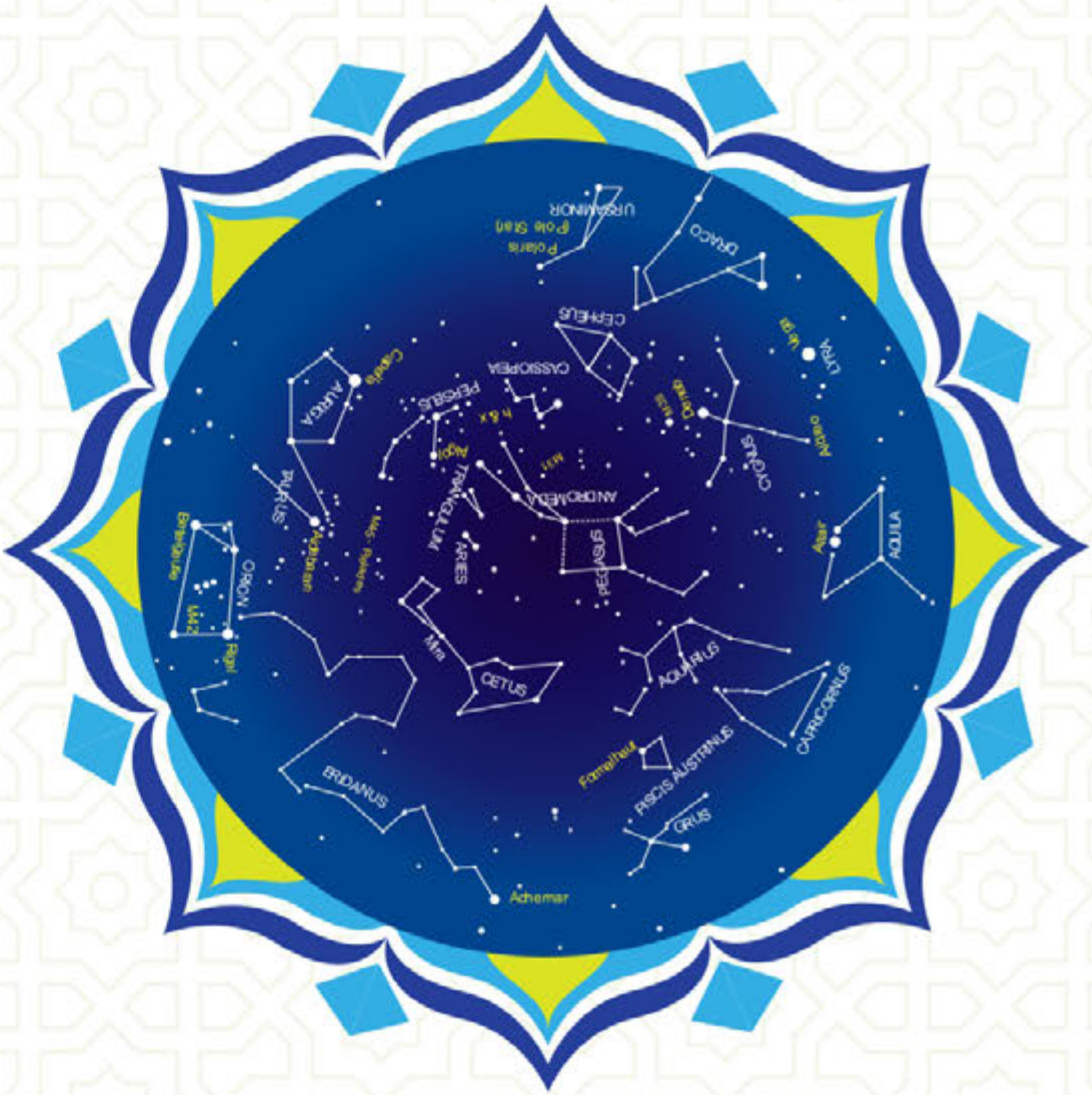
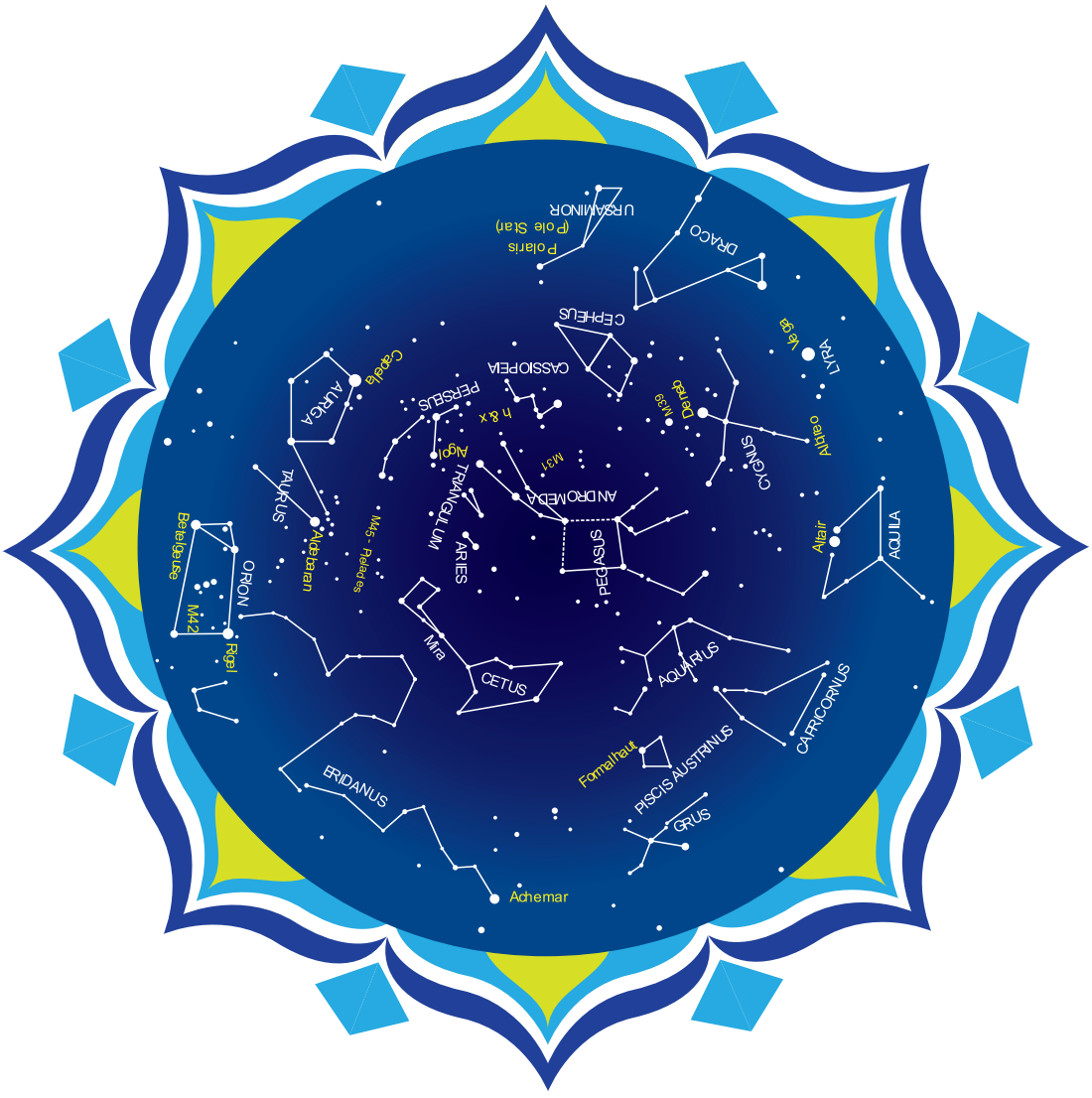
MILIK KEMENTERIAN AGAMA RI
TIDAK DIPERJUALBELIKAN

EPHEMERIS HISAB RUKYAT 2026



DIREKTORAT URUSAN AGAMA ISLAM DAN BINA SYARIAH
DIREKTORAT JENDERAL BIMBINGAN MASYARAKAT ISLAM
KEMENTERIAN AGAMA RI

EPHEMERIS HISAB RUKYAT 2026



DIREKTORAT URUSAN AGAMA ISLAM DAN BINA SYARIAH
DIREKTORAT JENDERAL BIMBINGAN MASYARAKAT ISLAM
KEMENTERIAN AGAMA RI

KATA PENGANTAR

بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

Alhamdulillah, segala puji serta syukur kita panjatkan kepada Allah SWT, pengatur peredaran bumi dan matahari, pemilik langit dan bumi serta segala apa yang ada di antara keduanya, yang telah memberikan kekuatan sehingga Direktorat Urusan Agama Islam dan Bina Syariah Direktorat Jenderal Bimbingan Masyarakat Islam Kementerian Agama Republik Indonesia dapat menerbitkan "EPHEMERIS HISAB RUKYAT 2026". Selawat serta salam semoga selalu tercurah kepada Nabi Muhammad SAW, lentera penuntun umat, pembawa risalah penuh hikmah yang membimbing umat Islam untuk hidup dalam kedamaian dan kebenaran. Semoga kita selalu mendapatkan syafaatnya di dunia dan akhirat.

Buku ini berisi data Matahari dan Bulan lengkap selama satu tahun Masehi disertai dengan penjelasan mengenai istilah-istilah dalam data tersebut. Dalam buku ini juga terdapat daftar gerhana Matahari dan gerhana Bulan yang terjadi pada tahun 2026 M, daftar waktu ijtimak, tinggi hilal, serta data posisi Matahari dan Bulan pada setiap awal Bulan Kamariah di tahun 2026 M.

Selain itu, dalam buku ini terdapat lampiran-lampiran untuk memudahkan pembaca memahami ataupun menggunakan data-data ephemeris dan implikasinya terhadap kajian hisab rukyat. Lampiran tersebut terdiri dari Keputusan Presiden RI Nomor 41 Tahun 1987 tentang Pembagian Wilayah RI Menjadi 3 (tiga) Wilayah Waktu, Kebijakan Pemerintah dalam Menetapkan Awal Bulan Kamariah, Fatwa MUI Nomor 2 Tahun 2004 tentang Penetapan Awal Bulan Ramadhan, Syawal, dan Dzulhijjah, Fatwa MUI Nomor 5 Tahun 2010 tentang Arah Kiblat, Daftar Refraksi, Daftar Kerendahan Ufuk, Magnetic Variation Epoch tahun 2020, serta contoh-contoh perhitungan yang menggunakan data dalam ephemeris ini.

Dengan terbitnya buku EPHEMERIS HISAB RUKYAT 2026 ini diharapkan masyarakat khususnya yang mendalami kajian hisab rukyat serta pegawai kantor Kementerian Agama se-Indonesia dapat menjadikannya rujukan dalam mempelajari dan mengambil kebijakan dalam hal hisab rukyat. Masukan dan saran sangat kami harapkan agar kami dapat membuat buku ini lebih baik lagi.

Direktur Urusan Agama Islam
dan Bina Syariah

Dr. H. Arsad Hidayat, Lc., M.A.

SAMBUTAN DIREKTUR JENDERAL
BIMBINGAN MASYARAKAT ISLAM

بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

Alhamdulillah, segala puji dan syukur bagi Allah SWT, Tuhan yang Maha Pengasih lagi Maha Penyayang, pemilik segala cahaya dan keteraturan, yang dengan limpahan rahmat-Nya menuntun setiap niat, menguatkan setiap langkah, dan memudahkan setiap ikhtiar hingga buku "Ephemeris Hisab Rukyat 2026" ini dapat diterbitkan. Selawat serta salam semoga senantiasa mengalir kepada Nabi Muhammad SAW, utusan pembawa risalah kebenaran, yang teladan dan akhlak mulianya senantiasa menerangi perjalanan umat sepanjang zaman. Semoga juga tercurah kepada keluarga, para sahabat, serta pengikut beliau hingga akhir zaman dengan harapan kita semua dapat kita dapat berkumpul dengan mereka di surga-Nya.

Berdasarkan Peraturan Menteri Agama Nomor 33 Tahun 2024 tentang Organisasi dan Tata Kerja Kementerian Agama, Direktorat Urusan Agama Islam dan Bina syariah mempunyai tugas antara lain melaksanakan perumusan dan pelaksanaan kebijakan, bimbingan teknis, supervisi, pemantauan, evaluasi, dan pelaporan di bidang urusan agama Islam dan bina syariah, termasuk di dalamnya bidang terkait hisab rukyat. Oleh karena itu, sebagai bentuk pelayanan pemerintah terhadap masyarakat mengenai hal-hal terkait data yang digunakan untuk kajian hisab rukyat, Direktorat Jenderal Bimbingan Masyarakat Islam Kementerian Agama menerbitkan buku Ephemeris Hisab Rukyat 2026.

Buku ini diharapkan menjadi referensi bagi para peminat ilmu falak (astronomi Islam) baik dari unsur pelajar, akademisi, organisasi hisab rukyat, individu, dan juga para pegawai di lingkungan Kementerian Agama se-Indonesia. Hadirnya buku ini diharapkan dapat menjadi standar dalam perhitungan posisi Matahari dan Bulan serta menjadi dasar untuk mempelajari perhitungan yang terkait dengan data pada buku ini seperti perhitungan awal waktu salat, perhitungan awal Bulan Kamariah, dan lain sebagainya.

Akhirnya, kami selaku Direktur Jenderal Bimbingan Masyarakat Islam menyampaikan apresiasi kepada Tim Penyusun yang telah berupaya mewujudkan buku Ephemeris Hisab Rukyat 2026 ini. Semoga upaya kita dalam memberikan pelayanan terbaik kepada umat Islam menjadi catatan amal baik di sisi Allah SWT.

Direktur Jenderal Bimbingan Masyarakat Islam

Prof. Dr. H. Abu Rokhmad, M.Ag.

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PENJELASAN DATA EPHEMERIS

I. UMUM

Ephemeris Hisab Rukyat ini menyediakan beberapa data mengenai Matahari dan Bulan yang dapat digunakan untuk kegiatan hisab maupun rukyat, menentukan arah kiblat, waktu–waktu salat, awal bulan kamariah, dan gerhana.

Data Matahari yang disediakan adalah Bujur Astronomi, Lintang Astronomi, Asensio Rekta, Deklinasi, Jarak Geosentris, Semi Diameter, Kemiringan Ekliptika dan Perata Waktu. Sedangkan data Bulan yang disediakan adalah Bujur Astronomi, Lintang Astronomi, Asensio Rekta, Deklinasi, Horizontal Paralaks, Semi Diameter, Sudut Kemiringan Bulan, dan Luas Cahaya Bulan.

II. DATA MATAHARI

1. Ecliptic Longitude

Ecliptic Longitude dikenal dalam bahasa Indonesia dengan Bujur Astronomi yang dikenal pula dengan istilah *Taqwim* atau *Thul* (التقويم = الطول) *Thulus Syams* (طول الشمس) adalah jarak Matahari dari titik Aries (Vernal Equinox =الحمل) diukur) diukur sepanjang lingkaran Ekliptika (Lihat gambar 1).

2. Ecliptic Latitude

Ecliptic Latitude dikenal dalam bahasa Indonesia dengan Lintang Astronomi yang dikenal pula dengan *Ardlusy Syams* (عرض الشمس). Data ini adalah jarak titik pusat Matahari dari Lingkaran Ekliptika. Sebetulnya Ekliptika itu sendiri adalah jarak yang ditempuh oleh gerak semu Matahari secara tahunan. Oleh karena itu, Matahari seolah–olah selalu berada di Lingkaran Ekliptika.Sebenarnya, jalannya tidak rata persis, namun ada sedikit geseran. Keadaan seperti ini dapat dilihat pada nilai Ecliptic Latitude yang selalu mendekati nol. Karena nilainya yang sangat kecil sehingga banyak sistem perhitungan yang mengabaikan nilai data ini.

3. Apparent Right Ascension

Apparent Right Ascension dikenal dalam bahasa Indonesia dengan Asensio Rekta. Data ini dikenal juga dengan istilah panjatan Tegak atau *Ash–shu'udul Mustaqim* atau *al–Mathali'ul Baladiyah* (المطالع البلادية = الصعود المستقيم) adalah jarak Matahari dari titik Aries (Hamal) diukur sepanjang Lingkaran Equator (Lihat gambar 1).

4. Apparent Declination

Apparent Declination dikenal dalam bahasa Indonesia dengan Deklinasi Matahari yang terlihat (bukan Matahari Hakiki), atau dikenal pula dengan istilah *Mail al–Syams* (ميل الشمس) adalah jarak Matahari dari Equator (Lihat gambar 1 dan 2). Bila nilai Deklinasipositif berarti Matahari berada di sebelah utara Equator; tapi bila nilai

Deklinasi negatif berarti Matahari berada disebelah selatan Equator.

5. True Geocentric Distance

True Geocentric Distance dikenal dalam bahasa Indonesia dengan istilah Jarak Geosentric. Data ini menggambarkan jarak antara Bumi dan Matahari dalam satuan AU *(Astronomical Unit)*. Oleh karena Bumi mengelilingi Matahari tidak merupakan bulat bola, melainkan berbentuk ellips (menyerupai bulat telur), sehingga terkadang dekat dan terkadang jauh. Jarak terdekat antara Bumi dengan Matahari disebut *Perigee* atau *al–Hadhidh* (الحضيض), sedangkan jarak terjauhnya disebut Apogee atau al–Auj (الأوج).

6. Semi Diameter

Semi Diameter dikenal dalam bahasa Indonesia dengan jari–jari yang dikenal pula dengan *Nisfu Quthr al–Syams* (نصف قطر الشمس) adalah jarak titik pusat Matahari dengan piringan luarnya.

7. True Obliquity

True Obliquity dikenal dalam bahasa Indonesia dengan Kemiringan Ekliptika yang dikenal pula dengan istilah *al–Mail al–Kulli* (الميل الكلى) atau dengan istilah *al–Mail A'dham* (الميل الاعظم) adalah Kemiringan Ekliptika dari Equator (lihat gambar 1).

8. Equation of Time

Equation of Time dikenal dalam bahasa Indonesia dengan Perata Waktu yang dikenal pula dengan *Ta'dil Waqt* atau *Ta'dil Zaman* (تعديل الوقت =تعديل الزمن) adalah selisih antara waktu kulminasi Matahari Hakiki dengan waktu kulminasi Matahari Rata–rata. Data ini biasanya dinyatakan dengan huruf "e" kecil.

III. DATA BULAN

1. Apparent Longitude

Apparent Longitude yaitu Bujur Astronomi Bulan (yang terlihat) yang dalam bahasa Arab dikenal dengan *Thul al–Qamar* (طول القمر). Data ini adalah jarak antara titik Aries sampai Bulan diukur sepanjang Lingkaran Ekliptika (Lihat gambar 1).

2. Apparent Latitude

Apparent Latitude diterjemahkan dengan Lintang Astronomi Bulan (yangterlihat) yang dalam istilah Arab disebut *Ardlual–Qomar* (عرض القمر). Data iniadalah jarak antara Bulan dengan Lingkaran Ekliptika diukur sepanjang Lingkaran Kutub Ekliptika. Nilai maksimum Lintang Astronomi Bulan adalah 5° 8' (lima derajat delapan menit). Nilai positif berarti bulan berada di utara Ekliptika, dan nilai negatif berarti Bulan berada di sebelah selatan Ekliptika.

3. Apparent Right Ascension

Apparent Right Ascention dikenal dalam bahasa Indonesia dengan Asensio Rekta Bulan (yang terlihat) yang dikenal pula dengan istilah Panjatan Tegakatau *Ash–shu'udu al–Mustaqim* atau *Al–Matholi'u al–Baladiyah* (المطالع البلادية = الصعود المستقيم). Data ini

adalah jarak titik pusat Bulan dari titik Aries diukur sepanjang lingkaran Equator (Lihat gambar 1).

4. Apparent Declination

Apparent Declination disini adalah Deklinasi Bulan yang dikenal pula dengan istilah *Mailual–Qamar* (ميل القمر). Data ini adalah jarak Bulan dari Equator (Lihat gambar 1 dan 2). Nilai Deklinasi positip jika Bulan di sebelah utara Equator, dan negatif jika di sebelah selatan Equator.

5. Horizontal Parallax

Parallax dikenal dalam bahasa Indonesia dengan "Benda Lihat" atau dalam bahasa Arab *Ikhtilafu al–Mandhar* (إختلاف المنظر). Sedangkan Horizontal Parallax adalah besaran sudut yang ditarik dari titik pusat Bulan ketika di ufuk(horizon) ke titik pusat Bumi dan garis yang ditarik dari titik pusat Bulan ketika itu ke permukaan Bumi.

6. Semi Diameter

Semi Diameter di sini adalah jari–jari Bulan atau disebut juga dengan *Nisfu Quthri al–Qamar* (نصف قطر القمر) adalah jarak antara titik pusat Bulan dengan piringan luarnya (Lihat gambar 4).

7. Angle Bright Limb

Angle Bright Limb dikenal dalam bahasa Indonesia dengan sudut kemiringan hilal, adalah sudut kemiringan piringan hilal yang memancarkan sinar sebagai akibat arah posisi hilal dari Matahari. Sudut ini diukur dari garis menghubungkan titik pusat hilal dengan titik Zenith (سمت الرأس) ke garis yang menghubungkan titik pusat hilal dengan titik pusat Matahari dengan arah sesuai perputaran jarum jam (lihat gambar 5).

8. Fraction Illumination

Fraction Illumination adalah besar atau luas piringan Bulan yang menerima sinar Matahari yang tampak dari Bumi. Jika seluruh piringan Bulan yang menerima sinar Matahari terlihat dari Bumi maka bentuknya akan berupa "bulatan penuh". Dalam keadaan seperti ini nilai Fraction Illumination Bulan adalah 1 (satu), yaitu persis pada saat puncak Bulan Purnama. Sedangkan jika Bumi, Bulan dan Matahari sedang persis berada pada satu garis lurus, maka akan terjadi Gerhana Matahari Total. Dalam keadaan seperti ini nilai Fraction Illumination Bulan adalah nol. Setelah Bulan Purnama, nilai Fraction Illumination akan semakin mengecil sampai pada nilai yang paling kecil, yaitu pada saat ijtima dan setelah itu nilai Fraction Illumination ini akan kembali membesar sampai mencapai nilai satu, pada saat Bulan Purnama. Dengan demikian, data Fraction Illumination ini dapat dijadikan pedoman untuk mengetahui kapan terjadinya ijtima' dan kapan bulan purnama (*istiqbal* = الإستقبال). Demikian pula saat first quarter (التربيع الأول) dan last quarter (التربيع الثاني) dari bulan dapat diketahui, yaitu dengan mencari nilai Fraction Illumination sebesar 0.5 (setengah).

IV. WAKTU YANG DIPERGUNAKAN

Data Matahari dan Bulan dalam Ephemeris ini disajikan berdasarkan waktu Universal Time (UT). Sehingga untuk mencari data Matahari dan Bulan bagi wilayah Indonesia, maka waktu–waktu daerah di Indonesia terlebih dahulu harus diubah menjadi UT, dengan cara :

UT = WIB - 7 jam
UT = WITA - 8 jam
UT = WIT - 9 jam

V. CONTOH PENGGUNAAN

Misalnya mencari Deklinasi Matahari dan Bulan pada pukul 18:00 WIB tanggal 17 Agustus 2026.
Mengubah WIB menjadi UT, dengan cara :
UT = WIB – 7 jam, sehingga jam 18.00 WIB = jam 11.00 UT Dilihat data Matahari dan Bulan pada tanggal 17 Agustus 2026.
Dalam kolom jam (paling kiri) pada angka 11 ditarik ke kanan hingga kolom “Apparent Declination”.
Lihat angka yang ada pada baris dan kolom itu, yaitu :
Deklinasi Matahari = 13° 19′ 49″
Deklinasi Bulan = -13° 25′ 44″

VI. PENYISIPAN ATAU INTERPOLASI

Oleh karena data Matahari dan Bulan dalam Ephemeris ini disajikan pada setiap jam, maka untuk memperoleh data pada pecahan jam (menit dan detik), diperlukan langkah–langkah penyisipan atau interpolasi atau ta’dil.

Contoh :
Mencari Bujur Ekliptika Bulan pada pukul 17:47:08.89 WIB tanggal 17 Agustus 2026

Langkah 1 :
Mengubah WIB menjadi UT dengan cara :
UT = WIB – 7 jam, sehingga jam 17:47:08.89 WIB => 10:47:08.89 UT

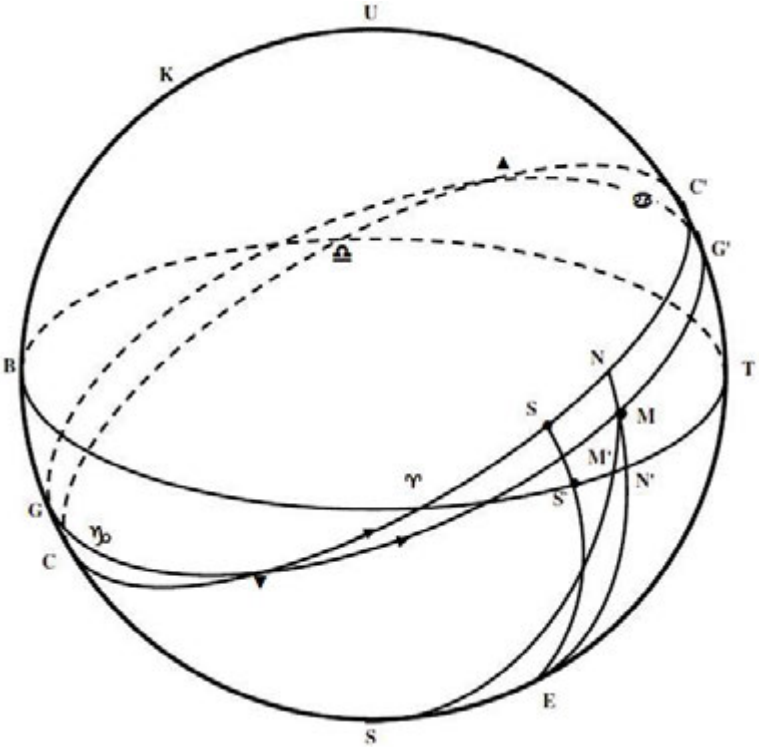
Langkah 2 :
Melacak data Bujur Ekliptika Bulan pada kolom Apparent Longitude Bulan sebagai berikut :
Data pada pukul 10 UT = 203° 47’ 38”
Data pada pukul 11 UT = 204° 19’ 28”
Perubahan 1 jam = 204° 19’ 28” – 203° 47’ 38” = 0° 31’ 50”
Perubahan dalam 47 menit 8.89 detik = 00:47:08.89 × 0° 31’ 50” = 0° 25’ 01”
Maka Bujur Astronomi Bulan jam 10:47:08.89 = 0° 25’ 01” + 203° 47’ 38”
= 204° 12’ 39”

Atau dapat digunakan cara sbb :

Bujur Astronomi Bulan jam 10	= 203° 47’ 38”	→	203° 47’ 38”
Bujur Astronomi Bulan jam 11	= 204° 19′ 28″-		
	0° 31′ 50″		
	00:47: 08.89 -		
	-0° 25’ 01”	→	-0° 25’ 01” -
Bujur Astronomi Bulan jam 10:47:08.89	=		204° 12’ 39”

VII. GAMBAR-GAMBAR

1. BOLA LANGIT PADA 0° DILIHAT DARI ZENITH



Keterangan:

BUTS = Barat, Utara, Timur, Selatan = Lingkaran Horizon = دائرة الأفق

γ = Titik Aries = Titik musim semi = Vernal Aquinox = حمل

♋ = Titik Cancer = جدي

♎ = Titik Libra = Titik musim dingin = Authomnal Aquinox = ميزان

♑ = Titik Capricorn = معدل النهار

▼ = Simpul Turun = Decending Node = العقدة النازلة

▲ = Simpul Naik = Ascending Node = العقدة الصاعدة

BγT♎ = Katulistiwa Langit = Equator = معدل النهار

Cγ C'♎ = Ekliptika = Lingkaran Zodiak = منطقة البروج

CγG′♎ = Orbit Bulan = Falak Bulan = فلك القمر

KE = Kutub Ekliptika = قطب دائرة البروج = قطب منطقة البروج

S = Sun = Matahari = الشمس

γ -S = Taqwim Matahari = Longitude of the Sun = طول الشمس

M = Moon = Bulan = القمر

γ -N = Takwim Bulan = Longitude of the Moon = طول القمر

γ -S′ = Panjatan Tegak Matahari = Right Ascension of the sun

= Asensio Rekta = الصعود المستقيم = المطالع البلادية

γ -M′ = Panjatan Tegak Bulan = Right Ascension of the Moon

= Asensio Rekta = الصعود المستقيم = المطالع البلادية

SS′ = Deklinasi Matahari = Declination of the sun = ميل الشمس

MM′ = Deklinasi Bulan = Declination of the moon = ميل القمر = الميل الأول

MN′ = Deklinasi Kedua Bulan = الميل الثاني للقمر

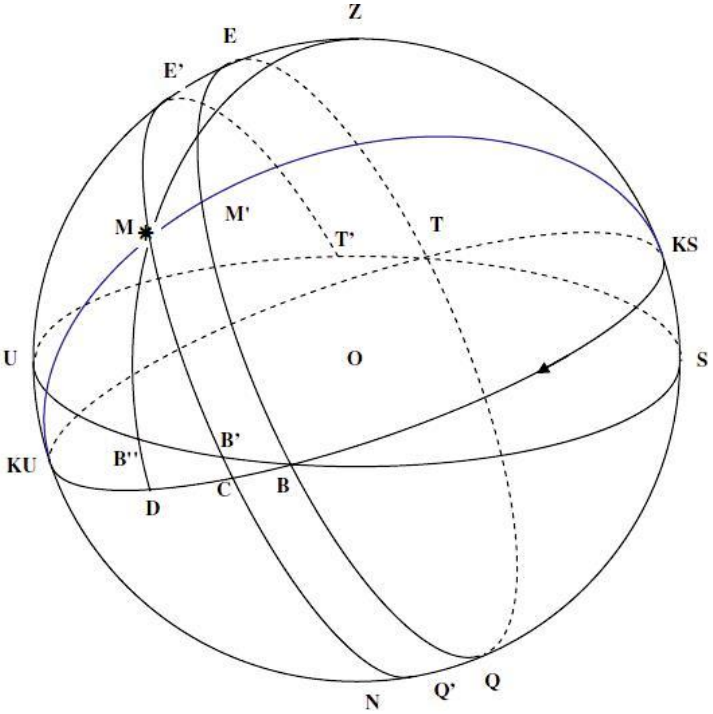
BC = TC' = Maksimum Deklinasi Matahari = 23° 27' = الميل الكلي = الميل الأعظم

MN = Lintang Astronomis Bulan = الميل الكلي = الأعظم

GC = G'C' = Maksimum 'Ard Bulan = 5° 8' = عرض القمر الكلي

⟶ = Arah ke Timur = Retrograde = المخالف

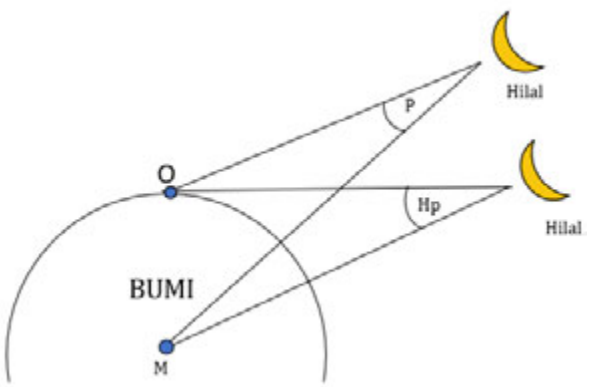
2. BOLA LANGIT PADA 20° LINTANG SELATAN DILIHAT DARI BARAT



Keterangan :

O	= Observer, Pengamat di Bumi
Z	= Zenit = Puncak Langit = سمت الرأس
N	= Nadir = Titik terbawah dari Bila Langit = سمت القدم
SBUT	= Selatan, Barat, Utara dan Timur = Cakrawala = Horizon = دائرة الأفق
KS	= Kutub Langit Selatan
KU	= Kutub Langit Utara
ZE	= Lintang Tempat = Latitude = عرض البلاد
ZUNS	= Meridian Langit = دائرة نصف النهار
EBQT	= Khatulistiwa Langit = Equator = معدل النهار
M	= Suatu Benda Langit = الجرم
ZM	= Jarak Zenit = Zenith Distance = بعد السمت
E'MB'Q	= Lingkaran Perjalanan Harian Benda Langit = المدار
KUMM'KS	= Lingkaran Waktu/Lingkaran Deklinasi = دائرة الميل
MM'	= Deklinasi = Declination = الميل
E'	= Titik Kulminasi atas
E'MB'	= Setengah Busur Siang = نصف قوس النهار
E'M	= Sudut Waktu = Hour Angle = t = فضل الدائر
MB'	= Dair = الدائر
B'C	= 90o – Setengah Busur Siang = نصف الفضلة
E'U	= Tinggi Kulminasi = غاية الإرتفاع
E'KU	= Ashal Hakiki = الأصل المطلق
UTSBB''	= Azimuth = السمت
MB'	= Tinggi = Altitude = الإرتفاع
⟵	= Arah Ke barat = Prograde = التوالي

3. Parallax / Beda Lihat



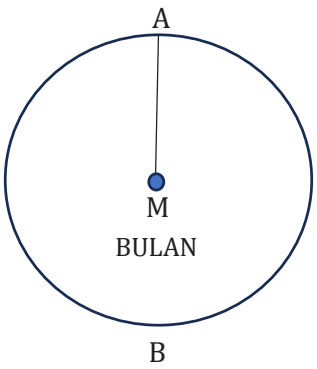
O = Peninjau, Observer

M = Titik Pusat Bumi = مركز االرض

Hp = Horizontal Parallax

P = Beda Langit = Parallax
= إختالف المنظر

4. Semi Diamater



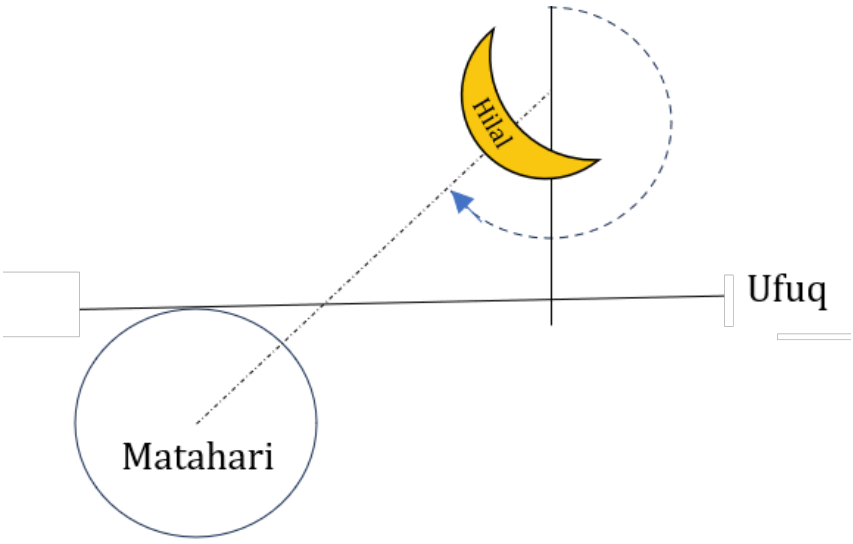
A = Titik teratas pada Piringan Atas, Upper Limb

M = Titik Pusat Bulan = مركز القمر

B = Titik terbawah pada Piringan Bawah, Lower Limb

AM = Jari–jari = Semi diameter Bulan =
نصف قطر القمر (rata–rata 0º 16')

5. Sudut Kemiringan Hilal



GERHANA MATAHARI DAN BULAN TAHUN 2026

Dalam tahun 2026 terjadi 4 (empat) kali gerhana, yaitu 2 (dua) kali gerhana matahari dan 2 (dua) kali gerhana bulan :

1. **Gerhana Matahari Cincin (Annular) 17 Februari 2026**. Menjelang awal bulan Ramadan 1447 Hijriah. Tidak dapat diamati di wilayah Indonesia. Daerah yang dapat mengamati gerhana sebagian: Argentina bagian selatan & Chili, Afrika bagian selatan, Antartika. Gerhana matahari cincin dapat diamati di Antartika.

Magnitudo	: 0,9630	
Kontak Penumbra 1 (P1)	: 09:56:23,7 UT	16:56:23,7 WIB
Kontak Umbra 1 (U1)	: 11:42:47,8 UT	18:42:47,8 WIB
Kontak Umbra 2 (U2)	: 11:55:16,9 UT	18:55:16,9 WIB
Puncak Gerhana (Maks.)	: 12:11:53,6 UT	19:11:53,6 WIB
Kontak Umbra 3 (U3)	: 12:29:06,9 UT	19:29:06,9 WIB
Kontak Umbra 4 (U4)	: 12:41:29,1 UT	19:41:29,1 WIB
Kontak Penumbra 4 (P4)	: 14:27:38,7 UT	21:27:38,7 WIB

2. **Gerhana Bulan Total 3 Maret 2026**. Tengah bulan Ramadan 1447 Hijriah. Dapat diamati di wilayah Indonesia. Tempat lain yang dapat mengamati gerhana: Asia bagian timur, Australia, Lautan Pasifik, Amerika.

Magnitudo Umbra	: 1,1526			
Durasi Gerhana				
Umbra	: 3 jam 27 menit 49 detik			
Total	: 0 jam 58 menit 58 detik			
Awal Gerhana Sebagian, Kontak Umbra 1 (U1)	: 09:49:37	UT	16:49:37	WIB
Awal Gerhana Total Kontak Umbra 2 (U2)	: 11:03:54	UT	18:03:54	WIB
Puncak Gerhana {Maks.)	: 11:33:40	UT	18:33:40	WIB
Akhir Gerhana Total, Kontak Umbra 3 (U3)	: 12:02:53	UT	19:02:53	WIB
Akhir Gerhana Sebagian, Kontak Umbra 4 (U4)	: 13:17:26	UT	20:17:26	WIB

3. **Gerhana Matahari Total 12 Agustus 2026**. Menjelang awal Bulan Rabi'ul Awal 1448 Hijriah. Tidak dapat diamati di wilayah Indonesia. Gerhana sebagian dapat diamati di: Amerika Utara bagian utara, Afrika bagian barat, Eropa. Gerhana total dapat diamati di: Arktik, Greenland, Islandia, Spanyol.

Magnitudo	: 1,0386	
Kontak Penumbra 1 (P1)	: 15:34:11,4 UT	22:34:11,4 WIB
Kontak Umbra 1 (U1)	: 16:58:05,6 UT	23:58:05,6 WIB
Kontak Umbra 2 (U2)	: 17:02:06,6 UT	00:02:06,6 WIB (13 Agustus 2026)
Puncak Gerhana (Maks.)	: 17:45:53,3 UT	00:45:53,3 WIB (13 Agustus 2026)
Kontak Umbra 3 (U3)	: 18:30:09,2 UT	01:30:09,2 WIB (13 Agustus 2026)
Kontak Umbra 4 (U4)	: 18:34:05,3 UT	01:34:05,3 WIB (13 Agustus 2026)
Kontak Penumbra 4 (P4)	: 19.57:56,8 UT	02.57:56,8 WIB (13 Agustus 2026)

4. **Gerhana Bulan Sebagian (Parsial) 28 Agustus 2026**. Tengah Bulan Rabi'ul Awal 1448 Hijriah. Tidak dapat diamati di wilayah Indonesia. Daerah yang dapat mengamati gerhana: Lautan Pasifik bagian Timur, Amerika, Eropa, Afrika.

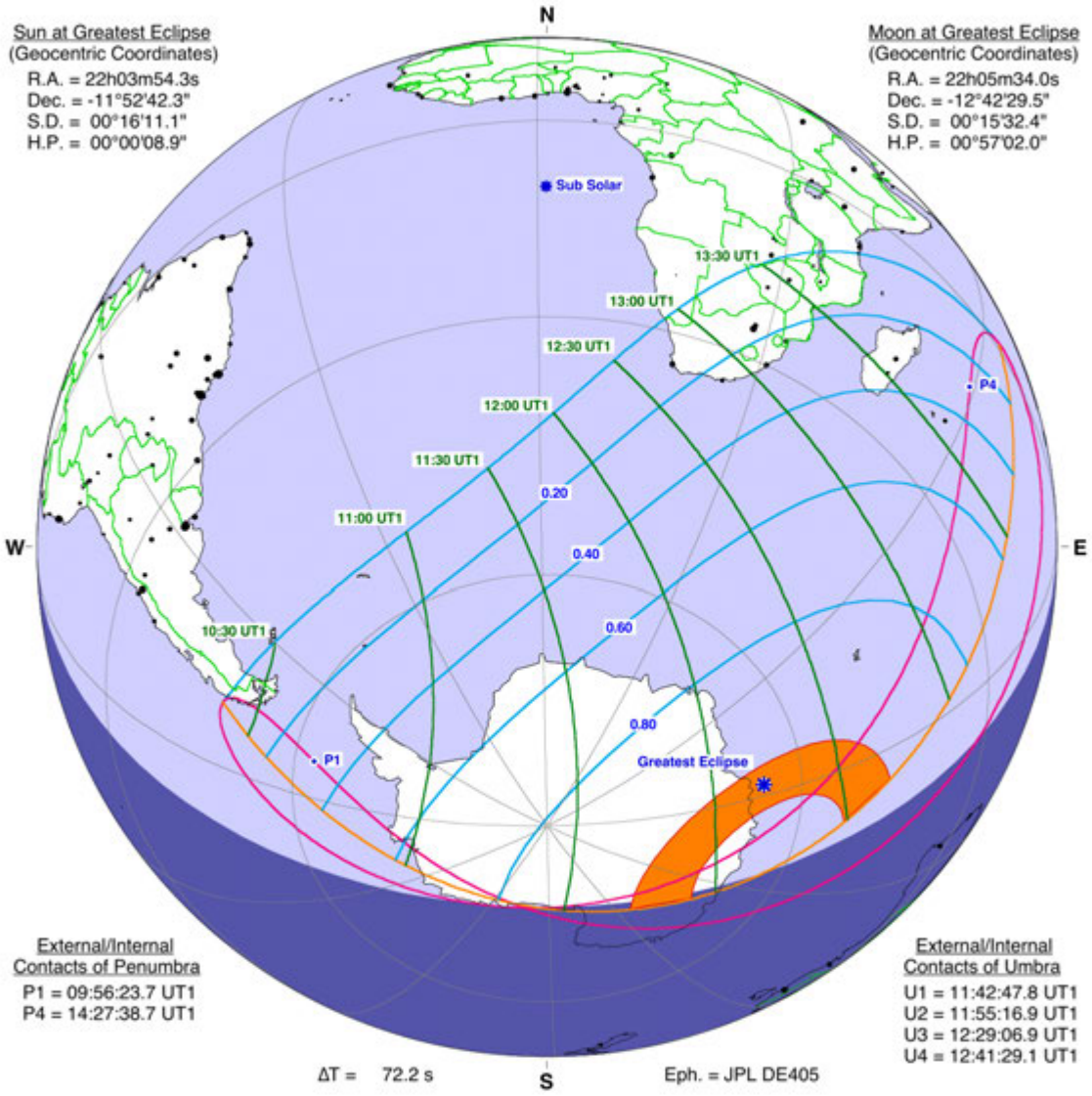
Magnitudo Umbra	: 0,9319			
Durasi Umbra	: 3 jam 18 menit 48 detik			
Awal Gerhana Sebagian, Kontak Umbra 1 (U1)	: 02:33:21	UT	09:33:21	WIB
Puncak Gerhana (Maks.)	: 04:12:52	UT	01:12:52	WIB
Akhir Gerhana Sebagian, Kontak Umbra 4 (U4)	: 05:52:09	UT	12:52:09	WIB

Annular Solar Eclipse of 2026 Feb 17

Greatest Eclipse = 12:13:05.8 TD (= 12:11:53.6 UT1)

Eclipse Magnitude = 0.9630 Saros Series = 121

Gamma = -0.9743 Saros Member = 61 of 71



Sun at Greatest Eclipse
(Geocentric Coordinates)
R.A. = 22h03m54.3s
Dec. = -11°52'42.3"
S.D. = 00°16'11.1"
H.P. = 00°00'08.9"

Moon at Greatest Eclipse
(Geocentric Coordinates)
R.A. = 22h05m34.0s
Dec. = -12°42'29.5"
S.D. = 00°15'32.4"
H.P. = 00°57'02.0"

External/Internal
Contacts of Penumbra
P1 = 09:56:23.7 UT1
P4 = 14:27:38.7 UT1

External/Internal
Contacts of Umbra
U1 = 11:42:47.8 UT1
U2 = 11:55:16.9 UT1
U3 = 12:29:06.9 UT1
U4 = 12:41:29.1 UT1

ΔT = 72.2 s Eph. = JPL DE405

Circumstances at Greatest Eclipse: 12:11:53.6 UT1

Lat. = 64°43.1'S Sun Alt. = 12.3°
Long. = 086°44.4'E Sun Azm. = 268.3°
Path Width = 616.2 km Duration = 02m19.6s

Circumstances at Greatest Duration: 11:48:15.2 UT1

Lat. = 71°57.6'S Sun Alt. = 0.0°
Long. = 136°39.8'E Sun Azm. = 228.4°
Path Width = 765.7 km Duration = 02m20.9s

0 1000 2000 3000 4000 5000
Kilometers

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COURTESY OF '21ST CENTURY CANON OF SOLAR ECLIPSES', FRED ESPENAK, ASTROPIXELS PUBLISHING, 2016

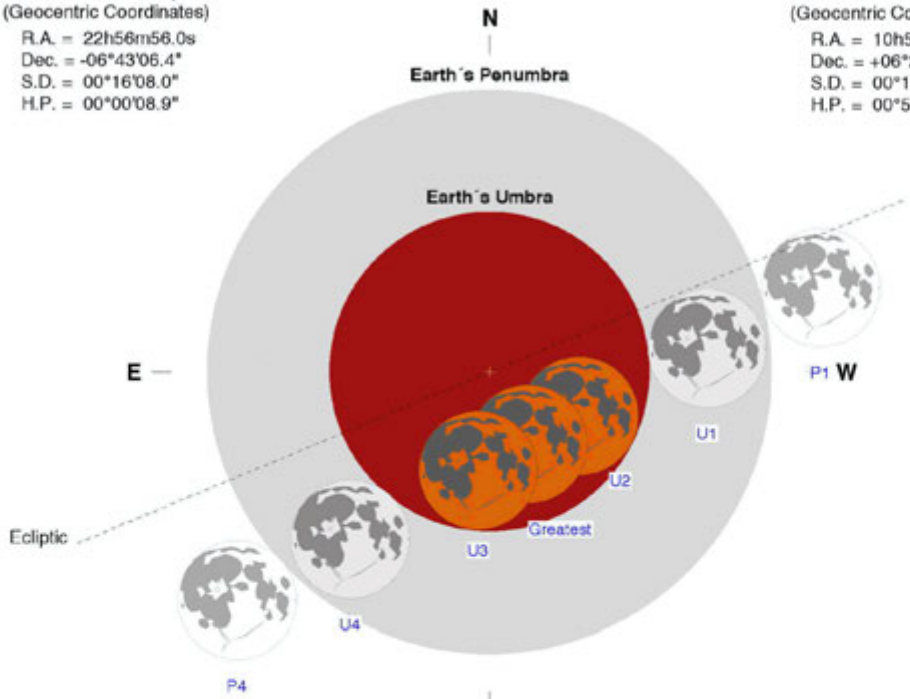
Total Lunar Eclipse of 2026 Mar 03

Greatest Eclipse = 11:34:52.1 TD (= 11:33:40.0 UT1)

Penumbral Magnitude = 2.1858 Gamma = -0.3765 Saros Series = 133
Umbral Magnitude = 1.1526 Axis = 0.3596° Saros Member = 27 of 71

Sun at Greatest Eclipse
(Geocentric Coordinates)
R.A. = 22h56m56.0s
Dec. = -06°43'06.4"
S.D. = 00°16'08.0"
H.P. = 00°00'08.9"

Moon at Greatest Eclipse
(Geocentric Coordinates)
R.A. = 10h56m15.0s
Dec. = +06°24'05.3"
S.D. = 00°15'37.0"
H.P. = 00°57'18.7"



Eclipse Durations
Penumbral = 05h39m21s
Umbral = 03h27m49s
Total = 00h58m58s

Eph. = JPL DE430
Rule = Herald-Sinnott
ΔT = 72 s

Eclipse Contacts
P1 = 08:43:58 UT1
U1 = 09:49:37 UT1
U2 = 11:03:54 UT1
U3 = 12:02:53 UT1
U4 = 13:17:26 UT1
P4 = 14:23:19 UT1

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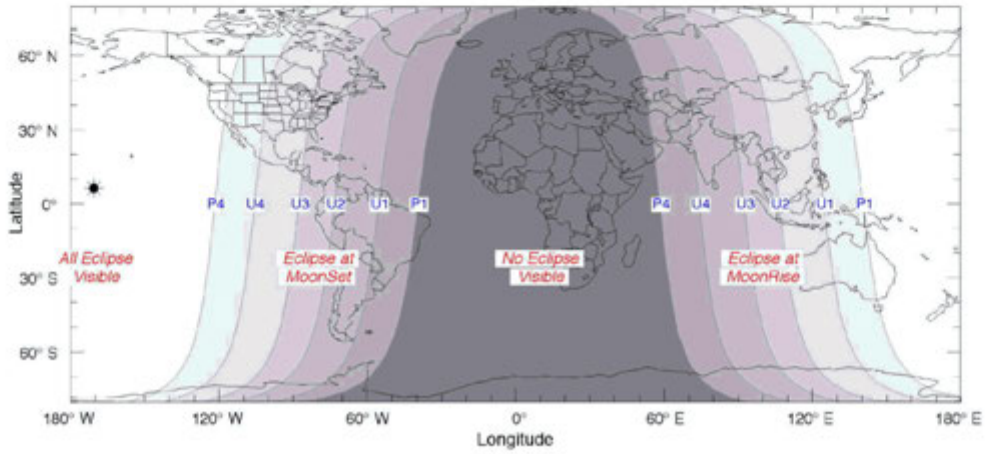


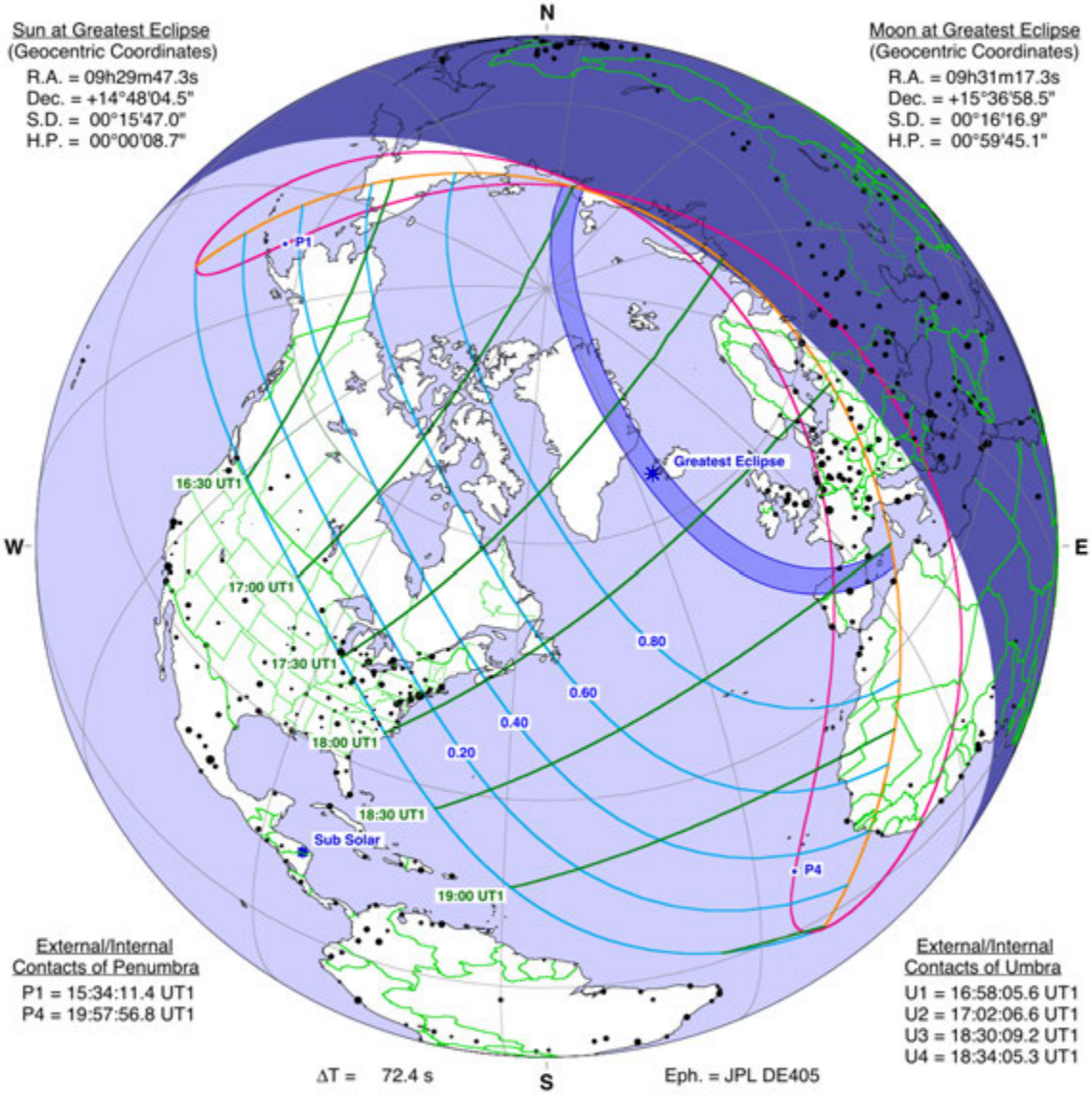
COURTESY OF *21ST CENTURY CANON OF LUNAR ECLIPSES*, FRED ESPENAK, ASTROPIXELS PUBLISHING, 2020

Total Solar Eclipse of 2026 Aug 12

Greatest Eclipse = 17:47:05.8 TD (= 17:45:53.3 UT1)

Eclipse Magnitude = 1.0386 Saros Series = 126

Gamma = 0.8977 Saros Member = 48 of 72



Sun at Greatest Eclipse
(Geocentric Coordinates)
R.A. = 09h29m47.3s
Dec. = +14°48'04.5"
S.D. = 00°15'47.0"
H.P. = 00°00'08.7"

Moon at Greatest Eclipse
(Geocentric Coordinates)
R.A. = 09h31m17.3s
Dec. = +15°36'58.5"
S.D. = 00°16'16.9"
H.P. = 00°59'45.1"

External/Internal
Contacts of Penumbra
P1 = 15:34:11.4 UT1
P4 = 19:57:56.8 UT1

External/Internal
Contacts of Umbra
U1 = 16:58:05.6 UT1
U2 = 17:02:06.6 UT1
U3 = 18:30:09.2 UT1
U4 = 18:34:05.3 UT1

ΔT = 72.4 s Eph. = JPL DE405

Circumstances at Greatest Eclipse: 17:45:53.3 UT1

Lat. = 65°13.4'N Sun Alt. = 25.8°
Long. = 025°13.7'W Sun Azm. = 248.4°
Path Width = 294.0 km Duration = 02m18.2s

Circumstances at Greatest Duration: 17:44:41.5 UT1

Lat. = 65°49.8'N Sun Alt. = 25.7°
Long. = 025°29.1'W Sun Azm. = 247.6°
Path Width = 292.9 km Duration = 02m18.2s

0 1000 2000 3000 4000 5000
Kilometers

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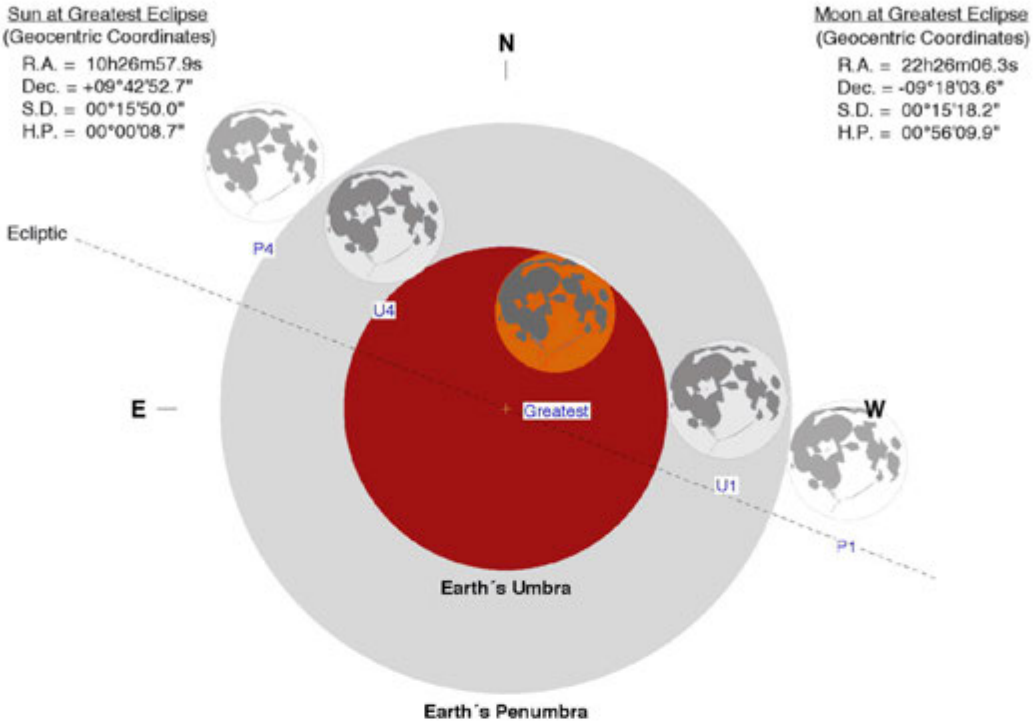
COURTESY OF '21ST CENTURY CANON OF SOLAR ECLIPSES', FRED ESPENAK, ASTROPIXELS PUBLISHING, 2016

Partial Lunar Eclipse of 2026 Aug 28

Greatest Eclipse = 04:14:04.3 TD (= 04:12:52.0 UT1)

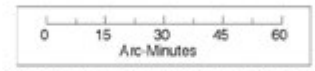
Penumbral Magnitude = 1.9664 Gamma = 0.4964 Saros Series = 138
Umbral Magnitude = 0.9319 Axis = 0.4647° Saros Member = 29 of 82



Eclipse Durations
Penumbral = 05h38m31s
Umbral = 03h18m48s

Eclipse Contacts
P1 = 01:23:29 UT1
U1 = 02:33:21 UT1
U4 = 05:52:09 UT1
P4 = 07:02:00 UT1

Eph. = JPL DE430
Rule = Herald-Sinnott
ΔT = 72 s



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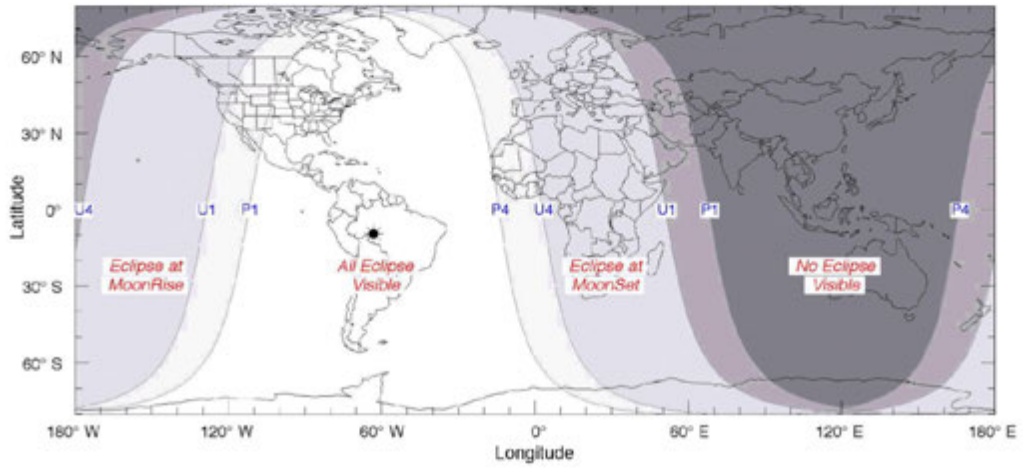


COURTESY OF *21ST CENTURY CANON OF LUNAR ECLIPSES*, FRED ESPENAK, ASTROPIXELS PUBLISHING, 2020

PENENTU AWAL BULAN HIJRIAH TAHUN 2026 M

Bulan	Ijtimak			Tinggi Hilal Toposentrik		Elongasi Geosentrik		Prediksi Awal Bulan	
	Hari	Tanggal	Jam (WIB)	Minimal	Maximal	Minimal	Maximal	Hari	Tanggal
Syaban 1447 H	Senin	19 Januari 2026	02:52	5° 12' 06"	6° 24' 56"	6° 54' 59"	8° 07' 24"	Selasa	20 Januari 2026
Ramadan 1447 H	Selasa	17 Februari 2026	19:01	-2° 24' 42"	-0° 55' 41"	0° 56' 23"	1° 53' 36"	Kamis	19 Februari 2026
Syawal 1447 H	Kamis	19 Maret 2026	08:23	0° 54' 26"	3° 07' 51"	4° 32' 39"	6° 06' 11"	Sabtu	21 Maret 2026
Zulqa'dah 1447 H	Jumat	17 April 2026	18:51	-5° 23' 09"	-2° 32' 40"	3° 53' 11"	4° 12' 54"	Ahad	19 April 2026
Zulhijjah 1447 H	Ahad	17 Mei 2026	03:00	3° 17' 32"	6° 57' 57"	8° 54' 49"	10° 37' 06"	Senin	18 Mei 2026
Muharram 1448 H	Senin	15 Juni 2026	09:54	0° 55' 14"	4° 01' 15"	5° 38' 15"	6° 58' 52"	Selasa	16 Juni 2026
Shafar 1448 H	Selasa	14 Juli 2026	16:43	-2° 01' 36"	0° 43' 01"	3° 12' 02"	3° 22' 25"	Kamis	16 Juli 2026
Rabi'ul Awal 1448 H	Kamis	13 Agustus 2026	00:36	6° 25' 31"	7° 47' 52"	8° 22' 37"	10° 10' 37"	Jumat	14 Agustus 2026
Rabi'ul Akhir 1448 H	Jumat	11 September 2026	10:26	0° 33' 28"	1° 44' 00"	3° 20' 40"	4° 49' 35"	Ahad	13 September 2026
Jumadal Ula 1448 H	Sabtu	10 Oktober 2026	22:49	-6° 33' 00"	-5° 14' 17"	4° 17' 44"	5° 08' 51"	Senin	12 Oktober 2026
Jumadal Akhirah 1448 H	Senin	09 November 2026	14:01	-2° 00' 24"	-0° 08' 09"	4° 59' 09"	5° 21' 25"	Rabu	11 November 2026
Rajab 1448 H	Rabu	09 Desember 2026	07:51	1° 41' 26"	3° 18' 29"	5° 40' 49"	6° 30' 47"	Kamis	10 Desember 2026

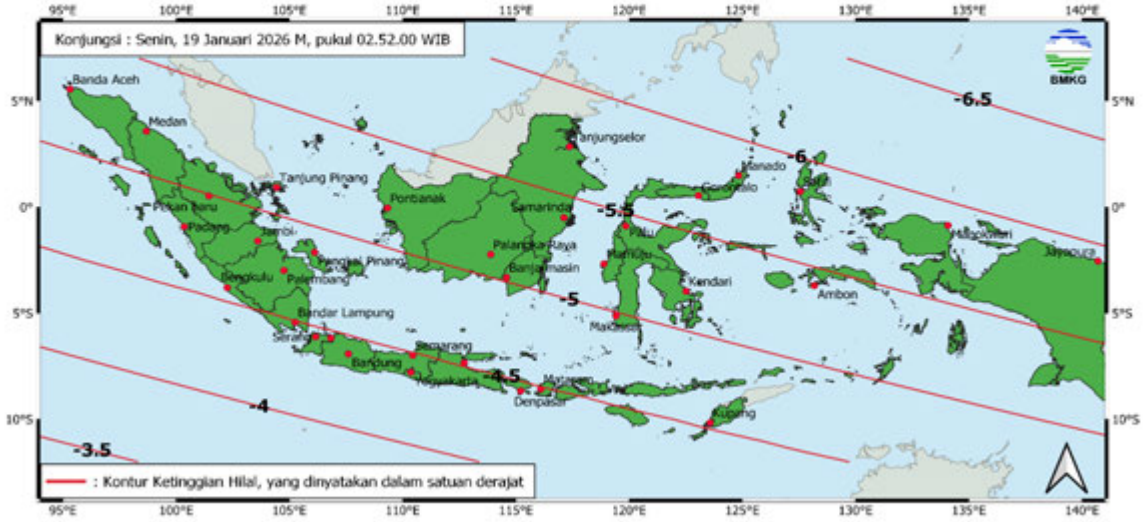
Catatan :

1. Data dalam tabel ini adalah hasil perhitungan mengacu pada kriteria baru MABIMS
2. Penetapan tanggal 1 Ramadan, 1 Syawal, 1 Zulhijjah 2026 H untuk pelaksanaan ibadah menunggu pengumuman Menteri Agama RI.

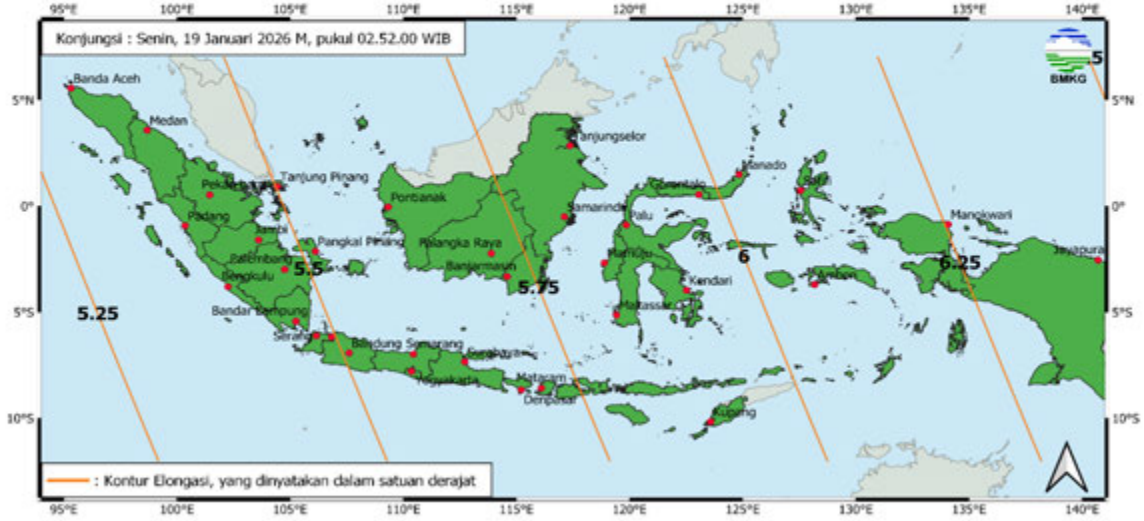
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
AHAD, 18 JANUARI 2026 M
PENENTU AWAL BULAN SYA'BAN 1447 H
IJTIMAK: SENIN, 19 JANUARI 2026 PUKUL 02:52:00 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT				TINGGI BULAN		ELONGASI		FI BULAN
		MATAHARI	BULAN	MATAHARI		BULAN						
				o	'	o	'	°	'	°	'	
1	Banda Aceh	18.44.23 WIB	18.24.12 WIB	249	30,02	245	27,30	-5	16,36	5	19,10	0,27
2	Medan	18.33.52 WIB	18.14.03 WIB	249	31,62	245	20,34	-5	11,98	5	22,99	0,28
3	Padang	18.33.53 WIB	18.15.46 WIB	249	29,76	245	2,32	-4	48,87	5	22,99	0,27
4	Pekanbaru	18.27.22 WIB	18.08.28 WIB	249	31,17	245	7,90	-4	59,73	5	25,42	0,28
5	Bengkulu	18.30.37 WIB	18.13.27 WIB	249	24,38	244	47,05	-4	34,48	5	24,20	0,27
6	Jambi	18.21.54 WIB	18.03.37 WIB	249	28,70	244	57,26	-4	51,12	5	27,46	0,28
7	Tanjung Pinang	18.14.47 WIB	17.55.18 WIB	249	31,32	245	7,93	-5	7,93	5	30,13	0,28
8	Palembang	18.19.23 WIB	18.01.32 WIB	249	26,12	244	49,61	-4	44,66	5	28,40	0,28
9	Bandar Lampung	18.21.04 WIB	18.04.11 WIB	249	19,80	244	35,79	-4	29,56	5	27,77	0,27
10	Pangkal Pinang	18.12.41 WIB	17.54.17 WIB	249	27,73	244	53,09	-4	52,67	5	30,92	0,28
11	Serang	18.18.32 WIB	18.01.48 WIB	249	17,56	244	31,00	-4	27,03	5	28,72	0,27
12	Jakarta	18.15.54 WIB	17.59.07 WIB	249	17,36	244	30,15	-4	27,90	5	29,71	0,28
13	Bandung	18.13.57 WIB	17.57.22 WIB	249	14,68	244	24,86	-4	24,72	5	30,44	0,28
14	Semarang	18.02.41 WIB	17.45.45 WIB	249	14,36	244	22,20	-4	29,29	5	34,70	0,28
15	Yogyakarta	18.04.13 WIB	17.47.38 WIB	249	11,25	244	16,97	-4	24,25	5	34,12	0,28
16	Surabaya	17.54.09 WIB	17.37.03 WIB	249	12,94	244	18,06	-4	31,31	5	37,95	0,29
17	Pontianak	17.56.40 WIB	17.36.54 WIB	249	30,43	245	1,08	-5	11,63	5	37,00	0,30
18	Palangka Raya	17.41.43 WIB	17.22.16 WIB	249	27,28	244	47,61	-5	7,00	5	42,72	0,30
19	Banjarmasin	18.40.33 WITA	18.21.28 WITA	249	25,07	244	41,24	-5	1,52	5	43,17	0,30
20	Samarinda	18.26.12 WITA	18.05.34 WITA	249	29,69	244	54,45	-5	23,72	5	48,70	0,31
21	Tanjungselor	18.20.13 WITA	17.58.04 WITA	249	31,23	245	9,26	-5	43,85	5	51,03	0,32
22	Denpasar	18.46.11 WITA	18.29.19 WITA	249	7,40	244	6,89	-4	27,20	5	41,00	0,29
23	Mataram	18.42.31 WITA	18.25.30 WITA	249	7,71	244	6,70	-4	29,22	5	42,41	0,29
24	Kupang	18.15.03 WITA	17.57.43 WITA	248	59,99	243	48,32	-4	32,26	5	53,04	0,31
25	Mamuju	18.22.23 WITA	18.02.26 WITA	249	26,28	244	41,98	-5	13,72	5	50,19	0,31
26	Makassar	18.23.58 WITA	18.05.00 WITA	249	20,22	244	27,11	-4	59,03	5	49,57	0,31
27	Palu	18.15.52 WITA	17.55.00 WITA	249	29,13	244	50,88	-5	26,52	5	52,73	0,32
28	Kendari	18.09.49 WITA	17.49.56 WITA	249	23,27	244	32,04	-5	12,37	5	55,09	0,32
29	Gorontalo	18.00.53 WITA	17.38.57 WITA	249	30,44	244	56,18	-5	41,19	5	58,59	0,33
30	Manado	17.52.20 WITA	17.29.43 WITA	249	30,87	244	59,74	-5	50,17	6	1,96	0,34
31	Sofifi	18.42.35 WIT	18.19.55 WIT	249	30,42	244	54,72	-5	50,84	6	5,81	0,35
32	Ambon	18.46.46 WIT	18.25.58 WIT	249	23,74	244	29,76	-5	24,66	6	4,16	0,34
33	Manokwari	18.18.55 WIT	17.56.03 WIT	249	28,68	244	42,63	-5	53,35	6	15,24	0,36
34	Jayapura	17.54.56 WIT	17.31.54 WIT	249	25,78	244	28,55	-5	55,12	6	24,89	0,38

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
AHAD, 18 JANUARI 2026 M
PENENTU AWAL BULAN SYAKBAN 1447 H



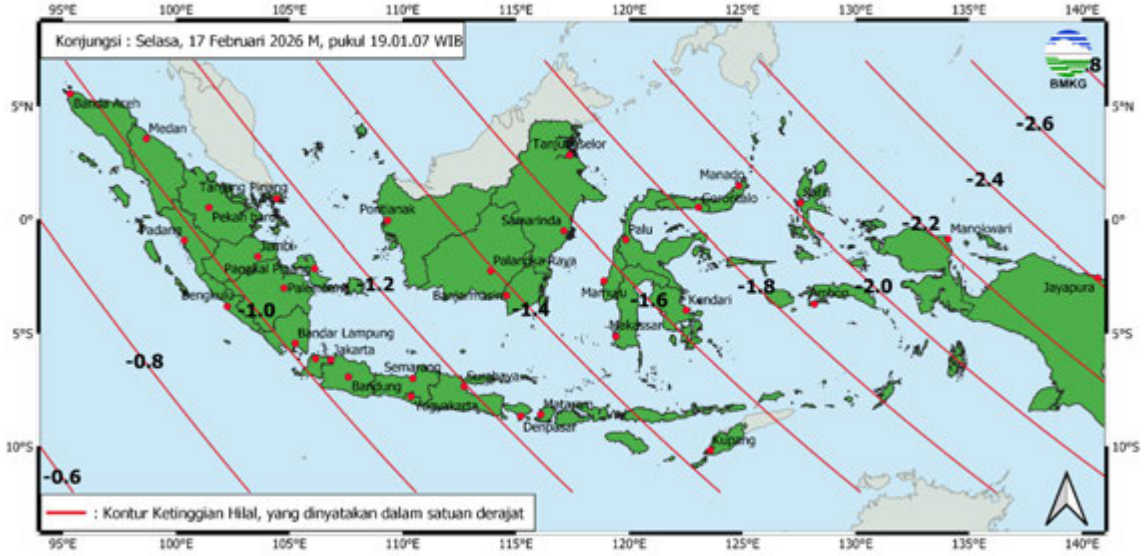
PETA ELONGASI SAAT MATAHARI TERBENAM
AHAD, 18 JANUARI 2026 M
PENENTU AWAL BULAN SYAKBAN 1447 H



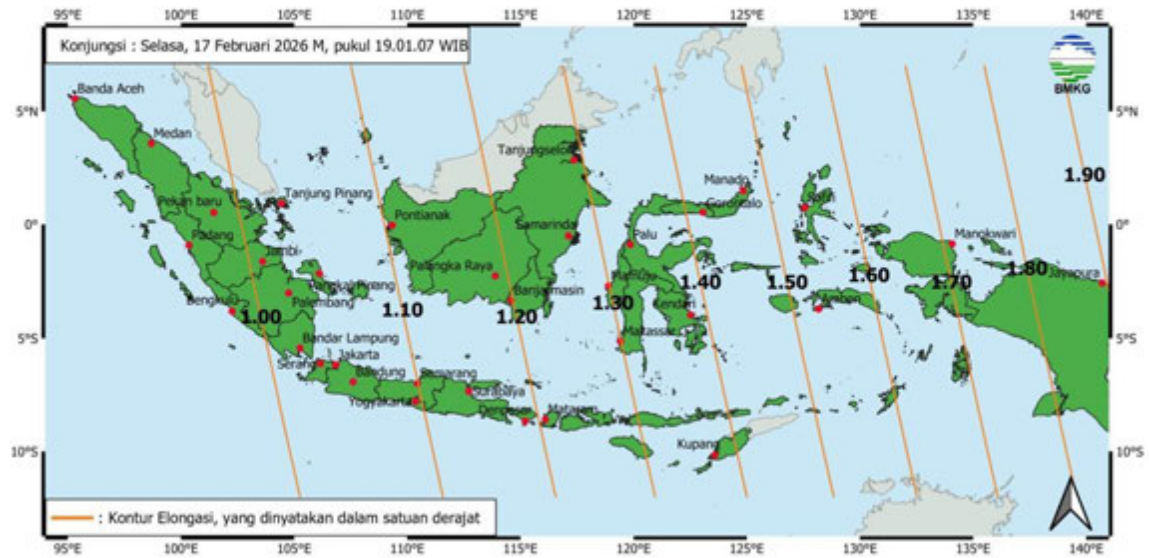
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
SELASA, 17 FEBRUARI 2026 M
PENENTU AWAL BULAN RAMADAN 1447 H
IJTIMAK: SELASA, 17 FEBRUARI 2026 PUKUL 19:01:07 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT				TINGGI BULAN		ELONGASI		FI BULAN
		MATAHARI	BULAN	MATAHARI		BULAN						
				o	'	o	'	°	'	°	'	
1	Banda Aceh	18.51.25 WIB	18.48.05 WIB	258	8,48	257	12,86	0	-58,46	0	56,39	0,01
2	Medan	18.39.36 WIB	18.36.02 WIB	258	8,54	257	10,97	-1	2,27	0	57,80	0,01
3	Padang	18.36.41 WIB	18.33.22 WIB	258	5,79	257	8,19	0	-58,79	0	58,24	0,01
4	Pekanbaru	18.31.07 WIB	18.27.30 WIB	258	7,07	257	8,02	-1	3,10	0	59,17	0,01
5	Bengkulu	18.31.32 WIB	18.28.15 WIB	258	1,64	257	3,26	0	-58,08	0	59,09	0,01
6	Jambi	18.24.16 WIB	18.20.36 WIB	258	4,82	257	4,38	-1	4,02	1	0,47	0,01
7	Tanjung Pinang	18.18.48 WIB	18.14.46 WIB	258	7,18	257	5,44	-1	9,76	1	1,64	0,02
8	Palembang	18.20.51 WIB	18.17.10 WIB	258	2,82	257	1,65	-1	4,04	1	1,19	0,01
9	Bandar Lampung	18.20.55 WIB	18.17.26 WIB	257	58,35	256	57,44	-1	1,15	1	1,18	0,01
10	Pangkal Pinang	18.14.43 WIB	18.10.47 WIB	258	3,98	257	1,28	-1	8,06	1	2,58	0,02
11	Serang	18.17.56 WIB	18.14.24 WIB	257	56,80	256	55,16	-1	1,72	1	1,84	0,01
12	Jakarta	18.15.17 WIB	18.11.40 WIB	257	56,64	256	54,28	-1	2,88	1	2,45	0,01
13	Bandung	18.12.49 WIB	18.09.12 WIB	257	54,83	256	51,86	-1	3,10	1	3,03	0,01
14	Semarang	18.01.31 WIB	17.57.33 WIB	257	54,51	256	48,39	-1	8,26	1	5,96	0,02
15	Yogyakarta	18.02.31 WIB	17.58.39 WIB	257	52,47	256	46,65	-1	6,75	1	5,69	0,02
16	Surabaya	17.52.45 WIB	17.48.33 WIB	257	53,50	256	44,91	-1	11,93	1	8,48	0,02
17	Pontianak	18.00.03 WIB	17.55.29 WIB	258	6,13	257	0,17	-1	18,27	1	6,37	0,02
18	Palangka Raya	17.43.41 WIB	17.38.47 WIB	258	3,39	256	53,18	-1	23,82	1	11,29	0,02
19	Banjarmasin	18.41.48 WITA	18.36.56 WITA	258	1,72	256	50,79	-1	23,19	1	11,89	0,02
20	Samarinda	18.29.18 WITA	18.23.47 WITA	258	5,25	256	52,20	-1	34,36	1	16,10	0,02
21	Tanjungselor	18.25.30 WITA	18.19.32 WITA	258	7,31	256	54,95	-1	41,99	1	17,43	0,03
22	Denpasar	18.43.54 WITA	18.39.32 WITA	257	49,79	256	38,57	-1	14,26	1	11,22	0,02
23	Mataram	18.40.17 WITA	18.35.49 WITA	257	49,96	256	37,69	-1	16,10	1	12,39	0,02
24	Kupang	18.11.46 WITA	18.06.35 WITA	257	44,72	256	23,66	-1	27,39	1	22,46	0,03
25	Mamuju	18.24.04 WITA	18.18.35 WITA	258	2,47	256	47,33	-1	33,72	1	17,94	0,02
26	Makassar	18.24.02 WITA	18.18.46 WITA	257	58,14	256	42,12	-1	29,68	1	17,96	0,02
27	Palu	18.18.42 WITA	18.12.53 WITA	258	4,68	256	49,03	-1	39,70	1	19,88	0,03
28	Kendari	18.10.39 WITA	18.04.52 WITA	258	0,16	256	41,12	-1	38,89	1	22,88	0,03
29	Gorontalo	18.04.40 WITA	17.58.15 WITA	258	5,81	256	47,77	-1	50,38	1	25,17	0,03
30	Manado	17.56.44 WITA	17.49.57 WITA	258	6,33	256	47,21	-1	56,87	1	28,26	0,03
31	Sofifi	18.46.30 WIT	18.39.28 WIT	258	5,69	256	43,82	-2	1,64	1	32,37	0,04
32	Ambon	18.47.47 WIT	18.41.15 WIT	258	0,30	256	35,58	-1	52,25	1	31,85	0,03
33	Manokwari	18.21.48 WIT	18.14.09 WIT	258	3,88	256	35,11	-2	13,37	1	42,68	0,04
34	Jayapura	17.56.44 WIT	17.48.28 WIT	258	1,38	256	24,96	-2	24,71	1	53,60	0,05

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
SELASA, 17 FEBRUARI 2026 M
PENENTU AWAL BULAN RAMADAN 1447 H



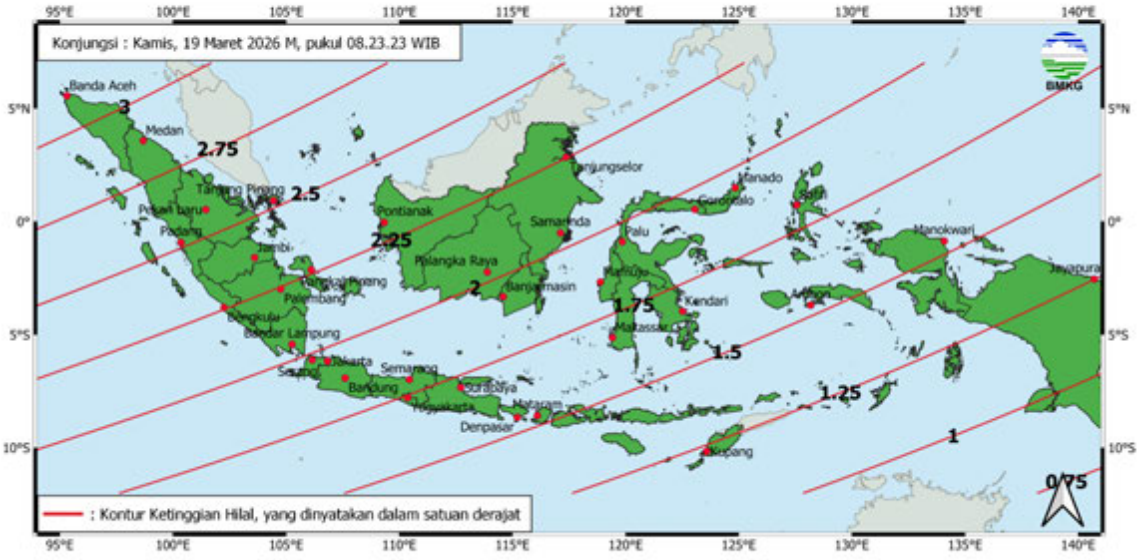
PETA ELONGASI SAAT MATAHARI TERBENAM
SELASA, 17 FEBRUARI 2026 M
PENENTU AWAL BULAN RAMADAN 1447 H



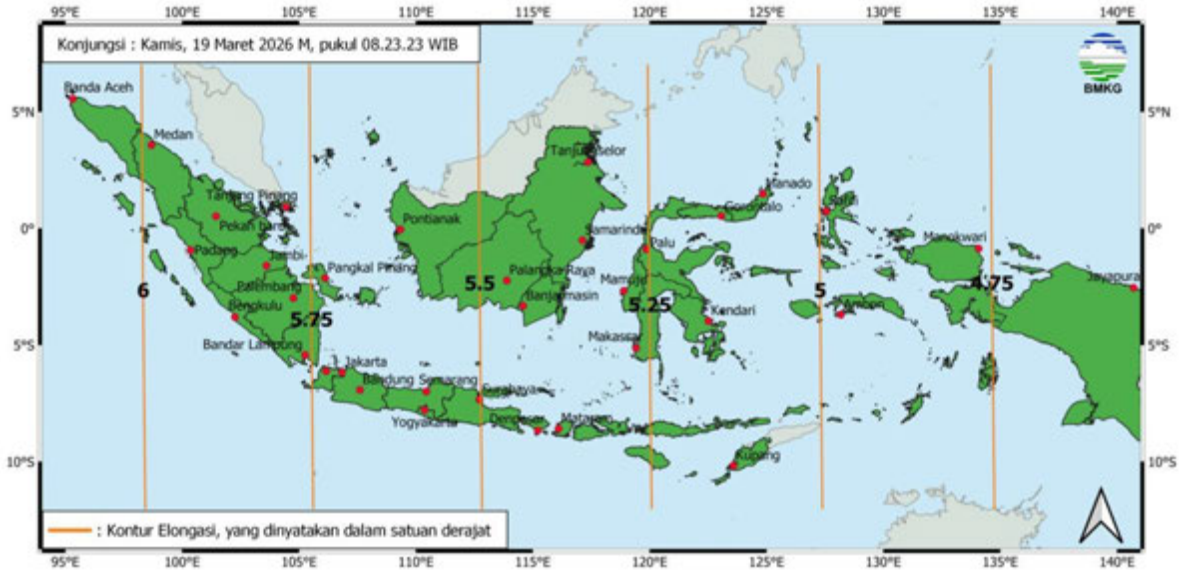
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
KAMIS, 19 MARET 2026 M
PENENTU AWAL BULAN SYAWAL 1447 H
IJTIMAK: KAMIS, 19 MARET 2026 PUKUL 08:23:23 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT				TINGGI BULAN		ELONGASI		FI BULAN
		MATAHARI	BULAN	MATAHARI		BULAN						
				o	'	o	'	°	'	°	'	
1	Banda Aceh	18.49.39 WIB	19.05.12 WIB	269	38,11	273	32,69	3	6,56	6	6,19	0,22
2	Medan	18.36.13 WIB	18.50.42 WIB	269	36,23	273	37,23	2	52,40	5	59,16	0,21
3	Padang	18.29.39 WIB	18.42.31 WIB	269	32,23	273	51,56	2	30,87	5	55,73	0,22
4	Pekanbaru	18.25.15 WIB	18.38.25 WIB	269	33,43	273	45,39	2	34,97	5	53,43	0,21
5	Bengkulu	18.22.10 WIB	18.33.53 WIB	269	29,53	273	58,52	2	15,20	5	51,81	0,21
6	Jambi	18.16.42 WIB	18.28.55 WIB	269	31,43	273	49,99	2	22,29	5	48,96	0,21
7	Tanjung Pinang	18.13.17 WIB	18.26.10 WIB	269	33,58	273	40,74	2	31,18	5	47,18	0,20
8	Palembang	18.12.08 WIB	18.23.47 WIB	269	30,10	273	52,97	2	14,38	5	46,58	0,21
9	Bandar Lampung	18.10.13 WIB	18.21.03 WIB	269	27,84	273	59,47	2	3,00	5	45,58	0,21
10	Pangkal Pinang	18.06.42 WIB	18.18.26 WIB	269	30,78	273	48,72	2	15,64	5	43,75	0,20
11	Serang	18.06.40 WIB	18.17.10 WIB	269	27,14	274	0,20	1	58,50	5	43,73	0,21
12	Jakarta	18.03.58 WIB	18.14.22 WIB	269	27,05	273	59,45	1	57,15	5	42,33	0,20
13	Bandung	18.00.54 WIB	18.10.59 WIB	269	26,29	274	0,40	1	52,58	5	40,73	0,20
14	Semarang	17.49.33 WIB	17.59.15 WIB	269	26,04	273	56,75	1	47,69	5	34,83	0,20
15	Yogyakarta	17.49.53 WIB	17.59.21 WIB	269	25,29	273	58,82	1	44,34	5	35,00	0,20
16	Surabaya	17.40.29 WIB	17.49.48 WIB	269	25,56	273	54,55	1	42,50	5	30,13	0,19
17	Pontianak	17.53.44 WIB	18.05.41 WIB	269	32,41	273	38,50	2	18,47	5	37,00	0,19
18	Palangka Raya	17.35.36 WIB	17.46.18 WIB	269	30,18	273	39,75	2	1,69	5	27,59	0,18
19	Banjarmasin	18.32.50 WITA	18.43.07 WITA	269	29,16	273	41,90	1	56,09	5	26,16	0,18
20	Samarinda	18.22.37 WITA	18.33.24 WITA	269	31,50	273	31,10	2	2,83	5	20,88	0,17
21	Tanjungselor	18.21.32 WITA	18.33.14 WITA	269	34,37	273	20,88	2	14,98	5	20,32	0,17
22	Denpasar	18.30.33 WITA	18.39.10 WITA	269	24,12	273	54,14	1	32,88	5	24,98	0,19
23	Mataram	18.27.00 WITA	18.35.31 WITA	269	24,14	273	52,73	1	31,81	5	23,15	0,18
24	Kupang	17.57.10 WITA	18.04.19 WITA	269	22,09	273	45,29	1	13,65	5	7,77	0,17
25	Mamuju	18.15.38 WITA	18.25.33 WITA	269	29,45	273	34,96	1	51,31	5	17,27	0,17
26	Makassar	18.13.35 WITA	18.22.44 WITA	269	27,18	273	40,43	1	40,67	5	16,22	0,17
27	Palu	18.11.42 WITA	18.22.01 WITA	269	30,97	273	29,08	1	56,53	5	15,25	0,17
28	Kendari	18.01.10 WITA	18.10.15 WITA	269	28,05	273	33,73	1	40,11	5	9,82	0,16
29	Gorontalo	17.58.50 WITA	18.09.07 WITA	269	32,01	273	21,57	1	56,23	5	8,62	0,16
30	Manado	17.51.40 WITA	18.01.59 WITA	269	32,72	273	17,03	1	56,51	5	4,95	0,15
31	Sofifi	18.40.50 WIT	18.50.34 WIT	269	31,89	273	16,11	1	48,98	4	59,39	0,15
32	Ambon	18.38.31 WIT	18.46.57 WIT	269	27,92	273	26,08	1	31,67	4	58,21	0,15
33	Manokwari	18.14.50 WIT	18.23.17 WIT	269	30,06	273	12,70	1	31,95	4	46,14	0,14
34	Jayapura	17.48.24 WIT	17.55.32 WIT	269	28,13	273	8,43	1	14,89	4	32,76	0,13

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
KAMIS, 19 MARET 2026 M
PENENTU AWAL BULAN SYAWAL 1447 H



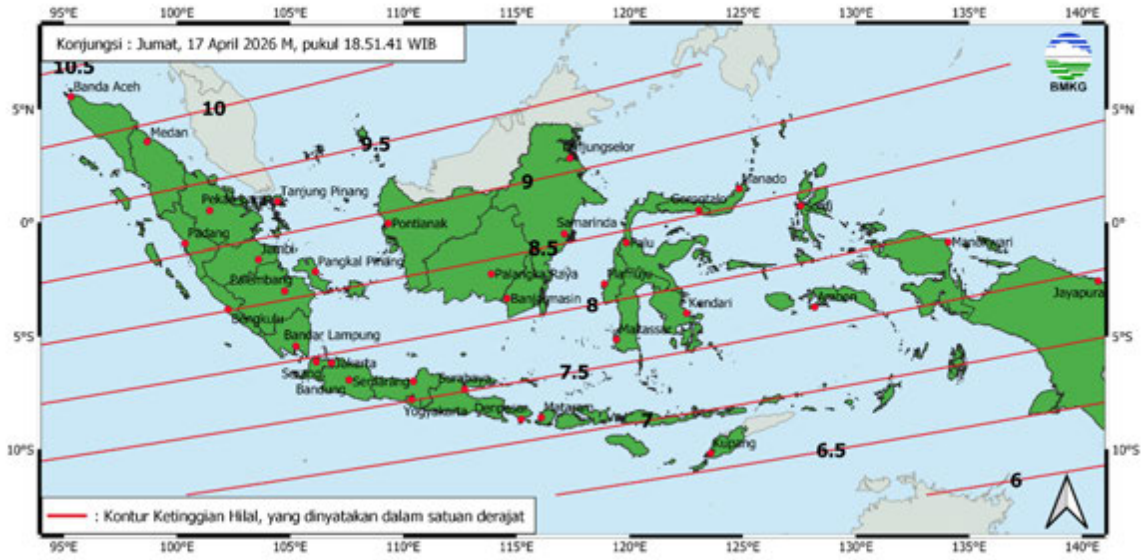
PETA ELONGASI SAAT MATAHARI TERBENAM
KAMIS, 19 MARET 2026 M
PENENTU AWAL BULAN SYAWAL 1447 H



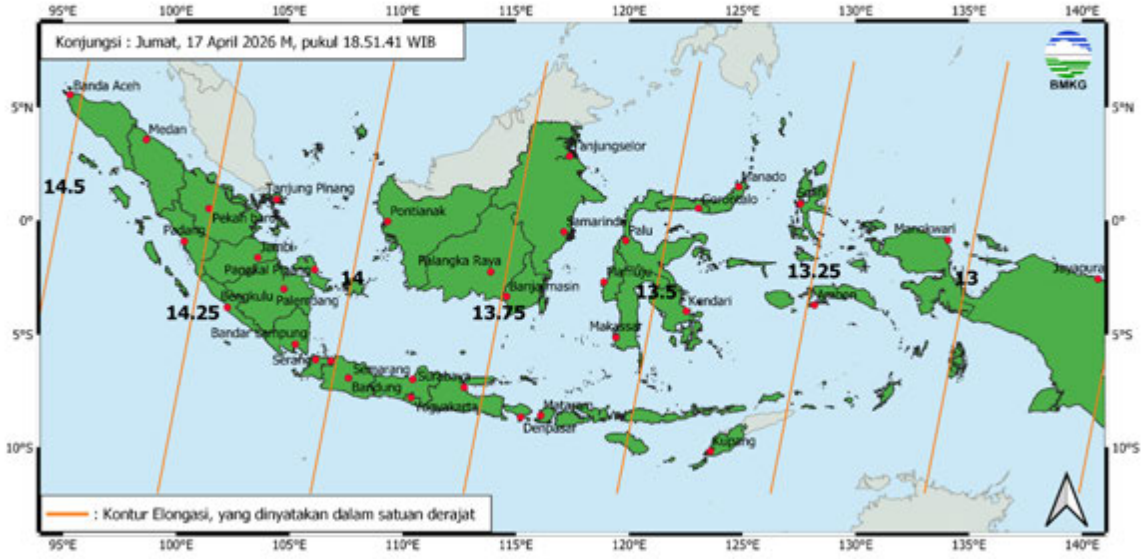
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
SABTU, 18 APRIL 2026 M
PENENTU AWAL BULAN ZULQA'DAH 1447 H
IJTIMAK: JUMAT, 17 APRIL 2026 PUKUL 18:51:41 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT				TINGGI BULAN		ELONGASI		FI BULAN
		MATAHARI	BULAN	MATAHARI		BULAN						
				o	'	o	'	°	'	°	'	
1	Banda Aceh	18.45.46 WIB	19.34.53 WIB	281	3,70	289	13,46	10	18,25	14	31,19	1,43
2	Medan	18.30.44 WIB	19.17.49 WIB	280	59,87	289	31,66	9	52,62	14	22,82	1,41
3	Padang	18.20.34 WIB	19.04.03 WIB	280	54,51	290	17,71	9	4,65	14	17,15	1,40
4	Pekanbaru	18.17.20 WIB	19.01.42 WIB	280	55,69	290	1,28	9	17,09	14	15,35	1,39
5	Bengkulu	18.10.45 WIB	18.51.49 WIB	280	53,18	290	45,92	8	30,44	14	11,70	1,39
6	Jambi	18.07.04 WIB	18.49.32 WIB	280	53,89	290	21,29	8	51,00	14	9,65	1,38
7	Tanjung Pinang	18.05.40 WIB	18.49.52 WIB	280	55,94	289	54,09	9	14,77	14	8,87	1,37
8	Palembang	18.01.23 WIB	18.42.39 WIB	280	53,21	290	34,56	8	34,03	14	6,49	1,37
9	Bandar Lampung	17.57.30 WIB	18.36.53 WIB	280	53,05	290	59,36	8	6,66	14	4,33	1,37
10	Pangkal Pinang	17.56.38 WIB	18.38.19 WIB	280	53,46	290	24,13	8	40,27	14	3,85	1,36
11	Serang	17.53.23 WIB	18.32.08 WIB	280	53,18	291	5,37	7	57,29	14	2,05	1,36
12	Jakarta	17.50.39 WIB	18.29.15 WIB	280	53,16	291	5,08	7	55,36	14	0,53	1,36
13	Bandung	17.46.58 WIB	18.24.53 WIB	280	53,43	291	11,85	7	45,46	13	58,48	1,35
14	Semarang	17.35.34 WIB	18.13.00 WIB	280	53,30	291	8,86	7	39,22	13	52,15	1,33
15	Yogyakarta	17.35.15 WIB	18.12.06 WIB	280	53,78	291	17,14	7	30,37	13	51,98	1,33
16	Surabaya	17.26.13 WIB	18.03.03 WIB	280	53,36	291	9,54	7	30,85	13	46,97	1,32
17	Pontianak	17.45.21 WIB	18.28.03 WIB	280	54,70	289	59,19	8	54,85	13	57,59	1,33
18	Palangka Raya	17.25.27 WIB	18.05.50 WIB	280	52,96	290	16,58	8	23,23	13	46,55	1,30
19	Banjarmasin	18.21.49 WITA	19.01.18 WITA	280	52,55	290	26,75	8	10,52	13	44,53	1,30
20	Samarinda	18.13.52 WITA	18.54.59 WITA	280	53,85	289	55,81	8	33,99	13	40,12	1,28
21	Tanjungselor	18.15.28 WITA	18.58.57 WITA	280	57,65	289	22,37	9	5,62	13	41,01	1,27
22	Denpasar	18.15.12 WITA	18.50.41 WITA	280	54,17	291	19,56	7	11,19	13	40,86	1,30
23	Mataram	18.11.42 WITA	18.47.07 WITA	280	54,05	291	17,59	7	10,38	13	38,93	1,29
24	Kupang	17.40.34 WITA	18.13.41 WITA	280	55,21	291	23,06	6	38,30	13	21,69	1,24
25	Mamuju	18.05.07 WITA	18.44.24 WITA	280	52,49	290	15,46	8	8,42	13	35,28	1,27
26	Makassar	18.01.06 WITA	18.38.32 WITA	280	52,18	290	39,13	7	41,67	13	33,06	1,27
27	Palu	18.02.38 WITA	18.43.02 WITA	280	53,40	289	56,83	8	24,42	13	33,90	1,26
28	Kendari	17.49.37 WITA	18.27.24 WITA	280	51,98	290	24,01	7	47,72	13	26,70	1,24
29	Gorontalo	17.50.54 WITA	18.31.49 WITA	280	54,45	289	39,53	8	31,71	13	27,41	1,23
30	Manado	17.44.31 WITA	18.25.49 WITA	280	55,40	289	28,59	8	36,99	13	23,87	1,22
31	Sofifi	18.33.04 WIT	19.13.24 WIT	280	54,39	289	33,14	8	24,14	13	17,55	1,20
32	Ambon	18.27.11 WIT	19.04.17 WIT	280	51,68	290	14,84	7	39,06	13	14,30	1,20
33	Manokwari	18.05.47 WIT	18.43.58 WIT	280	52,59	289	41,57	7	55,19	13	2,49	1,16
34	Jayapura	17.38.00 WIT	18.13.58 WIT	280	51,27	289	49,90	7	25,16	12	47,18	1,12

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
SABTU, 18 APRIL 2026 M
PENENTU AWAL BULAN ZULKAIDAH 1447 H



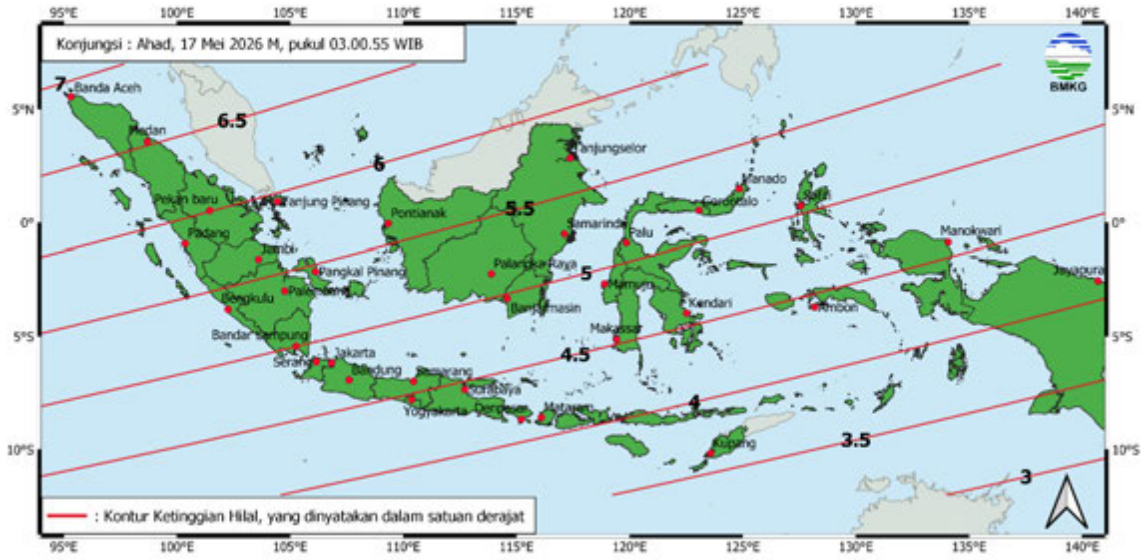
PETA ELONGASI SAAT MATAHARI TERBENAM
SABTU, 18 APRIL 2026 M
PENENTU AWAL BULAN ZULKAIDAH 1447 H



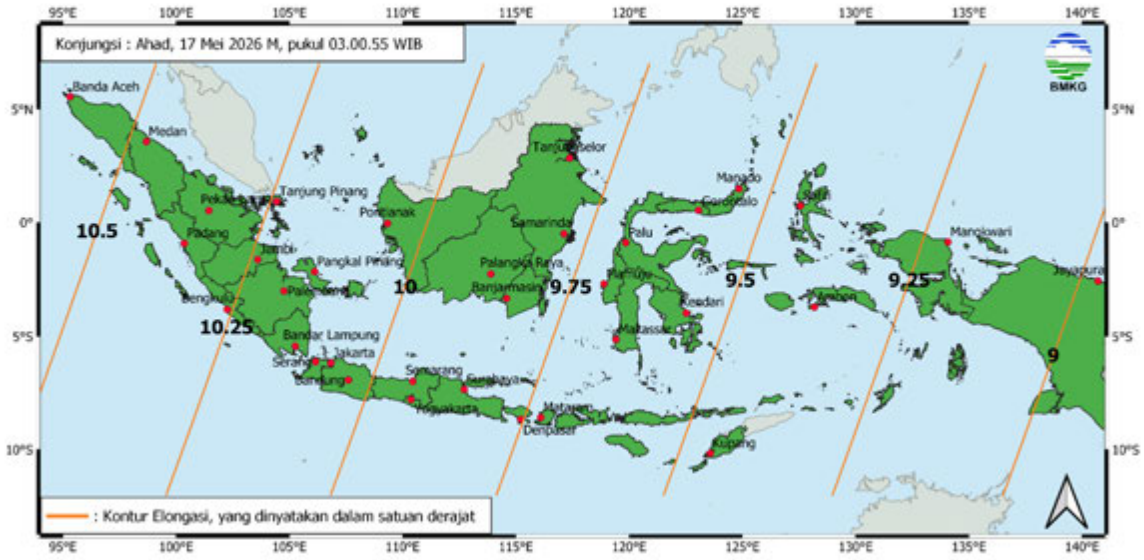
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
AHAD, 17 MEI 2026 M
PENENTU AWAL BULAN ZULHIJAH 1447 H
IJTIMAK: AHAD, 17 MEI 2026 PUKUL 03:00:55 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT				TINGGI BULAN		ELONGASI		FI BULAN
		MATAHARI	BULAN	MATAHARI		BULAN						
				o	'	o	'	°	'	°	'	
1	Banda Aceh	18.46.31 WIB	19.22.06 WIB	289	34,60	295	46,91	6	54,39	10	36,87	0,74
2	Medan	18.30.13 WIB	19.03.53 WIB	289	29,25	295	58,58	6	31,23	10	28,34	0,72
3	Padang	18.17.10 WIB	18.47.36 WIB	289	22,75	296	29,77	5	50,43	10	21,54	0,71
4	Pekanbaru	18.14.52 WIB	18.46.02 WIB	289	23,97	296	18,42	6	0,17	10	20,34	0,71
5	Bengkulu	18.05.32 WIB	18.33.45 WIB	289	22,48	296	50,77	5	21,16	10	15,50	0,70
6	Jambi	18.03.15 WIB	18.32.39 WIB	289	22,31	296	32,69	5	37,39	10	14,31	0,70
7	Tanjung Pinang	18.03.27 WIB	18.34.21 WIB	289	24,34	296	13,85	5	56,68	10	14,42	0,69
8	Palembang	17.56.41 WIB	18.24.58 WIB	289	22,13	296	42,51	5	22,75	10	10,90	0,69
9	Bandar Lampung	17.51.14 WIB	18.17.50 WIB	289	23,61	297	1,53	4	59,98	10	8,09	0,69
10	Pangkal Pinang	17.52.29 WIB	18.21.05 WIB	289	22,08	296	35,01	5	27,18	10	8,73	0,68
11	Serang	17.46.40 WIB	18.12.40 WIB	289	24,40	297	6,42	4	51,81	10	5,73	0,69
12	Jakarta	17.43.54 WIB	18.09.44 WIB	289	24,45	297	6,28	4	49,86	10	4,30	0,68
13	Bandung	17.39.44 WIB	18.04.56 WIB	289	25,54	297	11,83	4	41,34	10	2,15	0,68
14	Semarang	17.28.17 WIB	17.52.57 WIB	289	25,53	297	9,81	4	34,65	9	56,26	0,67
15	Yogyakarta	17.27.27 WIB	17.51.35 WIB	289	26,98	297	16,56	4	27,49	9	55,83	0,67
16	Surabaya	17.18.43 WIB	17.42.44 WIB	289	26,05	297	10,66	4	26,56	9	51,35	0,66
17	Pontianak	17.42.31 WIB	18.11.53 WIB	289	23,09	296	17,78	5	37,57	10	3,59	0,67
18	Palangka Raya	17.21.13 WIB	17.48.22 WIB	289	21,78	296	30,34	5	8,93	9	52,64	0,65
19	Banjarmasin	18.16.53 WITA	18.43.12 WITA	289	21,84	296	37,77	4	58,05	9	50,42	0,64
20	Samarinda	18.10.44 WITA	18.38.24 WITA	289	22,41	296	16,16	5	16,18	9	47,27	0,63
21	Tanjungselor	18.14.28 WITA	18.44.14 WITA	289	26,99	295	54,60	5	42,54	9	49,18	0,63
22	Denpasar	18.06.50 WITA	18.29.32 WITA	289	28,65	297	19,29	4	9,17	9	45,28	0,64
23	Mataram	18.03.24 WITA	18.26.00 WITA	289	28,44	297	17,78	4	8,01	9	43,52	0,64
24	Kupang	17.31.12 WITA	17.51.27 WITA	289	32,23	297	23,56	3	37,85	9	27,19	0,61
25	Mamuju	18.00.36 WITA	18.26.34 WITA	289	21,57	296	29,98	4	54,03	9	42,10	0,63
26	Makassar	17.55.01 WITA	18.19.18 WITA	289	22,78	296	47,50	4	31,71	9	39,26	0,62
27	Palu	17.59.15 WITA	18.26.11 WITA	289	22,04	296	17,06	5	6,80	9	41,41	0,62
28	Kendari	17.44.16 WITA	18.08.45 WITA	289	21,80	296	36,49	4	35,00	9	33,80	0,61
29	Gorontalo	17.48.26 WITA	18.15.41 WITA	289	23,17	296	5,81	5	11,25	9	35,91	0,61
30	Manado	17.42.39 WITA	18.10.11 WITA	289	24,35	295	58,98	5	14,80	9	32,97	0,60
31	Sofifi	18.30.43 WIT	18.57.17 WIT	289	23,24	296	2,00	5	2,67	9	26,94	0,59
32	Ambon	18.22.01 WIT	18.45.39 WIT	289	21,46	296	30,26	4	24,85	9	22,56	0,59
33	Manokwari	18.02.25 WIT	18.26.48 WIT	289	21,53	296	7,76	4	35,19	9	12,73	0,56
34	Jayapura	17.33.33 WIT	17.55.41 WIT	289	20,75	296	13,56	4	6,84	8	58,38	0,53

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
AHAD, 17 MEI 2026 M
PENENTU AWAL BULAN ZULHIJAH 1447 H



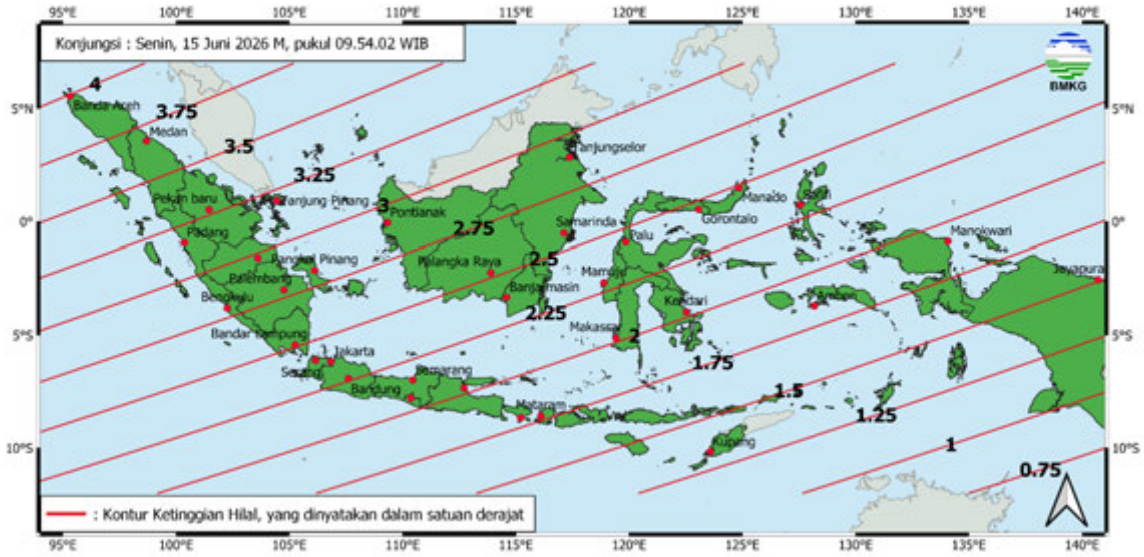
PETA ELONGASI SAAT MATAHARI TERBENAM
AHAD, 17 MEI 2026 M
PENENTU AWAL BULAN ZULHIJAH 1447 H



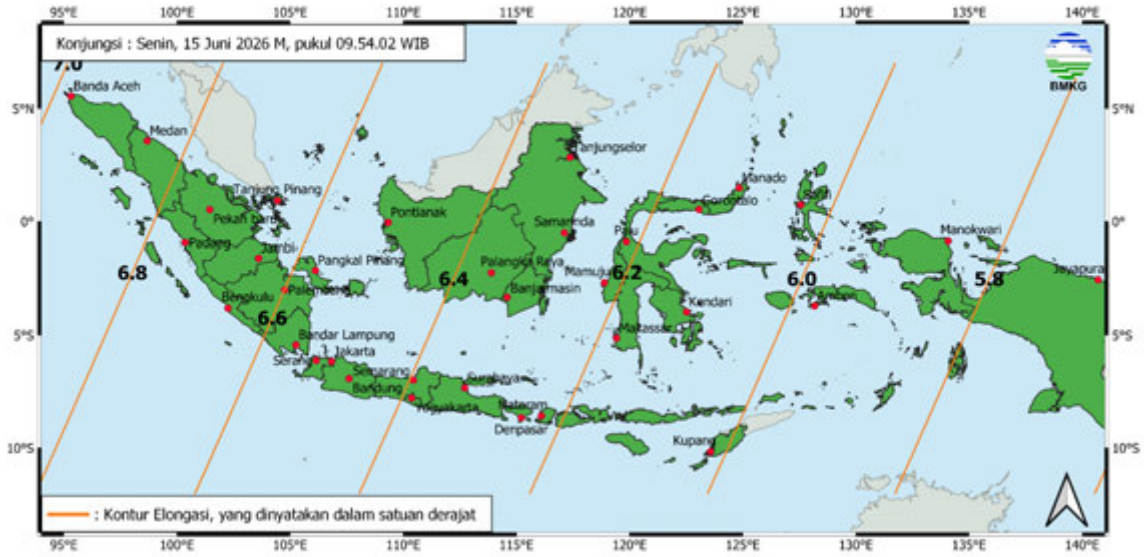
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
SENIN, 15 JUNI 2026 M
PENENTU AWAL BULAN MUHARRAM 1448 H
IJTIMAK: SENIN, 15 JUNI 2026 PUKUL 09:54:02 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT				TINGGI BULAN		ELONGASI		FI BULAN
		MATAHARI	BULAN	MATAHARI		BULAN						
				o	'	o	'	°	'	°	'	
1	Banda Aceh	18.52.30 WIB	19.14.23 WIB	293	31,65	297	38,09	3	59,41	6	58,62	0,29
2	Medan	18.35.34 WIB	18.55.51 WIB	293	25,62	297	45,35	3	40,53	6	51,21	0,28
3	Padang	18.21.05 WIB	18.38.51 WIB	293	18,61	298	4,49	3	9,92	6	44,96	0,28
4	Pekanbaru	18.19.14 WIB	18.37.30 WIB	293	19,86	297	57,74	3	16,27	6	44,16	0,28
5	Bengkulu	18.08.32 WIB	18.24.30 WIB	293	18,92	298	19,50	2	47,61	6	39,61	0,28
6	Jambi	18.06.57 WIB	18.23.46 WIB	293	18,33	298	7,60	2	58,41	6	38,93	0,27
7	Tanjung Pinang	18.07.58 WIB	18.25.52 WIB	293	20,35	297	56,13	3	11,86	6	39,36	0,27
8	Palembang	17.59.56 WIB	18.15.50 WIB	293	18,44	298	14,65	2	47,11	6	35,98	0,27
9	Bandar Lampung	17.53.43 WIB	18.08.17 WIB	293	20,75	298	28,44	2	30,43	6	33,38	0,27
10	Pangkal Pinang	17.56.01 WIB	18.12.05 WIB	293	18,25	298	10,06	2	49,42	6	34,34	0,27
11	Serang	17.48.56 WIB	18.02.59 WIB	293	21,89	298	32,42	2	23,99	6	31,39	0,27
12	Jakarta	17.46.09 WIB	18.00.02 WIB	293	21,98	298	32,57	2	22,14	6	30,24	0,27
13	Bandung	17.41.44 WIB	17.55.06 WIB	293	23,50	298	37,08	2	15,54	6	28,42	0,27
14	Semarang	17.30.16 WIB	17.43.03 WIB	293	23,61	298	36,58	2	8,88	6	23,73	0,26
15	Yogyakarta	17.29.10 WIB	17.41.33 WIB	293	25,55	298	41,77	2	3,83	6	23,29	0,26
16	Surabaya	17.20.34 WIB	17.32.45 WIB	293	24,41	298	38,07	2	1,62	6	19,82	0,26
17	Pontianak	17.46.43 WIB	18.03.13 WIB	293	19,20	298	0,28	2	54,92	6	30,47	0,26
18	Palangka Raya	17.24.43 WIB	17.39.17 WIB	293	18,20	298	9,78	2	31,29	6	21,49	0,25
19	Banjarmasin	18.20.02 WITA	18.33.55 WITA	293	18,52	298	14,95	2	22,98	6	19,61	0,25
20	Samarinda	18.14.47 WITA	18.29.35 WITA	293	18,77	298	2,08	2	34,57	6	17,51	0,25
21	Tanjungselor	18.19.35 WITA	18.36.00 WITA	293	23,73	297	50,46	2	53,79	6	19,43	0,24
22	Denpasar	18.08.16 WITA	18.19.16 WITA	293	27,96	298	45,71	1	47,62	6	14,93	0,25
23	Mataram	18.04.51 WITA	18.15.44 WITA	293	27,72	298	44,85	1	46,21	6	13,59	0,25
24	Kupang	17.32.08 WITA	17.40.46 WITA	293	32,98	298	52,21	1	20,05	6	1,03	0,24
25	Mamuju	18.03.57 WITA	18.17.21 WITA	293	18,24	298	11,28	2	17,38	6	13,23	0,24
26	Makassar	17.57.35 WITA	18.09.38 WITA	293	20,22	298	23,35	2	0,95	6	10,75	0,24
27	Palu	18.03.10 WITA	18.17.16 WITA	293	18,50	298	3,55	2	26,08	6	12,93	0,24
28	Kendari	17.47.13 WITA	17.59.16 WITA	293	18,92	298	16,80	2	1,38	6	6,74	0,24
29	Gorontalo	17.52.48 WITA	18.07.01 WITA	293	19,73	297	58,22	2	27,45	6	8,89	0,23
30	Manado	17.47.19 WITA	18.01.40 WITA	293	21,06	297	55,24	2	29,05	6	6,78	0,23
31	Sofifi	18.35.09 WIT	18.48.37 WIT	293	19,94	297	57,70	2	18,57	6	2,16	0,23
32	Ambon	18.25.02 WIT	18.36.10 WIT	293	18,67	298	14,56	1	50,59	5	58,39	0,23
33	Manokwari	18.06.20 WIT	18.17.47 WIT	293	18,42	298	2,85	1	54,69	5	51,58	0,22
34	Jayapura	17.36.56 WIT	17.46.17 WIT	293	18,06	298	8,12	1	30,26	5	41,32	0,21

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
SENIN, 15 JUNI 2026 M
PENENTU AWAL BULAN MUHARAM 1448 H



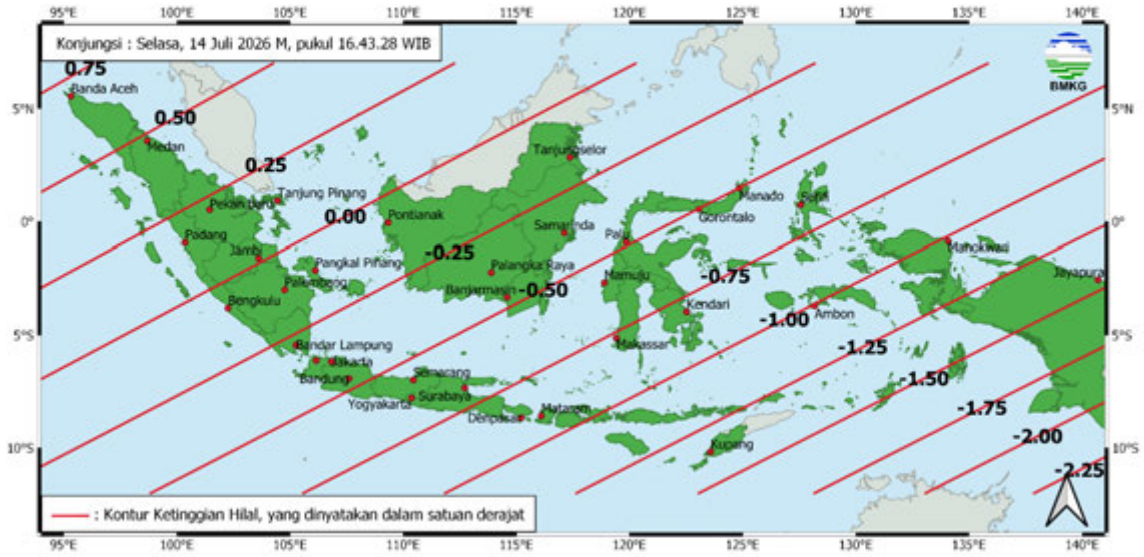
PETA ELONGASI SAAT MATAHARI TERBENAM
SENIN, 15 JUNI 2026 M
PENENTU AWAL BULAN MUHARAM 1448 H



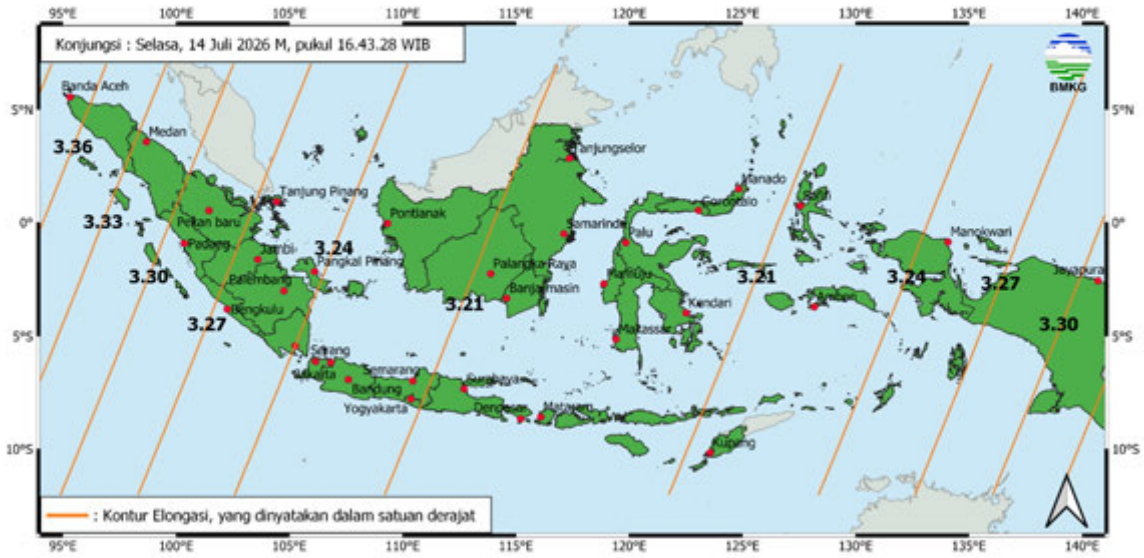
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
SELASA, 14 JULI 2026 M
PENENTU AWAL BULAN SHAFAR 1448 H
IJTIMAK: SELASA, 14 JULI 2026 PUKUL 16:43:28 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT				TINGGI BULAN		ELONGASI		FI BULAN
		MATAHARI	BULAN	MATAHARI		BULAN						
				o	'	o	'	°	'	°	'	
1	Banda Aceh	18.57.05 WIB	19.02.01 WIB	291	49,57	294	28,68	0	41,89	3	22,33	0,06
2	Medan	18.40.26 WIB	18.44.11 WIB	291	44,03	294	30,66	0	28,66	3	19,48	0,06
3	Padang	18.26.35 WIB	18.28.36 WIB	291	37,40	294	34,53	0	9,49	3	17,44	0,07
4	Pekanbaru	18.24.32 WIB	18.26.50 WIB	291	38,66	294	33,64	0	12,59	3	17,16	0,07
5	Bengkulu	18.14.26 WIB	18.15.10 WIB	291	37,60	294	40,40	0	-4,85	3	15,91	0,07
6	Jambi	18.12.32 WIB	18.13.46 WIB	291	37,21	294	37,17	0	0,67	3	15,69	0,07
7	Tanjung Pinang	18.13.12 WIB	18.15.06 WIB	291	39,23	294	35,24	0	8,22	3	15,76	0,07
8	Palembang	18.05.43 WIB	18.06.17 WIB	291	37,27	294	39,93	0	-6,79	3	14,96	0,07
9	Bandar Lampung	17.59.50 WIB	17.59.29 WIB	291	39,29	294	45,38	0	-17,14	3	14,40	0,07
10	Pangkal Pinang	18.01.40 WIB	18.02.17 WIB	291	37,19	294	39,21	0	-6,27	3	14,57	0,07
11	Serang	17.55.09 WIB	17.54.24 WIB	291	40,33	294	47,49	0	-21,70	3	13,99	0,07
12	Jakarta	17.52.22 WIB	17.51.29 WIB	291	40,44	294	47,85	0	-23,32	3	13,76	0,07
13	Bandung	17.48.03 WIB	17.46.46 WIB	291	41,82	294	50,20	0	-27,99	3	13,44	0,08
14	Semarang	17.36.36 WIB	17.34.47 WIB	291	42,01	294	51,20	0	-34,35	3	12,75	0,08
15	Yogyakarta	17.35.37 WIB	17.33.32 WIB	291	43,75	294	53,54	0	-37,58	3	12,70	0,08
16	Surabaya	17.26.57 WIB	17.24.36 WIB	291	42,80	294	52,83	0	-40,88	3	12,35	0,08
17	Pontianak	17.52.05 WIB	17.52.50 WIB	291	38,28	294	38,80	0	-4,88	3	13,74	0,07
18	Palangka Raya	17.30.23 WIB	17.29.36 WIB	291	37,39	294	43,21	0	-22,36	3	12,47	0,07
19	Banjarmasin	18.25.51 WITA	18.24.35 WITA	291	37,65	294	44,95	0	-28,16	3	12,31	0,08
20	Samarinda	18.20.13 WITA	18.19.27 WITA	291	38,10	294	43,56	0	-22,20	3	12,16	0,07
21	Tanjungselor	18.24.33 WITA	18.24.52 WITA	291	42,85	294	44,00	0	-9,89	3	12,27	0,07
22	Denpasar	18.14.50 WITA	18.11.33 WITA	291	46,08	294	57,39	0	-52,58	3	12,07	0,08
23	Mataram	18.11.24 WITA	18.07.59 WITA	291	45,89	294	57,33	0	-54,34	3	12,04	0,08
24	Kupang	17.38.55 WITA	17.33.32 WITA	291	50,89	295	3,75	-1	21,62	3	12,81	0,09
25	Mamuju	18.09.41 WITA	18.07.52 WITA	291	37,56	294	46,12	0	-34,68	3	12,04	0,08
26	Makassar	18.03.40 WITA	18.00.53 WITA	291	39,28	294	49,87	0	-46,43	3	12,05	0,08
27	Palu	18.08.40 WITA	18.07.17 WITA	291	37,92	294	45,27	0	-29,42	3	12,04	0,08
28	Kendari	17.53.07 WITA	17.50.13 WITA	291	38,23	294	49,28	0	-48,36	3	12,24	0,08
29	Gorontalo	17.58.06 WITA	17.56.39 WITA	291	39,22	294	46,91	0	-30,32	3	12,13	0,08
30	Manado	17.52.29 WITA	17.51.02 WITA	291	40,55	294	48,34	0	-30,18	3	12,26	0,08
31	Sofifi	18.40.25 WIT	18.38.15 WIT	291	39,58	294	49,74	0	-39,07	3	12,73	0,08
32	Ambon	18.30.54 WIT	18.27.05 WIT	291	38,20	294	51,38	-1	0,59	3	13,28	0,08
33	Manokwari	18.11.49 WIT	18.07.58 WIT	291	38,30	294	53,12	-1	1,31	3	14,87	0,09
34	Jayapura	17.42.39 WIT	17.37.01 WIT	291	38,09	294	56,47	-1	27,42	3	18,49	0,09

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
SELASA, 14 JULI 2026 M
PENENTU AWAL BULAN SAFAR 1448 H



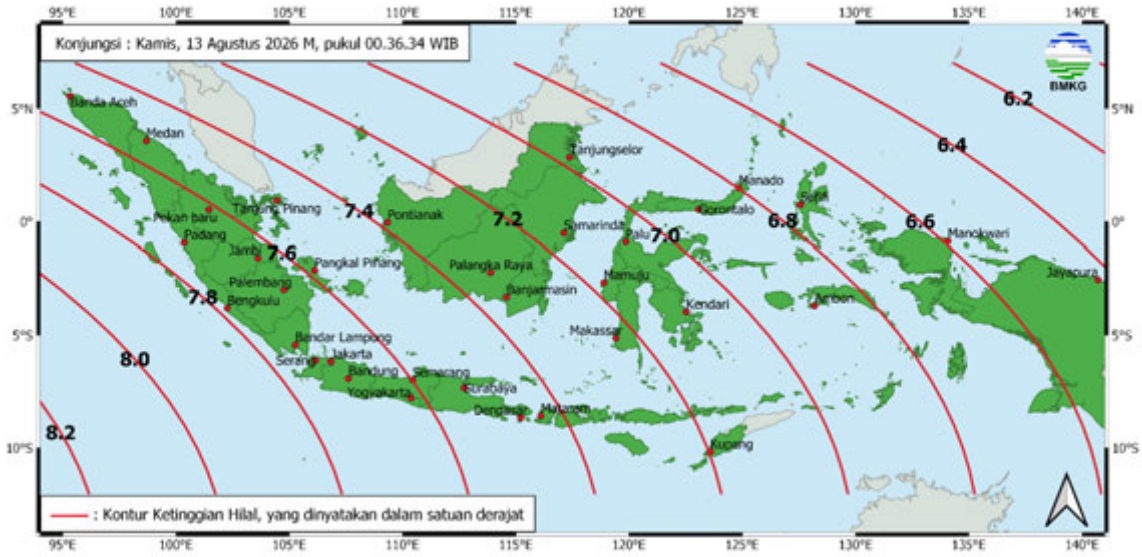
PETA ELONGASI SAAT MATAHARI TERBENAM
SELASA, 14 JULI 2026 M
PENENTU AWAL BULAN SAFAR 1448 H



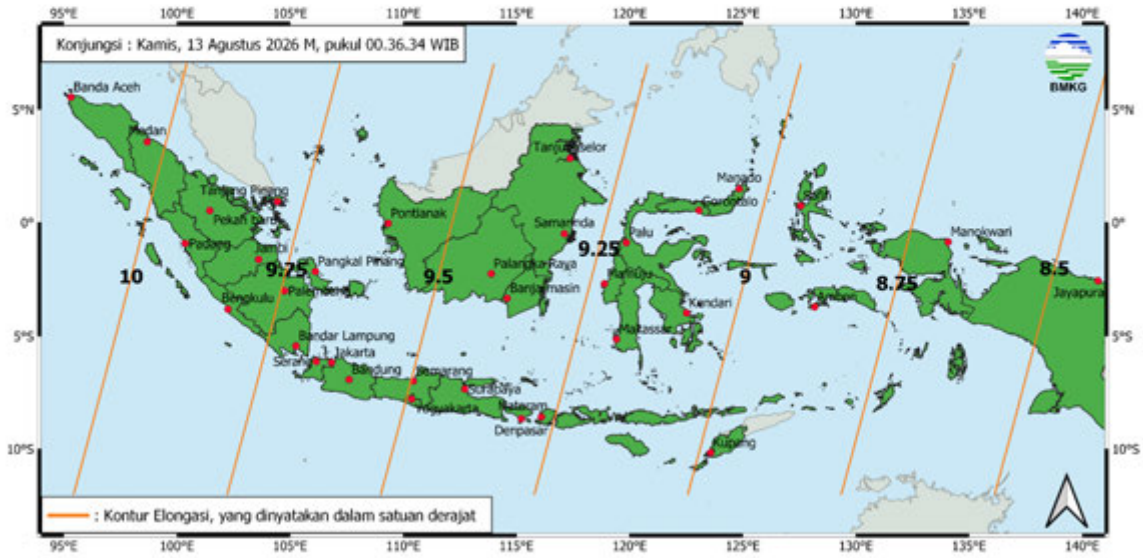
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
KAMIS, 13 AGUSTUS 2026 M
PENENTU AWAL BULAN RABI'UL AWAL 1448 H
IJTIMAK: KAMIS, 13 AGUSTUS 2026 PUKUL 00:36:34 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT				TINGGI BULAN		ELONGASI		FI BULAN
		MATAHARI	BULAN	MATAHARI		BULAN						
				o	'	o	'	°	'	°	'	
1	Banda Aceh	18.52.53 WIB	19.27.42 WIB	284	43,63	280	22,96	7	30,49	10	10,44	0,66
2	Medan	18.37.19 WIB	19.12.11 WIB	284	39,56	280	43,01	7	31,83	10	1,84	0,64
3	Padang	18.25.56 WIB	19.01.38 WIB	284	34,01	281	25,91	7	43,25	9	55,55	0,62
4	Pekanbaru	18.23.05 WIB	18.58.18 WIB	284	35,28	281	13,07	7	36,79	9	53,98	0,62
5	Bengkulu	18.15.21 WIB	18.51.27 WIB	284	33,40	281	57,12	7	46,71	9	49,70	0,60
6	Jambi	18.12.15 WIB	18.47.39 WIB	284	33,81	281	35,60	7	38,55	9	47,99	0,60
7	Tanjung Pinang	18.11.32 WIB	18.46.15 WIB	284	35,87	281	12,42	7	29,61	9	47,59	0,60
8	Palembang	18.06.11 WIB	18.41.45 WIB	284	33,50	281	50,76	7	39,71	9	44,64	0,59
9	Bandar Lampung	18.01.39 WIB	18.37.40 WIB	284	34,15	282	17,26	7	43,89	9	42,13	0,59
10	Pangkal Pinang	18.01.41 WIB	18.36.51 WIB	284	33,73	281	43,25	7	34,86	9	42,15	0,59
11	Serang	17.57.21 WIB	18.33.23 WIB	284	34,67	282	25,61	7	43,28	9	39,75	0,58
12	Jakarta	17.54.35 WIB	18.30.33 WIB	284	34,75	282	26,72	7	41,97	9	38,23	0,58
13	Bandung	17.50.42 WIB	18.26.42 WIB	284	35,47	282	35,79	7	41,59	9	36,08	0,57
14	Semarang	17.39.17 WIB	18.14.53 WIB	284	35,68	282	38,57	7	35,74	9	29,77	0,56
15	Yogyakarta	17.38.45 WIB	18.14.31 WIB	284	36,58	282	47,69	7	37,07	9	29,47	0,56
16	Surabaya	17.29.50 WIB	18.05.10 WIB	284	36,17	282	44,20	7	31,50	9	24,54	0,55
17	Pontianak	17.50.57 WIB	18.25.12 WIB	284	35,14	281	26,24	7	22,78	9	36,22	0,58
18	Palangka Raya	17.30.28 WIB	18.04.33 WIB	284	34,10	281	51,34	7	19,32	9	24,89	0,55
19	Banjarmasin	18.26.32 WITA	19.00.44 WITA	284	33,99	282	2,73	7	20,36	9	22,72	0,54
20	Samarinda	18.19.20 WITA	18.52.36 WITA	284	35,16	281	38,10	7	8,49	9	18,74	0,54
21	Tanjungselor	18.21.51 WITA	18.54.22 WITA	284	39,22	281	9,74	6	58,22	9	20,13	0,54
22	Denpasar	18.18.27 WITA	18.53.40 WITA	284	38,03	283	1,09	7	27,96	9	18,25	0,53
23	Mataram	18.14.59 WITA	18.50.03 WITA	284	37,96	283	0,77	7	25,99	9	16,33	0,53
24	Kupang	17.43.23 WITA	18.17.38 WITA	284	41,04	283	23,98	7	11,68	8	58,86	0,49
25	Mamuju	18.10.01 WITA	18.43.28 WITA	284	34,26	282	0,15	7	10,18	9	13,59	0,53
26	Makassar	18.05.19 WITA	18.39.13 WITA	284	34,71	282	25,28	7	13,97	9	11,00	0,52
27	Palu	18.08.00 WITA	18.40.58 WITA	284	35,02	281	44,30	7	4,02	9	12,48	0,52
28	Kendari	17.54.09 WITA	18.27.21 WITA	284	34,46	282	15,97	7	5,42	9	4,82	0,51
29	Gorontalo	17.56.40 WITA	18.28.53 WITA	284	36,39	281	34,83	6	53,87	9	6,21	0,51
30	Manado	17.50.32 WITA	18.22.18 WITA	284	37,59	281	28,72	6	47,71	9	2,81	0,51
31	Sofifi	18.38.53 WIT	19.10.25 WIT	284	36,83	281	37,71	6	44,42	8	56,37	0,49
32	Ambon	18.31.47 WIT	19.04.07 WIT	284	34,71	282	18,12	6	53,29	8	52,45	0,48
33	Manokwari	18.11.10 WIT	18.42.06 WIT	284	35,77	281	57,64	6	35,40	8	41,04	0,46
34	Jayapura	17.42.55 WIT	18.13.13 WIT	284	35,39	282	18,40	6	25,53	8	25,41	0,43

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
KAMIS, 13 AGUSTUS 2026 M
PENENTU AWAL BULAN RABIULAWAL 1448 H



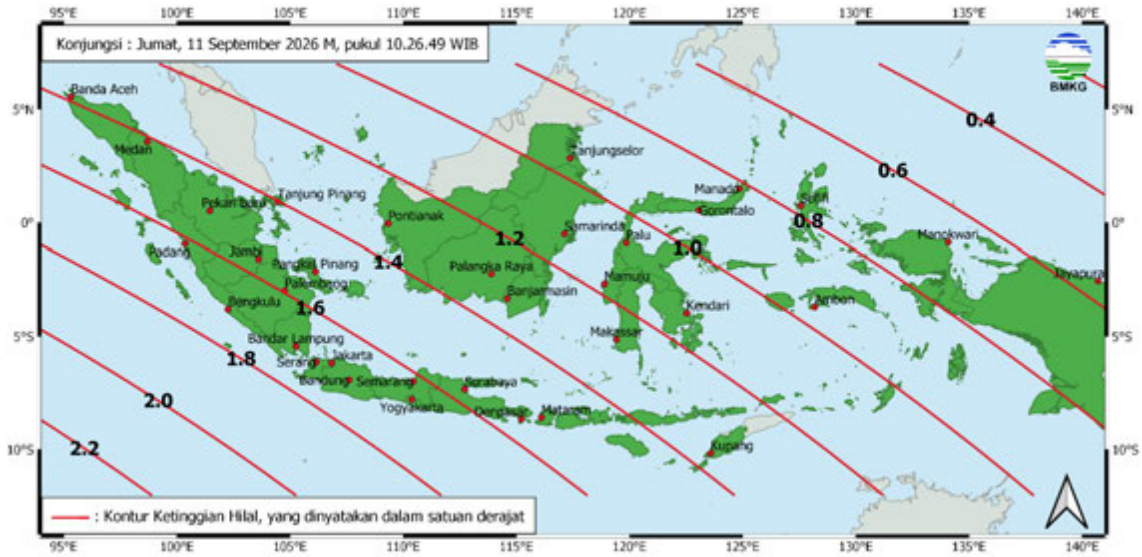
PETA ELONGASI SAAT MATAHARI TERBENAM
KAMIS, 13 AGUSTUS 2026 M
PENENTU AWAL BULAN RABIULAWAL 1448 H



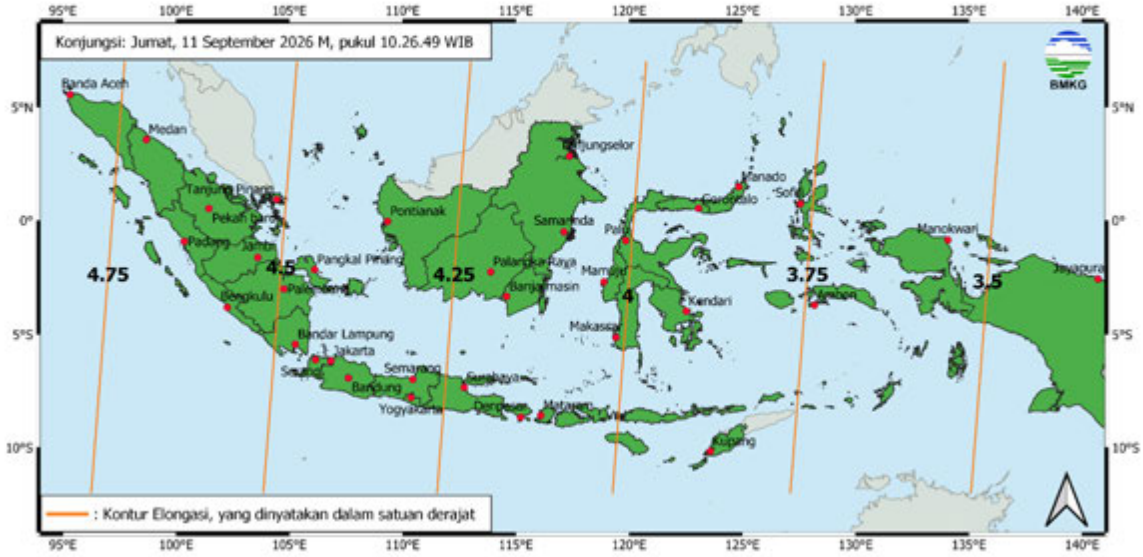
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
JUMAT, 11 SEPTEMBER 2026 M
PENENTU AWAL BULAN RABI'UL AKHIR 1448 H
IJTIMAK: JUMAT, 11 SEPTEMBER 2026 PUKUL 10:26:49 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT		TINGGI BULAN	ELONGASI	FI BULAN
		MATAHARI	BULAN	MATAHARI	BULAN			
				o '	o '	° '	° '	
1	Banda Aceh	18.40.28 WIB	18.48.14 WIB	274 32,84	270 37,82	1 23,10	4 49,55	0,14
2	Medan	18.26.22 WIB	18.34.14 WIB	274 30,58	270 45,49	1 24,63	4 42,57	0,13
3	Padang	18.18.15 WIB	18.27.02 WIB	274 26,28	270 57,27	1 36,74	4 38,56	0,13
4	Pekanbaru	18.14.21 WIB	18.22.38 WIB	274 27,59	270 54,98	1 30,23	4 36,64	0,13
5	Bengkulu	18.09.47 WIB	18.19.00 WIB	274 24,45	271 6,81	1 42,39	4 34,38	0,12
6	Jambi	18.05.04 WIB	18.13.35 WIB	274 25,97	271 2,28	1 33,29	4 32,06	0,12
7	Tanjung Pinang	18.02.31 WIB	18.10.19 WIB	274 28,15	270 57,38	1 23,94	4 30,81	0,12
8	Palembang	18.00.02 WIB	18.08.44 WIB	274 25,09	271 6,99	1 35,56	4 29,59	0,12
9	Bandar Lampung	17.57.16 WIB	18.06.29 WIB	274 23,82	271 14,27	1 41,89	4 28,24	0,11
10	Pangkal Pinang	17.54.53 WIB	18.03.12 WIB	274 25,74	271 6,13	1 30,63	4 27,06	0,12
11	Serang	17.53.29 WIB	18.02.44 WIB	274 23,60	271 17,10	1 42,26	4 26,37	0,11
12	Jakarta	17.50.46 WIB	17.59.56 WIB	274 23,63	271 17,85	1 41,20	4 25,04	0,11
13	Bandung	17.47.26 WIB	17.56.40 WIB	274 23,42	271 20,78	1 41,91	4 23,41	0,11
14	Semarang	17.36.03 WIB	17.44.55 WIB	274 23,58	271 23,35	1 36,98	4 17,85	0,10
15	Yogyakarta	17.36.07 WIB	17.45.11 WIB	274 23,36	271 25,72	1 39,30	4 17,88	0,10
16	Surabaya	17.26.52 WIB	17.35.30 WIB	274 23,62	271 26,29	1 33,86	4 13,38	0,10
17	Pontianak	17.42.39 WIB	17.50.03 WIB	274 27,58	271 4,73	1 18,80	4 21,07	0,11
18	Palangka Raya	17.23.45 WIB	17.31.04 WIB	274 26,17	271 14,15	1 17,60	4 11,86	0,10
19	Banjarmasin	18.20.36 WITA	18.28.05 WITA	274 25,51	271 17,33	1 19,50	4 10,34	0,10
20	Samarinda	18.11.22 WITA	18.17.53 WITA	274 27,69	271 13,92	1 7,17	4 5,86	0,10
21	Tanjungselor	18.11.27 WITA	18.17.10 WITA	274 30,94	271 8,65	0 56,95	4 5,90	0,10
22	Denpasar	18.16.28 WITA	18.25.03 WITA	274 23,49	271 32,24	1 32,83	4 8,33	0,09
23	Mataram	18.12.56 WITA	18.21.23 WITA	274 23,56	271 32,70	1 31,02	4 6,62	0,09
24	Kupang	17.42.32 WITA	17.50.17 WITA	274 23,86	271 43,04	1 21,41	3 52,00	0,08
25	Mamuju	18.03.37 WITA	18.10.23 WITA	274 26,19	271 20,08	1 10,34	4 2,12	0,09
26	Makassar	18.00.44 WITA	18.07.58 WITA	274 24,86	271 26,16	1 16,09	4 0,73	0,09
27	Palu	18.00.19 WITA	18.06.34 WITA	274 27,54	271 17,52	1 3,74	4 0,53	0,09
28	Kendari	17.48.43 WITA	17.55.17 WITA	274 25,64	271 26,34	1 7,64	3 54,96	0,09
29	Gorontalo	17.47.56 WITA	17.53.28 WITA	274 28,97	271 18,50	0 54,43	3 54,59	0,09
30	Manado	17.41.07 WITA	17.46.12 WITA	274 29,99	271 19,08	0 48,89	3 51,32	0,09
31	Sofifi	18.30.01 WIT	18.34.55 WIT	274 29,44	271 23,13	0 46,58	3 46,04	0,08
32	Ambon	18.26.09 WIT	18.31.55 WIT	274 26,15	271 31,14	0 57,27	3 44,21	0,08
33	Manokwari	18.03.28 WIT	18.07.52 WIT	274 28,47	271 32,31	0 40,20	3 33,52	0,07
34	Jayapura	17.36.26 WIT	17.40.18 WIT	274 27,66	271 41,37	0 33,47	3 20,98	0,07

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
JUMAT, 11 SEPTEMBER 2026 M
PENENTU AWAL BULAN RABIULAKHIR 1448 H



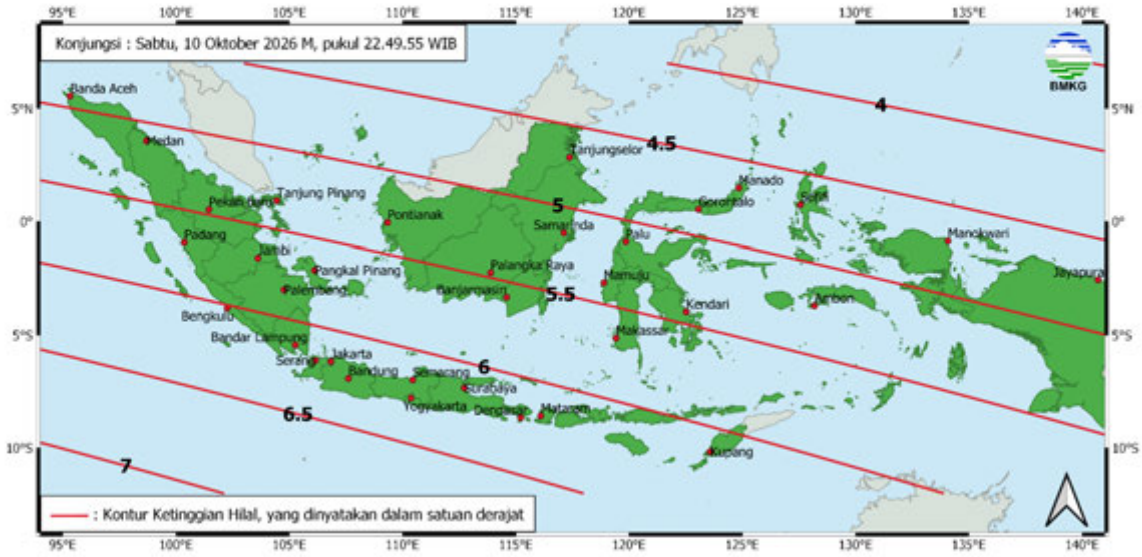
PETA ELONGASI SAAT MATAHARI TERBENAM
JUMAT, 11 SEPTEMBER 2026 M
PENENTU AWAL BULAN RABIULAKHIR 1448 H



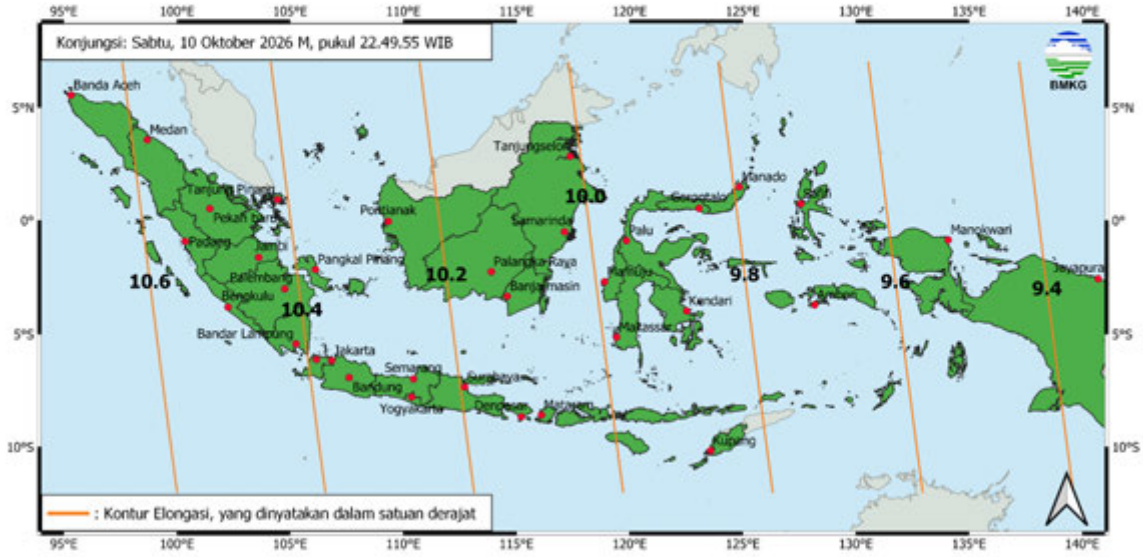
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
AHAD, 11 OKTOBER 2026 M
PENENTU AWAL BULAN JUMADAL ULA 1448 H
IJTIMAK: SABTU, 10 OKTOBER 2026 PUKUL 22:49:55 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT				TINGGI BULAN		ELONGASI		FI BULAN
		MATAHARI	BULAN	MATAHARI		BULAN						
				°	'	°	'	°	'	°	'	
1	Banda Aceh	18.26.04 WIB	18.50.04 WIB	262	55,36	254	27,34	4	55,21	10	40,50	0,78
2	Medan	18.13.35 WIB	18.38.21 WIB	262	54,99	254	43,82	5	6,93	10	34,77	0,77
3	Padang	18.09.07 WIB	18.36.22 WIB	262	51,88	255	14,84	5	41,62	10	32,73	0,75
4	Pekanbaru	18.04.03 WIB	18.30.17 WIB	262	53,27	255	6,37	5	27,90	10	30,41	0,75
5	Bengkulu	18.02.59 WIB	18.31.41 WIB	262	48,55	255	35,31	6	0,93	10	29,92	0,74
6	Jambi	17.56.29 WIB	18.23.42 WIB	262	51,38	255	22,08	5	41,28	10	26,94	0,74
7	Tanjung Pinang	17.51.53 WIB	18.17.30 WIB	262	53,78	255	6,61	5	19,43	10	24,84	0,74
8	Palembang	17.52.34 WIB	18.20.28 WIB	262	49,79	255	32,08	5	50,18	10	25,15	0,73
9	Bandar Lampung	17.51.48 WIB	18.21.05 WIB	262	46,29	255	48,25	6	7,83	10	24,81	0,73
10	Pangkal Pinang	17.46.44 WIB	18.13.57 WIB	262	50,93	255	27,70	5	41,08	10	22,49	0,73
11	Serang	17.48.34 WIB	18.18.08 WIB	262	45,21	255	53,35	6	11,28	10	23,33	0,72
12	Jakarta	17.45.54 WIB	18.15.24 WIB	262	45,16	255	54,18	6	10,44	10	22,11	0,72
13	Bandung	17.43.11 WIB	18.13.01 WIB	262	43,88	255	59,54	6	14,48	10	20,86	0,71
14	Semarang	17.31.52 WIB	18.01.21 WIB	262	43,95	256	1,93	6	9,72	10	15,69	0,70
15	Yogyakarta	17.32.35 WIB	18.02.33 WIB	262	42,43	256	6,93	6	15,57	10	16,02	0,70
16	Surabaya	17.22.58 WIB	17.52.21 WIB	262	43,44	256	5,72	6	8,06	10	11,63	0,69
17	Pontianak	17.32.47 WIB	17.58.22 WIB	262	53,28	255	17,34	5	18,84	10	16,12	0,71
18	Palangka Raya	17.15.40 WIB	17.41.56 WIB	262	51,30	255	34,99	5	28,09	10	8,31	0,69
19	Banjarmasin	18.13.25 WITA	18.40.13 WITA	262	49,98	255	42,28	5	35,17	10	7,28	0,69
20	Samarinda	18.01.53 WITA	18.26.44 WITA	262	53,34	255	27,31	5	8,96	10	2,03	0,68
21	Tanjungselor	17.59.15 WITA	18.22.07 WITA	262	55,82	255	7,48	4	41,67	10	0,83	0,68
22	Denpasar	18.13.39 WITA	18.43.28 WITA	262	40,99	256	15,54	6	12,69	10	7,39	0,68
23	Mataram	18.10.04 WITA	18.39.43 WITA	262	41,21	256	15,64	6	10,51	10	5,76	0,68
24	Kupang	17.40.59 WITA	18.10.31 WITA	262	38,26	256	29,73	6	7,28	9	52,53	0,64
25	Mamuju	17.55.54 WITA	18.21.46 WITA	262	51,07	255	41,93	5	22,63	9	59,31	0,67
26	Makassar	17.55.01 WITA	18.22.13 WITA	262	47,66	255	57,10	5	39,94	9	58,91	0,66
27	Palu	17.51.10 WITA	18.15.52 WITA	262	53,13	255	32,12	5	7,25	9	57,15	0,67
28	Kendari	17.42.03 WITA	18.08.10 WITA	262	49,59	255	52,59	5	25,82	9	53,01	0,65
29	Gorontalo	17.37.37 WITA	18.01.06 WITA	262	54,64	255	26,63	4	50,49	9	51,01	0,66
30	Manado	17.30.01 WITA	17.52.44 WITA	262	55,47	255	22,84	4	39,92	9	47,56	0,65
31	Sofifi	18.19.31 WIT	18.42.19 WIT	262	55,08	255	29,74	4	41,18	9	42,81	0,64
32	Ambon	18.19.16 WIT	18.44.29 WIT	262	50,32	255	55,58	5	13,69	9	42,69	0,63
33	Manokwari	17.54.16 WIT	18.17.08 WIT	262	54,06	255	44,70	4	42,18	9	31,39	0,61
34	Jayapura	17.28.37 WIT	17.51.32 WIT	262	52,60	255	59,57	4	43,01	9	19,84	0,58

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
AHAD, 11 OKTOBER 2026 M
PENENTU AWAL BULAN JUMADILAWAL 1448 H



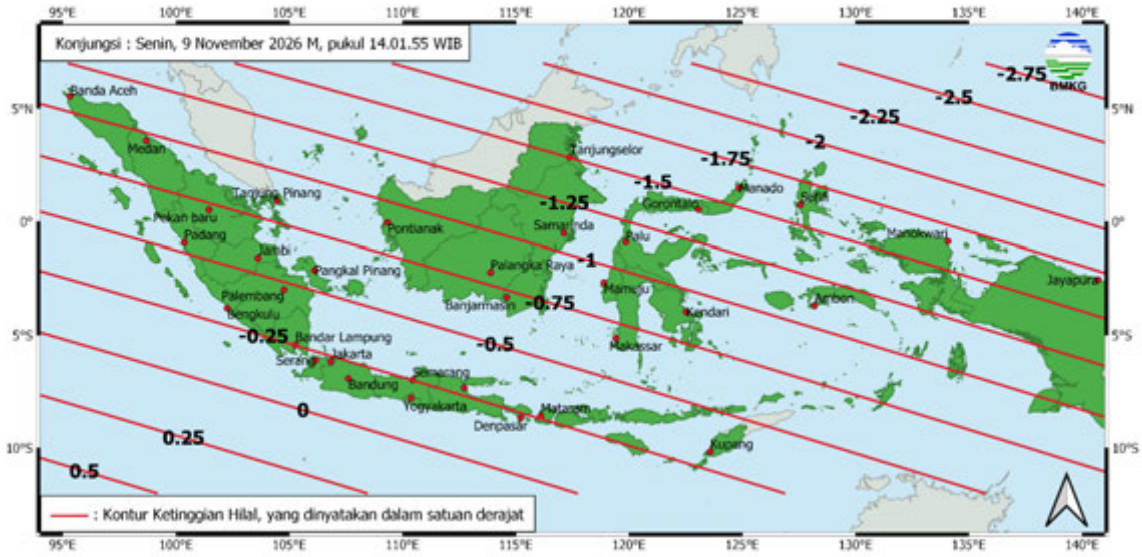
PETA ELONGASI SAAT MATAHARI TERBENAM
AHAD, 11 OKTOBER 2026 M
PENENTU AWAL BULAN JUMADILAWAL 1448 H



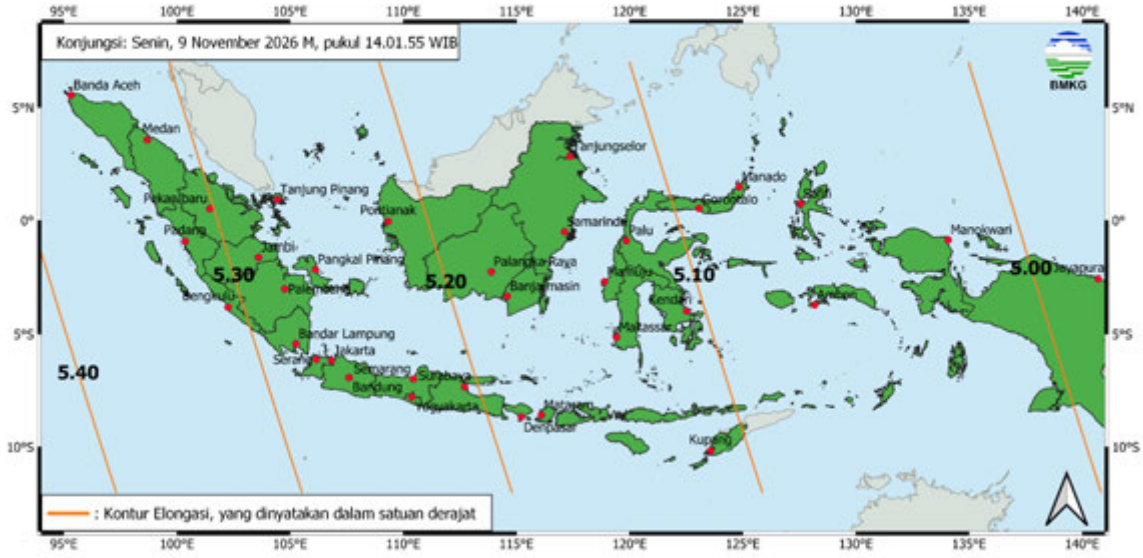
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
SENIN, 09 NOVEMBER 2026 M
PENENTU AWAL BULAN JUMADAL AKHIRAH 1448 H
IJTIMAK: SENIN, 09 NOVEMBER 2026 PUKUL 14:01:55 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT				TINGGI BULAN		ELONGASI		FI BULAN
		MATAHARI	BULAN	MATAHARI		BULAN						
				o	'	o	'	°	'	°	'	
1	Banda Aceh	18.19.16 WIB	18.15.14 WIB	253	4,15	247	42,56	-1	5,01	5	21,42	0,23
2	Medan	18.08.12 WIB	18.04.41 WIB	253	5,35	247	45,86	0	-57,88	5	19,41	0,22
3	Padang	18.06.59 WIB	18.05.22 WIB	253	3,16	247	45,56	0	-32,75	5	19,20	0,22
4	Pekanbaru	18.00.52 WIB	17.58.25 WIB	253	4,65	247	47,14	0	-43,35	5	18,12	0,22
5	Bengkulu	18.02.55 WIB	18.02.23 WIB	252	58,41	247	43,43	0	-19,42	5	18,48	0,21
6	Jambi	17.54.49 WIB	17.53.04 WIB	253	2,42	247	46,76	0	-34,32	5	17,08	0,21
7	Tanjung Pinang	17.48.24 WIB	17.45.22 WIB	253	5,07	247	49,21	0	-51,22	5	16,01	0,22
8	Palembang	17.51.55 WIB	17.50.40 WIB	253	0,16	247	45,74	0	-28,16	5	16,59	0,21
9	Bandar Lampung	17.52.55 WIB	17.52.44 WIB	252	54,62	247	42,13	0	-15,28	5	16,76	0,21
10	Pangkal Pinang	17.45.27 WIB	17.43.37 WIB	253	1,73	247	47,51	0	-35,45	5	15,52	0,21
11	Serang	17.50.11 WIB	17.50.12 WIB	252	52,74	247	41,18	0	-12,97	5	16,30	0,21
12	Jakarta	17.47.33 WIB	17.47.30 WIB	252	52,61	247	41,33	0	-13,78	5	15,87	0,21
13	Bandung	17.45.23 WIB	17.45.34 WIB	252	50,36	247	40,03	0	-10,94	5	15,51	0,20
14	Semarang	17.34.06 WIB	17.33.55 WIB	252	50,29	247	40,92	0	-15,24	5	13,70	0,20
15	Yogyakarta	17.35.24 WIB	17.35.37 WIB	252	47,61	247	38,96	0	-10,75	5	13,90	0,20
16	Surabaya	17.25.27 WIB	17.25.07 WIB	252	49,25	247	40,88	0	-17,04	5	12,37	0,20
17	Pontianak	17.30.00 WIB	17.26.46 WIB	253	4,54	247	51,50	0	-54,04	5	13,06	0,21
18	Palangka Raya	17.14.28 WIB	17.11.37 WIB	253	1,93	247	51,46	0	-48,62	5	10,74	0,21
19	Banjarmasin	18.12.59 WITA	18.10.32 WITA	252	59,99	247	50,08	0	-43,23	5	10,53	0,21
20	Samarinda	17.59.26 WITA	17.55.21 WITA	253	4,44	247	55,59	-1	5,96	5	8,64	0,21
21	Tanjungselor	17.54.23 WITA	17.48.44 WITA	253	6,31	247	58,81	-1	30,32	5	7,97	0,21
22	Denpasar	18.17.07 WITA	18.17.03 WITA	252	44,69	247	38,18	0	-13,95	5	11,12	0,20
23	Mataram	18.13.28 WITA	18.13.14 WITA	252	45,03	247	38,68	0	-15,84	5	10,59	0,20
24	Kupang	17.45.33 WITA	17.44.59 WITA	252	39,03	247	35,77	0	-19,65	5	6,83	0,20
25	Mamuju	17.55.00 WITA	17.51.41 WITA	253	1,41	247	53,33	0	-55,14	5	8,05	0,21
26	Makassar	17.55.54 WITA	17.53.37 WITA	252	56,08	247	48,71	0	-41,02	5	8,17	0,20
27	Palu	17.48.59 WITA	17.44.43 WITA	253	4,12	247	56,64	-1	8,77	5	7,27	0,21
28	Kendari	17.42.04 WITA	17.38.50 WITA	252	59,01	247	52,62	0	-53,83	5	6,40	0,20
29	Gorontalo	17.34.24 WITA	17.29.03 WITA	253	5,68	248	0,43	-1	25,61	5	5,48	0,21
30	Manado	17.26.07 WITA	17.20.06 WITA	253	6,34	248	2,67	-1	36,61	5	4,52	0,21
31	Sofifi	18.16.10 WIT	18.10.07 WIT	253	6,04	248	3,48	-1	37,03	5	3,44	0,21
32	Ambon	18.19.06 WIT	18.14.58 WIT	252	59,86	247	55,88	-1	6,67	5	3,75	0,20
33	Manokwari	17.52.03 WIT	17.45.51 WIT	253	4,84	248	4,80	-1	39,73	5	1,10	0,21
34	Jayapura	17.27.36 WIT	17.21.14 WIT	253	2,68	248	4,78	-1	42,30	4	59,15	0,20

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
SENIN, 9 NOVEMBER 2026 M
PENENTU AWAL BULAN JUMADILAKHIR 1448 H



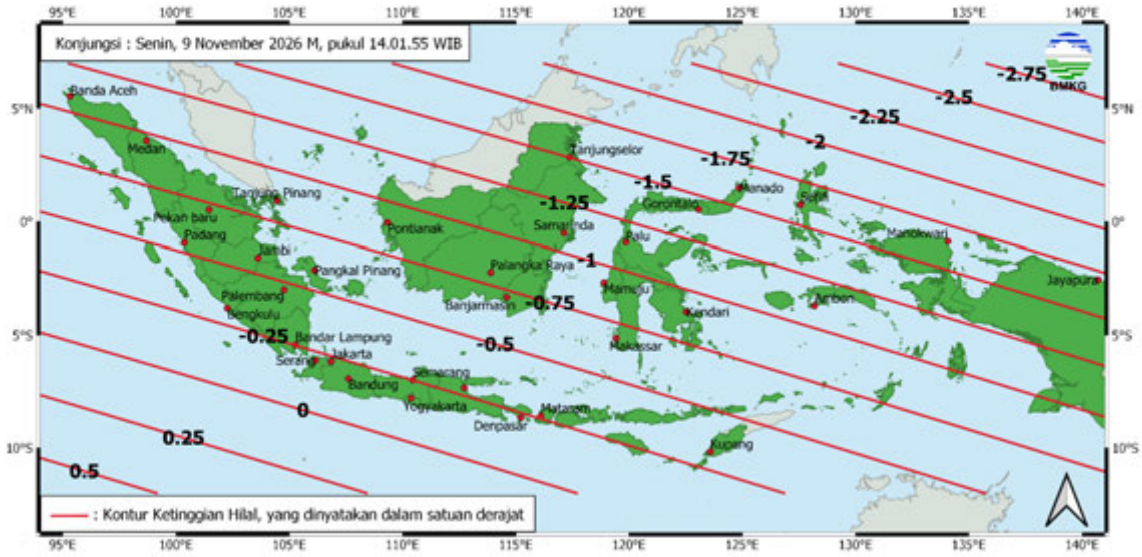
PETA ELONGASI SAAT MATAHARI TERBENAM
SENIN, 9 NOVEMBER 2026 M
PENENTU AWAL BULAN JUMADILAKHIR 1448 H



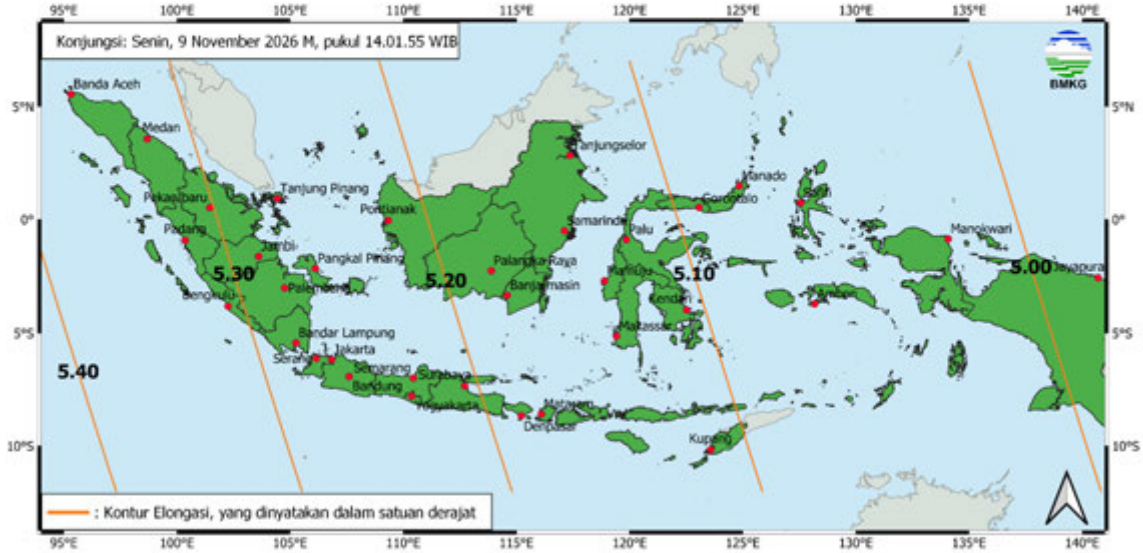
DATA HILAL DAN MATAHARI PADA SAAT MATAHARI TERBENAM
RABU, 09 DESEMBER 2026 M
PENENTU AWAL BULAN RAJAB 1448 H
IJTIMAK: RABU, 09 DESEMBER 2026 PUKUL 07:51:45 WIB

NO	NAMA LOKASI	WAKTU TERBENAM		AZIMUT				TINGGI BULAN		ELONGASI		FI BULAN
		MATAHARI	BULAN	MATAHARI		BULAN						
				o	'	o	'	°	'	°	'	
1	Banda Aceh	18.25.18 WIB	18.39.08 WIB	247	7,88	241	53,43	2	24,44	6	30,50	0,28
2	Medan	18.15.09 WIB	18.29.29 WIB	247	10,04	242	4,97	2	31,01	6	27,26	0,27
3	Padang	18.16.02 WIB	18.32.18 WIB	247	8,40	242	24,69	2	55,05	6	27,54	0,27
4	Pekanbaru	18.09.14 WIB	18.24.39 WIB	247	9,93	242	19,25	2	44,66	6	25,38	0,26
5	Bengkulu	18.13.19 WIB	18.30.41 WIB	247	2,67	242	33,72	3	8,17	6	26,67	0,26
6	Jambi	18.04.11 WIB	18.20.18 WIB	247	7,44	242	27,17	2	53,32	6	23,78	0,26
7	Tanjung Pinang	17.56.35 WIB	18.11.23 WIB	247	10,23	242	17,99	2	37,15	6	21,39	0,26
8	Palembang	18.01.56 WIB	18.18.33 WIB	247	4,71	242	31,45	2	59,27	6	23,07	0,26
9	Bandar Lampung	18.04.05 WIB	18.21.48 WIB	246	57,82	242	37,31	3	11,95	6	23,75	0,25
10	Pangkal Pinang	17.55.04 WIB	18.11.05 WIB	247	6,53	242	28,94	2	52,06	6	20,91	0,26
11	Serang	18.01.40 WIB	18.19.35 WIB	246	55,40	242	38,50	3	14,12	6	22,99	0,25
12	Jakarta	17.59.04 WIB	18.16.54 WIB	246	55,21	242	38,52	3	13,24	6	22,17	0,25
13	Bandung	17.57.15 WIB	18.15.21 WIB	246	52,30	242	39,59	3	15,91	6	21,60	0,25
14	Semarang	17.46.00 WIB	18.03.43 WIB	246	52,09	242	39,27	3	11,33	6	18,09	0,25
15	Yogyakarta	17.47.41 WIB	18.05.48 WIB	246	48,65	242	40,22	3	15,70	6	18,61	0,25
16	Surabaya	17.37.31 WIB	17.55.05 WIB	246	50,65	242	39,35	3	9,27	6	15,47	0,24
17	Pontianak	17.38.38 WIB	17.53.12 WIB	247	9,57	242	22,23	2	34,47	6	15,81	0,25
18	Palangka Raya	17.24.07 WIB	17.39.05 WIB	247	6,46	242	29,39	2	39,24	6	11,37	0,24
19	Banjarmasin	18.23.09 WITA	18.38.32 WITA	247	4,09	242	32,17	2	44,16	6	11,07	0,24
20	Samarinda	18.08.16 WITA	18.21.57 WITA	247	9,20	242	24,45	2	23,84	6	6,59	0,24
21	Tanjungselor	18.01.39 WITA	18.13.42 WITA	247	10,67	242	12,19	2	3,84	6	4,62	0,24
22	Denpasar	18.29.49 WITA	18.47.40 WITA	246	44,65	242	40,00	3	11,87	6	13,11	0,24
23	Mataram	18.26.08 WITA	18.43.49 WITA	246	45,05	242	39,78	3	9,93	6	11,98	0,24
24	Kupang	17.58.58 WITA	18.16.21 WITA	246	36,88	242	38,31	3	5,19	6	3,83	0,22
25	Mamuju	18.04.52 WITA	18.19.20 WITA	247	5,63	242	30,60	2	33,17	6	5,58	0,24
26	Makassar	18.06.55 WITA	18.22.28 WITA	246	59,03	242	35,54	2	45,85	6	6,19	0,23
27	Palu	17.58.00 WITA	18.11.29 WITA	247	8,75	242	25,85	2	21,43	6	3,54	0,23
28	Kendari	17.52.32 WITA	18.07.06 WITA	247	2,55	242	33,31	2	34,15	6	1,93	0,23
29	Gorontalo	17.42.45 WITA	17.55.06 WITA	247	10,28	242	21,68	2	7,75	5	59,07	0,23
30	Manado	17.34.01 WITA	17.45.39 WITA	247	10,80	242	18,69	1	59,24	5	56,54	0,23
31	Sofifi	18.24.25 WIT	18.36.01 WIT	247	10,49	242	21,57	1	59,02	5	53,79	0,23
32	Ambon	18.29.26 WIT	18.43.04 WIT	247	3,36	242	32,62	2	22,98	5	55,22	0,22
33	Manokwari	18.01.03 WIT	18.12.30 WIT	247	9,02	242	26,71	1	57,17	5	47,25	0,22
34	Jayapura	17.37.22 WIT	17.48.41 WIT	247	6,26	242	30,49	1	55,41	5	40,82	0,21

PETA KETINGGIAN HILAL SAAT MATAHARI TERBENAM
SENIN, 9 NOVEMBER 2026 M
PENENTU AWAL BULAN JUMADILAKHIR 1448 H



PETA ELONGASI SAAT MATAHARI TERBENAM
SENIN, 9 NOVEMBER 2026 M
PENENTU AWAL BULAN JUMADILAKHIR 1448 H



01 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	280° 34' 07"	0,70"	281° 29' 41"	-23° 01' 02"	0,9833267	16' 15,90"	23° 26' 17"	-03m 20s
01:00	280° 36' 40"	0,70"	281° 32' 27"	-23° 00' 50"	0,9833259	16' 15,90"	23° 26' 17"	-03m 21s
02:00	280° 39' 13"	0,70"	281° 35' 12"	-23° 00' 38"	0,9833252	16' 15,90"	23° 26' 17"	-03m 22s
03:00	280° 41' 46"	0,70"	281° 37' 58"	-23° 00' 26"	0,9833245	16' 15,90"	23° 26' 17"	-03m 24s
04:00	280° 44' 19"	0,70"	281° 40' 43"	-23° 00' 13"	0,9833238	16' 15,90"	23° 26' 17"	-03m 25s
05:00	280° 46' 51"	0,70"	281° 43' 29"	-23° 00' 01"	0,9833231	16' 15,91"	23° 26' 17"	-03m 26s
06:00	280° 49' 24"	0,70"	281° 46' 14"	-22° 59' 49"	0,9833224	16' 15,91"	23° 26' 17"	-03m 27s
07:00	280° 51' 57"	0,70"	281° 49' 00"	-22° 59' 36"	0,9833217	16' 15,91"	23° 26' 17"	-03m 28s
08:00	280° 54' 30"	0,70"	281° 51' 45"	-22° 59' 24"	0,9833210	16' 15,91"	23° 26' 17"	-03m 29s
09:00	280° 57' 03"	0,70"	281° 54' 31"	-22° 59' 11"	0,9833204	16' 15,91"	23° 26' 17"	-03m 31s
10:00	280° 59' 36"	0,70"	281° 57' 16"	-22° 58' 59"	0,9833197	16' 15,91"	23° 26' 17"	-03m 32s
11:00	281° 02' 08"	0,70"	282° 00' 02"	-22° 58' 46"	0,9833191	16' 15,91"	23° 26' 17"	-03m 33s
12:00	281° 04' 41"	0,70"	282° 02' 47"	-22° 58' 33"	0,9833185	16' 15,91"	23° 26' 17"	-03m 34s
13:00	281° 07' 14"	0,69"	282° 05' 32"	-22° 58' 21"	0,9833179	16' 15,91"	23° 26' 17"	-03m 35s
14:00	281° 09' 47"	0,69"	282° 08' 18"	-22° 58' 08"	0,9833173	16' 15,91"	23° 26' 17"	-03m 36s
15:00	281° 12' 20"	0,69"	282° 11' 03"	-22° 57' 55"	0,9833167	16' 15,91"	23° 26' 17"	-03m 38s
16:00	281° 14' 53"	0,69"	282° 13' 49"	-22° 57' 42"	0,9833161	16' 15,91"	23° 26' 17"	-03m 39s
17:00	281° 17' 25"	0,69"	282° 16' 34"	-22° 57' 29"	0,9833156	16' 15,91"	23° 26' 17"	-03m 40s
18:00	281° 19' 58"	0,69"	282° 19' 19"	-22° 57' 16"	0,9833150	16' 15,91"	23° 26' 17"	-03m 41s
19:00	281° 22' 31"	0,69"	282° 22' 05"	-22° 57' 03"	0,9833145	16' 15,91"	23° 26' 17"	-03m 42s
20:00	281° 25' 04"	0,69"	282° 24' 50"	-22° 56' 50"	0,9833139	16' 15,91"	23° 26' 17"	-03m 43s
21:00	281° 27' 37"	0,69"	282° 27' 36"	-22° 56' 37"	0,9833134	16' 15,91"	23° 26' 17"	-03m 45s
22:00	281° 30' 10"	0,69"	282° 30' 21"	-22° 56' 24"	0,9833129	16' 15,92"	23° 26' 17"	-03m 46s
23:00	281° 32' 42"	0,69"	282° 33' 06"	-22° 56' 11"	0,9833124	16' 15,92"	23° 26' 17"	-03m 47s
24:00	281° 35' 15"	0,69"	282° 35' 52"	-22° 55' 58"	0,9833119	16' 15,92"	23° 26' 17"	-03m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	66° 43' 01"	5° 02' 57"	63° 55' 18"	26° 24' 14"	00' 44"	16' 32,93"	267° 21' 56"	91,40%
01:00	67° 20' 30"	5° 03' 10"	64° 36' 20"	26° 30' 56"	00' 45"	16' 33,10"	267° 47' 09"	91,68%
02:00	67° 57' 59"	5° 03' 22"	65° 17' 27"	26° 37' 26"	00' 45"	16' 33,26"	268° 12' 43"	91,95%
03:00	68° 35' 30"	5° 03' 31"	65° 58' 40"	26° 43' 44"	00' 46"	16' 33,41"	268° 38' 41"	92,22%
04:00	69° 13' 01"	5° 03' 38"	66° 39' 58"	26° 49' 51"	00' 46"	16' 33,55"	269° 05' 03"	92,49%
05:00	69° 50' 33"	5° 03' 43"	67° 21' 21"	26° 55' 46"	00' 47"	16' 33,68"	269° 31' 50"	92,75%
06:00	70° 28' 06"	5° 03' 45"	68° 02' 50"	27° 01' 28"	00' 47"	16' 33,81"	269° 59' 02"	93,01%
07:00	71° 05' 39"	5° 03' 46"	68° 44' 23"	27° 06' 59"	00' 48"	16' 33,93"	270° 26' 41"	93,26%
08:00	71° 43' 13"	5° 03' 44"	69° 26' 01"	27° 12' 17"	00' 48"	16' 34,04"	270° 54' 47"	93,51%
09:00	72° 20' 48"	5° 03' 40"	70° 07' 44"	27° 17' 23"	00' 49"	16' 34,15"	271° 23' 21"	93,76%
10:00	72° 58' 24"	5° 03' 34"	70° 49' 31"	27° 22' 17"	00' 49"	16' 34,25"	271° 52' 25"	93,99%
11:00	73° 35' 59"	5° 03' 26"	71° 31' 23"	27° 26' 58"	00' 49"	16' 34,34"	272° 22' 01"	94,23%
12:00	74° 13' 36"	5° 03' 15"	72° 13' 18"	27° 31' 27"	00' 50"	16' 34,42"	272° 52' 08"	94,46%
13:00	74° 51' 13"	5° 03' 03"	72° 55' 17"	27° 35' 43"	00' 50"	16' 34,49"	273° 22' 50"	94,69%
14:00	75° 28' 50"	5° 02' 48"	73° 37' 20"	27° 39' 47"	00' 50"	16' 34,56"	273° 54' 07"	94,91%
15:00	76° 06' 28"	5° 02' 31"	74° 19' 27"	27° 43' 38"	00' 50"	16' 34,61"	274° 26' 01"	95,13%
16:00	76° 44' 06"	5° 02' 12"	75° 01' 37"	27° 47' 16"	00' 51"	16' 34,67"	274° 58' 35"	95,34%
17:00	77° 21' 44"	5° 01' 50"	75° 43' 50"	27° 50' 42"	00' 51"	16' 34,71"	275° 31' 51"	95,55%
18:00	77° 59' 23"	5° 01' 27"	76° 26' 06"	27° 53' 54"	00' 51"	16' 34,74"	276° 05' 51"	95,75%
19:00	78° 37' 01"	5° 01' 01"	77° 08' 25"	27° 56' 54"	00' 51"	16' 34,77"	276° 40' 38"	95,95%
20:00	79° 14' 40"	5° 00' 33"	77° 50' 46"	27° 59' 41"	00' 51"	16' 34,79"	277° 16' 14"	96,14%
21:00	79° 52' 19"	5° 00' 03"	78° 33' 09"	28° 02' 14"	00' 51"	16' 34,80"	277° 52' 44"	96,33%
22:00	80° 29' 59"	4° 59' 30"	79° 15' 35"	28° 04' 35"	00' 51"	16' 34,80"	278° 30' 11"	96,52%
23:00	81° 07' 38"	4° 58' 56"	79° 58' 02"	28° 06' 43"	00' 51"	16' 34,79"	279° 08' 39"	96,70%
24:00	81° 45' 17"	4° 58' 19"	80° 40' 31"	28° 08' 37"	00' 51"	16' 34,78"	279° 48' 12"	96,87%

02 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	281° 35' 15"	0,69"	282° 35' 52"	-22° 55' 58"	0,9833119	16' 15,92"	23° 26' 17"	-03m 48s
01:00	281° 37' 48"	0,68"	282° 38' 37"	-22° 55' 44"	0,9833115	16' 15,92"	23° 26' 17"	-03m 49s
02:00	281° 40' 21"	0,68"	282° 41' 22"	-22° 55' 31"	0,9833110	16' 15,92"	23° 26' 17"	-03m 50s
03:00	281° 42' 54"	0,68"	282° 44' 07"	-22° 55' 18"	0,9833105	16' 15,92"	23° 26' 17"	-03m 52s
04:00	281° 45' 26"	0,68"	282° 46' 53"	-22° 55' 04"	0,9833101	16' 15,92"	23° 26' 17"	-03m 53s
05:00	281° 47' 59"	0,68"	282° 49' 38"	-22° 54' 51"	0,9833097	16' 15,92"	23° 26' 17"	-03m 54s
06:00	281° 50' 32"	0,68"	282° 52' 23"	-22° 54' 37"	0,9833093	16' 15,92"	23° 26' 17"	-03m 55s
07:00	281° 53' 05"	0,68"	282° 55' 09"	-22° 54' 24"	0,9833089	16' 15,92"	23° 26' 17"	-03m 56s
08:00	281° 55' 38"	0,67"	282° 57' 54"	-22° 54' 10"	0,9833085	16' 15,92"	23° 26' 17"	-03m 57s
09:00	281° 58' 11"	0,67"	283° 00' 39"	-22° 53' 56"	0,9833081	16' 15,92"	23° 26' 17"	-03m 59s
10:00	282° 00' 43"	0,67"	283° 03' 24"	-22° 53' 43"	0,9833077	16' 15,92"	23° 26' 17"	-04m 00s
11:00	282° 03' 16"	0,67"	283° 06' 09"	-22° 53' 29"	0,9833074	16' 15,92"	23° 26' 17"	-04m 01s
12:00	282° 05' 49"	0,67"	283° 08' 55"	-22° 53' 15"	0,9833070	16' 15,92"	23° 26' 17"	-04m 02s
13:00	282° 08' 22"	0,67"	283° 11' 40"	-22° 53' 01"	0,9833067	16' 15,92"	23° 26' 17"	-04m 03s
14:00	282° 10' 55"	0,66"	283° 14' 25"	-22° 52' 47"	0,9833064	16' 15,92"	23° 26' 17"	-04m 04s
15:00	282° 13' 28"	0,66"	283° 17' 10"	-22° 52' 33"	0,9833061	16' 15,92"	23° 26' 17"	-04m 06s
16:00	282° 16' 00"	0,66"	283° 19' 55"	-22° 52' 19"	0,9833058	16' 15,92"	23° 26' 17"	-04m 07s
17:00	282° 18' 33"	0,66"	283° 22' 41"	-22° 52' 05"	0,9833055	16' 15,92"	23° 26' 17"	-04m 08s
18:00	282° 21' 06"	0,66"	283° 25' 26"	-22° 51' 51"	0,9833052	16' 15,92"	23° 26' 17"	-04m 09s
19:00	282° 23' 39"	0,65"	283° 28' 11"	-22° 51' 37"	0,9833049	16' 15,92"	23° 26' 17"	-04m 10s
20:00	282° 26' 12"	0,65"	283° 30' 56"	-22° 51' 23"	0,9833047	16' 15,92"	23° 26' 17"	-04m 11s
21:00	282° 28' 45"	0,65"	283° 33' 41"	-22° 51' 09"	0,9833044	16' 15,92"	23° 26' 17"	-04m 12s
22:00	282° 31' 17"	0,65"	283° 36' 26"	-22° 50' 54"	0,9833042	16' 15,92"	23° 26' 17"	-04m 14s
23:00	282° 33' 50"	0,64"	283° 39' 11"	-22° 50' 40"	0,9833040	16' 15,92"	23° 26' 17"	-04m 15s
24:00	282° 36' 23"	0,64"	283° 41' 57"	-22° 50' 26"	0,9833038	16' 15,92"	23° 26' 17"	-04m 16s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	81° 45' 17"	4° 58' 19"	80° 40' 31"	28° 08' 37"	00' 51"	16' 34,78"	279° 48' 12"	96,87%
01:00	82° 22' 56"	4° 57' 40"	81° 23' 02"	28° 10' 18"	00' 51"	16' 34,75"	280° 28' 56"	97,04%
02:00	83° 00' 35"	4° 56' 59"	82° 05' 34"	28° 11' 47"	00' 51"	16' 34,72"	281° 10' 56"	97,21%
03:00	83° 38' 14"	4° 56' 16"	82° 48' 06"	28° 13' 02"	00' 51"	16' 34,69"	281° 54' 20"	97,37%
04:00	84° 15' 53"	4° 55' 31"	83° 30' 40"	28° 14' 04"	00' 50"	16' 34,64"	282° 39' 13"	97,52%
05:00	84° 53' 31"	4° 54' 44"	84° 13' 14"	28° 14' 52"	00' 50"	16' 34,58"	283° 25' 44"	97,67%
06:00	85° 31' 10"	4° 53' 54"	84° 55' 49"	28° 15' 28"	00' 50"	16' 34,52"	284° 14' 03"	97,82%
07:00	86° 08' 48"	4° 53' 02"	85° 38' 24"	28° 15' 50"	00' 50"	16' 34,45"	285° 04' 19"	97,96%
08:00	86° 46' 25"	4° 52' 09"	86° 20' 58"	28° 15' 59"	00' 49"	16' 34,37"	285° 56' 45"	98,10%
09:00	87° 24' 02"	4° 51' 13"	87° 03' 33"	28° 15' 54"	00' 49"	16' 34,28"	286° 51' 33"	98,23%
10:00	88° 01' 39"	4° 50' 15"	87° 46' 06"	28° 15' 37"	00' 49"	16' 34,18"	287° 49' 01"	98,35%
11:00	88° 39' 15"	4° 49' 15"	88° 28' 39"	28° 15' 06"	00' 48"	16' 34,08"	288° 49' 24"	98,47%
12:00	89° 16' 51"	4° 48' 13"	89° 11' 11"	28° 14' 23"	00' 48"	16' 33,96"	289° 53' 04"	98,59%
13:00	89° 54' 26"	4° 47' 08"	89° 53' 42"	28° 13' 25"	00' 48"	16' 33,84"	291° 00' 24"	98,70%
14:00	90° 32' 01"	4° 46' 02"	90° 36' 12"	28° 12' 15"	00' 47"	16' 33,71"	292° 11' 53"	98,81%
15:00	91° 09' 34"	4° 44' 54"	91° 18' 40"	28° 10' 52"	00' 47"	16' 33,57"	293° 28' 01"	98,91%
16:00	91° 47' 08"	4° 43' 43"	92° 01' 06"	28° 09' 16"	00' 46"	16' 33,43"	294° 49' 27"	99,00%
17:00	92° 24' 40"	4° 42' 31"	92° 43' 30"	28° 07' 26"	00' 45"	16' 33,27"	296° 16' 55"	99,09%
18:00	93° 02' 12"	4° 41' 17"	93° 25' 51"	28° 05' 24"	00' 45"	16' 33,11"	297° 51' 17"	99,18%
19:00	93° 39' 42"	4° 40' 00"	94° 08' 10"	28° 03' 08"	00' 44"	16' 32,94"	299° 33' 35"	99,26%
20:00	94° 17' 12"	4° 38' 42"	94° 50' 27"	28° 00' 40"	00' 44"	16' 32,76"	301° 25' 04"	99,34%
21:00	94° 54' 41"	4° 37' 21"	95° 32' 40"	27° 57' 59"	00' 43"	16' 32,58"	303° 27' 10"	99,41%
22:00	95° 32' 09"	4° 35' 59"	96° 14' 51"	27° 55' 04"	00' 42"	16' 32,38"	305° 41' 39"	99,47%
23:00	96° 09' 36"	4° 34' 35"	96° 56' 58"	27° 51' 58"	00' 41"	16' 32,18"	308° 10' 35"	99,53%
24:00	96° 47' 02"	4° 33' 09"	97° 39' 02"	27° 48' 38"	00' 41"	16' 31,97"	310° 56' 29"	99,59%

03 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	282° 36' 23"	0,64"	283° 41' 57"	-22° 50' 26"	0,9833038	16' 15,92"	23° 26' 17"	-04m 16s
01:00	282° 38' 56"	0,64"	283° 44' 42"	-22° 50' 11"	0,9833036	16' 15,92"	23° 26' 17"	-04m 17s
02:00	282° 41' 29"	0,64"	283° 47' 27"	-22° 49' 57"	0,9833034	16' 15,92"	23° 26' 17"	-04m 18s
03:00	282° 44' 02"	0,63"	283° 50' 12"	-22° 49' 42"	0,9833032	16' 15,92"	23° 26' 17"	-04m 19s
04:00	282° 46' 34"	0,63"	283° 52' 57"	-22° 49' 28"	0,9833031	16' 15,92"	23° 26' 17"	-04m 20s
05:00	282° 49' 07"	0,63"	283° 55' 42"	-22° 49' 13"	0,9833029	16' 15,93"	23° 26' 17"	-04m 22s
06:00	282° 51' 40"	0,62"	283° 58' 27"	-22° 48' 59"	0,9833028	16' 15,93"	23° 26' 17"	-04m 23s
07:00	282° 54' 13"	0,62"	284° 01' 12"	-22° 48' 44"	0,9833027	16' 15,93"	23° 26' 17"	-04m 24s
08:00	282° 56' 46"	0,62"	284° 03' 57"	-22° 48' 29"	0,9833026	16' 15,93"	23° 26' 17"	-04m 25s
09:00	282° 59' 18"	0,62"	284° 06' 42"	-22° 48' 14"	0,9833025	16' 15,93"	23° 26' 17"	-04m 26s
10:00	283° 01' 51"	0,61"	284° 09' 27"	-22° 47' 59"	0,9833024	16' 15,93"	23° 26' 17"	-04m 27s
11:00	283° 04' 24"	0,61"	284° 12' 12"	-22° 47' 45"	0,9833023	16' 15,93"	23° 26' 17"	-04m 28s
12:00	283° 06' 57"	0,61"	284° 14' 57"	-22° 47' 30"	0,9833022	16' 15,93"	23° 26' 17"	-04m 30s
13:00	283° 09' 30"	0,60"	284° 17' 42"	-22° 47' 15"	0,9833022	16' 15,93"	23° 26' 17"	-04m 31s
14:00	283° 12' 03"	0,60"	284° 20' 27"	-22° 47' 00"	0,9833021	16' 15,93"	23° 26' 17"	-04m 32s
15:00	283° 14' 35"	0,60"	284° 23' 12"	-22° 46' 45"	0,9833021	16' 15,93"	23° 26' 17"	-04m 33s
16:00	283° 17' 08"	0,59"	284° 25' 57"	-22° 46' 29"	0,9833021	16' 15,93"	23° 26' 17"	-04m 34s
17:00	283° 19' 41"	0,59"	284° 28' 42"	-22° 46' 14"	0,9833021	16' 15,93"	23° 26' 17"	-04m 35s
18:00	283° 22' 14"	0,59"	284° 31' 27"	-22° 45' 59"	0,9833021	16' 15,93"	23° 26' 17"	-04m 36s
19:00	283° 24' 47"	0,58"	284° 34' 11"	-22° 45' 44"	0,9833021	16' 15,93"	23° 26' 17"	-04m 38s
20:00	283° 27' 20"	0,58"	284° 36' 56"	-22° 45' 28"	0,9833021	16' 15,93"	23° 26' 17"	-04m 39s
21:00	283° 29' 52"	0,58"	284° 39' 41"	-22° 45' 13"	0,9833021	16' 15,93"	23° 26' 17"	-04m 40s
22:00	283° 32' 25"	0,57"	284° 42' 26"	-22° 44' 58"	0,9833022	16' 15,93"	23° 26' 17"	-04m 41s
23:00	283° 34' 58"	0,57"	284° 45' 11"	-22° 44' 42"	0,9833022	16' 15,93"	23° 26' 17"	-04m 42s
24:00	283° 37' 31"	0,57"	284° 47' 56"	-22° 44' 27"	0,9833023	16' 15,93"	23° 26' 17"	-04m 43s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	96° 47' 02"	4° 33' 09"	97° 39' 02"	27° 48' 38"	00' 41"	16' 31,97"	310° 56' 29"	99,59%
01:00	97° 24' 27"	4° 31' 40"	98° 21' 01"	27° 45' 06"	00' 40"	16' 31,75"	314° 02' 13"	99,64%
02:00	98° 01' 51"	4° 30' 10"	99° 02' 57"	27° 41' 21"	00' 39"	16' 31,52"	317° 31' 13"	99,68%
03:00	98° 39' 13"	4° 28' 38"	99° 44' 49"	27° 37' 23"	00' 38"	16' 31,28"	321° 27' 16"	99,72%
04:00	99° 16' 34"	4° 27' 05"	100° 26' 37"	27° 33' 14"	00' 37"	16' 31,04"	325° 54' 28"	99,76%
05:00	99° 53' 54"	4° 25' 29"	101° 08' 20"	27° 28' 51"	00' 36"	16' 30,79"	330° 56' 54"	99,79%
06:00	100° 31' 13"	4° 23' 51"	101° 49' 59"	27° 24' 17"	00' 35"	16' 30,53"	336° 37' 51"	99,81%
07:00	101° 08' 31"	4° 22' 12"	102° 31' 32"	27° 19' 30"	00' 34"	16' 30,26"	342° 58' 55"	99,83%
08:00	101° 45' 47"	4° 20' 31"	103° 13' 01"	27° 14' 31"	00' 33"	16' 29,99"	349° 58' 33"	99,85%
09:00	102° 23' 01"	4° 18' 48"	103° 54' 24"	27° 09' 20"	00' 32"	16' 29,71"	357° 30' 44"	99,86%
10:00	103° 00' 14"	4° 17' 03"	104° 35' 42"	27° 03' 57"	00' 31"	16' 29,42"	5° 24' 30"	99,86%
11:00	103° 37' 26"	4° 15' 17"	105° 16' 55"	26° 58' 22"	00' 30"	16' 29,12"	13° 24' 51"	99,86%
12:00	104° 14' 36"	4° 13' 28"	105° 58' 02"	26° 52' 36"	00' 29"	16' 28,82"	21° 15' 27"	99,86%
13:00	104° 51' 45"	4° 11' 38"	106° 39' 03"	26° 46' 38"	00' 28"	16' 28,50"	28° 41' 55"	99,84%
14:00	105° 28' 52"	4° 09' 47"	107° 19' 58"	26° 40' 28"	00' 27"	16' 28,18"	35° 34' 08"	99,83%
15:00	106° 05' 57"	4° 07' 53"	108° 00' 47"	26° 34' 07"	00' 26"	16' 27,86"	41° 47' 01"	99,81%
16:00	106° 43' 01"	4° 05' 58"	108° 41' 30"	26° 27' 34"	00' 24"	16' 27,52"	47° 19' 40"	99,78%
17:00	107° 20' 03"	4° 04' 02"	109° 22' 07"	26° 20' 50"	00' 23"	16' 27,18"	52° 14' 07"	99,75%
18:00	107° 57' 03"	4° 02' 03"	110° 02' 37"	26° 13' 55"	00' 22"	16' 26,83"	56° 33' 52"	99,72%
19:00	108° 34' 01"	4° 00' 03"	110° 43' 00"	26° 06' 49"	00' 21"	16' 26,48"	60° 23' 01"	99,68%
20:00	109° 10' 58"	3° 58' 02"	111° 23' 16"	25° 59' 32"	00' 19"	16' 26,11"	63° 45' 39"	99,63%
21:00	109° 47' 52"	3° 55' 59"	112° 03' 26"	25° 52' 04"	00' 18"	16' 25,74"	66° 45' 30"	99,58%
22:00	110° 24' 45"	3° 53' 54"	112° 43' 29"	25° 44' 26"	00' 16"	16' 25,37"	69° 25' 52"	99,53%
23:00	111° 01' 36"	3° 51' 48"	113° 23' 24"	25° 36' 37"	00' 15"	16' 24,98"	71° 49' 35"	99,47%
24:00	111° 38' 25"	3° 49' 40"	114° 03' 13"	25° 28' 37"	00' 14"	16' 24,59"	73° 59' 03"	99,40%

04 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	283° 37' 31"	0,57"	284° 47' 56"	-22° 44' 27"	0,9833023	16' 15,93"	23° 26' 17"	-04m 43s
01:00	283° 40' 04"	0,56"	284° 50' 41"	-22° 44' 11"	0,9833024	16' 15,93"	23° 26' 17"	-04m 44s
02:00	283° 42' 37"	0,56"	284° 53' 26"	-22° 43' 56"	0,9833025	16' 15,93"	23° 26' 17"	-04m 46s
03:00	283° 45' 09"	0,55"	284° 56' 10"	-22° 43' 40"	0,9833026	16' 15,93"	23° 26' 17"	-04m 47s
04:00	283° 47' 42"	0,55"	284° 58' 55"	-22° 43' 24"	0,9833027	16' 15,93"	23° 26' 17"	-04m 48s
05:00	283° 50' 15"	0,55"	285° 01' 40"	-22° 43' 09"	0,9833029	16' 15,93"	23° 26' 17"	-04m 49s
06:00	283° 52' 48"	0,54"	285° 04' 25"	-22° 42' 53"	0,9833030	16' 15,93"	23° 26' 17"	-04m 50s
07:00	283° 55' 21"	0,54"	285° 07' 10"	-22° 42' 37"	0,9833031	16' 15,92"	23° 26' 17"	-04m 51s
08:00	283° 57' 54"	0,53"	285° 09' 54"	-22° 42' 21"	0,9833033	16' 15,92"	23° 26' 17"	-04m 52s
09:00	284° 00' 26"	0,53"	285° 12' 39"	-22° 42' 05"	0,9833035	16' 15,92"	23° 26' 17"	-04m 53s
10:00	284° 02' 59"	0,53"	285° 15' 24"	-22° 41' 49"	0,9833037	16' 15,92"	23° 26' 17"	-04m 55s
11:00	284° 05' 32"	0,52"	285° 18' 09"	-22° 41' 33"	0,9833039	16' 15,92"	23° 26' 17"	-04m 56s
12:00	284° 08' 05"	0,52"	285° 20' 53"	-22° 41' 17"	0,9833041	16' 15,92"	23° 26' 17"	-04m 57s
13:00	284° 10' 38"	0,51"	285° 23' 38"	-22° 41' 01"	0,9833043	16' 15,92"	23° 26' 17"	-04m 58s
14:00	284° 13' 10"	0,51"	285° 26' 23"	-22° 40' 45"	0,9833045	16' 15,92"	23° 26' 17"	-04m 59s
15:00	284° 15' 43"	0,50"	285° 29' 07"	-22° 40' 29"	0,9833048	16' 15,92"	23° 26' 17"	-05m 00s
16:00	284° 18' 16"	0,50"	285° 31' 52"	-22° 40' 12"	0,9833050	16' 15,92"	23° 26' 17"	-05m 01s
17:00	284° 20' 49"	0,50"	285° 34' 37"	-22° 39' 56"	0,9833053	16' 15,92"	23° 26' 17"	-05m 02s
18:00	284° 23' 22"	0,49"	285° 37' 21"	-22° 39' 40"	0,9833056	16' 15,92"	23° 26' 17"	-05m 04s
19:00	284° 25' 55"	0,49"	285° 40' 06"	-22° 39' 23"	0,9833059	16' 15,92"	23° 26' 17"	-05m 05s
20:00	284° 28' 27"	0,48"	285° 42' 51"	-22° 39' 07"	0,9833062	16' 15,92"	23° 26' 17"	-05m 06s
21:00	284° 31' 00"	0,48"	285° 45' 35"	-22° 38' 51"	0,9833065	16' 15,92"	23° 26' 17"	-05m 07s
22:00	284° 33' 33"	0,47"	285° 48' 20"	-22° 38' 34"	0,9833068	16' 15,92"	23° 26' 17"	-05m 08s
23:00	284° 36' 06"	0,47"	285° 51' 05"	-22° 38' 17"	0,9833072	16' 15,92"	23° 26' 17"	-05m 09s
24:00	284° 38' 39"	0,46"	285° 53' 49"	-22° 38' 01"	0,9833075	16' 15,92"	23° 26' 17"	-05m 10s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	111° 38' 25"	3° 49' 40"	114° 03' 13"	25° 28' 37"	00' 14"	16' 24,59"	73° 59' 03"	99,40%
01:00	112° 15' 12"	3° 47' 31"	114° 42' 54"	25° 20' 27"	00' 12"	16' 24,19"	75° 56' 19"	99,33%
02:00	112° 51' 56"	3° 45' 20"	115° 22' 27"	25° 12' 07"	00' 11"	16' 23,79"	77° 43' 02"	99,26%
03:00	113° 28' 39"	3° 43' 08"	116° 01' 53"	25° 03' 37"	00' 09"	16' 23,38"	79° 20' 39"	99,18%
04:00	114° 05' 20"	3° 40' 54"	116° 41' 12"	24° 54' 57"	00' 08"	16' 22,96"	80° 50' 21"	99,10%
05:00	114° 41' 59"	3° 38' 39"	117° 20' 23"	24° 46' 07"	00' 06"	16' 22,54"	82° 13' 08"	99,01%
06:00	115° 18' 35"	3° 36' 23"	117° 59' 26"	24° 37' 07"	00' 04"	16' 22,11"	83° 29' 52"	98,92%
07:00	115° 55' 09"	3° 34' 05"	118° 38' 21"	24° 27' 58"	00' 03"	16' 21,67"	84° 41' 14"	98,82%
08:00	116° 31' 41"	3° 31' 46"	119° 17' 09"	24° 18' 40"	00' 01"	16' 21,23"	85° 47' 52"	98,72%
09:00	117° 08' 11"	3° 29' 26"	119° 55' 49"	24° 09' 12"	00' 00"	16' 20,78"	86° 50' 18"	98,61%
10:00	117° 44' 38"	3° 27' 04"	120° 34' 20"	23° 59' 34"	59' 58"	16' 20,33"	87° 48' 58"	98,50%
11:00	118° 21' 04"	3° 24' 41"	121° 12' 44"	23° 49' 48"	59' 56"	16' 19,87"	88° 44' 15"	98,38%
12:00	118° 57' 27"	3° 22' 17"	121° 50' 59"	23° 39' 53"	59' 55"	16' 19,40"	89° 36' 30"	98,26%
13:00	119° 33' 47"	3° 19' 51"	122° 29' 07"	23° 29' 49"	59' 53"	16' 18,93"	90° 25' 59"	98,14%
14:00	120° 10' 05"	3° 17' 25"	123° 07' 06"	23° 19' 37"	59' 51"	16' 18,45"	91° 12' 59"	98,01%
15:00	120° 46' 21"	3° 14' 57"	123° 44' 57"	23° 09' 16"	59' 49"	16' 17,97"	91° 57' 43"	97,87%
16:00	121° 22' 34"	3° 12' 28"	124° 22' 40"	22° 58' 46"	59' 48"	16' 17,48"	92° 40' 22"	97,73%
17:00	121° 58' 45"	3° 09' 58"	125° 00' 15"	22° 48' 08"	59' 46"	16' 16,99"	93° 21' 06"	97,59%
18:00	122° 34' 54"	3° 07' 26"	125° 37' 41"	22° 37' 23"	59' 44"	16' 16,49"	94° 00' 05"	97,44%
19:00	123° 10' 59"	3° 04' 54"	126° 14' 59"	22° 26' 29"	59' 42"	16' 15,98"	94° 37' 28"	97,29%
20:00	123° 47' 03"	3° 02' 21"	126° 52' 09"	22° 15' 27"	59' 40"	16' 15,48"	95° 13' 20"	97,13%
21:00	124° 23' 04"	2° 59' 46"	127° 29' 10"	22° 04' 18"	59' 38"	16' 14,96"	95° 47' 50"	96,97%
22:00	124° 59' 02"	2° 57' 10"	128° 06' 03"	21° 53' 01"	59' 36"	16' 14,44"	96° 21' 01"	96,81%
23:00	125° 34' 58"	2° 54' 34"	128° 42' 48"	21° 41' 36"	59' 34"	16' 13,92"	96° 53' 01"	96,64%
24:00	126° 10' 51"	2° 51' 56"	129° 19' 24"	21° 30' 05"	59' 32"	16' 13,39"	97° 23' 53"	96,47%

05 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	284° 38' 39"	0,46"	285° 53' 49"	-22° 38' 01"	0,9833075	16' 15,92"	23° 26' 17"	-05m 10s
01:00	284° 41' 12"	0,46"	285° 56' 34"	-22° 37' 44"	0,9833079	16' 15,92"	23° 26' 17"	-05m 11s
02:00	284° 43' 44"	0,45"	285° 59' 18"	-22° 37' 27"	0,9833082	16' 15,92"	23° 26' 17"	-05m 13s
03:00	284° 46' 17"	0,45"	286° 02' 03"	-22° 37' 11"	0,9833086	16' 15,92"	23° 26' 17"	-05m 14s
04:00	284° 48' 50"	0,44"	286° 04' 48"	-22° 36' 54"	0,9833090	16' 15,92"	23° 26' 17"	-05m 15s
05:00	284° 51' 23"	0,44"	286° 07' 32"	-22° 36' 37"	0,9833094	16' 15,92"	23° 26' 17"	-05m 16s
06:00	284° 53' 56"	0,44"	286° 10' 17"	-22° 36' 20"	0,9833098	16' 15,92"	23° 26' 17"	-05m 17s
07:00	284° 56' 29"	0,43"	286° 13' 01"	-22° 36' 03"	0,9833102	16' 15,92"	23° 26' 17"	-05m 18s
08:00	284° 59' 01"	0,43"	286° 15' 46"	-22° 35' 46"	0,9833107	16' 15,92"	23° 26' 17"	-05m 19s
09:00	285° 01' 34"	0,42"	286° 18' 30"	-22° 35' 29"	0,9833111	16' 15,92"	23° 26' 17"	-05m 20s
10:00	285° 04' 07"	0,42"	286° 21' 15"	-22° 35' 12"	0,9833116	16' 15,92"	23° 26' 17"	-05m 21s
11:00	285° 06' 40"	0,41"	286° 23' 59"	-22° 34' 55"	0,9833121	16' 15,92"	23° 26' 17"	-05m 23s
12:00	285° 09' 13"	0,41"	286° 26' 44"	-22° 34' 38"	0,9833125	16' 15,92"	23° 26' 17"	-05m 24s
13:00	285° 11' 45"	0,40"	286° 29' 28"	-22° 34' 20"	0,9833130	16' 15,92"	23° 26' 17"	-05m 25s
14:00	285° 14' 18"	0,40"	286° 32' 12"	-22° 34' 03"	0,9833135	16' 15,91"	23° 26' 17"	-05m 26s
15:00	285° 16' 51"	0,39"	286° 34' 57"	-22° 33' 46"	0,9833141	16' 15,91"	23° 26' 17"	-05m 27s
16:00	285° 19' 24"	0,39"	286° 37' 41"	-22° 33' 29"	0,9833146	16' 15,91"	23° 26' 17"	-05m 28s
17:00	285° 21' 57"	0,38"	286° 40' 26"	-22° 33' 11"	0,9833151	16' 15,91"	23° 26' 17"	-05m 29s
18:00	285° 24' 30"	0,37"	286° 43' 10"	-22° 32' 54"	0,9833157	16' 15,91"	23° 26' 17"	-05m 30s
19:00	285° 27' 02"	0,37"	286° 45' 54"	-22° 32' 36"	0,9833162	16' 15,91"	23° 26' 17"	-05m 31s
20:00	285° 29' 35"	0,36"	286° 48' 39"	-22° 32' 19"	0,9833168	16' 15,91"	23° 26' 17"	-05m 32s
21:00	285° 32' 08"	0,36"	286° 51' 23"	-22° 32' 01"	0,9833174	16' 15,91"	23° 26' 17"	-05m 34s
22:00	285° 34' 41"	0,35"	286° 54' 08"	-22° 31' 43"	0,9833180	16' 15,91"	23° 26' 17"	-05m 35s
23:00	285° 37' 14"	0,35"	286° 56' 52"	-22° 31' 26"	0,9833186	16' 15,91"	23° 26' 17"	-05m 36s
24:00	285° 39' 47"	0,34"	286° 59' 36"	-22° 31' 08"	0,9833192	16' 15,91"	23° 26' 17"	-05m 37s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	126° 10' 51"	2° 51' 56"	129° 19' 24"	21° 30' 05"	59' 32"	16' 13,39"	97° 23' 53"	96,47%
01:00	126° 46' 41"	2° 49' 18"	129° 55' 52"	21° 18' 26"	59' 31"	16' 12,86"	97° 53' 41"	96,29%
02:00	127° 22' 29"	2° 46' 38"	130° 32' 12"	21° 06' 40"	59' 29"	16' 12,32"	98° 22' 30"	96,11%
03:00	127° 58' 14"	2° 43' 58"	131° 08' 23"	20° 54' 47"	59' 27"	16' 11,78"	98° 50' 23"	95,92%
04:00	128° 33' 57"	2° 41' 17"	131° 44' 26"	20° 42' 48"	59' 25"	16' 11,23"	99° 17' 23"	95,74%
05:00	129° 09' 36"	2° 38' 35"	132° 20' 21"	20° 30' 41"	59' 23"	16' 10,68"	99° 43' 33"	95,54%
06:00	129° 45' 13"	2° 35' 52"	132° 56' 07"	20° 18' 29"	59' 21"	16' 10,13"	100° 08' 55"	95,34%
07:00	130° 20' 48"	2° 33' 08"	133° 31' 46"	20° 06' 10"	59' 18"	16' 09,57"	100° 33' 33"	95,14%
08:00	130° 56' 19"	2° 30' 23"	134° 07' 16"	19° 53' 44"	59' 16"	16' 09,01"	100° 57' 28"	94,94%
09:00	131° 31' 48"	2° 27' 38"	134° 42' 37"	19° 41' 13"	59' 14"	16' 08,44"	101° 20' 42"	94,73%
10:00	132° 07' 14"	2° 24' 52"	135° 17' 51"	19° 28' 35"	59' 12"	16' 07,87"	101° 43' 17"	94,52%
11:00	132° 42' 37"	2° 22' 05"	135° 52' 57"	19° 15' 52"	59' 10"	16' 07,30"	102° 05' 15"	94,30%
12:00	133° 17' 58"	2° 19' 17"	136° 27' 54"	19° 03' 03"	59' 08"	16' 06,72"	102° 26' 38"	94,08%
13:00	133° 53' 15"	2° 16' 29"	137° 02' 43"	18° 50' 08"	59' 06"	16' 06,14"	102° 47' 26"	93,86%
14:00	134° 28' 30"	2° 13' 40"	137° 37' 25"	18° 37' 08"	59' 04"	16' 05,56"	103° 07' 42"	93,63%
15:00	135° 03' 42"	2° 10' 50"	138° 11' 58"	18° 24' 03"	59' 02"	16' 04,97"	103° 27' 26"	93,40%
16:00	135° 38' 51"	2° 08' 00"	138° 46' 24"	18° 10' 52"	58' 59"	16' 04,38"	103° 46' 40"	93,16%
17:00	136° 13' 58"	2° 05' 09"	139° 20' 41"	17° 57' 36"	58' 57"	16' 03,79"	104° 05' 25"	92,92%
18:00	136° 49' 01"	2° 02' 18"	139° 54' 51"	17° 44' 16"	58' 55"	16' 03,19"	104° 23' 42"	92,68%
19:00	137° 24' 02"	1° 59' 26"	140° 28' 53"	17° 30' 50"	58' 53"	16' 02,59"	104° 41' 31"	92,44%
20:00	137° 58' 59"	1° 56' 33"	141° 02' 47"	17° 17' 20"	58' 51"	16' 01,99"	104° 58' 55"	92,19%
21:00	138° 33' 54"	1° 53' 40"	141° 36' 34"	17° 03' 45"	58' 48"	16' 01,39"	105° 15' 53"	91,93%
22:00	139° 08' 46"	1° 50' 47"	142° 10' 13"	16° 50' 05"	58' 46"	16' 00,79"	105° 32' 26"	91,68%
23:00	139° 43' 35"	1° 47' 53"	142° 43' 44"	16° 36' 21"	58' 44"	16' 00,18"	105° 48' 35"	91,42%
24:00	140° 18' 21"	1° 44' 58"	143° 17' 08"	16° 22' 33"	58' 42"	16' 00,00"	106° 04' 21"	91,16%

06 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	285° 39' 47"	0,34"	286° 59' 36"	-22° 31' 08"	0,9833192	16' 15,91"	23° 26' 17"	-05m 37s
01:00	285° 42' 19"	0,34"	287° 02' 21"	-22° 30' 50"	0,9833198	16' 15,91"	23° 26' 17"	-05m 38s
02:00	285° 44' 52"	0,33"	287° 05' 05"	-22° 30' 32"	0,9833205	16' 15,91"	23° 26' 17"	-05m 39s
03:00	285° 47' 25"	0,33"	287° 07' 49"	-22° 30' 14"	0,9833211	16' 15,91"	23° 26' 17"	-05m 40s
04:00	285° 49' 58"	0,32"	287° 10' 33"	-22° 29' 57"	0,9833218	16' 15,91"	23° 26' 17"	-05m 41s
05:00	285° 52' 31"	0,32"	287° 13' 18"	-22° 29' 39"	0,9833224	16' 15,91"	23° 26' 17"	-05m 42s
06:00	285° 55' 04"	0,31"	287° 16' 02"	-22° 29' 21"	0,9833231	16' 15,91"	23° 26' 17"	-05m 43s
07:00	285° 57' 36"	0,31"	287° 18' 46"	-22° 29' 03"	0,9833238	16' 15,90"	23° 26' 17"	-05m 45s
08:00	286° 00' 09"	0,30"	287° 21' 30"	-22° 28' 44"	0,9833245	16' 15,90"	23° 26' 17"	-05m 46s
09:00	286° 02' 42"	0,29"	287° 24' 15"	-22° 28' 26"	0,9833252	16' 15,90"	23° 26' 18"	-05m 47s
10:00	286° 05' 15"	0,29"	287° 26' 59"	-22° 28' 08"	0,9833259	16' 15,90"	23° 26' 18"	-05m 48s
11:00	286° 07' 48"	0,28"	287° 29' 43"	-22° 27' 50"	0,9833267	16' 15,90"	23° 26' 18"	-05m 49s
12:00	286° 10' 20"	0,28"	287° 32' 27"	-22° 27' 32"	0,9833274	16' 15,90"	23° 26' 18"	-05m 50s
13:00	286° 12' 53"	0,27"	287° 35' 11"	-22° 27' 13"	0,9833282	16' 15,90"	23° 26' 18"	-05m 51s
14:00	286° 15' 26"	0,27"	287° 37' 56"	-22° 26' 55"	0,9833289	16' 15,90"	23° 26' 18"	-05m 52s
15:00	286° 17' 59"	0,26"	287° 40' 40"	-22° 26' 36"	0,9833297	16' 15,90"	23° 26' 18"	-05m 53s
16:00	286° 20' 32"	0,26"	287° 43' 24"	-22° 26' 18"	0,9833305	16' 15,90"	23° 26' 18"	-05m 54s
17:00	286° 23' 05"	0,25"	287° 46' 08"	-22° 25' 59"	0,9833313	16' 15,90"	23° 26' 18"	-05m 55s
18:00	286° 25' 37"	0,25"	287° 48' 52"	-22° 25' 41"	0,9833321	16' 15,90"	23° 26' 18"	-05m 57s
19:00	286° 28' 10"	0,24"	287° 51' 36"	-22° 25' 22"	0,9833329	16' 15,90"	23° 26' 18"	-05m 58s
20:00	286° 30' 43"	0,23"	287° 54' 20"	-22° 25' 04"	0,9833338	16' 15,89"	23° 26' 18"	-05m 59s
21:00	286° 33' 16"	0,23"	287° 57' 04"	-22° 24' 45"	0,9833346	16' 15,89"	23° 26' 18"	-06m 00s
22:00	286° 35' 49"	0,22"	287° 59' 48"	-22° 24' 26"	0,9833355	16' 15,89"	23° 26' 18"	-06m 01s
23:00	286° 38' 22"	0,22"	288° 02' 32"	-22° 24' 07"	0,9833363	16' 15,89"	23° 26' 18"	-06m 02s
24:00	286° 40' 54"	0,21"	288° 05' 17"	-22° 23' 48"	0,9833372	16' 15,89"	23° 26' 18"	-06m 03s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	140° 18' 21"	1° 44' 58"	143° 17' 08"	16° 22' 33"	58' 42"	16' 00,00"	106° 04' 21"	91,16%
01:00	140° 53' 04"	1° 42' 03"	143° 50' 24"	16° 08' 41"	58' 40"	15' 58,96"	106° 19' 44"	90,89%
02:00	141° 27' 44"	1° 39' 08"	144° 23' 34"	15° 54' 45"	58' 37"	15' 58,34"	106° 34' 46"	90,62%
03:00	142° 02' 21"	1° 36' 12"	144° 56' 35"	15° 40' 44"	58' 35"	15' 57,72"	106° 49' 26"	90,35%
04:00	142° 36' 56"	1° 33' 16"	145° 29' 30"	15° 26' 40"	58' 33"	15' 57,11"	107° 03' 45"	90,08%
05:00	143° 11' 27"	1° 30' 20"	146° 02' 17"	15° 12' 33"	58' 30"	15' 56,49"	107° 17' 44"	89,80%
06:00	143° 45' 55"	1° 27' 23"	146° 34' 57"	14° 58' 21"	58' 28"	15' 55,87"	107° 31' 23"	89,52%
07:00	144° 20' 21"	1° 24' 26"	147° 07' 31"	14° 44' 07"	58' 26"	15' 55,24"	107° 44' 43"	89,23%
08:00	144° 54' 43"	1° 21' 29"	147° 39' 57"	14° 29' 49"	58' 24"	15' 54,62"	107° 57' 44"	88,95%
09:00	145° 29' 03"	1° 18' 32"	148° 12' 16"	14° 15' 27"	58' 21"	15' 53,99"	108° 10' 26"	88,66%
10:00	146° 03' 20"	1° 15' 34"	148° 44' 29"	14° 01' 03"	58' 19"	15' 53,37"	108° 22' 51"	88,36%
11:00	146° 37' 33"	1° 12' 36"	149° 16' 35"	13° 46' 35"	58' 17"	15' 52,74"	108° 34' 57"	88,07%
12:00	147° 11' 44"	1° 09' 38"	149° 48' 34"	13° 32' 05"	58' 14"	15' 52,11"	108° 46' 47"	87,77%
13:00	147° 45' 52"	1° 06' 39"	150° 20' 26"	13° 17' 31"	58' 12"	15' 51,48"	108° 58' 19"	87,47%
14:00	148° 19' 57"	1° 03' 41"	150° 52' 12"	13° 02' 55"	58' 10"	15' 50,85"	109° 09' 35"	87,16%
15:00	148° 53' 59"	1° 00' 42"	151° 23' 52"	12° 48' 16"	58' 07"	15' 50,22"	109° 20' 34"	86,86%
16:00	149° 27' 58"	0° 57' 43"	151° 55' 25"	12° 33' 35"	58' 05"	15' 49,59"	109° 31' 17"	86,55%
17:00	150° 01' 54"	0° 54' 44"	152° 26' 52"	12° 18' 51"	58' 03"	15' 48,96"	109° 41' 45"	86,24%
18:00	150° 35' 47"	0° 51' 45"	152° 58' 13"	12° 04' 05"	58' 00"	15' 48,32"	109° 51' 57"	85,92%
19:00	151° 09' 37"	0° 48' 46"	153° 29' 28"	11° 49' 17"	57' 58"	15' 47,69"	110° 01' 54"	85,61%
20:00	151° 43' 25"	0° 45' 47"	154° 00' 36"	11° 34' 26"	57' 56"	15' 47,06"	110° 11' 36"	85,29%
21:00	152° 17' 09"	0° 42' 48"	154° 31' 39"	11° 19' 34"	57' 54"	15' 46,42"	110° 21' 03"	84,96%
22:00	152° 50' 50"	0° 39' 49"	155° 02' 36"	11° 04' 39"	57' 51"	15' 45,79"	110° 30' 16"	84,64%
23:00	153° 24' 29"	0° 36' 50"	155° 33' 26"	10° 49' 43"	57' 49"	15' 45,16"	110° 39' 14"	84,31%
24:00	153° 58' 05"	0° 33' 51"	156° 04' 12"	10° 34' 45"	57' 47"	15' 44,52"	110° 47' 59"	83,98%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	286° 40' 54"	0,21"	288° 05' 17"	-22° 23' 48"	0,9833372	16' 15,89"	23° 26' 18"	-06m 03s
01:00	286° 43' 27"	0,21"	288° 08' 01"	-22° 23' 30"	0,9833381	16' 15,89"	23° 26' 18"	-06m 04s
02:00	286° 46' 00"	0,20"	288° 10' 45"	-22° 23' 11"	0,9833390	16' 15,89"	23° 26' 18"	-06m 05s
03:00	286° 48' 33"	0,19"	288° 13' 29"	-22° 22' 52"	0,9833399	16' 15,89"	23° 26' 18"	-06m 06s
04:00	286° 51' 06"	0,19"	288° 16' 13"	-22° 22' 33"	0,9833408	16' 15,89"	23° 26' 18"	-06m 07s
05:00	286° 53' 39"	0,18"	288° 18' 57"	-22° 22' 14"	0,9833417	16' 15,89"	23° 26' 18"	-06m 08s
06:00	286° 56' 11"	0,18"	288° 21' 40"	-22° 21' 54"	0,9833427	16' 15,89"	23° 26' 18"	-06m 09s
07:00	286° 58' 44"	0,17"	288° 24' 24"	-22° 21' 35"	0,9833436	16' 15,88"	23° 26' 18"	-06m 11s
08:00	287° 01' 17"	0,17"	288° 27' 08"	-22° 21' 16"	0,9833446	16' 15,88"	23° 26' 18"	-06m 12s
09:00	287° 03' 50"	0,16"	288° 29' 52"	-22° 20' 57"	0,9833455	16' 15,88"	23° 26' 18"	-06m 13s
10:00	287° 06' 23"	0,16"	288° 32' 36"	-22° 20' 37"	0,9833465	16' 15,88"	23° 26' 18"	-06m 14s
11:00	287° 08' 56"	0,15"	288° 35' 20"	-22° 20' 18"	0,9833475	16' 15,88"	23° 26' 18"	-06m 15s
12:00	287° 11' 28"	0,14"	288° 38' 04"	-22° 19' 59"	0,9833485	16' 15,88"	23° 26' 18"	-06m 16s
13:00	287° 14' 01"	0,14"	288° 40' 48"	-22° 19' 39"	0,9833495	16' 15,88"	23° 26' 18"	-06m 17s
14:00	287° 16' 34"	0,13"	288° 43' 32"	-22° 19' 20"	0,9833505	16' 15,88"	23° 26' 18"	-06m 18s
15:00	287° 19' 07"	0,13"	288° 46' 16"	-22° 19' 00"	0,9833515	16' 15,88"	23° 26' 18"	-06m 19s
16:00	287° 21' 40"	0,12"	288° 48' 59"	-22° 18' 41"	0,9833526	16' 15,88"	23° 26' 18"	-06m 20s
17:00	287° 24' 13"	0,12"	288° 51' 43"	-22° 18' 21"	0,9833536	16' 15,87"	23° 26' 18"	-06m 21s
18:00	287° 26' 45"	0,11"	288° 54' 27"	-22° 18' 01"	0,9833547	16' 15,87"	23° 26' 18"	-06m 22s
19:00	287° 29' 18"	0,10"	288° 57' 11"	-22° 17' 42"	0,9833558	16' 15,87"	23° 26' 18"	-06m 23s
20:00	287° 31' 51"	0,10"	288° 59' 55"	-22° 17' 22"	0,9833568	16' 15,87"	23° 26' 18"	-06m 24s
21:00	287° 34' 24"	0,09"	289° 02' 38"	-22° 17' 02"	0,9833579	16' 15,87"	23° 26' 18"	-06m 25s
22:00	287° 36' 57"	0,09"	289° 05' 22"	-22° 16' 42"	0,9833590	16' 15,87"	23° 26' 18"	-06m 27s
23:00	287° 39' 30"	0,08"	289° 08' 06"	-22° 16' 22"	0,9833601	16' 15,87"	23° 26' 18"	-06m 28s
24:00	287° 42' 02"	0,08"	289° 10' 50"	-22° 16' 02"	0,9833613	16' 15,87"	23° 26' 18"	-06m 29s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	153° 58' 05"	0° 33' 51"	156° 04' 12"	10° 34' 45"	57' 47"	15' 44,52"	110° 47' 59"	83,98%
01:00	154° 31' 37"	0° 30' 52"	156° 34' 51"	10° 19' 45"	57' 44"	15' 43,89"	110° 56' 30"	83,65%
02:00	155° 05' 07"	0° 27' 53"	157° 05' 25"	10° 04' 43"	57' 42"	15' 43,26"	111° 04' 47"	83,32%
03:00	155° 38' 34"	0° 24' 54"	157° 35' 54"	9° 49' 40"	57' 40"	15' 42,63"	111° 12' 51"	82,98%
04:00	156° 11' 58"	0° 21' 55"	158° 06' 17"	9° 34' 35"	57' 37"	15' 41,99"	111° 20' 42"	82,65%
05:00	156° 45' 19"	0° 18' 56"	158° 36' 35"	9° 19' 29"	57' 35"	15' 41,36"	111° 28' 19"	82,31%
06:00	157° 18' 38"	0° 15' 58"	159° 06' 48"	9° 04' 22"	57' 33"	15' 40,73"	111° 35' 44"	81,97%
07:00	157° 51' 53"	0° 13' 00"	159° 36' 56"	8° 49' 14"	57' 30"	15' 40,10"	111° 42' 56"	81,62%
08:00	158° 25' 06"	0° 10' 01"	160° 06' 58"	8° 34' 04"	57' 28"	15' 39,47"	111° 49' 56"	81,28%
09:00	158° 58' 15"	0° 07' 03"	160° 36' 56"	8° 18' 54"	57' 26"	15' 38,85"	111° 56' 43"	80,93%
10:00	159° 31' 22"	0° 04' 05"	161° 06' 49"	8° 03' 42"	57' 23"	15' 38,22"	112° 03' 18"	80,58%
11:00	160° 04' 26"	0° 01' 08"	161° 36' 37"	7° 48' 30"	57' 21"	15' 37,59"	112° 09' 41"	80,23%
12:00	160° 37' 28"	-0° 01' 50"	162° 06' 20"	7° 33' 17"	57' 19"	15' 36,97"	112° 15' 52"	79,87%
13:00	161° 10' 26"	-0° 04' 47"	162° 35' 59"	7° 18' 03"	57' 17"	15' 36,35"	112° 21' 51"	79,52%
14:00	161° 43' 22"	-0° 07' 44"	163° 05' 33"	7° 02' 48"	57' 14"	15' 35,72"	112° 27' 39"	79,16%
15:00	162° 16' 15"	-0° 10' 40"	163° 35' 02"	6° 47' 33"	57' 12"	15' 35,10"	112° 33' 15"	78,80%
16:00	162° 49' 05"	-0° 13' 37"	164° 04' 28"	6° 32' 18"	57' 10"	15' 34,48"	112° 38' 40"	78,44%
17:00	163° 21' 53"	-0° 16' 33"	164° 33' 49"	6° 17' 02"	57' 07"	15' 33,87"	112° 43' 54"	78,08%
18:00	163° 54' 38"	-0° 19' 29"	165° 03' 06"	6° 01' 45"	57' 05"	15' 33,25"	112° 48' 57"	77,71%
19:00	164° 27' 20"	-0° 22' 24"	165° 32' 19"	5° 46' 28"	57' 03"	15' 32,64"	112° 53' 48"	77,35%
20:00	164° 59' 59"	-0° 25' 19"	166° 01' 27"	5° 31' 12"	57' 01"	15' 32,02"	112° 58' 29"	76,98%
21:00	165° 32' 35"	-0° 28' 14"	166° 30' 32"	5° 15' 54"	56' 58"	15' 31,41"	113° 02' 59"	76,61%
22:00	166° 05' 09"	-0° 31' 08"	166° 59' 33"	5° 00' 37"	56' 56"	15' 30,81"	113° 07' 18"	76,24%
23:00	166° 37' 41"	-0° 34' 02"	167° 28' 30"	4° 45' 20"	56' 54"	15' 30,20"	113° 11' 27"	75,87%
24:00	167° 10' 09"	-0° 36' 55"	167° 57' 24"	4° 30' 03"	56' 52"	15' 29,60"	113° 15' 25"	75,50%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	287° 42' 02"	0,08"	289° 10' 50"	-22° 16' 02"	0,9833613	16' 15,87"	23° 26' 18"	-06m 29s
01:00	287° 44' 35"	0,07"	289° 13' 33"	-22° 15' 42"	0,9833624	16' 15,87"	23° 26' 18"	-06m 30s
02:00	287° 47' 08"	0,06"	289° 16' 17"	-22° 15' 22"	0,9833635	16' 15,86"	23° 26' 18"	-06m 31s
03:00	287° 49' 41"	0,06"	289° 19' 01"	-22° 15' 02"	0,9833647	16' 15,86"	23° 26' 18"	-06m 32s
04:00	287° 52' 14"	0,05"	289° 21' 45"	-22° 14' 42"	0,9833658	16' 15,86"	23° 26' 18"	-06m 33s
05:00	287° 54' 46"	0,05"	289° 24' 28"	-22° 14' 22"	0,9833670	16' 15,86"	23° 26' 18"	-06m 34s
06:00	287° 57' 19"	0,04"	289° 27' 12"	-22° 14' 02"	0,9833682	16' 15,86"	23° 26' 18"	-06m 35s
07:00	287° 59' 52"	0,04"	289° 29' 56"	-22° 13' 42"	0,9833694	16' 15,86"	23° 26' 18"	-06m 36s
08:00	288° 02' 25"	0,03"	289° 32' 39"	-22° 13' 21"	0,9833706	16' 15,86"	23° 26' 18"	-06m 37s
09:00	288° 04' 58"	0,03"	289° 35' 23"	-22° 13' 01"	0,9833718	16' 15,86"	23° 26' 18"	-06m 38s
10:00	288° 07' 31"	0,02"	289° 38' 06"	-22° 12' 41"	0,9833730	16' 15,86"	23° 26' 18"	-06m 39s
11:00	288° 10' 03"	0,01"	289° 40' 50"	-22° 12' 20"	0,9833742	16' 15,85"	23° 26' 18"	-06m 40s
12:00	288° 12' 36"	0,01"	289° 43' 34"	-22° 12' 00"	0,9833755	16' 15,85"	23° 26' 18"	-06m 41s
13:00	288° 15' 09"	0,00"	289° 46' 17"	-22° 11' 39"	0,9833767	16' 15,85"	23° 26' 18"	-06m 42s
14:00	288° 17' 42"	-0,00"	289° 49' 01"	-22° 11' 18"	0,9833780	16' 15,85"	23° 26' 18"	-06m 43s
15:00	288° 20' 15"	-0,01"	289° 51' 44"	-22° 10' 58"	0,9833793	16' 15,85"	23° 26' 18"	-06m 44s
16:00	288° 22' 48"	-0,01"	289° 54' 28"	-22° 10' 37"	0,9833805	16' 15,85"	23° 26' 18"	-06m 46s
17:00	288° 25' 20"	-0,02"	289° 57' 11"	-22° 10' 16"	0,9833818	16' 15,85"	23° 26' 18"	-06m 47s
18:00	288° 27' 53"	-0,02"	289° 59' 55"	-22° 09' 56"	0,9833831	16' 15,85"	23° 26' 18"	-06m 48s
19:00	288° 30' 26"	-0,03"	290° 02' 38"	-22° 09' 35"	0,9833844	16' 15,84"	23° 26' 18"	-06m 49s
20:00	288° 32' 59"	-0,03"	290° 05' 22"	-22° 09' 14"	0,9833857	16' 15,84"	23° 26' 18"	-06m 50s
21:00	288° 35' 32"	-0,04"	290° 08' 05"	-22° 08' 53"	0,9833871	16' 15,84"	23° 26' 18"	-06m 51s
22:00	288° 38' 05"	-0,05"	290° 10' 49"	-22° 08' 32"	0,9833884	16' 15,84"	23° 26' 18"	-06m 52s
23:00	288° 40' 37"	-0,05"	290° 13' 32"	-22° 08' 11"	0,9833898	16' 15,84"	23° 26' 18"	-06m 53s
24:00	288° 43' 10"	-0,06"	290° 16' 16"	-22° 07' 50"	0,9833911	16' 15,84"	23° 26' 18"	-06m 54s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	167° 10' 09"	-0° 36' 55"	167° 57' 24"	4° 30' 03"	56' 52"	15' 29,60"	113° 15' 25"	75,50%
01:00	167° 42' 35"	-0° 39' 48"	168° 26' 14"	4° 14' 46"	56' 50"	15' 28,99"	113° 19' 13"	75,12%
02:00	168° 14' 59"	-0° 42' 41"	168° 55' 00"	3° 59' 29"	56' 47"	15' 28,39"	113° 22' 50"	74,75%
03:00	168° 47' 19"	-0° 45' 33"	169° 23' 43"	3° 44' 12"	56' 45"	15' 27,80"	113° 26' 18"	74,37%
04:00	169° 19' 37"	-0° 48' 25"	169° 52' 23"	3° 28' 56"	56' 43"	15' 27,20"	113° 29' 35"	73,99%
05:00	169° 51' 53"	-0° 51' 16"	170° 20' 59"	3° 13' 40"	56' 41"	15' 26,61"	113° 32' 42"	73,61%
06:00	170° 24' 06"	-0° 54' 07"	170° 49' 33"	2° 58' 24"	56' 39"	15' 26,02"	113° 35' 40"	73,23%
07:00	170° 56' 17"	-0° 56' 57"	171° 18' 03"	2° 43' 09"	56' 36"	15' 25,43"	113° 38' 27"	72,85%
08:00	171° 28' 24"	-0° 59' 47"	171° 46' 30"	2° 27' 55"	56' 34"	15' 24,85"	113° 41' 05"	72,46%
09:00	172° 00' 30"	-1° 02' 36"	172° 14' 54"	2° 12' 41"	56' 32"	15' 24,26"	113° 43' 33"	72,08%
10:00	172° 32' 33"	-1° 05' 24"	172° 43' 15"	1° 57' 28"	56' 30"	15' 23,68"	113° 45' 52"	71,69%
11:00	173° 04' 33"	-1° 08' 12"	173° 11' 34"	1° 42' 15"	56' 28"	15' 23,11"	113° 48' 01"	71,31%
12:00	173° 36' 31"	-1° 11' 00"	173° 39' 50"	1° 27' 03"	56' 26"	15' 22,53"	113° 50' 01"	70,92%
13:00	174° 08' 27"	-1° 13' 47"	174° 08' 03"	1° 11' 52"	56' 24"	15' 21,96"	113° 51' 51"	70,53%
14:00	174° 40' 20"	-1° 16' 33"	174° 36' 14"	0° 56' 42"	56' 22"	15' 21,39"	113° 53' 32"	70,14%
15:00	175° 12' 11"	-1° 19' 19"	175° 04' 22"	0° 41' 33"	56' 20"	15' 20,83"	113° 55' 04"	69,75%
16:00	175° 43' 59"	-1° 22' 04"	175° 32' 28"	0° 26' 25"	56' 18"	15' 20,27"	113° 56' 27"	69,36%
17:00	176° 15' 45"	-1° 24' 49"	176° 00' 32"	0° 11' 18"	56' 15"	15' 19,71"	113° 57' 40"	68,97%
18:00	176° 47' 29"	-1° 27' 33"	176° 28' 34"	-0° 03' 48"	56' 13"	15' 19,15"	113° 58' 45"	68,57%
19:00	177° 19' 10"	-1° 30' 16"	176° 56' 33"	-0° 18' 53"	56' 11"	15' 18,60"	113° 59' 40"	68,18%
20:00	177° 50' 49"	-1° 32' 58"	177° 24' 31"	-0° 33' 56"	56' 09"	15' 18,05"	114° 00' 27"	67,79%
21:00	178° 22' 26"	-1° 35' 40"	177° 52' 26"	-0° 48' 59"	56' 07"	15' 17,51"	114° 01' 04"	67,39%
22:00	178° 54' 00"	-1° 38' 22"	178° 20' 20"	-1° 04' 00"	56' 05"	15' 16,97"	114° 01' 33"	66,99%
23:00	179° 25' 32"	-1° 41' 02"	178° 48' 11"	-1° 19' 00"	56' 03"	15' 16,43"	114° 01' 54"	66,60%
24:00	179° 57' 02"	-1° 43' 42"	179° 16' 01"	-1° 33' 58"	56' 01"	15' 15,89"	114° 02' 05"	66,20%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	288° 43' 10"	-0,06"	290° 16' 16"	-22° 07' 50"	0,9833911	16' 15,84"	23° 26' 18"	-06m 54s
01:00	288° 45' 43"	-0,06"	290° 18' 59"	-22° 07' 29"	0,9833925	16' 15,84"	23° 26' 18"	-06m 55s
02:00	288° 48' 16"	-0,07"	290° 21' 42"	-22° 07' 08"	0,9833938	16' 15,83"	23° 26' 18"	-06m 56s
03:00	288° 50' 49"	-0,07"	290° 24' 26"	-22° 06' 47"	0,9833952	16' 15,83"	23° 26' 18"	-06m 57s
04:00	288° 53' 22"	-0,08"	290° 27' 09"	-22° 06' 26"	0,9833966	16' 15,83"	23° 26' 18"	-06m 58s
05:00	288° 55' 55"	-0,08"	290° 29' 52"	-22° 06' 04"	0,9833980	16' 15,83"	23° 26' 18"	-06m 59s
06:00	288° 58' 27"	-0,09"	290° 32' 36"	-22° 05' 43"	0,9833994	16' 15,83"	23° 26' 18"	-07m 00s
07:00	289° 01' 00"	-0,09"	290° 35' 19"	-22° 05' 22"	0,9834009	16' 15,83"	23° 26' 18"	-07m 01s
08:00	289° 03' 33"	-0,10"	290° 38' 02"	-22° 05' 00"	0,9834023	16' 15,83"	23° 26' 18"	-07m 02s
09:00	289° 06' 06"	-0,10"	290° 40' 46"	-22° 04' 39"	0,9834037	16' 15,83"	23° 26' 18"	-07m 03s
10:00	289° 08' 39"	-0,11"	290° 43' 29"	-22° 04' 17"	0,9834052	16' 15,82"	23° 26' 18"	-07m 04s
11:00	289° 11' 12"	-0,11"	290° 46' 12"	-22° 03' 56"	0,9834066	16' 15,82"	23° 26' 18"	-07m 05s
12:00	289° 13' 44"	-0,12"	290° 48' 56"	-22° 03' 34"	0,9834081	16' 15,82"	23° 26' 18"	-07m 06s
13:00	289° 16' 17"	-0,12"	290° 51' 39"	-22° 03' 13"	0,9834096	16' 15,82"	23° 26' 18"	-07m 07s
14:00	289° 18' 50"	-0,13"	290° 54' 22"	-22° 02' 51"	0,9834111	16' 15,82"	23° 26' 18"	-07m 08s
15:00	289° 21' 23"	-0,13"	290° 57' 05"	-22° 02' 29"	0,9834126	16' 15,82"	23° 26' 18"	-07m 09s
16:00	289° 23' 56"	-0,14"	290° 59' 48"	-22° 02' 07"	0,9834141	16' 15,81"	23° 26' 18"	-07m 10s
17:00	289° 26' 29"	-0,14"	291° 02' 32"	-22° 01' 46"	0,9834156	16' 15,81"	23° 26' 18"	-07m 11s
18:00	289° 29' 01"	-0,15"	291° 05' 15"	-22° 01' 24"	0,9834171	16' 15,81"	23° 26' 18"	-07m 12s
19:00	289° 31' 34"	-0,15"	291° 07' 58"	-22° 01' 02"	0,9834187	16' 15,81"	23° 26' 18"	-07m 13s
20:00	289° 34' 07"	-0,16"	291° 10' 41"	-22° 00' 40"	0,9834202	16' 15,81"	23° 26' 18"	-07m 14s
21:00	289° 36' 40"	-0,16"	291° 13' 24"	-22° 00' 18"	0,9834217	16' 15,81"	23° 26' 18"	-07m 15s
22:00	289° 39' 13"	-0,17"	291° 16' 07"	-21° 59' 56"	0,9834233	16' 15,81"	23° 26' 18"	-07m 16s
23:00	289° 41' 46"	-0,17"	291° 18' 50"	-21° 59' 34"	0,9834249	16' 15,80"	23° 26' 18"	-07m 17s
24:00	289° 44' 18"	-0,18"	291° 21' 34"	-21° 59' 12"	0,9834265	16' 15,80"	23° 26' 18"	-07m 18s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	179° 57' 02"	-1° 43' 42"	179° 16' 01"	-1° 33' 58"	56' 01"	15' 15,89"	114° 02' 05"	66,20%
01:00	180° 28' 30"	-1° 46' 21"	179° 43' 50"	-1° 48' 55"	55' 59"	15' 15,36"	114° 02' 08"	65,80%
02:00	180° 59' 56"	-1° 49' 00"	180° 11' 37"	-2° 03' 50"	55' 58"	15' 14,83"	114° 02' 02"	65,40%
03:00	181° 31' 19"	-1° 51' 37"	180° 39' 22"	-2° 18' 44"	55' 56"	15' 14,31"	114° 01' 48"	65,00%
04:00	182° 02' 40"	-1° 54' 14"	181° 07' 06"	-2° 33' 36"	55' 54"	15' 13,79"	114° 01' 25"	64,60%
05:00	182° 33' 59"	-1° 56' 50"	181° 34' 49"	-2° 48' 26"	55' 52"	15' 13,27"	114° 00' 54"	64,20%
06:00	183° 05' 16"	-1° 59' 26"	182° 02' 30"	-3° 03' 15"	55' 50"	15' 12,76"	114° 00' 14"	63,80%
07:00	183° 36' 31"	-2° 02' 01"	182° 30' 10"	-3° 18' 02"	55' 48"	15' 12,25"	113° 59' 26"	63,40%
08:00	184° 07' 44"	-2° 04' 35"	182° 57' 49"	-3° 32' 48"	55' 46"	15' 11,74"	113° 58' 29"	63,00%
09:00	184° 38' 55"	-2° 07' 08"	183° 25' 27"	-3° 47' 31"	55' 44"	15' 11,24"	113° 57' 25"	62,60%
10:00	185° 10' 03"	-2° 09' 40"	183° 53' 05"	-4° 02' 13"	55' 43"	15' 10,75"	113° 56' 12"	62,19%
11:00	185° 41' 10"	-2° 12' 12"	184° 20' 41"	-4° 16' 52"	55' 41"	15' 10,25"	113° 54' 50"	61,79%
12:00	186° 12' 15"	-2° 14' 42"	184° 48' 16"	-4° 31' 30"	55' 39"	15' 09,76"	113° 53' 21"	61,39%
13:00	186° 43' 18"	-2° 17' 12"	185° 15' 51"	-4° 46' 06"	55' 37"	15' 09,28"	113° 51' 44"	60,98%
14:00	187° 14' 18"	-2° 19' 41"	185° 43' 25"	-5° 00' 39"	55' 35"	15' 08,80"	113° 49' 58"	60,58%
15:00	187° 45' 17"	-2° 22' 10"	186° 10' 59"	-5° 15' 11"	55' 34"	15' 08,32"	113° 48' 04"	60,18%
16:00	188° 16' 14"	-2° 24' 37"	186° 38' 32"	-5° 29' 40"	55' 32"	15' 07,85"	113° 46' 03"	59,77%
17:00	188° 47' 09"	-2° 27' 03"	187° 06' 04"	-5° 44' 08"	55' 30"	15' 07,38"	113° 43' 53"	59,37%
18:00	189° 18' 03"	-2° 29' 29"	187° 33' 36"	-5° 58' 33"	55' 28"	15' 06,91"	113° 41' 35"	58,96%
19:00	189° 48' 54"	-2° 31' 54"	188° 01' 08"	-6° 12' 55"	55' 27"	15' 06,45"	113° 39' 10"	58,56%
20:00	190° 19' 44"	-2° 34' 18"	188° 28' 40"	-6° 27' 16"	55' 25"	15' 06,00"	113° 36' 36"	58,15%
21:00	190° 50' 32"	-2° 36' 41"	188° 56' 11"	-6° 41' 34"	55' 23"	15' 05,54"	113° 33' 55"	57,75%
22:00	191° 21' 18"	-2° 39' 03"	189° 23' 43"	-6° 55' 49"	55' 22"	15' 05,10"	113° 31' 05"	57,34%
23:00	191° 52' 02"	-2° 41' 24"	189° 51' 14"	-7° 10' 02"	55' 20"	15' 04,65"	113° 28' 08"	56,94%
24:00	192° 22' 45"	-2° 43' 45"	190° 18' 46"	-7° 24' 13"	55' 19"	15' 04,22"	113° 25' 03"	56,53%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	289° 44' 18"	-0,18"	291° 21' 34"	-21° 59' 12"	0,9834265	16' 15,80"	23° 26' 18"	-07m 18s
01:00	289° 46' 51"	-0,18"	291° 24' 17"	-21° 58' 50"	0,9834280	16' 15,80"	23° 26' 18"	-07m 20s
02:00	289° 49' 24"	-0,19"	291° 27' 00"	-21° 58' 27"	0,9834296	16' 15,80"	23° 26' 18"	-07m 21s
03:00	289° 51' 57"	-0,19"	291° 29' 43"	-21° 58' 05"	0,9834312	16' 15,80"	23° 26' 18"	-07m 22s
04:00	289° 54' 30"	-0,20"	291° 32' 26"	-21° 57' 43"	0,9834329	16' 15,80"	23° 26' 18"	-07m 23s
05:00	289° 57' 03"	-0,20"	291° 35' 09"	-21° 57' 21"	0,9834345	16' 15,79"	23° 26' 18"	-07m 24s
06:00	289° 59' 35"	-0,21"	291° 37' 52"	-21° 56' 58"	0,9834361	16' 15,79"	23° 26' 18"	-07m 25s
07:00	290° 02' 08"	-0,21"	291° 40' 35"	-21° 56' 36"	0,9834378	16' 15,79"	23° 26' 18"	-07m 26s
08:00	290° 04' 41"	-0,22"	291° 43' 18"	-21° 56' 13"	0,9834394	16' 15,79"	23° 26' 18"	-07m 27s
09:00	290° 07' 14"	-0,22"	291° 46' 01"	-21° 55' 51"	0,9834411	16' 15,79"	23° 26' 18"	-07m 28s
10:00	290° 09' 47"	-0,22"	291° 48' 44"	-21° 55' 28"	0,9834427	16' 15,79"	23° 26' 18"	-07m 29s
11:00	290° 12' 20"	-0,23"	291° 51' 27"	-21° 55' 06"	0,9834444	16' 15,78"	23° 26' 18"	-07m 30s
12:00	290° 14' 52"	-0,23"	291° 54' 10"	-21° 54' 43"	0,9834461	16' 15,78"	23° 26' 18"	-07m 31s
13:00	290° 17' 25"	-0,24"	291° 56' 53"	-21° 54' 20"	0,9834478	16' 15,78"	23° 26' 18"	-07m 32s
14:00	290° 19' 58"	-0,24"	291° 59' 35"	-21° 53' 58"	0,9834495	16' 15,78"	23° 26' 18"	-07m 33s
15:00	290° 22' 31"	-0,25"	292° 02' 18"	-21° 53' 35"	0,9834512	16' 15,78"	23° 26' 18"	-07m 34s
16:00	290° 25' 04"	-0,25"	292° 05' 01"	-21° 53' 12"	0,9834529	16' 15,78"	23° 26' 18"	-07m 35s
17:00	290° 27' 37"	-0,26"	292° 07' 44"	-21° 52' 49"	0,9834547	16' 15,77"	23° 26' 18"	-07m 36s
18:00	290° 30' 09"	-0,26"	292° 10' 27"	-21° 52' 26"	0,9834564	16' 15,77"	23° 26' 18"	-07m 37s
19:00	290° 32' 42"	-0,26"	292° 13' 10"	-21° 52' 03"	0,9834582	16' 15,77"	23° 26' 18"	-07m 38s
20:00	290° 35' 15"	-0,27"	292° 15' 52"	-21° 51' 40"	0,9834599	16' 15,77"	23° 26' 18"	-07m 39s
21:00	290° 37' 48"	-0,27"	292° 18' 35"	-21° 51' 17"	0,9834617	16' 15,77"	23° 26' 18"	-07m 40s
22:00	290° 40' 21"	-0,28"	292° 21' 18"	-21° 50' 54"	0,9834635	16' 15,77"	23° 26' 18"	-07m 41s
23:00	290° 42' 54"	-0,28"	292° 24' 01"	-21° 50' 31"	0,9834652	16' 15,76"	23° 26' 18"	-07m 42s
24:00	290° 45' 27"	-0,28"	292° 26' 44"	-21° 50' 08"	0,9834670	16' 15,76"	23° 26' 18"	-07m 43s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	192° 22' 45"	-2° 43' 45"	190° 18' 46"	-7° 24' 13"	55' 19"	15' 04,22"	113° 25' 03"	56,53%
01:00	192° 53' 25"	-2° 46' 04"	190° 46' 17"	-7° 38' 21"	55' 17"	15' 03,78"	113° 21' 51"	56,12%
02:00	193° 24' 05"	-2° 48' 22"	191° 13' 49"	-7° 52' 27"	55' 15"	15' 03,35"	113° 18' 30"	55,72%
03:00	193° 54' 42"	-2° 50' 40"	191° 41' 21"	-8° 06' 30"	55' 14"	15' 02,93"	113° 15' 02"	55,31%
04:00	194° 25' 18"	-2° 52' 57"	192° 08' 54"	-8° 20' 30"	55' 12"	15' 02,51"	113° 11' 26"	54,91%
05:00	194° 55' 52"	-2° 55' 12"	192° 36' 27"	-8° 34' 28"	55' 11"	15' 02,09"	113° 07' 42"	54,50%
06:00	195° 26' 25"	-2° 57' 27"	193° 04' 00"	-8° 48' 23"	55' 09"	15' 01,68"	113° 03' 51"	54,10%
07:00	195° 56' 56"	-2° 59' 41"	193° 31' 34"	-9° 02' 15"	55' 08"	15' 01,27"	112° 59' 52"	53,69%
08:00	196° 27' 26"	-3° 01' 54"	193° 59' 08"	-9° 16' 04"	55' 06"	15' 00,87"	112° 55' 46"	53,29%
09:00	196° 57' 54"	-3° 04' 05"	194° 26' 44"	-9° 29' 51"	55' 05"	15' 00,47"	112° 51' 31"	52,88%
10:00	197° 28' 21"	-3° 06' 16"	194° 54' 19"	-9° 43' 34"	55' 03"	15' 00,08"	112° 47' 09"	52,48%
11:00	197° 58' 46"	-3° 08' 26"	195° 21' 56"	-9° 57' 15"	55' 02"	15' 00,00"	112° 42' 40"	52,07%
12:00	198° 29' 09"	-3° 10' 35"	195° 49' 34"	-10° 10' 52"	55' 01"	14' 59,31"	112° 38' 03"	51,67%
13:00	198° 59' 32"	-3° 12' 43"	196° 17' 12"	-10° 24' 27"	54' 59"	14' 58,93"	112° 33' 19"	51,27%
14:00	199° 29' 52"	-3° 14' 50"	196° 44' 52"	-10° 37' 59"	54' 58"	14' 58,55"	112° 28' 26"	50,86%
15:00	200° 00' 12"	-3° 16' 55"	197° 12' 33"	-10° 51' 27"	54' 56"	14' 58,18"	112° 23' 27"	50,46%
16:00	200° 30' 30"	-3° 19' 00"	197° 40' 14"	-11° 04' 53"	54' 55"	14' 57,82"	112° 18' 20"	50,06%
17:00	201° 00' 47"	-3° 21' 04"	198° 07' 57"	-11° 18' 15"	54' 54"	14' 57,46"	112° 13' 05"	49,65%
18:00	201° 31' 02"	-3° 23' 07"	198° 35' 41"	-11° 31' 34"	54' 52"	14' 57,10"	112° 07' 43"	49,25%
19:00	202° 01' 16"	-3° 25' 09"	199° 03' 27"	-11° 44' 49"	54' 51"	14' 56,75"	112° 02' 14"	48,85%
20:00	202° 31' 29"	-3° 27' 09"	199° 31' 14"	-11° 58' 02"	54' 50"	14' 56,40"	111° 56' 37"	48,45%
21:00	203° 01' 41"	-3° 29' 09"	199° 59' 02"	-12° 11' 11"	54' 49"	14' 56,06"	111° 50' 52"	48,05%
22:00	203° 31' 51"	-3° 31' 07"	200° 26' 52"	-12° 24' 17"	54' 47"	14' 55,73"	111° 45' 00"	47,65%
23:00	204° 02' 00"	-3° 33' 05"	200° 54' 43"	-12° 37' 19"	54' 46"	14' 55,40"	111° 39' 01"	47,25%
24:00	204° 32' 08"	-3° 35' 01"	201° 22' 36"	-12° 50' 18"	54' 45"	14' 55,07"	111° 32' 54"	46,85%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	290° 45' 27"	-0,28"	292° 26' 44"	-21° 50' 08"	0,9834670	16' 15,76"	23° 26' 18"	-07m 43s
01:00	290° 47' 59"	-0,29"	292° 29' 26"	-21° 49' 44"	0,9834688	16' 15,76"	23° 26' 18"	-07m 44s
02:00	290° 50' 32"	-0,29"	292° 32' 09"	-21° 49' 21"	0,9834706	16' 15,76"	23° 26' 18"	-07m 45s
03:00	290° 53' 05"	-0,30"	292° 34' 52"	-21° 48' 58"	0,9834725	16' 15,76"	23° 26' 18"	-07m 46s
04:00	290° 55' 38"	-0,30"	292° 37' 34"	-21° 48' 34"	0,9834743	16' 15,76"	23° 26' 18"	-07m 47s
05:00	290° 58' 11"	-0,30"	292° 40' 17"	-21° 48' 11"	0,9834761	16' 15,75"	23° 26' 18"	-07m 48s
06:00	291° 00' 44"	-0,31"	292° 43' 00"	-21° 47' 48"	0,9834780	16' 15,75"	23° 26' 18"	-07m 49s
07:00	291° 03' 16"	-0,31"	292° 45' 42"	-21° 47' 24"	0,9834798	16' 15,75"	23° 26' 18"	-07m 50s
08:00	291° 05' 49"	-0,32"	292° 48' 25"	-21° 47' 01"	0,9834817	16' 15,75"	23° 26' 18"	-07m 51s
09:00	291° 08' 22"	-0,32"	292° 51' 08"	-21° 46' 37"	0,9834835	16' 15,75"	23° 26' 18"	-07m 52s
10:00	291° 10' 55"	-0,32"	292° 53' 50"	-21° 46' 13"	0,9834854	16' 15,74"	23° 26' 18"	-07m 52s
11:00	291° 13' 28"	-0,33"	292° 56' 33"	-21° 45' 50"	0,9834873	16' 15,74"	23° 26' 18"	-07m 53s
12:00	291° 16' 01"	-0,33"	292° 59' 15"	-21° 45' 26"	0,9834892	16' 15,74"	23° 26' 18"	-07m 54s
13:00	291° 18' 33"	-0,33"	293° 01' 58"	-21° 45' 02"	0,9834911	16' 15,74"	23° 26' 18"	-07m 55s
14:00	291° 21' 06"	-0,34"	293° 04' 41"	-21° 44' 38"	0,9834930	16' 15,74"	23° 26' 18"	-07m 56s
15:00	291° 23' 39"	-0,34"	293° 07' 23"	-21° 44' 15"	0,9834949	16' 15,73"	23° 26' 18"	-07m 57s
16:00	291° 26' 12"	-0,34"	293° 10' 06"	-21° 43' 51"	0,9834969	16' 15,73"	23° 26' 18"	-07m 58s
17:00	291° 28' 45"	-0,35"	293° 12' 48"	-21° 43' 27"	0,9834988	16' 15,73"	23° 26' 18"	-07m 59s
18:00	291° 31' 18"	-0,35"	293° 15' 31"	-21° 43' 03"	0,9835007	16' 15,73"	23° 26' 18"	-08m 00s
19:00	291° 33' 50"	-0,35"	293° 18' 13"	-21° 42' 39"	0,9835027	16' 15,73"	23° 26' 18"	-08m 01s
20:00	291° 36' 23"	-0,36"	293° 20' 55"	-21° 42' 15"	0,9835047	16' 15,72"	23° 26' 18"	-08m 02s
21:00	291° 38' 56"	-0,36"	293° 23' 38"	-21° 41' 51"	0,9835066	16' 15,72"	23° 26' 18"	-08m 03s
22:00	291° 41' 29"	-0,36"	293° 26' 20"	-21° 41' 26"	0,9835086	16' 15,72"	23° 26' 18"	-08m 04s
23:00	291° 44' 02"	-0,37"	293° 29' 03"	-21° 41' 02"	0,9835106	16' 15,72"	23° 26' 18"	-08m 05s
24:00	291° 46' 35"	-0,37"	293° 31' 45"	-21° 40' 38"	0,9835126	16' 15,72"	23° 26' 18"	-08m 06s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	204° 32' 08"	-3° 35' 01"	201° 22' 36"	-12° 50' 18"	54' 45"	14' 55,07"	111° 32' 54"	46,85%
01:00	205° 02' 15"	-3° 36' 57"	201° 50' 31"	-13° 03' 13"	54' 44"	14' 54,75"	111° 26' 40"	46,45%
02:00	205° 32' 21"	-3° 38' 51"	202° 18' 28"	-13° 16' 05"	54' 43"	14' 54,43"	111° 20' 18"	46,05%
03:00	206° 02' 25"	-3° 40' 44"	202° 46' 26"	-13° 28' 53"	54' 42"	14' 54,12"	111° 13' 49"	45,65%
04:00	206° 32' 29"	-3° 42' 36"	203° 14' 26"	-13° 41' 38"	54' 40"	14' 53,81"	111° 07' 13"	45,25%
05:00	207° 02' 31"	-3° 44' 27"	203° 42' 28"	-13° 54' 19"	54' 39"	14' 53,51"	111° 00' 29"	44,86%
06:00	207° 32' 32"	-3° 46' 17"	204° 10' 32"	-14° 06' 56"	54' 38"	14' 53,21"	110° 53' 38"	44,46%
07:00	208° 02' 33"	-3° 48' 06"	204° 38' 38"	-14° 19' 29"	54' 37"	14' 52,92"	110° 46' 40"	44,06%
08:00	208° 32' 32"	-3° 49' 54"	205° 06' 46"	-14° 31' 59"	54' 36"	14' 52,63"	110° 39' 34"	43,67%
09:00	209° 02' 30"	-3° 51' 40"	205° 34' 56"	-14° 44' 25"	54' 35"	14' 52,35"	110° 32' 21"	43,28%
10:00	209° 32' 28"	-3° 53' 26"	206° 03' 09"	-14° 56' 47"	54' 34"	14' 52,07"	110° 25' 00"	42,88%
11:00	210° 02' 24"	-3° 55' 10"	206° 31' 23"	-15° 09' 05"	54' 33"	14' 51,80"	110° 17' 32"	42,49%
12:00	210° 32' 20"	-3° 56' 54"	206° 59' 40"	-15° 21' 19"	54' 32"	14' 51,53"	110° 09' 57"	42,10%
13:00	211° 02' 14"	-3° 58' 36"	207° 28' 00"	-15° 33' 29"	54' 31"	14' 51,26"	110° 02' 15"	41,70%
14:00	211° 32' 08"	-4° 00' 17"	207° 56' 21"	-15° 45' 35"	54' 30"	14' 51,01"	109° 54' 25"	41,31%
15:00	212° 02' 01"	-4° 01' 56"	208° 24' 45"	-15° 57' 37"	54' 29"	14' 50,75"	109° 46' 28"	40,92%
16:00	212° 31' 53"	-4° 03' 35"	208° 53' 12"	-16° 09' 35"	54' 28"	14' 50,50"	109° 38' 23"	40,53%
17:00	213° 01' 44"	-4° 05' 13"	209° 21' 41"	-16° 21' 29"	54' 27"	14' 50,26"	109° 30' 11"	40,15%
18:00	213° 31' 35"	-4° 06' 49"	209° 50' 13"	-16° 33' 19"	54' 26"	14' 50,02"	109° 21' 52"	39,76%
19:00	214° 01' 24"	-4° 08' 24"	210° 18' 48"	-16° 45' 04"	54' 26"	14' 49,79"	109° 13' 26"	39,37%
20:00	214° 31' 13"	-4° 09' 58"	210° 47' 25"	-16° 56' 45"	54' 25"	14' 49,56"	109° 04' 52"	38,99%
21:00	215° 01' 02"	-4° 11' 31"	211° 16' 05"	-17° 08' 22"	54' 24"	14' 49,33"	108° 56' 11"	38,60%
22:00	215° 30' 49"	-4° 13' 03"	211° 44' 47"	-17° 19' 54"	54' 23"	14' 49,12"	108° 47' 23"	38,22%
23:00	216° 00' 36"	-4° 14' 33"	212° 13' 33"	-17° 31' 22"	54' 22"	14' 48,90"	108° 38' 27"	37,83%
24:00	216° 30' 22"	-4° 16' 02"	212° 42' 21"	-17° 42' 46"	54' 22"	14' 48,69"	108° 29' 24"	37,45%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	291° 46' 35"	-0,37"	293° 31' 45"	-21° 40' 38"	0,9835126	16' 15,72"	23° 26' 18"	-08m 06s
01:00	291° 49' 08"	-0,37"	293° 34' 28"	-21° 40' 14"	0,9835146	16' 15,72"	23° 26' 18"	-08m 07s
02:00	291° 51' 40"	-0,38"	293° 37' 10"	-21° 39' 49"	0,9835166	16' 15,71"	23° 26' 18"	-08m 08s
03:00	291° 54' 13"	-0,38"	293° 39' 52"	-21° 39' 25"	0,9835186	16' 15,71"	23° 26' 18"	-08m 09s
04:00	291° 56' 46"	-0,38"	293° 42' 35"	-21° 39' 01"	0,9835206	16' 15,71"	23° 26' 18"	-08m 10s
05:00	291° 59' 19"	-0,39"	293° 45' 17"	-21° 38' 36"	0,9835227	16' 15,71"	23° 26' 18"	-08m 11s
06:00	292° 01' 52"	-0,39"	293° 47' 59"	-21° 38' 12"	0,9835247	16' 15,71"	23° 26' 18"	-08m 12s
07:00	292° 04' 25"	-0,39"	293° 50' 41"	-21° 37' 47"	0,9835268	16' 15,70"	23° 26' 18"	-08m 13s
08:00	292° 06' 57"	-0,39"	293° 53' 24"	-21° 37' 22"	0,9835288	16' 15,70"	23° 26' 18"	-08m 14s
09:00	292° 09' 30"	-0,40"	293° 56' 06"	-21° 36' 58"	0,9835309	16' 15,70"	23° 26' 18"	-08m 15s
10:00	292° 12' 03"	-0,40"	293° 58' 48"	-21° 36' 33"	0,9835330	16' 15,70"	23° 26' 18"	-08m 16s
11:00	292° 14' 36"	-0,40"	294° 01' 30"	-21° 36' 08"	0,9835351	16' 15,69"	23° 26' 18"	-08m 17s
12:00	292° 17' 09"	-0,41"	294° 04' 13"	-21° 35' 44"	0,9835372	16' 15,69"	23° 26' 18"	-08m 18s
13:00	292° 19' 42"	-0,41"	294° 06' 55"	-21° 35' 19"	0,9835393	16' 15,69"	23° 26' 18"	-08m 19s
14:00	292° 22' 14"	-0,41"	294° 09' 37"	-21° 34' 54"	0,9835414	16' 15,69"	23° 26' 18"	-08m 20s
15:00	292° 24' 47"	-0,41"	294° 12' 19"	-21° 34' 29"	0,9835435	16' 15,69"	23° 26' 18"	-08m 21s
16:00	292° 27' 20"	-0,42"	294° 15' 01"	-21° 34' 04"	0,9835456	16' 15,68"	23° 26' 18"	-08m 22s
17:00	292° 29' 53"	-0,42"	294° 17' 43"	-21° 33' 39"	0,9835477	16' 15,68"	23° 26' 18"	-08m 22s
18:00	292° 32' 26"	-0,42"	294° 20' 26"	-21° 33' 14"	0,9835499	16' 15,68"	23° 26' 18"	-08m 23s
19:00	292° 34' 59"	-0,42"	294° 23' 08"	-21° 32' 49"	0,9835520	16' 15,68"	23° 26' 18"	-08m 24s
20:00	292° 37' 31"	-0,42"	294° 25' 50"	-21° 32' 24"	0,9835542	16' 15,68"	23° 26' 18"	-08m 25s
21:00	292° 40' 04"	-0,43"	294° 28' 32"	-21° 31' 59"	0,9835563	16' 15,67"	23° 26' 18"	-08m 26s
22:00	292° 42' 37"	-0,43"	294° 31' 14"	-21° 31' 33"	0,9835585	16' 15,67"	23° 26' 18"	-08m 27s
23:00	292° 45' 10"	-0,43"	294° 33' 56"	-21° 31' 08"	0,9835607	16' 15,67"	23° 26' 18"	-08m 28s
24:00	292° 47' 43"	-0,43"	294° 36' 38"	-21° 30' 43"	0,9835629	16' 15,67"	23° 26' 17"	-08m 29s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	216° 30' 22"	-4° 16' 02"	212° 42' 21"	-17° 42' 46"	54' 22"	14' 48,69"	108° 29' 24"	37,45%
01:00	217° 00' 08"	-4° 17' 30"	213° 11' 13"	-17° 54' 05"	54' 21"	14' 48,49"	108° 20' 14"	37,07%
02:00	217° 29' 53"	-4° 18' 57"	213° 40' 07"	-18° 05' 19"	54' 20"	14' 48,29"	108° 10' 57"	36,69%
03:00	217° 59' 37"	-4° 20' 23"	214° 09' 04"	-18° 16' 29"	54' 19"	14' 48,09"	108° 01' 32"	36,31%
04:00	218° 29' 21"	-4° 21' 48"	214° 38' 05"	-18° 27' 35"	54' 19"	14' 47,90"	107° 52' 00"	35,93%
05:00	218° 59' 04"	-4° 23' 11"	215° 07' 08"	-18° 38' 35"	54' 18"	14' 47,72"	107° 42' 21"	35,55%
06:00	219° 28' 47"	-4° 24' 33"	215° 36' 15"	-18° 49' 31"	54' 17"	14' 47,54"	107° 32' 34"	35,18%
07:00	219° 58' 29"	-4° 25' 54"	216° 05' 25"	-19° 00' 22"	54' 17"	14' 47,36"	107° 22' 40"	34,80%
08:00	220° 28' 11"	-4° 27' 14"	216° 34' 38"	-19° 11' 09"	54' 16"	14' 47,19"	107° 12' 39"	34,43%
09:00	220° 57' 52"	-4° 28' 32"	217° 03' 54"	-19° 21' 50"	54' 15"	14' 47,02"	107° 02' 31"	34,05%
10:00	221° 27' 33"	-4° 29' 49"	217° 33' 13"	-19° 32' 27"	54' 15"	14' 46,86"	106° 52' 15"	33,68%
11:00	221° 57' 13"	-4° 31' 05"	218° 02' 36"	-19° 42' 58"	54' 14"	14' 46,71"	106° 41' 53"	33,31%
12:00	222° 26' 53"	-4° 32' 20"	218° 32' 02"	-19° 53' 25"	54' 14"	14' 46,56"	106° 31' 22"	32,94%
13:00	222° 56' 33"	-4° 33' 33"	219° 01' 32"	-20° 03' 47"	54' 13"	14' 46,41"	106° 20' 45"	32,57%
14:00	223° 26' 12"	-4° 34' 46"	219° 31' 05"	-20° 14' 03"	54' 13"	14' 46,27"	106° 10' 01"	32,21%
15:00	223° 55' 51"	-4° 35' 57"	220° 00' 41"	-20° 24' 15"	54' 12"	14' 46,13"	105° 59' 09"	31,84%
16:00	224° 25' 29"	-4° 37' 06"	220° 30' 21"	-20° 34' 21"	54' 12"	14' 46,00"	105° 48' 10"	31,47%
17:00	224° 55' 07"	-4° 38' 15"	221° 00' 05"	-20° 44' 22"	54' 11"	14' 45,87"	105° 37' 03"	31,11%
18:00	225° 24' 45"	-4° 39' 22"	221° 29' 52"	-20° 54' 18"	54' 11"	14' 45,75"	105° 25' 50"	30,75%
19:00	225° 54' 23"	-4° 40' 28"	221° 59' 42"	-21° 04' 09"	54' 10"	14' 45,63"	105° 14' 29"	30,39%
20:00	226° 24' 00"	-4° 41' 33"	222° 29' 36"	-21° 13' 54"	54' 10"	14' 45,52"	105° 03' 01"	30,03%
21:00	226° 53' 38"	-4° 42' 36"	222° 59' 34"	-21° 23' 34"	54' 10"	14' 45,41"	104° 51' 26"	29,67%
22:00	227° 23' 14"	-4° 43' 38"	223° 29' 35"	-21° 33' 08"	54' 09"	14' 45,30"	104° 39' 44"	29,31%
23:00	227° 52' 51"	-4° 44' 39"	223° 59' 40"	-21° 42' 37"	54' 09"	14' 45,20"	104° 27' 54"	28,95%
24:00	228° 22' 28"	-4° 45' 39"	224° 29' 49"	-21° 52' 00"	54' 08"	14' 45,11"	104° 15' 57"	28,60%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	292° 47' 43"	-0,43"	294° 36' 38"	-21° 30' 43"	0,9835629	16' 15,67"	23° 26' 17"	-08m 29s
01:00	292° 50' 16"	-0,44"	294° 39' 20"	-21° 30' 18"	0,9835651	16' 15,66"	23° 26' 17"	-08m 30s
02:00	292° 52' 48"	-0,44"	294° 42' 02"	-21° 29' 52"	0,9835673	16' 15,66"	23° 26' 17"	-08m 31s
03:00	292° 55' 21"	-0,44"	294° 44' 44"	-21° 29' 27"	0,9835695	16' 15,66"	23° 26' 17"	-08m 32s
04:00	292° 57' 54"	-0,44"	294° 47' 26"	-21° 29' 01"	0,9835717	16' 15,66"	23° 26' 17"	-08m 33s
05:00	293° 00' 27"	-0,44"	294° 50' 08"	-21° 28' 36"	0,9835739	16' 15,66"	23° 26' 17"	-08m 34s
06:00	293° 03' 00"	-0,45"	294° 52' 50"	-21° 28' 10"	0,9835762	16' 15,65"	23° 26' 17"	-08m 35s
07:00	293° 05' 33"	-0,45"	294° 55' 32"	-21° 27' 45"	0,9835784	16' 15,65"	23° 26' 17"	-08m 36s
08:00	293° 08' 06"	-0,45"	294° 58' 14"	-21° 27' 19"	0,9835806	16' 15,65"	23° 26' 17"	-08m 37s
09:00	293° 10' 38"	-0,45"	295° 00' 55"	-21° 26' 53"	0,9835829	16' 15,65"	23° 26' 17"	-08m 38s
10:00	293° 13' 11"	-0,45"	295° 03' 37"	-21° 26' 28"	0,9835852	16' 15,65"	23° 26' 17"	-08m 39s
11:00	293° 15' 44"	-0,45"	295° 06' 19"	-21° 26' 02"	0,9835874	16' 15,64"	23° 26' 17"	-08m 39s
12:00	293° 18' 17"	-0,46"	295° 09' 01"	-21° 25' 36"	0,9835897	16' 15,64"	23° 26' 17"	-08m 40s
13:00	293° 20' 50"	-0,46"	295° 11' 43"	-21° 25' 10"	0,9835920	16' 15,64"	23° 26' 17"	-08m 41s
14:00	293° 23' 23"	-0,46"	295° 14' 25"	-21° 24' 44"	0,9835943	16' 15,64"	23° 26' 17"	-08m 42s
15:00	293° 25' 55"	-0,46"	295° 17' 06"	-21° 24' 18"	0,9835966	16' 15,63"	23° 26' 17"	-08m 43s
16:00	293° 28' 28"	-0,46"	295° 19' 48"	-21° 23' 52"	0,9835989	16' 15,63"	23° 26' 17"	-08m 44s
17:00	293° 31' 01"	-0,46"	295° 22' 30"	-21° 23' 26"	0,9836012	16' 15,63"	23° 26' 17"	-08m 45s
18:00	293° 33' 34"	-0,46"	295° 25' 12"	-21° 23' 00"	0,9836035	16' 15,63"	23° 26' 17"	-08m 46s
19:00	293° 36' 07"	-0,47"	295° 27' 53"	-21° 22' 34"	0,9836059	16' 15,62"	23° 26' 17"	-08m 47s
20:00	293° 38' 40"	-0,47"	295° 30' 35"	-21° 22' 08"	0,9836082	16' 15,62"	23° 26' 17"	-08m 48s
21:00	293° 41' 12"	-0,47"	295° 33' 17"	-21° 21' 42"	0,9836106	16' 15,62"	23° 26' 17"	-08m 49s
22:00	293° 43' 45"	-0,47"	295° 35' 58"	-21° 21' 15"	0,9836129	16' 15,62"	23° 26' 17"	-08m 50s
23:00	293° 46' 18"	-0,47"	295° 38' 40"	-21° 20' 49"	0,9836153	16' 15,62"	23° 26' 17"	-08m 51s
24:00	293° 48' 51"	-0,47"	295° 41' 22"	-21° 20' 23"	0,9836177	16' 15,61"	23° 26' 17"	-08m 51s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	228° 22' 28"	-4° 45' 39"	224° 29' 49"	-21° 52' 00"	54' 08"	14' 45,11"	104° 15' 57"	28,60%
01:00	228° 52' 04"	-4° 46' 37"	225° 00' 02"	-22° 01' 18"	54' 08"	14' 45,02"	104° 03' 53"	28,25%
02:00	229° 21' 41"	-4° 47' 34"	225° 30' 18"	-22° 10' 30"	54' 08"	14' 44,93"	103° 51' 42"	27,89%
03:00	229° 51' 17"	-4° 48' 30"	226° 00' 38"	-22° 19' 36"	54' 08"	14' 44,85"	103° 39' 24"	27,54%
04:00	230° 20' 53"	-4° 49' 25"	226° 31' 01"	-22° 28' 37"	54' 07"	14' 44,78"	103° 26' 58"	27,19%
05:00	230° 50' 29"	-4° 50' 18"	227° 01' 29"	-22° 37' 32"	54' 07"	14' 44,70"	103° 14' 26"	26,85%
06:00	231° 20' 05"	-4° 51' 10"	227° 32' 00"	-22° 46' 21"	54' 07"	14' 44,64"	103° 01' 46"	26,50%
07:00	231° 49' 41"	-4° 52' 00"	228° 02' 35"	-22° 55' 05"	54' 06"	14' 44,57"	102° 48' 59"	26,15%
08:00	232° 19' 16"	-4° 52' 49"	228° 33' 14"	-23° 03' 42"	54' 06"	14' 44,52"	102° 36' 05"	25,81%
09:00	232° 48' 52"	-4° 53' 37"	229° 03' 57"	-23° 12' 13"	54' 06"	14' 44,46"	102° 23' 03"	25,47%
10:00	233° 18' 28"	-4° 54' 24"	229° 34' 43"	-23° 20' 39"	54' 06"	14' 44,41"	102° 09' 55"	25,13%
11:00	233° 48' 04"	-4° 55' 09"	230° 05' 33"	-23° 28' 58"	54' 06"	14' 44,37"	101° 56' 39"	24,79%
12:00	234° 17' 40"	-4° 55' 53"	230° 36' 28"	-23° 37' 12"	54' 06"	14' 44,33"	101° 43' 17"	24,45%
13:00	234° 47' 16"	-4° 56' 36"	231° 07' 26"	-23° 45' 19"	54' 05"	14' 44,29"	101° 29' 47"	24,12%
14:00	235° 16' 52"	-4° 57' 17"	231° 38' 28"	-23° 53' 20"	54' 05"	14' 44,26"	101° 16' 10"	23,78%
15:00	235° 46' 28"	-4° 57' 57"	232° 09' 33"	-24° 01' 14"	54' 05"	14' 44,23"	101° 02' 26"	23,45%
16:00	236° 16' 04"	-4° 58' 36"	232° 40' 43"	-24° 09' 03"	54' 05"	14' 44,21"	100° 48' 35"	23,12%
17:00	236° 45' 41"	-4° 59' 14"	233° 11' 57"	-24° 16' 45"	54' 05"	14' 44,19"	100° 34' 37"	22,79%
18:00	237° 15' 17"	-4° 59' 50"	233° 43' 14"	-24° 24' 21"	54' 05"	14' 44,18"	100° 20' 31"	22,46%
19:00	237° 44' 54"	-5° 00' 24"	234° 14' 35"	-24° 31' 50"	54' 05"	14' 44,17"	100° 06' 19"	22,14%
20:00	238° 14' 31"	-5° 00' 58"	234° 46' 00"	-24° 39' 13"	54' 05"	14' 44,16"	99° 52' 00"	21,81%
21:00	238° 44' 08"	-5° 01' 30"	235° 17' 29"	-24° 46' 29"	54' 05"	14' 44,16"	99° 37' 33"	21,49%
22:00	239° 13' 45"	-5° 02' 00"	235° 49' 02"	-24° 53' 39"	54' 05"	14' 44,17"	99° 23' 00"	21,17%
23:00	239° 43' 22"	-5° 02' 30"	236° 20' 39"	-25° 00' 42"	54' 05"	14' 44,17"	99° 08' 19"	20,85%
24:00	240° 13' 00"	-5° 02' 58"	236° 52' 19"	-25° 07' 38"	54' 05"	14' 44,18"	98° 53' 31"	20,53%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	293° 48' 51"	-0,47"	295° 41' 22"	-21° 20' 23"	0,9836177	16' 15,61"	23° 26' 17"	-08m 51s
01:00	293° 51' 24"	-0,47"	295° 44' 03"	-21° 19' 56"	0,9836200	16' 15,61"	23° 26' 17"	-08m 52s
02:00	293° 53' 57"	-0,47"	295° 46' 45"	-21° 19' 30"	0,9836224	16' 15,61"	23° 26' 17"	-08m 53s
03:00	293° 56' 29"	-0,47"	295° 49' 26"	-21° 19' 04"	0,9836248	16' 15,61"	23° 26' 17"	-08m 54s
04:00	293° 59' 02"	-0,47"	295° 52' 08"	-21° 18' 37"	0,9836272	16' 15,60"	23° 26' 17"	-08m 55s
05:00	294° 01' 35"	-0,47"	295° 54' 50"	-21° 18' 11"	0,9836296	16' 15,60"	23° 26' 17"	-08m 56s
06:00	294° 04' 08"	-0,48"	295° 57' 31"	-21° 17' 44"	0,9836320	16' 15,60"	23° 26' 17"	-08m 57s
07:00	294° 06' 41"	-0,48"	296° 00' 13"	-21° 17' 17"	0,9836345	16' 15,60"	23° 26' 17"	-08m 58s
08:00	294° 09' 14"	-0,48"	296° 02' 54"	-21° 16' 51"	0,9836369	16' 15,59"	23° 26' 17"	-08m 59s
09:00	294° 11' 46"	-0,48"	296° 05' 36"	-21° 16' 24"	0,9836393	16' 15,59"	23° 26' 17"	-09m 00s
10:00	294° 14' 19"	-0,48"	296° 08' 17"	-21° 15' 57"	0,9836418	16' 15,59"	23° 26' 17"	-09m 01s
11:00	294° 16' 52"	-0,48"	296° 10' 59"	-21° 15' 30"	0,9836442	16' 15,59"	23° 26' 17"	-09m 02s
12:00	294° 19' 25"	-0,48"	296° 13' 40"	-21° 15' 04"	0,9836467	16' 15,58"	23° 26' 17"	-09m 02s
13:00	294° 21' 58"	-0,48"	296° 16' 21"	-21° 14' 37"	0,9836491	16' 15,58"	23° 26' 17"	-09m 03s
14:00	294° 24' 31"	-0,48"	296° 19' 03"	-21° 14' 10"	0,9836516	16' 15,58"	23° 26' 17"	-09m 04s
15:00	294° 27' 03"	-0,48"	296° 21' 44"	-21° 13' 43"	0,9836541	16' 15,58"	23° 26' 17"	-09m 05s
16:00	294° 29' 36"	-0,48"	296° 24' 26"	-21° 13' 16"	0,9836566	16' 15,57"	23° 26' 17"	-09m 06s
17:00	294° 32' 09"	-0,48"	296° 27' 07"	-21° 12' 49"	0,9836591	16' 15,57"	23° 26' 17"	-09m 07s
18:00	294° 34' 42"	-0,48"	296° 29' 48"	-21° 12' 22"	0,9836616	16' 15,57"	23° 26' 17"	-09m 08s
19:00	294° 37' 15"	-0,48"	296° 32' 30"	-21° 11' 54"	0,9836641	16' 15,57"	23° 26' 17"	-09m 09s
20:00	294° 39' 48"	-0,48"	296° 35' 11"	-21° 11' 27"	0,9836666	16' 15,56"	23° 26' 17"	-09m 10s
21:00	294° 42' 20"	-0,48"	296° 37' 52"	-21° 11' 00"	0,9836691	16' 15,56"	23° 26' 17"	-09m 11s
22:00	294° 44' 53"	-0,48"	296° 40' 33"	-21° 10' 33"	0,9836717	16' 15,56"	23° 26' 17"	-09m 11s
23:00	294° 47' 26"	-0,48"	296° 43' 15"	-21° 10' 05"	0,9836742	16' 15,56"	23° 26' 17"	-09m 12s
24:00	294° 49' 59"	-0,48"	296° 45' 56"	-21° 09' 38"	0,9836767	16' 15,55"	23° 26' 17"	-09m 13s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	240° 13' 00"	-5° 02' 58"	236° 52' 19"	-25° 07' 38"	54' 05"	14' 44,18"	98° 53' 31"	20,53%
01:00	240° 42' 38"	-5° 03' 24"	237° 24' 03"	-25° 14' 28"	54' 05"	14' 44,20"	98° 38' 37"	20,22%
02:00	241° 12' 16"	-5° 03' 49"	237° 55' 51"	-25° 21' 11"	54' 05"	14' 44,22"	98° 23' 35"	19,90%
03:00	241° 41' 55"	-5° 04' 13"	238° 27' 43"	-25° 27' 47"	54' 05"	14' 44,24"	98° 08' 26"	19,59%
04:00	242° 11' 34"	-5° 04' 36"	238° 59' 39"	-25° 34' 17"	54' 05"	14' 44,27"	97° 53' 11"	19,28%
05:00	242° 41' 13"	-5° 04' 57"	239° 31' 38"	-25° 40' 39"	54' 06"	14' 44,30"	97° 37' 48"	18,97%
06:00	243° 10' 52"	-5° 05' 17"	240° 03' 41"	-25° 46' 55"	54' 06"	14' 44,34"	97° 22' 18"	18,67%
07:00	243° 40' 32"	-5° 05' 35"	240° 35' 48"	-25° 53' 03"	54' 06"	14' 44,38"	97° 06' 42"	18,36%
08:00	244° 10' 12"	-5° 05' 53"	241° 07' 58"	-25° 59' 05"	54' 06"	14' 44,42"	96° 50' 58"	18,06%
09:00	244° 39' 53"	-5° 06' 08"	241° 40' 12"	-26° 04' 59"	54' 06"	14' 44,47"	96° 35' 07"	17,76%
10:00	245° 09' 34"	-5° 06' 23"	242° 12' 30"	-26° 10' 46"	54' 06"	14' 44,52"	96° 19' 10"	17,46%
11:00	245° 39' 15"	-5° 06' 36"	242° 44' 51"	-26° 16' 27"	54' 07"	14' 44,58"	96° 03' 05"	17,16%
12:00	246° 08' 57"	-5° 06' 47"	243° 17' 16"	-26° 22' 00"	54' 07"	14' 44,64"	95° 46' 53"	16,87%
13:00	246° 38' 39"	-5° 06' 57"	243° 49' 44"	-26° 27' 25"	54' 07"	14' 44,70"	95° 30' 35"	16,57%
14:00	247° 08' 22"	-5° 07' 06"	244° 22' 16"	-26° 32' 44"	54' 07"	14' 44,77"	95° 14' 09"	16,28%
15:00	247° 38' 05"	-5° 07' 14"	244° 54' 52"	-26° 37' 55"	54' 07"	14' 44,84"	94° 57' 36"	15,99%
16:00	248° 07' 49"	-5° 07' 20"	245° 27' 30"	-26° 42' 58"	54' 08"	14' 44,92"	94° 40' 56"	15,71%
17:00	248° 37' 33"	-5° 07' 24"	246° 00' 13"	-26° 47' 55"	54' 08"	14' 45,00"	94° 24' 10"	15,42%
18:00	249° 07' 17"	-5° 07' 28"	246° 32' 58"	-26° 52' 44"	54' 08"	14' 45,08"	94° 07' 16"	15,14%
19:00	249° 37' 02"	-5° 07' 30"	247° 05' 47"	-26° 57' 25"	54' 09"	14' 45,17"	93° 50' 15"	14,86%
20:00	250° 06' 48"	-5° 07' 30"	247° 38' 39"	-27° 01' 59"	54' 09"	14' 45,26"	93° 33' 07"	14,58%
21:00	250° 36' 34"	-5° 07' 29"	248° 11' 34"	-27° 06' 25"	54' 09"	14' 45,35"	93° 15' 53"	14,30%
22:00	251° 06' 21"	-5° 07' 27"	248° 44' 33"	-27° 10' 44"	54' 10"	14' 45,45"	92° 58' 31"	14,03%
23:00	251° 36' 08"	-5° 07' 23"	249° 17' 35"	-27° 14' 54"	54' 10"	14' 45,55"	92° 41' 01"	13,76%
24:00	252° 05' 56"	-5° 07' 18"	249° 50' 40"	-27° 18' 58"	54' 10"	14' 45,65"	92° 23' 25"	13,49%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	294° 49' 59"	-0,48"	296° 45' 56"	-21° 09' 38"	0,9836767	16' 15,55"	23° 26' 17"	-09m 13s
01:00	294° 52' 32"	-0,48"	296° 48' 37"	-21° 09' 11"	0,9836793	16' 15,55"	23° 26' 17"	-09m 14s
02:00	294° 55' 04"	-0,48"	296° 51' 18"	-21° 08' 43"	0,9836818	16' 15,55"	23° 26' 17"	-09m 15s
03:00	294° 57' 37"	-0,48"	296° 53' 59"	-21° 08' 16"	0,9836844	16' 15,55"	23° 26' 17"	-09m 16s
04:00	295° 00' 10"	-0,48"	296° 56' 41"	-21° 07' 48"	0,9836870	16' 15,54"	23° 26' 17"	-09m 17s
05:00	295° 02' 43"	-0,48"	296° 59' 22"	-21° 07' 21"	0,9836896	16' 15,54"	23° 26' 17"	-09m 18s
06:00	295° 05' 16"	-0,48"	297° 02' 03"	-21° 06' 53"	0,9836922	16' 15,54"	23° 26' 17"	-09m 19s
07:00	295° 07' 49"	-0,48"	297° 04' 44"	-21° 06' 25"	0,9836947	16' 15,54"	23° 26' 17"	-09m 19s
08:00	295° 10' 21"	-0,48"	297° 07' 25"	-21° 05' 58"	0,9836973	16' 15,53"	23° 26' 17"	-09m 20s
09:00	295° 12' 54"	-0,48"	297° 10' 06"	-21° 05' 30"	0,9837000	16' 15,53"	23° 26' 17"	-09m 21s
10:00	295° 15' 27"	-0,48"	297° 12' 47"	-21° 05' 02"	0,9837026	16' 15,53"	23° 26' 17"	-09m 22s
11:00	295° 18' 00"	-0,47"	297° 15' 28"	-21° 04' 34"	0,9837052	16' 15,53"	23° 26' 17"	-09m 23s
12:00	295° 20' 33"	-0,47"	297° 18' 09"	-21° 04' 07"	0,9837078	16' 15,52"	23° 26' 17"	-09m 24s
13:00	295° 23' 06"	-0,47"	297° 20' 50"	-21° 03' 39"	0,9837105	16' 15,52"	23° 26' 17"	-09m 25s
14:00	295° 25' 38"	-0,47"	297° 23' 31"	-21° 03' 11"	0,9837131	16' 15,52"	23° 26' 17"	-09m 26s
15:00	295° 28' 11"	-0,47"	297° 26' 12"	-21° 02' 43"	0,9837158	16' 15,52"	23° 26' 17"	-09m 26s
16:00	295° 30' 44"	-0,47"	297° 28' 53"	-21° 02' 15"	0,9837184	16' 15,51"	23° 26' 17"	-09m 27s
17:00	295° 33' 17"	-0,47"	297° 31' 34"	-21° 01' 47"	0,9837211	16' 15,51"	23° 26' 17"	-09m 28s
18:00	295° 35' 50"	-0,47"	297° 34' 15"	-21° 01' 18"	0,9837237	16' 15,51"	23° 26' 17"	-09m 29s
19:00	295° 38' 22"	-0,47"	297° 36' 56"	-21° 00' 50"	0,9837264	16' 15,50"	23° 26' 17"	-09m 30s
20:00	295° 40' 55"	-0,47"	297° 39' 37"	-21° 00' 22"	0,9837291	16' 15,50"	23° 26' 17"	-09m 31s
21:00	295° 43' 28"	-0,47"	297° 42' 18"	-20° 59' 54"	0,9837318	16' 15,50"	23° 26' 17"	-09m 32s
22:00	295° 46' 01"	-0,46"	297° 44' 59"	-20° 59' 26"	0,9837345	16' 15,50"	23° 26' 17"	-09m 33s
23:00	295° 48' 34"	-0,46"	297° 47' 40"	-20° 58' 57"	0,9837372	16' 15,49"	23° 26' 17"	-09m 33s
24:00	295° 51' 07"	-0,46"	297° 50' 20"	-20° 58' 29"	0,9837399	16' 15,49"	23° 26' 17"	-09m 34s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	252° 05' 56"	-5° 07' 18"	249° 50' 40"	-27° 18' 58"	54' 10"	14' 45,65"	92° 23' 25"	13,49%
01:00	252° 35' 44"	-5° 07' 12"	250° 23' 47"	-27° 22' 53"	54' 11"	14' 45,76"	92° 05' 42"	13,22%
02:00	253° 05' 33"	-5° 07' 04"	250° 56' 58"	-27° 26' 41"	54' 11"	14' 45,87"	91° 47' 51"	12,95%
03:00	253° 35' 23"	-5° 06' 55"	251° 30' 12"	-27° 30' 21"	54' 12"	14' 45,99"	91° 29' 53"	12,69%
04:00	254° 05' 13"	-5° 06' 44"	252° 03' 29"	-27° 33' 53"	54' 12"	14' 46,11"	91° 11' 48"	12,43%
05:00	254° 35' 04"	-5° 06' 32"	252° 36' 48"	-27° 37' 17"	54' 13"	14' 46,23"	90° 53' 36"	12,17%
06:00	255° 04' 56"	-5° 06' 19"	253° 10' 11"	-27° 40' 33"	54' 13"	14' 46,36"	90° 35' 16"	11,91%
07:00	255° 34' 48"	-5° 06' 04"	253° 43' 36"	-27° 43' 42"	54' 14"	14' 46,48"	90° 16' 48"	11,66%
08:00	256° 04' 41"	-5° 05' 48"	254° 17' 03"	-27° 46' 42"	54' 14"	14' 46,62"	89° 58' 14"	11,40%
09:00	256° 34' 34"	-5° 05' 30"	254° 50' 34"	-27° 49' 35"	54' 14"	14' 46,75"	89° 39' 31"	11,15%
10:00	257° 04' 29"	-5° 05' 11"	255° 24' 06"	-27° 52' 19"	54' 15"	14' 46,89"	89° 20' 41"	10,91%
11:00	257° 34' 23"	-5° 04' 50"	255° 57' 42"	-27° 54' 55"	54' 16"	14' 47,03"	89° 01' 43"	10,66%
12:00	258° 04' 19"	-5° 04' 29"	256° 31' 19"	-27° 57' 23"	54' 16"	14' 47,18"	88° 42' 38"	10,42%
13:00	258° 34' 15"	-5° 04' 05"	257° 04' 59"	-27° 59' 43"	54' 17"	14' 47,33"	88° 23' 24"	10,18%
14:00	259° 04' 13"	-5° 03' 41"	257° 38' 42"	-28° 01' 55"	54' 17"	14' 47,48"	88° 04' 03"	9,94%
15:00	259° 34' 10"	-5° 03' 15"	258° 12' 26"	-28° 03' 58"	54' 18"	14' 47,63"	87° 44' 33"	9,70%
16:00	260° 04' 09"	-5° 02' 47"	258° 46' 13"	-28° 05' 54"	54' 18"	14' 47,79"	87° 24' 55"	9,47%
17:00	260° 34' 08"	-5° 02' 18"	259° 20' 02"	-28° 07' 41"	54' 19"	14' 47,95"	87° 05' 09"	9,24%
18:00	261° 04' 09"	-5° 01' 48"	259° 53' 53"	-28° 09' 20"	54' 19"	14' 48,12"	86° 45' 14"	9,01%
19:00	261° 34' 09"	-5° 01' 16"	260° 27' 45"	-28° 10' 50"	54' 20"	14' 48,28"	86° 25' 11"	8,79%
20:00	262° 04' 11"	-5° 00' 43"	261° 01' 40"	-28° 12' 13"	54' 21"	14' 48,45"	86° 04' 58"	8,56%
21:00	262° 34' 14"	-5° 00' 09"	261° 35' 36"	-28° 13' 27"	54' 21"	14' 48,63"	85° 44' 36"	8,34%
22:00	263° 04' 17"	-4° 59' 33"	262° 09' 34"	-28° 14' 32"	54' 22"	14' 48,80"	85° 24' 06"	8,12%
23:00	263° 34' 21"	-4° 58' 55"	262° 43' 34"	-28° 15' 29"	54' 23"	14' 48,98"	85° 03' 25"	7,91%
24:00	264° 04' 26"	-4° 58' 17"	263° 17' 36"	-28° 16' 18"	54' 23"	14' 49,16"	84° 42' 35"	7,69%

16 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	295° 51' 07"	-0,46"	297° 50' 20"	-20° 58' 29"	0,9837399	16' 15,49"	23° 26' 17"	-09m 34s
01:00	295° 53' 39"	-0,46"	297° 53' 01"	-20° 58' 00"	0,9837426	16' 15,49"	23° 26' 17"	-09m 35s
02:00	295° 56' 12"	-0,46"	297° 55' 42"	-20° 57' 32"	0,9837454	16' 15,49"	23° 26' 17"	-09m 36s
03:00	295° 58' 45"	-0,46"	297° 58' 23"	-20° 57' 04"	0,9837481	16' 15,48"	23° 26' 17"	-09m 37s
04:00	296° 01' 18"	-0,46"	298° 01' 03"	-20° 56' 35"	0,9837508	16' 15,48"	23° 26' 17"	-09m 38s
05:00	296° 03' 51"	-0,45"	298° 03' 44"	-20° 56' 06"	0,9837536	16' 15,48"	23° 26' 17"	-09m 39s
06:00	296° 06' 23"	-0,45"	298° 06' 25"	-20° 55' 38"	0,9837563	16' 15,48"	23° 26' 17"	-09m 39s
07:00	296° 08' 56"	-0,45"	298° 09' 06"	-20° 55' 09"	0,9837591	16' 15,47"	23° 26' 17"	-09m 40s
08:00	296° 11' 29"	-0,45"	298° 11' 46"	-20° 54' 40"	0,9837619	16' 15,47"	23° 26' 17"	-09m 41s
09:00	296° 14' 02"	-0,45"	298° 14' 27"	-20° 54' 12"	0,9837646	16' 15,47"	23° 26' 17"	-09m 42s
10:00	296° 16' 35"	-0,45"	298° 17' 08"	-20° 53' 43"	0,9837674	16' 15,46"	23° 26' 17"	-09m 43s
11:00	296° 19' 07"	-0,44"	298° 19' 48"	-20° 53' 14"	0,9837702	16' 15,46"	23° 26' 17"	-09m 44s
12:00	296° 21' 40"	-0,44"	298° 22' 29"	-20° 52' 45"	0,9837730	16' 15,46"	23° 26' 17"	-09m 45s
13:00	296° 24' 13"	-0,44"	298° 25' 09"	-20° 52' 16"	0,9837758	16' 15,46"	23° 26' 17"	-09m 45s
14:00	296° 26' 46"	-0,44"	298° 27' 50"	-20° 51' 47"	0,9837786	16' 15,45"	23° 26' 17"	-09m 46s
15:00	296° 29' 19"	-0,44"	298° 30' 31"	-20° 51' 18"	0,9837814	16' 15,45"	23° 26' 17"	-09m 47s
16:00	296° 31' 51"	-0,43"	298° 33' 11"	-20° 50' 49"	0,9837842	16' 15,45"	23° 26' 17"	-09m 48s
17:00	296° 34' 24"	-0,43"	298° 35' 52"	-20° 50' 20"	0,9837871	16' 15,44"	23° 26' 17"	-09m 49s
18:00	296° 36' 57"	-0,43"	298° 38' 32"	-20° 49' 51"	0,9837899	16' 15,44"	23° 26' 17"	-09m 50s
19:00	296° 39' 30"	-0,43"	298° 41' 13"	-20° 49' 22"	0,9837927	16' 15,44"	23° 26' 17"	-09m 51s
20:00	296° 42' 03"	-0,42"	298° 43' 53"	-20° 48' 53"	0,9837956	16' 15,44"	23° 26' 17"	-09m 51s
21:00	296° 44' 36"	-0,42"	298° 46' 33"	-20° 48' 24"	0,9837984	16' 15,43"	23° 26' 17"	-09m 52s
22:00	296° 47' 08"	-0,42"	298° 49' 14"	-20° 47' 54"	0,9838013	16' 15,43"	23° 26' 17"	-09m 53s
23:00	296° 49' 41"	-0,42"	298° 51' 54"	-20° 47' 25"	0,9838041	16' 15,43"	23° 26' 17"	-09m 54s
24:00	296° 52' 14"	-0,42"	298° 54' 35"	-20° 46' 56"	0,9838070	16' 15,43"	23° 26' 17"	-09m 55s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	264° 04' 26"	-4° 58' 17"	263° 17' 36"	-28° 16' 18"	54' 23"	14' 49,16"	84° 42' 35"	7,69%
01:00	264° 34' 32"	-4° 57' 37"	263° 51' 38"	-28° 16' 58"	54' 24"	14' 49,35"	84° 21' 35"	7,48%
02:00	265° 04' 38"	-4° 56' 55"	264° 25' 42"	-28° 17' 30"	54' 25"	14' 49,54"	84° 00' 25"	7,28%
03:00	265° 34' 46"	-4° 56' 12"	264° 59' 48"	-28° 17' 53"	54' 25"	14' 49,73"	83° 39' 04"	7,07%
04:00	266° 04' 54"	-4° 55' 28"	265° 33' 55"	-28° 18' 08"	54' 26"	14' 49,92"	83° 17' 32"	6,87%
05:00	266° 35' 04"	-4° 54' 42"	266° 08' 03"	-28° 18' 15"	54' 27"	14' 50,12"	82° 55' 48"	6,67%
06:00	267° 05' 14"	-4° 53' 55"	266° 42' 12"	-28° 18' 13"	54' 28"	14' 50,31"	82° 33' 53"	6,47%
07:00	267° 35' 25"	-4° 53' 07"	267° 16' 22"	-28° 18' 02"	54' 28"	14' 50,52"	82° 11' 46"	6,28%
08:00	268° 05' 36"	-4° 52' 17"	267° 50' 33"	-28° 17' 43"	54' 29"	14' 50,72"	81° 49' 27"	6,08%
09:00	268° 35' 49"	-4° 51' 25"	268° 24' 45"	-28° 17' 15"	54' 30"	14' 50,93"	81° 26' 54"	5,89%
10:00	269° 06' 03"	-4° 50' 33"	268° 58' 57"	-28° 16' 39"	54' 31"	14' 51,13"	81° 04' 08"	5,71%
11:00	269° 36' 17"	-4° 49' 39"	269° 33' 11"	-28° 15' 54"	54' 31"	14' 51,35"	80° 41' 08"	5,52%
12:00	270° 06' 33"	-4° 48' 43"	270° 07' 24"	-28° 15' 01"	54' 32"	14' 51,56"	80° 17' 52"	5,34%
13:00	270° 36' 49"	-4° 47' 46"	270° 41' 39"	-28° 13' 59"	54' 33"	14' 51,78"	79° 54' 22"	5,16%
14:00	271° 07' 07"	-4° 46' 48"	271° 15' 54"	-28° 12' 48"	54' 34"	14' 51,99"	79° 30' 35"	4,99%
15:00	271° 37' 25"	-4° 45' 49"	271° 50' 09"	-28° 11' 29"	54' 35"	14' 52,22"	79° 06' 31"	4,82%
16:00	272° 07' 44"	-4° 44' 48"	272° 24' 25"	-28° 10' 01"	54' 35"	14' 52,44"	78° 42' 10"	4,65%
17:00	272° 38' 04"	-4° 43' 45"	272° 58' 40"	-28° 08' 25"	54' 36"	14' 52,67"	78° 17' 29"	4,48%
18:00	273° 08' 26"	-4° 42' 42"	273° 32' 56"	-28° 06' 40"	54' 37"	14' 52,89"	77° 52' 29"	4,32%
19:00	273° 38' 48"	-4° 41' 36"	274° 07' 12"	-28° 04' 46"	54' 38"	14' 53,12"	77° 27' 08"	4,15%
20:00	274° 09' 11"	-4° 40' 30"	274° 41' 28"	-28° 02' 44"	54' 39"	14' 53,36"	77° 01' 25"	4,00%
21:00	274° 39' 35"	-4° 39' 22"	275° 15' 43"	-28° 00' 33"	54' 40"	14' 53,59"	76° 35' 19"	3,84%
22:00	275° 10' 00"	-4° 38' 13"	275° 49' 59"	-27° 58' 14"	54' 40"	14' 53,83"	76° 08' 48"	3,69%
23:00	275° 40' 26"	-4° 37' 02"	276° 24' 14"	-27° 55' 46"	54' 41"	14' 54,07"	75° 41' 51"	3,54%
24:00	276° 10' 53"	-4° 35' 50"	276° 58' 29"	-27° 53' 10"	54' 42"	14' 54,31"	75° 14' 25"	3,39%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	296° 52' 14"	-0,42"	298° 54' 35"	-20° 46' 56"	0,9838070	16' 15,43"	23° 26' 17"	-09m 55s
01:00	296° 54' 47"	-0,41"	298° 57' 15"	-20° 46' 26"	0,9838099	16' 15,42"	23° 26' 17"	-09m 56s
02:00	296° 57' 20"	-0,41"	298° 59' 55"	-20° 45' 57"	0,9838128	16' 15,42"	23° 26' 17"	-09m 56s
03:00	296° 59' 52"	-0,41"	299° 02' 36"	-20° 45' 27"	0,9838157	16' 15,42"	23° 26' 17"	-09m 57s
04:00	297° 02' 25"	-0,40"	299° 05' 16"	-20° 44' 58"	0,9838186	16' 15,41"	23° 26' 17"	-09m 58s
05:00	297° 04' 58"	-0,40"	299° 07' 56"	-20° 44' 28"	0,9838215	16' 15,41"	23° 26' 17"	-09m 59s
06:00	297° 07' 31"	-0,40"	299° 10' 37"	-20° 43' 59"	0,9838244	16' 15,41"	23° 26' 17"	-10m 00s
07:00	297° 10' 03"	-0,40"	299° 13' 17"	-20° 43' 29"	0,9838273	16' 15,40"	23° 26' 17"	-10m 01s
08:00	297° 12' 36"	-0,39"	299° 15' 57"	-20° 42' 59"	0,9838302	16' 15,40"	23° 26' 17"	-10m 01s
09:00	297° 15' 09"	-0,39"	299° 18' 37"	-20° 42' 30"	0,9838332	16' 15,40"	23° 26' 17"	-10m 02s
10:00	297° 17' 42"	-0,39"	299° 21' 18"	-20° 42' 00"	0,9838361	16' 15,40"	23° 26' 17"	-10m 03s
11:00	297° 20' 15"	-0,39"	299° 23' 58"	-20° 41' 30"	0,9838391	16' 15,39"	23° 26' 17"	-10m 04s
12:00	297° 22' 47"	-0,38"	299° 26' 38"	-20° 41' 00"	0,9838420	16' 15,39"	23° 26' 17"	-10m 05s
13:00	297° 25' 20"	-0,38"	299° 29' 18"	-20° 40' 30"	0,9838450	16' 15,39"	23° 26' 17"	-10m 05s
14:00	297° 27' 53"	-0,38"	299° 31' 58"	-20° 40' 00"	0,9838479	16' 15,38"	23° 26' 17"	-10m 06s
15:00	297° 30' 26"	-0,37"	299° 34' 38"	-20° 39' 30"	0,9838509	16' 15,38"	23° 26' 17"	-10m 07s
16:00	297° 32' 59"	-0,37"	299° 37' 18"	-20° 39' 00"	0,9838539	16' 15,38"	23° 26' 17"	-10m 08s
17:00	297° 35' 31"	-0,37"	299° 39' 59"	-20° 38' 30"	0,9838569	16' 15,38"	23° 26' 17"	-10m 09s
18:00	297° 38' 04"	-0,36"	299° 42' 39"	-20° 38' 00"	0,9838598	16' 15,37"	23° 26' 17"	-10m 10s
19:00	297° 40' 37"	-0,36"	299° 45' 19"	-20° 37' 30"	0,9838628	16' 15,37"	23° 26' 17"	-10m 10s
20:00	297° 43' 10"	-0,36"	299° 47' 59"	-20° 37' 00"	0,9838658	16' 15,37"	23° 26' 17"	-10m 11s
21:00	297° 45' 43"	-0,35"	299° 50' 39"	-20° 36' 30"	0,9838689	16' 15,36"	23° 26' 17"	-10m 12s
22:00	297° 48' 15"	-0,35"	299° 53' 19"	-20° 35' 59"	0,9838719	16' 15,36"	23° 26' 17"	-10m 13s
23:00	297° 50' 48"	-0,35"	299° 55' 59"	-20° 35' 29"	0,9838749	16' 15,36"	23° 26' 17"	-10m 14s
24:00	297° 53' 21"	-0,34"	299° 58' 39"	-20° 34' 59"	0,9838779	16' 15,35"	23° 26' 17"	-10m 14s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	276° 10' 53"	-4° 35' 50"	276° 58' 29"	-27° 53' 10"	54' 42"	14' 54,31"	75° 14' 25"	3,39%
01:00	276° 41' 21"	-4° 34' 37"	277° 32' 43"	-27° 50' 25"	54' 43"	14' 54,55"	74° 46' 30"	3,25%
02:00	277° 11' 50"	-4° 33' 23"	278° 06' 57"	-27° 47' 31"	54' 44"	14' 54,80"	74° 18' 02"	3,11%
03:00	277° 42' 20"	-4° 32' 07"	278° 41' 10"	-27° 44' 29"	54' 45"	14' 55,05"	73° 49' 01"	2,97%
04:00	278° 12' 51"	-4° 30' 49"	279° 15' 22"	-27° 41' 18"	54' 46"	14' 55,30"	73° 19' 23"	2,84%
05:00	278° 43' 23"	-4° 29' 31"	279° 49' 34"	-27° 37' 59"	54' 47"	14' 55,55"	72° 49' 05"	2,71%
06:00	279° 13' 56"	-4° 28' 10"	280° 23' 45"	-27° 34' 31"	54' 48"	14' 55,80"	72° 18' 05"	2,58%
07:00	279° 44' 30"	-4° 26' 49"	280° 57' 55"	-27° 30' 54"	54' 49"	14' 56,06"	71° 46' 20"	2,45%
08:00	280° 15' 06"	-4° 25' 26"	281° 32' 04"	-27° 27' 10"	54' 50"	14' 56,32"	71° 13' 45"	2,33%
09:00	280° 45' 42"	-4° 24' 02"	282° 06' 12"	-27° 23' 16"	54' 51"	14' 56,58"	70° 40' 17"	2,21%
10:00	281° 16' 19"	-4° 22' 37"	282° 40' 18"	-27° 19' 14"	54' 52"	14' 56,84"	70° 05' 51"	2,09%
11:00	281° 46' 57"	-4° 21' 10"	283° 14' 24"	-27° 15' 04"	54' 52"	14' 57,10"	69° 30' 23"	1,98%
12:00	282° 17' 37"	-4° 19' 42"	283° 48' 28"	-27° 10' 46"	54' 53"	14' 57,37"	68° 53' 45"	1,87%
13:00	282° 48' 17"	-4° 18' 13"	284° 22' 31"	-27° 06' 18"	54' 54"	14' 57,63"	68° 15' 53"	1,76%
14:00	283° 18' 58"	-4° 16' 43"	284° 56' 32"	-27° 01' 43"	54' 55"	14' 57,90"	67° 36' 40"	1,66%
15:00	283° 49' 41"	-4° 15' 11"	285° 30' 32"	-26° 56' 59"	54' 56"	14' 58,17"	66° 55' 56"	1,56%
16:00	284° 20' 25"	-4° 13' 37"	286° 04' 30"	-26° 52' 07"	54' 57"	14' 58,44"	66° 13' 34"	1,46%
17:00	284° 51' 09"	-4° 12' 03"	286° 38' 27"	-26° 47' 06"	54' 58"	14' 58,71"	65° 29' 22"	1,37%
18:00	285° 21' 55"	-4° 10' 27"	287° 12' 22"	-26° 41' 58"	54' 59"	14' 58,99"	64° 43' 10"	1,28%
19:00	285° 52' 42"	-4° 08' 50"	287° 46' 15"	-26° 36' 40"	55' 00"	14' 59,27"	63° 54' 45"	1,19%
20:00	286° 23' 30"	-4° 07' 12"	288° 20' 06"	-26° 31' 15"	55' 01"	15' 00,00"	63° 03' 50"	1,11%
21:00	286° 54' 19"	-4° 05' 32"	288° 53' 55"	-26° 25' 42"	55' 02"	15' 00,00"	62° 10' 09"	1,03%
22:00	287° 25' 09"	-4° 03' 51"	289° 27' 43"	-26° 20' 00"	55' 03"	15' 00,11"	61° 13' 21"	0,95%
23:00	287° 56' 00"	-4° 02' 09"	290° 01' 28"	-26° 14' 10"	55' 05"	15' 00,39"	60° 13' 04"	0,87%
24:00	288° 26' 52"	-4° 00' 26"	290° 35' 11"	-26° 08' 12"	55' 06"	15' 00,67"	59° 08' 49"	0,80%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	297° 53' 21"	-0,34"	299° 58' 39"	-20° 34' 59"	0,9838779	16' 15,35"	23° 26' 17"	-10m 14s
01:00	297° 55' 54"	-0,34"	300° 01' 19"	-20° 34' 28"	0,9838810	16' 15,35"	23° 26' 17"	-10m 15s
02:00	297° 58' 26"	-0,34"	300° 03' 58"	-20° 33' 58"	0,9838840	16' 15,35"	23° 26' 17"	-10m 16s
03:00	298° 00' 59"	-0,33"	300° 06' 38"	-20° 33' 27"	0,9838870	16' 15,35"	23° 26' 18"	-10m 17s
04:00	298° 03' 32"	-0,33"	300° 09' 18"	-20° 32' 57"	0,9838901	16' 15,34"	23° 26' 18"	-10m 18s
05:00	298° 06' 05"	-0,33"	300° 11' 58"	-20° 32' 26"	0,9838932	16' 15,34"	23° 26' 18"	-10m 18s
06:00	298° 08' 38"	-0,32"	300° 14' 38"	-20° 31' 56"	0,9838962	16' 15,34"	23° 26' 18"	-10m 19s
07:00	298° 11' 10"	-0,32"	300° 17' 18"	-20° 31' 25"	0,9838993	16' 15,33"	23° 26' 18"	-10m 20s
08:00	298° 13' 43"	-0,31"	300° 19' 58"	-20° 30' 54"	0,9839024	16' 15,33"	23° 26' 18"	-10m 21s
09:00	298° 16' 16"	-0,31"	300° 22' 37"	-20° 30' 24"	0,9839055	16' 15,33"	23° 26' 18"	-10m 22s
10:00	298° 18' 49"	-0,31"	300° 25' 17"	-20° 29' 53"	0,9839085	16' 15,32"	23° 26' 18"	-10m 22s
11:00	298° 21' 21"	-0,30"	300° 27' 57"	-20° 29' 22"	0,9839116	16' 15,32"	23° 26' 18"	-10m 23s
12:00	298° 23' 54"	-0,30"	300° 30' 37"	-20° 28' 51"	0,9839148	16' 15,32"	23° 26' 18"	-10m 24s
13:00	298° 26' 27"	-0,29"	300° 33' 16"	-20° 28' 20"	0,9839179	16' 15,32"	23° 26' 18"	-10m 25s
14:00	298° 29' 00"	-0,29"	300° 35' 56"	-20° 27' 50"	0,9839210	16' 15,31"	23° 26' 18"	-10m 26s
15:00	298° 31' 32"	-0,29"	300° 38' 36"	-20° 27' 19"	0,9839241	16' 15,31"	23° 26' 18"	-10m 26s
16:00	298° 34' 05"	-0,28"	300° 41' 15"	-20° 26' 48"	0,9839272	16' 15,31"	23° 26' 18"	-10m 27s
17:00	298° 36' 38"	-0,28"	300° 43' 55"	-20° 26' 17"	0,9839304	16' 15,30"	23° 26' 18"	-10m 28s
18:00	298° 39' 11"	-0,27"	300° 46' 35"	-20° 25' 45"	0,9839335	16' 15,30"	23° 26' 18"	-10m 29s
19:00	298° 41' 44"	-0,27"	300° 49' 14"	-20° 25' 14"	0,9839367	16' 15,30"	23° 26' 18"	-10m 30s
20:00	298° 44' 16"	-0,27"	300° 51' 54"	-20° 24' 43"	0,9839398	16' 15,29"	23° 26' 18"	-10m 30s
21:00	298° 46' 49"	-0,26"	300° 54' 33"	-20° 24' 12"	0,9839430	16' 15,29"	23° 26' 18"	-10m 31s
22:00	298° 49' 22"	-0,26"	300° 57' 13"	-20° 23' 41"	0,9839461	16' 15,29"	23° 26' 18"	-10m 32s
23:00	298° 51' 55"	-0,25"	300° 59' 52"	-20° 23' 09"	0,9839493	16' 15,28"	23° 26' 18"	-10m 33s
24:00	298° 54' 27"	-0,25"	301° 02' 32"	-20° 22' 38"	0,9839525	16' 15,28"	23° 26' 18"	-10m 33s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	288° 26' 52"	-4° 00' 26"	290° 35' 11"	-26° 08' 12"	55' 06"	15' 00,67"	59° 08' 49"	0,80%
01:00	288° 57' 45"	-3° 58' 41"	291° 08' 52"	-26° 02' 06"	55' 07"	15' 00,96"	58° 00' 06"	0,73%
02:00	289° 28' 40"	-3° 56' 55"	291° 42' 31"	-25° 55' 51"	55' 08"	15' 01,24"	56° 46' 16"	0,67%
03:00	289° 59' 35"	-3° 55' 08"	292° 16' 08"	-25° 49' 29"	55' 09"	15' 01,53"	55° 26' 36"	0,61%
04:00	290° 30' 32"	-3° 53' 20"	292° 49' 42"	-25° 42' 59"	55' 10"	15' 01,82"	54° 00' 13"	0,55%
05:00	291° 01' 30"	-3° 51' 30"	293° 23' 14"	-25° 36' 21"	55' 11"	15' 02,11"	52° 26' 06"	0,50%
06:00	291° 32' 28"	-3° 49' 40"	293° 56' 44"	-25° 29' 35"	55' 12"	15' 02,40"	50° 42' 58"	0,44%
07:00	292° 03' 28"	-3° 47' 48"	294° 30' 11"	-25° 22' 40"	55' 13"	15' 02,70"	48° 49' 21"	0,40%
08:00	292° 34' 29"	-3° 45' 54"	295° 03' 35"	-25° 15' 39"	55' 14"	15' 02,99"	46° 43' 26"	0,35%
09:00	293° 05' 32"	-3° 44' 00"	295° 36' 57"	-25° 08' 29"	55' 15"	15' 03,29"	44° 23' 03"	0,31%
10:00	293° 36' 35"	-3° 42' 04"	296° 10' 17"	-25° 01' 11"	55' 16"	15' 03,58"	41° 45' 35"	0,27%
11:00	294° 07' 39"	-3° 40' 08"	296° 43' 34"	-24° 53' 46"	55' 17"	15' 03,88"	38° 47' 55"	0,24%
12:00	294° 38' 45"	-3° 38' 10"	297° 16' 48"	-24° 46' 13"	55' 18"	15' 04,18"	35° 26' 21"	0,21%
13:00	295° 09' 51"	-3° 36' 11"	297° 49' 59"	-24° 38' 33"	55' 20"	15' 04,48"	31° 36' 36"	0,18%
14:00	295° 40' 59"	-3° 34' 10"	298° 23' 07"	-24° 30' 45"	55' 21"	15' 04,78"	27° 13' 55"	0,16%
15:00	296° 12' 08"	-3° 32' 09"	298° 56' 13"	-24° 22' 49"	55' 22"	15' 05,09"	22° 13' 26"	0,14%
16:00	296° 43' 18"	-3° 30' 06"	299° 29' 16"	-24° 14' 46"	55' 23"	15' 05,39"	16° 30' 47"	0,12%
17:00	297° 14' 29"	-3° 28' 03"	300° 02' 16"	-24° 06' 35"	55' 24"	15' 05,69"	10° 03' 23"	0,11%
18:00	297° 45' 42"	-3° 25' 58"	300° 35' 13"	-23° 58' 17"	55' 25"	15' 06,00"	2° 52' 07"	0,10%
19:00	298° 16' 55"	-3° 23' 52"	301° 08' 07"	-23° 49' 51"	55' 26"	15' 06,30"	355° 03' 10"	0,09%
20:00	298° 48' 10"	-3° 21' 45"	301° 40' 59"	-23° 41' 18"	55' 27"	15' 06,61"	346° 48' 56"	0,09%
21:00	299° 19' 25"	-3° 19' 37"	302° 13' 47"	-23° 32' 38"	55' 29"	15' 06,92"	338° 26' 58"	0,09%
22:00	299° 50' 42"	-3° 17' 27"	302° 46' 32"	-23° 23' 51"	55' 30"	15' 07,23"	330° 16' 34"	0,09%
23:00	300° 22' 00"	-3° 15' 17"	303° 19' 14"	-23° 14' 56"	55' 31"	15' 07,54"	322° 34' 30"	0,10%
24:00	300° 53' 19"	-3° 13' 05"	303° 51' 53"	-23° 05' 54"	55' 32"	15' 07,85"	315° 32' 00"	0,11%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	298° 54' 27"	-0,25"	301° 02' 32"	-20° 22' 38"	0,9839525	16' 15,28"	23° 26' 18"	-10m 33s
01:00	298° 57' 00"	-0,24"	301° 05' 11"	-20° 22' 07"	0,9839557	16' 15,28"	23° 26' 18"	-10m 34s
02:00	298° 59' 33"	-0,24"	301° 07' 51"	-20° 21' 35"	0,9839589	16' 15,27"	23° 26' 18"	-10m 35s
03:00	299° 02' 06"	-0,24"	301° 10' 30"	-20° 21' 04"	0,9839621	16' 15,27"	23° 26' 18"	-10m 36s
04:00	299° 04' 38"	-0,23"	301° 13' 10"	-20° 20' 33"	0,9839653	16' 15,27"	23° 26' 18"	-10m 37s
05:00	299° 07' 11"	-0,23"	301° 15' 49"	-20° 20' 01"	0,9839685	16' 15,26"	23° 26' 18"	-10m 37s
06:00	299° 09' 44"	-0,22"	301° 18' 28"	-20° 19' 29"	0,9839717	16' 15,26"	23° 26' 18"	-10m 38s
07:00	299° 12' 17"	-0,22"	301° 21' 08"	-20° 18' 58"	0,9839749	16' 15,26"	23° 26' 18"	-10m 39s
08:00	299° 14' 49"	-0,21"	301° 23' 47"	-20° 18' 26"	0,9839782	16' 15,26"	23° 26' 18"	-10m 40s
09:00	299° 17' 22"	-0,21"	301° 26' 26"	-20° 17' 55"	0,9839814	16' 15,25"	23° 26' 18"	-10m 40s
10:00	299° 19' 55"	-0,20"	301° 29' 06"	-20° 17' 23"	0,9839846	16' 15,25"	23° 26' 18"	-10m 41s
11:00	299° 22' 28"	-0,20"	301° 31' 45"	-20° 16' 51"	0,9839879	16' 15,25"	23° 26' 18"	-10m 42s
12:00	299° 25' 00"	-0,19"	301° 34' 24"	-20° 16' 19"	0,9839911	16' 15,24"	23° 26' 18"	-10m 43s
13:00	299° 27' 33"	-0,19"	301° 37' 04"	-20° 15' 47"	0,9839944	16' 15,24"	23° 26' 18"	-10m 43s
14:00	299° 30' 06"	-0,19"	301° 39' 43"	-20° 15' 16"	0,9839977	16' 15,24"	23° 26' 18"	-10m 44s
15:00	299° 32' 39"	-0,18"	301° 42' 22"	-20° 14' 44"	0,9840009	16' 15,23"	23° 26' 18"	-10m 45s
16:00	299° 35' 11"	-0,18"	301° 45' 01"	-20° 14' 12"	0,9840042	16' 15,23"	23° 26' 18"	-10m 46s
17:00	299° 37' 44"	-0,17"	301° 47' 40"	-20° 13' 40"	0,9840075	16' 15,23"	23° 26' 18"	-10m 46s
18:00	299° 40' 17"	-0,17"	301° 50' 20"	-20° 13' 08"	0,9840108	16' 15,22"	23° 26' 18"	-10m 47s
19:00	299° 42' 50"	-0,16"	301° 52' 59"	-20° 12' 36"	0,9840141	16' 15,22"	23° 26' 18"	-10m 48s
20:00	299° 45' 22"	-0,16"	301° 55' 38"	-20° 12' 04"	0,9840174	16' 15,22"	23° 26' 18"	-10m 49s
21:00	299° 47' 55"	-0,15"	301° 58' 17"	-20° 11' 31"	0,9840207	16' 15,21"	23° 26' 18"	-10m 49s
22:00	299° 50' 28"	-0,15"	302° 00' 56"	-20° 10' 59"	0,9840240	16' 15,21"	23° 26' 18"	-10m 50s
23:00	299° 53' 00"	-0,14"	302° 03' 35"	-20° 10' 27"	0,9840274	16' 15,21"	23° 26' 18"	-10m 51s
24:00	299° 55' 33"	-0,14"	302° 06' 14"	-20° 09' 55"	0,9840307	16' 15,20"	23° 26' 18"	-10m 52s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	300° 53' 19"	-3° 13' 05"	303° 51' 53"	-23° 05' 54"	55' 32"	15' 07,85"	315° 32' 00"	0,11%
01:00	301° 24' 40"	-3° 10' 53"	304° 24' 29"	-22° 56' 46"	55' 33"	15' 08,16"	309° 14' 05"	0,12%
02:00	301° 56' 01"	-3° 08' 39"	304° 57' 02"	-22° 47' 30"	55' 34"	15' 08,47"	303° 40' 49"	0,14%
03:00	302° 27' 23"	-3° 06' 25"	305° 29' 32"	-22° 38' 07"	55' 35"	15' 08,79"	298° 49' 09"	0,16%
04:00	302° 58' 47"	-3° 04' 09"	306° 01' 58"	-22° 28' 37"	55' 37"	15' 09,10"	294° 34' 33"	0,19%
05:00	303° 30' 12"	-3° 01' 52"	306° 34' 22"	-22° 19' 00"	55' 38"	15' 09,42"	290° 52' 09"	0,22%
06:00	304° 01' 38"	-2° 59' 35"	307° 06' 42"	-22° 09' 17"	55' 39"	15' 09,73"	287° 37' 14"	0,25%
07:00	304° 33' 05"	-2° 57' 16"	307° 38' 59"	-21° 59' 26"	55' 40"	15' 10,05"	284° 45' 39"	0,29%
08:00	305° 04' 33"	-2° 54' 56"	308° 11' 13"	-21° 49' 29"	55' 41"	15' 10,36"	282° 13' 50"	0,32%
09:00	305° 36' 03"	-2° 52' 36"	308° 43' 24"	-21° 39' 26"	55' 42"	15' 10,68"	279° 58' 44"	0,37%
10:00	306° 07' 33"	-2° 50' 14"	309° 15' 31"	-21° 29' 15"	55' 43"	15' 11,00"	277° 57' 50"	0,41%
11:00	306° 39' 05"	-2° 47' 51"	309° 47' 36"	-21° 18' 58"	55' 45"	15' 11,32"	276° 09' 02"	0,46%
12:00	307° 10' 38"	-2° 45' 27"	310° 19' 37"	-21° 08' 35"	55' 46"	15' 11,64"	274° 30' 37"	0,52%
13:00	307° 42' 12"	-2° 43' 03"	310° 51' 35"	-20° 58' 05"	55' 47"	15' 11,96"	273° 01' 07"	0,58%
14:00	308° 13' 47"	-2° 40' 37"	311° 23' 29"	-20° 47' 29"	55' 48"	15' 12,28"	271° 39' 20"	0,64%
15:00	308° 45' 24"	-2° 38' 11"	311° 55' 21"	-20° 36' 46"	55' 49"	15' 12,60"	270° 24' 17"	0,70%
16:00	309° 17' 01"	-2° 35' 43"	312° 27' 09"	-20° 25' 57"	55' 51"	15' 12,92"	269° 15' 05"	0,77%
17:00	309° 48' 40"	-2° 33' 15"	312° 58' 54"	-20° 15' 02"	55' 52"	15' 13,24"	268° 11' 04"	0,84%
18:00	310° 20' 20"	-2° 30' 46"	313° 30' 36"	-20° 04' 01"	55' 53"	15' 13,57"	267° 11' 35"	0,92%
19:00	310° 52' 01"	-2° 28' 16"	314° 02' 14"	-19° 52' 54"	55' 54"	15' 13,89"	266° 16' 09"	1,00%
20:00	311° 23' 43"	-2° 25' 45"	314° 33' 50"	-19° 41' 40"	55' 55"	15' 14,21"	265° 24' 18"	1,08%
21:00	311° 55' 26"	-2° 23' 13"	315° 05' 22"	-19° 30' 21"	55' 56"	15' 14,54"	264° 35' 41"	1,16%
22:00	312° 27' 11"	-2° 20' 40"	315° 36' 51"	-19° 18' 55"	55' 58"	15' 14,86"	263° 49' 57"	1,25%
23:00	312° 58' 56"	-2° 18' 07"	316° 08' 17"	-19° 07' 24"	55' 59"	15' 15,19"	263° 06' 50"	1,35%
24:00	313° 30' 43"	-2° 15' 33"	316° 39' 40"	-18° 55' 47"	56' 00"	15' 15,51"	262° 26' 04"	1,44%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	299° 55' 33"	-0,14"	302° 06' 14"	-20° 09' 55"	0,9840307	16' 15,20"	23° 26' 18"	-10m 52s
01:00	299° 58' 06"	-0,13"	302° 08' 53"	-20° 09' 22"	0,9840340	16' 15,20"	23° 26' 18"	-10m 52s
02:00	300° 00' 39"	-0,13"	302° 11' 32"	-20° 08' 50"	0,9840374	16' 15,20"	23° 26' 18"	-10m 53s
03:00	300° 03' 11"	-0,12"	302° 14' 11"	-20° 08' 18"	0,9840407	16' 15,19"	23° 26' 18"	-10m 54s
04:00	300° 05' 44"	-0,12"	302° 16' 50"	-20° 07' 45"	0,9840441	16' 15,19"	23° 26' 18"	-10m 55s
05:00	300° 08' 17"	-0,11"	302° 19' 29"	-20° 07' 13"	0,9840474	16' 15,19"	23° 26' 18"	-10m 55s
06:00	300° 10' 50"	-0,11"	302° 22' 08"	-20° 06' 40"	0,9840508	16' 15,18"	23° 26' 18"	-10m 56s
07:00	300° 13' 22"	-0,10"	302° 24' 47"	-20° 06' 08"	0,9840542	16' 15,18"	23° 26' 18"	-10m 57s
08:00	300° 15' 55"	-0,10"	302° 27' 26"	-20° 05' 35"	0,9840575	16' 15,18"	23° 26' 18"	-10m 58s
09:00	300° 18' 28"	-0,09"	302° 30' 04"	-20° 05' 02"	0,9840609	16' 15,17"	23° 26' 18"	-10m 58s
10:00	300° 21' 00"	-0,09"	302° 32' 43"	-20° 04' 30"	0,9840643	16' 15,17"	23° 26' 18"	-10m 59s
11:00	300° 23' 33"	-0,08"	302° 35' 22"	-20° 03' 57"	0,9840677	16' 15,17"	23° 26' 18"	-11m 00s
12:00	300° 26' 06"	-0,07"	302° 38' 01"	-20° 03' 24"	0,9840711	16' 15,16"	23° 26' 18"	-11m 01s
13:00	300° 28' 39"	-0,07"	302° 40' 40"	-20° 02' 52"	0,9840745	16' 15,16"	23° 26' 18"	-11m 01s
14:00	300° 31' 11"	-0,06"	302° 43' 18"	-20° 02' 19"	0,9840780	16' 15,16"	23° 26' 18"	-11m 02s
15:00	300° 33' 44"	-0,06"	302° 45' 57"	-20° 01' 46"	0,9840814	16' 15,15"	23° 26' 18"	-11m 03s
16:00	300° 36' 17"	-0,05"	302° 48' 36"	-20° 01' 13"	0,9840848	16' 15,15"	23° 26' 18"	-11m 03s
17:00	300° 38' 49"	-0,05"	302° 51' 15"	-20° 00' 40"	0,9840882	16' 15,15"	23° 26' 18"	-11m 04s
18:00	300° 41' 22"	-0,04"	302° 53' 53"	-20° 00' 07"	0,9840917	16' 15,14"	23° 26' 18"	-11m 05s
19:00	300° 43' 55"	-0,04"	302° 56' 32"	-19° 59' 34"	0,9840951	16' 15,14"	23° 26' 18"	-11m 06s
20:00	300° 46' 28"	-0,03"	302° 59' 11"	-19° 59' 01"	0,9840986	16' 15,14"	23° 26' 18"	-11m 06s
21:00	300° 49' 00"	-0,03"	303° 01' 49"	-19° 58' 28"	0,9841020	16' 15,13"	23° 26' 18"	-11m 07s
22:00	300° 51' 33"	-0,02"	303° 04' 28"	-19° 57' 55"	0,9841055	16' 15,13"	23° 26' 18"	-11m 08s
23:00	300° 54' 06"	-0,02"	303° 07' 06"	-19° 57' 22"	0,9841090	16' 15,13"	23° 26' 18"	-11m 08s
24:00	300° 56' 38"	-0,01"	303° 09' 45"	-19° 56' 48"	0,9841125	16' 15,12"	23° 26' 18"	-11m 09s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	313° 30' 43"	-2° 15' 33"	316° 39' 40"	-18° 55' 47"	56' 00"	15' 15,51"	262° 26' 04"	1,44%
01:00	314° 02' 31"	-2° 12' 57"	317° 11' 00"	-18° 44' 04"	56' 01"	15' 15,84"	261° 47' 27"	1,55%
02:00	314° 34' 20"	-2° 10' 21"	317° 42' 16"	-18° 32' 16"	56' 02"	15' 16,16"	261° 10' 47"	1,65%
03:00	315° 06' 11"	-2° 07' 45"	318° 13' 30"	-18° 20' 22"	56' 04"	15' 16,49"	260° 35' 55"	1,76%
04:00	315° 38' 02"	-2° 05' 07"	318° 44' 40"	-18° 08' 22"	56' 05"	15' 16,82"	260° 02' 41"	1,87%
05:00	316° 09' 55"	-2° 02' 29"	319° 15' 47"	-17° 56' 17"	56' 06"	15' 17,14"	259° 30' 58"	1,98%
06:00	316° 41' 49"	-1° 59' 50"	319° 46' 52"	-17° 44' 06"	56' 07"	15' 17,47"	259° 00' 38"	2,10%
07:00	317° 13' 44"	-1° 57' 10"	320° 17' 53"	-17° 31' 50"	56' 08"	15' 17,80"	258° 31' 36"	2,23%
08:00	317° 45' 40"	-1° 54' 29"	320° 48' 52"	-17° 19' 29"	56' 10"	15' 18,13"	258° 03' 45"	2,35%
09:00	318° 17' 37"	-1° 51' 48"	321° 19' 47"	-17° 07' 02"	56' 11"	15' 18,46"	257° 37' 01"	2,48%
10:00	318° 49' 36"	-1° 49' 06"	321° 50' 39"	-16° 54' 30"	56' 12"	15' 18,78"	257° 11' 20"	2,61%
11:00	319° 21' 36"	-1° 46' 24"	322° 21' 29"	-16° 41' 53"	56' 13"	15' 19,11"	256° 46' 37"	2,75%
12:00	319° 53' 37"	-1° 43' 40"	322° 52' 16"	-16° 29' 11"	56' 14"	15' 19,44"	256° 22' 48"	2,89%
13:00	320° 25' 39"	-1° 40' 56"	323° 23' 00"	-16° 16' 24"	56' 16"	15' 19,77"	255° 59' 51"	3,04%
14:00	320° 57' 42"	-1° 38' 12"	323° 53' 41"	-16° 03' 32"	56' 17"	15' 20,10"	255° 37' 41"	3,18%
15:00	321° 29' 46"	-1° 35' 26"	324° 24' 19"	-15° 50' 35"	56' 18"	15' 20,43"	255° 16' 18"	3,34%
16:00	322° 01' 52"	-1° 32' 40"	324° 54' 55"	-15° 37' 34"	56' 19"	15' 20,76"	254° 55' 37"	3,49%
17:00	322° 33' 59"	-1° 29' 54"	325° 25' 28"	-15° 24' 27"	56' 21"	15' 21,09"	254° 35' 37"	3,65%
18:00	323° 06' 07"	-1° 27' 07"	325° 55' 58"	-15° 11' 16"	56' 22"	15' 21,42"	254° 16' 15"	3,81%
19:00	323° 38' 16"	-1° 24' 19"	326° 26' 26"	-14° 58' 00"	56' 23"	15' 21,75"	253° 57' 30"	3,98%
20:00	324° 10' 26"	-1° 21' 31"	326° 56' 51"	-14° 44' 40"	56' 24"	15' 22,08"	253° 39' 20"	4,15%
21:00	324° 42' 38"	-1° 18' 42"	327° 27' 13"	-14° 31' 15"	56' 25"	15' 22,41"	253° 21' 43"	4,32%
22:00	325° 14' 51"	-1° 15' 53"	327° 57' 33"	-14° 17' 45"	56' 27"	15' 22,74"	253° 04' 38"	4,50%
23:00	325° 47' 04"	-1° 13' 03"	328° 27' 51"	-14° 04' 12"	56' 28"	15' 23,08"	252° 48' 04"	4,68%
24:00	326° 19' 20"	-1° 10' 12"	328° 58' 06"	-13° 50' 34"	56' 29"	15' 23,41"	252° 31' 58"	4,86%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	300° 56' 38"	-0,01"	303° 09' 45"	-19° 56' 48"	0,9841125	16' 15,12"	23° 26' 18"	-11m 09s
01:00	300° 59' 11"	-0,01"	303° 12' 23"	-19° 56' 15"	0,9841160	16' 15,12"	23° 26' 18"	-11m 10s
02:00	301° 01' 44"	0,00"	303° 15' 02"	-19° 55' 42"	0,9841194	16' 15,12"	23° 26' 18"	-11m 11s
03:00	301° 04' 16"	0,01"	303° 17' 41"	-19° 55' 09"	0,9841229	16' 15,11"	23° 26' 18"	-11m 11s
04:00	301° 06' 49"	0,01"	303° 20' 19"	-19° 54' 35"	0,9841265	16' 15,11"	23° 26' 18"	-11m 12s
05:00	301° 09' 22"	0,02"	303° 22' 57"	-19° 54' 02"	0,9841300	16' 15,10"	23° 26' 18"	-11m 13s
06:00	301° 11' 54"	0,02"	303° 25' 36"	-19° 53' 28"	0,9841335	16' 15,10"	23° 26' 18"	-11m 13s
07:00	301° 14' 27"	0,03"	303° 28' 14"	-19° 52' 55"	0,9841370	16' 15,10"	23° 26' 18"	-11m 14s
08:00	301° 17' 00"	0,03"	303° 30' 53"	-19° 52' 21"	0,9841405	16' 15,09"	23° 26' 18"	-11m 15s
09:00	301° 19' 33"	0,04"	303° 33' 31"	-19° 51' 48"	0,9841441	16' 15,09"	23° 26' 18"	-11m 16s
10:00	301° 22' 05"	0,04"	303° 36' 09"	-19° 51' 14"	0,9841476	16' 15,09"	23° 26' 18"	-11m 16s
11:00	301° 24' 38"	0,05"	303° 38' 48"	-19° 50' 41"	0,9841512	16' 15,08"	23° 26' 18"	-11m 17s
12:00	301° 27' 11"	0,06"	303° 41' 26"	-19° 50' 07"	0,9841547	16' 15,08"	23° 26' 18"	-11m 18s
13:00	301° 29' 43"	0,06"	303° 44' 04"	-19° 49' 33"	0,9841583	16' 15,08"	23° 26' 18"	-11m 18s
14:00	301° 32' 16"	0,07"	303° 46' 43"	-19° 48' 59"	0,9841619	16' 15,07"	23° 26' 18"	-11m 19s
15:00	301° 34' 49"	0,07"	303° 49' 21"	-19° 48' 26"	0,9841654	16' 15,07"	23° 26' 18"	-11m 20s
16:00	301° 37' 21"	0,08"	303° 51' 59"	-19° 47' 52"	0,9841690	16' 15,07"	23° 26' 18"	-11m 20s
17:00	301° 39' 54"	0,08"	303° 54' 37"	-19° 47' 18"	0,9841726	16' 15,06"	23° 26' 18"	-11m 21s
18:00	301° 42' 27"	0,09"	303° 57' 16"	-19° 46' 44"	0,9841762	16' 15,06"	23° 26' 18"	-11m 22s
19:00	301° 44' 59"	0,09"	303° 59' 54"	-19° 46' 10"	0,9841798	16' 15,06"	23° 26' 18"	-11m 22s
20:00	301° 47' 32"	0,10"	304° 02' 32"	-19° 45' 36"	0,9841834	16' 15,05"	23° 26' 18"	-11m 23s
21:00	301° 50' 05"	0,11"	304° 05' 10"	-19° 45' 02"	0,9841870	16' 15,05"	23° 26' 18"	-11m 24s
22:00	301° 52' 37"	0,11"	304° 07' 48"	-19° 44' 28"	0,9841906	16' 15,04"	23° 26' 18"	-11m 25s
23:00	301° 55' 10"	0,12"	304° 10' 26"	-19° 43' 54"	0,9841943	16' 15,04"	23° 26' 18"	-11m 25s
24:00	301° 57' 43"	0,12"	304° 13' 04"	-19° 43' 20"	0,9841979	16' 15,04"	23° 26' 18"	-11m 26s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	326° 19' 20"	-1° 10' 12"	328° 58' 06"	-13° 50' 34"	56' 29"	15' 23,41"	252° 31' 58"	4,86%
01:00	326° 51' 36"	-1° 07' 21"	329° 28' 18"	-13° 36' 51"	56' 30"	15' 23,74"	252° 16' 21"	5,05%
02:00	327° 23' 53"	-1° 04' 30"	329° 58' 29"	-13° 23' 05"	56' 31"	15' 24,07"	252° 01' 10"	5,24%
03:00	327° 56' 12"	-1° 01' 38"	330° 28' 37"	-13° 09' 14"	56' 33"	15' 24,40"	251° 46' 25"	5,43%
04:00	328° 28' 32"	-0° 58' 46"	330° 58' 43"	-12° 55' 19"	56' 34"	15' 24,73"	251° 32' 05"	5,63%
05:00	329° 00' 53"	-0° 55' 53"	331° 28' 46"	-12° 41' 21"	56' 35"	15' 25,07"	251° 18' 09"	5,83%
06:00	329° 33' 16"	-0° 53' 00"	331° 58' 48"	-12° 27' 18"	56' 36"	15' 25,40"	251° 04' 36"	6,03%
07:00	330° 05' 39"	-0° 50' 06"	332° 28' 47"	-12° 13' 12"	56' 38"	15' 25,73"	250° 51' 26"	6,24%
08:00	330° 38' 04"	-0° 47' 12"	332° 58' 45"	-11° 59' 01"	56' 39"	15' 26,06"	250° 38' 37"	6,45%
09:00	331° 10' 30"	-0° 44' 18"	333° 28' 40"	-11° 44' 47"	56' 40"	15' 26,40"	250° 26' 09"	6,67%
10:00	331° 42' 57"	-0° 41' 23"	333° 58' 33"	-11° 30' 29"	56' 41"	15' 26,73"	250° 14' 02"	6,89%
11:00	332° 15' 25"	-0° 38' 28"	334° 28' 25"	-11° 16' 08"	56' 42"	15' 27,06"	250° 02' 14"	7,11%
12:00	332° 47' 55"	-0° 35' 33"	334° 58' 14"	-11° 01' 43"	56' 44"	15' 27,39"	249° 50' 46"	7,34%
13:00	333° 20' 26"	-0° 32' 37"	335° 28' 02"	-10° 47' 15"	56' 45"	15' 27,73"	249° 39' 36"	7,56%
14:00	333° 52' 58"	-0° 29' 41"	335° 57' 48"	-10° 32' 43"	56' 46"	15' 28,06"	249° 28' 45"	7,80%
15:00	334° 25' 31"	-0° 26' 44"	336° 27' 33"	-10° 18' 08"	56' 47"	15' 28,39"	249° 18' 11"	8,03%
16:00	334° 58' 05"	-0° 23' 48"	336° 57' 16"	-10° 03' 29"	56' 49"	15' 28,72"	249° 07' 55"	8,27%
17:00	335° 30' 41"	-0° 20' 51"	337° 26' 57"	-9° 48' 48"	56' 50"	15' 29,06"	248° 57' 56"	8,51%
18:00	336° 03' 18"	-0° 17' 54"	337° 56' 37"	-9° 34' 03"	56' 51"	15' 29,39"	248° 48' 14"	8,76%
19:00	336° 35' 56"	-0° 14' 56"	338° 26' 15"	-9° 19' 15"	56' 52"	15' 29,72"	248° 38' 47"	9,01%
20:00	337° 08' 35"	-0° 11' 59"	338° 55' 52"	-9° 04' 24"	56' 53"	15' 30,05"	248° 29' 37"	9,26%
21:00	337° 41' 16"	-0° 09' 01"	339° 25' 28"	-8° 49' 30"	56' 55"	15' 30,39"	248° 20' 42"	9,52%
22:00	338° 13' 58"	-0° 06' 03"	339° 55' 02"	-8° 34' 33"	56' 56"	15' 30,72"	248° 12' 03"	9,78%
23:00	338° 46' 41"	-0° 03' 05"	340° 24' 35"	-8° 19' 34"	56' 57"	15' 31,05"	248° 03' 38"	10,04%
24:00	339° 19' 25"	-0° 00' 07"	340° 54' 07"	-8° 04' 31"	56' 58"	15' 31,39"	247° 55' 29"	10,31%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	301° 57' 43"	0,12"	304° 13' 04"	-19° 43' 20"	0,9841979	16' 15,04"	23° 26' 18"	-11m 26s
01:00	302° 00' 15"	0,13"	304° 15' 42"	-19° 42' 46"	0,9842015	16' 15,03"	23° 26' 18"	-11m 27s
02:00	302° 02' 48"	0,13"	304° 18' 20"	-19° 42' 12"	0,9842052	16' 15,03"	23° 26' 18"	-11m 27s
03:00	302° 05' 21"	0,14"	304° 20' 58"	-19° 41' 37"	0,9842088	16' 15,03"	23° 26' 18"	-11m 28s
04:00	302° 07' 53"	0,14"	304° 23' 36"	-19° 41' 03"	0,9842125	16' 15,02"	23° 26' 18"	-11m 29s
05:00	302° 10' 26"	0,15"	304° 26' 14"	-19° 40' 29"	0,9842161	16' 15,02"	23° 26' 18"	-11m 29s
06:00	302° 12' 59"	0,16"	304° 28' 52"	-19° 39' 54"	0,9842198	16' 15,02"	23° 26' 18"	-11m 30s
07:00	302° 15' 31"	0,16"	304° 31' 30"	-19° 39' 20"	0,9842235	16' 15,01"	23° 26' 18"	-11m 31s
08:00	302° 18' 04"	0,17"	304° 34' 08"	-19° 38' 45"	0,9842272	16' 15,01"	23° 26' 18"	-11m 31s
09:00	302° 20' 37"	0,17"	304° 36' 46"	-19° 38' 11"	0,9842309	16' 15,00"	23° 26' 18"	-11m 32s
10:00	302° 23' 09"	0,18"	304° 39' 24"	-19° 37' 36"	0,9842346	16' 15,00"	23° 26' 18"	-11m 33s
11:00	302° 25' 42"	0,18"	304° 42' 02"	-19° 37' 02"	0,9842383	16' 15,00"	23° 26' 18"	-11m 33s
12:00	302° 28' 14"	0,19"	304° 44' 40"	-19° 36' 27"	0,9842420	16' 14,99"	23° 26' 18"	-11m 34s
13:00	302° 30' 47"	0,19"	304° 47' 17"	-19° 35' 53"	0,9842457	16' 14,99"	23° 26' 18"	-11m 35s
14:00	302° 33' 20"	0,20"	304° 49' 55"	-19° 35' 18"	0,9842494	16' 14,99"	23° 26' 18"	-11m 35s
15:00	302° 35' 52"	0,21"	304° 52' 33"	-19° 34' 43"	0,9842532	16' 14,98"	23° 26' 18"	-11m 36s
16:00	302° 38' 25"	0,21"	304° 55' 11"	-19° 34' 09"	0,9842569	16' 14,98"	23° 26' 18"	-11m 37s
17:00	302° 40' 58"	0,22"	304° 57' 48"	-19° 33' 34"	0,9842606	16' 14,98"	23° 26' 18"	-11m 37s
18:00	302° 43' 30"	0,22"	305° 00' 26"	-19° 32' 59"	0,9842644	16' 14,97"	23° 26' 18"	-11m 38s
19:00	302° 46' 03"	0,23"	305° 03' 04"	-19° 32' 24"	0,9842681	16' 14,97"	23° 26' 18"	-11m 39s
20:00	302° 48' 36"	0,23"	305° 05' 42"	-19° 31' 49"	0,9842719	16' 14,96"	23° 26' 18"	-11m 39s
21:00	302° 51' 08"	0,24"	305° 08' 19"	-19° 31' 14"	0,9842757	16' 14,96"	23° 26' 18"	-11m 40s
22:00	302° 53' 41"	0,24"	305° 10' 57"	-19° 30' 39"	0,9842795	16' 14,96"	23° 26' 18"	-11m 41s
23:00	302° 56' 13"	0,25"	305° 13' 34"	-19° 30' 04"	0,9842832	16' 14,95"	23° 26' 18"	-11m 41s
24:00	302° 58' 46"	0,25"	305° 16' 12"	-19° 29' 29"	0,9842870	16' 14,95"	23° 26' 18"	-11m 42s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	339° 19' 25"	-0° 00' 07"	340° 54' 07"	-8° 04' 31"	56' 58"	15' 31,39"	247° 55' 29"	10,31%
01:00	339° 52' 11"	0° 02' 51"	341° 23' 38"	-7° 49' 26"	57' 00"	15' 31,72"	247° 47' 33"	10,58%
02:00	340° 24' 57"	0° 05' 50"	341° 53' 08"	-7° 34' 19"	57' 01"	15' 32,05"	247° 39' 52"	10,85%
03:00	340° 57' 45"	0° 08' 48"	342° 22' 36"	-7° 19' 08"	57' 02"	15' 32,38"	247° 32' 25"	11,13%
04:00	341° 30' 35"	0° 11' 47"	342° 52' 04"	-7° 03' 55"	57' 03"	15' 32,72"	247° 25' 12"	11,40%
05:00	342° 03' 25"	0° 14' 46"	343° 21' 32"	-6° 48' 40"	57' 04"	15' 33,05"	247° 18' 13"	11,69%
06:00	342° 36' 17"	0° 17' 44"	343° 50' 58"	-6° 33' 23"	57' 06"	15' 33,38"	247° 11' 26"	11,97%
07:00	343° 09' 10"	0° 20' 43"	344° 20' 24"	-6° 18' 03"	57' 07"	15' 33,71"	247° 04' 53"	12,26%
08:00	343° 42' 04"	0° 23' 42"	344° 49' 49"	-6° 02' 41"	57' 08"	15' 34,05"	246° 58' 34"	12,55%
09:00	344° 15' 00"	0° 26' 41"	345° 19' 13"	-5° 47' 16"	57' 09"	15' 34,38"	246° 52' 26"	12,85%
10:00	344° 47' 57"	0° 29' 40"	345° 48' 37"	-5° 31' 50"	57' 11"	15' 34,71"	246° 46' 32"	13,15%
11:00	345° 20' 55"	0° 32' 38"	346° 18' 01"	-5° 16' 21"	57' 12"	15' 35,05"	246° 40' 50"	13,45%
12:00	345° 53' 54"	0° 35' 37"	346° 47' 24"	-5° 00' 51"	57' 13"	15' 35,38"	246° 35' 21"	13,75%
13:00	346° 26' 55"	0° 38' 35"	347° 16' 47"	-4° 45' 18"	57' 14"	15' 35,71"	246° 30' 04"	14,06%
14:00	346° 59' 57"	0° 41' 34"	347° 46' 09"	-4° 29' 44"	57' 15"	15' 36,04"	246° 24' 59"	14,37%
15:00	347° 33' 00"	0° 44' 32"	348° 15' 32"	-4° 14' 08"	57' 17"	15' 36,38"	246° 20' 06"	14,68%
16:00	348° 06' 05"	0° 47' 31"	348° 44' 54"	-3° 58' 30"	57' 18"	15' 36,71"	246° 15' 25"	15,00%
17:00	348° 39' 11"	0° 50' 29"	349° 14' 17"	-3° 42' 51"	57' 19"	15' 37,04"	246° 10' 56"	15,32%
18:00	349° 12' 18"	0° 53' 27"	349° 43' 39"	-3° 27' 10"	57' 20"	15' 37,37"	246° 06' 38"	15,64%
19:00	349° 45' 26"	0° 56' 25"	350° 13' 02"	-3° 11' 28"	57' 22"	15' 37,70"	246° 02' 32"	15,97%
20:00	350° 18' 36"	0° 59' 22"	350° 42' 24"	-2° 55' 44"	57' 23"	15' 38,04"	245° 58' 38"	16,30%
21:00	350° 51' 47"	1° 02' 20"	351° 11' 47"	-2° 39' 59"	57' 24"	15' 38,37"	245° 54' 55"	16,63%
22:00	351° 24' 59"	1° 05' 17"	351° 41' 11"	-2° 24' 12"	57' 25"	15' 38,70"	245° 51' 23"	16,96%
23:00	351° 58' 13"	1° 08' 14"	352° 10' 34"	-2° 08' 24"	57' 26"	15' 39,03"	245° 48' 03"	17,30%
24:00	352° 31' 28"	1° 11' 10"	352° 39' 59"	-1° 52' 36"	57' 28"	15' 39,36"	245° 44' 54"	17,64%

23 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	302° 58' 46"	0,25"	305° 16' 12"	-19° 29' 29"	0,9842870	16' 14,95"	23° 26' 18"	-11m 42s
01:00	303° 01' 19"	0,26"	305° 18' 50"	-19° 28' 54"	0,9842908	16' 14,95"	23° 26' 18"	-11m 43s
02:00	303° 03' 51"	0,27"	305° 21' 27"	-19° 28' 19"	0,9842946	16' 14,94"	23° 26' 18"	-11m 43s
03:00	303° 06' 24"	0,27"	305° 24' 05"	-19° 27' 44"	0,9842984	16' 14,94"	23° 26' 18"	-11m 44s
04:00	303° 08' 57"	0,28"	305° 26' 42"	-19° 27' 09"	0,9843023	16' 14,93"	23° 26' 18"	-11m 44s
05:00	303° 11' 29"	0,28"	305° 29' 20"	-19° 26' 34"	0,9843061	16' 14,93"	23° 26' 18"	-11m 45s
06:00	303° 14' 02"	0,29"	305° 31' 57"	-19° 25' 58"	0,9843099	16' 14,93"	23° 26' 18"	-11m 46s
07:00	303° 16' 34"	0,29"	305° 34' 34"	-19° 25' 23"	0,9843138	16' 14,92"	23° 26' 18"	-11m 46s
08:00	303° 19' 07"	0,30"	305° 37' 12"	-19° 24' 48"	0,9843176	16' 14,92"	23° 26' 18"	-11m 47s
09:00	303° 21' 40"	0,30"	305° 39' 49"	-19° 24' 12"	0,9843215	16' 14,92"	23° 26' 18"	-11m 48s
10:00	303° 24' 12"	0,31"	305° 42' 27"	-19° 23' 37"	0,9843253	16' 14,91"	23° 26' 18"	-11m 48s
11:00	303° 26' 45"	0,31"	305° 45' 04"	-19° 23' 01"	0,9843292	16' 14,91"	23° 26' 18"	-11m 49s
12:00	303° 29' 17"	0,32"	305° 47' 41"	-19° 22' 26"	0,9843331	16' 14,90"	23° 26' 18"	-11m 50s
13:00	303° 31' 50"	0,32"	305° 50' 19"	-19° 21' 50"	0,9843369	16' 14,90"	23° 26' 18"	-11m 50s
14:00	303° 34' 23"	0,33"	305° 52' 56"	-19° 21' 15"	0,9843408	16' 14,90"	23° 26' 18"	-11m 51s
15:00	303° 36' 55"	0,33"	305° 55' 33"	-19° 20' 39"	0,9843447	16' 14,89"	23° 26' 18"	-11m 51s
16:00	303° 39' 28"	0,34"	305° 58' 10"	-19° 20' 04"	0,9843486	16' 14,89"	23° 26' 18"	-11m 52s
17:00	303° 42' 00"	0,34"	306° 00' 48"	-19° 19' 28"	0,9843525	16' 14,88"	23° 26' 18"	-11m 53s
18:00	303° 44' 33"	0,35"	306° 03' 25"	-19° 18' 52"	0,9843564	16' 14,88"	23° 26' 18"	-11m 53s
19:00	303° 47' 06"	0,36"	306° 06' 02"	-19° 18' 16"	0,9843604	16' 14,88"	23° 26' 18"	-11m 54s
20:00	303° 49' 38"	0,36"	306° 08' 39"	-19° 17' 41"	0,9843643	16' 14,87"	23° 26' 18"	-11m 55s
21:00	303° 52' 11"	0,37"	306° 11' 16"	-19° 17' 05"	0,9843682	16' 14,87"	23° 26' 18"	-11m 55s
22:00	303° 54' 43"	0,37"	306° 13' 54"	-19° 16' 29"	0,9843722	16' 14,87"	23° 26' 18"	-11m 56s
23:00	303° 57' 16"	0,38"	306° 16' 31"	-19° 15' 53"	0,9843761	16' 14,86"	23° 26' 18"	-11m 56s
24:00	303° 59' 48"	0,38"	306° 19' 08"	-19° 15' 17"	0,9843801	16' 14,86"	23° 26' 18"	-11m 57s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	352° 31' 28"	1° 11' 10"	352° 39' 59"	-1° 52' 36"	57' 28"	15' 39,36"	245° 44' 54"	17,64%
01:00	353° 04' 44"	1° 14' 07"	353° 09' 24"	-1° 36' 46"	57' 29"	15' 39,70"	245° 41' 56"	17,98%
02:00	353° 38' 01"	1° 17' 03"	353° 38' 49"	-1° 20' 55"	57' 30"	15' 40,03"	245° 39' 08"	18,33%
03:00	354° 11' 20"	1° 19' 59"	354° 08' 15"	-1° 05' 03"	57' 31"	15' 40,36"	245° 36' 32"	18,68%
04:00	354° 44' 40"	1° 22' 54"	354° 37' 42"	-0° 49' 10"	57' 32"	15' 40,69"	245° 34' 07"	19,03%
05:00	355° 18' 02"	1° 25' 49"	355° 07' 10"	-0° 33' 16"	57' 34"	15' 41,02"	245° 31' 53"	19,38%
06:00	355° 51' 25"	1° 28' 44"	355° 36' 39"	-0° 17' 21"	57' 35"	15' 41,35"	245° 29' 49"	19,74%
07:00	356° 24' 49"	1° 31' 38"	356° 06' 09"	-0° 01' 26"	57' 36"	15' 41,69"	245° 27' 56"	20,10%
08:00	356° 58' 15"	1° 34' 32"	356° 35' 40"	0° 14' 30"	57' 37"	15' 42,02"	245° 26' 14"	20,46%
09:00	357° 31' 41"	1° 37' 26"	357° 05' 12"	0° 30' 26"	57' 39"	15' 42,35"	245° 24' 42"	20,83%
10:00	358° 05' 10"	1° 40' 19"	357° 34' 45"	0° 46' 23"	57' 40"	15' 42,68"	245° 23' 21"	21,19%
11:00	358° 38' 39"	1° 43' 12"	358° 04' 20"	1° 02' 20"	57' 41"	15' 43,01"	245° 22' 11"	21,56%
12:00	359° 12' 10"	1° 46' 04"	358° 33' 56"	1° 18' 17"	57' 42"	15' 43,34"	245° 21' 11"	21,94%
13:00	359° 45' 42"	1° 48' 55"	359° 03' 33"	1° 34' 15"	57' 43"	15' 43,67"	245° 20' 21"	22,31%
14:00	0° 19' 16"	1° 51' 47"	359° 33' 12"	1° 50' 13"	57' 45"	15' 44,00"	245° 19' 42"	22,69%
15:00	0° 52' 51"	1° 54' 37"	0° 02' 53"	2° 06' 11"	57' 46"	15' 44,33"	245° 19' 13"	23,07%
16:00	1° 26' 28"	1° 57' 27"	0° 32' 35"	2° 22' 09"	57' 47"	15' 44,66"	245° 18' 55"	23,45%
17:00	2° 00' 05"	2° 00' 17"	1° 02' 20"	2° 38' 07"	57' 48"	15' 44,99"	245° 18' 47"	23,84%
18:00	2° 33' 44"	2° 03' 06"	1° 32' 06"	2° 54' 05"	57' 49"	15' 45,32"	245° 18' 49"	24,22%
19:00	3° 07' 25"	2° 05' 54"	2° 01' 54"	3° 10' 03"	57' 51"	15' 45,65"	245° 19' 02"	24,61%
20:00	3° 41' 07"	2° 08' 42"	2° 31' 44"	3° 26' 01"	57' 52"	15' 45,98"	245° 19' 25"	25,01%
21:00	4° 14' 50"	2° 11' 29"	3° 01' 36"	3° 41' 58"	57' 53"	15' 46,31"	245° 19' 58"	25,40%
22:00	4° 48' 35"	2° 14' 16"	3° 31' 30"	3° 57' 55"	57' 54"	15' 46,64"	245° 20' 41"	25,80%
23:00	5° 22' 21"	2° 17' 02"	4° 01' 27"	4° 13' 51"	57' 56"	15' 46,97"	245° 21' 35"	26,20%
24:00	5° 56' 08"	2° 19' 47"	4° 31' 26"	4° 29' 47"	57' 57"	15' 47,30"	245° 22' 38"	26,60%

24 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	303° 59' 48"	0,38"	306° 19' 08"	-19° 15' 17"	0,9843801	16' 14,86"	23° 26' 18"	-11m 57s
01:00	304° 02' 21"	0,39"	306° 21' 45"	-19° 14' 41"	0,9843840	16' 14,85"	23° 26' 18"	-11m 58s
02:00	304° 04' 54"	0,39"	306° 24' 22"	-19° 14' 05"	0,9843880	16' 14,85"	23° 26' 18"	-11m 58s
03:00	304° 07' 26"	0,40"	306° 26' 59"	-19° 13' 29"	0,9843920	16' 14,85"	23° 26' 18"	-11m 59s
04:00	304° 09' 59"	0,40"	306° 29' 36"	-19° 12' 53"	0,9843960	16' 14,84"	23° 26' 18"	-11m 59s
05:00	304° 12' 31"	0,40"	306° 32' 13"	-19° 12' 17"	0,9844000	16' 14,84"	23° 26' 18"	-12m 00s
06:00	304° 15' 04"	0,41"	306° 34' 50"	-19° 11' 41"	0,9844040	16' 14,83"	23° 26' 18"	-12m 01s
07:00	304° 17' 37"	0,41"	306° 37' 27"	-19° 11' 05"	0,9844080	16' 14,83"	23° 26' 18"	-12m 01s
08:00	304° 20' 09"	0,42"	306° 40' 04"	-19° 10' 28"	0,9844120	16' 14,83"	23° 26' 18"	-12m 02s
09:00	304° 22' 42"	0,42"	306° 42' 41"	-19° 09' 52"	0,9844160	16' 14,82"	23° 26' 18"	-12m 03s
10:00	304° 25' 14"	0,43"	306° 45' 17"	-19° 09' 16"	0,9844200	16' 14,82"	23° 26' 18"	-12m 03s
11:00	304° 27' 47"	0,43"	306° 47' 54"	-19° 08' 40"	0,9844241	16' 14,81"	23° 26' 18"	-12m 04s
12:00	304° 30' 19"	0,44"	306° 50' 31"	-19° 08' 03"	0,9844281	16' 14,81"	23° 26' 18"	-12m 04s
13:00	304° 32' 52"	0,44"	306° 53' 08"	-19° 07' 27"	0,9844321	16' 14,81"	23° 26' 18"	-12m 05s
14:00	304° 35' 24"	0,45"	306° 55' 45"	-19° 06' 50"	0,9844362	16' 14,80"	23° 26' 18"	-12m 06s
15:00	304° 37' 57"	0,45"	306° 58' 21"	-19° 06' 14"	0,9844403	16' 14,80"	23° 26' 18"	-12m 06s
16:00	304° 40' 30"	0,46"	307° 00' 58"	-19° 05' 37"	0,9844443	16' 14,79"	23° 26' 18"	-12m 07s
17:00	304° 43' 02"	0,46"	307° 03' 35"	-19° 05' 01"	0,9844484	16' 14,79"	23° 26' 18"	-12m 07s
18:00	304° 45' 35"	0,47"	307° 06' 12"	-19° 04' 24"	0,9844525	16' 14,79"	23° 26' 18"	-12m 08s
19:00	304° 48' 07"	0,47"	307° 08' 48"	-19° 03' 48"	0,9844566	16' 14,78"	23° 26' 18"	-12m 08s
20:00	304° 50' 40"	0,47"	307° 11' 25"	-19° 03' 11"	0,9844607	16' 14,78"	23° 26' 18"	-12m 09s
21:00	304° 53' 12"	0,48"	307° 14' 02"	-19° 02' 34"	0,9844648	16' 14,77"	23° 26' 18"	-12m 10s
22:00	304° 55' 45"	0,48"	307° 16' 38"	-19° 01' 57"	0,9844689	16' 14,77"	23° 26' 18"	-12m 10s
23:00	304° 58' 17"	0,49"	307° 19' 15"	-19° 01' 21"	0,9844731	16' 14,77"	23° 26' 18"	-12m 11s
24:00	305° 00' 50"	0,49"	307° 21' 51"	-19° 00' 44"	0,9844772	16' 14,76"	23° 26' 18"	-12m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	5° 56' 08"	2° 19' 47"	4° 31' 26"	4° 29' 47"	57' 57"	15' 47,30"	245° 22' 38"	26,60%
01:00	6° 29' 57"	2° 22' 31"	5° 01' 27"	4° 45' 42"	57' 58"	15' 47,62"	245° 23' 52"	27,00%
02:00	7° 03' 48"	2° 25' 15"	5° 31' 31"	5° 01' 36"	57' 59"	15' 47,95"	245° 25' 16"	27,41%
03:00	7° 37' 39"	2° 27' 58"	6° 01' 38"	5° 17' 30"	58' 00"	15' 48,28"	245° 26' 51"	27,82%
04:00	8° 11' 32"	2° 30' 41"	6° 31' 47"	5° 33' 23"	58' 02"	15' 48,61"	245° 28' 35"	28,23%
05:00	8° 45' 27"	2° 33' 22"	7° 01' 59"	5° 49' 15"	58' 03"	15' 48,93"	245° 30' 29"	28,64%
06:00	9° 19' 23"	2° 36' 03"	7° 32' 14"	6° 05' 06"	58' 04"	15' 49,26"	245° 32' 34"	29,05%
07:00	9° 53' 20"	2° 38' 43"	8° 02' 32"	6° 20' 56"	58' 05"	15' 49,59"	245° 34' 49"	29,47%
08:00	10° 27' 19"	2° 41' 22"	8° 32' 52"	6° 36' 44"	58' 06"	15' 49,92"	245° 37' 13"	29,89%
09:00	11° 01' 19"	2° 44' 00"	9° 03' 16"	6° 52' 32"	58' 08"	15' 50,24"	245° 39' 48"	30,31%
10:00	11° 35' 21"	2° 46' 37"	9° 33' 43"	7° 08' 18"	58' 09"	15' 50,57"	245° 42' 33"	30,73%
11:00	12° 09' 24"	2° 49' 14"	10° 04' 13"	7° 24' 03"	58' 10"	15' 50,89"	245° 45' 28"	31,15%
12:00	12° 43' 28"	2° 51' 50"	10° 34' 47"	7° 39' 46"	58' 11"	15' 51,22"	245° 48' 34"	31,58%
13:00	13° 17' 34"	2° 54' 24"	11° 05' 24"	7° 55' 28"	58' 12"	15' 51,54"	245° 51' 49"	32,01%
14:00	13° 51' 41"	2° 56' 58"	11° 36' 04"	8° 11' 08"	58' 13"	15' 51,87"	245° 55' 14"	32,44%
15:00	14° 25' 50"	2° 59' 31"	12° 06' 48"	8° 26' 46"	58' 15"	15' 52,19"	245° 58' 50"	32,87%
16:00	15° 00' 00"	3° 02' 03"	12° 37' 36"	8° 42' 22"	58' 16"	15' 52,51"	246° 02' 35"	33,30%
17:00	15° 34' 12"	3° 04' 34"	13° 08' 27"	8° 57' 57"	58' 17"	15' 52,84"	246° 06' 31"	33,74%
18:00	16° 08' 25"	3° 07' 04"	13° 39' 23"	9° 13' 30"	58' 18"	15' 53,16"	246° 10' 37"	34,17%
19:00	16° 42' 40"	3° 09' 33"	14° 10' 22"	9° 29' 00"	58' 19"	15' 53,48"	246° 14' 53"	34,61%
20:00	17° 16' 56"	3° 12' 01"	14° 41' 25"	9° 44' 29"	58' 21"	15' 53,81"	246° 19' 19"	35,05%
21:00	17° 51' 13"	3° 14' 27"	15° 12' 32"	9° 59' 55"	58' 22"	15' 54,13"	246° 23' 55"	35,49%
22:00	18° 25' 32"	3° 16' 53"	15° 43' 43"	10° 15' 19"	58' 23"	15' 54,45"	246° 28' 41"	35,94%
23:00	18° 59' 53"	3° 19' 18"	16° 14' 58"	10° 30' 40"	58' 24"	15' 54,77"	246° 33' 38"	36,38%
24:00	19° 34' 15"	3° 21' 41"	16° 46' 18"	10° 45' 59"	58' 25"	15' 55,09"	246° 38' 44"	36,83%

25 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	305° 00' 50"	0,49"	307° 21' 51"	-19° 00' 44"	0,9844772	16' 14,76"	23° 26' 18"	-12m 11s
01:00	305° 03' 22"	0,50"	307° 24' 28"	-19° 00' 07"	0,9844813	16' 14,76"	23° 26' 18"	-12m 12s
02:00	305° 05' 55"	0,50"	307° 27' 05"	-18° 59' 30"	0,9844855	16' 14,75"	23° 26' 18"	-12m 13s
03:00	305° 08' 28"	0,50"	307° 29' 41"	-18° 58' 53"	0,9844896	16' 14,75"	23° 26' 18"	-12m 13s
04:00	305° 11' 00"	0,51"	307° 32' 18"	-18° 58' 16"	0,9844938	16' 14,74"	23° 26' 18"	-12m 14s
05:00	305° 13' 33"	0,51"	307° 34' 54"	-18° 57' 39"	0,9844980	16' 14,74"	23° 26' 18"	-12m 14s
06:00	305° 16' 05"	0,52"	307° 37' 30"	-18° 57' 02"	0,9845021	16' 14,74"	23° 26' 18"	-12m 15s
07:00	305° 18' 38"	0,52"	307° 40' 07"	-18° 56' 25"	0,9845063	16' 14,73"	23° 26' 18"	-12m 15s
08:00	305° 21' 10"	0,52"	307° 42' 43"	-18° 55' 48"	0,9845105	16' 14,73"	23° 26' 18"	-12m 16s
09:00	305° 23' 43"	0,53"	307° 45' 20"	-18° 55' 11"	0,9845147	16' 14,72"	23° 26' 18"	-12m 17s
10:00	305° 26' 15"	0,53"	307° 47' 56"	-18° 54' 34"	0,9845189	16' 14,72"	23° 26' 18"	-12m 17s
11:00	305° 28' 48"	0,53"	307° 50' 32"	-18° 53' 57"	0,9845231	16' 14,72"	23° 26' 18"	-12m 18s
12:00	305° 31' 20"	0,54"	307° 53' 09"	-18° 53' 19"	0,9845274	16' 14,71"	23° 26' 18"	-12m 18s
13:00	305° 33' 53"	0,54"	307° 55' 45"	-18° 52' 42"	0,9845316	16' 14,71"	23° 26' 18"	-12m 19s
14:00	305° 36' 25"	0,55"	307° 58' 21"	-18° 52' 05"	0,9845358	16' 14,70"	23° 26' 18"	-12m 19s
15:00	305° 38' 58"	0,55"	308° 00' 58"	-18° 51' 27"	0,9845401	16' 14,70"	23° 26' 18"	-12m 20s
16:00	305° 41' 30"	0,55"	308° 03' 34"	-18° 50' 50"	0,9845443	16' 14,69"	23° 26' 18"	-12m 21s
17:00	305° 44' 03"	0,56"	308° 06' 10"	-18° 50' 13"	0,9845486	16' 14,69"	23° 26' 18"	-12m 21s
18:00	305° 46' 35"	0,56"	308° 08' 46"	-18° 49' 35"	0,9845529	16' 14,69"	23° 26' 18"	-12m 22s
19:00	305° 49' 08"	0,56"	308° 11' 22"	-18° 48' 58"	0,9845571	16' 14,68"	23° 26' 18"	-12m 22s
20:00	305° 51' 40"	0,57"	308° 13' 59"	-18° 48' 20"	0,9845614	16' 14,68"	23° 26' 18"	-12m 23s
21:00	305° 54' 13"	0,57"	308° 16' 35"	-18° 47' 43"	0,9845657	16' 14,67"	23° 26' 18"	-12m 23s
22:00	305° 56' 45"	0,57"	308° 19' 11"	-18° 47' 05"	0,9845700	16' 14,67"	23° 26' 18"	-12m 24s
23:00	305° 59' 18"	0,58"	308° 21' 47"	-18° 46' 27"	0,9845743	16' 14,66"	23° 26' 18"	-12m 24s
24:00	306° 01' 50"	0,58"	308° 24' 23"	-18° 45' 50"	0,9845786	16' 14,66"	23° 26' 18"	-12m 25s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	19° 34' 15"	3° 21' 41"	16° 46' 18"	10° 45' 59"	58' 25"	15' 55,09"	246° 38' 44"	36,83%
01:00	20° 08' 38"	3° 24' 04"	17° 17' 42"	11° 01' 16"	58' 26"	15' 55,41"	246° 44' 01"	37,27%
02:00	20° 43' 03"	3° 26' 25"	17° 49' 11"	11° 16' 30"	58' 28"	15' 55,73"	246° 49' 28"	37,72%
03:00	21° 17' 29"	3° 28' 46"	18° 20' 44"	11° 31' 41"	58' 29"	15' 56,04"	246° 55' 05"	38,17%
04:00	21° 51' 57"	3° 31' 05"	18° 52' 21"	11° 46' 49"	58' 30"	15' 56,36"	247° 00' 52"	38,62%
05:00	22° 26' 26"	3° 33' 22"	19° 24' 04"	12° 01' 54"	58' 31"	15' 56,68"	247° 06' 50"	39,08%
06:00	23° 00' 57"	3° 35' 39"	19° 55' 51"	12° 16' 56"	58' 32"	15' 56,99"	247° 12' 58"	39,53%
07:00	23° 35' 29"	3° 37' 55"	20° 27' 43"	12° 31' 56"	58' 33"	15' 57,31"	247° 19' 16"	39,99%
08:00	24° 10' 02"	3° 40' 09"	20° 59' 40"	12° 46' 52"	58' 35"	15' 57,63"	247° 25' 44"	40,44%
09:00	24° 44' 37"	3° 42' 22"	21° 31' 41"	13° 01' 44"	58' 36"	15' 57,94"	247° 32' 22"	40,90%
10:00	25° 19' 14"	3° 44' 34"	22° 03' 48"	13° 16' 34"	58' 37"	15' 58,25"	247° 39' 11"	41,36%
11:00	25° 53' 52"	3° 46' 44"	22° 36' 00"	13° 31' 19"	58' 38"	15' 58,57"	247° 46' 10"	41,82%
12:00	26° 28' 32"	3° 48' 53"	23° 08' 17"	13° 46' 02"	58' 39"	15' 58,88"	247° 53' 19"	42,28%
13:00	27° 03' 13"	3° 51' 01"	23° 40' 40"	14° 00' 40"	58' 40"	15' 59,19"	248° 00' 38"	42,74%
14:00	27° 37' 55"	3° 53' 08"	24° 13' 07"	14° 15' 15"	58' 42"	15' 59,50"	248° 08' 08"	43,20%
15:00	28° 12' 39"	3° 55' 13"	24° 45' 41"	14° 29' 46"	58' 43"	16' 00,00"	248° 15' 48"	43,67%
16:00	28° 47' 24"	3° 57' 17"	25° 18' 19"	14° 44' 13"	58' 44"	16' 00,12"	248° 23' 38"	44,13%
17:00	29° 22' 11"	3° 59' 19"	25° 51' 03"	14° 58' 36"	58' 45"	16' 00,42"	248° 31' 39"	44,60%
18:00	29° 57' 00"	4° 01' 20"	26° 23' 53"	15° 12' 55"	58' 46"	16' 00,73"	248° 39' 50"	45,06%
19:00	30° 31' 49"	4° 03' 20"	26° 56' 49"	15° 27' 09"	58' 47"	16' 01,04"	248° 48' 11"	45,53%
20:00	31° 06' 41"	4° 05' 18"	27° 29' 50"	15° 41' 20"	58' 48"	16' 01,34"	248° 56' 43"	46,00%
21:00	31° 41' 33"	4° 07' 15"	28° 02' 57"	15° 55' 25"	58' 49"	16' 01,64"	249° 05' 25"	46,46%
22:00	32° 16' 28"	4° 09' 10"	28° 36' 10"	16° 09' 27"	58' 50"	16' 01,95"	249° 14' 18"	46,93%
23:00	32° 51' 23"	4° 11' 04"	29° 09' 29"	16° 23' 23"	58' 52"	16' 02,25"	249° 23' 20"	47,40%
24:00	33° 26' 20"	4° 12' 56"	29° 42' 54"	16° 37' 15"	58' 53"	16' 02,55"	249° 32' 33"	47,87%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	306° 01' 50"	0,58"	308° 24' 23"	-18° 45' 50"	0,9845786	16' 14,66"	23° 26' 18"	-12m 25s
01:00	306° 04' 23"	0,58"	308° 26' 59"	-18° 45' 12"	0,9845830	16' 14,66"	23° 26' 18"	-12m 25s
02:00	306° 06' 55"	0,59"	308° 29' 35"	-18° 44' 34"	0,9845873	16' 14,65"	23° 26' 18"	-12m 26s
03:00	306° 09' 28"	0,59"	308° 32' 11"	-18° 43' 56"	0,9845916	16' 14,65"	23° 26' 18"	-12m 27s
04:00	306° 12' 00"	0,59"	308° 34' 47"	-18° 43' 19"	0,9845960	16' 14,64"	23° 26' 18"	-12m 27s
05:00	306° 14' 33"	0,60"	308° 37' 23"	-18° 42' 41"	0,9846003	16' 14,64"	23° 26' 18"	-12m 28s
06:00	306° 17' 05"	0,60"	308° 39' 59"	-18° 42' 03"	0,9846047	16' 14,63"	23° 26' 18"	-12m 28s
07:00	306° 19' 38"	0,60"	308° 42' 35"	-18° 41' 25"	0,9846091	16' 14,63"	23° 26' 18"	-12m 29s
08:00	306° 22' 10"	0,60"	308° 45' 11"	-18° 40' 47"	0,9846135	16' 14,63"	23° 26' 18"	-12m 29s
09:00	306° 24' 43"	0,61"	308° 47' 47"	-18° 40' 09"	0,9846179	16' 14,62"	23° 26' 18"	-12m 30s
10:00	306° 27' 15"	0,61"	308° 50' 22"	-18° 39' 31"	0,9846223	16' 14,62"	23° 26' 18"	-12m 30s
11:00	306° 29' 48"	0,61"	308° 52' 58"	-18° 38' 53"	0,9846267	16' 14,61"	23° 26' 18"	-12m 31s
12:00	306° 32' 20"	0,61"	308° 55' 34"	-18° 38' 15"	0,9846311	16' 14,61"	23° 26' 18"	-12m 31s
13:00	306° 34' 53"	0,62"	308° 58' 10"	-18° 37' 37"	0,9846355	16' 14,60"	23° 26' 18"	-12m 32s
14:00	306° 37' 25"	0,62"	309° 00' 46"	-18° 36' 59"	0,9846399	16' 14,60"	23° 26' 18"	-12m 32s
15:00	306° 39' 58"	0,62"	309° 03' 21"	-18° 36' 20"	0,9846444	16' 14,60"	23° 26' 18"	-12m 33s
16:00	306° 42' 30"	0,62"	309° 05' 57"	-18° 35' 42"	0,9846488	16' 14,59"	23° 26' 18"	-12m 34s
17:00	306° 45' 02"	0,63"	309° 08' 33"	-18° 35' 04"	0,9846533	16' 14,59"	23° 26' 18"	-12m 34s
18:00	306° 47' 35"	0,63"	309° 11' 09"	-18° 34' 26"	0,9846578	16' 14,58"	23° 26' 18"	-12m 35s
19:00	306° 50' 07"	0,63"	309° 13' 44"	-18° 33' 47"	0,9846622	16' 14,58"	23° 26' 18"	-12m 35s
20:00	306° 52' 40"	0,63"	309° 16' 20"	-18° 33' 09"	0,9846667	16' 14,57"	23° 26' 18"	-12m 36s
21:00	306° 55' 12"	0,64"	309° 18' 55"	-18° 32' 30"	0,9846712	16' 14,57"	23° 26' 18"	-12m 36s
22:00	306° 57' 45"	0,64"	309° 21' 31"	-18° 31' 52"	0,9846757	16' 14,56"	23° 26' 18"	-12m 37s
23:00	307° 00' 17"	0,64"	309° 24' 07"	-18° 31' 14"	0,9846802	16' 14,56"	23° 26' 18"	-12m 37s
24:00	307° 02' 50"	0,64"	309° 26' 42"	-18° 30' 35"	0,9846847	16' 14,56"	23° 26' 18"	-12m 38s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	33° 26' 20"	4° 12' 56"	29° 42' 54"	16° 37' 15"	58' 53"	16' 02,55"	249° 32' 33"	47,87%
01:00	34° 01' 19"	4° 14' 47"	30° 16' 24"	16° 51' 02"	58' 54"	16' 02,85"	249° 41' 57"	48,34%
02:00	34° 36' 19"	4° 16' 37"	30° 50' 01"	17° 04' 44"	58' 55"	16' 03,14"	249° 51' 31"	48,81%
03:00	35° 11' 20"	4° 18' 25"	31° 23' 45"	17° 18' 21"	58' 56"	16' 03,44"	250° 01' 15"	49,28%
04:00	35° 46' 23"	4° 20' 11"	31° 57' 34"	17° 31' 53"	58' 57"	16' 03,74"	250° 11' 10"	49,75%
05:00	36° 21' 28"	4° 21' 56"	32° 31' 30"	17° 45' 20"	58' 58"	16' 04,03"	250° 21' 15"	50,23%
06:00	36° 56' 34"	4° 23' 39"	33° 05' 32"	17° 58' 41"	58' 59"	16' 04,32"	250° 31' 31"	50,70%
07:00	37° 31' 41"	4° 25' 21"	33° 39' 40"	18° 11' 57"	59' 00"	16' 04,62"	250° 41' 57"	51,17%
08:00	38° 06' 50"	4° 27' 01"	34° 13' 55"	18° 25' 07"	59' 01"	16' 04,91"	250° 52' 33"	51,64%
09:00	38° 42' 00"	4° 28' 39"	34° 48' 16"	18° 38' 12"	59' 02"	16' 05,19"	251° 03' 20"	52,12%
10:00	39° 17' 11"	4° 30' 16"	35° 22' 44"	18° 51' 10"	59' 03"	16' 05,48"	251° 14' 17"	52,59%
11:00	39° 52' 24"	4° 31' 51"	35° 57' 19"	19° 04' 03"	59' 05"	16' 05,77"	251° 25' 25"	53,06%
12:00	40° 27' 39"	4° 33' 25"	36° 32' 00"	19° 16' 50"	59' 06"	16' 06,05"	251° 36' 43"	53,53%
13:00	41° 02' 55"	4° 34' 56"	37° 06' 47"	19° 29' 31"	59' 07"	16' 06,33"	251° 48' 11"	54,01%
14:00	41° 38' 12"	4° 36' 27"	37° 41' 41"	19° 42' 05"	59' 08"	16' 06,61"	251° 59' 50"	54,48%
15:00	42° 13' 31"	4° 37' 55"	38° 16' 43"	19° 54' 34"	59' 09"	16' 06,89"	252° 11' 39"	54,95%
16:00	42° 48' 51"	4° 39' 22"	38° 51' 50"	20° 06' 55"	59' 10"	16' 07,17"	252° 23' 39"	55,42%
17:00	43° 24' 12"	4° 40' 47"	39° 27' 05"	20° 19' 10"	59' 11"	16' 07,45"	252° 35' 48"	55,90%
18:00	43° 59' 35"	4° 42' 10"	40° 02' 26"	20° 31' 19"	59' 12"	16' 07,72"	252° 48' 09"	56,37%
19:00	44° 34' 59"	4° 43' 32"	40° 37' 55"	20° 43' 21"	59' 13"	16' 07,99"	253° 00' 39"	56,84%
20:00	45° 10' 25"	4° 44' 52"	41° 13' 30"	20° 55' 16"	59' 14"	16' 08,26"	253° 13' 20"	57,31%
21:00	45° 45' 52"	4° 46' 10"	41° 49' 12"	21° 07' 04"	59' 15"	16' 08,53"	253° 26' 11"	57,78%
22:00	46° 21' 20"	4° 47' 26"	42° 25' 00"	21° 18' 45"	59' 16"	16' 08,80"	253° 39' 12"	58,25%
23:00	46° 56' 49"	4° 48' 41"	43° 00' 56"	21° 30' 18"	59' 17"	16' 09,06"	253° 52' 24"	58,72%
24:00	47° 32' 20"	4° 49' 54"	43° 36' 59"	21° 41' 44"	59' 18"	16' 09,32"	254° 05' 46"	59,19%

27 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	307° 02' 50"	0,64"	309° 26' 42"	-18° 30' 35"	0,9846847	16' 14,56"	23° 26' 18"	-12m 38s
01:00	307° 05' 22"	0,64"	309° 29' 18"	-18° 29' 56"	0,9846892	16' 14,55"	23° 26' 18"	-12m 38s
02:00	307° 07' 55"	0,65"	309° 31' 53"	-18° 29' 18"	0,9846938	16' 14,55"	23° 26' 18"	-12m 39s
03:00	307° 10' 27"	0,65"	309° 34' 29"	-18° 28' 39"	0,9846983	16' 14,54"	23° 26' 18"	-12m 39s
04:00	307° 12' 59"	0,65"	309° 37' 04"	-18° 28' 01"	0,9847029	16' 14,54"	23° 26' 18"	-12m 40s
05:00	307° 15' 32"	0,65"	309° 39' 40"	-18° 27' 22"	0,9847074	16' 14,53"	23° 26' 18"	-12m 40s
06:00	307° 18' 04"	0,65"	309° 42' 15"	-18° 26' 43"	0,9847120	16' 14,53"	23° 26' 18"	-12m 41s
07:00	307° 20' 37"	0,65"	309° 44' 50"	-18° 26' 04"	0,9847166	16' 14,52"	23° 26' 18"	-12m 41s
08:00	307° 23' 09"	0,66"	309° 47' 26"	-18° 25' 26"	0,9847212	16' 14,52"	23° 26' 18"	-12m 42s
09:00	307° 25' 42"	0,66"	309° 50' 01"	-18° 24' 47"	0,9847258	16' 14,51"	23° 26' 18"	-12m 42s
10:00	307° 28' 14"	0,66"	309° 52' 37"	-18° 24' 08"	0,9847304	16' 14,51"	23° 26' 18"	-12m 43s
11:00	307° 30' 46"	0,66"	309° 55' 12"	-18° 23' 29"	0,9847350	16' 14,51"	23° 26' 18"	-12m 43s
12:00	307° 33' 19"	0,66"	309° 57' 47"	-18° 22' 50"	0,9847396	16' 14,50"	23° 26' 18"	-12m 44s
13:00	307° 35' 51"	0,66"	310° 00' 22"	-18° 22' 11"	0,9847442	16' 14,50"	23° 26' 18"	-12m 44s
14:00	307° 38' 24"	0,66"	310° 02' 58"	-18° 21' 32"	0,9847489	16' 14,49"	23° 26' 18"	-12m 45s
15:00	307° 40' 56"	0,66"	310° 05' 33"	-18° 20' 53"	0,9847535	16' 14,49"	23° 26' 18"	-12m 45s
16:00	307° 43' 29"	0,67"	310° 08' 08"	-18° 20' 14"	0,9847582	16' 14,48"	23° 26' 18"	-12m 46s
17:00	307° 46' 01"	0,67"	310° 10' 43"	-18° 19' 35"	0,9847628	16' 14,48"	23° 26' 18"	-12m 46s
18:00	307° 48' 33"	0,67"	310° 13' 19"	-18° 18' 56"	0,9847675	16' 14,47"	23° 26' 18"	-12m 47s
19:00	307° 51' 06"	0,67"	310° 15' 54"	-18° 18' 17"	0,9847722	16' 14,47"	23° 26' 18"	-12m 47s
20:00	307° 53' 38"	0,67"	310° 18' 29"	-18° 17' 38"	0,9847769	16' 14,46"	23° 26' 18"	-12m 48s
21:00	307° 56' 11"	0,67"	310° 21' 04"	-18° 16' 58"	0,9847816	16' 14,46"	23° 26' 18"	-12m 48s
22:00	307° 58' 43"	0,67"	310° 23' 39"	-18° 16' 19"	0,9847863	16' 14,46"	23° 26' 18"	-12m 49s
23:00	308° 01' 15"	0,67"	310° 26' 14"	-18° 15' 40"	0,9847910	16' 14,45"	23° 26' 18"	-12m 49s
24:00	308° 03' 48"	0,67"	310° 28' 49"	-18° 15' 00"	0,9847957	16' 14,45"	23° 26' 18"	-12m 50s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	47° 32' 20"	4° 49' 54"	43° 36' 59"	21° 41' 44"	59' 18"	16' 09,32"	254° 05' 46"	59,19%
01:00	48° 07' 53"	4° 51' 04"	44° 13' 08"	21° 53' 03"	59' 19"	16' 09,58"	254° 19' 17"	59,66%
02:00	48° 43' 26"	4° 52' 14"	44° 49' 25"	22° 04' 15"	59' 19"	16' 09,84"	254° 33' 00"	60,13%
03:00	49° 19' 01"	4° 53' 21"	45° 25' 49"	22° 15' 18"	59' 20"	16' 10,10"	254° 46' 52"	60,60%
04:00	49° 54' 38"	4° 54' 26"	46° 02' 19"	22° 26' 14"	59' 21"	16' 10,35"	255° 00' 54"	61,07%
05:00	50° 30' 15"	4° 55' 30"	46° 38' 56"	22° 37' 02"	59' 22"	16' 10,60"	255° 15' 06"	61,53%
06:00	51° 05' 54"	4° 56' 31"	47° 15' 41"	22° 47' 42"	59' 23"	16' 10,85"	255° 29' 29"	62,00%
07:00	51° 41' 34"	4° 57' 31"	47° 52' 32"	22° 58' 14"	59' 24"	16' 11,10"	255° 44' 01"	62,46%
08:00	52° 17' 16"	4° 58' 29"	48° 29' 30"	23° 08' 38"	59' 25"	16' 11,34"	255° 58' 43"	62,93%
09:00	52° 52' 58"	4° 59' 25"	49° 06' 35"	23° 18' 54"	59' 26"	16' 11,59"	256° 13' 36"	63,39%
10:00	53° 28' 42"	5° 00' 19"	49° 43' 47"	23° 29' 01"	59' 27"	16' 11,82"	256° 28' 38"	63,85%
11:00	54° 04' 28"	5° 01' 12"	50° 21' 06"	23° 38' 59"	59' 28"	16' 12,06"	256° 43' 49"	64,31%
12:00	54° 40' 14"	5° 02' 02"	50° 58' 32"	23° 48' 49"	59' 28"	16' 12,30"	256° 59' 11"	64,77%
13:00	55° 16' 02"	5° 02' 50"	51° 36' 04"	23° 58' 30"	59' 29"	16' 12,53"	257° 14' 42"	65,23%
14:00	55° 51' 50"	5° 03' 37"	52° 13' 43"	24° 08' 02"	59' 30"	16' 12,76"	257° 30' 23"	65,69%
15:00	56° 27' 40"	5° 04' 21"	52° 51' 29"	24° 17' 25"	59' 31"	16' 12,98"	257° 46' 13"	66,14%
16:00	57° 03' 31"	5° 05' 04"	53° 29' 22"	24° 26' 40"	59' 32"	16' 13,21"	258° 02' 13"	66,60%
17:00	57° 39' 24"	5° 05' 44"	54° 07' 22"	24° 35' 44"	59' 33"	16' 13,43"	258° 18' 22"	67,05%
18:00	58° 15' 17"	5° 06' 23"	54° 45' 28"	24° 44' 40"	59' 33"	16' 13,65"	258° 34' 40"	67,51%
19:00	58° 51' 12"	5° 06' 59"	55° 23' 40"	24° 53' 26"	59' 34"	16' 13,86"	258° 51' 08"	67,96%
20:00	59° 27' 08"	5° 07' 34"	56° 01' 59"	25° 02' 03"	59' 35"	16' 14,07"	259° 07' 45"	68,41%
21:00	60° 03' 04"	5° 08' 07"	56° 40' 25"	25° 10' 30"	59' 36"	16' 14,28"	259° 24' 31"	68,85%
22:00	60° 39' 02"	5° 08' 37"	57° 18' 57"	25° 18' 48"	59' 37"	16' 14,49"	259° 41' 26"	69,30%
23:00	61° 15' 01"	5° 09' 06"	57° 57' 35"	25° 26' 55"	59' 37"	16' 14,69"	259° 58' 30"	69,75%
24:00	61° 51' 02"	5° 09' 33"	58° 36' 19"	25° 34' 53"	59' 38"	16' 14,89"	260° 15' 43"	70,19%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	308° 03' 48"	0,67"	310° 28' 49"	-18° 15' 00"	0,9847957	16' 14,45"	23° 26' 18"	-12m 50s
01:00	308° 06' 20"	0,67"	310° 31' 24"	-18° 14' 21"	0,9848005	16' 14,44"	23° 26' 18"	-12m 50s
02:00	308° 08' 53"	0,67"	310° 33' 59"	-18° 13' 42"	0,9848052	16' 14,44"	23° 26' 18"	-12m 51s
03:00	308° 11' 25"	0,67"	310° 36' 34"	-18° 13' 02"	0,9848100	16' 14,43"	23° 26' 18"	-12m 51s
04:00	308° 13' 57"	0,67"	310° 39' 09"	-18° 12' 23"	0,9848147	16' 14,43"	23° 26' 18"	-12m 51s
05:00	308° 16' 30"	0,67"	310° 41' 44"	-18° 11' 43"	0,9848195	16' 14,42"	23° 26' 18"	-12m 52s
06:00	308° 19' 02"	0,67"	310° 44' 19"	-18° 11' 04"	0,9848243	16' 14,42"	23° 26' 18"	-12m 52s
07:00	308° 21' 35"	0,67"	310° 46' 54"	-18° 10' 24"	0,9848291	16' 14,41"	23° 26' 18"	-12m 53s
08:00	308° 24' 07"	0,67"	310° 49' 29"	-18° 09' 44"	0,9848339	16' 14,41"	23° 26' 18"	-12m 53s
09:00	308° 26' 39"	0,68"	310° 52' 04"	-18° 09' 05"	0,9848387	16' 14,40"	23° 26' 18"	-12m 54s
10:00	308° 29' 12"	0,67"	310° 54' 38"	-18° 08' 25"	0,9848435	16' 14,40"	23° 26' 18"	-12m 54s
11:00	308° 31' 44"	0,67"	310° 57' 13"	-18° 07' 45"	0,9848484	16' 14,39"	23° 26' 18"	-12m 55s
12:00	308° 34' 17"	0,67"	310° 59' 48"	-18° 07' 06"	0,9848532	16' 14,39"	23° 26' 18"	-12m 55s
13:00	308° 36' 49"	0,67"	311° 02' 23"	-18° 06' 26"	0,9848580	16' 14,38"	23° 26' 18"	-12m 56s
14:00	308° 39' 21"	0,67"	311° 04' 57"	-18° 05' 46"	0,9848629	16' 14,38"	23° 26' 18"	-12m 56s
15:00	308° 41' 54"	0,67"	311° 07' 32"	-18° 05' 06"	0,9848678	16' 14,37"	23° 26' 18"	-12m 57s
16:00	308° 44' 26"	0,67"	311° 10' 07"	-18° 04' 26"	0,9848726	16' 14,37"	23° 26' 18"	-12m 57s
17:00	308° 46' 58"	0,67"	311° 12' 42"	-18° 03' 46"	0,9848775	16' 14,36"	23° 26' 18"	-12m 58s
18:00	308° 49' 31"	0,67"	311° 15' 16"	-18° 03' 07"	0,9848824	16' 14,36"	23° 26' 18"	-12m 58s
19:00	308° 52' 03"	0,67"	311° 17' 51"	-18° 02' 27"	0,9848873	16' 14,36"	23° 26' 18"	-12m 58s
20:00	308° 54' 36"	0,67"	311° 20' 25"	-18° 01' 47"	0,9848922	16' 14,35"	23° 26' 18"	-12m 59s
21:00	308° 57' 08"	0,67"	311° 23' 00"	-18° 01' 06"	0,9848972	16' 14,35"	23° 26' 18"	-12m 59s
22:00	308° 59' 40"	0,67"	311° 25' 35"	-18° 00' 26"	0,9849021	16' 14,34"	23° 26' 18"	-13m 00s
23:00	309° 02' 13"	0,67"	311° 28' 09"	-17° 59' 46"	0,9849070	16' 14,34"	23° 26' 18"	-13m 00s
24:00	309° 04' 45"	0,67"	311° 30' 44"	-17° 59' 06"	0,9849120	16' 14,33"	23° 26' 18"	-13m 01s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	61° 51' 02"	5° 09' 33"	58° 36' 19"	25° 34' 53"	59' 38"	16' 14,89"	260° 15' 43"	70,19%
01:00	62° 27' 03"	5° 09' 57"	59° 15' 10"	25° 42' 41"	59' 39"	16' 15,09"	260° 33' 05"	70,63%
02:00	63° 03' 05"	5° 10' 20"	59° 54' 07"	25° 50' 18"	59' 39"	16' 15,28"	260° 50' 35"	71,07%
03:00	63° 39' 08"	5° 10' 40"	60° 33' 10"	25° 57' 46"	59' 40"	16' 15,47"	261° 08' 14"	71,51%
04:00	64° 15' 12"	5° 10' 59"	61° 12' 19"	26° 05' 03"	59' 41"	16' 15,65"	261° 26' 02"	71,95%
05:00	64° 51' 17"	5° 11' 15"	61° 51' 33"	26° 12' 09"	59' 41"	16' 15,84"	261° 43' 57"	72,38%
06:00	65° 27' 24"	5° 11' 29"	62° 30' 54"	26° 19' 05"	59' 42"	16' 16,02"	262° 02' 01"	72,81%
07:00	66° 03' 31"	5° 11' 42"	63° 10' 20"	26° 25' 51"	59' 43"	16' 16,19"	262° 20' 14"	73,24%
08:00	66° 39' 39"	5° 11' 52"	63° 49' 51"	26° 32' 26"	59' 43"	16' 16,36"	262° 38' 34"	73,67%
09:00	67° 15' 48"	5° 12' 00"	64° 29' 28"	26° 38' 50"	59' 44"	16' 16,53"	262° 57' 02"	74,10%
10:00	67° 51' 57"	5° 12' 06"	65° 09' 11"	26° 45' 03"	59' 45"	16' 16,70"	263° 15' 38"	74,52%
11:00	68° 28' 08"	5° 12' 10"	65° 48' 59"	26° 51' 05"	59' 45"	16' 16,86"	263° 34' 22"	74,95%
12:00	69° 04' 20"	5° 12' 12"	66° 28' 51"	26° 56' 57"	59' 46"	16' 17,02"	263° 53' 14"	75,37%
13:00	69° 40' 32"	5° 12' 12"	67° 08' 49"	27° 02' 37"	59' 46"	16' 17,17"	264° 12' 12"	75,78%
14:00	70° 16' 45"	5° 12' 10"	67° 48' 52"	27° 08' 06"	59' 47"	16' 17,32"	264° 31' 19"	76,20%
15:00	70° 52' 59"	5° 12' 06"	68° 28' 59"	27° 13' 24"	59' 47"	16' 17,47"	264° 50' 32"	76,61%
16:00	71° 29' 14"	5° 12' 00"	69° 09' 11"	27° 18' 30"	59' 48"	16' 17,61"	265° 09' 53"	77,02%
17:00	72° 05' 30"	5° 11' 51"	69° 49' 28"	27° 23' 25"	59' 48"	16' 17,75"	265° 29' 20"	77,43%
18:00	72° 41' 46"	5° 11' 41"	70° 29' 49"	27° 28' 08"	59' 49"	16' 17,88"	265° 48' 55"	77,84%
19:00	73° 18' 03"	5° 11' 28"	71° 10' 14"	27° 32' 40"	59' 49"	16' 18,01"	266° 08' 36"	78,24%
20:00	73° 54' 21"	5° 11' 14"	71° 50' 43"	27° 37' 00"	59' 50"	16' 18,13"	266° 28' 24"	78,64%
21:00	74° 30' 39"	5° 10' 57"	72° 31' 16"	27° 41' 09"	59' 50"	16' 18,26"	266° 48' 18"	79,04%
22:00	75° 06' 58"	5° 10' 38"	73° 11' 53"	27° 45' 06"	59' 51"	16' 18,37"	267° 08' 19"	79,44%
23:00	75° 43' 18"	5° 10' 17"	73° 52' 34"	27° 48' 51"	59' 51"	16' 18,49"	267° 28' 25"	79,83%
24:00	76° 19' 38"	5° 09' 54"	74° 33' 18"	27° 52' 24"	59' 52"	16' 18,59"	267° 48' 38"	80,22%

29 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	309° 04' 45"	0,67"	311° 30' 44"	-17° 59' 06"	0,9849120	16' 14,33"	23° 26' 18"	-13m 01s
01:00	309° 07' 17"	0,67"	311° 33' 18"	-17° 58' 26"	0,9849169	16' 14,33"	23° 26' 18"	-13m 01s
02:00	309° 09' 50"	0,67"	311° 35' 53"	-17° 57' 46"	0,9849219	16' 14,32"	23° 26' 18"	-13m 02s
03:00	309° 12' 22"	0,67"	311° 38' 27"	-17° 57' 05"	0,9849269	16' 14,32"	23° 26' 18"	-13m 02s
04:00	309° 14' 54"	0,66"	311° 41' 02"	-17° 56' 25"	0,9849319	16' 14,31"	23° 26' 18"	-13m 02s
05:00	309° 17' 27"	0,66"	311° 43' 36"	-17° 55' 45"	0,9849369	16' 14,31"	23° 26' 18"	-13m 03s
06:00	309° 19' 59"	0,66"	311° 46' 10"	-17° 55' 05"	0,9849419	16' 14,30"	23° 26' 18"	-13m 03s
07:00	309° 22' 31"	0,66"	311° 48' 45"	-17° 54' 24"	0,9849469	16' 14,30"	23° 26' 18"	-13m 04s
08:00	309° 25' 04"	0,66"	311° 51' 19"	-17° 53' 44"	0,9849520	16' 14,29"	23° 26' 18"	-13m 04s
09:00	309° 27' 36"	0,66"	311° 53' 53"	-17° 53' 03"	0,9849570	16' 14,29"	23° 26' 18"	-13m 05s
10:00	309° 30' 08"	0,66"	311° 56' 28"	-17° 52' 23"	0,9849620	16' 14,28"	23° 26' 18"	-13m 05s
11:00	309° 32' 41"	0,66"	311° 59' 02"	-17° 51' 42"	0,9849671	16' 14,28"	23° 26' 18"	-13m 05s
12:00	309° 35' 13"	0,65"	312° 01' 36"	-17° 51' 02"	0,9849722	16' 14,27"	23° 26' 18"	-13m 06s
13:00	309° 37' 45"	0,65"	312° 04' 11"	-17° 50' 21"	0,9849772	16' 14,27"	23° 26' 18"	-13m 06s
14:00	309° 40' 18"	0,65"	312° 06' 45"	-17° 49' 41"	0,9849823	16' 14,26"	23° 26' 18"	-13m 07s
15:00	309° 42' 50"	0,65"	312° 09' 19"	-17° 49' 00"	0,9849874	16' 14,26"	23° 26' 18"	-13m 07s
16:00	309° 45' 22"	0,65"	312° 11' 53"	-17° 48' 19"	0,9849925	16' 14,25"	23° 26' 18"	-13m 08s
17:00	309° 47' 55"	0,64"	312° 14' 27"	-17° 47' 39"	0,9849977	16' 14,25"	23° 26' 18"	-13m 08s
18:00	309° 50' 27"	0,64"	312° 17' 01"	-17° 46' 58"	0,9850028	16' 14,24"	23° 26' 18"	-13m 08s
19:00	309° 52' 59"	0,64"	312° 19' 36"	-17° 46' 17"	0,9850079	16' 14,24"	23° 26' 18"	-13m 09s
20:00	309° 55' 32"	0,64"	312° 22' 10"	-17° 45' 36"	0,9850131	16' 14,23"	23° 26' 18"	-13m 09s
21:00	309° 58' 04"	0,64"	312° 24' 44"	-17° 44' 55"	0,9850182	16' 14,23"	23° 26' 18"	-13m 10s
22:00	310° 00' 36"	0,63"	312° 27' 18"	-17° 44' 14"	0,9850234	16' 14,22"	23° 26' 18"	-13m 10s
23:00	310° 03' 09"	0,63"	312° 29' 52"	-17° 43' 34"	0,9850286	16' 14,22"	23° 26' 18"	-13m 11s
24:00	310° 05' 41"	0,63"	312° 32' 26"	-17° 42' 53"	0,9850338	16' 14,21"	23° 26' 18"	-13m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	76° 19' 38"	5° 09' 54"	74° 33' 18"	27° 52' 24"	59' 52"	16' 18,59"	267° 48' 38"	80,22%
01:00	76° 55' 59"	5° 09' 29"	75° 14' 05"	27° 55' 45"	59' 52"	16' 18,70"	268° 08' 57"	80,61%
02:00	77° 32' 20"	5° 09' 02"	75° 54' 56"	27° 58' 54"	59' 52"	16' 18,80"	268° 29' 21"	80,99%
03:00	78° 08' 42"	5° 08' 33"	76° 35' 49"	28° 01' 51"	59' 53"	16' 18,89"	268° 49' 52"	81,37%
04:00	78° 45' 05"	5° 08' 02"	77° 16' 45"	28° 04' 36"	59' 53"	16' 18,98"	269° 10' 27"	81,75%
05:00	79° 21' 28"	5° 07' 28"	77° 57' 44"	28° 07' 09"	59' 53"	16' 19,07"	269° 31' 09"	82,13%
06:00	79° 57' 51"	5° 06' 53"	78° 38' 46"	28° 09' 30"	59' 54"	16' 19,15"	269° 51' 55"	82,50%
07:00	80° 34' 15"	5° 06' 15"	79° 19' 49"	28° 11' 38"	59' 54"	16' 19,23"	270° 12' 47"	82,87%
08:00	81° 10' 39"	5° 05' 36"	80° 00' 55"	28° 13' 34"	59' 54"	16' 19,30"	270° 33' 43"	83,24%
09:00	81° 47' 04"	5° 04' 54"	80° 42' 03"	28° 15' 18"	59' 54"	16' 19,36"	270° 54' 45"	83,60%
10:00	82° 23' 29"	5° 04' 10"	81° 23' 13"	28° 16' 50"	59' 55"	16' 19,43"	271° 15' 51"	83,96%
11:00	82° 59' 55"	5° 03' 25"	82° 04' 24"	28° 18' 10"	59' 55"	16' 19,48"	271° 37' 02"	84,32%
12:00	83° 36' 20"	5° 02' 37"	82° 45' 36"	28° 19' 16"	59' 55"	16' 19,54"	271° 58' 17"	84,67%
13:00	84° 12' 46"	5° 01' 47"	83° 26' 50"	28° 20' 11"	59' 55"	16' 19,58"	272° 19' 37"	85,03%
14:00	84° 49' 13"	5° 00' 55"	84° 08' 05"	28° 20' 53"	59' 55"	16' 19,63"	272° 41' 02"	85,37%
15:00	85° 25' 39"	5° 00' 01"	84° 49' 21"	28° 21' 23"	59' 56"	16' 19,66"	273° 02' 30"	85,72%
16:00	86° 02' 06"	4° 59' 05"	85° 30' 37"	28° 21' 40"	59' 56"	16' 19,70"	273° 24' 03"	86,06%
17:00	86° 38' 33"	4° 58' 07"	86° 11' 54"	28° 21' 45"	59' 56"	16' 19,72"	273° 45' 39"	86,40%
18:00	87° 15' 00"	4° 57' 07"	86° 53' 11"	28° 21' 38"	59' 56"	16' 19,74"	274° 07' 20"	86,73%
19:00	87° 51' 28"	4° 56' 05"	87° 34' 28"	28° 21' 18"	59' 56"	16' 19,76"	274° 29' 04"	87,06%
20:00	88° 27' 55"	4° 55' 01"	88° 15' 45"	28° 20' 45"	59' 56"	16' 19,77"	274° 50' 53"	87,39%
21:00	89° 04' 22"	4° 53' 55"	88° 57' 02"	28° 20' 01"	59' 56"	16' 19,78"	275° 12' 45"	87,71%
22:00	89° 40' 50"	4° 52' 47"	89° 38' 18"	28° 19' 03"	59' 56"	16' 19,78"	275° 34' 40"	88,03%
23:00	90° 17' 18"	4° 51' 37"	90° 19' 34"	28° 17' 54"	59' 56"	16' 19,78"	275° 56' 40"	88,35%
24:00	90° 53' 45"	4° 50' 25"	91° 00' 49"	28° 16' 31"	59' 56"	16' 19,77"	276° 18' 43"	88,66%

30 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	310° 05' 41"	0,63"	312° 32' 26"	-17° 42' 53"	0,9850338	16' 14,21"	23° 26' 18"	-13m 11s
01:00	310° 08' 13"	0,63"	312° 35' 00"	-17° 42' 12"	0,9850389	16' 14,21"	23° 26' 18"	-13m 11s
02:00	310° 10' 46"	0,63"	312° 37' 34"	-17° 41' 31"	0,9850442	16' 14,20"	23° 26' 18"	-13m 12s
03:00	310° 13' 18"	0,62"	312° 40' 08"	-17° 40' 50"	0,9850494	16' 14,19"	23° 26' 18"	-13m 12s
04:00	310° 15' 50"	0,62"	312° 42' 42"	-17° 40' 09"	0,9850546	16' 14,19"	23° 26' 18"	-13m 13s
05:00	310° 18' 22"	0,62"	312° 45' 16"	-17° 39' 27"	0,9850598	16' 14,18"	23° 26' 18"	-13m 13s
06:00	310° 20' 55"	0,62"	312° 47' 49"	-17° 38' 46"	0,9850651	16' 14,18"	23° 26' 18"	-13m 13s
07:00	310° 23' 27"	0,61"	312° 50' 23"	-17° 38' 05"	0,9850703	16' 14,17"	23° 26' 18"	-13m 14s
08:00	310° 25' 59"	0,61"	312° 52' 57"	-17° 37' 24"	0,9850756	16' 14,17"	23° 26' 18"	-13m 14s
09:00	310° 28' 32"	0,61"	312° 55' 31"	-17° 36' 43"	0,9850809	16' 14,16"	23° 26' 18"	-13m 15s
10:00	310° 31' 04"	0,60"	312° 58' 05"	-17° 36' 01"	0,9850862	16' 14,16"	23° 26' 18"	-13m 15s
11:00	310° 33' 36"	0,60"	313° 00' 39"	-17° 35' 20"	0,9850915	16' 14,15"	23° 26' 18"	-13m 15s
12:00	310° 36' 08"	0,60"	313° 03' 12"	-17° 34' 39"	0,9850968	16' 14,15"	23° 26' 18"	-13m 16s
13:00	310° 38' 41"	0,60"	313° 05' 46"	-17° 33' 57"	0,9851021	16' 14,14"	23° 26' 18"	-13m 16s
14:00	310° 41' 13"	0,59"	313° 08' 20"	-17° 33' 16"	0,9851074	16' 14,14"	23° 26' 18"	-13m 17s
15:00	310° 43' 45"	0,59"	313° 10' 53"	-17° 32' 35"	0,9851128	16' 14,13"	23° 26' 18"	-13m 17s
16:00	310° 46' 18"	0,59"	313° 13' 27"	-17° 31' 53"	0,9851181	16' 14,13"	23° 26' 18"	-13m 17s
17:00	310° 48' 50"	0,58"	313° 16' 01"	-17° 31' 12"	0,9851235	16' 14,12"	23° 26' 18"	-13m 18s
18:00	310° 51' 22"	0,58"	313° 18' 34"	-17° 30' 30"	0,9851288	16' 14,12"	23° 26' 18"	-13m 18s
19:00	310° 53' 54"	0,58"	313° 21' 08"	-17° 29' 49"	0,9851342	16' 14,11"	23° 26' 18"	-13m 18s
20:00	310° 56' 27"	0,57"	313° 23' 41"	-17° 29' 07"	0,9851396	16' 14,11"	23° 26' 18"	-13m 19s
21:00	310° 58' 59"	0,57"	313° 26' 15"	-17° 28' 25"	0,9851450	16' 14,10"	23° 26' 18"	-13m 19s
22:00	311° 01' 31"	0,57"	313° 28' 49"	-17° 27' 44"	0,9851504	16' 14,09"	23° 26' 18"	-13m 20s
23:00	311° 04' 03"	0,56"	313° 31' 22"	-17° 27' 02"	0,9851558	16' 14,09"	23° 26' 18"	-13m 20s
24:00	311° 06' 36"	0,56"	313° 33' 56"	-17° 26' 20"	0,9851613	16' 14,08"	23° 26' 18"	-13m 20s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	90° 53' 45"	4° 50' 25"	91° 00' 49"	28° 16' 31"	59' 56"	16' 19,77"	276° 18' 43"	88,66%
01:00	91° 30' 13"	4° 49' 11"	91° 42' 03"	28° 14' 57"	59' 56"	16' 19,75"	276° 40' 49"	88,97%
02:00	92° 06' 40"	4° 47' 55"	92° 23' 16"	28° 13' 10"	59' 56"	16' 19,73"	277° 02' 59"	89,27%
03:00	92° 43' 08"	4° 46' 37"	93° 04' 27"	28° 11' 11"	59' 56"	16' 19,71"	277° 25' 13"	89,57%
04:00	93° 19' 35"	4° 45' 18"	93° 45' 37"	28° 08' 59"	59' 56"	16' 19,68"	277° 47' 31"	89,87%
05:00	93° 56' 02"	4° 43' 56"	94° 26' 45"	28° 06' 35"	59' 55"	16' 19,64"	278° 09' 52"	90,17%
06:00	94° 32' 29"	4° 42' 32"	95° 07' 51"	28° 03' 59"	59' 55"	16' 19,60"	278° 32' 16"	90,46%
07:00	95° 08' 56"	4° 41' 07"	95° 48' 55"	28° 01' 10"	59' 55"	16' 19,55"	278° 54' 45"	90,74%
08:00	95° 45' 23"	4° 39' 39"	96° 29' 57"	27° 58' 10"	59' 55"	16' 19,50"	279° 17' 17"	91,02%
09:00	96° 21' 49"	4° 38' 10"	97° 10' 56"	27° 54' 57"	59' 55"	16' 19,44"	279° 39' 54"	91,30%
10:00	96° 58' 15"	4° 36' 39"	97° 51' 52"	27° 51' 32"	59' 54"	16' 19,38"	280° 02' 34"	91,58%
11:00	97° 34' 41"	4° 35' 06"	98° 32' 46"	27° 47' 55"	59' 54"	16' 19,31"	280° 25' 19"	91,85%
12:00	98° 11' 07"	4° 33' 31"	99° 13' 37"	27° 44' 06"	59' 54"	16' 19,23"	280° 48' 09"	92,11%
13:00	98° 47' 32"	4° 31' 54"	99° 54' 25"	27° 40' 05"	59' 54"	16' 19,15"	281° 11' 03"	92,37%
14:00	99° 23' 57"	4° 30' 15"	100° 35' 09"	27° 35' 52"	59' 53"	16' 19,07"	281° 34' 02"	92,63%
15:00	100° 00' 21"	4° 28' 35"	101° 15' 50"	27° 31' 27"	59' 53"	16' 18,97"	281° 57' 06"	92,88%
16:00	100° 36' 45"	4° 26' 53"	101° 56' 27"	27° 26' 51"	59' 53"	16' 18,88"	282° 20' 15"	93,13%
17:00	101° 13' 08"	4° 25' 09"	102° 37' 00"	27° 22' 03"	59' 52"	16' 18,77"	282° 43' 31"	93,38%
18:00	101° 49' 31"	4° 23' 23"	103° 17' 29"	27° 17' 03"	59' 52"	16' 18,66"	283° 06' 53"	93,62%
19:00	102° 25' 54"	4° 21' 36"	103° 57' 55"	27° 11' 51"	59' 51"	16' 18,55"	283° 30' 22"	93,86%
20:00	103° 02' 15"	4° 19' 46"	104° 38' 16"	27° 06' 28"	59' 51"	16' 18,43"	283° 53' 58"	94,09%
21:00	103° 38' 37"	4° 17' 55"	105° 18' 32"	27° 00' 53"	59' 51"	16' 18,30"	284° 17' 42"	94,32%
22:00	104° 14' 57"	4° 16' 03"	105° 58' 44"	26° 55' 07"	59' 50"	16' 18,17"	284° 41' 34"	94,54%
23:00	104° 51' 17"	4° 14' 08"	106° 38' 52"	26° 49' 10"	59' 50"	16' 18,03"	285° 05' 36"	94,76%
24:00	105° 27' 36"	4° 12' 12"	107° 18' 54"	26° 43' 02"	59' 49"	16' 17,89"	285° 29' 47"	94,98%

31 Januari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	311° 06' 36"	0,56"	313° 33' 56"	-17° 26' 20"	0,9851613	16' 14,08"	23° 26' 18"	-13m 20s
01:00	311° 09' 08"	0,56"	313° 36' 29"	-17° 25' 39"	0,9851667	16' 14,08"	23° 26' 18"	-13m 21s
02:00	311° 11' 40"	0,55"	313° 39' 03"	-17° 24' 57"	0,9851721	16' 14,07"	23° 26' 18"	-13m 21s
03:00	311° 14' 12"	0,55"	313° 41' 36"	-17° 24' 15"	0,9851776	16' 14,07"	23° 26' 18"	-13m 21s
04:00	311° 16' 45"	0,55"	313° 44' 09"	-17° 23' 33"	0,9851831	16' 14,06"	23° 26' 18"	-13m 22s
05:00	311° 19' 17"	0,54"	313° 46' 43"	-17° 22' 51"	0,9851886	16' 14,06"	23° 26' 18"	-13m 22s
06:00	311° 21' 49"	0,54"	313° 49' 16"	-17° 22' 09"	0,9851940	16' 14,05"	23° 26' 18"	-13m 23s
07:00	311° 24' 21"	0,53"	313° 51' 49"	-17° 21' 27"	0,9851995	16' 14,05"	23° 26' 18"	-13m 23s
08:00	311° 26' 54"	0,53"	313° 54' 23"	-17° 20' 45"	0,9852051	16' 14,04"	23° 26' 18"	-13m 23s
09:00	311° 29' 26"	0,53"	313° 56' 56"	-17° 20' 03"	0,9852106	16' 14,04"	23° 26' 18"	-13m 24s
10:00	311° 31' 58"	0,52"	313° 59' 29"	-17° 19' 21"	0,9852161	16' 14,03"	23° 26' 18"	-13m 24s
11:00	311° 34' 30"	0,52"	314° 02' 03"	-17° 18' 39"	0,9852217	16' 14,02"	23° 26' 18"	-13m 24s
12:00	311° 37' 03"	0,51"	314° 04' 36"	-17° 17' 57"	0,9852272	16' 14,02"	23° 26' 18"	-13m 25s
13:00	311° 39' 35"	0,51"	314° 07' 09"	-17° 17' 15"	0,9852328	16' 14,01"	23° 26' 18"	-13m 25s
14:00	311° 42' 07"	0,51"	314° 09' 42"	-17° 16' 33"	0,9852383	16' 14,01"	23° 26' 18"	-13m 25s
15:00	311° 44' 39"	0,50"	314° 12' 15"	-17° 15' 51"	0,9852439	16' 14,00"	23° 26' 18"	-13m 26s
16:00	311° 47' 12"	0,50"	314° 14' 49"	-17° 15' 09"	0,9852495	16' 14,00"	23° 26' 18"	-13m 26s
17:00	311° 49' 44"	0,49"	314° 17' 22"	-17° 14' 26"	0,9852551	16' 13,99"	23° 26' 18"	-13m 27s
18:00	311° 52' 16"	0,49"	314° 19' 55"	-17° 13' 44"	0,9852607	16' 13,99"	23° 26' 18"	-13m 27s
19:00	311° 54' 48"	0,48"	314° 22' 28"	-17° 13' 02"	0,9852664	16' 13,98"	23° 26' 18"	-13m 27s
20:00	311° 57' 20"	0,48"	314° 25' 01"	-17° 12' 19"	0,9852720	16' 13,97"	23° 26' 18"	-13m 28s
21:00	311° 59' 53"	0,48"	314° 27' 34"	-17° 11' 37"	0,9852776	16' 13,97"	23° 26' 18"	-13m 28s
22:00	312° 02' 25"	0,47"	314° 30' 07"	-17° 10' 55"	0,9852833	16' 13,96"	23° 26' 18"	-13m 28s
23:00	312° 04' 57"	0,47"	314° 32' 40"	-17° 10' 12"	0,9852890	16' 13,96"	23° 26' 18"	-13m 29s
24:00	312° 07' 29"	0,46"	314° 35' 13"	-17° 09' 30"	0,9852946	16' 13,95"	23° 26' 18"	-13m 29s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	105° 27' 36"	4° 12' 12"	107° 18' 54"	26° 43' 02"	59' 49"	16' 17,89"	285° 29' 47"	94,98%
01:00	106° 03' 55"	4° 10' 15"	107° 58' 52"	26° 36' 42"	59' 48"	16' 17,74"	285° 54' 10"	95,19%
02:00	106° 40' 13"	4° 08' 15"	108° 38' 44"	26° 30' 12"	59' 48"	16' 17,59"	286° 18' 44"	95,39%
03:00	107° 16' 30"	4° 06' 14"	109° 18' 32"	26° 23' 30"	59' 47"	16' 17,42"	286° 43' 31"	95,59%
04:00	107° 52' 46"	4° 04' 12"	109° 58' 14"	26° 16' 38"	59' 47"	16' 17,26"	287° 08' 32"	95,79%
05:00	108° 29' 02"	4° 02' 07"	110° 37' 50"	26° 09' 34"	59' 46"	16' 17,09"	287° 33' 49"	95,99%
06:00	109° 05' 16"	4° 00' 02"	111° 17' 21"	26° 02' 20"	59' 45"	16' 16,91"	287° 59' 22"	96,17%
07:00	109° 41' 30"	3° 57' 54"	111° 56' 46"	25° 54' 56"	59' 45"	16' 16,72"	288° 25' 14"	96,36%
08:00	110° 17' 43"	3° 55' 45"	112° 36' 06"	25° 47' 21"	59' 44"	16' 16,53"	288° 51' 26"	96,54%
09:00	110° 53' 55"	3° 53' 35"	113° 15' 19"	25° 39' 35"	59' 43"	16' 16,34"	289° 18' 00"	96,71%
10:00	111° 30' 06"	3° 51' 23"	113° 54' 27"	25° 31' 40"	59' 43"	16' 16,14"	289° 44' 59"	96,88%
11:00	112° 06' 16"	3° 49' 09"	114° 33' 28"	25° 23' 34"	59' 42"	16' 15,93"	290° 12' 25"	97,05%
12:00	112° 42' 25"	3° 46' 54"	115° 12' 24"	25° 15' 18"	59' 41"	16' 15,72"	290° 40' 21"	97,21%
13:00	113° 18' 33"	3° 44' 38"	115° 51' 13"	25° 06' 51"	59' 40"	16' 15,50"	291° 08' 49"	97,37%
14:00	113° 54' 39"	3° 42' 20"	116° 29' 55"	24° 58' 16"	59' 39"	16' 15,28"	291° 37' 55"	97,52%
15:00	114° 30' 45"	3° 40' 01"	117° 08' 32"	24° 49' 30"	59' 39"	16' 15,05"	292° 07' 41"	97,67%
16:00	115° 06' 50"	3° 37' 40"	117° 47' 01"	24° 40' 35"	59' 38"	16' 14,81"	292° 38' 12"	97,81%
17:00	115° 42' 53"	3° 35' 18"	118° 25' 24"	24° 31' 30"	59' 37"	16' 14,57"	293° 09' 34"	97,95%
18:00	116° 18' 56"	3° 32' 54"	119° 03' 41"	24° 22' 15"	59' 36"	16' 14,33"	293° 41' 51"	98,09%
19:00	116° 54' 57"	3° 30' 30"	119° 41' 51"	24° 12' 52"	59' 35"	16' 14,08"	294° 15' 12"	98,22%
20:00	117° 30' 57"	3° 28' 04"	120° 19' 54"	24° 03' 19"	59' 34"	16' 13,82"	294° 49' 43"	98,34%
21:00	118° 06' 55"	3° 25' 36"	120° 57' 50"	23° 53' 37"	59' 33"	16' 13,56"	295° 25' 34"	98,46%
22:00	118° 42' 52"	3° 23' 07"	121° 35' 39"	23° 43' 46"	59' 32"	16' 13,29"	296° 02' 55"	98,58%
23:00	119° 18' 48"	3° 20' 38"	122° 13' 22"	23° 33' 46"	59' 31"	16' 13,01"	296° 41' 58"	98,69%
24:00	119° 54' 43"	3° 18' 06"	122° 50' 57"	23° 23' 37"	59' 30"	16' 12,74"	297° 22' 57"	98,79%

01 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	312° 07' 29"	0,46"	314° 35' 13"	-17° 09' 30"	0,9852946	16' 13,95"	23° 26' 18"	-13m 29s
01:00	312° 10' 01"	0,46"	314° 37' 46"	-17° 08' 47"	0,9853003	16' 13,95"	23° 26' 18"	-13m 29s
02:00	312° 12' 34"	0,45"	314° 40' 19"	-17° 08' 05"	0,9853060	16' 13,94"	23° 26' 18"	-13m 30s
03:00	312° 15' 06"	0,45"	314° 42' 52"	-17° 07' 22"	0,9853117	16' 13,94"	23° 26' 18"	-13m 30s
04:00	312° 17' 38"	0,44"	314° 45' 25"	-17° 06' 39"	0,9853175	16' 13,93"	23° 26' 18"	-13m 30s
05:00	312° 20' 10"	0,44"	314° 47' 57"	-17° 05' 57"	0,9853232	16' 13,92"	23° 26' 18"	-13m 31s
06:00	312° 22' 42"	0,43"	314° 50' 30"	-17° 05' 14"	0,9853289	16' 13,92"	23° 26' 18"	-13m 31s
07:00	312° 25' 15"	0,43"	314° 53' 03"	-17° 04' 31"	0,9853347	16' 13,91"	23° 26' 18"	-13m 31s
08:00	312° 27' 47"	0,42"	314° 55' 36"	-17° 03' 49"	0,9853404	16' 13,91"	23° 26' 18"	-13m 32s
09:00	312° 30' 19"	0,42"	314° 58' 09"	-17° 03' 06"	0,9853462	16' 13,90"	23° 26' 18"	-13m 32s
10:00	312° 32' 51"	0,41"	315° 00' 41"	-17° 02' 23"	0,9853520	16' 13,90"	23° 26' 18"	-13m 32s
11:00	312° 35' 23"	0,41"	315° 03' 14"	-17° 01' 40"	0,9853578	16' 13,89"	23° 26' 18"	-13m 33s
12:00	312° 37' 56"	0,40"	315° 05' 47"	-17° 00' 57"	0,9853636	16' 13,88"	23° 26' 18"	-13m 33s
13:00	312° 40' 28"	0,40"	315° 08' 20"	-17° 00' 15"	0,9853694	16' 13,88"	23° 26' 18"	-13m 33s
14:00	312° 43' 00"	0,39"	315° 10' 52"	-16° 59' 32"	0,9853752	16' 13,87"	23° 26' 18"	-13m 34s
15:00	312° 45' 32"	0,39"	315° 13' 25"	-16° 58' 49"	0,9853810	16' 13,87"	23° 26' 18"	-13m 34s
16:00	312° 48' 04"	0,38"	315° 15' 58"	-16° 58' 06"	0,9853869	16' 13,86"	23° 26' 18"	-13m 34s
17:00	312° 50' 36"	0,38"	315° 18' 30"	-16° 57' 23"	0,9853927	16' 13,86"	23° 26' 18"	-13m 35s
18:00	312° 53' 09"	0,37"	315° 21' 03"	-16° 56' 40"	0,9853986	16' 13,85"	23° 26' 18"	-13m 35s
19:00	312° 55' 41"	0,37"	315° 23' 35"	-16° 55' 57"	0,9854045	16' 13,84"	23° 26' 18"	-13m 35s
20:00	312° 58' 13"	0,36"	315° 26' 08"	-16° 55' 13"	0,9854103	16' 13,84"	23° 26' 18"	-13m 35s
21:00	313° 00' 45"	0,36"	315° 28' 40"	-16° 54' 30"	0,9854162	16' 13,83"	23° 26' 18"	-13m 36s
22:00	313° 03' 17"	0,35"	315° 31' 13"	-16° 53' 47"	0,9854221	16' 13,83"	23° 26' 18"	-13m 36s
23:00	313° 05' 49"	0,35"	315° 33' 45"	-16° 53' 04"	0,9854280	16' 13,82"	23° 26' 18"	-13m 36s
24:00	313° 08' 22"	0,34"	315° 36' 18"	-16° 52' 21"	0,9854340	16' 13,81"	23° 26' 18"	-13m 37s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	119° 54' 43"	3° 18' 06"	122° 50' 57"	23° 23' 37"	59' 30"	16' 12,74"	297° 22' 57"	98,79%
01:00	120° 30' 36"	3° 15' 34"	123° 28' 25"	23° 13' 20"	59' 29"	16' 12,45"	298° 06' 08"	98,89%
02:00	121° 06' 28"	3° 13' 00"	124° 05' 47"	23° 02' 54"	59' 28"	16' 12,16"	298° 51' 52"	98,99%
03:00	121° 42' 19"	3° 10' 25"	124° 43' 01"	22° 52' 20"	59' 27"	16' 11,87"	299° 40' 31"	99,08%
04:00	122° 18' 08"	3° 07' 49"	125° 20' 08"	22° 41' 37"	59' 26"	16' 11,57"	300° 32' 33"	99,17%
05:00	122° 53' 55"	3° 05' 12"	125° 57' 08"	22° 30' 47"	59' 25"	16' 11,26"	301° 28' 32"	99,26%
06:00	123° 29' 42"	3° 02' 34"	126° 34' 01"	22° 19' 48"	59' 24"	16' 10,95"	302° 29' 11"	99,33%
07:00	124° 05' 26"	2° 59' 55"	127° 10' 46"	22° 08' 42"	59' 22"	16' 10,63"	303° 35' 19"	99,41%
08:00	124° 41' 09"	2° 57' 14"	127° 47' 24"	21° 57' 27"	59' 21"	16' 10,31"	304° 48' 00"	99,48%
09:00	125° 16' 51"	2° 54' 33"	128° 23' 55"	21° 46' 05"	59' 20"	16' 09,98"	306° 08' 34"	99,54%
10:00	125° 52' 31"	2° 51' 50"	129° 00' 19"	21° 34' 36"	59' 19"	16' 09,65"	307° 38' 43"	99,60%
11:00	126° 28' 09"	2° 49' 07"	129° 36' 36"	21° 22' 59"	59' 18"	16' 09,32"	309° 20' 38"	99,66%
12:00	127° 03' 46"	2° 46' 22"	130° 12' 45"	21° 11' 14"	59' 16"	16' 08,97"	311° 17' 09"	99,71%
13:00	127° 39' 21"	2° 43' 37"	130° 48' 47"	20° 59' 23"	59' 15"	16' 08,63"	313° 32' 03"	99,75%
14:00	128° 14' 54"	2° 40' 51"	131° 24' 42"	20° 47' 24"	59' 14"	16' 08,27"	316° 10' 23"	99,79%
15:00	128° 50' 26"	2° 38' 03"	132° 00' 29"	20° 35' 19"	59' 12"	16' 07,92"	319° 18' 59"	99,83%
16:00	129° 25' 56"	2° 35' 15"	132° 36' 09"	20° 23' 06"	59' 11"	16' 07,56"	323° 07' 13"	99,86%
17:00	130° 01' 24"	2° 32' 26"	133° 11' 42"	20° 10' 47"	59' 10"	16' 07,19"	327° 47' 50"	99,89%
18:00	130° 36' 50"	2° 29' 36"	133° 47' 08"	19° 58' 22"	59' 08"	16' 06,82"	333° 37' 50"	99,91%
19:00	131° 12' 15"	2° 26' 45"	134° 22' 26"	19° 45' 50"	59' 07"	16' 06,44"	340° 58' 28"	99,93%
20:00	131° 47' 38"	2° 23' 53"	134° 57' 38"	19° 33' 11"	59' 06"	16' 06,06"	350° 11' 57"	99,95%
21:00	132° 22' 59"	2° 21' 01"	135° 32' 42"	19° 20' 27"	59' 04"	16' 05,68"	1° 30' 36"	99,96%
22:00	132° 58' 18"	2° 18' 08"	136° 07' 38"	19° 07' 36"	59' 03"	16' 05,29"	14° 36' 30"	99,96%
23:00	133° 33' 35"	2° 15' 14"	136° 42' 28"	18° 54' 40"	59' 01"	16' 04,90"	28° 26' 51"	99,96%
24:00	134° 08' 51"	2° 12' 19"	137° 17' 11"	18° 41' 37"	59' 00"	16' 04,50"	41° 34' 44"	99,96%

02 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	313° 08' 22"	0,34"	315° 36' 18"	-16° 52' 21"	0,9854340	16' 13,81"	23° 26' 18"	-13m 37s
01:00	313° 10' 54"	0,34"	315° 38' 50"	-16° 51' 38"	0,9854399	16' 13,81"	23° 26' 18"	-13m 37s
02:00	313° 13' 26"	0,33"	315° 41' 23"	-16° 50' 54"	0,9854459	16' 13,80"	23° 26' 18"	-13m 37s
03:00	313° 15' 58"	0,33"	315° 43' 55"	-16° 50' 11"	0,9854518	16' 13,80"	23° 26' 18"	-13m 38s
04:00	313° 18' 30"	0,32"	315° 46' 28"	-16° 49' 28"	0,9854578	16' 13,79"	23° 26' 18"	-13m 38s
05:00	313° 21' 02"	0,31"	315° 49' 00"	-16° 48' 44"	0,9854637	16' 13,79"	23° 26' 18"	-13m 38s
06:00	313° 23' 35"	0,31"	315° 51' 32"	-16° 48' 01"	0,9854697	16' 13,78"	23° 26' 18"	-13m 39s
07:00	313° 26' 07"	0,30"	315° 54' 05"	-16° 47' 17"	0,9854757	16' 13,77"	23° 26' 18"	-13m 39s
08:00	313° 28' 39"	0,30"	315° 56' 37"	-16° 46' 34"	0,9854817	16' 13,77"	23° 26' 18"	-13m 39s
09:00	313° 31' 11"	0,29"	315° 59' 09"	-16° 45' 50"	0,9854877	16' 13,76"	23° 26' 18"	-13m 39s
10:00	313° 33' 43"	0,29"	316° 01' 41"	-16° 45' 07"	0,9854938	16' 13,76"	23° 26' 18"	-13m 40s
11:00	313° 36' 15"	0,28"	316° 04' 14"	-16° 44' 23"	0,9854998	16' 13,75"	23° 26' 18"	-13m 40s
12:00	313° 38' 47"	0,28"	316° 06' 46"	-16° 43' 40"	0,9855059	16' 13,74"	23° 26' 18"	-13m 40s
13:00	313° 41' 20"	0,27"	316° 09' 18"	-16° 42' 56"	0,9855119	16' 13,74"	23° 26' 18"	-13m 41s
14:00	313° 43' 52"	0,26"	316° 11' 50"	-16° 42' 12"	0,9855180	16' 13,73"	23° 26' 18"	-13m 41s
15:00	313° 46' 24"	0,26"	316° 14' 22"	-16° 41' 29"	0,9855241	16' 13,73"	23° 26' 18"	-13m 41s
16:00	313° 48' 56"	0,25"	316° 16' 54"	-16° 40' 45"	0,9855301	16' 13,72"	23° 26' 18"	-13m 41s
17:00	313° 51' 28"	0,25"	316° 19' 26"	-16° 40' 01"	0,9855362	16' 13,71"	23° 26' 18"	-13m 42s
18:00	313° 54' 00"	0,24"	316° 21' 59"	-16° 39' 18"	0,9855423	16' 13,71"	23° 26' 18"	-13m 42s
19:00	313° 56' 32"	0,24"	316° 24' 31"	-16° 38' 34"	0,9855485	16' 13,70"	23° 26' 18"	-13m 42s
20:00	313° 59' 04"	0,23"	316° 27' 03"	-16° 37' 50"	0,9855546	16' 13,70"	23° 26' 18"	-13m 43s
21:00	314° 01' 37"	0,22"	316° 29' 35"	-16° 37' 06"	0,9855607	16' 13,69"	23° 26' 18"	-13m 43s
22:00	314° 04' 09"	0,22"	316° 32' 07"	-16° 36' 22"	0,9855669	16' 13,68"	23° 26' 18"	-13m 43s
23:00	314° 06' 41"	0,21"	316° 34' 39"	-16° 35' 38"	0,9855730	16' 13,68"	23° 26' 18"	-13m 43s
24:00	314° 09' 13"	0,21"	316° 37' 11"	-16° 34' 54"	0,9855792	16' 13,67"	23° 26' 18"	-13m 44s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	134° 08' 51"	2° 12' 19"	137° 17' 11"	18° 41' 37"	59' 00"	16' 04,50"	41° 34' 44"	99,96%
01:00	134° 44' 04"	2° 09' 24"	137° 51' 46"	18° 28' 29"	58' 58"	16' 04,09"	52° 56' 09"	99,95%
02:00	135° 19' 16"	2° 06' 28"	138° 26' 15"	18° 15' 15"	58' 57"	16' 03,69"	62° 12' 05"	99,93%
03:00	135° 54' 26"	2° 03' 31"	139° 00' 36"	18° 01' 56"	58' 55"	16' 03,28"	69° 34' 17"	99,92%
04:00	136° 29' 34"	2° 00' 34"	139° 34' 51"	17° 48' 31"	58' 54"	16' 02,86"	75° 24' 54"	99,89%
05:00	137° 04' 39"	1° 57' 36"	140° 08' 58"	17° 35' 02"	58' 52"	16' 02,44"	80° 05' 16"	99,87%
06:00	137° 39' 43"	1° 54' 38"	140° 42' 59"	17° 21' 27"	58' 51"	16' 02,02"	83° 52' 31"	99,83%
07:00	138° 14' 45"	1° 51' 38"	141° 16' 52"	17° 07' 47"	58' 49"	16' 01,59"	86° 59' 30"	99,80%
08:00	138° 49' 45"	1° 48' 39"	141° 50' 39"	16° 54' 02"	58' 48"	16' 01,16"	89° 35' 41"	99,76%
09:00	139° 24' 42"	1° 45' 39"	142° 24' 19"	16° 40' 12"	58' 46"	16' 00,72"	91° 47' 56"	99,71%
10:00	139° 59' 38"	1° 42' 38"	142° 57' 52"	16° 26' 18"	58' 44"	16' 00,28"	93° 41' 23"	99,66%
11:00	140° 34' 32"	1° 39' 37"	143° 31' 19"	16° 12' 19"	58' 43"	16' 00,00"	95° 19' 48"	99,61%
12:00	141° 09' 23"	1° 36' 35"	144° 04' 39"	15° 58' 16"	58' 41"	15' 59,39"	96° 46' 05"	99,55%
13:00	141° 44' 12"	1° 33' 33"	144° 37' 52"	15° 44' 08"	58' 39"	15' 58,94"	98° 02' 24"	99,49%
14:00	142° 19' 00"	1° 30' 31"	145° 10' 59"	15° 29' 56"	58' 38"	15' 58,49"	99° 10' 29"	99,43%
15:00	142° 53' 45"	1° 27' 28"	145° 44' 00"	15° 15' 40"	58' 36"	15' 58,03"	100° 11' 40"	99,35%
16:00	143° 28' 28"	1° 24' 25"	146° 16' 53"	15° 01' 20"	58' 34"	15' 57,57"	101° 07' 01"	99,28%
17:00	144° 03' 09"	1° 21' 21"	146° 49' 41"	14° 46' 57"	58' 33"	15' 57,11"	101° 57' 23"	99,20%
18:00	144° 37' 48"	1° 18' 17"	147° 22' 22"	14° 32' 29"	58' 31"	15' 56,64"	102° 43' 28"	99,12%
19:00	145° 12' 24"	1° 15' 13"	147° 54' 57"	14° 17' 58"	58' 29"	15' 56,17"	103° 25' 50"	99,03%
20:00	145° 46' 58"	1° 12' 09"	148° 27' 26"	14° 03' 23"	58' 28"	15' 55,70"	104° 04' 58"	98,94%
21:00	146° 21' 30"	1° 09' 04"	148° 59' 48"	13° 48' 45"	58' 26"	15' 55,22"	104° 41' 14"	98,84%
22:00	146° 56' 00"	1° 05' 59"	149° 32' 05"	13° 34' 04"	58' 24"	15' 54,74"	105° 14' 59"	98,74%
23:00	147° 30' 28"	1° 02' 54"	150° 04' 15"	13° 19' 19"	58' 22"	15' 54,26"	105° 46' 30"	98,64%
24:00	148° 04' 53"	0° 59' 49"	150° 36' 20"	13° 04' 31"	58' 20"	15' 53,77"	106° 16' 00"	98,53%

03 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	314° 09' 13"	0,21"	316° 37' 11"	-16° 34' 54"	0,9855792	16' 13,67"	23° 26' 18"	-13m 44s
01:00	314° 11' 45"	0,20"	316° 39' 42"	-16° 34' 10"	0,9855854	16' 13,67"	23° 26' 18"	-13m 44s
02:00	314° 14' 17"	0,20"	316° 42' 14"	-16° 33' 26"	0,9855916	16' 13,66"	23° 26' 18"	-13m 44s
03:00	314° 16' 49"	0,19"	316° 44' 46"	-16° 32' 42"	0,9855978	16' 13,65"	23° 26' 18"	-13m 44s
04:00	314° 19' 21"	0,18"	316° 47' 18"	-16° 31' 58"	0,9856040	16' 13,65"	23° 26' 18"	-13m 45s
05:00	314° 21' 54"	0,18"	316° 49' 50"	-16° 31' 14"	0,9856102	16' 13,64"	23° 26' 18"	-13m 45s
06:00	314° 24' 26"	0,17"	316° 52' 22"	-16° 30' 30"	0,9856164	16' 13,63"	23° 26' 18"	-13m 45s
07:00	314° 26' 58"	0,17"	316° 54' 54"	-16° 29' 46"	0,9856227	16' 13,63"	23° 26' 18"	-13m 46s
08:00	314° 29' 30"	0,16"	316° 57' 25"	-16° 29' 02"	0,9856289	16' 13,62"	23° 26' 18"	-13m 46s
09:00	314° 32' 02"	0,15"	316° 59' 57"	-16° 28' 17"	0,9856352	16' 13,62"	23° 26' 18"	-13m 46s
10:00	314° 34' 34"	0,15"	317° 02' 29"	-16° 27' 33"	0,9856414	16' 13,61"	23° 26' 18"	-13m 46s
11:00	314° 37' 06"	0,14"	317° 05' 01"	-16° 26' 49"	0,9856477	16' 13,60"	23° 26' 18"	-13m 47s
12:00	314° 39' 38"	0,14"	317° 07' 32"	-16° 26' 04"	0,9856540	16' 13,60"	23° 26' 18"	-13m 47s
13:00	314° 42' 10"	0,13"	317° 10' 04"	-16° 25' 20"	0,9856603	16' 13,59"	23° 26' 18"	-13m 47s
14:00	314° 44' 42"	0,13"	317° 12' 36"	-16° 24' 36"	0,9856666	16' 13,58"	23° 26' 18"	-13m 47s
15:00	314° 47' 14"	0,12"	317° 15' 07"	-16° 23' 51"	0,9856729	16' 13,58"	23° 26' 18"	-13m 48s
16:00	314° 49' 47"	0,11"	317° 17' 39"	-16° 23' 07"	0,9856792	16' 13,57"	23° 26' 18"	-13m 48s
17:00	314° 52' 19"	0,11"	317° 20' 11"	-16° 22' 22"	0,9856856	16' 13,57"	23° 26' 18"	-13m 48s
18:00	314° 54' 51"	0,10"	317° 22' 42"	-16° 21' 38"	0,9856919	16' 13,56"	23° 26' 18"	-13m 48s
19:00	314° 57' 23"	0,10"	317° 25' 14"	-16° 20' 53"	0,9856983	16' 13,55"	23° 26' 18"	-13m 49s
20:00	314° 59' 55"	0,09"	317° 27' 45"	-16° 20' 09"	0,9857047	16' 13,55"	23° 26' 18"	-13m 49s
21:00	315° 02' 27"	0,08"	317° 30' 17"	-16° 19' 24"	0,9857110	16' 13,54"	23° 26' 18"	-13m 49s
22:00	315° 04' 59"	0,08"	317° 32' 48"	-16° 18' 40"	0,9857174	16' 13,53"	23° 26' 18"	-13m 49s
23:00	315° 07' 31"	0,07"	317° 35' 20"	-16° 17' 55"	0,9857238	16' 13,53"	23° 26' 18"	-13m 50s
24:00	315° 10' 03"	0,07"	317° 37' 51"	-16° 17' 10"	0,9857302	16' 13,52"	23° 26' 18"	-13m 50s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	148° 04' 53"	0° 59' 49"	150° 36' 20"	13° 04' 31"	58' 20"	15' 53,77"	106° 16' 00"	98,53%
01:00	148° 39' 17"	0° 56' 43"	151° 08' 19"	12° 49' 40"	58' 19"	15' 53,28"	106° 43' 42"	98,42%
02:00	149° 13' 38"	0° 53' 37"	151° 40' 11"	12° 34' 47"	58' 17"	15' 52,79"	107° 09' 47"	98,30%
03:00	149° 47' 56"	0° 50' 32"	152° 11' 59"	12° 19' 50"	58' 15"	15' 52,30"	107° 34' 22"	98,18%
04:00	150° 22' 13"	0° 47' 26"	152° 43' 40"	12° 04' 51"	58' 13"	15' 51,80"	107° 57' 37"	98,06%
05:00	150° 56' 27"	0° 44' 20"	153° 15' 16"	11° 49' 49"	58' 11"	15' 51,31"	108° 19' 38"	97,93%
06:00	151° 30' 38"	0° 41' 14"	153° 46' 46"	11° 34' 44"	58' 10"	15' 50,80"	108° 40' 31"	97,80%
07:00	152° 04' 48"	0° 38' 07"	154° 18' 11"	11° 19' 38"	58' 08"	15' 50,30"	109° 00' 22"	97,66%
08:00	152° 38' 55"	0° 35' 01"	154° 49' 30"	11° 04' 29"	58' 06"	15' 49,80"	109° 19' 15"	97,52%
09:00	153° 13' 00"	0° 31' 55"	155° 20' 44"	10° 49' 17"	58' 04"	15' 49,29"	109° 37' 14"	97,38%
10:00	153° 47' 03"	0° 28' 49"	155° 51' 53"	10° 34' 04"	58' 02"	15' 48,78"	109° 54' 23"	97,23%
11:00	154° 21' 03"	0° 25' 43"	156° 22' 56"	10° 18' 48"	58' 00"	15' 48,27"	110° 10' 46"	97,08%
12:00	154° 55' 01"	0° 22' 37"	156° 53' 55"	10° 03' 31"	57' 58"	15' 47,75"	110° 26' 25"	96,92%
13:00	155° 28' 56"	0° 19' 31"	157° 24' 48"	9° 48' 12"	57' 56"	15' 47,24"	110° 41' 23"	96,76%
14:00	156° 02' 49"	0° 16' 25"	157° 55' 37"	9° 32' 51"	57' 55"	15' 46,72"	110° 55' 43"	96,60%
15:00	156° 36' 40"	0° 13' 19"	158° 26' 20"	9° 17' 28"	57' 53"	15' 46,20"	111° 09' 26"	96,43%
16:00	157° 10' 29"	0° 10' 13"	158° 56' 59"	9° 02' 04"	57' 51"	15' 45,68"	111° 22' 35"	96,26%
17:00	157° 44' 15"	0° 07' 07"	159° 27' 33"	8° 46' 38"	57' 49"	15' 45,16"	111° 35' 12"	96,09%
18:00	158° 17' 58"	0° 04' 02"	159° 58' 02"	8° 31' 11"	57' 47"	15' 44,64"	111° 47' 17"	95,91%
19:00	158° 51' 40"	0° 00' 57"	160° 28' 27"	8° 15' 43"	57' 45"	15' 44,11"	111° 58' 54"	95,73%
20:00	159° 25' 19"	-0° 02' 08"	160° 58' 47"	8° 00' 13"	57' 43"	15' 43,59"	112° 10' 02"	95,55%
21:00	159° 58' 55"	-0° 05' 13"	161° 29' 02"	7° 44' 43"	57' 41"	15' 43,06"	112° 20' 44"	95,36%
22:00	160° 32' 30"	-0° 08' 18"	161° 59' 14"	7° 29' 11"	57' 39"	15' 42,53"	112° 31' 00"	95,17%
23:00	161° 06' 02"	-0° 11' 22"	162° 29' 21"	7° 13' 38"	57' 37"	15' 42,00"	112° 40' 52"	94,97%
24:00	161° 39' 31"	-0° 14' 26"	162° 59' 23"	6° 58' 05"	57' 35"	15' 41,47"	112° 50' 20"	94,78%

04 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	315° 10' 03"	0,07"	317° 37' 51"	-16° 17' 10"	0,9857302	16' 13,52"	23° 26' 18"	-13m 50s
01:00	315° 12' 35"	0,06"	317° 40' 22"	-16° 16' 26"	0,9857366	16' 13,52"	23° 26' 18"	-13m 50s
02:00	315° 15' 07"	0,05"	317° 42' 54"	-16° 15' 41"	0,9857431	16' 13,51"	23° 26' 18"	-13m 50s
03:00	315° 17' 39"	0,05"	317° 45' 25"	-16° 14' 56"	0,9857495	16' 13,50"	23° 26' 18"	-13m 51s
04:00	315° 20' 11"	0,04"	317° 47' 57"	-16° 14' 11"	0,9857559	16' 13,50"	23° 26' 18"	-13m 51s
05:00	315° 22' 44"	0,04"	317° 50' 28"	-16° 13' 27"	0,9857624	16' 13,49"	23° 26' 18"	-13m 51s
06:00	315° 25' 16"	0,03"	317° 52' 59"	-16° 12' 42"	0,9857689	16' 13,48"	23° 26' 18"	-13m 51s
07:00	315° 27' 48"	0,03"	317° 55' 31"	-16° 11' 57"	0,9857753	16' 13,48"	23° 26' 18"	-13m 51s
08:00	315° 30' 20"	0,02"	317° 58' 02"	-16° 11' 12"	0,9857818	16' 13,47"	23° 26' 18"	-13m 52s
09:00	315° 32' 52"	0,01"	318° 00' 33"	-16° 10' 27"	0,9857883	16' 13,46"	23° 26' 18"	-13m 52s
10:00	315° 35' 24"	0,01"	318° 03' 04"	-16° 09' 42"	0,9857948	16' 13,46"	23° 26' 18"	-13m 52s
11:00	315° 37' 56"	0,00"	318° 05' 36"	-16° 08' 57"	0,9858013	16' 13,45"	23° 26' 18"	-13m 52s
12:00	315° 40' 28"	-0,00"	318° 08' 07"	-16° 08' 12"	0,9858078	16' 13,45"	23° 26' 18"	-13m 53s
13:00	315° 43' 00"	-0,01"	318° 10' 38"	-16° 07' 27"	0,9858144	16' 13,44"	23° 26' 18"	-13m 53s
14:00	315° 45' 32"	-0,02"	318° 13' 09"	-16° 06' 42"	0,9858209	16' 13,43"	23° 26' 18"	-13m 53s
15:00	315° 48' 04"	-0,02"	318° 15' 40"	-16° 05' 57"	0,9858274	16' 13,43"	23° 26' 18"	-13m 53s
16:00	315° 50' 36"	-0,03"	318° 18' 11"	-16° 05' 12"	0,9858340	16' 13,42"	23° 26' 18"	-13m 53s
17:00	315° 53' 08"	-0,03"	318° 20' 42"	-16° 04' 27"	0,9858406	16' 13,41"	23° 26' 18"	-13m 54s
18:00	315° 55' 40"	-0,04"	318° 23' 14"	-16° 03' 41"	0,9858472	16' 13,41"	23° 26' 18"	-13m 54s
19:00	315° 58' 12"	-0,04"	318° 25' 45"	-16° 02' 56"	0,9858537	16' 13,40"	23° 26' 18"	-13m 54s
20:00	316° 00' 44"	-0,05"	318° 28' 16"	-16° 02' 11"	0,9858603	16' 13,39"	23° 26' 18"	-13m 54s
21:00	316° 03' 16"	-0,06"	318° 30' 47"	-16° 01' 26"	0,9858669	16' 13,39"	23° 26' 18"	-13m 55s
22:00	316° 05' 48"	-0,06"	318° 33' 18"	-16° 00' 40"	0,9858736	16' 13,38"	23° 26' 18"	-13m 55s
23:00	316° 08' 20"	-0,07"	318° 35' 49"	-15° 59' 55"	0,9858802	16' 13,37"	23° 26' 18"	-13m 55s
24:00	316° 10' 52"	-0,07"	318° 38' 20"	-15° 59' 10"	0,9858868	16' 13,37"	23° 26' 18"	-13m 55s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	161° 39' 31"	-0° 14' 26"	162° 59' 23"	6° 58' 05"	57' 35"	15' 41,47"	112° 50' 20"	94,78%
01:00	162° 12' 58"	-0° 17' 30"	163° 29' 22"	6° 42' 30"	57' 33"	15' 40,94"	112° 59' 25"	94,57%
02:00	162° 46' 23"	-0° 20' 33"	163° 59' 17"	6° 26' 55"	57' 31"	15' 40,40"	113° 08' 09"	94,37%
03:00	163° 19' 45"	-0° 23' 36"	164° 29' 07"	6° 11' 20"	57' 29"	15' 39,87"	113° 16' 32"	94,16%
04:00	163° 53' 05"	-0° 26' 39"	164° 58' 54"	5° 55' 43"	57' 27"	15' 39,34"	113° 24' 35"	93,95%
05:00	164° 26' 23"	-0° 29' 41"	165° 28' 37"	5° 40' 07"	57' 26"	15' 38,80"	113° 32' 18"	93,73%
06:00	164° 59' 38"	-0° 32' 43"	165° 58' 16"	5° 24' 30"	57' 24"	15' 38,27"	113° 39' 42"	93,52%
07:00	165° 32' 51"	-0° 35' 45"	166° 27' 51"	5° 08' 52"	57' 22"	15' 37,73"	113° 46' 48"	93,29%
08:00	166° 06' 01"	-0° 38' 46"	166° 57' 23"	4° 53' 15"	57' 20"	15' 37,20"	113° 53' 36"	93,07%
09:00	166° 39' 09"	-0° 41' 47"	167° 26' 51"	4° 37' 37"	57' 18"	15' 36,66"	114° 00' 06"	92,84%
10:00	167° 12' 15"	-0° 44' 48"	167° 56' 16"	4° 21' 59"	57' 16"	15' 36,12"	114° 06' 20"	92,61%
11:00	167° 45' 18"	-0° 47' 47"	168° 25' 37"	4° 06' 21"	57' 14"	15' 35,59"	114° 12' 18"	92,38%
12:00	168° 18' 19"	-0° 50' 47"	168° 54' 55"	3° 50' 43"	57' 12"	15' 35,05"	114° 18' 00"	92,14%
13:00	168° 51' 18"	-0° 53' 46"	169° 24' 10"	3° 35' 06"	57' 10"	15' 34,51"	114° 23' 26"	91,90%
14:00	169° 24' 14"	-0° 56' 44"	169° 53' 22"	3° 19' 28"	57' 08"	15' 33,98"	114° 28' 37"	91,66%
15:00	169° 57' 08"	-0° 59' 42"	170° 22' 30"	3° 03' 51"	57' 06"	15' 33,44"	114° 33' 33"	91,41%
16:00	170° 29' 59"	-1° 02' 40"	170° 51' 36"	2° 48' 14"	57' 04"	15' 32,91"	114° 38' 15"	91,16%
17:00	171° 02' 48"	-1° 05' 36"	171° 20' 38"	2° 32' 38"	57' 02"	15' 32,37"	114° 42' 43"	90,91%
18:00	171° 35' 35"	-1° 08' 33"	171° 49' 38"	2° 17' 02"	57' 00"	15' 31,83"	114° 46' 57"	90,66%
19:00	172° 08' 19"	-1° 11' 28"	172° 18' 35"	2° 01' 27"	56' 58"	15' 31,30"	114° 50' 58"	90,40%
20:00	172° 41' 01"	-1° 14' 23"	172° 47' 30"	1° 45' 52"	56' 56"	15' 30,77"	114° 54' 45"	90,14%
21:00	173° 13' 41"	-1° 17' 18"	173° 16' 22"	1° 30' 18"	56' 54"	15' 30,23"	114° 58' 19"	89,88%
22:00	173° 46' 18"	-1° 20' 12"	173° 45' 11"	1° 14' 44"	56' 52"	15' 29,70"	115° 01' 40"	89,61%
23:00	174° 18' 53"	-1° 23' 05"	174° 13' 58"	0° 59' 12"	56' 50"	15' 29,17"	115° 04' 49"	89,34%
24:00	174° 51' 26"	-1° 25' 58"	174° 42' 42"	0° 43' 40"	56' 48"	15' 28,63"	115° 07' 46"	89,07%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	316° 10' 52"	-0,07"	318° 38' 20"	-15° 59' 10"	0,9858868	16' 13,37"	23° 26' 18"	-13m 55s
01:00	316° 13' 24"	-0,08"	318° 40' 50"	-15° 58' 24"	0,9858935	16' 13,36"	23° 26' 18"	-13m 55s
02:00	316° 15' 56"	-0,08"	318° 43' 21"	-15° 57' 39"	0,9859001	16' 13,35"	23° 26' 18"	-13m 56s
03:00	316° 18' 28"	-0,09"	318° 45' 52"	-15° 56' 53"	0,9859068	16' 13,35"	23° 26' 18"	-13m 56s
04:00	316° 21' 01"	-0,10"	318° 48' 23"	-15° 56' 08"	0,9859134	16' 13,34"	23° 26' 18"	-13m 56s
05:00	316° 23' 33"	-0,10"	318° 50' 54"	-15° 55' 22"	0,9859201	16' 13,33"	23° 26' 18"	-13m 56s
06:00	316° 26' 05"	-0,11"	318° 53' 25"	-15° 54' 37"	0,9859268	16' 13,33"	23° 26' 18"	-13m 56s
07:00	316° 28' 37"	-0,11"	318° 55' 56"	-15° 53' 51"	0,9859335	16' 13,32"	23° 26' 18"	-13m 57s
08:00	316° 31' 09"	-0,12"	318° 58' 26"	-15° 53' 06"	0,9859402	16' 13,31"	23° 26' 18"	-13m 57s
09:00	316° 33' 41"	-0,12"	319° 00' 57"	-15° 52' 20"	0,9859469	16' 13,31"	23° 26' 18"	-13m 57s
10:00	316° 36' 13"	-0,13"	319° 03' 28"	-15° 51' 34"	0,9859536	16' 13,30"	23° 26' 18"	-13m 57s
11:00	316° 38' 45"	-0,13"	319° 05' 59"	-15° 50' 49"	0,9859604	16' 13,29"	23° 26' 18"	-13m 57s
12:00	316° 41' 17"	-0,14"	319° 08' 29"	-15° 50' 03"	0,9859671	16' 13,29"	23° 26' 18"	-13m 58s
13:00	316° 43' 49"	-0,14"	319° 11' 00"	-15° 49' 17"	0,9859739	16' 13,28"	23° 26' 18"	-13m 58s
14:00	316° 46' 21"	-0,15"	319° 13' 31"	-15° 48' 31"	0,9859806	16' 13,27"	23° 26' 18"	-13m 58s
15:00	316° 48' 53"	-0,16"	319° 16' 01"	-15° 47' 46"	0,9859874	16' 13,27"	23° 26' 18"	-13m 58s
16:00	316° 51' 25"	-0,16"	319° 18' 32"	-15° 47' 00"	0,9859942	16' 13,26"	23° 26' 18"	-13m 58s
17:00	316° 53' 57"	-0,17"	319° 21' 02"	-15° 46' 14"	0,9860010	16' 13,25"	23° 26' 18"	-13m 58s
18:00	316° 56' 29"	-0,17"	319° 23' 33"	-15° 45' 28"	0,9860078	16' 13,25"	23° 26' 18"	-13m 59s
19:00	316° 59' 01"	-0,18"	319° 26' 04"	-15° 44' 42"	0,9860146	16' 13,24"	23° 26' 18"	-13m 59s
20:00	317° 01' 33"	-0,18"	319° 28' 34"	-15° 43' 56"	0,9860214	16' 13,23"	23° 26' 18"	-13m 59s
21:00	317° 04' 05"	-0,19"	319° 31' 05"	-15° 43' 10"	0,9860282	16' 13,23"	23° 26' 18"	-13m 59s
22:00	317° 06' 37"	-0,19"	319° 33' 35"	-15° 42' 24"	0,9860350	16' 13,22"	23° 26' 18"	-13m 59s
23:00	317° 09' 09"	-0,20"	319° 36' 06"	-15° 41' 38"	0,9860419	16' 13,21"	23° 26' 18"	-14m 00s
24:00	317° 11' 41"	-0,20"	319° 38' 36"	-15° 40' 52"	0,9860487	16' 13,21"	23° 26' 18"	-14m 00s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	174° 51' 26"	-1° 25' 58"	174° 42' 42"	0° 43' 40"	56' 48"	15' 28,63"	115° 07' 46"	89,07%
01:00	175° 23' 56"	-1° 28' 50"	175° 11' 24"	0° 28' 10"	56' 46"	15' 28,10"	115° 10' 30"	88,80%
02:00	175° 56' 25"	-1° 31' 41"	175° 40' 04"	0° 12' 40"	56' 44"	15' 27,57"	115° 13' 03"	88,52%
03:00	176° 28' 50"	-1° 34' 31"	176° 08' 41"	-0° 02' 48"	56' 42"	15' 27,05"	115° 15' 24"	88,25%
04:00	177° 01' 14"	-1° 37' 21"	176° 37' 17"	-0° 18' 16"	56' 40"	15' 26,52"	115° 17' 33"	87,96%
05:00	177° 33' 35"	-1° 40' 10"	177° 05' 51"	-0° 33' 42"	56' 39"	15' 25,99"	115° 19' 31"	87,68%
06:00	178° 05' 54"	-1° 42' 59"	177° 34' 22"	-0° 49' 07"	56' 37"	15' 25,47"	115° 21' 18"	87,39%
07:00	178° 38' 11"	-1° 45' 46"	178° 02' 52"	-1° 04' 30"	56' 35"	15' 24,94"	115° 22' 54"	87,11%
08:00	179° 10' 25"	-1° 48' 33"	178° 31' 20"	-1° 19' 53"	56' 33"	15' 24,42"	115° 24' 19"	86,81%
09:00	179° 42' 37"	-1° 51' 19"	178° 59' 46"	-1° 35' 14"	56' 31"	15' 23,90"	115° 25' 33"	86,52%
10:00	180° 14' 47"	-1° 54' 05"	179° 28' 11"	-1° 50' 33"	56' 29"	15' 23,38"	115° 26' 36"	86,23%
11:00	180° 46' 55"	-1° 56' 49"	179° 56' 34"	-2° 05' 51"	56' 27"	15' 22,86"	115° 27' 29"	85,93%
12:00	181° 19' 01"	-1° 59' 33"	180° 24' 55"	-2° 21' 07"	56' 25"	15' 22,35"	115° 28' 12"	85,63%
13:00	181° 51' 04"	-2° 02' 16"	180° 53' 15"	-2° 36' 21"	56' 23"	15' 21,83"	115° 28' 45"	85,32%
14:00	182° 23' 05"	-2° 04' 58"	181° 21' 34"	-2° 51' 34"	56' 21"	15' 21,32"	115° 29' 07"	85,02%
15:00	182° 55' 04"	-2° 07' 40"	181° 49' 51"	-3° 06' 45"	56' 19"	15' 20,81"	115° 29' 20"	84,71%
16:00	183° 27' 01"	-2° 10' 20"	182° 18' 08"	-3° 21' 54"	56' 18"	15' 20,30"	115° 29' 22"	84,40%
17:00	183° 58' 55"	-2° 13' 00"	182° 46' 23"	-3° 37' 01"	56' 16"	15' 19,79"	115° 29' 15"	84,09%
18:00	184° 30' 48"	-2° 15' 38"	183° 14' 37"	-3° 52' 06"	56' 14"	15' 19,29"	115° 28' 58"	83,78%
19:00	185° 02' 38"	-2° 18' 16"	183° 42' 50"	-4° 07' 10"	56' 12"	15' 18,78"	115° 28' 32"	83,46%
20:00	185° 34' 26"	-2° 20' 53"	184° 11' 02"	-4° 22' 11"	56' 10"	15' 18,28"	115° 27' 56"	83,15%
21:00	186° 06' 12"	-2° 23' 29"	184° 39' 13"	-4° 37' 10"	56' 08"	15' 17,78"	115° 27' 10"	82,83%
22:00	186° 37' 56"	-2° 26' 04"	185° 07' 23"	-4° 52' 07"	56' 07"	15' 17,29"	115° 26' 16"	82,51%
23:00	187° 09' 38"	-2° 28' 39"	185° 35' 33"	-5° 07' 02"	56' 05"	15' 16,79"	115° 25' 12"	82,18%
24:00	187° 41' 18"	-2° 31' 12"	186° 03' 42"	-5° 21' 54"	56' 03"	15' 16,30"	115° 23' 59"	81,86%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	317° 11' 41"	-0,20"	319° 38' 36"	-15° 40' 52"	0,9860487	16' 13,21"	23° 26' 18"	-14m 00s
01:00	317° 14' 13"	-0,21"	319° 41' 06"	-15° 40' 06"	0,9860556	16' 13,20"	23° 26' 18"	-14m 00s
02:00	317° 16' 45"	-0,21"	319° 43' 37"	-15° 39' 20"	0,9860625	16' 13,19"	23° 26' 18"	-14m 00s
03:00	317° 19' 17"	-0,22"	319° 46' 07"	-15° 38' 34"	0,9860693	16' 13,19"	23° 26' 18"	-14m 00s
04:00	317° 21' 49"	-0,22"	319° 48' 38"	-15° 37' 48"	0,9860762	16' 13,18"	23° 26' 18"	-14m 00s
05:00	317° 24' 21"	-0,23"	319° 51' 08"	-15° 37' 02"	0,9860831	16' 13,17"	23° 26' 18"	-14m 01s
06:00	317° 26' 53"	-0,23"	319° 53' 38"	-15° 36' 15"	0,9860900	16' 13,17"	23° 26' 18"	-14m 01s
07:00	317° 29' 25"	-0,24"	319° 56' 09"	-15° 35' 29"	0,9860969	16' 13,16"	23° 26' 18"	-14m 01s
08:00	317° 31' 57"	-0,24"	319° 58' 39"	-15° 34' 43"	0,9861039	16' 13,15"	23° 26' 18"	-14m 01s
09:00	317° 34' 28"	-0,25"	320° 01' 09"	-15° 33' 56"	0,9861108	16' 13,15"	23° 26' 18"	-14m 01s
10:00	317° 37' 00"	-0,25"	320° 03' 39"	-15° 33' 10"	0,9861177	16' 13,14"	23° 26' 18"	-14m 01s
11:00	317° 39' 32"	-0,26"	320° 06' 10"	-15° 32' 24"	0,9861247	16' 13,13"	23° 26' 18"	-14m 02s
12:00	317° 42' 04"	-0,26"	320° 08' 40"	-15° 31' 37"	0,9861316	16' 13,13"	23° 26' 18"	-14m 02s
13:00	317° 44' 36"	-0,27"	320° 11' 10"	-15° 30' 51"	0,9861386	16' 13,12"	23° 26' 18"	-14m 02s
14:00	317° 47' 08"	-0,27"	320° 13' 40"	-15° 30' 05"	0,9861455	16' 13,11"	23° 26' 18"	-14m 02s
15:00	317° 49' 40"	-0,28"	320° 16' 10"	-15° 29' 18"	0,9861525	16' 13,11"	23° 26' 18"	-14m 02s
16:00	317° 52' 12"	-0,28"	320° 18' 40"	-15° 28' 32"	0,9861595	16' 13,10"	23° 26' 18"	-14m 02s
17:00	317° 54' 44"	-0,29"	320° 21' 11"	-15° 27' 45"	0,9861665	16' 13,09"	23° 26' 18"	-14m 02s
18:00	317° 57' 16"	-0,29"	320° 23' 41"	-15° 26' 59"	0,9861735	16' 13,08"	23° 26' 18"	-14m 03s
19:00	317° 59' 48"	-0,30"	320° 26' 11"	-15° 26' 12"	0,9861805	16' 13,08"	23° 26' 18"	-14m 03s
20:00	318° 02' 20"	-0,30"	320° 28' 41"	-15° 25' 25"	0,9861876	16' 13,07"	23° 26' 18"	-14m 03s
21:00	318° 04' 52"	-0,31"	320° 31' 11"	-15° 24' 39"	0,9861946	16' 13,06"	23° 26' 18"	-14m 03s
22:00	318° 07' 24"	-0,31"	320° 33' 41"	-15° 23' 52"	0,9862016	16' 13,06"	23° 26' 18"	-14m 03s
23:00	318° 09' 56"	-0,31"	320° 36' 11"	-15° 23' 05"	0,9862087	16' 13,05"	23° 26' 18"	-14m 03s
24:00	318° 12' 28"	-0,32"	320° 38' 41"	-15° 22' 19"	0,9862157	16' 13,04"	23° 26' 18"	-14m 03s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	187° 41' 18"	-2° 31' 12"	186° 03' 42"	-5° 21' 54"	56' 03"	15' 16,30"	115° 23' 59"	81,86%
01:00	188° 12' 55"	-2° 33' 44"	186° 31' 50"	-5° 36' 45"	56' 01"	15' 15,81"	115° 22' 37"	81,53%
02:00	188° 44' 31"	-2° 36' 16"	186° 59' 58"	-5° 51' 32"	55' 59"	15' 15,33"	115° 21' 06"	81,20%
03:00	189° 16' 04"	-2° 38' 46"	187° 28' 06"	-6° 06' 18"	55' 58"	15' 14,84"	115° 19' 26"	80,87%
04:00	189° 47' 36"	-2° 41' 16"	187° 56' 13"	-6° 21' 01"	55' 56"	15' 14,36"	115° 17' 37"	80,54%
05:00	190° 19' 05"	-2° 43' 44"	188° 24' 20"	-6° 35' 41"	55' 54"	15' 13,88"	115° 15' 40"	80,20%
06:00	190° 50' 33"	-2° 46' 12"	188° 52' 26"	-6° 50' 19"	55' 52"	15' 13,41"	115° 13' 33"	79,87%
07:00	191° 21' 58"	-2° 48' 38"	189° 20' 33"	-7° 04' 54"	55' 51"	15' 12,93"	115° 11' 19"	79,53%
08:00	191° 53' 22"	-2° 51' 04"	189° 48' 39"	-7° 19' 27"	55' 49"	15' 12,46"	115° 08' 55"	79,19%
09:00	192° 24' 43"	-2° 53' 29"	190° 16' 45"	-7° 33' 57"	55' 47"	15' 12,00"	115° 06' 23"	78,85%
10:00	192° 56' 03"	-2° 55' 52"	190° 44' 51"	-7° 48' 24"	55' 45"	15' 11,53"	115° 03' 43"	78,50%
11:00	193° 27' 21"	-2° 58' 15"	191° 12' 58"	-8° 02' 49"	55' 44"	15' 11,07"	115° 00' 54"	78,16%
12:00	193° 58' 37"	-3° 00' 36"	191° 41' 04"	-8° 17' 10"	55' 42"	15' 10,61"	114° 57' 57"	77,81%
13:00	194° 29' 50"	-3° 02' 57"	192° 09' 11"	-8° 31' 29"	55' 40"	15' 10,16"	114° 54' 51"	77,47%
14:00	195° 01' 02"	-3° 05' 16"	192° 37' 18"	-8° 45' 44"	55' 39"	15' 09,70"	114° 51' 37"	77,12%
15:00	195° 32' 13"	-3° 07' 34"	193° 05' 25"	-8° 59' 57"	55' 37"	15' 09,26"	114° 48' 15"	76,77%
16:00	196° 03' 21"	-3° 09' 52"	193° 33' 33"	-9° 14' 07"	55' 35"	15' 08,81"	114° 44' 45"	76,41%
17:00	196° 34' 27"	-3° 12' 08"	194° 01' 41"	-9° 28' 13"	55' 34"	15' 08,37"	114° 41' 07"	76,06%
18:00	197° 05' 32"	-3° 14' 23"	194° 29' 50"	-9° 42' 17"	55' 32"	15' 07,93"	114° 37' 21"	75,71%
19:00	197° 36' 35"	-3° 16' 37"	194° 57' 59"	-9° 56' 17"	55' 31"	15' 07,49"	114° 33' 26"	75,35%
20:00	198° 07' 36"	-3° 18' 50"	195° 26' 09"	-10° 10' 14"	55' 29"	15' 07,06"	114° 29' 24"	74,99%
21:00	198° 38' 35"	-3° 21' 02"	195° 54' 20"	-10° 24' 08"	55' 27"	15' 06,63"	114° 25' 14"	74,63%
22:00	199° 09' 33"	-3° 23' 12"	196° 22' 31"	-10° 37' 58"	55' 26"	15' 06,21"	114° 20' 56"	74,27%
23:00	199° 40' 28"	-3° 25' 22"	196° 50' 44"	-10° 51' 46"	55' 24"	15' 05,79"	114° 16' 30"	73,91%
24:00	200° 11' 22"	-3° 27' 31"	197° 18' 57"	-11° 05' 29"	55' 23"	15' 05,37"	114° 11' 56"	73,55%

07 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	318° 12' 28"	-0,32"	320° 38' 41"	-15° 22' 19"	0,9862157	16' 13,04"	23° 26' 18"	-14m 03s
01:00	318° 15' 00"	-0,32"	320° 41' 11"	-15° 21' 32"	0,9862228	16' 13,04"	23° 26' 18"	-14m 04s
02:00	318° 17' 32"	-0,33"	320° 43' 41"	-15° 20' 45"	0,9862299	16' 13,03"	23° 26' 18"	-14m 04s
03:00	318° 20' 04"	-0,33"	320° 46' 10"	-15° 19' 58"	0,9862369	16' 13,02"	23° 26' 18"	-14m 04s
04:00	318° 22' 36"	-0,34"	320° 48' 40"	-15° 19' 11"	0,9862440	16' 13,01"	23° 26' 18"	-14m 04s
05:00	318° 25' 08"	-0,34"	320° 51' 10"	-15° 18' 25"	0,9862511	16' 13,01"	23° 26' 18"	-14m 04s
06:00	318° 27' 40"	-0,35"	320° 53' 40"	-15° 17' 38"	0,9862582	16' 13,00"	23° 26' 18"	-14m 04s
07:00	318° 30' 12"	-0,35"	320° 56' 10"	-15° 16' 51"	0,9862653	16' 12,99"	23° 26' 18"	-14m 04s
08:00	318° 32' 44"	-0,35"	320° 58' 40"	-15° 16' 04"	0,9862725	16' 12,99"	23° 26' 18"	-14m 05s
09:00	318° 35' 15"	-0,36"	321° 01' 09"	-15° 15' 17"	0,9862796	16' 12,98"	23° 26' 18"	-14m 05s
10:00	318° 37' 47"	-0,36"	321° 03' 39"	-15° 14' 30"	0,9862867	16' 12,97"	23° 26' 18"	-14m 05s
11:00	318° 40' 19"	-0,37"	321° 06' 09"	-15° 13' 43"	0,9862939	16' 12,97"	23° 26' 18"	-14m 05s
12:00	318° 42' 51"	-0,37"	321° 08' 39"	-15° 12' 56"	0,9863010	16' 12,96"	23° 26' 18"	-14m 05s
13:00	318° 45' 23"	-0,37"	321° 11' 08"	-15° 12' 09"	0,9863082	16' 12,95"	23° 26' 18"	-14m 05s
14:00	318° 47' 55"	-0,38"	321° 13' 38"	-15° 11' 22"	0,9863154	16' 12,94"	23° 26' 18"	-14m 05s
15:00	318° 50' 27"	-0,38"	321° 16' 08"	-15° 10' 35"	0,9863225	16' 12,94"	23° 26' 18"	-14m 05s
16:00	318° 52' 59"	-0,39"	321° 18' 37"	-15° 09' 47"	0,9863297	16' 12,93"	23° 26' 18"	-14m 06s
17:00	318° 55' 31"	-0,39"	321° 21' 07"	-15° 09' 00"	0,9863369	16' 12,92"	23° 26' 18"	-14m 06s
18:00	318° 58' 03"	-0,39"	321° 23' 37"	-15° 08' 13"	0,9863441	16' 12,92"	23° 26' 18"	-14m 06s
19:00	319° 00' 35"	-0,40"	321° 26' 06"	-15° 07' 26"	0,9863513	16' 12,91"	23° 26' 18"	-14m 06s
20:00	319° 03' 07"	-0,40"	321° 28' 36"	-15° 06' 39"	0,9863585	16' 12,90"	23° 26' 18"	-14m 06s
21:00	319° 05' 39"	-0,40"	321° 31' 05"	-15° 05' 51"	0,9863658	16' 12,89"	23° 26' 18"	-14m 06s
22:00	319° 08' 10"	-0,41"	321° 33' 35"	-15° 05' 04"	0,9863730	16' 12,89"	23° 26' 18"	-14m 06s
23:00	319° 10' 42"	-0,41"	321° 36' 04"	-15° 04' 17"	0,9863802	16' 12,88"	23° 26' 18"	-14m 06s
24:00	319° 13' 14"	-0,42"	321° 38' 34"	-15° 03' 29"	0,9863875	16' 12,87"	23° 26' 18"	-14m 06s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	200° 11' 22"	-3° 27' 31"	197° 18' 57"	-11° 05' 29"	55' 23"	15' 05,37"	114° 11' 56"	73,55%
01:00	200° 42' 15"	-3° 29' 38"	197° 47' 11"	-11° 19' 10"	55' 21"	15' 04,95"	114° 07' 14"	73,19%
02:00	201° 13' 05"	-3° 31' 44"	198° 15' 26"	-11° 32' 47"	55' 20"	15' 04,54"	114° 02' 25"	72,82%
03:00	201° 43' 54"	-3° 33' 49"	198° 43' 42"	-11° 46' 20"	55' 18"	15' 04,14"	113° 57' 28"	72,45%
04:00	202° 14' 42"	-3° 35' 53"	199° 12' 00"	-11° 59' 50"	55' 17"	15' 03,73"	113° 52' 23"	72,09%
05:00	202° 45' 27"	-3° 37' 56"	199° 40' 18"	-12° 13' 16"	55' 15"	15' 03,33"	113° 47' 11"	71,72%
06:00	203° 16' 12"	-3° 39' 58"	200° 08' 38"	-12° 26' 38"	55' 14"	15' 02,94"	113° 41' 51"	71,35%
07:00	203° 46' 54"	-3° 41' 58"	200° 37' 00"	-12° 39' 57"	55' 12"	15' 02,55"	113° 36' 23"	70,98%
08:00	204° 17' 35"	-3° 43' 58"	201° 05' 22"	-12° 53' 12"	55' 11"	15' 02,16"	113° 30' 48"	70,61%
09:00	204° 48' 14"	-3° 45' 56"	201° 33' 46"	-13° 06' 23"	55' 10"	15' 01,77"	113° 25' 06"	70,23%
10:00	205° 18' 52"	-3° 47' 53"	202° 02' 12"	-13° 19' 31"	55' 08"	15' 01,39"	113° 19' 16"	69,86%
11:00	205° 49' 28"	-3° 49' 49"	202° 30' 39"	-13° 32' 34"	55' 07"	15' 01,02"	113° 13' 18"	69,48%
12:00	206° 20' 03"	-3° 51' 43"	202° 59' 07"	-13° 45' 34"	55' 05"	15' 00,65"	113° 07' 13"	69,11%
13:00	206° 50' 37"	-3° 53' 37"	203° 27' 37"	-13° 58' 30"	55' 04"	15' 00,28"	113° 01' 01"	68,73%
14:00	207° 21' 08"	-3° 55' 29"	203° 56' 09"	-14° 11' 21"	55' 03"	15' 00,00"	112° 54' 41"	68,36%
15:00	207° 51' 39"	-3° 57' 20"	204° 24' 43"	-14° 24' 09"	55' 01"	15' 00,00"	112° 48' 14"	67,98%
16:00	208° 22' 08"	-3° 59' 10"	204° 53' 18"	-14° 36' 53"	55' 00"	14' 59,20"	112° 41' 40"	67,60%
17:00	208° 52' 35"	-4° 00' 59"	205° 21' 56"	-14° 49' 32"	54' 59"	14' 58,85"	112° 34' 58"	67,22%
18:00	209° 23' 02"	-4° 02' 46"	205° 50' 35"	-15° 02' 07"	54' 58"	14' 58,50"	112° 28' 09"	66,84%
19:00	209° 53' 26"	-4° 04' 32"	206° 19' 16"	-15° 14' 38"	54' 56"	14' 58,16"	112° 21' 13"	66,46%
20:00	210° 23' 50"	-4° 06' 17"	206° 47' 59"	-15° 27' 05"	54' 55"	14' 57,83"	112° 14' 10"	66,07%
21:00	210° 54' 12"	-4° 08' 01"	207° 16' 45"	-15° 39' 28"	54' 54"	14' 57,49"	112° 06' 59"	65,69%
22:00	211° 24' 33"	-4° 09' 43"	207° 45' 32"	-15° 51' 46"	54' 53"	14' 57,16"	111° 59' 42"	65,31%
23:00	211° 54' 52"	-4° 11' 25"	208° 14' 21"	-16° 04' 00"	54' 52"	14' 56,84"	111° 52' 17"	64,92%
24:00	212° 25' 10"	-4° 13' 05"	208° 43' 13"	-16° 16' 09"	54' 50"	14' 56,52"	111° 44' 45"	64,54%

08 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	319° 13' 14"	-0,42"	321° 38' 34"	-15° 03' 29"	0,9863875	16' 12,87"	23° 26' 18"	-14m 06s
01:00	319° 15' 46"	-0,42"	321° 41' 03"	-15° 02' 42"	0,9863947	16' 12,87"	23° 26' 18"	-14m 07s
02:00	319° 18' 18"	-0,42"	321° 43' 33"	-15° 01' 54"	0,9864020	16' 12,86"	23° 26' 18"	-14m 07s
03:00	319° 20' 50"	-0,43"	321° 46' 02"	-15° 01' 07"	0,9864093	16' 12,85"	23° 26' 18"	-14m 07s
04:00	319° 23' 22"	-0,43"	321° 48' 31"	-15° 00' 20"	0,9864165	16' 12,84"	23° 26' 18"	-14m 07s
05:00	319° 25' 54"	-0,43"	321° 51' 01"	-14° 59' 32"	0,9864238	16' 12,84"	23° 26' 18"	-14m 07s
06:00	319° 28' 26"	-0,44"	321° 53' 30"	-14° 58' 45"	0,9864311	16' 12,83"	23° 26' 18"	-14m 07s
07:00	319° 30' 58"	-0,44"	321° 56' 00"	-14° 57' 57"	0,9864384	16' 12,82"	23° 26' 18"	-14m 07s
08:00	319° 33' 30"	-0,44"	321° 58' 29"	-14° 57' 09"	0,9864457	16' 12,82"	23° 26' 18"	-14m 07s
09:00	319° 36' 01"	-0,45"	322° 00' 58"	-14° 56' 22"	0,9864531	16' 12,81"	23° 26' 18"	-14m 07s
10:00	319° 38' 33"	-0,45"	322° 03' 27"	-14° 55' 34"	0,9864604	16' 12,80"	23° 26' 18"	-14m 07s
11:00	319° 41' 05"	-0,45"	322° 05' 57"	-14° 54' 46"	0,9864677	16' 12,79"	23° 26' 18"	-14m 08s
12:00	319° 43' 37"	-0,46"	322° 08' 26"	-14° 53' 59"	0,9864750	16' 12,79"	23° 26' 18"	-14m 08s
13:00	319° 46' 09"	-0,46"	322° 10' 55"	-14° 53' 11"	0,9864824	16' 12,78"	23° 26' 18"	-14m 08s
14:00	319° 48' 41"	-0,46"	322° 13' 24"	-14° 52' 23"	0,9864898	16' 12,77"	23° 26' 18"	-14m 08s
15:00	319° 51' 13"	-0,46"	322° 15' 53"	-14° 51' 36"	0,9864971	16' 12,77"	23° 26' 18"	-14m 08s
16:00	319° 53' 45"	-0,47"	322° 18' 23"	-14° 50' 48"	0,9865045	16' 12,76"	23° 26' 18"	-14m 08s
17:00	319° 56' 17"	-0,47"	322° 20' 52"	-14° 50' 00"	0,9865119	16' 12,75"	23° 26' 18"	-14m 08s
18:00	319° 58' 48"	-0,47"	322° 23' 21"	-14° 49' 12"	0,9865192	16' 12,74"	23° 26' 18"	-14m 08s
19:00	320° 01' 20"	-0,48"	322° 25' 50"	-14° 48' 24"	0,9865266	16' 12,74"	23° 26' 18"	-14m 08s
20:00	320° 03' 52"	-0,48"	322° 28' 19"	-14° 47' 36"	0,9865340	16' 12,73"	23° 26' 18"	-14m 08s
21:00	320° 06' 24"	-0,48"	322° 30' 48"	-14° 46' 48"	0,9865414	16' 12,72"	23° 26' 18"	-14m 08s
22:00	320° 08' 56"	-0,48"	322° 33' 17"	-14° 46' 01"	0,9865489	16' 12,71"	23° 26' 18"	-14m 08s
23:00	320° 11' 28"	-0,49"	322° 35' 46"	-14° 45' 13"	0,9865563	16' 12,71"	23° 26' 18"	-14m 09s
24:00	320° 14' 00"	-0,49"	322° 38' 15"	-14° 44' 25"	0,9865637	16' 12,70"	23° 26' 18"	-14m 09s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	212° 25' 10"	-4° 13' 05"	208° 43' 13"	-16° 16' 09"	54' 50"	14' 56,52"	111° 44' 45"	64,54%
01:00	212° 55' 27"	-4° 14' 43"	209° 12' 07"	-16° 28' 14"	54' 49"	14' 56,20"	111° 37' 06"	64,15%
02:00	213° 25' 43"	-4° 16' 21"	209° 41' 03"	-16° 40' 14"	54' 48"	14' 55,89"	111° 29' 20"	63,77%
03:00	213° 55' 58"	-4° 17' 57"	210° 10' 02"	-16° 52' 10"	54' 47"	14' 55,58"	111° 21' 27"	63,38%
04:00	214° 26' 11"	-4° 19' 32"	210° 39' 03"	-17° 04' 01"	54' 46"	14' 55,28"	111° 13' 27"	62,99%
05:00	214° 56' 23"	-4° 21' 06"	211° 08' 06"	-17° 15' 48"	54' 45"	14' 54,98"	111° 05' 20"	62,60%
06:00	215° 26' 34"	-4° 22' 38"	211° 37' 12"	-17° 27' 30"	54' 44"	14' 54,69"	110° 57' 06"	62,21%
07:00	215° 56' 44"	-4° 24' 10"	212° 06' 21"	-17° 39' 07"	54' 43"	14' 54,40"	110° 48' 45"	61,83%
08:00	216° 26' 53"	-4° 25' 39"	212° 35' 31"	-17° 50' 40"	54' 42"	14' 54,12"	110° 40' 17"	61,44%
09:00	216° 57' 01"	-4° 27' 08"	213° 04' 45"	-18° 02' 07"	54' 41"	14' 53,84"	110° 31' 42"	61,05%
10:00	217° 27' 07"	-4° 28' 35"	213° 34' 01"	-18° 13' 30"	54' 39"	14' 53,57"	110° 23' 00"	60,66%
11:00	217° 57' 13"	-4° 30' 02"	214° 03' 20"	-18° 24' 48"	54' 39"	14' 53,30"	110° 14' 12"	60,26%
12:00	218° 27' 18"	-4° 31' 26"	214° 32' 42"	-18° 36' 01"	54' 38"	14' 53,03"	110° 05' 16"	59,87%
13:00	218° 57' 21"	-4° 32' 50"	215° 02' 06"	-18° 47' 09"	54' 37"	14' 52,77"	109° 56' 14"	59,48%
14:00	219° 27' 24"	-4° 34' 12"	215° 31' 33"	-18° 58' 12"	54' 36"	14' 52,52"	109° 47' 05"	59,09%
15:00	219° 57' 25"	-4° 35' 33"	216° 01' 03"	-19° 09' 10"	54' 35"	14' 52,27"	109° 37' 49"	58,70%
16:00	220° 27' 26"	-4° 36' 53"	216° 30' 36"	-19° 20' 03"	54' 34"	14' 52,02"	109° 28' 27"	58,31%
17:00	220° 57' 26"	-4° 38' 11"	217° 00' 12"	-19° 30' 51"	54' 33"	14' 51,78"	109° 18' 58"	57,91%
18:00	221° 27' 24"	-4° 39' 28"	217° 29' 50"	-19° 41' 33"	54' 32"	14' 51,54"	109° 09' 22"	57,52%
19:00	221° 57' 22"	-4° 40' 43"	217° 59' 32"	-19° 52' 11"	54' 31"	14' 51,31"	108° 59' 40"	57,13%
20:00	222° 27' 19"	-4° 41' 58"	218° 29' 17"	-20° 02' 43"	54' 30"	14' 51,08"	108° 49' 51"	56,73%
21:00	222° 57' 16"	-4° 43' 11"	218° 59' 04"	-20° 13' 09"	54' 30"	14' 50,86"	108° 39' 55"	56,34%
22:00	223° 27' 11"	-4° 44' 23"	219° 28' 55"	-20° 23' 31"	54' 29"	14' 50,65"	108° 29' 53"	55,94%
23:00	223° 57' 06"	-4° 45' 33"	219° 58' 49"	-20° 33' 47"	54' 28"	14' 50,43"	108° 19' 44"	55,55%
24:00	224° 26' 59"	-4° 46' 42"	220° 28' 46"	-20° 43' 57"	54' 27"	14' 50,23"	108° 09' 29"	55,16%

09 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	320° 14' 00"	-0,49"	322° 38' 15"	-14° 44' 25"	0,9865637	16' 12,70"	23° 26' 18"	-14m 09s
01:00	320° 16' 32"	-0,49"	322° 40' 44"	-14° 43' 37"	0,9865711	16' 12,69"	23° 26' 18"	-14m 09s
02:00	320° 19' 03"	-0,49"	322° 43' 13"	-14° 42' 48"	0,9865786	16' 12,68"	23° 26' 18"	-14m 09s
03:00	320° 21' 35"	-0,50"	322° 45' 42"	-14° 42' 00"	0,9865860	16' 12,68"	23° 26' 18"	-14m 09s
04:00	320° 24' 07"	-0,50"	322° 48' 11"	-14° 41' 12"	0,9865935	16' 12,67"	23° 26' 18"	-14m 09s
05:00	320° 26' 39"	-0,50"	322° 50' 40"	-14° 40' 24"	0,9866010	16' 12,66"	23° 26' 18"	-14m 09s
06:00	320° 29' 11"	-0,50"	322° 53' 09"	-14° 39' 36"	0,9866084	16' 12,66"	23° 26' 18"	-14m 09s
07:00	320° 31' 43"	-0,50"	322° 55' 38"	-14° 38' 48"	0,9866159	16' 12,65"	23° 26' 18"	-14m 09s
08:00	320° 34' 15"	-0,51"	322° 58' 06"	-14° 38' 00"	0,9866234	16' 12,64"	23° 26' 18"	-14m 09s
09:00	320° 36' 47"	-0,51"	323° 00' 35"	-14° 37' 11"	0,9866309	16' 12,63"	23° 26' 18"	-14m 09s
10:00	320° 39' 18"	-0,51"	323° 03' 04"	-14° 36' 23"	0,9866384	16' 12,63"	23° 26' 18"	-14m 09s
11:00	320° 41' 50"	-0,51"	323° 05' 33"	-14° 35' 35"	0,9866459	16' 12,62"	23° 26' 18"	-14m 09s
12:00	320° 44' 22"	-0,52"	323° 08' 02"	-14° 34' 47"	0,9866534	16' 12,61"	23° 26' 18"	-14m 09s
13:00	320° 46' 54"	-0,52"	323° 10' 30"	-14° 33' 58"	0,9866609	16' 12,60"	23° 26' 18"	-14m 10s
14:00	320° 49' 26"	-0,52"	323° 12' 59"	-14° 33' 10"	0,9866685	16' 12,60"	23° 26' 18"	-14m 10s
15:00	320° 51' 58"	-0,52"	323° 15' 28"	-14° 32' 21"	0,9866760	16' 12,59"	23° 26' 18"	-14m 10s
16:00	320° 54' 29"	-0,52"	323° 17' 56"	-14° 31' 33"	0,9866835	16' 12,58"	23° 26' 18"	-14m 10s
17:00	320° 57' 01"	-0,52"	323° 20' 25"	-14° 30' 45"	0,9866911	16' 12,57"	23° 26' 18"	-14m 10s
18:00	320° 59' 33"	-0,53"	323° 22' 54"	-14° 29' 56"	0,9866986	16' 12,57"	23° 26' 18"	-14m 10s
19:00	321° 02' 05"	-0,53"	323° 25' 22"	-14° 29' 08"	0,9867062	16' 12,56"	23° 26' 18"	-14m 10s
20:00	321° 04' 37"	-0,53"	323° 27' 51"	-14° 28' 19"	0,9867138	16' 12,55"	23° 26' 18"	-14m 10s
21:00	321° 07' 09"	-0,53"	323° 30' 20"	-14° 27' 31"	0,9867213	16' 12,54"	23° 26' 18"	-14m 10s
22:00	321° 09' 41"	-0,53"	323° 32' 48"	-14° 26' 42"	0,9867289	16' 12,54"	23° 26' 18"	-14m 10s
23:00	321° 12' 12"	-0,53"	323° 35' 17"	-14° 25' 53"	0,9867365	16' 12,53"	23° 26' 18"	-14m 10s
24:00	321° 14' 44"	-0,53"	323° 37' 45"	-14° 25' 05"	0,9867441	16' 12,52"	23° 26' 18"	-14m 10s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	224° 26' 59"	-4° 46' 42"	220° 28' 46"	-20° 43' 57"	54' 27"	14' 50,23"	108° 09' 29"	55,16%
01:00	224° 56' 53"	-4° 47' 50"	220° 58' 46"	-20° 54' 02"	54' 26"	14' 50,02"	107° 59' 07"	54,76%
02:00	225° 26' 45"	-4° 48' 56"	221° 28' 49"	-21° 04' 02"	54' 26"	14' 49,83"	107° 48' 39"	54,37%
03:00	225° 56' 37"	-4° 50' 01"	221° 58' 56"	-21° 13' 56"	54' 25"	14' 49,64"	107° 38' 04"	53,97%
04:00	226° 26' 27"	-4° 51' 05"	222° 29' 06"	-21° 23' 44"	54' 24"	14' 49,45"	107° 27' 23"	53,58%
05:00	226° 56' 18"	-4° 52' 08"	222° 59' 19"	-21° 33' 27"	54' 24"	14' 49,27"	107° 16' 36"	53,18%
06:00	227° 26' 07"	-4° 53' 09"	223° 29' 35"	-21° 43' 04"	54' 23"	14' 49,09"	107° 05' 42"	52,79%
07:00	227° 55' 56"	-4° 54' 09"	223° 59' 54"	-21° 52' 35"	54' 22"	14' 48,92"	106° 54' 42"	52,39%
08:00	228° 25' 45"	-4° 55' 07"	224° 30' 17"	-22° 02' 01"	54' 22"	14' 48,75"	106° 43' 35"	52,00%
09:00	228° 55' 32"	-4° 56' 04"	225° 00' 43"	-22° 11' 20"	54' 21"	14' 48,59"	106° 32' 23"	51,60%
10:00	229° 25' 20"	-4° 57' 00"	225° 31' 13"	-22° 20' 34"	54' 21"	14' 48,43"	106° 21' 04"	51,21%
11:00	229° 55' 06"	-4° 57' 54"	226° 01' 46"	-22° 29' 42"	54' 20"	14' 48,28"	106° 09' 39"	50,81%
12:00	230° 24' 52"	-4° 58' 47"	226° 32' 22"	-22° 38' 44"	54' 20"	14' 48,13"	105° 58' 08"	50,42%
13:00	230° 54' 38"	-4° 59' 39"	227° 03' 02"	-22° 47' 40"	54' 19"	14' 47,99"	105° 46' 30"	50,02%
14:00	231° 24' 23"	-5° 00' 29"	227° 33' 45"	-22° 56' 30"	54' 19"	14' 47,85"	105° 34' 47"	49,63%
15:00	231° 54' 08"	-5° 01' 18"	228° 04' 32"	-23° 05' 14"	54' 18"	14' 47,72"	105° 22' 58"	49,24%
16:00	232° 23' 52"	-5° 02' 06"	228° 35' 22"	-23° 13' 51"	54' 18"	14' 47,59"	105° 11' 02"	48,84%
17:00	232° 53' 36"	-5° 02' 52"	229° 06' 15"	-23° 22' 23"	54' 17"	14' 47,47"	104° 59' 01"	48,45%
18:00	233° 23' 19"	-5° 03' 37"	229° 37' 12"	-23° 30' 48"	54' 17"	14' 47,35"	104° 46' 54"	48,05%
19:00	233° 53' 02"	-5° 04' 20"	230° 08' 13"	-23° 39' 07"	54' 16"	14' 47,24"	104° 34' 40"	47,66%
20:00	234° 22' 45"	-5° 05' 02"	230° 39' 17"	-23° 47' 20"	54' 16"	14' 47,13"	104° 22' 21"	47,27%
21:00	234° 52' 27"	-5° 05' 43"	231° 10' 24"	-23° 55' 26"	54' 16"	14' 47,03"	104° 09' 57"	46,87%
22:00	235° 22' 09"	-5° 06' 23"	231° 41' 35"	-24° 03' 26"	54' 15"	14' 46,93"	103° 57' 26"	46,48%
23:00	235° 51' 51"	-5° 07' 01"	232° 12' 49"	-24° 11' 20"	54' 15"	14' 46,84"	103° 44' 50"	46,09%
24:00	236° 21' 32"	-5° 07' 37"	232° 44' 07"	-24° 19' 07"	54' 14"	14' 46,75"	103° 32' 08"	45,70%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	321° 14' 44"	-0,53"	323° 37' 45"	-14° 25' 05"	0,9867441	16' 12,52"	23° 26' 18"	-14m 10s
01:00	321° 17' 16"	-0,54"	323° 40' 14"	-14° 24' 16"	0,9867517	16' 12,51"	23° 26' 18"	-14m 10s
02:00	321° 19' 48"	-0,54"	323° 42' 42"	-14° 23' 28"	0,9867593	16' 12,51"	23° 26' 18"	-14m 10s
03:00	321° 22' 20"	-0,54"	323° 45' 11"	-14° 22' 39"	0,9867669	16' 12,50"	23° 26' 18"	-14m 10s
04:00	321° 24' 51"	-0,54"	323° 47' 39"	-14° 21' 50"	0,9867746	16' 12,49"	23° 26' 18"	-14m 10s
05:00	321° 27' 23"	-0,54"	323° 50' 07"	-14° 21' 01"	0,9867822	16' 12,48"	23° 26' 18"	-14m 10s
06:00	321° 29' 55"	-0,54"	323° 52' 36"	-14° 20' 13"	0,9867898	16' 12,48"	23° 26' 18"	-14m 10s
07:00	321° 32' 27"	-0,54"	323° 55' 04"	-14° 19' 24"	0,9867975	16' 12,47"	23° 26' 18"	-14m 10s
08:00	321° 34' 59"	-0,54"	323° 57' 33"	-14° 18' 35"	0,9868051	16' 12,46"	23° 26' 18"	-14m 10s
09:00	321° 37' 31"	-0,55"	324° 00' 01"	-14° 17' 46"	0,9868128	16' 12,45"	23° 26' 18"	-14m 10s
10:00	321° 40' 02"	-0,55"	324° 02' 29"	-14° 16' 57"	0,9868204	16' 12,45"	23° 26' 18"	-14m 10s
11:00	321° 42' 34"	-0,55"	324° 04' 58"	-14° 16' 08"	0,9868281	16' 12,44"	23° 26' 18"	-14m 10s
12:00	321° 45' 06"	-0,55"	324° 07' 26"	-14° 15' 19"	0,9868358	16' 12,43"	23° 26' 18"	-14m 11s
13:00	321° 47' 38"	-0,55"	324° 09' 54"	-14° 14' 31"	0,9868435	16' 12,42"	23° 26' 18"	-14m 11s
14:00	321° 50' 10"	-0,55"	324° 12' 22"	-14° 13' 42"	0,9868512	16' 12,42"	23° 26' 18"	-14m 11s
15:00	321° 52' 41"	-0,55"	324° 14' 51"	-14° 12' 53"	0,9868589	16' 12,41"	23° 26' 18"	-14m 11s
16:00	321° 55' 13"	-0,55"	324° 17' 19"	-14° 12' 04"	0,9868666	16' 12,40"	23° 26' 18"	-14m 11s
17:00	321° 57' 45"	-0,55"	324° 19' 47"	-14° 11' 15"	0,9868743	16' 12,39"	23° 26' 18"	-14m 11s
18:00	322° 00' 17"	-0,55"	324° 22' 15"	-14° 10' 25"	0,9868820	16' 12,39"	23° 26' 18"	-14m 11s
19:00	322° 02' 49"	-0,55"	324° 24' 43"	-14° 09' 36"	0,9868897	16' 12,38"	23° 26' 18"	-14m 11s
20:00	322° 05' 20"	-0,55"	324° 27' 11"	-14° 08' 47"	0,9868974	16' 12,37"	23° 26' 18"	-14m 11s
21:00	322° 07' 52"	-0,55"	324° 29' 40"	-14° 07' 58"	0,9869052	16' 12,36"	23° 26' 18"	-14m 11s
22:00	322° 10' 24"	-0,55"	324° 32' 08"	-14° 07' 09"	0,9869129	16' 12,36"	23° 26' 18"	-14m 11s
23:00	322° 12' 56"	-0,55"	324° 34' 36"	-14° 06' 20"	0,9869207	16' 12,35"	23° 26' 18"	-14m 11s
24:00	322° 15' 28"	-0,55"	324° 37' 04"	-14° 05' 31"	0,9869284	16' 12,34"	23° 26' 18"	-14m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	236° 21' 32"	-5° 07' 37"	232° 44' 07"	-24° 19' 07"	54' 14"	14' 46,75"	103° 32' 08"	45,70%
01:00	236° 51' 13"	-5° 08' 12"	233° 15' 28"	-24° 26' 48"	54' 14"	14' 46,67"	103° 19' 20"	45,31%
02:00	237° 20' 54"	-5° 08' 46"	233° 46' 53"	-24° 34' 22"	54' 14"	14' 46,60"	103° 06' 27"	44,91%
03:00	237° 50' 35"	-5° 09' 19"	234° 18' 22"	-24° 41' 49"	54' 14"	14' 46,52"	102° 53' 28"	44,52%
04:00	238° 20' 16"	-5° 09' 50"	234° 49' 53"	-24° 49' 10"	54' 13"	14' 46,46"	102° 40' 24"	44,13%
05:00	238° 49' 56"	-5° 10' 20"	235° 21' 29"	-24° 56' 24"	54' 13"	14' 46,40"	102° 27' 14"	43,74%
06:00	239° 19' 36"	-5° 10' 48"	235° 53' 08"	-25° 03' 32"	54' 13"	14' 46,34"	102° 13' 59"	43,35%
07:00	239° 49' 16"	-5° 11' 15"	236° 24' 50"	-25° 10' 33"	54' 13"	14' 46,29"	102° 00' 38"	42,96%
08:00	240° 18' 56"	-5° 11' 41"	236° 56' 36"	-25° 17' 27"	54' 13"	14' 46,24"	101° 47' 13"	42,57%
09:00	240° 48' 36"	-5° 12' 05"	237° 28' 25"	-25° 24' 14"	54' 12"	14' 46,20"	101° 33' 42"	42,19%
10:00	241° 18' 16"	-5° 12' 28"	238° 00' 17"	-25° 30' 54"	54' 12"	14' 46,16"	101° 20' 05"	41,80%
11:00	241° 47' 56"	-5° 12' 49"	238° 32' 13"	-25° 37' 27"	54' 12"	14' 46,13"	101° 06' 24"	41,41%
12:00	242° 17' 35"	-5° 13' 09"	239° 04' 13"	-25° 43' 53"	54' 12"	14' 46,10"	100° 52' 38"	41,02%
13:00	242° 47' 15"	-5° 13' 28"	239° 36' 16"	-25° 50' 13"	54' 12"	14' 46,08"	100° 38' 46"	40,64%
14:00	243° 16' 55"	-5° 13' 45"	240° 08' 22"	-25° 56' 25"	54' 12"	14' 46,07"	100° 24' 50"	40,25%
15:00	243° 46' 35"	-5° 14' 01"	240° 40' 31"	-26° 02' 30"	54' 12"	14' 46,05"	100° 10' 49"	39,87%
16:00	244° 16' 15"	-5° 14' 15"	241° 12' 44"	-26° 08' 28"	54' 12"	14' 46,05"	99° 56' 42"	39,48%
17:00	244° 45' 54"	-5° 14' 28"	241° 45' 01"	-26° 14' 19"	54' 12"	14' 46,05"	99° 42' 32"	39,10%
18:00	245° 15' 35"	-5° 14' 40"	242° 17' 20"	-26° 20' 02"	54' 12"	14' 46,05"	99° 28' 16"	38,71%
19:00	245° 45' 15"	-5° 14' 50"	242° 49' 43"	-26° 25' 39"	54' 12"	14' 46,06"	99° 13' 56"	38,33%
20:00	246° 14' 55"	-5° 14' 59"	243° 22' 09"	-26° 31' 08"	54' 12"	14' 46,07"	98° 59' 31"	37,95%
21:00	246° 44' 35"	-5° 15' 07"	243° 54' 38"	-26° 36' 30"	54' 12"	14' 46,09"	98° 45' 01"	37,57%
22:00	247° 14' 16"	-5° 15' 13"	244° 27' 11"	-26° 41' 44"	54' 12"	14' 46,11"	98° 30' 27"	37,19%
23:00	247° 43' 57"	-5° 15' 17"	244° 59' 46"	-26° 46' 51"	54' 12"	14' 46,14"	98° 15' 49"	36,81%
24:00	248° 13' 38"	-5° 15' 21"	245° 32' 25"	-26° 51' 51"	54' 12"	14' 46,17"	98° 01' 06"	36,43%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	322° 15' 28"	-0,55"	324° 37' 04"	-14° 05' 31"	0,9869284	16' 12,34"	23° 26' 18"	-14m 11s
01:00	322° 17' 59"	-0,55"	324° 39' 32"	-14° 04' 41"	0,9869362	16' 12,33"	23° 26' 18"	-14m 11s
02:00	322° 20' 31"	-0,55"	324° 42' 00"	-14° 03' 52"	0,9869439	16' 12,32"	23° 26' 18"	-14m 11s
03:00	322° 23' 03"	-0,55"	324° 44' 28"	-14° 03' 03"	0,9869517	16' 12,32"	23° 26' 18"	-14m 11s
04:00	322° 25' 35"	-0,55"	324° 46' 56"	-14° 02' 13"	0,9869595	16' 12,31"	23° 26' 18"	-14m 11s
05:00	322° 28' 07"	-0,55"	324° 49' 24"	-14° 01' 24"	0,9869673	16' 12,30"	23° 26' 18"	-14m 11s
06:00	322° 30' 38"	-0,55"	324° 51' 52"	-14° 00' 35"	0,9869751	16' 12,29"	23° 26' 18"	-14m 11s
07:00	322° 33' 10"	-0,55"	324° 54' 20"	-13° 59' 45"	0,9869828	16' 12,29"	23° 26' 18"	-14m 11s
08:00	322° 35' 42"	-0,55"	324° 56' 47"	-13° 58' 56"	0,9869906	16' 12,28"	23° 26' 18"	-14m 11s
09:00	322° 38' 14"	-0,55"	324° 59' 15"	-13° 58' 07"	0,9869985	16' 12,27"	23° 26' 18"	-14m 11s
10:00	322° 40' 45"	-0,55"	325° 01' 43"	-13° 57' 17"	0,9870063	16' 12,26"	23° 26' 18"	-14m 11s
11:00	322° 43' 17"	-0,55"	325° 04' 11"	-13° 56' 28"	0,9870141	16' 12,26"	23° 26' 18"	-14m 11s
12:00	322° 45' 49"	-0,55"	325° 06' 39"	-13° 55' 38"	0,9870219	16' 12,25"	23° 26' 18"	-14m 11s
13:00	322° 48' 21"	-0,55"	325° 09' 07"	-13° 54' 49"	0,9870298	16' 12,24"	23° 26' 18"	-14m 11s
14:00	322° 50' 52"	-0,55"	325° 11' 34"	-13° 53' 59"	0,9870376	16' 12,23"	23° 26' 18"	-14m 11s
15:00	322° 53' 24"	-0,55"	325° 14' 02"	-13° 53' 09"	0,9870454	16' 12,22"	23° 26' 18"	-14m 11s
16:00	322° 55' 56"	-0,55"	325° 16' 30"	-13° 52' 20"	0,9870533	16' 12,22"	23° 26' 18"	-14m 11s
17:00	322° 58' 28"	-0,55"	325° 18' 58"	-13° 51' 30"	0,9870611	16' 12,21"	23° 26' 18"	-14m 11s
18:00	323° 01' 00"	-0,55"	325° 21' 25"	-13° 50' 41"	0,9870690	16' 12,20"	23° 26' 18"	-14m 11s
19:00	323° 03' 31"	-0,55"	325° 23' 53"	-13° 49' 51"	0,9870769	16' 12,19"	23° 26' 18"	-14m 11s
20:00	323° 06' 03"	-0,55"	325° 26' 21"	-13° 49' 01"	0,9870847	16' 12,19"	23° 26' 18"	-14m 11s
21:00	323° 08' 35"	-0,55"	325° 28' 48"	-13° 48' 11"	0,9870926	16' 12,18"	23° 26' 18"	-14m 11s
22:00	323° 11' 07"	-0,54"	325° 31' 16"	-13° 47' 22"	0,9871005	16' 12,17"	23° 26' 18"	-14m 11s
23:00	323° 13' 38"	-0,54"	325° 33' 44"	-13° 46' 32"	0,9871084	16' 12,16"	23° 26' 18"	-14m 11s
24:00	323° 16' 10"	-0,54"	325° 36' 11"	-13° 45' 42"	0,9871163	16' 12,15"	23° 26' 18"	-14m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	248° 13' 38"	-5° 15' 21"	245° 32' 25"	-26° 51' 51"	54' 12"	14' 46,17"	98° 01' 06"	36,43%
01:00	248° 43' 19"	-5° 15' 22"	246° 05' 07"	-26° 56' 43"	54' 12"	14' 46,21"	97° 46' 20"	36,05%
02:00	249° 13' 00"	-5° 15' 23"	246° 37' 52"	-27° 01' 27"	54' 13"	14' 46,25"	97° 31' 29"	35,67%
03:00	249° 42' 42"	-5° 15' 22"	247° 10' 40"	-27° 06' 04"	54' 13"	14' 46,30"	97° 16' 33"	35,30%
04:00	250° 12' 24"	-5° 15' 19"	247° 43' 31"	-27° 10' 34"	54' 13"	14' 46,35"	97° 01' 34"	34,92%
05:00	250° 42' 06"	-5° 15' 16"	248° 16' 25"	-27° 14' 56"	54' 13"	14' 46,41"	96° 46' 31"	34,55%
06:00	251° 11' 49"	-5° 15' 10"	248° 49' 21"	-27° 19' 10"	54' 13"	14' 46,47"	96° 31' 24"	34,17%
07:00	251° 41' 32"	-5° 15' 04"	249° 22' 21"	-27° 23' 16"	54' 14"	14' 46,53"	96° 16' 13"	33,80%
08:00	252° 11' 15"	-5° 14' 56"	249° 55' 24"	-27° 27' 15"	54' 14"	14' 46,61"	96° 00' 59"	33,43%
09:00	252° 40' 59"	-5° 14' 46"	250° 28' 29"	-27° 31' 06"	54' 14"	14' 46,68"	95° 45' 40"	33,05%
10:00	253° 10' 43"	-5° 14' 36"	251° 01' 37"	-27° 34' 49"	54' 15"	14' 46,76"	95° 30' 18"	32,68%
11:00	253° 40' 28"	-5° 14' 23"	251° 34' 48"	-27° 38' 25"	54' 15"	14' 46,85"	95° 14' 53"	32,31%
12:00	254° 10' 13"	-5° 14' 10"	252° 08' 01"	-27° 41' 52"	54' 15"	14' 46,94"	94° 59' 24"	31,95%
13:00	254° 39' 58"	-5° 13' 55"	252° 41' 17"	-27° 45' 12"	54' 16"	14' 47,03"	94° 43' 52"	31,58%
14:00	255° 09' 44"	-5° 13' 38"	253° 14' 36"	-27° 48' 24"	54' 16"	14' 47,13"	94° 28' 17"	31,21%
15:00	255° 39' 31"	-5° 13' 20"	253° 47' 57"	-27° 51' 27"	54' 16"	14' 47,23"	94° 12' 39"	30,85%
16:00	256° 09' 18"	-5° 13' 01"	254° 21' 21"	-27° 54' 23"	54' 17"	14' 47,34"	93° 56' 57"	30,48%
17:00	256° 39' 05"	-5° 12' 40"	254° 54' 47"	-27° 57' 11"	54' 17"	14' 47,46"	93° 41' 12"	30,12%
18:00	257° 08' 53"	-5° 12' 18"	255° 28' 15"	-27° 59' 51"	54' 18"	14' 47,57"	93° 25' 25"	29,76%
19:00	257° 38' 42"	-5° 11' 55"	256° 01' 46"	-28° 02' 22"	54' 18"	14' 47,70"	93° 09' 35"	29,40%
20:00	258° 08' 31"	-5° 11' 30"	256° 35' 18"	-28° 04' 46"	54' 18"	14' 47,82"	92° 53' 42"	29,04%
21:00	258° 38' 21"	-5° 11' 03"	257° 08' 53"	-28° 07' 02"	54' 19"	14' 47,95"	92° 37' 46"	28,68%
22:00	259° 08' 12"	-5° 10' 35"	257° 42' 31"	-28° 09' 09"	54' 19"	14' 48,09"	92° 21' 48"	28,32%
23:00	259° 38' 03"	-5° 10' 06"	258° 16' 10"	-28° 11' 08"	54' 20"	14' 48,23"	92° 05' 47"	27,96%
24:00	260° 07' 55"	-5° 09' 36"	258° 49' 51"	-28° 12' 59"	54' 20"	14' 48,37"	91° 49' 44"	27,61%

12 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	323° 16' 10"	-0,54"	325° 36' 11"	-13° 45' 42"	0,9871163	16' 12,15"	23° 26' 18"	-14m 11s
01:00	323° 18' 42"	-0,54"	325° 38' 39"	-13° 44' 52"	0,9871242	16' 12,15"	23° 26' 18"	-14m 11s
02:00	323° 21' 13"	-0,54"	325° 41' 06"	-13° 44' 03"	0,9871321	16' 12,14"	23° 26' 18"	-14m 11s
03:00	323° 23' 45"	-0,54"	325° 43' 34"	-13° 43' 13"	0,9871400	16' 12,13"	23° 26' 18"	-14m 11s
04:00	323° 26' 17"	-0,54"	325° 46' 01"	-13° 42' 23"	0,9871480	16' 12,12"	23° 26' 18"	-14m 11s
05:00	323° 28' 49"	-0,54"	325° 48' 29"	-13° 41' 33"	0,9871559	16' 12,12"	23° 26' 18"	-14m 11s
06:00	323° 31' 20"	-0,54"	325° 50' 56"	-13° 40' 43"	0,9871638	16' 12,11"	23° 26' 18"	-14m 11s
07:00	323° 33' 52"	-0,53"	325° 53' 24"	-13° 39' 53"	0,9871717	16' 12,10"	23° 26' 18"	-14m 11s
08:00	323° 36' 24"	-0,53"	325° 55' 51"	-13° 39' 03"	0,9871797	16' 12,09"	23° 26' 18"	-14m 11s
09:00	323° 38' 56"	-0,53"	325° 58' 18"	-13° 38' 13"	0,9871876	16' 12,08"	23° 26' 18"	-14m 10s
10:00	323° 41' 27"	-0,53"	326° 00' 46"	-13° 37' 23"	0,9871956	16' 12,08"	23° 26' 18"	-14m 10s
11:00	323° 43' 59"	-0,53"	326° 03' 13"	-13° 36' 33"	0,9872036	16' 12,07"	23° 26' 18"	-14m 10s
12:00	323° 46' 31"	-0,53"	326° 05' 41"	-13° 35' 43"	0,9872115	16' 12,06"	23° 26' 18"	-14m 10s
13:00	323° 49' 03"	-0,53"	326° 08' 08"	-13° 34' 53"	0,9872195	16' 12,05"	23° 26' 18"	-14m 10s
14:00	323° 51' 34"	-0,52"	326° 10' 35"	-13° 34' 03"	0,9872275	16' 12,05"	23° 26' 18"	-14m 10s
15:00	323° 54' 06"	-0,52"	326° 13' 03"	-13° 33' 12"	0,9872354	16' 12,04"	23° 26' 18"	-14m 10s
16:00	323° 56' 38"	-0,52"	326° 15' 30"	-13° 32' 22"	0,9872434	16' 12,03"	23° 26' 18"	-14m 10s
17:00	323° 59' 09"	-0,52"	326° 17' 57"	-13° 31' 32"	0,9872514	16' 12,02"	23° 26' 18"	-14m 10s
18:00	324° 01' 41"	-0,52"	326° 20' 24"	-13° 30' 42"	0,9872594	16' 12,01"	23° 26' 18"	-14m 10s
19:00	324° 04' 13"	-0,51"	326° 22' 52"	-13° 29' 52"	0,9872674	16' 12,01"	23° 26' 18"	-14m 10s
20:00	324° 06' 44"	-0,51"	326° 25' 19"	-13° 29' 01"	0,9872754	16' 12,00"	23° 26' 18"	-14m 10s
21:00	324° 09' 16"	-0,51"	326° 27' 46"	-13° 28' 11"	0,9872835	16' 11,99"	23° 26' 18"	-14m 10s
22:00	324° 11' 48"	-0,51"	326° 30' 13"	-13° 27' 21"	0,9872915	16' 11,98"	23° 26' 18"	-14m 10s
23:00	324° 14' 20"	-0,51"	326° 32' 40"	-13° 26' 30"	0,9872995	16' 11,97"	23° 26' 18"	-14m 10s
24:00	324° 16' 51"	-0,50"	326° 35' 07"	-13° 25' 40"	0,9873075	16' 11,97"	23° 26' 18"	-14m 10s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	260° 07' 55"	-5° 09' 36"	258° 49' 51"	-28° 12' 59"	54' 20"	14' 48,37"	91° 49' 44"	27,61%
01:00	260° 37' 47"	-5° 09' 04"	259° 23' 34"	-28° 14' 42"	54' 21"	14' 48,52"	91° 33' 39"	27,25%
02:00	261° 07' 40"	-5° 08' 30"	259° 57' 19"	-28° 16' 16"	54' 22"	14' 48,68"	91° 17' 32"	26,90%
03:00	261° 37' 34"	-5° 07' 55"	260° 31' 06"	-28° 17' 43"	54' 22"	14' 48,83"	91° 01' 22"	26,55%
04:00	262° 07' 28"	-5° 07' 19"	261° 04' 55"	-28° 19' 00"	54' 23"	14' 49,00"	90° 45' 10"	26,20%
05:00	262° 37' 24"	-5° 06' 41"	261° 38' 45"	-28° 20' 10"	54' 23"	14' 49,16"	90° 28' 57"	25,85%
06:00	263° 07' 20"	-5° 06' 02"	262° 12' 37"	-28° 21' 11"	54' 24"	14' 49,33"	90° 12' 42"	25,50%
07:00	263° 37' 17"	-5° 05' 22"	262° 46' 31"	-28° 22' 04"	54' 25"	14' 49,51"	89° 56' 25"	25,16%
08:00	264° 07' 14"	-5° 04' 40"	263° 20' 25"	-28° 22' 49"	54' 25"	14' 49,69"	89° 40' 06"	24,81%
09:00	264° 37' 13"	-5° 03' 57"	263° 54' 22"	-28° 23' 25"	54' 26"	14' 49,87"	89° 23' 46"	24,47%
10:00	265° 07' 12"	-5° 03' 12"	264° 28' 20"	-28° 23' 53"	54' 27"	14' 50,06"	89° 07' 25"	24,13%
11:00	265° 37' 12"	-5° 02' 26"	265° 02' 19"	-28° 24' 12"	54' 27"	14' 50,25"	88° 51' 02"	23,79%
12:00	266° 07' 13"	-5° 01' 39"	265° 36' 19"	-28° 24' 23"	54' 28"	14' 50,44"	88° 34' 38"	23,45%
13:00	266° 37' 15"	-5° 00' 50"	266° 10' 20"	-28° 24' 26"	54' 29"	14' 50,64"	88° 18' 13"	23,11%
14:00	267° 07' 18"	-4° 59' 59"	266° 44' 23"	-28° 24' 20"	54' 30"	14' 50,85"	88° 01' 46"	22,78%
15:00	267° 37' 21"	-4° 59' 08"	267° 18' 26"	-28° 24' 06"	54' 30"	14' 51,05"	87° 45' 19"	22,44%
16:00	268° 07' 26"	-4° 58' 15"	267° 52' 31"	-28° 23' 43"	54' 31"	14' 51,27"	87° 28' 51"	22,11%
17:00	268° 37' 32"	-4° 57' 20"	268° 26' 36"	-28° 23' 11"	54' 32"	14' 51,48"	87° 12' 23"	21,78%
18:00	269° 07' 38"	-4° 56' 24"	269° 00' 42"	-28° 22' 31"	54' 33"	14' 51,70"	86° 55' 53"	21,45%
19:00	269° 37' 45"	-4° 55' 27"	269° 34' 49"	-28° 21' 43"	54' 33"	14' 51,93"	86° 39' 23"	21,12%
20:00	270° 07' 54"	-4° 54' 28"	270° 08' 56"	-28° 20' 46"	54' 34"	14' 52,15"	86° 22' 53"	20,79%
21:00	270° 38' 03"	-4° 53' 28"	270° 43' 05"	-28° 19' 40"	54' 35"	14' 52,38"	86° 06' 22"	20,47%
22:00	271° 08' 14"	-4° 52' 27"	271° 17' 13"	-28° 18' 26"	54' 36"	14' 52,62"	85° 49' 51"	20,15%
23:00	271° 38' 25"	-4° 51' 24"	271° 51' 22"	-28° 17' 04"	54' 37"	14' 52,86"	85° 33' 20"	19,83%
24:00	272° 08' 38"	-4° 50' 19"	272° 25' 31"	-28° 15' 32"	54' 38"	14' 53,10"	85° 16' 49"	19,51%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	324° 16' 51"	-0,50"	326° 35' 07"	-13° 25' 40"	0,9873075	16' 11,97"	23° 26' 18"	-14m 10s
01:00	324° 19' 23"	-0,50"	326° 37' 34"	-13° 24' 50"	0,9873156	16' 11,96"	23° 26' 18"	-14m 10s
02:00	324° 21' 55"	-0,50"	326° 40' 02"	-13° 23' 59"	0,9873236	16' 11,95"	23° 26' 18"	-14m 10s
03:00	324° 24' 26"	-0,50"	326° 42' 29"	-13° 23' 09"	0,9873317	16' 11,94"	23° 26' 18"	-14m 10s
04:00	324° 26' 58"	-0,49"	326° 44' 56"	-13° 22' 18"	0,9873397	16' 11,93"	23° 26' 18"	-14m 10s
05:00	324° 29' 30"	-0,49"	326° 47' 23"	-13° 21' 28"	0,9873478	16' 11,93"	23° 26' 18"	-14m 10s
06:00	324° 32' 01"	-0,49"	326° 49' 50"	-13° 20' 37"	0,9873558	16' 11,92"	23° 26' 18"	-14m 10s
07:00	324° 34' 33"	-0,49"	326° 52' 17"	-13° 19' 47"	0,9873639	16' 11,91"	23° 26' 18"	-14m 10s
08:00	324° 37' 05"	-0,48"	326° 54' 44"	-13° 18' 56"	0,9873720	16' 11,90"	23° 26' 18"	-14m 09s
09:00	324° 39' 36"	-0,48"	326° 57' 11"	-13° 18' 06"	0,9873800	16' 11,90"	23° 26' 18"	-14m 09s
10:00	324° 42' 08"	-0,48"	326° 59' 37"	-13° 17' 15"	0,9873881	16' 11,89"	23° 26' 18"	-14m 09s
11:00	324° 44' 40"	-0,48"	327° 02' 04"	-13° 16' 25"	0,9873962	16' 11,88"	23° 26' 18"	-14m 09s
12:00	324° 47' 12"	-0,47"	327° 04' 31"	-13° 15' 34"	0,9874043	16' 11,87"	23° 26' 18"	-14m 09s
13:00	324° 49' 43"	-0,47"	327° 06' 58"	-13° 14' 43"	0,9874124	16' 11,86"	23° 26' 18"	-14m 09s
14:00	324° 52' 15"	-0,47"	327° 09' 25"	-13° 13' 53"	0,9874205	16' 11,86"	23° 26' 18"	-14m 09s
15:00	324° 54' 47"	-0,47"	327° 11' 52"	-13° 13' 02"	0,9874286	16' 11,85"	23° 26' 18"	-14m 09s
16:00	324° 57' 18"	-0,46"	327° 14' 19"	-13° 12' 11"	0,9874367	16' 11,84"	23° 26' 18"	-14m 09s
17:00	324° 59' 50"	-0,46"	327° 16' 45"	-13° 11' 21"	0,9874448	16' 11,83"	23° 26' 18"	-14m 09s
18:00	325° 02' 21"	-0,46"	327° 19' 12"	-13° 10' 30"	0,9874530	16' 11,82"	23° 26' 18"	-14m 09s
19:00	325° 04' 53"	-0,45"	327° 21' 39"	-13° 09' 39"	0,9874611	16' 11,82"	23° 26' 18"	-14m 09s
20:00	325° 07' 25"	-0,45"	327° 24' 06"	-13° 08' 48"	0,9874692	16' 11,81"	23° 26' 18"	-14m 09s
21:00	325° 09' 56"	-0,45"	327° 26' 32"	-13° 07' 57"	0,9874774	16' 11,80"	23° 26' 18"	-14m 09s
22:00	325° 12' 28"	-0,44"	327° 28' 59"	-13° 07' 06"	0,9874855	16' 11,79"	23° 26' 18"	-14m 09s
23:00	325° 15' 00"	-0,44"	327° 31' 26"	-13° 06' 16"	0,9874937	16' 11,78"	23° 26' 18"	-14m 08s
24:00	325° 17' 31"	-0,44"	327° 33' 53"	-13° 05' 25"	0,9875018	16' 11,78"	23° 26' 18"	-14m 08s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	272° 08' 38"	-4° 50' 19"	272° 25' 31"	-28° 15' 32"	54' 38"	14' 53,10"	85° 16' 49"	19,51%
01:00	272° 38' 51"	-4° 49' 14"	272° 59' 41"	-28° 13' 53"	54' 39"	14' 53,35"	85° 00' 18"	19,19%
02:00	273° 09' 06"	-4° 48' 07"	273° 33' 51"	-28° 12' 04"	54' 40"	14' 53,60"	84° 43' 47"	18,87%
03:00	273° 39' 22"	-4° 46' 58"	274° 08' 01"	-28° 10' 08"	54' 41"	14' 53,85"	84° 27' 16"	18,56%
04:00	274° 09' 38"	-4° 45' 49"	274° 42' 11"	-28° 08' 02"	54' 41"	14' 54,11"	84° 10' 45"	18,25%
05:00	274° 39' 56"	-4° 44' 38"	275° 16' 21"	-28° 05' 48"	54' 42"	14' 54,37"	83° 54' 15"	17,93%
06:00	275° 10' 15"	-4° 43' 25"	275° 50' 31"	-28° 03' 26"	54' 43"	14' 54,63"	83° 37' 46"	17,63%
07:00	275° 40' 36"	-4° 42' 11"	276° 24' 40"	-28° 00' 55"	54' 44"	14' 54,90"	83° 21' 17"	17,32%
08:00	276° 10' 57"	-4° 40' 56"	276° 58' 50"	-27° 58' 15"	54' 45"	14' 55,17"	83° 04' 48"	17,01%
09:00	276° 41' 19"	-4° 39' 39"	277° 32' 59"	-27° 55' 27"	54' 46"	14' 55,45"	82° 48' 21"	16,71%
10:00	277° 11' 43"	-4° 38' 21"	278° 07' 08"	-27° 52' 30"	54' 47"	14' 55,72"	82° 31' 54"	16,41%
11:00	277° 42' 08"	-4° 37' 02"	278° 41' 17"	-27° 49' 25"	54' 48"	14' 56,01"	82° 15' 28"	16,11%
12:00	278° 12' 34"	-4° 35' 41"	279° 15' 25"	-27° 46' 11"	54' 49"	14' 56,29"	81° 59' 03"	15,81%
13:00	278° 43' 01"	-4° 34' 19"	279° 49' 32"	-27° 42' 48"	54' 51"	14' 56,58"	81° 42' 40"	15,52%
14:00	279° 13' 30"	-4° 32' 56"	280° 23' 39"	-27° 39' 17"	54' 52"	14' 56,87"	81° 26' 17"	15,23%
15:00	279° 44' 00"	-4° 31' 31"	280° 57' 45"	-27° 35' 38"	54' 53"	14' 57,16"	81° 09' 56"	14,93%
16:00	280° 14' 31"	-4° 30' 05"	281° 31' 50"	-27° 31' 50"	54' 54"	14' 57,46"	80° 53' 36"	14,65%
17:00	280° 45' 03"	-4° 28' 37"	282° 05' 54"	-27° 27' 54"	54' 55"	14' 57,76"	80° 37' 17"	14,36%
18:00	281° 15' 37"	-4° 27' 08"	282° 39' 58"	-27° 23' 49"	54' 56"	14' 58,07"	80° 21' 00"	14,07%
19:00	281° 46' 11"	-4° 25' 38"	283° 14' 00"	-27° 19' 36"	54' 57"	14' 58,37"	80° 04' 45"	13,79%
20:00	282° 16' 48"	-4° 24' 07"	283° 48' 02"	-27° 15' 14"	54' 58"	14' 58,68"	79° 48' 31"	13,51%
21:00	282° 47' 25"	-4° 22' 34"	284° 22' 02"	-27° 10' 44"	54' 59"	14' 58,99"	79° 32' 19"	13,23%
22:00	283° 18' 04"	-4° 21' 00"	284° 56' 01"	-27° 06' 05"	55' 01"	14' 59,31"	79° 16' 08"	12,96%
23:00	283° 48' 44"	-4° 19' 24"	285° 29' 59"	-27° 01' 18"	55' 02"	15' 00,00"	79° 00' 00"	12,68%
24:00	284° 19' 25"	-4° 17' 48"	286° 03' 55"	-26° 56' 22"	55' 03"	15' 00,00"	78° 43' 53"	12,41%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	325° 17' 31"	-0,44"	327° 33' 53"	-13° 05' 25"	0,9875018	16' 11,78"	23° 26' 18"	-14m 08s
01:00	325° 20' 03"	-0,43"	327° 36' 19"	-13° 04' 34"	0,9875100	16' 11,77"	23° 26' 18"	-14m 08s
02:00	325° 22' 35"	-0,43"	327° 38' 46"	-13° 03' 43"	0,9875181	16' 11,76"	23° 26' 18"	-14m 08s
03:00	325° 25' 06"	-0,43"	327° 41' 12"	-13° 02' 52"	0,9875263	16' 11,75"	23° 26' 18"	-14m 08s
04:00	325° 27' 38"	-0,42"	327° 43' 39"	-13° 02' 01"	0,9875345	16' 11,74"	23° 26' 18"	-14m 08s
05:00	325° 30' 10"	-0,42"	327° 46' 06"	-13° 01' 10"	0,9875427	16' 11,74"	23° 26' 18"	-14m 08s
06:00	325° 32' 41"	-0,42"	327° 48' 32"	-13° 00' 19"	0,9875508	16' 11,73"	23° 26' 18"	-14m 08s
07:00	325° 35' 13"	-0,41"	327° 50' 59"	-12° 59' 28"	0,9875590	16' 11,72"	23° 26' 18"	-14m 08s
08:00	325° 37' 45"	-0,41"	327° 53' 25"	-12° 58' 37"	0,9875672	16' 11,71"	23° 26' 18"	-14m 08s
09:00	325° 40' 16"	-0,41"	327° 55' 52"	-12° 57' 46"	0,9875754	16' 11,70"	23° 26' 18"	-14m 08s
10:00	325° 42' 48"	-0,40"	327° 58' 18"	-12° 56' 54"	0,9875836	16' 11,69"	23° 26' 18"	-14m 07s
11:00	325° 45' 19"	-0,40"	328° 00' 45"	-12° 56' 03"	0,9875918	16' 11,69"	23° 26' 18"	-14m 07s
12:00	325° 47' 51"	-0,40"	328° 03' 11"	-12° 55' 12"	0,9876000	16' 11,68"	23° 26' 18"	-14m 07s
13:00	325° 50' 23"	-0,39"	328° 05' 37"	-12° 54' 21"	0,9876082	16' 11,67"	23° 26' 18"	-14m 07s
14:00	325° 52' 54"	-0,39"	328° 08' 04"	-12° 53' 30"	0,9876165	16' 11,66"	23° 26' 18"	-14m 07s
15:00	325° 55' 26"	-0,38"	328° 10' 30"	-12° 52' 39"	0,9876247	16' 11,65"	23° 26' 18"	-14m 07s
16:00	325° 57' 57"	-0,38"	328° 12' 57"	-12° 51' 47"	0,9876329	16' 11,65"	23° 26' 18"	-14m 07s
17:00	326° 00' 29"	-0,38"	328° 15' 23"	-12° 50' 56"	0,9876411	16' 11,64"	23° 26' 18"	-14m 07s
18:00	326° 03' 01"	-0,37"	328° 17' 49"	-12° 50' 05"	0,9876494	16' 11,63"	23° 26' 18"	-14m 07s
19:00	326° 05' 32"	-0,37"	328° 20' 16"	-12° 49' 13"	0,9876576	16' 11,62"	23° 26' 18"	-14m 07s
20:00	326° 08' 04"	-0,36"	328° 22' 42"	-12° 48' 22"	0,9876659	16' 11,61"	23° 26' 18"	-14m 07s
21:00	326° 10' 35"	-0,36"	328° 25' 08"	-12° 47' 31"	0,9876741	16' 11,61"	23° 26' 18"	-14m 06s
22:00	326° 13' 07"	-0,36"	328° 27' 34"	-12° 46' 39"	0,9876824	16' 11,60"	23° 26' 18"	-14m 06s
23:00	326° 15' 39"	-0,35"	328° 30' 01"	-12° 45' 48"	0,9876906	16' 11,59"	23° 26' 18"	-14m 06s
24:00	326° 18' 10"	-0,35"	328° 32' 27"	-12° 44' 57"	0,9876989	16' 11,58"	23° 26' 18"	-14m 06s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	284° 19' 25"	-4° 17' 48"	286° 03' 55"	-26° 56' 22"	55' 03"	15' 00,00"	78° 43' 53"	12,41%
01:00	284° 50' 08"	-4° 16' 09"	286° 37' 51"	-26° 51' 19"	55' 04"	15' 00,27"	78° 27' 48"	12,14%
02:00	285° 20' 52"	-4° 14' 30"	287° 11' 44"	-26° 46' 06"	55' 05"	15' 00,60"	78° 11' 46"	11,87%
03:00	285° 51' 38"	-4° 12' 49"	287° 45' 37"	-26° 40' 46"	55' 07"	15' 00,93"	77° 55' 45"	11,61%
04:00	286° 22' 25"	-4° 11' 07"	288° 19' 28"	-26° 35' 17"	55' 08"	15' 01,26"	77° 39' 46"	11,35%
05:00	286° 53' 13"	-4° 09' 24"	288° 53' 17"	-26° 29' 40"	55' 09"	15' 01,60"	77° 23' 50"	11,09%
06:00	287° 24' 03"	-4° 07' 39"	289° 27' 04"	-26° 23' 55"	55' 10"	15' 01,93"	77° 07' 55"	10,83%
07:00	287° 54' 54"	-4° 05' 54"	290° 00' 50"	-26° 18' 01"	55' 11"	15' 02,27"	76° 52' 03"	10,58%
08:00	288° 25' 47"	-4° 04' 06"	290° 34' 34"	-26° 12' 00"	55' 13"	15' 02,62"	76° 36' 13"	10,32%
09:00	288° 56' 41"	-4° 02' 18"	291° 08' 16"	-26° 05' 50"	55' 14"	15' 02,96"	76° 20' 26"	10,07%
10:00	289° 27' 36"	-4° 00' 28"	291° 41' 57"	-25° 59' 32"	55' 15"	15' 03,31"	76° 04' 41"	9,83%
11:00	289° 58' 33"	-3° 58' 37"	292° 15' 35"	-25° 53' 06"	55' 17"	15' 03,66"	75° 48' 58"	9,58%
12:00	290° 29' 31"	-3° 56' 45"	292° 49' 11"	-25° 46' 31"	55' 18"	15' 04,01"	75° 33' 17"	9,34%
13:00	291° 00' 31"	-3° 54' 52"	293° 22' 46"	-25° 39' 49"	55' 19"	15' 04,36"	75° 17' 39"	9,10%
14:00	291° 31' 32"	-3° 52' 57"	293° 56' 18"	-25° 32' 59"	55' 20"	15' 04,72"	75° 02' 03"	8,86%
15:00	292° 02' 35"	-3° 51' 01"	294° 29' 49"	-25° 26' 00"	55' 22"	15' 05,08"	74° 46' 29"	8,63%
16:00	292° 33' 40"	-3° 49' 04"	295° 03' 17"	-25° 18' 54"	55' 23"	15' 05,44"	74° 30' 58"	8,39%
17:00	293° 04' 45"	-3° 47' 05"	295° 36' 43"	-25° 11' 40"	55' 24"	15' 05,80"	74° 15' 29"	8,16%
18:00	293° 35' 53"	-3° 45' 06"	296° 10' 06"	-25° 04' 18"	55' 26"	15' 06,17"	74° 00' 02"	7,94%
19:00	294° 07' 01"	-3° 43' 05"	296° 43' 28"	-24° 56' 48"	55' 27"	15' 06,53"	73° 44' 38"	7,71%
20:00	294° 38' 12"	-3° 41' 03"	297° 16' 47"	-24° 49' 10"	55' 28"	15' 06,90"	73° 29' 15"	7,49%
21:00	295° 09' 24"	-3° 38' 59"	297° 50' 03"	-24° 41' 24"	55' 30"	15' 07,27"	73° 13' 55"	7,27%
22:00	295° 40' 37"	-3° 36' 55"	298° 23' 18"	-24° 33' 31"	55' 31"	15' 07,64"	72° 58' 37"	7,06%
23:00	296° 11' 52"	-3° 34' 49"	298° 56' 30"	-24° 25' 30"	55' 33"	15' 08,02"	72° 43' 21"	6,84%
24:00	296° 43' 08"	-3° 32' 42"	299° 29' 39"	-24° 17' 21"	55' 34"	15' 08,39"	72° 28' 08"	6,63%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	326° 18' 10"	-0,35"	328° 32' 27"	-12° 44' 57"	0,9876989	16' 11,58"	23° 26' 18"	-14m 06s
01:00	326° 20' 42"	-0,34"	328° 34' 53"	-12° 44' 05"	0,9877072	16' 11,57"	23° 26' 18"	-14m 06s
02:00	326° 23' 13"	-0,34"	328° 37' 19"	-12° 43' 14"	0,9877154	16' 11,57"	23° 26' 18"	-14m 06s
03:00	326° 25' 45"	-0,34"	328° 39' 45"	-12° 42' 22"	0,9877237	16' 11,56"	23° 26' 18"	-14m 06s
04:00	326° 28' 17"	-0,33"	328° 42' 11"	-12° 41' 31"	0,9877320	16' 11,55"	23° 26' 18"	-14m 06s
05:00	326° 30' 48"	-0,33"	328° 44' 38"	-12° 40' 39"	0,9877403	16' 11,54"	23° 26' 18"	-14m 06s
06:00	326° 33' 20"	-0,32"	328° 47' 04"	-12° 39' 47"	0,9877486	16' 11,53"	23° 26' 18"	-14m 05s
07:00	326° 35' 51"	-0,32"	328° 49' 30"	-12° 38' 56"	0,9877569	16' 11,52"	23° 26' 18"	-14m 05s
08:00	326° 38' 23"	-0,31"	328° 51' 56"	-12° 38' 04"	0,9877652	16' 11,52"	23° 26' 18"	-14m 05s
09:00	326° 40' 55"	-0,31"	328° 54' 22"	-12° 37' 13"	0,9877735	16' 11,51"	23° 26' 18"	-14m 05s
10:00	326° 43' 26"	-0,30"	328° 56' 48"	-12° 36' 21"	0,9877818	16' 11,50"	23° 26' 18"	-14m 05s
11:00	326° 45' 58"	-0,30"	328° 59' 14"	-12° 35' 29"	0,9877901	16' 11,49"	23° 26' 18"	-14m 05s
12:00	326° 48' 29"	-0,30"	329° 01' 40"	-12° 34' 38"	0,9877984	16' 11,48"	23° 26' 18"	-14m 05s
13:00	326° 51' 01"	-0,29"	329° 04' 06"	-12° 33' 46"	0,9878067	16' 11,48"	23° 26' 18"	-14m 05s
14:00	326° 53' 32"	-0,29"	329° 06' 32"	-12° 32' 54"	0,9878151	16' 11,47"	23° 26' 18"	-14m 04s
15:00	326° 56' 04"	-0,28"	329° 08' 58"	-12° 32' 03"	0,9878234	16' 11,46"	23° 26' 18"	-14m 04s
16:00	326° 58' 35"	-0,28"	329° 11' 24"	-12° 31' 11"	0,9878317	16' 11,45"	23° 26' 18"	-14m 04s
17:00	327° 01' 07"	-0,27"	329° 13' 50"	-12° 30' 19"	0,9878401	16' 11,44"	23° 26' 18"	-14m 04s
18:00	327° 03' 39"	-0,27"	329° 16' 15"	-12° 29' 27"	0,9878484	16' 11,43"	23° 26' 18"	-14m 04s
19:00	327° 06' 10"	-0,26"	329° 18' 41"	-12° 28' 35"	0,9878568	16' 11,43"	23° 26' 18"	-14m 04s
20:00	327° 08' 42"	-0,26"	329° 21' 07"	-12° 27' 43"	0,9878651	16' 11,42"	23° 26' 18"	-14m 04s
21:00	327° 11' 13"	-0,25"	329° 23' 33"	-12° 26' 52"	0,9878735	16' 11,41"	23° 26' 18"	-14m 04s
22:00	327° 13' 45"	-0,25"	329° 25' 59"	-12° 26' 00"	0,9878818	16' 11,40"	23° 26' 18"	-14m 03s
23:00	327° 16' 16"	-0,24"	329° 28' 25"	-12° 25' 08"	0,9878902	16' 11,39"	23° 26' 18"	-14m 03s
24:00	327° 18' 48"	-0,24"	329° 30' 50"	-12° 24' 16"	0,9878986	16' 11,39"	23° 26' 18"	-14m 03s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	296° 43' 08"	-3° 32' 42"	299° 29' 39"	-24° 17' 21"	55' 34"	15' 08,39"	72° 28' 08"	6,63%
01:00	297° 14' 26"	-3° 30' 34"	300° 02' 46"	-24° 09' 05"	55' 35"	15' 08,77"	72° 12' 55"	6,43%
02:00	297° 45' 46"	-3° 28' 25"	300° 35' 51"	-24° 00' 41"	55' 37"	15' 09,15"	71° 57' 45"	6,22%
03:00	298° 17' 07"	-3° 26' 15"	301° 08' 53"	-23° 52' 09"	55' 38"	15' 09,53"	71° 42' 37"	6,02%
04:00	298° 48' 30"	-3° 24' 03"	301° 41' 52"	-23° 43' 30"	55' 39"	15' 09,91"	71° 27' 29"	5,82%
05:00	299° 19' 54"	-3° 21' 51"	302° 14' 49"	-23° 34' 43"	55' 41"	15' 10,30"	71° 12' 24"	5,63%
06:00	299° 51' 20"	-3° 19' 37"	302° 47' 43"	-23° 25' 50"	55' 42"	15' 10,68"	70° 57' 19"	5,43%
07:00	300° 22' 48"	-3° 17' 22"	303° 20' 34"	-23° 16' 48"	55' 44"	15' 11,07"	70° 42' 16"	5,24%
08:00	300° 54' 17"	-3° 15' 06"	303° 53' 23"	-23° 07' 39"	55' 45"	15' 11,46"	70° 27' 13"	5,06%
09:00	301° 25' 47"	-3° 12' 49"	304° 26' 09"	-22° 58' 23"	55' 47"	15' 11,85"	70° 12' 11"	4,87%
10:00	301° 57' 20"	-3° 10' 30"	304° 58' 53"	-22° 49' 00"	55' 48"	15' 12,24"	69° 57' 09"	4,69%
11:00	302° 28' 54"	-3° 08' 11"	305° 31' 33"	-22° 39' 30"	55' 49"	15' 12,63"	69° 42' 08"	4,52%
12:00	303° 00' 29"	-3° 05' 51"	306° 04' 11"	-22° 29' 52"	55' 51"	15' 13,02"	69° 27' 06"	4,34%
13:00	303° 32' 06"	-3° 03' 29"	306° 36' 46"	-22° 20' 08"	55' 52"	15' 13,42"	69° 12' 03"	4,17%
14:00	304° 03' 45"	-3° 01' 07"	307° 09' 19"	-22° 10' 16"	55' 54"	15' 13,81"	68° 57' 00"	4,00%
15:00	304° 35' 25"	-2° 58' 43"	307° 41' 49"	-22° 00' 17"	55' 55"	15' 14,21"	68° 41' 55"	3,84%
16:00	305° 07' 07"	-2° 56' 18"	308° 14' 15"	-21° 50' 11"	55' 57"	15' 14,61"	68° 26' 49"	3,67%
17:00	305° 38' 51"	-2° 53' 53"	308° 46' 39"	-21° 39' 59"	55' 58"	15' 15,00"	68° 11' 40"	3,52%
18:00	306° 10' 36"	-2° 51' 26"	309° 19' 01"	-21° 29' 39"	56' 00"	15' 15,40"	67° 56' 28"	3,36%
19:00	306° 42' 23"	-2° 48' 58"	309° 51' 19"	-21° 19' 13"	56' 01"	15' 15,80"	67° 41' 13"	3,21%
20:00	307° 14' 12"	-2° 46' 29"	310° 23' 35"	-21° 08' 40"	56' 03"	15' 16,20"	67° 25' 53"	3,06%
21:00	307° 46' 02"	-2° 43' 59"	310° 55' 48"	-20° 58' 00"	56' 04"	15' 16,60"	67° 10' 29"	2,91%
22:00	308° 17' 54"	-2° 41' 29"	311° 27' 58"	-20° 47' 14"	56' 06"	15' 17,01"	66° 54' 59"	2,77%
23:00	308° 49' 47"	-2° 38' 57"	312° 00' 05"	-20° 36' 21"	56' 07"	15' 17,41"	66° 39' 22"	2,63%
24:00	309° 21' 42"	-2° 36' 24"	312° 32' 09"	-20° 25' 21"	56' 08"	15' 17,81"	66° 23' 37"	2,50%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	327° 18' 48"	-0,24"	329° 30' 50"	-12° 24' 16"	0,9878986	16' 11,39"	23° 26' 18"	-14m 03s
01:00	327° 21' 19"	-0,23"	329° 33' 16"	-12° 23' 24"	0,9879069	16' 11,38"	23° 26' 18"	-14m 03s
02:00	327° 23' 51"	-0,23"	329° 35' 42"	-12° 22' 32"	0,9879153	16' 11,37"	23° 26' 18"	-14m 03s
03:00	327° 26' 22"	-0,22"	329° 38' 07"	-12° 21' 40"	0,9879237	16' 11,36"	23° 26' 18"	-14m 03s
04:00	327° 28' 54"	-0,22"	329° 40' 33"	-12° 20' 48"	0,9879321	16' 11,35"	23° 26' 18"	-14m 03s
05:00	327° 31' 25"	-0,21"	329° 42' 59"	-12° 19' 56"	0,9879405	16' 11,34"	23° 26' 18"	-14m 02s
06:00	327° 33' 57"	-0,21"	329° 45' 25"	-12° 19' 04"	0,9879489	16' 11,34"	23° 26' 18"	-14m 02s
07:00	327° 36' 28"	-0,20"	329° 47' 50"	-12° 18' 12"	0,9879573	16' 11,33"	23° 26' 18"	-14m 02s
08:00	327° 39' 00"	-0,20"	329° 50' 16"	-12° 17' 20"	0,9879657	16' 11,32"	23° 26' 18"	-14m 02s
09:00	327° 41' 31"	-0,19"	329° 52' 41"	-12° 16' 28"	0,9879741	16' 11,31"	23° 26' 18"	-14m 02s
10:00	327° 44' 03"	-0,19"	329° 55' 07"	-12° 15' 35"	0,9879825	16' 11,30"	23° 26' 18"	-14m 02s
11:00	327° 46' 35"	-0,18"	329° 57' 32"	-12° 14' 43"	0,9879909	16' 11,29"	23° 26' 18"	-14m 01s
12:00	327° 49' 06"	-0,18"	329° 59' 58"	-12° 13' 51"	0,9879993	16' 11,29"	23° 26' 18"	-14m 01s
13:00	327° 51' 38"	-0,17"	330° 02' 24"	-12° 12' 59"	0,9880077	16' 11,28"	23° 26' 18"	-14m 01s
14:00	327° 54' 09"	-0,17"	330° 04' 49"	-12° 12' 07"	0,9880161	16' 11,27"	23° 26' 18"	-14m 01s
15:00	327° 56' 41"	-0,16"	330° 07' 15"	-12° 11' 14"	0,9880246	16' 11,26"	23° 26' 18"	-14m 01s
16:00	327° 59' 12"	-0,16"	330° 09' 40"	-12° 10' 22"	0,9880330	16' 11,25"	23° 26' 18"	-14m 01s
17:00	328° 01' 44"	-0,15"	330° 12' 05"	-12° 09' 30"	0,9880414	16' 11,24"	23° 26' 18"	-14m 01s
18:00	328° 04' 15"	-0,15"	330° 14' 31"	-12° 08' 38"	0,9880499	16' 11,24"	23° 26' 18"	-14m 00s
19:00	328° 06' 46"	-0,14"	330° 16' 56"	-12° 07' 45"	0,9880583	16' 11,23"	23° 26' 18"	-14m 00s
20:00	328° 09' 18"	-0,13"	330° 19' 22"	-12° 06' 53"	0,9880668	16' 11,22"	23° 26' 18"	-14m 00s
21:00	328° 11' 49"	-0,13"	330° 21' 47"	-12° 06' 00"	0,9880752	16' 11,21"	23° 26' 18"	-14m 00s
22:00	328° 14' 21"	-0,12"	330° 24' 12"	-12° 05' 08"	0,9880837	16' 11,20"	23° 26' 18"	-14m 00s
23:00	328° 16' 52"	-0,12"	330° 26' 38"	-12° 04' 16"	0,9880921	16' 11,19"	23° 26' 18"	-14m 00s
24:00	328° 19' 24"	-0,11"	330° 29' 03"	-12° 03' 23"	0,9881006	16' 11,19"	23° 26' 18"	-13m 59s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	309° 21' 42"	-2° 36' 24"	312° 32' 09"	-20° 25' 21"	56' 08"	15' 17,81"	66° 23' 37"	2,50%
01:00	309° 53' 39"	-2° 33' 50"	313° 04' 11"	-20° 14' 15"	56' 10"	15' 18,22"	66° 07' 43"	2,36%
02:00	310° 25' 38"	-2° 31' 16"	313° 36' 09"	-20° 03' 03"	56' 11"	15' 18,62"	65° 51' 39"	2,24%
03:00	310° 57' 38"	-2° 28' 40"	314° 08' 05"	-19° 51' 44"	56' 13"	15' 19,03"	65° 35' 24"	2,11%
04:00	311° 29' 39"	-2° 26' 04"	314° 39' 59"	-19° 40' 19"	56' 14"	15' 19,43"	65° 18' 54"	1,99%
05:00	312° 01' 43"	-2° 23' 26"	315° 11' 49"	-19° 28' 48"	56' 16"	15' 19,84"	65° 02' 09"	1,87%
06:00	312° 33' 48"	-2° 20' 48"	315° 43' 36"	-19° 17' 10"	56' 17"	15' 20,24"	64° 45' 07"	1,75%
07:00	313° 05' 55"	-2° 18' 09"	316° 15' 21"	-19° 05' 26"	56' 19"	15' 20,65"	64° 27' 45"	1,64%
08:00	313° 38' 03"	-2° 15' 29"	316° 47' 03"	-18° 53' 36"	56' 20"	15' 21,05"	64° 10' 00"	1,53%
09:00	314° 10' 13"	-2° 12' 48"	317° 18' 43"	-18° 41' 41"	56' 22"	15' 21,46"	63° 51' 48"	1,43%
10:00	314° 42' 25"	-2° 10' 06"	317° 50' 19"	-18° 29' 39"	56' 23"	15' 21,87"	63° 33' 07"	1,33%
11:00	315° 14' 38"	-2° 07' 23"	318° 21' 53"	-18° 17' 31"	56' 25"	15' 22,27"	63° 13' 52"	1,23%
12:00	315° 46' 53"	-2° 04' 40"	318° 53' 24"	-18° 05' 17"	56' 26"	15' 22,68"	62° 53' 58"	1,14%
13:00	316° 19' 10"	-2° 01' 56"	319° 24' 53"	-17° 52' 58"	56' 28"	15' 23,09"	62° 33' 18"	1,05%
14:00	316° 51' 28"	-1° 59' 11"	319° 56' 18"	-17° 40' 33"	56' 29"	15' 23,49"	62° 11' 46"	0,96%
15:00	317° 23' 48"	-1° 56' 25"	320° 27' 42"	-17° 28' 02"	56' 31"	15' 23,90"	61° 49' 14"	0,88%
16:00	317° 56' 10"	-1° 53' 38"	320° 59' 02"	-17° 15' 26"	56' 32"	15' 24,31"	61° 25' 32"	0,80%
17:00	318° 28' 33"	-1° 50' 51"	321° 30' 20"	-17° 02' 44"	56' 34"	15' 24,71"	61° 00' 27"	0,72%
18:00	319° 00' 58"	-1° 48' 03"	322° 01' 36"	-16° 49' 56"	56' 35"	15' 25,12"	60° 33' 46"	0,65%
19:00	319° 33' 25"	-1° 45' 14"	322° 32' 48"	-16° 37' 04"	56' 37"	15' 25,52"	60° 05' 09"	0,58%
20:00	320° 05' 53"	-1° 42' 24"	323° 03' 59"	-16° 24' 05"	56' 38"	15' 25,93"	59° 34' 16"	0,52%
21:00	320° 38' 23"	-1° 39' 34"	323° 35' 07"	-16° 11' 02"	56' 40"	15' 26,33"	59° 00' 38"	0,46%
22:00	321° 10' 55"	-1° 36' 43"	324° 06' 12"	-15° 57' 53"	56' 41"	15' 26,74"	58° 23' 39"	0,40%
23:00	321° 43' 28"	-1° 33' 51"	324° 37' 15"	-15° 44' 39"	56' 43"	15' 27,14"	57° 42' 33"	0,35%
24:00	322° 16' 03"	-1° 30' 59"	325° 08' 16"	-15° 31' 20"	56' 44"	15' 27,54"	56° 56' 19"	0,30%

17 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	328° 19' 24"	-0,11"	330° 29' 03"	-12° 03' 23"	0,9881006	16' 11,19"	23° 26' 18"	-13m 59s
01:00	328° 21' 55"	-0,11"	330° 31' 28"	-12° 02' 31"	0,9881091	16' 11,18"	23° 26' 18"	-13m 59s
02:00	328° 24' 27"	-0,10"	330° 33' 54"	-12° 01' 38"	0,9881175	16' 11,17"	23° 26' 18"	-13m 59s
03:00	328° 26' 58"	-0,10"	330° 36' 19"	-12° 00' 46"	0,9881260	16' 11,16"	23° 26' 18"	-13m 59s
04:00	328° 29' 30"	-0,09"	330° 38' 44"	-11° 59' 53"	0,9881345	16' 11,15"	23° 26' 18"	-13m 59s
05:00	328° 32' 01"	-0,09"	330° 41' 09"	-11° 59' 01"	0,9881430	16' 11,14"	23° 26' 18"	-13m 59s
06:00	328° 34' 33"	-0,08"	330° 43' 35"	-11° 58' 08"	0,9881515	16' 11,14"	23° 26' 18"	-13m 58s
07:00	328° 37' 04"	-0,07"	330° 46' 00"	-11° 57' 16"	0,9881599	16' 11,13"	23° 26' 18"	-13m 58s
08:00	328° 39' 36"	-0,07"	330° 48' 25"	-11° 56' 23"	0,9881684	16' 11,12"	23° 26' 18"	-13m 58s
09:00	328° 42' 07"	-0,06"	330° 50' 50"	-11° 55' 31"	0,9881769	16' 11,11"	23° 26' 18"	-13m 58s
10:00	328° 44' 38"	-0,06"	330° 53' 15"	-11° 54' 38"	0,9881854	16' 11,10"	23° 26' 18"	-13m 58s
11:00	328° 47' 10"	-0,05"	330° 55' 40"	-11° 53' 45"	0,9881939	16' 11,09"	23° 26' 18"	-13m 57s
12:00	328° 49' 41"	-0,05"	330° 58' 06"	-11° 52' 53"	0,9882025	16' 11,09"	23° 26' 18"	-13m 57s
13:00	328° 52' 13"	-0,04"	331° 00' 31"	-11° 52' 00"	0,9882110	16' 11,08"	23° 26' 18"	-13m 57s
14:00	328° 54' 44"	-0,04"	331° 02' 56"	-11° 51' 07"	0,9882195	16' 11,07"	23° 26' 18"	-13m 57s
15:00	328° 57' 16"	-0,03"	331° 05' 21"	-11° 50' 15"	0,9882280	16' 11,06"	23° 26' 18"	-13m 57s
16:00	328° 59' 47"	-0,02"	331° 07' 46"	-11° 49' 22"	0,9882365	16' 11,05"	23° 26' 18"	-13m 57s
17:00	329° 02' 19"	-0,02"	331° 10' 11"	-11° 48' 29"	0,9882450	16' 11,04"	23° 26' 18"	-13m 56s
18:00	329° 04' 50"	-0,01"	331° 12' 36"	-11° 47' 36"	0,9882536	16' 11,04"	23° 26' 18"	-13m 56s
19:00	329° 07' 21"	-0,01"	331° 15' 01"	-11° 46' 43"	0,9882621	16' 11,03"	23° 26' 18"	-13m 56s
20:00	329° 09' 53"	-0,00"	331° 17' 26"	-11° 45' 51"	0,9882707	16' 11,02"	23° 26' 18"	-13m 56s
21:00	329° 12' 24"	0,00"	331° 19' 51"	-11° 44' 58"	0,9882792	16' 11,01"	23° 26' 18"	-13m 56s
22:00	329° 14' 56"	0,01"	331° 22' 16"	-11° 44' 05"	0,9882877	16' 11,00"	23° 26' 18"	-13m 55s
23:00	329° 17' 27"	0,02"	331° 24' 41"	-11° 43' 12"	0,9882963	16' 10,99"	23° 26' 18"	-13m 55s
24:00	329° 19' 58"	0,02"	331° 27' 05"	-11° 42' 19"	0,9883048	16' 10,99"	23° 26' 18"	-13m 55s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	322° 16' 03"	-1° 30' 59"	325° 08' 16"	-15° 31' 20"	56' 44"	15' 27,54"	56° 56' 19"	0,30%
01:00	322° 48' 40"	-1° 28' 06"	325° 39' 14"	-15° 17' 56"	56' 46"	15' 27,95"	56° 03' 35"	0,25%
02:00	323° 21' 18"	-1° 25' 12"	326° 10' 10"	-15° 04' 27"	56' 47"	15' 28,35"	55° 02' 29"	0,21%
03:00	323° 53' 58"	-1° 22' 18"	326° 41' 03"	-14° 50' 54"	56' 49"	15' 28,75"	53° 50' 22"	0,17%
04:00	324° 26' 39"	-1° 19' 23"	327° 11' 55"	-14° 37' 15"	56' 50"	15' 29,15"	52° 23' 21"	0,14%
05:00	324° 59' 22"	-1° 16' 28"	327° 42' 44"	-14° 23' 31"	56' 52"	15' 29,55"	50° 35' 37"	0,11%
06:00	325° 32' 07"	-1° 13' 32"	328° 13' 30"	-14° 09' 43"	56' 53"	15' 29,95"	48° 17' 56"	0,08%
07:00	326° 04' 54"	-1° 10' 35"	328° 44' 15"	-13° 55' 50"	56' 54"	15' 30,35"	45° 15' 01"	0,06%
08:00	326° 37' 42"	-1° 07' 38"	329° 14' 58"	-13° 41' 53"	56' 56"	15' 30,74"	40° 59' 45"	0,04%
09:00	327° 10' 31"	-1° 04' 40"	329° 45' 38"	-13° 27' 51"	56' 57"	15' 31,14"	34° 40' 50"	0,03%
10:00	327° 43' 23"	-1° 01' 42"	330° 16' 17"	-13° 13' 44"	56' 59"	15' 31,54"	24° 35' 23"	0,02%
11:00	328° 16' 15"	-0° 58' 44"	330° 46' 53"	-12° 59' 34"	57' 00"	15' 31,93"	7° 26' 34"	0,01%
12:00	328° 49' 10"	-0° 55' 45"	331° 17' 28"	-12° 45' 19"	57' 02"	15' 32,32"	340° 07' 00"	0,01%
13:00	329° 22' 06"	-0° 52' 45"	331° 48' 01"	-12° 30' 59"	57' 03"	15' 32,72"	309° 56' 18"	0,01%
14:00	329° 55' 04"	-0° 49' 45"	332° 18' 31"	-12° 16' 36"	57' 05"	15' 33,11"	288° 52' 56"	0,01%
15:00	330° 28' 03"	-0° 46' 44"	332° 49' 00"	-12° 02' 08"	57' 06"	15' 33,50"	276° 30' 37"	0,02%
16:00	331° 01' 04"	-0° 43' 44"	333° 19' 28"	-11° 47' 37"	57' 07"	15' 33,89"	268° 59' 47"	0,04%
17:00	331° 34' 07"	-0° 40' 42"	333° 49' 53"	-11° 33' 01"	57' 09"	15' 34,27"	264° 05' 02"	0,05%
18:00	332° 07' 11"	-0° 37' 41"	334° 20' 17"	-11° 18' 22"	57' 10"	15' 34,66"	260° 39' 09"	0,07%
19:00	332° 40' 16"	-0° 34' 39"	334° 50' 39"	-11° 03' 38"	57' 12"	15' 35,05"	258° 07' 35"	0,10%
20:00	333° 13' 24"	-0° 31' 36"	335° 21' 00"	-10° 48' 51"	57' 13"	15' 35,43"	256° 11' 18"	0,13%
21:00	333° 46' 32"	-0° 28' 34"	335° 51' 19"	-10° 34' 01"	57' 15"	15' 35,81"	254° 39' 07"	0,16%
22:00	334° 19' 43"	-0° 25' 31"	336° 21' 36"	-10° 19' 06"	57' 16"	15' 36,19"	253° 24' 06"	0,20%
23:00	334° 52' 55"	-0° 22' 27"	336° 51' 52"	-10° 04' 08"	57' 17"	15' 36,57"	252° 21' 42"	0,24%
24:00	335° 26' 08"	-0° 19' 24"	337° 22' 07"	-9° 49' 07"	57' 19"	15' 36,95"	251° 28' 53"	0,29%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	329° 19' 58"	0,02"	331° 27' 05"	-11° 42' 19"	0,9883048	16' 10,99"	23° 26' 18"	-13m 55s
01:00	329° 22' 30"	0,03"	331° 29' 30"	-11° 41' 26"	0,9883134	16' 10,98"	23° 26' 18"	-13m 55s
02:00	329° 25' 01"	0,03"	331° 31' 55"	-11° 40' 33"	0,9883220	16' 10,97"	23° 26' 18"	-13m 55s
03:00	329° 27' 33"	0,04"	331° 34' 20"	-11° 39' 40"	0,9883305	16' 10,96"	23° 26' 18"	-13m 54s
04:00	329° 30' 04"	0,04"	331° 36' 45"	-11° 38' 47"	0,9883391	16' 10,95"	23° 26' 18"	-13m 54s
05:00	329° 32' 35"	0,05"	331° 39' 10"	-11° 37' 54"	0,9883477	16' 10,94"	23° 26' 18"	-13m 54s
06:00	329° 35' 07"	0,06"	331° 41' 34"	-11° 37' 01"	0,9883562	16' 10,94"	23° 26' 18"	-13m 54s
07:00	329° 37' 38"	0,06"	331° 43' 59"	-11° 36' 08"	0,9883648	16' 10,93"	23° 26' 18"	-13m 54s
08:00	329° 40' 10"	0,07"	331° 46' 24"	-11° 35' 15"	0,9883734	16' 10,92"	23° 26' 18"	-13m 53s
09:00	329° 42' 41"	0,07"	331° 48' 49"	-11° 34' 22"	0,9883820	16' 10,91"	23° 26' 18"	-13m 53s
10:00	329° 45' 12"	0,08"	331° 51' 13"	-11° 33' 29"	0,9883906	16' 10,90"	23° 26' 18"	-13m 53s
11:00	329° 47' 44"	0,08"	331° 53' 38"	-11° 32' 36"	0,9883992	16' 10,89"	23° 26' 18"	-13m 53s
12:00	329° 50' 15"	0,09"	331° 56' 03"	-11° 31' 43"	0,9884078	16' 10,88"	23° 26' 18"	-13m 53s
13:00	329° 52' 47"	0,10"	331° 58' 27"	-11° 30' 50"	0,9884164	16' 10,88"	23° 26' 18"	-13m 52s
14:00	329° 55' 18"	0,10"	332° 00' 52"	-11° 29' 57"	0,9884250	16' 10,87"	23° 26' 18"	-13m 52s
15:00	329° 57' 49"	0,11"	332° 03' 17"	-11° 29' 03"	0,9884336	16' 10,86"	23° 26' 18"	-13m 52s
16:00	330° 00' 21"	0,11"	332° 05' 41"	-11° 28' 10"	0,9884422	16' 10,85"	23° 26' 18"	-13m 52s
17:00	330° 02' 52"	0,12"	332° 08' 06"	-11° 27' 17"	0,9884508	16' 10,84"	23° 26' 18"	-13m 51s
18:00	330° 05' 23"	0,12"	332° 10' 30"	-11° 26' 24"	0,9884594	16' 10,83"	23° 26' 18"	-13m 51s
19:00	330° 07' 55"	0,13"	332° 12' 55"	-11° 25' 30"	0,9884680	16' 10,83"	23° 26' 18"	-13m 51s
20:00	330° 10' 26"	0,13"	332° 15' 19"	-11° 24' 37"	0,9884767	16' 10,82"	23° 26' 18"	-13m 51s
21:00	330° 12' 57"	0,14"	332° 17' 44"	-11° 23' 44"	0,9884853	16' 10,81"	23° 26' 18"	-13m 51s
22:00	330° 15' 29"	0,15"	332° 20' 08"	-11° 22' 51"	0,9884939	16' 10,80"	23° 26' 18"	-13m 50s
23:00	330° 18' 00"	0,15"	332° 22' 33"	-11° 21' 57"	0,9885026	16' 10,79"	23° 26' 18"	-13m 50s
24:00	330° 20' 31"	0,16"	332° 24' 57"	-11° 21' 04"	0,9885112	16' 10,78"	23° 26' 18"	-13m 50s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	335° 26' 08"	-0° 19' 24"	337° 22' 07"	-9° 49' 07"	57' 19"	15' 36,95"	251° 28' 53"	0,29%
01:00	335° 59' 23"	-0° 16' 20"	337° 52' 21"	-9° 34' 02"	57' 20"	15' 37,33"	250° 43' 29"	0,34%
02:00	336° 32' 40"	-0° 13' 16"	338° 22' 33"	-9° 18' 54"	57' 21"	15' 37,70"	250° 03' 57"	0,39%
03:00	337° 05' 58"	-0° 10' 12"	338° 52' 44"	-9° 03' 43"	57' 23"	15' 38,07"	249° 29' 11"	0,45%
04:00	337° 39' 18"	-0° 07' 07"	339° 22' 54"	-8° 48' 28"	57' 24"	15' 38,45"	248° 58' 17"	0,51%
05:00	338° 12' 39"	-0° 04' 02"	339° 53' 02"	-8° 33' 11"	57' 26"	15' 38,82"	248° 30' 37"	0,57%
06:00	338° 46' 02"	-0° 00' 58"	340° 23' 10"	-8° 17' 50"	57' 27"	15' 39,18"	248° 05' 39"	0,64%
07:00	339° 19' 26"	0° 02' 07"	340° 53' 17"	-8° 02' 27"	57' 28"	15' 39,55"	247° 43' 00"	0,72%
08:00	339° 52' 52"	0° 05' 13"	341° 23' 23"	-7° 47' 00"	57' 30"	15' 39,92"	247° 22' 20"	0,80%
09:00	340° 26' 19"	0° 08' 18"	341° 53' 27"	-7° 31' 31"	57' 31"	15' 40,28"	247° 03' 23"	0,88%
10:00	340° 59' 48"	0° 11' 23"	342° 23' 32"	-7° 15' 59"	57' 32"	15' 40,64"	246° 45' 57"	0,96%
11:00	341° 33' 18"	0° 14' 29"	342° 53' 35"	-7° 00' 24"	57' 34"	15' 41,00"	246° 29' 50"	1,06%
12:00	342° 06' 50"	0° 17' 34"	343° 23' 37"	-6° 44' 47"	57' 35"	15' 41,36"	246° 14' 53"	1,15%
13:00	342° 40' 23"	0° 20' 40"	343° 53' 39"	-6° 29' 07"	57' 36"	15' 41,71"	246° 01' 00"	1,25%
14:00	343° 13' 58"	0° 23' 45"	344° 23' 41"	-6° 13' 25"	57' 38"	15' 42,07"	245° 48' 03"	1,35%
15:00	343° 47' 34"	0° 26' 51"	344° 53' 42"	-5° 57' 40"	57' 39"	15' 42,42"	245° 35' 58"	1,46%
16:00	344° 21' 11"	0° 29' 56"	345° 23' 42"	-5° 41' 53"	57' 40"	15' 42,77"	245° 24' 40"	1,57%
17:00	344° 54' 50"	0° 33' 02"	345° 53' 42"	-5° 26' 04"	57' 41"	15' 43,12"	245° 14' 05"	1,68%
18:00	345° 28' 31"	0° 36' 07"	346° 23' 42"	-5° 10' 12"	57' 43"	15' 43,46"	245° 04' 09"	1,80%
19:00	346° 02' 13"	0° 39' 12"	346° 53' 41"	-4° 54' 19"	57' 44"	15' 43,81"	244° 54' 49"	1,93%
20:00	346° 35' 56"	0° 42' 18"	347° 23' 40"	-4° 38' 24"	57' 45"	15' 44,15"	244° 46' 03"	2,05%
21:00	347° 09' 41"	0° 45' 23"	347° 53' 40"	-4° 22' 26"	57' 46"	15' 44,49"	244° 37' 48"	2,19%
22:00	347° 43' 27"	0° 48' 28"	348° 23' 39"	-4° 06' 27"	57' 48"	15' 44,83"	244° 30' 03"	2,32%
23:00	348° 17' 15"	0° 51' 33"	348° 53' 38"	-3° 50' 26"	57' 49"	15' 45,16"	244° 22' 46"	2,46%
24:00	348° 51' 03"	0° 54' 37"	349° 23' 37"	-3° 34' 24"	57' 50"	15' 45,49"	244° 15' 54"	2,61%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	330° 20' 31"	0,16"	332° 24' 57"	-11° 21' 04"	0,9885112	16' 10,78"	23° 26' 18"	-13m 50s
01:00	330° 23' 03"	0,16"	332° 27' 22"	-11° 20' 11"	0,9885198	16' 10,77"	23° 26' 18"	-13m 50s
02:00	330° 25' 34"	0,17"	332° 29' 46"	-11° 19' 17"	0,9885285	16' 10,77"	23° 26' 18"	-13m 49s
03:00	330° 28' 05"	0,17"	332° 32' 11"	-11° 18' 24"	0,9885371	16' 10,76"	23° 26' 18"	-13m 49s
04:00	330° 30' 37"	0,18"	332° 34' 35"	-11° 17' 30"	0,9885458	16' 10,75"	23° 26' 18"	-13m 49s
05:00	330° 33' 08"	0,19"	332° 36' 59"	-11° 16' 37"	0,9885545	16' 10,74"	23° 26' 18"	-13m 49s
06:00	330° 35' 39"	0,19"	332° 39' 24"	-11° 15' 43"	0,9885631	16' 10,73"	23° 26' 18"	-13m 49s
07:00	330° 38' 11"	0,20"	332° 41' 48"	-11° 14' 50"	0,9885718	16' 10,72"	23° 26' 18"	-13m 48s
08:00	330° 40' 42"	0,20"	332° 44' 12"	-11° 13' 56"	0,9885805	16' 10,72"	23° 26' 18"	-13m 48s
09:00	330° 43' 13"	0,21"	332° 46' 37"	-11° 13' 03"	0,9885891	16' 10,71"	23° 26' 18"	-13m 48s
10:00	330° 45' 45"	0,21"	332° 49' 01"	-11° 12' 09"	0,9885978	16' 10,70"	23° 26' 18"	-13m 48s
11:00	330° 48' 16"	0,22"	332° 51' 25"	-11° 11' 16"	0,9886065	16' 10,69"	23° 26' 18"	-13m 47s
12:00	330° 50' 47"	0,22"	332° 53' 49"	-11° 10' 22"	0,9886152	16' 10,68"	23° 26' 18"	-13m 47s
13:00	330° 53' 19"	0,23"	332° 56' 14"	-11° 09' 29"	0,9886239	16' 10,67"	23° 26' 18"	-13m 47s
14:00	330° 55' 50"	0,23"	332° 58' 38"	-11° 08' 35"	0,9886325	16' 10,66"	23° 26' 18"	-13m 47s
15:00	330° 58' 21"	0,24"	333° 01' 02"	-11° 07' 41"	0,9886412	16' 10,66"	23° 26' 18"	-13m 46s
16:00	331° 00' 53"	0,25"	333° 03' 26"	-11° 06' 48"	0,9886499	16' 10,65"	23° 26' 18"	-13m 46s
17:00	331° 03' 24"	0,25"	333° 05' 50"	-11° 05' 54"	0,9886586	16' 10,64"	23° 26' 18"	-13m 46s
18:00	331° 05' 55"	0,26"	333° 08' 14"	-11° 05' 00"	0,9886673	16' 10,63"	23° 26' 18"	-13m 46s
19:00	331° 08' 26"	0,26"	333° 10' 39"	-11° 04' 07"	0,9886761	16' 10,62"	23° 26' 18"	-13m 45s
20:00	331° 10' 58"	0,27"	333° 13' 03"	-11° 03' 13"	0,9886848	16' 10,61"	23° 26' 18"	-13m 45s
21:00	331° 13' 29"	0,27"	333° 15' 27"	-11° 02' 19"	0,9886935	16' 10,60"	23° 26' 18"	-13m 45s
22:00	331° 16' 00"	0,28"	333° 17' 51"	-11° 01' 26"	0,9887022	16' 10,60"	23° 26' 18"	-13m 45s
23:00	331° 18' 32"	0,28"	333° 20' 15"	-11° 00' 32"	0,9887109	16' 10,59"	23° 26' 18"	-13m 44s
24:00	331° 21' 03"	0,29"	333° 22' 39"	-10° 59' 38"	0,9887197	16' 10,58"	23° 26' 18"	-13m 44s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	348° 51' 03"	0° 54' 37"	349° 23' 37"	-3° 34' 24"	57' 50"	15' 45,49"	244° 15' 54"	2,61%
01:00	349° 24' 54"	0° 57' 42"	349° 53' 36"	-3° 18' 20"	57' 51"	15' 45,83"	244° 09' 27"	2,75%
02:00	349° 58' 45"	1° 00' 46"	350° 23' 35"	-3° 02' 14"	57' 53"	15' 46,15"	244° 03' 24"	2,91%
03:00	350° 32' 39"	1° 03' 50"	350° 53' 35"	-2° 46' 07"	57' 54"	15' 46,48"	243° 57' 42"	3,06%
04:00	351° 06' 33"	1° 06' 54"	351° 23' 35"	-2° 29' 58"	57' 55"	15' 46,81"	243° 52' 22"	3,22%
05:00	351° 40' 29"	1° 09' 58"	351° 53' 35"	-2° 13' 48"	57' 56"	15' 47,13"	243° 47' 22"	3,39%
06:00	352° 14' 26"	1° 13' 01"	352° 23' 36"	-1° 57' 37"	57' 57"	15' 47,45"	243° 42' 41"	3,55%
07:00	352° 48' 24"	1° 16' 04"	352° 53' 37"	-1° 41' 25"	57' 58"	15' 47,76"	243° 38' 19"	3,73%
08:00	353° 22' 24"	1° 19' 06"	353° 23' 39"	-1° 25' 12"	58' 00"	15' 48,08"	243° 34' 15"	3,90%
09:00	353° 56' 25"	1° 22' 09"	353° 53' 42"	-1° 08' 57"	58' 01"	15' 48,39"	243° 30' 29"	4,08%
10:00	354° 30' 28"	1° 25' 10"	354° 23' 45"	-0° 52' 42"	58' 02"	15' 48,70"	243° 26' 59"	4,27%
11:00	355° 04' 31"	1° 28' 12"	354° 53' 50"	-0° 36' 26"	58' 03"	15' 49,01"	243° 23' 45"	4,46%
12:00	355° 38' 36"	1° 31' 13"	355° 23' 55"	-0° 20' 09"	58' 04"	15' 49,32"	243° 20' 47"	4,65%
13:00	356° 12' 43"	1° 34' 14"	355° 54' 01"	-0° 03' 52"	58' 05"	15' 49,62"	243° 18' 05"	4,85%
14:00	356° 46' 50"	1° 37' 14"	356° 24' 08"	0° 12' 26"	58' 06"	15' 49,92"	243° 15' 37"	5,05%
15:00	357° 20' 59"	1° 40' 13"	356° 54' 16"	0° 28' 44"	58' 07"	15' 50,22"	243° 13' 24"	5,25%
16:00	357° 55' 09"	1° 43' 13"	357° 24' 25"	0° 45' 03"	58' 09"	15' 50,52"	243° 11' 26"	5,46%
17:00	358° 29' 20"	1° 46' 11"	357° 54' 35"	1° 01' 23"	58' 10"	15' 50,81"	243° 09' 41"	5,67%
18:00	359° 03' 33"	1° 49' 10"	358° 24' 47"	1° 17' 42"	58' 11"	15' 51,10"	243° 08' 10"	5,89%
19:00	359° 37' 47"	1° 52' 07"	358° 55' 00"	1° 34' 02"	58' 12"	15' 51,39"	243° 06' 52"	6,11%
20:00	0° 12' 02"	1° 55' 04"	359° 25' 15"	1° 50' 22"	58' 13"	15' 51,68"	243° 05' 47"	6,33%
21:00	0° 46' 18"	1° 58' 01"	359° 55' 31"	2° 06' 41"	58' 14"	15' 51,96"	243° 04' 56"	6,56%
22:00	1° 20' 35"	2° 00' 57"	0° 25' 49"	2° 23' 01"	58' 15"	15' 52,24"	243° 04' 17"	6,79%
23:00	1° 54' 54"	2° 03' 52"	0° 56' 08"	2° 39' 21"	58' 16"	15' 52,52"	243° 03' 51"	7,03%
24:00	2° 29' 14"	2° 06' 47"	1° 26' 29"	2° 55' 40"	58' 17"	15' 52,80"	243° 03' 37"	7,27%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	331° 21' 03"	0,29"	333° 22' 39"	-10° 59' 38"	0,9887197	16' 10,58"	23° 26' 18"	-13m 44s
01:00	331° 23' 34"	0,29"	333° 25' 03"	-10° 58' 44"	0,9887284	16' 10,57"	23° 26' 18"	-13m 44s
02:00	331° 26' 05"	0,30"	333° 27' 27"	-10° 57' 50"	0,9887371	16' 10,56"	23° 26' 18"	-13m 44s
03:00	331° 28' 37"	0,30"	333° 29' 51"	-10° 56' 57"	0,9887459	16' 10,55"	23° 26' 18"	-13m 43s
04:00	331° 31' 08"	0,31"	333° 32' 15"	-10° 56' 03"	0,9887546	16' 10,54"	23° 26' 18"	-13m 43s
05:00	331° 33' 39"	0,31"	333° 34' 39"	-10° 55' 09"	0,9887633	16' 10,54"	23° 26' 18"	-13m 43s
06:00	331° 36' 10"	0,32"	333° 37' 03"	-10° 54' 15"	0,9887721	16' 10,53"	23° 26' 18"	-13m 43s
07:00	331° 38' 42"	0,32"	333° 39' 27"	-10° 53' 21"	0,9887808	16' 10,52"	23° 26' 18"	-13m 42s
08:00	331° 41' 13"	0,33"	333° 41' 51"	-10° 52' 27"	0,9887896	16' 10,51"	23° 26' 18"	-13m 42s
09:00	331° 43' 44"	0,33"	333° 44' 14"	-10° 51' 33"	0,9887984	16' 10,50"	23° 26' 18"	-13m 42s
10:00	331° 46' 15"	0,34"	333° 46' 38"	-10° 50' 39"	0,9888071	16' 10,49"	23° 26' 18"	-13m 41s
11:00	331° 48' 47"	0,34"	333° 49' 02"	-10° 49' 45"	0,9888159	16' 10,48"	23° 26' 18"	-13m 41s
12:00	331° 51' 18"	0,35"	333° 51' 26"	-10° 48' 51"	0,9888247	16' 10,48"	23° 26' 18"	-13m 41s
13:00	331° 53' 49"	0,35"	333° 53' 50"	-10° 47' 57"	0,9888334	16' 10,47"	23° 26' 18"	-13m 41s
14:00	331° 56' 20"	0,36"	333° 56' 14"	-10° 47' 03"	0,9888422	16' 10,46"	23° 26' 18"	-13m 40s
15:00	331° 58' 52"	0,36"	333° 58' 37"	-10° 46' 09"	0,9888510	16' 10,45"	23° 26' 18"	-13m 40s
16:00	332° 01' 23"	0,37"	334° 01' 01"	-10° 45' 15"	0,9888598	16' 10,44"	23° 26' 18"	-13m 40s
17:00	332° 03' 54"	0,37"	334° 03' 25"	-10° 44' 21"	0,9888686	16' 10,43"	23° 26' 18"	-13m 40s
18:00	332° 06' 25"	0,38"	334° 05' 49"	-10° 43' 27"	0,9888774	16' 10,42"	23° 26' 18"	-13m 39s
19:00	332° 08' 56"	0,38"	334° 08' 12"	-10° 42' 33"	0,9888862	16' 10,42"	23° 26' 18"	-13m 39s
20:00	332° 11' 28"	0,39"	334° 10' 36"	-10° 41' 39"	0,9888950	16' 10,41"	23° 26' 18"	-13m 39s
21:00	332° 13' 59"	0,39"	334° 13' 00"	-10° 40' 44"	0,9889038	16' 10,40"	23° 26' 18"	-13m 38s
22:00	332° 16' 30"	0,40"	334° 15' 23"	-10° 39' 50"	0,9889126	16' 10,39"	23° 26' 18"	-13m 38s
23:00	332° 19' 01"	0,40"	334° 17' 47"	-10° 38' 56"	0,9889214	16' 10,38"	23° 26' 18"	-13m 38s
24:00	332° 21' 32"	0,41"	334° 20' 11"	-10° 38' 02"	0,9889302	16' 10,37"	23° 26' 18"	-13m 38s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	2° 29' 14"	2° 06' 47"	1° 26' 29"	2° 55' 40"	58' 17"	15' 52,80"	243° 03' 37"	7,27%
01:00	3° 03' 35"	2° 09' 41"	1° 56' 52"	3° 11' 59"	58' 18"	15' 53,07"	243° 03' 35"	7,51%
02:00	3° 37' 57"	2° 12' 34"	2° 27' 17"	3° 28' 18"	58' 19"	15' 53,34"	243° 03' 45"	7,76%
03:00	4° 12' 20"	2° 15' 26"	2° 57' 44"	3° 44' 36"	58' 20"	15' 53,61"	243° 04' 07"	8,01%
04:00	4° 46' 45"	2° 18' 18"	3° 28' 12"	4° 00' 53"	58' 21"	15' 53,88"	243° 04' 41"	8,26%
05:00	5° 21' 10"	2° 21' 09"	3° 58' 43"	4° 17' 10"	58' 22"	15' 54,14"	243° 05' 27"	8,52%
06:00	5° 55' 37"	2° 24' 00"	4° 29' 16"	4° 33' 26"	58' 23"	15' 54,41"	243° 06' 24"	8,78%
07:00	6° 30' 05"	2° 26' 49"	4° 59' 52"	4° 49' 41"	58' 24"	15' 54,66"	243° 07' 32"	9,05%
08:00	7° 04' 34"	2° 29' 38"	5° 30' 29"	5° 05' 56"	58' 25"	15' 54,92"	243° 08' 52"	9,32%
09:00	7° 39' 04"	2° 32' 26"	6° 01' 09"	5° 22' 09"	58' 26"	15' 55,17"	243° 10' 23"	9,59%
10:00	8° 13' 35"	2° 35' 13"	6° 31' 52"	5° 38' 22"	58' 27"	15' 55,43"	243° 12' 06"	9,87%
11:00	8° 48' 07"	2° 37' 59"	7° 02' 37"	5° 54' 33"	58' 27"	15' 55,67"	243° 13' 59"	10,15%
12:00	9° 22' 40"	2° 40' 44"	7° 33' 24"	6° 10' 43"	58' 28"	15' 55,92"	243° 16' 03"	10,44%
13:00	9° 57' 14"	2° 43' 29"	8° 04' 14"	6° 26' 51"	58' 29"	15' 56,16"	243° 18' 18"	10,72%
14:00	10° 31' 50"	2° 46' 12"	8° 35' 08"	6° 42' 58"	58' 30"	15' 56,41"	243° 20' 44"	11,01%
15:00	11° 06' 26"	2° 48' 55"	9° 06' 03"	6° 59' 04"	58' 31"	15' 56,64"	243° 23' 21"	11,31%
16:00	11° 41' 03"	2° 51' 37"	9° 37' 02"	7° 15' 08"	58' 32"	15' 56,88"	243° 26' 09"	11,61%
17:00	12° 15' 42"	2° 54' 17"	10° 08' 04"	7° 31' 10"	58' 33"	15' 57,11"	243° 29' 07"	11,91%
18:00	12° 50' 21"	2° 56' 57"	10° 39' 09"	7° 47' 10"	58' 34"	15' 57,34"	243° 32' 16"	12,22%
19:00	13° 25' 02"	2° 59' 36"	11° 10' 17"	8° 03' 09"	58' 34"	15' 57,57"	243° 35' 35"	12,53%
20:00	13° 59' 43"	3° 02' 13"	11° 41' 28"	8° 19' 05"	58' 35"	15' 57,80"	243° 39' 05"	12,84%
21:00	14° 34' 26"	3° 04' 50"	12° 12' 42"	8° 35' 00"	58' 36"	15' 58,02"	243° 42' 45"	13,15%
22:00	15° 09' 09"	3° 07' 25"	12° 44' 00"	8° 50' 52"	58' 37"	15' 58,24"	243° 46' 36"	13,47%
23:00	15° 43' 53"	3° 10' 00"	13° 15' 21"	9° 06' 42"	58' 38"	15' 58,46"	243° 50' 38"	13,80%
24:00	16° 18' 39"	3° 12' 33"	13° 46' 46"	9° 22' 30"	58' 38"	15' 58,67"	243° 54' 49"	14,12%

21 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	332° 21' 32"	0,41"	334° 20' 11"	-10° 38' 02"	0,9889302	16' 10,37"	23° 26' 18"	-13m 38s
01:00	332° 24' 04"	0,41"	334° 22' 34"	-10° 37' 08"	0,9889390	16' 10,36"	23° 26' 18"	-13m 37s
02:00	332° 26' 35"	0,41"	334° 24' 58"	-10° 36' 13"	0,9889479	16' 10,35"	23° 26' 18"	-13m 37s
03:00	332° 29' 06"	0,42"	334° 27' 21"	-10° 35' 19"	0,9889567	16' 10,35"	23° 26' 18"	-13m 37s
04:00	332° 31' 37"	0,42"	334° 29' 45"	-10° 34' 25"	0,9889655	16' 10,34"	23° 26' 18"	-13m 37s
05:00	332° 34' 08"	0,43"	334° 32' 08"	-10° 33' 31"	0,9889744	16' 10,33"	23° 26' 18"	-13m 36s
06:00	332° 36' 40"	0,43"	334° 34' 32"	-10° 32' 36"	0,9889832	16' 10,32"	23° 26' 18"	-13m 36s
07:00	332° 39' 11"	0,44"	334° 36' 55"	-10° 31' 42"	0,9889921	16' 10,31"	23° 26' 18"	-13m 36s
08:00	332° 41' 42"	0,44"	334° 39' 19"	-10° 30' 48"	0,9890009	16' 10,30"	23° 26' 18"	-13m 35s
09:00	332° 44' 13"	0,44"	334° 41' 42"	-10° 29' 53"	0,9890098	16' 10,29"	23° 26' 18"	-13m 35s
10:00	332° 46' 44"	0,45"	334° 44' 06"	-10° 28' 59"	0,9890186	16' 10,29"	23° 26' 18"	-13m 35s
11:00	332° 49' 15"	0,45"	334° 46' 29"	-10° 28' 05"	0,9890275	16' 10,28"	23° 26' 18"	-13m 34s
12:00	332° 51' 47"	0,46"	334° 48' 53"	-10° 27' 10"	0,9890363	16' 10,27"	23° 26' 18"	-13m 34s
13:00	332° 54' 18"	0,46"	334° 51' 16"	-10° 26' 16"	0,9890452	16' 10,26"	23° 26' 18"	-13m 34s
14:00	332° 56' 49"	0,46"	334° 53' 39"	-10° 25' 21"	0,9890541	16' 10,25"	23° 26' 18"	-13m 34s
15:00	332° 59' 20"	0,47"	334° 56' 03"	-10° 24' 27"	0,9890630	16' 10,24"	23° 26' 18"	-13m 33s
16:00	333° 01' 51"	0,47"	334° 58' 26"	-10° 23' 32"	0,9890718	16' 10,23"	23° 26' 18"	-13m 33s
17:00	333° 04' 22"	0,48"	335° 00' 49"	-10° 22' 38"	0,9890807	16' 10,22"	23° 26' 18"	-13m 33s
18:00	333° 06' 54"	0,48"	335° 03' 13"	-10° 21' 43"	0,9890896	16' 10,22"	23° 26' 18"	-13m 32s
19:00	333° 09' 25"	0,48"	335° 05' 36"	-10° 20' 49"	0,9890985	16' 10,21"	23° 26' 18"	-13m 32s
20:00	333° 11' 56"	0,49"	335° 07' 59"	-10° 19' 54"	0,9891074	16' 10,20"	23° 26' 18"	-13m 32s
21:00	333° 14' 27"	0,49"	335° 10' 23"	-10° 19' 00"	0,9891163	16' 10,19"	23° 26' 18"	-13m 31s
22:00	333° 16' 58"	0,49"	335° 12' 46"	-10° 18' 05"	0,9891252	16' 10,18"	23° 26' 18"	-13m 31s
23:00	333° 19' 29"	0,50"	335° 15' 09"	-10° 17' 11"	0,9891341	16' 10,17"	23° 26' 18"	-13m 31s
24:00	333° 22' 00"	0,50"	335° 17' 32"	-10° 16' 16"	0,9891430	16' 10,16"	23° 26' 18"	-13m 31s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	16° 18' 39"	3° 12' 33"	13° 46' 46"	9° 22' 30"	58' 38"	15' 58,67"	243° 54' 49"	14,12%
01:00	16° 53' 25"	3° 15' 05"	14° 18' 14"	9° 38' 16"	58' 39"	15' 58,89"	243° 59' 12"	14,45%
02:00	17° 28' 12"	3° 17' 36"	14° 49' 46"	9° 53' 59"	58' 40"	15' 59,10"	244° 03' 44"	14,78%
03:00	18° 03' 00"	3° 20' 06"	15° 21' 21"	10° 09' 39"	58' 41"	15' 59,31"	244° 08' 27"	15,12%
04:00	18° 37' 49"	3° 22' 35"	15° 53' 00"	10° 25' 16"	58' 42"	16' 00,00"	244° 13' 20"	15,46%
05:00	19° 12' 39"	3° 25' 02"	16° 24' 43"	10° 40' 51"	58' 42"	16' 00,00"	244° 18' 23"	15,80%
06:00	19° 47' 30"	3° 27' 29"	16° 56' 30"	10° 56' 23"	58' 43"	16' 00,00"	244° 23' 36"	16,15%
07:00	20° 22' 21"	3° 29' 54"	17° 28' 21"	11° 11' 52"	58' 44"	16' 00,11"	244° 29' 00"	16,49%
08:00	20° 57' 14"	3° 32' 18"	18° 00' 16"	11° 27' 18"	58' 44"	16' 00,31"	244° 34' 34"	16,85%
09:00	21° 32' 07"	3° 34' 40"	18° 32' 15"	11° 42' 41"	58' 45"	16' 00,50"	244° 40' 18"	17,20%
10:00	22° 07' 02"	3° 37' 02"	19° 04' 19"	11° 58' 00"	58' 46"	16' 00,69"	244° 46' 12"	17,56%
11:00	22° 41' 57"	3° 39' 22"	19° 36' 26"	12° 13' 16"	58' 47"	16' 00,88"	244° 52' 17"	17,92%
12:00	23° 16' 53"	3° 41' 40"	20° 08' 38"	12° 28' 29"	58' 47"	16' 01,06"	244° 58' 31"	18,28%
13:00	23° 51' 49"	3° 43' 58"	20° 40' 54"	12° 43' 38"	58' 48"	16' 01,25"	245° 04' 56"	18,65%
14:00	24° 26' 47"	3° 46' 14"	21° 13' 15"	12° 58' 43"	58' 49"	16' 01,43"	245° 11' 30"	19,02%
15:00	25° 01' 45"	3° 48' 29"	21° 45' 40"	13° 13' 45"	58' 49"	16' 01,60"	245° 18' 15"	19,39%
16:00	25° 36' 44"	3° 50' 42"	22° 18' 09"	13° 28' 43"	58' 50"	16' 01,78"	245° 25' 10"	19,77%
17:00	26° 11' 44"	3° 52' 54"	22° 50' 44"	13° 43' 37"	58' 51"	16' 01,95"	245° 32' 15"	20,14%
18:00	26° 46' 45"	3° 55' 04"	23° 23' 23"	13° 58' 27"	58' 51"	16' 02,12"	245° 39' 29"	20,53%
19:00	27° 21' 46"	3° 57' 13"	23° 56' 06"	14° 13' 12"	58' 52"	16' 02,29"	245° 46' 54"	20,91%
20:00	27° 56' 49"	3° 59' 21"	24° 28' 55"	14° 27' 54"	58' 52"	16' 02,46"	245° 54' 29"	21,30%
21:00	28° 31' 52"	4° 01' 27"	25° 01' 48"	14° 42' 31"	58' 53"	16' 02,62"	246° 02' 14"	21,68%
22:00	29° 06' 55"	4° 03' 32"	25° 34' 47"	14° 57' 04"	58' 54"	16' 02,78"	246° 10' 09"	22,08%
23:00	29° 42' 00"	4° 05' 35"	26° 07' 50"	15° 11' 33"	58' 54"	16' 02,94"	246° 18' 13"	22,47%
24:00	30° 17' 05"	4° 07' 37"	26° 40' 58"	15° 25' 56"	58' 55"	16' 03,09"	246° 26' 28"	22,87%

22 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	333° 22' 00"	0,50"	335° 17' 32"	-10° 16' 16"	0,9891430	16' 10,16"	23° 26' 18"	-13m 31s
01:00	333° 24' 31"	0,50"	335° 19' 56"	-10° 15' 21"	0,9891520	16' 10,15"	23° 26' 18"	-13m 30s
02:00	333° 27' 03"	0,51"	335° 22' 19"	-10° 14' 27"	0,9891609	16' 10,15"	23° 26' 18"	-13m 30s
03:00	333° 29' 34"	0,51"	335° 24' 42"	-10° 13' 32"	0,9891698	16' 10,14"	23° 26' 18"	-13m 30s
04:00	333° 32' 05"	0,52"	335° 27' 05"	-10° 12' 37"	0,9891787	16' 10,13"	23° 26' 18"	-13m 29s
05:00	333° 34' 36"	0,52"	335° 29' 28"	-10° 11' 43"	0,9891877	16' 10,12"	23° 26' 18"	-13m 29s
06:00	333° 37' 07"	0,52"	335° 31' 51"	-10° 10' 48"	0,9891966	16' 10,11"	23° 26' 18"	-13m 29s
07:00	333° 39' 38"	0,52"	335° 34' 14"	-10° 09' 53"	0,9892056	16' 10,10"	23° 26' 18"	-13m 28s
08:00	333° 42' 09"	0,53"	335° 36' 37"	-10° 08' 59"	0,9892145	16' 10,09"	23° 26' 18"	-13m 28s
09:00	333° 44' 40"	0,53"	335° 39' 00"	-10° 08' 04"	0,9892235	16' 10,08"	23° 26' 18"	-13m 28s
10:00	333° 47' 11"	0,53"	335° 41' 24"	-10° 07' 09"	0,9892324	16' 10,08"	23° 26' 18"	-13m 27s
11:00	333° 49' 42"	0,54"	335° 43' 47"	-10° 06' 14"	0,9892414	16' 10,07"	23° 26' 18"	-13m 27s
12:00	333° 52' 14"	0,54"	335° 46' 10"	-10° 05' 19"	0,9892504	16' 10,06"	23° 26' 18"	-13m 27s
13:00	333° 54' 45"	0,54"	335° 48' 33"	-10° 04' 25"	0,9892593	16' 10,05"	23° 26' 18"	-13m 26s
14:00	333° 57' 16"	0,55"	335° 50' 56"	-10° 03' 30"	0,9892683	16' 10,04"	23° 26' 18"	-13m 26s
15:00	333° 59' 47"	0,55"	335° 53' 19"	-10° 02' 35"	0,9892773	16' 10,03"	23° 26' 18"	-13m 26s
16:00	334° 02' 18"	0,55"	335° 55' 41"	-10° 01' 40"	0,9892863	16' 10,02"	23° 26' 18"	-13m 25s
17:00	334° 04' 49"	0,55"	335° 58' 04"	-10° 00' 45"	0,9892952	16' 10,01"	23° 26' 18"	-13m 25s
18:00	334° 07' 20"	0,56"	336° 00' 27"	-9° 59' 50"	0,9893042	16' 10,00"	23° 26' 18"	-13m 25s
19:00	334° 09' 51"	0,56"	336° 02' 50"	-9° 58' 55"	0,9893132	16' 10,00"	23° 26' 18"	-13m 24s
20:00	334° 12' 22"	0,56"	336° 05' 13"	-9° 58' 01"	0,9893222	16' 09,99"	23° 26' 18"	-13m 24s
21:00	334° 14' 53"	0,56"	336° 07' 36"	-9° 57' 06"	0,9893312	16' 09,98"	23° 26' 18"	-13m 24s
22:00	334° 17' 24"	0,57"	336° 09' 59"	-9° 56' 11"	0,9893403	16' 09,97"	23° 26' 18"	-13m 23s
23:00	334° 19' 55"	0,57"	336° 12' 22"	-9° 55' 16"	0,9893493	16' 09,96"	23° 26' 18"	-13m 23s
24:00	334° 22' 26"	0,57"	336° 14' 44"	-9° 54' 21"	0,9893583	16' 09,95"	23° 26' 18"	-13m 23s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	30° 17' 05"	4° 07' 37"	26° 40' 58"	15° 25' 56"	58' 55"	16' 03,09"	246° 26' 28"	22,87%
01:00	30° 52' 11"	4° 09' 37"	27° 14' 12"	15° 40' 15"	58' 55"	16' 03,25"	246° 34' 53"	23,27%
02:00	31° 27' 17"	4° 11' 36"	27° 47' 30"	15° 54' 29"	58' 56"	16' 03,40"	246° 43' 27"	23,67%
03:00	32° 02' 24"	4° 13' 33"	28° 20' 54"	16° 08' 39"	58' 56"	16' 03,55"	246° 52' 12"	24,07%
04:00	32° 37' 32"	4° 15' 29"	28° 54' 23"	16° 22' 43"	58' 57"	16' 03,69"	247° 01' 06"	24,48%
05:00	33° 12' 41"	4° 17' 23"	29° 27' 57"	16° 36' 42"	58' 57"	16' 03,84"	247° 10' 10"	24,89%
06:00	33° 47' 50"	4° 19' 16"	30° 01' 37"	16° 50' 36"	58' 58"	16' 03,98"	247° 19' 24"	25,30%
07:00	34° 23' 00"	4° 21' 06"	30° 35' 22"	17° 04' 25"	58' 58"	16' 04,12"	247° 28' 48"	25,71%
08:00	34° 58' 11"	4° 22' 56"	31° 09' 12"	17° 18' 08"	58' 59"	16' 04,26"	247° 38' 22"	26,13%
09:00	35° 33' 22"	4° 24' 43"	31° 43' 08"	17° 31' 46"	58' 59"	16' 04,39"	247° 48' 05"	26,55%
10:00	36° 08' 33"	4° 26' 29"	32° 17' 09"	17° 45' 18"	59' 00"	16' 04,52"	247° 57' 59"	26,97%
11:00	36° 43' 46"	4° 28' 14"	32° 51' 16"	17° 58' 44"	59' 00"	16' 04,65"	248° 08' 02"	27,39%
12:00	37° 18' 59"	4° 29' 57"	33° 25' 29"	18° 12' 05"	59' 01"	16' 04,78"	248° 18' 15"	27,82%
13:00	37° 54' 12"	4° 31' 38"	33° 59' 47"	18° 25' 19"	59' 01"	16' 04,91"	248° 28' 37"	28,24%
14:00	38° 29' 26"	4° 33' 17"	34° 34' 11"	18° 38' 28"	59' 02"	16' 05,03"	248° 39' 09"	28,67%
15:00	39° 04' 41"	4° 34' 55"	35° 08' 41"	18° 51' 31"	59' 02"	16' 05,15"	248° 49' 51"	29,10%
16:00	39° 39' 56"	4° 36' 31"	35° 43' 16"	19° 04' 27"	59' 03"	16' 05,27"	249° 00' 42"	29,54%
17:00	40° 15' 12"	4° 38' 05"	36° 17' 57"	19° 17' 17"	59' 03"	16' 05,39"	249° 11' 44"	29,97%
18:00	40° 50' 28"	4° 39' 38"	36° 52' 44"	19° 30' 00"	59' 04"	16' 05,50"	249° 22' 54"	30,41%
19:00	41° 25' 45"	4° 41' 08"	37° 27' 37"	19° 42' 37"	59' 04"	16' 05,61"	249° 34' 14"	30,85%
20:00	42° 01' 03"	4° 42' 37"	38° 02' 36"	19° 55' 08"	59' 04"	16' 05,72"	249° 45' 44"	31,29%
21:00	42° 36' 21"	4° 44' 05"	38° 37' 40"	20° 07' 31"	59' 05"	16' 05,83"	249° 57' 23"	31,73%
22:00	43° 11' 39"	4° 45' 30"	39° 12' 50"	20° 19' 48"	59' 05"	16' 05,94"	250° 09' 12"	32,17%
23:00	43° 46' 58"	4° 46' 54"	39° 48' 07"	20° 31' 58"	59' 06"	16' 06,04"	250° 21' 10"	32,62%
24:00	44° 22' 17"	4° 48' 16"	40° 23' 29"	20° 44' 01"	59' 06"	16' 06,14"	250° 33' 17"	33,07%

23 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	334° 22' 26"	0,57"	336° 14' 44"	-9° 54' 21"	0,9893583	16' 09,95"	23° 26' 18"	-13m 23s
01:00	334° 24' 57"	0,57"	336° 17' 07"	-9° 53' 26"	0,9893673	16' 09,94"	23° 26' 18"	-13m 22s
02:00	334° 27' 28"	0,58"	336° 19' 30"	-9° 52' 31"	0,9893763	16' 09,93"	23° 26' 18"	-13m 22s
03:00	334° 29' 59"	0,58"	336° 21' 53"	-9° 51' 36"	0,9893854	16' 09,93"	23° 26' 18"	-13m 22s
04:00	334° 32' 30"	0,58"	336° 24' 16"	-9° 50' 41"	0,9893944	16' 09,92"	23° 26' 18"	-13m 21s
05:00	334° 35' 02"	0,58"	336° 26' 38"	-9° 49' 45"	0,9894035	16' 09,91"	23° 26' 18"	-13m 21s
06:00	334° 37' 33"	0,58"	336° 29' 01"	-9° 48' 50"	0,9894125	16' 09,90"	23° 26' 18"	-13m 21s
07:00	334° 40' 04"	0,59"	336° 31' 24"	-9° 47' 55"	0,9894216	16' 09,89"	23° 26' 18"	-13m 20s
08:00	334° 42' 35"	0,59"	336° 33' 46"	-9° 47' 00"	0,9894306	16' 09,88"	23° 26' 18"	-13m 20s
09:00	334° 45' 06"	0,59"	336° 36' 09"	-9° 46' 05"	0,9894397	16' 09,87"	23° 26' 18"	-13m 20s
10:00	334° 47' 37"	0,59"	336° 38' 32"	-9° 45' 10"	0,9894487	16' 09,86"	23° 26' 18"	-13m 19s
11:00	334° 50' 08"	0,59"	336° 40' 54"	-9° 44' 15"	0,9894578	16' 09,85"	23° 26' 18"	-13m 19s
12:00	334° 52' 39"	0,59"	336° 43' 17"	-9° 43' 20"	0,9894669	16' 09,85"	23° 26' 18"	-13m 19s
13:00	334° 55' 10"	0,60"	336° 45' 40"	-9° 42' 24"	0,9894760	16' 09,84"	23° 26' 18"	-13m 18s
14:00	334° 57' 41"	0,60"	336° 48' 02"	-9° 41' 29"	0,9894851	16' 09,83"	23° 26' 18"	-13m 18s
15:00	335° 00' 12"	0,60"	336° 50' 25"	-9° 40' 34"	0,9894941	16' 09,82"	23° 26' 18"	-13m 18s
16:00	335° 02' 43"	0,60"	336° 52' 47"	-9° 39' 39"	0,9895032	16' 09,81"	23° 26' 18"	-13m 17s
17:00	335° 05' 14"	0,60"	336° 55' 10"	-9° 38' 44"	0,9895123	16' 09,80"	23° 26' 18"	-13m 17s
18:00	335° 07' 45"	0,60"	336° 57' 32"	-9° 37' 48"	0,9895215	16' 09,79"	23° 26' 18"	-13m 17s
19:00	335° 10' 16"	0,60"	336° 59' 55"	-9° 36' 53"	0,9895306	16' 09,78"	23° 26' 18"	-13m 16s
20:00	335° 12' 47"	0,61"	337° 02' 17"	-9° 35' 58"	0,9895397	16' 09,77"	23° 26' 18"	-13m 16s
21:00	335° 15' 18"	0,61"	337° 04' 40"	-9° 35' 02"	0,9895488	16' 09,77"	23° 26' 18"	-13m 16s
22:00	335° 17' 49"	0,61"	337° 07' 02"	-9° 34' 07"	0,9895579	16' 09,76"	23° 26' 18"	-13m 15s
23:00	335° 20' 20"	0,61"	337° 09' 25"	-9° 33' 12"	0,9895671	16' 09,75"	23° 26' 18"	-13m 15s
24:00	335° 22' 51"	0,61"	337° 11' 47"	-9° 32' 16"	0,9895762	16' 09,74"	23° 26' 18"	-13m 14s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	44° 22' 17"	4° 48' 16"	40° 23' 29"	20° 44' 01"	59' 06"	16' 06,14"	250° 33' 17"	33,07%
01:00	44° 57' 37"	4° 49' 36"	40° 58' 57"	20° 55' 57"	59' 06"	16' 06,24"	250° 45' 34"	33,52%
02:00	45° 32' 57"	4° 50' 54"	41° 34' 31"	21° 07' 45"	59' 07"	16' 06,34"	250° 58' 00"	33,97%
03:00	46° 08' 18"	4° 52' 11"	42° 10' 11"	21° 19' 26"	59' 07"	16' 06,43"	251° 10' 35"	34,42%
04:00	46° 43' 39"	4° 53' 25"	42° 45' 57"	21° 31' 00"	59' 07"	16' 06,52"	251° 23' 19"	34,87%
05:00	47° 19' 01"	4° 54' 38"	43° 21' 49"	21° 42' 26"	59' 08"	16' 06,61"	251° 36' 13"	35,33%
06:00	47° 54' 23"	4° 55' 49"	43° 57' 47"	21° 53' 45"	59' 08"	16' 06,70"	251° 49' 16"	35,78%
07:00	48° 29' 46"	4° 56' 58"	44° 33' 51"	22° 04' 56"	59' 08"	16' 06,79"	252° 02' 27"	36,24%
08:00	49° 05' 08"	4° 58' 05"	45° 10' 01"	22° 15' 59"	59' 09"	16' 06,87"	252° 15' 48"	36,70%
09:00	49° 40' 32"	4° 59' 11"	45° 46' 17"	22° 26' 54"	59' 09"	16' 06,95"	252° 29' 17"	37,16%
10:00	50° 15' 55"	5° 00' 14"	46° 22' 39"	22° 37' 41"	59' 09"	16' 07,03"	252° 42' 56"	37,62%
11:00	50° 51' 20"	5° 01' 16"	46° 59' 07"	22° 48' 20"	59' 09"	16' 07,11"	252° 56' 43"	38,09%
12:00	51° 26' 44"	5° 02' 15"	47° 35' 41"	22° 58' 50"	59' 10"	16' 07,19"	253° 10' 39"	38,55%
13:00	52° 02' 09"	5° 03' 13"	48° 12' 21"	23° 09' 12"	59' 10"	16' 07,26"	253° 24' 43"	39,01%
14:00	52° 37' 34"	5° 04' 09"	48° 49' 06"	23° 19' 26"	59' 10"	16' 07,33"	253° 38' 56"	39,48%
15:00	53° 12' 59"	5° 05' 03"	49° 25' 58"	23° 29' 32"	59' 10"	16' 07,40"	253° 53' 18"	39,95%
16:00	53° 48' 25"	5° 05' 55"	50° 02' 55"	23° 39' 28"	59' 11"	16' 07,46"	254° 07' 48"	40,41%
17:00	54° 23' 51"	5° 06' 45"	50° 39' 58"	23° 49' 16"	59' 11"	16' 07,53"	254° 22' 27"	40,88%
18:00	54° 59' 18"	5° 07' 33"	51° 17' 07"	23° 58' 55"	59' 11"	16' 07,59"	254° 37' 13"	41,35%
19:00	55° 34' 44"	5° 08' 19"	51° 54' 22"	24° 08' 26"	59' 11"	16' 07,65"	254° 52' 08"	41,82%
20:00	56° 10' 11"	5° 09' 04"	52° 31' 42"	24° 17' 47"	59' 12"	16' 07,71"	255° 07' 11"	42,29%
21:00	56° 45' 39"	5° 09' 46"	53° 09' 08"	24° 26' 59"	59' 12"	16' 07,77"	255° 22' 22"	42,77%
22:00	57° 21' 06"	5° 10' 26"	53° 46' 40"	24° 36' 02"	59' 12"	16' 07,82"	255° 37' 41"	43,24%
23:00	57° 56' 34"	5° 11' 04"	54° 24' 17"	24° 44' 56"	59' 12"	16' 07,87"	255° 53' 08"	43,71%
24:00	58° 32' 02"	5° 11' 41"	55° 02' 00"	24° 53' 40"	59' 12"	16' 07,92"	256° 08' 43"	44,19%

24 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	335° 22' 51"	0,61"	337° 11' 47"	-9° 32' 16"	0,9895762	16' 09,74"	23° 26' 18"	-13m 14s
01:00	335° 25' 21"	0,61"	337° 14' 10"	-9° 31' 21"	0,9895853	16' 09,73"	23° 26' 18"	-13m 14s
02:00	335° 27' 52"	0,61"	337° 16' 32"	-9° 30' 26"	0,9895945	16' 09,72"	23° 26' 18"	-13m 14s
03:00	335° 30' 23"	0,61"	337° 18' 54"	-9° 29' 30"	0,9896036	16' 09,71"	23° 26' 18"	-13m 13s
04:00	335° 32' 54"	0,61"	337° 21' 17"	-9° 28' 35"	0,9896128	16' 09,70"	23° 26' 18"	-13m 13s
05:00	335° 35' 25"	0,61"	337° 23' 39"	-9° 27' 39"	0,9896219	16' 09,69"	23° 26' 18"	-13m 13s
06:00	335° 37' 56"	0,61"	337° 26' 01"	-9° 26' 44"	0,9896311	16' 09,68"	23° 26' 18"	-13m 12s
07:00	335° 40' 27"	0,62"	337° 28' 24"	-9° 25' 49"	0,9896403	16' 09,68"	23° 26' 18"	-13m 12s
08:00	335° 42' 58"	0,62"	337° 30' 46"	-9° 24' 53"	0,9896495	16' 09,67"	23° 26' 18"	-13m 11s
09:00	335° 45' 29"	0,62"	337° 33' 08"	-9° 23' 58"	0,9896586	16' 09,66"	23° 26' 18"	-13m 11s
10:00	335° 48' 00"	0,62"	337° 35' 31"	-9° 23' 02"	0,9896678	16' 09,65"	23° 26' 18"	-13m 11s
11:00	335° 50' 31"	0,62"	337° 37' 53"	-9° 22' 07"	0,9896770	16' 09,64"	23° 26' 18"	-13m 10s
12:00	335° 53' 02"	0,62"	337° 40' 15"	-9° 21' 11"	0,9896862	16' 09,63"	23° 26' 18"	-13m 10s
13:00	335° 55' 33"	0,62"	337° 42' 37"	-9° 20' 16"	0,9896954	16' 09,62"	23° 26' 18"	-13m 10s
14:00	335° 58' 04"	0,62"	337° 45' 00"	-9° 19' 20"	0,9897046	16' 09,61"	23° 26' 18"	-13m 09s
15:00	336° 00' 35"	0,62"	337° 47' 22"	-9° 18' 24"	0,9897138	16' 09,60"	23° 26' 18"	-13m 09s
16:00	336° 03' 06"	0,62"	337° 49' 44"	-9° 17' 29"	0,9897231	16' 09,59"	23° 26' 18"	-13m 08s
17:00	336° 05' 36"	0,62"	337° 52' 06"	-9° 16' 33"	0,9897323	16' 09,59"	23° 26' 18"	-13m 08s
18:00	336° 08' 07"	0,62"	337° 54' 28"	-9° 15' 38"	0,9897415	16' 09,58"	23° 26' 18"	-13m 08s
19:00	336° 10' 38"	0,62"	337° 56' 50"	-9° 14' 42"	0,9897507	16' 09,57"	23° 26' 18"	-13m 07s
20:00	336° 13' 09"	0,62"	337° 59' 12"	-9° 13' 46"	0,9897600	16' 09,56"	23° 26' 18"	-13m 07s
21:00	336° 15' 40"	0,62"	338° 01' 35"	-9° 12' 51"	0,9897692	16' 09,55"	23° 26' 18"	-13m 07s
22:00	336° 18' 11"	0,62"	338° 03' 57"	-9° 11' 55"	0,9897785	16' 09,54"	23° 26' 18"	-13m 06s
23:00	336° 20' 42"	0,62"	338° 06' 19"	-9° 10' 59"	0,9897877	16' 09,53"	23° 26' 18"	-13m 06s
24:00	336° 23' 13"	0,62"	338° 08' 41"	-9° 10' 04"	0,9897970	16' 09,52"	23° 26' 18"	-13m 05s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	58° 32' 02"	5° 11' 41"	55° 02' 00"	24° 53' 40"	59' 12"	16' 07,92"	256° 08' 43"	44,19%
01:00	59° 07' 30"	5° 12' 15"	55° 39' 49"	25° 02' 15"	59' 13"	16' 07,97"	256° 24' 25"	44,66%
02:00	59° 42' 59"	5° 12' 48"	56° 17' 42"	25° 10' 40"	59' 13"	16' 08,02"	256° 40' 14"	45,14%
03:00	60° 18' 28"	5° 13' 18"	56° 55' 41"	25° 18' 56"	59' 13"	16' 08,06"	256° 56' 12"	45,61%
04:00	60° 53' 57"	5° 13' 47"	57° 33' 46"	25° 27' 02"	59' 13"	16' 08,10"	257° 12' 16"	46,09%
05:00	61° 29' 26"	5° 14' 13"	58° 11' 56"	25° 34' 58"	59' 13"	16' 08,14"	257° 28' 28"	46,56%
06:00	62° 04' 55"	5° 14' 37"	58° 50' 10"	25° 42' 44"	59' 13"	16' 08,18"	257° 44' 46"	47,04%
07:00	62° 40' 25"	5° 15' 00"	59° 28' 30"	25° 50' 20"	59' 13"	16' 08,21"	258° 01' 12"	47,52%
08:00	63° 15' 55"	5° 15' 20"	60° 06' 55"	25° 57' 46"	59' 14"	16' 08,25"	258° 17' 44"	48,00%
09:00	63° 51' 25"	5° 15' 39"	60° 45' 25"	26° 05' 03"	59' 14"	16' 08,28"	258° 34' 24"	48,47%
10:00	64° 26' 55"	5° 15' 55"	61° 24' 00"	26° 12' 08"	59' 14"	16' 08,31"	258° 51' 09"	48,95%
11:00	65° 02' 25"	5° 16' 10"	62° 02' 40"	26° 19' 04"	59' 14"	16' 08,33"	259° 08' 02"	49,43%
12:00	65° 37' 55"	5° 16' 22"	62° 41' 24"	26° 25' 49"	59' 14"	16' 08,36"	259° 25' 00"	49,91%
13:00	66° 13' 26"	5° 16' 32"	63° 20' 13"	26° 32' 24"	59' 14"	16' 08,38"	259° 42' 05"	50,38%
14:00	66° 48' 56"	5° 16' 41"	63° 59' 06"	26° 38' 48"	59' 14"	16' 08,40"	259° 59' 16"	50,86%
15:00	67° 24' 27"	5° 16' 47"	64° 38' 04"	26° 45' 02"	59' 14"	16' 08,42"	260° 16' 32"	51,34%
16:00	67° 59' 58"	5° 16' 52"	65° 17' 06"	26° 51' 05"	59' 14"	16' 08,44"	260° 33' 55"	51,82%
17:00	68° 35' 29"	5° 16' 54"	65° 56' 12"	26° 56' 57"	59' 14"	16' 08,45"	260° 51' 23"	52,29%
18:00	69° 11' 00"	5° 16' 54"	66° 35' 23"	27° 02' 39"	59' 14"	16' 08,46"	261° 08' 56"	52,77%
19:00	69° 46' 31"	5° 16' 53"	67° 14' 37"	27° 08' 09"	59' 14"	16' 08,47"	261° 26' 35"	53,25%
20:00	70° 22' 02"	5° 16' 49"	67° 53' 55"	27° 13' 29"	59' 14"	16' 08,48"	261° 44' 19"	53,73%
21:00	70° 57' 33"	5° 16' 43"	68° 33' 17"	27° 18' 38"	59' 14"	16' 08,49"	262° 02' 08"	54,20%
22:00	71° 33' 04"	5° 16' 35"	69° 12' 43"	27° 23' 36"	59' 15"	16' 08,49"	262° 20' 02"	54,68%
23:00	72° 08' 35"	5° 16' 26"	69° 52' 12"	27° 28' 22"	59' 15"	16' 08,49"	262° 38' 00"	55,15%
24:00	72° 44' 07"	5° 16' 14"	70° 31' 44"	27° 32' 58"	59' 15"	16' 08,49"	262° 56' 03"	55,63%

25 Februari 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	336° 23' 13"	0,62"	338° 08' 41"	-9° 10' 04"	0,9897970	16' 09,52"	23° 26' 18"	-13m 05s
01:00	336° 25' 44"	0,62"	338° 11' 03"	-9° 09' 08"	0,9898063	16' 09,51"	23° 26' 18"	-13m 05s
02:00	336° 28' 15"	0,61"	338° 13' 25"	-9° 08' 12"	0,9898155	16' 09,50"	23° 26' 18"	-13m 05s
03:00	336° 30' 45"	0,61"	338° 15' 47"	-9° 07' 16"	0,9898248	16' 09,49"	23° 26' 18"	-13m 04s
04:00	336° 33' 16"	0,61"	338° 18' 09"	-9° 06' 21"	0,9898341	16' 09,49"	23° 26' 18"	-13m 04s
05:00	336° 35' 47"	0,61"	338° 20' 31"	-9° 05' 25"	0,9898434	16' 09,48"	23° 26' 18"	-13m 03s
06:00	336° 38' 18"	0,61"	338° 22' 53"	-9° 04' 29"	0,9898527	16' 09,47"	23° 26' 18"	-13m 03s
07:00	336° 40' 49"	0,61"	338° 25' 15"	-9° 03' 33"	0,9898620	16' 09,46"	23° 26' 18"	-13m 03s
08:00	336° 43' 20"	0,61"	338° 27' 37"	-9° 02' 38"	0,9898713	16' 09,45"	23° 26' 18"	-13m 02s
09:00	336° 45' 51"	0,61"	338° 29' 58"	-9° 01' 42"	0,9898806	16' 09,44"	23° 26' 18"	-13m 02s
10:00	336° 48' 21"	0,61"	338° 32' 20"	-9° 00' 46"	0,9898899	16' 09,43"	23° 26' 18"	-13m 02s
11:00	336° 50' 52"	0,61"	338° 34' 42"	-8° 59' 50"	0,9898993	16' 09,42"	23° 26' 18"	-13m 01s
12:00	336° 53' 23"	0,61"	338° 37' 04"	-8° 58' 54"	0,9899086	16' 09,41"	23° 26' 18"	-13m 01s
13:00	336° 55' 54"	0,60"	338° 39' 26"	-8° 57' 58"	0,9899179	16' 09,40"	23° 26' 18"	-13m 00s
14:00	336° 58' 25"	0,60"	338° 41' 48"	-8° 57' 02"	0,9899273	16' 09,39"	23° 26' 18"	-13m 00s
15:00	337° 00' 56"	0,60"	338° 44' 10"	-8° 56' 07"	0,9899366	16' 09,39"	23° 26' 18"	-13m 00s
16:00	337° 03' 26"	0,60"	338° 46' 31"	-8° 55' 11"	0,9899460	16' 09,38"	23° 26' 18"	-12m 59s
17:00	337° 05' 57"	0,60"	338° 48' 53"	-8° 54' 15"	0,9899553	16' 09,37"	23° 26' 18"	-12m 59s
18:00	337° 08' 28"	0,60"	338° 51' 15"	-8° 53' 19"	0,9899647	16' 09,36"	23° 26' 18"	-12m 58s
19:00	337° 10' 59"	0,60"	338° 53' 37"	-8° 52' 23"	0,9899741	16' 09,35"	23° 26' 18"	-12m 58s
20:00	337° 13' 30"	0,59"	338° 55' 58"	-8° 51' 27"	0,9899835	16' 09,34"	23° 26' 18"	-12m 57s
21:00	337° 16' 01"	0,59"	338° 58' 20"	-8° 50' 31"	0,9899928	16' 09,33"	23° 26' 18"	-12m 57s
22:00	337° 18' 31"	0,59"	339° 00' 42"	-8° 49' 35"	0,9900022	16' 09,32"	23° 26' 18"	-12m 57s
23:00	337° 21' 02"	0,59"	339° 03' 04"	-8° 48' 39"	0,9900116	16' 09,31"	23° 26' 18"	-12m 56s
24:00	337° 23' 33"	0,59"	339° 05' 25"	-8° 47' 43"	0,9900210	16' 09,30"	23° 26' 18"	-12m 56s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	72° 44' 07"	5° 16' 14"	70° 31' 44"	27° 32' 58"	59' 15"	16' 08,49"	262° 56' 03"	55,63%
01:00	73° 19' 38"	5° 16' 00"	71° 11' 20"	27° 37' 22"	59' 15"	16' 08,49"	263° 14' 10"	56,10%
02:00	73° 55' 09"	5° 15' 44"	71° 50' 59"	27° 41' 35"	59' 14"	16' 08,49"	263° 32' 21"	56,58%
03:00	74° 30' 40"	5° 15' 26"	72° 30' 41"	27° 45' 37"	59' 14"	16' 08,48"	263° 50' 37"	57,05%
04:00	75° 06' 11"	5° 15' 07"	73° 10' 26"	27° 49' 27"	59' 14"	16' 08,47"	264° 08' 56"	57,52%
05:00	75° 41' 42"	5° 14' 45"	73° 50' 14"	27° 53' 06"	59' 14"	16' 08,46"	264° 27' 18"	58,00%
06:00	76° 17' 14"	5° 14' 21"	74° 30' 04"	27° 56' 34"	59' 14"	16' 08,44"	264° 45' 45"	58,47%
07:00	76° 52' 45"	5° 13' 55"	75° 09' 57"	27° 59' 50"	59' 14"	16' 08,43"	265° 04' 14"	58,94%
08:00	77° 28' 16"	5° 13' 27"	75° 49' 52"	28° 02' 54"	59' 14"	16' 08,41"	265° 22' 47"	59,41%
09:00	78° 03' 46"	5° 12' 57"	76° 29' 49"	28° 05' 47"	59' 14"	16' 08,39"	265° 41' 22"	59,88%
10:00	78° 39' 17"	5° 12' 26"	77° 09' 48"	28° 08' 29"	59' 14"	16' 08,37"	266° 00' 00"	60,34%
11:00	79° 14' 48"	5° 11' 52"	77° 49' 49"	28° 10' 58"	59' 14"	16' 08,34"	266° 18' 41"	60,81%
12:00	79° 50' 18"	5° 11' 16"	78° 29' 52"	28° 13' 17"	59' 14"	16' 08,32"	266° 37' 23"	61,28%
13:00	80° 25' 49"	5° 10' 38"	79° 09' 57"	28° 15' 23"	59' 14"	16' 08,29"	266° 56' 08"	61,74%
14:00	81° 01' 19"	5° 09' 58"	79° 50' 03"	28° 17' 18"	59' 14"	16' 08,26"	267° 14' 55"	62,21%
15:00	81° 36' 49"	5° 09' 17"	80° 30' 10"	28° 19' 01"	59' 14"	16' 08,22"	267° 33' 44"	62,67%
16:00	82° 12' 19"	5° 08' 33"	81° 10' 18"	28° 20' 32"	59' 13"	16' 08,19"	267° 52' 34"	63,13%
17:00	82° 47' 49"	5° 07' 47"	81° 50' 28"	28° 21' 52"	59' 13"	16' 08,15"	268° 11' 26"	63,59%
18:00	83° 23' 19"	5° 07' 00"	82° 30' 38"	28° 23' 00"	59' 13"	16' 08,11"	268° 30' 19"	64,05%
19:00	83° 58' 49"	5° 06' 10"	83° 10' 49"	28° 23' 56"	59' 13"	16' 08,06"	268° 49' 12"	64,51%
20:00	84° 34' 18"	5° 05' 19"	83° 51' 00"	28° 24' 40"	59' 13"	16' 08,02"	269° 08' 07"	64,96%
21:00	85° 09' 47"	5° 04' 25"	84° 31' 12"	28° 25' 12"	59' 13"	16' 07,97"	269° 27' 02"	65,42%
22:00	85° 45' 16"	5° 03' 30"	85° 11' 24"	28° 25' 33"	59' 12"	16' 07,92"	269° 45' 57"	65,87%
23:00	86° 20' 44"	5° 02' 32"	85° 51' 36"	28° 25' 41"	59' 12"	16' 07,87"	270° 04' 52"	66,32%
24:00	86° 56' 13"	5° 01' 33"	86° 31' 47"	28° 25' 38"	59' 12"	16' 07,81"	270° 23' 48"	66,77%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	337° 23' 33"	0,59"	339° 05' 25"	-8° 47' 43"	0,9900210	16' 09,30"	23° 26' 18"	-12m 56s
01:00	337° 26' 04"	0,58"	339° 07' 47"	-8° 46' 47"	0,9900304	16' 09,29"	23° 26' 18"	-12m 55s
02:00	337° 28' 35"	0,58"	339° 10' 09"	-8° 45' 51"	0,9900398	16' 09,28"	23° 26' 18"	-12m 55s
03:00	337° 31' 05"	0,58"	339° 12' 30"	-8° 44' 55"	0,9900493	16' 09,28"	23° 26' 18"	-12m 55s
04:00	337° 33' 36"	0,58"	339° 14' 52"	-8° 43' 59"	0,9900587	16' 09,27"	23° 26' 18"	-12m 54s
05:00	337° 36' 07"	0,58"	339° 17' 13"	-8° 43' 02"	0,9900681	16' 09,26"	23° 26' 18"	-12m 54s
06:00	337° 38' 38"	0,57"	339° 19' 35"	-8° 42' 06"	0,9900776	16' 09,25"	23° 26' 18"	-12m 53s
07:00	337° 41' 09"	0,57"	339° 21' 57"	-8° 41' 10"	0,9900870	16' 09,24"	23° 26' 18"	-12m 53s
08:00	337° 43' 39"	0,57"	339° 24' 18"	-8° 40' 14"	0,9900964	16' 09,23"	23° 26' 18"	-12m 53s
09:00	337° 46' 10"	0,57"	339° 26' 40"	-8° 39' 18"	0,9901059	16' 09,22"	23° 26' 18"	-12m 52s
10:00	337° 48' 41"	0,56"	339° 29' 01"	-8° 38' 22"	0,9901154	16' 09,21"	23° 26' 18"	-12m 52s
11:00	337° 51' 12"	0,56"	339° 31' 23"	-8° 37' 26"	0,9901248	16' 09,20"	23° 26' 18"	-12m 51s
12:00	337° 53' 42"	0,56"	339° 33' 44"	-8° 36' 29"	0,9901343	16' 09,19"	23° 26' 18"	-12m 51s
13:00	337° 56' 13"	0,56"	339° 36' 06"	-8° 35' 33"	0,9901438	16' 09,18"	23° 26' 18"	-12m 50s
14:00	337° 58' 44"	0,55"	339° 38' 27"	-8° 34' 37"	0,9901533	16' 09,17"	23° 26' 18"	-12m 50s
15:00	338° 01' 15"	0,55"	339° 40' 49"	-8° 33' 41"	0,9901628	16' 09,16"	23° 26' 18"	-12m 50s
16:00	338° 03' 45"	0,55"	339° 43' 10"	-8° 32' 45"	0,9901723	16' 09,15"	23° 26' 18"	-12m 49s
17:00	338° 06' 16"	0,55"	339° 45' 32"	-8° 31' 48"	0,9901818	16' 09,15"	23° 26' 18"	-12m 49s
18:00	338° 08' 47"	0,54"	339° 47' 53"	-8° 30' 52"	0,9901913	16' 09,14"	23° 26' 18"	-12m 48s
19:00	338° 11' 18"	0,54"	339° 50' 14"	-8° 29' 56"	0,9902008	16' 09,13"	23° 26' 18"	-12m 48s
20:00	338° 13' 48"	0,54"	339° 52' 36"	-8° 29' 00"	0,9902103	16' 09,12"	23° 26' 18"	-12m 47s
21:00	338° 16' 19"	0,53"	339° 54' 57"	-8° 28' 03"	0,9902199	16' 09,11"	23° 26' 18"	-12m 47s
22:00	338° 18' 50"	0,53"	339° 57' 19"	-8° 27' 07"	0,9902294	16' 09,10"	23° 26' 18"	-12m 47s
23:00	338° 21' 21"	0,53"	339° 59' 40"	-8° 26' 11"	0,9902389	16' 09,09"	23° 26' 18"	-12m 46s
24:00	338° 23' 51"	0,53"	340° 02' 01"	-8° 25' 14"	0,9902485	16' 09,08"	23° 26' 18"	-12m 46s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	86° 56' 13"	5° 01' 33"	86° 31' 47"	28° 25' 38"	59' 12"	16' 07,81"	270° 23' 48"	66,77%
01:00	87° 31' 41"	5° 00' 32"	87° 11' 59"	28° 25' 24"	59' 12"	16' 07,76"	270° 42' 43"	67,22%
02:00	88° 07' 09"	4° 59' 29"	87° 52' 10"	28° 24' 57"	59' 12"	16' 07,70"	271° 01' 37"	67,67%
03:00	88° 42' 37"	4° 58' 24"	88° 32' 21"	28° 24' 19"	59' 11"	16' 07,64"	271° 20' 31"	68,12%
04:00	89° 18' 04"	4° 57' 17"	89° 12' 31"	28° 23' 28"	59' 11"	16' 07,57"	271° 39' 24"	68,56%
05:00	89° 53' 31"	4° 56' 08"	89° 52' 39"	28° 22' 26"	59' 11"	16' 07,50"	271° 58' 16"	69,00%
06:00	90° 28' 58"	4° 54' 58"	90° 32' 47"	28° 21' 13"	59' 11"	16' 07,44"	272° 17' 07"	69,44%
07:00	91° 04' 24"	4° 53' 45"	91° 12' 54"	28° 19' 47"	59' 10"	16' 07,36"	272° 35' 57"	69,88%
08:00	91° 39' 50"	4° 52' 31"	91° 52' 59"	28° 18' 10"	59' 10"	16' 07,29"	272° 54' 44"	70,32%
09:00	92° 15' 16"	4° 51' 15"	92° 33' 03"	28° 16' 21"	59' 10"	16' 07,21"	273° 13' 30"	70,75%
10:00	92° 50' 41"	4° 49' 57"	93° 13' 05"	28° 14' 21"	59' 10"	16' 07,13"	273° 32' 14"	71,18%
11:00	93° 26' 06"	4° 48' 37"	93° 53' 05"	28° 12' 08"	59' 09"	16' 07,05"	273° 50' 55"	71,62%
12:00	94° 01' 31"	4° 47' 15"	94° 33' 03"	28° 09' 45"	59' 09"	16' 06,97"	274° 09' 35"	72,04%
13:00	94° 36' 55"	4° 45' 52"	95° 12' 59"	28° 07' 09"	59' 09"	16' 06,88"	274° 28' 11"	72,47%
14:00	95° 12' 19"	4° 44' 27"	95° 52' 53"	28° 04' 22"	59' 08"	16' 06,79"	274° 46' 45"	72,90%
15:00	95° 47' 43"	4° 43' 00"	96° 32' 45"	28° 01' 24"	59' 08"	16' 06,70"	275° 05' 15"	73,32%
16:00	96° 23' 06"	4° 41' 31"	97° 12' 33"	27° 58' 14"	59' 08"	16' 06,61"	275° 23' 43"	73,74%
17:00	96° 58' 28"	4° 40' 00"	97° 52' 19"	27° 54' 53"	59' 07"	16' 06,51"	275° 42' 07"	74,16%
18:00	97° 33' 50"	4° 38' 28"	98° 32' 03"	27° 51' 20"	59' 07"	16' 06,41"	276° 00' 27"	74,57%
19:00	98° 09' 12"	4° 36' 54"	99° 11' 43"	27° 47' 36"	59' 06"	16' 06,31"	276° 18' 44"	74,99%
20:00	98° 44' 33"	4° 35' 18"	99° 51' 20"	27° 43' 41"	59' 06"	16' 06,20"	276° 36' 57"	75,40%
21:00	99° 19' 54"	4° 33' 40"	100° 30' 53"	27° 39' 34"	59' 06"	16' 06,09"	276° 55' 05"	75,81%
22:00	99° 55' 14"	4° 32' 01"	101° 10' 24"	27° 35' 17"	59' 05"	16' 05,98"	277° 13' 10"	76,21%
23:00	100° 30' 34"	4° 30' 20"	101° 49' 51"	27° 30' 48"	59' 05"	16' 05,87"	277° 31' 10"	76,62%
24:00	101° 05' 53"	4° 28' 37"	102° 29' 14"	27° 26' 08"	59' 04"	16' 05,76"	277° 49' 05"	77,02%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	338° 23' 51"	0,53"	340° 02' 01"	-8° 25' 14"	0,9902485	16' 09,08"	23° 26' 18"	-12m 46s
01:00	338° 26' 22"	0,52"	340° 04' 22"	-8° 24' 18"	0,9902580	16' 09,07"	23° 26' 18"	-12m 45s
02:00	338° 28' 53"	0,52"	340° 06' 44"	-8° 23' 22"	0,9902676	16' 09,06"	23° 26' 18"	-12m 45s
03:00	338° 31' 23"	0,52"	340° 09' 05"	-8° 22' 25"	0,9902772	16' 09,05"	23° 26' 18"	-12m 44s
04:00	338° 33' 54"	0,51"	340° 11' 26"	-8° 21' 29"	0,9902868	16' 09,04"	23° 26' 18"	-12m 44s
05:00	338° 36' 25"	0,51"	340° 13' 48"	-8° 20' 32"	0,9902963	16' 09,03"	23° 26' 18"	-12m 43s
06:00	338° 38' 56"	0,51"	340° 16' 09"	-8° 19' 36"	0,9903059	16' 09,02"	23° 26' 18"	-12m 43s
07:00	338° 41' 26"	0,50"	340° 18' 30"	-8° 18' 40"	0,9903155	16' 09,01"	23° 26' 18"	-12m 43s
08:00	338° 43' 57"	0,50"	340° 20' 51"	-8° 17' 43"	0,9903251	16' 09,01"	23° 26' 18"	-12m 42s
09:00	338° 46' 28"	0,49"	340° 23' 12"	-8° 16' 47"	0,9903347	16' 09,00"	23° 26' 18"	-12m 42s
10:00	338° 48' 58"	0,49"	340° 25' 34"	-8° 15' 50"	0,9903443	16' 08,99"	23° 26' 18"	-12m 41s
11:00	338° 51' 29"	0,49"	340° 27' 55"	-8° 14' 54"	0,9903540	16' 08,98"	23° 26' 18"	-12m 41s
12:00	338° 54' 00"	0,48"	340° 30' 16"	-8° 13' 57"	0,9903636	16' 08,97"	23° 26' 18"	-12m 40s
13:00	338° 56' 30"	0,48"	340° 32' 37"	-8° 13' 01"	0,9903732	16' 08,96"	23° 26' 18"	-12m 40s
14:00	338° 59' 01"	0,48"	340° 34' 58"	-8° 12' 04"	0,9903829	16' 08,95"	23° 26' 18"	-12m 39s
15:00	339° 01' 32"	0,47"	340° 37' 19"	-8° 11' 08"	0,9903925	16' 08,94"	23° 26' 18"	-12m 39s
16:00	339° 04' 02"	0,47"	340° 39' 40"	-8° 10' 11"	0,9904022	16' 08,93"	23° 26' 18"	-12m 39s
17:00	339° 06' 33"	0,46"	340° 42' 01"	-8° 09' 15"	0,9904118	16' 08,92"	23° 26' 18"	-12m 38s
18:00	339° 09' 04"	0,46"	340° 44' 23"	-8° 08' 18"	0,9904215	16' 08,91"	23° 26' 18"	-12m 38s
19:00	339° 11' 34"	0,46"	340° 46' 44"	-8° 07' 21"	0,9904312	16' 08,90"	23° 26' 18"	-12m 37s
20:00	339° 14' 05"	0,45"	340° 49' 05"	-8° 06' 25"	0,9904409	16' 08,89"	23° 26' 18"	-12m 37s
21:00	339° 16' 36"	0,45"	340° 51' 26"	-8° 05' 28"	0,9904505	16' 08,88"	23° 26' 18"	-12m 36s
22:00	339° 19' 06"	0,44"	340° 53' 47"	-8° 04' 32"	0,9904602	16' 08,87"	23° 26' 18"	-12m 36s
23:00	339° 21' 37"	0,44"	340° 56' 08"	-8° 03' 35"	0,9904699	16' 08,86"	23° 26' 18"	-12m 35s
24:00	339° 24' 08"	0,43"	340° 58' 29"	-8° 02' 38"	0,9904796	16' 08,85"	23° 26' 18"	-12m 35s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	101° 05' 53"	4° 28' 37"	102° 29' 14"	27° 26' 08"	59' 04"	16' 05,76"	277° 49' 05"	77,02%
01:00	101° 41' 12"	4° 26' 53"	103° 08' 33"	27° 21' 17"	59' 04"	16' 05,64"	278° 06' 55"	77,42%
02:00	102° 16' 30"	4° 25' 07"	103° 47' 48"	27° 16' 15"	59' 04"	16' 05,52"	278° 24' 41"	77,81%
03:00	102° 51' 48"	4° 23' 19"	104° 27' 00"	27° 11' 03"	59' 03"	16' 05,39"	278° 42' 21"	78,21%
04:00	103° 27' 05"	4° 21' 30"	105° 06' 07"	27° 05' 39"	59' 03"	16' 05,27"	278° 59' 56"	78,60%
05:00	104° 02' 21"	4° 19' 39"	105° 45' 10"	27° 00' 05"	59' 02"	16' 05,14"	279° 17' 26"	78,99%
06:00	104° 37' 37"	4° 17' 46"	106° 24' 09"	26° 54' 20"	59' 02"	16' 05,01"	279° 34' 50"	79,37%
07:00	105° 12' 52"	4° 15' 52"	107° 03' 03"	26° 48' 25"	59' 01"	16' 04,87"	279° 52' 08"	79,76%
08:00	105° 48' 07"	4° 13' 57"	107° 41' 52"	26° 42' 18"	59' 01"	16' 04,73"	280° 09' 20"	80,14%
09:00	106° 23' 21"	4° 11' 59"	108° 20' 37"	26° 36' 02"	59' 00"	16' 04,59"	280° 26' 26"	80,51%
10:00	106° 58' 34"	4° 10' 00"	108° 59' 17"	26° 29' 35"	59' 00"	16' 04,45"	280° 43' 26"	80,89%
11:00	107° 33' 47"	4° 08' 00"	109° 37' 52"	26° 22' 58"	58' 59"	16' 04,31"	281° 00' 19"	81,26%
12:00	108° 08' 59"	4° 05' 58"	110° 16' 22"	26° 16' 10"	58' 59"	16' 04,16"	281° 17' 06"	81,63%
13:00	108° 44' 10"	4° 03' 55"	110° 54' 47"	26° 09' 13"	58' 58"	16' 04,00"	281° 33' 47"	82,00%
14:00	109° 19' 21"	4° 01' 50"	111° 33' 06"	26° 02' 05"	58' 57"	16' 03,85"	281° 50' 20"	82,36%
15:00	109° 54' 31"	3° 59' 43"	112° 11' 21"	25° 54' 47"	58' 57"	16' 03,69"	282° 06' 47"	82,72%
16:00	110° 29' 40"	3° 57' 35"	112° 49' 30"	25° 47' 20"	58' 56"	16' 03,53"	282° 23' 06"	83,08%
17:00	111° 04' 49"	3° 55' 26"	113° 27' 33"	25° 39' 43"	58' 56"	16' 03,37"	282° 39' 18"	83,43%
18:00	111° 39' 57"	3° 53' 15"	114° 05' 32"	25° 31' 55"	58' 55"	16' 03,20"	282° 55' 23"	83,78%
19:00	112° 15' 04"	3° 51' 03"	114° 43' 24"	25° 23' 59"	58' 54"	16' 03,04"	283° 11' 21"	84,13%
20:00	112° 50' 10"	3° 48' 50"	115° 21' 11"	25° 15' 52"	58' 54"	16' 02,86"	283° 27' 11"	84,47%
21:00	113° 25' 15"	3° 46' 35"	115° 58' 52"	25° 07' 37"	58' 53"	16' 02,69"	283° 42' 53"	84,81%
22:00	114° 00' 20"	3° 44' 18"	116° 36' 28"	24° 59' 12"	58' 53"	16' 02,51"	283° 58' 28"	85,15%
23:00	114° 35' 24"	3° 42' 00"	117° 13' 57"	24° 50' 37"	58' 52"	16' 02,33"	284° 13' 54"	85,49%
24:00	115° 10' 27"	3° 39' 41"	117° 51' 21"	24° 41' 54"	58' 51"	16' 02,15"	284° 29' 13"	85,82%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	339° 24' 08"	0,43"	340° 58' 29"	-8° 02' 38"	0,9904796	16' 08,85"	23° 26' 18"	-12m 35s
01:00	339° 26' 38"	0,43"	341° 00' 50"	-8° 01' 42"	0,9904894	16' 08,84"	23° 26' 18"	-12m 34s
02:00	339° 29' 09"	0,43"	341° 03' 10"	-8° 00' 45"	0,9904991	16' 08,83"	23° 26' 18"	-12m 34s
03:00	339° 31' 40"	0,42"	341° 05' 31"	-7° 59' 48"	0,9905088	16' 08,83"	23° 26' 18"	-12m 34s
04:00	339° 34' 10"	0,42"	341° 07' 52"	-7° 58' 52"	0,9905185	16' 08,82"	23° 26' 18"	-12m 33s
05:00	339° 36' 41"	0,41"	341° 10' 13"	-7° 57' 55"	0,9905283	16' 08,81"	23° 26' 18"	-12m 33s
06:00	339° 39' 11"	0,41"	341° 12' 34"	-7° 56' 58"	0,9905380	16' 08,80"	23° 26' 18"	-12m 32s
07:00	339° 41' 42"	0,40"	341° 14' 55"	-7° 56' 02"	0,9905478	16' 08,79"	23° 26' 18"	-12m 32s
08:00	339° 44' 13"	0,40"	341° 17' 16"	-7° 55' 05"	0,9905576	16' 08,78"	23° 26' 18"	-12m 31s
09:00	339° 46' 43"	0,39"	341° 19' 37"	-7° 54' 08"	0,9905673	16' 08,77"	23° 26' 18"	-12m 31s
10:00	339° 49' 14"	0,39"	341° 21' 58"	-7° 53' 11"	0,9905771	16' 08,76"	23° 26' 18"	-12m 30s
11:00	339° 51' 44"	0,39"	341° 24' 18"	-7° 52' 15"	0,9905869	16' 08,75"	23° 26' 18"	-12m 30s
12:00	339° 54' 15"	0,38"	341° 26' 39"	-7° 51' 18"	0,9905967	16' 08,74"	23° 26' 18"	-12m 29s
13:00	339° 56' 46"	0,38"	341° 29' 00"	-7° 50' 21"	0,9906065	16' 08,73"	23° 26' 18"	-12m 29s
14:00	339° 59' 16"	0,37"	341° 31' 21"	-7° 49' 24"	0,9906163	16' 08,72"	23° 26' 18"	-12m 28s
15:00	340° 01' 47"	0,37"	341° 33' 42"	-7° 48' 27"	0,9906261	16' 08,71"	23° 26' 18"	-12m 28s
16:00	340° 04' 17"	0,36"	341° 36' 02"	-7° 47' 31"	0,9906359	16' 08,70"	23° 26' 18"	-12m 27s
17:00	340° 06' 48"	0,36"	341° 38' 23"	-7° 46' 34"	0,9906457	16' 08,69"	23° 26' 18"	-12m 27s
18:00	340° 09' 19"	0,35"	341° 40' 44"	-7° 45' 37"	0,9906556	16' 08,68"	23° 26' 18"	-12m 27s
19:00	340° 11' 49"	0,35"	341° 43' 04"	-7° 44' 40"	0,9906654	16' 08,67"	23° 26' 18"	-12m 26s
20:00	340° 14' 20"	0,34"	341° 45' 25"	-7° 43' 43"	0,9906752	16' 08,66"	23° 26' 18"	-12m 26s
21:00	340° 16' 50"	0,34"	341° 47' 46"	-7° 42' 46"	0,9906851	16' 08,65"	23° 26' 18"	-12m 25s
22:00	340° 19' 21"	0,33"	341° 50' 07"	-7° 41' 49"	0,9906949	16' 08,64"	23° 26' 18"	-12m 25s
23:00	340° 21' 51"	0,33"	341° 52' 27"	-7° 40' 53"	0,9907048	16' 08,63"	23° 26' 18"	-12m 24s
24:00	340° 24' 22"	0,32"	341° 54' 48"	-7° 39' 56"	0,9907147	16' 08,62"	23° 26' 18"	-12m 24s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	115° 10' 27"	3° 39' 41"	117° 51' 21"	24° 41' 54"	58' 51"	16' 02,15"	284° 29' 13"	85,82%
01:00	115° 45' 29"	3° 37' 21"	118° 28' 38"	24° 33' 01"	58' 51"	16' 01,96"	284° 44' 23"	86,14%
02:00	116° 20' 31"	3° 34' 59"	119° 05' 50"	24° 24' 00"	58' 50"	16' 01,77"	284° 59' 25"	86,47%
03:00	116° 55' 31"	3° 32' 36"	119° 42' 55"	24° 14' 49"	58' 49"	16' 01,58"	285° 14' 19"	86,79%
04:00	117° 30' 31"	3° 30' 12"	120° 19' 55"	24° 05' 30"	58' 48"	16' 01,39"	285° 29' 04"	87,11%
05:00	118° 05' 30"	3° 27' 47"	120° 56' 48"	23° 56' 02"	58' 48"	16' 01,19"	285° 43' 41"	87,42%
06:00	118° 40' 28"	3° 25' 20"	121° 33' 35"	23° 46' 26"	58' 47"	16' 00,99"	285° 58' 09"	87,73%
07:00	119° 15' 25"	3° 22' 52"	122° 10' 16"	23° 36' 41"	58' 46"	16' 00,78"	286° 12' 28"	88,04%
08:00	119° 50' 21"	3° 20' 23"	122° 46' 51"	23° 26' 47"	58' 45"	16' 00,58"	286° 26' 39"	88,35%
09:00	120° 25' 16"	3° 17' 52"	123° 23' 19"	23° 16' 45"	58' 45"	16' 00,37"	286° 40' 40"	88,65%
10:00	121° 00' 11"	3° 15' 21"	123° 59' 41"	23° 06' 36"	58' 44"	16' 00,15"	286° 54' 33"	88,94%
11:00	121° 35' 04"	3° 12' 48"	124° 35' 57"	22° 56' 18"	58' 43"	16' 00,00"	287° 08' 16"	89,24%
12:00	122° 09' 56"	3° 10' 14"	125° 12' 06"	22° 45' 52"	58' 42"	16' 00,00"	287° 21' 50"	89,53%
13:00	122° 44' 48"	3° 07' 40"	125° 48' 09"	22° 35' 18"	58' 41"	15' 59,50"	287° 35' 15"	89,81%
14:00	123° 19' 38"	3° 05' 04"	126° 24' 06"	22° 24' 36"	58' 41"	15' 59,27"	287° 48' 31"	90,10%
15:00	123° 54' 27"	3° 02' 27"	126° 59' 56"	22° 13' 47"	58' 40"	15' 59,05"	288° 01' 37"	90,38%
16:00	124° 29' 16"	2° 59' 48"	127° 35' 40"	22° 02' 50"	58' 39"	15' 58,81"	288° 14' 33"	90,65%
17:00	125° 04' 03"	2° 57' 09"	128° 11' 17"	21° 51' 46"	58' 38"	15' 58,58"	288° 27' 20"	90,92%
18:00	125° 38' 50"	2° 54' 29"	128° 46' 48"	21° 40' 35"	58' 37"	15' 58,34"	288° 39' 57"	91,19%
19:00	126° 13' 35"	2° 51' 48"	129° 22' 12"	21° 29' 16"	58' 36"	15' 58,10"	288° 52' 24"	91,45%
20:00	126° 48' 19"	2° 49' 06"	129° 57' 30"	21° 17' 50"	58' 35"	15' 57,86"	289° 04' 41"	91,71%
21:00	127° 23' 02"	2° 46' 23"	130° 32' 42"	21° 06' 17"	58' 35"	15' 57,62"	289° 16' 49"	91,97%
22:00	127° 57' 44"	2° 43' 38"	131° 07' 47"	20° 54' 37"	58' 34"	15' 57,37"	289° 28' 46"	92,22%
23:00	128° 32' 25"	2° 40' 53"	131° 42' 46"	20° 42' 50"	58' 33"	15' 57,12"	289° 40' 33"	92,47%
24:00	129° 07' 05"	2° 38' 08"	132° 17' 38"	20° 30' 56"	58' 32"	15' 56,86"	289° 52' 10"	92,72%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	340° 24' 22"	0,32"	341° 54' 48"	-7° 39' 56"	0,9907147	16' 08,62"	23° 26' 18"	-12m 24s
01:00	340° 26' 52"	0,32"	341° 57' 08"	-7° 38' 59"	0,9907246	16' 08,61"	23° 26' 18"	-12m 23s
02:00	340° 29' 23"	0,31"	341° 59' 29"	-7° 38' 02"	0,9907344	16' 08,60"	23° 26' 18"	-12m 23s
03:00	340° 31' 54"	0,31"	342° 01' 50"	-7° 37' 05"	0,9907443	16' 08,59"	23° 26' 18"	-12m 22s
04:00	340° 34' 24"	0,30"	342° 04' 10"	-7° 36' 08"	0,9907542	16' 08,59"	23° 26' 18"	-12m 22s
05:00	340° 36' 55"	0,30"	342° 06' 31"	-7° 35' 11"	0,9907641	16' 08,58"	23° 26' 18"	-12m 21s
06:00	340° 39' 25"	0,29"	342° 08' 51"	-7° 34' 14"	0,9907741	16' 08,57"	23° 26' 18"	-12m 21s
07:00	340° 41' 56"	0,28"	342° 11' 12"	-7° 33' 17"	0,9907840	16' 08,56"	23° 26' 18"	-12m 20s
08:00	340° 44' 26"	0,28"	342° 13' 32"	-7° 32' 20"	0,9907939	16' 08,55"	23° 26' 18"	-12m 20s
09:00	340° 46' 57"	0,27"	342° 15' 53"	-7° 31' 23"	0,9908038	16' 08,54"	23° 26' 18"	-12m 19s
10:00	340° 49' 27"	0,27"	342° 18' 13"	-7° 30' 26"	0,9908138	16' 08,53"	23° 26' 18"	-12m 19s
11:00	340° 51' 58"	0,26"	342° 20' 34"	-7° 29' 29"	0,9908237	16' 08,52"	23° 26' 18"	-12m 18s
12:00	340° 54' 28"	0,26"	342° 22' 54"	-7° 28' 32"	0,9908337	16' 08,51"	23° 26' 18"	-12m 18s
13:00	340° 56' 59"	0,25"	342° 25' 15"	-7° 27' 35"	0,9908437	16' 08,50"	23° 26' 18"	-12m 17s
14:00	340° 59' 29"	0,25"	342° 27' 35"	-7° 26' 38"	0,9908536	16' 08,49"	23° 26' 18"	-12m 17s
15:00	341° 02' 00"	0,24"	342° 29' 56"	-7° 25' 41"	0,9908636	16' 08,48"	23° 26' 18"	-12m 16s
16:00	341° 04' 30"	0,24"	342° 32' 16"	-7° 24' 44"	0,9908736	16' 08,47"	23° 26' 18"	-12m 16s
17:00	341° 07' 01"	0,23"	342° 34' 37"	-7° 23' 46"	0,9908836	16' 08,46"	23° 26' 18"	-12m 15s
18:00	341° 09' 31"	0,22"	342° 36' 57"	-7° 22' 49"	0,9908936	16' 08,45"	23° 26' 18"	-12m 15s
19:00	341° 12' 02"	0,22"	342° 39' 17"	-7° 21' 52"	0,9909036	16' 08,44"	23° 26' 18"	-12m 14s
20:00	341° 14' 32"	0,21"	342° 41' 38"	-7° 20' 55"	0,9909136	16' 08,43"	23° 26' 18"	-12m 14s
21:00	341° 17' 03"	0,21"	342° 43' 58"	-7° 19' 58"	0,9909236	16' 08,42"	23° 26' 18"	-12m 13s
22:00	341° 19' 33"	0,20"	342° 46' 19"	-7° 19' 01"	0,9909336	16' 08,41"	23° 26' 18"	-12m 13s
23:00	341° 22' 04"	0,20"	342° 48' 39"	-7° 18' 04"	0,9909437	16' 08,40"	23° 26' 18"	-12m 12s
24:00	341° 24' 34"	0,19"	342° 50' 59"	-7° 17' 06"	0,9909537	16' 08,39"	23° 26' 18"	-12m 12s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	129° 07' 05"	2° 38' 08"	132° 17' 38"	20° 30' 56"	58' 32"	15' 56,86"	289° 52' 10"	92,72%
01:00	129° 41' 44"	2° 35' 21"	132° 52' 24"	20° 18' 56"	58' 31"	15' 56,60"	290° 03' 36"	92,96%
02:00	130° 16' 21"	2° 32' 33"	133° 27' 03"	20° 06' 50"	58' 30"	15' 56,34"	290° 14' 52"	93,20%
03:00	130° 50' 58"	2° 29' 45"	134° 01' 36"	19° 54' 37"	58' 29"	15' 56,08"	290° 25' 57"	93,43%
04:00	131° 25' 33"	2° 26' 55"	134° 36' 03"	19° 42' 17"	58' 28"	15' 55,82"	290° 36' 52"	93,66%
05:00	132° 00' 07"	2° 24' 05"	135° 10' 23"	19° 29' 52"	58' 27"	15' 55,55"	290° 47' 36"	93,88%
06:00	132° 34' 40"	2° 21' 14"	135° 44' 37"	19° 17' 20"	58' 26"	15' 55,27"	290° 58' 09"	94,11%
07:00	133° 09' 12"	2° 18' 23"	136° 18' 45"	19° 04' 43"	58' 25"	15' 55,00"	291° 08' 31"	94,32%
08:00	133° 43' 42"	2° 15' 30"	136° 52' 47"	18° 51' 59"	58' 24"	15' 54,72"	291° 18' 42"	94,54%
09:00	134° 18' 12"	2° 12' 37"	137° 26' 42"	18° 39' 10"	58' 23"	15' 54,44"	291° 28' 42"	94,75%
10:00	134° 52' 40"	2° 09' 43"	138° 00' 31"	18° 26' 15"	58' 22"	15' 54,16"	291° 38' 30"	94,95%
11:00	135° 27' 07"	2° 06' 49"	138° 34' 14"	18° 13' 15"	58' 21"	15' 53,87"	291° 48' 07"	95,15%
12:00	136° 01' 32"	2° 03' 53"	139° 07' 51"	18° 00' 09"	58' 20"	15' 53,58"	291° 57' 32"	95,35%
13:00	136° 35' 57"	2° 00' 58"	139° 41' 21"	17° 46' 58"	58' 19"	15' 53,29"	292° 06' 46"	95,55%
14:00	137° 10' 20"	1° 58' 01"	140° 14' 46"	17° 33' 42"	58' 18"	15' 52,99"	292° 15' 47"	95,73%
15:00	137° 44' 41"	1° 55' 04"	140° 48' 04"	17° 20' 20"	58' 17"	15' 52,70"	292° 24' 36"	95,92%
16:00	138° 19' 02"	1° 52' 06"	141° 21' 17"	17° 06' 53"	58' 15"	15' 52,40"	292° 33' 13"	96,10%
17:00	138° 53' 21"	1° 49' 08"	141° 54' 24"	16° 53' 22"	58' 14"	15' 52,09"	292° 41' 37"	96,28%
18:00	139° 27' 39"	1° 46' 09"	142° 27' 24"	16° 39' 46"	58' 13"	15' 51,79"	292° 49' 48"	96,45%
19:00	140° 01' 56"	1° 43' 10"	143° 00' 19"	16° 26' 05"	58' 12"	15' 51,48"	292° 57' 46"	96,62%
20:00	140° 36' 11"	1° 40' 10"	143° 33' 08"	16° 12' 19"	58' 11"	15' 51,17"	293° 05' 30"	96,79%
21:00	141° 10' 25"	1° 37' 10"	144° 05' 51"	15° 58' 29"	58' 10"	15' 50,85"	293° 13' 01"	96,95%
22:00	141° 44' 37"	1° 34' 09"	144° 38' 29"	15° 44' 34"	58' 09"	15' 50,54"	293° 20' 18"	97,10%
23:00	142° 18' 48"	1° 31' 08"	145° 11' 00"	15° 30' 35"	58' 07"	15' 50,22"	293° 27' 19"	97,26%
24:00	142° 52' 58"	1° 28' 06"	145° 43' 27"	15° 16' 32"	58' 06"	15' 49,89"	293° 34' 06"	97,41%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	341° 24' 34"	0,19"	342° 50' 59"	-7° 17' 06"	0,9909537	16' 08,39"	23° 26' 18"	-12m 12s
01:00	341° 27' 05"	0,19"	342° 53' 19"	-7° 16' 09"	0,9909637	16' 08,38"	23° 26' 18"	-12m 11s
02:00	341° 29' 35"	0,18"	342° 55' 40"	-7° 15' 12"	0,9909738	16' 08,37"	23° 26' 18"	-12m 11s
03:00	341° 32' 06"	0,17"	342° 58' 00"	-7° 14' 15"	0,9909839	16' 08,36"	23° 26' 18"	-12m 10s
04:00	341° 34' 36"	0,17"	343° 00' 20"	-7° 13' 18"	0,9909939	16' 08,35"	23° 26' 18"	-12m 10s
05:00	341° 37' 06"	0,16"	343° 02' 41"	-7° 12' 20"	0,9910040	16' 08,34"	23° 26' 18"	-12m 09s
06:00	341° 39' 37"	0,16"	343° 05' 01"	-7° 11' 23"	0,9910141	16' 08,33"	23° 26' 18"	-12m 09s
07:00	341° 42' 07"	0,15"	343° 07' 21"	-7° 10' 26"	0,9910242	16' 08,32"	23° 26' 18"	-12m 08s
08:00	341° 44' 38"	0,15"	343° 09' 41"	-7° 09' 29"	0,9910343	16' 08,31"	23° 26' 18"	-12m 08s
09:00	341° 47' 08"	0,14"	343° 12' 01"	-7° 08' 31"	0,9910444	16' 08,30"	23° 26' 18"	-12m 07s
10:00	341° 49' 39"	0,13"	343° 14' 22"	-7° 07' 34"	0,9910545	16' 08,29"	23° 26' 18"	-12m 07s
11:00	341° 52' 09"	0,13"	343° 16' 42"	-7° 06' 37"	0,9910646	16' 08,28"	23° 26' 18"	-12m 06s
12:00	341° 54' 40"	0,12"	343° 19' 02"	-7° 05' 39"	0,9910747	16' 08,27"	23° 26' 18"	-12m 06s
13:00	341° 57' 10"	0,12"	343° 21' 22"	-7° 04' 42"	0,9910849	16' 08,26"	23° 26' 18"	-12m 05s
14:00	341° 59' 40"	0,11"	343° 23' 42"	-7° 03' 45"	0,9910950	16' 08,25"	23° 26' 18"	-12m 05s
15:00	342° 02' 11"	0,10"	343° 26' 02"	-7° 02' 47"	0,9911051	16' 08,24"	23° 26' 18"	-12m 04s
16:00	342° 04' 41"	0,10"	343° 28' 23"	-7° 01' 50"	0,9911153	16' 08,23"	23° 26' 18"	-12m 04s
17:00	342° 07' 12"	0,09"	343° 30' 43"	-7° 00' 53"	0,9911254	16' 08,22"	23° 26' 18"	-12m 03s
18:00	342° 09' 42"	0,09"	343° 33' 03"	-6° 59' 55"	0,9911356	16' 08,21"	23° 26' 18"	-12m 03s
19:00	342° 12' 13"	0,08"	343° 35' 23"	-6° 58' 58"	0,9911458	16' 08,20"	23° 26' 18"	-12m 02s
20:00	342° 14' 43"	0,08"	343° 37' 43"	-6° 58' 01"	0,9911560	16' 08,19"	23° 26' 18"	-12m 02s
21:00	342° 17' 13"	0,07"	343° 40' 03"	-6° 57' 03"	0,9911662	16' 08,18"	23° 26' 18"	-12m 01s
22:00	342° 19' 44"	0,06"	343° 42' 23"	-6° 56' 06"	0,9911763	16' 08,17"	23° 26' 18"	-12m 01s
23:00	342° 22' 14"	0,06"	343° 44' 43"	-6° 55' 08"	0,9911865	16' 08,16"	23° 26' 18"	-12m 00s
24:00	342° 24' 45"	0,05"	343° 47' 03"	-6° 54' 11"	0,9911968	16' 08,15"	23° 26' 18"	-12m 00s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	142° 52' 58"	1° 28' 06"	145° 43' 27"	15° 16' 32"	58' 06"	15' 49,89"	293° 34' 06"	97,41%
01:00	143° 27' 06"	1° 25' 04"	146° 15' 47"	15° 02' 25"	58' 05"	15' 49,57"	293° 40' 38"	97,55%
02:00	144° 01' 13"	1° 22' 02"	146° 48' 02"	14° 48' 13"	58' 04"	15' 49,24"	293° 46' 53"	97,69%
03:00	144° 35' 19"	1° 18' 59"	147° 20' 12"	14° 33' 58"	58' 03"	15' 48,91"	293° 52' 52"	97,83%
04:00	145° 09' 23"	1° 15' 56"	147° 52' 16"	14° 19' 39"	58' 01"	15' 48,58"	293° 58' 33"	97,96%
05:00	145° 43' 26"	1° 12' 52"	148° 24' 15"	14° 05' 16"	58' 00"	15' 48,24"	294° 03' 56"	98,09%
06:00	146° 17' 27"	1° 09' 48"	148° 56' 08"	13° 50' 50"	57' 59"	15' 47,91"	294° 09' 00"	98,21%
07:00	146° 51' 27"	1° 06' 44"	149° 27' 57"	13° 36' 20"	57' 58"	15' 47,57"	294° 13' 43"	98,33%
08:00	147° 25' 25"	1° 03' 40"	149° 59' 40"	13° 21' 47"	57' 56"	15' 47,22"	294° 18' 05"	98,45%
09:00	147° 59' 22"	1° 00' 35"	150° 31' 17"	13° 07' 10"	57' 55"	15' 46,88"	294° 22' 05"	98,56%
10:00	148° 33' 17"	0° 57' 31"	151° 02' 50"	12° 52' 30"	57' 54"	15' 46,53"	294° 25' 40"	98,66%
11:00	149° 07' 11"	0° 54' 26"	151° 34' 18"	12° 37' 47"	57' 53"	15' 46,18"	294° 28' 49"	98,77%
12:00	149° 41' 04"	0° 51' 20"	152° 05' 41"	12° 23' 01"	57' 51"	15' 45,83"	294° 31' 29"	98,87%
13:00	150° 14' 55"	0° 48' 15"	152° 36' 59"	12° 08' 12"	57' 50"	15' 45,48"	294° 33' 39"	98,96%
14:00	150° 48' 44"	0° 45' 10"	153° 08' 12"	11° 53' 20"	57' 49"	15' 45,12"	294° 35' 15"	99,05%
15:00	151° 22' 32"	0° 42' 04"	153° 39' 20"	11° 38' 25"	57' 47"	15' 44,76"	294° 36' 13"	99,14%
16:00	151° 56' 18"	0° 38' 58"	154° 10' 24"	11° 23' 28"	57' 46"	15' 44,40"	294° 36' 28"	99,22%
17:00	152° 30' 03"	0° 35' 52"	154° 41' 23"	11° 08' 28"	57' 45"	15' 44,04"	294° 35' 57"	99,30%
18:00	153° 03' 46"	0° 32' 47"	155° 12' 17"	10° 53' 25"	57' 43"	15' 43,67"	294° 34' 32"	99,37%
19:00	153° 37' 28"	0° 29' 41"	155° 43' 07"	10° 38' 21"	57' 42"	15' 43,30"	294° 32' 04"	99,44%
20:00	154° 11' 08"	0° 26' 35"	156° 13' 53"	10° 23' 13"	57' 41"	15' 42,93"	294° 28' 25"	99,51%
21:00	154° 44' 47"	0° 23' 29"	156° 44' 34"	10° 08' 04"	57' 39"	15' 42,56"	294° 23' 20"	99,57%
22:00	155° 18' 24"	0° 20' 23"	157° 15' 11"	9° 52' 52"	57' 38"	15' 42,19"	294° 16' 33"	99,63%
23:00	155° 51' 59"	0° 17' 17"	157° 45' 43"	9° 37' 39"	57' 37"	15' 41,81"	294° 07' 42"	99,68%
24:00	156° 25' 33"	0° 14' 11"	158° 16' 11"	9° 22' 23"	57' 35"	15' 41,43"	293° 56' 16"	99,73%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	342° 24' 45"	0,05"	343° 47' 03"	-6° 54' 11"	0,9911968	16' 08,15"	23° 26' 18"	-12m 00s
01:00	342° 27' 15"	0,05"	343° 49' 23"	-6° 53' 13"	0,9912070	16' 08,14"	23° 26' 18"	-11m 59s
02:00	342° 29' 45"	0,04"	343° 51' 43"	-6° 52' 16"	0,9912172	16' 08,13"	23° 26' 18"	-11m 59s
03:00	342° 32' 16"	0,03"	343° 54' 03"	-6° 51' 19"	0,9912274	16' 08,12"	23° 26' 18"	-11m 58s
04:00	342° 34' 46"	0,03"	343° 56' 23"	-6° 50' 21"	0,9912377	16' 08,11"	23° 26' 18"	-11m 57s
05:00	342° 37' 16"	0,02"	343° 58' 43"	-6° 49' 24"	0,9912479	16' 08,10"	23° 26' 18"	-11m 57s
06:00	342° 39' 47"	0,02"	344° 01' 03"	-6° 48' 26"	0,9912581	16' 08,09"	23° 26' 18"	-11m 56s
07:00	342° 42' 17"	0,01"	344° 03' 23"	-6° 47' 29"	0,9912684	16' 08,08"	23° 26' 18"	-11m 56s
08:00	342° 44' 48"	0,00"	344° 05' 43"	-6° 46' 31"	0,9912787	16' 08,07"	23° 26' 18"	-11m 55s
09:00	342° 47' 18"	-0,00"	344° 08' 03"	-6° 45' 34"	0,9912889	16' 08,06"	23° 26' 18"	-11m 55s
10:00	342° 49' 48"	-0,01"	344° 10' 22"	-6° 44' 36"	0,9912992	16' 08,05"	23° 26' 18"	-11m 54s
11:00	342° 52' 19"	-0,01"	344° 12' 42"	-6° 43' 39"	0,9913095	16' 08,04"	23° 26' 18"	-11m 54s
12:00	342° 54' 49"	-0,02"	344° 15' 02"	-6° 42' 41"	0,9913198	16' 08,03"	23° 26' 18"	-11m 53s
13:00	342° 57' 19"	-0,02"	344° 17' 22"	-6° 41' 43"	0,9913301	16' 08,02"	23° 26' 18"	-11m 53s
14:00	342° 59' 50"	-0,03"	344° 19' 42"	-6° 40' 46"	0,9913404	16' 08,01"	23° 26' 18"	-11m 52s
15:00	343° 02' 20"	-0,04"	344° 22' 02"	-6° 39' 48"	0,9913507	16' 08,00"	23° 26' 18"	-11m 52s
16:00	343° 04' 50"	-0,04"	344° 24' 22"	-6° 38' 51"	0,9913610	16' 07,99"	23° 26' 18"	-11m 51s
17:00	343° 07' 21"	-0,05"	344° 26' 41"	-6° 37' 53"	0,9913713	16' 07,98"	23° 26' 18"	-11m 51s
18:00	343° 09' 51"	-0,05"	344° 29' 01"	-6° 36' 56"	0,9913817	16' 07,97"	23° 26' 18"	-11m 50s
19:00	343° 12' 21"	-0,06"	344° 31' 21"	-6° 35' 58"	0,9913920	16' 07,96"	23° 26' 18"	-11m 49s
20:00	343° 14' 52"	-0,07"	344° 33' 41"	-6° 35' 00"	0,9914023	16' 07,95"	23° 26' 18"	-11m 49s
21:00	343° 17' 22"	-0,07"	344° 36' 00"	-6° 34' 03"	0,9914127	16' 07,94"	23° 26' 18"	-11m 48s
22:00	343° 19' 52"	-0,08"	344° 38' 20"	-6° 33' 05"	0,9914231	16' 07,93"	23° 26' 18"	-11m 48s
23:00	343° 22' 23"	-0,08"	344° 40' 40"	-6° 32' 07"	0,9914334	16' 07,92"	23° 26' 18"	-11m 47s
24:00	343° 24' 53"	-0,09"	344° 43' 00"	-6° 31' 10"	0,9914438	16' 07,91"	23° 26' 18"	-11m 47s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	156° 25' 33"	0° 14' 11"	158° 16' 11"	9° 22' 23"	57' 35"	15' 41,43"	293° 56' 16"	99,73%
01:00	156° 59' 05"	0° 11' 05"	158° 46' 36"	9° 07' 06"	57' 34"	15' 41,05"	293° 41' 36"	99,77%
02:00	157° 32' 36"	0° 07' 59"	159° 16' 56"	8° 51' 47"	57' 32"	15' 40,67"	293° 22' 42"	99,81%
03:00	158° 06' 05"	0° 04' 54"	159° 47' 12"	8° 36' 26"	57' 31"	15' 40,29"	292° 58' 09"	99,85%
04:00	158° 39' 32"	0° 01' 48"	160° 17' 24"	8° 21' 03"	57' 30"	15' 39,90"	292° 25' 48"	99,88%
05:00	159° 12' 58"	-0° 01' 17"	160° 47' 33"	8° 05' 39"	57' 28"	15' 39,52"	291° 42' 12"	99,91%
06:00	159° 46' 22"	-0° 04' 22"	161° 17' 37"	7° 50' 14"	57' 27"	15' 39,13"	290° 41' 25"	99,94%
07:00	160° 19' 44"	-0° 07' 27"	161° 47' 38"	7° 34' 47"	57' 25"	15' 38,74"	289° 12' 33"	99,96%
08:00	160° 53' 05"	-0° 10' 32"	162° 17' 36"	7° 19' 19"	57' 24"	15' 38,35"	286° 52' 53"	99,97%
09:00	161° 26' 24"	-0° 13' 37"	162° 47' 29"	7° 03' 49"	57' 22"	15' 37,95"	282° 46' 54"	99,99%
10:00	161° 59' 42"	-0° 16' 41"	163° 17' 20"	6° 48' 19"	57' 21"	15' 37,56"	273° 58' 41"	99,99%
11:00	162° 32' 58"	-0° 19' 45"	163° 47' 06"	6° 32' 47"	57' 20"	15' 37,16"	246° 51' 35"	100,00%
12:00	163° 06' 12"	-0° 22' 49"	164° 16' 50"	6° 17' 15"	57' 18"	15' 36,76"	175° 59' 53"	100,00%
13:00	163° 39' 25"	-0° 25' 53"	164° 46' 30"	6° 01' 41"	57' 17"	15' 36,36"	144° 09' 14"	99,99%
14:00	164° 12' 35"	-0° 28' 56"	165° 16' 07"	5° 46' 07"	57' 15"	15' 35,96"	134° 18' 21"	99,99%
15:00	164° 45' 44"	-0° 31' 59"	165° 45' 40"	5° 30' 32"	57' 14"	15' 35,56"	129° 51' 30"	99,98%
16:00	165° 18' 52"	-0° 35' 01"	166° 15' 11"	5° 14' 57"	57' 12"	15' 35,15"	127° 22' 04"	99,96%
17:00	165° 51' 58"	-0° 38' 04"	166° 44' 39"	4° 59' 21"	57' 11"	15' 34,75"	125° 47' 19"	99,94%
18:00	166° 25' 02"	-0° 41' 05"	167° 14' 04"	4° 43' 44"	57' 09"	15' 34,34"	124° 42' 15"	99,92%
19:00	166° 58' 04"	-0° 44' 07"	167° 43' 25"	4° 28' 07"	57' 08"	15' 33,94"	123° 55' 03"	99,89%
20:00	167° 31' 05"	-0° 47' 08"	168° 12' 44"	4° 12' 30"	57' 06"	15' 33,53"	123° 19' 22"	99,86%
21:00	168° 04' 04"	-0° 50' 09"	168° 42' 01"	3° 56' 52"	57' 05"	15' 33,12"	122° 51' 32"	99,82%
22:00	168° 37' 01"	-0° 53' 09"	169° 11' 14"	3° 41' 15"	57' 03"	15' 32,71"	122° 29' 17"	99,78%
23:00	169° 09' 56"	-0° 56' 09"	169° 40' 25"	3° 25' 37"	57' 02"	15' 32,29"	122° 11' 07"	99,74%
24:00	169° 42' 50"	-0° 59' 08"	170° 09' 34"	3° 09' 59"	57' 00"	15' 31,88"	121° 56' 01"	99,69%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	343° 24' 53"	-0,09"	344° 43' 00"	-6° 31' 10"	0,9914438	16' 07,91"	23° 26' 18"	-11m 47s
01:00	343° 27' 23"	-0,09"	344° 45' 19"	-6° 30' 12"	0,9914542	16' 07,90"	23° 26' 18"	-11m 46s
02:00	343° 29' 54"	-0,10"	344° 47' 39"	-6° 29' 14"	0,9914646	16' 07,89"	23° 26' 18"	-11m 46s
03:00	343° 32' 24"	-0,11"	344° 49' 59"	-6° 28' 17"	0,9914749	16' 07,88"	23° 26' 18"	-11m 45s
04:00	343° 34' 54"	-0,11"	344° 52' 18"	-6° 27' 19"	0,9914853	16' 07,87"	23° 26' 18"	-11m 45s
05:00	343° 37' 25"	-0,12"	344° 54' 38"	-6° 26' 21"	0,9914958	16' 07,86"	23° 26' 18"	-11m 44s
06:00	343° 39' 55"	-0,12"	344° 56' 58"	-6° 25' 23"	0,9915062	16' 07,85"	23° 26' 18"	-11m 44s
07:00	343° 42' 25"	-0,13"	344° 59' 17"	-6° 24' 26"	0,9915166	16' 07,84"	23° 26' 18"	-11m 43s
08:00	343° 44' 55"	-0,13"	345° 01' 37"	-6° 23' 28"	0,9915270	16' 07,83"	23° 26' 18"	-11m 42s
09:00	343° 47' 26"	-0,14"	345° 03' 57"	-6° 22' 30"	0,9915374	16' 07,82"	23° 26' 18"	-11m 42s
10:00	343° 49' 56"	-0,15"	345° 06' 16"	-6° 21' 32"	0,9915479	16' 07,81"	23° 26' 18"	-11m 41s
11:00	343° 52' 26"	-0,15"	345° 08' 36"	-6° 20' 35"	0,9915583	16' 07,80"	23° 26' 18"	-11m 41s
12:00	343° 54' 57"	-0,16"	345° 10' 55"	-6° 19' 37"	0,9915688	16' 07,79"	23° 26' 18"	-11m 40s
13:00	343° 57' 27"	-0,16"	345° 13' 15"	-6° 18' 39"	0,9915792	16' 07,78"	23° 26' 18"	-11m 40s
14:00	343° 59' 57"	-0,17"	345° 15' 35"	-6° 17' 41"	0,9915897	16' 07,77"	23° 26' 18"	-11m 39s
15:00	344° 02' 27"	-0,17"	345° 17' 54"	-6° 16' 44"	0,9916002	16' 07,76"	23° 26' 18"	-11m 39s
16:00	344° 04' 58"	-0,18"	345° 20' 14"	-6° 15' 46"	0,9916107	16' 07,75"	23° 26' 18"	-11m 38s
17:00	344° 07' 28"	-0,19"	345° 22' 33"	-6° 14' 48"	0,9916211	16' 07,74"	23° 26' 18"	-11m 37s
18:00	344° 09' 58"	-0,19"	345° 24' 53"	-6° 13' 50"	0,9916316	16' 07,73"	23° 26' 18"	-11m 37s
19:00	344° 12' 28"	-0,20"	345° 27' 12"	-6° 12' 52"	0,9916421	16' 07,72"	23° 26' 18"	-11m 36s
20:00	344° 14' 59"	-0,20"	345° 29' 32"	-6° 11' 54"	0,9916526	16' 07,71"	23° 26' 18"	-11m 36s
21:00	344° 17' 29"	-0,21"	345° 31' 51"	-6° 10' 57"	0,9916631	16' 07,70"	23° 26' 18"	-11m 35s
22:00	344° 19' 59"	-0,21"	345° 34' 11"	-6° 09' 59"	0,9916737	16' 07,69"	23° 26' 18"	-11m 35s
23:00	344° 22' 29"	-0,22"	345° 36' 30"	-6° 09' 01"	0,9916842	16' 07,68"	23° 26' 18"	-11m 34s
24:00	344° 25' 00"	-0,22"	345° 38' 50"	-6° 08' 03"	0,9916947	16' 07,67"	23° 26' 18"	-11m 34s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	169° 42' 50"	-0° 59' 08"	170° 09' 34"	3° 09' 59"	57' 00"	15' 31,88"	121° 56' 01"	99,69%
01:00	170° 15' 42"	-1° 02' 07"	170° 38' 40"	2° 54' 21"	56' 59"	15' 31,47"	121° 43' 18"	99,64%
02:00	170° 48' 32"	-1° 05' 05"	171° 07' 43"	2° 38' 43"	56' 57"	15' 31,05"	121° 32' 25"	99,59%
03:00	171° 21' 21"	-1° 08' 03"	171° 36' 45"	2° 23' 06"	56' 56"	15' 30,64"	121° 22' 59"	99,53%
04:00	171° 54' 08"	-1° 11' 00"	172° 05' 44"	2° 07' 28"	56' 54"	15' 30,22"	121° 14' 44"	99,47%
05:00	172° 26' 53"	-1° 13' 57"	172° 34' 41"	1° 51' 51"	56' 53"	15' 29,80"	121° 07' 26"	99,40%
06:00	172° 59' 36"	-1° 16' 53"	173° 03' 35"	1° 36' 15"	56' 51"	15' 29,39"	121° 00' 55"	99,33%
07:00	173° 32' 18"	-1° 19' 48"	173° 32' 28"	1° 20' 38"	56' 49"	15' 28,97"	120° 55' 01"	99,26%
08:00	174° 04' 58"	-1° 22' 43"	174° 01' 19"	1° 05' 03"	56' 48"	15' 28,55"	120° 49' 39"	99,18%
09:00	174° 37' 36"	-1° 25' 38"	174° 30' 08"	0° 49' 28"	56' 46"	15' 28,13"	120° 44' 43"	99,10%
10:00	175° 10' 12"	-1° 28' 31"	174° 58' 55"	0° 33' 53"	56' 45"	15' 27,71"	120° 40' 08"	99,01%
11:00	175° 42' 47"	-1° 31' 24"	175° 27' 40"	0° 18' 20"	56' 43"	15' 27,29"	120° 35' 51"	98,92%
12:00	176° 15' 20"	-1° 34' 17"	175° 56' 23"	0° 02' 47"	56' 42"	15' 26,87"	120° 31' 49"	98,83%
13:00	176° 47' 51"	-1° 37' 08"	176° 25' 05"	-0° 12' 45"	56' 40"	15' 26,45"	120° 27' 58"	98,74%
14:00	177° 20' 20"	-1° 39' 59"	176° 53' 46"	-0° 28' 16"	56' 39"	15' 26,03"	120° 24' 18"	98,64%
15:00	177° 52' 48"	-1° 42' 50"	177° 22' 25"	-0° 43' 46"	56' 37"	15' 25,61"	120° 20' 45"	98,53%
16:00	178° 25' 14"	-1° 45' 39"	177° 51' 02"	-0° 59' 15"	56' 36"	15' 25,18"	120° 17' 18"	98,43%
17:00	178° 57' 38"	-1° 48' 28"	178° 19' 38"	-1° 14' 43"	56' 34"	15' 24,76"	120° 13' 57"	98,32%
18:00	179° 30' 00"	-1° 51' 17"	178° 48' 13"	-1° 30' 10"	56' 32"	15' 24,34"	120° 10' 39"	98,20%
19:00	180° 02' 21"	-1° 54' 04"	179° 16' 46"	-1° 45' 35"	56' 31"	15' 23,92"	120° 07' 23"	98,09%
20:00	180° 34' 40"	-1° 56' 51"	179° 45' 18"	-2° 00' 59"	56' 29"	15' 23,50"	120° 04' 09"	97,97%
21:00	181° 06' 57"	-1° 59' 36"	180° 13' 50"	-2° 16' 22"	56' 28"	15' 23,08"	120° 00' 57"	97,84%
22:00	181° 39' 12"	-2° 02' 21"	180° 42' 20"	-2° 31' 43"	56' 26"	15' 22,65"	119° 57' 44"	97,71%
23:00	182° 11' 26"	-2° 05' 06"	181° 10' 49"	-2° 47' 03"	56' 25"	15' 22,23"	119° 54' 31"	97,58%
24:00	182° 43' 38"	-2° 07' 49"	181° 39' 17"	-3° 02' 21"	56' 23"	15' 21,81"	119° 51' 17"	97,45%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	344° 25' 00"	-0,22"	345° 38' 50"	-6° 08' 03"	0,9916947	16' 07,67"	23° 26' 18"	-11m 34s
01:00	344° 27' 30"	-0,23"	345° 41' 09"	-6° 07' 05"	0,9917053	16' 07,66"	23° 26' 18"	-11m 33s
02:00	344° 30' 00"	-0,23"	345° 43' 28"	-6° 06' 07"	0,9917158	16' 07,65"	23° 26' 18"	-11m 32s
03:00	344° 32' 30"	-0,24"	345° 45' 48"	-6° 05' 09"	0,9917263	16' 07,64"	23° 26' 18"	-11m 32s
04:00	344° 35' 01"	-0,25"	345° 48' 07"	-6° 04' 11"	0,9917369	16' 07,63"	23° 26' 18"	-11m 31s
05:00	344° 37' 31"	-0,25"	345° 50' 27"	-6° 03' 13"	0,9917475	16' 07,62"	23° 26' 18"	-11m 31s
06:00	344° 40' 01"	-0,26"	345° 52' 46"	-6° 02' 15"	0,9917580	16' 07,60"	23° 26' 18"	-11m 30s
07:00	344° 42' 31"	-0,26"	345° 55' 05"	-6° 01' 17"	0,9917686	16' 07,59"	23° 26' 18"	-11m 30s
08:00	344° 45' 02"	-0,27"	345° 57' 25"	-6° 00' 19"	0,9917792	16' 07,58"	23° 26' 18"	-11m 29s
09:00	344° 47' 32"	-0,27"	345° 59' 44"	-5° 59' 22"	0,9917898	16' 07,57"	23° 26' 18"	-11m 28s
10:00	344° 50' 02"	-0,28"	346° 02' 03"	-5° 58' 24"	0,9918004	16' 07,56"	23° 26' 18"	-11m 28s
11:00	344° 52' 32"	-0,28"	346° 04' 23"	-5° 57' 26"	0,9918110	16' 07,55"	23° 26' 18"	-11m 27s
12:00	344° 55' 02"	-0,29"	346° 06' 42"	-5° 56' 28"	0,9918216	16' 07,54"	23° 26' 18"	-11m 27s
13:00	344° 57' 33"	-0,29"	346° 09' 01"	-5° 55' 30"	0,9918322	16' 07,53"	23° 26' 18"	-11m 26s
14:00	345° 00' 03"	-0,30"	346° 11' 21"	-5° 54' 32"	0,9918428	16' 07,52"	23° 26' 18"	-11m 26s
15:00	345° 02' 33"	-0,30"	346° 13' 40"	-5° 53' 34"	0,9918534	16' 07,51"	23° 26' 18"	-11m 25s
16:00	345° 05' 03"	-0,31"	346° 15' 59"	-5° 52' 36"	0,9918641	16' 07,50"	23° 26' 18"	-11m 24s
17:00	345° 07' 33"	-0,31"	346° 18' 18"	-5° 51' 37"	0,9918747	16' 07,49"	23° 26' 18"	-11m 24s
18:00	345° 10' 04"	-0,32"	346° 20' 38"	-5° 50' 39"	0,9918853	16' 07,48"	23° 26' 18"	-11m 23s
19:00	345° 12' 34"	-0,32"	346° 22' 57"	-5° 49' 41"	0,9918960	16' 07,47"	23° 26' 18"	-11m 23s
20:00	345° 15' 04"	-0,33"	346° 25' 16"	-5° 48' 43"	0,9919067	16' 07,46"	23° 26' 18"	-11m 22s
21:00	345° 17' 34"	-0,33"	346° 27' 35"	-5° 47' 45"	0,9919173	16' 07,45"	23° 26' 18"	-11m 22s
22:00	345° 20' 04"	-0,34"	346° 29' 55"	-5° 46' 47"	0,9919280	16' 07,44"	23° 26' 18"	-11m 21s
23:00	345° 22' 35"	-0,34"	346° 32' 14"	-5° 45' 49"	0,9919387	16' 07,43"	23° 26' 18"	-11m 20s
24:00	345° 25' 05"	-0,35"	346° 34' 33"	-5° 44' 51"	0,9919493	16' 07,42"	23° 26' 18"	-11m 20s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	182° 43' 38"	-2° 07' 49"	181° 39' 17"	-3° 02' 21"	56' 23"	15' 21,81"	119° 51' 17"	97,45%
01:00	183° 15' 48"	-2° 10' 32"	182° 07' 45"	-3° 17' 37"	56' 22"	15' 21,39"	119° 48' 01"	97,31%
02:00	183° 47' 56"	-2° 13' 14"	182° 36' 12"	-3° 32' 52"	56' 20"	15' 20,97"	119° 44' 43"	97,17%
03:00	184° 20' 03"	-2° 15' 54"	183° 04' 38"	-3° 48' 05"	56' 19"	15' 20,55"	119° 41' 23"	97,02%
04:00	184° 52' 08"	-2° 18' 34"	183° 33' 03"	-4° 03' 16"	56' 17"	15' 20,13"	119° 38' 00"	96,88%
05:00	185° 24' 11"	-2° 21' 14"	184° 01' 28"	-4° 18' 26"	56' 15"	15' 19,71"	119° 34' 34"	96,73%
06:00	185° 56' 12"	-2° 23' 52"	184° 29' 52"	-4° 33' 33"	56' 14"	15' 19,29"	119° 31' 05"	96,57%
07:00	186° 28' 12"	-2° 26' 29"	184° 58' 16"	-4° 48' 38"	56' 12"	15' 18,87"	119° 27' 32"	96,41%
08:00	187° 00' 10"	-2° 29' 06"	185° 26' 39"	-5° 03' 42"	56' 11"	15' 18,45"	119° 23' 55"	96,25%
09:00	187° 32' 06"	-2° 31' 41"	185° 55' 02"	-5° 18' 43"	56' 09"	15' 18,04"	119° 20' 14"	96,09%
10:00	188° 04' 00"	-2° 34' 16"	186° 23' 25"	-5° 33' 42"	56' 08"	15' 17,62"	119° 16' 29"	95,92%
11:00	188° 35' 53"	-2° 36' 49"	186° 51' 48"	-5° 48' 39"	56' 06"	15' 17,21"	119° 12' 40"	95,75%
12:00	189° 07' 44"	-2° 39' 22"	187° 20' 10"	-6° 03' 34"	56' 05"	15' 16,79"	119° 08' 46"	95,58%
13:00	189° 39' 34"	-2° 41' 54"	187° 48' 32"	-6° 18' 26"	56' 03"	15' 16,38"	119° 04' 47"	95,40%
14:00	190° 11' 21"	-2° 44' 25"	188° 16' 55"	-6° 33' 16"	56' 02"	15' 15,97"	119° 00' 43"	95,22%
15:00	190° 43' 07"	-2° 46' 54"	188° 45' 17"	-6° 48' 03"	56' 00"	15' 15,55"	118° 56' 34"	95,03%
16:00	191° 14' 51"	-2° 49' 23"	189° 13' 40"	-7° 02' 48"	55' 59"	15' 15,14"	118° 52' 20"	94,85%
17:00	191° 46' 34"	-2° 51' 51"	189° 42' 02"	-7° 17' 30"	55' 57"	15' 14,73"	118° 48' 01"	94,66%
18:00	192° 18' 15"	-2° 54' 18"	190° 10' 25"	-7° 32' 10"	55' 56"	15' 14,33"	118° 43' 37"	94,47%
19:00	192° 49' 54"	-2° 56' 43"	190° 38' 48"	-7° 46' 47"	55' 54"	15' 13,92"	118° 39' 07"	94,27%
20:00	193° 21' 31"	-2° 59' 08"	191° 07' 12"	-8° 01' 21"	55' 53"	15' 13,51"	118° 34' 32"	94,07%
21:00	193° 53' 07"	-3° 01' 31"	191° 35' 36"	-8° 15' 53"	55' 51"	15' 13,11"	118° 29' 51"	93,87%
22:00	194° 24' 41"	-3° 03' 54"	192° 04' 00"	-8° 30' 21"	55' 50"	15' 12,70"	118° 25' 05"	93,67%
23:00	194° 56' 13"	-3° 06' 15"	192° 32' 25"	-8° 44' 47"	55' 48"	15' 12,30"	118° 20' 13"	93,46%
24:00	195° 27' 44"	-3° 08' 36"	193° 00' 51"	-8° 59' 10"	55' 47"	15' 11,90"	118° 15' 15"	93,25%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	345° 25' 05"	-0,35"	346° 34' 33"	-5° 44' 51"	0,9919493	16' 07,42"	23° 26' 18"	-11m 20s
01:00	345° 27' 35"	-0,35"	346° 36' 52"	-5° 43' 53"	0,9919600	16' 07,41"	23° 26' 18"	-11m 19s
02:00	345° 30' 05"	-0,36"	346° 39' 11"	-5° 42' 55"	0,9919707	16' 07,40"	23° 26' 18"	-11m 19s
03:00	345° 32' 35"	-0,36"	346° 41' 30"	-5° 41' 57"	0,9919814	16' 07,39"	23° 26' 18"	-11m 18s
04:00	345° 35' 05"	-0,36"	346° 43' 50"	-5° 40' 59"	0,9919921	16' 07,38"	23° 26' 18"	-11m 18s
05:00	345° 37' 36"	-0,37"	346° 46' 09"	-5° 40' 00"	0,9920028	16' 07,37"	23° 26' 18"	-11m 17s
06:00	345° 40' 06"	-0,37"	346° 48' 28"	-5° 39' 02"	0,9920136	16' 07,36"	23° 26' 18"	-11m 16s
07:00	345° 42' 36"	-0,38"	346° 50' 47"	-5° 38' 04"	0,9920243	16' 07,35"	23° 26' 18"	-11m 16s
08:00	345° 45' 06"	-0,38"	346° 53' 06"	-5° 37' 06"	0,9920350	16' 07,33"	23° 26' 18"	-11m 15s
09:00	345° 47' 36"	-0,39"	346° 55' 25"	-5° 36' 08"	0,9920457	16' 07,32"	23° 26' 18"	-11m 15s
10:00	345° 50' 06"	-0,39"	346° 57' 44"	-5° 35' 10"	0,9920565	16' 07,31"	23° 26' 18"	-11m 14s
11:00	345° 52' 36"	-0,40"	347° 00' 03"	-5° 34' 11"	0,9920672	16' 07,30"	23° 26' 18"	-11m 13s
12:00	345° 55' 07"	-0,40"	347° 02' 22"	-5° 33' 13"	0,9920780	16' 07,29"	23° 26' 18"	-11m 13s
13:00	345° 57' 37"	-0,40"	347° 04' 41"	-5° 32' 15"	0,9920887	16' 07,28"	23° 26' 18"	-11m 12s
14:00	346° 00' 07"	-0,41"	347° 07' 00"	-5° 31' 17"	0,9920995	16' 07,27"	23° 26' 18"	-11m 12s
15:00	346° 02' 37"	-0,41"	347° 09' 19"	-5° 30' 19"	0,9921103	16' 07,26"	23° 26' 18"	-11m 11s
16:00	346° 05' 07"	-0,42"	347° 11' 38"	-5° 29' 20"	0,9921210	16' 07,25"	23° 26' 18"	-11m 11s
17:00	346° 07' 37"	-0,42"	347° 13' 57"	-5° 28' 22"	0,9921318	16' 07,24"	23° 26' 18"	-11m 10s
18:00	346° 10' 07"	-0,43"	347° 16' 16"	-5° 27' 24"	0,9921426	16' 07,23"	23° 26' 18"	-11m 09s
19:00	346° 12' 37"	-0,43"	347° 18' 35"	-5° 26' 26"	0,9921534	16' 07,22"	23° 26' 18"	-11m 09s
20:00	346° 15' 08"	-0,43"	347° 20' 54"	-5° 25' 27"	0,9921642	16' 07,21"	23° 26' 18"	-11m 08s
21:00	346° 17' 38"	-0,44"	347° 23' 13"	-5° 24' 29"	0,9921750	16' 07,20"	23° 26' 18"	-11m 08s
22:00	346° 20' 08"	-0,44"	347° 25' 32"	-5° 23' 31"	0,9921858	16' 07,19"	23° 26' 18"	-11m 07s
23:00	346° 22' 38"	-0,45"	347° 27' 51"	-5° 22' 33"	0,9921966	16' 07,18"	23° 26' 18"	-11m 06s
24:00	346° 25' 08"	-0,45"	347° 30' 10"	-5° 21' 34"	0,9922075	16' 07,17"	23° 26' 18"	-11m 06s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	195° 27' 44"	-3° 08' 36"	193° 00' 51"	-8° 59' 10"	55' 47"	15' 11,90"	118° 15' 15"	93,25%
01:00	195° 59' 13"	-3° 10' 55"	193° 29' 17"	-9° 13' 30"	55' 45"	15' 11,50"	118° 10' 11"	93,04%
02:00	196° 30' 41"	-3° 13' 13"	193° 57' 44"	-9° 27' 46"	55' 44"	15' 11,11"	118° 05' 02"	92,82%
03:00	197° 02' 06"	-3° 15' 31"	194° 26' 11"	-9° 42' 00"	55' 42"	15' 10,71"	117° 59' 47"	92,60%
04:00	197° 33' 30"	-3° 17' 47"	194° 54' 39"	-9° 56' 11"	55' 41"	15' 10,32"	117° 54' 25"	92,38%
05:00	198° 04' 53"	-3° 20' 01"	195° 23' 09"	-10° 10' 18"	55' 40"	15' 09,92"	117° 48' 58"	92,16%
06:00	198° 36' 14"	-3° 22' 15"	195° 51' 39"	-10° 24' 22"	55' 38"	15' 09,53"	117° 43' 25"	91,93%
07:00	199° 07' 33"	-3° 24' 28"	196° 20' 10"	-10° 38' 23"	55' 37"	15' 09,14"	117° 37' 46"	91,70%
08:00	199° 38' 51"	-3° 26' 39"	196° 48' 42"	-10° 52' 20"	55' 35"	15' 08,76"	117° 32' 01"	91,47%
09:00	200° 10' 07"	-3° 28' 50"	197° 17' 15"	-11° 06' 14"	55' 34"	15' 08,37"	117° 26' 10"	91,23%
10:00	200° 41' 21"	-3° 30' 59"	197° 45' 49"	-11° 20' 04"	55' 32"	15' 07,99"	117° 20' 12"	91,00%
11:00	201° 12' 34"	-3° 33' 07"	198° 14' 25"	-11° 33' 51"	55' 31"	15' 07,61"	117° 14' 09"	90,76%
12:00	201° 43' 46"	-3° 35' 14"	198° 43' 02"	-11° 47' 35"	55' 30"	15' 07,23"	117° 07' 59"	90,51%
13:00	202° 14' 55"	-3° 37' 19"	199° 11' 40"	-12° 01' 15"	55' 28"	15' 06,85"	117° 01' 43"	90,27%
14:00	202° 46' 04"	-3° 39' 24"	199° 40' 19"	-12° 14' 51"	55' 27"	15' 06,48"	116° 55' 22"	90,02%
15:00	203° 17' 10"	-3° 41' 27"	200° 09' 00"	-12° 28' 23"	55' 26"	15' 06,11"	116° 48' 54"	89,77%
16:00	203° 48' 15"	-3° 43' 29"	200° 37' 42"	-12° 41' 52"	55' 24"	15' 05,74"	116° 42' 19"	89,52%
17:00	204° 19' 19"	-3° 45' 30"	201° 06' 26"	-12° 55' 17"	55' 23"	15' 05,37"	116° 35' 39"	89,26%
18:00	204° 50' 21"	-3° 47' 30"	201° 35' 11"	-13° 08' 38"	55' 21"	15' 05,00"	116° 28' 52"	89,00%
19:00	205° 21' 21"	-3° 49' 28"	202° 03' 57"	-13° 21' 55"	55' 20"	15' 04,64"	116° 21' 59"	88,74%
20:00	205° 52' 20"	-3° 51' 26"	202° 32' 46"	-13° 35' 08"	55' 19"	15' 04,28"	116° 15' 00"	88,48%
21:00	206° 23' 18"	-3° 53' 22"	203° 01' 36"	-13° 48' 17"	55' 17"	15' 03,92"	116° 07' 55"	88,22%
22:00	206° 54' 14"	-3° 55' 16"	203° 30' 28"	-14° 01' 22"	55' 16"	15' 03,56"	116° 00' 43"	87,95%
23:00	207° 25' 09"	-3° 57' 10"	203° 59' 21"	-14° 14' 23"	55' 15"	15' 03,21"	115° 53' 25"	87,68%
24:00	207° 56' 02"	-3° 59' 02"	204° 28' 17"	-14° 27' 20"	55' 14"	15' 02,86"	115° 46' 01"	87,41%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	346° 25' 08"	-0,45"	347° 30' 10"	-5° 21' 34"	0,9922075	16' 07,17"	23° 26' 18"	-11m 06s
01:00	346° 27' 38"	-0,45"	347° 32' 29"	-5° 20' 36"	0,9922183	16' 07,16"	23° 26' 18"	-11m 05s
02:00	346° 30' 08"	-0,46"	347° 34' 48"	-5° 19' 38"	0,9922291	16' 07,15"	23° 26' 18"	-11m 05s
03:00	346° 32' 38"	-0,46"	347° 37' 07"	-5° 18' 39"	0,9922400	16' 07,14"	23° 26' 18"	-11m 04s
04:00	346° 35' 08"	-0,46"	347° 39' 26"	-5° 17' 41"	0,9922508	16' 07,12"	23° 26' 18"	-11m 03s
05:00	346° 37' 38"	-0,47"	347° 41' 45"	-5° 16' 43"	0,9922616	16' 07,11"	23° 26' 18"	-11m 03s
06:00	346° 40' 09"	-0,47"	347° 44' 04"	-5° 15' 45"	0,9922725	16' 07,10"	23° 26' 18"	-11m 02s
07:00	346° 42' 39"	-0,48"	347° 46' 22"	-5° 14' 46"	0,9922834	16' 07,09"	23° 26' 18"	-11m 02s
08:00	346° 45' 09"	-0,48"	347° 48' 41"	-5° 13' 48"	0,9922942	16' 07,08"	23° 26' 18"	-11m 01s
09:00	346° 47' 39"	-0,48"	347° 51' 00"	-5° 12' 49"	0,9923051	16' 07,07"	23° 26' 18"	-11m 00s
10:00	346° 50' 09"	-0,49"	347° 53' 19"	-5° 11' 51"	0,9923160	16' 07,06"	23° 26' 18"	-11m 00s
11:00	346° 52' 39"	-0,49"	347° 55' 38"	-5° 10' 53"	0,9923269	16' 07,05"	23° 26' 18"	-10m 59s
12:00	346° 55' 09"	-0,49"	347° 57' 57"	-5° 09' 54"	0,9923377	16' 07,04"	23° 26' 18"	-10m 59s
13:00	346° 57' 39"	-0,50"	348° 00' 15"	-5° 08' 56"	0,9923486	16' 07,03"	23° 26' 18"	-10m 58s
14:00	347° 00' 09"	-0,50"	348° 02' 34"	-5° 07' 58"	0,9923595	16' 07,02"	23° 26' 18"	-10m 57s
15:00	347° 02' 39"	-0,50"	348° 04' 53"	-5° 06' 59"	0,9923704	16' 07,01"	23° 26' 18"	-10m 57s
16:00	347° 05' 09"	-0,51"	348° 07' 12"	-5° 06' 01"	0,9923813	16' 07,00"	23° 26' 18"	-10m 56s
17:00	347° 07' 39"	-0,51"	348° 09' 31"	-5° 05' 02"	0,9923923	16' 06,99"	23° 26' 18"	-10m 56s
18:00	347° 10' 09"	-0,51"	348° 11' 49"	-5° 04' 04"	0,9924032	16' 06,98"	23° 26' 18"	-10m 55s
19:00	347° 12' 39"	-0,52"	348° 14' 08"	-5° 03' 06"	0,9924141	16' 06,97"	23° 26' 18"	-10m 54s
20:00	347° 15' 09"	-0,52"	348° 16' 27"	-5° 02' 07"	0,9924250	16' 06,95"	23° 26' 18"	-10m 54s
21:00	347° 17' 40"	-0,52"	348° 18' 46"	-5° 01' 09"	0,9924360	16' 06,94"	23° 26' 18"	-10m 53s
22:00	347° 20' 10"	-0,53"	348° 21' 04"	-5° 00' 10"	0,9924469	16' 06,93"	23° 26' 18"	-10m 53s
23:00	347° 22' 40"	-0,53"	348° 23' 23"	-4° 59' 12"	0,9924578	16' 06,92"	23° 26' 18"	-10m 52s
24:00	347° 25' 10"	-0,53"	348° 25' 42"	-4° 58' 13"	0,9924688	16' 06,91"	23° 26' 18"	-10m 51s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	207° 56' 02"	-3° 59' 02"	204° 28' 17"	-14° 27' 20"	55' 14"	15' 02,86"	115° 46' 01"	87,41%
01:00	208° 26' 53"	-4° 00' 53"	204° 57' 14"	-14° 40' 12"	55' 12"	15' 02,51"	115° 38' 31"	87,13%
02:00	208° 57' 44"	-4° 02' 43"	205° 26' 13"	-14° 53' 00"	55' 11"	15' 02,17"	115° 30' 54"	86,86%
03:00	209° 28' 32"	-4° 04' 32"	205° 55' 15"	-15° 05' 44"	55' 10"	15' 01,82"	115° 23' 11"	86,58%
04:00	209° 59' 20"	-4° 06' 19"	206° 24' 18"	-15° 18' 24"	55' 09"	15' 01,48"	115° 15' 22"	86,30%
05:00	210° 30' 06"	-4° 08' 05"	206° 53' 23"	-15° 30' 59"	55' 07"	15' 01,15"	115° 07' 27"	86,01%
06:00	211° 00' 50"	-4° 09' 50"	207° 22' 30"	-15° 43' 30"	55' 06"	15' 00,81"	114° 59' 25"	85,73%
07:00	211° 31' 33"	-4° 11' 33"	207° 51' 40"	-15° 55' 57"	55' 05"	15' 00,48"	114° 51' 18"	85,44%
08:00	212° 02' 15"	-4° 13' 15"	208° 20' 51"	-16° 08' 18"	55' 04"	15' 00,15"	114° 43' 03"	85,15%
09:00	212° 32' 55"	-4° 14' 56"	208° 50' 05"	-16° 20' 36"	55' 02"	15' 00,00"	114° 34' 43"	84,86%
10:00	213° 03' 34"	-4° 16' 36"	209° 19' 21"	-16° 32' 48"	55' 01"	15' 00,00"	114° 26' 17"	84,57%
11:00	213° 34' 12"	-4° 18' 14"	209° 48' 39"	-16° 44' 56"	55' 00"	14' 59,19"	114° 17' 44"	84,27%
12:00	214° 04' 48"	-4° 19' 51"	210° 18' 00"	-16° 56' 59"	54' 59"	14' 58,87"	114° 09' 05"	83,97%
13:00	214° 35' 24"	-4° 21' 26"	210° 47' 23"	-17° 08' 58"	54' 58"	14' 58,56"	114° 00' 20"	83,67%
14:00	215° 05' 57"	-4° 23' 01"	211° 16' 49"	-17° 20' 51"	54' 57"	14' 58,25"	113° 51' 29"	83,37%
15:00	215° 36' 30"	-4° 24' 34"	211° 46' 17"	-17° 32' 40"	54' 56"	14' 57,94"	113° 42' 31"	83,07%
16:00	216° 07' 01"	-4° 26' 05"	212° 15' 47"	-17° 44' 24"	54' 54"	14' 57,64"	113° 33' 28"	82,76%
17:00	216° 37' 31"	-4° 27' 36"	212° 45' 20"	-17° 56' 03"	54' 53"	14' 57,34"	113° 24' 18"	82,45%
18:00	217° 08' 00"	-4° 29' 05"	213° 14' 55"	-18° 07' 37"	54' 52"	14' 57,04"	113° 15' 02"	82,14%
19:00	217° 38' 27"	-4° 30' 32"	213° 44' 33"	-18° 19' 06"	54' 51"	14' 56,75"	113° 05' 40"	81,83%
20:00	218° 08' 53"	-4° 31' 59"	214° 14' 14"	-18° 30' 30"	54' 50"	14' 56,46"	112° 56' 12"	81,52%
21:00	218° 39' 18"	-4° 33' 24"	214° 43' 57"	-18° 41' 48"	54' 49"	14' 56,18"	112° 46' 37"	81,20%
22:00	219° 09' 42"	-4° 34' 48"	215° 13' 43"	-18° 53' 02"	54' 48"	14' 55,89"	112° 36' 57"	80,89%
23:00	219° 40' 05"	-4° 36' 10"	215° 43' 32"	-19° 04' 10"	54' 47"	14' 55,61"	112° 27' 11"	80,57%
24:00	220° 10' 26"	-4° 37' 31"	216° 13' 23"	-19° 15' 13"	54' 46"	14' 55,34"	112° 17' 18"	80,25%

08 Maret 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	347° 25' 10"	-0,53"	348° 25' 42"	-4° 58' 13"	0,9924688	16' 06,91"	23° 26' 18"	-10m 51s
01:00	347° 27' 40"	-0,53"	348° 28' 00"	-4° 57' 15"	0,9924798	16' 06,90"	23° 26' 18"	-10m 51s
02:00	347° 30' 10"	-0,54"	348° 30' 19"	-4° 56' 16"	0,9924907	16' 06,89"	23° 26' 18"	-10m 50s
03:00	347° 32' 40"	-0,54"	348° 32' 38"	-4° 55' 18"	0,9925017	16' 06,88"	23° 26' 18"	-10m 50s
04:00	347° 35' 10"	-0,54"	348° 34' 56"	-4° 54' 19"	0,9925126	16' 06,87"	23° 26' 18"	-10m 49s
05:00	347° 37' 40"	-0,55"	348° 37' 15"	-4° 53' 21"	0,9925236	16' 06,86"	23° 26' 18"	-10m 48s
06:00	347° 40' 10"	-0,55"	348° 39' 34"	-4° 52' 22"	0,9925346	16' 06,85"	23° 26' 18"	-10m 48s
07:00	347° 42' 40"	-0,55"	348° 41' 52"	-4° 51' 24"	0,9925456	16' 06,84"	23° 26' 18"	-10m 47s
08:00	347° 45' 10"	-0,55"	348° 44' 11"	-4° 50' 25"	0,9925566	16' 06,83"	23° 26' 18"	-10m 46s
09:00	347° 47' 40"	-0,56"	348° 46' 30"	-4° 49' 27"	0,9925676	16' 06,82"	23° 26' 18"	-10m 46s
10:00	347° 50' 10"	-0,56"	348° 48' 48"	-4° 48' 28"	0,9925786	16' 06,81"	23° 26' 18"	-10m 45s
11:00	347° 52' 40"	-0,56"	348° 51' 07"	-4° 47' 30"	0,9925896	16' 06,79"	23° 26' 18"	-10m 45s
12:00	347° 55' 10"	-0,56"	348° 53' 25"	-4° 46' 31"	0,9926006	16' 06,78"	23° 26' 18"	-10m 44s
13:00	347° 57' 40"	-0,56"	348° 55' 44"	-4° 45' 33"	0,9926116	16' 06,77"	23° 26' 18"	-10m 43s
14:00	348° 00' 10"	-0,57"	348° 58' 03"	-4° 44' 34"	0,9926226	16' 06,76"	23° 26' 18"	-10m 43s
15:00	348° 02' 40"	-0,57"	349° 00' 21"	-4° 43' 36"	0,9926337	16' 06,75"	23° 26' 18"	-10m 42s
16:00	348° 05' 10"	-0,57"	349° 02' 40"	-4° 42' 37"	0,9926447	16' 06,74"	23° 26' 18"	-10m 42s
17:00	348° 07' 40"	-0,57"	349° 04' 58"	-4° 41' 38"	0,9926557	16' 06,73"	23° 26' 18"	-10m 41s
18:00	348° 10' 10"	-0,58"	349° 07' 17"	-4° 40' 40"	0,9926668	16' 06,72"	23° 26' 18"	-10m 40s
19:00	348° 12' 40"	-0,58"	349° 09' 35"	-4° 39' 41"	0,9926778	16' 06,71"	23° 26' 18"	-10m 40s
20:00	348° 15' 10"	-0,58"	349° 11' 54"	-4° 38' 43"	0,9926888	16' 06,70"	23° 26' 18"	-10m 39s
21:00	348° 17' 40"	-0,58"	349° 14' 12"	-4° 37' 44"	0,9926999	16' 06,69"	23° 26' 18"	-10m 38s
22:00	348° 20' 10"	-0,58"	349° 16' 31"	-4° 36' 46"	0,9927110	16' 06,68"	23° 26' 18"	-10m 38s
23:00	348° 22' 40"	-0,59"	349° 18' 49"	-4° 35' 47"	0,9927220	16' 06,67"	23° 26' 18"	-10m 37s
24:00	348° 25' 10"	-0,59"	349° 21' 08"	-4° 34' 48"	0,9927331	16' 06,65"	23° 26' 18"	-10m 37s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	220° 10' 26"	-4° 37' 31"	216° 13' 23"	-19° 15' 13"	54' 46"	14' 55,34"	112° 17' 18"	80,25%
01:00	220° 40' 46"	-4° 38' 51"	216° 43' 17"	-19° 26' 11"	54' 45"	14' 55,07"	112° 07' 20"	79,93%
02:00	221° 11' 06"	-4° 40' 09"	217° 13' 14"	-19° 37' 03"	54' 44"	14' 54,80"	111° 57' 15"	79,60%
03:00	221° 41' 24"	-4° 41' 26"	217° 43' 14"	-19° 47' 50"	54' 43"	14' 54,53"	111° 47' 05"	79,28%
04:00	222° 11' 40"	-4° 42' 41"	218° 13' 16"	-19° 58' 31"	54' 42"	14' 54,27"	111° 36' 48"	78,95%
05:00	222° 41' 56"	-4° 43' 56"	218° 43' 22"	-20° 09' 07"	54' 41"	14' 54,02"	111° 26' 26"	78,62%
06:00	223° 12' 11"	-4° 45' 08"	219° 13' 30"	-20° 19' 38"	54' 40"	14' 53,76"	111° 15' 57"	78,29%
07:00	223° 42' 25"	-4° 46' 20"	219° 43' 41"	-20° 30' 02"	54' 39"	14' 53,51"	111° 05' 23"	77,96%
08:00	224° 12' 37"	-4° 47' 30"	220° 13' 55"	-20° 40' 22"	54' 38"	14' 53,27"	110° 54' 43"	77,63%
09:00	224° 42' 49"	-4° 48' 39"	220° 44' 12"	-20° 50' 35"	54' 38"	14' 53,03"	110° 43' 57"	77,29%
10:00	225° 12' 59"	-4° 49' 46"	221° 14' 33"	-21° 00' 43"	54' 37"	14' 52,79"	110° 33' 05"	76,95%
11:00	225° 43' 09"	-4° 50' 52"	221° 44' 56"	-21° 10' 45"	54' 36"	14' 52,55"	110° 22' 07"	76,61%
12:00	226° 13' 18"	-4° 51' 57"	222° 15' 22"	-21° 20' 41"	54' 35"	14' 52,32"	110° 11' 04"	76,28%
13:00	226° 43' 25"	-4° 53' 00"	222° 45' 51"	-21° 30' 32"	54' 34"	14' 52,10"	109° 59' 54"	75,93%
14:00	227° 13' 32"	-4° 54' 02"	223° 16' 23"	-21° 40' 16"	54' 33"	14' 51,88"	109° 48' 39"	75,59%
15:00	227° 43' 38"	-4° 55' 02"	223° 46' 58"	-21° 49' 55"	54' 32"	14' 51,66"	109° 37' 19"	75,25%
16:00	228° 13' 42"	-4° 56' 01"	224° 17' 37"	-21° 59' 28"	54' 32"	14' 51,45"	109° 25' 52"	74,90%
17:00	228° 43' 46"	-4° 56' 59"	224° 48' 18"	-22° 08' 54"	54' 31"	14' 51,24"	109° 14' 20"	74,56%
18:00	229° 13' 49"	-4° 57' 55"	225° 19' 02"	-22° 18' 15"	54' 30"	14' 51,03"	109° 02' 43"	74,21%
19:00	229° 43' 51"	-4° 58' 50"	225° 49' 50"	-22° 27' 29"	54' 29"	14' 50,83"	108° 51' 00"	73,86%
20:00	230° 13' 53"	-4° 59' 44"	226° 20' 41"	-22° 36' 38"	54' 29"	14' 50,63"	108° 39' 11"	73,51%
21:00	230° 43' 53"	-5° 00' 36"	226° 51' 35"	-22° 45' 40"	54' 28"	14' 50,44"	108° 27' 17"	73,15%
22:00	231° 13' 52"	-5° 01' 27"	227° 22' 32"	-22° 54' 36"	54' 27"	14' 50,25"	108° 15' 17"	72,80%
23:00	231° 43' 51"	-5° 02' 16"	227° 53' 32"	-23° 03' 26"	54' 27"	14' 50,07"	108° 03' 12"	72,45%
24:00	232° 13' 49"	-5° 03' 04"	228° 24' 35"	-23° 12' 09"	54' 26"	14' 49,89"	107° 51' 01"	72,09%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	348° 25' 10"	-0,59"	349° 21' 08"	-4° 34' 48"	0,9927331	16' 06,65"	23° 26' 18"	-10m 37s
01:00	348° 27' 40"	-0,59"	349° 23' 26"	-4° 33' 50"	0,9927442	16' 06,64"	23° 26' 18"	-10m 36s
02:00	348° 30' 10"	-0,59"	349° 25' 45"	-4° 32' 51"	0,9927552	16' 06,63"	23° 26' 18"	-10m 35s
03:00	348° 32' 40"	-0,59"	349° 28' 03"	-4° 31' 52"	0,9927663	16' 06,62"	23° 26' 18"	-10m 35s
04:00	348° 35' 10"	-0,59"	349° 30' 22"	-4° 30' 54"	0,9927774	16' 06,61"	23° 26' 18"	-10m 34s
05:00	348° 37' 39"	-0,60"	349° 32' 40"	-4° 29' 55"	0,9927885	16' 06,60"	23° 26' 18"	-10m 33s
06:00	348° 40' 09"	-0,60"	349° 34' 58"	-4° 28' 56"	0,9927996	16' 06,59"	23° 26' 18"	-10m 33s
07:00	348° 42' 39"	-0,60"	349° 37' 17"	-4° 27' 58"	0,9928107	16' 06,58"	23° 26' 18"	-10m 32s
08:00	348° 45' 09"	-0,60"	349° 39' 35"	-4° 26' 59"	0,9928218	16' 06,57"	23° 26' 18"	-10m 32s
09:00	348° 47' 39"	-0,60"	349° 41' 54"	-4° 26' 00"	0,9928329	16' 06,56"	23° 26' 18"	-10m 31s
10:00	348° 50' 09"	-0,60"	349° 44' 12"	-4° 25' 02"	0,9928440	16' 06,55"	23° 26' 18"	-10m 30s
11:00	348° 52' 39"	-0,60"	349° 46' 31"	-4° 24' 03"	0,9928551	16' 06,54"	23° 26' 18"	-10m 30s
12:00	348° 55' 09"	-0,60"	349° 48' 49"	-4° 23' 04"	0,9928662	16' 06,52"	23° 26' 18"	-10m 29s
13:00	348° 57' 39"	-0,61"	349° 51' 07"	-4° 22' 06"	0,9928774	16' 06,51"	23° 26' 18"	-10m 28s
14:00	349° 00' 09"	-0,61"	349° 53' 26"	-4° 21' 07"	0,9928885	16' 06,50"	23° 26' 18"	-10m 28s
15:00	349° 02' 39"	-0,61"	349° 55' 44"	-4° 20' 08"	0,9928996	16' 06,49"	23° 26' 18"	-10m 27s
16:00	349° 05' 09"	-0,61"	349° 58' 02"	-4° 19' 10"	0,9929108	16' 06,48"	23° 26' 18"	-10m 26s
17:00	349° 07' 39"	-0,61"	350° 00' 21"	-4° 18' 11"	0,9929219	16' 06,47"	23° 26' 18"	-10m 26s
18:00	349° 10' 09"	-0,61"	350° 02' 39"	-4° 17' 12"	0,9929331	16' 06,46"	23° 26' 18"	-10m 25s
19:00	349° 12' 39"	-0,61"	350° 04' 57"	-4° 16' 13"	0,9929442	16' 06,45"	23° 26' 18"	-10m 25s
20:00	349° 15' 08"	-0,61"	350° 07' 16"	-4° 15' 15"	0,9929554	16' 06,44"	23° 26' 18"	-10m 24s
21:00	349° 17' 38"	-0,61"	350° 09' 34"	-4° 14' 16"	0,9929665	16' 06,43"	23° 26' 18"	-10m 23s
22:00	349° 20' 08"	-0,61"	350° 11' 52"	-4° 13' 17"	0,9929777	16' 06,42"	23° 26' 18"	-10m 23s
23:00	349° 22' 38"	-0,61"	350° 14' 10"	-4° 12' 18"	0,9929889	16' 06,41"	23° 26' 18"	-10m 22s
24:00	349° 25' 08"	-0,62"	350° 16' 29"	-4° 11' 20"	0,9930000	16' 06,39"	23° 26' 18"	-10m 21s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	232° 13' 49"	-5° 03' 04"	228° 24' 35"	-23° 12' 09"	54' 26"	14' 49,89"	107° 51' 01"	72,09%
01:00	232° 43' 46"	-5° 03' 51"	228° 55' 41"	-23° 20' 46"	54' 25"	14' 49,71"	107° 38' 46"	71,73%
02:00	233° 13' 43"	-5° 04' 36"	229° 26' 51"	-23° 29' 17"	54' 25"	14' 49,54"	107° 26' 24"	71,37%
03:00	233° 43' 39"	-5° 05' 19"	229° 58' 04"	-23° 37' 41"	54' 24"	14' 49,38"	107° 13' 58"	71,02%
04:00	234° 13' 34"	-5° 06' 02"	230° 29' 20"	-23° 45' 58"	54' 24"	14' 49,21"	107° 01' 26"	70,65%
05:00	234° 43' 28"	-5° 06' 43"	231° 00' 39"	-23° 54' 10"	54' 23"	14' 49,06"	106° 48' 50"	70,29%
06:00	235° 13' 21"	-5° 07' 22"	231° 32' 01"	-24° 02' 14"	54' 22"	14' 48,90"	106° 36' 08"	69,93%
07:00	235° 43' 14"	-5° 08' 00"	232° 03' 27"	-24° 10' 12"	54' 22"	14' 48,75"	106° 23' 21"	69,57%
08:00	236° 13' 07"	-5° 08' 37"	232° 34' 55"	-24° 18' 04"	54' 21"	14' 48,61"	106° 10' 28"	69,20%
09:00	236° 42' 58"	-5° 09' 12"	233° 06' 27"	-24° 25' 48"	54' 21"	14' 48,47"	105° 57' 31"	68,83%
10:00	237° 12' 49"	-5° 09' 46"	233° 38' 02"	-24° 33' 26"	54' 20"	14' 48,33"	105° 44' 29"	68,47%
11:00	237° 42' 40"	-5° 10' 19"	234° 09' 40"	-24° 40' 58"	54' 20"	14' 48,20"	105° 31' 22"	68,10%
12:00	238° 12' 30"	-5° 10' 50"	234° 41' 21"	-24° 48' 22"	54' 19"	14' 48,08"	105° 18' 10"	67,73%
13:00	238° 42' 19"	-5° 11' 20"	235° 13' 05"	-24° 55' 40"	54' 19"	14' 47,96"	105° 04' 54"	67,36%
14:00	239° 12' 08"	-5° 11' 48"	235° 44' 52"	-25° 02' 50"	54' 18"	14' 47,84"	104° 51' 32"	66,99%
15:00	239° 41' 56"	-5° 12' 15"	236° 16' 43"	-25° 09' 54"	54' 18"	14' 47,73"	104° 38' 06"	66,62%
16:00	240° 11' 44"	-5° 12' 40"	236° 48' 36"	-25° 16' 51"	54' 18"	14' 47,62"	104° 24' 35"	66,24%
17:00	240° 41' 31"	-5° 13' 04"	237° 20' 33"	-25° 23' 41"	54' 17"	14' 47,52"	104° 11' 00"	65,87%
18:00	241° 11' 18"	-5° 13' 27"	237° 52' 32"	-25° 30' 24"	54' 17"	14' 47,42"	103° 57' 20"	65,49%
19:00	241° 41' 04"	-5° 13' 48"	238° 24' 35"	-25° 36' 59"	54' 17"	14' 47,32"	103° 43' 36"	65,12%
20:00	242° 10' 50"	-5° 14' 08"	238° 56' 41"	-25° 43' 28"	54' 16"	14' 47,24"	103° 29' 47"	64,74%
21:00	242° 40' 36"	-5° 14' 26"	239° 28' 49"	-25° 49' 50"	54' 16"	14' 47,15"	103° 15' 54"	64,36%
22:00	243° 10' 21"	-5° 14' 43"	240° 01' 01"	-25° 56' 04"	54' 16"	14' 47,07"	103° 01' 57"	63,99%
23:00	243° 40' 05"	-5° 14' 59"	240° 33' 16"	-26° 02' 11"	54' 15"	14' 47,00"	102° 47' 55"	63,61%
24:00	244° 09' 50"	-5° 15' 13"	241° 05' 33"	-26° 08' 11"	54' 15"	14' 46,93"	102° 33' 50"	63,23%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	349° 25' 08"	-0,62"	350° 16' 29"	-4° 11' 20"	0,9930000	16' 06,39"	23° 26' 18"	-10m 21s
01:00	349° 27' 38"	-0,62"	350° 18' 47"	-4° 10' 21"	0,9930112	16' 06,38"	23° 26' 18"	-10m 21s
02:00	349° 30' 08"	-0,62"	350° 21' 05"	-4° 09' 22"	0,9930224	16' 06,37"	23° 26' 18"	-10m 20s
03:00	349° 32' 38"	-0,62"	350° 23' 24"	-4° 08' 23"	0,9930336	16' 06,36"	23° 26' 18"	-10m 19s
04:00	349° 35' 08"	-0,62"	350° 25' 42"	-4° 07' 24"	0,9930448	16' 06,35"	23° 26' 18"	-10m 19s
05:00	349° 37' 38"	-0,62"	350° 28' 00"	-4° 06' 26"	0,9930560	16' 06,34"	23° 26' 18"	-10m 18s
06:00	349° 40' 07"	-0,62"	350° 30' 18"	-4° 05' 27"	0,9930672	16' 06,33"	23° 26' 18"	-10m 18s
07:00	349° 42' 37"	-0,62"	350° 32' 36"	-4° 04' 28"	0,9930784	16' 06,32"	23° 26' 18"	-10m 17s
08:00	349° 45' 07"	-0,62"	350° 34' 55"	-4° 03' 29"	0,9930896	16' 06,31"	23° 26' 18"	-10m 16s
09:00	349° 47' 37"	-0,62"	350° 37' 13"	-4° 02' 30"	0,9931008	16' 06,30"	23° 26' 18"	-10m 16s
10:00	349° 50' 07"	-0,62"	350° 39' 31"	-4° 01' 32"	0,9931120	16' 06,29"	23° 26' 18"	-10m 15s
11:00	349° 52' 37"	-0,62"	350° 41' 49"	-4° 00' 33"	0,9931232	16' 06,27"	23° 26' 18"	-10m 14s
12:00	349° 55' 07"	-0,62"	350° 44' 07"	-3° 59' 34"	0,9931344	16' 06,26"	23° 26' 18"	-10m 14s
13:00	349° 57' 37"	-0,62"	350° 46' 26"	-3° 58' 35"	0,9931456	16' 06,25"	23° 26' 18"	-10m 13s
14:00	350° 00' 06"	-0,62"	350° 48' 44"	-3° 57' 36"	0,9931569	16' 06,24"	23° 26' 18"	-10m 12s
15:00	350° 02' 36"	-0,62"	350° 51' 02"	-3° 56' 37"	0,9931681	16' 06,23"	23° 26' 18"	-10m 12s
16:00	350° 05' 06"	-0,62"	350° 53' 20"	-3° 55' 39"	0,9931793	16' 06,22"	23° 26' 18"	-10m 11s
17:00	350° 07' 36"	-0,62"	350° 55' 38"	-3° 54' 40"	0,9931906	16' 06,21"	23° 26' 18"	-10m 10s
18:00	350° 10' 06"	-0,62"	350° 57' 56"	-3° 53' 41"	0,9932018	16' 06,20"	23° 26' 18"	-10m 10s
19:00	350° 12' 36"	-0,62"	351° 00' 14"	-3° 52' 42"	0,9932130	16' 06,19"	23° 26' 18"	-10m 09s
20:00	350° 15' 06"	-0,62"	351° 02' 33"	-3° 51' 43"	0,9932243	16' 06,18"	23° 26' 18"	-10m 08s
21:00	350° 17' 35"	-0,62"	351° 04' 51"	-3° 50' 44"	0,9932356	16' 06,17"	23° 26' 18"	-10m 08s
22:00	350° 20' 05"	-0,62"	351° 07' 09"	-3° 49' 45"	0,9932468	16' 06,15"	23° 26' 18"	-10m 07s
23:00	350° 22' 35"	-0,62"	351° 09' 27"	-3° 48' 46"	0,9932581	16' 06,14"	23° 26' 18"	-10m 07s
24:00	350° 25' 05"	-0,61"	351° 11' 45"	-3° 47' 48"	0,9932693	16' 06,13"	23° 26' 18"	-10m 06s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	244° 09' 50"	-5° 15' 13"	241° 05' 33"	-26° 08' 11"	54' 15"	14' 46,93"	102° 33' 50"	63,23%
01:00	244° 39' 34"	-5° 15' 26"	241° 37' 53"	-26° 14' 04"	54' 15"	14' 46,86"	102° 19' 40"	62,85%
02:00	245° 09' 18"	-5° 15' 37"	242° 10' 17"	-26° 19' 49"	54' 15"	14' 46,80"	102° 05' 26"	62,47%
03:00	245° 39' 01"	-5° 15' 47"	242° 42' 43"	-26° 25' 27"	54' 14"	14' 46,75"	101° 51' 08"	62,08%
04:00	246° 08' 44"	-5° 15' 56"	243° 15' 12"	-26° 30' 58"	54' 14"	14' 46,70"	101° 36' 46"	61,70%
05:00	246° 38' 27"	-5° 16' 03"	243° 47' 44"	-26° 36' 21"	54' 14"	14' 46,65"	101° 22' 21"	61,32%
06:00	247° 08' 10"	-5° 16' 09"	244° 20' 18"	-26° 41' 37"	54' 14"	14' 46,61"	101° 07' 52"	60,93%
07:00	247° 37' 52"	-5° 16' 13"	244° 52' 55"	-26° 46' 45"	54' 14"	14' 46,58"	100° 53' 19"	60,55%
08:00	248° 07' 35"	-5° 16' 16"	245° 25' 35"	-26° 51' 46"	54' 14"	14' 46,55"	100° 38' 42"	60,16%
09:00	248° 37' 17"	-5° 16' 17"	245° 58' 18"	-26° 56' 39"	54' 14"	14' 46,52"	100° 24' 02"	59,78%
10:00	249° 06' 59"	-5° 16' 17"	246° 31' 03"	-27° 01' 24"	54' 14"	14' 46,50"	100° 09' 19"	59,39%
11:00	249° 36' 41"	-5° 16' 16"	247° 03' 51"	-27° 06' 02"	54' 14"	14' 46,49"	99° 54' 32"	59,00%
12:00	250° 06' 22"	-5° 16' 13"	247° 36' 41"	-27° 10' 33"	54' 13"	14' 46,47"	99° 39' 42"	58,62%
13:00	250° 36' 04"	-5° 16' 09"	248° 09' 34"	-27° 14' 55"	54' 13"	14' 46,47"	99° 24' 48"	58,23%
14:00	251° 05' 46"	-5° 16' 04"	248° 42' 30"	-27° 19' 10"	54' 13"	14' 46,47"	99° 09' 52"	57,84%
15:00	251° 35' 27"	-5° 15' 57"	249° 15' 27"	-27° 23' 18"	54' 13"	14' 46,47"	98° 54' 52"	57,45%
16:00	252° 05' 08"	-5° 15' 48"	249° 48' 28"	-27° 27' 17"	54' 13"	14' 46,48"	98° 39' 50"	57,06%
17:00	252° 34' 50"	-5° 15' 39"	250° 21' 30"	-27° 31' 09"	54' 14"	14' 46,49"	98° 24' 44"	56,67%
18:00	253° 04' 31"	-5° 15' 27"	250° 54' 35"	-27° 34' 53"	54' 14"	14' 46,51"	98° 09' 36"	56,28%
19:00	253° 34' 13"	-5° 15' 15"	251° 27' 42"	-27° 38' 29"	54' 14"	14' 46,54"	97° 54' 25"	55,89%
20:00	254° 03' 54"	-5° 15' 01"	252° 00' 52"	-27° 41' 57"	54' 14"	14' 46,56"	97° 39' 12"	55,50%
21:00	254° 33' 36"	-5° 14' 45"	252° 34' 03"	-27° 45' 17"	54' 14"	14' 46,60"	97° 23' 56"	55,11%
22:00	255° 03' 18"	-5° 14' 29"	253° 07' 17"	-27° 48' 29"	54' 14"	14' 46,64"	97° 08' 37"	54,72%
23:00	255° 32' 59"	-5° 14' 10"	253° 40' 33"	-27° 51' 34"	54' 14"	14' 46,68"	96° 53' 16"	54,32%
24:00	256° 02' 41"	-5° 13' 51"	254° 13' 50"	-27° 54' 30"	54' 14"	14' 46,73"	96° 37' 53"	53,93%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	350° 25' 05"	-0,61"	351° 11' 45"	-3° 47' 48"	0,9932693	16' 06,13"	23° 26' 18"	-10m 06s
01:00	350° 27' 35"	-0,61"	351° 14' 03"	-3° 46' 49"	0,9932806	16' 06,12"	23° 26' 18"	-10m 05s
02:00	350° 30' 05"	-0,61"	351° 16' 21"	-3° 45' 50"	0,9932919	16' 06,11"	23° 26' 18"	-10m 05s
03:00	350° 32' 34"	-0,61"	351° 18' 39"	-3° 44' 51"	0,9933031	16' 06,10"	23° 26' 18"	-10m 04s
04:00	350° 35' 04"	-0,61"	351° 20' 57"	-3° 43' 52"	0,9933144	16' 06,09"	23° 26' 18"	-10m 03s
05:00	350° 37' 34"	-0,61"	351° 23' 15"	-3° 42' 53"	0,9933257	16' 06,08"	23° 26' 18"	-10m 03s
06:00	350° 40' 04"	-0,61"	351° 25' 33"	-3° 41' 54"	0,9933370	16' 06,07"	23° 26' 18"	-10m 02s
07:00	350° 42' 34"	-0,61"	351° 27' 51"	-3° 40' 55"	0,9933483	16' 06,06"	23° 26' 18"	-10m 01s
08:00	350° 45' 04"	-0,61"	351° 30' 09"	-3° 39' 56"	0,9933596	16' 06,04"	23° 26' 18"	-10m 01s
09:00	350° 47' 33"	-0,61"	351° 32' 27"	-3° 38' 57"	0,9933709	16' 06,03"	23° 26' 18"	-10m 00s
10:00	350° 50' 03"	-0,61"	351° 34' 45"	-3° 37' 58"	0,9933822	16' 06,02"	23° 26' 18"	-09m 59s
11:00	350° 52' 33"	-0,61"	351° 37' 03"	-3° 36' 59"	0,9933935	16' 06,01"	23° 26' 18"	-09m 59s
12:00	350° 55' 03"	-0,60"	351° 39' 21"	-3° 36' 00"	0,9934048	16' 06,00"	23° 26' 18"	-09m 58s
13:00	350° 57' 33"	-0,60"	351° 41' 39"	-3° 35' 01"	0,9934161	16' 05,99"	23° 26' 18"	-09m 57s
14:00	351° 00' 02"	-0,60"	351° 43' 57"	-3° 34' 03"	0,9934274	16' 05,98"	23° 26' 18"	-09m 57s
15:00	351° 02' 32"	-0,60"	351° 46' 15"	-3° 33' 04"	0,9934387	16' 05,97"	23° 26' 18"	-09m 56s
16:00	351° 05' 02"	-0,60"	351° 48' 33"	-3° 32' 05"	0,9934500	16' 05,96"	23° 26' 18"	-09m 55s
17:00	351° 07' 32"	-0,60"	351° 50' 51"	-3° 31' 06"	0,9934613	16' 05,95"	23° 26' 18"	-09m 55s
18:00	351° 10' 01"	-0,60"	351° 53' 09"	-3° 30' 07"	0,9934727	16' 05,93"	23° 26' 18"	-09m 54s
19:00	351° 12' 31"	-0,59"	351° 55' 27"	-3° 29' 08"	0,9934840	16' 05,92"	23° 26' 18"	-09m 53s
20:00	351° 15' 01"	-0,59"	351° 57' 45"	-3° 28' 09"	0,9934953	16' 05,91"	23° 26' 18"	-09m 53s
21:00	351° 17' 31"	-0,59"	352° 00' 03"	-3° 27' 10"	0,9935067	16' 05,90"	23° 26' 18"	-09m 52s
22:00	351° 20' 01"	-0,59"	352° 02' 21"	-3° 26' 11"	0,9935180	16' 05,89"	23° 26' 18"	-09m 51s
23:00	351° 22' 30"	-0,59"	352° 04' 39"	-3° 25' 12"	0,9935293	16' 05,88"	23° 26' 18"	-09m 51s
24:00	351° 25' 00"	-0,59"	352° 06' 56"	-3° 24' 13"	0,9935407	16' 05,87"	23° 26' 18"	-09m 50s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	256° 02' 41"	-5° 13' 51"	254° 13' 50"	-27° 54' 30"	54' 14"	14' 46,73"	96° 37' 53"	53,93%
01:00	256° 32' 23"	-5° 13' 30"	254° 47' 10"	-27° 57' 19"	54' 15"	14' 46,78"	96° 22' 28"	53,54%
02:00	257° 02' 06"	-5° 13' 07"	255° 20' 32"	-27° 59' 59"	54' 15"	14' 46,84"	96° 07' 00"	53,15%
03:00	257° 31' 48"	-5° 12' 43"	255° 53' 55"	-28° 02' 32"	54' 15"	14' 46,91"	95° 51' 31"	52,75%
04:00	258° 01' 31"	-5° 12' 18"	256° 27' 21"	-28° 04' 56"	54' 15"	14' 46,98"	95° 35' 59"	52,36%
05:00	258° 31' 14"	-5° 11' 52"	257° 00' 48"	-28° 07' 12"	54' 16"	14' 47,05"	95° 20' 26"	51,97%
06:00	259° 00' 57"	-5° 11' 24"	257° 34' 16"	-28° 09' 20"	54' 16"	14' 47,13"	95° 04' 51"	51,57%
07:00	259° 30' 40"	-5° 10' 54"	258° 07' 47"	-28° 11' 20"	54' 16"	14' 47,21"	94° 49' 15"	51,18%
08:00	260° 00' 24"	-5° 10' 24"	258° 41' 19"	-28° 13' 12"	54' 16"	14' 47,30"	94° 33' 37"	50,78%
09:00	260° 30' 08"	-5° 09' 51"	259° 14' 53"	-28° 14' 56"	54' 17"	14' 47,39"	94° 17' 58"	50,39%
10:00	260° 59' 52"	-5° 09' 18"	259° 48' 28"	-28° 16' 31"	54' 17"	14' 47,49"	94° 02' 17"	49,99%
11:00	261° 29' 37"	-5° 08' 43"	260° 22' 04"	-28° 17' 59"	54' 18"	14' 47,60"	93° 46' 35"	49,60%
12:00	261° 59' 22"	-5° 08' 07"	260° 55' 42"	-28° 19' 18"	54' 18"	14' 47,71"	93° 30' 52"	49,20%
13:00	262° 29' 07"	-5° 07' 29"	261° 29' 21"	-28° 20' 29"	54' 18"	14' 47,82"	93° 15' 08"	48,81%
14:00	262° 58' 53"	-5° 06' 50"	262° 03' 01"	-28° 21' 31"	54' 19"	14' 47,94"	92° 59' 23"	48,41%
15:00	263° 28' 40"	-5° 06' 09"	262° 36' 43"	-28° 22' 26"	54' 19"	14' 48,06"	92° 43' 37"	48,02%
16:00	263° 58' 26"	-5° 05' 27"	263° 10' 26"	-28° 23' 12"	54' 20"	14' 48,19"	92° 27' 50"	47,62%
17:00	264° 28' 14"	-5° 04' 44"	263° 44' 10"	-28° 23' 50"	54' 20"	14' 48,32"	92° 12' 03"	47,23%
18:00	264° 58' 01"	-5° 03' 59"	264° 17' 54"	-28° 24' 19"	54' 21"	14' 48,46"	91° 56' 16"	46,83%
19:00	265° 27' 50"	-5° 03' 13"	264° 51' 40"	-28° 24' 40"	54' 21"	14' 48,61"	91° 40' 28"	46,44%
20:00	265° 57' 38"	-5° 02' 26"	265° 25' 27"	-28° 24' 53"	54' 22"	14' 48,76"	91° 24' 39"	46,04%
21:00	266° 27' 28"	-5° 01' 37"	265° 59' 14"	-28° 24' 58"	54' 22"	14' 48,91"	91° 08' 51"	45,65%
22:00	266° 57' 18"	-5° 00' 47"	266° 33' 02"	-28° 24' 54"	54' 23"	14' 49,07"	90° 53' 02"	45,26%
23:00	267° 27' 08"	-4° 59' 56"	267° 06' 51"	-28° 24' 42"	54' 24"	14' 49,23"	90° 37' 14"	44,86%
24:00	267° 56' 59"	-4° 59' 03"	267° 40' 40"	-28° 24' 21"	54' 24"	14' 49,40"	90° 21' 25"	44,47%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	351° 25' 00"	-0,59"	352° 06' 56"	-3° 24' 13"	0,9935407	16' 05,87"	23° 26' 18"	-09m 50s
01:00	351° 27' 30"	-0,58"	352° 09' 14"	-3° 23' 14"	0,9935520	16' 05,86"	23° 26' 18"	-09m 49s
02:00	351° 30' 00"	-0,58"	352° 11' 32"	-3° 22' 15"	0,9935634	16' 05,85"	23° 26' 18"	-09m 49s
03:00	351° 32' 29"	-0,58"	352° 13' 50"	-3° 21' 16"	0,9935747	16' 05,84"	23° 26' 18"	-09m 48s
04:00	351° 34' 59"	-0,58"	352° 16' 08"	-3° 20' 17"	0,9935861	16' 05,82"	23° 26' 18"	-09m 47s
05:00	351° 37' 29"	-0,58"	352° 18' 26"	-3° 19' 18"	0,9935974	16' 05,81"	23° 26' 18"	-09m 47s
06:00	351° 39' 59"	-0,57"	352° 20' 44"	-3° 18' 18"	0,9936088	16' 05,80"	23° 26' 18"	-09m 46s
07:00	351° 42' 28"	-0,57"	352° 23' 02"	-3° 17' 19"	0,9936201	16' 05,79"	23° 26' 18"	-09m 45s
08:00	351° 44' 58"	-0,57"	352° 25' 19"	-3° 16' 20"	0,9936315	16' 05,78"	23° 26' 18"	-09m 45s
09:00	351° 47' 28"	-0,57"	352° 27' 37"	-3° 15' 21"	0,9936429	16' 05,77"	23° 26' 18"	-09m 44s
10:00	351° 49' 58"	-0,57"	352° 29' 55"	-3° 14' 22"	0,9936543	16' 05,76"	23° 26' 18"	-09m 43s
11:00	351° 52' 27"	-0,56"	352° 32' 13"	-3° 13' 23"	0,9936656	16' 05,75"	23° 26' 18"	-09m 43s
12:00	351° 54' 57"	-0,56"	352° 34' 31"	-3° 12' 24"	0,9936770	16' 05,74"	23° 26' 18"	-09m 42s
13:00	351° 57' 27"	-0,56"	352° 36' 48"	-3° 11' 25"	0,9936884	16' 05,73"	23° 26' 18"	-09m 41s
14:00	351° 59' 57"	-0,56"	352° 39' 06"	-3° 10' 26"	0,9936998	16' 05,71"	23° 26' 18"	-09m 41s
15:00	352° 02' 26"	-0,55"	352° 41' 24"	-3° 09' 27"	0,9937112	16' 05,70"	23° 26' 18"	-09m 40s
16:00	352° 04' 56"	-0,55"	352° 43' 42"	-3° 08' 28"	0,9937225	16' 05,69"	23° 26' 18"	-09m 39s
17:00	352° 07' 26"	-0,55"	352° 46' 00"	-3° 07' 29"	0,9937339	16' 05,68"	23° 26' 18"	-09m 39s
18:00	352° 09' 55"	-0,55"	352° 48' 17"	-3° 06' 30"	0,9937453	16' 05,67"	23° 26' 18"	-09m 38s
19:00	352° 12' 25"	-0,54"	352° 50' 35"	-3° 05' 31"	0,9937567	16' 05,66"	23° 26' 18"	-09m 37s
20:00	352° 14' 55"	-0,54"	352° 52' 53"	-3° 04' 32"	0,9937681	16' 05,65"	23° 26' 18"	-09m 37s
21:00	352° 17' 25"	-0,54"	352° 55' 11"	-3° 03' 33"	0,9937795	16' 05,64"	23° 26' 18"	-09m 36s
22:00	352° 19' 54"	-0,54"	352° 57' 28"	-3° 02' 33"	0,9937909	16' 05,63"	23° 26' 18"	-09m 35s
23:00	352° 22' 24"	-0,53"	352° 59' 46"	-3° 01' 34"	0,9938023	16' 05,61"	23° 26' 18"	-09m 35s
24:00	352° 24' 54"	-0,53"	353° 02' 04"	-3° 00' 35"	0,9938137	16' 05,60"	23° 26' 18"	-09m 34s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	267° 56' 59"	-4° 59' 03"	267° 40' 40"	-28° 24' 21"	54' 24"	14' 49,40"	90° 21' 25"	44,47%
01:00	268° 26' 51"	-4° 58' 08"	268° 14' 30"	-28° 23' 52"	54' 25"	14' 49,57"	90° 05' 37"	44,07%
02:00	268° 56' 44"	-4° 57' 13"	268° 48' 21"	-28° 23' 15"	54' 25"	14' 49,75"	89° 49' 49"	43,68%
03:00	269° 26' 37"	-4° 56' 16"	269° 22' 12"	-28° 22' 30"	54' 26"	14' 49,93"	89° 34' 02"	43,28%
04:00	269° 56' 31"	-4° 55' 17"	269° 56' 03"	-28° 21' 36"	54' 27"	14' 50,12"	89° 18' 15"	42,89%
05:00	270° 26' 25"	-4° 54' 18"	270° 29' 55"	-28° 20' 33"	54' 28"	14' 50,31"	89° 02' 29"	42,50%
06:00	270° 56' 21"	-4° 53' 17"	271° 03' 46"	-28° 19' 22"	54' 28"	14' 50,51"	88° 46' 44"	42,10%
07:00	271° 26' 17"	-4° 52' 14"	271° 37' 38"	-28° 18' 03"	54' 29"	14' 50,71"	88° 30' 59"	41,71%
08:00	271° 56' 14"	-4° 51' 11"	272° 11' 31"	-28° 16' 36"	54' 30"	14' 50,92"	88° 15' 16"	41,32%
09:00	272° 26' 11"	-4° 50' 05"	272° 45' 23"	-28° 15' 00"	54' 31"	14' 51,13"	87° 59' 33"	40,93%
10:00	272° 56' 10"	-4° 48' 59"	273° 19' 15"	-28° 13' 15"	54' 31"	14' 51,35"	87° 43' 52"	40,54%
11:00	273° 26' 09"	-4° 47' 51"	273° 53' 07"	-28° 11' 22"	54' 32"	14' 51,57"	87° 28' 12"	40,14%
12:00	273° 56' 09"	-4° 46' 42"	274° 26' 59"	-28° 09' 21"	54' 33"	14' 51,80"	87° 12' 34"	39,75%
13:00	274° 26' 11"	-4° 45' 31"	275° 00' 51"	-28° 07' 12"	54' 34"	14' 52,03"	86° 56' 57"	39,36%
14:00	274° 56' 13"	-4° 44' 20"	275° 34' 42"	-28° 04' 54"	54' 35"	14' 52,27"	86° 41' 22"	38,97%
15:00	275° 26' 16"	-4° 43' 06"	276° 08' 33"	-28° 02' 27"	54' 36"	14' 52,51"	86° 25' 48"	38,58%
16:00	275° 56' 19"	-4° 41' 52"	276° 42' 24"	-27° 59' 53"	54' 37"	14' 52,75"	86° 10' 17"	38,19%
17:00	276° 26' 24"	-4° 40' 36"	277° 16' 14"	-27° 57' 10"	54' 37"	14' 53,00"	85° 54' 47"	37,80%
18:00	276° 56' 30"	-4° 39' 19"	277° 50' 04"	-27° 54' 18"	54' 38"	14' 53,26"	85° 39' 20"	37,42%
19:00	277° 26' 37"	-4° 38' 00"	278° 23' 53"	-27° 51' 18"	54' 39"	14' 53,51"	85° 23' 54"	37,03%
20:00	277° 56' 45"	-4° 36' 41"	278° 57' 42"	-27° 48' 10"	54' 40"	14' 53,78"	85° 08' 31"	36,64%
21:00	278° 26' 54"	-4° 35' 19"	279° 31' 29"	-27° 44' 54"	54' 41"	14' 54,05"	84° 53' 10"	36,25%
22:00	278° 57' 04"	-4° 33' 57"	280° 05' 17"	-27° 41' 29"	54' 42"	14' 54,32"	84° 37' 52"	35,87%
23:00	279° 27' 15"	-4° 32' 33"	280° 39' 03"	-27° 37' 55"	54' 43"	14' 54,60"	84° 22' 37"	35,48%
24:00	279° 57' 27"	-4° 31' 08"	281° 12' 48"	-27° 34' 14"	54' 44"	14' 54,88"	84° 07' 24"	35,10%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	352° 24' 54"	-0,53"	353° 02' 04"	-3° 00' 35"	0,9938137	16' 05,60"	23° 26' 18"	-09m 34s
01:00	352° 27' 23"	-0,53"	353° 04' 22"	-2° 59' 36"	0,9938251	16' 05,59"	23° 26' 18"	-09m 33s
02:00	352° 29' 53"	-0,52"	353° 06' 39"	-2° 58' 37"	0,9938366	16' 05,58"	23° 26' 18"	-09m 33s
03:00	352° 32' 23"	-0,52"	353° 08' 57"	-2° 57' 38"	0,9938480	16' 05,57"	23° 26' 18"	-09m 32s
04:00	352° 34' 52"	-0,52"	353° 11' 15"	-2° 56' 39"	0,9938594	16' 05,56"	23° 26' 18"	-09m 31s
05:00	352° 37' 22"	-0,51"	353° 13' 32"	-2° 55' 40"	0,9938708	16' 05,55"	23° 26' 18"	-09m 31s
06:00	352° 39' 52"	-0,51"	353° 15' 50"	-2° 54' 41"	0,9938822	16' 05,54"	23° 26' 18"	-09m 30s
07:00	352° 42' 21"	-0,51"	353° 18' 08"	-2° 53' 41"	0,9938937	16' 05,53"	23° 26' 18"	-09m 29s
08:00	352° 44' 51"	-0,51"	353° 20' 25"	-2° 52' 42"	0,9939051	16' 05,51"	23° 26' 18"	-09m 29s
09:00	352° 47' 21"	-0,50"	353° 22' 43"	-2° 51' 43"	0,9939165	16' 05,50"	23° 26' 18"	-09m 28s
10:00	352° 49' 50"	-0,50"	353° 25' 01"	-2° 50' 44"	0,9939279	16' 05,49"	23° 26' 18"	-09m 27s
11:00	352° 52' 20"	-0,50"	353° 27' 18"	-2° 49' 45"	0,9939394	16' 05,48"	23° 26' 18"	-09m 27s
12:00	352° 54' 50"	-0,49"	353° 29' 36"	-2° 48' 46"	0,9939508	16' 05,47"	23° 26' 18"	-09m 26s
13:00	352° 57' 19"	-0,49"	353° 31' 54"	-2° 47' 47"	0,9939622	16' 05,46"	23° 26' 18"	-09m 25s
14:00	352° 59' 49"	-0,49"	353° 34' 11"	-2° 46' 47"	0,9939737	16' 05,45"	23° 26' 18"	-09m 25s
15:00	353° 02' 19"	-0,48"	353° 36' 29"	-2° 45' 48"	0,9939851	16' 05,44"	23° 26' 18"	-09m 24s
16:00	353° 04' 48"	-0,48"	353° 38' 47"	-2° 44' 49"	0,9939966	16' 05,43"	23° 26' 18"	-09m 23s
17:00	353° 07' 18"	-0,47"	353° 41' 04"	-2° 43' 50"	0,9940080	16' 05,41"	23° 26' 18"	-09m 22s
18:00	353° 09' 48"	-0,47"	353° 43' 22"	-2° 42' 51"	0,9940195	16' 05,40"	23° 26' 18"	-09m 22s
19:00	353° 12' 17"	-0,47"	353° 45' 39"	-2° 41' 52"	0,9940309	16' 05,39"	23° 26' 18"	-09m 21s
20:00	353° 14' 47"	-0,46"	353° 47' 57"	-2° 40' 52"	0,9940424	16' 05,38"	23° 26' 18"	-09m 20s
21:00	353° 17' 17"	-0,46"	353° 50' 15"	-2° 39' 53"	0,9940538	16' 05,37"	23° 26' 18"	-09m 20s
22:00	353° 19' 46"	-0,46"	353° 52' 32"	-2° 38' 54"	0,9940653	16' 05,36"	23° 26' 18"	-09m 19s
23:00	353° 22' 16"	-0,45"	353° 54' 50"	-2° 37' 55"	0,9940767	16' 05,35"	23° 26' 18"	-09m 18s
24:00	353° 24' 45"	-0,45"	353° 57' 07"	-2° 36' 56"	0,9940882	16' 05,34"	23° 26' 18"	-09m 18s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	279° 57' 27"	-4° 31' 08"	281° 12' 48"	-27° 34' 14"	54' 44"	14' 54,88"	84° 07' 24"	35,10%
01:00	280° 27' 41"	-4° 29' 42"	281° 46' 33"	-27° 30' 24"	54' 45"	14' 55,16"	83° 52' 14"	34,71%
02:00	280° 57' 55"	-4° 28' 14"	282° 20' 16"	-27° 26' 26"	54' 46"	14' 55,45"	83° 37' 07"	34,33%
03:00	281° 28' 11"	-4° 26' 45"	282° 53' 59"	-27° 22' 19"	54' 48"	14' 55,75"	83° 22' 03"	33,95%
04:00	281° 58' 27"	-4° 25' 15"	283° 27' 40"	-27° 18' 05"	54' 49"	14' 56,05"	83° 07' 02"	33,57%
05:00	282° 28' 45"	-4° 23' 43"	284° 01' 20"	-27° 13' 42"	54' 50"	14' 56,35"	82° 52' 04"	33,19%
06:00	282° 59' 05"	-4° 22' 10"	284° 35' 00"	-27° 09' 11"	54' 51"	14' 56,66"	82° 37' 10"	32,81%
07:00	283° 29' 25"	-4° 20' 36"	285° 08' 37"	-27° 04' 31"	54' 52"	14' 56,97"	82° 22' 19"	32,43%
08:00	283° 59' 47"	-4° 19' 01"	285° 42' 14"	-26° 59' 44"	54' 53"	14' 57,29"	82° 07' 32"	32,05%
09:00	284° 30' 10"	-4° 17' 24"	286° 15' 49"	-26° 54' 48"	54' 54"	14' 57,61"	81° 52' 48"	31,67%
10:00	285° 00' 34"	-4° 15' 46"	286° 49' 23"	-26° 49' 44"	54' 56"	14' 57,94"	81° 38' 08"	31,29%
11:00	285° 31' 00"	-4° 14' 07"	287° 22' 55"	-26° 44' 32"	54' 57"	14' 58,27"	81° 23' 32"	30,92%
12:00	286° 01' 27"	-4° 12' 26"	287° 56' 26"	-26° 39' 11"	54' 58"	14' 58,60"	81° 09' 00"	30,54%
13:00	286° 31' 55"	-4° 10' 44"	288° 29' 55"	-26° 33' 43"	54' 59"	14' 58,94"	80° 54' 32"	30,17%
14:00	287° 02' 25"	-4° 09' 01"	289° 03' 23"	-26° 28' 06"	55' 00"	14' 59,28"	80° 40' 09"	29,79%
15:00	287° 32' 56"	-4° 07' 17"	289° 36' 49"	-26° 22' 22"	55' 02"	15' 00,00"	80° 25' 49"	29,42%
16:00	288° 03' 28"	-4° 05' 31"	290° 10' 13"	-26° 16' 29"	55' 03"	15' 00,00"	80° 11' 34"	29,05%
17:00	288° 34' 02"	-4° 03' 44"	290° 43' 36"	-26° 10' 29"	55' 04"	15' 00,33"	79° 57' 24"	28,68%
18:00	289° 04' 37"	-4° 01' 56"	291° 16' 57"	-26° 04' 20"	55' 06"	15' 00,69"	79° 43' 18"	28,31%
19:00	289° 35' 14"	-4° 00' 07"	291° 50' 16"	-25° 58' 03"	55' 07"	15' 01,05"	79° 29' 16"	27,94%
20:00	290° 05' 53"	-3° 58' 16"	292° 23' 33"	-25° 51' 39"	55' 08"	15' 01,42"	79° 15' 20"	27,58%
21:00	290° 36' 32"	-3° 56' 25"	292° 56' 49"	-25° 45' 06"	55' 10"	15' 01,79"	79° 01' 28"	27,21%
22:00	291° 07' 14"	-3° 54' 32"	293° 30' 02"	-25° 38' 26"	55' 11"	15' 02,16"	78° 47' 41"	26,85%
23:00	291° 37' 56"	-3° 52' 38"	294° 03' 14"	-25° 31' 38"	55' 12"	15' 02,54"	78° 34' 00"	26,48%
24:00	292° 08' 41"	-3° 50' 42"	294° 36' 23"	-25° 24' 42"	55' 14"	15' 02,92"	78° 20' 23"	26,12%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	353° 24' 45"	-0,45"	353° 57' 07"	-2° 36' 56"	0,9940882	16' 05,34"	23° 26' 18"	-09m 18s
01:00	353° 27' 15"	-0,44"	353° 59' 25"	-2° 35' 56"	0,9940997	16' 05,33"	23° 26' 18"	-09m 17s
02:00	353° 29' 45"	-0,44"	354° 01' 42"	-2° 34' 57"	0,9941111	16' 05,31"	23° 26' 18"	-09m 16s
03:00	353° 32' 14"	-0,44"	354° 04' 00"	-2° 33' 58"	0,9941226	16' 05,30"	23° 26' 18"	-09m 16s
04:00	353° 34' 44"	-0,43"	354° 06' 17"	-2° 32' 59"	0,9941341	16' 05,29"	23° 26' 18"	-09m 15s
05:00	353° 37' 14"	-0,43"	354° 08' 35"	-2° 32' 00"	0,9941455	16' 05,28"	23° 26' 18"	-09m 14s
06:00	353° 39' 43"	-0,42"	354° 10' 53"	-2° 31' 00"	0,9941570	16' 05,27"	23° 26' 18"	-09m 14s
07:00	353° 42' 13"	-0,42"	354° 13' 10"	-2° 30' 01"	0,9941685	16' 05,26"	23° 26' 18"	-09m 13s
08:00	353° 44' 42"	-0,42"	354° 15' 28"	-2° 29' 02"	0,9941799	16' 05,25"	23° 26' 18"	-09m 12s
09:00	353° 47' 12"	-0,41"	354° 17' 45"	-2° 28' 03"	0,9941914	16' 05,24"	23° 26' 18"	-09m 12s
10:00	353° 49' 42"	-0,41"	354° 20' 03"	-2° 27' 04"	0,9942029	16' 05,23"	23° 26' 18"	-09m 11s
11:00	353° 52' 11"	-0,40"	354° 22' 20"	-2° 26' 04"	0,9942144	16' 05,21"	23° 26' 18"	-09m 10s
12:00	353° 54' 41"	-0,40"	354° 24' 38"	-2° 25' 05"	0,9942259	16' 05,20"	23° 26' 18"	-09m 09s
13:00	353° 57' 10"	-0,40"	354° 26' 55"	-2° 24' 06"	0,9942373	16' 05,19"	23° 26' 18"	-09m 09s
14:00	353° 59' 40"	-0,39"	354° 29' 13"	-2° 23' 07"	0,9942488	16' 05,18"	23° 26' 18"	-09m 08s
15:00	354° 02' 10"	-0,39"	354° 31' 30"	-2° 22' 08"	0,9942603	16' 05,17"	23° 26' 18"	-09m 07s
16:00	354° 04' 39"	-0,38"	354° 33' 47"	-2° 21' 08"	0,9942718	16' 05,16"	23° 26' 18"	-09m 07s
17:00	354° 07' 09"	-0,38"	354° 36' 05"	-2° 20' 09"	0,9942833	16' 05,15"	23° 26' 18"	-09m 06s
18:00	354° 09' 38"	-0,37"	354° 38' 22"	-2° 19' 10"	0,9942948	16' 05,14"	23° 26' 18"	-09m 05s
19:00	354° 12' 08"	-0,37"	354° 40' 40"	-2° 18' 11"	0,9943063	16' 05,13"	23° 26' 18"	-09m 05s
20:00	354° 14' 37"	-0,36"	354° 42' 57"	-2° 17' 11"	0,9943178	16' 05,11"	23° 26' 18"	-09m 04s
21:00	354° 17' 07"	-0,36"	354° 45' 15"	-2° 16' 12"	0,9943293	16' 05,10"	23° 26' 18"	-09m 03s
22:00	354° 19' 36"	-0,35"	354° 47' 32"	-2° 15' 13"	0,9943408	16' 05,09"	23° 26' 18"	-09m 03s
23:00	354° 22' 06"	-0,35"	354° 49' 50"	-2° 14' 14"	0,9943523	16' 05,08"	23° 26' 18"	-09m 02s
24:00	354° 24' 36"	-0,35"	354° 52' 07"	-2° 13' 14"	0,9943637	16' 05,07"	23° 26' 18"	-09m 01s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	292° 08' 41"	-3° 50' 42"	294° 36' 23"	-25° 24' 42"	55' 14"	15' 02,92"	78° 20' 23"	26,12%
01:00	292° 39' 27"	-3° 48' 45"	295° 09' 31"	-25° 17' 38"	55' 15"	15' 03,31"	78° 06' 52"	25,76%
02:00	293° 10' 14"	-3° 46' 48"	295° 42' 36"	-25° 10' 26"	55' 17"	15' 03,69"	77° 53' 26"	25,40%
03:00	293° 41' 03"	-3° 44' 49"	296° 15' 40"	-25° 03' 07"	55' 18"	15' 04,09"	77° 40' 05"	25,04%
04:00	294° 11' 54"	-3° 42' 48"	296° 48' 41"	-24° 55' 39"	55' 20"	15' 04,48"	77° 26' 51"	24,69%
05:00	294° 42' 46"	-3° 40' 47"	297° 21' 40"	-24° 48' 04"	55' 21"	15' 04,88"	77° 13' 41"	24,33%
06:00	295° 13' 40"	-3° 38' 44"	297° 54' 37"	-24° 40' 22"	55' 23"	15' 05,28"	77° 00' 38"	23,98%
07:00	295° 44' 36"	-3° 36' 41"	298° 27' 32"	-24° 32' 32"	55' 24"	15' 05,69"	76° 47' 40"	23,62%
08:00	296° 15' 33"	-3° 34' 36"	299° 00' 25"	-24° 24' 34"	55' 26"	15' 06,10"	76° 34' 48"	23,27%
09:00	296° 46' 32"	-3° 32' 30"	299° 33' 15"	-24° 16' 29"	55' 27"	15' 06,51"	76° 22' 03"	22,92%
10:00	297° 17' 33"	-3° 30' 22"	300° 06' 03"	-24° 08' 16"	55' 29"	15' 06,93"	76° 09' 23"	22,57%
11:00	297° 48' 35"	-3° 28' 14"	300° 38' 49"	-23° 59' 55"	55' 30"	15' 07,35"	75° 56' 50"	22,23%
12:00	298° 19' 39"	-3° 26' 04"	301° 11' 33"	-23° 51' 28"	55' 32"	15' 07,77"	75° 44' 22"	21,88%
13:00	298° 50' 45"	-3° 23' 54"	301° 44' 14"	-23° 42' 52"	55' 33"	15' 08,20"	75° 32' 02"	21,54%
14:00	299° 21' 53"	-3° 21' 42"	302° 16' 53"	-23° 34' 10"	55' 35"	15' 08,63"	75° 19' 47"	21,20%
15:00	299° 53' 03"	-3° 19' 29"	302° 49' 30"	-23° 25' 20"	55' 36"	15' 09,06"	75° 07' 40"	20,85%
16:00	300° 24' 14"	-3° 17' 15"	303° 22' 04"	-23° 16' 23"	55' 38"	15' 09,50"	74° 55' 39"	20,52%
17:00	300° 55' 27"	-3° 15' 00"	303° 54' 36"	-23° 07' 18"	55' 40"	15' 09,93"	74° 43' 45"	20,18%
18:00	301° 26' 42"	-3° 12' 44"	304° 27' 06"	-22° 58' 06"	55' 41"	15' 10,38"	74° 31' 57"	19,84%
19:00	301° 57' 59"	-3° 10' 26"	304° 59' 33"	-22° 48' 47"	55' 43"	15' 10,82"	74° 20' 17"	19,51%
20:00	302° 29' 17"	-3° 08' 08"	305° 31' 57"	-22° 39' 21"	55' 44"	15' 11,27"	74° 08' 43"	19,18%
21:00	303° 00' 38"	-3° 05' 48"	306° 04' 20"	-22° 29' 48"	55' 46"	15' 11,72"	73° 57' 17"	18,85%
22:00	303° 32' 00"	-3° 03' 28"	306° 36' 40"	-22° 20' 08"	55' 48"	15' 12,17"	73° 45' 58"	18,52%
23:00	304° 03' 24"	-3° 01' 06"	307° 08' 57"	-22° 10' 20"	55' 49"	15' 12,63"	73° 34' 47"	18,19%
24:00	304° 34' 51"	-2° 58' 43"	307° 41' 12"	-22° 00' 26"	55' 51"	15' 13,08"	73° 23' 42"	17,87%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	354° 24' 36"	-0,35"	354° 52' 07"	-2° 13' 14"	0,9943637	16' 05,07"	23° 26' 18"	-09m 01s
01:00	354° 27' 05"	-0,34"	354° 54' 24"	-2° 12' 15"	0,9943752	16' 05,06"	23° 26' 18"	-09m 00s
02:00	354° 29' 35"	-0,34"	354° 56' 42"	-2° 11' 16"	0,9943868	16' 05,05"	23° 26' 18"	-09m 00s
03:00	354° 32' 04"	-0,33"	354° 58' 59"	-2° 10' 17"	0,9943983	16' 05,04"	23° 26' 18"	-08m 59s
04:00	354° 34' 34"	-0,33"	355° 01' 17"	-2° 09' 17"	0,9944098	16' 05,02"	23° 26' 18"	-08m 58s
05:00	354° 37' 03"	-0,32"	355° 03' 34"	-2° 08' 18"	0,9944213	16' 05,01"	23° 26' 18"	-08m 58s
06:00	354° 39' 33"	-0,32"	355° 05' 51"	-2° 07' 19"	0,9944328	16' 05,00"	23° 26' 18"	-08m 57s
07:00	354° 42' 02"	-0,31"	355° 08' 09"	-2° 06' 20"	0,9944443	16' 04,99"	23° 26' 18"	-08m 56s
08:00	354° 44' 32"	-0,31"	355° 10' 26"	-2° 05' 20"	0,9944558	16' 04,98"	23° 26' 18"	-08m 56s
09:00	354° 47' 01"	-0,30"	355° 12' 43"	-2° 04' 21"	0,9944673	16' 04,97"	23° 26' 18"	-08m 55s
10:00	354° 49' 31"	-0,30"	355° 15' 01"	-2° 03' 22"	0,9944788	16' 04,96"	23° 26' 18"	-08m 54s
11:00	354° 52' 00"	-0,29"	355° 17' 18"	-2° 02' 22"	0,9944903	16' 04,95"	23° 26' 18"	-08m 53s
12:00	354° 54' 30"	-0,29"	355° 19' 36"	-2° 01' 23"	0,9945018	16' 04,94"	23° 26' 18"	-08m 53s
13:00	354° 56' 59"	-0,28"	355° 21' 53"	-2° 00' 24"	0,9945133	16' 04,92"	23° 26' 18"	-08m 52s
14:00	354° 59' 29"	-0,28"	355° 24' 10"	-1° 59' 25"	0,9945249	16' 04,91"	23° 26' 18"	-08m 51s
15:00	355° 01' 58"	-0,27"	355° 26' 28"	-1° 58' 25"	0,9945364	16' 04,90"	23° 26' 18"	-08m 51s
16:00	355° 04' 28"	-0,27"	355° 28' 45"	-1° 57' 26"	0,9945479	16' 04,89"	23° 26' 18"	-08m 50s
17:00	355° 06' 57"	-0,26"	355° 31' 02"	-1° 56' 27"	0,9945594	16' 04,88"	23° 26' 18"	-08m 49s
18:00	355° 09' 27"	-0,26"	355° 33' 20"	-1° 55' 27"	0,9945709	16' 04,87"	23° 26' 18"	-08m 49s
19:00	355° 11' 56"	-0,25"	355° 35' 37"	-1° 54' 28"	0,9945825	16' 04,86"	23° 26' 18"	-08m 48s
20:00	355° 14' 26"	-0,25"	355° 37' 54"	-1° 53' 29"	0,9945940	16' 04,85"	23° 26' 18"	-08m 47s
21:00	355° 16' 55"	-0,24"	355° 40' 11"	-1° 52' 30"	0,9946055	16' 04,83"	23° 26' 18"	-08m 46s
22:00	355° 19' 25"	-0,24"	355° 42' 29"	-1° 51' 30"	0,9946170	16' 04,82"	23° 26' 18"	-08m 46s
23:00	355° 21' 54"	-0,23"	355° 44' 46"	-1° 50' 31"	0,9946285	16' 04,81"	23° 26' 18"	-08m 45s
24:00	355° 24' 24"	-0,23"	355° 47' 03"	-1° 49' 32"	0,9946401	16' 04,80"	23° 26' 18"	-08m 44s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	304° 34' 51"	-2° 58' 43"	307° 41' 12"	-22° 00' 26"	55' 51"	15' 13,08"	73° 23' 42"	17,87%
01:00	305° 06' 19"	-2° 56' 20"	308° 13' 25"	-21° 50' 25"	55' 53"	15' 13,55"	73° 12' 46"	17,54%
02:00	305° 37' 49"	-2° 53' 55"	308° 45' 35"	-21° 40' 16"	55' 55"	15' 14,01"	73° 01' 57"	17,22%
03:00	306° 09' 21"	-2° 51' 29"	309° 17' 43"	-21° 30' 01"	55' 56"	15' 14,47"	72° 51' 15"	16,91%
04:00	306° 40' 55"	-2° 49' 02"	309° 49' 49"	-21° 19' 40"	55' 58"	15' 14,94"	72° 40' 42"	16,59%
05:00	307° 12' 31"	-2° 46' 34"	310° 21' 52"	-21° 09' 11"	56' 00"	15' 15,41"	72° 30' 17"	16,27%
06:00	307° 44' 09"	-2° 44' 05"	310° 53' 52"	-20° 58' 36"	56' 01"	15' 15,89"	72° 19' 59"	15,96%
07:00	308° 15' 48"	-2° 41' 35"	311° 25' 51"	-20° 47' 54"	56' 03"	15' 16,36"	72° 09' 50"	15,65%
08:00	308° 47' 30"	-2° 39' 05"	311° 57' 46"	-20° 37' 05"	56' 05"	15' 16,84"	71° 59' 49"	15,34%
09:00	309° 19' 14"	-2° 36' 33"	312° 29' 40"	-20° 26' 10"	56' 07"	15' 17,32"	71° 49' 56"	15,03%
10:00	309° 51' 00"	-2° 34' 00"	313° 01' 31"	-20° 15' 08"	56' 08"	15' 17,80"	71° 40' 12"	14,73%
11:00	310° 22' 48"	-2° 31' 26"	313° 33' 19"	-20° 04' 00"	56' 10"	15' 18,28"	71° 30' 36"	14,43%
12:00	310° 54' 38"	-2° 28' 52"	314° 05' 06"	-19° 52' 45"	56' 12"	15' 18,77"	71° 21' 09"	14,13%
13:00	311° 26' 30"	-2° 26' 16"	314° 36' 50"	-19° 41' 24"	56' 14"	15' 19,26"	71° 11' 51"	13,83%
14:00	311° 58' 25"	-2° 23' 39"	315° 08' 31"	-19° 29' 56"	56' 16"	15' 19,75"	71° 02' 42"	13,54%
15:00	312° 30' 21"	-2° 21' 02"	315° 40' 11"	-19° 18' 22"	56' 17"	15' 20,24"	70° 53' 41"	13,24%
16:00	313° 02' 19"	-2° 18' 24"	316° 11' 48"	-19° 06' 42"	56' 19"	15' 20,73"	70° 44' 50"	12,95%
17:00	313° 34' 20"	-2° 15' 44"	316° 43' 22"	-18° 54' 56"	56' 21"	15' 21,22"	70° 36' 09"	12,66%
18:00	314° 06' 22"	-2° 13' 04"	317° 14' 55"	-18° 43' 04"	56' 23"	15' 21,72"	70° 27' 36"	12,38%
19:00	314° 38' 27"	-2° 10' 23"	317° 46' 25"	-18° 31' 05"	56' 25"	15' 22,22"	70° 19' 14"	12,10%
20:00	315° 10' 34"	-2° 07' 41"	318° 17' 53"	-18° 19' 01"	56' 26"	15' 22,72"	70° 11' 01"	11,81%
21:00	315° 42' 43"	-2° 04' 58"	318° 49' 19"	-18° 06' 50"	56' 28"	15' 23,22"	70° 02' 58"	11,54%
22:00	316° 14' 54"	-2° 02' 15"	319° 20' 42"	-17° 54' 34"	56' 30"	15' 23,72"	69° 55' 05"	11,26%
23:00	316° 47' 07"	-1° 59' 30"	319° 52' 04"	-17° 42' 11"	56' 32"	15' 24,22"	69° 47' 22"	10,99%
24:00	317° 19' 22"	-1° 56' 45"	320° 23' 23"	-17° 29' 43"	56' 34"	15' 24,73"	69° 39' 50"	10,72%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	355° 24' 24"	-0,23"	355° 47' 03"	-1° 49' 32"	0,9946401	16' 04,80"	23° 26' 18"	-08m 44s
01:00	355° 26' 53"	-0,22"	355° 49' 21"	-1° 48' 32"	0,9946516	16' 04,79"	23° 26' 18"	-08m 44s
02:00	355° 29' 23"	-0,21"	355° 51' 38"	-1° 47' 33"	0,9946631	16' 04,78"	23° 26' 18"	-08m 43s
03:00	355° 31' 52"	-0,21"	355° 53' 55"	-1° 46' 34"	0,9946746	16' 04,77"	23° 26' 18"	-08m 42s
04:00	355° 34' 22"	-0,20"	355° 56' 12"	-1° 45' 35"	0,9946862	16' 04,76"	23° 26' 18"	-08m 41s
05:00	355° 36' 51"	-0,20"	355° 58' 30"	-1° 44' 35"	0,9946977	16' 04,75"	23° 26' 18"	-08m 41s
06:00	355° 39' 21"	-0,19"	356° 00' 47"	-1° 43' 36"	0,9947092	16' 04,73"	23° 26' 18"	-08m 40s
07:00	355° 41' 50"	-0,19"	356° 03' 04"	-1° 42' 37"	0,9947208	16' 04,72"	23° 26' 18"	-08m 39s
08:00	355° 44' 20"	-0,18"	356° 05' 21"	-1° 41' 37"	0,9947323	16' 04,71"	23° 26' 18"	-08m 39s
09:00	355° 46' 49"	-0,18"	356° 07' 39"	-1° 40' 38"	0,9947438	16' 04,70"	23° 26' 18"	-08m 38s
10:00	355° 49' 18"	-0,17"	356° 09' 56"	-1° 39' 39"	0,9947554	16' 04,69"	23° 26' 18"	-08m 37s
11:00	355° 51' 48"	-0,17"	356° 12' 13"	-1° 38' 39"	0,9947669	16' 04,68"	23° 26' 18"	-08m 37s
12:00	355° 54' 17"	-0,16"	356° 14' 30"	-1° 37' 40"	0,9947784	16' 04,67"	23° 26' 18"	-08m 36s
13:00	355° 56' 47"	-0,16"	356° 16' 47"	-1° 36' 41"	0,9947900	16' 04,66"	23° 26' 18"	-08m 35s
14:00	355° 59' 16"	-0,15"	356° 19' 05"	-1° 35' 41"	0,9948015	16' 04,64"	23° 26' 18"	-08m 34s
15:00	356° 01' 46"	-0,14"	356° 21' 22"	-1° 34' 42"	0,9948130	16' 04,63"	23° 26' 18"	-08m 34s
16:00	356° 04' 15"	-0,14"	356° 23' 39"	-1° 33' 43"	0,9948246	16' 04,62"	23° 26' 18"	-08m 33s
17:00	356° 06' 45"	-0,13"	356° 25' 56"	-1° 32' 43"	0,9948361	16' 04,61"	23° 26' 18"	-08m 32s
18:00	356° 09' 14"	-0,13"	356° 28' 13"	-1° 31' 44"	0,9948476	16' 04,60"	23° 26' 18"	-08m 32s
19:00	356° 11' 43"	-0,12"	356° 30' 31"	-1° 30' 45"	0,9948592	16' 04,59"	23° 26' 18"	-08m 31s
20:00	356° 14' 13"	-0,12"	356° 32' 48"	-1° 29' 45"	0,9948707	16' 04,58"	23° 26' 18"	-08m 30s
21:00	356° 16' 42"	-0,11"	356° 35' 05"	-1° 28' 46"	0,9948822	16' 04,57"	23° 26' 18"	-08m 29s
22:00	356° 19' 12"	-0,11"	356° 37' 22"	-1° 27' 47"	0,9948938	16' 04,56"	23° 26' 18"	-08m 29s
23:00	356° 21' 41"	-0,10"	356° 39' 39"	-1° 26' 47"	0,9949053	16' 04,54"	23° 26' 18"	-08m 28s
24:00	356° 24' 10"	-0,09"	356° 41' 56"	-1° 25' 48"	0,9949168	16' 04,53"	23° 26' 18"	-08m 27s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	317° 19' 22"	-1° 56' 45"	320° 23' 23"	-17° 29' 43"	56' 34"	15' 24,73"	69° 39' 50"	10,72%
01:00	317° 51' 40"	-1° 53' 59"	320° 54' 40"	-17° 17' 09"	56' 36"	15' 25,23"	69° 32' 28"	10,45%
02:00	318° 24' 00"	-1° 51' 12"	321° 25' 55"	-17° 04' 30"	56' 38"	15' 25,74"	69° 25' 16"	10,18%
03:00	318° 56' 22"	-1° 48' 25"	321° 57' 08"	-16° 51' 44"	56' 39"	15' 26,24"	69° 18' 16"	9,92%
04:00	319° 28' 46"	-1° 45' 36"	322° 28' 19"	-16° 38' 53"	56' 41"	15' 26,75"	69° 11' 27"	9,66%
05:00	320° 01' 12"	-1° 42' 47"	322° 59' 28"	-16° 25' 57"	56' 43"	15' 27,26"	69° 04' 49"	9,40%
06:00	320° 33' 40"	-1° 39' 57"	323° 30' 36"	-16° 12' 55"	56' 45"	15' 27,77"	68° 58' 22"	9,15%
07:00	321° 06' 11"	-1° 37' 07"	324° 01' 41"	-15° 59' 47"	56' 47"	15' 28,28"	68° 52' 07"	8,90%
08:00	321° 38' 44"	-1° 34' 15"	324° 32' 44"	-15° 46' 35"	56' 49"	15' 28,79"	68° 46' 04"	8,65%
09:00	322° 11' 19"	-1° 31' 23"	325° 03' 45"	-15° 33' 16"	56' 51"	15' 29,31"	68° 40' 14"	8,40%
10:00	322° 43' 57"	-1° 28' 31"	325° 34' 45"	-15° 19' 53"	56' 53"	15' 29,82"	68° 34' 35"	8,16%
11:00	323° 16' 36"	-1° 25' 37"	326° 05' 43"	-15° 06' 24"	56' 54"	15' 30,33"	68° 29' 10"	7,92%
12:00	323° 49' 18"	-1° 22' 43"	326° 36' 39"	-14° 52' 50"	56' 56"	15' 30,85"	68° 23' 57"	7,69%
13:00	324° 22' 02"	-1° 19' 49"	327° 07' 33"	-14° 39' 12"	56' 58"	15' 31,36"	68° 18' 58"	7,45%
14:00	324° 54' 48"	-1° 16' 53"	327° 38' 26"	-14° 25' 28"	57' 00"	15' 31,87"	68° 14' 12"	7,22%
15:00	325° 27' 37"	-1° 13' 57"	328° 09' 17"	-14° 11' 39"	57' 02"	15' 32,39"	68° 09' 41"	6,99%
16:00	326° 00' 27"	-1° 11' 01"	328° 40' 06"	-13° 57' 45"	57' 04"	15' 32,90"	68° 05' 23"	6,77%
17:00	326° 33' 20"	-1° 08' 04"	329° 10' 54"	-13° 43' 46"	57' 06"	15' 33,42"	68° 01' 21"	6,55%
18:00	327° 06' 16"	-1° 05' 06"	329° 41' 41"	-13° 29' 43"	57' 08"	15' 33,93"	67° 57' 33"	6,33%
19:00	327° 39' 13"	-1° 02' 08"	330° 12' 25"	-13° 15' 34"	57' 10"	15' 34,45"	67° 54' 01"	6,11%
20:00	328° 12' 13"	-0° 59' 09"	330° 43' 09"	-13° 01' 22"	57' 11"	15' 34,96"	67° 50' 45"	5,90%
21:00	328° 45' 15"	-0° 56' 09"	331° 13' 51"	-12° 47' 04"	57' 13"	15' 35,47"	67° 47' 46"	5,69%
22:00	329° 18' 19"	-0° 53' 10"	331° 44' 32"	-12° 32' 42"	57' 15"	15' 35,99"	67° 45' 03"	5,49%
23:00	329° 51' 26"	-0° 50' 09"	332° 15' 11"	-12° 18' 16"	57' 17"	15' 36,50"	67° 42' 39"	5,29%
24:00	330° 24' 34"	-0° 47' 08"	332° 45' 49"	-12° 03' 45"	57' 19"	15' 37,01"	67° 40' 32"	5,09%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	356° 24' 10"	-0,09"	356° 41' 56"	-1° 25' 48"	0,9949168	16' 04,53"	23° 26' 18"	-08m 27s
01:00	356° 26' 40"	-0,09"	356° 44' 14"	-1° 24' 49"	0,9949284	16' 04,52"	23° 26' 18"	-08m 27s
02:00	356° 29' 09"	-0,08"	356° 46' 31"	-1° 23' 49"	0,9949399	16' 04,51"	23° 26' 18"	-08m 26s
03:00	356° 31' 39"	-0,08"	356° 48' 48"	-1° 22' 50"	0,9949515	16' 04,50"	23° 26' 18"	-08m 25s
04:00	356° 34' 08"	-0,07"	356° 51' 05"	-1° 21' 51"	0,9949630	16' 04,49"	23° 26' 18"	-08m 24s
05:00	356° 36' 37"	-0,07"	356° 53' 22"	-1° 20' 51"	0,9949745	16' 04,48"	23° 26' 18"	-08m 24s
06:00	356° 39' 07"	-0,06"	356° 55' 39"	-1° 19' 52"	0,9949861	16' 04,47"	23° 26' 18"	-08m 23s
07:00	356° 41' 36"	-0,05"	356° 57' 56"	-1° 18' 53"	0,9949976	16' 04,45"	23° 26' 18"	-08m 22s
08:00	356° 44' 05"	-0,05"	357° 00' 14"	-1° 17' 53"	0,9950092	16' 04,44"	23° 26' 18"	-08m 22s
09:00	356° 46' 35"	-0,04"	357° 02' 31"	-1° 16' 54"	0,9950207	16' 04,43"	23° 26' 18"	-08m 21s
10:00	356° 49' 04"	-0,04"	357° 04' 48"	-1° 15' 55"	0,9950322	16' 04,42"	23° 26' 18"	-08m 20s
11:00	356° 51' 34"	-0,03"	357° 07' 05"	-1° 14' 55"	0,9950438	16' 04,41"	23° 26' 18"	-08m 19s
12:00	356° 54' 03"	-0,03"	357° 09' 22"	-1° 13' 56"	0,9950553	16' 04,40"	23° 26' 18"	-08m 19s
13:00	356° 56' 32"	-0,02"	357° 11' 39"	-1° 12' 57"	0,9950669	16' 04,39"	23° 26' 18"	-08m 18s
14:00	356° 59' 02"	-0,01"	357° 13' 56"	-1° 11' 57"	0,9950784	16' 04,38"	23° 26' 18"	-08m 17s
15:00	357° 01' 31"	-0,01"	357° 16' 13"	-1° 10' 58"	0,9950899	16' 04,37"	23° 26' 18"	-08m 17s
16:00	357° 04' 00"	-0,00"	357° 18' 30"	-1° 09' 59"	0,9951015	16' 04,35"	23° 26' 18"	-08m 16s
17:00	357° 06' 30"	0,00"	357° 20' 47"	-1° 08' 59"	0,9951130	16' 04,34"	23° 26' 18"	-08m 15s
18:00	357° 08' 59"	0,01"	357° 23' 04"	-1° 08' 00"	0,9951246	16' 04,33"	23° 26' 18"	-08m 14s
19:00	357° 11' 28"	0,01"	357° 25' 21"	-1° 07' 01"	0,9951361	16' 04,32"	23° 26' 18"	-08m 14s
20:00	357° 13' 58"	0,02"	357° 27' 39"	-1° 06' 01"	0,9951477	16' 04,31"	23° 26' 18"	-08m 13s
21:00	357° 16' 27"	0,03"	357° 29' 56"	-1° 05' 02"	0,9951592	16' 04,30"	23° 26' 18"	-08m 12s
22:00	357° 18' 56"	0,03"	357° 32' 13"	-1° 04' 03"	0,9951707	16' 04,29"	23° 26' 18"	-08m 12s
23:00	357° 21' 26"	0,04"	357° 34' 30"	-1° 03' 03"	0,9951823	16' 04,28"	23° 26' 18"	-08m 11s
24:00	357° 23' 55"	0,04"	357° 36' 47"	-1° 02' 04"	0,9951938	16' 04,26"	23° 26' 18"	-08m 10s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	330° 24' 34"	-0° 47' 08"	332° 45' 49"	-12° 03' 45"	57' 19"	15' 37,01"	67° 40' 32"	5,09%
01:00	330° 57' 45"	-0° 44' 07"	333° 16' 26"	-11° 49' 09"	57' 21"	15' 37,52"	67° 38' 45"	4,89%
02:00	331° 30' 59"	-0° 41' 05"	333° 47' 02"	-11° 34' 30"	57' 23"	15' 38,04"	67° 37' 17"	4,70%
03:00	332° 04' 14"	-0° 38' 03"	334° 17' 37"	-11° 19' 46"	57' 25"	15' 38,55"	67° 36' 10"	4,51%
04:00	332° 37' 32"	-0° 35' 01"	334° 48' 11"	-11° 04' 58"	57' 26"	15' 39,06"	67° 35' 24"	4,33%
05:00	333° 10' 52"	-0° 31' 58"	335° 18' 44"	-10° 50' 06"	57' 28"	15' 39,57"	67° 35' 01"	4,14%
06:00	333° 44' 14"	-0° 28' 54"	335° 49' 15"	-10° 35' 10"	57' 30"	15' 40,07"	67° 35' 00"	3,97%
07:00	334° 17' 39"	-0° 25' 51"	336° 19' 46"	-10° 20' 10"	57' 32"	15' 40,58"	67° 35' 24"	3,79%
08:00	334° 51' 06"	-0° 22' 46"	336° 50' 16"	-10° 05' 06"	57' 34"	15' 41,09"	67° 36' 14"	3,62%
09:00	335° 24' 35"	-0° 19' 42"	337° 20' 46"	-9° 49' 58"	57' 36"	15' 41,59"	67° 37' 31"	3,45%
10:00	335° 58' 06"	-0° 16' 37"	337° 51' 14"	-9° 34' 47"	57' 38"	15' 42,10"	67° 39' 16"	3,29%
11:00	336° 31' 39"	-0° 13' 32"	338° 21' 42"	-9° 19' 32"	57' 39"	15' 42,60"	67° 41' 31"	3,13%
12:00	337° 05' 15"	-0° 10' 27"	338° 52' 09"	-9° 04' 13"	57' 41"	15' 43,10"	67° 44' 17"	2,97%
13:00	337° 38' 53"	-0° 07' 21"	339° 22' 36"	-8° 48' 51"	57' 43"	15' 43,60"	67° 47' 38"	2,82%
14:00	338° 12' 33"	-0° 04' 16"	339° 53' 02"	-8° 33' 25"	57' 45"	15' 44,10"	67° 51' 34"	2,67%
15:00	338° 46' 16"	-0° 01' 10"	340° 23' 28"	-8° 17' 56"	57' 47"	15' 44,60"	67° 56' 09"	2,53%
16:00	339° 20' 00"	0° 01' 57"	340° 53' 53"	-8° 02' 24"	57' 49"	15' 45,09"	68° 01' 25"	2,39%
17:00	339° 53' 47"	0° 05' 03"	341° 24' 18"	-7° 46' 48"	57' 50"	15' 45,59"	68° 07' 26"	2,25%
18:00	340° 27' 36"	0° 08' 10"	341° 54' 43"	-7° 31' 09"	57' 52"	15' 46,08"	68° 14' 14"	2,12%
19:00	341° 01' 28"	0° 11' 16"	342° 25' 07"	-7° 15' 27"	57' 54"	15' 46,57"	68° 21' 53"	1,99%
20:00	341° 35' 21"	0° 14' 23"	342° 55' 32"	-6° 59' 42"	57' 56"	15' 47,06"	68° 30' 29"	1,86%
21:00	342° 09' 17"	0° 17' 30"	343° 25' 56"	-6° 43' 54"	57' 58"	15' 47,54"	68° 40' 05"	1,74%
22:00	342° 43' 15"	0° 20' 37"	343° 56' 20"	-6° 28' 04"	57' 59"	15' 48,03"	68° 50' 48"	1,62%
23:00	343° 17' 15"	0° 23' 44"	344° 26' 44"	-6° 12' 10"	58' 01"	15' 48,51"	69° 02' 45"	1,51%
24:00	343° 51' 17"	0° 26' 51"	344° 57' 09"	-5° 56' 14"	58' 03"	15' 48,99"	69° 16' 02"	1,40%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	357° 23' 55"	0,04"	357° 36' 47"	-1° 02' 04"	0,9951938	16' 04,26"	23° 26' 18"	-08m 10s
01:00	357° 26' 24"	0,05"	357° 39' 04"	-1° 01' 05"	0,9952054	16' 04,25"	23° 26' 18"	-08m 09s
02:00	357° 28' 54"	0,05"	357° 41' 21"	-1° 00' 05"	0,9952169	16' 04,24"	23° 26' 18"	-08m 09s
03:00	357° 31' 23"	0,06"	357° 43' 38"	-0° 59' 06"	0,9952284	16' 04,23"	23° 26' 18"	-08m 08s
04:00	357° 33' 52"	0,06"	357° 45' 55"	-0° 58' 07"	0,9952400	16' 04,22"	23° 26' 18"	-08m 07s
05:00	357° 36' 22"	0,07"	357° 48' 12"	-0° 57' 07"	0,9952515	16' 04,21"	23° 26' 18"	-08m 06s
06:00	357° 38' 51"	0,08"	357° 50' 29"	-0° 56' 08"	0,9952631	16' 04,20"	23° 26' 18"	-08m 06s
07:00	357° 41' 20"	0,08"	357° 52' 46"	-0° 55' 09"	0,9952746	16' 04,19"	23° 26' 18"	-08m 05s
08:00	357° 43' 49"	0,09"	357° 55' 03"	-0° 54' 09"	0,9952861	16' 04,17"	23° 26' 18"	-08m 04s
09:00	357° 46' 19"	0,09"	357° 57' 20"	-0° 53' 10"	0,9952977	16' 04,16"	23° 26' 18"	-08m 04s
10:00	357° 48' 48"	0,10"	357° 59' 37"	-0° 52' 10"	0,9953092	16' 04,15"	23° 26' 18"	-08m 03s
11:00	357° 51' 17"	0,10"	358° 01' 54"	-0° 51' 11"	0,9953208	16' 04,14"	23° 26' 18"	-08m 02s
12:00	357° 53' 47"	0,11"	358° 04' 11"	-0° 50' 12"	0,9953323	16' 04,13"	23° 26' 18"	-08m 01s
13:00	357° 56' 16"	0,12"	358° 06' 28"	-0° 49' 12"	0,9953438	16' 04,12"	23° 26' 18"	-08m 01s
14:00	357° 58' 45"	0,12"	358° 08' 45"	-0° 48' 13"	0,9953554	16' 04,11"	23° 26' 18"	-08m 00s
15:00	358° 01' 14"	0,13"	358° 11' 02"	-0° 47' 14"	0,9953669	16' 04,10"	23° 26' 18"	-07m 59s
16:00	358° 03' 44"	0,13"	358° 13' 19"	-0° 46' 14"	0,9953785	16' 04,09"	23° 26' 18"	-07m 59s
17:00	358° 06' 13"	0,14"	358° 15' 36"	-0° 45' 15"	0,9953900	16' 04,07"	23° 26' 18"	-07m 58s
18:00	358° 08' 42"	0,14"	358° 17' 53"	-0° 44' 16"	0,9954015	16' 04,06"	23° 26' 18"	-07m 57s
19:00	358° 11' 11"	0,15"	358° 20' 10"	-0° 43' 16"	0,9954131	16' 04,05"	23° 26' 18"	-07m 56s
20:00	358° 13' 41"	0,15"	358° 22' 27"	-0° 42' 17"	0,9954246	16' 04,04"	23° 26' 18"	-07m 56s
21:00	358° 16' 10"	0,16"	358° 24' 44"	-0° 41' 18"	0,9954361	16' 04,03"	23° 26' 18"	-07m 55s
22:00	358° 18' 39"	0,16"	358° 27' 01"	-0° 40' 18"	0,9954477	16' 04,02"	23° 26' 18"	-07m 54s
23:00	358° 21' 08"	0,17"	358° 29' 18"	-0° 39' 19"	0,9954592	16' 04,01"	23° 26' 18"	-07m 53s
24:00	358° 23' 38"	0,18"	358° 31' 34"	-0° 38' 20"	0,9954708	16' 04,00"	23° 26' 18"	-07m 53s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	343° 51' 17"	0° 26' 51"	344° 57' 09"	-5° 56' 14"	58' 03"	15' 48,99"	69° 16' 02"	1,40%
01:00	344° 25' 21"	0° 29' 59"	345° 27' 33"	-5° 40' 15"	58' 05"	15' 49,46"	69° 30' 50"	1,29%
02:00	344° 59' 28"	0° 33' 06"	345° 57' 58"	-5° 24' 13"	58' 06"	15' 49,94"	69° 47' 18"	1,19%
03:00	345° 33' 37"	0° 36' 13"	346° 28' 23"	-5° 08' 09"	58' 08"	15' 50,41"	70° 05' 38"	1,09%
04:00	346° 07' 47"	0° 39' 20"	346° 58' 48"	-4° 52' 02"	58' 10"	15' 50,88"	70° 26' 05"	1,00%
05:00	346° 42' 00"	0° 42' 27"	347° 29' 14"	-4° 35' 54"	58' 12"	15' 51,35"	70° 48' 55"	0,91%
06:00	347° 16' 16"	0° 45' 34"	347° 59' 40"	-4° 19' 42"	58' 13"	15' 51,82"	71° 14' 31"	0,83%
07:00	347° 50' 33"	0° 48' 41"	348° 30' 06"	-4° 03' 29"	58' 15"	15' 52,28"	71° 43' 16"	0,75%
08:00	348° 24' 52"	0° 51' 48"	349° 00' 34"	-3° 47' 14"	58' 17"	15' 52,74"	72° 15' 41"	0,67%
09:00	348° 59' 13"	0° 54' 55"	349° 31' 02"	-3° 30' 56"	58' 18"	15' 53,20"	72° 52' 23"	0,60%
10:00	349° 33' 37"	0° 58' 01"	350° 01' 30"	-3° 14' 37"	58' 20"	15' 53,65"	73° 34' 09"	0,53%
11:00	350° 08' 02"	1° 01' 07"	350° 32' 00"	-2° 58' 16"	58' 22"	15' 54,10"	74° 21' 59"	0,46%
12:00	350° 42' 30"	1° 04' 14"	351° 02' 30"	-2° 41' 53"	58' 23"	15' 54,55"	75° 17' 08"	0,40%
13:00	351° 17' 00"	1° 07' 19"	351° 33' 01"	-2° 25' 28"	58' 25"	15' 54,99"	76° 21' 15"	0,35%
14:00	351° 51' 31"	1° 10' 25"	352° 03' 34"	-2° 09' 02"	58' 27"	15' 55,44"	77° 36' 29"	0,30%
15:00	352° 26' 05"	1° 13' 31"	352° 34' 07"	-1° 52' 34"	58' 28"	15' 55,87"	79° 05' 45"	0,25%
16:00	353° 00' 41"	1° 16' 36"	353° 04' 41"	-1° 36' 05"	58' 30"	15' 56,31"	80° 53' 02"	0,21%
17:00	353° 35' 18"	1° 19' 41"	353° 35' 17"	-1° 19' 34"	58' 31"	15' 56,74"	83° 03' 55"	0,17%
18:00	354° 09' 58"	1° 22' 45"	354° 05' 54"	-1° 03' 02"	58' 33"	15' 57,17"	85° 46' 22"	0,14%
19:00	354° 44' 40"	1° 25' 49"	354° 36' 32"	-0° 46' 29"	58' 35"	15' 57,60"	89° 12' 04"	0,11%
20:00	355° 19' 23"	1° 28' 53"	355° 07' 12"	-0° 29' 55"	58' 36"	15' 58,02"	93° 38' 26"	0,08%
21:00	355° 54' 09"	1° 31' 56"	355° 37' 53"	-0° 13' 20"	58' 38"	15' 58,44"	99° 31' 28"	0,06%
22:00	356° 28' 56"	1° 34' 59"	356° 08' 36"	0° 03' 16"	58' 39"	15' 58,85"	107° 28' 48"	0,04%
23:00	357° 03' 46"	1° 38' 02"	356° 39' 20"	0° 19' 53"	58' 41"	15' 59,26"	118° 17' 59"	0,03%
24:00	357° 38' 37"	1° 41' 04"	357° 10' 06"	0° 36' 31"	58' 42"	16' 00,00"	132° 34' 12"	0,03%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	358° 23' 38"	0,18"	358° 31' 34"	-0° 38' 20"	0,9954708	16' 04,00"	23° 26' 18"	-07m 53s
01:00	358° 26' 07"	0,18"	358° 33' 51"	-0° 37' 20"	0,9954823	16' 03,99"	23° 26' 18"	-07m 52s
02:00	358° 28' 36"	0,19"	358° 36' 08"	-0° 36' 21"	0,9954938	16' 03,97"	23° 26' 18"	-07m 51s
03:00	358° 31' 05"	0,19"	358° 38' 25"	-0° 35' 22"	0,9955054	16' 03,96"	23° 26' 18"	-07m 51s
04:00	358° 33' 35"	0,20"	358° 40' 42"	-0° 34' 22"	0,9955169	16' 03,95"	23° 26' 18"	-07m 50s
05:00	358° 36' 04"	0,20"	358° 42' 59"	-0° 33' 23"	0,9955284	16' 03,94"	23° 26' 18"	-07m 49s
06:00	358° 38' 33"	0,21"	358° 45' 16"	-0° 32' 24"	0,9955400	16' 03,93"	23° 26' 18"	-07m 48s
07:00	358° 41' 02"	0,21"	358° 47' 33"	-0° 31' 24"	0,9955515	16' 03,92"	23° 26' 18"	-07m 48s
08:00	358° 43' 31"	0,22"	358° 49' 50"	-0° 30' 25"	0,9955630	16' 03,91"	23° 26' 18"	-07m 47s
09:00	358° 46' 01"	0,22"	358° 52' 07"	-0° 29' 26"	0,9955746	16' 03,90"	23° 26' 18"	-07m 46s
10:00	358° 48' 30"	0,23"	358° 54' 24"	-0° 28' 26"	0,9955861	16' 03,88"	23° 26' 18"	-07m 45s
11:00	358° 50' 59"	0,23"	358° 56' 41"	-0° 27' 27"	0,9955976	16' 03,87"	23° 26' 18"	-07m 45s
12:00	358° 53' 28"	0,24"	358° 58' 57"	-0° 26' 27"	0,9956092	16' 03,86"	23° 26' 18"	-07m 44s
13:00	358° 55' 57"	0,24"	359° 01' 14"	-0° 25' 28"	0,9956207	16' 03,85"	23° 26' 18"	-07m 43s
14:00	358° 58' 27"	0,25"	359° 03' 31"	-0° 24' 29"	0,9956322	16' 03,84"	23° 26' 18"	-07m 43s
15:00	359° 00' 56"	0,25"	359° 05' 48"	-0° 23' 29"	0,9956437	16' 03,83"	23° 26' 18"	-07m 42s
16:00	359° 03' 25"	0,26"	359° 08' 05"	-0° 22' 30"	0,9956553	16' 03,82"	23° 26' 18"	-07m 41s
17:00	359° 05' 54"	0,26"	359° 10' 22"	-0° 21' 31"	0,9956668	16' 03,81"	23° 26' 18"	-07m 40s
18:00	359° 08' 23"	0,27"	359° 12' 39"	-0° 20' 31"	0,9956783	16' 03,80"	23° 26' 18"	-07m 40s
19:00	359° 10' 52"	0,27"	359° 14' 56"	-0° 19' 32"	0,9956899	16' 03,78"	23° 26' 18"	-07m 39s
20:00	359° 13' 22"	0,28"	359° 17' 12"	-0° 18' 33"	0,9957014	16' 03,77"	23° 26' 18"	-07m 38s
21:00	359° 15' 51"	0,28"	359° 19' 29"	-0° 17' 33"	0,9957129	16' 03,76"	23° 26' 18"	-07m 37s
22:00	359° 18' 20"	0,29"	359° 21' 46"	-0° 16' 34"	0,9957244	16' 03,75"	23° 26' 18"	-07m 37s
23:00	359° 20' 49"	0,29"	359° 24' 03"	-0° 15' 35"	0,9957360	16' 03,74"	23° 26' 18"	-07m 36s
24:00	359° 23' 18"	0,30"	359° 26' 20"	-0° 14' 35"	0,9957475	16' 03,73"	23° 26' 18"	-07m 35s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	357° 38' 37"	1° 41' 04"	357° 10' 06"	0° 36' 31"	58' 42"	16' 00,00"	132° 34' 12"	0,03%
01:00	358° 13' 30"	1° 44' 06"	357° 40' 54"	0° 53' 09"	58' 44"	16' 00,07"	149° 39' 38"	0,02%
02:00	358° 48' 25"	1° 47' 07"	358° 11' 43"	1° 09' 48"	58' 45"	16' 00,47"	167° 02' 45"	0,03%
03:00	359° 23' 22"	1° 50' 07"	358° 42' 35"	1° 26' 28"	58' 47"	16' 00,87"	181° 57' 23"	0,03%
04:00	359° 58' 21"	1° 53' 07"	359° 13' 28"	1° 43' 08"	58' 48"	16' 01,26"	193° 24' 29"	0,04%
05:00	0° 33' 21"	1° 56' 07"	359° 44' 24"	1° 59' 48"	58' 49"	16' 01,65"	201° 51' 15"	0,06%
06:00	1° 08' 24"	1° 59' 06"	0° 15' 21"	2° 16' 28"	58' 51"	16' 02,03"	208° 05' 36"	0,08%
07:00	1° 43' 28"	2° 02' 04"	0° 46' 21"	2° 33' 09"	58' 52"	16' 02,41"	212° 47' 30"	0,10%
08:00	2° 18' 34"	2° 05' 02"	1° 17' 23"	2° 49' 49"	58' 54"	16' 02,79"	216° 24' 55"	0,13%
09:00	2° 53' 41"	2° 07' 59"	1° 48' 28"	3° 06' 29"	58' 55"	16' 03,16"	219° 16' 39"	0,17%
10:00	3° 28' 50"	2° 10' 55"	2° 19' 34"	3° 23' 10"	58' 56"	16' 03,53"	221° 35' 14"	0,20%
11:00	4° 04' 02"	2° 13' 51"	2° 50' 44"	3° 39' 50"	58' 58"	16' 03,89"	223° 29' 14"	0,25%
12:00	4° 39' 14"	2° 16' 45"	3° 21' 55"	3° 56' 29"	58' 59"	16' 04,25"	225° 04' 38"	0,29%
13:00	5° 14' 29"	2° 19' 40"	3° 53' 10"	4° 13' 08"	59' 00"	16' 04,61"	226° 25' 38"	0,35%
14:00	5° 49' 45"	2° 22' 33"	4° 24' 27"	4° 29' 47"	59' 02"	16' 04,96"	227° 35' 20"	0,40%
15:00	6° 25' 03"	2° 25' 25"	4° 55' 47"	4° 46' 25"	59' 03"	16' 05,30"	228° 36' 01"	0,46%
16:00	7° 00' 22"	2° 28' 17"	5° 27' 09"	5° 03' 02"	59' 04"	16' 05,64"	229° 29' 24"	0,53%
17:00	7° 35' 43"	2° 31' 08"	5° 58' 35"	5° 19' 39"	59' 05"	16' 05,98"	230° 16' 48"	0,60%
18:00	8° 11' 05"	2° 33' 58"	6° 30' 04"	5° 36' 14"	59' 07"	16' 06,31"	230° 59' 16"	0,67%
19:00	8° 46' 29"	2° 36' 47"	7° 01' 35"	5° 52' 48"	59' 08"	16' 06,64"	231° 37' 37"	0,75%
20:00	9° 21' 55"	2° 39' 36"	7° 33' 10"	6° 09' 22"	59' 09"	16' 06,96"	232° 12' 28"	0,84%
21:00	9° 57' 22"	2° 42' 23"	8° 04' 48"	6° 25' 54"	59' 10"	16' 07,28"	232° 44' 24"	0,93%
22:00	10° 32' 51"	2° 45' 10"	8° 36' 29"	6° 42' 24"	59' 11"	16' 07,59"	233° 13' 48"	1,02%
23:00	11° 08' 21"	2° 47' 55"	9° 08' 13"	6° 58' 54"	59' 12"	16' 07,90"	233° 41' 02"	1,12%
24:00	11° 43' 52"	2° 50' 40"	9° 40' 01"	7° 15' 21"	59' 13"	16' 08,21"	234° 06' 25"	1,22%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	359° 23' 18"	0,30"	359° 26' 20"	-0° 14' 35"	0,9957475	16' 03,73"	23° 26' 18"	-07m 35s
01:00	359° 25' 47"	0,30"	359° 28' 37"	-0° 13' 36"	0,9957590	16' 03,72"	23° 26' 18"	-07m 34s
02:00	359° 28' 17"	0,31"	359° 30' 54"	-0° 12' 37"	0,9957705	16' 03,71"	23° 26' 18"	-07m 34s
03:00	359° 30' 46"	0,31"	359° 33' 10"	-0° 11' 37"	0,9957821	16' 03,69"	23° 26' 18"	-07m 33s
04:00	359° 33' 15"	0,32"	359° 35' 27"	-0° 10' 38"	0,9957936	16' 03,68"	23° 26' 18"	-07m 32s
05:00	359° 35' 44"	0,32"	359° 37' 44"	-0° 09' 39"	0,9958051	16' 03,67"	23° 26' 18"	-07m 32s
06:00	359° 38' 13"	0,33"	359° 40' 01"	-0° 08' 40"	0,9958166	16' 03,66"	23° 26' 18"	-07m 31s
07:00	359° 40' 42"	0,33"	359° 42' 18"	-0° 07' 40"	0,9958281	16' 03,65"	23° 26' 18"	-07m 30s
08:00	359° 43' 11"	0,34"	359° 44' 34"	-0° 06' 41"	0,9958397	16' 03,64"	23° 26' 18"	-07m 29s
09:00	359° 45' 41"	0,34"	359° 46' 51"	-0° 05' 42"	0,9958512	16' 03,63"	23° 26' 18"	-07m 29s
10:00	359° 48' 10"	0,34"	359° 49' 08"	-0° 04' 42"	0,9958627	16' 03,62"	23° 26' 18"	-07m 28s
11:00	359° 50' 39"	0,35"	359° 51' 25"	-0° 03' 43"	0,9958742	16' 03,61"	23° 26' 18"	-07m 27s
12:00	359° 53' 08"	0,35"	359° 53' 42"	-0° 02' 44"	0,9958857	16' 03,59"	23° 26' 18"	-07m 26s
13:00	359° 55' 37"	0,36"	359° 55' 59"	-0° 01' 44"	0,9958973	16' 03,58"	23° 26' 18"	-07m 26s
14:00	359° 58' 06"	0,36"	359° 58' 15"	-0° 00' 45"	0,9959088	16' 03,57"	23° 26' 18"	-07m 25s
15:00	0° 00' 35"	0,37"	0° 00' 32"	0° 00' 14"	0,9959203	16' 03,56"	23° 26' 18"	-07m 24s
16:00	0° 03' 04"	0,37"	0° 02' 49"	0° 01' 14"	0,9959318	16' 03,55"	23° 26' 18"	-07m 23s
17:00	0° 05' 33"	0,37"	0° 05' 06"	0° 02' 13"	0,9959433	16' 03,54"	23° 26' 18"	-07m 23s
18:00	0° 08' 02"	0,38"	0° 07' 22"	0° 03' 12"	0,9959549	16' 03,53"	23° 26' 18"	-07m 22s
19:00	0° 10' 32"	0,38"	0° 09' 39"	0° 04' 12"	0,9959664	16' 03,52"	23° 26' 18"	-07m 21s
20:00	0° 13' 01"	0,39"	0° 11' 56"	0° 05' 11"	0,9959779	16' 03,51"	23° 26' 18"	-07m 20s
21:00	0° 15' 30"	0,39"	0° 14' 13"	0° 06' 10"	0,9959894	16' 03,49"	23° 26' 18"	-07m 20s
22:00	0° 17' 59"	0,39"	0° 16' 30"	0° 07' 09"	0,9960009	16' 03,48"	23° 26' 18"	-07m 19s
23:00	0° 20' 28"	0,40"	0° 18' 46"	0° 08' 09"	0,9960124	16' 03,47"	23° 26' 18"	-07m 18s
24:00	0° 22' 57"	0,40"	0° 21' 03"	0° 09' 08"	0,9960239	16' 03,46"	23° 26' 18"	-07m 18s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	11° 43' 52"	2° 50' 40"	9° 40' 01"	7° 15' 21"	59' 13"	16' 08,21"	234° 06' 25"	1,22%
01:00	12° 19' 25"	2° 53' 23"	10° 11' 52"	7° 31' 47"	59' 15"	16' 08,51"	234° 30' 10"	1,33%
02:00	12° 55' 00"	2° 56' 06"	10° 43' 47"	7° 48' 12"	59' 16"	16' 08,80"	234° 52' 31"	1,44%
03:00	13° 30' 35"	2° 58' 47"	11° 15' 45"	8° 04' 34"	59' 17"	16' 09,09"	235° 13' 38"	1,56%
04:00	14° 06' 12"	3° 01' 27"	11° 47' 47"	8° 20' 55"	59' 18"	16' 09,37"	235° 33' 40"	1,68%
05:00	14° 41' 51"	3° 04' 07"	12° 19' 53"	8° 37' 13"	59' 19"	16' 09,65"	235° 52' 45"	1,80%
06:00	15° 17' 31"	3° 06' 45"	12° 52' 03"	8° 53' 30"	59' 20"	16' 09,93"	236° 11' 01"	1,94%
07:00	15° 53' 12"	3° 09' 22"	13° 24' 16"	9° 09' 44"	59' 21"	16' 10,20"	236° 28' 32"	2,07%
08:00	16° 28' 54"	3° 11' 58"	13° 56' 34"	9° 25' 55"	59' 22"	16' 10,46"	236° 45' 24"	2,21%
09:00	17° 04' 38"	3° 14' 32"	14° 28' 55"	9° 42' 05"	59' 23"	16' 10,72"	237° 01' 41"	2,35%
10:00	17° 40' 22"	3° 17' 06"	15° 01' 21"	9° 58' 11"	59' 24"	16' 10,98"	237° 17' 28"	2,50%
11:00	18° 16' 08"	3° 19' 38"	15° 33' 50"	10° 14' 15"	59' 25"	16' 11,23"	237° 32' 48"	2,66%
12:00	18° 51' 55"	3° 22' 09"	16° 06' 24"	10° 30' 16"	59' 25"	16' 11,47"	237° 47' 44"	2,81%
13:00	19° 27' 44"	3° 24' 39"	16° 39' 02"	10° 46' 15"	59' 26"	16' 11,71"	238° 02' 19"	2,98%
14:00	20° 03' 33"	3° 27' 08"	17° 11' 44"	11° 02' 10"	59' 27"	16' 11,94"	238° 16' 35"	3,14%
15:00	20° 39' 24"	3° 29' 35"	17° 44' 31"	11° 18' 02"	59' 28"	16' 12,17"	238° 30' 35"	3,31%
16:00	21° 15' 16"	3° 32' 01"	18° 17' 22"	11° 33' 51"	59' 29"	16' 12,40"	238° 44' 21"	3,49%
17:00	21° 51' 08"	3° 34' 25"	18° 50' 18"	11° 49' 37"	59' 30"	16' 12,61"	238° 57' 54"	3,67%
18:00	22° 27' 02"	3° 36' 48"	19° 23' 19"	12° 05' 19"	59' 30"	16' 12,83"	239° 11' 16"	3,86%
19:00	23° 02' 57"	3° 39' 10"	19° 56' 23"	12° 20' 57"	59' 31"	16' 13,04"	239° 24' 28"	4,04%
20:00	23° 38' 52"	3° 41' 31"	20° 29' 33"	12° 36' 32"	59' 32"	16' 13,24"	239° 37' 33"	4,24%
21:00	24° 14' 49"	3° 43' 50"	21° 02' 47"	12° 52' 03"	59' 33"	16' 13,44"	239° 50' 30"	4,44%
22:00	24° 50' 47"	3° 46' 08"	21° 36' 07"	13° 07' 31"	59' 33"	16' 13,63"	240° 03' 22"	4,64%
23:00	25° 26' 45"	3° 48' 24"	22° 09' 31"	13° 22' 54"	59' 34"	16' 13,82"	240° 16' 09"	4,85%
24:00	26° 02' 45"	3° 50' 38"	22° 43' 00"	13° 38' 13"	59' 35"	16' 14,00"	240° 28' 52"	5,06%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	0° 22' 57"	0,40"	0° 21' 03"	0° 09' 08"	0,9960239	16' 03,46"	23° 26' 18"	-07m 18s
01:00	0° 25' 26"	0,41"	0° 23' 20"	0° 10' 07"	0,9960354	16' 03,45"	23° 26' 18"	-07m 17s
02:00	0° 27' 55"	0,41"	0° 25' 37"	0° 11' 07"	0,9960470	16' 03,44"	23° 26' 18"	-07m 16s
03:00	0° 30' 24"	0,41"	0° 27' 53"	0° 12' 06"	0,9960585	16' 03,43"	23° 26' 18"	-07m 15s
04:00	0° 32' 53"	0,42"	0° 30' 10"	0° 13' 05"	0,9960700	16' 03,42"	23° 26' 18"	-07m 15s
05:00	0° 35' 22"	0,42"	0° 32' 27"	0° 14' 05"	0,9960815	16' 03,41"	23° 26' 18"	-07m 14s
06:00	0° 37' 51"	0,42"	0° 34' 44"	0° 15' 04"	0,9960930	16' 03,39"	23° 26' 18"	-07m 13s
07:00	0° 40' 20"	0,43"	0° 37' 00"	0° 16' 03"	0,9961045	16' 03,38"	23° 26' 18"	-07m 12s
08:00	0° 42' 49"	0,43"	0° 39' 17"	0° 17' 02"	0,9961160	16' 03,37"	23° 26' 18"	-07m 12s
09:00	0° 45' 18"	0,43"	0° 41' 34"	0° 18' 02"	0,9961275	16' 03,36"	23° 26' 18"	-07m 11s
10:00	0° 47' 47"	0,44"	0° 43' 51"	0° 19' 01"	0,9961390	16' 03,35"	23° 26' 18"	-07m 10s
11:00	0° 50' 16"	0,44"	0° 46' 07"	0° 20' 00"	0,9961506	16' 03,34"	23° 26' 18"	-07m 09s
12:00	0° 52' 45"	0,45"	0° 48' 24"	0° 20' 59"	0,9961621	16' 03,33"	23° 26' 18"	-07m 09s
13:00	0° 55' 14"	0,45"	0° 50' 41"	0° 21' 59"	0,9961736	16' 03,32"	23° 26' 18"	-07m 08s
14:00	0° 57' 43"	0,45"	0° 52' 58"	0° 22' 58"	0,9961851	16' 03,30"	23° 26' 18"	-07m 07s
15:00	1° 00' 12"	0,45"	0° 55' 14"	0° 23' 57"	0,9961966	16' 03,29"	23° 26' 18"	-07m 06s
16:00	1° 02' 41"	0,46"	0° 57' 31"	0° 24' 57"	0,9962081	16' 03,28"	23° 26' 18"	-07m 06s
17:00	1° 05' 10"	0,46"	0° 59' 48"	0° 25' 56"	0,9962196	16' 03,27"	23° 26' 18"	-07m 05s
18:00	1° 07' 40"	0,46"	1° 02' 04"	0° 26' 55"	0,9962311	16' 03,26"	23° 26' 18"	-07m 04s
19:00	1° 10' 08"	0,47"	1° 04' 21"	0° 27' 54"	0,9962426	16' 03,25"	23° 26' 18"	-07m 03s
20:00	1° 12' 37"	0,47"	1° 06' 38"	0° 28' 54"	0,9962541	16' 03,24"	23° 26' 18"	-07m 03s
21:00	1° 15' 06"	0,47"	1° 08' 55"	0° 29' 53"	0,9962656	16' 03,23"	23° 26' 18"	-07m 02s
22:00	1° 17' 35"	0,48"	1° 11' 11"	0° 30' 52"	0,9962771	16' 03,22"	23° 26' 18"	-07m 01s
23:00	1° 20' 04"	0,48"	1° 13' 28"	0° 31' 51"	0,9962886	16' 03,20"	23° 26' 18"	-07m 00s
24:00	1° 22' 33"	0,48"	1° 15' 45"	0° 32' 51"	0,9963001	16' 03,19"	23° 26' 18"	-07m 00s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	26° 02' 45"	3° 50' 38"	22° 43' 00"	13° 38' 13"	59' 35"	16' 14,00"	240° 28' 52"	5,06%
01:00	26° 38' 45"	3° 52' 52"	23° 16' 34"	13° 53' 28"	59' 35"	16' 14,18"	240° 41' 32"	5,27%
02:00	27° 14' 46"	3° 55' 03"	23° 50' 13"	14° 08' 39"	59' 36"	16' 14,35"	240° 54' 10"	5,49%
03:00	27° 50' 48"	3° 57' 14"	24° 23' 57"	14° 23' 45"	59' 37"	16' 14,52"	241° 06' 47"	5,72%
04:00	28° 26' 51"	3° 59' 22"	24° 57' 46"	14° 38' 46"	59' 37"	16' 14,68"	241° 19' 22"	5,95%
05:00	29° 02' 54"	4° 01' 30"	25° 31' 40"	14° 53' 43"	59' 38"	16' 14,83"	241° 31' 58"	6,18%
06:00	29° 38' 58"	4° 03' 35"	26° 05' 40"	15° 08' 36"	59' 38"	16' 14,99"	241° 44' 34"	6,42%
07:00	30° 15' 03"	4° 05' 39"	26° 39' 44"	15° 23' 23"	59' 39"	16' 15,13"	241° 57' 10"	6,66%
08:00	30° 51' 09"	4° 07' 42"	27° 13' 54"	15° 38' 05"	59' 39"	16' 15,27"	242° 09' 48"	6,90%
09:00	31° 27' 15"	4° 09' 42"	27° 48' 10"	15° 52' 42"	59' 40"	16' 15,41"	242° 22' 28"	7,15%
10:00	32° 03' 22"	4° 11' 41"	28° 22' 31"	16° 07' 14"	59' 40"	16' 15,54"	242° 35' 10"	7,41%
11:00	32° 39' 30"	4° 13' 39"	28° 56' 57"	16° 21' 41"	59' 41"	16' 15,66"	242° 47' 54"	7,67%
12:00	33° 15' 38"	4° 15' 35"	29° 31' 29"	16° 36' 02"	59' 41"	16' 15,78"	243° 00' 42"	7,93%
13:00	33° 51' 46"	4° 17' 29"	30° 06' 06"	16° 50' 17"	59' 42"	16' 15,90"	243° 13' 33"	8,19%
14:00	34° 27' 55"	4° 19' 21"	30° 40' 49"	17° 04' 27"	59' 42"	16' 16,01"	243° 26' 27"	8,46%
15:00	35° 04' 05"	4° 21' 12"	31° 15' 37"	17° 18' 31"	59' 42"	16' 16,11"	243° 39' 25"	8,74%
16:00	35° 40' 15"	4° 23' 01"	31° 50' 31"	17° 32' 29"	59' 43"	16' 16,21"	243° 52' 28"	9,02%
17:00	36° 16' 26"	4° 24' 49"	32° 25' 31"	17° 46' 22"	59' 43"	16' 16,31"	244° 05' 34"	9,30%
18:00	36° 52' 37"	4° 26' 34"	33° 00' 36"	18° 00' 08"	59' 44"	16' 16,39"	244° 18' 46"	9,59%
19:00	37° 28' 48"	4° 28' 18"	33° 35' 47"	18° 13' 47"	59' 44"	16' 16,48"	244° 32' 02"	9,88%
20:00	38° 05' 00"	4° 30' 00"	34° 11' 04"	18° 27' 21"	59' 44"	16' 16,56"	244° 45' 23"	10,17%
21:00	38° 41' 12"	4° 31' 40"	34° 46' 26"	18° 40' 47"	59' 44"	16' 16,63"	244° 58' 49"	10,47%
22:00	39° 17' 25"	4° 33' 19"	35° 21' 55"	18° 54' 08"	59' 45"	16' 16,70"	245° 12' 21"	10,77%
23:00	39° 53' 38"	4° 34' 55"	35° 57' 28"	19° 07' 21"	59' 45"	16' 16,76"	245° 25' 58"	11,08%
24:00	40° 29' 51"	4° 36' 30"	36° 33' 08"	19° 20' 28"	59' 45"	16' 16,82"	245° 39' 41"	11,38%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	1° 22' 33"	0,48"	1° 15' 45"	0° 32' 51"	0,9963001	16' 03,19"	23° 26' 18"	-07m 00s
01:00	1° 25' 02"	0,48"	1° 18' 01"	0° 33' 50"	0,9963116	16' 03,18"	23° 26' 18"	-06m 59s
02:00	1° 27' 31"	0,49"	1° 20' 18"	0° 34' 49"	0,9963231	16' 03,17"	23° 26' 18"	-06m 58s
03:00	1° 30' 00"	0,49"	1° 22' 35"	0° 35' 48"	0,9963346	16' 03,16"	23° 26' 18"	-06m 57s
04:00	1° 32' 29"	0,49"	1° 24' 51"	0° 36' 48"	0,9963461	16' 03,15"	23° 26' 18"	-06m 57s
05:00	1° 34' 58"	0,49"	1° 27' 08"	0° 37' 47"	0,9963576	16' 03,14"	23° 26' 18"	-06m 56s
06:00	1° 37' 27"	0,50"	1° 29' 25"	0° 38' 46"	0,9963691	16' 03,13"	23° 26' 18"	-06m 55s
07:00	1° 39' 56"	0,50"	1° 31' 41"	0° 39' 45"	0,9963806	16' 03,12"	23° 26' 18"	-06m 55s
08:00	1° 42' 25"	0,50"	1° 33' 58"	0° 40' 44"	0,9963921	16' 03,10"	23° 26' 18"	-06m 54s
09:00	1° 44' 54"	0,50"	1° 36' 15"	0° 41' 44"	0,9964036	16' 03,09"	23° 26' 18"	-06m 53s
10:00	1° 47' 23"	0,51"	1° 38' 32"	0° 42' 43"	0,9964151	16' 03,08"	23° 26' 18"	-06m 52s
11:00	1° 49' 52"	0,51"	1° 40' 48"	0° 43' 42"	0,9964266	16' 03,07"	23° 26' 18"	-06m 52s
12:00	1° 52' 21"	0,51"	1° 43' 05"	0° 44' 41"	0,9964381	16' 03,06"	23° 26' 18"	-06m 51s
13:00	1° 54' 50"	0,51"	1° 45' 22"	0° 45' 41"	0,9964496	16' 03,05"	23° 26' 18"	-06m 50s
14:00	1° 57' 19"	0,51"	1° 47' 38"	0° 46' 40"	0,9964611	16' 03,04"	23° 26' 18"	-06m 49s
15:00	1° 59' 48"	0,52"	1° 49' 55"	0° 47' 39"	0,9964726	16' 03,03"	23° 26' 18"	-06m 49s
16:00	2° 02' 17"	0,52"	1° 52' 11"	0° 48' 38"	0,9964841	16' 03,02"	23° 26' 18"	-06m 48s
17:00	2° 04' 46"	0,52"	1° 54' 28"	0° 49' 37"	0,9964956	16' 03,00"	23° 26' 18"	-06m 47s
18:00	2° 07' 14"	0,52"	1° 56' 45"	0° 50' 37"	0,9965071	16' 02,99"	23° 26' 18"	-06m 46s
19:00	2° 09' 43"	0,52"	1° 59' 01"	0° 51' 36"	0,9965186	16' 02,98"	23° 26' 18"	-06m 46s
20:00	2° 12' 12"	0,52"	2° 01' 18"	0° 52' 35"	0,9965301	16' 02,97"	23° 26' 18"	-06m 45s
21:00	2° 14' 41"	0,53"	2° 03' 35"	0° 53' 34"	0,9965416	16' 02,96"	23° 26' 18"	-06m 44s
22:00	2° 17' 10"	0,53"	2° 05' 51"	0° 54' 33"	0,9965531	16' 02,95"	23° 26' 18"	-06m 43s
23:00	2° 19' 39"	0,53"	2° 08' 08"	0° 55' 33"	0,9965646	16' 02,94"	23° 26' 18"	-06m 43s
24:00	2° 22' 08"	0,53"	2° 10' 25"	0° 56' 32"	0,9965761	16' 02,93"	23° 26' 18"	-06m 42s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	40° 29' 51"	4° 36' 30"	36° 33' 08"	19° 20' 28"	59' 45"	16' 16,82"	245° 39' 41"	11,38%
01:00	41° 06' 04"	4° 38' 03"	37° 08' 54"	19° 33' 28"	59' 45"	16' 16,88"	245° 53' 29"	11,70%
02:00	41° 42' 17"	4° 39' 34"	37° 44' 45"	19° 46' 21"	59' 45"	16' 16,92"	246° 07' 24"	12,01%
03:00	42° 18' 31"	4° 41' 03"	38° 20' 43"	19° 59' 06"	59' 46"	16' 16,97"	246° 21' 24"	12,33%
04:00	42° 54' 45"	4° 42' 31"	38° 56' 46"	20° 11' 45"	59' 46"	16' 17,01"	246° 35' 31"	12,66%
05:00	43° 30' 59"	4° 43' 56"	39° 32' 54"	20° 24' 16"	59' 46"	16' 17,04"	246° 49' 43"	12,99%
06:00	44° 07' 13"	4° 45' 20"	40° 09' 09"	20° 36' 39"	59' 46"	16' 17,07"	247° 04' 02"	13,32%
07:00	44° 43' 28"	4° 46' 41"	40° 45' 30"	20° 48' 55"	59' 46"	16' 17,10"	247° 18' 28"	13,65%
08:00	45° 19' 42"	4° 48' 01"	41° 21' 56"	21° 01' 03"	59' 46"	16' 17,12"	247° 32' 59"	13,99%
09:00	45° 55' 57"	4° 49' 19"	41° 58' 28"	21° 13' 04"	59' 46"	16' 17,13"	247° 47' 37"	14,33%
10:00	46° 32' 11"	4° 50' 35"	42° 35' 06"	21° 24' 56"	59' 46"	16' 17,14"	248° 02' 22"	14,68%
11:00	47° 08' 25"	4° 51' 49"	43° 11' 50"	21° 36' 41"	59' 46"	16' 17,15"	248° 17' 13"	15,03%
12:00	47° 44' 40"	4° 53' 01"	43° 48' 40"	21° 48' 17"	59' 46"	16' 17,15"	248° 32' 11"	15,38%
13:00	48° 20' 54"	4° 54' 11"	44° 25' 35"	21° 59' 45"	59' 46"	16' 17,14"	248° 47' 15"	15,73%
14:00	48° 57' 09"	4° 55' 19"	45° 02' 37"	22° 11' 05"	59' 46"	16' 17,13"	249° 02' 26"	16,09%
15:00	49° 33' 23"	4° 56' 25"	45° 39' 43"	22° 22' 16"	59' 46"	16' 17,12"	249° 17' 43"	16,45%
16:00	50° 09' 37"	4° 57' 29"	46° 16' 56"	22° 33' 18"	59' 46"	16' 17,10"	249° 33' 07"	16,82%
17:00	50° 45' 51"	4° 58' 32"	46° 54' 14"	22° 44' 12"	59' 46"	16' 17,08"	249° 48' 38"	17,18%
18:00	51° 22' 05"	4° 59' 32"	47° 31' 38"	22° 54' 58"	59' 46"	16' 17,05"	250° 04' 15"	17,56%
19:00	51° 58' 19"	5° 00' 30"	48° 09' 08"	23° 05' 34"	59' 46"	16' 17,02"	250° 19' 59"	17,93%
20:00	52° 34' 32"	5° 01' 26"	48° 46' 43"	23° 16' 01"	59' 46"	16' 16,99"	250° 35' 49"	18,31%
21:00	53° 10' 45"	5° 02' 20"	49° 24' 23"	23° 26' 20"	59' 46"	16' 16,95"	250° 51' 46"	18,69%
22:00	53° 46' 59"	5° 03' 12"	50° 02' 10"	23° 36' 29"	59' 45"	16' 16,90"	251° 07' 49"	19,07%
23:00	54° 23' 11"	5° 04' 02"	50° 40' 01"	23° 46' 29"	59' 45"	16' 16,86"	251° 23' 59"	19,45%
24:00	54° 59' 24"	5° 04' 50"	51° 17' 58"	23° 56' 19"	59' 45"	16' 16,80"	251° 40' 15"	19,84%

23 Maret 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	2° 22' 08"	0,53"	2° 10' 25"	0° 56' 32"	0,9965761	16' 02,93"	23° 26' 18"	-06m 42s
01:00	2° 24' 37"	0,53"	2° 12' 41"	0° 57' 31"	0,9965876	16' 02,92"	23° 26' 18"	-06m 41s
02:00	2° 27' 06"	0,53"	2° 14' 58"	0° 58' 30"	0,9965991	16' 02,90"	23° 26' 18"	-06m 40s
03:00	2° 29' 34"	0,53"	2° 17' 15"	0° 59' 29"	0,9966106	16' 02,89"	23° 26' 18"	-06m 40s
04:00	2° 32' 03"	0,53"	2° 19' 31"	1° 00' 28"	0,9966221	16' 02,88"	23° 26' 18"	-06m 39s
05:00	2° 34' 32"	0,54"	2° 21' 48"	1° 01' 28"	0,9966336	16' 02,87"	23° 26' 18"	-06m 38s
06:00	2° 37' 01"	0,54"	2° 24' 04"	1° 02' 27"	0,9966451	16' 02,86"	23° 26' 18"	-06m 37s
07:00	2° 39' 30"	0,54"	2° 26' 21"	1° 03' 26"	0,9966566	16' 02,85"	23° 26' 18"	-06m 37s
08:00	2° 41' 59"	0,54"	2° 28' 38"	1° 04' 25"	0,9966681	16' 02,84"	23° 26' 18"	-06m 36s
09:00	2° 44' 28"	0,54"	2° 30' 54"	1° 05' 24"	0,9966796	16' 02,83"	23° 26' 18"	-06m 35s
10:00	2° 46' 56"	0,54"	2° 33' 11"	1° 06' 23"	0,9966911	16' 02,82"	23° 26' 18"	-06m 34s
11:00	2° 49' 25"	0,54"	2° 35' 28"	1° 07' 23"	0,9967026	16' 02,80"	23° 26' 18"	-06m 34s
12:00	2° 51' 54"	0,54"	2° 37' 44"	1° 08' 22"	0,9967141	16' 02,79"	23° 26' 18"	-06m 33s
13:00	2° 54' 23"	0,54"	2° 40' 01"	1° 09' 21"	0,9967256	16' 02,78"	23° 26' 18"	-06m 32s
14:00	2° 56' 52"	0,54"	2° 42' 17"	1° 10' 20"	0,9967371	16' 02,77"	23° 26' 18"	-06m 31s
15:00	2° 59' 21"	0,54"	2° 44' 34"	1° 11' 19"	0,9967486	16' 02,76"	23° 26' 18"	-06m 31s
16:00	3° 01' 50"	0,54"	2° 46' 51"	1° 12' 18"	0,9967601	16' 02,75"	23° 26' 18"	-06m 30s
17:00	3° 04' 18"	0,54"	2° 49' 07"	1° 13' 17"	0,9967717	16' 02,74"	23° 26' 18"	-06m 29s
18:00	3° 06' 47"	0,54"	2° 51' 24"	1° 14' 16"	0,9967832	16' 02,73"	23° 26' 18"	-06m 28s
19:00	3° 09' 16"	0,54"	2° 53' 40"	1° 15' 16"	0,9967947	16' 02,72"	23° 26' 18"	-06m 28s
20:00	3° 11' 45"	0,54"	2° 55' 57"	1° 16' 15"	0,9968062	16' 02,70"	23° 26' 18"	-06m 27s
21:00	3° 14' 14"	0,54"	2° 58' 14"	1° 17' 14"	0,9968177	16' 02,69"	23° 26' 18"	-06m 26s
22:00	3° 16' 42"	0,55"	3° 00' 30"	1° 18' 13"	0,9968292	16' 02,68"	23° 26' 18"	-06m 25s
23:00	3° 19' 11"	0,55"	3° 02' 47"	1° 19' 12"	0,9968407	16' 02,67"	23° 26' 18"	-06m 25s
24:00	3° 21' 40"	0,55"	3° 05' 03"	1° 20' 11"	0,9968522	16' 02,66"	23° 26' 18"	-06m 24s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	54° 59' 24"	5° 04' 50"	51° 17' 58"	23° 56' 19"	59' 45"	16' 16,80"	251° 40' 15"	19,84%
01:00	55° 35' 36"	5° 05' 37"	51° 56' 00"	24° 06' 00"	59' 45"	16' 16,75"	251° 56' 38"	20,23%
02:00	56° 11' 48"	5° 06' 21"	52° 34' 08"	24° 15' 32"	59' 45"	16' 16,68"	252° 13' 07"	20,63%
03:00	56° 47' 59"	5° 07' 02"	53° 12' 20"	24° 24' 54"	59' 44"	16' 16,62"	252° 29' 42"	21,03%
04:00	57° 24' 10"	5° 07' 42"	53° 50' 38"	24° 34' 06"	59' 44"	16' 16,55"	252° 46' 23"	21,43%
05:00	58° 00' 21"	5° 08' 20"	54° 29' 01"	24° 43' 08"	59' 44"	16' 16,48"	253° 03' 11"	21,83%
06:00	58° 36' 31"	5° 08' 56"	55° 07' 29"	24° 52' 01"	59' 44"	16' 16,40"	253° 20' 04"	22,23%
07:00	59° 12' 41"	5° 09' 30"	55° 46' 02"	25° 00' 43"	59' 43"	16' 16,32"	253° 37' 04"	22,64%
08:00	59° 48' 50"	5° 10' 02"	56° 24' 40"	25° 09' 15"	59' 43"	16' 16,23"	253° 54' 09"	23,05%
09:00	60° 24' 59"	5° 10' 31"	57° 03' 23"	25° 17' 38"	59' 43"	16' 16,14"	254° 11' 21"	23,46%
10:00	61° 01' 08"	5° 10' 59"	57° 42' 10"	25° 25' 49"	59' 42"	16' 16,05"	254° 28' 38"	23,88%
11:00	61° 37' 16"	5° 11' 24"	58° 21' 02"	25° 33' 51"	59' 42"	16' 15,95"	254° 46' 00"	24,29%
12:00	62° 13' 23"	5° 11' 48"	58° 59' 58"	25° 41' 42"	59' 42"	16' 15,85"	255° 03' 28"	24,71%
13:00	62° 49' 30"	5° 12' 09"	59° 38' 59"	25° 49' 23"	59' 41"	16' 15,74"	255° 21' 02"	25,13%
14:00	63° 25' 36"	5° 12' 28"	60° 18' 04"	25° 56' 53"	59' 41"	16' 15,64"	255° 38' 40"	25,56%
15:00	64° 01' 42"	5° 12' 46"	60° 57' 14"	26° 04' 12"	59' 40"	16' 15,52"	255° 56' 24"	25,98%
16:00	64° 37' 47"	5° 13' 01"	61° 36' 27"	26° 11' 21"	59' 40"	16' 15,41"	256° 14' 13"	26,41%
17:00	65° 13' 51"	5° 13' 14"	62° 15' 45"	26° 18' 19"	59' 39"	16' 15,29"	256° 32' 07"	26,84%
18:00	65° 49' 55"	5° 13' 25"	62° 55' 07"	26° 25' 06"	59' 39"	16' 15,16"	256° 50' 06"	27,28%
19:00	66° 25' 58"	5° 13' 34"	63° 34' 32"	26° 31' 42"	59' 39"	16' 15,04"	257° 08' 10"	27,71%
20:00	67° 02' 00"	5° 13' 41"	64° 14' 01"	26° 38' 07"	59' 38"	16' 14,91"	257° 26' 18"	28,15%
21:00	67° 38' 02"	5° 13' 46"	64° 53' 34"	26° 44' 21"	59' 38"	16' 14,77"	257° 44' 30"	28,58%
22:00	68° 14' 03"	5° 13' 48"	65° 33' 10"	26° 50' 24"	59' 37"	16' 14,64"	258° 02' 47"	29,02%
23:00	68° 50' 03"	5° 13' 49"	66° 12' 50"	26° 56' 16"	59' 37"	16' 14,50"	258° 21' 08"	29,47%
24:00	69° 26' 03"	5° 13' 48"	66° 52' 32"	27° 01' 57"	59' 36"	16' 14,35"	258° 39' 33"	29,91%

24 Maret 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	3° 21' 40"	0,55"	3° 05' 03"	1° 20' 11"	0,9968522	16' 02,66"	23° 26' 18"	-06m 24s
01:00	3° 24' 09"	0,54"	3° 07' 20"	1° 21' 10"	0,9968637	16' 02,65"	23° 26' 18"	-06m 23s
02:00	3° 26' 38"	0,54"	3° 09' 37"	1° 22' 09"	0,9968752	16' 02,64"	23° 26' 18"	-06m 22s
03:00	3° 29' 06"	0,54"	3° 11' 53"	1° 23' 08"	0,9968867	16' 02,63"	23° 26' 18"	-06m 22s
04:00	3° 31' 35"	0,54"	3° 14' 10"	1° 24' 07"	0,9968982	16' 02,62"	23° 26' 18"	-06m 21s
05:00	3° 34' 04"	0,54"	3° 16' 26"	1° 25' 07"	0,9969097	16' 02,60"	23° 26' 18"	-06m 20s
06:00	3° 36' 33"	0,54"	3° 18' 43"	1° 26' 06"	0,9969212	16' 02,59"	23° 26' 18"	-06m 19s
07:00	3° 39' 01"	0,54"	3° 20' 59"	1° 27' 05"	0,9969327	16' 02,58"	23° 26' 18"	-06m 19s
08:00	3° 41' 30"	0,54"	3° 23' 16"	1° 28' 04"	0,9969442	16' 02,57"	23° 26' 18"	-06m 18s
09:00	3° 43' 59"	0,54"	3° 25' 33"	1° 29' 03"	0,9969557	16' 02,56"	23° 26' 18"	-06m 17s
10:00	3° 46' 28"	0,54"	3° 27' 49"	1° 30' 02"	0,9969672	16' 02,55"	23° 26' 18"	-06m 16s
11:00	3° 48' 56"	0,54"	3° 30' 06"	1° 31' 01"	0,9969788	16' 02,54"	23° 26' 18"	-06m 16s
12:00	3° 51' 25"	0,54"	3° 32' 22"	1° 32' 00"	0,9969903	16' 02,53"	23° 26' 18"	-06m 15s
13:00	3° 53' 54"	0,54"	3° 34' 39"	1° 32' 59"	0,9970018	16' 02,52"	23° 26' 18"	-06m 14s
14:00	3° 56' 23"	0,54"	3° 36' 56"	1° 33' 58"	0,9970133	16' 02,50"	23° 26' 18"	-06m 13s
15:00	3° 58' 51"	0,54"	3° 39' 12"	1° 34' 57"	0,9970248	16' 02,49"	23° 26' 18"	-06m 13s
16:00	4° 01' 20"	0,54"	3° 41' 29"	1° 35' 56"	0,9970363	16' 02,48"	23° 26' 18"	-06m 12s
17:00	4° 03' 49"	0,54"	3° 43' 45"	1° 36' 55"	0,9970478	16' 02,47"	23° 26' 18"	-06m 11s
18:00	4° 06' 18"	0,53"	3° 46' 02"	1° 37' 54"	0,9970593	16' 02,46"	23° 26' 18"	-06m 10s
19:00	4° 08' 46"	0,53"	3° 48' 18"	1° 38' 53"	0,9970709	16' 02,45"	23° 26' 18"	-06m 10s
20:00	4° 11' 15"	0,53"	3° 50' 35"	1° 39' 52"	0,9970824	16' 02,44"	23° 26' 18"	-06m 09s
21:00	4° 13' 44"	0,53"	3° 52' 51"	1° 40' 51"	0,9970939	16' 02,43"	23° 26' 18"	-06m 08s
22:00	4° 16' 12"	0,53"	3° 55' 08"	1° 41' 50"	0,9971054	16' 02,42"	23° 26' 18"	-06m 07s
23:00	4° 18' 41"	0,53"	3° 57' 25"	1° 42' 49"	0,9971169	16' 02,40"	23° 26' 18"	-06m 07s
24:00	4° 21' 10"	0,53"	3° 59' 41"	1° 43' 48"	0,9971284	16' 02,39"	23° 26' 18"	-06m 06s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	69° 26' 03"	5° 13' 48"	66° 52' 32"	27° 01' 57"	59' 36"	16' 14,35"	258° 39' 33"	29,91%
01:00	70° 02' 01"	5° 13' 45"	67° 32' 18"	27° 07' 26"	59' 35"	16' 14,21"	258° 58' 01"	30,35%
02:00	70° 37' 59"	5° 13' 39"	68° 12' 07"	27° 12' 44"	59' 35"	16' 14,06"	259° 16' 34"	30,80%
03:00	71° 13' 56"	5° 13' 32"	68° 51' 59"	27° 17' 50"	59' 34"	16' 13,90"	259° 35' 10"	31,25%
04:00	71° 49' 53"	5° 13' 22"	69° 31' 53"	27° 22' 46"	59' 34"	16' 13,75"	259° 53' 49"	31,70%
05:00	72° 25' 48"	5° 13' 10"	70° 11' 50"	27° 27' 29"	59' 33"	16' 13,59"	260° 12' 32"	32,15%
06:00	73° 01' 43"	5° 12' 57"	70° 51' 50"	27° 32' 01"	59' 33"	16' 13,43"	260° 31' 18"	32,61%
07:00	73° 37' 37"	5° 12' 41"	71° 31' 52"	27° 36' 22"	59' 32"	16' 13,26"	260° 50' 06"	33,06%
08:00	74° 13' 30"	5° 12' 24"	72° 11' 56"	27° 40' 31"	59' 31"	16' 13,09"	261° 08' 58"	33,52%
09:00	74° 49' 22"	5° 12' 04"	72° 52' 02"	27° 44' 28"	59' 31"	16' 12,92"	261° 27' 51"	33,97%
10:00	75° 25' 13"	5° 11' 42"	73° 32' 09"	27° 48' 14"	59' 30"	16' 12,75"	261° 46' 48"	34,43%
11:00	76° 01' 03"	5° 11' 18"	74° 12' 19"	27° 51' 48"	59' 29"	16' 12,57"	262° 05' 46"	34,89%
12:00	76° 36' 52"	5° 10' 53"	74° 52' 30"	27° 55' 10"	59' 29"	16' 12,39"	262° 24' 47"	35,35%
13:00	77° 12' 41"	5° 10' 25"	75° 32' 43"	27° 58' 21"	59' 28"	16' 12,21"	262° 43' 49"	35,81%
14:00	77° 48' 28"	5° 09' 55"	76° 12' 57"	28° 01' 20"	59' 27"	16' 12,02"	263° 02' 53"	36,28%
15:00	78° 24' 15"	5° 09' 23"	76° 53' 12"	28° 04' 07"	59' 27"	16' 11,84"	263° 21' 58"	36,74%
16:00	79° 00' 00"	5° 08' 50"	77° 33' 28"	28° 06' 42"	59' 26"	16' 11,64"	263° 41' 05"	37,21%
17:00	79° 35' 44"	5° 08' 14"	78° 13' 44"	28° 09' 05"	59' 25"	16' 11,45"	264° 00' 13"	37,67%
18:00	80° 11' 28"	5° 07' 36"	78° 54' 02"	28° 11' 16"	59' 25"	16' 11,26"	264° 19' 22"	38,14%
19:00	80° 47' 10"	5° 06' 56"	79° 34' 20"	28° 13' 16"	59' 24"	16' 11,06"	264° 38' 31"	38,61%
20:00	81° 22' 52"	5° 06' 15"	80° 14' 38"	28° 15' 04"	59' 23"	16' 10,86"	264° 57' 41"	39,08%
21:00	81° 58' 32"	5° 05' 31"	80° 54' 57"	28° 16' 40"	59' 22"	16' 10,65"	265° 16' 52"	39,55%
22:00	82° 34' 11"	5° 04' 46"	81° 35' 15"	28° 18' 04"	59' 22"	16' 10,45"	265° 36' 02"	40,02%
23:00	83° 09' 50"	5° 03' 58"	82° 15' 34"	28° 19' 16"	59' 21"	16' 10,24"	265° 55' 13"	40,49%
24:00	83° 45' 27"	5° 03' 09"	82° 55' 52"	28° 20' 16"	59' 20"	16' 10,03"	266° 14' 23"	40,96%

25 Maret 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	4° 21' 10"	0,53"	3° 59' 41"	1° 43' 48"	0,9971284	16' 02,39"	23° 26' 18"	-06m 06s
01:00	4° 23' 39"	0,53"	4° 01' 58"	1° 44' 47"	0,9971400	16' 02,38"	23° 26' 18"	-06m 05s
02:00	4° 26' 07"	0,52"	4° 04' 14"	1° 45' 46"	0,9971515	16' 02,37"	23° 26' 18"	-06m 04s
03:00	4° 28' 36"	0,52"	4° 06' 31"	1° 46' 45"	0,9971630	16' 02,36"	23° 26' 18"	-06m 04s
04:00	4° 31' 05"	0,52"	4° 08' 47"	1° 47' 44"	0,9971745	16' 02,35"	23° 26' 18"	-06m 03s
05:00	4° 33' 33"	0,52"	4° 11' 04"	1° 48' 43"	0,9971861	16' 02,34"	23° 26' 18"	-06m 02s
06:00	4° 36' 02"	0,52"	4° 13' 20"	1° 49' 42"	0,9971976	16' 02,33"	23° 26' 18"	-06m 01s
07:00	4° 38' 31"	0,51"	4° 15' 37"	1° 50' 41"	0,9972091	16' 02,32"	23° 26' 18"	-06m 01s
08:00	4° 40' 59"	0,51"	4° 17' 53"	1° 51' 40"	0,9972206	16' 02,30"	23° 26' 18"	-06m 00s
09:00	4° 43' 28"	0,51"	4° 20' 10"	1° 52' 39"	0,9972322	16' 02,29"	23° 26' 18"	-05m 59s
10:00	4° 45' 57"	0,51"	4° 22' 27"	1° 53' 38"	0,9972437	16' 02,28"	23° 26' 18"	-05m 58s
11:00	4° 48' 25"	0,51"	4° 24' 43"	1° 54' 37"	0,9972552	16' 02,27"	23° 26' 18"	-05m 58s
12:00	4° 50' 54"	0,50"	4° 27' 00"	1° 55' 36"	0,9972668	16' 02,26"	23° 26' 18"	-05m 57s
13:00	4° 53' 23"	0,50"	4° 29' 16"	1° 56' 35"	0,9972783	16' 02,25"	23° 26' 18"	-05m 56s
14:00	4° 55' 51"	0,50"	4° 31' 33"	1° 57' 34"	0,9972898	16' 02,24"	23° 26' 18"	-05m 55s
15:00	4° 58' 20"	0,50"	4° 33' 49"	1° 58' 33"	0,9973013	16' 02,23"	23° 26' 18"	-05m 54s
16:00	5° 00' 49"	0,50"	4° 36' 06"	1° 59' 32"	0,9973129	16' 02,22"	23° 26' 18"	-05m 54s
17:00	5° 03' 17"	0,49"	4° 38' 22"	2° 00' 31"	0,9973244	16' 02,20"	23° 26' 18"	-05m 53s
18:00	5° 05' 46"	0,49"	4° 40' 39"	2° 01' 30"	0,9973360	16' 02,19"	23° 26' 18"	-05m 52s
19:00	5° 08' 14"	0,49"	4° 42' 55"	2° 02' 29"	0,9973475	16' 02,18"	23° 26' 18"	-05m 51s
20:00	5° 10' 43"	0,49"	4° 45' 12"	2° 03' 27"	0,9973590	16' 02,17"	23° 26' 18"	-05m 51s
21:00	5° 13' 12"	0,48"	4° 47' 28"	2° 04' 26"	0,9973706	16' 02,16"	23° 26' 18"	-05m 50s
22:00	5° 15' 40"	0,48"	4° 49' 45"	2° 05' 25"	0,9973821	16' 02,15"	23° 26' 18"	-05m 49s
23:00	5° 18' 09"	0,48"	4° 52' 02"	2° 06' 24"	0,9973937	16' 02,14"	23° 26' 18"	-05m 48s
24:00	5° 20' 37"	0,48"	4° 54' 18"	2° 07' 23"	0,9974052	16' 02,13"	23° 26' 18"	-05m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	83° 45' 27"	5° 03' 09"	82° 55' 52"	28° 20' 16"	59' 20"	16' 10,03"	266° 14' 23"	40,96%
01:00	84° 21' 03"	5° 02' 17"	83° 36' 10"	28° 21' 04"	59' 19"	16' 09,82"	266° 33' 33"	41,43%
02:00	84° 56' 38"	5° 01' 24"	84° 16' 27"	28° 21' 41"	59' 19"	16' 09,60"	266° 52' 42"	41,91%
03:00	85° 32' 12"	5° 00' 29"	84° 56' 44"	28° 22' 05"	59' 18"	16' 09,39"	267° 11' 50"	42,38%
04:00	86° 07' 45"	4° 59' 32"	85° 36' 59"	28° 22' 18"	59' 17"	16' 09,17"	267° 30' 58"	42,85%
05:00	86° 43' 16"	4° 58' 33"	86° 17' 14"	28° 22' 19"	59' 16"	16' 08,95"	267° 50' 04"	43,33%
06:00	87° 18' 47"	4° 57' 32"	86° 57' 27"	28° 22' 08"	59' 15"	16' 08,72"	268° 09' 09"	43,80%
07:00	87° 54' 16"	4° 56' 30"	87° 37' 39"	28° 21' 46"	59' 15"	16' 08,50"	268° 28' 12"	44,28%
08:00	88° 29' 45"	4° 55' 25"	88° 17' 49"	28° 21' 11"	59' 14"	16' 08,27"	268° 47' 14"	44,75%
09:00	89° 05' 12"	4° 54' 19"	88° 57' 58"	28° 20' 25"	59' 13"	16' 08,04"	269° 06' 14"	45,23%
10:00	89° 40' 38"	4° 53' 11"	89° 38' 05"	28° 19' 27"	59' 12"	16' 07,81"	269° 25' 11"	45,70%
11:00	90° 16' 03"	4° 52' 01"	90° 18' 09"	28° 18' 18"	59' 11"	16' 07,58"	269° 44' 06"	46,18%
12:00	90° 51' 26"	4° 50' 49"	90° 58' 12"	28° 16' 57"	59' 10"	16' 07,34"	270° 02' 59"	46,66%
13:00	91° 26' 49"	4° 49' 35"	91° 38' 13"	28° 15' 24"	59' 09"	16' 07,10"	270° 21' 48"	47,13%
14:00	92° 02' 10"	4° 48' 20"	92° 18' 11"	28° 13' 39"	59' 09"	16' 06,87"	270° 40' 35"	47,61%
15:00	92° 37' 30"	4° 47' 03"	92° 58' 06"	28° 11' 43"	59' 08"	16' 06,62"	270° 59' 19"	48,08%
16:00	93° 12' 49"	4° 45' 44"	93° 37' 59"	28° 09' 36"	59' 07"	16' 06,38"	271° 18' 00"	48,56%
17:00	93° 48' 06"	4° 44' 23"	94° 17' 48"	28° 07' 17"	59' 06"	16' 06,14"	271° 36' 37"	49,03%
18:00	94° 23' 23"	4° 43' 00"	94° 57' 35"	28° 04' 46"	59' 05"	16' 05,89"	271° 55' 10"	49,51%
19:00	94° 58' 38"	4° 41' 36"	95° 37' 19"	28° 02' 05"	59' 04"	16' 05,65"	272° 13' 40"	49,99%
20:00	95° 33' 52"	4° 40' 10"	96° 16' 59"	27° 59' 12"	59' 03"	16' 05,40"	272° 32' 05"	50,46%
21:00	96° 09' 05"	4° 38' 43"	96° 56' 36"	27° 56' 07"	59' 02"	16' 05,15"	272° 50' 27"	50,93%
22:00	96° 44' 16"	4° 37' 13"	97° 36' 10"	27° 52' 52"	59' 01"	16' 04,89"	273° 08' 44"	51,41%
23:00	97° 19' 26"	4° 35' 42"	98° 15' 39"	27° 49' 25"	59' 00"	16' 04,64"	273° 26' 56"	51,88%
24:00	97° 54' 35"	4° 34' 09"	98° 55' 05"	27° 45' 47"	58' 59"	16' 04,38"	273° 45' 04"	52,36%

26 Maret 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	5° 20' 37"	0,48"	4° 54' 18"	2° 07' 23"	0,9974052	16' 02,13"	23° 26' 18"	-05m 48s
01:00	5° 23' 06"	0,47"	4° 56' 35"	2° 08' 22"	0,9974168	16' 02,12"	23° 26' 18"	-05m 47s
02:00	5° 25' 35"	0,47"	4° 58' 51"	2° 09' 21"	0,9974283	16' 02,10"	23° 26' 18"	-05m 46s
03:00	5° 28' 03"	0,47"	5° 01' 08"	2° 10' 20"	0,9974399	16' 02,09"	23° 26' 18"	-05m 45s
04:00	5° 30' 32"	0,46"	5° 03' 24"	2° 11' 19"	0,9974514	16' 02,08"	23° 26' 18"	-05m 45s
05:00	5° 33' 00"	0,46"	5° 05' 41"	2° 12' 17"	0,9974630	16' 02,07"	23° 26' 18"	-05m 44s
06:00	5° 35' 29"	0,46"	5° 07' 57"	2° 13' 16"	0,9974745	16' 02,06"	23° 26' 18"	-05m 43s
07:00	5° 37' 58"	0,45"	5° 10' 14"	2° 14' 15"	0,9974861	16' 02,05"	23° 26' 18"	-05m 42s
08:00	5° 40' 26"	0,45"	5° 12' 30"	2° 15' 14"	0,9974976	16' 02,04"	23° 26' 18"	-05m 42s
09:00	5° 42' 55"	0,45"	5° 14' 47"	2° 16' 13"	0,9975092	16' 02,03"	23° 26' 18"	-05m 41s
10:00	5° 45' 23"	0,45"	5° 17' 03"	2° 17' 12"	0,9975207	16' 02,02"	23° 26' 18"	-05m 40s
11:00	5° 47' 52"	0,44"	5° 19' 20"	2° 18' 10"	0,9975323	16' 02,00"	23° 26' 18"	-05m 39s
12:00	5° 50' 20"	0,44"	5° 21' 36"	2° 19' 09"	0,9975439	16' 01,99"	23° 26' 18"	-05m 39s
13:00	5° 52' 49"	0,44"	5° 23' 53"	2° 20' 08"	0,9975554	16' 01,98"	23° 26' 18"	-05m 38s
14:00	5° 55' 17"	0,43"	5° 26' 09"	2° 21' 07"	0,9975670	16' 01,97"	23° 26' 18"	-05m 37s
15:00	5° 57' 46"	0,43"	5° 28' 26"	2° 22' 06"	0,9975786	16' 01,96"	23° 26' 18"	-05m 36s
16:00	6° 00' 15"	0,42"	5° 30' 42"	2° 23' 05"	0,9975901	16' 01,95"	23° 26' 18"	-05m 36s
17:00	6° 02' 43"	0,42"	5° 32' 59"	2° 24' 03"	0,9976017	16' 01,94"	23° 26' 18"	-05m 35s
18:00	6° 05' 12"	0,42"	5° 35' 15"	2° 25' 02"	0,9976133	16' 01,93"	23° 26' 18"	-05m 34s
19:00	6° 07' 40"	0,41"	5° 37' 32"	2° 26' 01"	0,9976248	16' 01,91"	23° 26' 18"	-05m 33s
20:00	6° 10' 09"	0,41"	5° 39' 48"	2° 27' 00"	0,9976364	16' 01,90"	23° 26' 18"	-05m 33s
21:00	6° 12' 37"	0,41"	5° 42' 05"	2° 27' 59"	0,9976480	16' 01,89"	23° 26' 18"	-05m 32s
22:00	6° 15' 06"	0,40"	5° 44' 21"	2° 28' 57"	0,9976596	16' 01,88"	23° 26' 18"	-05m 31s
23:00	6° 17' 34"	0,40"	5° 46' 38"	2° 29' 56"	0,9976712	16' 01,87"	23° 26' 18"	-05m 30s
24:00	6° 20' 03"	0,40"	5° 48' 54"	2° 30' 55"	0,9976827	16' 01,86"	23° 26' 18"	-05m 30s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	97° 54' 35"	4° 34' 09"	98° 55' 05"	27° 45' 47"	58' 59"	16' 04,38"	273° 45' 04"	52,36%
01:00	98° 29' 43"	4° 32' 35"	99° 34' 27"	27° 41' 58"	58' 58"	16' 04,13"	274° 03' 07"	52,83%
02:00	99° 04' 50"	4° 30' 59"	100° 13' 45"	27° 37' 58"	58' 58"	16' 03,87"	274° 21' 05"	53,30%
03:00	99° 39' 55"	4° 29' 21"	100° 52' 59"	27° 33' 48"	58' 57"	16' 03,61"	274° 38' 58"	53,77%
04:00	100° 14' 59"	4° 27' 42"	101° 32' 08"	27° 29' 26"	58' 56"	16' 03,35"	274° 56' 46"	54,24%
05:00	100° 50' 01"	4° 26' 01"	102° 11' 13"	27° 24' 53"	58' 55"	16' 03,09"	275° 14' 27"	54,71%
06:00	101° 25' 03"	4° 24' 19"	102° 50' 14"	27° 20' 10"	58' 54"	16' 02,82"	275° 32' 04"	55,18%
07:00	102° 00' 03"	4° 22' 35"	103° 29' 10"	27° 15' 16"	58' 53"	16' 02,56"	275° 49' 34"	55,65%
08:00	102° 35' 01"	4° 20' 49"	104° 08' 01"	27° 10' 12"	58' 52"	16' 02,29"	276° 06' 59"	56,12%
09:00	103° 09' 59"	4° 19' 02"	104° 46' 47"	27° 04' 57"	58' 51"	16' 02,02"	276° 24' 17"	56,59%
10:00	103° 44' 55"	4° 17' 13"	105° 25' 29"	26° 59' 32"	58' 50"	16' 01,75"	276° 41' 29"	57,05%
11:00	104° 19' 50"	4° 15' 23"	106° 04' 05"	26° 53' 56"	58' 49"	16' 01,48"	276° 58' 35"	57,52%
12:00	104° 54' 44"	4° 13' 31"	106° 42' 36"	26° 48' 10"	58' 48"	16' 01,21"	277° 15' 34"	57,99%
13:00	105° 29' 36"	4° 11' 38"	107° 21' 02"	26° 42' 14"	58' 47"	16' 00,94"	277° 32' 26"	58,45%
14:00	106° 04' 27"	4° 09' 43"	107° 59' 23"	26° 36' 07"	58' 46"	16' 00,66"	277° 49' 12"	58,91%
15:00	106° 39' 17"	4° 07' 47"	108° 37' 38"	26° 29' 51"	58' 45"	16' 00,39"	278° 05' 50"	59,37%
16:00	107° 14' 05"	4° 05' 49"	109° 15' 48"	26° 23' 24"	58' 44"	16' 00,11"	278° 22' 22"	59,83%
17:00	107° 48' 52"	4° 03' 50"	109° 53' 52"	26° 16' 48"	58' 43"	16' 00,00"	278° 38' 46"	60,29%
18:00	108° 23' 38"	4° 01' 49"	110° 31' 51"	26° 10' 02"	58' 42"	16' 00,00"	278° 55' 03"	60,75%
19:00	108° 58' 22"	3° 59' 47"	111° 09' 44"	26° 03' 06"	58' 41"	15' 59,28"	279° 11' 13"	61,21%
20:00	109° 33' 05"	3° 57' 44"	111° 47' 31"	25° 56' 01"	58' 40"	15' 59,00"	279° 27' 14"	61,66%
21:00	110° 07' 47"	3° 55' 39"	112° 25' 12"	25° 48' 46"	58' 39"	15' 58,72"	279° 43' 09"	62,12%
22:00	110° 42' 28"	3° 53' 33"	113° 02' 48"	25° 41' 22"	58' 38"	15' 58,43"	279° 58' 55"	62,57%
23:00	111° 17' 07"	3° 51' 26"	113° 40' 17"	25° 33' 48"	58' 37"	15' 58,15"	280° 14' 33"	63,02%
24:00	111° 51' 45"	3° 49' 17"	114° 17' 40"	25° 26' 05"	58' 36"	15' 57,87"	280° 30' 04"	63,47%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	6° 20' 03"	0,40"	5° 48' 54"	2° 30' 55"	0,9976827	16' 01,86"	23° 26' 18"	-05m 30s
01:00	6° 22' 31"	0,39"	5° 51' 11"	2° 31' 54"	0,9976943	16' 01,85"	23° 26' 18"	-05m 29s
02:00	6° 25' 00"	0,39"	5° 53' 27"	2° 32' 52"	0,9977059	16' 01,84"	23° 26' 18"	-05m 28s
03:00	6° 27' 28"	0,38"	5° 55' 44"	2° 33' 51"	0,9977175	16' 01,83"	23° 26' 18"	-05m 27s
04:00	6° 29' 57"	0,38"	5° 58' 01"	2° 34' 50"	0,9977291	16' 01,81"	23° 26' 18"	-05m 27s
05:00	6° 32' 25"	0,38"	6° 00' 17"	2° 35' 49"	0,9977407	16' 01,80"	23° 26' 18"	-05m 26s
06:00	6° 34' 54"	0,37"	6° 02' 34"	2° 36' 47"	0,9977523	16' 01,79"	23° 26' 18"	-05m 25s
07:00	6° 37' 22"	0,37"	6° 04' 50"	2° 37' 46"	0,9977639	16' 01,78"	23° 26' 18"	-05m 24s
08:00	6° 39' 51"	0,36"	6° 07' 07"	2° 38' 45"	0,9977755	16' 01,77"	23° 26' 18"	-05m 24s
09:00	6° 42' 19"	0,36"	6° 09' 23"	2° 39' 43"	0,9977871	16' 01,76"	23° 26' 18"	-05m 23s
10:00	6° 44' 47"	0,35"	6° 11' 40"	2° 40' 42"	0,9977987	16' 01,75"	23° 26' 18"	-05m 22s
11:00	6° 47' 16"	0,35"	6° 13' 56"	2° 41' 41"	0,9978103	16' 01,74"	23° 26' 18"	-05m 21s
12:00	6° 49' 44"	0,35"	6° 16' 13"	2° 42' 40"	0,9978219	16' 01,72"	23° 26' 18"	-05m 21s
13:00	6° 52' 13"	0,34"	6° 18' 29"	2° 43' 38"	0,9978335	16' 01,71"	23° 26' 18"	-05m 20s
14:00	6° 54' 41"	0,34"	6° 20' 46"	2° 44' 37"	0,9978451	16' 01,70"	23° 26' 18"	-05m 19s
15:00	6° 57' 10"	0,33"	6° 23' 02"	2° 45' 36"	0,9978567	16' 01,69"	23° 26' 18"	-05m 18s
16:00	6° 59' 38"	0,33"	6° 25' 19"	2° 46' 34"	0,9978683	16' 01,68"	23° 26' 18"	-05m 17s
17:00	7° 02' 07"	0,32"	6° 27' 35"	2° 47' 33"	0,9978799	16' 01,67"	23° 26' 18"	-05m 17s
18:00	7° 04' 35"	0,32"	6° 29' 52"	2° 48' 32"	0,9978915	16' 01,66"	23° 26' 18"	-05m 16s
19:00	7° 07' 03"	0,31"	6° 32' 08"	2° 49' 30"	0,9979031	16' 01,65"	23° 26' 18"	-05m 15s
20:00	7° 09' 32"	0,31"	6° 34' 25"	2° 50' 29"	0,9979148	16' 01,64"	23° 26' 18"	-05m 14s
21:00	7° 12' 00"	0,31"	6° 36' 41"	2° 51' 28"	0,9979264	16' 01,62"	23° 26' 18"	-05m 14s
22:00	7° 14' 29"	0,30"	6° 38' 58"	2° 52' 26"	0,9979380	16' 01,61"	23° 26' 18"	-05m 13s
23:00	7° 16' 57"	0,30"	6° 41' 14"	2° 53' 25"	0,9979496	16' 01,60"	23° 26' 18"	-05m 12s
24:00	7° 19' 25"	0,29"	6° 43' 31"	2° 54' 23"	0,9979613	16' 01,59"	23° 26' 18"	-05m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	111° 51' 45"	3° 49' 17"	114° 17' 40"	25° 26' 05"	58' 36"	15' 57,87"	280° 30' 04"	63,47%
01:00	112° 26' 21"	3° 47' 07"	114° 54' 58"	25° 18' 13"	58' 34"	15' 57,58"	280° 45' 26"	63,92%
02:00	113° 00' 56"	3° 44' 56"	115° 32' 09"	25° 10' 11"	58' 33"	15' 57,29"	281° 00' 40"	64,37%
03:00	113° 35' 30"	3° 42' 43"	116° 09' 14"	25° 02' 01"	58' 32"	15' 57,01"	281° 15' 45"	64,81%
04:00	114° 10' 02"	3° 40' 29"	116° 46' 13"	24° 53' 42"	58' 31"	15' 56,72"	281° 30' 43"	65,26%
05:00	114° 44' 34"	3° 38' 14"	117° 23' 05"	24° 45' 14"	58' 30"	15' 56,43"	281° 45' 31"	65,70%
06:00	115° 19' 03"	3° 35' 57"	117° 59' 52"	24° 36' 37"	58' 29"	15' 56,14"	282° 00' 11"	66,14%
07:00	115° 53' 32"	3° 33' 40"	118° 36' 32"	24° 27' 52"	58' 28"	15' 55,85"	282° 14' 42"	66,58%
08:00	116° 27' 59"	3° 31' 21"	119° 13' 05"	24° 18' 58"	58' 27"	15' 55,56"	282° 29' 05"	67,02%
09:00	117° 02' 25"	3° 29' 01"	119° 49' 32"	24° 09' 56"	58' 26"	15' 55,26"	282° 43' 18"	67,45%
10:00	117° 36' 49"	3° 26' 40"	120° 25' 53"	24° 00' 46"	58' 25"	15' 54,97"	282° 57' 23"	67,89%
11:00	118° 11' 13"	3° 24' 17"	121° 02' 07"	23° 51' 27"	58' 24"	15' 54,68"	283° 11' 18"	68,32%
12:00	118° 45' 34"	3° 21' 54"	121° 38' 15"	23° 42' 00"	58' 23"	15' 54,38"	283° 25' 04"	68,75%
13:00	119° 19' 55"	3° 19' 29"	122° 14' 17"	23° 32' 25"	58' 22"	15' 54,08"	283° 38' 41"	69,18%
14:00	119° 54' 14"	3° 17' 03"	122° 50' 12"	23° 22' 42"	58' 21"	15' 53,79"	283° 52' 09"	69,60%
15:00	120° 28' 32"	3° 14' 37"	123° 26' 00"	23° 12' 52"	58' 19"	15' 53,49"	284° 05' 27"	70,03%
16:00	121° 02' 48"	3° 12' 09"	124° 01' 42"	23° 02' 53"	58' 18"	15' 53,19"	284° 18' 36"	70,45%
17:00	121° 37' 04"	3° 09' 40"	124° 37' 17"	22° 52' 47"	58' 17"	15' 52,89"	284° 31' 35"	70,87%
18:00	122° 11' 17"	3° 07' 10"	125° 12' 46"	22° 42' 34"	58' 16"	15' 52,59"	284° 44' 25"	71,29%
19:00	122° 45' 30"	3° 04' 39"	125° 48' 08"	22° 32' 12"	58' 15"	15' 52,29"	284° 57' 05"	71,71%
20:00	123° 19' 41"	3° 02' 07"	126° 23' 24"	22° 21' 44"	58' 14"	15' 51,99"	285° 09' 35"	72,12%
21:00	123° 53' 51"	2° 59' 34"	126° 58' 33"	22° 11' 08"	58' 13"	15' 51,69"	285° 21' 55"	72,53%
22:00	124° 27' 59"	2° 57' 00"	127° 33' 36"	22° 00' 26"	58' 12"	15' 51,39"	285° 34' 06"	72,94%
23:00	125° 02' 07"	2° 54' 25"	128° 08' 32"	21° 49' 36"	58' 11"	15' 51,09"	285° 46' 07"	73,35%
24:00	125° 36' 12"	2° 51' 49"	128° 43' 21"	21° 38' 39"	58' 10"	15' 50,78"	285° 57' 57"	73,76%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	7° 19' 25"	0,29"	6° 43' 31"	2° 54' 23"	0,9979613	16' 01,59"	23° 26' 18"	-05m 11s
01:00	7° 21' 54"	0,29"	6° 45' 47"	2° 55' 22"	0,9979729	16' 01,58"	23° 26' 18"	-05m 11s
02:00	7° 24' 22"	0,28"	6° 48' 04"	2° 56' 21"	0,9979845	16' 01,57"	23° 26' 18"	-05m 10s
03:00	7° 26' 51"	0,28"	6° 50' 20"	2° 57' 19"	0,9979962	16' 01,56"	23° 26' 18"	-05m 09s
04:00	7° 29' 19"	0,27"	6° 52' 37"	2° 58' 18"	0,9980078	16' 01,55"	23° 26' 18"	-05m 08s
05:00	7° 31' 47"	0,27"	6° 54' 53"	2° 59' 16"	0,9980194	16' 01,53"	23° 26' 18"	-05m 08s
06:00	7° 34' 16"	0,26"	6° 57' 10"	3° 00' 15"	0,9980311	16' 01,52"	23° 26' 18"	-05m 07s
07:00	7° 36' 44"	0,26"	6° 59' 26"	3° 01' 14"	0,9980427	16' 01,51"	23° 26' 18"	-05m 06s
08:00	7° 39' 13"	0,25"	7° 01' 43"	3° 02' 12"	0,9980544	16' 01,50"	23° 26' 18"	-05m 05s
09:00	7° 41' 41"	0,25"	7° 03' 59"	3° 03' 11"	0,9980660	16' 01,49"	23° 26' 18"	-05m 05s
10:00	7° 44' 09"	0,24"	7° 06' 16"	3° 04' 09"	0,9980777	16' 01,48"	23° 26' 18"	-05m 04s
11:00	7° 46' 38"	0,24"	7° 08' 32"	3° 05' 08"	0,9980893	16' 01,47"	23° 26' 18"	-05m 03s
12:00	7° 49' 06"	0,23"	7° 10' 49"	3° 06' 06"	0,9981010	16' 01,46"	23° 26' 18"	-05m 02s
13:00	7° 51' 34"	0,23"	7° 13' 05"	3° 07' 05"	0,9981126	16' 01,44"	23° 26' 18"	-05m 02s
14:00	7° 54' 03"	0,22"	7° 15' 22"	3° 08' 03"	0,9981243	16' 01,43"	23° 26' 18"	-05m 01s
15:00	7° 56' 31"	0,22"	7° 17' 38"	3° 09' 02"	0,9981360	16' 01,42"	23° 26' 18"	-05m 00s
16:00	7° 58' 59"	0,21"	7° 19' 55"	3° 10' 00"	0,9981476	16' 01,41"	23° 26' 18"	-04m 59s
17:00	8° 01' 28"	0,21"	7° 22' 11"	3° 10' 59"	0,9981593	16' 01,40"	23° 26' 18"	-04m 59s
18:00	8° 03' 56"	0,20"	7° 24' 28"	3° 11' 58"	0,9981709	16' 01,39"	23° 26' 18"	-04m 58s
19:00	8° 06' 24"	0,20"	7° 26' 44"	3° 12' 56"	0,9981826	16' 01,38"	23° 26' 18"	-04m 57s
20:00	8° 08' 53"	0,19"	7° 29' 01"	3° 13' 54"	0,9981943	16' 01,37"	23° 26' 18"	-04m 56s
21:00	8° 11' 21"	0,19"	7° 31' 17"	3° 14' 53"	0,9982060	16' 01,35"	23° 26' 18"	-04m 56s
22:00	8° 13' 49"	0,18"	7° 33' 34"	3° 15' 51"	0,9982176	16' 01,34"	23° 26' 18"	-04m 55s
23:00	8° 16' 18"	0,17"	7° 35' 50"	3° 16' 50"	0,9982293	16' 01,33"	23° 26' 18"	-04m 54s
24:00	8° 18' 46"	0,17"	7° 38' 07"	3° 17' 48"	0,9982410	16' 01,32"	23° 26' 18"	-04m 53s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	125° 36' 12"	2° 51' 49"	128° 43' 21"	21° 38' 39"	58' 10"	15' 50,78"	285° 57' 57"	73,76%
01:00	126° 10' 17"	2° 49' 13"	129° 18' 05"	21° 27' 35"	58' 08"	15' 50,48"	286° 09' 38"	74,16%
02:00	126° 44' 20"	2° 46' 35"	129° 52' 41"	21° 16' 25"	58' 07"	15' 50,17"	286° 21' 08"	74,56%
03:00	127° 18' 22"	2° 43' 57"	130° 27' 11"	21° 05' 08"	58' 06"	15' 49,87"	286° 32' 28"	74,96%
04:00	127° 52' 22"	2° 41' 17"	131° 01' 35"	20° 53' 44"	58' 05"	15' 49,56"	286° 43' 38"	75,36%
05:00	128° 26' 22"	2° 38' 37"	131° 35' 52"	20° 42' 14"	58' 04"	15' 49,25"	286° 54' 38"	75,75%
06:00	129° 00' 19"	2° 35' 56"	132° 10' 03"	20° 30' 38"	58' 03"	15' 48,95"	287° 05' 27"	76,14%
07:00	129° 34' 16"	2° 33' 14"	132° 44' 08"	20° 18' 55"	58' 02"	15' 48,64"	287° 16' 06"	76,53%
08:00	130° 08' 11"	2° 30' 31"	133° 18' 06"	20° 07' 07"	58' 01"	15' 48,33"	287° 26' 35"	76,92%
09:00	130° 42' 05"	2° 27' 48"	133° 51' 58"	19° 55' 12"	57' 59"	15' 48,02"	287° 36' 53"	77,30%
10:00	131° 15' 58"	2° 25' 04"	134° 25' 44"	19° 43' 11"	57' 58"	15' 47,71"	287° 47' 00"	77,68%
11:00	131° 49' 49"	2° 22' 19"	134° 59' 23"	19° 31' 04"	57' 57"	15' 47,40"	287° 56' 57"	78,06%
12:00	132° 23' 39"	2° 19' 33"	135° 32' 56"	19° 18' 52"	57' 56"	15' 47,09"	288° 06' 43"	78,44%
13:00	132° 57' 28"	2° 16' 47"	136° 06' 23"	19° 06' 33"	57' 55"	15' 46,78"	288° 16' 18"	78,81%
14:00	133° 31' 15"	2° 14' 00"	136° 39' 43"	18° 54' 10"	57' 54"	15' 46,46"	288° 25' 43"	79,18%
15:00	134° 05' 01"	2° 11' 12"	137° 12' 58"	18° 41' 40"	57' 53"	15' 46,15"	288° 34' 56"	79,55%
16:00	134° 38' 45"	2° 08' 24"	137° 46' 07"	18° 29' 06"	57' 51"	15' 45,84"	288° 43' 59"	79,92%
17:00	135° 12' 29"	2° 05' 35"	138° 19' 09"	18° 16' 26"	57' 50"	15' 45,52"	288° 52' 51"	80,28%
18:00	135° 46' 11"	2° 02' 45"	138° 52' 06"	18° 03' 41"	57' 49"	15' 45,21"	289° 01' 32"	80,64%
19:00	136° 19' 52"	1° 59' 55"	139° 24' 56"	17° 50' 51"	57' 48"	15' 44,89"	289° 10' 02"	81,00%
20:00	136° 53' 31"	1° 57' 04"	139° 57' 41"	17° 37' 55"	57' 47"	15' 44,58"	289° 18' 20"	81,35%
21:00	137° 27' 09"	1° 54' 13"	140° 30' 19"	17° 24' 55"	57' 46"	15' 44,26"	289° 26' 28"	81,70%
22:00	138° 00' 46"	1° 51' 21"	141° 02' 52"	17° 11' 50"	57' 44"	15' 43,95"	289° 34' 24"	82,05%
23:00	138° 34' 21"	1° 48' 29"	141° 35' 20"	16° 58' 40"	57' 43"	15' 43,63"	289° 42' 08"	82,40%
24:00	139° 07' 56"	1° 45' 36"	142° 07' 41"	16° 45' 26"	57' 42"	15' 43,31"	289° 49' 42"	82,74%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	8° 18' 46"	0,17"	7° 38' 07"	3° 17' 48"	0,9982410	16' 01,32"	23° 26' 18"	-04m 53s
01:00	8° 21' 14"	0,16"	7° 40' 24"	3° 18' 47"	0,9982527	16' 01,31"	23° 26' 18"	-04m 53s
02:00	8° 23' 43"	0,16"	7° 42' 40"	3° 19' 45"	0,9982644	16' 01,30"	23° 26' 18"	-04m 52s
03:00	8° 26' 11"	0,15"	7° 44' 57"	3° 20' 44"	0,9982761	16' 01,29"	23° 26' 18"	-04m 51s
04:00	8° 28' 39"	0,15"	7° 47' 13"	3° 21' 42"	0,9982878	16' 01,28"	23° 26' 18"	-04m 50s
05:00	8° 31' 07"	0,14"	7° 49' 30"	3° 22' 41"	0,9982995	16' 01,26"	23° 26' 18"	-04m 50s
06:00	8° 33' 36"	0,14"	7° 51' 46"	3° 23' 39"	0,9983112	16' 01,25"	23° 26' 18"	-04m 49s
07:00	8° 36' 04"	0,13"	7° 54' 03"	3° 24' 37"	0,9983228	16' 01,24"	23° 26' 18"	-04m 48s
08:00	8° 38' 32"	0,13"	7° 56' 19"	3° 25' 36"	0,9983346	16' 01,23"	23° 26' 18"	-04m 47s
09:00	8° 41' 00"	0,12"	7° 58' 36"	3° 26' 34"	0,9983463	16' 01,22"	23° 26' 18"	-04m 46s
10:00	8° 43' 29"	0,11"	8° 00' 52"	3° 27' 33"	0,9983580	16' 01,21"	23° 26' 18"	-04m 46s
11:00	8° 45' 57"	0,11"	8° 03' 09"	3° 28' 31"	0,9983697	16' 01,20"	23° 26' 18"	-04m 45s
12:00	8° 48' 25"	0,10"	8° 05' 25"	3° 29' 29"	0,9983814	16' 01,19"	23° 26' 18"	-04m 44s
13:00	8° 50' 54"	0,10"	8° 07' 42"	3° 30' 28"	0,9983931	16' 01,17"	23° 26' 18"	-04m 43s
14:00	8° 53' 22"	0,09"	8° 09' 58"	3° 31' 26"	0,9984048	16' 01,16"	23° 26' 18"	-04m 43s
15:00	8° 55' 50"	0,09"	8° 12' 15"	3° 32' 25"	0,9984165	16' 01,15"	23° 26' 18"	-04m 42s
16:00	8° 58' 18"	0,08"	8° 14' 31"	3° 33' 23"	0,9984283	16' 01,14"	23° 26' 18"	-04m 41s
17:00	9° 00' 46"	0,08"	8° 16' 48"	3° 34' 21"	0,9984400	16' 01,13"	23° 26' 18"	-04m 40s
18:00	9° 03' 15"	0,07"	8° 19' 05"	3° 35' 20"	0,9984517	16' 01,12"	23° 26' 18"	-04m 40s
19:00	9° 05' 43"	0,06"	8° 21' 21"	3° 36' 18"	0,9984634	16' 01,11"	23° 26' 18"	-04m 39s
20:00	9° 08' 11"	0,06"	8° 23' 38"	3° 37' 16"	0,9984752	16' 01,10"	23° 26' 18"	-04m 38s
21:00	9° 10' 39"	0,05"	8° 25' 54"	3° 38' 15"	0,9984869	16' 01,08"	23° 26' 18"	-04m 37s
22:00	9° 13' 08"	0,05"	8° 28' 11"	3° 39' 13"	0,9984986	16' 01,07"	23° 26' 18"	-04m 37s
23:00	9° 15' 36"	0,04"	8° 30' 27"	3° 40' 11"	0,9985104	16' 01,06"	23° 26' 18"	-04m 36s
24:00	9° 18' 04"	0,04"	8° 32' 44"	3° 41' 09"	0,9985221	16' 01,05"	23° 26' 18"	-04m 35s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	139° 07' 56"	1° 45' 36"	142° 07' 41"	16° 45' 26"	57' 42"	15' 43,31"	289° 49' 42"	82,74%
01:00	139° 41' 29"	1° 42' 42"	142° 39' 57"	16° 32' 07"	57' 41"	15' 42,99"	289° 57' 04"	83,08%
02:00	140° 15' 00"	1° 39' 48"	143° 12' 07"	16° 18' 44"	57' 40"	15' 42,67"	290° 04' 14"	83,42%
03:00	140° 48' 30"	1° 36' 54"	143° 44' 12"	16° 05' 16"	57' 39"	15' 42,35"	290° 11' 13"	83,75%
04:00	141° 21' 59"	1° 33' 59"	144° 16' 11"	15° 51' 44"	57' 37"	15' 42,03"	290° 18' 00"	84,08%
05:00	141° 55' 27"	1° 31' 04"	144° 48' 05"	15° 38' 08"	57' 36"	15' 41,71"	290° 24' 35"	84,41%
06:00	142° 28' 54"	1° 28' 09"	145° 19' 53"	15° 24' 28"	57' 35"	15' 41,39"	290° 30' 59"	84,74%
07:00	143° 02' 19"	1° 25' 13"	145° 51' 36"	15° 10' 43"	57' 34"	15' 41,07"	290° 37' 10"	85,06%
08:00	143° 35' 42"	1° 22' 16"	146° 23' 14"	14° 56' 55"	57' 33"	15' 40,75"	290° 43' 10"	85,38%
09:00	144° 09' 05"	1° 19' 19"	146° 54' 46"	14° 43' 03"	57' 32"	15' 40,43"	290° 48' 57"	85,70%
10:00	144° 42' 26"	1° 16' 22"	147° 26' 14"	14° 29' 08"	57' 30"	15' 40,11"	290° 54' 32"	86,01%
11:00	145° 15' 46"	1° 13' 25"	147° 57' 36"	14° 15' 08"	57' 29"	15' 39,78"	290° 59' 55"	86,32%
12:00	145° 49' 05"	1° 10' 27"	148° 28' 53"	14° 01' 05"	57' 28"	15' 39,46"	291° 05' 05"	86,63%
13:00	146° 22' 22"	1° 07' 30"	149° 00' 05"	13° 46' 59"	57' 27"	15' 39,14"	291° 10' 03"	86,93%
14:00	146° 55' 38"	1° 04' 31"	149° 31' 13"	13° 32' 49"	57' 26"	15' 38,81"	291° 14' 48"	87,23%
15:00	147° 28' 53"	1° 01' 33"	150° 02' 15"	13° 18' 36"	57' 24"	15' 38,49"	291° 19' 20"	87,53%
16:00	148° 02' 06"	0° 58' 34"	150° 33' 13"	13° 04' 19"	57' 23"	15' 38,16"	291° 23' 40"	87,82%
17:00	148° 35' 19"	0° 55' 35"	151° 04' 06"	12° 50' 00"	57' 22"	15' 37,84"	291° 27' 46"	88,11%
18:00	149° 08' 30"	0° 52' 36"	151° 34' 54"	12° 35' 37"	57' 21"	15' 37,51"	291° 31' 39"	88,40%
19:00	149° 41' 39"	0° 49' 37"	152° 05' 38"	12° 21' 12"	57' 20"	15' 37,18"	291° 35' 19"	88,68%
20:00	150° 14' 48"	0° 46' 38"	152° 36' 17"	12° 06' 43"	57' 18"	15' 36,86"	291° 38' 45"	88,96%
21:00	150° 47' 55"	0° 43' 38"	153° 06' 52"	11° 52' 12"	57' 17"	15' 36,53"	291° 41' 58"	89,24%
22:00	151° 21' 00"	0° 40' 39"	153° 37' 22"	11° 37' 38"	57' 16"	15' 36,20"	291° 44' 56"	89,52%
23:00	151° 54' 05"	0° 37' 39"	154° 07' 48"	11° 23' 02"	57' 15"	15' 35,87"	291° 47' 41"	89,79%
24:00	152° 27' 08"	0° 34' 39"	154° 38' 10"	11° 08' 22"	57' 14"	15' 35,55"	291° 50' 11"	90,05%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	9° 18' 04"	0,04"	8° 32' 44"	3° 41' 09"	0,9985221	16' 01,05"	23° 26' 18"	-04m 35s
01:00	9° 20' 32"	0,03"	8° 35' 00"	3° 42' 08"	0,9985339	16' 01,04"	23° 26' 18"	-04m 34s
02:00	9° 23' 00"	0,03"	8° 37' 17"	3° 43' 06"	0,9985456	16' 01,03"	23° 26' 18"	-04m 34s
03:00	9° 25' 29"	0,02"	8° 39' 33"	3° 44' 04"	0,9985574	16' 01,02"	23° 26' 18"	-04m 33s
04:00	9° 27' 57"	0,01"	8° 41' 50"	3° 45' 03"	0,9985691	16' 01,01"	23° 26' 18"	-04m 32s
05:00	9° 30' 25"	0,01"	8° 44' 07"	3° 46' 01"	0,9985809	16' 00,99"	23° 26' 18"	-04m 31s
06:00	9° 32' 53"	0,00"	8° 46' 23"	3° 46' 59"	0,9985926	16' 00,98"	23° 26' 18"	-04m 31s
07:00	9° 35' 21"	-0,00"	8° 48' 40"	3° 47' 57"	0,9986044	16' 00,97"	23° 26' 18"	-04m 30s
08:00	9° 37' 50"	-0,01"	8° 50' 56"	3° 48' 56"	0,9986161	16' 00,96"	23° 26' 18"	-04m 29s
09:00	9° 40' 18"	-0,01"	8° 53' 13"	3° 49' 54"	0,9986279	16' 00,95"	23° 26' 18"	-04m 28s
10:00	9° 42' 46"	-0,02"	8° 55' 29"	3° 50' 52"	0,9986397	16' 00,94"	23° 26' 18"	-04m 28s
11:00	9° 45' 14"	-0,03"	8° 57' 46"	3° 51' 50"	0,9986514	16' 00,93"	23° 26' 18"	-04m 27s
12:00	9° 47' 42"	-0,03"	9° 00' 02"	3° 52' 48"	0,9986632	16' 00,91"	23° 26' 18"	-04m 26s
13:00	9° 50' 10"	-0,04"	9° 02' 19"	3° 53' 47"	0,9986750	16' 00,90"	23° 26' 18"	-04m 25s
14:00	9° 52' 39"	-0,04"	9° 04' 36"	3° 54' 45"	0,9986868	16' 00,89"	23° 26' 18"	-04m 25s
15:00	9° 55' 07"	-0,05"	9° 06' 52"	3° 55' 43"	0,9986985	16' 00,88"	23° 26' 18"	-04m 24s
16:00	9° 57' 35"	-0,05"	9° 09' 09"	3° 56' 41"	0,9987103	16' 00,87"	23° 26' 18"	-04m 23s
17:00	10° 00' 03"	-0,06"	9° 11' 25"	3° 57' 39"	0,9987221	16' 00,86"	23° 26' 18"	-04m 22s
18:00	10° 02' 31"	-0,07"	9° 13' 42"	3° 58' 38"	0,9987339	16' 00,85"	23° 26' 18"	-04m 22s
19:00	10° 04' 59"	-0,07"	9° 15' 58"	3° 59' 36"	0,9987457	16' 00,84"	23° 26' 18"	-04m 21s
20:00	10° 07' 27"	-0,08"	9° 18' 15"	4° 00' 34"	0,9987575	16' 00,82"	23° 26' 18"	-04m 20s
21:00	10° 09' 56"	-0,08"	9° 20' 32"	4° 01' 32"	0,9987693	16' 00,81"	23° 26' 18"	-04m 19s
22:00	10° 12' 24"	-0,09"	9° 22' 48"	4° 02' 30"	0,9987811	16' 00,80"	23° 26' 18"	-04m 19s
23:00	10° 14' 52"	-0,09"	9° 25' 05"	4° 03' 28"	0,9987929	16' 00,79"	23° 26' 18"	-04m 18s
24:00	10° 17' 20"	-0,10"	9° 27' 21"	4° 04' 26"	0,9988047	16' 00,78"	23° 26' 18"	-04m 17s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	152° 27' 08"	0° 34' 39"	154° 38' 10"	11° 08' 22"	57' 14"	15' 35,55"	291° 50' 11"	90,05%
01:00	153° 00' 10"	0° 31' 39"	155° 08' 28"	10° 53' 41"	57' 12"	15' 35,22"	291° 52' 27"	90,32%
02:00	153° 33' 11"	0° 28' 39"	155° 38' 41"	10° 38' 57"	57' 11"	15' 34,89"	291° 54' 28"	90,58%
03:00	154° 06' 10"	0° 25' 39"	156° 08' 50"	10° 24' 10"	57' 10"	15' 34,56"	291° 56' 14"	90,84%
04:00	154° 39' 09"	0° 22' 39"	156° 38' 56"	10° 09' 22"	57' 09"	15' 34,23"	291° 57' 45"	91,09%
05:00	155° 12' 05"	0° 19' 40"	157° 08' 57"	9° 54' 31"	57' 08"	15' 33,90"	291° 59' 00"	91,34%
06:00	155° 45' 01"	0° 16' 40"	157° 38' 55"	9° 39' 38"	57' 06"	15' 33,57"	292° 00' 00"	91,59%
07:00	156° 17' 55"	0° 13' 40"	158° 08' 49"	9° 24' 43"	57' 05"	15' 33,23"	292° 00' 43"	91,83%
08:00	156° 50' 48"	0° 10' 40"	158° 38' 39"	9° 09' 46"	57' 04"	15' 32,90"	292° 01' 10"	92,07%
09:00	157° 23' 40"	0° 07' 40"	159° 08' 25"	8° 54' 48"	57' 03"	15' 32,57"	292° 01' 20"	92,31%
10:00	157° 56' 31"	0° 04' 40"	159° 38' 08"	8° 39' 47"	57' 01"	15' 32,24"	292° 01' 13"	92,54%
11:00	158° 29' 20"	0° 01' 41"	160° 07' 48"	8° 24' 45"	57' 00"	15' 31,91"	292° 00' 49"	92,77%
12:00	159° 02' 08"	-0° 01' 19"	160° 37' 24"	8° 09' 41"	56' 59"	15' 31,57"	292° 00' 07"	93,00%
13:00	159° 34' 55"	-0° 04' 18"	161° 06' 56"	7° 54' 36"	56' 58"	15' 31,24"	291° 59' 06"	93,22%
14:00	160° 07' 40"	-0° 07' 17"	161° 36' 26"	7° 39' 29"	56' 57"	15' 30,91"	291° 57' 46"	93,44%
15:00	160° 40' 25"	-0° 10' 16"	162° 05' 52"	7° 24' 21"	56' 55"	15' 30,57"	291° 56' 07"	93,66%
16:00	161° 13' 08"	-0° 13' 15"	162° 35' 14"	7° 09' 12"	56' 54"	15' 30,24"	291° 54' 08"	93,87%
17:00	161° 45' 49"	-0° 16' 14"	163° 04' 34"	6° 54' 01"	56' 53"	15' 29,91"	291° 51' 48"	94,08%
18:00	162° 18' 30"	-0° 19' 12"	163° 33' 51"	6° 38' 49"	56' 52"	15' 29,57"	291° 49' 07"	94,28%
19:00	162° 51' 09"	-0° 22' 11"	164° 03' 05"	6° 23' 36"	56' 50"	15' 29,24"	291° 46' 04"	94,48%
20:00	163° 23' 47"	-0° 25' 09"	164° 32' 16"	6° 08' 22"	56' 49"	15' 28,90"	291° 42' 39"	94,68%
21:00	163° 56' 23"	-0° 28' 06"	165° 01' 24"	5° 53' 07"	56' 48"	15' 28,57"	291° 38' 50"	94,88%
22:00	164° 28' 59"	-0° 31' 04"	165° 30' 29"	5° 37' 51"	56' 47"	15' 28,23"	291° 34' 37"	95,07%
23:00	165° 01' 33"	-0° 34' 01"	165° 59' 32"	5° 22' 34"	56' 46"	15' 27,90"	291° 29' 59"	95,25%
24:00	165° 34' 06"	-0° 36' 58"	166° 28' 32"	5° 07' 16"	56' 44"	15' 27,56"	291° 24' 54"	95,44%

31 Maret 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	10° 17' 20"	-0,10"	9° 27' 21"	4° 04' 26"	0,9988047	16' 00,78"	23° 26' 18"	-04m 17s
01:00	10° 19' 48"	-0,11"	9° 29' 38"	4° 05' 24"	0,9988165	16' 00,77"	23° 26' 18"	-04m 16s
02:00	10° 22' 16"	-0,11"	9° 31' 54"	4° 06' 23"	0,9988283	16' 00,76"	23° 26' 18"	-04m 16s
03:00	10° 24' 44"	-0,12"	9° 34' 11"	4° 07' 21"	0,9988401	16' 00,74"	23° 26' 18"	-04m 15s
04:00	10° 27' 12"	-0,12"	9° 36' 28"	4° 08' 19"	0,9988519	16' 00,73"	23° 26' 18"	-04m 14s
05:00	10° 29' 40"	-0,13"	9° 38' 44"	4° 09' 17"	0,9988638	16' 00,72"	23° 26' 18"	-04m 13s
06:00	10° 32' 09"	-0,13"	9° 41' 01"	4° 10' 15"	0,9988756	16' 00,71"	23° 26' 18"	-04m 13s
07:00	10° 34' 37"	-0,14"	9° 43' 17"	4° 11' 13"	0,9988874	16' 00,70"	23° 26' 18"	-04m 12s
08:00	10° 37' 05"	-0,14"	9° 45' 34"	4° 12' 11"	0,9988992	16' 00,69"	23° 26' 18"	-04m 11s
09:00	10° 39' 33"	-0,15"	9° 47' 51"	4° 13' 09"	0,9989110	16' 00,68"	23° 26' 18"	-04m 10s
10:00	10° 42' 01"	-0,16"	9° 50' 07"	4° 14' 07"	0,9989229	16' 00,66"	23° 26' 18"	-04m 10s
11:00	10° 44' 29"	-0,16"	9° 52' 24"	4° 15' 05"	0,9989347	16' 00,65"	23° 26' 18"	-04m 09s
12:00	10° 46' 57"	-0,17"	9° 54' 40"	4° 16' 03"	0,9989465	16' 00,64"	23° 26' 18"	-04m 08s
13:00	10° 49' 25"	-0,17"	9° 56' 57"	4° 17' 01"	0,9989584	16' 00,63"	23° 26' 18"	-04m 07s
14:00	10° 51' 53"	-0,18"	9° 59' 14"	4° 17' 59"	0,9989702	16' 00,62"	23° 26' 18"	-04m 07s
15:00	10° 54' 21"	-0,18"	10° 01' 30"	4° 18' 57"	0,9989821	16' 00,61"	23° 26' 18"	-04m 06s
16:00	10° 56' 49"	-0,19"	10° 03' 47"	4° 19' 55"	0,9989939	16' 00,60"	23° 26' 18"	-04m 05s
17:00	10° 59' 17"	-0,19"	10° 06' 04"	4° 20' 53"	0,9990058	16' 00,59"	23° 26' 18"	-04m 04s
18:00	11° 01' 45"	-0,20"	10° 08' 20"	4° 21' 51"	0,9990176	16' 00,57"	23° 26' 18"	-04m 04s
19:00	11° 04' 13"	-0,20"	10° 10' 37"	4° 22' 49"	0,9990295	16' 00,56"	23° 26' 18"	-04m 03s
20:00	11° 06' 41"	-0,21"	10° 12' 53"	4° 23' 47"	0,9990413	16' 00,55"	23° 26' 18"	-04m 02s
21:00	11° 09' 09"	-0,22"	10° 15' 10"	4° 24' 45"	0,9990532	16' 00,54"	23° 26' 18"	-04m 01s
22:00	11° 11' 38"	-0,22"	10° 17' 27"	4° 25' 43"	0,9990650	16' 00,53"	23° 26' 18"	-04m 01s
23:00	11° 14' 06"	-0,23"	10° 19' 43"	4° 26' 41"	0,9990769	16' 00,52"	23° 26' 18"	-04m 00s
24:00	11° 16' 34"	-0,23"	10° 22' 00"	4° 27' 39"	0,9990888	16' 00,51"	23° 26' 18"	-03m 59s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	165° 34' 06"	-0° 36' 58"	166° 28' 32"	5° 07' 16"	56' 44"	15' 27,56"	291° 24' 54"	95,44%
01:00	166° 06' 37"	-0° 39' 54"	166° 57' 30"	4° 51' 58"	56' 43"	15' 27,22"	291° 19' 22"	95,62%
02:00	166° 39' 08"	-0° 42' 50"	167° 26' 25"	4° 36' 39"	56' 42"	15' 26,89"	291° 13' 22"	95,79%
03:00	167° 11' 37"	-0° 45' 46"	167° 55' 18"	4° 21' 20"	56' 41"	15' 26,55"	291° 06' 51"	95,97%
04:00	167° 44' 05"	-0° 48' 41"	168° 24' 08"	4° 06' 00"	56' 39"	15' 26,22"	290° 59' 50"	96,14%
05:00	168° 16' 31"	-0° 51' 36"	168° 52' 56"	3° 50' 40"	56' 38"	15' 25,88"	290° 52' 16"	96,30%
06:00	168° 48' 57"	-0° 54' 31"	169° 21' 42"	3° 35' 19"	56' 37"	15' 25,54"	290° 44' 08"	96,46%
07:00	169° 21' 21"	-0° 57' 25"	169° 50' 26"	3° 19' 58"	56' 36"	15' 25,21"	290° 35' 24"	96,62%
08:00	169° 53' 44"	-1° 00' 19"	170° 19' 08"	3° 04' 37"	56' 34"	15' 24,87"	290° 26' 02"	96,77%
09:00	170° 26' 05"	-1° 03' 12"	170° 47' 48"	2° 49' 16"	56' 33"	15' 24,53"	290° 15' 59"	96,92%
10:00	170° 58' 26"	-1° 06' 05"	171° 16' 26"	2° 33' 55"	56' 32"	15' 24,19"	290° 05' 14"	97,07%
11:00	171° 30' 45"	-1° 08' 57"	171° 45' 02"	2° 18' 34"	56' 31"	15' 23,86"	289° 53' 44"	97,22%
12:00	172° 03' 02"	-1° 11' 49"	172° 13' 36"	2° 03' 13"	56' 29"	15' 23,52"	289° 41' 26"	97,35%
13:00	172° 35' 19"	-1° 14' 40"	172° 42' 09"	1° 47' 51"	56' 28"	15' 23,18"	289° 28' 17"	97,49%
14:00	173° 07' 34"	-1° 17' 31"	173° 10' 40"	1° 32' 31"	56' 27"	15' 22,85"	289° 14' 13"	97,62%
15:00	173° 39' 48"	-1° 20' 21"	173° 39' 09"	1° 17' 10"	56' 26"	15' 22,51"	288° 59' 10"	97,75%
16:00	174° 12' 01"	-1° 23' 11"	174° 07' 37"	1° 01' 50"	56' 24"	15' 22,17"	288° 43' 05"	97,88%
17:00	174° 44' 13"	-1° 26' 00"	174° 36' 03"	0° 46' 30"	56' 23"	15' 21,83"	288° 25' 52"	98,00%
18:00	175° 16' 23"	-1° 28' 49"	175° 04' 28"	0° 31' 10"	56' 22"	15' 21,50"	288° 07' 25"	98,11%
19:00	175° 48' 32"	-1° 31' 37"	175° 32' 52"	0° 15' 51"	56' 21"	15' 21,16"	287° 47' 40"	98,23%
20:00	176° 20' 40"	-1° 34' 24"	176° 01' 14"	0° 00' 33"	56' 20"	15' 20,82"	287° 26' 28"	98,34%
21:00	176° 52' 47"	-1° 37' 11"	176° 29' 36"	-0° 14' 45"	56' 18"	15' 20,49"	287° 03' 43"	98,45%
22:00	177° 24' 52"	-1° 39' 57"	176° 57' 56"	-0° 30' 02"	56' 17"	15' 20,15"	286° 39' 14"	98,55%
23:00	177° 56' 56"	-1° 42' 42"	177° 26' 15"	-0° 45' 18"	56' 16"	15' 19,81"	286° 12' 53"	98,65%
24:00	178° 28' 59"	-1° 45' 27"	177° 54' 33"	-1° 00' 33"	56' 15"	15' 19,47"	285° 44' 28"	98,74%

01 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	11° 16' 34"	-0,23"	10° 22' 00"	4° 27' 39"	0,9990888	16' 00,51"	23° 26' 18"	-03m 59s
01:00	11° 19' 02"	-0,24"	10° 24' 17"	4° 28' 37"	0,9991007	16' 00,49"	23° 26' 18"	-03m 58s
02:00	11° 21' 30"	-0,24"	10° 26' 33"	4° 29' 34"	0,9991125	16' 00,48"	23° 26' 18"	-03m 58s
03:00	11° 23' 58"	-0,25"	10° 28' 50"	4° 30' 32"	0,9991244	16' 00,47"	23° 26' 18"	-03m 57s
04:00	11° 26' 26"	-0,25"	10° 31' 07"	4° 31' 30"	0,9991363	16' 00,46"	23° 26' 18"	-03m 56s
05:00	11° 28' 54"	-0,26"	10° 33' 23"	4° 32' 28"	0,9991482	16' 00,45"	23° 26' 18"	-03m 55s
06:00	11° 31' 22"	-0,26"	10° 35' 40"	4° 33' 26"	0,9991600	16' 00,44"	23° 26' 18"	-03m 55s
07:00	11° 33' 50"	-0,27"	10° 37' 57"	4° 34' 24"	0,9991719	16' 00,43"	23° 26' 18"	-03m 54s
08:00	11° 36' 18"	-0,27"	10° 40' 13"	4° 35' 22"	0,9991838	16' 00,41"	23° 26' 18"	-03m 53s
09:00	11° 38' 46"	-0,28"	10° 42' 30"	4° 36' 19"	0,9991957	16' 00,40"	23° 26' 18"	-03m 52s
10:00	11° 41' 14"	-0,28"	10° 44' 47"	4° 37' 17"	0,9992076	16' 00,39"	23° 26' 18"	-03m 52s
11:00	11° 43' 42"	-0,29"	10° 47' 03"	4° 38' 15"	0,9992195	16' 00,38"	23° 26' 18"	-03m 51s
12:00	11° 46' 10"	-0,29"	10° 49' 20"	4° 39' 13"	0,9992314	16' 00,37"	23° 26' 18"	-03m 50s
13:00	11° 48' 38"	-0,30"	10° 51' 37"	4° 40' 11"	0,9992433	16' 00,36"	23° 26' 18"	-03m 49s
14:00	11° 51' 06"	-0,30"	10° 53' 53"	4° 41' 09"	0,9992552	16' 00,35"	23° 26' 18"	-03m 49s
15:00	11° 53' 34"	-0,31"	10° 56' 10"	4° 42' 06"	0,9992671	16' 00,33"	23° 26' 18"	-03m 48s
16:00	11° 56' 02"	-0,31"	10° 58' 27"	4° 43' 04"	0,9992790	16' 00,32"	23° 26' 18"	-03m 47s
17:00	11° 58' 29"	-0,32"	11° 00' 43"	4° 44' 02"	0,9992909	16' 00,31"	23° 26' 18"	-03m 46s
18:00	12° 00' 57"	-0,32"	11° 03' 00"	4° 45' 00"	0,9993028	16' 00,30"	23° 26' 18"	-03m 46s
19:00	12° 03' 25"	-0,33"	11° 05' 17"	4° 45' 57"	0,9993147	16' 00,29"	23° 26' 18"	-03m 45s
20:00	12° 05' 53"	-0,33"	11° 07' 33"	4° 46' 55"	0,9993267	16' 00,28"	23° 26' 18"	-03m 44s
21:00	12° 08' 21"	-0,34"	11° 09' 50"	4° 47' 53"	0,9993386	16' 00,27"	23° 26' 18"	-03m 43s
22:00	12° 10' 49"	-0,34"	11° 12' 07"	4° 48' 51"	0,9993505	16' 00,25"	23° 26' 18"	-03m 43s
23:00	12° 13' 17"	-0,35"	11° 14' 23"	4° 49' 48"	0,9993624	16' 00,24"	23° 26' 18"	-03m 42s
24:00	12° 15' 45"	-0,35"	11° 16' 40"	4° 50' 46"	0,9993744	16' 00,23"	23° 26' 18"	-03m 41s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	178° 28' 59"	-1° 45' 27"	177° 54' 33"	-1° 00' 33"	56' 15"	15' 19,47"	285° 44' 28"	98,74%
01:00	179° 01' 00"	-1° 48' 11"	178° 22' 51"	-1° 15' 48"	56' 13"	15' 19,14"	285° 13' 45"	98,83%
02:00	179° 33' 01"	-1° 50' 54"	178° 51' 07"	-1° 31' 01"	56' 12"	15' 18,80"	284° 40' 30"	98,92%
03:00	180° 05' 00"	-1° 53' 37"	179° 19' 23"	-1° 46' 14"	56' 11"	15' 18,47"	284° 04' 24"	99,01%
04:00	180° 36' 58"	-1° 56' 19"	179° 47' 38"	-2° 01' 25"	56' 10"	15' 18,13"	283° 25' 07"	99,09%
05:00	181° 08' 54"	-1° 59' 00"	180° 15' 52"	-2° 16' 35"	56' 08"	15' 17,79"	282° 42' 16"	99,16%
06:00	181° 40' 50"	-2° 01' 41"	180° 44' 06"	-2° 31' 44"	56' 07"	15' 17,46"	281° 55' 22"	99,24%
07:00	182° 12' 44"	-2° 04' 20"	181° 12' 19"	-2° 46' 52"	56' 06"	15' 17,12"	281° 03' 50"	99,31%
08:00	182° 44' 37"	-2° 06' 59"	181° 40' 32"	-3° 01' 59"	56' 05"	15' 16,79"	280° 07' 02"	99,37%
09:00	183° 16' 29"	-2° 09' 38"	182° 08' 44"	-3° 17' 04"	56' 04"	15' 16,45"	279° 04' 10"	99,44%
10:00	183° 48' 19"	-2° 12' 15"	182° 36' 56"	-3° 32' 07"	56' 02"	15' 16,12"	277° 54' 15"	99,49%
11:00	184° 20' 08"	-2° 14' 52"	183° 05' 07"	-3° 47' 10"	56' 01"	15' 15,78"	276° 36' 08"	99,55%
12:00	184° 51' 56"	-2° 17' 27"	183° 33' 19"	-4° 02' 10"	56' 00"	15' 15,45"	275° 08' 23"	99,60%
13:00	185° 23' 43"	-2° 20' 02"	184° 01' 30"	-4° 17' 09"	55' 59"	15' 15,12"	273° 29' 13"	99,65%
14:00	185° 55' 28"	-2° 22' 36"	184° 29' 42"	-4° 32' 06"	55' 57"	15' 14,79"	271° 36' 29"	99,69%
15:00	186° 27' 12"	-2° 25' 10"	184° 57' 53"	-4° 47' 02"	55' 56"	15' 14,45"	269° 27' 27"	99,73%
16:00	186° 58' 55"	-2° 27' 42"	185° 26' 04"	-5° 01' 56"	55' 55"	15' 14,12"	266° 58' 45"	99,77%
17:00	187° 30' 37"	-2° 30' 13"	185° 54' 15"	-5° 16' 47"	55' 54"	15' 13,79"	264° 06' 09"	99,80%
18:00	188° 02' 18"	-2° 32' 44"	186° 22' 27"	-5° 31' 37"	55' 53"	15' 13,46"	260° 44' 27"	99,83%
19:00	188° 33' 57"	-2° 35' 14"	186° 50' 39"	-5° 46' 25"	55' 51"	15' 13,13"	256° 47' 19"	99,86%
20:00	189° 05' 35"	-2° 37' 43"	187° 18' 50"	-6° 01' 11"	55' 50"	15' 12,80"	252° 07' 17"	99,88%
21:00	189° 37' 12"	-2° 40' 10"	187° 47' 03"	-6° 15' 55"	55' 49"	15' 12,47"	246° 36' 17"	99,90%
22:00	190° 08' 48"	-2° 42' 37"	188° 15' 15"	-6° 30' 37"	55' 48"	15' 12,14"	240° 06' 47"	99,91%
23:00	190° 40' 22"	-2° 45' 03"	188° 43' 29"	-6° 45' 16"	55' 46"	15' 11,81"	232° 34' 18"	99,92%
24:00	191° 11' 55"	-2° 47' 28"	189° 11' 42"	-6° 59' 53"	55' 45"	15' 11,48"	224° 01' 19"	99,93%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	12° 15' 45"	-0,35"	11° 16' 40"	4° 50' 46"	0,9993744	16' 00,23"	23° 26' 18"	-03m 41s
01:00	12° 18' 13"	-0,36"	11° 18' 57"	4° 51' 44"	0,9993863	16' 00,22"	23° 26' 18"	-03m 41s
02:00	12° 20' 41"	-0,36"	11° 21' 14"	4° 52' 41"	0,9993982	16' 00,21"	23° 26' 18"	-03m 40s
03:00	12° 23' 09"	-0,37"	11° 23' 30"	4° 53' 39"	0,9994102	16' 00,20"	23° 26' 18"	-03m 39s
04:00	12° 25' 37"	-0,37"	11° 25' 47"	4° 54' 37"	0,9994221	16' 00,18"	23° 26' 18"	-03m 38s
05:00	12° 28' 05"	-0,38"	11° 28' 04"	4° 55' 34"	0,9994340	16' 00,17"	23° 26' 18"	-03m 38s
06:00	12° 30' 33"	-0,38"	11° 30' 21"	4° 56' 32"	0,9994460	16' 00,16"	23° 26' 18"	-03m 37s
07:00	12° 33' 01"	-0,39"	11° 32' 37"	4° 57' 30"	0,9994579	16' 00,15"	23° 26' 18"	-03m 36s
08:00	12° 35' 29"	-0,39"	11° 34' 54"	4° 58' 27"	0,9994699	16' 00,14"	23° 26' 18"	-03m 35s
09:00	12° 37' 56"	-0,40"	11° 37' 11"	4° 59' 25"	0,9994818	16' 00,13"	23° 26' 18"	-03m 35s
10:00	12° 40' 24"	-0,40"	11° 39' 27"	5° 00' 23"	0,9994938	16' 00,12"	23° 26' 18"	-03m 34s
11:00	12° 42' 52"	-0,40"	11° 41' 44"	5° 01' 20"	0,9995057	16' 00,10"	23° 26' 18"	-03m 33s
12:00	12° 45' 20"	-0,41"	11° 44' 01"	5° 02' 18"	0,9995177	16' 00,09"	23° 26' 18"	-03m 32s
13:00	12° 47' 48"	-0,41"	11° 46' 18"	5° 03' 15"	0,9995297	16' 00,08"	23° 26' 18"	-03m 32s
14:00	12° 50' 16"	-0,42"	11° 48' 34"	5° 04' 13"	0,9995416	16' 00,07"	23° 26' 18"	-03m 31s
15:00	12° 52' 44"	-0,42"	11° 50' 51"	5° 05' 11"	0,9995536	16' 00,06"	23° 26' 18"	-03m 30s
16:00	12° 55' 12"	-0,43"	11° 53' 08"	5° 06' 08"	0,9995655	16' 00,05"	23° 26' 18"	-03m 29s
17:00	12° 57' 40"	-0,43"	11° 55' 25"	5° 07' 06"	0,9995775	16' 00,04"	23° 26' 18"	-03m 29s
18:00	13° 00' 08"	-0,43"	11° 57' 42"	5° 08' 03"	0,9995895	16' 00,02"	23° 26' 18"	-03m 28s
19:00	13° 02' 35"	-0,44"	11° 59' 58"	5° 09' 01"	0,9996015	16' 00,01"	23° 26' 18"	-03m 27s
20:00	13° 05' 03"	-0,44"	12° 02' 15"	5° 09' 58"	0,9996134	16' 00,00"	23° 26' 18"	-03m 26s
21:00	13° 07' 31"	-0,45"	12° 04' 32"	5° 10' 56"	0,9996254	16' 00,00"	23° 26' 18"	-03m 26s
22:00	13° 09' 59"	-0,45"	12° 06' 49"	5° 11' 53"	0,9996374	16' 00,00"	23° 26' 18"	-03m 25s
23:00	13° 12' 27"	-0,46"	12° 09' 05"	5° 12' 51"	0,9996494	16' 00,00"	23° 26' 18"	-03m 24s
24:00	13° 14' 55"	-0,46"	12° 11' 22"	5° 13' 48"	0,9996614	16' 00,00"	23° 26' 18"	-03m 24s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	191° 11' 55"	-2° 47' 28"	189° 11' 42"	-6° 59' 53"	55' 45"	15' 11,48"	224° 01' 19"	99,93%
01:00	191° 43' 27"	-2° 49' 53"	189° 39' 56"	-7° 14' 28"	55' 44"	15' 11,16"	214° 41' 12"	99,94%
02:00	192° 14' 58"	-2° 52' 16"	190° 08' 11"	-7° 29' 01"	55' 43"	15' 10,83"	204° 59' 03"	99,94%
03:00	192° 46' 27"	-2° 54' 38"	190° 36' 27"	-7° 43' 31"	55' 42"	15' 10,51"	195° 26' 27"	99,93%
04:00	193° 17' 56"	-2° 56' 59"	191° 04' 43"	-7° 57' 58"	55' 40"	15' 10,18"	186° 32' 03"	99,93%
05:00	193° 49' 23"	-2° 59' 19"	191° 33' 00"	-8° 12' 23"	55' 39"	15' 09,86"	178° 34' 04"	99,92%
06:00	194° 20' 49"	-3° 01' 38"	192° 01' 18"	-8° 26' 46"	55' 38"	15' 09,53"	171° 38' 54"	99,91%
07:00	194° 52' 13"	-3° 03' 56"	192° 29' 37"	-8° 41' 05"	55' 37"	15' 09,21"	165° 44' 21"	99,89%
08:00	195° 23' 37"	-3° 06' 13"	192° 57' 56"	-8° 55' 23"	55' 36"	15' 08,89"	160° 43' 41"	99,87%
09:00	195° 54' 59"	-3° 08' 29"	193° 26' 17"	-9° 09' 37"	55' 35"	15' 08,57"	156° 28' 51"	99,84%
10:00	196° 26' 20"	-3° 10' 44"	193° 54' 39"	-9° 23' 48"	55' 33"	15' 08,25"	152° 52' 03"	99,82%
11:00	196° 57' 40"	-3° 12' 58"	194° 23' 02"	-9° 37' 57"	55' 32"	15' 07,93"	149° 46' 29"	99,79%
12:00	197° 28' 58"	-3° 15' 11"	194° 51' 26"	-9° 52' 02"	55' 31"	15' 07,61"	147° 06' 31"	99,75%
13:00	198° 00' 16"	-3° 17' 23"	195° 19' 51"	-10° 06' 05"	55' 30"	15' 07,30"	144° 47' 33"	99,71%
14:00	198° 31' 32"	-3° 19' 33"	195° 48' 17"	-10° 20' 04"	55' 29"	15' 06,98"	142° 45' 52"	99,67%
15:00	199° 02' 47"	-3° 21' 43"	196° 16' 45"	-10° 34' 01"	55' 28"	15' 06,66"	140° 58' 33"	99,63%
16:00	199° 34' 01"	-3° 23' 51"	196° 45' 15"	-10° 47' 54"	55' 26"	15' 06,35"	139° 23' 12"	99,58%
17:00	200° 05' 13"	-3° 25' 59"	197° 13' 45"	-11° 01' 44"	55' 25"	15' 06,04"	137° 57' 54"	99,53%
18:00	200° 36' 25"	-3° 28' 05"	197° 42' 17"	-11° 15' 31"	55' 24"	15' 05,73"	136° 41' 06"	99,47%
19:00	201° 07' 35"	-3° 30' 10"	198° 10' 51"	-11° 29' 15"	55' 23"	15' 05,42"	135° 31' 33"	99,41%
20:00	201° 38' 44"	-3° 32' 14"	198° 39' 26"	-11° 42' 55"	55' 22"	15' 05,11"	134° 28' 11"	99,35%
21:00	202° 09' 52"	-3° 34' 17"	199° 08' 03"	-11° 56' 31"	55' 21"	15' 04,80"	133° 30' 09"	99,29%
22:00	202° 40' 58"	-3° 36' 18"	199° 36' 41"	-12° 10' 05"	55' 20"	15' 04,49"	132° 36' 44"	99,22%
23:00	203° 12' 04"	-3° 38' 19"	200° 05' 22"	-12° 23' 34"	55' 18"	15' 04,19"	131° 47' 21"	99,15%
24:00	203° 43' 08"	-3° 40' 18"	200° 34' 04"	-12° 37' 00"	55' 17"	15' 03,88"	131° 01' 30"	99,07%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	13° 14' 55"	-0,46"	12° 11' 22"	5° 13' 48"	0,9996614	16' 00,00"	23° 26' 18"	-03m 24s
01:00	13° 17' 23"	-0,46"	12° 13' 39"	5° 14' 46"	0,9996733	16' 00,00"	23° 26' 18"	-03m 23s
02:00	13° 19' 50"	-0,47"	12° 15' 56"	5° 15' 43"	0,9996853	16' 00,00"	23° 26' 18"	-03m 22s
03:00	13° 22' 18"	-0,47"	12° 18' 13"	5° 16' 41"	0,9996973	16' 00,00"	23° 26' 18"	-03m 21s
04:00	13° 24' 46"	-0,48"	12° 20' 29"	5° 17' 38"	0,9997093	16' 00,00"	23° 26' 18"	-03m 21s
05:00	13° 27' 14"	-0,48"	12° 22' 46"	5° 18' 36"	0,9997213	16' 00,00"	23° 26' 18"	-03m 20s
06:00	13° 29' 42"	-0,48"	12° 25' 03"	5° 19' 33"	0,9997333	16' 00,00"	23° 26' 18"	-03m 19s
07:00	13° 32' 10"	-0,49"	12° 27' 20"	5° 20' 30"	0,9997453	16' 00,00"	23° 26' 18"	-03m 18s
08:00	13° 34' 37"	-0,49"	12° 29' 37"	5° 21' 28"	0,9997573	16' 00,00"	23° 26' 18"	-03m 18s
09:00	13° 37' 05"	-0,49"	12° 31' 54"	5° 22' 25"	0,9997693	16' 00,00"	23° 26' 18"	-03m 17s
10:00	13° 39' 33"	-0,50"	12° 34' 10"	5° 23' 23"	0,9997813	16' 00,00"	23° 26' 18"	-03m 16s
11:00	13° 42' 01"	-0,50"	12° 36' 27"	5° 24' 20"	0,9997933	16' 00,00"	23° 26' 18"	-03m 15s
12:00	13° 44' 29"	-0,50"	12° 38' 44"	5° 25' 17"	0,9998053	16' 00,00"	23° 26' 18"	-03m 15s
13:00	13° 46' 57"	-0,51"	12° 41' 01"	5° 26' 15"	0,9998174	16' 00,00"	23° 26' 18"	-03m 14s
14:00	13° 49' 24"	-0,51"	12° 43' 18"	5° 27' 12"	0,9998294	16' 00,00"	23° 26' 18"	-03m 13s
15:00	13° 51' 52"	-0,52"	12° 45' 35"	5° 28' 09"	0,9998414	16' 00,00"	23° 26' 18"	-03m 12s
16:00	13° 54' 20"	-0,52"	12° 47' 51"	5° 29' 07"	0,9998534	16' 00,00"	23° 26' 18"	-03m 12s
17:00	13° 56' 48"	-0,52"	12° 50' 08"	5° 30' 04"	0,9998654	16' 00,00"	23° 26' 18"	-03m 11s
18:00	13° 59' 16"	-0,53"	12° 52' 25"	5° 31' 01"	0,9998775	16' 00,00"	23° 26' 18"	-03m 10s
19:00	14° 01' 43"	-0,53"	12° 54' 42"	5° 31' 59"	0,9998895	16' 00,00"	23° 26' 18"	-03m 10s
20:00	14° 04' 11"	-0,53"	12° 56' 59"	5° 32' 56"	0,9999015	16' 00,00"	23° 26' 18"	-03m 09s
21:00	14° 06' 39"	-0,54"	12° 59' 16"	5° 33' 53"	0,9999135	16' 00,00"	23° 26' 18"	-03m 08s
22:00	14° 09' 07"	-0,54"	13° 01' 33"	5° 34' 51"	0,9999256	16' 00,00"	23° 26' 18"	-03m 07s
23:00	14° 11' 35"	-0,54"	13° 03' 50"	5° 35' 48"	0,9999376	16' 00,00"	23° 26' 18"	-03m 07s
24:00	14° 14' 02"	-0,54"	13° 06' 06"	5° 36' 45"	0,9999496	16' 00,00"	23° 26' 18"	-03m 06s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	203° 43' 08"	-3° 40' 18"	200° 34' 04"	-12° 37' 00"	55' 17"	15' 03,88"	131° 01' 30"	99,07%
01:00	204° 14' 11"	-3° 42' 16"	201° 02' 47"	-12° 50' 23"	55' 16"	15' 03,58"	130° 18' 43"	98,99%
02:00	204° 45' 13"	-3° 44' 13"	201° 31' 33"	-13° 03' 41"	55' 15"	15' 03,28"	129° 38' 40"	98,91%
03:00	205° 16' 14"	-3° 46' 09"	202° 00' 20"	-13° 16' 56"	55' 14"	15' 02,98"	129° 01' 03"	98,83%
04:00	205° 47' 14"	-3° 48' 04"	202° 29' 10"	-13° 30' 07"	55' 13"	15' 02,68"	128° 25' 34"	98,74%
05:00	206° 18' 12"	-3° 49' 57"	202° 58' 01"	-13° 43' 15"	55' 12"	15' 02,38"	127° 52' 00"	98,65%
06:00	206° 49' 10"	-3° 51' 49"	203° 26' 55"	-13° 56' 18"	55' 11"	15' 02,08"	127° 20' 08"	98,55%
07:00	207° 20' 06"	-3° 53' 40"	203° 55' 50"	-14° 09' 17"	55' 10"	15' 01,79"	126° 49' 49"	98,45%
08:00	207° 51' 01"	-3° 55' 30"	204° 24' 48"	-14° 22' 13"	55' 09"	15' 01,50"	126° 20' 53"	98,35%
09:00	208° 21' 55"	-3° 57' 19"	204° 53' 47"	-14° 35' 04"	55' 08"	15' 01,20"	125° 53' 11"	98,25%
10:00	208° 52' 48"	-3° 59' 06"	205° 22' 49"	-14° 47' 51"	55' 06"	15' 00,91"	125° 26' 37"	98,14%
11:00	209° 23' 39"	-4° 00' 52"	205° 51' 54"	-15° 00' 34"	55' 05"	15' 00,63"	125° 01' 04"	98,03%
12:00	209° 54' 30"	-4° 02' 37"	206° 21' 00"	-15° 13' 13"	55' 04"	15' 00,34"	124° 36' 26"	97,91%
13:00	210° 25' 19"	-4° 04' 20"	206° 50' 09"	-15° 25' 48"	55' 03"	15' 00,05"	124° 12' 39"	97,80%
14:00	210° 56' 07"	-4° 06' 02"	207° 19' 20"	-15° 38' 18"	55' 02"	15' 00,00"	123° 49' 37"	97,68%
15:00	211° 26' 54"	-4° 07' 43"	207° 48' 33"	-15° 50' 44"	55' 01"	14' 59,49"	123° 27' 18"	97,55%
16:00	211° 57' 40"	-4° 09' 23"	208° 17' 49"	-16° 03' 05"	55' 00"	14' 59,21"	123° 05' 36"	97,43%
17:00	212° 28' 25"	-4° 11' 02"	208° 47' 07"	-16° 15' 22"	54' 59"	14' 58,93"	122° 44' 29"	97,30%
18:00	212° 59' 09"	-4° 12' 39"	209° 16' 28"	-16° 27' 34"	54' 58"	14' 58,65"	122° 23' 54"	97,16%
19:00	213° 29' 52"	-4° 14' 15"	209° 45' 52"	-16° 39' 42"	54' 57"	14' 58,38"	122° 03' 48"	97,03%
20:00	214° 00' 33"	-4° 15' 49"	210° 15' 17"	-16° 51' 45"	54' 56"	14' 58,11"	121° 44' 09"	96,89%
21:00	214° 31' 14"	-4° 17' 23"	210° 44' 46"	-17° 03' 43"	54' 55"	14' 57,84"	121° 24' 54"	96,75%
22:00	215° 01' 53"	-4° 18' 55"	211° 14' 17"	-17° 15' 37"	54' 54"	14' 57,57"	121° 06' 01"	96,60%
23:00	215° 32' 32"	-4° 20' 25"	211° 43' 51"	-17° 27' 26"	54' 53"	14' 57,30"	120° 47' 29"	96,45%
24:00	216° 03' 09"	-4° 21' 55"	212° 13' 27"	-17° 39' 10"	54' 52"	14' 57,04"	120° 29' 16"	96,30%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	14° 14' 02"	-0,54"	13° 06' 06"	5° 36' 45"	0,9999496	16' 00,00"	23° 26' 18"	-03m 06s
01:00	14° 16' 30"	-0,55"	13° 08' 23"	5° 37' 42"	0,9999617	16' 00,00"	23° 26' 18"	-03m 05s
02:00	14° 18' 58"	-0,55"	13° 10' 40"	5° 38' 40"	0,9999737	16' 00,00"	23° 26' 18"	-03m 04s
03:00	14° 21' 26"	-0,55"	13° 12' 57"	5° 39' 37"	0,9999857	16' 00,00"	23° 26' 18"	-03m 04s
04:00	14° 23' 53"	-0,56"	13° 15' 14"	5° 40' 34"	0,9999978	16' 00,00"	23° 26' 18"	-03m 03s
05:00	14° 26' 21"	-0,56"	13° 17' 31"	5° 41' 31"	1,0000098	16' 00,00"	23° 26' 18"	-03m 02s
06:00	14° 28' 49"	-0,56"	13° 19' 48"	5° 42' 28"	1,0000219	16' 00,00"	23° 26' 18"	-03m 02s
07:00	14° 31' 17"	-0,57"	13° 22' 05"	5° 43' 26"	1,0000339	16' 00,00"	23° 26' 18"	-03m 01s
08:00	14° 33' 44"	-0,57"	13° 24' 22"	5° 44' 23"	1,0000460	16' 00,00"	23° 26' 18"	-03m 00s
09:00	14° 36' 12"	-0,57"	13° 26' 39"	5° 45' 20"	1,0000580	16' 00,00"	23° 26' 18"	-02m 59s
10:00	14° 38' 40"	-0,57"	13° 28' 56"	5° 46' 17"	1,0000701	16' 00,00"	23° 26' 18"	-02m 59s
11:00	14° 41' 08"	-0,58"	13° 31' 13"	5° 47' 14"	1,0000821	16' 00,00"	23° 26' 18"	-02m 58s
12:00	14° 43' 35"	-0,58"	13° 33' 30"	5° 48' 11"	1,0000942	16' 00,00"	23° 26' 18"	-02m 57s
13:00	14° 46' 03"	-0,58"	13° 35' 47"	5° 49' 08"	1,0001063	16' 00,00"	23° 26' 18"	-02m 56s
14:00	14° 48' 31"	-0,58"	13° 38' 03"	5° 50' 06"	1,0001183	16' 00,00"	23° 26' 18"	-02m 56s
15:00	14° 50' 59"	-0,59"	13° 40' 20"	5° 51' 03"	1,0001304	16' 00,00"	23° 26' 18"	-02m 55s
16:00	14° 53' 26"	-0,59"	13° 42' 37"	5° 52' 00"	1,0001424	15' 59,49"	23° 26' 18"	-02m 54s
17:00	14° 55' 54"	-0,59"	13° 44' 54"	5° 52' 57"	1,0001545	15' 59,48"	23° 26' 18"	-02m 54s
18:00	14° 58' 22"	-0,59"	13° 47' 11"	5° 53' 54"	1,0001666	15' 59,47"	23° 26' 18"	-02m 53s
19:00	15° 00' 50"	-0,60"	13° 49' 28"	5° 54' 51"	1,0001786	15' 59,46"	23° 26' 18"	-02m 52s
20:00	15° 03' 17"	-0,60"	13° 51' 45"	5° 55' 48"	1,0001907	15' 59,45"	23° 26' 18"	-02m 51s
21:00	15° 05' 45"	-0,60"	13° 54' 02"	5° 56' 45"	1,0002028	15' 59,44"	23° 26' 18"	-02m 51s
22:00	15° 08' 13"	-0,60"	13° 56' 19"	5° 57' 42"	1,0002149	15' 59,42"	23° 26' 18"	-02m 50s
23:00	15° 10' 40"	-0,60"	13° 58' 36"	5° 58' 39"	1,0002269	15' 59,41"	23° 26' 18"	-02m 49s
24:00	15° 13' 08"	-0,61"	14° 00' 53"	5° 59' 36"	1,0002390	15' 59,40"	23° 26' 18"	-02m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	216° 03' 09"	-4° 21' 55"	212° 13' 27"	-17° 39' 10"	54' 52"	14' 57,04"	120° 29' 16"	96,30%
01:00	216° 33' 45"	-4° 23' 23"	212° 43' 06"	-17° 50' 49"	54' 51"	14' 56,78"	120° 11' 21"	96,15%
02:00	217° 04' 20"	-4° 24' 49"	213° 12' 48"	-18° 02' 23"	54' 50"	14' 56,52"	119° 53' 41"	95,99%
03:00	217° 34' 54"	-4° 26' 15"	213° 42' 33"	-18° 13' 52"	54' 49"	14' 56,26"	119° 36' 15"	95,83%
04:00	218° 05' 27"	-4° 27' 39"	214° 12' 20"	-18° 25' 16"	54' 48"	14' 56,00"	119° 19' 03"	95,67%
05:00	218° 35' 59"	-4° 29' 02"	214° 42' 10"	-18° 36' 35"	54' 48"	14' 55,75"	119° 02' 03"	95,50%
06:00	219° 06' 30"	-4° 30' 23"	215° 12' 03"	-18° 47' 49"	54' 47"	14' 55,50"	118° 45' 15"	95,33%
07:00	219° 37' 00"	-4° 31' 43"	215° 41' 59"	-18° 58' 58"	54' 46"	14' 55,25"	118° 28' 36"	95,16%
08:00	220° 07' 29"	-4° 33' 02"	216° 11' 58"	-19° 10' 01"	54' 45"	14' 55,00"	118° 12' 07"	94,99%
09:00	220° 37' 57"	-4° 34' 19"	216° 41' 59"	-19° 21' 00"	54' 44"	14' 54,75"	117° 55' 47"	94,81%
10:00	221° 08' 24"	-4° 35' 35"	217° 12' 04"	-19° 31' 52"	54' 43"	14' 54,51"	117° 39' 34"	94,63%
11:00	221° 38' 50"	-4° 36' 50"	217° 42' 12"	-19° 42' 40"	54' 42"	14' 54,27"	117° 23' 29"	94,45%
12:00	222° 09' 15"	-4° 38' 04"	218° 12' 22"	-19° 53' 22"	54' 41"	14' 54,03"	117° 07' 30"	94,26%
13:00	222° 39' 38"	-4° 39' 16"	218° 42' 35"	-20° 03' 58"	54' 40"	14' 53,80"	116° 51' 36"	94,08%
14:00	223° 10' 01"	-4° 40' 26"	219° 12' 52"	-20° 14' 29"	54' 39"	14' 53,57"	116° 35' 48"	93,88%
15:00	223° 40' 23"	-4° 41' 35"	219° 43' 11"	-20° 24' 55"	54' 39"	14' 53,34"	116° 20' 05"	93,69%
16:00	224° 10' 44"	-4° 42' 43"	220° 13' 34"	-20° 35' 14"	54' 38"	14' 53,11"	116° 04' 26"	93,49%
17:00	224° 41' 04"	-4° 43' 50"	220° 43' 59"	-20° 45' 28"	54' 37"	14' 52,88"	115° 48' 51"	93,29%
18:00	225° 11' 23"	-4° 44' 55"	221° 14' 28"	-20° 55' 37"	54' 36"	14' 52,66"	115° 33' 19"	93,09%
19:00	225° 41' 41"	-4° 45' 59"	221° 45' 00"	-21° 05' 39"	54' 35"	14' 52,44"	115° 17' 50"	92,89%
20:00	226° 11' 58"	-4° 47' 01"	222° 15' 35"	-21° 15' 36"	54' 35"	14' 52,22"	115° 02' 24"	92,68%
21:00	226° 42' 15"	-4° 48' 02"	222° 46' 12"	-21° 25' 27"	54' 34"	14' 52,01"	114° 47' 00"	92,47%
22:00	227° 12' 30"	-4° 49' 02"	223° 16' 53"	-21° 35' 12"	54' 33"	14' 51,80"	114° 31' 38"	92,26%
23:00	227° 42' 44"	-4° 50' 00"	223° 47' 37"	-21° 44' 51"	54' 32"	14' 51,59"	114° 16' 17"	92,04%
24:00	228° 12' 58"	-4° 50' 57"	224° 18' 25"	-21° 54' 23"	54' 31"	14' 51,38"	114° 00' 58"	91,83%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	15° 13' 08"	-0,61"	14° 00' 53"	5° 59' 36"	1,0002390	15' 59,40"	23° 26' 18"	-02m 48s
01:00	15° 15' 36"	-0,61"	14° 03' 10"	6° 00' 33"	1,0002511	15' 59,39"	23° 26' 18"	-02m 48s
02:00	15° 18' 03"	-0,61"	14° 05' 27"	6° 01' 30"	1,0002632	15' 59,38"	23° 26' 18"	-02m 47s
03:00	15° 20' 31"	-0,61"	14° 07' 44"	6° 02' 27"	1,0002752	15' 59,37"	23° 26' 18"	-02m 46s
04:00	15° 22' 59"	-0,61"	14° 10' 01"	6° 03' 24"	1,0002873	15' 59,35"	23° 26' 18"	-02m 46s
05:00	15° 25' 27"	-0,62"	14° 12' 18"	6° 04' 21"	1,0002994	15' 59,34"	23° 26' 18"	-02m 45s
06:00	15° 27' 54"	-0,62"	14° 14' 35"	6° 05' 18"	1,0003115	15' 59,33"	23° 26' 18"	-02m 44s
07:00	15° 30' 22"	-0,62"	14° 16' 52"	6° 06' 15"	1,0003236	15' 59,32"	23° 26' 18"	-02m 43s
08:00	15° 32' 50"	-0,62"	14° 19' 10"	6° 07' 12"	1,0003357	15' 59,31"	23° 26' 18"	-02m 43s
09:00	15° 35' 17"	-0,62"	14° 21' 27"	6° 08' 09"	1,0003478	15' 59,30"	23° 26' 18"	-02m 42s
10:00	15° 37' 45"	-0,62"	14° 23' 44"	6° 09' 05"	1,0003599	15' 59,28"	23° 26' 18"	-02m 41s
11:00	15° 40' 13"	-0,62"	14° 26' 01"	6° 10' 02"	1,0003719	15' 59,27"	23° 26' 18"	-02m 41s
12:00	15° 42' 40"	-0,63"	14° 28' 18"	6° 10' 59"	1,0003840	15' 59,26"	23° 26' 18"	-02m 40s
13:00	15° 45' 08"	-0,63"	14° 30' 35"	6° 11' 56"	1,0003961	15' 59,25"	23° 26' 18"	-02m 39s
14:00	15° 47' 36"	-0,63"	14° 32' 52"	6° 12' 53"	1,0004082	15' 59,24"	23° 26' 18"	-02m 38s
15:00	15° 50' 03"	-0,63"	14° 35' 09"	6° 13' 50"	1,0004203	15' 59,23"	23° 26' 18"	-02m 38s
16:00	15° 52' 31"	-0,63"	14° 37' 26"	6° 14' 47"	1,0004324	15' 59,22"	23° 26' 18"	-02m 37s
17:00	15° 54' 59"	-0,63"	14° 39' 43"	6° 15' 43"	1,0004445	15' 59,20"	23° 26' 18"	-02m 36s
18:00	15° 57' 26"	-0,63"	14° 42' 00"	6° 16' 40"	1,0004566	15' 59,19"	23° 26' 18"	-02m 36s
19:00	15° 59' 54"	-0,64"	14° 44' 17"	6° 17' 37"	1,0004687	15' 59,18"	23° 26' 18"	-02m 35s
20:00	16° 02' 21"	-0,64"	14° 46' 34"	6° 18' 34"	1,0004808	15' 59,17"	23° 26' 18"	-02m 34s
21:00	16° 04' 49"	-0,64"	14° 48' 52"	6° 19' 31"	1,0004929	15' 59,16"	23° 26' 18"	-02m 33s
22:00	16° 07' 17"	-0,64"	14° 51' 09"	6° 20' 27"	1,0005051	15' 59,15"	23° 26' 18"	-02m 33s
23:00	16° 09' 44"	-0,64"	14° 53' 26"	6° 21' 24"	1,0005172	15' 59,13"	23° 26' 18"	-02m 32s
24:00	16° 12' 12"	-0,64"	14° 55' 43"	6° 22' 21"	1,0005293	15' 59,12"	23° 26' 18"	-02m 31s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	228° 12' 58"	-4° 50' 57"	224° 18' 25"	-21° 54' 23"	54' 31"	14' 51,38"	114° 00' 58"	91,83%
01:00	228° 43' 10"	-4° 51' 53"	224° 49' 15"	-22° 03' 50"	54' 31"	14' 51,18"	113° 45' 40"	91,60%
02:00	229° 13' 22"	-4° 52' 47"	225° 20' 08"	-22° 13' 11"	54' 30"	14' 50,98"	113° 30' 23"	91,38%
03:00	229° 43' 33"	-4° 53' 39"	225° 51' 05"	-22° 22' 26"	54' 29"	14' 50,78"	113° 15' 07"	91,16%
04:00	230° 13' 43"	-4° 54' 31"	226° 22' 04"	-22° 31' 34"	54' 29"	14' 50,58"	112° 59' 51"	90,93%
05:00	230° 43' 52"	-4° 55' 21"	226° 53' 07"	-22° 40' 36"	54' 28"	14' 50,39"	112° 44' 35"	90,70%
06:00	231° 14' 00"	-4° 56' 09"	227° 24' 13"	-22° 49' 32"	54' 27"	14' 50,20"	112° 29' 19"	90,47%
07:00	231° 44' 08"	-4° 56' 56"	227° 55' 22"	-22° 58' 22"	54' 26"	14' 50,02"	112° 14' 03"	90,23%
08:00	232° 14' 14"	-4° 57' 42"	228° 26' 34"	-23° 07' 05"	54' 26"	14' 49,83"	111° 58' 47"	89,99%
09:00	232° 44' 20"	-4° 58' 27"	228° 57' 49"	-23° 15' 42"	54' 25"	14' 49,65"	111° 43' 30"	89,75%
10:00	233° 14' 25"	-4° 59' 09"	229° 29' 08"	-23° 24' 12"	54' 24"	14' 49,48"	111° 28' 13"	89,51%
11:00	233° 44' 29"	-4° 59' 51"	230° 00' 29"	-23° 32' 36"	54' 24"	14' 49,30"	111° 12' 55"	89,26%
12:00	234° 14' 33"	-5° 00' 31"	230° 31' 54"	-23° 40' 53"	54' 23"	14' 49,13"	110° 57' 36"	89,02%
13:00	234° 44' 35"	-5° 01' 10"	231° 03' 21"	-23° 49' 04"	54' 23"	14' 48,97"	110° 42' 16"	88,77%
14:00	235° 14' 37"	-5° 01' 47"	231° 34' 52"	-23° 57' 08"	54' 22"	14' 48,80"	110° 26' 55"	88,51%
15:00	235° 44' 38"	-5° 02' 23"	232° 06' 26"	-24° 05' 06"	54' 21"	14' 48,64"	110° 11' 33"	88,26%
16:00	236° 14' 38"	-5° 02' 58"	232° 38' 03"	-24° 12' 56"	54' 21"	14' 48,48"	109° 56' 09"	88,00%
17:00	236° 44' 38"	-5° 03' 31"	233° 09' 42"	-24° 20' 40"	54' 20"	14' 48,33"	109° 40' 45"	87,74%
18:00	237° 14' 37"	-5° 04' 03"	233° 41' 25"	-24° 28' 17"	54' 20"	14' 48,18"	109° 25' 19"	87,48%
19:00	237° 44' 35"	-5° 04' 33"	234° 13' 11"	-24° 35' 48"	54' 19"	14' 48,03"	109° 09' 51"	87,22%
20:00	238° 14' 32"	-5° 05' 02"	234° 45' 00"	-24° 43' 11"	54' 19"	14' 47,89"	108° 54' 22"	86,95%
21:00	238° 44' 29"	-5° 05' 29"	235° 16' 52"	-24° 50' 28"	54' 18"	14' 47,75"	108° 38' 52"	86,69%
22:00	239° 14' 25"	-5° 05' 55"	235° 48' 47"	-24° 57' 37"	54' 18"	14' 47,61"	108° 23' 19"	86,42%
23:00	239° 44' 21"	-5° 06' 20"	236° 20' 45"	-25° 04' 40"	54' 17"	14' 47,47"	108° 07' 46"	86,14%
24:00	240° 14' 15"	-5° 06' 43"	236° 52' 45"	-25° 11' 35"	54' 17"	14' 47,34"	107° 52' 10"	85,87%

06 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	16° 12' 12"	-0,64"	14° 55' 43"	6° 22' 21"	1,0005293	15' 59,12"	23° 26' 18"	-02m 31s
01:00	16° 14' 40"	-0,64"	14° 58' 00"	6° 23' 18"	1,0005414	15' 59,11"	23° 26' 18"	-02m 31s
02:00	16° 17' 07"	-0,64"	15° 00' 17"	6° 24' 14"	1,0005535	15' 59,10"	23° 26' 18"	-02m 30s
03:00	16° 19' 35"	-0,64"	15° 02' 34"	6° 25' 11"	1,0005656	15' 59,09"	23° 26' 18"	-02m 29s
04:00	16° 22' 02"	-0,64"	15° 04' 52"	6° 26' 08"	1,0005777	15' 59,08"	23° 26' 18"	-02m 28s
05:00	16° 24' 30"	-0,64"	15° 07' 09"	6° 27' 04"	1,0005898	15' 59,06"	23° 26' 18"	-02m 28s
06:00	16° 26' 58"	-0,64"	15° 09' 26"	6° 28' 01"	1,0006019	15' 59,05"	23° 26' 18"	-02m 27s
07:00	16° 29' 25"	-0,65"	15° 11' 43"	6° 28' 58"	1,0006141	15' 59,04"	23° 26' 18"	-02m 26s
08:00	16° 31' 53"	-0,65"	15° 14' 00"	6° 29' 54"	1,0006262	15' 59,03"	23° 26' 18"	-02m 26s
09:00	16° 34' 20"	-0,65"	15° 16' 17"	6° 30' 51"	1,0006383	15' 59,02"	23° 26' 18"	-02m 25s
10:00	16° 36' 48"	-0,65"	15° 18' 35"	6° 31' 48"	1,0006504	15' 59,01"	23° 26' 18"	-02m 24s
11:00	16° 39' 16"	-0,65"	15° 20' 52"	6° 32' 44"	1,0006625	15' 58,99"	23° 26' 18"	-02m 23s
12:00	16° 41' 43"	-0,65"	15° 23' 09"	6° 33' 41"	1,0006747	15' 58,98"	23° 26' 18"	-02m 23s
13:00	16° 44' 11"	-0,65"	15° 25' 26"	6° 34' 37"	1,0006868	15' 58,97"	23° 26' 18"	-02m 22s
14:00	16° 46' 38"	-0,65"	15° 27' 43"	6° 35' 34"	1,0006989	15' 58,96"	23° 26' 18"	-02m 21s
15:00	16° 49' 06"	-0,65"	15° 30' 01"	6° 36' 31"	1,0007110	15' 58,95"	23° 26' 18"	-02m 21s
16:00	16° 51' 34"	-0,65"	15° 32' 18"	6° 37' 27"	1,0007231	15' 58,94"	23° 26' 18"	-02m 20s
17:00	16° 54' 01"	-0,65"	15° 34' 35"	6° 38' 24"	1,0007353	15' 58,92"	23° 26' 18"	-02m 19s
18:00	16° 56' 29"	-0,65"	15° 36' 52"	6° 39' 20"	1,0007474	15' 58,91"	23° 26' 18"	-02m 18s
19:00	16° 58' 56"	-0,65"	15° 39' 10"	6° 40' 17"	1,0007595	15' 58,90"	23° 26' 18"	-02m 18s
20:00	17° 01' 24"	-0,65"	15° 41' 27"	6° 41' 13"	1,0007717	15' 58,89"	23° 26' 18"	-02m 17s
21:00	17° 03' 51"	-0,65"	15° 43' 44"	6° 42' 10"	1,0007838	15' 58,88"	23° 26' 18"	-02m 16s
22:00	17° 06' 19"	-0,65"	15° 46' 01"	6° 43' 06"	1,0007959	15' 58,87"	23° 26' 18"	-02m 16s
23:00	17° 08' 46"	-0,65"	15° 48' 19"	6° 44' 03"	1,0008080	15' 58,86"	23° 26' 18"	-02m 15s
24:00	17° 11' 14"	-0,65"	15° 50' 36"	6° 44' 59"	1,0008202	15' 58,84"	23° 26' 18"	-02m 14s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	240° 14' 15"	-5° 06' 43"	236° 52' 45"	-25° 11' 35"	54' 17"	14' 47,34"	107° 52' 10"	85,87%
01:00	240° 44' 10"	-5° 07' 05"	237° 24' 49"	-25° 18' 24"	54' 16"	14' 47,22"	107° 36' 33"	85,59%
02:00	241° 14' 03"	-5° 07' 26"	237° 56' 55"	-25° 25' 05"	54' 16"	14' 47,09"	107° 20' 54"	85,31%
03:00	241° 43' 56"	-5° 07' 45"	238° 29' 05"	-25° 31' 40"	54' 15"	14' 46,97"	107° 05' 13"	85,03%
04:00	242° 13' 48"	-5° 08' 02"	239° 01' 17"	-25° 38' 07"	54' 15"	14' 46,86"	106° 49' 30"	84,75%
05:00	242° 43' 40"	-5° 08' 19"	239° 33' 32"	-25° 44' 27"	54' 14"	14' 46,75"	106° 33' 46"	84,46%
06:00	243° 13' 31"	-5° 08' 34"	240° 05' 49"	-25° 50' 39"	54' 14"	14' 46,64"	106° 18' 00"	84,18%
07:00	243° 43' 21"	-5° 08' 47"	240° 38' 10"	-25° 56' 44"	54' 14"	14' 46,53"	106° 02' 12"	83,89%
08:00	244° 13' 11"	-5° 08' 59"	241° 10' 33"	-26° 02' 42"	54' 13"	14' 46,43"	105° 46' 22"	83,60%
09:00	244° 43' 01"	-5° 09' 10"	241° 42' 58"	-26° 08' 33"	54' 13"	14' 46,33"	105° 30' 31"	83,30%
10:00	245° 12' 50"	-5° 09' 19"	242° 15' 27"	-26° 14' 16"	54' 13"	14' 46,24"	105° 14' 37"	83,01%
11:00	245° 42' 38"	-5° 09' 27"	242° 47' 58"	-26° 19' 52"	54' 12"	14' 46,15"	104° 58' 42"	82,71%
12:00	246° 12' 26"	-5° 09' 33"	243° 20' 31"	-26° 25' 21"	54' 12"	14' 46,06"	104° 42' 45"	82,41%
13:00	246° 42' 13"	-5° 09' 38"	243° 53' 07"	-26° 30' 42"	54' 12"	14' 45,98"	104° 26' 47"	82,11%
14:00	247° 12' 00"	-5° 09' 42"	244° 25' 46"	-26° 35' 55"	54' 11"	14' 45,90"	104° 10' 47"	81,81%
15:00	247° 41' 47"	-5° 09' 44"	244° 58' 27"	-26° 41' 01"	54' 11"	14' 45,83"	103° 54' 45"	81,50%
16:00	248° 11' 33"	-5° 09' 45"	245° 31' 10"	-26° 45' 59"	54' 11"	14' 45,76"	103° 38' 41"	81,20%
17:00	248° 41' 18"	-5° 09' 44"	246° 03' 56"	-26° 50' 50"	54' 11"	14' 45,69"	103° 22' 36"	80,89%
18:00	249° 11' 04"	-5° 09' 42"	246° 36' 44"	-26° 55' 33"	54' 10"	14' 45,63"	103° 06' 29"	80,58%
19:00	249° 40' 48"	-5° 09' 39"	247° 09' 34"	-27° 00' 08"	54' 10"	14' 45,57"	102° 50' 20"	80,26%
20:00	250° 10' 33"	-5° 09' 34"	247° 42' 26"	-27° 04' 36"	54' 10"	14' 45,52"	102° 34' 10"	79,95%
21:00	250° 40' 17"	-5° 09' 28"	248° 15' 21"	-27° 08' 56"	54' 10"	14' 45,47"	102° 17' 59"	79,63%
22:00	251° 10' 00"	-5° 09' 21"	248° 48' 18"	-27° 13' 08"	54' 10"	14' 45,42"	102° 01' 46"	79,32%
23:00	251° 39' 44"	-5° 09' 12"	249° 21' 17"	-27° 17' 12"	54' 09"	14' 45,38"	101° 45' 32"	79,00%
24:00	252° 09' 27"	-5° 09' 01"	249° 54' 18"	-27° 21' 09"	54' 09"	14' 45,34"	101° 29' 16"	78,68%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	17° 11' 14"	-0,65"	15° 50' 36"	6° 44' 59"	1,0008202	15' 58,84"	23° 26' 18"	-02m 14s
01:00	17° 13' 42"	-0,65"	15° 52' 53"	6° 45' 56"	1,0008323	15' 58,83"	23° 26' 18"	-02m 13s
02:00	17° 16' 09"	-0,65"	15° 55' 10"	6° 46' 52"	1,0008444	15' 58,82"	23° 26' 18"	-02m 13s
03:00	17° 18' 37"	-0,65"	15° 57' 28"	6° 47' 49"	1,0008566	15' 58,81"	23° 26' 18"	-02m 12s
04:00	17° 21' 04"	-0,65"	15° 59' 45"	6° 48' 45"	1,0008687	15' 58,80"	23° 26' 18"	-02m 11s
05:00	17° 23' 32"	-0,65"	16° 02' 02"	6° 49' 41"	1,0008808	15' 58,79"	23° 26' 18"	-02m 11s
06:00	17° 25' 59"	-0,64"	16° 04' 20"	6° 50' 38"	1,0008930	15' 58,77"	23° 26' 18"	-02m 10s
07:00	17° 28' 27"	-0,64"	16° 06' 37"	6° 51' 34"	1,0009051	15' 58,76"	23° 26' 18"	-02m 09s
08:00	17° 30' 54"	-0,64"	16° 08' 54"	6° 52' 31"	1,0009172	15' 58,75"	23° 26' 18"	-02m 09s
09:00	17° 33' 22"	-0,64"	16° 11' 11"	6° 53' 27"	1,0009294	15' 58,74"	23° 26' 18"	-02m 08s
10:00	17° 35' 49"	-0,64"	16° 13' 29"	6° 54' 23"	1,0009415	15' 58,73"	23° 26' 18"	-02m 07s
11:00	17° 38' 17"	-0,64"	16° 15' 46"	6° 55' 20"	1,0009536	15' 58,72"	23° 26' 18"	-02m 06s
12:00	17° 40' 44"	-0,64"	16° 18' 03"	6° 56' 16"	1,0009658	15' 58,70"	23° 26' 18"	-02m 06s
13:00	17° 43' 12"	-0,64"	16° 20' 21"	6° 57' 12"	1,0009779	15' 58,69"	23° 26' 18"	-02m 05s
14:00	17° 45' 39"	-0,64"	16° 22' 38"	6° 58' 09"	1,0009901	15' 58,68"	23° 26' 18"	-02m 04s
15:00	17° 48' 07"	-0,64"	16° 24' 56"	6° 59' 05"	1,0010022	15' 58,67"	23° 26' 18"	-02m 04s
16:00	17° 50' 34"	-0,64"	16° 27' 13"	7° 00' 01"	1,0010143	15' 58,66"	23° 26' 18"	-02m 03s
17:00	17° 53' 02"	-0,64"	16° 29' 30"	7° 00' 57"	1,0010265	15' 58,65"	23° 26' 18"	-02m 02s
18:00	17° 55' 29"	-0,63"	16° 31' 48"	7° 01' 54"	1,0010386	15' 58,63"	23° 26' 18"	-02m 02s
19:00	17° 57' 57"	-0,63"	16° 34' 05"	7° 02' 50"	1,0010508	15' 58,62"	23° 26' 18"	-02m 01s
20:00	18° 00' 24"	-0,63"	16° 36' 22"	7° 03' 46"	1,0010629	15' 58,61"	23° 26' 18"	-02m 00s
21:00	18° 02' 52"	-0,63"	16° 38' 40"	7° 04' 42"	1,0010750	15' 58,60"	23° 26' 18"	-01m 59s
22:00	18° 05' 19"	-0,63"	16° 40' 57"	7° 05' 38"	1,0010872	15' 58,59"	23° 26' 18"	-01m 59s
23:00	18° 07' 47"	-0,63"	16° 43' 15"	7° 06' 35"	1,0010993	15' 58,58"	23° 26' 18"	-01m 58s
24:00	18° 10' 14"	-0,63"	16° 45' 32"	7° 07' 31"	1,0011115	15' 58,56"	23° 26' 18"	-01m 57s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	252° 09' 27"	-5° 09' 01"	249° 54' 18"	-27° 21' 09"	54' 09"	14' 45,34"	101° 29' 16"	78,68%
01:00	252° 39' 09"	-5° 08' 50"	250° 27' 20"	-27° 24' 58"	54' 09"	14' 45,31"	101° 12' 59"	78,35%
02:00	253° 08' 52"	-5° 08' 37"	251° 00' 25"	-27° 28' 39"	54' 09"	14' 45,28"	100° 56' 41"	78,03%
03:00	253° 38' 34"	-5° 08' 22"	251° 33' 32"	-27° 32' 12"	54' 09"	14' 45,25"	100° 40' 21"	77,70%
04:00	254° 08' 16"	-5° 08' 06"	252° 06' 41"	-27° 35' 37"	54' 09"	14' 45,23"	100° 24' 01"	77,37%
05:00	254° 37' 57"	-5° 07' 49"	252° 39' 51"	-27° 38' 55"	54' 09"	14' 45,21"	100° 07' 39"	77,04%
06:00	255° 07' 39"	-5° 07' 30"	253° 13' 03"	-27° 42' 04"	54' 09"	14' 45,20"	99° 51' 17"	76,71%
07:00	255° 37' 20"	-5° 07' 10"	253° 46' 17"	-27° 45' 05"	54' 09"	14' 45,19"	99° 34' 53"	76,38%
08:00	256° 07' 01"	-5° 06' 49"	254° 19' 32"	-27° 47' 59"	54' 09"	14' 45,19"	99° 18' 29"	76,04%
09:00	256° 36' 41"	-5° 06' 26"	254° 52' 49"	-27° 50' 44"	54' 09"	14' 45,19"	99° 02' 04"	75,71%
10:00	257° 06' 22"	-5° 06' 02"	255° 26' 08"	-27° 53' 22"	54' 09"	14' 45,19"	98° 45' 38"	75,37%
11:00	257° 36' 02"	-5° 05' 37"	255° 59' 28"	-27° 55' 51"	54' 09"	14' 45,20"	98° 29' 11"	75,03%
12:00	258° 05' 43"	-5° 05' 10"	256° 32' 49"	-27° 58' 13"	54' 09"	14' 45,21"	98° 12' 44"	74,69%
13:00	258° 35' 23"	-5° 04' 42"	257° 06' 11"	-28° 00' 26"	54' 09"	14' 45,23"	97° 56' 16"	74,35%
14:00	259° 05' 03"	-5° 04' 12"	257° 39' 35"	-28° 02' 31"	54' 09"	14' 45,25"	97° 39' 48"	74,00%
15:00	259° 34' 43"	-5° 03' 41"	258° 13' 00"	-28° 04' 28"	54' 09"	14' 45,28"	97° 23' 19"	73,66%
16:00	260° 04' 23"	-5° 03' 09"	258° 46' 27"	-28° 06' 17"	54' 09"	14' 45,31"	97° 06' 50"	73,31%
17:00	260° 34' 03"	-5° 02' 35"	259° 19' 54"	-28° 07' 58"	54' 09"	14' 45,34"	96° 50' 21"	72,96%
18:00	261° 03' 43"	-5° 02' 00"	259° 53' 22"	-28° 09' 31"	54' 09"	14' 45,38"	96° 33' 51"	72,61%
19:00	261° 33' 22"	-5° 01' 24"	260° 26' 52"	-28° 10' 56"	54' 10"	14' 45,43"	96° 17' 22"	72,26%
20:00	262° 03' 02"	-5° 00' 46"	261° 00' 22"	-28° 12' 12"	54' 10"	14' 45,47"	96° 00' 52"	71,91%
21:00	262° 32' 42"	-5° 00' 07"	261° 33' 53"	-28° 13' 20"	54' 10"	14' 45,53"	95° 44' 23"	71,56%
22:00	263° 02' 22"	-4° 59' 27"	262° 07' 25"	-28° 14' 21"	54' 10"	14' 45,59"	95° 27' 54"	71,20%
23:00	263° 32' 02"	-4° 58' 45"	262° 40' 58"	-28° 15' 12"	54' 10"	14' 45,65"	95° 11' 25"	70,84%
24:00	264° 01' 42"	-4° 58' 02"	263° 14' 31"	-28° 15' 56"	54' 11"	14' 45,71"	94° 54' 56"	70,49%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	18° 10' 14"	-0,63"	16° 45' 32"	7° 07' 31"	1,0011115	15' 58,56"	23° 26' 18"	-01m 57s
01:00	18° 12' 42"	-0,62"	16° 47' 49"	7° 08' 27"	1,0011236	15' 58,55"	23° 26' 18"	-01m 57s
02:00	18° 15' 09"	-0,62"	16° 50' 07"	7° 09' 23"	1,0011357	15' 58,54"	23° 26' 18"	-01m 56s
03:00	18° 17' 37"	-0,62"	16° 52' 24"	7° 10' 19"	1,0011479	15' 58,53"	23° 26' 18"	-01m 55s
04:00	18° 20' 04"	-0,62"	16° 54' 42"	7° 11' 15"	1,0011600	15' 58,52"	23° 26' 18"	-01m 55s
05:00	18° 22' 32"	-0,62"	16° 56' 59"	7° 12' 12"	1,0011722	15' 58,51"	23° 26' 18"	-01m 54s
06:00	18° 24' 59"	-0,62"	16° 59' 17"	7° 13' 08"	1,0011843	15' 58,49"	23° 26' 18"	-01m 53s
07:00	18° 27' 27"	-0,62"	17° 01' 34"	7° 14' 04"	1,0011964	15' 58,48"	23° 26' 18"	-01m 53s
08:00	18° 29' 54"	-0,61"	17° 03' 52"	7° 15' 00"	1,0012086	15' 58,47"	23° 26' 18"	-01m 52s
09:00	18° 32' 21"	-0,61"	17° 06' 09"	7° 15' 56"	1,0012207	15' 58,46"	23° 26' 18"	-01m 51s
10:00	18° 34' 49"	-0,61"	17° 08' 27"	7° 16' 52"	1,0012329	15' 58,45"	23° 26' 18"	-01m 50s
11:00	18° 37' 16"	-0,61"	17° 10' 44"	7° 17' 48"	1,0012450	15' 58,44"	23° 26' 18"	-01m 50s
12:00	18° 39' 44"	-0,61"	17° 13' 02"	7° 18' 44"	1,0012571	15' 58,43"	23° 26' 18"	-01m 49s
13:00	18° 42' 11"	-0,60"	17° 15' 19"	7° 19' 40"	1,0012693	15' 58,41"	23° 26' 18"	-01m 48s
14:00	18° 44' 39"	-0,60"	17° 17' 37"	7° 20' 36"	1,0012814	15' 58,40"	23° 26' 18"	-01m 48s
15:00	18° 47' 06"	-0,60"	17° 19' 54"	7° 21' 32"	1,0012936	15' 58,39"	23° 26' 18"	-01m 47s
16:00	18° 49' 34"	-0,60"	17° 22' 12"	7° 22' 28"	1,0013057	15' 58,38"	23° 26' 18"	-01m 46s
17:00	18° 52' 01"	-0,60"	17° 24' 29"	7° 23' 24"	1,0013178	15' 58,37"	23° 26' 18"	-01m 46s
18:00	18° 54' 28"	-0,59"	17° 26' 47"	7° 24' 20"	1,0013300	15' 58,36"	23° 26' 18"	-01m 45s
19:00	18° 56' 56"	-0,59"	17° 29' 04"	7° 25' 16"	1,0013421	15' 58,34"	23° 26' 18"	-01m 44s
20:00	18° 59' 23"	-0,59"	17° 31' 22"	7° 26' 12"	1,0013543	15' 58,33"	23° 26' 18"	-01m 44s
21:00	19° 01' 51"	-0,59"	17° 33' 39"	7° 27' 08"	1,0013664	15' 58,32"	23° 26' 18"	-01m 43s
22:00	19° 04' 18"	-0,58"	17° 35' 57"	7° 28' 04"	1,0013785	15' 58,31"	23° 26' 18"	-01m 42s
23:00	19° 06' 45"	-0,58"	17° 38' 14"	7° 28' 59"	1,0013907	15' 58,30"	23° 26' 18"	-01m 41s
24:00	19° 09' 13"	-0,58"	17° 40' 32"	7° 29' 55"	1,0014028	15' 58,29"	23° 26' 18"	-01m 41s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	264° 01' 42"	-4° 58' 02"	263° 14' 31"	-28° 15' 56"	54' 11"	14' 45,71"	94° 54' 56"	70,49%
01:00	264° 31' 22"	-4° 57' 18"	263° 48' 05"	-28° 16' 32"	54' 11"	14' 45,79"	94° 38' 28"	70,13%
02:00	265° 01' 02"	-4° 56' 32"	264° 21' 39"	-28° 16' 59"	54' 11"	14' 45,86"	94° 22' 00"	69,77%
03:00	265° 30' 43"	-4° 55' 45"	264° 55' 14"	-28° 17' 18"	54' 12"	14' 45,94"	94° 05' 33"	69,40%
04:00	266° 00' 23"	-4° 54' 57"	265° 28' 49"	-28° 17' 29"	54' 12"	14' 46,03"	93° 49' 07"	69,04%
05:00	266° 30' 04"	-4° 54' 07"	266° 02' 25"	-28° 17' 32"	54' 12"	14' 46,12"	93° 32' 41"	68,68%
06:00	266° 59' 45"	-4° 53' 16"	266° 36' 01"	-28° 17' 26"	54' 13"	14' 46,21"	93° 16' 16"	68,31%
07:00	267° 29' 26"	-4° 52' 24"	267° 09' 37"	-28° 17' 12"	54' 13"	14' 46,31"	92° 59' 53"	67,94%
08:00	267° 59' 07"	-4° 51' 30"	267° 43' 13"	-28° 16' 50"	54' 13"	14' 46,42"	92° 43' 30"	67,58%
09:00	268° 28' 49"	-4° 50' 35"	268° 16' 50"	-28° 16' 20"	54' 14"	14' 46,52"	92° 27' 08"	67,21%
10:00	268° 58' 31"	-4° 49' 39"	268° 50' 26"	-28° 15' 42"	54' 14"	14' 46,64"	92° 10' 47"	66,84%
11:00	269° 28' 13"	-4° 48' 41"	269° 24' 02"	-28° 14' 55"	54' 14"	14' 46,76"	91° 54' 28"	66,47%
12:00	269° 57' 55"	-4° 47' 42"	269° 57' 39"	-28° 14' 00"	54' 15"	14' 46,88"	91° 38' 10"	66,09%
13:00	270° 27' 38"	-4° 46' 42"	270° 31' 15"	-28° 12' 57"	54' 15"	14' 47,01"	91° 21' 54"	65,72%
14:00	270° 57' 21"	-4° 45' 40"	271° 04' 51"	-28° 11' 45"	54' 16"	14' 47,14"	91° 05' 39"	65,34%
15:00	271° 27' 04"	-4° 44' 38"	271° 38' 26"	-28° 10' 26"	54' 16"	14' 47,28"	90° 49' 26"	64,97%
16:00	271° 56' 48"	-4° 43' 33"	272° 12' 02"	-28° 08' 58"	54' 17"	14' 47,42"	90° 33' 15"	64,59%
17:00	272° 26' 32"	-4° 42' 28"	272° 45' 36"	-28° 07' 22"	54' 17"	14' 47,56"	90° 17' 06"	64,21%
18:00	272° 56' 17"	-4° 41' 21"	273° 19' 11"	-28° 05' 37"	54' 18"	14' 47,71"	90° 00' 58"	63,84%
19:00	273° 26' 02"	-4° 40' 13"	273° 52' 45"	-28° 03' 45"	54' 19"	14' 47,87"	89° 44' 53"	63,46%
20:00	273° 55' 47"	-4° 39' 04"	274° 26' 18"	-28° 01' 44"	54' 19"	14' 48,03"	89° 28' 49"	63,07%
21:00	274° 25' 33"	-4° 37' 54"	274° 59' 51"	-27° 59' 35"	54' 20"	14' 48,20"	89° 12' 48"	62,69%
22:00	274° 55' 20"	-4° 36' 42"	275° 33' 23"	-27° 57' 18"	54' 20"	14' 48,37"	88° 56' 49"	62,31%
23:00	275° 25' 07"	-4° 35' 29"	276° 06' 54"	-27° 54' 53"	54' 21"	14' 48,54"	88° 40' 53"	61,93%
24:00	275° 54' 54"	-4° 34' 14"	276° 40' 24"	-27° 52' 19"	54' 22"	14' 48,72"	88° 24' 59"	61,54%

09 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	19° 09' 13"	-0,58"	17° 40' 32"	7° 29' 55"	1,0014028	15' 58,29"	23° 26' 18"	-01m 41s
01:00	19° 11' 40"	-0,58"	17° 42' 50"	7° 30' 51"	1,0014150	15' 58,27"	23° 26' 18"	-01m 40s
02:00	19° 14' 08"	-0,57"	17° 45' 07"	7° 31' 47"	1,0014271	15' 58,26"	23° 26' 18"	-01m 39s
03:00	19° 16' 35"	-0,57"	17° 47' 25"	7° 32' 43"	1,0014392	15' 58,25"	23° 26' 18"	-01m 39s
04:00	19° 19' 02"	-0,57"	17° 49' 42"	7° 33' 39"	1,0014514	15' 58,24"	23° 26' 18"	-01m 38s
05:00	19° 21' 30"	-0,57"	17° 52' 00"	7° 34' 34"	1,0014635	15' 58,23"	23° 26' 18"	-01m 37s
06:00	19° 23' 57"	-0,56"	17° 54' 18"	7° 35' 30"	1,0014756	15' 58,22"	23° 26' 18"	-01m 37s
07:00	19° 26' 25"	-0,56"	17° 56' 35"	7° 36' 26"	1,0014878	15' 58,20"	23° 26' 18"	-01m 36s
08:00	19° 28' 52"	-0,56"	17° 58' 53"	7° 37' 22"	1,0014999	15' 58,19"	23° 26' 18"	-01m 35s
09:00	19° 31' 19"	-0,55"	18° 01' 11"	7° 38' 18"	1,0015120	15' 58,18"	23° 26' 18"	-01m 35s
10:00	19° 33' 47"	-0,55"	18° 03' 28"	7° 39' 13"	1,0015242	15' 58,17"	23° 26' 18"	-01m 34s
11:00	19° 36' 14"	-0,55"	18° 05' 46"	7° 40' 09"	1,0015363	15' 58,16"	23° 26' 18"	-01m 33s
12:00	19° 38' 41"	-0,55"	18° 08' 04"	7° 41' 05"	1,0015484	15' 58,15"	23° 26' 18"	-01m 33s
13:00	19° 41' 09"	-0,54"	18° 10' 21"	7° 42' 00"	1,0015606	15' 58,13"	23° 26' 18"	-01m 32s
14:00	19° 43' 36"	-0,54"	18° 12' 39"	7° 42' 56"	1,0015727	15' 58,12"	23° 26' 18"	-01m 31s
15:00	19° 46' 03"	-0,54"	18° 14' 57"	7° 43' 52"	1,0015848	15' 58,11"	23° 26' 18"	-01m 31s
16:00	19° 48' 31"	-0,53"	18° 17' 14"	7° 44' 47"	1,0015970	15' 58,10"	23° 26' 18"	-01m 30s
17:00	19° 50' 58"	-0,53"	18° 19' 32"	7° 45' 43"	1,0016091	15' 58,09"	23° 26' 18"	-01m 29s
18:00	19° 53' 26"	-0,53"	18° 21' 50"	7° 46' 39"	1,0016212	15' 58,08"	23° 26' 18"	-01m 29s
19:00	19° 55' 53"	-0,52"	18° 24' 07"	7° 47' 34"	1,0016334	15' 58,07"	23° 26' 18"	-01m 28s
20:00	19° 58' 20"	-0,52"	18° 26' 25"	7° 48' 30"	1,0016455	15' 58,05"	23° 26' 18"	-01m 27s
21:00	20° 00' 48"	-0,52"	18° 28' 43"	7° 49' 26"	1,0016576	15' 58,04"	23° 26' 18"	-01m 27s
22:00	20° 03' 15"	-0,51"	18° 31' 01"	7° 50' 21"	1,0016697	15' 58,03"	23° 26' 18"	-01m 26s
23:00	20° 05' 42"	-0,51"	18° 33' 18"	7° 51' 17"	1,0016819	15' 58,02"	23° 26' 18"	-01m 25s
24:00	20° 08' 10"	-0,51"	18° 35' 36"	7° 52' 12"	1,0016940	15' 58,01"	23° 26' 18"	-01m 25s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	275° 54' 54"	-4° 34' 14"	276° 40' 24"	-27° 52' 19"	54' 22"	14' 48,72"	88° 24' 59"	61,54%
01:00	276° 24' 43"	-4° 32' 59"	277° 13' 53"	-27° 49' 38"	54' 22"	14' 48,91"	88° 09' 08"	61,16%
02:00	276° 54' 31"	-4° 31' 42"	277° 47' 22"	-27° 46' 48"	54' 23"	14' 49,10"	87° 53' 19"	60,77%
03:00	277° 24' 21"	-4° 30' 24"	278° 20' 49"	-27° 43' 50"	54' 24"	14' 49,29"	87° 37' 33"	60,38%
04:00	277° 54' 10"	-4° 29' 04"	278° 54' 16"	-27° 40' 44"	54' 25"	14' 49,49"	87° 21' 50"	59,99%
05:00	278° 24' 01"	-4° 27' 44"	279° 27' 41"	-27° 37' 30"	54' 25"	14' 49,70"	87° 06' 10"	59,61%
06:00	278° 53' 52"	-4° 26' 22"	280° 01' 06"	-27° 34' 08"	54' 26"	14' 49,90"	86° 50' 33"	59,22%
07:00	279° 23' 44"	-4° 24' 59"	280° 34' 29"	-27° 30' 38"	54' 27"	14' 50,12"	86° 34' 59"	58,83%
08:00	279° 53' 37"	-4° 23' 35"	281° 07' 50"	-27° 26' 59"	54' 28"	14' 50,34"	86° 19' 28"	58,43%
09:00	280° 23' 30"	-4° 22' 09"	281° 41' 11"	-27° 23' 13"	54' 28"	14' 50,56"	86° 04' 01"	58,04%
10:00	280° 53' 24"	-4° 20' 42"	282° 14' 30"	-27° 19' 18"	54' 29"	14' 50,79"	85° 48' 37"	57,65%
11:00	281° 23' 19"	-4° 19' 14"	282° 47' 48"	-27° 15' 16"	54' 30"	14' 51,02"	85° 33' 16"	57,26%
12:00	281° 53' 15"	-4° 17' 45"	283° 21' 04"	-27° 11' 06"	54' 31"	14' 51,26"	85° 17' 59"	56,86%
13:00	282° 23' 11"	-4° 16' 14"	283° 54' 19"	-27° 06' 47"	54' 32"	14' 51,50"	85° 02' 46"	56,47%
14:00	282° 53' 08"	-4° 14' 43"	284° 27' 32"	-27° 02' 21"	54' 33"	14' 51,75"	84° 47' 37"	56,07%
15:00	283° 23' 06"	-4° 13' 10"	285° 00' 44"	-26° 57' 46"	54' 34"	14' 52,00"	84° 32' 31"	55,68%
16:00	283° 53' 05"	-4° 11' 36"	285° 33' 54"	-26° 53' 04"	54' 35"	14' 52,26"	84° 17' 29"	55,28%
17:00	284° 23' 05"	-4° 10' 01"	286° 07' 02"	-26° 48' 14"	54' 36"	14' 52,52"	84° 02' 31"	54,88%
18:00	284° 53' 06"	-4° 08' 24"	286° 40' 08"	-26° 43' 16"	54' 37"	14' 52,79"	83° 47' 38"	54,48%
19:00	285° 23' 08"	-4° 06' 46"	287° 13' 13"	-26° 38' 10"	54' 38"	14' 53,06"	83° 32' 48"	54,09%
20:00	285° 53' 10"	-4° 05' 08"	287° 46' 16"	-26° 32' 56"	54' 39"	14' 53,34"	83° 18' 03"	53,69%
21:00	286° 23' 14"	-4° 03' 27"	288° 19' 17"	-26° 27' 35"	54' 40"	14' 53,62"	83° 03' 22"	53,29%
22:00	286° 53' 19"	-4° 01' 46"	288° 52' 17"	-26° 22' 06"	54' 41"	14' 53,90"	82° 48' 45"	52,89%
23:00	287° 23' 24"	-4° 00' 04"	289° 25' 14"	-26° 16' 28"	54' 42"	14' 54,20"	82° 34' 13"	52,49%
24:00	287° 53' 31"	-3° 58' 20"	289° 58' 10"	-26° 10' 44"	54' 43"	14' 54,49"	82° 19' 46"	52,09%

10 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	20° 08' 10"	-0,51"	18° 35' 36"	7° 52' 12"	1,0016940	15' 58,01"	23° 26' 18"	-01m 25s
01:00	20° 10' 37"	-0,50"	18° 37' 54"	7° 53' 08"	1,0017061	15' 58,00"	23° 26' 18"	-01m 24s
02:00	20° 13' 04"	-0,50"	18° 40' 12"	7° 54' 03"	1,0017182	15' 57,98"	23° 26' 18"	-01m 23s
03:00	20° 15' 32"	-0,50"	18° 42' 29"	7° 54' 59"	1,0017303	15' 57,97"	23° 26' 18"	-01m 23s
04:00	20° 17' 59"	-0,49"	18° 44' 47"	7° 55' 54"	1,0017425	15' 57,96"	23° 26' 18"	-01m 22s
05:00	20° 20' 26"	-0,49"	18° 47' 05"	7° 56' 50"	1,0017546	15' 57,95"	23° 26' 18"	-01m 21s
06:00	20° 22' 53"	-0,48"	18° 49' 23"	7° 57' 45"	1,0017667	15' 57,94"	23° 26' 18"	-01m 20s
07:00	20° 25' 21"	-0,48"	18° 51' 41"	7° 58' 41"	1,0017788	15' 57,93"	23° 26' 18"	-01m 20s
08:00	20° 27' 48"	-0,48"	18° 53' 58"	7° 59' 36"	1,0017909	15' 57,91"	23° 26' 18"	-01m 19s
09:00	20° 30' 15"	-0,47"	18° 56' 16"	8° 00' 32"	1,0018030	15' 57,90"	23° 26' 18"	-01m 18s
10:00	20° 32' 43"	-0,47"	18° 58' 34"	8° 01' 27"	1,0018152	15' 57,89"	23° 26' 18"	-01m 18s
11:00	20° 35' 10"	-0,47"	19° 00' 52"	8° 02' 22"	1,0018273	15' 57,88"	23° 26' 18"	-01m 17s
12:00	20° 37' 37"	-0,46"	19° 03' 10"	8° 03' 18"	1,0018394	15' 57,87"	23° 26' 18"	-01m 16s
13:00	20° 40' 05"	-0,46"	19° 05' 27"	8° 04' 13"	1,0018515	15' 57,86"	23° 26' 18"	-01m 16s
14:00	20° 42' 32"	-0,45"	19° 07' 45"	8° 05' 09"	1,0018636	15' 57,84"	23° 26' 18"	-01m 15s
15:00	20° 44' 59"	-0,45"	19° 10' 03"	8° 06' 04"	1,0018757	15' 57,83"	23° 26' 18"	-01m 14s
16:00	20° 47' 26"	-0,45"	19° 12' 21"	8° 06' 59"	1,0018878	15' 57,82"	23° 26' 18"	-01m 14s
17:00	20° 49' 54"	-0,44"	19° 14' 39"	8° 07' 55"	1,0018999	15' 57,81"	23° 26' 18"	-01m 13s
18:00	20° 52' 21"	-0,44"	19° 16' 57"	8° 08' 50"	1,0019120	15' 57,80"	23° 26' 18"	-01m 12s
19:00	20° 54' 48"	-0,43"	19° 19' 15"	8° 09' 45"	1,0019241	15' 57,79"	23° 26' 18"	-01m 12s
20:00	20° 57' 16"	-0,43"	19° 21' 33"	8° 10' 40"	1,0019362	15' 57,78"	23° 26' 18"	-01m 11s
21:00	20° 59' 43"	-0,43"	19° 23' 51"	8° 11' 36"	1,0019483	15' 57,76"	23° 26' 18"	-01m 10s
22:00	21° 02' 10"	-0,42"	19° 26' 08"	8° 12' 31"	1,0019604	15' 57,75"	23° 26' 18"	-01m 10s
23:00	21° 04' 37"	-0,42"	19° 28' 26"	8° 13' 26"	1,0019725	15' 57,74"	23° 26' 18"	-01m 09s
24:00	21° 07' 05"	-0,41"	19° 30' 44"	8° 14' 21"	1,0019846	15' 57,73"	23° 26' 18"	-01m 09s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	287° 53' 31"	-3° 58' 20"	289° 58' 10"	-26° 10' 44"	54' 43"	14' 54,49"	82° 19' 46"	52,09%
01:00	288° 23' 39"	-3° 56' 36"	290° 31' 03"	-26° 04' 51"	54' 44"	14' 54,79"	82° 05' 23"	51,69%
02:00	288° 53' 48"	-3° 54' 50"	291° 03' 55"	-25° 58' 51"	54' 45"	14' 55,10"	81° 51' 05"	51,28%
03:00	289° 23' 58"	-3° 53' 03"	291° 36' 44"	-25° 52' 43"	54' 46"	14' 55,41"	81° 36' 52"	50,88%
04:00	289° 54' 09"	-3° 51' 14"	292° 09' 31"	-25° 46' 27"	54' 47"	14' 55,72"	81° 22' 43"	50,48%
05:00	290° 24' 21"	-3° 49' 25"	292° 42' 17"	-25° 40' 04"	54' 49"	14' 56,04"	81° 08' 40"	50,08%
06:00	290° 54' 35"	-3° 47' 35"	293° 15' 00"	-25° 33' 34"	54' 50"	14' 56,36"	80° 54' 42"	49,67%
07:00	291° 24' 49"	-3° 45' 43"	293° 47' 41"	-25° 26' 55"	54' 51"	14' 56,69"	80° 40' 49"	49,27%
08:00	291° 55' 05"	-3° 43' 50"	294° 20' 19"	-25° 20' 10"	54' 52"	14' 57,03"	80° 27' 01"	48,87%
09:00	292° 25' 22"	-3° 41' 56"	294° 52' 56"	-25° 13' 16"	54' 53"	14' 57,36"	80° 13' 18"	48,46%
10:00	292° 55' 40"	-3° 40' 01"	295° 25' 30"	-25° 06' 16"	54' 55"	14' 57,71"	79° 59' 41"	48,06%
11:00	293° 26' 00"	-3° 38' 05"	295° 58' 03"	-24° 59' 07"	54' 56"	14' 58,05"	79° 46' 09"	47,65%
12:00	293° 56' 21"	-3° 36' 08"	296° 30' 32"	-24° 51' 52"	54' 57"	14' 58,41"	79° 32' 42"	47,25%
13:00	294° 26' 43"	-3° 34' 10"	297° 03' 00"	-24° 44' 29"	54' 59"	14' 58,76"	79° 19' 21"	46,84%
14:00	294° 57' 07"	-3° 32' 10"	297° 35' 25"	-24° 36' 59"	55' 00"	14' 59,12"	79° 06' 06"	46,44%
15:00	295° 27' 32"	-3° 30' 10"	298° 07' 48"	-24° 29' 21"	55' 01"	14' 59,49"	78° 52' 57"	46,03%
16:00	295° 57' 58"	-3° 28' 08"	298° 40' 09"	-24° 21' 36"	55' 03"	15' 00,00"	78° 39' 53"	45,63%
17:00	296° 28' 26"	-3° 26' 06"	299° 12' 27"	-24° 13' 44"	55' 04"	15' 00,24"	78° 26' 55"	45,22%
18:00	296° 58' 55"	-3° 24' 02"	299° 44' 43"	-24° 05' 45"	55' 05"	15' 00,61"	78° 14' 03"	44,82%
19:00	297° 29' 26"	-3° 21' 57"	300° 16' 56"	-23° 57' 38"	55' 07"	15' 01,00"	78° 01' 17"	44,41%
20:00	297° 59' 58"	-3° 19' 51"	300° 49' 07"	-23° 49' 25"	55' 08"	15' 01,39"	77° 48' 37"	44,01%
21:00	298° 30' 32"	-3° 17' 45"	301° 21' 16"	-23° 41' 04"	55' 10"	15' 01,78"	77° 36' 03"	43,60%
22:00	299° 01' 07"	-3° 15' 37"	301° 53' 22"	-23° 32' 36"	55' 11"	15' 02,18"	77° 23' 36"	43,20%
23:00	299° 31' 43"	-3° 13' 28"	302° 25' 26"	-23° 24' 01"	55' 13"	15' 02,58"	77° 11' 14"	42,79%
24:00	300° 02' 22"	-3° 11' 18"	302° 57' 27"	-23° 15' 19"	55' 14"	15' 02,98"	76° 58' 59"	42,39%

11 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	21° 07' 05"	-0,41"	19° 30' 44"	8° 14' 21"	1,0019846	15' 57,73"	23° 26' 18"	-01m 09s
01:00	21° 09' 32"	-0,41"	19° 33' 02"	8° 15' 17"	1,0019967	15' 57,72"	23° 26' 18"	-01m 08s
02:00	21° 11' 59"	-0,40"	19° 35' 20"	8° 16' 12"	1,0020088	15' 57,71"	23° 26' 18"	-01m 07s
03:00	21° 14' 26"	-0,40"	19° 37' 38"	8° 17' 07"	1,0020209	15' 57,69"	23° 26' 18"	-01m 07s
04:00	21° 16' 54"	-0,39"	19° 39' 56"	8° 18' 02"	1,0020330	15' 57,68"	23° 26' 18"	-01m 06s
05:00	21° 19' 21"	-0,39"	19° 42' 14"	8° 18' 57"	1,0020451	15' 57,67"	23° 26' 18"	-01m 05s
06:00	21° 21' 48"	-0,39"	19° 44' 32"	8° 19' 52"	1,0020571	15' 57,66"	23° 26' 18"	-01m 05s
07:00	21° 24' 15"	-0,38"	19° 46' 50"	8° 20' 47"	1,0020692	15' 57,65"	23° 26' 18"	-01m 04s
08:00	21° 26' 42"	-0,38"	19° 49' 08"	8° 21' 43"	1,0020813	15' 57,64"	23° 26' 18"	-01m 03s
09:00	21° 29' 10"	-0,37"	19° 51' 26"	8° 22' 38"	1,0020934	15' 57,63"	23° 26' 18"	-01m 03s
10:00	21° 31' 37"	-0,37"	19° 53' 44"	8° 23' 33"	1,0021055	15' 57,61"	23° 26' 18"	-01m 02s
11:00	21° 34' 04"	-0,36"	19° 56' 02"	8° 24' 28"	1,0021175	15' 57,60"	23° 26' 18"	-01m 01s
12:00	21° 36' 31"	-0,36"	19° 58' 20"	8° 25' 23"	1,0021296	15' 57,59"	23° 26' 18"	-01m 01s
13:00	21° 38' 59"	-0,35"	20° 00' 38"	8° 26' 18"	1,0021417	15' 57,58"	23° 26' 18"	-01m 00s
14:00	21° 41' 26"	-0,35"	20° 02' 56"	8° 27' 13"	1,0021538	15' 57,57"	23° 26' 18"	-00m 59s
15:00	21° 43' 53"	-0,34"	20° 05' 14"	8° 28' 08"	1,0021658	15' 57,56"	23° 26' 18"	-00m 59s
16:00	21° 46' 20"	-0,34"	20° 07' 32"	8° 29' 03"	1,0021779	15' 57,54"	23° 26' 18"	-00m 58s
17:00	21° 48' 47"	-0,33"	20° 09' 50"	8° 29' 58"	1,0021900	15' 57,53"	23° 26' 18"	-00m 57s
18:00	21° 51' 15"	-0,33"	20° 12' 08"	8° 30' 53"	1,0022020	15' 57,52"	23° 26' 18"	-00m 57s
19:00	21° 53' 42"	-0,32"	20° 14' 26"	8° 31' 48"	1,0022141	15' 57,51"	23° 26' 18"	-00m 56s
20:00	21° 56' 09"	-0,32"	20° 16' 45"	8° 32' 43"	1,0022262	15' 57,50"	23° 26' 18"	-00m 55s
21:00	21° 58' 36"	-0,32"	20° 19' 03"	8° 33' 38"	1,0022382	15' 57,49"	23° 26' 18"	-00m 55s
22:00	22° 01' 03"	-0,31"	20° 21' 21"	8° 34' 33"	1,0022503	15' 57,48"	23° 26' 18"	-00m 54s
23:00	22° 03' 31"	-0,31"	20° 23' 39"	8° 35' 27"	1,0022623	15' 57,46"	23° 26' 18"	-00m 53s
24:00	22° 05' 58"	-0,30"	20° 25' 57"	8° 36' 22"	1,0022744	15' 57,45"	23° 26' 18"	-00m 53s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	300° 02' 22"	-3° 11' 18"	302° 57' 27"	-23° 15' 19"	55' 14"	15' 02,98"	76° 58' 59"	42,39%
01:00	300° 33' 01"	-3° 09' 06"	303° 29' 26"	-23° 06' 30"	55' 16"	15' 03,40"	76° 46' 51"	41,98%
02:00	301° 03' 43"	-3° 06' 54"	304° 01' 23"	-22° 57' 34"	55' 17"	15' 03,81"	76° 34' 49"	41,58%
03:00	301° 34' 26"	-3° 04' 41"	304° 33' 17"	-22° 48' 32"	55' 19"	15' 04,23"	76° 22' 53"	41,17%
04:00	302° 05' 11"	-3° 02' 27"	305° 05' 09"	-22° 39' 22"	55' 20"	15' 04,65"	76° 11' 04"	40,77%
05:00	302° 35' 57"	-3° 00' 12"	305° 36' 58"	-22° 30' 06"	55' 22"	15' 05,08"	75° 59' 21"	40,36%
06:00	303° 06' 45"	-2° 57' 56"	306° 08' 45"	-22° 20' 43"	55' 23"	15' 05,51"	75° 47' 46"	39,96%
07:00	303° 37' 35"	-2° 55' 39"	306° 40' 30"	-22° 11' 13"	55' 25"	15' 05,95"	75° 36' 17"	39,55%
08:00	304° 08' 26"	-2° 53' 21"	307° 12' 12"	-22° 01' 36"	55' 27"	15' 06,39"	75° 24' 55"	39,15%
09:00	304° 39' 19"	-2° 51' 02"	307° 43' 52"	-21° 51' 53"	55' 28"	15' 06,83"	75° 13' 39"	38,75%
10:00	305° 10' 14"	-2° 48' 42"	308° 15' 29"	-21° 42' 03"	55' 30"	15' 07,28"	75° 02' 31"	38,34%
11:00	305° 41' 11"	-2° 46' 21"	308° 47' 04"	-21° 32' 06"	55' 31"	15' 07,73"	74° 51' 30"	37,94%
12:00	306° 12' 10"	-2° 43' 59"	309° 18' 37"	-21° 22' 03"	55' 33"	15' 08,19"	74° 40' 36"	37,54%
13:00	306° 43' 10"	-2° 41' 36"	309° 50' 07"	-21° 11' 54"	55' 35"	15' 08,65"	74° 29' 49"	37,14%
14:00	307° 14' 12"	-2° 39' 12"	310° 21' 35"	-21° 01' 38"	55' 37"	15' 09,11"	74° 19' 09"	36,74%
15:00	307° 45' 17"	-2° 36' 48"	310° 53' 00"	-20° 51' 15"	55' 38"	15' 09,58"	74° 08' 36"	36,33%
16:00	308° 16' 23"	-2° 34' 22"	311° 24' 23"	-20° 40' 46"	55' 40"	15' 10,05"	73° 58' 11"	35,93%
17:00	308° 47' 30"	-2° 31' 55"	311° 55' 44"	-20° 30' 11"	55' 42"	15' 10,53"	73° 47' 53"	35,53%
18:00	309° 18' 40"	-2° 29' 28"	312° 27' 03"	-20° 19' 29"	55' 44"	15' 11,01"	73° 37' 43"	35,13%
19:00	309° 49' 52"	-2° 27' 00"	312° 58' 19"	-20° 08' 41"	55' 45"	15' 11,49"	73° 27' 40"	34,74%
20:00	310° 21' 06"	-2° 24' 30"	313° 29' 33"	-19° 57' 47"	55' 47"	15' 11,98"	73° 17' 44"	34,34%
21:00	310° 52' 22"	-2° 22' 00"	314° 00' 45"	-19° 46' 47"	55' 49"	15' 12,47"	73° 07' 57"	33,94%
22:00	311° 23' 40"	-2° 19' 29"	314° 31' 55"	-19° 35' 41"	55' 51"	15' 12,97"	72° 58' 17"	33,54%
23:00	311° 54' 59"	-2° 16' 57"	315° 03' 02"	-19° 24' 28"	55' 53"	15' 13,46"	72° 48' 44"	33,14%
24:00	312° 26' 21"	-2° 14' 25"	315° 34' 08"	-19° 13' 09"	55' 54"	15' 13,97"	72° 39' 20"	32,75%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	22° 05' 58"	-0,30"	20° 25' 57"	8° 36' 22"	1,0022744	15' 57,45"	23° 26' 18"	-00m 53s
01:00	22° 08' 25"	-0,30"	20° 28' 15"	8° 37' 17"	1,0022864	15' 57,44"	23° 26' 18"	-00m 52s
02:00	22° 10' 52"	-0,29"	20° 30' 33"	8° 38' 12"	1,0022985	15' 57,43"	23° 26' 18"	-00m 52s
03:00	22° 13' 19"	-0,29"	20° 32' 51"	8° 39' 07"	1,0023105	15' 57,42"	23° 26' 18"	-00m 51s
04:00	22° 15' 46"	-0,28"	20° 35' 10"	8° 40' 02"	1,0023226	15' 57,41"	23° 26' 18"	-00m 50s
05:00	22° 18' 14"	-0,28"	20° 37' 28"	8° 40' 56"	1,0023346	15' 57,39"	23° 26' 18"	-00m 50s
06:00	22° 20' 41"	-0,27"	20° 39' 46"	8° 41' 51"	1,0023466	15' 57,38"	23° 26' 18"	-00m 49s
07:00	22° 23' 08"	-0,27"	20° 42' 04"	8° 42' 46"	1,0023587	15' 57,37"	23° 26' 18"	-00m 48s
08:00	22° 25' 35"	-0,26"	20° 44' 22"	8° 43' 41"	1,0023707	15' 57,36"	23° 26' 18"	-00m 48s
09:00	22° 28' 02"	-0,25"	20° 46' 41"	8° 44' 35"	1,0023828	15' 57,35"	23° 26' 18"	-00m 47s
10:00	22° 30' 29"	-0,25"	20° 48' 59"	8° 45' 30"	1,0023948	15' 57,34"	23° 26' 18"	-00m 46s
11:00	22° 32' 57"	-0,24"	20° 51' 17"	8° 46' 25"	1,0024068	15' 57,33"	23° 26' 18"	-00m 46s
12:00	22° 35' 24"	-0,24"	20° 53' 35"	8° 47' 20"	1,0024188	15' 57,31"	23° 26' 18"	-00m 45s
13:00	22° 37' 51"	-0,23"	20° 55' 53"	8° 48' 14"	1,0024309	15' 57,30"	23° 26' 18"	-00m 44s
14:00	22° 40' 18"	-0,23"	20° 58' 12"	8° 49' 09"	1,0024429	15' 57,29"	23° 26' 18"	-00m 44s
15:00	22° 42' 45"	-0,22"	21° 00' 30"	8° 50' 04"	1,0024549	15' 57,28"	23° 26' 18"	-00m 43s
16:00	22° 45' 12"	-0,22"	21° 02' 48"	8° 50' 58"	1,0024669	15' 57,27"	23° 26' 18"	-00m 43s
17:00	22° 47' 39"	-0,21"	21° 05' 06"	8° 51' 53"	1,0024789	15' 57,26"	23° 26' 18"	-00m 42s
18:00	22° 50' 07"	-0,21"	21° 07' 25"	8° 52' 47"	1,0024909	15' 57,25"	23° 26' 18"	-00m 41s
19:00	22° 52' 34"	-0,20"	21° 09' 43"	8° 53' 42"	1,0025029	15' 57,23"	23° 26' 18"	-00m 41s
20:00	22° 55' 01"	-0,20"	21° 12' 01"	8° 54' 37"	1,0025149	15' 57,22"	23° 26' 18"	-00m 40s
21:00	22° 57' 28"	-0,19"	21° 14' 20"	8° 55' 31"	1,0025270	15' 57,21"	23° 26' 18"	-00m 39s
22:00	22° 59' 55"	-0,19"	21° 16' 38"	8° 56' 26"	1,0025390	15' 57,20"	23° 26' 18"	-00m 39s
23:00	23° 02' 22"	-0,18"	21° 18' 56"	8° 57' 20"	1,0025509	15' 57,19"	23° 26' 18"	-00m 38s
24:00	23° 04' 49"	-0,18"	21° 21' 14"	8° 58' 15"	1,0025629	15' 57,18"	23° 26' 18"	-00m 37s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	312° 26' 21"	-2° 14' 25"	315° 34' 08"	-19° 13' 09"	55' 54"	15' 13,97"	72° 39' 20"	32,75%
01:00	312° 57' 45"	-2° 11' 51"	316° 05' 11"	-19° 01' 45"	55' 56"	15' 14,47"	72° 30' 03"	32,35%
02:00	313° 29' 11"	-2° 09' 17"	316° 36' 12"	-18° 50' 14"	55' 58"	15' 14,98"	72° 20' 55"	31,96%
03:00	314° 00' 39"	-2° 06' 42"	317° 07' 11"	-18° 38' 38"	56' 00"	15' 15,49"	72° 11' 54"	31,57%
04:00	314° 32' 10"	-2° 04' 06"	317° 38' 08"	-18° 26' 55"	56' 02"	15' 16,01"	72° 03' 02"	31,17%
05:00	315° 03' 42"	-2° 01' 29"	318° 09' 03"	-18° 15' 07"	56' 04"	15' 16,53"	71° 54' 17"	30,78%
06:00	315° 35' 17"	-1° 58' 51"	318° 39' 56"	-18° 03' 13"	56' 06"	15' 17,05"	71° 45' 41"	30,39%
07:00	316° 06' 53"	-1° 56' 13"	319° 10' 47"	-17° 51' 13"	56' 08"	15' 17,57"	71° 37' 13"	30,00%
08:00	316° 38' 32"	-1° 53' 34"	319° 41' 36"	-17° 39' 08"	56' 10"	15' 18,10"	71° 28' 53"	29,61%
09:00	317° 10' 14"	-1° 50' 54"	320° 12' 23"	-17° 26' 56"	56' 12"	15' 18,63"	71° 20' 42"	29,22%
10:00	317° 41' 57"	-1° 48' 13"	320° 43' 08"	-17° 14' 40"	56' 13"	15' 19,17"	71° 12' 39"	28,84%
11:00	318° 13' 43"	-1° 45' 32"	321° 13' 51"	-17° 02' 17"	56' 15"	15' 19,71"	71° 04' 44"	28,45%
12:00	318° 45' 31"	-1° 42' 49"	321° 44' 33"	-16° 49' 49"	56' 17"	15' 20,25"	70° 56' 59"	28,06%
13:00	319° 17' 21"	-1° 40' 07"	322° 15' 13"	-16° 37' 16"	56' 19"	15' 20,79"	70° 49' 22"	27,68%
14:00	319° 49' 13"	-1° 37' 23"	322° 45' 51"	-16° 24' 37"	56' 21"	15' 21,34"	70° 41' 53"	27,30%
15:00	320° 21' 08"	-1° 34' 39"	323° 16' 27"	-16° 11' 53"	56' 23"	15' 21,89"	70° 34' 34"	26,92%
16:00	320° 53' 05"	-1° 31' 54"	323° 47' 02"	-15° 59' 03"	56' 25"	15' 22,44"	70° 27' 23"	26,53%
17:00	321° 25' 05"	-1° 29' 08"	324° 17' 35"	-15° 46' 09"	56' 28"	15' 22,99"	70° 20' 21"	26,16%
18:00	321° 57' 07"	-1° 26' 22"	324° 48' 07"	-15° 33' 09"	56' 30"	15' 23,55"	70° 13' 28"	25,78%
19:00	322° 29' 11"	-1° 23' 35"	325° 18' 37"	-15° 20' 03"	56' 32"	15' 24,11"	70° 06' 44"	25,40%
20:00	323° 01' 18"	-1° 20' 47"	325° 49' 06"	-15° 06' 53"	56' 34"	15' 24,68"	70° 00' 10"	25,02%
21:00	323° 33' 27"	-1° 17' 59"	326° 19' 33"	-14° 53' 37"	56' 36"	15' 25,24"	69° 53' 45"	24,65%
22:00	324° 05' 38"	-1° 15' 10"	326° 49' 59"	-14° 40' 17"	56' 38"	15' 25,81"	69° 47' 29"	24,28%
23:00	324° 37' 52"	-1° 12' 21"	327° 20' 23"	-14° 26' 51"	56' 40"	15' 26,38"	69° 41' 22"	23,91%
24:00	325° 10' 09"	-1° 09' 31"	327° 50' 46"	-14° 13' 21"	56' 42"	15' 26,95"	69° 35' 25"	23,54%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	23° 04' 49"	-0,18"	21° 21' 14"	8° 58' 15"	1,0025629	15' 57,18"	23° 26' 18"	-00m 37s
01:00	23° 07' 16"	-0,17"	21° 23' 33"	8° 59' 09"	1,0025749	15' 57,17"	23° 26' 18"	-00m 37s
02:00	23° 09' 43"	-0,16"	21° 25' 51"	9° 00' 04"	1,0025869	15' 57,15"	23° 26' 18"	-00m 36s
03:00	23° 12' 11"	-0,16"	21° 28' 10"	9° 00' 58"	1,0025989	15' 57,14"	23° 26' 18"	-00m 36s
04:00	23° 14' 38"	-0,15"	21° 30' 28"	9° 01' 53"	1,0026109	15' 57,13"	23° 26' 18"	-00m 35s
05:00	23° 17' 05"	-0,15"	21° 32' 46"	9° 02' 47"	1,0026229	15' 57,12"	23° 26' 18"	-00m 34s
06:00	23° 19' 32"	-0,14"	21° 35' 05"	9° 03' 41"	1,0026349	15' 57,11"	23° 26' 18"	-00m 34s
07:00	23° 21' 59"	-0,14"	21° 37' 23"	9° 04' 36"	1,0026468	15' 57,10"	23° 26' 18"	-00m 33s
08:00	23° 24' 26"	-0,13"	21° 39' 41"	9° 05' 30"	1,0026588	15' 57,09"	23° 26' 18"	-00m 32s
09:00	23° 26' 53"	-0,13"	21° 42' 00"	9° 06' 25"	1,0026708	15' 57,07"	23° 26' 18"	-00m 32s
10:00	23° 29' 20"	-0,12"	21° 44' 18"	9° 07' 19"	1,0026827	15' 57,06"	23° 26' 18"	-00m 31s
11:00	23° 31' 47"	-0,12"	21° 46' 37"	9° 08' 13"	1,0026947	15' 57,05"	23° 26' 18"	-00m 30s
12:00	23° 34' 14"	-0,11"	21° 48' 55"	9° 09' 08"	1,0027067	15' 57,04"	23° 26' 18"	-00m 30s
13:00	23° 36' 41"	-0,10"	21° 51' 14"	9° 10' 02"	1,0027186	15' 57,03"	23° 26' 18"	-00m 29s
14:00	23° 39' 08"	-0,10"	21° 53' 32"	9° 10' 56"	1,0027306	15' 57,02"	23° 26' 18"	-00m 29s
15:00	23° 41' 35"	-0,09"	21° 55' 50"	9° 11' 51"	1,0027425	15' 57,01"	23° 26' 18"	-00m 28s
16:00	23° 44' 03"	-0,09"	21° 58' 09"	9° 12' 45"	1,0027545	15' 56,99"	23° 26' 18"	-00m 27s
17:00	23° 46' 30"	-0,08"	22° 00' 27"	9° 13' 39"	1,0027664	15' 56,98"	23° 26' 18"	-00m 27s
18:00	23° 48' 57"	-0,08"	22° 02' 46"	9° 14' 33"	1,0027784	15' 56,97"	23° 26' 18"	-00m 26s
19:00	23° 51' 24"	-0,07"	22° 05' 04"	9° 15' 27"	1,0027903	15' 56,96"	23° 26' 18"	-00m 25s
20:00	23° 53' 51"	-0,07"	22° 07' 23"	9° 16' 22"	1,0028022	15' 56,95"	23° 26' 18"	-00m 25s
21:00	23° 56' 18"	-0,06"	22° 09' 41"	9° 17' 16"	1,0028142	15' 56,94"	23° 26' 18"	-00m 24s
22:00	23° 58' 45"	-0,06"	22° 12' 00"	9° 18' 10"	1,0028261	15' 56,93"	23° 26' 18"	-00m 24s
23:00	24° 01' 12"	-0,05"	22° 14' 18"	9° 19' 04"	1,0028380	15' 56,91"	23° 26' 18"	-00m 23s
24:00	24° 03' 39"	-0,04"	22° 16' 37"	9° 19' 58"	1,0028500	15' 56,90"	23° 26' 18"	-00m 22s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	325° 10' 09"	-1° 09' 31"	327° 50' 46"	-14° 13' 21"	56' 42"	15' 26,95"	69° 35' 25"	23,54%
01:00	325° 42' 27"	-1° 06' 40"	328° 21' 08"	-13° 59' 46"	56' 44"	15' 27,52"	69° 29' 38"	23,17%
02:00	326° 14' 49"	-1° 03' 49"	328° 51' 29"	-13° 46' 05"	56' 46"	15' 28,10"	69° 24' 00"	22,80%
03:00	326° 47' 13"	-1° 00' 57"	329° 21' 49"	-13° 32' 20"	56' 48"	15' 28,68"	69° 18' 32"	22,44%
04:00	327° 19' 39"	-0° 58' 05"	329° 52' 07"	-13° 18' 31"	56' 51"	15' 29,26"	69° 13' 14"	22,07%
05:00	327° 52' 08"	-0° 55' 12"	330° 22' 24"	-13° 04' 36"	56' 53"	15' 29,84"	69° 08' 06"	21,71%
06:00	328° 24' 39"	-0° 52' 18"	330° 52' 41"	-12° 50' 37"	56' 55"	15' 30,43"	69° 03' 07"	21,35%
07:00	328° 57' 13"	-0° 49' 25"	331° 22' 56"	-12° 36' 34"	56' 57"	15' 31,01"	68° 58' 19"	20,99%
08:00	329° 29' 50"	-0° 46' 30"	331° 53' 11"	-12° 22' 26"	56' 59"	15' 31,60"	68° 53' 42"	20,63%
09:00	330° 02' 29"	-0° 43' 35"	332° 23' 25"	-12° 08' 13"	57' 01"	15' 32,19"	68° 49' 14"	20,28%
10:00	330° 35' 11"	-0° 40' 40"	332° 53' 37"	-11° 53' 56"	57' 03"	15' 32,78"	68° 44' 58"	19,93%
11:00	331° 07' 55"	-0° 37' 45"	333° 23' 50"	-11° 39' 35"	57' 06"	15' 33,37"	68° 40' 51"	19,57%
12:00	331° 40' 42"	-0° 34' 48"	333° 54' 01"	-11° 25' 09"	57' 08"	15' 33,97"	68° 36' 56"	19,22%
13:00	332° 13' 32"	-0° 31' 52"	334° 24' 12"	-11° 10' 39"	57' 10"	15' 34,56"	68° 33' 11"	18,88%
14:00	332° 46' 24"	-0° 28' 55"	334° 54' 22"	-10° 56' 05"	57' 12"	15' 35,16"	68° 29' 37"	18,53%
15:00	333° 19' 19"	-0° 25' 58"	335° 24' 32"	-10° 41' 27"	57' 14"	15' 35,76"	68° 26' 15"	18,19%
16:00	333° 52' 16"	-0° 23' 00"	335° 54' 41"	-10° 26' 45"	57' 17"	15' 36,35"	68° 23' 03"	17,84%
17:00	334° 25' 17"	-0° 20' 02"	336° 24' 50"	-10° 11' 58"	57' 19"	15' 36,95"	68° 20' 03"	17,50%
18:00	334° 58' 20"	-0° 17' 03"	336° 54' 59"	-9° 57' 08"	57' 21"	15' 37,55"	68° 17' 15"	17,17%
19:00	335° 31' 25"	-0° 14' 05"	337° 25' 07"	-9° 42' 14"	57' 23"	15' 38,16"	68° 14' 38"	16,83%
20:00	336° 04' 33"	-0° 11' 06"	337° 55' 15"	-9° 27' 16"	57' 25"	15' 38,76"	68° 12' 13"	16,50%
21:00	336° 37' 44"	-0° 08' 06"	338° 25' 23"	-9° 12' 14"	57' 28"	15' 39,36"	68° 10' 00"	16,17%
22:00	337° 10' 58"	-0° 05' 07"	338° 55' 31"	-8° 57' 08"	57' 30"	15' 39,97"	68° 07' 59"	15,84%
23:00	337° 44' 14"	-0° 02' 07"	339° 25' 39"	-8° 41' 59"	57' 32"	15' 40,57"	68° 06' 10"	15,51%
24:00	338° 17' 33"	0° 00' 53"	339° 55' 47"	-8° 26' 46"	57' 34"	15' 41,18"	68° 04' 34"	15,19%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	24° 03' 39"	-0,04"	22° 16' 37"	9° 19' 58"	1,0028500	15' 56,90"	23° 26' 18"	-00m 22s
01:00	24° 06' 06"	-0,04"	22° 18' 55"	9° 20' 52"	1,0028619	15' 56,89"	23° 26' 18"	-00m 22s
02:00	24° 08' 33"	-0,03"	22° 21' 14"	9° 21' 46"	1,0028738	15' 56,88"	23° 26' 18"	-00m 21s
03:00	24° 11' 00"	-0,03"	22° 23' 33"	9° 22' 41"	1,0028857	15' 56,87"	23° 26' 18"	-00m 20s
04:00	24° 13' 27"	-0,02"	22° 25' 51"	9° 23' 35"	1,0028976	15' 56,86"	23° 26' 18"	-00m 20s
05:00	24° 15' 54"	-0,02"	22° 28' 10"	9° 24' 29"	1,0029095	15' 56,85"	23° 26' 18"	-00m 19s
06:00	24° 18' 21"	-0,01"	22° 30' 28"	9° 25' 23"	1,0029214	15' 56,83"	23° 26' 18"	-00m 19s
07:00	24° 20' 48"	-0,01"	22° 32' 47"	9° 26' 17"	1,0029333	15' 56,82"	23° 26' 18"	-00m 18s
08:00	24° 23' 15"	0,00"	22° 35' 06"	9° 27' 11"	1,0029452	15' 56,81"	23° 26' 18"	-00m 17s
09:00	24° 25' 42"	0,01"	22° 37' 24"	9° 28' 05"	1,0029571	15' 56,80"	23° 26' 18"	-00m 17s
10:00	24° 28' 09"	0,01"	22° 39' 43"	9° 28' 59"	1,0029690	15' 56,79"	23° 26' 18"	-00m 16s
11:00	24° 30' 36"	0,02"	22° 42' 01"	9° 29' 53"	1,0029809	15' 56,78"	23° 26' 18"	-00m 16s
12:00	24° 33' 03"	0,02"	22° 44' 20"	9° 30' 47"	1,0029928	15' 56,77"	23° 26' 18"	-00m 15s
13:00	24° 35' 30"	0,03"	22° 46' 39"	9° 31' 41"	1,0030046	15' 56,76"	23° 26' 18"	-00m 14s
14:00	24° 37' 57"	0,03"	22° 48' 57"	9° 32' 34"	1,0030165	15' 56,74"	23° 26' 18"	-00m 14s
15:00	24° 40' 24"	0,04"	22° 51' 16"	9° 33' 28"	1,0030284	15' 56,73"	23° 26' 18"	-00m 13s
16:00	24° 42' 51"	0,04"	22° 53' 35"	9° 34' 22"	1,0030403	15' 56,72"	23° 26' 18"	-00m 12s
17:00	24° 45' 18"	0,05"	22° 55' 53"	9° 35' 16"	1,0030521	15' 56,71"	23° 26' 18"	-00m 12s
18:00	24° 47' 45"	0,05"	22° 58' 12"	9° 36' 10"	1,0030640	15' 56,70"	23° 26' 18"	-00m 11s
19:00	24° 50' 12"	0,06"	23° 00' 31"	9° 37' 04"	1,0030758	15' 56,69"	23° 26' 18"	-00m 11s
20:00	24° 52' 39"	0,07"	23° 02' 50"	9° 37' 57"	1,0030877	15' 56,68"	23° 26' 18"	-00m 10s
21:00	24° 55' 06"	0,07"	23° 05' 08"	9° 38' 51"	1,0030995	15' 56,66"	23° 26' 18"	-00m 09s
22:00	24° 57' 33"	0,08"	23° 07' 27"	9° 39' 45"	1,0031114	15' 56,65"	23° 26' 18"	-00m 09s
23:00	25° 00' 00"	0,08"	23° 09' 46"	9° 40' 39"	1,0031232	15' 56,64"	23° 26' 18"	-00m 08s
24:00	25° 02' 27"	0,09"	23° 12' 05"	9° 41' 33"	1,0031351	15' 56,63"	23° 26' 18"	-00m 08s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	338° 17' 33"	0° 00' 53"	339° 55' 47"	-8° 26' 46"	57' 34"	15' 41,18"	68° 04' 34"	15,19%
01:00	338° 50' 55"	0° 03' 54"	340° 25' 55"	-8° 11' 30"	57' 36"	15' 41,78"	68° 03' 11"	14,87%
02:00	339° 24' 20"	0° 06' 54"	340° 56' 03"	-7° 56' 10"	57' 39"	15' 42,39"	68° 02' 01"	14,55%
03:00	339° 57' 47"	0° 09' 55"	341° 26' 11"	-7° 40' 47"	57' 41"	15' 42,99"	68° 01' 04"	14,23%
04:00	340° 31' 17"	0° 12' 56"	341° 56' 20"	-7° 25' 21"	57' 43"	15' 43,60"	68° 00' 20"	13,91%
05:00	341° 04' 50"	0° 15' 57"	342° 26' 29"	-7° 09' 51"	57' 45"	15' 44,20"	67° 59' 49"	13,60%
06:00	341° 38' 26"	0° 18' 58"	342° 56' 38"	-6° 54' 18"	57' 48"	15' 44,81"	67° 59' 33"	13,29%
07:00	342° 12' 04"	0° 22' 00"	343° 26' 48"	-6° 38' 41"	57' 50"	15' 45,42"	67° 59' 30"	12,99%
08:00	342° 45' 45"	0° 25' 01"	343° 56' 58"	-6° 23' 02"	57' 52"	15' 46,02"	67° 59' 42"	12,68%
09:00	343° 19' 29"	0° 28' 03"	344° 27' 09"	-6° 07' 20"	57' 54"	15' 46,63"	68° 00' 09"	12,38%
10:00	343° 53' 16"	0° 31' 04"	344° 57' 21"	-5° 51' 35"	57' 56"	15' 47,23"	68° 00' 50"	12,08%
11:00	344° 27' 05"	0° 34' 06"	345° 27' 34"	-5° 35' 46"	57' 59"	15' 47,84"	68° 01' 46"	11,78%
12:00	345° 00' 57"	0° 37' 07"	345° 57' 47"	-5° 19' 55"	58' 01"	15' 48,44"	68° 02' 58"	11,49%
13:00	345° 34' 52"	0° 40' 09"	346° 28' 01"	-5° 04' 02"	58' 03"	15' 49,04"	68° 04' 26"	11,20%
14:00	346° 08' 50"	0° 43' 11"	346° 58' 16"	-4° 48' 05"	58' 05"	15' 49,65"	68° 06' 10"	10,91%
15:00	346° 42' 51"	0° 46' 13"	347° 28' 32"	-4° 32' 06"	58' 08"	15' 50,25"	68° 08' 11"	10,63%
16:00	347° 16' 54"	0° 49' 14"	347° 58' 49"	-4° 16' 05"	58' 10"	15' 50,85"	68° 10' 28"	10,35%
17:00	347° 51' 00"	0° 52' 16"	348° 29' 08"	-4° 00' 01"	58' 12"	15' 51,45"	68° 13' 03"	10,07%
18:00	348° 25' 09"	0° 55' 17"	348° 59' 28"	-3° 43' 54"	58' 14"	15' 52,05"	68° 15' 56"	9,79%
19:00	348° 59' 21"	0° 58' 19"	349° 29' 48"	-3° 27' 46"	58' 16"	15' 52,64"	68° 19' 06"	9,52%
20:00	349° 33' 35"	1° 01' 20"	350° 00' 11"	-3° 11' 35"	58' 19"	15' 53,24"	68° 22' 36"	9,25%
21:00	350° 07' 52"	1° 04' 21"	350° 30' 35"	-2° 55' 22"	58' 21"	15' 53,83"	68° 26' 25"	8,98%
22:00	350° 42' 13"	1° 07' 22"	351° 01' 00"	-2° 39' 07"	58' 23"	15' 54,43"	68° 30' 33"	8,72%
23:00	351° 16' 35"	1° 10' 23"	351° 31' 27"	-2° 22' 49"	58' 25"	15' 55,02"	68° 35' 02"	8,46%
24:00	351° 51' 01"	1° 13' 23"	352° 01' 56"	-2° 06' 30"	58' 27"	15' 55,61"	68° 39' 52"	8,20%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	25° 02' 27"	0,09"	23° 12' 05"	9° 41' 33"	1,0031351	15' 56,63"	23° 26' 18"	-00m 08s
01:00	25° 04' 54"	0,09"	23° 14' 23"	9° 42' 26"	1,0031469	15' 56,62"	23° 26' 18"	-00m 07s
02:00	25° 07' 21"	0,10"	23° 16' 42"	9° 43' 20"	1,0031587	15' 56,61"	23° 26' 18"	-00m 06s
03:00	25° 09' 48"	0,10"	23° 19' 01"	9° 44' 14"	1,0031705	15' 56,60"	23° 26' 18"	-00m 06s
04:00	25° 12' 15"	0,11"	23° 21' 20"	9° 45' 07"	1,0031824	15' 56,59"	23° 26' 18"	-00m 05s
05:00	25° 14' 41"	0,11"	23° 23' 38"	9° 46' 01"	1,0031942	15' 56,57"	23° 26' 18"	-00m 05s
06:00	25° 17' 08"	0,12"	23° 25' 57"	9° 46' 55"	1,0032060	15' 56,56"	23° 26' 18"	-00m 04s
07:00	25° 19' 35"	0,12"	23° 28' 16"	9° 47' 48"	1,0032178	15' 56,55"	23° 26' 18"	-00m 03s
08:00	25° 22' 02"	0,13"	23° 30' 35"	9° 48' 42"	1,0032296	15' 56,54"	23° 26' 18"	-00m 03s
09:00	25° 24' 29"	0,14"	23° 32' 54"	9° 49' 35"	1,0032414	15' 56,53"	23° 26' 18"	-00m 02s
10:00	25° 26' 56"	0,14"	23° 35' 13"	9° 50' 29"	1,0032532	15' 56,52"	23° 26' 18"	-00m 02s
11:00	25° 29' 23"	0,15"	23° 37' 31"	9° 51' 23"	1,0032650	15' 56,51"	23° 26' 18"	-00m 01s
12:00	25° 31' 50"	0,15"	23° 39' 50"	9° 52' 16"	1,0032768	15' 56,50"	23° 26' 18"	-00m 00s
13:00	25° 34' 17"	0,16"	23° 42' 09"	9° 53' 10"	1,0032886	15' 56,48"	23° 26' 18"	00m 00s
14:00	25° 36' 44"	0,16"	23° 44' 28"	9° 54' 03"	1,0033004	15' 56,47"	23° 26' 18"	00m 01s
15:00	25° 39' 11"	0,17"	23° 46' 47"	9° 54' 57"	1,0033121	15' 56,46"	23° 26' 18"	00m 01s
16:00	25° 41' 38"	0,17"	23° 49' 06"	9° 55' 50"	1,0033239	15' 56,45"	23° 26' 18"	00m 02s
17:00	25° 44' 05"	0,18"	23° 51' 25"	9° 56' 44"	1,0033357	15' 56,44"	23° 26' 18"	00m 03s
18:00	25° 46' 31"	0,18"	23° 53' 44"	9° 57' 37"	1,0033474	15' 56,43"	23° 26' 18"	00m 03s
19:00	25° 48' 58"	0,19"	23° 56' 03"	9° 58' 30"	1,0033592	15' 56,42"	23° 26' 18"	00m 04s
20:00	25° 51' 25"	0,19"	23° 58' 22"	9° 59' 24"	1,0033710	15' 56,41"	23° 26' 18"	00m 04s
21:00	25° 53' 52"	0,20"	24° 00' 41"	10° 00' 17"	1,0033827	15' 56,39"	23° 26' 18"	00m 05s
22:00	25° 56' 19"	0,20"	24° 03' 00"	10° 01' 11"	1,0033945	15' 56,38"	23° 26' 18"	00m 06s
23:00	25° 58' 46"	0,21"	24° 05' 19"	10° 02' 04"	1,0034062	15' 56,37"	23° 26' 18"	00m 06s
24:00	26° 01' 13"	0,21"	24° 07' 38"	10° 02' 57"	1,0034179	15' 56,36"	23° 26' 18"	00m 07s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	351° 51' 01"	1° 13' 23"	352° 01' 56"	-2° 06' 30"	58' 27"	15' 55,61"	68° 39' 52"	8,20%
01:00	352° 25' 29"	1° 16' 23"	352° 32' 26"	-1° 50' 09"	58' 29"	15' 56,19"	68° 45' 04"	7,95%
02:00	353° 00' 00"	1° 19' 24"	353° 02' 58"	-1° 33' 46"	58' 32"	15' 56,78"	68° 50' 38"	7,70%
03:00	353° 34' 34"	1° 22' 23"	353° 33' 32"	-1° 17' 22"	58' 34"	15' 57,36"	68° 56' 35"	7,45%
04:00	354° 09' 11"	1° 25' 23"	354° 04' 08"	-1° 00' 56"	58' 36"	15' 57,95"	69° 02' 56"	7,21%
05:00	354° 43' 50"	1° 28' 22"	354° 34' 46"	-0° 44' 28"	58' 38"	15' 58,53"	69° 09' 41"	6,97%
06:00	355° 18' 32"	1° 31' 21"	355° 05' 27"	-0° 27' 59"	58' 40"	15' 59,10"	69° 16' 53"	6,74%
07:00	355° 53' 17"	1° 34' 20"	355° 36' 09"	-0° 11' 29"	58' 42"	16' 00,00"	69° 24' 31"	6,50%
08:00	356° 28' 05"	1° 37' 18"	356° 06' 54"	0° 05' 03"	58' 44"	16' 00,25"	69° 32' 36"	6,27%
09:00	357° 02' 55"	1° 40' 15"	356° 37' 41"	0° 21' 36"	58' 46"	16' 00,82"	69° 41' 10"	6,05%
10:00	357° 37' 48"	1° 43' 13"	357° 08' 30"	0° 38' 10"	58' 48"	16' 01,39"	69° 50' 15"	5,83%
11:00	358° 12' 44"	1° 46' 10"	357° 39' 22"	0° 54' 45"	58' 51"	16' 01,95"	69° 59' 50"	5,61%
12:00	358° 47' 42"	1° 49' 06"	358° 10' 17"	1° 11' 21"	58' 53"	16' 02,52"	70° 09' 59"	5,39%
13:00	359° 22' 44"	1° 52' 02"	358° 41' 14"	1° 27' 58"	58' 55"	16' 03,07"	70° 20' 41"	5,18%
14:00	359° 57' 47"	1° 54' 58"	359° 12' 14"	1° 44' 36"	58' 57"	16' 03,63"	70° 32' 00"	4,98%
15:00	0° 32' 54"	1° 57' 53"	359° 43' 17"	2° 01' 14"	58' 59"	16' 04,18"	70° 43' 56"	4,77%
16:00	1° 08' 03"	2° 00' 47"	0° 14' 22"	2° 17' 53"	59' 01"	16' 04,73"	70° 56' 31"	4,57%
17:00	1° 43' 15"	2° 03' 41"	0° 45' 31"	2° 34' 32"	59' 03"	16' 05,28"	71° 09' 49"	4,38%
18:00	2° 18' 29"	2° 06' 34"	1° 16' 42"	2° 51' 12"	59' 05"	16' 05,82"	71° 23' 50"	4,19%
19:00	2° 53' 46"	2° 09' 27"	1° 47' 57"	3° 07' 52"	59' 07"	16' 06,36"	71° 38' 38"	4,00%
20:00	3° 29' 06"	2° 12' 19"	2° 19' 15"	3° 24' 33"	59' 09"	16' 06,90"	71° 54' 16"	3,82%
21:00	4° 04' 28"	2° 15' 10"	2° 50' 36"	3° 41' 13"	59' 11"	16' 07,43"	72° 10' 45"	3,64%
22:00	4° 39' 53"	2° 18' 01"	3° 22' 01"	3° 57' 54"	59' 13"	16' 07,96"	72° 28' 11"	3,46%
23:00	5° 15' 20"	2° 20' 51"	3° 53' 29"	4° 14' 34"	59' 14"	16' 08,48"	72° 46' 36"	3,29%
24:00	5° 50' 50"	2° 23' 40"	4° 25' 00"	4° 31' 14"	59' 16"	16' 09,00"	73° 06' 04"	3,12%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	26° 01' 13"	0,21"	24° 07' 38"	10° 02' 57"	1,0034179	15' 56,36"	23° 26' 18"	00m 07s
01:00	26° 03' 40"	0,22"	24° 09' 57"	10° 03' 51"	1,0034297	15' 56,35"	23° 26' 18"	00m 07s
02:00	26° 06' 07"	0,22"	24° 12' 16"	10° 04' 44"	1,0034414	15' 56,34"	23° 26' 18"	00m 08s
03:00	26° 08' 33"	0,23"	24° 14' 35"	10° 05' 37"	1,0034531	15' 56,33"	23° 26' 18"	00m 08s
04:00	26° 11' 00"	0,23"	24° 16' 54"	10° 06' 30"	1,0034649	15' 56,32"	23° 26' 18"	00m 09s
05:00	26° 13' 27"	0,24"	24° 19' 13"	10° 07' 24"	1,0034766	15' 56,31"	23° 26' 18"	00m 10s
06:00	26° 15' 54"	0,24"	24° 21' 32"	10° 08' 17"	1,0034883	15' 56,29"	23° 26' 18"	00m 10s
07:00	26° 18' 21"	0,24"	24° 23' 51"	10° 09' 10"	1,0035000	15' 56,28"	23° 26' 18"	00m 11s
08:00	26° 20' 48"	0,25"	24° 26' 10"	10° 10' 03"	1,0035117	15' 56,27"	23° 26' 18"	00m 11s
09:00	26° 23' 15"	0,25"	24° 28' 29"	10° 10' 56"	1,0035234	15' 56,26"	23° 26' 18"	00m 12s
10:00	26° 25' 41"	0,26"	24° 30' 48"	10° 11' 50"	1,0035351	15' 56,25"	23° 26' 18"	00m 13s
11:00	26° 28' 08"	0,26"	24° 33' 07"	10° 12' 43"	1,0035468	15' 56,24"	23° 26' 18"	00m 13s
12:00	26° 30' 35"	0,27"	24° 35' 26"	10° 13' 36"	1,0035585	15' 56,23"	23° 26' 18"	00m 14s
13:00	26° 33' 02"	0,27"	24° 37' 45"	10° 14' 29"	1,0035701	15' 56,22"	23° 26' 18"	00m 14s
14:00	26° 35' 29"	0,28"	24° 40' 04"	10° 15' 22"	1,0035818	15' 56,21"	23° 26' 18"	00m 15s
15:00	26° 37' 56"	0,28"	24° 42' 24"	10° 16' 15"	1,0035935	15' 56,19"	23° 26' 18"	00m 16s
16:00	26° 40' 22"	0,29"	24° 44' 43"	10° 17' 08"	1,0036052	15' 56,18"	23° 26' 18"	00m 16s
17:00	26° 42' 49"	0,29"	24° 47' 02"	10° 18' 01"	1,0036168	15' 56,17"	23° 26' 18"	00m 17s
18:00	26° 45' 16"	0,29"	24° 49' 21"	10° 18' 54"	1,0036285	15' 56,16"	23° 26' 18"	00m 17s
19:00	26° 47' 43"	0,30"	24° 51' 40"	10° 19' 47"	1,0036401	15' 56,15"	23° 26' 18"	00m 18s
20:00	26° 50' 10"	0,30"	24° 53' 59"	10° 20' 40"	1,0036518	15' 56,14"	23° 26' 18"	00m 18s
21:00	26° 52' 37"	0,31"	24° 56' 19"	10° 21' 33"	1,0036634	15' 56,13"	23° 26' 18"	00m 19s
22:00	26° 55' 03"	0,31"	24° 58' 38"	10° 22' 26"	1,0036751	15' 56,12"	23° 26' 18"	00m 20s
23:00	26° 57' 30"	0,32"	25° 00' 57"	10° 23' 19"	1,0036867	15' 56,11"	23° 26' 18"	00m 20s
24:00	26° 59' 57"	0,32"	25° 03' 16"	10° 24' 12"	1,0036983	15' 56,09"	23° 26' 18"	00m 21s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	5° 50' 50"	2° 23' 40"	4° 25' 00"	4° 31' 14"	59' 16"	16' 09,00"	73° 06' 04"	3,12%
01:00	6° 26' 22"	2° 26' 28"	4° 56' 35"	4° 47' 54"	59' 18"	16' 09,52"	73° 26' 41"	2,96%
02:00	7° 01' 57"	2° 29' 16"	5° 28' 14"	5° 04' 34"	59' 20"	16' 10,03"	73° 48' 30"	2,80%
03:00	7° 37' 35"	2° 32' 03"	5° 59' 56"	5° 21' 13"	59' 22"	16' 10,54"	74° 11' 38"	2,65%
04:00	8° 13' 15"	2° 34' 49"	6° 31' 42"	5° 37' 52"	59' 24"	16' 11,04"	74° 36' 12"	2,50%
05:00	8° 48' 57"	2° 37' 34"	7° 03' 33"	5° 54' 30"	59' 26"	16' 11,54"	75° 02' 16"	2,35%
06:00	9° 24' 42"	2° 40' 19"	7° 35' 27"	6° 11' 07"	59' 28"	16' 12,03"	75° 30' 01"	2,21%
07:00	10° 00' 29"	2° 43' 02"	8° 07' 25"	6° 27' 43"	59' 29"	16' 12,52"	75° 59' 35"	2,07%
08:00	10° 36' 18"	2° 45' 45"	8° 39' 27"	6° 44' 18"	59' 31"	16' 13,01"	76° 31' 07"	1,94%
09:00	11° 12' 10"	2° 48' 27"	9° 11' 33"	7° 00' 53"	59' 33"	16' 13,49"	77° 04' 49"	1,81%
10:00	11° 48' 05"	2° 51' 07"	9° 43' 44"	7° 17' 26"	59' 35"	16' 13,96"	77° 40' 55"	1,69%
11:00	12° 24' 01"	2° 53' 47"	10° 15' 59"	7° 33' 57"	59' 36"	16' 14,43"	78° 19' 38"	1,57%
12:00	13° 00' 00"	2° 56' 26"	10° 48' 18"	7° 50' 28"	59' 38"	16' 14,90"	79° 01' 17"	1,45%
13:00	13° 36' 02"	2° 59' 03"	11° 20' 42"	8° 06' 57"	59' 40"	16' 15,36"	79° 46' 11"	1,34%
14:00	14° 12' 05"	3° 01' 40"	11° 53' 11"	8° 23' 24"	59' 41"	16' 15,81"	80° 34' 43"	1,24%
15:00	14° 48' 11"	3° 04' 16"	12° 25' 44"	8° 39' 49"	59' 43"	16' 16,26"	81° 27' 20"	1,14%
16:00	15° 24' 19"	3° 06' 50"	12° 58' 21"	8° 56' 13"	59' 45"	16' 16,71"	82° 24' 33"	1,04%
17:00	16° 00' 29"	3° 09' 23"	13° 31' 04"	9° 12' 34"	59' 46"	16' 17,15"	83° 26' 59"	0,95%
18:00	16° 36' 42"	3° 11' 56"	14° 03' 51"	9° 28' 54"	59' 48"	16' 17,58"	84° 35' 22"	0,86%
19:00	17° 12' 56"	3° 14' 27"	14° 36' 43"	9° 45' 11"	59' 49"	16' 18,01"	85° 50' 34"	0,78%
20:00	17° 49' 13"	3° 16' 57"	15° 09' 41"	10° 01' 26"	59' 51"	16' 18,43"	87° 13' 35"	0,70%
21:00	18° 25' 32"	3° 19' 25"	15° 42' 43"	10° 17' 39"	59' 53"	16' 18,85"	88° 45' 42"	0,63%
22:00	19° 01' 52"	3° 21' 53"	16° 15' 50"	10° 33' 49"	59' 54"	16' 19,26"	90° 28' 23"	0,56%
23:00	19° 38' 15"	3° 24' 19"	16° 49' 03"	10° 49' 57"	59' 56"	16' 19,66"	92° 23' 26"	0,50%
24:00	20° 14' 40"	3° 26' 44"	17° 22' 21"	11° 06' 01"	59' 57"	16' 20,06"	94° 33' 04"	0,44%

17 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	26° 59' 57"	0,32"	25° 03' 16"	10° 24' 12"	1,0036983	15' 56,09"	23° 26' 18"	00m 21s
01:00	27° 02' 24"	0,32"	25° 05' 35"	10° 25' 05"	1,0037100	15' 56,08"	23° 26' 18"	00m 21s
02:00	27° 04' 51"	0,33"	25° 07' 55"	10° 25' 58"	1,0037216	15' 56,07"	23° 26' 18"	00m 22s
03:00	27° 07' 17"	0,33"	25° 10' 14"	10° 26' 51"	1,0037332	15' 56,06"	23° 26' 18"	00m 22s
04:00	27° 09' 44"	0,34"	25° 12' 33"	10° 27' 43"	1,0037448	15' 56,05"	23° 26' 18"	00m 23s
05:00	27° 12' 11"	0,34"	25° 14' 52"	10° 28' 36"	1,0037564	15' 56,04"	23° 26' 18"	00m 24s
06:00	27° 14' 38"	0,34"	25° 17' 12"	10° 29' 29"	1,0037680	15' 56,03"	23° 26' 18"	00m 24s
07:00	27° 17' 05"	0,35"	25° 19' 31"	10° 30' 22"	1,0037796	15' 56,02"	23° 26' 18"	00m 25s
08:00	27° 19' 31"	0,35"	25° 21' 50"	10° 31' 15"	1,0037912	15' 56,01"	23° 26' 18"	00m 25s
09:00	27° 21' 58"	0,35"	25° 24' 10"	10° 32' 07"	1,0038028	15' 55,99"	23° 26' 18"	00m 26s
10:00	27° 24' 25"	0,36"	25° 26' 29"	10° 33' 00"	1,0038144	15' 55,98"	23° 26' 18"	00m 26s
11:00	27° 26' 52"	0,36"	25° 28' 48"	10° 33' 53"	1,0038259	15' 55,97"	23° 26' 18"	00m 27s
12:00	27° 29' 18"	0,37"	25° 31' 08"	10° 34' 45"	1,0038375	15' 55,96"	23° 26' 18"	00m 28s
13:00	27° 31' 45"	0,37"	25° 33' 27"	10° 35' 38"	1,0038491	15' 55,95"	23° 26' 18"	00m 28s
14:00	27° 34' 12"	0,37"	25° 35' 46"	10° 36' 31"	1,0038606	15' 55,94"	23° 26' 18"	00m 29s
15:00	27° 36' 39"	0,38"	25° 38' 06"	10° 37' 23"	1,0038722	15' 55,93"	23° 26' 18"	00m 29s
16:00	27° 39' 05"	0,38"	25° 40' 25"	10° 38' 16"	1,0038838	15' 55,92"	23° 26' 18"	00m 30s
17:00	27° 41' 32"	0,38"	25° 42' 45"	10° 39' 09"	1,0038953	15' 55,91"	23° 26' 18"	00m 30s
18:00	27° 43' 59"	0,39"	25° 45' 04"	10° 40' 01"	1,0039069	15' 55,90"	23° 26' 18"	00m 31s
19:00	27° 46' 26"	0,39"	25° 47' 23"	10° 40' 54"	1,0039184	15' 55,88"	23° 26' 18"	00m 32s
20:00	27° 48' 52"	0,39"	25° 49' 43"	10° 41' 46"	1,0039299	15' 55,87"	23° 26' 18"	00m 32s
21:00	27° 51' 19"	0,40"	25° 52' 02"	10° 42' 39"	1,0039415	15' 55,86"	23° 26' 18"	00m 33s
22:00	27° 53' 46"	0,40"	25° 54' 22"	10° 43' 31"	1,0039530	15' 55,85"	23° 26' 18"	00m 33s
23:00	27° 56' 13"	0,40"	25° 56' 41"	10° 44' 24"	1,0039645	15' 55,84"	23° 26' 18"	00m 34s
24:00	27° 58' 39"	0,41"	25° 59' 01"	10° 45' 16"	1,0039760	15' 55,83"	23° 26' 18"	00m 34s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	20° 14' 40"	3° 26' 44"	17° 22' 21"	11° 06' 01"	59' 57"	16' 20,06"	94° 33' 04"	0,44%
01:00	20° 51' 07"	3° 29' 08"	17° 55' 44"	11° 22' 03"	59' 58"	16' 20,45"	96° 59' 55"	0,39%
02:00	21° 27' 36"	3° 31' 30"	18° 29' 13"	11° 38' 02"	00' 00"	16' 20,84"	99° 47' 12"	0,34%
03:00	22° 04' 07"	3° 33' 51"	19° 02' 47"	11° 53' 57"	00' 01"	16' 21,22"	102° 58' 43"	0,29%
04:00	22° 40' 39"	3° 36' 11"	19° 36' 26"	12° 09' 50"	00' 03"	16' 21,59"	106° 38' 59"	0,25%
05:00	23° 17' 14"	3° 38' 29"	20° 10' 11"	12° 25' 39"	00' 04"	16' 21,96"	110° 53' 04"	0,22%
06:00	23° 53' 50"	3° 40' 46"	20° 44' 02"	12° 41' 24"	00' 05"	16' 22,32"	115° 46' 20"	0,19%
07:00	24° 30' 28"	3° 43' 01"	21° 17' 59"	12° 57' 06"	00' 07"	16' 22,68"	121° 23' 48"	0,16%
08:00	25° 07' 08"	3° 45' 15"	21° 52' 01"	13° 12' 44"	00' 08"	16' 23,02"	127° 48' 48"	0,14%
09:00	25° 43' 50"	3° 47' 28"	22° 26' 09"	13° 28' 19"	00' 09"	16' 23,37"	135° 01' 12"	0,13%
10:00	26° 20' 33"	3° 49' 39"	23° 00' 23"	13° 43' 49"	00' 10"	16' 23,70"	142° 55' 09"	0,12%
11:00	26° 57' 18"	3° 51' 48"	23° 34' 43"	13° 59' 15"	00' 12"	16' 24,03"	151° 17' 47"	0,12%
12:00	27° 34' 05"	3° 53' 56"	24° 09' 08"	14° 14' 37"	00' 13"	16' 24,35"	159° 50' 15"	0,12%
13:00	28° 10' 53"	3° 56' 03"	24° 43' 40"	14° 29' 55"	00' 14"	16' 24,66"	168° 11' 22"	0,12%
14:00	28° 47' 43"	3° 58' 08"	25° 18' 18"	14° 45' 08"	00' 15"	16' 24,97"	176° 02' 42"	0,13%
15:00	29° 24' 34"	4° 00' 11"	25° 53' 02"	15° 00' 16"	00' 16"	16' 25,27"	183° 12' 00"	0,15%
16:00	30° 01' 27"	4° 02' 13"	26° 27' 52"	15° 15' 20"	00' 17"	16' 25,57"	189° 34' 03"	0,17%
17:00	30° 38' 22"	4° 04' 13"	27° 02' 49"	15° 30' 18"	00' 18"	16' 25,85"	195° 09' 05"	0,19%
18:00	31° 15' 18"	4° 06' 12"	27° 37' 51"	15° 45' 12"	00' 19"	16' 26,13"	200° 00' 42"	0,22%
19:00	31° 52' 15"	4° 08' 08"	28° 13' 00"	16° 00' 01"	00' 20"	16' 26,41"	204° 13' 56"	0,26%
20:00	32° 29' 14"	4° 10' 04"	28° 48' 16"	16° 14' 44"	00' 21"	16' 26,67"	207° 54' 11"	0,30%
21:00	33° 06' 14"	4° 11' 57"	29° 23' 37"	16° 29' 22"	00' 22"	16' 26,93"	211° 06' 28"	0,34%
22:00	33° 43' 15"	4° 13' 49"	29° 59' 05"	16° 43' 54"	00' 23"	16' 27,18"	213° 55' 12"	0,40%
23:00	34° 20' 17"	4° 15' 39"	30° 34' 40"	16° 58' 21"	00' 24"	16' 27,42"	216° 24' 11"	0,45%
24:00	34° 57' 21"	4° 17' 27"	31° 10' 21"	17° 12' 42"	00' 25"	16' 27,66"	218° 36' 32"	0,51%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	27° 58' 39"	0,41"	25° 59' 01"	10° 45' 16"	1,0039760	15' 55,83"	23° 26' 18"	00m 34s
01:00	28° 01' 06"	0,41"	26° 01' 20"	10° 46' 09"	1,0039875	15' 55,82"	23° 26' 18"	00m 35s
02:00	28° 03' 33"	0,41"	26° 03' 40"	10° 47' 01"	1,0039990	15' 55,81"	23° 26' 18"	00m 35s
03:00	28° 05' 59"	0,41"	26° 05' 59"	10° 47' 54"	1,0040105	15' 55,80"	23° 26' 18"	00m 36s
04:00	28° 08' 26"	0,42"	26° 08' 19"	10° 48' 46"	1,0040220	15' 55,79"	23° 26' 18"	00m 37s
05:00	28° 10' 53"	0,42"	26° 10' 38"	10° 49' 38"	1,0040335	15' 55,77"	23° 26' 18"	00m 37s
06:00	28° 13' 20"	0,42"	26° 12' 58"	10° 50' 31"	1,0040450	15' 55,76"	23° 26' 18"	00m 38s
07:00	28° 15' 46"	0,42"	26° 15' 17"	10° 51' 23"	1,0040565	15' 55,75"	23° 26' 18"	00m 38s
08:00	28° 18' 13"	0,43"	26° 17' 37"	10° 52' 15"	1,0040680	15' 55,74"	23° 26' 18"	00m 39s
09:00	28° 20' 40"	0,43"	26° 19' 56"	10° 53' 08"	1,0040794	15' 55,73"	23° 26' 18"	00m 39s
10:00	28° 23' 06"	0,43"	26° 22' 16"	10° 54' 00"	1,0040909	15' 55,72"	23° 26' 18"	00m 40s
11:00	28° 25' 33"	0,44"	26° 24' 35"	10° 54' 52"	1,0041023	15' 55,71"	23° 26' 18"	00m 40s
12:00	28° 28' 00"	0,44"	26° 26' 55"	10° 55' 45"	1,0041138	15' 55,70"	23° 26' 18"	00m 41s
13:00	28° 30' 26"	0,44"	26° 29' 15"	10° 56' 37"	1,0041253	15' 55,69"	23° 26' 18"	00m 42s
14:00	28° 32' 53"	0,44"	26° 31' 34"	10° 57' 29"	1,0041367	15' 55,68"	23° 26' 18"	00m 42s
15:00	28° 35' 20"	0,44"	26° 33' 54"	10° 58' 21"	1,0041481	15' 55,67"	23° 26' 18"	00m 43s
16:00	28° 37' 46"	0,45"	26° 36' 14"	10° 59' 13"	1,0041596	15' 55,65"	23° 26' 18"	00m 43s
17:00	28° 40' 13"	0,45"	26° 38' 33"	11° 00' 06"	1,0041710	15' 55,64"	23° 26' 18"	00m 44s
18:00	28° 42' 40"	0,45"	26° 40' 53"	11° 00' 58"	1,0041824	15' 55,63"	23° 26' 18"	00m 44s
19:00	28° 45' 06"	0,45"	26° 43' 13"	11° 01' 50"	1,0041939	15' 55,62"	23° 26' 18"	00m 45s
20:00	28° 47' 33"	0,45"	26° 45' 32"	11° 02' 42"	1,0042053	15' 55,61"	23° 26' 18"	00m 45s
21:00	28° 50' 00"	0,46"	26° 47' 52"	11° 03' 34"	1,0042167	15' 55,60"	23° 26' 18"	00m 46s
22:00	28° 52' 26"	0,46"	26° 50' 12"	11° 04' 26"	1,0042281	15' 55,59"	23° 26' 18"	00m 46s
23:00	28° 54' 53"	0,46"	26° 52' 31"	11° 05' 18"	1,0042395	15' 55,58"	23° 26' 18"	00m 47s
24:00	28° 57' 20"	0,46"	26° 54' 51"	11° 06' 10"	1,0042509	15' 55,57"	23° 26' 18"	00m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	34° 57' 21"	4° 17' 27"	31° 10' 21"	17° 12' 42"	00' 25"	16' 27,66"	218° 36' 32"	0,51%
01:00	35° 34' 26"	4° 19' 14"	31° 46' 09"	17° 26' 57"	00' 26"	16' 27,89"	220° 34' 53"	0,58%
02:00	36° 11' 32"	4° 20' 58"	32° 22' 03"	17° 41' 06"	00' 27"	16' 28,11"	222° 21' 22"	0,65%
03:00	36° 48' 39"	4° 22' 41"	32° 58' 03"	17° 55' 09"	00' 27"	16' 28,33"	223° 57' 46"	0,72%
04:00	37° 25' 47"	4° 24' 22"	33° 34' 11"	18° 09' 05"	00' 28"	16' 28,53"	225° 25' 33"	0,81%
05:00	38° 02' 57"	4° 26' 02"	34° 10' 24"	18° 22' 55"	00' 29"	16' 28,73"	226° 45' 56"	0,89%
06:00	38° 40' 07"	4° 27' 39"	34° 46' 45"	18° 36' 38"	00' 30"	16' 28,93"	227° 59' 56"	0,98%
07:00	39° 17' 18"	4° 29' 15"	35° 23' 12"	18° 50' 15"	00' 30"	16' 29,11"	229° 08' 23"	1,08%
08:00	39° 54' 30"	4° 30' 49"	35° 59' 46"	19° 03' 45"	00' 31"	16' 29,29"	230° 12' 01"	1,18%
09:00	40° 31' 43"	4° 32' 20"	36° 36' 26"	19° 17' 08"	00' 31"	16' 29,46"	231° 11' 26"	1,29%
10:00	41° 08' 57"	4° 33' 50"	37° 13' 13"	19° 30' 23"	00' 32"	16' 29,62"	232° 07' 09"	1,40%
11:00	41° 46' 12"	4° 35' 18"	37° 50' 07"	19° 43' 32"	00' 33"	16' 29,77"	232° 59' 36"	1,51%
12:00	42° 23' 27"	4° 36' 45"	38° 27' 07"	19° 56' 33"	00' 33"	16' 29,92"	233° 49' 10"	1,63%
13:00	43° 00' 43"	4° 38' 09"	39° 04' 14"	20° 09' 26"	00' 34"	16' 30,06"	234° 36' 10"	1,76%
14:00	43° 38' 00"	4° 39' 31"	39° 41' 28"	20° 22' 12"	00' 34"	16' 30,19"	235° 20' 53"	1,89%
15:00	44° 15' 18"	4° 40' 51"	40° 18' 48"	20° 34' 50"	00' 35"	16' 30,32"	236° 03' 34"	2,03%
16:00	44° 52' 36"	4° 42' 09"	40° 56' 15"	20° 47' 21"	00' 35"	16' 30,43"	236° 44' 25"	2,17%
17:00	45° 29' 54"	4° 43' 26"	41° 33' 48"	20° 59' 43"	00' 35"	16' 30,54"	237° 23' 38"	2,31%
18:00	46° 07' 14"	4° 44' 40"	42° 11' 28"	21° 11' 57"	00' 36"	16' 30,64"	238° 01' 22"	2,47%
19:00	46° 44' 33"	4° 45' 52"	42° 49' 15"	21° 24' 03"	00' 36"	16' 30,74"	238° 37' 47"	2,62%
20:00	47° 21' 53"	4° 47' 03"	43° 27' 08"	21° 36' 00"	00' 36"	16' 30,82"	239° 13' 00"	2,78%
21:00	47° 59' 14"	4° 48' 11"	44° 05' 08"	21° 47' 49"	00' 37"	16' 30,90"	239° 47' 07"	2,95%
22:00	48° 36' 35"	4° 49' 17"	44° 43' 14"	21° 59' 29"	00' 37"	16' 30,97"	240° 20' 16"	3,12%
23:00	49° 13' 56"	4° 50' 21"	45° 21' 27"	22° 11' 01"	00' 37"	16' 31,04"	240° 52' 31"	3,29%
24:00	49° 51' 17"	4° 51' 23"	45° 59' 46"	22° 22' 23"	00' 37"	16' 31,09"	241° 23' 57"	3,47%

19 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	28° 57' 20"	0,46"	26° 54' 51"	11° 06' 10"	1,0042509	15' 55,57"	23° 26' 18"	00m 48s
01:00	28° 59' 46"	0,46"	26° 57' 11"	11° 07' 02"	1,0042623	15' 55,56"	23° 26' 18"	00m 48s
02:00	29° 02' 13"	0,47"	26° 59' 30"	11° 07' 54"	1,0042737	15' 55,55"	23° 26' 18"	00m 49s
03:00	29° 04' 40"	0,47"	27° 01' 50"	11° 08' 46"	1,0042851	15' 55,54"	23° 26' 18"	00m 49s
04:00	29° 07' 06"	0,47"	27° 04' 10"	11° 09' 38"	1,0042964	15' 55,52"	23° 26' 18"	00m 50s
05:00	29° 09' 33"	0,47"	27° 06' 30"	11° 10' 30"	1,0043078	15' 55,51"	23° 26' 18"	00m 50s
06:00	29° 12' 00"	0,47"	27° 08' 50"	11° 11' 22"	1,0043192	15' 55,50"	23° 26' 18"	00m 51s
07:00	29° 14' 26"	0,47"	27° 11' 09"	11° 12' 14"	1,0043305	15' 55,49"	23° 26' 18"	00m 51s
08:00	29° 16' 53"	0,47"	27° 13' 29"	11° 13' 06"	1,0043419	15' 55,48"	23° 26' 18"	00m 52s
09:00	29° 19' 19"	0,48"	27° 15' 49"	11° 13' 57"	1,0043532	15' 55,47"	23° 26' 18"	00m 52s
10:00	29° 21' 46"	0,48"	27° 18' 09"	11° 14' 49"	1,0043646	15' 55,46"	23° 26' 18"	00m 53s
11:00	29° 24' 13"	0,48"	27° 20' 29"	11° 15' 41"	1,0043759	15' 55,45"	23° 26' 18"	00m 53s
12:00	29° 26' 39"	0,48"	27° 22' 48"	11° 16' 33"	1,0043873	15' 55,44"	23° 26' 18"	00m 54s
13:00	29° 29' 06"	0,48"	27° 25' 08"	11° 17' 25"	1,0043986	15' 55,43"	23° 26' 18"	00m 54s
14:00	29° 31' 32"	0,48"	27° 27' 28"	11° 18' 16"	1,0044099	15' 55,42"	23° 26' 18"	00m 55s
15:00	29° 33' 59"	0,48"	27° 29' 48"	11° 19' 08"	1,0044213	15' 55,41"	23° 26' 18"	00m 56s
16:00	29° 36' 26"	0,48"	27° 32' 08"	11° 20' 00"	1,0044326	15' 55,40"	23° 26' 18"	00m 56s
17:00	29° 38' 52"	0,48"	27° 34' 28"	11° 20' 51"	1,0044439	15' 55,38"	23° 26' 18"	00m 57s
18:00	29° 41' 19"	0,48"	27° 36' 48"	11° 21' 43"	1,0044552	15' 55,37"	23° 26' 18"	00m 57s
19:00	29° 43' 45"	0,48"	27° 39' 08"	11° 22' 35"	1,0044665	15' 55,36"	23° 26' 18"	00m 58s
20:00	29° 46' 12"	0,48"	27° 41' 28"	11° 23' 26"	1,0044778	15' 55,35"	23° 26' 18"	00m 58s
21:00	29° 48' 38"	0,49"	27° 43' 48"	11° 24' 18"	1,0044891	15' 55,34"	23° 26' 18"	00m 59s
22:00	29° 51' 05"	0,49"	27° 46' 08"	11° 25' 10"	1,0045004	15' 55,33"	23° 26' 18"	00m 59s
23:00	29° 53' 32"	0,49"	27° 48' 28"	11° 26' 01"	1,0045117	15' 55,32"	23° 26' 18"	01m 00s
24:00	29° 55' 58"	0,49"	27° 50' 47"	11° 26' 53"	1,0045230	15' 55,31"	23° 26' 18"	01m 00s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	49° 51' 17"	4° 51' 23"	45° 59' 46"	22° 22' 23"	00' 37"	16' 31,09"	241° 23' 57"	3,47%
01:00	50° 28' 39"	4° 52' 23"	46° 38' 12"	22° 33' 37"	00' 38"	16' 31,14"	241° 54' 39"	3,66%
02:00	51° 06' 01"	4° 53' 21"	47° 16' 44"	22° 44' 41"	00' 38"	16' 31,18"	242° 24' 40"	3,85%
03:00	51° 43' 23"	4° 54' 17"	47° 55' 22"	22° 55' 36"	00' 38"	16' 31,21"	242° 54' 04"	4,04%
04:00	52° 20' 45"	4° 55' 10"	48° 34' 06"	23° 06' 22"	00' 38"	16' 31,24"	243° 22' 55"	4,24%
05:00	52° 58' 07"	4° 56' 02"	49° 12' 57"	23° 16' 58"	00' 38"	16' 31,26"	243° 51' 14"	4,45%
06:00	53° 35' 30"	4° 56' 52"	49° 51' 53"	23° 27' 24"	00' 38"	16' 31,27"	244° 19' 06"	4,65%
07:00	54° 12' 52"	4° 57' 39"	50° 30' 56"	23° 37' 41"	00' 38"	16' 31,27"	244° 46' 31"	4,87%
08:00	54° 50' 14"	4° 58' 24"	51° 10' 04"	23° 47' 48"	00' 38"	16' 31,27"	245° 13' 33"	5,08%
09:00	55° 27' 37"	4° 59' 07"	51° 49' 19"	23° 57' 45"	00' 38"	16' 31,25"	245° 40' 12"	5,31%
10:00	56° 04' 59"	4° 59' 48"	52° 28' 39"	24° 07' 32"	00' 38"	16' 31,24"	246° 06' 32"	5,53%
11:00	56° 42' 21"	5° 00' 27"	53° 08' 05"	24° 17' 09"	00' 38"	16' 31,21"	246° 32' 34"	5,77%
12:00	57° 19' 42"	5° 01' 04"	53° 47' 37"	24° 26' 36"	00' 38"	16' 31,18"	246° 58' 18"	6,00%
13:00	57° 57' 04"	5° 01' 38"	54° 27' 14"	24° 35' 52"	00' 38"	16' 31,13"	247° 23' 47"	6,24%
14:00	58° 34' 25"	5° 02' 11"	55° 06' 57"	24° 44' 57"	00' 37"	16' 31,09"	247° 49' 02"	6,49%
15:00	59° 11' 46"	5° 02' 41"	55° 46' 45"	24° 53' 52"	00' 37"	16' 31,03"	248° 14' 04"	6,74%
16:00	59° 49' 07"	5° 03' 09"	56° 26' 38"	25° 02' 37"	00' 37"	16' 30,97"	248° 38' 53"	6,99%
17:00	60° 26' 27"	5° 03' 35"	57° 06' 37"	25° 11' 10"	00' 37"	16' 30,90"	249° 03' 31"	7,25%
18:00	61° 03' 47"	5° 03' 59"	57° 46' 40"	25° 19' 33"	00' 36"	16' 30,82"	249° 27' 59"	7,51%
19:00	61° 41' 06"	5° 04' 21"	58° 26' 49"	25° 27' 44"	00' 36"	16' 30,74"	249° 52' 18"	7,78%
20:00	62° 18' 25"	5° 04' 40"	59° 07' 02"	25° 35' 45"	00' 36"	16' 30,65"	250° 16' 27"	8,05%
21:00	62° 55' 43"	5° 04' 57"	59° 47' 20"	25° 43' 34"	00' 35"	16' 30,55"	250° 40' 29"	8,32%
22:00	63° 33' 01"	5° 05' 12"	60° 27' 43"	25° 51' 13"	00' 35"	16' 30,44"	251° 04' 22"	8,60%
23:00	64° 10' 18"	5° 05' 25"	61° 08' 10"	25° 58' 39"	00' 35"	16' 30,33"	251° 28' 09"	8,89%
24:00	64° 47' 34"	5° 05' 36"	61° 48' 41"	26° 05' 55"	00' 34"	16' 30,21"	251° 51' 49"	9,17%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	29° 55' 58"	0,49"	27° 50' 47"	11° 26' 53"	1,0045230	15' 55,31"	23° 26' 18"	01m 00s
01:00	29° 58' 25"	0,49"	27° 53' 07"	11° 27' 44"	1,0045342	15' 55,30"	23° 26' 18"	01m 01s
02:00	30° 00' 51"	0,49"	27° 55' 27"	11° 28' 36"	1,0045455	15' 55,29"	23° 26' 18"	01m 01s
03:00	30° 03' 18"	0,49"	27° 57' 47"	11° 29' 27"	1,0045568	15' 55,28"	23° 26' 18"	01m 02s
04:00	30° 05' 44"	0,49"	28° 00' 07"	11° 30' 19"	1,0045681	15' 55,27"	23° 26' 18"	01m 02s
05:00	30° 08' 11"	0,49"	28° 02' 28"	11° 31' 10"	1,0045793	15' 55,26"	23° 26' 18"	01m 03s
06:00	30° 10' 37"	0,49"	28° 04' 48"	11° 32' 02"	1,0045906	15' 55,24"	23° 26' 18"	01m 03s
07:00	30° 13' 04"	0,49"	28° 07' 08"	11° 32' 53"	1,0046018	15' 55,23"	23° 26' 18"	01m 04s
08:00	30° 15' 31"	0,49"	28° 09' 28"	11° 33' 45"	1,0046131	15' 55,22"	23° 26' 18"	01m 04s
09:00	30° 17' 57"	0,49"	28° 11' 48"	11° 34' 36"	1,0046243	15' 55,21"	23° 26' 18"	01m 05s
10:00	30° 20' 24"	0,49"	28° 14' 08"	11° 35' 27"	1,0046355	15' 55,20"	23° 26' 18"	01m 06s
11:00	30° 22' 50"	0,49"	28° 16' 28"	11° 36' 19"	1,0046468	15' 55,19"	23° 26' 18"	01m 06s
12:00	30° 25' 17"	0,49"	28° 18' 48"	11° 37' 10"	1,0046580	15' 55,18"	23° 26' 18"	01m 07s
13:00	30° 27' 43"	0,49"	28° 21' 08"	11° 38' 01"	1,0046692	15' 55,17"	23° 26' 18"	01m 07s
14:00	30° 30' 10"	0,49"	28° 23' 28"	11° 38' 52"	1,0046804	15' 55,16"	23° 26' 18"	01m 08s
15:00	30° 32' 36"	0,48"	28° 25' 48"	11° 39' 44"	1,0046916	15' 55,15"	23° 26' 18"	01m 08s
16:00	30° 35' 03"	0,48"	28° 28' 09"	11° 40' 35"	1,0047028	15' 55,14"	23° 26' 18"	01m 09s
17:00	30° 37' 29"	0,48"	28° 30' 29"	11° 41' 26"	1,0047141	15' 55,13"	23° 26' 18"	01m 09s
18:00	30° 39' 56"	0,48"	28° 32' 49"	11° 42' 17"	1,0047253	15' 55,12"	23° 26' 18"	01m 10s
19:00	30° 42' 22"	0,48"	28° 35' 09"	11° 43' 09"	1,0047364	15' 55,11"	23° 26' 18"	01m 10s
20:00	30° 44' 49"	0,48"	28° 37' 29"	11° 44' 00"	1,0047476	15' 55,10"	23° 26' 18"	01m 11s
21:00	30° 47' 15"	0,48"	28° 39' 49"	11° 44' 51"	1,0047588	15' 55,08"	23° 26' 18"	01m 11s
22:00	30° 49' 42"	0,48"	28° 42' 10"	11° 45' 42"	1,0047700	15' 55,07"	23° 26' 18"	01m 12s
23:00	30° 52' 08"	0,48"	28° 44' 30"	11° 46' 33"	1,0047812	15' 55,06"	23° 26' 18"	01m 12s
24:00	30° 54' 35"	0,48"	28° 46' 50"	11° 47' 24"	1,0047924	15' 55,05"	23° 26' 18"	01m 13s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	64° 47' 34"	5° 05' 36"	61° 48' 41"	26° 05' 55"	00' 34"	16' 30,21"	251° 51' 49"	9,17%
01:00	65° 24' 50"	5° 05' 45"	62° 29' 17"	26° 12' 59"	00' 34"	16' 30,09"	252° 15' 24"	9,47%
02:00	66° 02' 05"	5° 05' 51"	63° 09' 57"	26° 19' 51"	00' 33"	16' 29,95"	252° 38' 52"	9,76%
03:00	66° 39' 20"	5° 05' 56"	63° 50' 41"	26° 26' 32"	00' 33"	16' 29,81"	253° 02' 15"	10,06%
04:00	67° 16' 33"	5° 05' 58"	64° 31' 28"	26° 33' 01"	00' 32"	16' 29,67"	253° 25' 34"	10,37%
05:00	67° 53' 46"	5° 05' 58"	65° 12' 19"	26° 39' 18"	00' 32"	16' 29,52"	253° 48' 47"	10,67%
06:00	68° 30' 58"	5° 05' 56"	65° 53' 14"	26° 45' 23"	00' 31"	16' 29,36"	254° 11' 56"	10,98%
07:00	69° 08' 09"	5° 05' 51"	66° 34' 12"	26° 51' 17"	00' 30"	16' 29,19"	254° 35' 01"	11,30%
08:00	69° 45' 19"	5° 05' 45"	67° 15' 13"	26° 56' 58"	00' 30"	16' 29,02"	254° 58' 03"	11,62%
09:00	70° 22' 28"	5° 05' 36"	67° 56' 17"	27° 02' 28"	00' 29"	16' 28,84"	255° 21' 00"	11,94%
10:00	70° 59' 36"	5° 05' 25"	68° 37' 24"	27° 07' 45"	00' 29"	16' 28,66"	255° 43' 54"	12,27%
11:00	71° 36' 43"	5° 05' 13"	69° 18' 34"	27° 12' 50"	00' 28"	16' 28,47"	256° 06' 44"	12,60%
12:00	72° 13' 49"	5° 04' 58"	69° 59' 47"	27° 17' 43"	00' 27"	16' 28,27"	256° 29' 31"	12,93%
13:00	72° 50' 54"	5° 04' 40"	70° 41' 01"	27° 22' 24"	00' 26"	16' 28,07"	256° 52' 15"	13,27%
14:00	73° 27' 58"	5° 04' 21"	71° 22' 18"	27° 26' 52"	00' 26"	16' 27,86"	257° 14' 55"	13,61%
15:00	74° 05' 00"	5° 04' 00"	72° 03' 37"	27° 31' 08"	00' 25"	16' 27,65"	257° 37' 33"	13,95%
16:00	74° 42' 02"	5° 03' 36"	72° 44' 58"	27° 35' 12"	00' 24"	16' 27,42"	258° 00' 07"	14,30%
17:00	75° 19' 02"	5° 03' 11"	73° 26' 21"	27° 39' 04"	00' 23"	16' 27,20"	258° 22' 38"	14,65%
18:00	75° 56' 01"	5° 02' 43"	74° 07' 45"	27° 42' 43"	00' 22"	16' 26,97"	258° 45' 07"	15,01%
19:00	76° 32' 59"	5° 02' 13"	74° 49' 10"	27° 46' 09"	00' 21"	16' 26,73"	259° 07' 32"	15,37%
20:00	77° 09' 55"	5° 01' 41"	75° 30' 37"	27° 49' 23"	00' 21"	16' 26,48"	259° 29' 54"	15,73%
21:00	77° 46' 51"	5° 01' 07"	76° 12' 04"	27° 52' 25"	00' 20"	16' 26,23"	259° 52' 14"	16,09%
22:00	78° 23' 44"	5° 00' 31"	76° 53' 32"	27° 55' 14"	00' 19"	16' 25,98"	260° 14' 30"	16,46%
23:00	79° 00' 37"	4° 59' 53"	77° 35' 01"	27° 57' 50"	00' 18"	16' 25,72"	260° 36' 43"	16,83%
24:00	79° 37' 28"	4° 59' 13"	78° 16' 31"	28° 00' 14"	00' 17"	16' 25,45"	260° 58' 53"	17,20%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	30° 54' 35"	0,48"	28° 46' 50"	11° 47' 24"	1,0047924	15' 55,05"	23° 26' 18"	01m 13s
01:00	30° 57' 01"	0,48"	28° 49' 10"	11° 48' 15"	1,0048035	15' 55,04"	23° 26' 18"	01m 13s
02:00	30° 59' 28"	0,48"	28° 51' 31"	11° 49' 06"	1,0048147	15' 55,03"	23° 26' 18"	01m 14s
03:00	31° 01' 54"	0,47"	28° 53' 51"	11° 49' 57"	1,0048258	15' 55,02"	23° 26' 18"	01m 14s
04:00	31° 04' 20"	0,47"	28° 56' 11"	11° 50' 48"	1,0048370	15' 55,01"	23° 26' 18"	01m 15s
05:00	31° 06' 47"	0,47"	28° 58' 32"	11° 51' 39"	1,0048482	15' 55,00"	23° 26' 18"	01m 15s
06:00	31° 09' 13"	0,47"	29° 00' 52"	11° 52' 30"	1,0048593	15' 54,99"	23° 26' 18"	01m 16s
07:00	31° 11' 40"	0,47"	29° 03' 12"	11° 53' 21"	1,0048704	15' 54,98"	23° 26' 18"	01m 16s
08:00	31° 14' 06"	0,47"	29° 05' 32"	11° 54' 12"	1,0048816	15' 54,97"	23° 26' 18"	01m 17s
09:00	31° 16' 33"	0,47"	29° 07' 53"	11° 55' 03"	1,0048927	15' 54,96"	23° 26' 18"	01m 17s
10:00	31° 18' 59"	0,46"	29° 10' 13"	11° 55' 54"	1,0049038	15' 54,95"	23° 26' 18"	01m 18s
11:00	31° 21' 26"	0,46"	29° 12' 33"	11° 56' 45"	1,0049150	15' 54,94"	23° 26' 18"	01m 18s
12:00	31° 23' 52"	0,46"	29° 14' 54"	11° 57' 35"	1,0049261	15' 54,93"	23° 26' 18"	01m 19s
13:00	31° 26' 18"	0,46"	29° 17' 14"	11° 58' 26"	1,0049372	15' 54,92"	23° 26' 18"	01m 19s
14:00	31° 28' 45"	0,46"	29° 19' 35"	11° 59' 17"	1,0049483	15' 54,90"	23° 26' 18"	01m 20s
15:00	31° 31' 11"	0,45"	29° 21' 55"	12° 00' 08"	1,0049594	15' 54,89"	23° 26' 18"	01m 20s
16:00	31° 33' 38"	0,45"	29° 24' 15"	12° 00' 58"	1,0049705	15' 54,88"	23° 26' 18"	01m 21s
17:00	31° 36' 04"	0,45"	29° 26' 36"	12° 01' 49"	1,0049816	15' 54,87"	23° 26' 18"	01m 21s
18:00	31° 38' 30"	0,45"	29° 28' 56"	12° 02' 40"	1,0049927	15' 54,86"	23° 26' 18"	01m 22s
19:00	31° 40' 57"	0,45"	29° 31' 17"	12° 03' 31"	1,0050038	15' 54,85"	23° 26' 18"	01m 22s
20:00	31° 43' 23"	0,44"	29° 33' 37"	12° 04' 21"	1,0050149	15' 54,84"	23° 26' 18"	01m 23s
21:00	31° 45' 50"	0,44"	29° 35' 58"	12° 05' 12"	1,0050260	15' 54,83"	23° 26' 18"	01m 23s
22:00	31° 48' 16"	0,44"	29° 38' 18"	12° 06' 02"	1,0050371	15' 54,82"	23° 26' 18"	01m 24s
23:00	31° 50' 42"	0,44"	29° 40' 39"	12° 06' 53"	1,0050482	15' 54,81"	23° 26' 18"	01m 24s
24:00	31° 53' 09"	0,44"	29° 42' 59"	12° 07' 44"	1,0050592	15' 54,80"	23° 26' 18"	01m 25s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	79° 37' 28"	4° 59' 13"	78° 16' 31"	28° 00' 14"	00' 17"	16' 25,45"	260° 58' 53"	17,20%
01:00	80° 14' 17"	4° 58' 31"	78° 58' 00"	28° 02' 25"	00' 16"	16' 25,18"	261° 21' 00"	17,58%
02:00	80° 51' 05"	4° 57' 47"	79° 39' 30"	28° 04' 24"	00' 15"	16' 24,91"	261° 43' 03"	17,96%
03:00	81° 27' 52"	4° 57' 00"	80° 20' 59"	28° 06' 10"	00' 14"	16' 24,63"	262° 05' 04"	18,34%
04:00	82° 04' 37"	4° 56' 12"	81° 02' 28"	28° 07' 44"	00' 13"	16' 24,34"	262° 27' 00"	18,73%
05:00	82° 41' 21"	4° 55' 22"	81° 43' 57"	28° 09' 05"	00' 12"	16' 24,05"	262° 48' 54"	19,12%
06:00	83° 18' 03"	4° 54' 30"	82° 25' 25"	28° 10' 14"	00' 11"	16' 23,75"	263° 10' 43"	19,51%
07:00	83° 54' 43"	4° 53' 36"	83° 06' 52"	28° 11' 10"	00' 09"	16' 23,45"	263° 32' 29"	19,90%
08:00	84° 31' 22"	4° 52' 39"	83° 48' 18"	28° 11' 53"	00' 08"	16' 23,15"	263° 54' 11"	20,30%
09:00	85° 07' 59"	4° 51' 41"	84° 29' 43"	28° 12' 24"	00' 07"	16' 22,84"	264° 15' 49"	20,70%
10:00	85° 44' 35"	4° 50' 41"	85° 11' 06"	28° 12' 43"	00' 06"	16' 22,52"	264° 37' 24"	21,10%
11:00	86° 21' 08"	4° 49' 39"	85° 52' 28"	28° 12' 49"	00' 05"	16' 22,20"	264° 58' 54"	21,50%
12:00	86° 57' 41"	4° 48' 35"	86° 33' 48"	28° 12' 42"	00' 04"	16' 21,88"	265° 20' 19"	21,91%
13:00	87° 34' 11"	4° 47' 29"	87° 15' 06"	28° 12' 24"	00' 02"	16' 21,55"	265° 41' 41"	22,32%
14:00	88° 10' 40"	4° 46' 22"	87° 56' 22"	28° 11' 52"	00' 01"	16' 21,22"	266° 02' 58"	22,73%
15:00	88° 47' 07"	4° 45' 12"	88° 37' 35"	28° 11' 09"	00' 00"	16' 20,88"	266° 24' 10"	23,14%
16:00	89° 23' 32"	4° 44' 00"	89° 18' 46"	28° 10' 13"	59' 59"	16' 20,54"	266° 45' 17"	23,56%
17:00	89° 59' 55"	4° 42' 47"	89° 59' 54"	28° 09' 05"	59' 57"	16' 20,19"	267° 06' 20"	23,98%
18:00	90° 36' 17"	4° 41' 32"	90° 41' 00"	28° 07' 44"	59' 56"	16' 19,84"	267° 27' 17"	24,40%
19:00	91° 12' 36"	4° 40' 15"	91° 22' 02"	28° 06' 12"	59' 55"	16' 19,49"	267° 48' 09"	24,82%
20:00	91° 48' 54"	4° 38' 56"	92° 03' 01"	28° 04' 27"	59' 54"	16' 19,13"	268° 08' 56"	25,24%
21:00	92° 25' 10"	4° 37' 35"	92° 43' 57"	28° 02' 30"	59' 52"	16' 18,77"	268° 29' 38"	25,67%
22:00	93° 01' 24"	4° 36' 13"	93° 24' 50"	28° 00' 22"	59' 51"	16' 18,41"	268° 50' 14"	26,10%
23:00	93° 37' 36"	4° 34' 49"	94° 05' 38"	27° 58' 01"	59' 50"	16' 18,04"	269° 10' 44"	26,53%
24:00	94° 13' 47"	4° 33' 23"	94° 46' 23"	27° 55' 28"	59' 48"	16' 17,67"	269° 31' 09"	26,96%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	31° 53' 09"	0,44"	29° 42' 59"	12° 07' 44"	1,0050592	15' 54,80"	23° 26' 18"	01m 25s
01:00	31° 55' 35"	0,43"	29° 45' 20"	12° 08' 34"	1,0050703	15' 54,79"	23° 26' 18"	01m 25s
02:00	31° 58' 02"	0,43"	29° 47' 40"	12° 09' 25"	1,0050814	15' 54,78"	23° 26' 18"	01m 26s
03:00	32° 00' 28"	0,43"	29° 50' 01"	12° 10' 15"	1,0050924	15' 54,77"	23° 26' 18"	01m 26s
04:00	32° 02' 54"	0,43"	29° 52' 21"	12° 11' 06"	1,0051035	15' 54,76"	23° 26' 18"	01m 27s
05:00	32° 05' 21"	0,42"	29° 54' 42"	12° 11' 56"	1,0051145	15' 54,75"	23° 26' 18"	01m 27s
06:00	32° 07' 47"	0,42"	29° 57' 02"	12° 12' 47"	1,0051256	15' 54,74"	23° 26' 18"	01m 28s
07:00	32° 10' 13"	0,42"	29° 59' 23"	12° 13' 37"	1,0051366	15' 54,73"	23° 26' 18"	01m 28s
08:00	32° 12' 40"	0,41"	30° 01' 44"	12° 14' 27"	1,0051477	15' 54,72"	23° 26' 18"	01m 29s
09:00	32° 15' 06"	0,41"	30° 04' 04"	12° 15' 18"	1,0051587	15' 54,70"	23° 26' 18"	01m 29s
10:00	32° 17' 32"	0,41"	30° 06' 25"	12° 16' 08"	1,0051697	15' 54,69"	23° 26' 18"	01m 29s
11:00	32° 19' 59"	0,41"	30° 08' 45"	12° 16' 59"	1,0051808	15' 54,68"	23° 26' 18"	01m 30s
12:00	32° 22' 25"	0,40"	30° 11' 06"	12° 17' 49"	1,0051918	15' 54,67"	23° 26' 18"	01m 30s
13:00	32° 24' 51"	0,40"	30° 13' 27"	12° 18' 39"	1,0052028	15' 54,66"	23° 26' 18"	01m 31s
14:00	32° 27' 18"	0,40"	30° 15' 47"	12° 19' 29"	1,0052138	15' 54,65"	23° 26' 18"	01m 31s
15:00	32° 29' 44"	0,39"	30° 18' 08"	12° 20' 20"	1,0052249	15' 54,64"	23° 26' 18"	01m 32s
16:00	32° 32' 10"	0,39"	30° 20' 29"	12° 21' 10"	1,0052359	15' 54,63"	23° 26' 18"	01m 32s
17:00	32° 34' 37"	0,39"	30° 22' 49"	12° 22' 00"	1,0052469	15' 54,62"	23° 26' 18"	01m 33s
18:00	32° 37' 03"	0,38"	30° 25' 10"	12° 22' 50"	1,0052579	15' 54,61"	23° 26' 18"	01m 33s
19:00	32° 39' 29"	0,38"	30° 27' 31"	12° 23' 41"	1,0052689	15' 54,60"	23° 26' 18"	01m 34s
20:00	32° 41' 56"	0,38"	30° 29' 52"	12° 24' 31"	1,0052799	15' 54,59"	23° 26' 18"	01m 34s
21:00	32° 44' 22"	0,37"	30° 32' 12"	12° 25' 21"	1,0052909	15' 54,58"	23° 26' 18"	01m 35s
22:00	32° 46' 48"	0,37"	30° 34' 33"	12° 26' 11"	1,0053019	15' 54,57"	23° 26' 18"	01m 35s
23:00	32° 49' 15"	0,37"	30° 36' 54"	12° 27' 01"	1,0053129	15' 54,56"	23° 26' 18"	01m 36s
24:00	32° 51' 41"	0,36"	30° 39' 15"	12° 27' 51"	1,0053238	15' 54,55"	23° 26' 18"	01m 36s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	94° 13' 47"	4° 33' 23"	94° 46' 23"	27° 55' 28"	59' 48"	16' 17,67"	269° 31' 09"	26,96%
01:00	94° 49' 55"	4° 31' 55"	95° 27' 04"	27° 52' 44"	59' 47"	16' 17,29"	269° 51' 27"	27,40%
02:00	95° 26' 02"	4° 30' 25"	96° 07' 41"	27° 49' 47"	59' 45"	16' 16,92"	270° 11' 39"	27,83%
03:00	96° 02' 06"	4° 28' 54"	96° 48' 13"	27° 46' 39"	59' 44"	16' 16,53"	270° 31' 45"	28,27%
04:00	96° 38' 08"	4° 27' 21"	97° 28' 41"	27° 43' 20"	59' 43"	16' 16,15"	270° 51' 45"	28,71%
05:00	97° 14' 09"	4° 25' 47"	98° 09' 04"	27° 39' 48"	59' 41"	16' 15,76"	271° 11' 38"	29,15%
06:00	97° 50' 07"	4° 24' 11"	98° 49' 23"	27° 36' 06"	59' 40"	16' 15,37"	271° 31' 25"	29,59%
07:00	98° 26' 04"	4° 22' 33"	99° 29' 36"	27° 32' 11"	59' 38"	16' 14,98"	271° 51' 04"	30,04%
08:00	99° 01' 58"	4° 20' 53"	100° 09' 45"	27° 28' 06"	59' 37"	16' 14,58"	272° 10' 37"	30,48%
09:00	99° 37' 51"	4° 19' 12"	100° 49' 48"	27° 23' 49"	59' 35"	16' 14,18"	272° 30' 03"	30,93%
10:00	100° 13' 41"	4° 17' 29"	101° 29' 47"	27° 19' 21"	59' 34"	16' 13,78"	272° 49' 21"	31,38%
11:00	100° 49' 30"	4° 15' 45"	102° 09' 40"	27° 14' 42"	59' 32"	16' 13,37"	273° 08' 32"	31,83%
12:00	101° 25' 16"	4° 13' 59"	102° 49' 27"	27° 09' 52"	59' 31"	16' 12,96"	273° 27' 36"	32,28%
13:00	102° 01' 00"	4° 12' 12"	103° 29' 09"	27° 04' 50"	59' 29"	16' 12,55"	273° 46' 32"	32,73%
14:00	102° 36' 42"	4° 10' 23"	104° 08' 45"	26° 59' 38"	59' 28"	16' 12,14"	274° 05' 21"	33,18%
15:00	103° 12' 22"	4° 08' 32"	104° 48' 15"	26° 54' 16"	59' 26"	16' 11,73"	274° 24' 02"	33,64%
16:00	103° 48' 00"	4° 06' 40"	105° 27' 39"	26° 48' 42"	59' 25"	16' 11,31"	274° 42' 35"	34,09%
17:00	104° 23' 36"	4° 04' 47"	106° 06' 57"	26° 42' 58"	59' 23"	16' 10,89"	275° 01' 00"	34,55%
18:00	104° 59' 10"	4° 02' 52"	106° 46' 09"	26° 37' 04"	59' 22"	16' 10,47"	275° 19' 17"	35,00%
19:00	105° 34' 41"	4° 00' 55"	107° 25' 15"	26° 30' 59"	59' 20"	16' 10,04"	275° 37' 25"	35,46%
20:00	106° 10' 11"	3° 58' 57"	108° 04' 14"	26° 24' 44"	59' 19"	16' 09,62"	275° 55' 26"	35,92%
21:00	106° 45' 38"	3° 56' 58"	108° 43' 07"	26° 18' 18"	59' 17"	16' 09,19"	276° 13' 18"	36,38%
22:00	107° 21' 03"	3° 54' 57"	109° 21' 53"	26° 11' 43"	59' 15"	16' 08,76"	276° 31' 01"	36,84%
23:00	107° 56' 26"	3° 52' 55"	110° 00' 33"	26° 04' 57"	59' 14"	16' 08,33"	276° 48' 36"	37,30%
24:00	108° 31' 47"	3° 50' 52"	110° 39' 06"	25° 58' 02"	59' 12"	16' 07,89"	277° 06' 02"	37,77%

23 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	32° 51' 41"	0,36"	30° 39' 15"	12° 27' 51"	1,0053238	15' 54,55"	23° 26' 18"	01m 36s
01:00	32° 54' 07"	0,36"	30° 41' 35"	12° 28' 41"	1,0053348	15' 54,54"	23° 26' 18"	01m 37s
02:00	32° 56' 33"	0,36"	30° 43' 56"	12° 29' 31"	1,0053458	15' 54,53"	23° 26' 18"	01m 37s
03:00	32° 59' 00"	0,35"	30° 46' 17"	12° 30' 21"	1,0053568	15' 54,52"	23° 26' 18"	01m 38s
04:00	33° 01' 26"	0,35"	30° 48' 38"	12° 31' 11"	1,0053677	15' 54,51"	23° 26' 18"	01m 38s
05:00	33° 03' 52"	0,35"	30° 50' 59"	12° 32' 01"	1,0053787	15' 54,50"	23° 26' 18"	01m 39s
06:00	33° 06' 19"	0,34"	30° 53' 19"	12° 32' 51"	1,0053897	15' 54,49"	23° 26' 18"	01m 39s
07:00	33° 08' 45"	0,34"	30° 55' 40"	12° 33' 41"	1,0054006	15' 54,48"	23° 26' 18"	01m 39s
08:00	33° 11' 11"	0,33"	30° 58' 01"	12° 34' 31"	1,0054116	15' 54,46"	23° 26' 18"	01m 40s
09:00	33° 13' 37"	0,33"	31° 00' 22"	12° 35' 21"	1,0054225	15' 54,45"	23° 26' 18"	01m 40s
10:00	33° 16' 04"	0,33"	31° 02' 43"	12° 36' 11"	1,0054335	15' 54,44"	23° 26' 18"	01m 41s
11:00	33° 18' 30"	0,32"	31° 05' 04"	12° 37' 00"	1,0054444	15' 54,43"	23° 26' 18"	01m 41s
12:00	33° 20' 56"	0,32"	31° 07' 25"	12° 37' 50"	1,0054554	15' 54,42"	23° 26' 18"	01m 42s
13:00	33° 23' 22"	0,31"	31° 09' 46"	12° 38' 40"	1,0054663	15' 54,41"	23° 26' 18"	01m 42s
14:00	33° 25' 49"	0,31"	31° 12' 07"	12° 39' 30"	1,0054772	15' 54,40"	23° 26' 18"	01m 43s
15:00	33° 28' 15"	0,31"	31° 14' 27"	12° 40' 19"	1,0054882	15' 54,39"	23° 26' 18"	01m 43s
16:00	33° 30' 41"	0,30"	31° 16' 48"	12° 41' 09"	1,0054991	15' 54,38"	23° 26' 18"	01m 44s
17:00	33° 33' 07"	0,30"	31° 19' 09"	12° 41' 59"	1,0055100	15' 54,37"	23° 26' 18"	01m 44s
18:00	33° 35' 33"	0,29"	31° 21' 30"	12° 42' 49"	1,0055210	15' 54,36"	23° 26' 18"	01m 45s
19:00	33° 38' 00"	0,29"	31° 23' 51"	12° 43' 38"	1,0055319	15' 54,35"	23° 26' 18"	01m 45s
20:00	33° 40' 26"	0,28"	31° 26' 12"	12° 44' 28"	1,0055428	15' 54,34"	23° 26' 18"	01m 45s
21:00	33° 42' 52"	0,28"	31° 28' 33"	12° 45' 17"	1,0055537	15' 54,33"	23° 26' 18"	01m 46s
22:00	33° 45' 18"	0,28"	31° 30' 54"	12° 46' 07"	1,0055646	15' 54,32"	23° 26' 18"	01m 46s
23:00	33° 47' 44"	0,27"	31° 33' 15"	12° 46' 57"	1,0055755	15' 54,31"	23° 26' 18"	01m 47s
24:00	33° 50' 11"	0,27"	31° 35' 36"	12° 47' 46"	1,0055864	15' 54,30"	23° 26' 18"	01m 47s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	108° 31' 47"	3° 50' 52"	110° 39' 06"	25° 58' 02"	59' 12"	16' 07,89"	277° 06' 02"	37,77%
01:00	109° 07' 06"	3° 48' 47"	111° 17' 33"	25° 50' 57"	59' 11"	16' 07,46"	277° 23' 19"	38,23%
02:00	109° 42' 23"	3° 46' 41"	111° 55' 52"	25° 43' 42"	59' 09"	16' 07,02"	277° 40' 28"	38,69%
03:00	110° 17' 37"	3° 44' 33"	112° 34' 05"	25° 36' 18"	59' 07"	16' 06,58"	277° 57' 27"	39,16%
04:00	110° 52' 49"	3° 42' 25"	113° 12' 11"	25° 28' 44"	59' 06"	16' 06,14"	278° 14' 18"	39,62%
05:00	111° 27' 59"	3° 40' 15"	113° 50' 10"	25° 21' 00"	59' 04"	16' 05,70"	278° 30' 59"	40,09%
06:00	112° 03' 07"	3° 38' 03"	114° 28' 01"	25° 13' 08"	59' 03"	16' 05,26"	278° 47' 32"	40,55%
07:00	112° 38' 13"	3° 35' 51"	115° 05' 46"	25° 05' 06"	59' 01"	16' 04,81"	279° 03' 55"	41,02%
08:00	113° 13' 17"	3° 33' 37"	115° 43' 24"	24° 56' 55"	58' 59"	16' 04,37"	279° 20' 08"	41,48%
09:00	113° 48' 18"	3° 31' 22"	116° 20' 54"	24° 48' 36"	58' 58"	16' 03,92"	279° 36' 12"	41,95%
10:00	114° 23' 18"	3° 29' 06"	116° 58' 17"	24° 40' 07"	58' 56"	16' 03,47"	279° 52' 07"	42,42%
11:00	114° 58' 15"	3° 26' 49"	117° 35' 33"	24° 31' 30"	58' 54"	16' 03,02"	280° 07' 52"	42,88%
12:00	115° 33' 10"	3° 24' 30"	118° 12' 41"	24° 22' 44"	58' 53"	16' 02,57"	280° 23' 28"	43,35%
13:00	116° 08' 02"	3° 22' 11"	118° 49' 43"	24° 13' 49"	58' 51"	16' 02,12"	280° 38' 54"	43,82%
14:00	116° 42' 53"	3° 19' 50"	119° 26' 37"	24° 04' 46"	58' 49"	16' 01,67"	280° 54' 10"	44,29%
15:00	117° 17' 42"	3° 17' 28"	120° 03' 23"	23° 55' 35"	58' 48"	16' 01,22"	281° 09' 17"	44,75%
16:00	117° 52' 28"	3° 15' 05"	120° 40' 03"	23° 46' 16"	58' 46"	16' 00,77"	281° 24' 14"	45,22%
17:00	118° 27' 12"	3° 12' 41"	121° 16' 34"	23° 36' 48"	58' 44"	16' 00,31"	281° 39' 01"	45,69%
18:00	119° 01' 54"	3° 10' 16"	121° 52' 59"	23° 27' 13"	58' 43"	16' 00,00"	281° 53' 38"	46,15%
19:00	119° 36' 34"	3° 07' 50"	122° 29' 16"	23° 17' 30"	58' 41"	15' 59,40"	282° 08' 05"	46,62%
20:00	120° 11' 11"	3° 05' 23"	123° 05' 26"	23° 07' 38"	58' 39"	15' 58,95"	282° 22' 22"	47,09%
21:00	120° 45' 47"	3° 02' 56"	123° 41' 28"	22° 57' 40"	58' 38"	15' 58,49"	282° 36' 29"	47,55%
22:00	121° 20' 20"	3° 00' 27"	124° 17' 23"	22° 47' 33"	58' 36"	15' 58,03"	282° 50' 27"	48,02%
23:00	121° 54' 51"	2° 57' 57"	124° 53' 10"	22° 37' 20"	58' 34"	15' 57,58"	283° 04' 14"	48,48%
24:00	122° 29' 20"	2° 55' 26"	125° 28' 50"	22° 26' 59"	58' 33"	15' 57,12"	283° 17' 51"	48,95%

24 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	33° 50' 11"	0,27"	31° 35' 36"	12° 47' 46"	1,0055864	15' 54,30"	23° 26' 18"	01m 47s
01:00	33° 52' 37"	0,26"	31° 37' 58"	12° 48' 36"	1,0055973	15' 54,29"	23° 26' 18"	01m 48s
02:00	33° 55' 03"	0,26"	31° 40' 19"	12° 49' 25"	1,0056082	15' 54,28"	23° 26' 18"	01m 48s
03:00	33° 57' 29"	0,25"	31° 42' 40"	12° 50' 15"	1,0056191	15' 54,27"	23° 26' 18"	01m 49s
04:00	33° 59' 55"	0,25"	31° 45' 01"	12° 51' 04"	1,0056300	15' 54,26"	23° 26' 18"	01m 49s
05:00	34° 02' 22"	0,24"	31° 47' 22"	12° 51' 53"	1,0056409	15' 54,25"	23° 26' 18"	01m 50s
06:00	34° 04' 48"	0,24"	31° 49' 43"	12° 52' 43"	1,0056518	15' 54,24"	23° 26' 18"	01m 50s
07:00	34° 07' 14"	0,24"	31° 52' 04"	12° 53' 32"	1,0056627	15' 54,23"	23° 26' 18"	01m 50s
08:00	34° 09' 40"	0,23"	31° 54' 25"	12° 54' 22"	1,0056736	15' 54,22"	23° 26' 18"	01m 51s
09:00	34° 12' 06"	0,23"	31° 56' 46"	12° 55' 11"	1,0056845	15' 54,21"	23° 26' 18"	01m 51s
10:00	34° 14' 32"	0,22"	31° 59' 08"	12° 56' 00"	1,0056953	15' 54,20"	23° 26' 18"	01m 52s
11:00	34° 16' 59"	0,22"	32° 01' 29"	12° 56' 50"	1,0057062	15' 54,19"	23° 26' 18"	01m 52s
12:00	34° 19' 25"	0,21"	32° 03' 50"	12° 57' 39"	1,0057171	15' 54,17"	23° 26' 18"	01m 53s
13:00	34° 21' 51"	0,21"	32° 06' 11"	12° 58' 28"	1,0057279	15' 54,16"	23° 26' 18"	01m 53s
14:00	34° 24' 17"	0,20"	32° 08' 32"	12° 59' 17"	1,0057388	15' 54,15"	23° 26' 18"	01m 54s
15:00	34° 26' 43"	0,20"	32° 10' 54"	13° 00' 07"	1,0057497	15' 54,14"	23° 26' 18"	01m 54s
16:00	34° 29' 09"	0,19"	32° 13' 15"	13° 00' 56"	1,0057605	15' 54,13"	23° 26' 18"	01m 54s
17:00	34° 31' 35"	0,19"	32° 15' 36"	13° 01' 45"	1,0057714	15' 54,12"	23° 26' 18"	01m 55s
18:00	34° 34' 02"	0,18"	32° 17' 57"	13° 02' 34"	1,0057822	15' 54,11"	23° 26' 18"	01m 55s
19:00	34° 36' 28"	0,18"	32° 20' 19"	13° 03' 23"	1,0057931	15' 54,10"	23° 26' 18"	01m 56s
20:00	34° 38' 54"	0,17"	32° 22' 40"	13° 04' 12"	1,0058039	15' 54,09"	23° 26' 18"	01m 56s
21:00	34° 41' 20"	0,17"	32° 25' 01"	13° 05' 01"	1,0058148	15' 54,08"	23° 26' 18"	01m 57s
22:00	34° 43' 46"	0,16"	32° 27' 22"	13° 05' 50"	1,0058256	15' 54,07"	23° 26' 18"	01m 57s
23:00	34° 46' 12"	0,16"	32° 29' 44"	13° 06' 39"	1,0058365	15' 54,06"	23° 26' 18"	01m 57s
24:00	34° 48' 38"	0,15"	32° 32' 05"	13° 07' 28"	1,0058473	15' 54,05"	23° 26' 18"	01m 58s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	122° 29' 20"	2° 55' 26"	125° 28' 50"	22° 26' 59"	58' 33"	15' 57,12"	283° 17' 51"	48,95%
01:00	123° 03' 47"	2° 52' 54"	126° 04' 22"	22° 16' 31"	58' 31"	15' 56,66"	283° 31' 17"	49,42%
02:00	123° 38' 12"	2° 50' 22"	126° 39' 48"	22° 05' 55"	58' 29"	15' 56,20"	283° 44' 34"	49,88%
03:00	124° 12' 35"	2° 47' 48"	127° 15' 05"	21° 55' 13"	58' 28"	15' 55,74"	283° 57' 41"	50,34%
04:00	124° 46' 55"	2° 45' 14"	127° 50' 16"	21° 44' 24"	58' 26"	15' 55,29"	284° 10' 37"	50,81%
05:00	125° 21' 14"	2° 42' 38"	128° 25' 19"	21° 33' 28"	58' 24"	15' 54,83"	284° 23' 23"	51,27%
06:00	125° 55' 30"	2° 40' 02"	129° 00' 15"	21° 22' 25"	58' 23"	15' 54,37"	284° 35' 59"	51,73%
07:00	126° 29' 44"	2° 37' 26"	129° 35' 03"	21° 11' 16"	58' 21"	15' 53,91"	284° 48' 25"	52,19%
08:00	127° 03' 56"	2° 34' 48"	130° 09' 45"	21° 00' 00"	58' 19"	15' 53,45"	285° 00' 40"	52,66%
09:00	127° 38' 06"	2° 32' 10"	130° 44' 19"	20° 48' 38"	58' 18"	15' 53,00"	285° 12' 45"	53,12%
10:00	128° 12' 14"	2° 29' 31"	131° 18' 46"	20° 37' 10"	58' 16"	15' 52,54"	285° 24' 40"	53,58%
11:00	128° 46' 20"	2° 26' 51"	131° 53' 05"	20° 25' 36"	58' 14"	15' 52,08"	285° 36' 24"	54,03%
12:00	129° 20' 24"	2° 24' 10"	132° 27' 18"	20° 13' 55"	58' 13"	15' 51,62"	285° 47' 58"	54,49%
13:00	129° 54' 25"	2° 21' 29"	133° 01' 23"	20° 02' 09"	58' 11"	15' 51,16"	285° 59' 22"	54,95%
14:00	130° 28' 25"	2° 18' 47"	133° 35' 22"	19° 50' 17"	58' 09"	15' 50,71"	286° 10' 36"	55,41%
15:00	131° 02' 23"	2° 16' 04"	134° 09' 13"	19° 38' 19"	58' 08"	15' 50,25"	286° 21' 39"	55,86%
16:00	131° 36' 18"	2° 13' 21"	134° 42' 58"	19° 26' 15"	58' 06"	15' 49,79"	286° 32' 32"	56,32%
17:00	132° 10' 11"	2° 10' 37"	135° 16' 35"	19° 14' 06"	58' 04"	15' 49,34"	286° 43' 14"	56,77%
18:00	132° 44' 03"	2° 07' 53"	135° 50' 06"	19° 01' 52"	58' 03"	15' 48,88"	286° 53' 46"	57,22%
19:00	133° 17' 52"	2° 05' 08"	136° 23' 30"	18° 49' 32"	58' 01"	15' 48,43"	287° 04' 08"	57,67%
20:00	133° 51' 40"	2° 02' 22"	136° 56' 47"	18° 37' 07"	57' 59"	15' 47,97"	287° 14' 19"	58,12%
21:00	134° 25' 25"	1° 59' 36"	137° 29' 57"	18° 24' 36"	57' 58"	15' 47,52"	287° 24' 20"	58,57%
22:00	134° 59' 08"	1° 56' 50"	138° 03' 01"	18° 12' 01"	57' 56"	15' 47,07"	287° 34' 11"	59,02%
23:00	135° 32' 50"	1° 54' 02"	138° 35' 58"	17° 59' 21"	57' 54"	15' 46,61"	287° 43' 51"	59,47%
24:00	136° 06' 29"	1° 51' 15"	139° 08' 48"	17° 46' 36"	57' 53"	15' 46,16"	287° 53' 21"	59,91%

25 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	34° 48' 38"	0,15"	32° 32' 05"	13° 07' 28"	1,0058473	15' 54,05"	23° 26' 18"	01m 58s
01:00	34° 51' 04"	0,15"	32° 34' 26"	13° 08' 17"	1,0058582	15' 54,04"	23° 26' 18"	01m 58s
02:00	34° 53' 30"	0,14"	32° 36' 48"	13° 09' 06"	1,0058690	15' 54,03"	23° 26' 18"	01m 59s
03:00	34° 55' 57"	0,14"	32° 39' 09"	13° 09' 55"	1,0058798	15' 54,02"	23° 26' 18"	01m 59s
04:00	34° 58' 23"	0,13"	32° 41' 31"	13° 10' 44"	1,0058906	15' 54,01"	23° 26' 18"	02m 00s
05:00	35° 00' 49"	0,13"	32° 43' 52"	13° 11' 33"	1,0059015	15' 54,00"	23° 26' 18"	02m 00s
06:00	35° 03' 15"	0,12"	32° 46' 13"	13° 12' 22"	1,0059123	15' 53,99"	23° 26' 18"	02m 00s
07:00	35° 05' 41"	0,12"	32° 48' 35"	13° 13' 11"	1,0059231	15' 53,98"	23° 26' 18"	02m 01s
08:00	35° 08' 07"	0,11"	32° 50' 56"	13° 14' 00"	1,0059339	15' 53,97"	23° 26' 18"	02m 01s
09:00	35° 10' 33"	0,11"	32° 53' 18"	13° 14' 48"	1,0059447	15' 53,96"	23° 26' 18"	02m 02s
10:00	35° 12' 59"	0,10"	32° 55' 39"	13° 15' 37"	1,0059556	15' 53,95"	23° 26' 18"	02m 02s
11:00	35° 15' 25"	0,10"	32° 58' 01"	13° 16' 26"	1,0059664	15' 53,94"	23° 26' 18"	02m 03s
12:00	35° 17' 51"	0,09"	33° 00' 22"	13° 17' 15"	1,0059772	15' 53,93"	23° 26' 18"	02m 03s
13:00	35° 20' 17"	0,09"	33° 02' 44"	13° 18' 03"	1,0059880	15' 53,92"	23° 26' 18"	02m 03s
14:00	35° 22' 43"	0,08"	33° 05' 05"	13° 18' 52"	1,0059988	15' 53,91"	23° 26' 18"	02m 04s
15:00	35° 25' 09"	0,08"	33° 07' 27"	13° 19' 41"	1,0060096	15' 53,90"	23° 26' 18"	02m 04s
16:00	35° 27' 35"	0,07"	33° 09' 48"	13° 20' 29"	1,0060204	15' 53,89"	23° 26' 18"	02m 05s
17:00	35° 30' 01"	0,06"	33° 12' 10"	13° 21' 18"	1,0060312	15' 53,88"	23° 26' 18"	02m 05s
18:00	35° 32' 27"	0,06"	33° 14' 31"	13° 22' 06"	1,0060420	15' 53,87"	23° 26' 18"	02m 06s
19:00	35° 34' 53"	0,05"	33° 16' 53"	13° 22' 55"	1,0060528	15' 53,86"	23° 26' 18"	02m 06s
20:00	35° 37' 20"	0,05"	33° 19' 14"	13° 23' 44"	1,0060636	15' 53,85"	23° 26' 18"	02m 06s
21:00	35° 39' 46"	0,04"	33° 21' 36"	13° 24' 32"	1,0060743	15' 53,84"	23° 26' 18"	02m 07s
22:00	35° 42' 12"	0,04"	33° 23' 57"	13° 25' 21"	1,0060851	15' 53,83"	23° 26' 18"	02m 07s
23:00	35° 44' 38"	0,03"	33° 26' 19"	13° 26' 09"	1,0060959	15' 53,82"	23° 26' 18"	02m 08s
24:00	35° 47' 04"	0,03"	33° 28' 41"	13° 26' 58"	1,0061067	15' 53,81"	23° 26' 18"	02m 08s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	136° 06' 29"	1° 51' 15"	139° 08' 48"	17° 46' 36"	57' 53"	15' 46,16"	287° 53' 21"	59,91%
01:00	136° 40' 07"	1° 48' 27"	139° 41' 32"	17° 33' 46"	57' 51"	15' 45,71"	288° 02' 40"	60,36%
02:00	137° 13' 42"	1° 45' 38"	140° 14' 09"	17° 20' 52"	57' 49"	15' 45,26"	288° 11' 50"	60,80%
03:00	137° 47' 16"	1° 42' 49"	140° 46' 40"	17° 07' 53"	57' 48"	15' 44,81"	288° 20' 49"	61,24%
04:00	138° 20' 47"	1° 39' 59"	141° 19' 05"	16° 54' 50"	57' 46"	15' 44,36"	288° 29' 37"	61,68%
05:00	138° 54' 17"	1° 37' 09"	141° 51' 24"	16° 41' 42"	57' 44"	15' 43,91"	288° 38' 15"	62,12%
06:00	139° 27' 44"	1° 34' 19"	142° 23' 36"	16° 28' 30"	57' 43"	15' 43,46"	288° 46' 43"	62,56%
07:00	140° 01' 10"	1° 31' 29"	142° 55' 42"	16° 15' 14"	57' 41"	15' 43,02"	288° 55' 01"	62,99%
08:00	140° 34' 34"	1° 28' 38"	143° 27' 42"	16° 01' 53"	57' 39"	15' 42,57"	289° 03' 08"	63,43%
09:00	141° 07' 56"	1° 25' 46"	143° 59' 36"	15° 48' 29"	57' 38"	15' 42,13"	289° 11' 05"	63,86%
10:00	141° 41' 16"	1° 22' 54"	144° 31' 24"	15° 35' 01"	57' 36"	15' 41,68"	289° 18' 51"	64,29%
11:00	142° 14' 34"	1° 20' 02"	145° 03' 06"	15° 21' 29"	57' 34"	15' 41,24"	289° 26' 27"	64,72%
12:00	142° 47' 51"	1° 17' 10"	145° 34' 43"	15° 07' 53"	57' 33"	15' 40,80"	289° 33' 53"	65,15%
13:00	143° 21' 05"	1° 14' 18"	146° 06' 13"	14° 54' 14"	57' 31"	15' 40,36"	289° 41' 09"	65,57%
14:00	143° 54' 18"	1° 11' 25"	146° 37' 38"	14° 40' 31"	57' 30"	15' 39,92"	289° 48' 14"	66,00%
15:00	144° 27' 29"	1° 08' 32"	147° 08' 58"	14° 26' 44"	57' 28"	15' 39,48"	289° 55' 09"	66,42%
16:00	145° 00' 38"	1° 05' 39"	147° 40' 11"	14° 12' 54"	57' 26"	15' 39,04"	290° 01' 54"	66,84%
17:00	145° 33' 45"	1° 02' 45"	148° 11' 20"	13° 59' 01"	57' 25"	15' 38,61"	290° 08' 28"	67,26%
18:00	146° 06' 50"	0° 59' 51"	148° 42' 23"	13° 45' 05"	57' 23"	15' 38,17"	290° 14' 52"	67,68%
19:00	146° 39' 54"	0° 56' 58"	149° 13' 20"	13° 31' 05"	57' 22"	15' 37,74"	290° 21' 06"	68,09%
20:00	147° 12' 56"	0° 54' 04"	149° 44' 13"	13° 17' 03"	57' 20"	15' 37,31"	290° 27' 10"	68,51%
21:00	147° 45' 56"	0° 51' 09"	150° 15' 00"	13° 02' 57"	57' 18"	15' 36,87"	290° 33' 03"	68,92%
22:00	148° 18' 54"	0° 48' 15"	150° 45' 42"	12° 48' 49"	57' 17"	15' 36,44"	290° 38' 46"	69,33%
23:00	148° 51' 50"	0° 45' 21"	151° 16' 19"	12° 34' 38"	57' 15"	15' 36,01"	290° 44' 19"	69,74%
24:00	149° 24' 45"	0° 42' 26"	151° 46' 51"	12° 20' 24"	57' 14"	15' 35,59"	290° 49' 41"	70,15%

26 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	35° 47' 04"	0,03"	33° 28' 41"	13° 26' 58"	1,0061067	15' 53,81"	23° 26' 18"	02m 08s
01:00	35° 49' 30"	0,02"	33° 31' 02"	13° 27' 46"	1,0061175	15' 53,80"	23° 26' 18"	02m 09s
02:00	35° 51' 56"	0,02"	33° 33' 24"	13° 28' 34"	1,0061282	15' 53,78"	23° 26' 18"	02m 09s
03:00	35° 54' 22"	0,01"	33° 35' 46"	13° 29' 23"	1,0061390	15' 53,77"	23° 26' 18"	02m 09s
04:00	35° 56' 48"	0,01"	33° 38' 07"	13° 30' 11"	1,0061498	15' 53,76"	23° 26' 18"	02m 10s
05:00	35° 59' 14"	0,00"	33° 40' 29"	13° 30' 59"	1,0061606	15' 53,75"	23° 26' 18"	02m 10s
06:00	36° 01' 40"	-0,00"	33° 42' 51"	13° 31' 48"	1,0061713	15' 53,74"	23° 26' 18"	02m 11s
07:00	36° 04' 06"	-0,01"	33° 45' 12"	13° 32' 36"	1,0061821	15' 53,73"	23° 26' 18"	02m 11s
08:00	36° 06' 32"	-0,02"	33° 47' 34"	13° 33' 24"	1,0061929	15' 53,72"	23° 26' 18"	02m 11s
09:00	36° 08' 58"	-0,02"	33° 49' 56"	13° 34' 13"	1,0062036	15' 53,71"	23° 26' 18"	02m 12s
10:00	36° 11' 24"	-0,03"	33° 52' 18"	13° 35' 01"	1,0062144	15' 53,70"	23° 26' 18"	02m 12s
11:00	36° 13' 49"	-0,03"	33° 54' 39"	13° 35' 49"	1,0062251	15' 53,69"	23° 26' 18"	02m 13s
12:00	36° 16' 15"	-0,04"	33° 57' 01"	13° 36' 37"	1,0062359	15' 53,68"	23° 26' 18"	02m 13s
13:00	36° 18' 41"	-0,04"	33° 59' 23"	13° 37' 25"	1,0062466	15' 53,67"	23° 26' 18"	02m 13s
14:00	36° 21' 07"	-0,05"	34° 01' 45"	13° 38' 13"	1,0062574	15' 53,66"	23° 26' 18"	02m 14s
15:00	36° 23' 33"	-0,05"	34° 04' 06"	13° 39' 01"	1,0062681	15' 53,65"	23° 26' 18"	02m 14s
16:00	36° 25' 59"	-0,06"	34° 06' 28"	13° 39' 50"	1,0062789	15' 53,64"	23° 26' 18"	02m 15s
17:00	36° 28' 25"	-0,06"	34° 08' 50"	13° 40' 38"	1,0062896	15' 53,63"	23° 26' 18"	02m 15s
18:00	36° 30' 51"	-0,07"	34° 11' 12"	13° 41' 26"	1,0063004	15' 53,62"	23° 26' 18"	02m 15s
19:00	36° 33' 17"	-0,08"	34° 13' 34"	13° 42' 14"	1,0063111	15' 53,61"	23° 26' 18"	02m 16s
20:00	36° 35' 43"	-0,08"	34° 15' 56"	13° 43' 02"	1,0063219	15' 53,60"	23° 26' 18"	02m 16s
21:00	36° 38' 09"	-0,09"	34° 18' 18"	13° 43' 50"	1,0063326	15' 53,59"	23° 26' 18"	02m 17s
22:00	36° 40' 35"	-0,09"	34° 20' 39"	13° 44' 37"	1,0063433	15' 53,58"	23° 26' 18"	02m 17s
23:00	36° 43' 01"	-0,10"	34° 23' 01"	13° 45' 25"	1,0063541	15' 53,57"	23° 26' 18"	02m 17s
24:00	36° 45' 27"	-0,10"	34° 25' 23"	13° 46' 13"	1,0063648	15' 53,56"	23° 26' 18"	02m 18s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	149° 24' 45"	0° 42' 26"	151° 46' 51"	12° 20' 24"	57' 14"	15' 35,59"	290° 49' 41"	70,15%
01:00	149° 57' 38"	0° 39' 32"	152° 17' 18"	12° 06' 07"	57' 12"	15' 35,16"	290° 54' 53"	70,55%
02:00	150° 30' 29"	0° 36' 37"	152° 47' 41"	11° 51' 48"	57' 11"	15' 34,73"	290° 59' 55"	70,95%
03:00	151° 03' 19"	0° 33' 43"	153° 17' 58"	11° 37' 27"	57' 09"	15' 34,31"	291° 04' 46"	71,35%
04:00	151° 36' 07"	0° 30' 48"	153° 48' 11"	11° 23' 03"	57' 07"	15' 33,89"	291° 09' 27"	71,75%
05:00	152° 08' 53"	0° 27' 53"	154° 18' 20"	11° 08' 36"	57' 06"	15' 33,47"	291° 13' 58"	72,15%
06:00	152° 41' 38"	0° 24' 59"	154° 48' 24"	10° 54' 08"	57' 04"	15' 33,05"	291° 18' 19"	72,54%
07:00	153° 14' 21"	0° 22' 04"	155° 18' 23"	10° 39' 37"	57' 03"	15' 32,63"	291° 22' 29"	72,93%
08:00	153° 47' 02"	0° 19' 09"	155° 48' 18"	10° 25' 04"	57' 01"	15' 32,21"	291° 26' 29"	73,32%
09:00	154° 19' 41"	0° 16' 15"	156° 18' 09"	10° 10' 29"	57' 00"	15' 31,80"	291° 30' 18"	73,71%
10:00	154° 52' 19"	0° 13' 20"	156° 47' 56"	9° 55' 52"	56' 58"	15' 31,38"	291° 33' 57"	74,10%
11:00	155° 24' 56"	0° 10' 26"	157° 17' 38"	9° 41' 13"	56' 57"	15' 30,97"	291° 37' 26"	74,48%
12:00	155° 57' 31"	0° 07' 32"	157° 47' 17"	9° 26' 33"	56' 55"	15' 30,56"	291° 40' 44"	74,86%
13:00	156° 30' 04"	0° 04' 38"	158° 16' 52"	9° 11' 50"	56' 54"	15' 30,15"	291° 43' 52"	75,24%
14:00	157° 02' 35"	0° 01' 43"	158° 46' 22"	8° 57' 06"	56' 52"	15' 29,74"	291° 46' 49"	75,61%
15:00	157° 35' 05"	-0° 01' 10"	159° 15' 49"	8° 42' 21"	56' 51"	15' 29,33"	291° 49' 36"	75,99%
16:00	158° 07' 34"	-0° 04' 04"	159° 45' 12"	8° 27' 33"	56' 49"	15' 28,92"	291° 52' 13"	76,36%
17:00	158° 40' 00"	-0° 06' 58"	160° 14' 32"	8° 12' 45"	56' 48"	15' 28,52"	291° 54' 39"	76,73%
18:00	159° 12' 26"	-0° 09' 51"	160° 43' 48"	7° 57' 55"	56' 46"	15' 28,12"	291° 56' 54"	77,10%
19:00	159° 44' 50"	-0° 12' 44"	161° 13' 00"	7° 43' 03"	56' 45"	15' 27,72"	291° 58' 59"	77,46%
20:00	160° 17' 12"	-0° 15' 37"	161° 42' 09"	7° 28' 11"	56' 43"	15' 27,32"	292° 00' 53"	77,82%
21:00	160° 49' 32"	-0° 18' 30"	162° 11' 14"	7° 13' 17"	56' 42"	15' 26,92"	292° 02' 37"	78,18%
22:00	161° 21' 52"	-0° 21' 23"	162° 40' 17"	6° 58' 22"	56' 40"	15' 26,52"	292° 04' 10"	78,54%
23:00	161° 54' 09"	-0° 24' 15"	163° 09' 16"	6° 43' 26"	56' 39"	15' 26,13"	292° 05' 32"	78,90%
24:00	162° 26' 26"	-0° 27' 07"	163° 38' 12"	6° 28' 29"	56' 38"	15' 25,73"	292° 06' 43"	79,25%

27 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	36° 45' 27"	-0,10"	34° 25' 23"	13° 46' 13"	1,0063648	15' 53,56"	23° 26' 18"	02m 18s
01:00	36° 47' 53"	-0,11"	34° 27' 45"	13° 47' 01"	1,0063755	15' 53,55"	23° 26' 18"	02m 18s
02:00	36° 50' 19"	-0,11"	34° 30' 07"	13° 47' 49"	1,0063862	15' 53,54"	23° 26' 18"	02m 19s
03:00	36° 52' 45"	-0,12"	34° 32' 29"	13° 48' 37"	1,0063970	15' 53,53"	23° 26' 18"	02m 19s
04:00	36° 55' 10"	-0,12"	34° 34' 51"	13° 49' 25"	1,0064077	15' 53,52"	23° 26' 18"	02m 19s
05:00	36° 57' 36"	-0,13"	34° 37' 13"	13° 50' 12"	1,0064184	15' 53,51"	23° 26' 18"	02m 20s
06:00	37° 00' 02"	-0,13"	34° 39' 35"	13° 51' 00"	1,0064291	15' 53,50"	23° 26' 18"	02m 20s
07:00	37° 02' 28"	-0,14"	34° 41' 57"	13° 51' 48"	1,0064398	15' 53,49"	23° 26' 18"	02m 21s
08:00	37° 04' 54"	-0,15"	34° 44' 19"	13° 52' 35"	1,0064506	15' 53,48"	23° 26' 18"	02m 21s
09:00	37° 07' 20"	-0,15"	34° 46' 41"	13° 53' 23"	1,0064613	15' 53,47"	23° 26' 18"	02m 21s
10:00	37° 09' 46"	-0,16"	34° 49' 03"	13° 54' 11"	1,0064720	15' 53,46"	23° 26' 18"	02m 22s
11:00	37° 12' 12"	-0,16"	34° 51' 25"	13° 54' 58"	1,0064827	15' 53,45"	23° 26' 18"	02m 22s
12:00	37° 14' 38"	-0,17"	34° 53' 47"	13° 55' 46"	1,0064934	15' 53,44"	23° 26' 18"	02m 22s
13:00	37° 17' 03"	-0,17"	34° 56' 09"	13° 56' 34"	1,0065041	15' 53,43"	23° 26' 18"	02m 23s
14:00	37° 19' 29"	-0,18"	34° 58' 31"	13° 57' 21"	1,0065148	15' 53,42"	23° 26' 18"	02m 23s
15:00	37° 21' 55"	-0,18"	35° 00' 54"	13° 58' 09"	1,0065255	15' 53,41"	23° 26' 18"	02m 24s
16:00	37° 24' 21"	-0,19"	35° 03' 16"	13° 58' 56"	1,0065362	15' 53,40"	23° 26' 18"	02m 24s
17:00	37° 26' 47"	-0,19"	35° 05' 38"	13° 59' 44"	1,0065469	15' 53,39"	23° 26' 18"	02m 24s
18:00	37° 29' 13"	-0,20"	35° 08' 00"	14° 00' 31"	1,0065576	15' 53,38"	23° 26' 18"	02m 25s
19:00	37° 31' 39"	-0,20"	35° 10' 22"	14° 01' 19"	1,0065683	15' 53,37"	23° 26' 18"	02m 25s
20:00	37° 34' 04"	-0,21"	35° 12' 44"	14° 02' 06"	1,0065790	15' 53,36"	23° 26' 18"	02m 26s
21:00	37° 36' 30"	-0,21"	35° 15' 06"	14° 02' 53"	1,0065897	15' 53,35"	23° 26' 18"	02m 26s
22:00	37° 38' 56"	-0,22"	35° 17' 29"	14° 03' 41"	1,0066004	15' 53,34"	23° 26' 18"	02m 26s
23:00	37° 41' 22"	-0,22"	35° 19' 51"	14° 04' 28"	1,0066111	15' 53,33"	23° 26' 18"	02m 27s
24:00	37° 43' 48"	-0,23"	35° 22' 13"	14° 05' 15"	1,0066217	15' 53,32"	23° 26' 18"	02m 27s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	162° 26' 26"	-0° 27' 07"	163° 38' 12"	6° 28' 29"	56' 38"	15' 25,73"	292° 06' 43"	79,25%
01:00	162° 58' 41"	-0° 29' 58"	164° 07' 05"	6° 13' 31"	56' 36"	15' 25,34"	292° 07' 44"	79,60%
02:00	163° 30' 54"	-0° 32' 50"	164° 35' 55"	5° 58' 32"	56' 35"	15' 24,95"	292° 08' 34"	79,95%
03:00	164° 03' 06"	-0° 35' 41"	165° 04' 42"	5° 43' 32"	56' 33"	15' 24,56"	292° 09' 13"	80,29%
04:00	164° 35' 16"	-0° 38' 32"	165° 33' 26"	5° 28' 32"	56' 32"	15' 24,17"	292° 09' 41"	80,63%
05:00	165° 07' 25"	-0° 41' 22"	166° 02' 08"	5° 13' 31"	56' 30"	15' 23,79"	292° 09' 58"	80,97%
06:00	165° 39' 33"	-0° 44' 12"	166° 30' 46"	4° 58' 29"	56' 29"	15' 23,40"	292° 10' 04"	81,31%
07:00	166° 11' 39"	-0° 47' 02"	166° 59' 23"	4° 43' 27"	56' 28"	15' 23,02"	292° 09' 58"	81,64%
08:00	166° 43' 44"	-0° 49' 51"	167° 27' 56"	4° 28' 24"	56' 26"	15' 22,64"	292° 09' 42"	81,98%
09:00	167° 15' 47"	-0° 52' 40"	167° 56' 28"	4° 13' 21"	56' 25"	15' 22,26"	292° 09' 14"	82,30%
10:00	167° 47' 49"	-0° 55' 28"	168° 24' 56"	3° 58' 18"	56' 23"	15' 21,88"	292° 08' 35"	82,63%
11:00	168° 19' 50"	-0° 58' 16"	168° 53' 23"	3° 43' 14"	56' 22"	15' 21,51"	292° 07' 45"	82,96%
12:00	168° 51' 49"	-1° 01' 04"	169° 21' 48"	3° 28' 10"	56' 21"	15' 21,13"	292° 06' 43"	83,28%
13:00	169° 23' 47"	-1° 03' 51"	169° 50' 10"	3° 13' 06"	56' 19"	15' 20,76"	292° 05' 29"	83,59%
14:00	169° 55' 44"	-1° 06' 37"	170° 18' 30"	2° 58' 02"	56' 18"	15' 20,39"	292° 04' 04"	83,91%
15:00	170° 27' 39"	-1° 09' 24"	170° 46' 48"	2° 42' 58"	56' 17"	15' 20,02"	292° 02' 27"	84,22%
16:00	170° 59' 33"	-1° 12' 09"	171° 15' 04"	2° 27' 53"	56' 15"	15' 19,65"	292° 00' 38"	84,53%
17:00	171° 31' 26"	-1° 14' 54"	171° 43' 19"	2° 12' 49"	56' 14"	15' 19,28"	291° 58' 37"	84,84%
18:00	172° 03' 17"	-1° 17' 39"	172° 11' 31"	1° 57' 45"	56' 13"	15' 18,92"	291° 56' 24"	85,14%
19:00	172° 35' 07"	-1° 20' 23"	172° 39' 42"	1° 42' 41"	56' 11"	15' 18,55"	291° 53' 58"	85,45%
20:00	173° 06' 56"	-1° 23' 07"	173° 07' 52"	1° 27' 37"	56' 10"	15' 18,19"	291° 51' 21"	85,74%
21:00	173° 38' 43"	-1° 25' 50"	173° 35' 59"	1° 12' 34"	56' 09"	15' 17,83"	291° 48' 30"	86,04%
22:00	174° 10' 30"	-1° 28' 32"	174° 04' 06"	0° 57' 31"	56' 07"	15' 17,47"	291° 45' 28"	86,33%
23:00	174° 42' 15"	-1° 31' 14"	174° 32' 10"	0° 42' 28"	56' 06"	15' 17,12"	291° 42' 12"	86,62%
24:00	175° 13' 58"	-1° 33' 55"	175° 00' 14"	0° 27' 26"	56' 05"	15' 16,76"	291° 38' 43"	86,91%

28 April 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	37° 43' 48"	-0,23"	35° 22' 13"	14° 05' 15"	1,0066217	15' 53,32"	23° 26' 18"	02m 27s
01:00	37° 46' 14"	-0,23"	35° 24' 35"	14° 06' 03"	1,0066324	15' 53,31"	23° 26' 18"	02m 27s
02:00	37° 48' 40"	-0,24"	35° 26' 58"	14° 06' 50"	1,0066431	15' 53,30"	23° 26' 18"	02m 28s
03:00	37° 51' 05"	-0,24"	35° 29' 20"	14° 07' 37"	1,0066538	15' 53,29"	23° 26' 18"	02m 28s
04:00	37° 53' 31"	-0,25"	35° 31' 42"	14° 08' 24"	1,0066645	15' 53,28"	23° 26' 18"	02m 29s
05:00	37° 55' 57"	-0,25"	35° 34' 04"	14° 09' 11"	1,0066751	15' 53,27"	23° 26' 18"	02m 29s
06:00	37° 58' 23"	-0,26"	35° 36' 27"	14° 09' 59"	1,0066858	15' 53,26"	23° 26' 18"	02m 29s
07:00	38° 00' 49"	-0,26"	35° 38' 49"	14° 10' 46"	1,0066965	15' 53,25"	23° 26' 18"	02m 30s
08:00	38° 03' 14"	-0,27"	35° 41' 11"	14° 11' 33"	1,0067072	15' 53,24"	23° 26' 18"	02m 30s
09:00	38° 05' 40"	-0,27"	35° 43' 34"	14° 12' 20"	1,0067178	15' 53,23"	23° 26' 18"	02m 30s
10:00	38° 08' 06"	-0,28"	35° 45' 56"	14° 13' 07"	1,0067285	15' 53,22"	23° 26' 18"	02m 31s
11:00	38° 10' 32"	-0,28"	35° 48' 18"	14° 13' 54"	1,0067392	15' 53,21"	23° 26' 18"	02m 31s
12:00	38° 12' 58"	-0,29"	35° 50' 41"	14° 14' 41"	1,0067498	15' 53,20"	23° 26' 18"	02m 31s
13:00	38° 15' 23"	-0,29"	35° 53' 03"	14° 15' 28"	1,0067605	15' 53,19"	23° 26' 18"	02m 32s
14:00	38° 17' 49"	-0,30"	35° 55' 26"	14° 16' 15"	1,0067712	15' 53,18"	23° 26' 18"	02m 32s
15:00	38° 20' 15"	-0,30"	35° 57' 48"	14° 17' 02"	1,0067818	15' 53,17"	23° 26' 18"	02m 33s
16:00	38° 22' 41"	-0,31"	36° 00' 11"	14° 17' 49"	1,0067925	15' 53,16"	23° 26' 18"	02m 33s
17:00	38° 25' 07"	-0,31"	36° 02' 33"	14° 18' 36"	1,0068031	15' 53,15"	23° 26' 18"	02m 33s
18:00	38° 27' 32"	-0,32"	36° 04' 55"	14° 19' 23"	1,0068138	15' 53,14"	23° 26' 18"	02m 34s
19:00	38° 29' 58"	-0,32"	36° 07' 18"	14° 20' 10"	1,0068244	15' 53,13"	23° 26' 18"	02m 34s
20:00	38° 32' 24"	-0,33"	36° 09' 40"	14° 20' 56"	1,0068351	15' 53,12"	23° 26' 18"	02m 34s
21:00	38° 34' 50"	-0,33"	36° 12' 03"	14° 21' 43"	1,0068458	15' 53,11"	23° 26' 18"	02m 35s
22:00	38° 37' 15"	-0,34"	36° 14' 25"	14° 22' 30"	1,0068564	15' 53,10"	23° 26' 18"	02m 35s
23:00	38° 39' 41"	-0,34"	36° 16' 48"	14° 23' 17"	1,0068670	15' 53,09"	23° 26' 18"	02m 35s
24:00	38° 42' 07"	-0,35"	36° 19' 10"	14° 24' 03"	1,0068777	15' 53,08"	23° 26' 18"	02m 36s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	175° 13' 58"	-1° 33' 55"	175° 00' 14"	0° 27' 26"	56' 05"	15' 16,76"	291° 38' 43"	86,91%
01:00	175° 45' 41"	-1° 36' 36"	175° 28' 16"	0° 12' 25"	56' 03"	15' 16,41"	291° 35' 02"	87,20%
02:00	176° 17' 22"	-1° 39' 16"	175° 56' 17"	-0° 02' 36"	56' 02"	15' 16,05"	291° 31' 07"	87,48%
03:00	176° 49' 02"	-1° 41' 55"	176° 24' 17"	-0° 17' 37"	56' 01"	15' 15,70"	291° 26' 58"	87,76%
04:00	177° 20' 41"	-1° 44' 34"	176° 52' 16"	-0° 32' 36"	55' 59"	15' 15,35"	291° 22' 36"	88,03%
05:00	177° 52' 19"	-1° 47' 12"	177° 20' 14"	-0° 47' 35"	55' 58"	15' 15,01"	291° 18' 00"	88,30%
06:00	178° 23' 55"	-1° 49' 49"	177° 48' 11"	-1° 02' 33"	55' 57"	15' 14,66"	291° 13' 10"	88,57%
07:00	178° 55' 31"	-1° 52' 26"	178° 16' 07"	-1° 17' 31"	55' 56"	15' 14,32"	291° 08' 06"	88,84%
08:00	179° 27' 05"	-1° 55' 02"	178° 44' 02"	-1° 32' 27"	55' 54"	15' 13,98"	291° 02' 47"	89,10%
09:00	179° 58' 38"	-1° 57' 37"	179° 11' 56"	-1° 47' 22"	55' 53"	15' 13,63"	290° 57' 13"	89,36%
10:00	180° 30' 09"	-2° 00' 12"	179° 39' 50"	-2° 02' 16"	55' 52"	15' 13,30"	290° 51' 25"	89,62%
11:00	181° 01' 40"	-2° 02' 46"	180° 07' 43"	-2° 17' 10"	55' 51"	15' 12,96"	290° 45' 21"	89,88%
12:00	181° 33' 09"	-2° 05' 19"	180° 35' 36"	-2° 32' 02"	55' 49"	15' 12,62"	290° 39' 01"	90,13%
13:00	182° 04' 38"	-2° 07' 51"	181° 03' 29"	-2° 46' 52"	55' 48"	15' 12,29"	290° 32' 26"	90,38%
14:00	182° 36' 05"	-2° 10' 23"	181° 31' 20"	-3° 01' 42"	55' 47"	15' 11,96"	290° 25' 34"	90,62%
15:00	183° 07' 31"	-2° 12' 54"	181° 59' 12"	-3° 16' 30"	55' 46"	15' 11,62"	290° 18' 26"	90,86%
16:00	183° 38' 56"	-2° 15' 24"	182° 27' 03"	-3° 31' 17"	55' 45"	15' 11,30"	290° 11' 00"	91,10%
17:00	184° 10' 20"	-2° 17' 53"	182° 54' 55"	-3° 46' 03"	55' 43"	15' 10,97"	290° 03' 18"	91,34%
18:00	184° 41' 43"	-2° 20' 22"	183° 22' 46"	-4° 00' 47"	55' 42"	15' 10,64"	289° 55' 18"	91,57%
19:00	185° 13' 04"	-2° 22' 50"	183° 50' 37"	-4° 15' 29"	55' 41"	15' 10,32"	289° 46' 59"	91,80%
20:00	185° 44' 25"	-2° 25' 16"	184° 18' 28"	-4° 30' 10"	55' 40"	15' 10,00"	289° 38' 22"	92,03%
21:00	186° 15' 45"	-2° 27' 42"	184° 46' 19"	-4° 44' 49"	55' 39"	15' 09,67"	289° 29' 26"	92,25%
22:00	186° 47' 03"	-2° 30' 08"	185° 14' 10"	-4° 59' 27"	55' 37"	15' 09,35"	289° 20' 11"	92,47%
23:00	187° 18' 20"	-2° 32' 32"	185° 42' 02"	-5° 14' 03"	55' 36"	15' 09,04"	289° 10' 35"	92,69%
24:00	187° 49' 37"	-2° 34' 55"	186° 09' 53"	-5° 28' 37"	55' 35"	15' 08,72"	289° 00' 38"	92,91%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	38° 42' 07"	-0,35"	36° 19' 10"	14° 24' 03"	1,0068777	15' 53,08"	23° 26' 18"	02m 36s
01:00	38° 44' 33"	-0,35"	36° 21' 33"	14° 24' 50"	1,0068883	15' 53,06"	23° 26' 18"	02m 36s
02:00	38° 46' 58"	-0,36"	36° 23' 56"	14° 25' 37"	1,0068990	15' 53,05"	23° 26' 18"	02m 36s
03:00	38° 49' 24"	-0,36"	36° 26' 18"	14° 26' 23"	1,0069096	15' 53,04"	23° 26' 18"	02m 37s
04:00	38° 51' 50"	-0,37"	36° 28' 41"	14° 27' 10"	1,0069203	15' 53,03"	23° 26' 18"	02m 37s
05:00	38° 54' 16"	-0,37"	36° 31' 03"	14° 27' 57"	1,0069309	15' 53,02"	23° 26' 18"	02m 38s
06:00	38° 56' 41"	-0,37"	36° 33' 26"	14° 28' 43"	1,0069415	15' 53,01"	23° 26' 18"	02m 38s
07:00	38° 59' 07"	-0,38"	36° 35' 49"	14° 29' 30"	1,0069522	15' 53,00"	23° 26' 18"	02m 38s
08:00	39° 01' 33"	-0,38"	36° 38' 11"	14° 30' 16"	1,0069628	15' 52,99"	23° 26' 18"	02m 39s
09:00	39° 03' 59"	-0,39"	36° 40' 34"	14° 31' 03"	1,0069734	15' 52,98"	23° 26' 18"	02m 39s
10:00	39° 06' 24"	-0,39"	36° 42' 57"	14° 31' 49"	1,0069841	15' 52,97"	23° 26' 18"	02m 39s
11:00	39° 08' 50"	-0,40"	36° 45' 19"	14° 32' 36"	1,0069947	15' 52,96"	23° 26' 18"	02m 40s
12:00	39° 11' 16"	-0,40"	36° 47' 42"	14° 33' 22"	1,0070053	15' 52,95"	23° 26' 18"	02m 40s
13:00	39° 13' 41"	-0,41"	36° 50' 05"	14° 34' 08"	1,0070159	15' 52,94"	23° 26' 18"	02m 40s
14:00	39° 16' 07"	-0,41"	36° 52' 27"	14° 34' 55"	1,0070266	15' 52,93"	23° 26' 18"	02m 41s
15:00	39° 18' 33"	-0,41"	36° 54' 50"	14° 35' 41"	1,0070372	15' 52,92"	23° 26' 18"	02m 41s
16:00	39° 20' 59"	-0,42"	36° 57' 13"	14° 36' 28"	1,0070478	15' 52,91"	23° 26' 18"	02m 41s
17:00	39° 23' 24"	-0,42"	36° 59' 36"	14° 37' 14"	1,0070584	15' 52,90"	23° 26' 18"	02m 42s
18:00	39° 25' 50"	-0,43"	37° 01' 58"	14° 38' 00"	1,0070690	15' 52,89"	23° 26' 18"	02m 42s
19:00	39° 28' 16"	-0,43"	37° 04' 21"	14° 38' 46"	1,0070796	15' 52,88"	23° 26' 18"	02m 42s
20:00	39° 30' 41"	-0,43"	37° 06' 44"	14° 39' 33"	1,0070903	15' 52,87"	23° 26' 18"	02m 43s
21:00	39° 33' 07"	-0,44"	37° 09' 07"	14° 40' 19"	1,0071009	15' 52,86"	23° 26' 18"	02m 43s
22:00	39° 35' 33"	-0,44"	37° 11' 30"	14° 41' 05"	1,0071115	15' 52,85"	23° 26' 18"	02m 43s
23:00	39° 37' 58"	-0,45"	37° 13' 53"	14° 41' 51"	1,0071221	15' 52,84"	23° 26' 18"	02m 44s
24:00	39° 40' 24"	-0,45"	37° 16' 15"	14° 42' 37"	1,0071327	15' 52,83"	23° 26' 18"	02m 44s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	187° 49' 37"	-2° 34' 55"	186° 09' 53"	-5° 28' 37"	55' 35"	15' 08,72"	289° 00' 38"	92,91%
01:00	188° 20' 52"	-2° 37' 18"	186° 37' 45"	-5° 43' 09"	55' 34"	15' 08,41"	288° 50' 21"	93,12%
02:00	188° 52' 06"	-2° 39' 40"	187° 05' 38"	-5° 57' 39"	55' 33"	15' 08,09"	288° 39' 41"	93,32%
03:00	189° 23' 20"	-2° 42' 00"	187° 33' 31"	-6° 12' 08"	55' 32"	15' 07,78"	288° 28' 39"	93,53%
04:00	189° 54' 32"	-2° 44' 20"	188° 01' 24"	-6° 26' 34"	55' 31"	15' 07,47"	288° 17' 13"	93,73%
05:00	190° 25' 43"	-2° 46' 39"	188° 29' 18"	-6° 40' 58"	55' 29"	15' 07,16"	288° 05' 23"	93,93%
06:00	190° 56' 53"	-2° 48' 57"	188° 57' 13"	-6° 55' 21"	55' 28"	15' 06,86"	287° 53' 09"	94,12%
07:00	191° 28' 02"	-2° 51' 14"	189° 25' 08"	-7° 09' 41"	55' 27"	15' 06,55"	287° 40' 28"	94,32%
08:00	191° 59' 10"	-2° 53' 30"	189° 53' 04"	-7° 23' 58"	55' 26"	15' 06,25"	287° 27' 21"	94,51%
09:00	192° 30' 18"	-2° 55' 46"	190° 21' 01"	-7° 38' 14"	55' 25"	15' 05,95"	287° 13' 46"	94,69%
10:00	193° 01' 24"	-2° 58' 00"	190° 48' 58"	-7° 52' 27"	55' 24"	15' 05,65"	286° 59' 43"	94,87%
11:00	193° 32' 29"	-3° 00' 13"	191° 16' 57"	-8° 06' 38"	55' 23"	15' 05,35"	286° 45' 09"	95,05%
12:00	194° 03' 33"	-3° 02' 25"	191° 44' 57"	-8° 20' 46"	55' 22"	15' 05,05"	286° 30' 04"	95,23%
13:00	194° 34' 36"	-3° 04' 37"	192° 12' 57"	-8° 34' 52"	55' 21"	15' 04,76"	286° 14' 26"	95,40%
14:00	195° 05' 39"	-3° 06' 47"	192° 40' 59"	-8° 48' 55"	55' 20"	15' 04,47"	285° 58' 15"	95,57%
15:00	195° 36' 40"	-3° 08' 56"	193° 09' 02"	-9° 02' 56"	55' 18"	15' 04,18"	285° 41' 28"	95,74%
16:00	196° 07' 40"	-3° 11' 04"	193° 37' 06"	-9° 16' 54"	55' 17"	15' 03,89"	285° 24' 04"	95,90%
17:00	196° 38' 40"	-3° 13' 12"	194° 05' 12"	-9° 30' 50"	55' 16"	15' 03,60"	285° 06' 01"	96,06%
18:00	197° 09' 38"	-3° 15' 18"	194° 33' 18"	-9° 44' 42"	55' 15"	15' 03,31"	284° 47' 17"	96,21%
19:00	197° 40' 36"	-3° 17' 23"	195° 01' 26"	-9° 58' 32"	55' 14"	15' 03,03"	284° 27' 50"	96,37%
20:00	198° 11' 32"	-3° 19' 27"	195° 29' 36"	-10° 12' 19"	55' 13"	15' 02,74"	284° 07' 38"	96,52%
21:00	198° 42' 28"	-3° 21' 30"	195° 57' 47"	-10° 26' 03"	55' 12"	15' 02,46"	283° 46' 39"	96,66%
22:00	199° 13' 23"	-3° 23' 32"	196° 26' 00"	-10° 39' 44"	55' 11"	15' 02,18"	283° 24' 49"	96,81%
23:00	199° 44' 16"	-3° 25' 33"	196° 54' 14"	-10° 53' 22"	55' 10"	15' 01,90"	283° 02' 06"	96,95%
24:00	200° 15' 09"	-3° 27' 33"	197° 22' 29"	-11° 06' 57"	55' 09"	15' 01,63"	282° 38' 27"	97,08%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	39° 40' 24"	-0,45"	37° 16' 15"	14° 42' 37"	1,0071327	15' 52,83"	23° 26' 18"	02m 44s
01:00	39° 42' 50"	-0,45"	37° 18' 38"	14° 43' 23"	1,0071433	15' 52,82"	23° 26' 18"	02m 44s
02:00	39° 45' 15"	-0,46"	37° 21' 01"	14° 44' 09"	1,0071539	15' 52,81"	23° 26' 18"	02m 45s
03:00	39° 47' 41"	-0,46"	37° 23' 24"	14° 44' 55"	1,0071645	15' 52,80"	23° 26' 18"	02m 45s
04:00	39° 50' 07"	-0,47"	37° 25' 47"	14° 45' 41"	1,0071751	15' 52,79"	23° 26' 18"	02m 45s
05:00	39° 52' 32"	-0,47"	37° 28' 10"	14° 46' 27"	1,0071857	15' 52,78"	23° 26' 18"	02m 46s
06:00	39° 54' 58"	-0,47"	37° 30' 33"	14° 47' 13"	1,0071963	15' 52,77"	23° 26' 18"	02m 46s
07:00	39° 57' 24"	-0,48"	37° 32' 56"	14° 47' 59"	1,0072069	15' 52,76"	23° 26' 18"	02m 46s
08:00	39° 59' 49"	-0,48"	37° 35' 19"	14° 48' 45"	1,0072175	15' 52,75"	23° 26' 18"	02m 47s
09:00	40° 02' 15"	-0,48"	37° 37' 42"	14° 49' 31"	1,0072281	15' 52,74"	23° 26' 18"	02m 47s
10:00	40° 04' 41"	-0,49"	37° 40' 05"	14° 50' 17"	1,0072387	15' 52,73"	23° 26' 18"	02m 47s
11:00	40° 07' 06"	-0,49"	37° 42' 28"	14° 51' 03"	1,0072493	15' 52,72"	23° 26' 18"	02m 48s
12:00	40° 09' 32"	-0,50"	37° 44' 51"	14° 51' 49"	1,0072598	15' 52,71"	23° 26' 18"	02m 48s
13:00	40° 11' 58"	-0,50"	37° 47' 14"	14° 52' 34"	1,0072704	15' 52,70"	23° 26' 18"	02m 48s
14:00	40° 14' 23"	-0,50"	37° 49' 37"	14° 53' 20"	1,0072810	15' 52,69"	23° 26' 18"	02m 49s
15:00	40° 16' 49"	-0,51"	37° 52' 00"	14° 54' 06"	1,0072916	15' 52,68"	23° 26' 18"	02m 49s
16:00	40° 19' 15"	-0,51"	37° 54' 23"	14° 54' 52"	1,0073022	15' 52,67"	23° 26' 18"	02m 49s
17:00	40° 21' 40"	-0,51"	37° 56' 46"	14° 55' 37"	1,0073127	15' 52,66"	23° 26' 18"	02m 50s
18:00	40° 24' 06"	-0,52"	37° 59' 09"	14° 56' 23"	1,0073233	15' 52,65"	23° 26' 18"	02m 50s
19:00	40° 26' 31"	-0,52"	38° 01' 32"	14° 57' 09"	1,0073339	15' 52,64"	23° 26' 18"	02m 50s
20:00	40° 28' 57"	-0,52"	38° 03' 56"	14° 57' 54"	1,0073445	15' 52,63"	23° 26' 18"	02m 50s
21:00	40° 31' 23"	-0,53"	38° 06' 19"	14° 58' 40"	1,0073550	15' 52,62"	23° 26' 18"	02m 51s
22:00	40° 33' 48"	-0,53"	38° 08' 42"	14° 59' 25"	1,0073656	15' 52,61"	23° 26' 18"	02m 51s
23:00	40° 36' 14"	-0,53"	38° 11' 05"	15° 00' 11"	1,0073762	15' 52,60"	23° 26' 18"	02m 51s
24:00	40° 38' 39"	-0,53"	38° 13' 28"	15° 00' 56"	1,0073868	15' 52,59"	23° 26' 18"	02m 52s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	200° 15' 09"	-3° 27' 33"	197° 22' 29"	-11° 06' 57"	55' 09"	15' 01,63"	282° 38' 27"	97,08%
01:00	200° 46' 01"	-3° 29' 32"	197° 50' 47"	-11° 20' 29"	55' 08"	15' 01,35"	282° 13' 48"	97,22%
02:00	201° 16' 52"	-3° 31' 29"	198° 19' 06"	-11° 33' 58"	55' 07"	15' 01,08"	281° 48' 06"	97,35%
03:00	201° 47' 43"	-3° 33' 26"	198° 47' 27"	-11° 47' 24"	55' 06"	15' 00,81"	281° 21' 16"	97,47%
04:00	202° 18' 32"	-3° 35' 21"	199° 15' 50"	-12° 00' 46"	55' 05"	15' 00,54"	280° 53' 14"	97,60%
05:00	202° 49' 20"	-3° 37' 15"	199° 44' 15"	-12° 14' 05"	55' 04"	15' 00,27"	280° 23' 56"	97,72%
06:00	203° 20' 08"	-3° 39' 09"	200° 12' 41"	-12° 27' 21"	55' 03"	15' 00,00"	279° 53' 15"	97,83%
07:00	203° 50' 55"	-3° 41' 01"	200° 41' 10"	-12° 40' 33"	55' 02"	15' 00,00"	279° 21' 05"	97,95%
08:00	204° 21' 40"	-3° 42' 51"	201° 09' 41"	-12° 53' 41"	55' 01"	14' 59,48"	278° 47' 21"	98,06%
09:00	204° 52' 25"	-3° 44' 41"	201° 38' 13"	-13° 06' 47"	55' 00"	14' 59,22"	278° 11' 54"	98,17%
10:00	205° 23' 09"	-3° 46' 30"	202° 06' 48"	-13° 19' 48"	54' 59"	14' 58,96"	277° 34' 36"	98,27%
11:00	205° 53' 53"	-3° 48' 17"	202° 35' 25"	-13° 32' 46"	54' 58"	14' 58,70"	276° 55' 19"	98,37%
12:00	206° 24' 35"	-3° 50' 03"	203° 04' 05"	-13° 45' 40"	54' 57"	14' 58,44"	276° 13' 52"	98,47%
13:00	206° 55' 16"	-3° 51' 48"	203° 32' 46"	-13° 58' 31"	54' 56"	14' 58,19"	275° 30' 04"	98,56%
14:00	207° 25' 57"	-3° 53' 32"	204° 01' 30"	-14° 11' 17"	54' 56"	14' 57,94"	274° 43' 42"	98,65%
15:00	207° 56' 37"	-3° 55' 15"	204° 30' 16"	-14° 24' 00"	54' 55"	14' 57,69"	273° 54' 32"	98,74%
16:00	208° 27' 16"	-3° 56' 56"	204° 59' 05"	-14° 36' 39"	54' 54"	14' 57,44"	273° 02' 18"	98,82%
17:00	208° 57' 54"	-3° 58' 37"	205° 27' 56"	-14° 49' 14"	54' 53"	14' 57,19"	272° 06' 41"	98,90%
18:00	209° 28' 31"	-4° 00' 16"	205° 56' 49"	-15° 01' 45"	54' 52"	14' 56,94"	271° 07' 22"	98,98%
19:00	209° 59' 08"	-4° 01' 54"	206° 25' 45"	-15° 14' 12"	54' 51"	14' 56,70"	270° 03' 56"	99,05%
20:00	210° 29' 44"	-4° 03' 30"	206° 54' 43"	-15° 26' 35"	54' 50"	14' 56,46"	268° 55' 57"	99,12%
21:00	211° 00' 19"	-4° 05' 06"	207° 23' 44"	-15° 38' 53"	54' 49"	14' 56,22"	267° 42' 55"	99,19%
22:00	211° 30' 53"	-4° 06' 40"	207° 52' 48"	-15° 51' 08"	54' 48"	14' 55,98"	266° 24' 16"	99,25%
23:00	212° 01' 26"	-4° 08' 13"	208° 21' 54"	-16° 03' 18"	54' 47"	14' 55,74"	264° 59' 20"	99,32%
24:00	212° 31' 58"	-4° 09' 44"	208° 51' 03"	-16° 15' 24"	54' 47"	14' 55,51"	263° 27' 22"	99,37%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	40° 38' 39"	-0,53"	38° 13' 28"	15° 00' 56"	1,0073868	15' 52,59"	23° 26' 18"	02m 52s
01:00	40° 41' 05"	-0,54"	38° 15' 52"	15° 01' 42"	1,0073973	15' 52,58"	23° 26' 18"	02m 52s
02:00	40° 43' 31"	-0,54"	38° 18' 15"	15° 02' 27"	1,0074079	15' 52,57"	23° 26' 18"	02m 52s
03:00	40° 45' 56"	-0,54"	38° 20' 38"	15° 03' 13"	1,0074184	15' 52,56"	23° 26' 18"	02m 53s
04:00	40° 48' 22"	-0,55"	38° 23' 01"	15° 03' 58"	1,0074290	15' 52,55"	23° 26' 18"	02m 53s
05:00	40° 50' 47"	-0,55"	38° 25' 25"	15° 04' 43"	1,0074396	15' 52,54"	23° 26' 18"	02m 53s
06:00	40° 53' 13"	-0,55"	38° 27' 48"	15° 05' 29"	1,0074501	15' 52,53"	23° 26' 18"	02m 54s
07:00	40° 55' 39"	-0,55"	38° 30' 11"	15° 06' 14"	1,0074607	15' 52,52"	23° 26' 18"	02m 54s
08:00	40° 58' 04"	-0,56"	38° 32' 34"	15° 06' 59"	1,0074712	15' 52,51"	23° 26' 18"	02m 54s
09:00	41° 00' 30"	-0,56"	38° 34' 58"	15° 07' 45"	1,0074818	15' 52,50"	23° 26' 18"	02m 54s
10:00	41° 02' 55"	-0,56"	38° 37' 21"	15° 08' 30"	1,0074923	15' 52,49"	23° 26' 18"	02m 55s
11:00	41° 05' 21"	-0,57"	38° 39' 44"	15° 09' 15"	1,0075029	15' 52,48"	23° 26' 18"	02m 55s
12:00	41° 07' 46"	-0,57"	38° 42' 08"	15° 10' 00"	1,0075134	15' 52,47"	23° 26' 18"	02m 55s
13:00	41° 10' 12"	-0,57"	38° 44' 31"	15° 10' 46"	1,0075240	15' 52,46"	23° 26' 18"	02m 56s
14:00	41° 12' 38"	-0,57"	38° 46' 55"	15° 11' 31"	1,0075345	15' 52,45"	23° 26' 18"	02m 56s
15:00	41° 15' 03"	-0,58"	38° 49' 18"	15° 12' 16"	1,0075451	15' 52,44"	23° 26' 18"	02m 56s
16:00	41° 17' 29"	-0,58"	38° 51' 41"	15° 13' 01"	1,0075556	15' 52,43"	23° 26' 18"	02m 57s
17:00	41° 19' 54"	-0,58"	38° 54' 05"	15° 13' 46"	1,0075661	15' 52,42"	23° 26' 18"	02m 57s
18:00	41° 22' 20"	-0,58"	38° 56' 28"	15° 14' 31"	1,0075767	15' 52,41"	23° 26' 18"	02m 57s
19:00	41° 24' 45"	-0,59"	38° 58' 52"	15° 15' 16"	1,0075872	15' 52,40"	23° 26' 18"	02m 57s
20:00	41° 27' 11"	-0,59"	39° 01' 15"	15° 16' 01"	1,0075977	15' 52,39"	23° 26' 18"	02m 58s
21:00	41° 29' 36"	-0,59"	39° 03' 39"	15° 16' 46"	1,0076083	15' 52,38"	23° 26' 18"	02m 58s
22:00	41° 32' 02"	-0,59"	39° 06' 02"	15° 17' 31"	1,0076188	15' 52,37"	23° 26' 18"	02m 58s
23:00	41° 34' 27"	-0,59"	39° 08' 26"	15° 18' 16"	1,0076293	15' 52,36"	23° 26' 18"	02m 59s
24:00	41° 36' 53"	-0,60"	39° 10' 49"	15° 19' 01"	1,0076398	15' 52,35"	23° 26' 18"	02m 59s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	212° 31' 58"	-4° 09' 44"	208° 51' 03"	-16° 15' 24"	54' 47"	14' 55,51"	263° 27' 22"	99,37%
01:00	213° 02' 30"	-4° 11' 15"	209° 20' 15"	-16° 27' 25"	54' 46"	14' 55,27"	261° 47' 31"	99,43%
02:00	213° 33' 01"	-4° 12' 44"	209° 49' 29"	-16° 39' 22"	54' 45"	14' 55,04"	259° 58' 47"	99,48%
03:00	214° 03' 31"	-4° 14' 12"	210° 18' 46"	-16° 51' 14"	54' 44"	14' 54,81"	258° 00' 05"	99,52%
04:00	214° 34' 00"	-4° 15' 39"	210° 48' 06"	-17° 03' 02"	54' 43"	14' 54,59"	255° 50' 09"	99,57%
05:00	215° 04' 29"	-4° 17' 04"	211° 17' 29"	-17° 14' 46"	54' 42"	14' 54,36"	253° 27' 34"	99,61%
06:00	215° 34' 57"	-4° 18' 28"	211° 46' 55"	-17° 26' 25"	54' 42"	14' 54,14"	250° 50' 45"	99,65%
07:00	216° 05' 24"	-4° 19' 51"	212° 16' 24"	-17° 37' 59"	54' 41"	14' 53,92"	247° 58' 03"	99,68%
08:00	216° 35' 50"	-4° 21' 13"	212° 45' 55"	-17° 49' 28"	54' 40"	14' 53,70"	244° 47' 38"	99,71%
09:00	217° 06' 15"	-4° 22' 33"	213° 15' 30"	-18° 00' 53"	54' 39"	14' 53,48"	241° 17' 44"	99,74%
10:00	217° 36' 40"	-4° 23' 52"	213° 45' 07"	-18° 12' 12"	54' 38"	14' 53,26"	237° 26' 41"	99,76%
11:00	218° 07' 04"	-4° 25' 10"	214° 14' 48"	-18° 23' 27"	54' 38"	14' 53,05"	233° 13' 10"	99,79%
12:00	218° 37' 27"	-4° 26' 26"	214° 44' 31"	-18° 34' 37"	54' 37"	14' 52,83"	228° 36' 29"	99,80%
13:00	219° 07' 50"	-4° 27' 41"	215° 14' 18"	-18° 45' 42"	54' 36"	14' 52,62"	223° 36' 56"	99,82%
14:00	219° 38' 11"	-4° 28' 55"	215° 44' 08"	-18° 56' 42"	54' 35"	14' 52,42"	218° 16' 07"	99,83%
15:00	220° 08' 32"	-4° 30' 08"	216° 14' 00"	-19° 07' 36"	54' 35"	14' 52,21"	212° 37' 17"	99,84%
16:00	220° 38' 53"	-4° 31' 19"	216° 43' 56"	-19° 18' 26"	54' 34"	14' 52,00"	206° 45' 19"	99,84%
17:00	221° 09' 12"	-4° 32' 29"	217° 13' 55"	-19° 29' 10"	54' 33"	14' 51,80"	200° 46' 30"	99,84%
18:00	221° 39' 31"	-4° 33' 37"	217° 43' 58"	-19° 39' 49"	54' 32"	14' 51,60"	194° 47' 54"	99,84%
19:00	222° 09' 49"	-4° 34' 44"	218° 14' 03"	-19° 50' 23"	54' 32"	14' 51,40"	188° 56' 33"	99,84%
20:00	222° 40' 06"	-4° 35' 50"	218° 44' 12"	-20° 00' 51"	54' 31"	14' 51,21"	183° 18' 37"	99,83%
21:00	223° 10' 23"	-4° 36' 55"	219° 14' 24"	-20° 11' 14"	54' 30"	14' 51,01"	177° 58' 52"	99,82%
22:00	223° 40' 39"	-4° 37' 58"	219° 44' 39"	-20° 21' 32"	54' 29"	14' 50,82"	173° 00' 22"	99,80%
23:00	224° 10' 54"	-4° 39' 00"	220° 14' 57"	-20° 31' 44"	54' 29"	14' 50,63"	168° 24' 36"	99,78%
24:00	224° 41' 09"	-4° 40' 00"	220° 45' 18"	-20° 41' 50"	54' 28"	14' 50,44"	164° 11' 45"	99,76%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	41° 36' 53"	-0,60"	39° 10' 49"	15° 19' 01"	1,0076398	15' 52,35"	23° 26' 18"	02m 59s
01:00	41° 39' 19"	-0,60"	39° 13' 13"	15° 19' 46"	1,0076504	15' 52,34"	23° 26' 18"	02m 59s
02:00	41° 41' 44"	-0,60"	39° 15' 36"	15° 20' 30"	1,0076609	15' 52,33"	23° 26' 18"	02m 59s
03:00	41° 44' 10"	-0,60"	39° 18' 00"	15° 21' 15"	1,0076714	15' 52,32"	23° 26' 18"	03m 00s
04:00	41° 46' 35"	-0,60"	39° 20' 23"	15° 22' 00"	1,0076819	15' 52,31"	23° 26' 18"	03m 00s
05:00	41° 49' 01"	-0,61"	39° 22' 47"	15° 22' 45"	1,0076924	15' 52,30"	23° 26' 18"	03m 00s
06:00	41° 51' 26"	-0,61"	39° 25' 11"	15° 23' 29"	1,0077030	15' 52,29"	23° 26' 18"	03m 01s
07:00	41° 53' 52"	-0,61"	39° 27' 34"	15° 24' 14"	1,0077135	15' 52,28"	23° 26' 18"	03m 01s
08:00	41° 56' 17"	-0,61"	39° 29' 58"	15° 24' 59"	1,0077240	15' 52,27"	23° 26' 17"	03m 01s
09:00	41° 58' 43"	-0,61"	39° 32' 22"	15° 25' 43"	1,0077345	15' 52,26"	23° 26' 17"	03m 01s
10:00	42° 01' 08"	-0,61"	39° 34' 45"	15° 26' 28"	1,0077450	15' 52,25"	23° 26' 17"	03m 02s
11:00	42° 03' 34"	-0,62"	39° 37' 09"	15° 27' 13"	1,0077555	15' 52,24"	23° 26' 17"	03m 02s
12:00	42° 05' 59"	-0,62"	39° 39' 33"	15° 27' 57"	1,0077660	15' 52,23"	23° 26' 17"	03m 02s
13:00	42° 08' 25"	-0,62"	39° 41' 56"	15° 28' 42"	1,0077765	15' 52,23"	23° 26' 17"	03m 03s
14:00	42° 10' 50"	-0,62"	39° 44' 20"	15° 29' 26"	1,0077870	15' 52,22"	23° 26' 17"	03m 03s
15:00	42° 13' 16"	-0,62"	39° 46' 44"	15° 30' 11"	1,0077975	15' 52,21"	23° 26' 17"	03m 03s
16:00	42° 15' 41"	-0,62"	39° 49' 08"	15° 30' 55"	1,0078080	15' 52,20"	23° 26' 17"	03m 03s
17:00	42° 18' 07"	-0,62"	39° 51' 31"	15° 31' 40"	1,0078185	15' 52,19"	23° 26' 17"	03m 04s
18:00	42° 20' 32"	-0,63"	39° 53' 55"	15° 32' 24"	1,0078290	15' 52,18"	23° 26' 17"	03m 04s
19:00	42° 22' 58"	-0,63"	39° 56' 19"	15° 33' 08"	1,0078395	15' 52,17"	23° 26' 17"	03m 04s
20:00	42° 25' 23"	-0,63"	39° 58' 43"	15° 33' 53"	1,0078500	15' 52,16"	23° 26' 17"	03m 04s
21:00	42° 27' 48"	-0,63"	40° 01' 07"	15° 34' 37"	1,0078604	15' 52,15"	23° 26' 17"	03m 05s
22:00	42° 30' 14"	-0,63"	40° 03' 31"	15° 35' 21"	1,0078709	15' 52,14"	23° 26' 17"	03m 05s
23:00	42° 32' 39"	-0,63"	40° 05' 54"	15° 36' 06"	1,0078814	15' 52,13"	23° 26' 17"	03m 05s
24:00	42° 35' 05"	-0,63"	40° 08' 18"	15° 36' 50"	1,0078919	15' 52,12"	23° 26' 17"	03m 05s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	224° 41' 09"	-4° 40' 00"	220° 45' 18"	-20° 41' 50"	54' 28"	14' 50,44"	164° 11' 45"	99,76%
01:00	225° 11' 22"	-4° 41' 00"	221° 15' 43"	-20° 51' 51"	54' 27"	14' 50,25"	160° 21' 04"	99,74%
02:00	225° 41' 36"	-4° 41' 57"	221° 46' 11"	-21° 01' 47"	54' 27"	14' 50,07"	156° 51' 11"	99,71%
03:00	226° 11' 48"	-4° 42' 54"	222° 16' 42"	-21° 11' 36"	54' 26"	14' 49,89"	153° 40' 25"	99,68%
04:00	226° 42' 00"	-4° 43' 49"	222° 47' 17"	-21° 21' 20"	54' 25"	14' 49,71"	150° 46' 59"	99,65%
05:00	227° 12' 11"	-4° 44' 43"	223° 17' 55"	-21° 30' 58"	54' 25"	14' 49,53"	148° 09' 06"	99,61%
06:00	227° 42' 21"	-4° 45' 35"	223° 48' 36"	-21° 40' 30"	54' 24"	14' 49,35"	145° 45' 04"	99,57%
07:00	228° 12' 31"	-4° 46' 26"	224° 19' 20"	-21° 49' 56"	54' 23"	14' 49,18"	143° 33' 20"	99,53%
08:00	228° 42' 40"	-4° 47' 16"	224° 50' 08"	-21° 59' 16"	54' 23"	14' 49,01"	141° 32' 31"	99,48%
09:00	229° 12' 49"	-4° 48' 04"	225° 20' 59"	-22° 08' 30"	54' 22"	14' 48,84"	139° 41' 22"	99,43%
10:00	229° 42' 56"	-4° 48' 51"	225° 51' 53"	-22° 17' 38"	54' 22"	14' 48,67"	137° 58' 47"	99,38%
11:00	230° 13' 03"	-4° 49' 37"	226° 22' 51"	-22° 26' 41"	54' 21"	14' 48,50"	136° 23' 48"	99,32%
12:00	230° 43' 10"	-4° 50' 21"	226° 53' 52"	-22° 35' 36"	54' 20"	14' 48,34"	134° 55' 34"	99,26%
13:00	231° 13' 16"	-4° 51' 04"	227° 24' 56"	-22° 44' 26"	54' 20"	14' 48,18"	133° 33' 21"	99,20%
14:00	231° 43' 21"	-4° 51' 46"	227° 56' 04"	-22° 53' 10"	54' 19"	14' 48,02"	132° 16' 29"	99,14%
15:00	232° 13' 26"	-4° 52' 26"	228° 27' 14"	-23° 01' 47"	54' 19"	14' 47,87"	131° 04' 26"	99,07%
16:00	232° 43' 30"	-4° 53' 04"	228° 58' 28"	-23° 10' 18"	54' 18"	14' 47,71"	129° 56' 40"	99,00%
17:00	233° 13' 33"	-4° 53' 42"	229° 29' 46"	-23° 18' 42"	54' 17"	14' 47,56"	128° 52' 46"	98,92%
18:00	233° 43' 36"	-4° 54' 18"	230° 01' 06"	-23° 27' 00"	54' 17"	14' 47,41"	127° 52' 21"	98,84%
19:00	234° 13' 38"	-4° 54' 52"	230° 32' 30"	-23° 35' 12"	54' 16"	14' 47,26"	126° 55' 05"	98,76%
20:00	234° 43' 39"	-4° 55' 26"	231° 03' 57"	-23° 43' 17"	54' 16"	14' 47,12"	126° 00' 39"	98,68%
21:00	235° 13' 40"	-4° 55' 58"	231° 35' 27"	-23° 51' 15"	54' 15"	14' 46,98"	125° 08' 48"	98,59%
22:00	235° 43' 41"	-4° 56' 28"	232° 07' 00"	-23° 59' 07"	54' 15"	14' 46,84"	124° 19' 17"	98,50%
23:00	236° 13' 40"	-4° 56' 57"	232° 38' 37"	-24° 06' 52"	54' 14"	14' 46,70"	123° 31' 54"	98,41%
24:00	236° 43' 39"	-4° 57' 25"	233° 10' 17"	-24° 14' 31"	54' 14"	14' 46,57"	122° 46' 28"	98,31%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	42° 35' 05"	-0,63"	40° 08' 18"	15° 36' 50"	1,0078919	15' 52,12"	23° 26' 17"	03m 05s
01:00	42° 37' 30"	-0,63"	40° 10' 42"	15° 37' 34"	1,0079024	15' 52,11"	23° 26' 17"	03m 06s
02:00	42° 39' 56"	-0,63"	40° 13' 06"	15° 38' 18"	1,0079128	15' 52,10"	23° 26' 17"	03m 06s
03:00	42° 42' 21"	-0,63"	40° 15' 30"	15° 39' 02"	1,0079233	15' 52,09"	23° 26' 17"	03m 06s
04:00	42° 44' 47"	-0,64"	40° 17' 54"	15° 39' 47"	1,0079338	15' 52,08"	23° 26' 17"	03m 07s
05:00	42° 47' 12"	-0,64"	40° 20' 18"	15° 40' 31"	1,0079443	15' 52,07"	23° 26' 17"	03m 07s
06:00	42° 49' 38"	-0,64"	40° 22' 42"	15° 41' 15"	1,0079547	15' 52,06"	23° 26' 17"	03m 07s
07:00	42° 52' 03"	-0,64"	40° 25' 06"	15° 41' 59"	1,0079652	15' 52,05"	23° 26' 17"	03m 07s
08:00	42° 54' 28"	-0,64"	40° 27' 30"	15° 42' 43"	1,0079757	15' 52,04"	23° 26' 17"	03m 08s
09:00	42° 56' 54"	-0,64"	40° 29' 54"	15° 43' 27"	1,0079861	15' 52,03"	23° 26' 17"	03m 08s
10:00	42° 59' 19"	-0,64"	40° 32' 18"	15° 44' 11"	1,0079966	15' 52,02"	23° 26' 17"	03m 08s
11:00	43° 01' 45"	-0,64"	40° 34' 42"	15° 44' 55"	1,0080070	15' 52,01"	23° 26' 17"	03m 08s
12:00	43° 04' 10"	-0,64"	40° 37' 06"	15° 45' 39"	1,0080175	15' 52,00"	23° 26' 17"	03m 09s
13:00	43° 06' 36"	-0,64"	40° 39' 30"	15° 46' 23"	1,0080279	15' 51,99"	23° 26' 17"	03m 09s
14:00	43° 09' 01"	-0,64"	40° 41' 54"	15° 47' 06"	1,0080384	15' 51,98"	23° 26' 17"	03m 09s
15:00	43° 11' 26"	-0,64"	40° 44' 18"	15° 47' 50"	1,0080488	15' 51,97"	23° 26' 17"	03m 09s
16:00	43° 13' 52"	-0,64"	40° 46' 42"	15° 48' 34"	1,0080593	15' 51,96"	23° 26' 17"	03m 10s
17:00	43° 16' 17"	-0,64"	40° 49' 06"	15° 49' 18"	1,0080697	15' 51,95"	23° 26' 17"	03m 10s
18:00	43° 18' 43"	-0,64"	40° 51' 30"	15° 50' 02"	1,0080802	15' 51,94"	23° 26' 17"	03m 10s
19:00	43° 21' 08"	-0,64"	40° 53' 55"	15° 50' 45"	1,0080906	15' 51,93"	23° 26' 17"	03m 10s
20:00	43° 23' 34"	-0,64"	40° 56' 19"	15° 51' 29"	1,0081010	15' 51,92"	23° 26' 17"	03m 11s
21:00	43° 25' 59"	-0,64"	40° 58' 43"	15° 52' 13"	1,0081115	15' 51,91"	23° 26' 17"	03m 11s
22:00	43° 28' 24"	-0,64"	41° 01' 07"	15° 52' 56"	1,0081219	15' 51,90"	23° 26' 17"	03m 11s
23:00	43° 30' 50"	-0,64"	41° 03' 31"	15° 53' 40"	1,0081323	15' 51,89"	23° 26' 17"	03m 11s
24:00	43° 33' 15"	-0,64"	41° 05' 56"	15° 54' 24"	1,0081428	15' 51,88"	23° 26' 17"	03m 12s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	236° 43' 39"	-4° 57' 25"	233° 10' 17"	-24° 14' 31"	54' 14"	14' 46,57"	122° 46' 28"	98,31%
01:00	237° 13' 38"	-4° 57' 51"	233° 41' 59"	-24° 22' 02"	54' 13"	14' 46,43"	122° 02' 49"	98,21%
02:00	237° 43' 36"	-4° 58' 16"	234° 13' 45"	-24° 29' 27"	54' 13"	14' 46,30"	121° 20' 48"	98,11%
03:00	238° 13' 33"	-4° 58' 40"	234° 45' 34"	-24° 36' 45"	54' 12"	14' 46,18"	120° 40' 17"	98,01%
04:00	238° 43' 30"	-4° 59' 02"	235° 17' 26"	-24° 43' 57"	54' 12"	14' 46,05"	120° 01' 09"	97,90%
05:00	239° 13' 27"	-4° 59' 23"	235° 49' 22"	-24° 51' 01"	54' 11"	14' 45,93"	119° 23' 16"	97,79%
06:00	239° 43' 22"	-4° 59' 42"	236° 21' 20"	-24° 57' 58"	54' 11"	14' 45,81"	118° 46' 34"	97,67%
07:00	240° 13' 18"	-5° 00' 00"	236° 53' 21"	-25° 04' 49"	54' 11"	14' 45,69"	118° 10' 56"	97,56%
08:00	240° 43' 12"	-5° 00' 17"	237° 25' 25"	-25° 11' 32"	54' 10"	14' 45,57"	117° 36' 19"	97,44%
09:00	241° 13' 07"	-5° 00' 32"	237° 57' 32"	-25° 18' 09"	54' 10"	14' 45,46"	117° 02' 37"	97,31%
10:00	241° 43' 00"	-5° 00' 46"	238° 29' 42"	-25° 24' 38"	54' 09"	14' 45,35"	116° 29' 47"	97,19%
11:00	242° 12' 54"	-5° 00' 58"	239° 01' 55"	-25° 31' 00"	54' 09"	14' 45,25"	115° 57' 45"	97,06%
12:00	242° 42' 46"	-5° 01' 09"	239° 34' 10"	-25° 37' 15"	54' 09"	14' 45,14"	115° 26' 27"	96,93%
13:00	243° 12' 38"	-5° 01' 19"	240° 06' 28"	-25° 43' 23"	54' 08"	14' 45,04"	114° 55' 51"	96,79%
14:00	243° 42' 30"	-5° 01' 27"	240° 38' 50"	-25° 49' 23"	54' 08"	14' 44,94"	114° 25' 54"	96,65%
15:00	244° 12' 21"	-5° 01' 34"	241° 11' 13"	-25° 55' 16"	54' 07"	14' 44,84"	113° 56' 33"	96,51%
16:00	244° 42' 12"	-5° 01' 40"	241° 43' 40"	-26° 01' 02"	54' 07"	14' 44,75"	113° 27' 46"	96,37%
17:00	245° 12' 02"	-5° 01' 44"	242° 16' 09"	-26° 06' 40"	54' 07"	14' 44,66"	112° 59' 31"	96,22%
18:00	245° 41' 52"	-5° 01' 47"	242° 48' 41"	-26° 12' 11"	54' 06"	14' 44,57"	112° 31' 45"	96,07%
19:00	246° 11' 41"	-5° 01' 48"	243° 21' 15"	-26° 17' 35"	54' 06"	14' 44,48"	112° 04' 28"	95,92%
20:00	246° 41' 30"	-5° 01' 48"	243° 53' 52"	-26° 22' 51"	54' 06"	14' 44,40"	111° 37' 36"	95,77%
21:00	247° 11' 18"	-5° 01' 47"	244° 26' 31"	-26° 28' 00"	54' 06"	14' 44,32"	111° 11' 09"	95,61%
22:00	247° 41' 06"	-5° 01' 44"	244° 59' 13"	-26° 33' 01"	54' 05"	14' 44,24"	110° 45' 05"	95,45%
23:00	248° 10' 54"	-5° 01' 40"	245° 31' 57"	-26° 37' 54"	54' 05"	14' 44,17"	110° 19' 24"	95,29%
24:00	248° 40' 41"	-5° 01' 35"	246° 04' 43"	-26° 42' 40"	54' 05"	14' 44,10"	109° 54' 02"	95,12%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	43° 33' 15"	-0,64"	41° 05' 56"	15° 54' 24"	1,0081428	15' 51,88"	23° 26' 17"	03m 12s
01:00	43° 35' 41"	-0,64"	41° 08' 20"	15° 55' 07"	1,0081532	15' 51,87"	23° 26' 17"	03m 12s
02:00	43° 38' 06"	-0,64"	41° 10' 44"	15° 55' 51"	1,0081636	15' 51,86"	23° 26' 17"	03m 12s
03:00	43° 40' 31"	-0,64"	41° 13' 08"	15° 56' 34"	1,0081740	15' 51,85"	23° 26' 17"	03m 12s
04:00	43° 42' 57"	-0,64"	41° 15' 33"	15° 57' 18"	1,0081845	15' 51,84"	23° 26' 17"	03m 13s
05:00	43° 45' 22"	-0,64"	41° 17' 57"	15° 58' 01"	1,0081949	15' 51,83"	23° 26' 17"	03m 13s
06:00	43° 47' 47"	-0,64"	41° 20' 21"	15° 58' 45"	1,0082053	15' 51,82"	23° 26' 17"	03m 13s
07:00	43° 50' 13"	-0,64"	41° 22' 46"	15° 59' 28"	1,0082157	15' 51,81"	23° 26' 17"	03m 13s
08:00	43° 52' 38"	-0,64"	41° 25' 10"	16° 00' 11"	1,0082261	15' 51,80"	23° 26' 17"	03m 13s
09:00	43° 55' 04"	-0,64"	41° 27' 34"	16° 00' 55"	1,0082365	15' 51,79"	23° 26' 17"	03m 14s
10:00	43° 57' 29"	-0,64"	41° 29' 59"	16° 01' 38"	1,0082469	15' 51,78"	23° 26' 17"	03m 14s
11:00	43° 59' 54"	-0,64"	41° 32' 23"	16° 02' 21"	1,0082573	15' 51,77"	23° 26' 17"	03m 14s
12:00	44° 02' 20"	-0,64"	41° 34' 47"	16° 03' 05"	1,0082677	15' 51,76"	23° 26' 17"	03m 14s
13:00	44° 04' 45"	-0,64"	41° 37' 12"	16° 03' 48"	1,0082781	15' 51,75"	23° 26' 17"	03m 15s
14:00	44° 07' 10"	-0,63"	41° 39' 36"	16° 04' 31"	1,0082885	15' 51,74"	23° 26' 17"	03m 15s
15:00	44° 09' 36"	-0,63"	41° 42' 01"	16° 05' 14"	1,0082989	15' 51,73"	23° 26' 17"	03m 15s
16:00	44° 12' 01"	-0,63"	41° 44' 25"	16° 05' 57"	1,0083093	15' 51,72"	23° 26' 17"	03m 15s
17:00	44° 14' 26"	-0,63"	41° 46' 50"	16° 06' 40"	1,0083197	15' 51,71"	23° 26' 17"	03m 16s
18:00	44° 16' 52"	-0,63"	41° 49' 14"	16° 07' 24"	1,0083301	15' 51,70"	23° 26' 17"	03m 16s
19:00	44° 19' 17"	-0,63"	41° 51' 39"	16° 08' 07"	1,0083405	15' 51,69"	23° 26' 17"	03m 16s
20:00	44° 21' 42"	-0,63"	41° 54' 03"	16° 08' 50"	1,0083508	15' 51,68"	23° 26' 17"	03m 16s
21:00	44° 24' 08"	-0,63"	41° 56' 28"	16° 09' 33"	1,0083612	15' 51,67"	23° 26' 17"	03m 16s
22:00	44° 26' 33"	-0,63"	41° 58' 52"	16° 10' 16"	1,0083716	15' 51,66"	23° 26' 17"	03m 17s
23:00	44° 28' 58"	-0,63"	42° 01' 17"	16° 10' 59"	1,0083820	15' 51,65"	23° 26' 17"	03m 17s
24:00	44° 31' 24"	-0,62"	42° 03' 41"	16° 11' 42"	1,0083923	15' 51,64"	23° 26' 17"	03m 17s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	248° 40' 41"	-5° 01' 35"	246° 04' 43"	-26° 42' 40"	54' 05"	14' 44,10"	109° 54' 02"	95,12%
01:00	249° 10' 28"	-5° 01' 28"	246° 37' 32"	-26° 47' 18"	54' 04"	14' 44,03"	109° 29' 00"	94,95%
02:00	249° 40' 14"	-5° 01' 20"	247° 10' 23"	-26° 51' 49"	54' 04"	14' 43,96"	109° 04' 17"	94,78%
03:00	250° 10' 00"	-5° 01' 10"	247° 43' 16"	-26° 56' 12"	54' 04"	14' 43,90"	108° 39' 51"	94,61%
04:00	250° 39' 46"	-5° 00' 59"	248° 16' 11"	-27° 00' 27"	54' 04"	14' 43,84"	108° 15' 41"	94,43%
05:00	251° 09' 31"	-5° 00' 47"	248° 49' 08"	-27° 04' 35"	54' 04"	14' 43,78"	107° 51' 47"	94,25%
06:00	251° 39' 16"	-5° 00' 33"	249° 22' 08"	-27° 08' 35"	54' 03"	14' 43,73"	107° 28' 08"	94,07%
07:00	252° 09' 00"	-5° 00' 18"	249° 55' 09"	-27° 12' 27"	54' 03"	14' 43,68"	107° 04' 43"	93,88%
08:00	252° 38' 44"	-5° 00' 02"	250° 28' 12"	-27° 16' 11"	54' 03"	14' 43,63"	106° 41' 31"	93,69%
09:00	253° 08' 28"	-4° 59' 44"	251° 01' 17"	-27° 19' 47"	54' 03"	14' 43,59"	106° 18' 32"	93,50%
10:00	253° 38' 11"	-4° 59' 25"	251° 34' 23"	-27° 23' 16"	54' 03"	14' 43,54"	105° 55' 46"	93,31%
11:00	254° 07' 54"	-4° 59' 05"	252° 07' 32"	-27° 26' 36"	54' 03"	14' 43,51"	105° 33' 10"	93,11%
12:00	254° 37' 37"	-4° 58' 43"	252° 40' 42"	-27° 29' 49"	54' 02"	14' 43,47"	105° 10' 46"	92,92%
13:00	255° 07' 19"	-4° 58' 20"	253° 13' 54"	-27° 32' 54"	54' 02"	14' 43,44"	104° 48' 33"	92,71%
14:00	255° 37' 02"	-4° 57' 55"	253° 47' 07"	-27° 35' 51"	54' 02"	14' 43,41"	104° 26' 29"	92,51%
15:00	256° 06' 43"	-4° 57' 29"	254° 20' 21"	-27° 38' 40"	54' 02"	14' 43,38"	104° 04' 36"	92,30%
16:00	256° 36' 25"	-4° 57' 02"	254° 53' 37"	-27° 41' 21"	54' 02"	14' 43,36"	103° 42' 52"	92,10%
17:00	257° 06' 06"	-4° 56' 33"	255° 26' 55"	-27° 43' 54"	54' 02"	14' 43,34"	103° 21' 16"	91,88%
18:00	257° 35' 47"	-4° 56' 04"	256° 00' 13"	-27° 46' 19"	54' 02"	14' 43,32"	102° 59' 50"	91,67%
19:00	258° 05' 28"	-4° 55' 32"	256° 33' 33"	-27° 48' 36"	54' 02"	14' 43,31"	102° 38' 31"	91,45%
20:00	258° 35' 09"	-4° 55' 00"	257° 06' 54"	-27° 50' 44"	54' 02"	14' 43,30"	102° 17' 21"	91,23%
21:00	259° 04' 49"	-4° 54' 26"	257° 40' 17"	-27° 52' 45"	54' 02"	14' 43,29"	101° 56' 19"	91,01%
22:00	259° 34' 29"	-4° 53' 51"	258° 13' 40"	-27° 54' 38"	54' 02"	14' 43,29"	101° 35' 24"	90,79%
23:00	260° 04' 09"	-4° 53' 14"	258° 47' 04"	-27° 56' 23"	54' 02"	14' 43,29"	101° 14' 36"	90,56%
24:00	260° 33' 49"	-4° 52' 36"	259° 20' 29"	-27° 57' 59"	54' 02"	14' 43,29"	100° 53' 55"	90,33%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	44° 31' 24"	-0,62"	42° 03' 41"	16° 11' 42"	1,0083923	15' 51,64"	23° 26' 17"	03m 17s
01:00	44° 33' 49"	-0,62"	42° 06' 06"	16° 12' 24"	1,0084027	15' 51,63"	23° 26' 17"	03m 17s
02:00	44° 36' 14"	-0,62"	42° 08' 31"	16° 13' 07"	1,0084131	15' 51,62"	23° 26' 17"	03m 17s
03:00	44° 38' 40"	-0,62"	42° 10' 55"	16° 13' 50"	1,0084234	15' 51,61"	23° 26' 17"	03m 18s
04:00	44° 41' 05"	-0,62"	42° 13' 20"	16° 14' 33"	1,0084338	15' 51,60"	23° 26' 17"	03m 18s
05:00	44° 43' 30"	-0,62"	42° 15' 45"	16° 15' 16"	1,0084441	15' 51,59"	23° 26' 17"	03m 18s
06:00	44° 45' 56"	-0,62"	42° 18' 09"	16° 15' 59"	1,0084545	15' 51,58"	23° 26' 17"	03m 18s
07:00	44° 48' 21"	-0,61"	42° 20' 34"	16° 16' 41"	1,0084648	15' 51,58"	23° 26' 17"	03m 19s
08:00	44° 50' 46"	-0,61"	42° 22' 59"	16° 17' 24"	1,0084752	15' 51,57"	23° 26' 17"	03m 19s
09:00	44° 53' 12"	-0,61"	42° 25' 23"	16° 18' 07"	1,0084855	15' 51,56"	23° 26' 17"	03m 19s
10:00	44° 55' 37"	-0,61"	42° 27' 48"	16° 18' 49"	1,0084959	15' 51,55"	23° 26' 17"	03m 19s
11:00	44° 58' 02"	-0,61"	42° 30' 13"	16° 19' 32"	1,0085062	15' 51,54"	23° 26' 17"	03m 19s
12:00	45° 00' 28"	-0,61"	42° 32' 37"	16° 20' 15"	1,0085165	15' 51,53"	23° 26' 17"	03m 20s
13:00	45° 02' 53"	-0,60"	42° 35' 02"	16° 20' 57"	1,0085269	15' 51,52"	23° 26' 17"	03m 20s
14:00	45° 05' 18"	-0,60"	42° 37' 27"	16° 21' 40"	1,0085372	15' 51,51"	23° 26' 17"	03m 20s
15:00	45° 07' 43"	-0,60"	42° 39' 52"	16° 22' 22"	1,0085475	15' 51,50"	23° 26' 17"	03m 20s
16:00	45° 10' 09"	-0,60"	42° 42' 17"	16° 23' 05"	1,0085579	15' 51,49"	23° 26' 17"	03m 20s
17:00	45° 12' 34"	-0,60"	42° 44' 41"	16° 23' 47"	1,0085682	15' 51,48"	23° 26' 17"	03m 21s
18:00	45° 14' 59"	-0,59"	42° 47' 06"	16° 24' 30"	1,0085785	15' 51,47"	23° 26' 17"	03m 21s
19:00	45° 17' 25"	-0,59"	42° 49' 31"	16° 25' 12"	1,0085888	15' 51,46"	23° 26' 17"	03m 21s
20:00	45° 19' 50"	-0,59"	42° 51' 56"	16° 25' 54"	1,0085991	15' 51,45"	23° 26' 17"	03m 21s
21:00	45° 22' 15"	-0,59"	42° 54' 21"	16° 26' 37"	1,0086095	15' 51,44"	23° 26' 17"	03m 21s
22:00	45° 24' 40"	-0,59"	42° 56' 46"	16° 27' 19"	1,0086198	15' 51,43"	23° 26' 17"	03m 22s
23:00	45° 27' 06"	-0,58"	42° 59' 11"	16° 28' 01"	1,0086301	15' 51,42"	23° 26' 17"	03m 22s
24:00	45° 29' 31"	-0,58"	43° 01' 36"	16° 28' 44"	1,0086404	15' 51,41"	23° 26' 17"	03m 22s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	260° 33' 49"	-4° 52' 36"	259° 20' 29"	-27° 57' 59"	54' 02"	14' 43,29"	100° 53' 55"	90,33%
01:00	261° 03' 29"	-4° 51' 57"	259° 53' 54"	-27° 59' 28"	54' 02"	14' 43,30"	100° 33' 22"	90,10%
02:00	261° 33' 08"	-4° 51' 17"	260° 27' 21"	-28° 00' 48"	54' 02"	14' 43,31"	100° 12' 55"	89,86%
03:00	262° 02' 47"	-4° 50' 35"	261° 00' 48"	-28° 02' 00"	54' 02"	14' 43,32"	99° 52' 34"	89,63%
04:00	262° 32' 26"	-4° 49' 52"	261° 34' 16"	-28° 03' 04"	54' 02"	14' 43,34"	99° 32' 20"	89,39%
05:00	263° 02' 05"	-4° 49' 07"	262° 07' 44"	-28° 04' 00"	54' 02"	14' 43,36"	99° 12' 12"	89,15%
06:00	263° 31' 44"	-4° 48' 22"	262° 41' 13"	-28° 04' 48"	54' 02"	14' 43,39"	98° 52' 10"	88,90%
07:00	264° 01' 23"	-4° 47' 35"	263° 14' 42"	-28° 05' 28"	54' 02"	14' 43,41"	98° 32' 14"	88,66%
08:00	264° 31' 01"	-4° 46' 46"	263° 48' 12"	-28° 05' 59"	54' 02"	14' 43,44"	98° 12' 24"	88,41%
09:00	265° 00' 40"	-4° 45' 57"	264° 21' 42"	-28° 06' 23"	54' 02"	14' 43,48"	97° 52' 39"	88,16%
10:00	265° 30' 18"	-4° 45' 06"	264° 55' 12"	-28° 06' 38"	54' 03"	14' 43,52"	97° 33' 01"	87,90%
11:00	265° 59' 56"	-4° 44' 14"	265° 28' 42"	-28° 06' 45"	54' 03"	14' 43,56"	97° 13' 28"	87,65%
12:00	266° 29' 35"	-4° 43' 20"	266° 02' 12"	-28° 06' 44"	54' 03"	14' 43,60"	96° 54' 00"	87,39%
13:00	266° 59' 13"	-4° 42' 26"	266° 35' 42"	-28° 06' 35"	54' 03"	14' 43,65"	96° 34' 38"	87,13%
14:00	267° 28' 51"	-4° 41' 30"	267° 09' 13"	-28° 06' 17"	54' 03"	14' 43,70"	96° 15' 21"	86,86%
15:00	267° 58' 29"	-4° 40' 32"	267° 42' 43"	-28° 05' 52"	54' 04"	14' 43,76"	95° 56' 09"	86,60%
16:00	268° 28' 08"	-4° 39' 34"	268° 16' 12"	-28° 05' 18"	54' 04"	14' 43,82"	95° 37' 02"	86,33%
17:00	268° 57' 46"	-4° 38' 34"	268° 49' 42"	-28° 04' 36"	54' 04"	14' 43,88"	95° 18' 01"	86,06%
18:00	269° 27' 24"	-4° 37' 33"	269° 23' 11"	-28° 03' 46"	54' 04"	14' 43,95"	94° 59' 05"	85,79%
19:00	269° 57' 02"	-4° 36' 31"	269° 56' 39"	-28° 02' 48"	54' 04"	14' 44,02"	94° 40' 14"	85,52%
20:00	270° 26' 41"	-4° 35' 27"	270° 30' 08"	-28° 01' 42"	54' 05"	14' 44,10"	94° 21' 28"	85,24%
21:00	270° 56' 19"	-4° 34' 22"	271° 03' 35"	-28° 00' 27"	54' 05"	14' 44,17"	94° 02' 48"	84,96%
22:00	271° 25' 58"	-4° 33' 16"	271° 37' 02"	-27° 59' 04"	54' 05"	14' 44,26"	93° 44' 12"	84,68%
23:00	271° 55' 36"	-4° 32' 09"	272° 10' 29"	-27° 57' 34"	54' 06"	14' 44,34"	93° 25' 41"	84,40%
24:00	272° 25' 15"	-4° 31' 00"	272° 43' 54"	-27° 55' 55"	54' 06"	14' 44,43"	93° 07' 16"	84,11%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	45° 29' 31"	-0,58"	43° 01' 36"	16° 28' 44"	1,0086404	15' 51,41"	23° 26' 17"	03m 22s
01:00	45° 31' 56"	-0,58"	43° 04' 01"	16° 29' 26"	1,0086507	15' 51,40"	23° 26' 17"	03m 22s
02:00	45° 34' 21"	-0,58"	43° 06' 26"	16° 30' 08"	1,0086610	15' 51,39"	23° 26' 17"	03m 22s
03:00	45° 36' 47"	-0,57"	43° 08' 51"	16° 30' 50"	1,0086713	15' 51,38"	23° 26' 17"	03m 23s
04:00	45° 39' 12"	-0,57"	43° 11' 16"	16° 31' 32"	1,0086815	15' 51,37"	23° 26' 17"	03m 23s
05:00	45° 41' 37"	-0,57"	43° 13' 41"	16° 32' 14"	1,0086918	15' 51,36"	23° 26' 17"	03m 23s
06:00	45° 44' 02"	-0,57"	43° 16' 06"	16° 32' 56"	1,0087021	15' 51,35"	23° 26' 17"	03m 23s
07:00	45° 46' 28"	-0,56"	43° 18' 31"	16° 33' 39"	1,0087124	15' 51,34"	23° 26' 17"	03m 23s
08:00	45° 48' 53"	-0,56"	43° 20' 56"	16° 34' 21"	1,0087227	15' 51,33"	23° 26' 17"	03m 24s
09:00	45° 51' 18"	-0,56"	43° 23' 21"	16° 35' 03"	1,0087330	15' 51,32"	23° 26' 17"	03m 24s
10:00	45° 53' 43"	-0,56"	43° 25' 46"	16° 35' 45"	1,0087432	15' 51,31"	23° 26' 17"	03m 24s
11:00	45° 56' 09"	-0,55"	43° 28' 11"	16° 36' 26"	1,0087535	15' 51,30"	23° 26' 17"	03m 24s
12:00	45° 58' 34"	-0,55"	43° 30' 36"	16° 37' 08"	1,0087638	15' 51,29"	23° 26' 17"	03m 24s
13:00	46° 00' 59"	-0,55"	43° 33' 01"	16° 37' 50"	1,0087740	15' 51,28"	23° 26' 17"	03m 24s
14:00	46° 03' 24"	-0,54"	43° 35' 26"	16° 38' 32"	1,0087843	15' 51,27"	23° 26' 17"	03m 25s
15:00	46° 05' 50"	-0,54"	43° 37' 52"	16° 39' 14"	1,0087945	15' 51,26"	23° 26' 17"	03m 25s
16:00	46° 08' 15"	-0,54"	43° 40' 17"	16° 39' 56"	1,0088048	15' 51,25"	23° 26' 17"	03m 25s
17:00	46° 10' 40"	-0,54"	43° 42' 42"	16° 40' 38"	1,0088150	15' 51,24"	23° 26' 17"	03m 25s
18:00	46° 13' 05"	-0,53"	43° 45' 07"	16° 41' 19"	1,0088253	15' 51,24"	23° 26' 17"	03m 25s
19:00	46° 15' 31"	-0,53"	43° 47' 32"	16° 42' 01"	1,0088355	15' 51,23"	23° 26' 17"	03m 25s
20:00	46° 17' 56"	-0,53"	43° 49' 58"	16° 42' 43"	1,0088458	15' 51,22"	23° 26' 17"	03m 26s
21:00	46° 20' 21"	-0,52"	43° 52' 23"	16° 43' 24"	1,0088560	15' 51,21"	23° 26' 17"	03m 26s
22:00	46° 22' 46"	-0,52"	43° 54' 48"	16° 44' 06"	1,0088662	15' 51,20"	23° 26' 17"	03m 26s
23:00	46° 25' 11"	-0,52"	43° 57' 13"	16° 44' 48"	1,0088765	15' 51,19"	23° 26' 17"	03m 26s
24:00	46° 27' 37"	-0,51"	43° 59' 39"	16° 45' 29"	1,0088867	15' 51,18"	23° 26' 17"	03m 26s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	272° 25' 15"	-4° 31' 00"	272° 43' 54"	-27° 55' 55"	54' 06"	14' 44,43"	93° 07' 16"	84,11%
01:00	272° 54' 54"	-4° 29' 51"	273° 17' 19"	-27° 54' 08"	54' 06"	14' 44,53"	92° 48' 55"	83,82%
02:00	273° 24' 33"	-4° 28' 40"	273° 50' 43"	-27° 52' 13"	54' 07"	14' 44,62"	92° 30' 40"	83,53%
03:00	273° 54' 12"	-4° 27' 27"	274° 24' 06"	-27° 50' 10"	54' 07"	14' 44,73"	92° 12' 29"	83,24%
04:00	274° 23' 51"	-4° 26' 14"	274° 57' 28"	-27° 47' 59"	54' 07"	14' 44,83"	91° 54' 24"	82,95%
05:00	274° 53' 30"	-4° 24' 59"	275° 30' 48"	-27° 45' 40"	54' 08"	14' 44,94"	91° 36' 24"	82,65%
06:00	275° 23' 10"	-4° 23' 43"	276° 04' 08"	-27° 43' 13"	54' 08"	14' 45,05"	91° 18' 28"	82,35%
07:00	275° 52' 50"	-4° 22' 26"	276° 37' 27"	-27° 40' 37"	54' 09"	14' 45,17"	91° 00' 38"	82,05%
08:00	276° 22' 30"	-4° 21' 08"	277° 10' 44"	-27° 37' 54"	54' 09"	14' 45,29"	90° 42' 53"	81,75%
09:00	276° 52' 10"	-4° 19' 49"	277° 44' 00"	-27° 35' 03"	54' 10"	14' 45,42"	90° 25' 13"	81,45%
10:00	277° 21' 51"	-4° 18' 28"	278° 17' 15"	-27° 32' 04"	54' 10"	14' 45,55"	90° 07' 38"	81,14%
11:00	277° 51' 32"	-4° 17' 06"	278° 50' 28"	-27° 28' 57"	54' 11"	14' 45,68"	89° 50' 09"	80,83%
12:00	278° 21' 13"	-4° 15' 43"	279° 23' 39"	-27° 25' 41"	54' 11"	14' 45,82"	89° 32' 44"	80,52%
13:00	278° 50' 54"	-4° 14' 19"	279° 56' 50"	-27° 22' 18"	54' 12"	14' 45,96"	89° 15' 25"	80,21%
14:00	279° 20' 36"	-4° 12' 54"	280° 29' 58"	-27° 18' 48"	54' 12"	14' 46,10"	88° 58' 11"	79,90%
15:00	279° 50' 18"	-4° 11' 27"	281° 03' 05"	-27° 15' 09"	54' 13"	14' 46,25"	88° 41' 02"	79,58%
16:00	280° 20' 00"	-4° 10' 00"	281° 36' 10"	-27° 11' 22"	54' 13"	14' 46,40"	88° 23' 58"	79,26%
17:00	280° 49' 43"	-4° 08' 31"	282° 09' 14"	-27° 07' 28"	54' 14"	14' 46,56"	88° 07' 00"	78,94%
18:00	281° 19' 26"	-4° 07' 01"	282° 42' 15"	-27° 03' 25"	54' 14"	14' 46,72"	87° 50' 07"	78,62%
19:00	281° 49' 10"	-4° 05' 30"	283° 15' 15"	-26° 59' 15"	54' 15"	14' 46,89"	87° 33' 20"	78,30%
20:00	282° 18' 54"	-4° 03' 57"	283° 48' 13"	-26° 54' 57"	54' 16"	14' 47,06"	87° 16' 38"	77,97%
21:00	282° 48' 38"	-4° 02' 24"	284° 21' 09"	-26° 50' 32"	54' 16"	14' 47,23"	87° 00' 01"	77,64%
22:00	283° 18' 23"	-4° 00' 50"	284° 54' 03"	-26° 45' 58"	54' 17"	14' 47,41"	86° 43' 30"	77,31%
23:00	283° 48' 08"	-3° 59' 14"	285° 26' 55"	-26° 41' 17"	54' 18"	14' 47,59"	86° 27' 04"	76,98%
24:00	284° 17' 54"	-3° 57' 37"	285° 59' 45"	-26° 36' 29"	54' 18"	14' 47,78"	86° 10' 44"	76,65%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	46° 27' 37"	-0,51"	43° 59' 39"	16° 45' 29"	1,0088867	15' 51,18"	23° 26' 17"	03m 26s
01:00	46° 30' 02"	-0,51"	44° 02' 04"	16° 46' 11"	1,0088969	15' 51,17"	23° 26' 17"	03m 27s
02:00	46° 32' 27"	-0,51"	44° 04' 29"	16° 46' 52"	1,0089071	15' 51,16"	23° 26' 17"	03m 27s
03:00	46° 34' 52"	-0,50"	44° 06' 55"	16° 47' 34"	1,0089173	15' 51,15"	23° 26' 17"	03m 27s
04:00	46° 37' 17"	-0,50"	44° 09' 20"	16° 48' 15"	1,0089276	15' 51,14"	23° 26' 17"	03m 27s
05:00	46° 39' 43"	-0,50"	44° 11' 45"	16° 48' 56"	1,0089378	15' 51,13"	23° 26' 17"	03m 27s
06:00	46° 42' 08"	-0,49"	44° 14' 11"	16° 49' 38"	1,0089480	15' 51,12"	23° 26' 17"	03m 27s
07:00	46° 44' 33"	-0,49"	44° 16' 36"	16° 50' 19"	1,0089582	15' 51,11"	23° 26' 17"	03m 28s
08:00	46° 46' 58"	-0,49"	44° 19' 02"	16° 51' 01"	1,0089684	15' 51,10"	23° 26' 17"	03m 28s
09:00	46° 49' 23"	-0,48"	44° 21' 27"	16° 51' 42"	1,0089786	15' 51,09"	23° 26' 17"	03m 28s
10:00	46° 51' 48"	-0,48"	44° 23' 52"	16° 52' 23"	1,0089887	15' 51,08"	23° 26' 17"	03m 28s
11:00	46° 54' 14"	-0,48"	44° 26' 18"	16° 53' 04"	1,0089989	15' 51,07"	23° 26' 17"	03m 28s
12:00	46° 56' 39"	-0,47"	44° 28' 43"	16° 53' 46"	1,0090091	15' 51,06"	23° 26' 17"	03m 28s
13:00	46° 59' 04"	-0,47"	44° 31' 09"	16° 54' 27"	1,0090193	15' 51,05"	23° 26' 17"	03m 28s
14:00	47° 01' 29"	-0,46"	44° 33' 34"	16° 55' 08"	1,0090295	15' 51,04"	23° 26' 17"	03m 29s
15:00	47° 03' 54"	-0,46"	44° 36' 00"	16° 55' 49"	1,0090396	15' 51,03"	23° 26' 17"	03m 29s
16:00	47° 06' 20"	-0,46"	44° 38' 25"	16° 56' 30"	1,0090498	15' 51,02"	23° 26' 17"	03m 29s
17:00	47° 08' 45"	-0,45"	44° 40' 51"	16° 57' 11"	1,0090600	15' 51,01"	23° 26' 17"	03m 29s
18:00	47° 11' 10"	-0,45"	44° 43' 17"	16° 57' 52"	1,0090701	15' 51,00"	23° 26' 17"	03m 29s
19:00	47° 13' 35"	-0,44"	44° 45' 42"	16° 58' 33"	1,0090803	15' 50,99"	23° 26' 17"	03m 29s
20:00	47° 16' 00"	-0,44"	44° 48' 08"	16° 59' 14"	1,0090904	15' 50,99"	23° 26' 17"	03m 30s
21:00	47° 18' 25"	-0,44"	44° 50' 33"	16° 59' 55"	1,0091006	15' 50,98"	23° 26' 17"	03m 30s
22:00	47° 20' 50"	-0,43"	44° 52' 59"	17° 00' 36"	1,0091107	15' 50,97"	23° 26' 17"	03m 30s
23:00	47° 23' 16"	-0,43"	44° 55' 25"	17° 01' 17"	1,0091209	15' 50,96"	23° 26' 17"	03m 30s
24:00	47° 25' 41"	-0,42"	44° 57' 50"	17° 01' 58"	1,0091310	15' 50,95"	23° 26' 17"	03m 30s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	284° 17' 54"	-3° 57' 37"	285° 59' 45"	-26° 36' 29"	54' 18"	14' 47,78"	86° 10' 44"	76,65%
01:00	284° 47' 41"	-3° 55' 59"	286° 32' 33"	-26° 31' 32"	54' 19"	14' 47,97"	85° 54' 30"	76,31%
02:00	285° 17' 27"	-3° 54' 20"	287° 05' 18"	-26° 26' 29"	54' 20"	14' 48,17"	85° 38' 21"	75,98%
03:00	285° 47' 15"	-3° 52' 40"	287° 38' 02"	-26° 21' 17"	54' 20"	14' 48,37"	85° 22' 18"	75,64%
04:00	286° 17' 03"	-3° 50' 59"	288° 10' 43"	-26° 15' 58"	54' 21"	14' 48,57"	85° 06' 21"	75,30%
05:00	286° 46' 51"	-3° 49' 17"	288° 43' 22"	-26° 10' 31"	54' 22"	14' 48,78"	84° 50' 29"	74,95%
06:00	287° 16' 40"	-3° 47' 33"	289° 15' 59"	-26° 04' 57"	54' 23"	14' 48,99"	84° 34' 43"	74,61%
07:00	287° 46' 30"	-3° 45' 49"	289° 48' 33"	-25° 59' 16"	54' 23"	14' 49,21"	84° 19' 03"	74,27%
08:00	288° 16' 21"	-3° 44' 04"	290° 21' 05"	-25° 53' 27"	54' 24"	14' 49,43"	84° 03' 29"	73,92%
09:00	288° 46' 12"	-3° 42' 17"	290° 53' 34"	-25° 47' 30"	54' 25"	14' 49,65"	83° 48' 01"	73,57%
10:00	289° 16' 03"	-3° 40' 29"	291° 26' 01"	-25° 41' 26"	54' 26"	14' 49,88"	83° 32' 38"	73,22%
11:00	289° 45' 56"	-3° 38' 41"	291° 58' 26"	-25° 35' 15"	54' 27"	14' 50,12"	83° 17' 22"	72,87%
12:00	290° 15' 49"	-3° 36' 51"	292° 30' 48"	-25° 28' 57"	54' 28"	14' 50,35"	83° 02' 12"	72,51%
13:00	290° 45' 42"	-3° 35' 00"	293° 03' 08"	-25° 22' 31"	54' 29"	14' 50,60"	82° 47' 08"	72,16%
14:00	291° 15' 37"	-3° 33' 08"	293° 35' 25"	-25° 15' 58"	54' 30"	14' 50,84"	82° 32' 10"	71,80%
15:00	291° 45' 32"	-3° 31' 15"	294° 07' 39"	-25° 09' 18"	54' 30"	14' 51,09"	82° 17' 18"	71,44%
16:00	292° 15' 28"	-3° 29' 22"	294° 39' 51"	-25° 02' 30"	54' 31"	14' 51,35"	82° 02' 32"	71,08%
17:00	292° 45' 25"	-3° 27' 27"	295° 12' 01"	-24° 55' 36"	54' 32"	14' 51,61"	81° 47' 52"	70,72%
18:00	293° 15' 23"	-3° 25' 31"	295° 44' 07"	-24° 48' 34"	54' 33"	14' 51,87"	81° 33' 19"	70,36%
19:00	293° 45' 21"	-3° 23' 34"	296° 16' 11"	-24° 41' 26"	54' 34"	14' 52,14"	81° 18' 52"	69,99%
20:00	294° 15' 21"	-3° 21' 36"	296° 48' 13"	-24° 34' 10"	54' 35"	14' 52,42"	81° 04' 31"	69,62%
21:00	294° 45' 21"	-3° 19' 37"	297° 20' 11"	-24° 26' 47"	54' 36"	14' 52,69"	80° 50' 17"	69,26%
22:00	295° 15' 22"	-3° 17' 37"	297° 52' 07"	-24° 19' 17"	54' 37"	14' 52,97"	80° 36' 09"	68,89%
23:00	295° 45' 24"	-3° 15' 36"	298° 24' 01"	-24° 11' 40"	54' 38"	14' 53,26"	80° 22' 08"	68,52%
24:00	296° 15' 27"	-3° 13' 34"	298° 55' 51"	-24° 03' 57"	54' 39"	14' 53,55"	80° 08' 13"	68,14%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	47° 25' 41"	-0,42"	44° 57' 50"	17° 01' 58"	1,0091310	15' 50,95"	23° 26' 17"	03m 30s
01:00	47° 28' 06"	-0,42"	45° 00' 16"	17° 02' 39"	1,0091412	15' 50,94"	23° 26' 17"	03m 30s
02:00	47° 30' 31"	-0,42"	45° 02' 42"	17° 03' 20"	1,0091513	15' 50,93"	23° 26' 17"	03m 30s
03:00	47° 32' 56"	-0,41"	45° 05' 07"	17° 04' 00"	1,0091614	15' 50,92"	23° 26' 17"	03m 31s
04:00	47° 35' 21"	-0,41"	45° 07' 33"	17° 04' 41"	1,0091715	15' 50,91"	23° 26' 17"	03m 31s
05:00	47° 37' 46"	-0,40"	45° 09' 59"	17° 05' 22"	1,0091817	15' 50,90"	23° 26' 17"	03m 31s
06:00	47° 40' 12"	-0,40"	45° 12' 25"	17° 06' 03"	1,0091918	15' 50,89"	23° 26' 17"	03m 31s
07:00	47° 42' 37"	-0,40"	45° 14' 50"	17° 06' 43"	1,0092019	15' 50,88"	23° 26' 17"	03m 31s
08:00	47° 45' 02"	-0,39"	45° 17' 16"	17° 07' 24"	1,0092120	15' 50,87"	23° 26' 17"	03m 31s
09:00	47° 47' 27"	-0,39"	45° 19' 42"	17° 08' 04"	1,0092221	15' 50,86"	23° 26' 17"	03m 31s
10:00	47° 49' 52"	-0,38"	45° 22' 08"	17° 08' 45"	1,0092322	15' 50,85"	23° 26' 17"	03m 32s
11:00	47° 52' 17"	-0,38"	45° 24' 34"	17° 09' 26"	1,0092423	15' 50,84"	23° 26' 17"	03m 32s
12:00	47° 54' 42"	-0,37"	45° 26' 59"	17° 10' 06"	1,0092524	15' 50,83"	23° 26' 17"	03m 32s
13:00	47° 57' 07"	-0,37"	45° 29' 25"	17° 10' 47"	1,0092624	15' 50,82"	23° 26' 17"	03m 32s
14:00	47° 59' 33"	-0,36"	45° 31' 51"	17° 11' 27"	1,0092725	15' 50,81"	23° 26' 17"	03m 32s
15:00	48° 01' 58"	-0,36"	45° 34' 17"	17° 12' 07"	1,0092826	15' 50,80"	23° 26' 17"	03m 32s
16:00	48° 04' 23"	-0,36"	45° 36' 43"	17° 12' 48"	1,0092927	15' 50,79"	23° 26' 17"	03m 32s
17:00	48° 06' 48"	-0,35"	45° 39' 09"	17° 13' 28"	1,0093027	15' 50,79"	23° 26' 17"	03m 32s
18:00	48° 09' 13"	-0,35"	45° 41' 35"	17° 14' 09"	1,0093128	15' 50,78"	23° 26' 17"	03m 33s
19:00	48° 11' 38"	-0,34"	45° 44' 01"	17° 14' 49"	1,0093229	15' 50,77"	23° 26' 17"	03m 33s
20:00	48° 14' 03"	-0,34"	45° 46' 27"	17° 15' 29"	1,0093329	15' 50,76"	23° 26' 17"	03m 33s
21:00	48° 16' 28"	-0,33"	45° 48' 53"	17° 16' 09"	1,0093430	15' 50,75"	23° 26' 17"	03m 33s
22:00	48° 18' 53"	-0,33"	45° 51' 19"	17° 16' 50"	1,0093530	15' 50,74"	23° 26' 17"	03m 33s
23:00	48° 21' 18"	-0,32"	45° 53' 45"	17° 17' 30"	1,0093631	15' 50,73"	23° 26' 17"	03m 33s
24:00	48° 23' 44"	-0,32"	45° 56' 11"	17° 18' 10"	1,0093731	15' 50,72"	23° 26' 17"	03m 33s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	296° 15' 27"	-3° 13' 34"	298° 55' 51"	-24° 03' 57"	54' 39"	14' 53,55"	80° 08' 13"	68,14%
01:00	296° 45' 31"	-3° 11' 31"	299° 27' 39"	-23° 56' 06"	54' 41"	14' 53,85"	79° 54' 25"	67,77%
02:00	297° 15' 36"	-3° 09' 28"	299° 59' 24"	-23° 48' 09"	54' 42"	14' 54,15"	79° 40' 43"	67,40%
03:00	297° 45' 42"	-3° 07' 23"	300° 31' 07"	-23° 40' 05"	54' 43"	14' 54,45"	79° 27' 08"	67,02%
04:00	298° 15' 49"	-3° 05' 17"	301° 02' 46"	-23° 31' 54"	54' 44"	14' 54,76"	79° 13' 39"	66,64%
05:00	298° 45' 57"	-3° 03' 11"	301° 34' 23"	-23° 23' 36"	54' 45"	14' 55,07"	79° 00' 17"	66,26%
06:00	299° 16' 06"	-3° 01' 03"	302° 05' 58"	-23° 15' 12"	54' 46"	14' 55,39"	78° 47' 02"	65,88%
07:00	299° 46' 16"	-2° 58' 54"	302° 37' 29"	-23° 06' 41"	54' 47"	14' 55,71"	78° 33' 54"	65,50%
08:00	300° 16' 27"	-2° 56' 45"	303° 08' 58"	-22° 58' 03"	54' 49"	14' 56,04"	78° 20' 52"	65,12%
09:00	300° 46' 40"	-2° 54' 35"	303° 40' 24"	-22° 49' 19"	54' 50"	14' 56,37"	78° 07' 57"	64,73%
10:00	301° 16' 53"	-2° 52' 23"	304° 11' 47"	-22° 40' 29"	54' 51"	14' 56,70"	77° 55' 09"	64,35%
11:00	301° 47' 08"	-2° 50' 11"	304° 43' 07"	-22° 31' 32"	54' 52"	14' 57,04"	77° 42' 28"	63,96%
12:00	302° 17' 24"	-2° 47' 58"	305° 14' 25"	-22° 22' 28"	54' 54"	14' 57,39"	77° 29' 54"	63,57%
13:00	302° 47' 41"	-2° 45' 44"	305° 45' 40"	-22° 13' 18"	54' 55"	14' 57,73"	77° 17' 26"	63,18%
14:00	303° 17' 59"	-2° 43' 30"	306° 16' 52"	-22° 04' 02"	54' 56"	14' 58,09"	77° 05' 06"	62,79%
15:00	303° 48' 19"	-2° 41' 14"	306° 48' 02"	-21° 54' 39"	54' 57"	14' 58,44"	76° 52' 53"	62,40%
16:00	304° 18' 40"	-2° 38' 57"	307° 19' 08"	-21° 45' 10"	54' 59"	14' 58,81"	76° 40' 46"	62,01%
17:00	304° 49' 02"	-2° 36' 40"	307° 50' 12"	-21° 35' 35"	55' 00"	14' 59,17"	76° 28' 47"	61,61%
18:00	305° 19' 25"	-2° 34' 22"	308° 21' 14"	-21° 25' 53"	55' 01"	15' 00,00"	76° 16' 55"	61,22%
19:00	305° 49' 50"	-2° 32' 03"	308° 52' 13"	-21° 16' 06"	55' 03"	15' 00,00"	76° 05' 10"	60,82%
20:00	306° 20' 16"	-2° 29' 43"	309° 23' 09"	-21° 06' 12"	55' 04"	15' 00,30"	75° 53' 32"	60,42%
21:00	306° 50' 43"	-2° 27' 22"	309° 54' 02"	-20° 56' 12"	55' 06"	15' 00,68"	75° 42' 01"	60,03%
22:00	307° 21' 12"	-2° 25' 01"	310° 24' 53"	-20° 46' 06"	55' 07"	15' 01,07"	75° 30' 38"	59,63%
23:00	307° 51' 43"	-2° 22' 38"	310° 55' 41"	-20° 35' 54"	55' 08"	15' 01,46"	75° 19' 22"	59,23%
24:00	308° 22' 14"	-2° 20' 15"	311° 26' 27"	-20° 25' 36"	55' 10"	15' 01,86"	75° 08' 13"	58,82%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	48° 23' 44"	-0,32"	45° 56' 11"	17° 18' 10"	1,0093731	15' 50,72"	23° 26' 17"	03m 33s
01:00	48° 26' 09"	-0,31"	45° 58' 37"	17° 18' 50"	1,0093831	15' 50,71"	23° 26' 17"	03m 33s
02:00	48° 28' 34"	-0,31"	46° 01' 03"	17° 19' 30"	1,0093932	15' 50,70"	23° 26' 17"	03m 34s
03:00	48° 30' 59"	-0,30"	46° 03' 29"	17° 20' 10"	1,0094032	15' 50,69"	23° 26' 17"	03m 34s
04:00	48° 33' 24"	-0,30"	46° 05' 55"	17° 20' 50"	1,0094132	15' 50,68"	23° 26' 17"	03m 34s
05:00	48° 35' 49"	-0,29"	46° 08' 21"	17° 21' 30"	1,0094232	15' 50,67"	23° 26' 17"	03m 34s
06:00	48° 38' 14"	-0,29"	46° 10' 47"	17° 22' 10"	1,0094332	15' 50,66"	23° 26' 17"	03m 34s
07:00	48° 40' 39"	-0,29"	46° 13' 13"	17° 22' 50"	1,0094433	15' 50,65"	23° 26' 17"	03m 34s
08:00	48° 43' 04"	-0,28"	46° 15' 39"	17° 23' 30"	1,0094533	15' 50,64"	23° 26' 17"	03m 34s
09:00	48° 45' 29"	-0,28"	46° 18' 06"	17° 24' 10"	1,0094633	15' 50,63"	23° 26' 17"	03m 34s
10:00	48° 47' 54"	-0,27"	46° 20' 32"	17° 24' 50"	1,0094732	15' 50,62"	23° 26' 17"	03m 34s
11:00	48° 50' 19"	-0,27"	46° 22' 58"	17° 25' 30"	1,0094832	15' 50,62"	23° 26' 17"	03m 35s
12:00	48° 52' 44"	-0,26"	46° 25' 24"	17° 26' 09"	1,0094932	15' 50,61"	23° 26' 17"	03m 35s
13:00	48° 55' 09"	-0,26"	46° 27' 50"	17° 26' 49"	1,0095032	15' 50,60"	23° 26' 17"	03m 35s
14:00	48° 57' 35"	-0,25"	46° 30' 17"	17° 27' 29"	1,0095132	15' 50,59"	23° 26' 17"	03m 35s
15:00	49° 00' 00"	-0,25"	46° 32' 43"	17° 28' 09"	1,0095231	15' 50,58"	23° 26' 17"	03m 35s
16:00	49° 02' 25"	-0,24"	46° 35' 09"	17° 28' 48"	1,0095331	15' 50,57"	23° 26' 17"	03m 35s
17:00	49° 04' 50"	-0,24"	46° 37' 35"	17° 29' 28"	1,0095431	15' 50,56"	23° 26' 17"	03m 35s
18:00	49° 07' 15"	-0,23"	46° 40' 02"	17° 30' 08"	1,0095530	15' 50,55"	23° 26' 17"	03m 35s
19:00	49° 09' 40"	-0,23"	46° 42' 28"	17° 30' 47"	1,0095630	15' 50,54"	23° 26' 17"	03m 35s
20:00	49° 12' 05"	-0,22"	46° 44' 54"	17° 31' 27"	1,0095729	15' 50,53"	23° 26' 17"	03m 36s
21:00	49° 14' 30"	-0,22"	46° 47' 21"	17° 32' 06"	1,0095829	15' 50,52"	23° 26' 17"	03m 36s
22:00	49° 16' 55"	-0,21"	46° 49' 47"	17° 32' 46"	1,0095928	15' 50,51"	23° 26' 17"	03m 36s
23:00	49° 19' 20"	-0,20"	46° 52' 13"	17° 33' 25"	1,0096027	15' 50,50"	23° 26' 17"	03m 36s
24:00	49° 21' 45"	-0,20"	46° 54' 40"	17° 34' 05"	1,0096127	15' 50,49"	23° 26' 17"	03m 36s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	308° 22' 14"	-2° 20' 15"	311° 26' 27"	-20° 25' 36"	55' 10"	15' 01,86"	75° 08' 13"	58,82%
01:00	308° 52' 47"	-2° 17' 51"	311° 57' 10"	-20° 15' 12"	55' 11"	15' 02,26"	74° 57' 11"	58,42%
02:00	309° 23' 22"	-2° 15' 26"	312° 27' 51"	-20° 04' 43"	55' 13"	15' 02,66"	74° 46' 17"	58,02%
03:00	309° 53' 58"	-2° 13' 01"	312° 58' 29"	-19° 54' 07"	55' 14"	15' 03,07"	74° 35' 30"	57,61%
04:00	310° 24' 36"	-2° 10' 35"	313° 29' 05"	-19° 43' 26"	55' 16"	15' 03,49"	74° 24' 50"	57,21%
05:00	310° 55' 15"	-2° 08' 08"	313° 59' 38"	-19° 32' 39"	55' 17"	15' 03,91"	74° 14' 18"	56,80%
06:00	311° 25' 56"	-2° 05' 40"	314° 30' 08"	-19° 21' 46"	55' 19"	15' 04,33"	74° 03' 53"	56,40%
07:00	311° 56' 39"	-2° 03' 11"	315° 00' 37"	-19° 10' 47"	55' 21"	15' 04,76"	73° 53' 36"	55,99%
08:00	312° 27' 23"	-2° 00' 42"	315° 31' 03"	-18° 59' 43"	55' 22"	15' 05,19"	73° 43' 26"	55,58%
09:00	312° 58' 08"	-1° 58' 12"	316° 01' 26"	-18° 48' 33"	55' 24"	15' 05,62"	73° 33' 24"	55,17%
10:00	313° 28' 56"	-1° 55' 42"	316° 31' 47"	-18° 37' 18"	55' 25"	15' 06,06"	73° 23' 30"	54,76%
11:00	313° 59' 45"	-1° 53' 10"	317° 02' 06"	-18° 25' 57"	55' 27"	15' 06,51"	73° 13' 42"	54,35%
12:00	314° 30' 36"	-1° 50' 38"	317° 32' 23"	-18° 14' 31"	55' 29"	15' 06,96"	73° 04' 03"	53,94%
13:00	315° 01' 28"	-1° 48' 05"	318° 02' 38"	-18° 02' 59"	55' 30"	15' 07,41"	72° 54' 31"	53,52%
14:00	315° 32' 22"	-1° 45' 32"	318° 32' 50"	-17° 51' 22"	55' 32"	15' 07,87"	72° 45' 07"	53,11%
15:00	316° 03' 18"	-1° 42' 58"	319° 03' 00"	-17° 39' 39"	55' 34"	15' 08,33"	72° 35' 51"	52,70%
16:00	316° 34' 16"	-1° 40' 23"	319° 33' 08"	-17° 27' 52"	55' 35"	15' 08,79"	72° 26' 42"	52,28%
17:00	317° 05' 16"	-1° 37' 48"	320° 03' 14"	-17° 15' 58"	55' 37"	15' 09,26"	72° 17' 41"	51,87%
18:00	317° 36' 17"	-1° 35' 12"	320° 33' 18"	-17° 04' 00"	55' 39"	15' 09,73"	72° 08' 48"	51,45%
19:00	318° 07' 20"	-1° 32' 35"	321° 03' 20"	-16° 51' 57"	55' 41"	15' 10,21"	72° 00' 02"	51,04%
20:00	318° 38' 26"	-1° 29' 58"	321° 33' 20"	-16° 39' 48"	55' 42"	15' 10,69"	71° 51' 25"	50,62%
21:00	319° 09' 33"	-1° 27' 20"	322° 03' 18"	-16° 27' 35"	55' 44"	15' 11,18"	71° 42' 55"	50,20%
22:00	319° 40' 42"	-1° 24' 41"	322° 33' 14"	-16° 15' 16"	55' 46"	15' 11,67"	71° 34' 33"	49,78%
23:00	320° 11' 53"	-1° 22' 02"	323° 03' 09"	-16° 02' 52"	55' 48"	15' 12,16"	71° 26' 19"	49,37%
24:00	320° 43' 06"	-1° 19' 23"	323° 33' 01"	-15° 50' 24"	55' 50"	15' 12,66"	71° 18' 13"	48,95%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	49° 21' 45"	-0,20"	46° 54' 40"	17° 34' 05"	1,0096127	15' 50,49"	23° 26' 17"	03m 36s
01:00	49° 24' 10"	-0,19"	46° 57' 06"	17° 34' 44"	1,0096226	15' 50,48"	23° 26' 17"	03m 36s
02:00	49° 26' 35"	-0,19"	46° 59' 33"	17° 35' 23"	1,0096325	15' 50,47"	23° 26' 17"	03m 36s
03:00	49° 29' 00"	-0,18"	47° 01' 59"	17° 36' 03"	1,0096424	15' 50,47"	23° 26' 17"	03m 36s
04:00	49° 31' 25"	-0,18"	47° 04' 26"	17° 36' 42"	1,0096523	15' 50,46"	23° 26' 17"	03m 36s
05:00	49° 33' 50"	-0,17"	47° 06' 52"	17° 37' 21"	1,0096622	15' 50,45"	23° 26' 17"	03m 36s
06:00	49° 36' 15"	-0,17"	47° 09' 18"	17° 38' 01"	1,0096721	15' 50,44"	23° 26' 17"	03m 36s
07:00	49° 38' 40"	-0,16"	47° 11' 45"	17° 38' 40"	1,0096820	15' 50,43"	23° 26' 17"	03m 37s
08:00	49° 41' 05"	-0,16"	47° 14' 11"	17° 39' 19"	1,0096919	15' 50,42"	23° 26' 17"	03m 37s
09:00	49° 43' 30"	-0,15"	47° 16' 38"	17° 39' 58"	1,0097018	15' 50,41"	23° 26' 17"	03m 37s
10:00	49° 45' 55"	-0,15"	47° 19' 05"	17° 40' 37"	1,0097116	15' 50,40"	23° 26' 17"	03m 37s
11:00	49° 48' 20"	-0,14"	47° 21' 31"	17° 41' 16"	1,0097215	15' 50,39"	23° 26' 17"	03m 37s
12:00	49° 50' 45"	-0,14"	47° 23' 58"	17° 41' 55"	1,0097314	15' 50,38"	23° 26' 17"	03m 37s
13:00	49° 53' 10"	-0,13"	47° 26' 24"	17° 42' 34"	1,0097412	15' 50,37"	23° 26' 17"	03m 37s
14:00	49° 55' 35"	-0,13"	47° 28' 51"	17° 43' 13"	1,0097511	15' 50,36"	23° 26' 17"	03m 37s
15:00	49° 58' 00"	-0,12"	47° 31' 18"	17° 43' 52"	1,0097609	15' 50,35"	23° 26' 17"	03m 37s
16:00	50° 00' 25"	-0,12"	47° 33' 44"	17° 44' 31"	1,0097708	15' 50,34"	23° 26' 17"	03m 37s
17:00	50° 02' 50"	-0,11"	47° 36' 11"	17° 45' 10"	1,0097806	15' 50,34"	23° 26' 17"	03m 37s
18:00	50° 05' 15"	-0,11"	47° 38' 37"	17° 45' 49"	1,0097904	15' 50,33"	23° 26' 17"	03m 38s
19:00	50° 07' 40"	-0,10"	47° 41' 04"	17° 46' 28"	1,0098003	15' 50,32"	23° 26' 17"	03m 38s
20:00	50° 10' 05"	-0,09"	47° 43' 31"	17° 47' 07"	1,0098101	15' 50,31"	23° 26' 17"	03m 38s
21:00	50° 12' 30"	-0,09"	47° 45' 58"	17° 47' 46"	1,0098199	15' 50,30"	23° 26' 17"	03m 38s
22:00	50° 14' 55"	-0,08"	47° 48' 24"	17° 48' 24"	1,0098297	15' 50,29"	23° 26' 17"	03m 38s
23:00	50° 17' 20"	-0,08"	47° 50' 51"	17° 49' 03"	1,0098395	15' 50,28"	23° 26' 17"	03m 38s
24:00	50° 19' 45"	-0,07"	47° 53' 18"	17° 49' 42"	1,0098493	15' 50,27"	23° 26' 17"	03m 38s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	320° 43' 06"	-1° 19' 23"	323° 33' 01"	-15° 50' 24"	55' 50"	15' 12,66"	71° 18' 13"	48,95%
01:00	321° 14' 21"	-1° 16' 42"	324° 02' 52"	-15° 37' 50"	55' 51"	15' 13,16"	71° 10' 16"	48,53%
02:00	321° 45' 38"	-1° 14' 01"	324° 32' 41"	-15° 25' 12"	55' 53"	15' 13,67"	71° 02' 26"	48,11%
03:00	322° 16' 56"	-1° 11' 20"	325° 02' 29"	-15° 12' 28"	55' 55"	15' 14,17"	70° 54' 44"	47,69%
04:00	322° 48' 18"	-1° 08' 38"	325° 32' 15"	-14° 59' 40"	55' 57"	15' 14,69"	70° 47' 10"	47,27%
05:00	323° 19' 41"	-1° 05' 56"	326° 01' 59"	-14° 46' 48"	55' 59"	15' 15,20"	70° 39' 44"	46,85%
06:00	323° 51' 06"	-1° 03' 13"	326° 31' 42"	-14° 33' 50"	56' 01"	15' 15,72"	70° 32' 26"	46,43%
07:00	324° 22' 33"	-1° 00' 30"	327° 01' 24"	-14° 20' 48"	56' 03"	15' 16,25"	70° 25' 17"	46,01%
08:00	324° 54' 03"	-0° 57' 46"	327° 31' 04"	-14° 07' 41"	56' 05"	15' 16,78"	70° 18' 16"	45,58%
09:00	325° 25' 34"	-0° 55' 01"	328° 00' 42"	-13° 54' 30"	56' 07"	15' 17,31"	70° 11' 23"	45,16%
10:00	325° 57' 08"	-0° 52' 16"	328° 30' 20"	-13° 41' 14"	56' 09"	15' 17,84"	70° 04' 38"	44,74%
11:00	326° 28' 44"	-0° 49' 31"	328° 59' 56"	-13° 27' 54"	56' 11"	15' 18,38"	69° 58' 01"	44,32%
12:00	327° 00' 22"	-0° 46' 45"	329° 29' 31"	-13° 14' 30"	56' 13"	15' 18,93"	69° 51' 33"	43,90%
13:00	327° 32' 03"	-0° 43' 59"	329° 59' 05"	-13° 01' 01"	56' 15"	15' 19,47"	69° 45' 13"	43,47%
14:00	328° 03' 45"	-0° 41' 12"	330° 28' 38"	-12° 47' 27"	56' 17"	15' 20,02"	69° 39' 02"	43,05%
15:00	328° 35' 31"	-0° 38' 25"	330° 58' 10"	-12° 33' 50"	56' 19"	15' 20,57"	69° 32' 59"	42,63%
16:00	329° 07' 18"	-0° 35' 38"	331° 27' 40"	-12° 20' 08"	56' 21"	15' 21,13"	69° 27' 04"	42,21%
17:00	329° 39' 08"	-0° 32' 50"	331° 57' 10"	-12° 06' 22"	56' 23"	15' 21,69"	69° 21' 18"	41,78%
18:00	330° 11' 00"	-0° 30' 02"	332° 26' 39"	-11° 52' 32"	56' 25"	15' 22,25"	69° 15' 41"	41,36%
19:00	330° 42' 54"	-0° 27' 13"	332° 56' 08"	-11° 38' 37"	56' 27"	15' 22,82"	69° 10' 12"	40,94%
20:00	331° 14' 51"	-0° 24' 25"	333° 25' 35"	-11° 24' 39"	56' 29"	15' 23,39"	69° 04' 52"	40,52%
21:00	331° 46' 50"	-0° 21' 35"	333° 55' 02"	-11° 10' 37"	56' 31"	15' 23,96"	68° 59' 40"	40,09%
22:00	332° 18' 52"	-0° 18' 46"	334° 24' 29"	-10° 56' 31"	56' 33"	15' 24,54"	68° 54' 37"	39,67%
23:00	332° 50' 56"	-0° 15' 56"	334° 53' 54"	-10° 42' 20"	56' 35"	15' 25,12"	68° 49' 43"	39,25%
24:00	333° 23' 02"	-0° 13' 06"	335° 23' 20"	-10° 28' 06"	56' 37"	15' 25,70"	68° 44' 57"	38,83%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	50° 19' 45"	-0,07"	47° 53' 18"	17° 49' 42"	1,0098493	15' 50,27"	23° 26' 17"	03m 38s
01:00	50° 22' 10"	-0,07"	47° 55' 45"	17° 50' 20"	1,0098591	15' 50,26"	23° 26' 17"	03m 38s
02:00	50° 24' 35"	-0,06"	47° 58' 11"	17° 50' 59"	1,0098689	15' 50,25"	23° 26' 17"	03m 38s
03:00	50° 27' 00"	-0,06"	48° 00' 38"	17° 51' 38"	1,0098787	15' 50,24"	23° 26' 17"	03m 38s
04:00	50° 29' 25"	-0,05"	48° 03' 05"	17° 52' 16"	1,0098885	15' 50,23"	23° 26' 17"	03m 38s
05:00	50° 31' 50"	-0,05"	48° 05' 32"	17° 52' 55"	1,0098982	15' 50,22"	23° 26' 17"	03m 38s
06:00	50° 34' 15"	-0,04"	48° 07' 59"	17° 53' 33"	1,0099080	15' 50,22"	23° 26' 17"	03m 38s
07:00	50° 36' 40"	-0,04"	48° 10' 26"	17° 54' 12"	1,0099178	15' 50,21"	23° 26' 17"	03m 38s
08:00	50° 39' 05"	-0,03"	48° 12' 52"	17° 54' 50"	1,0099275	15' 50,20"	23° 26' 17"	03m 38s
09:00	50° 41' 30"	-0,03"	48° 15' 19"	17° 55' 28"	1,0099373	15' 50,19"	23° 26' 17"	03m 39s
10:00	50° 43' 55"	-0,02"	48° 17' 46"	17° 56' 07"	1,0099470	15' 50,18"	23° 26' 17"	03m 39s
11:00	50° 46' 20"	-0,01"	48° 20' 13"	17° 56' 45"	1,0099568	15' 50,17"	23° 26' 17"	03m 39s
12:00	50° 48' 44"	-0,01"	48° 22' 40"	17° 57' 24"	1,0099665	15' 50,16"	23° 26' 17"	03m 39s
13:00	50° 51' 09"	-0,00"	48° 25' 07"	17° 58' 02"	1,0099762	15' 50,15"	23° 26' 17"	03m 39s
14:00	50° 53' 34"	0,00"	48° 27' 34"	17° 58' 40"	1,0099859	15' 50,14"	23° 26' 17"	03m 39s
15:00	50° 55' 59"	0,01"	48° 30' 01"	17° 59' 18"	1,0099956	15' 50,13"	23° 26' 17"	03m 39s
16:00	50° 58' 24"	0,01"	48° 32' 28"	17° 59' 56"	1,0100053	15' 50,12"	23° 26' 17"	03m 39s
17:00	51° 00' 49"	0,02"	48° 34' 55"	18° 00' 35"	1,0100151	15' 50,11"	23° 26' 17"	03m 39s
18:00	51° 03' 14"	0,02"	48° 37' 22"	18° 01' 13"	1,0100247	15' 50,11"	23° 26' 17"	03m 39s
19:00	51° 05' 39"	0,03"	48° 39' 49"	18° 01' 51"	1,0100344	15' 50,10"	23° 26' 17"	03m 39s
20:00	51° 08' 04"	0,03"	48° 42' 16"	18° 02' 29"	1,0100441	15' 50,09"	23° 26' 17"	03m 39s
21:00	51° 10' 29"	0,04"	48° 44' 43"	18° 03' 07"	1,0100538	15' 50,08"	23° 26' 17"	03m 39s
22:00	51° 12' 54"	0,04"	48° 47' 10"	18° 03' 45"	1,0100635	15' 50,07"	23° 26' 17"	03m 39s
23:00	51° 15' 19"	0,05"	48° 49' 38"	18° 04' 23"	1,0100731	15' 50,06"	23° 26' 17"	03m 39s
24:00	51° 17' 44"	0,05"	48° 52' 05"	18° 05' 01"	1,0100828	15' 50,05"	23° 26' 17"	03m 39s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	333° 23' 02"	-0° 13' 06"	335° 23' 20"	-10° 28' 06"	56' 37"	15' 25,70"	68° 44' 57"	38,83%
01:00	333° 55' 11"	-0° 10' 15"	335° 52' 45"	-10° 13' 49"	56' 40"	15' 26,28"	68° 40' 21"	38,41%
02:00	334° 27' 23"	-0° 07' 25"	336° 22' 09"	-9° 59' 27"	56' 42"	15' 26,87"	68° 35' 53"	37,99%
03:00	334° 59' 37"	-0° 04' 34"	336° 51' 33"	-9° 45' 02"	56' 44"	15' 27,46"	68° 31' 34"	37,56%
04:00	335° 31' 53"	-0° 01' 42"	337° 20' 57"	-9° 30' 33"	56' 46"	15' 28,06"	68° 27' 24"	37,14%
05:00	336° 04' 12"	0° 01' 09"	337° 50' 21"	-9° 16' 00"	56' 48"	15' 28,65"	68° 23' 23"	36,72%
06:00	336° 36' 34"	0° 04' 01"	338° 19' 45"	-9° 01' 24"	56' 50"	15' 29,25"	68° 19' 32"	36,30%
07:00	337° 08' 58"	0° 06' 53"	338° 49' 09"	-8° 46' 45"	56' 53"	15' 29,85"	68° 15' 49"	35,88%
08:00	337° 41' 25"	0° 09' 45"	339° 18' 32"	-8° 32' 02"	56' 55"	15' 30,46"	68° 12' 15"	35,47%
09:00	338° 13' 55"	0° 12' 37"	339° 47' 56"	-8° 17' 15"	56' 57"	15' 31,07"	68° 08' 51"	35,05%
10:00	338° 46' 27"	0° 15' 29"	340° 17' 20"	-8° 02' 26"	56' 59"	15' 31,68"	68° 05' 36"	34,63%
11:00	339° 19' 02"	0° 18' 22"	340° 46' 45"	-7° 47' 32"	57' 02"	15' 32,29"	68° 02' 30"	34,21%
12:00	339° 51' 40"	0° 21' 14"	341° 16' 09"	-7° 32' 36"	57' 04"	15' 32,90"	67° 59' 34"	33,80%
13:00	340° 24' 20"	0° 24' 07"	341° 45' 34"	-7° 17' 37"	57' 06"	15' 33,52"	67° 56' 47"	33,38%
14:00	340° 57' 03"	0° 27' 00"	342° 15' 00"	-7° 02' 34"	57' 08"	15' 34,14"	67° 54' 10"	32,96%
15:00	341° 29' 49"	0° 29' 53"	342° 44' 26"	-6° 47' 28"	57' 11"	15' 34,76"	67° 51' 42"	32,55%
16:00	342° 02' 37"	0° 32' 46"	343° 13' 52"	-6° 32' 20"	57' 13"	15' 35,38"	67° 49' 24"	32,14%
17:00	342° 35' 28"	0° 35' 39"	343° 43' 20"	-6° 17' 08"	57' 15"	15' 36,01"	67° 47' 15"	31,72%
18:00	343° 08' 22"	0° 38' 32"	344° 12' 48"	-6° 01' 53"	57' 18"	15' 36,64"	67° 45' 17"	31,31%
19:00	343° 41' 19"	0° 41' 25"	344° 42' 16"	-5° 46' 36"	57' 20"	15' 37,26"	67° 43' 28"	30,90%
20:00	344° 14' 19"	0° 44' 18"	345° 11' 46"	-5° 31' 16"	57' 22"	15' 37,90"	67° 41' 49"	30,49%
21:00	344° 47' 21"	0° 47' 11"	345° 41' 17"	-5° 15' 53"	57' 25"	15' 38,53"	67° 40' 20"	30,08%
22:00	345° 20' 26"	0° 50' 05"	346° 10' 48"	-5° 00' 27"	57' 27"	15' 39,16"	67° 39' 01"	29,67%
23:00	345° 53' 35"	0° 52' 58"	346° 40' 21"	-4° 44' 59"	57' 29"	15' 39,80"	67° 37' 52"	29,26%
24:00	346° 26' 46"	0° 55' 51"	347° 09' 55"	-4° 29' 28"	57' 32"	15' 40,44"	67° 36' 53"	28,86%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	51° 17' 44"	0,05"	48° 52' 05"	18° 05' 01"	1,0100828	15' 50,05"	23° 26' 17"	03m 39s
01:00	51° 20' 09"	0,06"	48° 54' 32"	18° 05' 39"	1,0100924	15' 50,04"	23° 26' 17"	03m 39s
02:00	51° 22' 33"	0,06"	48° 56' 59"	18° 06' 17"	1,0101021	15' 50,03"	23° 26' 17"	03m 39s
03:00	51° 24' 58"	0,07"	48° 59' 26"	18° 06' 54"	1,0101117	15' 50,02"	23° 26' 17"	03m 40s
04:00	51° 27' 23"	0,08"	49° 01' 53"	18° 07' 32"	1,0101214	15' 50,01"	23° 26' 17"	03m 40s
05:00	51° 29' 48"	0,08"	49° 04' 21"	18° 08' 10"	1,0101310	15' 50,01"	23° 26' 17"	03m 40s
06:00	51° 32' 13"	0,09"	49° 06' 48"	18° 08' 48"	1,0101406	15' 50,00"	23° 26' 17"	03m 40s
07:00	51° 34' 38"	0,09"	49° 09' 15"	18° 09' 26"	1,0101502	15' 49,99"	23° 26' 17"	03m 40s
08:00	51° 37' 03"	0,10"	49° 11' 42"	18° 10' 03"	1,0101598	15' 49,98"	23° 26' 17"	03m 40s
09:00	51° 39' 28"	0,10"	49° 14' 09"	18° 10' 41"	1,0101694	15' 49,97"	23° 26' 17"	03m 40s
10:00	51° 41' 53"	0,11"	49° 16' 37"	18° 11' 18"	1,0101790	15' 49,96"	23° 26' 17"	03m 40s
11:00	51° 44' 18"	0,11"	49° 19' 04"	18° 11' 56"	1,0101886	15' 49,95"	23° 26' 17"	03m 40s
12:00	51° 46' 42"	0,12"	49° 21' 31"	18° 12' 34"	1,0101982	15' 49,94"	23° 26' 17"	03m 40s
13:00	51° 49' 07"	0,12"	49° 23' 59"	18° 13' 11"	1,0102078	15' 49,93"	23° 26' 17"	03m 40s
14:00	51° 51' 32"	0,13"	49° 26' 26"	18° 13' 49"	1,0102174	15' 49,92"	23° 26' 17"	03m 40s
15:00	51° 53' 57"	0,13"	49° 28' 53"	18° 14' 26"	1,0102269	15' 49,92"	23° 26' 17"	03m 40s
16:00	51° 56' 22"	0,14"	49° 31' 21"	18° 15' 04"	1,0102365	15' 49,91"	23° 26' 17"	03m 40s
17:00	51° 58' 47"	0,14"	49° 33' 48"	18° 15' 41"	1,0102460	15' 49,90"	23° 26' 17"	03m 40s
18:00	52° 01' 12"	0,15"	49° 36' 16"	18° 16' 18"	1,0102556	15' 49,89"	23° 26' 17"	03m 40s
19:00	52° 03' 37"	0,15"	49° 38' 43"	18° 16' 56"	1,0102651	15' 49,88"	23° 26' 17"	03m 40s
20:00	52° 06' 02"	0,16"	49° 41' 10"	18° 17' 33"	1,0102746	15' 49,87"	23° 26' 17"	03m 40s
21:00	52° 08' 26"	0,16"	49° 43' 38"	18° 18' 10"	1,0102842	15' 49,86"	23° 26' 17"	03m 40s
22:00	52° 10' 51"	0,17"	49° 46' 05"	18° 18' 47"	1,0102937	15' 49,85"	23° 26' 17"	03m 40s
23:00	52° 13' 16"	0,17"	49° 48' 33"	18° 19' 25"	1,0103032	15' 49,84"	23° 26' 17"	03m 40s
24:00	52° 15' 41"	0,18"	49° 51' 00"	18° 20' 02"	1,0103127	15' 49,83"	23° 26' 17"	03m 40s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	346° 26' 46"	0° 55' 51"	347° 09' 55"	-4° 29' 28"	57' 32"	15' 40,44"	67° 36' 53"	28,86%
01:00	347° 00' 00"	0° 58' 43"	347° 39' 30"	-4° 13' 55"	57' 34"	15' 41,08"	67° 36' 05"	28,45%
02:00	347° 33' 16"	1° 01' 36"	348° 09' 07"	-3° 58' 19"	57' 36"	15' 41,72"	67° 35' 27"	28,05%
03:00	348° 06' 36"	1° 04' 29"	348° 38' 45"	-3° 42' 41"	57' 39"	15' 42,36"	67° 34' 59"	27,64%
04:00	348° 39' 59"	1° 07' 21"	349° 08' 24"	-3° 27' 00"	57' 41"	15' 43,00"	67° 34' 42"	27,24%
05:00	349° 13' 24"	1° 10' 14"	349° 38' 05"	-3° 11' 17"	57' 43"	15' 43,65"	67° 34' 36"	26,84%
06:00	349° 46' 53"	1° 13' 06"	350° 07' 48"	-2° 55' 33"	57' 46"	15' 44,29"	67° 34' 40"	26,44%
07:00	350° 20' 24"	1° 15' 58"	350° 37' 33"	-2° 39' 45"	57' 48"	15' 44,94"	67° 34' 55"	26,04%
08:00	350° 53' 58"	1° 18' 50"	351° 07' 19"	-2° 23' 56"	57' 50"	15' 45,59"	67° 35' 22"	25,65%
09:00	351° 27' 36"	1° 21' 42"	351° 37' 07"	-2° 08' 05"	57' 53"	15' 46,24"	67° 35' 59"	25,25%
10:00	352° 01' 16"	1° 24' 33"	352° 06' 57"	-1° 52' 12"	57' 55"	15' 46,89"	67° 36' 47"	24,86%
11:00	352° 34' 59"	1° 27' 24"	352° 36' 49"	-1° 36' 17"	57' 58"	15' 47,54"	67° 37' 46"	24,46%
12:00	353° 08' 46"	1° 30' 15"	353° 06' 43"	-1° 20' 20"	58' 00"	15' 48,19"	67° 38' 57"	24,07%
13:00	353° 42' 35"	1° 33' 06"	353° 36' 40"	-1° 04' 22"	58' 02"	15' 48,84"	67° 40' 20"	23,68%
14:00	354° 16' 27"	1° 35' 56"	354° 06' 38"	-0° 48' 22"	58' 05"	15' 49,49"	67° 41' 54"	23,30%
15:00	354° 50' 23"	1° 38' 46"	354° 36' 39"	-0° 32' 20"	58' 07"	15' 50,14"	67° 43' 39"	22,91%
16:00	355° 24' 21"	1° 41' 35"	355° 06' 43"	-0° 16' 17"	58' 10"	15' 50,79"	67° 45' 37"	22,53%
17:00	355° 58' 23"	1° 44' 25"	355° 36' 49"	-0° 00' 12"	58' 12"	15' 51,45"	67° 47' 46"	22,14%
18:00	356° 32' 27"	1° 47' 14"	356° 06' 58"	0° 15' 54"	58' 14"	15' 52,10"	67° 50' 08"	21,76%
19:00	357° 06' 35"	1° 50' 02"	356° 37' 09"	0° 32' 01"	58' 17"	15' 52,75"	67° 52' 42"	21,38%
20:00	357° 40' 45"	1° 52' 50"	357° 07' 23"	0° 48' 10"	58' 19"	15' 53,40"	67° 55' 28"	21,01%
21:00	358° 14' 59"	1° 55' 38"	357° 37' 40"	1° 04' 20"	58' 22"	15' 54,06"	67° 58' 27"	20,63%
22:00	358° 49' 16"	1° 58' 25"	358° 08' 00"	1° 20' 31"	58' 24"	15' 54,71"	68° 01' 39"	20,26%
23:00	359° 23' 35"	2° 01' 11"	358° 38' 23"	1° 36' 42"	58' 26"	15' 55,36"	68° 05' 03"	19,89%
24:00	359° 57' 58"	2° 03' 58"	359° 08' 49"	1° 52' 55"	58' 29"	15' 56,01"	68° 08' 41"	19,52%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	52° 15' 41"	0,18"	49° 51' 00"	18° 20' 02"	1,0103127	15' 49,83"	23° 26' 17"	03m 40s
01:00	52° 18' 06"	0,18"	49° 53' 28"	18° 20' 39"	1,0103222	15' 49,83"	23° 26' 17"	03m 40s
02:00	52° 20' 31"	0,19"	49° 55' 55"	18° 21' 16"	1,0103317	15' 49,82"	23° 26' 17"	03m 40s
03:00	52° 22' 56"	0,19"	49° 58' 23"	18° 21' 53"	1,0103412	15' 49,81"	23° 26' 17"	03m 40s
04:00	52° 25' 20"	0,20"	50° 00' 50"	18° 22' 30"	1,0103506	15' 49,80"	23° 26' 17"	03m 40s
05:00	52° 27' 45"	0,20"	50° 03' 18"	18° 23' 07"	1,0103601	15' 49,79"	23° 26' 17"	03m 40s
06:00	52° 30' 10"	0,21"	50° 05' 46"	18° 23' 44"	1,0103696	15' 49,78"	23° 26' 17"	03m 40s
07:00	52° 32' 35"	0,21"	50° 08' 13"	18° 24' 21"	1,0103790	15' 49,77"	23° 26' 17"	03m 40s
08:00	52° 35' 00"	0,21"	50° 10' 41"	18° 24' 58"	1,0103885	15' 49,76"	23° 26' 17"	03m 40s
09:00	52° 37' 25"	0,22"	50° 13' 09"	18° 25' 35"	1,0103979	15' 49,75"	23° 26' 17"	03m 40s
10:00	52° 39' 50"	0,22"	50° 15' 36"	18° 26' 12"	1,0104074	15' 49,75"	23° 26' 17"	03m 40s
11:00	52° 42' 14"	0,23"	50° 18' 04"	18° 26' 49"	1,0104168	15' 49,74"	23° 26' 17"	03m 40s
12:00	52° 44' 39"	0,23"	50° 20' 31"	18° 27' 25"	1,0104262	15' 49,73"	23° 26' 17"	03m 40s
13:00	52° 47' 04"	0,24"	50° 22' 59"	18° 28' 02"	1,0104356	15' 49,72"	23° 26' 17"	03m 40s
14:00	52° 49' 29"	0,24"	50° 25' 27"	18° 28' 39"	1,0104450	15' 49,71"	23° 26' 17"	03m 40s
15:00	52° 51' 54"	0,25"	50° 27' 55"	18° 29' 16"	1,0104544	15' 49,70"	23° 26' 17"	03m 40s
16:00	52° 54' 19"	0,25"	50° 30' 22"	18° 29' 52"	1,0104638	15' 49,69"	23° 26' 17"	03m 40s
17:00	52° 56' 43"	0,26"	50° 32' 50"	18° 30' 29"	1,0104732	15' 49,68"	23° 26' 17"	03m 40s
18:00	52° 59' 08"	0,26"	50° 35' 18"	18° 31' 05"	1,0104826	15' 49,67"	23° 26' 17"	03m 40s
19:00	53° 01' 33"	0,26"	50° 37' 46"	18° 31' 42"	1,0104919	15' 49,67"	23° 26' 17"	03m 40s
20:00	53° 03' 58"	0,27"	50° 40' 14"	18° 32' 19"	1,0105013	15' 49,66"	23° 26' 17"	03m 40s
21:00	53° 06' 23"	0,27"	50° 42' 41"	18° 32' 55"	1,0105107	15' 49,65"	23° 26' 17"	03m 40s
22:00	53° 08' 47"	0,28"	50° 45' 09"	18° 33' 31"	1,0105200	15' 49,64"	23° 26' 17"	03m 40s
23:00	53° 11' 12"	0,28"	50° 47' 37"	18° 34' 08"	1,0105293	15' 49,63"	23° 26' 17"	03m 40s
24:00	53° 13' 37"	0,29"	50° 50' 05"	18° 34' 44"	1,0105387	15' 49,62"	23° 26' 17"	03m 40s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	359° 57' 58"	2° 03' 58"	359° 08' 49"	1° 52' 55"	58' 29"	15' 56,01"	68° 08' 41"	19,52%
01:00	0° 32' 24"	2° 06' 43"	359° 39' 18"	2° 09' 09"	58' 31"	15' 56,66"	68° 12' 32"	19,15%
02:00	1° 06' 53"	2° 09' 28"	0° 09' 51"	2° 25' 23"	58' 33"	15' 57,31"	68° 16' 36"	18,79%
03:00	1° 41' 25"	2° 12' 13"	0° 40' 27"	2° 41' 38"	58' 36"	15' 57,96"	68° 20' 53"	18,42%
04:00	2° 16' 01"	2° 14' 57"	1° 11' 06"	2° 57' 54"	58' 38"	15' 58,61"	68° 25' 25"	18,06%
05:00	2° 50' 39"	2° 17' 40"	1° 41' 49"	3° 14' 10"	58' 41"	15' 59,25"	68° 30' 10"	17,70%
06:00	3° 25' 20"	2° 20' 23"	2° 12' 35"	3° 30' 27"	58' 43"	16' 00,00"	68° 35' 10"	17,35%
07:00	4° 00' 05"	2° 23' 05"	2° 43' 25"	3° 46' 44"	58' 45"	16' 00,54"	68° 40' 24"	16,99%
08:00	4° 34' 52"	2° 25' 46"	3° 14' 19"	4° 03' 01"	58' 48"	16' 01,19"	68° 45' 53"	16,64%
09:00	5° 09' 43"	2° 28' 27"	3° 45' 17"	4° 19' 19"	58' 50"	16' 01,83"	68° 51' 37"	16,29%
10:00	5° 44' 37"	2° 31' 07"	4° 16' 19"	4° 35' 36"	58' 52"	16' 02,47"	68° 57' 35"	15,95%
11:00	6° 19' 34"	2° 33' 46"	4° 47' 25"	4° 51' 54"	58' 55"	16' 03,11"	69° 03' 50"	15,60%
12:00	6° 54' 33"	2° 36' 24"	5° 18' 35"	5° 08' 11"	58' 57"	16' 03,74"	69° 10' 19"	15,26%
13:00	7° 29' 36"	2° 39' 02"	5° 49' 49"	5° 24' 29"	58' 59"	16' 04,38"	69° 17' 05"	14,92%
14:00	8° 04' 42"	2° 41' 39"	6° 21' 07"	5° 40' 46"	59' 02"	16' 05,01"	69° 24' 07"	14,59%
15:00	8° 39' 51"	2° 44' 15"	6° 52' 30"	5° 57' 03"	59' 04"	16' 05,64"	69° 31' 26"	14,26%
16:00	9° 15' 04"	2° 46' 51"	7° 23' 58"	6° 13' 19"	59' 06"	16' 06,27"	69° 39' 01"	13,93%
17:00	9° 50' 19"	2° 49' 25"	7° 55' 29"	6° 29' 35"	59' 09"	16' 06,90"	69° 46' 54"	13,60%
18:00	10° 25' 37"	2° 51' 59"	8° 27' 06"	6° 45' 50"	59' 11"	16' 07,52"	69° 55' 04"	13,27%
19:00	11° 00' 58"	2° 54' 31"	8° 58' 47"	7° 02' 04"	59' 13"	16' 08,14"	70° 03' 32"	12,95%
20:00	11° 36' 23"	2° 57' 03"	9° 30' 33"	7° 18' 17"	59' 16"	16' 08,76"	70° 12' 18"	12,63%
21:00	12° 11' 50"	2° 59' 34"	10° 02' 24"	7° 34' 30"	59' 18"	16' 09,38"	70° 21' 23"	12,32%
22:00	12° 47' 20"	3° 02' 04"	10° 34' 20"	7° 50' 42"	59' 20"	16' 09,99"	70° 30' 47"	12,00%
23:00	13° 22' 54"	3° 04' 32"	11° 06' 21"	8° 06' 52"	59' 22"	16' 10,60"	70° 40' 30"	11,69%
24:00	13° 58' 30"	3° 07' 00"	11° 38' 27"	8° 23' 01"	59' 24"	16' 11,21"	70° 50' 34"	11,39%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	53° 13' 37"	0,29"	50° 50' 05"	18° 34' 44"	1,0105387	15' 49,62"	23° 26' 17"	03m 40s
01:00	53° 16' 02"	0,29"	50° 52' 33"	18° 35' 21"	1,0105480	15' 49,61"	23° 26' 17"	03m 40s
02:00	53° 18' 27"	0,29"	50° 55' 01"	18° 35' 57"	1,0105573	15' 49,60"	23° 26' 17"	03m 40s
03:00	53° 20' 52"	0,30"	50° 57' 29"	18° 36' 33"	1,0105666	15' 49,60"	23° 26' 17"	03m 40s
04:00	53° 23' 16"	0,30"	50° 59' 56"	18° 37' 10"	1,0105759	15' 49,59"	23° 26' 17"	03m 40s
05:00	53° 25' 41"	0,31"	51° 02' 24"	18° 37' 46"	1,0105852	15' 49,58"	23° 26' 17"	03m 40s
06:00	53° 28' 06"	0,31"	51° 04' 52"	18° 38' 22"	1,0105945	15' 49,57"	23° 26' 17"	03m 40s
07:00	53° 30' 31"	0,31"	51° 07' 20"	18° 38' 58"	1,0106038	15' 49,56"	23° 26' 17"	03m 40s
08:00	53° 32' 56"	0,32"	51° 09' 48"	18° 39' 34"	1,0106131	15' 49,55"	23° 26' 17"	03m 40s
09:00	53° 35' 20"	0,32"	51° 12' 16"	18° 40' 10"	1,0106223	15' 49,54"	23° 26' 17"	03m 40s
10:00	53° 37' 45"	0,33"	51° 14' 44"	18° 40' 46"	1,0106316	15' 49,53"	23° 26' 17"	03m 40s
11:00	53° 40' 10"	0,33"	51° 17' 12"	18° 41' 23"	1,0106408	15' 49,53"	23° 26' 17"	03m 40s
12:00	53° 42' 35"	0,33"	51° 19' 40"	18° 41' 59"	1,0106501	15' 49,52"	23° 26' 17"	03m 40s
13:00	53° 44' 59"	0,34"	51° 22' 09"	18° 42' 34"	1,0106593	15' 49,51"	23° 26' 17"	03m 40s
14:00	53° 47' 24"	0,34"	51° 24' 37"	18° 43' 10"	1,0106685	15' 49,50"	23° 26' 17"	03m 40s
15:00	53° 49' 49"	0,34"	51° 27' 05"	18° 43' 46"	1,0106778	15' 49,49"	23° 26' 17"	03m 40s
16:00	53° 52' 14"	0,35"	51° 29' 33"	18° 44' 22"	1,0106870	15' 49,48"	23° 26' 17"	03m 40s
17:00	53° 54' 39"	0,35"	51° 32' 01"	18° 44' 58"	1,0106962	15' 49,47"	23° 26' 17"	03m 40s
18:00	53° 57' 03"	0,35"	51° 34' 29"	18° 45' 34"	1,0107054	15' 49,47"	23° 26' 17"	03m 40s
19:00	53° 59' 28"	0,36"	51° 36' 57"	18° 46' 10"	1,0107146	15' 49,46"	23° 26' 17"	03m 40s
20:00	54° 01' 53"	0,36"	51° 39' 25"	18° 46' 45"	1,0107237	15' 49,45"	23° 26' 17"	03m 40s
21:00	54° 04' 18"	0,37"	51° 41' 54"	18° 47' 21"	1,0107329	15' 49,44"	23° 26' 17"	03m 40s
22:00	54° 06' 42"	0,37"	51° 44' 22"	18° 47' 57"	1,0107421	15' 49,43"	23° 26' 17"	03m 40s
23:00	54° 09' 07"	0,37"	51° 46' 50"	18° 48' 32"	1,0107512	15' 49,42"	23° 26' 17"	03m 40s
24:00	54° 11' 32"	0,37"	51° 49' 18"	18° 49' 08"	1,0107604	15' 49,41"	23° 26' 17"	03m 40s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	13° 58' 30"	3° 07' 00"	11° 38' 27"	8° 23' 01"	59' 24"	16' 11,21"	70° 50' 34"	11,39%
01:00	14° 34' 10"	3° 09' 27"	12° 10' 38"	8° 39' 09"	59' 27"	16' 11,82"	71° 00' 58"	11,08%
02:00	15° 09' 52"	3° 11' 53"	12° 42' 55"	8° 55' 15"	59' 29"	16' 12,42"	71° 11' 43"	10,78%
03:00	15° 45' 37"	3° 14' 18"	13° 15' 17"	9° 11' 20"	59' 31"	16' 13,02"	71° 22' 49"	10,49%
04:00	16° 21' 25"	3° 16' 41"	13° 47' 44"	9° 27' 23"	59' 33"	16' 13,61"	71° 34' 18"	10,19%
05:00	16° 57' 17"	3° 19' 04"	14° 20' 17"	9° 43' 25"	59' 35"	16' 14,20"	71° 46' 10"	9,90%
06:00	17° 33' 11"	3° 21' 25"	14° 52' 56"	9° 59' 24"	59' 38"	16' 14,79"	71° 58' 24"	9,62%
07:00	18° 09' 08"	3° 23' 45"	15° 25' 40"	10° 15' 22"	59' 40"	16' 15,37"	72° 11' 03"	9,33%
08:00	18° 45' 08"	3° 26' 04"	15° 58' 30"	10° 31' 17"	59' 42"	16' 15,95"	72° 24' 07"	9,05%
09:00	19° 21' 10"	3° 28' 22"	16° 31' 26"	10° 47' 11"	59' 44"	16' 16,53"	72° 37' 36"	8,78%
10:00	19° 57' 16"	3° 30' 39"	17° 04' 28"	11° 03' 01"	59' 46"	16' 17,10"	72° 51' 32"	8,51%
11:00	20° 33' 25"	3° 32' 54"	17° 37' 36"	11° 18' 50"	59' 48"	16' 17,67"	73° 05' 55"	8,24%
12:00	21° 09' 36"	3° 35' 08"	18° 10' 50"	11° 34' 36"	59' 50"	16' 18,23"	73° 20' 46"	7,97%
13:00	21° 45' 50"	3° 37' 21"	18° 44' 10"	11° 50' 19"	59' 52"	16' 18,79"	73° 36' 06"	7,71%
14:00	22° 22' 07"	3° 39' 32"	19° 17' 37"	12° 05' 59"	59' 54"	16' 19,34"	73° 51' 56"	7,45%
15:00	22° 58' 27"	3° 41' 42"	19° 51' 10"	12° 21' 37"	59' 56"	16' 19,89"	74° 08' 18"	7,20%
16:00	23° 34' 49"	3° 43' 51"	20° 24' 49"	12° 37' 11"	59' 58"	16' 20,43"	74° 25' 13"	6,95%
17:00	24° 11' 14"	3° 45' 58"	20° 58' 34"	12° 52' 43"	00' 00"	16' 20,97"	74° 42' 41"	6,70%
18:00	24° 47' 42"	3° 48' 04"	21° 32' 27"	13° 08' 11"	00' 02"	16' 21,51"	75° 00' 44"	6,46%
19:00	25° 24' 13"	3° 50' 09"	22° 06' 25"	13° 23' 35"	00' 04"	16' 22,04"	75° 19' 24"	6,22%
20:00	26° 00' 46"	3° 52' 12"	22° 40' 31"	13° 38' 56"	00' 06"	16' 22,56"	75° 38' 43"	5,99%
21:00	26° 37' 22"	3° 54' 14"	23° 14' 43"	13° 54' 14"	00' 08"	16' 23,08"	75° 58' 41"	5,76%
22:00	27° 14' 00"	3° 56' 14"	23° 49' 02"	14° 09' 27"	00' 10"	16' 23,59"	76° 19' 22"	5,53%
23:00	27° 50' 41"	3° 58' 13"	24° 23' 28"	14° 24' 37"	00' 12"	16' 24,10"	76° 40' 46"	5,31%
24:00	28° 27' 25"	4° 00' 10"	24° 58' 01"	14° 39' 43"	00' 14"	16' 24,60"	77° 02' 57"	5,09%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	54° 11' 32"	0,37"	51° 49' 18"	18° 49' 08"	1,0107604	15' 49,41"	23° 26' 17"	03m 40s
01:00	54° 13' 57"	0,38"	51° 51' 46"	18° 49' 44"	1,0107695	15' 49,41"	23° 26' 17"	03m 40s
02:00	54° 16' 21"	0,38"	51° 54' 15"	18° 50' 19"	1,0107786	15' 49,40"	23° 26' 17"	03m 40s
03:00	54° 18' 46"	0,38"	51° 56' 43"	18° 50' 55"	1,0107878	15' 49,39"	23° 26' 17"	03m 40s
04:00	54° 21' 11"	0,39"	51° 59' 11"	18° 51' 30"	1,0107969	15' 49,38"	23° 26' 17"	03m 40s
05:00	54° 23' 36"	0,39"	52° 01' 40"	18° 52' 06"	1,0108060	15' 49,37"	23° 26' 17"	03m 40s
06:00	54° 26' 00"	0,39"	52° 04' 08"	18° 52' 41"	1,0108151	15' 49,36"	23° 26' 17"	03m 40s
07:00	54° 28' 25"	0,40"	52° 06' 36"	18° 53' 16"	1,0108242	15' 49,35"	23° 26' 17"	03m 40s
08:00	54° 30' 50"	0,40"	52° 09' 05"	18° 53' 52"	1,0108333	15' 49,35"	23° 26' 17"	03m 40s
09:00	54° 33' 15"	0,40"	52° 11' 33"	18° 54' 27"	1,0108424	15' 49,34"	23° 26' 17"	03m 40s
10:00	54° 35' 39"	0,40"	52° 14' 01"	18° 55' 02"	1,0108514	15' 49,33"	23° 26' 17"	03m 40s
11:00	54° 38' 04"	0,41"	52° 16' 30"	18° 55' 37"	1,0108605	15' 49,32"	23° 26' 17"	03m 40s
12:00	54° 40' 29"	0,41"	52° 18' 58"	18° 56' 13"	1,0108695	15' 49,31"	23° 26' 17"	03m 40s
13:00	54° 42' 54"	0,41"	52° 21' 27"	18° 56' 48"	1,0108786	15' 49,30"	23° 26' 17"	03m 40s
14:00	54° 45' 18"	0,42"	52° 23' 55"	18° 57' 23"	1,0108876	15' 49,29"	23° 26' 17"	03m 40s
15:00	54° 47' 43"	0,42"	52° 26' 24"	18° 57' 58"	1,0108966	15' 49,29"	23° 26' 17"	03m 40s
16:00	54° 50' 08"	0,42"	52° 28' 52"	18° 58' 33"	1,0109057	15' 49,28"	23° 26' 17"	03m 40s
17:00	54° 52' 32"	0,42"	52° 31' 20"	18° 59' 08"	1,0109147	15' 49,27"	23° 26' 17"	03m 40s
18:00	54° 54' 57"	0,42"	52° 33' 49"	18° 59' 43"	1,0109237	15' 49,26"	23° 26' 17"	03m 40s
19:00	54° 57' 22"	0,43"	52° 36' 17"	19° 00' 18"	1,0109327	15' 49,25"	23° 26' 17"	03m 39s
20:00	54° 59' 47"	0,43"	52° 38' 46"	19° 00' 53"	1,0109416	15' 49,24"	23° 26' 17"	03m 39s
21:00	55° 02' 11"	0,43"	52° 41' 15"	19° 01' 28"	1,0109506	15' 49,24"	23° 26' 17"	03m 39s
22:00	55° 04' 36"	0,43"	52° 43' 43"	19° 02' 03"	1,0109596	15' 49,23"	23° 26' 17"	03m 39s
23:00	55° 07' 01"	0,44"	52° 46' 12"	19° 02' 38"	1,0109686	15' 49,22"	23° 26' 17"	03m 39s
24:00	55° 09' 25"	0,44"	52° 48' 40"	19° 03' 13"	1,0109775	15' 49,21"	23° 26' 17"	03m 39s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	28° 27' 25"	4° 00' 10"	24° 58' 01"	14° 39' 43"	00' 14"	16' 24,60"	77° 02' 57"	5,09%
01:00	29° 04' 11"	4° 02' 06"	25° 32' 40"	14° 54' 44"	00' 15"	16' 25,10"	77° 25' 56"	4,88%
02:00	29° 40' 59"	4° 04' 00"	26° 07' 27"	15° 09' 41"	00' 17"	16' 25,59"	77° 49' 47"	4,67%
03:00	30° 17' 50"	4° 05' 52"	26° 42' 21"	15° 24' 34"	00' 19"	16' 26,07"	78° 14' 32"	4,47%
04:00	30° 54' 44"	4° 07' 43"	27° 17' 22"	15° 39' 22"	00' 21"	16' 26,55"	78° 40' 13"	4,27%
05:00	31° 31' 40"	4° 09' 32"	27° 52' 30"	15° 54' 06"	00' 23"	16' 27,02"	79° 06' 56"	4,07%
06:00	32° 08' 38"	4° 11' 20"	28° 27' 46"	16° 08' 44"	00' 24"	16' 27,49"	79° 34' 42"	3,88%
07:00	32° 45' 39"	4° 13' 06"	29° 03' 09"	16° 23' 18"	00' 26"	16' 27,94"	80° 03' 37"	3,69%
08:00	33° 22' 42"	4° 14' 50"	29° 38' 39"	16° 37' 46"	00' 28"	16' 28,40"	80° 33' 45"	3,51%
09:00	33° 59' 47"	4° 16' 33"	30° 14' 17"	16° 52' 10"	00' 29"	16' 28,84"	81° 05' 11"	3,33%
10:00	34° 36' 54"	4° 18' 14"	30° 50' 02"	17° 06' 28"	00' 31"	16' 29,28"	81° 38' 00"	3,16%
11:00	35° 14' 04"	4° 19' 53"	31° 25' 54"	17° 20' 40"	00' 32"	16' 29,72"	82° 12' 19"	2,99%
12:00	35° 51' 16"	4° 21' 30"	32° 01' 54"	17° 34' 47"	00' 34"	16' 30,14"	82° 48' 14"	2,82%
13:00	36° 28' 30"	4° 23' 06"	32° 38' 02"	17° 48' 47"	00' 36"	16' 30,56"	83° 25' 53"	2,66%
14:00	37° 05' 47"	4° 24' 40"	33° 14' 17"	18° 02' 42"	00' 37"	16' 30,97"	84° 05' 24"	2,51%
15:00	37° 43' 05"	4° 26' 12"	33° 50' 40"	18° 16' 31"	00' 39"	16' 31,38"	84° 46' 57"	2,36%
16:00	38° 20' 25"	4° 27' 42"	34° 27' 10"	18° 30' 14"	00' 40"	16' 31,77"	85° 30' 43"	2,21%
17:00	38° 57' 48"	4° 29' 11"	35° 03' 48"	18° 43' 50"	00' 41"	16' 32,17"	86° 16' 53"	2,07%
18:00	39° 35' 12"	4° 30' 37"	35° 40' 34"	18° 57' 20"	00' 43"	16' 32,55"	87° 05' 41"	1,94%
19:00	40° 12' 38"	4° 32' 02"	36° 17' 28"	19° 10' 43"	00' 44"	16' 32,92"	87° 57' 24"	1,81%
20:00	40° 50' 07"	4° 33' 25"	36° 54' 29"	19° 23' 59"	00' 46"	16' 33,29"	88° 52' 17"	1,68%
21:00	41° 27' 37"	4° 34' 45"	37° 31' 38"	19° 37' 09"	00' 47"	16' 33,65"	89° 50' 42"	1,56%
22:00	42° 05' 09"	4° 36' 04"	38° 08' 55"	19° 50' 11"	00' 48"	16' 34,00"	90° 53' 02"	1,44%
23:00	42° 42' 42"	4° 37' 21"	38° 46' 19"	20° 03' 06"	00' 49"	16' 34,35"	91° 59' 43"	1,33%
24:00	43° 20' 18"	4° 38' 36"	39° 23' 51"	20° 15' 54"	00' 51"	16' 34,69"	93° 11' 16"	1,23%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	55° 09' 25"	0,44"	52° 48' 40"	19° 03' 13"	1,0109775	15' 49,21"	23° 26' 17"	03m 39s
01:00	55° 11' 50"	0,44"	52° 51' 09"	19° 03' 47"	1,0109865	15' 49,20"	23° 26' 17"	03m 39s
02:00	55° 14' 15"	0,44"	52° 53' 38"	19° 04' 22"	1,0109954	15' 49,19"	23° 26' 17"	03m 39s
03:00	55° 16' 40"	0,44"	52° 56' 06"	19° 04' 57"	1,0110043	15' 49,18"	23° 26' 17"	03m 39s
04:00	55° 19' 04"	0,45"	52° 58' 35"	19° 05' 31"	1,0110132	15' 49,18"	23° 26' 17"	03m 39s
05:00	55° 21' 29"	0,45"	53° 01' 03"	19° 06' 06"	1,0110222	15' 49,17"	23° 26' 17"	03m 39s
06:00	55° 23' 54"	0,45"	53° 03' 32"	19° 06' 41"	1,0110311	15' 49,16"	23° 26' 17"	03m 39s
07:00	55° 26' 18"	0,45"	53° 06' 01"	19° 07' 15"	1,0110399	15' 49,15"	23° 26' 17"	03m 39s
08:00	55° 28' 43"	0,45"	53° 08' 30"	19° 07' 50"	1,0110488	15' 49,14"	23° 26' 17"	03m 39s
09:00	55° 31' 08"	0,45"	53° 10' 58"	19° 08' 24"	1,0110577	15' 49,13"	23° 26' 17"	03m 39s
10:00	55° 33' 32"	0,46"	53° 13' 27"	19° 08' 59"	1,0110666	15' 49,13"	23° 26' 17"	03m 39s
11:00	55° 35' 57"	0,46"	53° 15' 56"	19° 09' 33"	1,0110754	15' 49,12"	23° 26' 17"	03m 39s
12:00	55° 38' 22"	0,46"	53° 18' 25"	19° 10' 08"	1,0110843	15' 49,11"	23° 26' 17"	03m 39s
13:00	55° 40' 46"	0,46"	53° 20' 53"	19° 10' 42"	1,0110931	15' 49,10"	23° 26' 17"	03m 38s
14:00	55° 43' 11"	0,46"	53° 23' 22"	19° 11' 16"	1,0111020	15' 49,09"	23° 26' 17"	03m 38s
15:00	55° 45' 36"	0,46"	53° 25' 51"	19° 11' 51"	1,0111108	15' 49,08"	23° 26' 17"	03m 38s
16:00	55° 48' 00"	0,46"	53° 28' 20"	19° 12' 25"	1,0111196	15' 49,08"	23° 26' 17"	03m 38s
17:00	55° 50' 25"	0,46"	53° 30' 49"	19° 12' 59"	1,0111284	15' 49,07"	23° 26' 17"	03m 38s
18:00	55° 52' 50"	0,46"	53° 33' 18"	19° 13' 33"	1,0111372	15' 49,06"	23° 26' 17"	03m 38s
19:00	55° 55' 14"	0,47"	53° 35' 46"	19° 14' 07"	1,0111460	15' 49,05"	23° 26' 17"	03m 38s
20:00	55° 57' 39"	0,47"	53° 38' 15"	19° 14' 42"	1,0111548	15' 49,04"	23° 26' 17"	03m 38s
21:00	56° 00' 04"	0,47"	53° 40' 44"	19° 15' 16"	1,0111636	15' 49,04"	23° 26' 17"	03m 38s
22:00	56° 02' 28"	0,47"	53° 43' 13"	19° 15' 50"	1,0111724	15' 49,03"	23° 26' 17"	03m 38s
23:00	56° 04' 53"	0,47"	53° 45' 42"	19° 16' 24"	1,0111811	15' 49,02"	23° 26' 17"	03m 38s
24:00	56° 07' 18"	0,47"	53° 48' 11"	19° 16' 58"	1,0111899	15' 49,01"	23° 26' 17"	03m 38s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	43° 20' 18"	4° 38' 36"	39° 23' 51"	20° 15' 54"	00' 51"	16' 34,69"	93° 11' 16"	1,23%
01:00	43° 57' 55"	4° 39' 49"	40° 01' 31"	20° 28' 34"	00' 52"	16' 35,01"	94° 28' 16"	1,13%
02:00	44° 35' 34"	4° 41' 01"	40° 39' 19"	20° 41' 07"	00' 53"	16' 35,34"	95° 51' 24"	1,03%
03:00	45° 13' 14"	4° 42' 10"	41° 17' 14"	20° 53' 31"	00' 54"	16' 35,65"	97° 21' 29"	0,94%
04:00	45° 50' 56"	4° 43' 17"	41° 55' 18"	21° 05' 48"	00' 55"	16' 35,95"	98° 59' 26"	0,85%
05:00	46° 28' 40"	4° 44' 22"	42° 33' 28"	21° 17' 57"	00' 56"	16' 36,25"	100° 46' 22"	0,77%
06:00	47° 06' 25"	4° 45' 25"	43° 11' 47"	21° 29' 57"	00' 57"	16' 36,54"	102° 43' 31"	0,70%
07:00	47° 44' 11"	4° 46' 26"	43° 50' 13"	21° 41' 50"	00' 58"	16' 36,82"	104° 52' 25"	0,63%
08:00	48° 21' 59"	4° 47' 25"	44° 28' 47"	21° 53' 33"	00' 59"	16' 37,09"	107° 14' 47"	0,56%
09:00	48° 59' 48"	4° 48' 22"	45° 07' 29"	22° 05' 08"	01' 00"	16' 37,35"	109° 52' 37"	0,50%
10:00	49° 37' 39"	4° 49' 16"	45° 46' 18"	22° 16' 34"	01' 01"	16' 37,61"	112° 48' 15"	0,45%
11:00	50° 15' 31"	4° 50' 09"	46° 25' 14"	22° 27' 52"	01' 02"	16' 37,85"	116° 04' 14"	0,40%
12:00	50° 53' 24"	4° 51' 00"	47° 04' 18"	22° 39' 00"	01' 03"	16' 38,09"	119° 43' 23"	0,35%
13:00	51° 31' 18"	4° 51' 48"	47° 43' 30"	22° 49' 59"	01' 04"	16' 38,32"	123° 48' 37"	0,31%
14:00	52° 09' 13"	4° 52' 35"	48° 22' 49"	23° 00' 48"	01' 05"	16' 38,54"	128° 22' 39"	0,28%
15:00	52° 47' 10"	4° 53' 19"	49° 02' 15"	23° 11' 29"	01' 06"	16' 38,75"	133° 27' 39"	0,25%
16:00	53° 25' 07"	4° 54' 01"	49° 41' 48"	23° 21' 59"	01' 06"	16' 38,95"	139° 04' 31"	0,23%
17:00	54° 03' 06"	4° 54' 41"	50° 21' 29"	23° 32' 20"	01' 07"	16' 39,14"	145° 12' 14"	0,21%
18:00	54° 41' 05"	4° 55' 19"	51° 01' 17"	23° 42' 31"	01' 08"	16' 39,33"	151° 46' 58"	0,20%
19:00	55° 19' 06"	4° 55' 54"	51° 41' 12"	23° 52' 32"	01' 08"	16' 39,50"	158° 41' 46"	0,19%
20:00	55° 57' 07"	4° 56' 28"	52° 21' 13"	24° 02' 23"	01' 09"	16' 39,67"	165° 46' 55"	0,19%
21:00	56° 35' 09"	4° 56' 59"	53° 01' 22"	24° 12' 03"	01' 10"	16' 39,83"	172° 51' 04"	0,19%
22:00	57° 13' 12"	4° 57' 28"	53° 41' 37"	24° 21' 33"	01' 10"	16' 39,98"	179° 43' 03"	0,20%
23:00	57° 51' 15"	4° 57' 55"	54° 22' 00"	24° 30' 53"	01' 11"	16' 40,12"	186° 13' 37"	0,21%
24:00	58° 29' 19"	4° 58' 19"	55° 02' 28"	24° 40' 02"	01' 11"	16' 40,25"	192° 16' 27"	0,23%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	56° 07' 18"	0,47"	53° 48' 11"	19° 16' 58"	1,0111899	15' 49,01"	23° 26' 17"	03m 38s
01:00	56° 09' 42"	0,47"	53° 50' 40"	19° 17' 32"	1,0111986	15' 49,00"	23° 26' 17"	03m 38s
02:00	56° 12' 07"	0,47"	53° 53' 09"	19° 18' 06"	1,0112073	15' 48,99"	23° 26' 17"	03m 38s
03:00	56° 14' 32"	0,47"	53° 55' 38"	19° 18' 40"	1,0112161	15' 48,99"	23° 26' 17"	03m 38s
04:00	56° 16' 56"	0,47"	53° 58' 07"	19° 19' 13"	1,0112248	15' 48,98"	23° 26' 17"	03m 37s
05:00	56° 19' 21"	0,47"	54° 00' 36"	19° 19' 47"	1,0112335	15' 48,97"	23° 26' 17"	03m 37s
06:00	56° 21' 46"	0,47"	54° 03' 05"	19° 20' 21"	1,0112422	15' 48,96"	23° 26' 17"	03m 37s
07:00	56° 24' 10"	0,47"	54° 05' 34"	19° 20' 55"	1,0112509	15' 48,95"	23° 26' 17"	03m 37s
08:00	56° 26' 35"	0,47"	54° 08' 03"	19° 21' 28"	1,0112596	15' 48,95"	23° 26' 17"	03m 37s
09:00	56° 28' 59"	0,47"	54° 10' 32"	19° 22' 02"	1,0112682	15' 48,94"	23° 26' 17"	03m 37s
10:00	56° 31' 24"	0,47"	54° 13' 01"	19° 22' 36"	1,0112769	15' 48,93"	23° 26' 17"	03m 37s
11:00	56° 33' 49"	0,47"	54° 15' 30"	19° 23' 09"	1,0112856	15' 48,92"	23° 26' 17"	03m 37s
12:00	56° 36' 13"	0,47"	54° 18' 00"	19° 23' 43"	1,0112942	15' 48,91"	23° 26' 17"	03m 37s
13:00	56° 38' 38"	0,47"	54° 20' 29"	19° 24' 17"	1,0113028	15' 48,90"	23° 26' 17"	03m 37s
14:00	56° 41' 03"	0,47"	54° 22' 58"	19° 24' 50"	1,0113115	15' 48,90"	23° 26' 17"	03m 37s
15:00	56° 43' 27"	0,47"	54° 25' 27"	19° 25' 24"	1,0113201	15' 48,89"	23° 26' 17"	03m 37s
16:00	56° 45' 52"	0,47"	54° 27' 56"	19° 25' 57"	1,0113287	15' 48,88"	23° 26' 17"	03m 36s
17:00	56° 48' 16"	0,47"	54° 30' 25"	19° 26' 30"	1,0113373	15' 48,87"	23° 26' 17"	03m 36s
18:00	56° 50' 41"	0,47"	54° 32' 55"	19° 27' 04"	1,0113459	15' 48,86"	23° 26' 17"	03m 36s
19:00	56° 53' 06"	0,47"	54° 35' 24"	19° 27' 37"	1,0113545	15' 48,86"	23° 26' 17"	03m 36s
20:00	56° 55' 30"	0,47"	54° 37' 53"	19° 28' 10"	1,0113631	15' 48,85"	23° 26' 17"	03m 36s
21:00	56° 57' 55"	0,47"	54° 40' 22"	19° 28' 44"	1,0113717	15' 48,84"	23° 26' 17"	03m 36s
22:00	57° 00' 19"	0,47"	54° 42' 52"	19° 29' 17"	1,0113802	15' 48,83"	23° 26' 17"	03m 36s
23:00	57° 02' 44"	0,47"	54° 45' 21"	19° 29' 50"	1,0113888	15' 48,82"	23° 26' 17"	03m 36s
24:00	57° 05' 09"	0,47"	54° 47' 50"	19° 30' 23"	1,0113973	15' 48,82"	23° 26' 17"	03m 36s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	58° 29' 19"	4° 58' 19"	55° 02' 28"	24° 40' 02"	01' 11"	16' 40,25"	192° 16' 27"	0,23%
01:00	59° 07' 24"	4° 58' 42"	55° 43' 04"	24° 49' 00"	01' 12"	16' 40,37"	197° 48' 21"	0,26%
02:00	59° 45' 29"	4° 59' 02"	56° 23' 45"	24° 57' 47"	01' 12"	16' 40,48"	202° 48' 43"	0,29%
03:00	60° 23' 35"	4° 59' 20"	57° 04' 33"	25° 06' 23"	01' 12"	16' 40,58"	207° 18' 47"	0,32%
04:00	61° 01' 41"	4° 59' 36"	57° 45' 27"	25° 14' 49"	01' 13"	16' 40,68"	211° 20' 51"	0,36%
05:00	61° 39' 48"	4° 59' 50"	58° 26' 27"	25° 23' 03"	01' 13"	16' 40,76"	214° 57' 43"	0,41%
06:00	62° 17' 55"	5° 00' 01"	59° 07' 33"	25° 31' 05"	01' 13"	16' 40,84"	218° 12' 17"	0,46%
07:00	62° 56' 02"	5° 00' 10"	59° 48' 45"	25° 38' 56"	01' 13"	16' 40,90"	221° 07' 19"	0,52%
08:00	63° 34' 10"	5° 00' 17"	60° 30' 02"	25° 46' 36"	01' 14"	16' 40,96"	223° 45' 20"	0,58%
09:00	64° 12' 17"	5° 00' 22"	61° 11' 25"	25° 54' 04"	01' 14"	16' 41,01"	226° 08' 36"	0,65%
10:00	64° 50' 25"	5° 00' 24"	61° 52' 53"	26° 01' 20"	01' 14"	16' 41,05"	228° 19' 03"	0,72%
11:00	65° 28' 34"	5° 00' 24"	62° 34' 27"	26° 08' 24"	01' 14"	16' 41,08"	230° 18' 22"	0,80%
12:00	66° 06' 42"	5° 00' 22"	63° 16' 05"	26° 15' 16"	01' 14"	16' 41,10"	232° 08' 00"	0,88%
13:00	66° 44' 50"	5° 00' 18"	63° 57' 49"	26° 21' 57"	01' 14"	16' 41,11"	233° 49' 11"	0,97%
14:00	67° 22' 58"	5° 00' 12"	64° 39' 37"	26° 28' 25"	01' 14"	16' 41,11"	235° 22' 58"	1,06%
15:00	68° 01' 06"	5° 00' 03"	65° 21' 29"	26° 34' 41"	01' 14"	16' 41,10"	236° 50' 15"	1,16%
16:00	68° 39' 14"	4° 59' 52"	66° 03' 26"	26° 40' 44"	01' 14"	16' 41,09"	238° 11' 49"	1,26%
17:00	69° 17' 22"	4° 59' 39"	66° 45' 28"	26° 46' 36"	01' 14"	16' 41,06"	239° 28' 20"	1,37%
18:00	69° 55' 29"	4° 59' 23"	67° 27' 33"	26° 52' 14"	01' 14"	16' 41,03"	240° 40' 21"	1,49%
19:00	70° 33' 36"	4° 59' 06"	68° 09' 42"	26° 57' 40"	01' 14"	16' 40,99"	241° 48' 23"	1,61%
20:00	71° 11' 43"	4° 58' 46"	68° 51' 55"	27° 02' 54"	01' 14"	16' 40,93"	242° 52' 50"	1,73%
21:00	71° 49' 50"	4° 58' 24"	69° 34' 11"	27° 07' 55"	01' 13"	16' 40,87"	243° 54' 06"	1,86%
22:00	72° 27' 56"	4° 58' 00"	70° 16' 31"	27° 12' 43"	01' 13"	16' 40,80"	244° 52' 30"	2,00%
23:00	73° 06' 02"	4° 57' 33"	70° 58' 53"	27° 17' 18"	01' 13"	16' 40,72"	245° 48' 18"	2,14%
24:00	73° 44' 07"	4° 57' 04"	71° 41' 19"	27° 21' 41"	01' 12"	16' 40,63"	246° 41' 46"	2,29%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	57° 05' 09"	0,47"	54° 47' 50"	19° 30' 23"	1,0113973	15' 48,82"	23° 26' 17"	03m 36s
01:00	57° 07' 33"	0,47"	54° 50' 20"	19° 30' 56"	1,0114059	15' 48,81"	23° 26' 17"	03m 36s
02:00	57° 09' 58"	0,47"	54° 52' 49"	19° 31' 30"	1,0114144	15' 48,80"	23° 26' 17"	03m 35s
03:00	57° 12' 22"	0,47"	54° 55' 18"	19° 32' 03"	1,0114229	15' 48,79"	23° 26' 17"	03m 35s
04:00	57° 14' 47"	0,46"	54° 57' 48"	19° 32' 36"	1,0114314	15' 48,78"	23° 26' 17"	03m 35s
05:00	57° 17' 11"	0,46"	55° 00' 17"	19° 33' 09"	1,0114399	15' 48,78"	23° 26' 17"	03m 35s
06:00	57° 19' 36"	0,46"	55° 02' 46"	19° 33' 42"	1,0114484	15' 48,77"	23° 26' 17"	03m 35s
07:00	57° 22' 01"	0,46"	55° 05' 16"	19° 34' 15"	1,0114569	15' 48,76"	23° 26' 17"	03m 35s
08:00	57° 24' 25"	0,46"	55° 07' 45"	19° 34' 47"	1,0114654	15' 48,75"	23° 26' 17"	03m 35s
09:00	57° 26' 50"	0,46"	55° 10' 15"	19° 35' 20"	1,0114739	15' 48,74"	23° 26' 17"	03m 35s
10:00	57° 29' 14"	0,46"	55° 12' 44"	19° 35' 53"	1,0114823	15' 48,74"	23° 26' 17"	03m 35s
11:00	57° 31' 39"	0,46"	55° 15' 13"	19° 36' 26"	1,0114908	15' 48,73"	23° 26' 17"	03m 35s
12:00	57° 34' 03"	0,45"	55° 17' 43"	19° 36' 59"	1,0114992	15' 48,72"	23° 26' 17"	03m 34s
13:00	57° 36' 28"	0,45"	55° 20' 12"	19° 37' 31"	1,0115077	15' 48,71"	23° 26' 17"	03m 34s
14:00	57° 38' 53"	0,45"	55° 22' 42"	19° 38' 04"	1,0115161	15' 48,70"	23° 26' 17"	03m 34s
15:00	57° 41' 17"	0,45"	55° 25' 11"	19° 38' 37"	1,0115245	15' 48,70"	23° 26' 17"	03m 34s
16:00	57° 43' 42"	0,45"	55° 27' 41"	19° 39' 09"	1,0115329	15' 48,69"	23° 26' 17"	03m 34s
17:00	57° 46' 06"	0,45"	55° 30' 10"	19° 39' 42"	1,0115413	15' 48,68"	23° 26' 17"	03m 34s
18:00	57° 48' 31"	0,44"	55° 32' 40"	19° 40' 14"	1,0115497	15' 48,67"	23° 26' 17"	03m 34s
19:00	57° 50' 55"	0,44"	55° 35' 10"	19° 40' 47"	1,0115581	15' 48,67"	23° 26' 17"	03m 34s
20:00	57° 53' 20"	0,44"	55° 37' 39"	19° 41' 19"	1,0115665	15' 48,66"	23° 26' 17"	03m 34s
21:00	57° 55' 44"	0,44"	55° 40' 09"	19° 41' 52"	1,0115748	15' 48,65"	23° 26' 17"	03m 33s
22:00	57° 58' 09"	0,44"	55° 42' 38"	19° 42' 24"	1,0115832	15' 48,64"	23° 26' 17"	03m 33s
23:00	58° 00' 33"	0,43"	55° 45' 08"	19° 42' 57"	1,0115916	15' 48,63"	23° 26' 17"	03m 33s
24:00	58° 02' 58"	0,43"	55° 47' 38"	19° 43' 29"	1,0115999	15' 48,63"	23° 26' 17"	03m 33s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	73° 44' 07"	4° 57' 04"	71° 41' 19"	27° 21' 41"	01' 12"	16' 40,63"	246° 41' 46"	2,29%
01:00	74° 22' 11"	4° 56' 34"	72° 23' 47"	27° 25' 50"	01' 12"	16' 40,53"	247° 33' 07"	2,44%
02:00	75° 00' 15"	4° 56' 01"	73° 06' 18"	27° 29' 47"	01' 12"	16' 40,43"	248° 22' 31"	2,59%
03:00	75° 38' 18"	4° 55' 25"	73° 48' 51"	27° 33' 30"	01' 11"	16' 40,31"	249° 10' 10"	2,75%
04:00	76° 16' 21"	4° 54' 48"	74° 31' 27"	27° 37' 01"	01' 11"	16' 40,19"	249° 56' 12"	2,92%
05:00	76° 54' 23"	4° 54' 08"	75° 14' 04"	27° 40' 18"	01' 10"	16' 40,06"	250° 40' 46"	3,09%
06:00	77° 32' 24"	4° 53' 27"	75° 56' 43"	27° 43' 23"	01' 10"	16' 39,91"	251° 23' 59"	3,27%
07:00	78° 10' 24"	4° 52' 43"	76° 39' 23"	27° 46' 14"	01' 09"	16' 39,76"	252° 05' 56"	3,45%
08:00	78° 48' 23"	4° 51' 57"	77° 22' 04"	27° 48' 51"	01' 09"	16' 39,61"	252° 46' 45"	3,63%
09:00	79° 26' 22"	4° 51' 09"	78° 04' 47"	27° 51' 16"	01' 08"	16' 39,44"	253° 26' 29"	3,82%
10:00	80° 04' 19"	4° 50' 18"	78° 47' 30"	27° 53' 28"	01' 07"	16' 39,26"	254° 05' 14"	4,02%
11:00	80° 42' 15"	4° 49' 26"	79° 30' 14"	27° 55' 26"	01' 07"	16' 39,08"	254° 43' 03"	4,22%
12:00	81° 20' 10"	4° 48' 31"	80° 12' 58"	27° 57' 11"	01' 06"	16' 38,88"	255° 20' 01"	4,42%
13:00	81° 58' 05"	4° 47' 35"	80° 55' 43"	27° 58' 42"	01' 05"	16' 38,68"	255° 56' 11"	4,63%
14:00	82° 35' 58"	4° 46' 36"	81° 38' 27"	28° 00' 01"	01' 05"	16' 38,47"	256° 31' 36"	4,85%
15:00	83° 13' 49"	4° 45' 35"	82° 21' 11"	28° 01' 06"	01' 04"	16' 38,26"	257° 06' 19"	5,07%
16:00	83° 51' 40"	4° 44' 32"	83° 03' 55"	28° 01' 58"	01' 03"	16' 38,03"	257° 40' 22"	5,29%
17:00	84° 29' 29"	4° 43' 27"	83° 46' 38"	28° 02' 36"	01' 02"	16' 37,80"	258° 13' 48"	5,52%
18:00	85° 07' 17"	4° 42' 21"	84° 29' 20"	28° 03' 02"	01' 01"	16' 37,55"	258° 46' 38"	5,75%
19:00	85° 45' 04"	4° 41' 12"	85° 12' 01"	28° 03' 14"	01' 00"	16' 37,30"	259° 18' 54"	5,99%
20:00	86° 22' 49"	4° 40' 01"	85° 54' 40"	28° 03' 13"	00' 59"	16' 37,05"	259° 50' 39"	6,23%
21:00	87° 00' 33"	4° 38' 48"	86° 37' 18"	28° 02' 59"	00' 58"	16' 36,78"	260° 21' 54"	6,48%
22:00	87° 38' 15"	4° 37' 33"	87° 19' 54"	28° 02' 31"	00' 57"	16' 36,51"	260° 52' 40"	6,73%
23:00	88° 15' 55"	4° 36' 16"	88° 02' 28"	28° 01' 50"	00' 56"	16' 36,23"	261° 22' 59"	6,98%
24:00	88° 53' 35"	4° 34' 57"	88° 45' 00"	28° 00' 57"	00' 55"	16' 35,94"	261° 52' 51"	7,24%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	58° 02' 58"	0,43"	55° 47' 38"	19° 43' 29"	1,0115999	15' 48,63"	23° 26' 17"	03m 33s
01:00	58° 05' 22"	0,43"	55° 50' 07"	19° 44' 01"	1,0116082	15' 48,62"	23° 26' 17"	03m 33s
02:00	58° 07' 47"	0,43"	55° 52' 37"	19° 44' 33"	1,0116166	15' 48,61"	23° 26' 17"	03m 33s
03:00	58° 10' 11"	0,43"	55° 55' 07"	19° 45' 06"	1,0116249	15' 48,60"	23° 26' 17"	03m 33s
04:00	58° 12' 36"	0,42"	55° 57' 36"	19° 45' 38"	1,0116332	15' 48,59"	23° 26' 17"	03m 33s
05:00	58° 15' 00"	0,42"	56° 00' 06"	19° 46' 10"	1,0116415	15' 48,59"	23° 26' 17"	03m 32s
06:00	58° 17' 25"	0,42"	56° 02' 36"	19° 46' 42"	1,0116498	15' 48,58"	23° 26' 17"	03m 32s
07:00	58° 19' 50"	0,42"	56° 05' 06"	19° 47' 14"	1,0116581	15' 48,57"	23° 26' 17"	03m 32s
08:00	58° 22' 14"	0,41"	56° 07' 35"	19° 47' 46"	1,0116664	15' 48,56"	23° 26' 17"	03m 32s
09:00	58° 24' 39"	0,41"	56° 10' 05"	19° 48' 18"	1,0116746	15' 48,56"	23° 26' 17"	03m 32s
10:00	58° 27' 03"	0,41"	56° 12' 35"	19° 48' 50"	1,0116829	15' 48,55"	23° 26' 17"	03m 32s
11:00	58° 29' 28"	0,41"	56° 15' 05"	19° 49' 22"	1,0116911	15' 48,54"	23° 26' 17"	03m 32s
12:00	58° 31' 52"	0,40"	56° 17' 34"	19° 49' 54"	1,0116994	15' 48,53"	23° 26' 17"	03m 32s
13:00	58° 34' 16"	0,40"	56° 20' 04"	19° 50' 26"	1,0117076	15' 48,53"	23° 26' 17"	03m 31s
14:00	58° 36' 41"	0,40"	56° 22' 34"	19° 50' 58"	1,0117159	15' 48,52"	23° 26' 17"	03m 31s
15:00	58° 39' 05"	0,40"	56° 25' 04"	19° 51' 30"	1,0117241	15' 48,51"	23° 26' 17"	03m 31s
16:00	58° 41' 30"	0,39"	56° 27' 34"	19° 52' 01"	1,0117323	15' 48,50"	23° 26' 17"	03m 31s
17:00	58° 43' 54"	0,39"	56° 30' 04"	19° 52' 33"	1,0117405	15' 48,49"	23° 26' 17"	03m 31s
18:00	58° 46' 19"	0,39"	56° 32' 34"	19° 53' 05"	1,0117487	15' 48,49"	23° 26' 17"	03m 31s
19:00	58° 48' 43"	0,38"	56° 35' 03"	19° 53' 37"	1,0117569	15' 48,48"	23° 26' 17"	03m 31s
20:00	58° 51' 08"	0,38"	56° 37' 33"	19° 54' 08"	1,0117651	15' 48,47"	23° 26' 17"	03m 30s
21:00	58° 53' 32"	0,38"	56° 40' 03"	19° 54' 40"	1,0117732	15' 48,46"	23° 26' 17"	03m 30s
22:00	58° 55' 57"	0,37"	56° 42' 33"	19° 55' 11"	1,0117814	15' 48,46"	23° 26' 17"	03m 30s
23:00	58° 58' 21"	0,37"	56° 45' 03"	19° 55' 43"	1,0117896	15' 48,45"	23° 26' 17"	03m 30s
24:00	59° 00' 46"	0,37"	56° 47' 33"	19° 56' 14"	1,0117977	15' 48,44"	23° 26' 17"	03m 30s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	88° 53' 35"	4° 34' 57"	88° 45' 00"	28° 00' 57"	00' 55"	16' 35,94"	261° 52' 51"	7,24%
01:00	89° 31' 12"	4° 33' 36"	89° 27' 29"	27° 59' 50"	00' 54"	16' 35,64"	262° 22' 19"	7,50%
02:00	90° 08' 48"	4° 32' 14"	90° 09' 56"	27° 58' 30"	00' 53"	16' 35,34"	262° 51' 22"	7,77%
03:00	90° 46' 22"	4° 30' 49"	90° 52' 20"	27° 56' 57"	00' 52"	16' 35,03"	263° 20' 02"	8,04%
04:00	91° 23' 55"	4° 29' 22"	91° 34' 41"	27° 55' 12"	00' 51"	16' 34,71"	263° 48' 20"	8,32%
05:00	92° 01' 26"	4° 27' 54"	92° 16' 58"	27° 53' 13"	00' 50"	16' 34,38"	264° 16' 16"	8,60%
06:00	92° 38' 54"	4° 26' 24"	92° 59' 12"	27° 51' 02"	00' 48"	16' 34,05"	264° 43' 51"	8,89%
07:00	93° 16' 22"	4° 24' 52"	93° 41' 23"	27° 48' 38"	00' 47"	16' 33,71"	265° 11' 06"	9,17%
08:00	93° 53' 47"	4° 23' 18"	94° 23' 29"	27° 46' 01"	00' 46"	16' 33,37"	265° 38' 01"	9,47%
09:00	94° 31' 10"	4° 21' 42"	95° 05' 32"	27° 43' 11"	00' 45"	16' 33,01"	266° 04' 38"	9,76%
10:00	95° 08' 32"	4° 20' 04"	95° 47' 30"	27° 40' 09"	00' 43"	16' 32,65"	266° 30' 56"	10,06%
11:00	95° 45' 51"	4° 18' 25"	96° 29' 24"	27° 36' 55"	00' 42"	16' 32,29"	266° 56' 55"	10,37%
12:00	96° 23' 09"	4° 16' 44"	97° 11' 13"	27° 33' 28"	00' 40"	16' 31,91"	267° 22' 37"	10,68%
13:00	97° 00' 25"	4° 15' 01"	97° 52' 57"	27° 29' 49"	00' 39"	16' 31,53"	267° 48' 02"	10,99%
14:00	97° 37' 38"	4° 13' 17"	98° 34' 37"	27° 25' 57"	00' 38"	16' 31,15"	268° 13' 10"	11,30%
15:00	98° 14' 50"	4° 11' 30"	99° 16' 11"	27° 21' 53"	00' 36"	16' 30,75"	268° 38' 01"	11,62%
16:00	98° 51' 59"	4° 09' 42"	99° 57' 41"	27° 17' 38"	00' 35"	16' 30,36"	269° 02' 35"	11,95%
17:00	99° 29' 06"	4° 07' 53"	100° 39' 04"	27° 13' 10"	00' 33"	16' 29,95"	269° 26' 54"	12,27%
18:00	100° 06' 11"	4° 06' 01"	101° 20' 22"	27° 08' 30"	00' 32"	16' 29,54"	269° 50' 57"	12,60%
19:00	100° 43' 14"	4° 04' 09"	102° 01' 35"	27° 03' 38"	00' 30"	16' 29,13"	270° 14' 44"	12,94%
20:00	101° 20' 15"	4° 02' 14"	102° 42' 41"	26° 58' 35"	00' 29"	16' 28,70"	270° 38' 16"	13,27%
21:00	101° 57' 13"	4° 00' 18"	103° 23' 41"	26° 53' 20"	00' 27"	16' 28,28"	271° 01' 33"	13,61%
22:00	102° 34' 09"	3° 58' 20"	104° 04' 36"	26° 47' 54"	00' 26"	16' 27,84"	271° 24' 35"	13,96%
23:00	103° 11' 03"	3° 56' 21"	104° 45' 24"	26° 42' 16"	00' 24"	16' 27,40"	271° 47' 22"	14,30%
24:00	103° 47' 55"	3° 54' 20"	105° 26' 05"	26° 36' 27"	00' 22"	16' 26,96"	272° 09' 55"	14,66%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	59° 00' 46"	0,37"	56° 47' 33"	19° 56' 14"	1,0117977	15' 48,44"	23° 26' 17"	03m 30s
01:00	59° 03' 10"	0,36"	56° 50' 03"	19° 56' 46"	1,0118058	15' 48,43"	23° 26' 17"	03m 30s
02:00	59° 05' 35"	0,36"	56° 52' 33"	19° 57' 17"	1,0118140	15' 48,43"	23° 26' 17"	03m 30s
03:00	59° 07' 59"	0,36"	56° 55' 03"	19° 57' 49"	1,0118221	15' 48,42"	23° 26' 17"	03m 29s
04:00	59° 10' 24"	0,35"	56° 57' 33"	19° 58' 20"	1,0118302	15' 48,41"	23° 26' 17"	03m 29s
05:00	59° 12' 48"	0,35"	57° 00' 03"	19° 58' 51"	1,0118383	15' 48,40"	23° 26' 17"	03m 29s
06:00	59° 15' 12"	0,35"	57° 02' 33"	19° 59' 22"	1,0118464	15' 48,39"	23° 26' 17"	03m 29s
07:00	59° 17' 37"	0,34"	57° 05' 03"	19° 59' 54"	1,0118545	15' 48,39"	23° 26' 17"	03m 29s
08:00	59° 20' 01"	0,34"	57° 07' 33"	20° 00' 25"	1,0118626	15' 48,38"	23° 26' 17"	03m 29s
09:00	59° 22' 26"	0,34"	57° 10' 03"	20° 00' 56"	1,0118707	15' 48,37"	23° 26' 17"	03m 29s
10:00	59° 24' 50"	0,33"	57° 12' 34"	20° 01' 27"	1,0118788	15' 48,36"	23° 26' 17"	03m 28s
11:00	59° 27' 15"	0,33"	57° 15' 04"	20° 01' 58"	1,0118868	15' 48,36"	23° 26' 17"	03m 28s
12:00	59° 29' 39"	0,32"	57° 17' 34"	20° 02' 29"	1,0118949	15' 48,35"	23° 26' 17"	03m 28s
13:00	59° 32' 03"	0,32"	57° 20' 04"	20° 03' 00"	1,0119029	15' 48,34"	23° 26' 17"	03m 28s
14:00	59° 34' 28"	0,32"	57° 22' 34"	20° 03' 31"	1,0119110	15' 48,33"	23° 26' 17"	03m 28s
15:00	59° 36' 52"	0,31"	57° 25' 04"	20° 04' 02"	1,0119190	15' 48,33"	23° 26' 17"	03m 28s
16:00	59° 39' 17"	0,31"	57° 27' 35"	20° 04' 33"	1,0119270	15' 48,32"	23° 26' 17"	03m 28s
17:00	59° 41' 41"	0,30"	57° 30' 05"	20° 05' 04"	1,0119350	15' 48,31"	23° 26' 17"	03m 27s
18:00	59° 44' 05"	0,30"	57° 32' 35"	20° 05' 35"	1,0119431	15' 48,30"	23° 26' 17"	03m 27s
19:00	59° 46' 30"	0,30"	57° 35' 05"	20° 06' 06"	1,0119511	15' 48,30"	23° 26' 17"	03m 27s
20:00	59° 48' 54"	0,29"	57° 37' 35"	20° 06' 36"	1,0119591	15' 48,29"	23° 26' 17"	03m 27s
21:00	59° 51' 19"	0,29"	57° 40' 06"	20° 07' 07"	1,0119670	15' 48,28"	23° 26' 17"	03m 27s
22:00	59° 53' 43"	0,28"	57° 42' 36"	20° 07' 38"	1,0119750	15' 48,27"	23° 26' 17"	03m 27s
23:00	59° 56' 07"	0,28"	57° 45' 06"	20° 08' 09"	1,0119830	15' 48,27"	23° 26' 17"	03m 26s
24:00	59° 58' 32"	0,28"	57° 47' 37"	20° 08' 39"	1,0119910	15' 48,26"	23° 26' 17"	03m 26s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	103° 47' 55"	3° 54' 20"	105° 26' 05"	26° 36' 27"	00' 22"	16' 26,96"	272° 09' 55"	14,66%
01:00	104° 24' 44"	3° 52' 18"	106° 06' 40"	26° 30' 26"	00' 21"	16' 26,51"	272° 32' 13"	15,01%
02:00	105° 01' 31"	3° 50' 14"	106° 47' 08"	26° 24' 15"	00' 19"	16' 26,05"	272° 54' 16"	15,36%
03:00	105° 38' 15"	3° 48' 09"	107° 27' 29"	26° 17' 52"	00' 17"	16' 25,59"	273° 16' 06"	15,72%
04:00	106° 14' 57"	3° 46' 03"	108° 07' 44"	26° 11' 19"	00' 16"	16' 25,13"	273° 37' 41"	16,09%
05:00	106° 51' 37"	3° 43' 55"	108° 47' 51"	26° 04' 35"	00' 14"	16' 24,66"	273° 59' 02"	16,45%
06:00	107° 28' 14"	3° 41' 45"	109° 27' 51"	25° 57' 40"	00' 12"	16' 24,19"	274° 20' 09"	16,82%
07:00	108° 04' 49"	3° 39' 34"	110° 07' 44"	25° 50' 35"	00' 10"	16' 23,71"	274° 41' 03"	17,19%
08:00	108° 41' 21"	3° 37' 22"	110° 47' 30"	25° 43' 19"	00' 09"	16' 23,22"	275° 01' 42"	17,57%
09:00	109° 17' 51"	3° 35' 08"	111° 27' 08"	25° 35' 53"	00' 07"	16' 22,73"	275° 22' 08"	17,94%
10:00	109° 54' 19"	3° 32' 53"	112° 06' 39"	25° 28' 17"	00' 05"	16' 22,24"	275° 42' 21"	18,32%
11:00	110° 30' 43"	3° 30' 37"	112° 46' 02"	25° 20' 30"	00' 03"	16' 21,75"	276° 02' 20"	18,71%
12:00	111° 07' 06"	3° 28' 20"	113° 25' 17"	25° 12' 34"	00' 01"	16' 21,24"	276° 22' 05"	19,09%
13:00	111° 43' 25"	3° 26' 01"	114° 04' 25"	25° 04' 28"	59' 59"	16' 20,74"	276° 41' 37"	19,48%
14:00	112° 19' 42"	3° 23' 41"	114° 43' 25"	24° 56' 12"	59' 58"	16' 20,23"	277° 00' 56"	19,87%
15:00	112° 55' 57"	3° 21' 20"	115° 22' 16"	24° 47' 47"	59' 56"	16' 19,72"	277° 20' 01"	20,26%
16:00	113° 32' 09"	3° 18' 57"	116° 01' 01"	24° 39' 12"	59' 54"	16' 19,20"	277° 38' 53"	20,66%
17:00	114° 08' 18"	3° 16' 34"	116° 39' 37"	24° 30' 28"	59' 52"	16' 18,68"	277° 57' 32"	21,05%
18:00	114° 44' 25"	3° 14' 09"	117° 18' 05"	24° 21' 35"	59' 50"	16' 18,16"	278° 15' 58"	21,45%
19:00	115° 20' 29"	3° 11' 43"	117° 56' 25"	24° 12' 32"	59' 48"	16' 17,63"	278° 34' 10"	21,85%
20:00	115° 56' 30"	3° 09' 16"	118° 34' 37"	24° 03' 21"	59' 46"	16' 17,10"	278° 52' 10"	22,26%
21:00	116° 32' 29"	3° 06' 48"	119° 12' 40"	23° 54' 01"	59' 44"	16' 16,57"	279° 09' 57"	22,66%
22:00	117° 08' 25"	3° 04' 19"	119° 50' 36"	23° 44' 32"	59' 42"	16' 16,03"	279° 27' 30"	23,07%
23:00	117° 44' 18"	3° 01' 49"	120° 28' 23"	23° 34' 54"	59' 40"	16' 15,49"	279° 44' 51"	23,48%
24:00	118° 20' 09"	2° 59' 18"	121° 06' 02"	23° 25' 09"	59' 38"	16' 14,95"	280° 01' 59"	23,90%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	59° 58' 32"	0,28"	57° 47' 37"	20° 08' 39"	1,0119910	15' 48,26"	23° 26' 17"	03m 26s
01:00	60° 00' 56"	0,27"	57° 50' 07"	20° 09' 10"	1,0119989	15' 48,25"	23° 26' 17"	03m 26s
02:00	60° 03' 21"	0,27"	57° 52' 37"	20° 09' 40"	1,0120069	15' 48,24"	23° 26' 17"	03m 26s
03:00	60° 05' 45"	0,26"	57° 55' 07"	20° 10' 11"	1,0120148	15' 48,24"	23° 26' 17"	03m 26s
04:00	60° 08' 09"	0,26"	57° 57' 38"	20° 10' 41"	1,0120227	15' 48,23"	23° 26' 17"	03m 26s
05:00	60° 10' 34"	0,25"	58° 00' 08"	20° 11' 12"	1,0120307	15' 48,22"	23° 26' 17"	03m 25s
06:00	60° 12' 58"	0,25"	58° 02' 39"	20° 11' 42"	1,0120386	15' 48,21"	23° 26' 17"	03m 25s
07:00	60° 15' 22"	0,25"	58° 05' 09"	20° 12' 13"	1,0120465	15' 48,21"	23° 26' 17"	03m 25s
08:00	60° 17' 47"	0,24"	58° 07' 39"	20° 12' 43"	1,0120544	15' 48,20"	23° 26' 17"	03m 25s
09:00	60° 20' 11"	0,24"	58° 10' 10"	20° 13' 13"	1,0120623	15' 48,19"	23° 26' 17"	03m 25s
10:00	60° 22' 36"	0,23"	58° 12' 40"	20° 13' 43"	1,0120702	15' 48,19"	23° 26' 17"	03m 25s
11:00	60° 25' 00"	0,23"	58° 15' 11"	20° 14' 14"	1,0120781	15' 48,18"	23° 26' 17"	03m 24s
12:00	60° 27' 24"	0,22"	58° 17' 41"	20° 14' 44"	1,0120859	15' 48,17"	23° 26' 17"	03m 24s
13:00	60° 29' 49"	0,22"	58° 20' 12"	20° 15' 14"	1,0120938	15' 48,16"	23° 26' 17"	03m 24s
14:00	60° 32' 13"	0,21"	58° 22' 42"	20° 15' 44"	1,0121017	15' 48,16"	23° 26' 17"	03m 24s
15:00	60° 34' 37"	0,21"	58° 25' 13"	20° 16' 14"	1,0121095	15' 48,15"	23° 26' 17"	03m 24s
16:00	60° 37' 02"	0,20"	58° 27' 43"	20° 16' 44"	1,0121174	15' 48,14"	23° 26' 17"	03m 24s
17:00	60° 39' 26"	0,20"	58° 30' 14"	20° 17' 14"	1,0121252	15' 48,13"	23° 26' 17"	03m 23s
18:00	60° 41' 50"	0,19"	58° 32' 44"	20° 17' 44"	1,0121331	15' 48,13"	23° 26' 17"	03m 23s
19:00	60° 44' 15"	0,19"	58° 35' 15"	20° 18' 14"	1,0121409	15' 48,12"	23° 26' 17"	03m 23s
20:00	60° 46' 39"	0,18"	58° 37' 45"	20° 18' 44"	1,0121487	15' 48,11"	23° 26' 17"	03m 23s
21:00	60° 49' 03"	0,18"	58° 40' 16"	20° 19' 14"	1,0121565	15' 48,10"	23° 26' 17"	03m 23s
22:00	60° 51' 28"	0,18"	58° 42' 46"	20° 19' 44"	1,0121643	15' 48,10"	23° 26' 17"	03m 22s
23:00	60° 53' 52"	0,17"	58° 45' 17"	20° 20' 14"	1,0121721	15' 48,09"	23° 26' 17"	03m 22s
24:00	60° 56' 16"	0,17"	58° 47' 48"	20° 20' 43"	1,0121799	15' 48,08"	23° 26' 17"	03m 22s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	118° 20' 09"	2° 59' 18"	121° 06' 02"	23° 25' 09"	59' 38"	16' 14,95"	280° 01' 59"	23,90%
01:00	118° 55' 56"	2° 56' 46"	121° 43' 33"	23° 15' 14"	59' 36"	16' 14,40"	280° 18' 54"	24,31%
02:00	119° 31' 42"	2° 54' 12"	122° 20' 56"	23° 05' 12"	59' 34"	16' 13,85"	280° 35' 36"	24,73%
03:00	120° 07' 24"	2° 51' 38"	122° 58' 10"	22° 55' 02"	59' 32"	16' 13,30"	280° 52' 06"	25,14%
04:00	120° 43' 04"	2° 49' 03"	123° 35' 16"	22° 44' 43"	59' 30"	16' 12,75"	281° 08' 23"	25,56%
05:00	121° 18' 41"	2° 46' 27"	124° 12' 14"	22° 34' 17"	59' 28"	16' 12,19"	281° 24' 27"	25,98%
06:00	121° 54' 15"	2° 43' 50"	124° 49' 03"	22° 23' 43"	59' 26"	16' 11,63"	281° 40' 19"	26,41%
07:00	122° 29' 47"	2° 41' 13"	125° 25' 44"	22° 13' 02"	59' 24"	16' 11,07"	281° 55' 58"	26,83%
08:00	123° 05' 16"	2° 38' 34"	126° 02' 17"	22° 02' 13"	59' 22"	16' 10,51"	282° 11' 24"	27,26%
09:00	123° 40' 42"	2° 35' 55"	126° 38' 42"	21° 51' 17"	59' 20"	16' 09,94"	282° 26' 38"	27,69%
10:00	124° 16' 05"	2° 33' 14"	127° 14' 58"	21° 40' 14"	59' 18"	16' 09,38"	282° 41' 40"	28,12%
11:00	124° 51' 26"	2° 30' 33"	127° 51' 06"	21° 29' 04"	59' 16"	16' 08,81"	282° 56' 29"	28,55%
12:00	125° 26' 43"	2° 27' 52"	128° 27' 06"	21° 17' 47"	59' 14"	16' 08,24"	283° 11' 06"	28,98%
13:00	126° 01' 58"	2° 25' 09"	129° 02' 57"	21° 06' 23"	59' 11"	16' 07,67"	283° 25' 30"	29,41%
14:00	126° 37' 11"	2° 22' 26"	129° 38' 41"	20° 54' 52"	59' 09"	16' 07,09"	283° 39' 43"	29,85%
15:00	127° 12' 20"	2° 19' 42"	130° 14' 16"	20° 43' 15"	59' 07"	16' 06,52"	283° 53' 43"	30,29%
16:00	127° 47' 27"	2° 16' 57"	130° 49' 43"	20° 31' 31"	59' 05"	16' 05,94"	284° 07' 31"	30,72%
17:00	128° 22' 31"	2° 14' 12"	131° 25' 02"	20° 19' 41"	59' 03"	16' 05,36"	284° 21' 06"	31,16%
18:00	128° 57' 32"	2° 11' 26"	132° 00' 13"	20° 07' 45"	59' 01"	16' 04,78"	284° 34' 30"	31,60%
19:00	129° 32' 31"	2° 08' 39"	132° 35' 16"	19° 55' 43"	58' 59"	16' 04,20"	284° 47' 42"	32,04%
20:00	130° 07' 27"	2° 05' 52"	133° 10' 11"	19° 43' 35"	58' 57"	16' 03,62"	285° 00' 41"	32,48%
21:00	130° 42' 20"	2° 03' 05"	133° 44' 58"	19° 31' 21"	58' 55"	16' 03,04"	285° 13' 29"	32,93%
22:00	131° 17' 10"	2° 00' 16"	134° 19' 37"	19° 19' 01"	58' 52"	16' 02,46"	285° 26' 05"	33,37%
23:00	131° 51' 57"	1° 57' 27"	134° 54' 08"	19° 06' 36"	58' 50"	16' 01,87"	285° 38' 29"	33,81%
24:00	132° 26' 42"	1° 54' 38"	135° 28' 32"	18° 54' 05"	58' 48"	16' 01,29"	285° 50' 41"	34,26%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	60° 56' 16"	0,17"	58° 47' 48"	20° 20' 43"	1,0121799	15' 48,08"	23° 26' 17"	03m 22s
01:00	60° 58' 41"	0,16"	58° 50' 18"	20° 21' 13"	1,0121877	15' 48,08"	23° 26' 17"	03m 22s
02:00	61° 01' 05"	0,16"	58° 52' 49"	20° 21' 43"	1,0121955	15' 48,07"	23° 26' 17"	03m 22s
03:00	61° 03' 29"	0,15"	58° 55' 19"	20° 22' 12"	1,0122032	15' 48,06"	23° 26' 17"	03m 22s
04:00	61° 05' 54"	0,15"	58° 57' 50"	20° 22' 42"	1,0122110	15' 48,05"	23° 26' 17"	03m 21s
05:00	61° 08' 18"	0,14"	59° 00' 21"	20° 23' 12"	1,0122188	15' 48,05"	23° 26' 17"	03m 21s
06:00	61° 10' 42"	0,14"	59° 02' 51"	20° 23' 41"	1,0122265	15' 48,04"	23° 26' 17"	03m 21s
07:00	61° 13' 06"	0,13"	59° 05' 22"	20° 24' 11"	1,0122342	15' 48,03"	23° 26' 17"	03m 21s
08:00	61° 15' 31"	0,13"	59° 07' 53"	20° 24' 40"	1,0122420	15' 48,02"	23° 26' 17"	03m 21s
09:00	61° 17' 55"	0,12"	59° 10' 24"	20° 25' 09"	1,0122497	15' 48,02"	23° 26' 17"	03m 20s
10:00	61° 20' 19"	0,12"	59° 12' 54"	20° 25' 39"	1,0122574	15' 48,01"	23° 26' 17"	03m 20s
11:00	61° 22' 44"	0,11"	59° 15' 25"	20° 26' 08"	1,0122651	15' 48,00"	23° 26' 17"	03m 20s
12:00	61° 25' 08"	0,11"	59° 17' 56"	20° 26' 37"	1,0122729	15' 48,00"	23° 26' 17"	03m 20s
13:00	61° 27' 32"	0,10"	59° 20' 27"	20° 27' 07"	1,0122806	15' 47,99"	23° 26' 17"	03m 20s
14:00	61° 29' 56"	0,09"	59° 22' 57"	20° 27' 36"	1,0122882	15' 47,98"	23° 26' 17"	03m 19s
15:00	61° 32' 21"	0,09"	59° 25' 28"	20° 28' 05"	1,0122959	15' 47,97"	23° 26' 17"	03m 19s
16:00	61° 34' 45"	0,08"	59° 27' 59"	20° 28' 34"	1,0123036	15' 47,97"	23° 26' 17"	03m 19s
17:00	61° 37' 09"	0,08"	59° 30' 30"	20° 29' 04"	1,0123113	15' 47,96"	23° 26' 17"	03m 19s
18:00	61° 39' 34"	0,07"	59° 33' 01"	20° 29' 33"	1,0123190	15' 47,95"	23° 26' 17"	03m 19s
19:00	61° 41' 58"	0,07"	59° 35' 32"	20° 30' 02"	1,0123266	15' 47,95"	23° 26' 17"	03m 18s
20:00	61° 44' 22"	0,06"	59° 38' 02"	20° 30' 31"	1,0123343	15' 47,94"	23° 26' 17"	03m 18s
21:00	61° 46' 46"	0,06"	59° 40' 33"	20° 31' 00"	1,0123419	15' 47,93"	23° 26' 17"	03m 18s
22:00	61° 49' 11"	0,05"	59° 43' 04"	20° 31' 29"	1,0123496	15' 47,92"	23° 26' 17"	03m 18s
23:00	61° 51' 35"	0,05"	59° 45' 35"	20° 31' 58"	1,0123572	15' 47,92"	23° 26' 17"	03m 18s
24:00	61° 53' 59"	0,04"	59° 48' 06"	20° 32' 26"	1,0123648	15' 47,91"	23° 26' 17"	03m 17s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	132° 26' 42"	1° 54' 38"	135° 28' 32"	18° 54' 05"	58' 48"	16' 01,29"	285° 50' 41"	34,26%
01:00	133° 01' 24"	1° 51' 48"	136° 02' 48"	18° 41' 29"	58' 46"	16' 00,70"	286° 02' 41"	34,71%
02:00	133° 36' 03"	1° 48' 58"	136° 36' 56"	18° 28' 48"	58' 44"	16' 00,12"	286° 14' 30"	35,15%
03:00	134° 10' 40"	1° 46' 07"	137° 10' 56"	18° 16' 01"	58' 42"	16' 00,00"	286° 26' 07"	35,60%
04:00	134° 45' 14"	1° 43' 16"	137° 44' 49"	18° 03' 10"	58' 39"	15' 58,95"	286° 37' 32"	36,05%
05:00	135° 19' 45"	1° 40' 24"	138° 18' 34"	17° 50' 14"	58' 37"	15' 58,36"	286° 48' 46"	36,50%
06:00	135° 54' 13"	1° 37' 32"	138° 52' 12"	17° 37' 12"	58' 35"	15' 57,77"	286° 59' 49"	36,95%
07:00	136° 28' 39"	1° 34' 40"	139° 25' 42"	17° 24' 06"	58' 33"	15' 57,18"	287° 10' 40"	37,40%
08:00	137° 03' 02"	1° 31' 47"	139° 59' 05"	17° 10' 56"	58' 31"	15' 56,60"	287° 21' 19"	37,85%
09:00	137° 37' 22"	1° 28' 54"	140° 32' 21"	16° 57' 41"	58' 29"	15' 56,01"	287° 31' 47"	38,30%
10:00	138° 11' 39"	1° 26' 01"	141° 05' 30"	16° 44' 22"	58' 27"	15' 55,42"	287° 42' 04"	38,75%
11:00	138° 45' 54"	1° 23' 07"	141° 38' 31"	16° 30' 58"	58' 24"	15' 54,83"	287° 52' 10"	39,20%
12:00	139° 20' 06"	1° 20' 13"	142° 11' 25"	16° 17' 30"	58' 22"	15' 54,25"	288° 02' 04"	39,65%
13:00	139° 54' 16"	1° 17' 19"	142° 44' 13"	16° 03' 59"	58' 20"	15' 53,66"	288° 11' 47"	40,11%
14:00	140° 28' 23"	1° 14' 24"	143° 16' 53"	15° 50' 23"	58' 18"	15' 53,07"	288° 21' 19"	40,56%
15:00	141° 02' 27"	1° 11' 30"	143° 49' 26"	15° 36' 43"	58' 16"	15' 52,49"	288° 30' 41"	41,01%
16:00	141° 36' 29"	1° 08' 35"	144° 21' 53"	15° 23' 00"	58' 14"	15' 51,90"	288° 39' 51"	41,46%
17:00	142° 10' 28"	1° 05' 40"	144° 54' 13"	15° 09' 13"	58' 11"	15' 51,32"	288° 48' 50"	41,92%
18:00	142° 44' 24"	1° 02' 44"	145° 26' 26"	14° 55' 23"	58' 09"	15' 50,74"	288° 57' 38"	42,37%
19:00	143° 18' 18"	0° 59' 49"	145° 58' 33"	14° 41' 29"	58' 07"	15' 50,15"	289° 06' 15"	42,82%
20:00	143° 52' 09"	0° 56' 53"	146° 30' 34"	14° 27' 31"	58' 05"	15' 49,57"	289° 14' 42"	43,28%
21:00	144° 25' 57"	0° 53' 58"	147° 02' 27"	14° 13' 31"	58' 03"	15' 48,99"	289° 22' 58"	43,73%
22:00	144° 59' 43"	0° 51' 02"	147° 34' 15"	13° 59' 27"	58' 01"	15' 48,41"	289° 31' 03"	44,18%
23:00	145° 33' 27"	0° 48' 06"	148° 05' 56"	13° 45' 20"	57' 59"	15' 47,83"	289° 38' 57"	44,64%
24:00	146° 07' 08"	0° 45' 10"	148° 37' 31"	13° 31' 10"	57' 57"	15' 47,25"	289° 46' 41"	45,09%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	61° 53' 59"	0,04"	59° 48' 06"	20° 32' 26"	1,0123648	15' 47,91"	23° 26' 17"	03m 17s
01:00	61° 56' 23"	0,04"	59° 50' 37"	20° 32' 55"	1,0123725	15' 47,90"	23° 26' 17"	03m 17s
02:00	61° 58' 48"	0,03"	59° 53' 08"	20° 33' 24"	1,0123801	15' 47,89"	23° 26' 17"	03m 17s
03:00	62° 01' 12"	0,03"	59° 55' 39"	20° 33' 53"	1,0123877	15' 47,89"	23° 26' 17"	03m 17s
04:00	62° 03' 36"	0,02"	59° 58' 10"	20° 34' 22"	1,0123953	15' 47,88"	23° 26' 17"	03m 17s
05:00	62° 06' 00"	0,02"	60° 00' 41"	20° 34' 50"	1,0124029	15' 47,87"	23° 26' 17"	03m 16s
06:00	62° 08' 25"	0,01"	60° 03' 12"	20° 35' 19"	1,0124105	15' 47,87"	23° 26' 17"	03m 16s
07:00	62° 10' 49"	0,01"	60° 05' 43"	20° 35' 48"	1,0124181	15' 47,86"	23° 26' 17"	03m 16s
08:00	62° 13' 13"	0,00"	60° 08' 14"	20° 36' 16"	1,0124256	15' 47,85"	23° 26' 17"	03m 16s
09:00	62° 15' 37"	-0,00"	60° 10' 45"	20° 36' 45"	1,0124332	15' 47,85"	23° 26' 17"	03m 16s
10:00	62° 18' 01"	-0,01"	60° 13' 16"	20° 37' 13"	1,0124408	15' 47,84"	23° 26' 17"	03m 15s
11:00	62° 20' 26"	-0,02"	60° 15' 47"	20° 37' 42"	1,0124483	15' 47,83"	23° 26' 17"	03m 15s
12:00	62° 22' 50"	-0,02"	60° 18' 18"	20° 38' 10"	1,0124559	15' 47,82"	23° 26' 17"	03m 15s
13:00	62° 25' 14"	-0,03"	60° 20' 49"	20° 38' 38"	1,0124634	15' 47,82"	23° 26' 17"	03m 15s
14:00	62° 27' 38"	-0,03"	60° 23' 20"	20° 39' 07"	1,0124710	15' 47,81"	23° 26' 17"	03m 14s
15:00	62° 30' 02"	-0,04"	60° 25' 51"	20° 39' 35"	1,0124785	15' 47,80"	23° 26' 17"	03m 14s
16:00	62° 32' 27"	-0,04"	60° 28' 23"	20° 40' 03"	1,0124860	15' 47,80"	23° 26' 17"	03m 14s
17:00	62° 34' 51"	-0,05"	60° 30' 54"	20° 40' 32"	1,0124936	15' 47,79"	23° 26' 17"	03m 14s
18:00	62° 37' 15"	-0,05"	60° 33' 25"	20° 41' 00"	1,0125011	15' 47,78"	23° 26' 17"	03m 14s
19:00	62° 39' 39"	-0,06"	60° 35' 56"	20° 41' 28"	1,0125086	15' 47,77"	23° 26' 17"	03m 13s
20:00	62° 42' 03"	-0,06"	60° 38' 27"	20° 41' 56"	1,0125161	15' 47,77"	23° 26' 17"	03m 13s
21:00	62° 44' 28"	-0,07"	60° 40' 58"	20° 42' 24"	1,0125236	15' 47,76"	23° 26' 17"	03m 13s
22:00	62° 46' 52"	-0,07"	60° 43' 30"	20° 42' 52"	1,0125311	15' 47,75"	23° 26' 17"	03m 13s
23:00	62° 49' 16"	-0,08"	60° 46' 01"	20° 43' 20"	1,0125386	15' 47,75"	23° 26' 17"	03m 12s
24:00	62° 51' 40"	-0,08"	60° 48' 32"	20° 43' 48"	1,0125460	15' 47,74"	23° 26' 17"	03m 12s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	146° 07' 08"	0° 45' 10"	148° 37' 31"	13° 31' 10"	57' 57"	15' 47,25"	289° 46' 41"	45,09%
01:00	146° 40' 46"	0° 42' 14"	149° 09' 00"	13° 16' 57"	57' 54"	15' 46,67"	289° 54' 14"	45,54%
02:00	147° 14' 22"	0° 39' 18"	149° 40' 23"	13° 02' 42"	57' 52"	15' 46,09"	290° 01' 37"	45,99%
03:00	147° 47' 55"	0° 36' 22"	150° 11' 40"	12° 48' 23"	57' 50"	15' 45,52"	290° 08' 49"	46,44%
04:00	148° 21' 26"	0° 33' 26"	150° 42' 52"	12° 34' 02"	57' 48"	15' 44,94"	290° 15' 51"	46,90%
05:00	148° 54' 54"	0° 30' 30"	151° 13' 57"	12° 19' 39"	57' 46"	15' 44,37"	290° 22' 42"	47,35%
06:00	149° 28' 20"	0° 27' 35"	151° 44' 57"	12° 05' 13"	57' 44"	15' 43,80"	290° 29' 23"	47,80%
07:00	150° 01' 43"	0° 24' 39"	152° 15' 51"	11° 50' 45"	57' 42"	15' 43,23"	290° 35' 54"	48,25%
08:00	150° 35' 04"	0° 21' 43"	152° 46' 40"	11° 36' 14"	57' 40"	15' 42,66"	290° 42' 14"	48,70%
09:00	151° 08' 23"	0° 18' 47"	153° 17' 23"	11° 21' 42"	57' 38"	15' 42,09"	290° 48' 25"	49,15%
10:00	151° 41' 39"	0° 15' 52"	153° 48' 01"	11° 07' 07"	57' 36"	15' 41,53"	290° 54' 25"	49,60%
11:00	152° 14' 52"	0° 12' 56"	154° 18' 33"	10° 52' 30"	57' 33"	15' 40,96"	291° 00' 15"	50,04%
12:00	152° 48' 03"	0° 10' 01"	154° 49' 01"	10° 37' 51"	57' 31"	15' 40,40"	291° 05' 55"	50,49%
13:00	153° 21' 12"	0° 07' 06"	155° 19' 23"	10° 23' 10"	57' 29"	15' 39,84"	291° 11' 25"	50,94%
14:00	153° 54' 19"	0° 04' 11"	155° 49' 40"	10° 08' 28"	57' 27"	15' 39,28"	291° 16' 45"	51,39%
15:00	154° 27' 23"	0° 01' 16"	156° 19' 53"	9° 53' 43"	57' 25"	15' 38,72"	291° 21' 55"	51,83%
16:00	155° 00' 24"	-0° 01' 39"	156° 50' 00"	9° 38' 57"	57' 23"	15' 38,17"	291° 26' 55"	52,28%
17:00	155° 33' 24"	-0° 04' 33"	157° 20' 03"	9° 24' 10"	57' 21"	15' 37,62"	291° 31' 45"	52,72%
18:00	156° 06' 21"	-0° 07' 28"	157° 50' 01"	9° 09' 21"	57' 19"	15' 37,06"	291° 36' 25"	53,17%
19:00	156° 39' 16"	-0° 10' 21"	158° 19' 55"	8° 54' 31"	57' 17"	15' 36,51"	291° 40' 56"	53,61%
20:00	157° 12' 08"	-0° 13' 15"	158° 49' 44"	8° 39' 39"	57' 15"	15' 35,97"	291° 45' 17"	54,05%
21:00	157° 44' 59"	-0° 16' 09"	159° 19' 28"	8° 24' 46"	57' 13"	15' 35,42"	291° 49' 28"	54,49%
22:00	158° 17' 47"	-0° 19' 02"	159° 49' 08"	8° 09' 52"	57' 11"	15' 34,88"	291° 53' 29"	54,93%
23:00	158° 50' 32"	-0° 21' 54"	160° 18' 44"	7° 54' 56"	57' 09"	15' 34,34"	291° 57' 21"	55,37%
24:00	159° 23' 16"	-0° 24' 47"	160° 48' 16"	7° 40' 00"	57' 07"	15' 33,80"	292° 01' 03"	55,81%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	62° 51' 40"	-0,08"	60° 48' 32"	20° 43' 48"	1,0125460	15' 47,74"	23° 26' 17"	03m 12s
01:00	62° 54' 04"	-0,09"	60° 51' 03"	20° 44' 16"	1,0125535	15' 47,73"	23° 26' 17"	03m 12s
02:00	62° 56' 29"	-0,09"	60° 53' 34"	20° 44' 44"	1,0125610	15' 47,73"	23° 26' 17"	03m 12s
03:00	62° 58' 53"	-0,10"	60° 56' 06"	20° 45' 12"	1,0125684	15' 47,72"	23° 26' 17"	03m 12s
04:00	63° 01' 17"	-0,11"	60° 58' 37"	20° 45' 40"	1,0125759	15' 47,71"	23° 26' 17"	03m 11s
05:00	63° 03' 41"	-0,11"	61° 01' 08"	20° 46' 08"	1,0125833	15' 47,70"	23° 26' 17"	03m 11s
06:00	63° 06' 05"	-0,12"	61° 03' 40"	20° 46' 35"	1,0125908	15' 47,70"	23° 26' 17"	03m 11s
07:00	63° 08' 29"	-0,12"	61° 06' 11"	20° 47' 03"	1,0125982	15' 47,69"	23° 26' 17"	03m 11s
08:00	63° 10' 54"	-0,13"	61° 08' 42"	20° 47' 31"	1,0126056	15' 47,68"	23° 26' 17"	03m 10s
09:00	63° 13' 18"	-0,13"	61° 11' 14"	20° 47' 58"	1,0126131	15' 47,68"	23° 26' 17"	03m 10s
10:00	63° 15' 42"	-0,14"	61° 13' 45"	20° 48' 26"	1,0126205	15' 47,67"	23° 26' 17"	03m 10s
11:00	63° 18' 06"	-0,14"	61° 16' 16"	20° 48' 54"	1,0126279	15' 47,66"	23° 26' 17"	03m 10s
12:00	63° 20' 30"	-0,15"	61° 18' 48"	20° 49' 21"	1,0126353	15' 47,66"	23° 26' 17"	03m 09s
13:00	63° 22' 54"	-0,15"	61° 21' 19"	20° 49' 49"	1,0126427	15' 47,65"	23° 26' 17"	03m 09s
14:00	63° 25' 18"	-0,16"	61° 23' 50"	20° 50' 16"	1,0126501	15' 47,64"	23° 26' 17"	03m 09s
15:00	63° 27' 43"	-0,16"	61° 26' 22"	20° 50' 44"	1,0126575	15' 47,64"	23° 26' 17"	03m 09s
16:00	63° 30' 07"	-0,17"	61° 28' 53"	20° 51' 11"	1,0126649	15' 47,63"	23° 26' 17"	03m 08s
17:00	63° 32' 31"	-0,17"	61° 31' 25"	20° 51' 38"	1,0126723	15' 47,62"	23° 26' 17"	03m 08s
18:00	63° 34' 55"	-0,18"	61° 33' 56"	20° 52' 06"	1,0126796	15' 47,61"	23° 26' 17"	03m 08s
19:00	63° 37' 19"	-0,18"	61° 36' 28"	20° 52' 33"	1,0126870	15' 47,61"	23° 26' 17"	03m 08s
20:00	63° 39' 43"	-0,19"	61° 38' 59"	20° 53' 00"	1,0126944	15' 47,60"	23° 26' 17"	03m 08s
21:00	63° 42' 07"	-0,19"	61° 41' 31"	20° 53' 27"	1,0127017	15' 47,59"	23° 26' 17"	03m 07s
22:00	63° 44' 32"	-0,20"	61° 44' 02"	20° 53' 54"	1,0127091	15' 47,59"	23° 26' 17"	03m 07s
23:00	63° 46' 56"	-0,20"	61° 46' 34"	20° 54' 22"	1,0127164	15' 47,58"	23° 26' 17"	03m 07s
24:00	63° 49' 20"	-0,21"	61° 49' 05"	20° 54' 49"	1,0127237	15' 47,57"	23° 26' 17"	03m 07s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	159° 23' 16"	-0° 24' 47"	160° 48' 16"	7° 40' 00"	57' 07"	15' 33,80"	292° 01' 03"	55,81%
01:00	159° 55' 57"	-0° 27' 39"	161° 17' 44"	7° 25' 03"	57' 05"	15' 33,26"	292° 04' 35"	56,25%
02:00	160° 28' 37"	-0° 30' 31"	161° 47' 08"	7° 10' 04"	57' 03"	15' 32,73"	292° 07' 58"	56,68%
03:00	161° 01' 14"	-0° 33' 22"	162° 16' 28"	6° 55' 05"	57' 01"	15' 32,19"	292° 11' 11"	57,12%
04:00	161° 33' 48"	-0° 36' 13"	162° 45' 44"	6° 40' 05"	56' 59"	15' 31,66"	292° 14' 15"	57,55%
05:00	162° 06' 21"	-0° 39' 04"	163° 14' 56"	6° 25' 05"	56' 57"	15' 31,14"	292° 17' 10"	57,98%
06:00	162° 38' 52"	-0° 41' 54"	163° 44' 04"	6° 10' 03"	56' 55"	15' 30,61"	292° 19' 55"	58,42%
07:00	163° 11' 20"	-0° 44' 44"	164° 13' 10"	5° 55' 01"	56' 54"	15' 30,09"	292° 22' 30"	58,85%
08:00	163° 43' 47"	-0° 47' 34"	164° 42' 11"	5° 39' 59"	56' 52"	15' 29,57"	292° 24' 56"	59,28%
09:00	164° 16' 11"	-0° 50' 23"	165° 11' 09"	5° 24' 56"	56' 50"	15' 29,05"	292° 27' 13"	59,70%
10:00	164° 48' 33"	-0° 53' 11"	165° 40' 04"	5° 09' 53"	56' 48"	15' 28,53"	292° 29' 20"	60,13%
11:00	165° 20' 54"	-0° 55' 59"	166° 08' 56"	4° 54' 49"	56' 46"	15' 28,02"	292° 31' 18"	60,56%
12:00	165° 53' 12"	-0° 58' 47"	166° 37' 44"	4° 39' 45"	56' 44"	15' 27,51"	292° 33' 07"	60,98%
13:00	166° 25' 28"	-1° 01' 34"	167° 06' 30"	4° 24' 41"	56' 42"	15' 27,00"	292° 34' 46"	61,40%
14:00	166° 57' 42"	-1° 04' 21"	167° 35' 12"	4° 09' 37"	56' 40"	15' 26,50"	292° 36' 17"	61,82%
15:00	167° 29' 54"	-1° 07' 07"	168° 03' 52"	3° 54' 33"	56' 39"	15' 26,00"	292° 37' 38"	62,24%
16:00	168° 02' 05"	-1° 09' 52"	168° 32' 28"	3° 39' 29"	56' 37"	15' 25,50"	292° 38' 49"	62,66%
17:00	168° 34' 13"	-1° 12' 37"	169° 01' 02"	3° 24' 24"	56' 35"	15' 25,00"	292° 39' 52"	63,08%
18:00	169° 06' 19"	-1° 15' 22"	169° 29' 33"	3° 09' 20"	56' 33"	15' 24,50"	292° 40' 45"	63,50%
19:00	169° 38' 24"	-1° 18' 05"	169° 58' 02"	2° 54' 16"	56' 31"	15' 24,01"	292° 41' 29"	63,91%
20:00	170° 10' 26"	-1° 20' 49"	170° 26' 28"	2° 39' 12"	56' 29"	15' 23,52"	292° 42' 04"	64,32%
21:00	170° 42' 27"	-1° 23' 31"	170° 54' 52"	2° 24' 09"	56' 28"	15' 23,04"	292° 42' 30"	64,74%
22:00	171° 14' 26"	-1° 26' 14"	171° 23' 14"	2° 09' 06"	56' 26"	15' 22,55"	292° 42' 46"	65,15%
23:00	171° 46' 23"	-1° 28' 55"	171° 51' 33"	1° 54' 03"	56' 24"	15' 22,07"	292° 42' 54"	65,55%
24:00	172° 18' 18"	-1° 31' 36"	172° 19' 50"	1° 39' 01"	56' 22"	15' 21,59"	292° 42' 52"	65,96%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	63° 49' 20"	-0,21"	61° 49' 05"	20° 54' 49"	1,0127237	15' 47,57"	23° 26' 17"	03m 07s
01:00	63° 51' 44"	-0,21"	61° 51' 37"	20° 55' 16"	1,0127311	15' 47,57"	23° 26' 17"	03m 06s
02:00	63° 54' 08"	-0,22"	61° 54' 08"	20° 55' 43"	1,0127384	15' 47,56"	23° 26' 17"	03m 06s
03:00	63° 56' 32"	-0,22"	61° 56' 40"	20° 56' 10"	1,0127457	15' 47,55"	23° 26' 17"	03m 06s
04:00	63° 58' 56"	-0,23"	61° 59' 11"	20° 56' 37"	1,0127530	15' 47,55"	23° 26' 17"	03m 06s
05:00	64° 01' 20"	-0,23"	62° 01' 43"	20° 57' 04"	1,0127603	15' 47,54"	23° 26' 17"	03m 05s
06:00	64° 03' 44"	-0,24"	62° 04' 15"	20° 57' 30"	1,0127676	15' 47,53"	23° 26' 17"	03m 05s
07:00	64° 06' 08"	-0,24"	62° 06' 46"	20° 57' 57"	1,0127749	15' 47,53"	23° 26' 17"	03m 05s
08:00	64° 08' 33"	-0,25"	62° 09' 18"	20° 58' 24"	1,0127822	15' 47,52"	23° 26' 17"	03m 05s
09:00	64° 10' 57"	-0,25"	62° 11' 50"	20° 58' 51"	1,0127895	15' 47,51"	23° 26' 17"	03m 04s
10:00	64° 13' 21"	-0,26"	62° 14' 21"	20° 59' 17"	1,0127968	15' 47,50"	23° 26' 17"	03m 04s
11:00	64° 15' 45"	-0,26"	62° 16' 53"	20° 59' 44"	1,0128041	15' 47,50"	23° 26' 17"	03m 04s
12:00	64° 18' 09"	-0,27"	62° 19' 25"	21° 00' 11"	1,0128114	15' 47,49"	23° 26' 17"	03m 04s
13:00	64° 20' 33"	-0,27"	62° 21' 56"	21° 00' 37"	1,0128186	15' 47,48"	23° 26' 17"	03m 03s
14:00	64° 22' 57"	-0,28"	62° 24' 28"	21° 01' 04"	1,0128259	15' 47,48"	23° 26' 17"	03m 03s
15:00	64° 25' 21"	-0,28"	62° 27' 00"	21° 01' 30"	1,0128331	15' 47,47"	23° 26' 17"	03m 03s
16:00	64° 27' 45"	-0,29"	62° 29' 31"	21° 01' 57"	1,0128404	15' 47,46"	23° 26' 17"	03m 03s
17:00	64° 30' 09"	-0,29"	62° 32' 03"	21° 02' 23"	1,0128476	15' 47,46"	23° 26' 17"	03m 02s
18:00	64° 32' 33"	-0,30"	62° 34' 35"	21° 02' 50"	1,0128549	15' 47,45"	23° 26' 17"	03m 02s
19:00	64° 34' 57"	-0,30"	62° 37' 07"	21° 03' 16"	1,0128621	15' 47,44"	23° 26' 17"	03m 02s
20:00	64° 37' 22"	-0,31"	62° 39' 38"	21° 03' 42"	1,0128693	15' 47,44"	23° 26' 17"	03m 01s
21:00	64° 39' 46"	-0,31"	62° 42' 10"	21° 04' 09"	1,0128765	15' 47,43"	23° 26' 17"	03m 01s
22:00	64° 42' 10"	-0,31"	62° 44' 42"	21° 04' 35"	1,0128838	15' 47,42"	23° 26' 17"	03m 01s
23:00	64° 44' 34"	-0,32"	62° 47' 14"	21° 05' 01"	1,0128910	15' 47,42"	23° 26' 17"	03m 01s
24:00	64° 46' 58"	-0,32"	62° 49' 46"	21° 05' 27"	1,0128982	15' 47,41"	23° 26' 17"	03m 00s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	172° 18' 18"	-1° 31' 36"	172° 19' 50"	1° 39' 01"	56' 22"	15' 21,59"	292° 42' 52"	65,96%
01:00	172° 50' 12"	-1° 34' 16"	172° 48' 05"	1° 23' 59"	56' 21"	15' 21,12"	292° 42' 41"	66,37%
02:00	173° 22' 03"	-1° 36' 56"	173° 16' 18"	1° 08' 57"	56' 19"	15' 20,65"	292° 42' 22"	66,77%
03:00	173° 53' 53"	-1° 39' 34"	173° 44' 29"	0° 53' 57"	56' 17"	15' 20,18"	292° 41' 53"	67,17%
04:00	174° 25' 41"	-1° 42' 13"	174° 12' 38"	0° 38' 57"	56' 15"	15' 19,71"	292° 41' 14"	67,57%
05:00	174° 57' 28"	-1° 44' 50"	174° 40' 45"	0° 23' 57"	56' 14"	15' 19,25"	292° 40' 27"	67,97%
06:00	175° 29' 12"	-1° 47' 27"	175° 08' 51"	0° 08' 59"	56' 12"	15' 18,78"	292° 39' 31"	68,37%
07:00	176° 00' 55"	-1° 50' 03"	175° 36' 55"	-0° 05' 59"	56' 10"	15' 18,33"	292° 38' 25"	68,76%
08:00	176° 32' 36"	-1° 52' 39"	176° 04' 57"	-0° 20' 56"	56' 09"	15' 17,87"	292° 37' 11"	69,15%
09:00	177° 04' 16"	-1° 55' 13"	176° 32' 58"	-0° 35' 52"	56' 07"	15' 17,42"	292° 35' 47"	69,55%
10:00	177° 35' 54"	-1° 57' 47"	177° 00' 58"	-0° 50' 47"	56' 05"	15' 16,97"	292° 34' 14"	69,93%
11:00	178° 07' 30"	-2° 00' 20"	177° 28' 56"	-1° 05' 41"	56' 04"	15' 16,52"	292° 32' 32"	70,32%
12:00	178° 39' 04"	-2° 02' 53"	177° 56' 53"	-1° 20' 33"	56' 02"	15' 16,08"	292° 30' 41"	70,71%
13:00	179° 10' 37"	-2° 05' 24"	178° 24' 49"	-1° 35' 25"	56' 01"	15' 15,64"	292° 28' 41"	71,09%
14:00	179° 42' 09"	-2° 07' 55"	178° 52' 43"	-1° 50' 16"	55' 59"	15' 15,20"	292° 26' 31"	71,47%
15:00	180° 13' 39"	-2° 10' 25"	179° 20' 37"	-2° 05' 05"	55' 57"	15' 14,77"	292° 24' 13"	71,85%
16:00	180° 45' 07"	-2° 12' 55"	179° 48' 30"	-2° 19' 53"	55' 56"	15' 14,34"	292° 21' 45"	72,23%
17:00	181° 16' 33"	-2° 15' 23"	180° 16' 22"	-2° 34' 40"	55' 54"	15' 13,91"	292° 19' 08"	72,61%
18:00	181° 47' 59"	-2° 17' 51"	180° 44' 13"	-2° 49' 25"	55' 53"	15' 13,48"	292° 16' 22"	72,98%
19:00	182° 19' 22"	-2° 20' 18"	181° 12' 03"	-3° 04' 09"	55' 51"	15' 13,06"	292° 13' 27"	73,36%
20:00	182° 50' 44"	-2° 22' 44"	181° 39' 53"	-3° 18' 51"	55' 50"	15' 12,64"	292° 10' 22"	73,73%
21:00	183° 22' 05"	-2° 25' 09"	182° 07' 42"	-3° 33' 32"	55' 48"	15' 12,23"	292° 07' 08"	74,09%
22:00	183° 53' 24"	-2° 27' 33"	182° 35' 31"	-3° 48' 11"	55' 46"	15' 11,81"	292° 03' 45"	74,46%
23:00	184° 24' 42"	-2° 29' 56"	183° 03' 19"	-4° 02' 49"	55' 45"	15' 11,40"	292° 00' 12"	74,82%
24:00	184° 55' 58"	-2° 32' 19"	183° 31' 06"	-4° 17' 24"	55' 43"	15' 11,00"	291° 56' 30"	75,19%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	64° 46' 58"	-0,32"	62° 49' 46"	21° 05' 27"	1,0128982	15' 47,41"	23° 26' 17"	03m 00s
01:00	64° 49' 22"	-0,33"	62° 52' 17"	21° 05' 54"	1,0129054	15' 47,40"	23° 26' 17"	03m 00s
02:00	64° 51' 46"	-0,33"	62° 54' 49"	21° 06' 20"	1,0129126	15' 47,40"	23° 26' 17"	03m 00s
03:00	64° 54' 10"	-0,34"	62° 57' 21"	21° 06' 46"	1,0129198	15' 47,39"	23° 26' 17"	03m 00s
04:00	64° 56' 34"	-0,34"	62° 59' 53"	21° 07' 12"	1,0129270	15' 47,38"	23° 26' 17"	02m 59s
05:00	64° 58' 58"	-0,35"	63° 02' 25"	21° 07' 38"	1,0129341	15' 47,38"	23° 26' 17"	02m 59s
06:00	65° 01' 22"	-0,35"	63° 04' 57"	21° 08' 04"	1,0129413	15' 47,37"	23° 26' 17"	02m 59s
07:00	65° 03' 46"	-0,36"	63° 07' 29"	21° 08' 30"	1,0129485	15' 47,36"	23° 26' 17"	02m 59s
08:00	65° 06' 10"	-0,36"	63° 10' 01"	21° 08' 55"	1,0129556	15' 47,36"	23° 26' 17"	02m 58s
09:00	65° 08' 34"	-0,36"	63° 12' 33"	21° 09' 21"	1,0129628	15' 47,35"	23° 26' 17"	02m 58s
10:00	65° 10' 58"	-0,37"	63° 15' 04"	21° 09' 47"	1,0129699	15' 47,34"	23° 26' 17"	02m 58s
11:00	65° 13' 22"	-0,37"	63° 17' 36"	21° 10' 13"	1,0129771	15' 47,34"	23° 26' 17"	02m 57s
12:00	65° 15' 46"	-0,38"	63° 20' 08"	21° 10' 39"	1,0129842	15' 47,33"	23° 26' 17"	02m 57s
13:00	65° 18' 10"	-0,38"	63° 22' 40"	21° 11' 04"	1,0129914	15' 47,32"	23° 26' 17"	02m 57s
14:00	65° 20' 34"	-0,39"	63° 25' 12"	21° 11' 30"	1,0129985	15' 47,32"	23° 26' 17"	02m 57s
15:00	65° 22' 58"	-0,39"	63° 27' 44"	21° 11' 56"	1,0130056	15' 47,31"	23° 26' 17"	02m 56s
16:00	65° 25' 22"	-0,39"	63° 30' 16"	21° 12' 21"	1,0130128	15' 47,30"	23° 26' 17"	02m 56s
17:00	65° 27' 46"	-0,40"	63° 32' 48"	21° 12' 47"	1,0130199	15' 47,30"	23° 26' 17"	02m 56s
18:00	65° 30' 10"	-0,40"	63° 35' 20"	21° 13' 12"	1,0130270	15' 47,29"	23° 26' 17"	02m 55s
19:00	65° 32' 34"	-0,41"	63° 37' 53"	21° 13' 38"	1,0130341	15' 47,28"	23° 26' 17"	02m 55s
20:00	65° 34' 58"	-0,41"	63° 40' 25"	21° 14' 03"	1,0130412	15' 47,28"	23° 26' 17"	02m 55s
21:00	65° 37' 22"	-0,41"	63° 42' 57"	21° 14' 28"	1,0130483	15' 47,27"	23° 26' 17"	02m 55s
22:00	65° 39' 46"	-0,42"	63° 45' 29"	21° 14' 54"	1,0130554	15' 47,26"	23° 26' 17"	02m 54s
23:00	65° 42' 10"	-0,42"	63° 48' 01"	21° 15' 19"	1,0130625	15' 47,26"	23° 26' 17"	02m 54s
24:00	65° 44' 34"	-0,43"	63° 50' 33"	21° 15' 44"	1,0130695	15' 47,25"	23° 26' 17"	02m 54s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	184° 55' 58"	-2° 32' 19"	183° 31' 06"	-4° 17' 24"	55' 43"	15' 11,00"	291° 56' 30"	75,19%
01:00	185° 27' 13"	-2° 34' 41"	183° 58' 54"	-4° 31' 59"	55' 42"	15' 10,59"	291° 52' 39"	75,55%
02:00	185° 58' 27"	-2° 37' 01"	184° 26' 41"	-4° 46' 31"	55' 41"	15' 10,19"	291° 48' 38"	75,90%
03:00	186° 29' 39"	-2° 39' 21"	184° 54' 28"	-5° 01' 02"	55' 39"	15' 09,79"	291° 44' 28"	76,26%
04:00	187° 00' 49"	-2° 41' 40"	185° 22' 15"	-5° 15' 30"	55' 38"	15' 09,40"	291° 40' 09"	76,61%
05:00	187° 31' 59"	-2° 43' 58"	185° 50' 02"	-5° 29' 57"	55' 36"	15' 09,01"	291° 35' 39"	76,96%
06:00	188° 03' 07"	-2° 46' 15"	186° 17' 49"	-5° 44' 22"	55' 35"	15' 08,62"	291° 31' 01"	77,31%
07:00	188° 34' 13"	-2° 48' 32"	186° 45' 36"	-5° 58' 44"	55' 33"	15' 08,23"	291° 26' 12"	77,66%
08:00	189° 05' 19"	-2° 50' 47"	187° 13' 24"	-6° 13' 05"	55' 32"	15' 07,85"	291° 21' 15"	78,00%
09:00	189° 36' 23"	-2° 53' 01"	187° 41' 11"	-6° 27' 23"	55' 31"	15' 07,47"	291° 16' 07"	78,35%
10:00	190° 07' 25"	-2° 55' 14"	188° 08' 59"	-6° 41' 40"	55' 29"	15' 07,09"	291° 10' 50"	78,69%
11:00	190° 38' 27"	-2° 57' 27"	188° 36' 48"	-6° 55' 54"	55' 28"	15' 06,72"	291° 05' 22"	79,02%
12:00	191° 09' 27"	-2° 59' 38"	189° 04' 36"	-7° 10' 06"	55' 26"	15' 06,35"	290° 59' 45"	79,36%
13:00	191° 40' 26"	-3° 01' 48"	189° 32' 25"	-7° 24' 15"	55' 25"	15' 05,98"	290° 53' 58"	79,69%
14:00	192° 11' 24"	-3° 03' 58"	190° 00' 15"	-7° 38' 23"	55' 24"	15' 05,62"	290° 48' 02"	80,02%
15:00	192° 42' 20"	-3° 06' 06"	190° 28' 06"	-7° 52' 27"	55' 22"	15' 05,26"	290° 41' 55"	80,35%
16:00	193° 13' 16"	-3° 08' 14"	190° 55' 57"	-8° 06' 30"	55' 21"	15' 04,90"	290° 35' 38"	80,68%
17:00	193° 44' 10"	-3° 10' 20"	191° 23' 49"	-8° 20' 30"	55' 20"	15' 04,54"	290° 29' 11"	81,00%
18:00	194° 15' 03"	-3° 12' 25"	191° 51' 41"	-8° 34' 27"	55' 18"	15' 04,19"	290° 22' 33"	81,33%
19:00	194° 45' 55"	-3° 14' 29"	192° 19' 35"	-8° 48' 22"	55' 17"	15' 03,84"	290° 15' 46"	81,64%
20:00	195° 16' 45"	-3° 16' 33"	192° 47' 30"	-9° 02' 14"	55' 16"	15' 03,50"	290° 08' 48"	81,96%
21:00	195° 47' 35"	-3° 18' 35"	193° 15' 25"	-9° 16' 03"	55' 15"	15' 03,15"	290° 01' 39"	82,28%
22:00	196° 18' 23"	-3° 20' 36"	193° 43' 22"	-9° 29' 50"	55' 13"	15' 02,81"	289° 54' 21"	82,59%
23:00	196° 49' 10"	-3° 22' 36"	194° 11' 20"	-9° 43' 33"	55' 12"	15' 02,48"	289° 46' 51"	82,90%
24:00	197° 19' 56"	-3° 24' 35"	194° 39' 19"	-9° 57' 14"	55' 11"	15' 02,14"	289° 39' 11"	83,20%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	65° 44' 34"	-0,43"	63° 50' 33"	21° 15' 44"	1,0130695	15' 47,25"	23° 26' 17"	02m 54s
01:00	65° 46' 58"	-0,43"	63° 53' 05"	21° 16' 09"	1,0130766	15' 47,24"	23° 26' 17"	02m 54s
02:00	65° 49' 22"	-0,43"	63° 55' 37"	21° 16' 35"	1,0130837	15' 47,24"	23° 26' 17"	02m 53s
03:00	65° 51' 46"	-0,44"	63° 58' 09"	21° 17' 00"	1,0130908	15' 47,23"	23° 26' 17"	02m 53s
04:00	65° 54' 10"	-0,44"	64° 00' 42"	21° 17' 25"	1,0130978	15' 47,22"	23° 26' 17"	02m 53s
05:00	65° 56' 34"	-0,44"	64° 03' 14"	21° 17' 50"	1,0131049	15' 47,22"	23° 26' 17"	02m 52s
06:00	65° 58' 58"	-0,45"	64° 05' 46"	21° 18' 15"	1,0131119	15' 47,21"	23° 26' 17"	02m 52s
07:00	66° 01' 22"	-0,45"	64° 08' 18"	21° 18' 40"	1,0131190	15' 47,20"	23° 26' 17"	02m 52s
08:00	66° 03' 46"	-0,46"	64° 10' 50"	21° 19' 05"	1,0131260	15' 47,20"	23° 26' 17"	02m 51s
09:00	66° 06' 10"	-0,46"	64° 13' 23"	21° 19' 30"	1,0131330	15' 47,19"	23° 26' 17"	02m 51s
10:00	66° 08' 34"	-0,46"	64° 15' 55"	21° 19' 55"	1,0131401	15' 47,18"	23° 26' 17"	02m 51s
11:00	66° 10' 58"	-0,47"	64° 18' 27"	21° 20' 20"	1,0131471	15' 47,18"	23° 26' 17"	02m 51s
12:00	66° 13' 22"	-0,47"	64° 20' 59"	21° 20' 44"	1,0131541	15' 47,17"	23° 26' 17"	02m 50s
13:00	66° 15' 46"	-0,47"	64° 23' 32"	21° 21' 09"	1,0131611	15' 47,16"	23° 26' 17"	02m 50s
14:00	66° 18' 10"	-0,48"	64° 26' 04"	21° 21' 34"	1,0131681	15' 47,16"	23° 26' 17"	02m 50s
15:00	66° 20' 34"	-0,48"	64° 28' 36"	21° 21' 59"	1,0131752	15' 47,15"	23° 26' 17"	02m 49s
16:00	66° 22' 58"	-0,48"	64° 31' 08"	21° 22' 23"	1,0131822	15' 47,14"	23° 26' 17"	02m 49s
17:00	66° 25' 22"	-0,49"	64° 33' 41"	21° 22' 48"	1,0131891	15' 47,14"	23° 26' 17"	02m 49s
18:00	66° 27' 46"	-0,49"	64° 36' 13"	21° 23' 12"	1,0131961	15' 47,13"	23° 26' 17"	02m 49s
19:00	66° 30' 10"	-0,49"	64° 38' 45"	21° 23' 37"	1,0132031	15' 47,12"	23° 26' 17"	02m 48s
20:00	66° 32' 34"	-0,50"	64° 41' 18"	21° 24' 01"	1,0132101	15' 47,12"	23° 26' 17"	02m 48s
21:00	66° 34' 58"	-0,50"	64° 43' 50"	21° 24' 26"	1,0132171	15' 47,11"	23° 26' 17"	02m 48s
22:00	66° 37' 22"	-0,50"	64° 46' 22"	21° 24' 50"	1,0132240	15' 47,11"	23° 26' 17"	02m 47s
23:00	66° 39' 46"	-0,50"	64° 48' 55"	21° 25' 15"	1,0132310	15' 47,10"	23° 26' 17"	02m 47s
24:00	66° 42' 10"	-0,51"	64° 51' 27"	21° 25' 39"	1,0132380	15' 47,09"	23° 26' 17"	02m 47s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	197° 19' 56"	-3° 24' 35"	194° 39' 19"	-9° 57' 14"	55' 11"	15' 02,14"	289° 39' 11"	83,20%
01:00	197° 50' 42"	-3° 26' 33"	195° 07' 19"	-10° 10' 52"	55' 10"	15' 01,81"	289° 31' 20"	83,51%
02:00	198° 21' 26"	-3° 28' 30"	195° 35' 20"	-10° 24' 28"	55' 09"	15' 01,48"	289° 23' 18"	83,81%
03:00	198° 52' 09"	-3° 30' 26"	196° 03' 23"	-10° 38' 00"	55' 07"	15' 01,16"	289° 15' 05"	84,11%
04:00	199° 22' 51"	-3° 32' 20"	196° 31' 27"	-10° 51' 29"	55' 06"	15' 00,84"	289° 06' 40"	84,41%
05:00	199° 53' 31"	-3° 34' 14"	196° 59' 33"	-11° 04' 55"	55' 05"	15' 00,52"	288° 58' 05"	84,70%
06:00	200° 24' 11"	-3° 36' 06"	197° 27' 41"	-11° 18' 18"	55' 04"	15' 00,20"	288° 49' 18"	84,99%
07:00	200° 54' 50"	-3° 37' 58"	197° 55' 49"	-11° 31' 38"	55' 03"	15' 00,00"	288° 40' 20"	85,28%
08:00	201° 25' 28"	-3° 39' 48"	198° 24' 00"	-11° 44' 55"	55' 02"	15' 00,00"	288° 31' 10"	85,57%
09:00	201° 56' 05"	-3° 41' 37"	198° 52' 12"	-11° 58' 08"	55' 00"	14' 59,27"	288° 21' 49"	85,85%
10:00	202° 26' 41"	-3° 43' 25"	199° 20' 26"	-12° 11' 18"	54' 59"	14' 58,97"	288° 12' 16"	86,14%
11:00	202° 57' 16"	-3° 45' 12"	199° 48' 42"	-12° 24' 25"	54' 58"	14' 58,67"	288° 02' 30"	86,42%
12:00	203° 27' 50"	-3° 46' 58"	200° 17' 00"	-12° 37' 28"	54' 57"	14' 58,37"	287° 52' 33"	86,69%
13:00	203° 58' 23"	-3° 48' 42"	200° 45' 19"	-12° 50' 28"	54' 56"	14' 58,08"	287° 42' 23"	86,97%
14:00	204° 28' 55"	-3° 50' 25"	201° 13' 41"	-13° 03' 24"	54' 55"	14' 57,78"	287° 32' 00"	87,24%
15:00	204° 59' 26"	-3° 52' 08"	201° 42' 04"	-13° 16' 17"	54' 54"	14' 57,49"	287° 21' 25"	87,51%
16:00	205° 29' 57"	-3° 53' 49"	202° 10' 30"	-13° 29' 06"	54' 53"	14' 57,21"	287° 10' 37"	87,77%
17:00	206° 00' 26"	-3° 55' 29"	202° 38' 58"	-13° 41' 51"	54' 52"	14' 56,93"	286° 59' 36"	88,03%
18:00	206° 30' 55"	-3° 57' 07"	203° 07' 28"	-13° 54' 33"	54' 51"	14' 56,65"	286° 48' 22"	88,30%
19:00	207° 01' 22"	-3° 58' 45"	203° 36' 00"	-14° 07' 11"	54' 50"	14' 56,37"	286° 36' 54"	88,55%
20:00	207° 31' 49"	-4° 00' 21"	204° 04' 34"	-14° 19' 46"	54' 49"	14' 56,09"	286° 25' 12"	88,81%
21:00	208° 02' 15"	-4° 01' 56"	204° 33' 11"	-14° 32' 16"	54' 48"	14' 55,82"	286° 13' 17"	89,06%
22:00	208° 32' 41"	-4° 03' 30"	205° 01' 50"	-14° 44' 43"	54' 47"	14' 55,55"	286° 01' 08"	89,31%
23:00	209° 03' 05"	-4° 05' 03"	205° 30' 31"	-14° 57' 05"	54' 46"	14' 55,29"	285° 48' 44"	89,56%
24:00	209° 33' 28"	-4° 06' 34"	205° 59' 15"	-15° 09' 24"	54' 45"	14' 55,02"	285° 36' 05"	89,80%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	66° 42' 10"	-0,51"	64° 51' 27"	21° 25' 39"	1,0132380	15' 47,09"	23° 26' 17"	02m 47s
01:00	66° 44' 33"	-0,51"	64° 54' 00"	21° 26' 03"	1,0132449	15' 47,09"	23° 26' 17"	02m 46s
02:00	66° 46' 57"	-0,51"	64° 56' 32"	21° 26' 28"	1,0132519	15' 47,08"	23° 26' 17"	02m 46s
03:00	66° 49' 21"	-0,52"	64° 59' 05"	21° 26' 52"	1,0132588	15' 47,07"	23° 26' 17"	02m 46s
04:00	66° 51' 45"	-0,52"	65° 01' 37"	21° 27' 16"	1,0132658	15' 47,07"	23° 26' 17"	02m 46s
05:00	66° 54' 09"	-0,52"	65° 04' 09"	21° 27' 40"	1,0132727	15' 47,06"	23° 26' 17"	02m 45s
06:00	66° 56' 33"	-0,52"	65° 06' 42"	21° 28' 04"	1,0132796	15' 47,05"	23° 26' 17"	02m 45s
07:00	66° 58' 57"	-0,53"	65° 09' 14"	21° 28' 28"	1,0132866	15' 47,05"	23° 26' 17"	02m 45s
08:00	67° 01' 21"	-0,53"	65° 11' 47"	21° 28' 52"	1,0132935	15' 47,04"	23° 26' 17"	02m 44s
09:00	67° 03' 45"	-0,53"	65° 14' 19"	21° 29' 16"	1,0133004	15' 47,03"	23° 26' 17"	02m 44s
10:00	67° 06' 09"	-0,54"	65° 16' 52"	21° 29' 40"	1,0133073	15' 47,03"	23° 26' 17"	02m 44s
11:00	67° 08' 33"	-0,54"	65° 19' 24"	21° 30' 04"	1,0133142	15' 47,02"	23° 26' 17"	02m 43s
12:00	67° 10' 57"	-0,54"	65° 21' 57"	21° 30' 28"	1,0133211	15' 47,01"	23° 26' 17"	02m 43s
13:00	67° 13' 21"	-0,54"	65° 24' 29"	21° 30' 52"	1,0133280	15' 47,01"	23° 26' 17"	02m 43s
14:00	67° 15' 44"	-0,55"	65° 27' 02"	21° 31' 16"	1,0133349	15' 47,00"	23° 26' 17"	02m 42s
15:00	67° 18' 08"	-0,55"	65° 29' 35"	21° 31' 39"	1,0133418	15' 47,00"	23° 26' 17"	02m 42s
16:00	67° 20' 32"	-0,55"	65° 32' 07"	21° 32' 03"	1,0133487	15' 46,99"	23° 26' 17"	02m 42s
17:00	67° 22' 56"	-0,55"	65° 34' 40"	21° 32' 27"	1,0133556	15' 46,98"	23° 26' 17"	02m 41s
18:00	67° 25' 20"	-0,56"	65° 37' 12"	21° 32' 51"	1,0133624	15' 46,98"	23° 26' 17"	02m 41s
19:00	67° 27' 44"	-0,56"	65° 39' 45"	21° 33' 14"	1,0133693	15' 46,97"	23° 26' 17"	02m 41s
20:00	67° 30' 08"	-0,56"	65° 42' 18"	21° 33' 38"	1,0133762	15' 46,96"	23° 26' 17"	02m 41s
21:00	67° 32' 32"	-0,56"	65° 44' 50"	21° 34' 01"	1,0133830	15' 46,96"	23° 26' 17"	02m 40s
22:00	67° 34' 56"	-0,56"	65° 47' 23"	21° 34' 25"	1,0133899	15' 46,95"	23° 26' 17"	02m 40s
23:00	67° 37' 20"	-0,57"	65° 49' 56"	21° 34' 48"	1,0133967	15' 46,94"	23° 26' 17"	02m 40s
24:00	67° 39' 43"	-0,57"	65° 52' 28"	21° 35' 12"	1,0134036	15' 46,94"	23° 26' 17"	02m 39s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	209° 33' 28"	-4° 06' 34"	205° 59' 15"	-15° 09' 24"	54' 45"	14' 55,02"	285° 36' 05"	89,80%
01:00	210° 03' 51"	-4° 08' 04"	206° 28' 01"	-15° 21' 39"	54' 44"	14' 54,76"	285° 23' 11"	90,04%
02:00	210° 34' 13"	-4° 09' 33"	206° 56' 50"	-15° 33' 49"	54' 43"	14' 54,51"	285° 10' 03"	90,28%
03:00	211° 04' 34"	-4° 11' 01"	207° 25' 42"	-15° 45' 56"	54' 42"	14' 54,25"	284° 56' 38"	90,52%
04:00	211° 34' 55"	-4° 12' 28"	207° 54' 35"	-15° 57' 58"	54' 41"	14' 54,00"	284° 42' 58"	90,75%
05:00	212° 05' 14"	-4° 13' 53"	208° 23' 32"	-16° 09' 56"	54' 40"	14' 53,75"	284° 29' 01"	90,98%
06:00	212° 35' 33"	-4° 15' 17"	208° 52' 31"	-16° 21' 50"	54' 39"	14' 53,51"	284° 14' 48"	91,21%
07:00	213° 05' 51"	-4° 16' 40"	209° 21' 33"	-16° 33' 39"	54' 38"	14' 53,26"	284° 00' 18"	91,43%
08:00	213° 36' 09"	-4° 18' 01"	209° 50' 38"	-16° 45' 24"	54' 38"	14' 53,02"	283° 45' 31"	91,66%
09:00	214° 06' 25"	-4° 19' 22"	210° 19' 46"	-16° 57' 05"	54' 37"	14' 52,79"	283° 30' 25"	91,87%
10:00	214° 36' 41"	-4° 20' 41"	210° 48' 56"	-17° 08' 41"	54' 36"	14' 52,55"	283° 15' 02"	92,09%
11:00	215° 06' 57"	-4° 21' 59"	211° 18' 09"	-17° 20' 13"	54' 35"	14' 52,32"	282° 59' 20"	92,30%
12:00	215° 37' 11"	-4° 23' 15"	211° 47' 25"	-17° 31' 40"	54' 34"	14' 52,09"	282° 43' 18"	92,52%
13:00	216° 07' 25"	-4° 24' 30"	212° 16' 45"	-17° 43' 02"	54' 33"	14' 51,87"	282° 26' 57"	92,72%
14:00	216° 37' 38"	-4° 25' 44"	212° 46' 07"	-17° 54' 20"	54' 32"	14' 51,64"	282° 10' 16"	92,93%
15:00	217° 07' 51"	-4° 26' 57"	213° 15' 32"	-18° 05' 33"	54' 32"	14' 51,42"	281° 53' 14"	93,13%
16:00	217° 38' 03"	-4° 28' 09"	213° 45' 00"	-18° 16' 41"	54' 31"	14' 51,20"	281° 35' 50"	93,33%
17:00	218° 08' 14"	-4° 29' 19"	214° 14' 31"	-18° 27' 45"	54' 30"	14' 50,99"	281° 18' 04"	93,53%
18:00	218° 38' 24"	-4° 30' 27"	214° 44' 05"	-18° 38' 43"	54' 29"	14' 50,78"	280° 59' 56"	93,72%
19:00	219° 08' 34"	-4° 31' 35"	215° 13' 42"	-18° 49' 37"	54' 28"	14' 50,57"	280° 41' 23"	93,91%
20:00	219° 38' 44"	-4° 32' 41"	215° 43' 23"	-19° 00' 26"	54' 28"	14' 50,36"	280° 22' 27"	94,10%
21:00	220° 08' 52"	-4° 33' 46"	216° 13' 06"	-19° 11' 09"	54' 27"	14' 50,15"	280° 03' 05"	94,28%
22:00	220° 39' 00"	-4° 34' 50"	216° 42' 53"	-19° 21' 48"	54' 26"	14' 49,95"	279° 43' 17"	94,46%
23:00	221° 09' 08"	-4° 35' 52"	217° 12' 43"	-19° 32' 21"	54' 26"	14' 49,75"	279° 23' 02"	94,64%
24:00	221° 39' 15"	-4° 36' 53"	217° 42' 36"	-19° 42' 50"	54' 25"	14' 49,56"	279° 02' 19"	94,82%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	67° 39' 43"	-0,57"	65° 52' 28"	21° 35' 12"	1,0134036	15' 46,94"	23° 26' 17"	02m 39s
01:00	67° 42' 07"	-0,57"	65° 55' 01"	21° 35' 35"	1,0134104	15' 46,93"	23° 26' 17"	02m 39s
02:00	67° 44' 31"	-0,57"	65° 57' 34"	21° 35' 58"	1,0134172	15' 46,92"	23° 26' 17"	02m 39s
03:00	67° 46' 55"	-0,57"	66° 00' 06"	21° 36' 22"	1,0134241	15' 46,92"	23° 26' 17"	02m 38s
04:00	67° 49' 19"	-0,58"	66° 02' 39"	21° 36' 45"	1,0134309	15' 46,91"	23° 26' 17"	02m 38s
05:00	67° 51' 43"	-0,58"	66° 05' 12"	21° 37' 08"	1,0134377	15' 46,91"	23° 26' 17"	02m 38s
06:00	67° 54' 07"	-0,58"	66° 07' 45"	21° 37' 31"	1,0134445	15' 46,90"	23° 26' 17"	02m 37s
07:00	67° 56' 31"	-0,58"	66° 10' 17"	21° 37' 54"	1,0134514	15' 46,89"	23° 26' 17"	02m 37s
08:00	67° 58' 54"	-0,58"	66° 12' 50"	21° 38' 17"	1,0134582	15' 46,89"	23° 26' 17"	02m 37s
09:00	68° 01' 18"	-0,58"	66° 15' 23"	21° 38' 40"	1,0134650	15' 46,88"	23° 26' 17"	02m 36s
10:00	68° 03' 42"	-0,59"	66° 17' 56"	21° 39' 03"	1,0134718	15' 46,87"	23° 26' 17"	02m 36s
11:00	68° 06' 06"	-0,59"	66° 20' 28"	21° 39' 26"	1,0134785	15' 46,87"	23° 26' 17"	02m 36s
12:00	68° 08' 30"	-0,59"	66° 23' 01"	21° 39' 49"	1,0134853	15' 46,86"	23° 26' 17"	02m 35s
13:00	68° 10' 54"	-0,59"	66° 25' 34"	21° 40' 12"	1,0134921	15' 46,85"	23° 26' 17"	02m 35s
14:00	68° 13' 18"	-0,59"	66° 28' 07"	21° 40' 35"	1,0134989	15' 46,85"	23° 26' 17"	02m 35s
15:00	68° 15' 42"	-0,59"	66° 30' 40"	21° 40' 58"	1,0135057	15' 46,84"	23° 26' 17"	02m 34s
16:00	68° 18' 05"	-0,59"	66° 33' 13"	21° 41' 21"	1,0135124	15' 46,84"	23° 26' 17"	02m 34s
17:00	68° 20' 29"	-0,60"	66° 35' 46"	21° 41' 44"	1,0135192	15' 46,83"	23° 26' 17"	02m 34s
18:00	68° 22' 53"	-0,60"	66° 38' 18"	21° 42' 06"	1,0135260	15' 46,82"	23° 26' 17"	02m 33s
19:00	68° 25' 17"	-0,60"	66° 40' 51"	21° 42' 29"	1,0135327	15' 46,82"	23° 26' 17"	02m 33s
20:00	68° 27' 41"	-0,60"	66° 43' 24"	21° 42' 52"	1,0135395	15' 46,81"	23° 26' 17"	02m 33s
21:00	68° 30' 05"	-0,60"	66° 45' 57"	21° 43' 14"	1,0135462	15' 46,80"	23° 26' 17"	02m 32s
22:00	68° 32' 28"	-0,60"	66° 48' 30"	21° 43' 37"	1,0135529	15' 46,80"	23° 26' 17"	02m 32s
23:00	68° 34' 52"	-0,60"	66° 51' 03"	21° 43' 59"	1,0135597	15' 46,79"	23° 26' 17"	02m 32s
24:00	68° 37' 16"	-0,60"	66° 53' 36"	21° 44' 22"	1,0135664	15' 46,79"	23° 26' 17"	02m 31s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	221° 39' 15"	-4° 36' 53"	217° 42' 36"	-19° 42' 50"	54' 25"	14' 49,56"	279° 02' 19"	94,82%
01:00	222° 09' 21"	-4° 37' 53"	218° 12' 32"	-19° 53' 13"	54' 24"	14' 49,36"	278° 41' 07"	94,99%
02:00	222° 39' 27"	-4° 38' 51"	218° 42' 32"	-20° 03' 31"	54' 23"	14' 49,17"	278° 19' 24"	95,16%
03:00	223° 09' 32"	-4° 39' 48"	219° 12' 35"	-20° 13' 43"	54' 23"	14' 48,98"	277° 57' 10"	95,33%
04:00	223° 39' 36"	-4° 40' 44"	219° 42' 41"	-20° 23' 51"	54' 22"	14' 48,80"	277° 34' 23"	95,49%
05:00	224° 09' 40"	-4° 41' 38"	220° 12' 51"	-20° 33' 52"	54' 21"	14' 48,62"	277° 11' 02"	95,65%
06:00	224° 39' 44"	-4° 42' 32"	220° 43' 04"	-20° 43' 49"	54' 21"	14' 48,44"	276° 47' 05"	95,81%
07:00	225° 09' 47"	-4° 43' 23"	221° 13' 20"	-20° 53' 39"	54' 20"	14' 48,26"	276° 22' 30"	95,96%
08:00	225° 39' 49"	-4° 44' 14"	221° 43' 39"	-21° 03' 25"	54' 19"	14' 48,08"	275° 57' 16"	96,12%
09:00	226° 09' 51"	-4° 45' 03"	222° 14' 02"	-21° 13' 04"	54' 19"	14' 47,91"	275° 31' 21"	96,27%
10:00	226° 39' 52"	-4° 45' 50"	222° 44' 29"	-21° 22' 38"	54' 18"	14' 47,74"	275° 04' 42"	96,41%
11:00	227° 09' 53"	-4° 46' 37"	223° 14' 58"	-21° 32' 07"	54' 18"	14' 47,57"	274° 37' 18"	96,55%
12:00	227° 39' 54"	-4° 47' 22"	223° 45' 31"	-21° 41' 29"	54' 17"	14' 47,41"	274° 09' 06"	96,69%
13:00	228° 09' 53"	-4° 48' 06"	224° 16' 08"	-21° 50' 46"	54' 16"	14' 47,25"	273° 40' 03"	96,83%
14:00	228° 39' 53"	-4° 48' 48"	224° 46' 48"	-21° 59' 57"	54' 16"	14' 47,09"	273° 10' 07"	96,97%
15:00	229° 09' 52"	-4° 49' 29"	225° 17' 31"	-22° 09' 02"	54' 15"	14' 46,93"	272° 39' 15"	97,10%
16:00	229° 39' 50"	-4° 50' 09"	225° 48' 18"	-22° 18' 01"	54' 15"	14' 46,78"	272° 07' 23"	97,22%
17:00	230° 09' 48"	-4° 50' 47"	226° 19' 08"	-22° 26' 54"	54' 14"	14' 46,63"	271° 34' 27"	97,35%
18:00	230° 39' 45"	-4° 51' 24"	226° 50' 01"	-22° 35' 41"	54' 13"	14' 46,48"	271° 00' 24"	97,47%
19:00	231° 09' 42"	-4° 52' 00"	227° 20' 58"	-22° 44' 22"	54' 13"	14' 46,33"	270° 25' 08"	97,59%
20:00	231° 39' 39"	-4° 52' 34"	227° 51' 58"	-22° 52' 56"	54' 12"	14' 46,19"	269° 48' 37"	97,70%
21:00	232° 09' 35"	-4° 53' 07"	228° 23' 02"	-23° 01' 25"	54' 12"	14' 46,04"	269° 10' 43"	97,82%
22:00	232° 39' 31"	-4° 53' 38"	228° 54' 09"	-23° 09' 47"	54' 11"	14' 45,91"	268° 31' 22"	97,93%
23:00	233° 09' 26"	-4° 54' 08"	229° 25' 20"	-23° 18' 03"	54' 11"	14' 45,77"	267° 50' 26"	98,03%
24:00	233° 39' 21"	-4° 54' 37"	229° 56' 33"	-23° 26' 13"	54' 10"	14' 45,64"	267° 07' 50"	98,14%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	68° 37' 16"	-0,60"	66° 53' 36"	21° 44' 22"	1,0135664	15' 46,79"	23° 26' 17"	02m 31s
01:00	68° 39' 40"	-0,60"	66° 56' 09"	21° 44' 44"	1,0135731	15' 46,78"	23° 26' 17"	02m 31s
02:00	68° 42' 04"	-0,60"	66° 58' 42"	21° 45' 06"	1,0135799	15' 46,77"	23° 26' 17"	02m 31s
03:00	68° 44' 28"	-0,61"	67° 01' 15"	21° 45' 29"	1,0135866	15' 46,77"	23° 26' 17"	02m 30s
04:00	68° 46' 51"	-0,61"	67° 03' 48"	21° 45' 51"	1,0135933	15' 46,76"	23° 26' 17"	02m 30s
05:00	68° 49' 15"	-0,61"	67° 06' 21"	21° 46' 13"	1,0136000	15' 46,75"	23° 26' 17"	02m 30s
06:00	68° 51' 39"	-0,61"	67° 08' 54"	21° 46' 36"	1,0136067	15' 46,75"	23° 26' 17"	02m 29s
07:00	68° 54' 03"	-0,61"	67° 11' 27"	21° 46' 58"	1,0136134	15' 46,74"	23° 26' 17"	02m 29s
08:00	68° 56' 27"	-0,61"	67° 14' 00"	21° 47' 20"	1,0136201	15' 46,74"	23° 26' 17"	02m 29s
09:00	68° 58' 51"	-0,61"	67° 16' 33"	21° 47' 42"	1,0136268	15' 46,73"	23° 26' 17"	02m 28s
10:00	69° 01' 14"	-0,61"	67° 19' 06"	21° 48' 04"	1,0136334	15' 46,72"	23° 26' 17"	02m 28s
11:00	69° 03' 38"	-0,61"	67° 21' 39"	21° 48' 26"	1,0136401	15' 46,72"	23° 26' 17"	02m 27s
12:00	69° 06' 02"	-0,61"	67° 24' 12"	21° 48' 48"	1,0136468	15' 46,71"	23° 26' 17"	02m 27s
13:00	69° 08' 26"	-0,61"	67° 26' 45"	21° 49' 10"	1,0136535	15' 46,70"	23° 26' 17"	02m 27s
14:00	69° 10' 50"	-0,61"	67° 29' 18"	21° 49' 32"	1,0136601	15' 46,70"	23° 26' 17"	02m 26s
15:00	69° 13' 13"	-0,61"	67° 31' 52"	21° 49' 54"	1,0136668	15' 46,69"	23° 26' 17"	02m 26s
16:00	69° 15' 37"	-0,61"	67° 34' 25"	21° 50' 16"	1,0136734	15' 46,69"	23° 26' 17"	02m 26s
17:00	69° 18' 01"	-0,61"	67° 36' 58"	21° 50' 38"	1,0136801	15' 46,68"	23° 26' 17"	02m 25s
18:00	69° 20' 25"	-0,61"	67° 39' 31"	21° 50' 59"	1,0136867	15' 46,67"	23° 26' 17"	02m 25s
19:00	69° 22' 49"	-0,61"	67° 42' 04"	21° 51' 21"	1,0136934	15' 46,67"	23° 26' 17"	02m 25s
20:00	69° 25' 13"	-0,61"	67° 44' 37"	21° 51' 43"	1,0137000	15' 46,66"	23° 26' 17"	02m 24s
21:00	69° 27' 36"	-0,61"	67° 47' 10"	21° 52' 04"	1,0137066	15' 46,65"	23° 26' 17"	02m 24s
22:00	69° 30' 00"	-0,61"	67° 49' 44"	21° 52' 26"	1,0137133	15' 46,65"	23° 26' 17"	02m 24s
23:00	69° 32' 24"	-0,61"	67° 52' 17"	21° 52' 48"	1,0137199	15' 46,64"	23° 26' 17"	02m 23s
24:00	69° 34' 48"	-0,61"	67° 54' 50"	21° 53' 09"	1,0137265	15' 46,64"	23° 26' 17"	02m 23s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	233° 39' 21"	-4° 54' 37"	229° 56' 33"	-23° 26' 13"	54' 10"	14' 45,64"	267° 07' 50"	98,14%
01:00	234° 09' 15"	-4° 55' 05"	230° 27' 51"	-23° 34' 16"	54' 10"	14' 45,51"	266° 23' 25"	98,24%
02:00	234° 39' 09"	-4° 55' 31"	230° 59' 11"	-23° 42' 13"	54' 09"	14' 45,38"	265° 37' 03"	98,33%
03:00	235° 09' 03"	-4° 55' 55"	231° 30' 35"	-23° 50' 04"	54' 09"	14' 45,25"	264° 48' 34"	98,43%
04:00	235° 38' 56"	-4° 56' 19"	232° 02' 02"	-23° 57' 48"	54' 09"	14' 45,13"	263° 57' 48"	98,52%
05:00	236° 08' 49"	-4° 56' 41"	232° 33' 33"	-24° 05' 25"	54' 08"	14' 45,01"	263° 04' 33"	98,61%
06:00	236° 38' 41"	-4° 57' 01"	233° 05' 06"	-24° 12' 56"	54' 08"	14' 44,89"	262° 08' 35"	98,69%
07:00	237° 08' 33"	-4° 57' 20"	233° 36' 44"	-24° 20' 20"	54' 07"	14' 44,77"	261° 09' 41"	98,77%
08:00	237° 38' 25"	-4° 57' 38"	234° 08' 24"	-24° 27' 37"	54' 07"	14' 44,66"	260° 07' 34"	98,85%
09:00	238° 08' 16"	-4° 57' 55"	234° 40' 07"	-24° 34' 48"	54' 06"	14' 44,55"	259° 01' 55"	98,93%
10:00	238° 38' 07"	-4° 58' 10"	235° 11' 54"	-24° 41' 52"	54' 06"	14' 44,44"	257° 52' 24"	99,00%
11:00	239° 07' 57"	-4° 58' 24"	235° 43' 44"	-24° 48' 49"	54' 06"	14' 44,33"	256° 38' 37"	99,07%
12:00	239° 37' 48"	-4° 58' 36"	236° 15' 37"	-24° 55' 40"	54' 05"	14' 44,23"	255° 20' 09"	99,14%
13:00	240° 07' 37"	-4° 58' 47"	236° 47' 33"	-25° 02' 23"	54' 05"	14' 44,13"	253° 56' 30"	99,20%
14:00	240° 37' 27"	-4° 58' 57"	237° 19' 33"	-25° 08' 59"	54' 04"	14' 44,03"	252° 27' 06"	99,26%
15:00	241° 07' 16"	-4° 59' 05"	237° 51' 35"	-25° 15' 29"	54' 04"	14' 43,93"	250° 51' 20"	99,32%
16:00	241° 37' 05"	-4° 59' 12"	238° 23' 40"	-25° 21' 51"	54' 04"	14' 43,84"	249° 08' 31"	99,37%
17:00	242° 06' 53"	-4° 59' 17"	238° 55' 49"	-25° 28' 07"	54' 03"	14' 43,75"	247° 17' 50"	99,42%
18:00	242° 36' 42"	-4° 59' 21"	239° 28' 00"	-25° 34' 15"	54' 03"	14' 43,66"	245° 18' 25"	99,47%
19:00	243° 06' 29"	-4° 59' 24"	240° 00' 14"	-25° 40' 16"	54' 03"	14' 43,57"	243° 09' 16"	99,51%
20:00	243° 36' 17"	-4° 59' 26"	240° 32' 32"	-25° 46' 10"	54' 03"	14' 43,49"	240° 49' 19"	99,56%
21:00	244° 06' 04"	-4° 59' 26"	241° 04' 52"	-25° 51' 57"	54' 02"	14' 43,41"	238° 17' 24"	99,59%
22:00	244° 35' 51"	-4° 59' 24"	241° 37' 14"	-25° 57' 36"	54' 02"	14' 43,33"	235° 32' 15"	99,63%
23:00	245° 05' 38"	-4° 59' 22"	242° 09' 40"	-26° 03' 08"	54' 02"	14' 43,26"	232° 32' 35"	99,66%
24:00	245° 35' 24"	-4° 59' 18"	242° 42' 08"	-26° 08' 33"	54' 01"	14' 43,18"	229° 17' 07"	99,69%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	69° 34' 48"	-0,61"	67° 54' 50"	21° 53' 09"	1,0137265	15' 46,64"	23° 26' 17"	02m 23s
01:00	69° 37' 11"	-0,61"	67° 57' 23"	21° 53' 31"	1,0137331	15' 46,63"	23° 26' 17"	02m 23s
02:00	69° 39' 35"	-0,61"	67° 59' 56"	21° 53' 52"	1,0137397	15' 46,62"	23° 26' 17"	02m 22s
03:00	69° 41' 59"	-0,61"	68° 02' 30"	21° 54' 13"	1,0137463	15' 46,62"	23° 26' 17"	02m 22s
04:00	69° 44' 23"	-0,61"	68° 05' 03"	21° 54' 35"	1,0137529	15' 46,61"	23° 26' 17"	02m 21s
05:00	69° 46' 47"	-0,61"	68° 07' 36"	21° 54' 56"	1,0137595	15' 46,61"	23° 26' 17"	02m 21s
06:00	69° 49' 10"	-0,61"	68° 10' 10"	21° 55' 17"	1,0137661	15' 46,60"	23° 26' 17"	02m 21s
07:00	69° 51' 34"	-0,61"	68° 12' 43"	21° 55' 39"	1,0137727	15' 46,59"	23° 26' 17"	02m 20s
08:00	69° 53' 58"	-0,61"	68° 15' 16"	21° 56' 00"	1,0137793	15' 46,59"	23° 26' 17"	02m 20s
09:00	69° 56' 22"	-0,61"	68° 17' 49"	21° 56' 21"	1,0137858	15' 46,58"	23° 26' 17"	02m 20s
10:00	69° 58' 46"	-0,61"	68° 20' 23"	21° 56' 42"	1,0137924	15' 46,57"	23° 26' 17"	02m 19s
11:00	70° 01' 09"	-0,61"	68° 22' 56"	21° 57' 03"	1,0137990	15' 46,57"	23° 26' 17"	02m 19s
12:00	70° 03' 33"	-0,61"	68° 25' 29"	21° 57' 24"	1,0138055	15' 46,56"	23° 26' 17"	02m 19s
13:00	70° 05' 57"	-0,61"	68° 28' 03"	21° 57' 45"	1,0138121	15' 46,56"	23° 26' 17"	02m 18s
14:00	70° 08' 21"	-0,61"	68° 30' 36"	21° 58' 06"	1,0138186	15' 46,55"	23° 26' 17"	02m 18s
15:00	70° 10' 44"	-0,60"	68° 33' 10"	21° 58' 27"	1,0138252	15' 46,54"	23° 26' 17"	02m 17s
16:00	70° 13' 08"	-0,60"	68° 35' 43"	21° 58' 48"	1,0138317	15' 46,54"	23° 26' 17"	02m 17s
17:00	70° 15' 32"	-0,60"	68° 38' 16"	21° 59' 09"	1,0138382	15' 46,53"	23° 26' 17"	02m 17s
18:00	70° 17' 56"	-0,60"	68° 40' 50"	21° 59' 30"	1,0138448	15' 46,53"	23° 26' 17"	02m 16s
19:00	70° 20' 19"	-0,60"	68° 43' 23"	21° 59' 50"	1,0138513	15' 46,52"	23° 26' 17"	02m 16s
20:00	70° 22' 43"	-0,60"	68° 45' 57"	22° 00' 11"	1,0138578	15' 46,51"	23° 26' 17"	02m 16s
21:00	70° 25' 07"	-0,60"	68° 48' 30"	22° 00' 32"	1,0138643	15' 46,51"	23° 26' 17"	02m 15s
22:00	70° 27' 31"	-0,60"	68° 51' 03"	22° 00' 53"	1,0138708	15' 46,50"	23° 26' 17"	02m 15s
23:00	70° 29' 54"	-0,60"	68° 53' 37"	22° 01' 13"	1,0138773	15' 46,50"	23° 26' 17"	02m 14s
24:00	70° 32' 18"	-0,59"	68° 56' 10"	22° 01' 34"	1,0138839	15' 46,49"	23° 26' 17"	02m 14s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	245° 35' 24"	-4° 59' 18"	242° 42' 08"	-26° 08' 33"	54' 01"	14' 43,18"	229° 17' 07"	99,69%
01:00	246° 05' 10"	-4° 59' 12"	243° 14' 40"	-26° 13' 51"	54' 01"	14' 43,11"	225° 44' 40"	99,72%
02:00	246° 34' 56"	-4° 59' 05"	243° 47' 13"	-26° 19' 01"	54' 01"	14' 43,04"	221° 54' 15"	99,74%
03:00	247° 04' 42"	-4° 58' 57"	244° 19' 50"	-26° 24' 04"	54' 01"	14' 42,98"	217° 45' 19"	99,76%
04:00	247° 34' 27"	-4° 58' 48"	244° 52' 28"	-26° 28' 59"	54' 00"	14' 42,91"	213° 17' 51"	99,78%
05:00	248° 04' 12"	-4° 58' 37"	245° 25' 10"	-26° 33' 46"	54' 00"	14' 42,85"	208° 32' 41"	99,79%
06:00	248° 33' 57"	-4° 58' 25"	245° 57' 54"	-26° 38' 27"	54' 00"	14' 42,79"	203° 31' 34"	99,80%
07:00	249° 03' 42"	-4° 58' 11"	246° 30' 40"	-26° 42' 59"	54' 00"	14' 42,74"	198° 17' 24"	99,81%
08:00	249° 33' 26"	-4° 57' 56"	247° 03' 28"	-26° 47' 24"	54' 00"	14' 42,68"	192° 54' 04"	99,81%
09:00	250° 03' 10"	-4° 57' 40"	247° 36' 19"	-26° 51' 42"	53' 59"	14' 42,63"	187° 26' 17"	99,81%
10:00	250° 32' 54"	-4° 57' 22"	248° 09' 12"	-26° 55' 51"	53' 59"	14' 42,58"	181° 59' 13"	99,81%
11:00	251° 02' 37"	-4° 57' 03"	248° 42' 08"	-26° 59' 53"	53' 59"	14' 42,54"	176° 37' 54"	99,81%
12:00	251° 32' 21"	-4° 56' 43"	249° 15' 05"	-27° 03' 48"	53' 59"	14' 42,50"	171° 26' 51"	99,80%
13:00	252° 02' 04"	-4° 56' 21"	249° 48' 04"	-27° 07' 34"	53' 59"	14' 42,45"	166° 29' 43"	99,79%
14:00	252° 31' 47"	-4° 55' 58"	250° 21' 06"	-27° 11' 13"	53' 59"	14' 42,42"	161° 49' 01"	99,77%
15:00	253° 01' 30"	-4° 55' 34"	250° 54' 09"	-27° 14' 44"	53' 58"	14' 42,38"	157° 26' 16"	99,76%
16:00	253° 31' 13"	-4° 55' 08"	251° 27' 15"	-27° 18' 07"	53' 58"	14' 42,35"	153° 22' 00"	99,73%
17:00	254° 00' 55"	-4° 54' 41"	252° 00' 22"	-27° 21' 23"	53' 58"	14' 42,32"	149° 36' 03"	99,71%
18:00	254° 30' 37"	-4° 54' 12"	252° 33' 30"	-27° 24' 30"	53' 58"	14' 42,29"	146° 07' 42"	99,68%
19:00	255° 00' 19"	-4° 53' 43"	253° 06' 41"	-27° 27' 30"	53' 58"	14' 42,26"	142° 55' 54"	99,65%
20:00	255° 30' 01"	-4° 53' 11"	253° 39' 53"	-27° 30' 22"	53' 58"	14' 42,24"	139° 59' 26"	99,62%
21:00	255° 59' 43"	-4° 52' 39"	254° 13' 07"	-27° 33' 06"	53' 58"	14' 42,22"	137° 17' 00"	99,59%
22:00	256° 29' 25"	-4° 52' 05"	254° 46' 22"	-27° 35' 41"	53' 58"	14' 42,20"	134° 47' 20"	99,55%
23:00	256° 59' 06"	-4° 51' 30"	255° 19' 39"	-27° 38' 09"	53' 58"	14' 42,18"	132° 29' 11"	99,50%
24:00	257° 28' 47"	-4° 50' 54"	255° 52' 57"	-27° 40' 29"	53' 58"	14' 42,17"	130° 21' 25"	99,46%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	70° 32' 18"	-0,59"	68° 56' 10"	22° 01' 34"	1,0138839	15' 46,49"	23° 26' 17"	02m 14s
01:00	70° 34' 42"	-0,59"	68° 58' 44"	22° 01' 54"	1,0138903	15' 46,48"	23° 26' 17"	02m 14s
02:00	70° 37' 06"	-0,59"	69° 01' 17"	22° 02' 15"	1,0138968	15' 46,48"	23° 26' 17"	02m 13s
03:00	70° 39' 29"	-0,59"	69° 03' 51"	22° 02' 35"	1,0139033	15' 46,47"	23° 26' 17"	02m 13s
04:00	70° 41' 53"	-0,59"	69° 06' 24"	22° 02' 56"	1,0139098	15' 46,46"	23° 26' 17"	02m 13s
05:00	70° 44' 17"	-0,59"	69° 08' 58"	22° 03' 16"	1,0139163	15' 46,46"	23° 26' 17"	02m 12s
06:00	70° 46' 41"	-0,59"	69° 11' 31"	22° 03' 36"	1,0139228	15' 46,45"	23° 26' 17"	02m 12s
07:00	70° 49' 04"	-0,59"	69° 14' 05"	22° 03' 57"	1,0139292	15' 46,45"	23° 26' 17"	02m 11s
08:00	70° 51' 28"	-0,58"	69° 16' 38"	22° 04' 17"	1,0139357	15' 46,44"	23° 26' 17"	02m 11s
09:00	70° 53' 52"	-0,58"	69° 19' 12"	22° 04' 37"	1,0139421	15' 46,43"	23° 26' 17"	02m 11s
10:00	70° 56' 16"	-0,58"	69° 21' 46"	22° 04' 57"	1,0139486	15' 46,43"	23° 26' 17"	02m 10s
11:00	70° 58' 39"	-0,58"	69° 24' 19"	22° 05' 17"	1,0139550	15' 46,42"	23° 26' 17"	02m 10s
12:00	71° 01' 03"	-0,58"	69° 26' 53"	22° 05' 37"	1,0139615	15' 46,42"	23° 26' 17"	02m 10s
13:00	71° 03' 27"	-0,57"	69° 29' 26"	22° 05' 58"	1,0139679	15' 46,41"	23° 26' 17"	02m 09s
14:00	71° 05' 51"	-0,57"	69° 32' 00"	22° 06' 18"	1,0139743	15' 46,40"	23° 26' 17"	02m 09s
15:00	71° 08' 14"	-0,57"	69° 34' 34"	22° 06' 37"	1,0139808	15' 46,40"	23° 26' 17"	02m 08s
16:00	71° 10' 38"	-0,57"	69° 37' 07"	22° 06' 57"	1,0139872	15' 46,39"	23° 26' 17"	02m 08s
17:00	71° 13' 02"	-0,57"	69° 39' 41"	22° 07' 17"	1,0139936	15' 46,39"	23° 26' 17"	02m 08s
18:00	71° 15' 25"	-0,57"	69° 42' 15"	22° 07' 37"	1,0140000	15' 46,38"	23° 26' 17"	02m 07s
19:00	71° 17' 49"	-0,56"	69° 44' 48"	22° 07' 57"	1,0140064	15' 46,37"	23° 26' 17"	02m 07s
20:00	71° 20' 13"	-0,56"	69° 47' 22"	22° 08' 17"	1,0140128	15' 46,37"	23° 26' 17"	02m 06s
21:00	71° 22' 37"	-0,56"	69° 49' 56"	22° 08' 36"	1,0140192	15' 46,36"	23° 26' 17"	02m 06s
22:00	71° 25' 00"	-0,56"	69° 52' 29"	22° 08' 56"	1,0140256	15' 46,36"	23° 26' 17"	02m 06s
23:00	71° 27' 24"	-0,55"	69° 55' 03"	22° 09' 16"	1,0140320	15' 46,35"	23° 26' 17"	02m 05s
24:00	71° 29' 48"	-0,55"	69° 57' 37"	22° 09' 35"	1,0140384	15' 46,34"	23° 26' 17"	02m 05s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	257° 28' 47"	-4° 50' 54"	255° 52' 57"	-27° 40' 29"	53' 58"	14' 42,17"	130° 21' 25"	99,46%
01:00	257° 58' 29"	-4° 50' 16"	256° 26' 16"	-27° 42' 41"	53' 58"	14' 42,16"	128° 22' 58"	99,41%
02:00	258° 28' 10"	-4° 49' 37"	256° 59' 37"	-27° 44' 45"	53' 58"	14' 42,15"	126° 32' 54"	99,36%
03:00	258° 57' 50"	-4° 48' 57"	257° 32' 58"	-27° 46' 41"	53' 58"	14' 42,15"	124° 50' 21"	99,30%
04:00	259° 27' 31"	-4° 48' 15"	258° 06' 21"	-27° 48' 29"	53' 58"	14' 42,14"	123° 14' 33"	99,25%
05:00	259° 57' 12"	-4° 47' 32"	258° 39' 45"	-27° 50' 09"	53' 58"	14' 42,14"	121° 44' 49"	99,19%
06:00	260° 26' 53"	-4° 46' 48"	259° 13' 10"	-27° 51' 40"	53' 58"	14' 42,15"	120° 20' 34"	99,12%
07:00	260° 56' 33"	-4° 46' 02"	259° 46' 35"	-27° 53' 04"	53' 58"	14' 42,15"	119° 01' 16"	99,06%
08:00	261° 26' 13"	-4° 45' 15"	260° 20' 02"	-27° 54' 19"	53' 58"	14' 42,16"	117° 46' 25"	98,99%
09:00	261° 55' 54"	-4° 44' 27"	260° 53' 29"	-27° 55' 27"	53' 58"	14' 42,17"	116° 35' 37"	98,91%
10:00	262° 25' 34"	-4° 43' 38"	261° 26' 57"	-27° 56' 26"	53' 58"	14' 42,18"	115° 28' 28"	98,84%
11:00	262° 55' 14"	-4° 42' 47"	262° 00' 25"	-27° 57' 17"	53' 58"	14' 42,20"	114° 24' 41"	98,76%
12:00	263° 24' 54"	-4° 41' 55"	262° 33' 54"	-27° 58' 01"	53' 58"	14' 42,22"	113° 23' 55"	98,68%
13:00	263° 54' 34"	-4° 41' 02"	263° 07' 23"	-27° 58' 36"	53' 58"	14' 42,24"	112° 25' 57"	98,59%
14:00	264° 24' 14"	-4° 40' 07"	263° 40' 52"	-27° 59' 02"	53' 58"	14' 42,26"	111° 30' 31"	98,50%
15:00	264° 53' 54"	-4° 39' 11"	264° 14' 22"	-27° 59' 21"	53' 58"	14' 42,29"	110° 37' 25"	98,41%
16:00	265° 23' 34"	-4° 38' 14"	264° 47' 52"	-27° 59' 32"	53' 58"	14' 42,32"	109° 46' 27"	98,32%
17:00	265° 53' 14"	-4° 37' 16"	265° 21' 23"	-27° 59' 34"	53' 58"	14' 42,35"	108° 57' 28"	98,22%
18:00	266° 22' 54"	-4° 36' 16"	265° 54' 53"	-27° 59' 28"	53' 58"	14' 42,38"	108° 10' 19"	98,12%
19:00	266° 52' 33"	-4° 35' 15"	266° 28' 23"	-27° 59' 14"	53' 59"	14' 42,42"	107° 24' 50"	98,02%
20:00	267° 22' 13"	-4° 34' 13"	267° 01' 53"	-27° 58' 52"	53' 59"	14' 42,46"	106° 40' 55"	97,91%
21:00	267° 51' 53"	-4° 33' 10"	267° 35' 23"	-27° 58' 22"	53' 59"	14' 42,50"	105° 58' 27"	97,80%
22:00	268° 21' 33"	-4° 32' 05"	268° 08' 53"	-27° 57' 44"	53' 59"	14' 42,55"	105° 17' 20"	97,69%
23:00	268° 51' 13"	-4° 30' 59"	268° 42' 22"	-27° 56' 57"	53' 59"	14' 42,59"	104° 37' 28"	97,58%
24:00	269° 20' 52"	-4° 29' 52"	269° 15' 51"	-27° 56' 03"	53' 59"	14' 42,64"	103° 58' 46"	97,46%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	71° 29' 48"	-0,55"	69° 57' 37"	22° 09' 35"	1,0140384	15' 46,34"	23° 26' 17"	02m 05s
01:00	71° 32' 11"	-0,55"	70° 00' 10"	22° 09' 55"	1,0140448	15' 46,34"	23° 26' 17"	02m 04s
02:00	71° 34' 35"	-0,55"	70° 02' 44"	22° 10' 15"	1,0140511	15' 46,33"	23° 26' 17"	02m 04s
03:00	71° 36' 59"	-0,54"	70° 05' 18"	22° 10' 34"	1,0140575	15' 46,33"	23° 26' 17"	02m 04s
04:00	71° 39' 22"	-0,54"	70° 07' 52"	22° 10' 53"	1,0140639	15' 46,32"	23° 26' 17"	02m 03s
05:00	71° 41' 46"	-0,54"	70° 10' 25"	22° 11' 13"	1,0140702	15' 46,32"	23° 26' 17"	02m 03s
06:00	71° 44' 10"	-0,54"	70° 12' 59"	22° 11' 32"	1,0140766	15' 46,31"	23° 26' 17"	02m 03s
07:00	71° 46' 34"	-0,53"	70° 15' 33"	22° 11' 52"	1,0140829	15' 46,30"	23° 26' 17"	02m 02s
08:00	71° 48' 57"	-0,53"	70° 18' 07"	22° 12' 11"	1,0140893	15' 46,30"	23° 26' 17"	02m 02s
09:00	71° 51' 21"	-0,53"	70° 20' 41"	22° 12' 30"	1,0140956	15' 46,29"	23° 26' 17"	02m 01s
10:00	71° 53' 45"	-0,53"	70° 23' 14"	22° 12' 49"	1,0141019	15' 46,29"	23° 26' 17"	02m 01s
11:00	71° 56' 08"	-0,52"	70° 25' 48"	22° 13' 08"	1,0141083	15' 46,28"	23° 26' 17"	02m 01s
12:00	71° 58' 32"	-0,52"	70° 28' 22"	22° 13' 28"	1,0141146	15' 46,27"	23° 26' 17"	02m 00s
13:00	72° 00' 56"	-0,52"	70° 30' 56"	22° 13' 47"	1,0141209	15' 46,27"	23° 26' 17"	02m 00s
14:00	72° 03' 19"	-0,52"	70° 33' 30"	22° 14' 06"	1,0141272	15' 46,26"	23° 26' 17"	01m 59s
15:00	72° 05' 43"	-0,51"	70° 36' 04"	22° 14' 25"	1,0141335	15' 46,26"	23° 26' 17"	01m 59s
16:00	72° 08' 07"	-0,51"	70° 38' 38"	22° 14' 44"	1,0141398	15' 46,25"	23° 26' 17"	01m 59s
17:00	72° 10' 30"	-0,51"	70° 41' 11"	22° 15' 03"	1,0141461	15' 46,24"	23° 26' 17"	01m 58s
18:00	72° 12' 54"	-0,50"	70° 43' 45"	22° 15' 22"	1,0141524	15' 46,24"	23° 26' 17"	01m 58s
19:00	72° 15' 18"	-0,50"	70° 46' 19"	22° 15' 40"	1,0141587	15' 46,23"	23° 26' 17"	01m 57s
20:00	72° 17' 42"	-0,50"	70° 48' 53"	22° 15' 59"	1,0141650	15' 46,23"	23° 26' 17"	01m 57s
21:00	72° 20' 05"	-0,49"	70° 51' 27"	22° 16' 18"	1,0141712	15' 46,22"	23° 26' 17"	01m 56s
22:00	72° 22' 29"	-0,49"	70° 54' 01"	22° 16' 37"	1,0141775	15' 46,22"	23° 26' 17"	01m 56s
23:00	72° 24' 53"	-0,49"	70° 56' 35"	22° 16' 55"	1,0141838	15' 46,21"	23° 26' 17"	01m 56s
24:00	72° 27' 16"	-0,49"	70° 59' 09"	22° 17' 14"	1,0141900	15' 46,20"	23° 26' 17"	01m 55s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	269° 20' 52"	-4° 29' 52"	269° 15' 51"	-27° 56' 03"	53' 59"	14' 42,64"	103° 58' 46"	97,46%
01:00	269° 50' 32"	-4° 28' 44"	269° 49' 19"	-27° 55' 00"	54' 00"	14' 42,70"	103° 21' 10"	97,34%
02:00	270° 20' 12"	-4° 27' 34"	270° 22' 47"	-27° 53' 49"	54' 00"	14' 42,75"	102° 44' 35"	97,21%
03:00	270° 49' 52"	-4° 26' 23"	270° 56' 15"	-27° 52' 30"	54' 00"	14' 42,81"	102° 08' 57"	97,09%
04:00	271° 19' 32"	-4° 25' 11"	271° 29' 41"	-27° 51' 03"	54' 00"	14' 42,88"	101° 34' 14"	96,96%
05:00	271° 49' 12"	-4° 23' 58"	272° 03' 07"	-27° 49' 28"	54' 00"	14' 42,94"	101° 00' 22"	96,83%
06:00	272° 18' 52"	-4° 22' 44"	272° 36' 32"	-27° 47' 45"	54' 01"	14' 43,01"	100° 27' 17"	96,69%
07:00	272° 48' 32"	-4° 21' 28"	273° 09' 56"	-27° 45' 54"	54' 01"	14' 43,08"	99° 54' 58"	96,55%
08:00	273° 18' 13"	-4° 20' 11"	273° 43' 20"	-27° 43' 54"	54' 01"	14' 43,15"	99° 23' 22"	96,41%
09:00	273° 47' 53"	-4° 18' 53"	274° 16' 42"	-27° 41' 47"	54' 02"	14' 43,23"	98° 52' 25"	96,27%
10:00	274° 17' 34"	-4° 17' 34"	274° 50' 03"	-27° 39' 32"	54' 02"	14' 43,30"	98° 22' 08"	96,12%
11:00	274° 47' 14"	-4° 16' 14"	275° 23' 23"	-27° 37' 08"	54' 02"	14' 43,39"	97° 52' 26"	95,97%
12:00	275° 16' 55"	-4° 14' 52"	275° 56' 41"	-27° 34' 37"	54' 02"	14' 43,47"	97° 23' 19"	95,82%
13:00	275° 46' 36"	-4° 13' 29"	276° 29' 59"	-27° 31' 57"	54' 03"	14' 43,56"	96° 54' 45"	95,66%
14:00	276° 16' 17"	-4° 12' 05"	277° 03' 15"	-27° 29' 10"	54' 03"	14' 43,65"	96° 26' 43"	95,50%
15:00	276° 45' 58"	-4° 10' 40"	277° 36' 29"	-27° 26' 15"	54' 03"	14' 43,74"	95° 59' 10"	95,34%
16:00	277° 15' 39"	-4° 09' 14"	278° 09' 42"	-27° 23' 11"	54' 04"	14' 43,84"	95° 32' 06"	95,17%
17:00	277° 45' 21"	-4° 07' 47"	278° 42' 54"	-27° 20' 00"	54' 04"	14' 43,94"	95° 05' 29"	95,01%
18:00	278° 15' 02"	-4° 06' 18"	279° 16' 03"	-27° 16' 41"	54' 05"	14' 44,04"	94° 39' 18"	94,84%
19:00	278° 44' 44"	-4° 04' 49"	279° 49' 11"	-27° 13' 14"	54' 05"	14' 44,14"	94° 13' 33"	94,66%
20:00	279° 14' 26"	-4° 03' 18"	280° 22' 18"	-27° 09' 39"	54' 05"	14' 44,25"	93° 48' 11"	94,49%
21:00	279° 44' 09"	-4° 01' 46"	280° 55' 22"	-27° 05' 57"	54' 06"	14' 44,36"	93° 23' 13"	94,31%
22:00	280° 13' 51"	-4° 00' 13"	281° 28' 25"	-27° 02' 06"	54' 06"	14' 44,48"	92° 58' 37"	94,13%
23:00	280° 43' 34"	-3° 58' 39"	282° 01' 26"	-26° 58' 08"	54' 07"	14' 44,59"	92° 34' 23"	93,94%
24:00	281° 13' 17"	-3° 57' 04"	282° 34' 25"	-26° 54' 02"	54' 07"	14' 44,71"	92° 10' 29"	93,76%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	72° 27' 16"	-0,49"	70° 59' 09"	22° 17' 14"	1,0141900	15' 46,20"	23° 26' 17"	01m 55s
01:00	72° 29' 40"	-0,48"	71° 01' 43"	22° 17' 33"	1,0141963	15' 46,20"	23° 26' 17"	01m 55s
02:00	72° 32' 04"	-0,48"	71° 04' 17"	22° 17' 51"	1,0142025	15' 46,19"	23° 26' 17"	01m 54s
03:00	72° 34' 27"	-0,48"	71° 06' 51"	22° 18' 10"	1,0142088	15' 46,19"	23° 26' 17"	01m 54s
04:00	72° 36' 51"	-0,47"	71° 09' 25"	22° 18' 28"	1,0142150	15' 46,18"	23° 26' 17"	01m 54s
05:00	72° 39' 15"	-0,47"	71° 11' 59"	22° 18' 47"	1,0142213	15' 46,17"	23° 26' 17"	01m 53s
06:00	72° 41' 38"	-0,47"	71° 14' 33"	22° 19' 05"	1,0142275	15' 46,17"	23° 26' 17"	01m 53s
07:00	72° 44' 02"	-0,46"	71° 17' 07"	22° 19' 23"	1,0142337	15' 46,16"	23° 26' 17"	01m 52s
08:00	72° 46' 26"	-0,46"	71° 19' 41"	22° 19' 42"	1,0142399	15' 46,16"	23° 26' 17"	01m 52s
09:00	72° 48' 49"	-0,45"	71° 22' 15"	22° 20' 00"	1,0142461	15' 46,15"	23° 26' 17"	01m 52s
10:00	72° 51' 13"	-0,45"	71° 24' 49"	22° 20' 18"	1,0142523	15' 46,15"	23° 26' 17"	01m 51s
11:00	72° 53' 36"	-0,45"	71° 27' 23"	22° 20' 36"	1,0142586	15' 46,14"	23° 26' 17"	01m 51s
12:00	72° 56' 00"	-0,44"	71° 29' 57"	22° 20' 55"	1,0142647	15' 46,13"	23° 26' 17"	01m 50s
13:00	72° 58' 24"	-0,44"	71° 32' 31"	22° 21' 13"	1,0142709	15' 46,13"	23° 26' 17"	01m 50s
14:00	73° 00' 47"	-0,44"	71° 35' 05"	22° 21' 31"	1,0142771	15' 46,12"	23° 26' 17"	01m 50s
15:00	73° 03' 11"	-0,43"	71° 37' 39"	22° 21' 49"	1,0142833	15' 46,12"	23° 26' 17"	01m 49s
16:00	73° 05' 35"	-0,43"	71° 40' 14"	22° 22' 07"	1,0142895	15' 46,11"	23° 26' 17"	01m 49s
17:00	73° 07' 58"	-0,43"	71° 42' 48"	22° 22' 25"	1,0142956	15' 46,10"	23° 26' 17"	01m 48s
18:00	73° 10' 22"	-0,42"	71° 45' 22"	22° 22' 43"	1,0143018	15' 46,10"	23° 26' 17"	01m 48s
19:00	73° 12' 46"	-0,42"	71° 47' 56"	22° 23' 00"	1,0143080	15' 46,09"	23° 26' 17"	01m 47s
20:00	73° 15' 09"	-0,41"	71° 50' 30"	22° 23' 18"	1,0143141	15' 46,09"	23° 26' 17"	01m 47s
21:00	73° 17' 33"	-0,41"	71° 53' 04"	22° 23' 36"	1,0143203	15' 46,08"	23° 26' 17"	01m 47s
22:00	73° 19' 57"	-0,41"	71° 55' 38"	22° 23' 54"	1,0143264	15' 46,08"	23° 26' 17"	01m 46s
23:00	73° 22' 20"	-0,40"	71° 58' 13"	22° 24' 12"	1,0143325	15' 46,07"	23° 26' 17"	01m 46s
24:00	73° 24' 44"	-0,40"	72° 00' 47"	22° 24' 29"	1,0143387	15' 46,06"	23° 26' 17"	01m 45s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	281° 13' 17"	-3° 57' 04"	282° 34' 25"	-26° 54' 02"	54' 07"	14' 44,71"	92° 10' 29"	93,76%
01:00	281° 43' 00"	-3° 55' 27"	283° 07' 21"	-26° 49' 48"	54' 07"	14' 44,83"	91° 46' 55"	93,57%
02:00	282° 12' 43"	-3° 53' 50"	283° 40' 16"	-26° 45' 27"	54' 08"	14' 44,96"	91° 23' 41"	93,37%
03:00	282° 42' 27"	-3° 52' 11"	284° 13' 09"	-26° 40' 58"	54' 08"	14' 45,09"	91° 00' 46"	93,18%
04:00	283° 12' 11"	-3° 50' 32"	284° 45' 59"	-26° 36' 21"	54' 09"	14' 45,22"	90° 38' 08"	92,98%
05:00	283° 41' 55"	-3° 48' 51"	285° 18' 47"	-26° 31' 37"	54' 09"	14' 45,36"	90° 15' 49"	92,78%
06:00	284° 11' 40"	-3° 47' 09"	285° 51' 33"	-26° 26' 45"	54' 10"	14' 45,49"	89° 53' 46"	92,58%
07:00	284° 41' 25"	-3° 45' 27"	286° 24' 16"	-26° 21' 46"	54' 10"	14' 45,64"	89° 32' 00"	92,37%
08:00	285° 11' 10"	-3° 43' 43"	286° 56' 58"	-26° 16' 39"	54' 11"	14' 45,78"	89° 10' 30"	92,16%
09:00	285° 40' 55"	-3° 41' 58"	287° 29' 36"	-26° 11' 24"	54' 11"	14' 45,93"	88° 49' 17"	91,95%
10:00	286° 10' 41"	-3° 40' 12"	288° 02' 12"	-26° 06' 02"	54' 12"	14' 46,08"	88° 28' 18"	91,73%
11:00	286° 40' 27"	-3° 38' 25"	288° 34' 46"	-26° 00' 33"	54' 13"	14' 46,23"	88° 07' 35"	91,52%
12:00	287° 10' 14"	-3° 36' 37"	289° 07' 17"	-25° 54' 56"	54' 13"	14' 46,39"	87° 47' 06"	91,30%
13:00	287° 40' 01"	-3° 34' 48"	289° 39' 46"	-25° 49' 12"	54' 14"	14' 46,55"	87° 26' 51"	91,07%
14:00	288° 09' 48"	-3° 32' 58"	290° 12' 12"	-25° 43' 21"	54' 14"	14' 46,71"	87° 06' 51"	90,85%
15:00	288° 39' 36"	-3° 31' 06"	290° 44' 35"	-25° 37' 22"	54' 15"	14' 46,88"	86° 47' 04"	90,62%
16:00	289° 09' 24"	-3° 29' 14"	291° 16' 56"	-25° 31' 16"	54' 16"	14' 47,05"	86° 27' 31"	90,39%
17:00	289° 39' 13"	-3° 27' 21"	291° 49' 14"	-25° 25' 03"	54' 16"	14' 47,22"	86° 08' 10"	90,16%
18:00	290° 09' 02"	-3° 25' 27"	292° 21' 29"	-25° 18' 42"	54' 17"	14' 47,40"	85° 49' 03"	89,92%
19:00	290° 38' 52"	-3° 23' 32"	292° 53' 41"	-25° 12' 15"	54' 18"	14' 47,58"	85° 30' 09"	89,68%
20:00	291° 08' 41"	-3° 21' 36"	293° 25' 51"	-25° 05' 40"	54' 18"	14' 47,76"	85° 11' 27"	89,44%
21:00	291° 38' 32"	-3° 19' 39"	293° 57' 57"	-24° 58' 58"	54' 19"	14' 47,95"	84° 52' 57"	89,20%
22:00	292° 08' 23"	-3° 17' 41"	294° 30' 01"	-24° 52' 10"	54' 20"	14' 48,14"	84° 34' 39"	88,95%
23:00	292° 38' 14"	-3° 15' 42"	295° 02' 02"	-24° 45' 14"	54' 20"	14' 48,33"	84° 16' 34"	88,70%
24:00	293° 08' 06"	-3° 13' 42"	295° 34' 00"	-24° 38' 11"	54' 21"	14' 48,53"	83° 58' 40"	88,45%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	73° 24' 44"	-0,40"	72° 00' 47"	22° 24' 29"	1,0143387	15' 46,06"	23° 26' 17"	01m 45s
01:00	73° 27' 07"	-0,39"	72° 03' 21"	22° 24' 47"	1,0143448	15' 46,06"	23° 26' 17"	01m 45s
02:00	73° 29' 31"	-0,39"	72° 05' 55"	22° 25' 04"	1,0143509	15' 46,05"	23° 26' 17"	01m 44s
03:00	73° 31' 55"	-0,39"	72° 08' 29"	22° 25' 22"	1,0143570	15' 46,05"	23° 26' 17"	01m 44s
04:00	73° 34' 18"	-0,38"	72° 11' 04"	22° 25' 39"	1,0143631	15' 46,04"	23° 26' 17"	01m 44s
05:00	73° 36' 42"	-0,38"	72° 13' 38"	22° 25' 57"	1,0143692	15' 46,04"	23° 26' 17"	01m 43s
06:00	73° 39' 06"	-0,37"	72° 16' 12"	22° 26' 14"	1,0143753	15' 46,03"	23° 26' 17"	01m 43s
07:00	73° 41' 29"	-0,37"	72° 18' 46"	22° 26' 32"	1,0143814	15' 46,02"	23° 26' 17"	01m 42s
08:00	73° 43' 53"	-0,36"	72° 21' 21"	22° 26' 49"	1,0143875	15' 46,02"	23° 26' 17"	01m 42s
09:00	73° 46' 17"	-0,36"	72° 23' 55"	22° 27' 06"	1,0143936	15' 46,01"	23° 26' 17"	01m 41s
10:00	73° 48' 40"	-0,36"	72° 26' 29"	22° 27' 24"	1,0143997	15' 46,01"	23° 26' 17"	01m 41s
11:00	73° 51' 04"	-0,35"	72° 29' 03"	22° 27' 41"	1,0144058	15' 46,00"	23° 26' 17"	01m 41s
12:00	73° 53' 27"	-0,35"	72° 31' 38"	22° 27' 58"	1,0144118	15' 46,00"	23° 26' 17"	01m 40s
13:00	73° 55' 51"	-0,34"	72° 34' 12"	22° 28' 15"	1,0144179	15' 45,99"	23° 26' 17"	01m 40s
14:00	73° 58' 15"	-0,34"	72° 36' 46"	22° 28' 32"	1,0144239	15' 45,99"	23° 26' 17"	01m 39s
15:00	74° 00' 38"	-0,33"	72° 39' 21"	22° 28' 49"	1,0144300	15' 45,98"	23° 26' 17"	01m 39s
16:00	74° 03' 02"	-0,33"	72° 41' 55"	22° 29' 06"	1,0144360	15' 45,97"	23° 26' 17"	01m 38s
17:00	74° 05' 25"	-0,32"	72° 44' 29"	22° 29' 23"	1,0144420	15' 45,97"	23° 26' 17"	01m 38s
18:00	74° 07' 49"	-0,32"	72° 47' 04"	22° 29' 40"	1,0144481	15' 45,96"	23° 26' 17"	01m 38s
19:00	74° 10' 13"	-0,32"	72° 49' 38"	22° 29' 57"	1,0144541	15' 45,96"	23° 26' 17"	01m 37s
20:00	74° 12' 36"	-0,31"	72° 52' 12"	22° 30' 14"	1,0144601	15' 45,95"	23° 26' 17"	01m 37s
21:00	74° 15' 00"	-0,31"	72° 54' 47"	22° 30' 31"	1,0144661	15' 45,95"	23° 26' 17"	01m 36s
22:00	74° 17' 23"	-0,30"	72° 57' 21"	22° 30' 48"	1,0144721	15' 45,94"	23° 26' 17"	01m 36s
23:00	74° 19' 47"	-0,30"	72° 59' 55"	22° 31' 04"	1,0144781	15' 45,93"	23° 26' 17"	01m 35s
24:00	74° 22' 11"	-0,29"	73° 02' 30"	22° 31' 21"	1,0144841	15' 45,93"	23° 26' 17"	01m 35s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	293° 08' 06"	-3° 13' 42"	295° 34' 00"	-24° 38' 11"	54' 21"	14' 48,53"	83° 58' 40"	88,45%
01:00	293° 37' 59"	-3° 11' 41"	296° 05' 55"	-24° 31' 01"	54' 22"	14' 48,73"	83° 40' 57"	88,20%
02:00	294° 07' 52"	-3° 09' 40"	296° 37' 47"	-24° 23' 45"	54' 22"	14' 48,93"	83° 23' 26"	87,94%
03:00	294° 37' 45"	-3° 07' 37"	297° 09' 36"	-24° 16' 21"	54' 23"	14' 49,13"	83° 06' 06"	87,68%
04:00	295° 07' 40"	-3° 05' 33"	297° 41' 22"	-24° 08' 51"	54' 24"	14' 49,34"	82° 48' 57"	87,42%
05:00	295° 37' 34"	-3° 03' 29"	298° 13' 05"	-24° 01' 14"	54' 25"	14' 49,56"	82° 32' 00"	87,16%
06:00	296° 07' 30"	-3° 01' 24"	298° 44' 45"	-23° 53' 31"	54' 26"	14' 49,77"	82° 15' 13"	86,89%
07:00	296° 37' 26"	-2° 59' 17"	299° 16' 22"	-23° 45' 40"	54' 26"	14' 49,99"	81° 58' 37"	86,62%
08:00	297° 07' 22"	-2° 57' 10"	299° 47' 56"	-23° 37' 43"	54' 27"	14' 50,22"	81° 42' 11"	86,35%
09:00	297° 37' 20"	-2° 55' 02"	300° 19' 27"	-23° 29' 40"	54' 28"	14' 50,44"	81° 25' 56"	86,07%
10:00	298° 07' 17"	-2° 52' 53"	300° 50' 55"	-23° 21' 30"	54' 29"	14' 50,67"	81° 09' 51"	85,80%
11:00	298° 37' 16"	-2° 50' 43"	301° 22' 20"	-23° 13' 13"	54' 30"	14' 50,91"	80° 53' 57"	85,52%
12:00	299° 07' 15"	-2° 48' 33"	301° 53' 41"	-23° 04' 50"	54' 31"	14' 51,14"	80° 38' 13"	85,24%
13:00	299° 37' 15"	-2° 46' 21"	302° 25' 00"	-22° 56' 20"	54' 31"	14' 51,38"	80° 22' 39"	84,95%
14:00	300° 07' 16"	-2° 44' 09"	302° 56' 16"	-22° 47' 44"	54' 32"	14' 51,63"	80° 07' 15"	84,67%
15:00	300° 37' 17"	-2° 41' 56"	303° 27' 28"	-22° 39' 02"	54' 33"	14' 51,87"	79° 52' 01"	84,38%
16:00	301° 07' 19"	-2° 39' 42"	303° 58' 37"	-22° 30' 14"	54' 34"	14' 52,13"	79° 36' 57"	84,09%
17:00	301° 37' 22"	-2° 37' 27"	304° 29' 43"	-22° 21' 19"	54' 35"	14' 52,38"	79° 22' 02"	83,80%
18:00	302° 07' 26"	-2° 35' 11"	305° 00' 46"	-22° 12' 18"	54' 36"	14' 52,64"	79° 07' 18"	83,50%
19:00	302° 37' 30"	-2° 32' 55"	305° 31' 46"	-22° 03' 11"	54' 37"	14' 52,90"	78° 52' 43"	83,20%
20:00	303° 07' 36"	-2° 30' 38"	306° 02' 43"	-21° 53' 57"	54' 38"	14' 53,16"	78° 38' 18"	82,90%
21:00	303° 37' 42"	-2° 28' 20"	306° 33' 37"	-21° 44' 38"	54' 39"	14' 53,43"	78° 24' 02"	82,60%
22:00	304° 07' 49"	-2° 26' 01"	307° 04' 28"	-21° 35' 12"	54' 40"	14' 53,70"	78° 09' 55"	82,29%
23:00	304° 37' 56"	-2° 23' 42"	307° 35' 16"	-21° 25' 41"	54' 41"	14' 53,98"	77° 55' 59"	81,99%
24:00	305° 08' 05"	-2° 21' 21"	308° 06' 01"	-21° 16' 04"	54' 42"	14' 54,26"	77° 42' 11"	81,68%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	74° 22' 11"	-0,29"	73° 02' 30"	22° 31' 21"	1,0144841	15' 45,93"	23° 26' 17"	01m 35s
01:00	74° 24' 34"	-0,29"	73° 05' 04"	22° 31' 38"	1,0144901	15' 45,92"	23° 26' 17"	01m 35s
02:00	74° 26' 58"	-0,28"	73° 07' 39"	22° 31' 54"	1,0144961	15' 45,92"	23° 26' 17"	01m 34s
03:00	74° 29' 21"	-0,28"	73° 10' 13"	22° 32' 11"	1,0145021	15' 45,91"	23° 26' 17"	01m 34s
04:00	74° 31' 45"	-0,27"	73° 12' 48"	22° 32' 27"	1,0145081	15' 45,91"	23° 26' 17"	01m 33s
05:00	74° 34' 09"	-0,27"	73° 15' 22"	22° 32' 44"	1,0145140	15' 45,90"	23° 26' 17"	01m 33s
06:00	74° 36' 32"	-0,26"	73° 17' 56"	22° 33' 00"	1,0145200	15' 45,90"	23° 26' 17"	01m 32s
07:00	74° 38' 56"	-0,26"	73° 20' 31"	22° 33' 17"	1,0145259	15' 45,89"	23° 26' 17"	01m 32s
08:00	74° 41' 19"	-0,25"	73° 23' 05"	22° 33' 33"	1,0145319	15' 45,88"	23° 26' 17"	01m 31s
09:00	74° 43' 43"	-0,25"	73° 25' 40"	22° 33' 49"	1,0145378	15' 45,88"	23° 26' 17"	01m 31s
10:00	74° 46' 07"	-0,25"	73° 28' 14"	22° 34' 06"	1,0145438	15' 45,87"	23° 26' 17"	01m 31s
11:00	74° 48' 30"	-0,24"	73° 30' 49"	22° 34' 22"	1,0145497	15' 45,87"	23° 26' 17"	01m 30s
12:00	74° 50' 54"	-0,24"	73° 33' 23"	22° 34' 38"	1,0145556	15' 45,86"	23° 26' 17"	01m 30s
13:00	74° 53' 17"	-0,23"	73° 35' 58"	22° 34' 54"	1,0145615	15' 45,86"	23° 26' 17"	01m 29s
14:00	74° 55' 41"	-0,23"	73° 38' 32"	22° 35' 10"	1,0145674	15' 45,85"	23° 26' 17"	01m 29s
15:00	74° 58' 05"	-0,22"	73° 41' 07"	22° 35' 26"	1,0145733	15' 45,85"	23° 26' 17"	01m 28s
16:00	75° 00' 28"	-0,22"	73° 43' 42"	22° 35' 42"	1,0145792	15' 45,84"	23° 26' 17"	01m 28s
17:00	75° 02' 52"	-0,21"	73° 46' 16"	22° 35' 58"	1,0145851	15' 45,83"	23° 26' 17"	01m 27s
18:00	75° 05' 15"	-0,21"	73° 48' 51"	22° 36' 14"	1,0145910	15' 45,83"	23° 26' 17"	01m 27s
19:00	75° 07' 39"	-0,20"	73° 51' 25"	22° 36' 30"	1,0145969	15' 45,82"	23° 26' 17"	01m 27s
20:00	75° 10' 02"	-0,20"	73° 54' 00"	22° 36' 46"	1,0146028	15' 45,82"	23° 26' 17"	01m 26s
21:00	75° 12' 26"	-0,19"	73° 56' 34"	22° 37' 02"	1,0146086	15' 45,81"	23° 26' 17"	01m 26s
22:00	75° 14' 50"	-0,19"	73° 59' 09"	22° 37' 18"	1,0146145	15' 45,81"	23° 26' 17"	01m 25s
23:00	75° 17' 13"	-0,18"	74° 01' 44"	22° 37' 33"	1,0146204	15' 45,80"	23° 26' 17"	01m 25s
24:00	75° 19' 37"	-0,18"	74° 04' 18"	22° 37' 49"	1,0146262	15' 45,80"	23° 26' 17"	01m 24s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	305° 08' 05"	-2° 21' 21"	308° 06' 01"	-21° 16' 04"	54' 42"	14' 54,26"	77° 42' 11"	81,68%
01:00	305° 38' 15"	-2° 19' 00"	308° 36' 42"	-21° 06' 20"	54' 43"	14' 54,54"	77° 28' 33"	81,37%
02:00	306° 08' 25"	-2° 16' 39"	309° 07' 21"	-20° 56' 31"	54' 44"	14' 54,83"	77° 15' 04"	81,05%
03:00	306° 38' 37"	-2° 14' 16"	309° 37' 56"	-20° 46' 36"	54' 45"	14' 55,12"	77° 01' 45"	80,74%
04:00	307° 08' 49"	-2° 11' 53"	310° 08' 29"	-20° 36' 36"	54' 46"	14' 55,41"	76° 48' 34"	80,42%
05:00	307° 39' 02"	-2° 09' 29"	310° 38' 59"	-20° 26' 29"	54' 47"	14' 55,71"	76° 35' 33"	80,10%
06:00	308° 09' 16"	-2° 07' 04"	311° 09' 25"	-20° 16' 17"	54' 48"	14' 56,01"	76° 22' 41"	79,77%
07:00	308° 39' 32"	-2° 04' 39"	311° 39' 49"	-20° 05' 59"	54' 50"	14' 56,32"	76° 09' 58"	79,45%
08:00	309° 09' 48"	-2° 02' 13"	312° 10' 10"	-19° 55' 36"	54' 51"	14' 56,62"	75° 57' 23"	79,12%
09:00	309° 40' 05"	-1° 59' 47"	312° 40' 28"	-19° 45' 07"	54' 52"	14' 56,94"	75° 44' 58"	78,79%
10:00	310° 10' 23"	-1° 57' 19"	313° 10' 43"	-19° 34' 33"	54' 53"	14' 57,25"	75° 32' 42"	78,46%
11:00	310° 40' 43"	-1° 54' 51"	313° 40' 55"	-19° 23' 53"	54' 54"	14' 57,57"	75° 20' 35"	78,13%
12:00	311° 11' 03"	-1° 52' 23"	314° 11' 05"	-19° 13' 08"	54' 55"	14' 57,89"	75° 08' 37"	77,79%
13:00	311° 41' 25"	-1° 49' 54"	314° 41' 12"	-19° 02' 17"	54' 57"	14' 58,22"	74° 56' 47"	77,45%
14:00	312° 11' 47"	-1° 47' 24"	315° 11' 15"	-18° 51' 21"	54' 58"	14' 58,55"	74° 45' 07"	77,11%
15:00	312° 42' 11"	-1° 44' 53"	315° 41' 17"	-18° 40' 20"	54' 59"	14' 58,89"	74° 33' 35"	76,77%
16:00	313° 12' 36"	-1° 42' 22"	316° 11' 15"	-18° 29' 14"	55' 00"	14' 59,22"	74° 22' 12"	76,43%
17:00	313° 43' 02"	-1° 39' 50"	316° 41' 11"	-18° 18' 02"	55' 02"	15' 00,00"	74° 10' 58"	76,08%
18:00	314° 13' 29"	-1° 37' 18"	317° 11' 04"	-18° 06' 46"	55' 03"	15' 00,00"	73° 59' 52"	75,74%
19:00	314° 43' 57"	-1° 34' 45"	317° 40' 54"	-17° 55' 24"	55' 04"	15' 00,26"	73° 48' 56"	75,39%
20:00	315° 14' 27"	-1° 32' 12"	318° 10' 42"	-17° 43' 57"	55' 05"	15' 00,61"	73° 38' 08"	75,03%
21:00	315° 44' 58"	-1° 29' 38"	318° 40' 28"	-17° 32' 25"	55' 07"	15' 00,97"	73° 27' 28"	74,68%
22:00	316° 15' 30"	-1° 27' 03"	319° 10' 10"	-17° 20' 49"	55' 08"	15' 01,33"	73° 16' 58"	74,32%
23:00	316° 46' 04"	-1° 24' 28"	319° 39' 51"	-17° 09' 07"	55' 09"	15' 01,69"	73° 06' 35"	73,97%
24:00	317° 16' 38"	-1° 21' 53"	320° 09' 29"	-16° 57' 20"	55' 11"	15' 02,06"	72° 56' 22"	73,61%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	75° 19' 37"	-0,18"	74° 04' 18"	22° 37' 49"	1,0146262	15' 45,80"	23° 26' 17"	01m 24s
01:00	75° 22' 00"	-0,17"	74° 06' 53"	22° 38' 05"	1,0146321	15' 45,79"	23° 26' 17"	01m 24s
02:00	75° 24' 24"	-0,17"	74° 09' 27"	22° 38' 20"	1,0146379	15' 45,79"	23° 26' 17"	01m 23s
03:00	75° 26' 47"	-0,16"	74° 12' 02"	22° 38' 36"	1,0146437	15' 45,78"	23° 26' 17"	01m 23s
04:00	75° 29' 11"	-0,15"	74° 14' 37"	22° 38' 51"	1,0146496	15' 45,77"	23° 26' 17"	01m 23s
05:00	75° 31' 35"	-0,15"	74° 17' 11"	22° 39' 07"	1,0146554	15' 45,77"	23° 26' 17"	01m 22s
06:00	75° 33' 58"	-0,14"	74° 19' 46"	22° 39' 22"	1,0146612	15' 45,76"	23° 26' 17"	01m 22s
07:00	75° 36' 22"	-0,14"	74° 22' 21"	22° 39' 38"	1,0146670	15' 45,76"	23° 26' 17"	01m 21s
08:00	75° 38' 45"	-0,13"	74° 24' 55"	22° 39' 53"	1,0146728	15' 45,75"	23° 26' 17"	01m 21s
09:00	75° 41' 09"	-0,13"	74° 27' 30"	22° 40' 09"	1,0146786	15' 45,75"	23° 26' 17"	01m 20s
10:00	75° 43' 32"	-0,12"	74° 30' 05"	22° 40' 24"	1,0146844	15' 45,74"	23° 26' 17"	01m 20s
11:00	75° 45' 56"	-0,12"	74° 32' 39"	22° 40' 39"	1,0146901	15' 45,74"	23° 26' 17"	01m 19s
12:00	75° 48' 19"	-0,11"	74° 35' 14"	22° 40' 54"	1,0146959	15' 45,73"	23° 26' 17"	01m 19s
13:00	75° 50' 43"	-0,11"	74° 37' 49"	22° 41' 09"	1,0147017	15' 45,73"	23° 26' 17"	01m 18s
14:00	75° 53' 07"	-0,10"	74° 40' 24"	22° 41' 25"	1,0147074	15' 45,72"	23° 26' 17"	01m 18s
15:00	75° 55' 30"	-0,10"	74° 42' 58"	22° 41' 40"	1,0147132	15' 45,72"	23° 26' 17"	01m 17s
16:00	75° 57' 54"	-0,09"	74° 45' 33"	22° 41' 55"	1,0147190	15' 45,71"	23° 26' 17"	01m 17s
17:00	76° 00' 17"	-0,09"	74° 48' 08"	22° 42' 10"	1,0147247	15' 45,70"	23° 26' 17"	01m 17s
18:00	76° 02' 41"	-0,08"	74° 50' 43"	22° 42' 25"	1,0147304	15' 45,70"	23° 26' 17"	01m 16s
19:00	76° 05' 04"	-0,08"	74° 53' 17"	22° 42' 40"	1,0147362	15' 45,69"	23° 26' 17"	01m 16s
20:00	76° 07' 28"	-0,07"	74° 55' 52"	22° 42' 54"	1,0147419	15' 45,69"	23° 26' 17"	01m 15s
21:00	76° 09' 51"	-0,07"	74° 58' 27"	22° 43' 09"	1,0147476	15' 45,68"	23° 26' 17"	01m 15s
22:00	76° 12' 15"	-0,06"	75° 01' 02"	22° 43' 24"	1,0147533	15' 45,68"	23° 26' 17"	01m 14s
23:00	76° 14' 38"	-0,06"	75° 03' 37"	22° 43' 39"	1,0147590	15' 45,67"	23° 26' 17"	01m 14s
24:00	76° 17' 02"	-0,05"	75° 06' 11"	22° 43' 53"	1,0147647	15' 45,67"	23° 26' 17"	01m 13s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	317° 16' 38"	-1° 21' 53"	320° 09' 29"	-16° 57' 20"	55' 11"	15' 02,06"	72° 56' 22"	73,61%
01:00	317° 47' 14"	-1° 19' 17"	320° 39' 04"	-16° 45' 29"	55' 12"	15' 02,43"	72° 46' 17"	73,25%
02:00	318° 17' 52"	-1° 16' 40"	321° 08' 37"	-16° 33' 33"	55' 13"	15' 02,81"	72° 36' 21"	72,88%
03:00	318° 48' 30"	-1° 14' 03"	321° 38' 08"	-16° 21' 32"	55' 15"	15' 03,18"	72° 26' 33"	72,52%
04:00	319° 19' 10"	-1° 11' 25"	322° 07' 37"	-16° 09' 27"	55' 16"	15' 03,57"	72° 16' 54"	72,15%
05:00	319° 49' 52"	-1° 08' 47"	322° 37' 03"	-15° 57' 17"	55' 18"	15' 03,95"	72° 07' 23"	71,78%
06:00	320° 20' 35"	-1° 06' 09"	323° 06' 28"	-15° 45' 02"	55' 19"	15' 04,34"	71° 58' 01"	71,41%
07:00	320° 51' 19"	-1° 03' 30"	323° 35' 50"	-15° 32' 43"	55' 20"	15' 04,74"	71° 48' 47"	71,04%
08:00	321° 22' 05"	-1° 00' 50"	324° 05' 10"	-15° 20' 19"	55' 22"	15' 05,13"	71° 39' 42"	70,66%
09:00	321° 52' 52"	-0° 58' 10"	324° 34' 27"	-15° 07' 51"	55' 23"	15' 05,53"	71° 30' 46"	70,29%
10:00	322° 23' 41"	-0° 55' 30"	325° 03' 43"	-14° 55' 18"	55' 25"	15' 05,94"	71° 21' 58"	69,91%
11:00	322° 54' 31"	-0° 52' 49"	325° 32' 57"	-14° 42' 41"	55' 26"	15' 06,35"	71° 13' 18"	69,53%
12:00	323° 25' 22"	-0° 50' 08"	326° 02' 09"	-14° 30' 00"	55' 28"	15' 06,76"	71° 04' 47"	69,15%
13:00	323° 56' 16"	-0° 47' 27"	326° 31' 20"	-14° 17' 15"	55' 29"	15' 07,18"	70° 56' 24"	68,77%
14:00	324° 27' 10"	-0° 44' 45"	327° 00' 28"	-14° 04' 25"	55' 31"	15' 07,59"	70° 48' 10"	68,38%
15:00	324° 58' 07"	-0° 42' 03"	327° 29' 35"	-13° 51' 31"	55' 33"	15' 08,02"	70° 40' 04"	67,99%
16:00	325° 29' 05"	-0° 39' 20"	327° 58' 39"	-13° 38' 33"	55' 34"	15' 08,44"	70° 32' 06"	67,61%
17:00	326° 00' 04"	-0° 36' 37"	328° 27' 43"	-13° 25' 31"	55' 36"	15' 08,88"	70° 24' 17"	67,22%
18:00	326° 31' 06"	-0° 33' 54"	328° 56' 44"	-13° 12' 25"	55' 37"	15' 09,31"	70° 16' 36"	66,83%
19:00	327° 02' 09"	-0° 31' 10"	329° 25' 44"	-12° 59' 14"	55' 39"	15' 09,75"	70° 09' 04"	66,43%
20:00	327° 33' 13"	-0° 28' 26"	329° 54' 43"	-12° 46' 00"	55' 41"	15' 10,19"	70° 01' 40"	66,04%
21:00	328° 04' 19"	-0° 25' 42"	330° 23' 40"	-12° 32' 42"	55' 42"	15' 10,63"	69° 54' 25"	65,64%
22:00	328° 35' 27"	-0° 22' 57"	330° 52' 36"	-12° 19' 20"	55' 44"	15' 11,08"	69° 47' 18"	65,25%
23:00	329° 06' 37"	-0° 20' 13"	331° 21' 31"	-12° 05' 55"	55' 45"	15' 11,54"	69° 40' 20"	64,85%
24:00	329° 37' 49"	-0° 17' 28"	331° 50' 24"	-11° 52' 25"	55' 47"	15' 11,99"	69° 33' 29"	64,45%

07 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	76° 17' 02"	-0,05"	75° 06' 11"	22° 43' 53"	1,0147647	15' 45,67"	23° 26' 17"	01m 13s
01:00	76° 19' 26"	-0,05"	75° 08' 46"	22° 44' 08"	1,0147704	15' 45,66"	23° 26' 17"	01m 13s
02:00	76° 21' 49"	-0,04"	75° 11' 21"	22° 44' 23"	1,0147761	15' 45,66"	23° 26' 17"	01m 12s
03:00	76° 24' 13"	-0,03"	75° 13' 56"	22° 44' 37"	1,0147817	15' 45,65"	23° 26' 17"	01m 12s
04:00	76° 26' 36"	-0,03"	75° 16' 31"	22° 44' 52"	1,0147874	15' 45,65"	23° 26' 17"	01m 11s
05:00	76° 29' 00"	-0,02"	75° 19' 05"	22° 45' 06"	1,0147931	15' 45,64"	23° 26' 17"	01m 11s
06:00	76° 31' 23"	-0,02"	75° 21' 40"	22° 45' 21"	1,0147987	15' 45,64"	23° 26' 17"	01m 11s
07:00	76° 33' 47"	-0,01"	75° 24' 15"	22° 45' 35"	1,0148044	15' 45,63"	23° 26' 17"	01m 10s
08:00	76° 36' 10"	-0,01"	75° 26' 50"	22° 45' 50"	1,0148100	15' 45,63"	23° 26' 17"	01m 10s
09:00	76° 38' 34"	-0,00"	75° 29' 25"	22° 46' 04"	1,0148156	15' 45,62"	23° 26' 17"	01m 09s
10:00	76° 40' 57"	0,00"	75° 32' 00"	22° 46' 18"	1,0148213	15' 45,61"	23° 26' 17"	01m 09s
11:00	76° 43' 21"	0,01"	75° 34' 35"	22° 46' 32"	1,0148269	15' 45,61"	23° 26' 17"	01m 08s
12:00	76° 45' 44"	0,01"	75° 37' 10"	22° 46' 47"	1,0148325	15' 45,60"	23° 26' 17"	01m 08s
13:00	76° 48' 08"	0,02"	75° 39' 45"	22° 47' 01"	1,0148381	15' 45,60"	23° 26' 17"	01m 07s
14:00	76° 50' 31"	0,02"	75° 42' 19"	22° 47' 15"	1,0148437	15' 45,59"	23° 26' 17"	01m 07s
15:00	76° 52' 55"	0,03"	75° 44' 54"	22° 47' 29"	1,0148493	15' 45,59"	23° 26' 17"	01m 06s
16:00	76° 55' 19"	0,03"	75° 47' 29"	22° 47' 43"	1,0148549	15' 45,58"	23° 26' 17"	01m 06s
17:00	76° 57' 42"	0,04"	75° 50' 04"	22° 47' 57"	1,0148605	15' 45,58"	23° 26' 17"	01m 05s
18:00	77° 00' 06"	0,04"	75° 52' 39"	22° 48' 11"	1,0148660	15' 45,57"	23° 26' 17"	01m 05s
19:00	77° 02' 29"	0,05"	75° 55' 14"	22° 48' 25"	1,0148716	15' 45,57"	23° 26' 17"	01m 04s
20:00	77° 04' 53"	0,06"	75° 57' 49"	22° 48' 39"	1,0148771	15' 45,56"	23° 26' 17"	01m 04s
21:00	77° 07' 16"	0,06"	76° 00' 24"	22° 48' 53"	1,0148827	15' 45,56"	23° 26' 17"	01m 03s
22:00	77° 09' 40"	0,07"	76° 02' 59"	22° 49' 06"	1,0148882	15' 45,55"	23° 26' 17"	01m 03s
23:00	77° 12' 03"	0,07"	76° 05' 34"	22° 49' 20"	1,0148938	15' 45,55"	23° 26' 17"	01m 02s
24:00	77° 14' 27"	0,08"	76° 08' 09"	22° 49' 34"	1,0148993	15' 45,54"	23° 26' 17"	01m 02s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	329° 37' 49"	-0° 17' 28"	331° 50' 24"	-11° 52' 25"	55' 47"	15' 11,99"	69° 33' 29"	64,45%
01:00	330° 09' 02"	-0° 14' 42"	332° 19' 16"	-11° 38' 52"	55' 49"	15' 12,45"	69° 26' 48"	64,05%
02:00	330° 40' 17"	-0° 11' 57"	332° 48' 07"	-11° 25' 15"	55' 51"	15' 12,91"	69° 20' 14"	63,64%
03:00	331° 11' 34"	-0° 09' 11"	333° 16' 56"	-11° 11' 35"	55' 52"	15' 13,38"	69° 13' 49"	63,24%
04:00	331° 42' 53"	-0° 06' 25"	333° 45' 45"	-10° 57' 51"	55' 54"	15' 13,85"	69° 07' 33"	62,83%
05:00	332° 14' 13"	-0° 03' 39"	334° 14' 33"	-10° 44' 03"	55' 56"	15' 14,32"	69° 01' 25"	62,43%
06:00	332° 45' 36"	-0° 00' 52"	334° 43' 20"	-10° 30' 12"	55' 57"	15' 14,80"	68° 55' 25"	62,02%
07:00	333° 17' 00"	0° 01' 54"	335° 12' 06"	-10° 16' 18"	55' 59"	15' 15,28"	68° 49' 34"	61,61%
08:00	333° 48' 26"	0° 04' 41"	335° 40' 51"	-10° 02' 20"	56' 01"	15' 15,77"	68° 43' 51"	61,20%
09:00	334° 19' 55"	0° 07' 28"	336° 09' 36"	-9° 48' 19"	56' 03"	15' 16,25"	68° 38' 16"	60,78%
10:00	334° 51' 25"	0° 10' 15"	336° 38' 20"	-9° 34' 14"	56' 05"	15' 16,75"	68° 32' 50"	60,37%
11:00	335° 22' 57"	0° 13' 02"	337° 07' 03"	-9° 20' 07"	56' 06"	15' 17,24"	68° 27' 33"	59,96%
12:00	335° 54' 31"	0° 15' 49"	337° 35' 46"	-9° 05' 56"	56' 08"	15' 17,74"	68° 22' 24"	59,54%
13:00	336° 26' 08"	0° 18' 37"	338° 04' 28"	-8° 51' 42"	56' 10"	15' 18,24"	68° 17' 23"	59,12%
14:00	336° 57' 46"	0° 21' 24"	338° 33' 10"	-8° 37' 24"	56' 12"	15' 18,75"	68° 12' 31"	58,70%
15:00	337° 29' 26"	0° 24' 12"	339° 01' 52"	-8° 23' 04"	56' 14"	15' 19,25"	68° 07' 47"	58,28%
16:00	338° 01' 09"	0° 26' 59"	339° 30' 33"	-8° 08' 41"	56' 16"	15' 19,77"	68° 03' 12"	57,86%
17:00	338° 32' 53"	0° 29' 47"	339° 59' 14"	-7° 54' 15"	56' 18"	15' 20,28"	67° 58' 46"	57,44%
18:00	339° 04' 40"	0° 32' 34"	340° 27' 55"	-7° 39' 45"	56' 19"	15' 20,80"	67° 54' 27"	57,02%
19:00	339° 36' 28"	0° 35' 22"	340° 56' 36"	-7° 25' 13"	56' 21"	15' 21,32"	67° 50' 18"	56,59%
20:00	340° 08' 19"	0° 38' 10"	341° 25' 17"	-7° 10' 39"	56' 23"	15' 21,84"	67° 46' 17"	56,17%
21:00	340° 40' 12"	0° 40' 58"	341° 53' 58"	-6° 56' 01"	56' 25"	15' 22,37"	67° 42' 24"	55,74%
22:00	341° 12' 08"	0° 43' 45"	342° 22' 39"	-6° 41' 21"	56' 27"	15' 22,90"	67° 38' 40"	55,32%
23:00	341° 44' 05"	0° 46' 33"	342° 51' 21"	-6° 26' 38"	56' 29"	15' 23,44"	67° 35' 05"	54,89%
24:00	342° 16' 05"	0° 49' 21"	343° 20' 03"	-6° 11' 52"	56' 31"	15' 23,97"	67° 31' 39"	54,46%

08 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	77° 14' 27"	0,08"	76° 08' 09"	22° 49' 34"	1,0148993	15' 45,54"	23° 26' 17"	01m 02s
01:00	77° 16' 50"	0,08"	76° 10' 44"	22° 49' 48"	1,0149048	15' 45,54"	23° 26' 17"	01m 02s
02:00	77° 19' 14"	0,09"	76° 13' 19"	22° 50' 01"	1,0149103	15' 45,53"	23° 26' 17"	01m 01s
03:00	77° 21' 37"	0,09"	76° 15' 54"	22° 50' 15"	1,0149158	15' 45,53"	23° 26' 17"	01m 01s
04:00	77° 24' 01"	0,10"	76° 18' 29"	22° 50' 28"	1,0149213	15' 45,52"	23° 26' 17"	01m 00s
05:00	77° 26' 24"	0,10"	76° 21' 04"	22° 50' 42"	1,0149268	15' 45,52"	23° 26' 17"	01m 00s
06:00	77° 28' 48"	0,11"	76° 23' 39"	22° 50' 55"	1,0149323	15' 45,51"	23° 26' 17"	00m 59s
07:00	77° 31' 11"	0,11"	76° 26' 14"	22° 51' 09"	1,0149378	15' 45,51"	23° 26' 17"	00m 59s
08:00	77° 33' 35"	0,12"	76° 28' 49"	22° 51' 22"	1,0149433	15' 45,50"	23° 26' 17"	00m 58s
09:00	77° 35' 58"	0,12"	76° 31' 24"	22° 51' 35"	1,0149487	15' 45,50"	23° 26' 17"	00m 58s
10:00	77° 38' 22"	0,13"	76° 33' 59"	22° 51' 49"	1,0149542	15' 45,49"	23° 26' 17"	00m 57s
11:00	77° 40' 45"	0,13"	76° 36' 35"	22° 52' 02"	1,0149596	15' 45,49"	23° 26' 17"	00m 57s
12:00	77° 43' 09"	0,14"	76° 39' 10"	22° 52' 15"	1,0149651	15' 45,48"	23° 26' 17"	00m 56s
13:00	77° 45' 32"	0,14"	76° 41' 45"	22° 52' 28"	1,0149705	15' 45,48"	23° 26' 17"	00m 56s
14:00	77° 47' 56"	0,15"	76° 44' 20"	22° 52' 41"	1,0149759	15' 45,47"	23° 26' 17"	00m 55s
15:00	77° 50' 19"	0,15"	76° 46' 55"	22° 52' 54"	1,0149813	15' 45,47"	23° 26' 17"	00m 55s
16:00	77° 52' 43"	0,16"	76° 49' 30"	22° 53' 07"	1,0149868	15' 45,46"	23° 26' 17"	00m 54s
17:00	77° 55' 06"	0,16"	76° 52' 05"	22° 53' 20"	1,0149922	15' 45,46"	23° 26' 17"	00m 54s
18:00	77° 57' 30"	0,17"	76° 54' 40"	22° 53' 33"	1,0149975	15' 45,45"	23° 26' 17"	00m 53s
19:00	77° 59' 53"	0,17"	76° 57' 15"	22° 53' 46"	1,0150029	15' 45,45"	23° 26' 17"	00m 53s
20:00	78° 02' 17"	0,18"	76° 59' 51"	22° 53' 59"	1,0150083	15' 45,44"	23° 26' 17"	00m 52s
21:00	78° 04' 40"	0,18"	77° 02' 26"	22° 54' 12"	1,0150137	15' 45,44"	23° 26' 17"	00m 52s
22:00	78° 07' 04"	0,19"	77° 05' 01"	22° 54' 25"	1,0150190	15' 45,43"	23° 26' 17"	00m 51s
23:00	78° 09' 27"	0,19"	77° 07' 36"	22° 54' 38"	1,0150244	15' 45,43"	23° 26' 17"	00m 51s
24:00	78° 11' 51"	0,20"	77° 10' 11"	22° 54' 50"	1,0150298	15' 45,42"	23° 26' 17"	00m 50s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	342° 16' 05"	0° 49' 21"	343° 20' 03"	-6° 11' 52"	56' 31"	15' 23,97"	67° 31' 39"	54,46%
01:00	342° 48' 07"	0° 52' 08"	343° 48' 45"	-5° 57' 04"	56' 33"	15' 24,52"	67° 28' 20"	54,03%
02:00	343° 20' 11"	0° 54' 56"	344° 17' 27"	-5° 42' 13"	56' 35"	15' 25,06"	67° 25' 11"	53,60%
03:00	343° 52' 18"	0° 57' 43"	344° 46' 11"	-5° 27' 20"	56' 37"	15' 25,61"	67° 22' 10"	53,17%
04:00	344° 24' 27"	1° 00' 30"	345° 14' 54"	-5° 12' 25"	56' 39"	15' 26,15"	67° 19' 18"	52,74%
05:00	344° 56' 38"	1° 03' 17"	345° 43' 39"	-4° 57' 27"	56' 41"	15' 26,71"	67° 16' 35"	52,30%
06:00	345° 28' 52"	1° 06' 04"	346° 12' 24"	-4° 42' 26"	56' 43"	15' 27,26"	67° 14' 01"	51,87%
07:00	346° 01' 08"	1° 08' 51"	346° 41' 10"	-4° 27' 24"	56' 45"	15' 27,82"	67° 11' 35"	51,44%
08:00	346° 33' 26"	1° 11' 38"	347° 09' 57"	-4° 12' 19"	56' 47"	15' 28,38"	67° 09' 18"	51,00%
09:00	347° 05' 47"	1° 14' 24"	347° 38' 45"	-3° 57' 12"	56' 49"	15' 28,95"	67° 07' 10"	50,57%
10:00	347° 38' 10"	1° 17' 11"	348° 07' 33"	-3° 42' 03"	56' 51"	15' 29,51"	67° 05' 10"	50,13%
11:00	348° 10' 36"	1° 19' 57"	348° 36' 23"	-3° 26' 52"	56' 54"	15' 30,08"	67° 03' 20"	49,69%
12:00	348° 43' 04"	1° 22' 43"	349° 05' 15"	-3° 11' 39"	56' 56"	15' 30,65"	67° 01' 38"	49,26%
13:00	349° 15' 35"	1° 25' 29"	349° 34' 07"	-2° 56' 25"	56' 58"	15' 31,23"	67° 00' 06"	48,82%
14:00	349° 48' 08"	1° 28' 14"	350° 03' 01"	-2° 41' 08"	57' 00"	15' 31,81"	66° 58' 42"	48,38%
15:00	350° 20' 43"	1° 30' 59"	350° 31' 56"	-2° 25' 49"	57' 02"	15' 32,39"	66° 57' 28"	47,94%
16:00	350° 53' 21"	1° 33' 44"	351° 00' 53"	-2° 10' 29"	57' 04"	15' 32,97"	66° 56' 22"	47,50%
17:00	351° 26' 02"	1° 36' 28"	351° 29' 52"	-1° 55' 07"	57' 06"	15' 33,55"	66° 55' 26"	47,06%
18:00	351° 58' 45"	1° 39' 13"	351° 58' 52"	-1° 39' 43"	57' 08"	15' 34,14"	66° 54' 38"	46,62%
19:00	352° 31' 31"	1° 41' 57"	352° 27' 53"	-1° 24' 17"	57' 11"	15' 34,73"	66° 54' 00"	46,18%
20:00	353° 04' 20"	1° 44' 40"	352° 56' 57"	-1° 08' 51"	57' 13"	15' 35,32"	66° 53' 31"	45,74%
21:00	353° 37' 11"	1° 47' 23"	353° 26' 03"	-0° 53' 22"	57' 15"	15' 35,92"	66° 53' 11"	45,30%
22:00	354° 10' 05"	1° 50' 06"	353° 55' 10"	-0° 37' 52"	57' 17"	15' 36,51"	66° 53' 00"	44,86%
23:00	354° 43' 01"	1° 52' 49"	354° 24' 20"	-0° 22' 21"	57' 19"	15' 37,11"	66° 52' 59"	44,42%
24:00	355° 16' 00"	1° 55' 31"	354° 53' 32"	-0° 06' 49"	57' 22"	15' 37,71"	66° 53' 07"	43,97%

09 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	78° 11' 51"	0,20"	77° 10' 11"	22° 54' 50"	1,0150298	15' 45,42"	23° 26' 17"	00m 50s
01:00	78° 14' 14"	0,20"	77° 12' 46"	22° 55' 03"	1,0150351	15' 45,42"	23° 26' 17"	00m 50s
02:00	78° 16' 38"	0,21"	77° 15' 22"	22° 55' 16"	1,0150404	15' 45,41"	23° 26' 17"	00m 49s
03:00	78° 19' 01"	0,21"	77° 17' 57"	22° 55' 28"	1,0150457	15' 45,41"	23° 26' 17"	00m 49s
04:00	78° 21' 25"	0,22"	77° 20' 32"	22° 55' 41"	1,0150511	15' 45,40"	23° 26' 17"	00m 48s
05:00	78° 23' 48"	0,22"	77° 23' 07"	22° 55' 53"	1,0150564	15' 45,40"	23° 26' 17"	00m 48s
06:00	78° 26' 12"	0,23"	77° 25' 42"	22° 56' 06"	1,0150617	15' 45,39"	23° 26' 17"	00m 47s
07:00	78° 28' 35"	0,23"	77° 28' 18"	22° 56' 18"	1,0150670	15' 45,39"	23° 26' 17"	00m 47s
08:00	78° 30' 59"	0,24"	77° 30' 53"	22° 56' 30"	1,0150723	15' 45,38"	23° 26' 17"	00m 47s
09:00	78° 33' 22"	0,24"	77° 33' 28"	22° 56' 43"	1,0150775	15' 45,38"	23° 26' 17"	00m 46s
10:00	78° 35' 46"	0,25"	77° 36' 03"	22° 56' 55"	1,0150828	15' 45,37"	23° 26' 17"	00m 46s
11:00	78° 38' 09"	0,25"	77° 38' 39"	22° 57' 07"	1,0150881	15' 45,37"	23° 26' 17"	00m 45s
12:00	78° 40' 33"	0,26"	77° 41' 14"	22° 57' 19"	1,0150933	15' 45,36"	23° 26' 17"	00m 45s
13:00	78° 42' 56"	0,26"	77° 43' 49"	22° 57' 32"	1,0150986	15' 45,36"	23° 26' 17"	00m 44s
14:00	78° 45' 20"	0,26"	77° 46' 24"	22° 57' 44"	1,0151038	15' 45,35"	23° 26' 17"	00m 44s
15:00	78° 47' 43"	0,27"	77° 49' 00"	22° 57' 56"	1,0151090	15' 45,35"	23° 26' 17"	00m 43s
16:00	78° 50' 06"	0,27"	77° 51' 35"	22° 58' 08"	1,0151142	15' 45,34"	23° 26' 17"	00m 43s
17:00	78° 52' 30"	0,28"	77° 54' 10"	22° 58' 20"	1,0151195	15' 45,34"	23° 26' 17"	00m 42s
18:00	78° 54' 53"	0,28"	77° 56' 45"	22° 58' 32"	1,0151247	15' 45,33"	23° 26' 17"	00m 42s
19:00	78° 57' 17"	0,29"	77° 59' 21"	22° 58' 44"	1,0151299	15' 45,33"	23° 26' 17"	00m 41s
20:00	78° 59' 40"	0,29"	78° 01' 56"	22° 58' 55"	1,0151350	15' 45,32"	23° 26' 17"	00m 41s
21:00	79° 02' 04"	0,30"	78° 04' 31"	22° 59' 07"	1,0151402	15' 45,32"	23° 26' 17"	00m 40s
22:00	79° 04' 27"	0,30"	78° 07' 07"	22° 59' 19"	1,0151454	15' 45,31"	23° 26' 17"	00m 40s
23:00	79° 06' 51"	0,30"	78° 09' 42"	22° 59' 31"	1,0151506	15' 45,31"	23° 26' 17"	00m 39s
24:00	79° 09' 14"	0,31"	78° 12' 17"	22° 59' 42"	1,0151557	15' 45,30"	23° 26' 17"	00m 39s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	355° 16' 00"	1° 55' 31"	354° 53' 32"	-0° 06' 49"	57' 22"	15' 37,71"	66° 53' 07"	43,97%
01:00	355° 49' 02"	1° 58' 12"	355° 22' 46"	0° 08' 45"	57' 24"	15' 38,31"	66° 53' 24"	43,53%
02:00	356° 22' 06"	2° 00' 53"	355° 52' 03"	0° 24' 20"	57' 26"	15' 38,92"	66° 53' 51"	43,09%
03:00	356° 55' 13"	2° 03' 34"	356° 21' 21"	0° 39' 56"	57' 28"	15' 39,53"	66° 54' 27"	42,65%
04:00	357° 28' 23"	2° 06' 14"	356° 50' 43"	0° 55' 33"	57' 30"	15' 40,14"	66° 55' 13"	42,21%
05:00	358° 01' 36"	2° 08' 54"	357° 20' 07"	1° 11' 11"	57' 33"	15' 40,75"	66° 56' 09"	41,76%
06:00	358° 34' 51"	2° 11' 33"	357° 49' 33"	1° 26' 50"	57' 35"	15' 41,36"	66° 57' 14"	41,32%
07:00	359° 08' 09"	2° 14' 12"	358° 19' 03"	1° 42' 30"	57' 37"	15' 41,97"	66° 58' 28"	40,88%
08:00	359° 41' 30"	2° 16' 50"	358° 48' 35"	1° 58' 11"	57' 39"	15' 42,59"	66° 59' 53"	40,44%
09:00	0° 14' 54"	2° 19' 27"	359° 18' 10"	2° 13' 52"	57' 42"	15' 43,21"	67° 01' 27"	40,00%
10:00	0° 48' 20"	2° 22' 04"	359° 47' 49"	2° 29' 34"	57' 44"	15' 43,82"	67° 03' 11"	39,55%
11:00	1° 21' 50"	2° 24' 40"	0° 17' 30"	2° 45' 17"	57' 46"	15' 44,44"	67° 05' 05"	39,11%
12:00	1° 55' 22"	2° 27' 16"	0° 47' 14"	3° 01' 00"	57' 49"	15' 45,07"	67° 07' 09"	38,67%
13:00	2° 28' 57"	2° 29' 51"	1° 17' 02"	3° 16' 44"	57' 51"	15' 45,69"	67° 09' 22"	38,23%
14:00	3° 02' 35"	2° 32' 26"	1° 46' 53"	3° 32' 28"	57' 53"	15' 46,31"	67° 11' 46"	37,79%
15:00	3° 36' 16"	2° 34' 59"	2° 16' 48"	3° 48' 12"	57' 55"	15' 46,94"	67° 14' 20"	37,35%
16:00	4° 09' 59"	2° 37' 32"	2° 46' 46"	4° 03' 56"	57' 58"	15' 47,57"	67° 17' 05"	36,91%
17:00	4° 43' 46"	2° 40' 05"	3° 16' 48"	4° 19' 41"	58' 00"	15' 48,19"	67° 19' 59"	36,47%
18:00	5° 17' 35"	2° 42' 36"	3° 46' 53"	4° 35' 26"	58' 02"	15' 48,82"	67° 23' 04"	36,03%
19:00	5° 51' 28"	2° 45' 07"	4° 17' 02"	4° 51' 11"	58' 05"	15' 49,45"	67° 26' 19"	35,59%
20:00	6° 25' 23"	2° 47' 37"	4° 47' 16"	5° 06' 56"	58' 07"	15' 50,08"	67° 29' 45"	35,16%
21:00	6° 59' 21"	2° 50' 07"	5° 17' 33"	5° 22' 40"	58' 09"	15' 50,71"	67° 33' 21"	34,72%
22:00	7° 33' 23"	2° 52' 35"	5° 47' 54"	5° 38' 25"	58' 12"	15' 51,35"	67° 37' 07"	34,28%
23:00	8° 07' 27"	2° 55' 03"	6° 18' 19"	5° 54' 09"	58' 14"	15' 51,98"	67° 41' 05"	33,85%
24:00	8° 41' 34"	2° 57' 30"	6° 48' 49"	6° 09' 53"	58' 16"	15' 52,61"	67° 45' 13"	33,41%

10 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	79° 09' 14"	0,31"	78° 12' 17"	22° 59' 42"	1,0151557	15' 45,30"	23° 26' 17"	00m 39s
01:00	79° 11' 38"	0,31"	78° 14' 53"	22° 59' 54"	1,0151609	15' 45,30"	23° 26' 17"	00m 38s
02:00	79° 14' 01"	0,32"	78° 17' 28"	23° 00' 06"	1,0151660	15' 45,29"	23° 26' 17"	00m 38s
03:00	79° 16' 25"	0,32"	78° 20' 03"	23° 00' 17"	1,0151711	15' 45,29"	23° 26' 17"	00m 37s
04:00	79° 18' 48"	0,33"	78° 22' 39"	23° 00' 29"	1,0151762	15' 45,28"	23° 26' 17"	00m 37s
05:00	79° 21' 12"	0,33"	78° 25' 14"	23° 00' 40"	1,0151814	15' 45,28"	23° 26' 17"	00m 36s
06:00	79° 23' 35"	0,33"	78° 27' 50"	23° 00' 52"	1,0151865	15' 45,27"	23° 26' 17"	00m 36s
07:00	79° 25' 59"	0,34"	78° 30' 25"	23° 01' 03"	1,0151916	15' 45,27"	23° 26' 17"	00m 35s
08:00	79° 28' 22"	0,34"	78° 33' 00"	23° 01' 14"	1,0151966	15' 45,27"	23° 26' 17"	00m 35s
09:00	79° 30' 45"	0,35"	78° 35' 36"	23° 01' 26"	1,0152017	15' 45,26"	23° 26' 17"	00m 34s
10:00	79° 33' 09"	0,35"	78° 38' 11"	23° 01' 37"	1,0152068	15' 45,26"	23° 26' 17"	00m 34s
11:00	79° 35' 32"	0,35"	78° 40' 46"	23° 01' 48"	1,0152118	15' 45,25"	23° 26' 17"	00m 33s
12:00	79° 37' 56"	0,36"	78° 43' 22"	23° 01' 59"	1,0152169	15' 45,25"	23° 26' 17"	00m 33s
13:00	79° 40' 19"	0,36"	78° 45' 57"	23° 02' 11"	1,0152219	15' 45,24"	23° 26' 17"	00m 32s
14:00	79° 42' 43"	0,37"	78° 48' 33"	23° 02' 22"	1,0152270	15' 45,24"	23° 26' 17"	00m 32s
15:00	79° 45' 06"	0,37"	78° 51' 08"	23° 02' 33"	1,0152320	15' 45,23"	23° 26' 17"	00m 31s
16:00	79° 47' 30"	0,37"	78° 53' 44"	23° 02' 44"	1,0152370	15' 45,23"	23° 26' 17"	00m 31s
17:00	79° 49' 53"	0,38"	78° 56' 19"	23° 02' 55"	1,0152420	15' 45,22"	23° 26' 17"	00m 30s
18:00	79° 52' 17"	0,38"	78° 58' 54"	23° 03' 06"	1,0152470	15' 45,22"	23° 26' 17"	00m 30s
19:00	79° 54' 40"	0,38"	79° 01' 30"	23° 03' 17"	1,0152520	15' 45,21"	23° 26' 17"	00m 29s
20:00	79° 57' 04"	0,39"	79° 04' 05"	23° 03' 27"	1,0152570	15' 45,21"	23° 26' 17"	00m 28s
21:00	79° 59' 27"	0,39"	79° 06' 41"	23° 03' 38"	1,0152620	15' 45,20"	23° 26' 17"	00m 28s
22:00	80° 01' 50"	0,39"	79° 09' 16"	23° 03' 49"	1,0152669	15' 45,20"	23° 26' 17"	00m 27s
23:00	80° 04' 14"	0,40"	79° 11' 52"	23° 04' 00"	1,0152719	15' 45,20"	23° 26' 17"	00m 27s
24:00	80° 06' 37"	0,40"	79° 14' 27"	23° 04' 10"	1,0152768	15' 45,19"	23° 26' 17"	00m 26s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	8° 41' 34"	2° 57' 30"	6° 48' 49"	6° 09' 53"	58' 16"	15' 52,61"	67° 45' 13"	33,41%
01:00	9° 15' 44"	2° 59' 56"	7° 19' 23"	6° 25' 36"	58' 19"	15' 53,24"	67° 49' 32"	32,98%
02:00	9° 49' 57"	3° 02' 21"	7° 50' 01"	6° 41' 19"	58' 21"	15' 53,88"	67° 54' 02"	32,54%
03:00	10° 24' 13"	3° 04' 45"	8° 20' 44"	6° 57' 01"	58' 23"	15' 54,51"	67° 58' 43"	32,11%
04:00	10° 58' 32"	3° 07' 09"	8° 51' 31"	7° 12' 43"	58' 26"	15' 55,15"	68° 03' 34"	31,68%
05:00	11° 32' 54"	3° 09' 31"	9° 22' 24"	7° 28' 23"	58' 28"	15' 55,78"	68° 08' 37"	31,25%
06:00	12° 07' 19"	3° 11' 52"	9° 53' 20"	7° 44' 03"	58' 30"	15' 56,41"	68° 13' 52"	30,82%
07:00	12° 41' 47"	3° 14' 13"	10° 24' 22"	7° 59' 42"	58' 33"	15' 57,05"	68° 19' 17"	30,39%
08:00	13° 16' 18"	3° 16' 32"	10° 55' 29"	8° 15' 20"	58' 35"	15' 57,68"	68° 24' 54"	29,96%
09:00	13° 50' 52"	3° 18' 51"	11° 26' 41"	8° 30' 57"	58' 37"	15' 58,32"	68° 30' 43"	29,53%
10:00	14° 25' 29"	3° 21' 08"	11° 57' 58"	8° 46' 32"	58' 39"	15' 58,95"	68° 36' 43"	29,11%
11:00	15° 00' 09"	3° 23' 25"	12° 29' 20"	9° 02' 07"	58' 42"	16' 00,00"	68° 42' 55"	28,68%
12:00	15° 34' 52"	3° 25' 40"	13° 00' 47"	9° 17' 40"	58' 44"	16' 00,22"	68° 49' 18"	28,26%
13:00	16° 09' 39"	3° 27' 54"	13° 32' 20"	9° 33' 11"	58' 46"	16' 00,85"	68° 55' 54"	27,84%
14:00	16° 44' 28"	3° 30' 08"	14° 03' 59"	9° 48' 41"	58' 49"	16' 01,48"	69° 02' 41"	27,42%
15:00	17° 19' 20"	3° 32' 20"	14° 35' 43"	10° 04' 09"	58' 51"	16' 02,11"	69° 09' 41"	27,00%
16:00	17° 54' 15"	3° 34' 31"	15° 07' 32"	10° 19' 35"	58' 53"	16' 02,74"	69° 16' 52"	26,58%
17:00	18° 29' 14"	3° 36' 40"	15° 39' 27"	10° 35' 00"	58' 56"	16' 03,37"	69° 24' 16"	26,16%
18:00	19° 04' 15"	3° 38' 49"	16° 11' 29"	10° 50' 22"	58' 58"	16' 04,00"	69° 31' 53"	25,75%
19:00	19° 39' 19"	3° 40' 56"	16° 43' 36"	11° 05' 42"	59' 00"	16' 04,62"	69° 39' 42"	25,34%
20:00	20° 14' 27"	3° 43' 02"	17° 15' 49"	11° 21' 01"	59' 03"	16' 05,25"	69° 47' 44"	24,93%
21:00	20° 49' 37"	3° 45' 07"	17° 48' 08"	11° 36' 17"	59' 05"	16' 05,87"	69° 55' 58"	24,52%
22:00	21° 24' 50"	3° 47' 11"	18° 20' 33"	11° 51' 30"	59' 07"	16' 06,50"	70° 04' 25"	24,11%
23:00	22° 00' 07"	3° 49' 13"	18° 53' 05"	12° 06' 41"	59' 09"	16' 07,12"	70° 13' 06"	23,70%
24:00	22° 35' 26"	3° 51' 14"	19° 25' 43"	12° 21' 50"	59' 12"	16' 07,74"	70° 21' 59"	23,30%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	80° 06' 37"	0,40"	79° 14' 27"	23° 04' 10"	1,0152768	15' 45,19"	23° 26' 17"	00m 26s
01:00	80° 09' 01"	0,40"	79° 17' 03"	23° 04' 21"	1,0152818	15' 45,19"	23° 26' 17"	00m 26s
02:00	80° 11' 24"	0,41"	79° 19' 38"	23° 04' 32"	1,0152867	15' 45,18"	23° 26' 17"	00m 25s
03:00	80° 13' 48"	0,41"	79° 22' 14"	23° 04' 42"	1,0152916	15' 45,18"	23° 26' 17"	00m 25s
04:00	80° 16' 11"	0,41"	79° 24' 49"	23° 04' 53"	1,0152965	15' 45,17"	23° 26' 17"	00m 24s
05:00	80° 18' 35"	0,42"	79° 27' 25"	23° 05' 03"	1,0153014	15' 45,17"	23° 26' 17"	00m 24s
06:00	80° 20' 58"	0,42"	79° 30' 00"	23° 05' 13"	1,0153063	15' 45,16"	23° 26' 17"	00m 23s
07:00	80° 23' 21"	0,42"	79° 32' 36"	23° 05' 24"	1,0153112	15' 45,16"	23° 26' 17"	00m 23s
08:00	80° 25' 45"	0,43"	79° 35' 11"	23° 05' 34"	1,0153161	15' 45,15"	23° 26' 17"	00m 22s
09:00	80° 28' 08"	0,43"	79° 37' 47"	23° 05' 44"	1,0153209	15' 45,15"	23° 26' 17"	00m 22s
10:00	80° 30' 32"	0,43"	79° 40' 23"	23° 05' 55"	1,0153258	15' 45,14"	23° 26' 17"	00m 21s
11:00	80° 32' 55"	0,44"	79° 42' 58"	23° 06' 05"	1,0153306	15' 45,14"	23° 26' 17"	00m 21s
12:00	80° 35' 19"	0,44"	79° 45' 34"	23° 06' 15"	1,0153355	15' 45,14"	23° 26' 17"	00m 20s
13:00	80° 37' 42"	0,44"	79° 48' 09"	23° 06' 25"	1,0153403	15' 45,13"	23° 26' 17"	00m 20s
14:00	80° 40' 06"	0,44"	79° 50' 45"	23° 06' 35"	1,0153451	15' 45,13"	23° 26' 17"	00m 19s
15:00	80° 42' 29"	0,45"	79° 53' 20"	23° 06' 45"	1,0153499	15' 45,12"	23° 26' 17"	00m 19s
16:00	80° 44' 52"	0,45"	79° 55' 56"	23° 06' 55"	1,0153547	15' 45,12"	23° 26' 17"	00m 18s
17:00	80° 47' 16"	0,45"	79° 58' 31"	23° 07' 05"	1,0153595	15' 45,11"	23° 26' 17"	00m 18s
18:00	80° 49' 39"	0,45"	80° 01' 07"	23° 07' 15"	1,0153643	15' 45,11"	23° 26' 17"	00m 17s
19:00	80° 52' 03"	0,46"	80° 03' 43"	23° 07' 25"	1,0153691	15' 45,10"	23° 26' 17"	00m 17s
20:00	80° 54' 26"	0,46"	80° 06' 18"	23° 07' 35"	1,0153738	15' 45,10"	23° 26' 17"	00m 16s
21:00	80° 56' 50"	0,46"	80° 08' 54"	23° 07' 45"	1,0153786	15' 45,10"	23° 26' 17"	00m 16s
22:00	80° 59' 13"	0,46"	80° 11' 29"	23° 07' 54"	1,0153833	15' 45,09"	23° 26' 17"	00m 15s
23:00	81° 01' 36"	0,47"	80° 14' 05"	23° 08' 04"	1,0153880	15' 45,09"	23° 26' 17"	00m 15s
24:00	81° 04' 00"	0,47"	80° 16' 41"	23° 08' 14"	1,0153928	15' 45,08"	23° 26' 17"	00m 14s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	22° 35' 26"	3° 51' 14"	19° 25' 43"	12° 21' 50"	59' 12"	16' 07,74"	70° 21' 59"	23,30%
01:00	23° 10' 49"	3° 53' 14"	19° 58' 27"	12° 36' 56"	59' 14"	16' 08,35"	70° 31' 06"	22,89%
02:00	23° 46' 14"	3° 55' 13"	20° 31' 18"	12° 51' 59"	59' 16"	16' 08,97"	70° 40' 26"	22,49%
03:00	24° 21' 43"	3° 57' 10"	21° 04' 16"	13° 06' 59"	59' 19"	16' 09,58"	70° 50' 00"	22,10%
04:00	24° 57' 14"	3° 59' 05"	21° 37' 20"	13° 21' 56"	59' 21"	16' 10,19"	70° 59' 48"	21,70%
05:00	25° 32' 49"	4° 01' 00"	22° 10' 31"	13° 36' 50"	59' 23"	16' 10,80"	71° 09' 49"	21,30%
06:00	26° 08' 26"	4° 02' 53"	22° 43' 48"	13° 51' 41"	59' 25"	16' 11,41"	71° 20' 04"	20,91%
07:00	26° 44' 07"	4° 04' 44"	23° 17' 13"	14° 06' 28"	59' 27"	16' 12,02"	71° 30' 34"	20,52%
08:00	27° 19' 50"	4° 06' 34"	23° 50' 44"	14° 21' 12"	59' 30"	16' 12,62"	71° 41' 18"	20,13%
09:00	27° 55' 37"	4° 08' 23"	24° 24' 23"	14° 35' 52"	59' 32"	16' 13,22"	71° 52' 16"	19,75%
10:00	28° 31' 26"	4° 10' 10"	24° 58' 09"	14° 50' 29"	59' 34"	16' 13,81"	72° 03' 29"	19,36%
11:00	29° 07' 18"	4° 11' 55"	25° 32' 01"	15° 05' 01"	59' 36"	16' 14,41"	72° 14' 57"	18,98%
12:00	29° 43' 13"	4° 13' 40"	26° 06' 02"	15° 19' 30"	59' 38"	16' 15,00"	72° 26' 40"	18,60%
13:00	30° 19' 12"	4° 15' 22"	26° 40' 09"	15° 33' 55"	59' 41"	16' 15,59"	72° 38' 38"	18,23%
14:00	30° 55' 13"	4° 17' 03"	27° 14' 24"	15° 48' 16"	59' 43"	16' 16,17"	72° 50' 51"	17,85%
15:00	31° 31' 16"	4° 18' 42"	27° 48' 46"	16° 02' 32"	59' 45"	16' 16,75"	73° 03' 21"	17,48%
16:00	32° 07' 23"	4° 20' 20"	28° 23' 16"	16° 16' 44"	59' 47"	16' 17,33"	73° 16' 05"	17,11%
17:00	32° 43' 33"	4° 21' 56"	28° 57' 53"	16° 30' 51"	59' 49"	16' 17,91"	73° 29' 06"	16,75%
18:00	33° 19' 45"	4° 23' 31"	29° 32' 39"	16° 44' 53"	59' 51"	16' 18,48"	73° 42' 23"	16,38%
19:00	33° 56' 01"	4° 25' 04"	30° 07' 31"	16° 58' 51"	59' 53"	16' 19,05"	73° 55' 57"	16,02%
20:00	34° 32' 19"	4° 26' 35"	30° 42' 32"	17° 12' 44"	59' 55"	16' 19,61"	74° 09' 47"	15,67%
21:00	35° 08' 40"	4° 28' 04"	31° 17' 40"	17° 26' 31"	59' 57"	16' 20,17"	74° 23' 55"	15,31%
22:00	35° 45' 04"	4° 29' 32"	31° 52' 56"	17° 40' 14"	59' 59"	16' 20,72"	74° 38' 19"	14,96%
23:00	36° 21' 30"	4° 30' 58"	32° 28' 20"	17° 53' 51"	00' 01"	16' 21,28"	74° 53' 01"	14,61%
24:00	36° 57' 59"	4° 32' 23"	33° 03' 53"	18° 07' 23"	00' 03"	16' 21,82"	75° 08' 01"	14,27%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	81° 04' 00"	0,47"	80° 16' 41"	23° 08' 14"	1,0153928	15' 45,08"	23° 26' 17"	00m 14s
01:00	81° 06' 23"	0,47"	80° 19' 16"	23° 08' 23"	1,0153975	15' 45,08"	23° 26' 17"	00m 14s
02:00	81° 08' 47"	0,47"	80° 21' 52"	23° 08' 33"	1,0154022	15' 45,07"	23° 26' 17"	00m 13s
03:00	81° 11' 10"	0,48"	80° 24' 28"	23° 08' 42"	1,0154069	15' 45,07"	23° 26' 17"	00m 13s
04:00	81° 13' 34"	0,48"	80° 27' 03"	23° 08' 52"	1,0154116	15' 45,07"	23° 26' 17"	00m 12s
05:00	81° 15' 57"	0,48"	80° 29' 39"	23° 09' 01"	1,0154162	15' 45,06"	23° 26' 17"	00m 12s
06:00	81° 18' 20"	0,48"	80° 32' 15"	23° 09' 11"	1,0154209	15' 45,06"	23° 26' 17"	00m 11s
07:00	81° 20' 44"	0,48"	80° 34' 50"	23° 09' 20"	1,0154255	15' 45,05"	23° 26' 17"	00m 10s
08:00	81° 23' 07"	0,49"	80° 37' 26"	23° 09' 29"	1,0154302	15' 45,05"	23° 26' 17"	00m 10s
09:00	81° 25' 31"	0,49"	80° 40' 02"	23° 09' 39"	1,0154348	15' 45,04"	23° 26' 17"	00m 09s
10:00	81° 27' 54"	0,49"	80° 42' 37"	23° 09' 48"	1,0154394	15' 45,04"	23° 26' 17"	00m 09s
11:00	81° 30' 18"	0,49"	80° 45' 13"	23° 09' 57"	1,0154441	15' 45,03"	23° 26' 17"	00m 08s
12:00	81° 32' 41"	0,49"	80° 47' 49"	23° 10' 06"	1,0154487	15' 45,03"	23° 26' 17"	00m 08s
13:00	81° 35' 04"	0,49"	80° 50' 24"	23° 10' 15"	1,0154533	15' 45,03"	23° 26' 17"	00m 07s
14:00	81° 37' 28"	0,50"	80° 53' 00"	23° 10' 24"	1,0154578	15' 45,02"	23° 26' 17"	00m 07s
15:00	81° 39' 51"	0,50"	80° 55' 36"	23° 10' 33"	1,0154624	15' 45,02"	23° 26' 17"	00m 06s
16:00	81° 42' 15"	0,50"	80° 58' 11"	23° 10' 42"	1,0154670	15' 45,01"	23° 26' 17"	00m 06s
17:00	81° 44' 38"	0,50"	81° 00' 47"	23° 10' 51"	1,0154715	15' 45,01"	23° 26' 17"	00m 05s
18:00	81° 47' 02"	0,50"	81° 03' 23"	23° 11' 00"	1,0154761	15' 45,01"	23° 26' 17"	00m 05s
19:00	81° 49' 25"	0,50"	81° 05' 59"	23° 11' 09"	1,0154806	15' 45,00"	23° 26' 17"	00m 04s
20:00	81° 51' 48"	0,50"	81° 08' 34"	23° 11' 18"	1,0154851	15' 45,00"	23° 26' 17"	00m 04s
21:00	81° 54' 12"	0,50"	81° 11' 10"	23° 11' 27"	1,0154897	15' 44,99"	23° 26' 17"	00m 03s
22:00	81° 56' 35"	0,51"	81° 13' 46"	23° 11' 35"	1,0154942	15' 44,99"	23° 26' 17"	00m 03s
23:00	81° 58' 59"	0,51"	81° 16' 21"	23° 11' 44"	1,0154987	15' 44,98"	23° 26' 17"	00m 02s
24:00	82° 01' 22"	0,51"	81° 18' 57"	23° 11' 53"	1,0155032	15' 44,98"	23° 26' 17"	00m 02s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	36° 57' 59"	4° 32' 23"	33° 03' 53"	18° 07' 23"	00' 03"	16' 21,82"	75° 08' 01"	14,27%
01:00	37° 34' 31"	4° 33' 45"	33° 39' 33"	18° 20' 49"	00' 05"	16' 22,37"	75° 23' 19"	13,92%
02:00	38° 11' 06"	4° 35' 06"	34° 15' 21"	18° 34' 09"	00' 07"	16' 22,90"	75° 38' 55"	13,58%
03:00	38° 47' 43"	4° 36' 25"	34° 51' 17"	18° 47' 24"	00' 09"	16' 23,44"	75° 54' 50"	13,25%
04:00	39° 24' 23"	4° 37' 42"	35° 27' 21"	19° 00' 32"	00' 11"	16' 23,97"	76° 11' 04"	12,91%
05:00	40° 01' 06"	4° 38' 58"	36° 03' 34"	19° 13' 34"	00' 13"	16' 24,49"	76° 27' 37"	12,58%
06:00	40° 37' 51"	4° 40' 11"	36° 39' 55"	19° 26' 30"	00' 15"	16' 25,01"	76° 44' 30"	12,26%
07:00	41° 14' 39"	4° 41' 23"	37° 16' 24"	19° 39' 20"	00' 17"	16' 25,53"	77° 01' 43"	11,93%
08:00	41° 51' 30"	4° 42' 33"	37° 53' 01"	19° 52' 03"	00' 19"	16' 26,04"	77° 19' 16"	11,61%
09:00	42° 28' 23"	4° 43' 41"	38° 29' 46"	20° 04' 40"	00' 21"	16' 26,54"	77° 37' 11"	11,30%
10:00	43° 05' 18"	4° 44' 47"	39° 06' 40"	20° 17' 09"	00' 23"	16' 27,04"	77° 55' 27"	10,98%
11:00	43° 42' 16"	4° 45' 51"	39° 43' 42"	20° 29' 32"	00' 24"	16' 27,53"	78° 14' 05"	10,67%
12:00	44° 19' 17"	4° 46' 53"	40° 20' 53"	20° 41' 47"	00' 26"	16' 28,02"	78° 33' 05"	10,37%
13:00	44° 56' 20"	4° 47' 54"	40° 58' 12"	20° 53' 55"	00' 28"	16' 28,50"	78° 52' 29"	10,07%
14:00	45° 33' 25"	4° 48' 52"	41° 35' 39"	21° 05' 56"	00' 30"	16' 28,98"	79° 12' 15"	9,77%
15:00	46° 10' 32"	4° 49' 48"	42° 13' 14"	21° 17' 49"	00' 31"	16' 29,45"	79° 32' 26"	9,47%
16:00	46° 47' 43"	4° 50' 43"	42° 50' 58"	21° 29' 35"	00' 33"	16' 29,91"	79° 53' 02"	9,18%
17:00	47° 24' 55"	4° 51' 35"	43° 28' 50"	21° 41' 13"	00' 35"	16' 30,37"	80° 14' 03"	8,90%
18:00	48° 02' 10"	4° 52' 26"	44° 06' 51"	21° 52' 42"	00' 36"	16' 30,82"	80° 35' 30"	8,61%
19:00	48° 39' 26"	4° 53' 14"	44° 44' 59"	22° 04' 04"	00' 38"	16' 31,27"	80° 57' 25"	8,33%
20:00	49° 16' 46"	4° 54' 00"	45° 23' 16"	22° 15' 17"	00' 40"	16' 31,71"	81° 19' 47"	8,06%
21:00	49° 54' 07"	4° 54' 44"	46° 01' 42"	22° 26' 22"	00' 41"	16' 32,14"	81° 42' 38"	7,79%
22:00	50° 31' 30"	4° 55' 27"	46° 40' 15"	22° 37' 19"	00' 43"	16' 32,56"	82° 05' 58"	7,52%
23:00	51° 08' 56"	4° 56' 07"	47° 18' 57"	22° 48' 07"	00' 44"	16' 32,98"	82° 29' 49"	7,26%
24:00	51° 46' 24"	4° 56' 45"	47° 57' 47"	22° 58' 46"	00' 46"	16' 33,39"	82° 54' 12"	7,00%

13 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	82° 01' 22"	0,51"	81° 18' 57"	23° 11' 53"	1,0155032	15' 44,98"	23° 26' 17"	00m 02s
01:00	82° 03' 45"	0,51"	81° 21' 33"	23° 12' 01"	1,0155076	15' 44,98"	23° 26' 17"	00m 01s
02:00	82° 06' 09"	0,51"	81° 24' 09"	23° 12' 10"	1,0155121	15' 44,97"	23° 26' 17"	00m 01s
03:00	82° 08' 32"	0,51"	81° 26' 44"	23° 12' 18"	1,0155165	15' 44,97"	23° 26' 17"	-00m 00s
04:00	82° 10' 56"	0,51"	81° 29' 20"	23° 12' 27"	1,0155210	15' 44,96"	23° 26' 17"	-00m 01s
05:00	82° 13' 19"	0,51"	81° 31' 56"	23° 12' 35"	1,0155254	15' 44,96"	23° 26' 17"	-00m 01s
06:00	82° 15' 43"	0,51"	81° 34' 32"	23° 12' 44"	1,0155298	15' 44,95"	23° 26' 17"	-00m 02s
07:00	82° 18' 06"	0,51"	81° 37' 08"	23° 12' 52"	1,0155343	15' 44,95"	23° 26' 17"	-00m 02s
08:00	82° 20' 29"	0,51"	81° 39' 43"	23° 13' 00"	1,0155387	15' 44,95"	23° 26' 17"	-00m 03s
09:00	82° 22' 53"	0,51"	81° 42' 19"	23° 13' 08"	1,0155431	15' 44,94"	23° 26' 17"	-00m 03s
10:00	82° 25' 16"	0,51"	81° 44' 55"	23° 13' 17"	1,0155474	15' 44,94"	23° 26' 17"	-00m 04s
11:00	82° 27' 40"	0,51"	81° 47' 31"	23° 13' 25"	1,0155518	15' 44,93"	23° 26' 17"	-00m 04s
12:00	82° 30' 03"	0,51"	81° 50' 07"	23° 13' 33"	1,0155562	15' 44,93"	23° 26' 17"	-00m 05s
13:00	82° 32' 26"	0,51"	81° 52' 42"	23° 13' 41"	1,0155605	15' 44,93"	23° 26' 17"	-00m 05s
14:00	82° 34' 50"	0,51"	81° 55' 18"	23° 13' 49"	1,0155649	15' 44,92"	23° 26' 17"	-00m 06s
15:00	82° 37' 13"	0,52"	81° 57' 54"	23° 13' 57"	1,0155692	15' 44,92"	23° 26' 17"	-00m 06s
16:00	82° 39' 37"	0,52"	82° 00' 30"	23° 14' 05"	1,0155735	15' 44,91"	23° 26' 17"	-00m 07s
17:00	82° 42' 00"	0,52"	82° 03' 06"	23° 14' 13"	1,0155778	15' 44,91"	23° 26' 17"	-00m 07s
18:00	82° 44' 23"	0,51"	82° 05' 41"	23° 14' 21"	1,0155821	15' 44,91"	23° 26' 17"	-00m 08s
19:00	82° 46' 47"	0,51"	82° 08' 17"	23° 14' 29"	1,0155864	15' 44,90"	23° 26' 17"	-00m 08s
20:00	82° 49' 10"	0,51"	82° 10' 53"	23° 14' 36"	1,0155907	15' 44,90"	23° 26' 17"	-00m 09s
21:00	82° 51' 34"	0,51"	82° 13' 29"	23° 14' 44"	1,0155950	15' 44,89"	23° 26' 17"	-00m 10s
22:00	82° 53' 57"	0,51"	82° 16' 05"	23° 14' 52"	1,0155992	15' 44,89"	23° 26' 17"	-00m 10s
23:00	82° 56' 20"	0,51"	82° 18' 41"	23° 14' 59"	1,0156035	15' 44,89"	23° 26' 17"	-00m 11s
24:00	82° 58' 44"	0,51"	82° 21' 16"	23° 15' 07"	1,0156077	15' 44,88"	23° 26' 17"	-00m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	51° 46' 24"	4° 56' 45"	47° 57' 47"	22° 58' 46"	00' 46"	16' 33,39"	82° 54' 12"	7,00%
01:00	52° 23' 53"	4° 57' 21"	48° 36' 46"	23° 09' 16"	00' 47"	16' 33,80"	83° 19' 08"	6,75%
02:00	53° 01' 25"	4° 57' 54"	49° 15' 52"	23° 19' 37"	00' 49"	16' 34,20"	83° 44' 38"	6,50%
03:00	53° 38' 59"	4° 58' 26"	49° 55' 06"	23° 29' 49"	00' 50"	16' 34,59"	84° 10' 43"	6,25%
04:00	54° 16' 35"	4° 58' 56"	50° 34' 29"	23° 39' 51"	00' 52"	16' 34,97"	84° 37' 26"	6,01%
05:00	54° 54' 12"	4° 59' 23"	51° 13' 59"	23° 49' 44"	00' 53"	16' 35,35"	85° 04' 48"	5,77%
06:00	55° 31' 52"	4° 59' 49"	51° 53' 37"	23° 59' 27"	00' 54"	16' 35,72"	85° 32' 50"	5,54%
07:00	56° 09' 33"	5° 00' 12"	52° 33' 23"	24° 09' 00"	00' 56"	16' 36,08"	86° 01' 35"	5,31%
08:00	56° 47' 16"	5° 00' 33"	53° 13' 17"	24° 18' 24"	00' 57"	16' 36,44"	86° 31' 04"	5,09%
09:00	57° 25' 01"	5° 00' 52"	53° 53' 19"	24° 27' 37"	00' 58"	16' 36,78"	87° 01' 20"	4,87%
10:00	58° 02' 47"	5° 01' 08"	54° 33' 28"	24° 36' 41"	01' 00"	16' 37,12"	87° 32' 26"	4,65%
11:00	58° 40' 35"	5° 01' 23"	55° 13' 45"	24° 45' 34"	01' 01"	16' 37,45"	88° 04' 24"	4,44%
12:00	59° 18' 25"	5° 01' 35"	55° 54' 09"	24° 54' 16"	01' 02"	16' 37,77"	88° 37' 17"	4,24%
13:00	59° 56' 17"	5° 01' 45"	56° 34' 40"	25° 02' 48"	01' 03"	16' 38,09"	89° 11' 08"	4,04%
14:00	60° 34' 10"	5° 01' 53"	57° 15' 19"	25° 11' 09"	01' 04"	16' 38,40"	89° 46' 02"	3,84%
15:00	61° 12' 04"	5° 01' 59"	57° 56' 04"	25° 19' 19"	01' 05"	16' 38,70"	90° 22' 02"	3,65%
16:00	61° 50' 00"	5° 02' 02"	58° 36' 57"	25° 27' 19"	01' 06"	16' 38,99"	90° 59' 12"	3,46%
17:00	62° 27' 57"	5° 02' 03"	59° 17' 57"	25° 35' 07"	01' 07"	16' 39,27"	91° 37' 39"	3,28%
18:00	63° 05' 56"	5° 02' 02"	59° 59' 03"	25° 42' 44"	01' 08"	16' 39,54"	92° 17' 26"	3,10%
19:00	63° 43' 56"	5° 01' 59"	60° 40' 16"	25° 50' 10"	01' 09"	16' 39,81"	92° 58' 41"	2,93%
20:00	64° 21' 57"	5° 01' 54"	61° 21' 36"	25° 57' 24"	01' 10"	16' 40,06"	93° 41' 31"	2,77%
21:00	65° 00' 00"	5° 01' 46"	62° 03' 02"	26° 04' 27"	01' 11"	16' 40,31"	94° 26' 03"	2,60%
22:00	65° 38' 03"	5° 01' 36"	62° 44' 34"	26° 11' 18"	01' 12"	16' 40,55"	95° 12' 25"	2,45%
23:00	66° 16' 08"	5° 01' 24"	63° 26' 12"	26° 17' 58"	01' 13"	16' 40,78"	96° 00' 48"	2,30%
24:00	66° 54' 14"	5° 01' 10"	64° 07' 57"	26° 24' 25"	01' 14"	16' 41,00"	96° 51' 23"	2,15%

14 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	82° 58' 44"	0,51"	82° 21' 16"	23° 15' 07"	1,0156077	15' 44,88"	23° 26' 17"	-00m 11s
01:00	83° 01' 07"	0,51"	82° 23' 52"	23° 15' 15"	1,0156119	15' 44,88"	23° 26' 17"	-00m 12s
02:00	83° 03' 31"	0,51"	82° 26' 28"	23° 15' 22"	1,0156162	15' 44,87"	23° 26' 17"	-00m 12s
03:00	83° 05' 54"	0,51"	82° 29' 04"	23° 15' 30"	1,0156204	15' 44,87"	23° 26' 17"	-00m 13s
04:00	83° 08' 17"	0,51"	82° 31' 40"	23° 15' 37"	1,0156246	15' 44,87"	23° 26' 17"	-00m 13s
05:00	83° 10' 41"	0,51"	82° 34' 16"	23° 15' 44"	1,0156287	15' 44,86"	23° 26' 17"	-00m 14s
06:00	83° 13' 04"	0,51"	82° 36' 52"	23° 15' 52"	1,0156329	15' 44,86"	23° 26' 17"	-00m 14s
07:00	83° 15' 27"	0,51"	82° 39' 28"	23° 15' 59"	1,0156371	15' 44,86"	23° 26' 17"	-00m 15s
08:00	83° 17' 51"	0,51"	82° 42' 03"	23° 16' 06"	1,0156412	15' 44,85"	23° 26' 17"	-00m 15s
09:00	83° 20' 14"	0,51"	82° 44' 39"	23° 16' 14"	1,0156454	15' 44,85"	23° 26' 17"	-00m 16s
10:00	83° 22' 38"	0,51"	82° 47' 15"	23° 16' 21"	1,0156495	15' 44,84"	23° 26' 17"	-00m 17s
11:00	83° 25' 01"	0,50"	82° 49' 51"	23° 16' 28"	1,0156536	15' 44,84"	23° 26' 17"	-00m 17s
12:00	83° 27' 24"	0,50"	82° 52' 27"	23° 16' 35"	1,0156577	15' 44,84"	23° 26' 17"	-00m 18s
13:00	83° 29' 48"	0,50"	82° 55' 03"	23° 16' 42"	1,0156618	15' 44,83"	23° 26' 17"	-00m 18s
14:00	83° 32' 11"	0,50"	82° 57' 39"	23° 16' 49"	1,0156659	15' 44,83"	23° 26' 17"	-00m 19s
15:00	83° 34' 35"	0,50"	83° 00' 15"	23° 16' 56"	1,0156700	15' 44,82"	23° 26' 17"	-00m 19s
16:00	83° 36' 58"	0,50"	83° 02' 51"	23° 17' 03"	1,0156741	15' 44,82"	23° 26' 17"	-00m 20s
17:00	83° 39' 21"	0,50"	83° 05' 26"	23° 17' 10"	1,0156781	15' 44,82"	23° 26' 17"	-00m 20s
18:00	83° 41' 45"	0,50"	83° 08' 02"	23° 17' 17"	1,0156822	15' 44,81"	23° 26' 17"	-00m 21s
19:00	83° 44' 08"	0,49"	83° 10' 38"	23° 17' 23"	1,0156862	15' 44,81"	23° 26' 17"	-00m 21s
20:00	83° 46' 31"	0,49"	83° 13' 14"	23° 17' 30"	1,0156902	15' 44,81"	23° 26' 17"	-00m 22s
21:00	83° 48' 55"	0,49"	83° 15' 50"	23° 17' 37"	1,0156943	15' 44,80"	23° 26' 17"	-00m 22s
22:00	83° 51' 18"	0,49"	83° 18' 26"	23° 17' 44"	1,0156983	15' 44,80"	23° 26' 17"	-00m 23s
23:00	83° 53' 42"	0,49"	83° 21' 02"	23° 17' 50"	1,0157023	15' 44,79"	23° 26' 17"	-00m 24s
24:00	83° 56' 05"	0,49"	83° 23' 38"	23° 17' 57"	1,0157062	15' 44,79"	23° 26' 17"	-00m 24s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	66° 54' 14"	5° 01' 10"	64° 07' 57"	26° 24' 25"	01' 14"	16' 41,00"	96° 51' 23"	2,15%
01:00	67° 32' 21"	5° 00' 53"	64° 49' 47"	26° 30' 41"	01' 15"	16' 41,22"	97° 44' 23"	2,01%
02:00	68° 10' 29"	5° 00' 34"	65° 31' 42"	26° 36' 44"	01' 15"	16' 41,42"	98° 40' 01"	1,87%
03:00	68° 48' 38"	5° 00' 13"	66° 13' 43"	26° 42' 35"	01' 16"	16' 41,62"	99° 38' 35"	1,74%
04:00	69° 26' 48"	4° 59' 50"	66° 55' 50"	26° 48' 14"	01' 17"	16' 41,80"	100° 40' 22"	1,61%
05:00	70° 04' 59"	4° 59' 24"	67° 38' 01"	26° 53' 41"	01' 17"	16' 41,98"	101° 45' 46"	1,49%
06:00	70° 43' 10"	4° 58' 56"	68° 20' 18"	26° 58' 55"	01' 18"	16' 42,15"	102° 55' 10"	1,38%
07:00	71° 21' 22"	4° 58' 26"	69° 02' 39"	27° 03' 57"	01' 19"	16' 42,31"	104° 09' 04"	1,26%
08:00	71° 59' 35"	4° 57' 54"	69° 45' 05"	27° 08' 46"	01' 19"	16' 42,46"	105° 28' 01"	1,16%
09:00	72° 37' 49"	4° 57' 19"	70° 27' 35"	27° 13' 22"	01' 20"	16' 42,60"	106° 52' 42"	1,06%
10:00	73° 16' 03"	4° 56' 42"	71° 10' 09"	27° 17' 45"	01' 20"	16' 42,73"	108° 23' 51"	0,96%
11:00	73° 54' 18"	4° 56' 03"	71° 52' 48"	27° 21' 56"	01' 21"	16' 42,85"	110° 02' 23"	0,87%
12:00	74° 32' 33"	4° 55' 22"	72° 35' 30"	27° 25' 53"	01' 21"	16' 42,96"	111° 49' 22"	0,79%
13:00	75° 10' 49"	4° 54' 39"	73° 18' 16"	27° 29' 38"	01' 21"	16' 43,07"	113° 46' 04"	0,71%
14:00	75° 49' 05"	4° 53' 53"	74° 01' 05"	27° 33' 10"	01' 22"	16' 43,16"	115° 53' 57"	0,64%
15:00	76° 27' 21"	4° 53' 05"	74° 43' 57"	27° 36' 28"	01' 22"	16' 43,24"	118° 14' 47"	0,57%
16:00	77° 05' 38"	4° 52' 15"	75° 26' 53"	27° 39' 33"	01' 22"	16' 43,32"	120° 50' 38"	0,51%
17:00	77° 43' 55"	4° 51' 23"	76° 09' 51"	27° 42' 25"	01' 23"	16' 43,38"	123° 43' 55"	0,45%
18:00	78° 22' 12"	4° 50' 29"	76° 52' 51"	27° 45' 04"	01' 23"	16' 43,44"	126° 57' 26"	0,40%
19:00	79° 00' 30"	4° 49' 32"	77° 35' 54"	27° 47' 30"	01' 23"	16' 43,49"	130° 34' 18"	0,35%
20:00	79° 38' 47"	4° 48' 33"	78° 18' 59"	27° 49' 42"	01' 23"	16' 43,52"	134° 37' 59"	0,31%
21:00	80° 17' 05"	4° 47' 32"	79° 02' 06"	27° 51' 40"	01' 23"	16' 43,55"	139° 11' 57"	0,27%
22:00	80° 55' 23"	4° 46' 29"	79° 45' 14"	27° 53' 25"	01' 23"	16' 43,57"	144° 19' 21"	0,24%
23:00	81° 33' 40"	4° 45' 24"	80° 28' 24"	27° 54' 57"	01' 23"	16' 43,57"	150° 02' 21"	0,21%
24:00	82° 11' 58"	4° 44' 16"	81° 11' 35"	27° 56' 16"	01' 23"	16' 43,57"	156° 21' 10"	0,19%

15 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	83° 56' 05"	0,49"	83° 23' 38"	23° 17' 57"	1,0157062	15' 44,79"	23° 26' 17"	-00m 24s
01:00	83° 58' 28"	0,48"	83° 26' 14"	23° 18' 03"	1,0157102	15' 44,79"	23° 26' 17"	-00m 25s
02:00	84° 00' 52"	0,48"	83° 28' 50"	23° 18' 10"	1,0157142	15' 44,78"	23° 26' 17"	-00m 25s
03:00	84° 03' 15"	0,48"	83° 31' 26"	23° 18' 16"	1,0157181	15' 44,78"	23° 26' 17"	-00m 26s
04:00	84° 05' 38"	0,48"	83° 34' 02"	23° 18' 23"	1,0157221	15' 44,78"	23° 26' 17"	-00m 26s
05:00	84° 08' 02"	0,48"	83° 36' 38"	23° 18' 29"	1,0157260	15' 44,77"	23° 26' 17"	-00m 27s
06:00	84° 10' 25"	0,47"	83° 39' 14"	23° 18' 35"	1,0157299	15' 44,77"	23° 26' 17"	-00m 27s
07:00	84° 12' 48"	0,47"	83° 41' 50"	23° 18' 42"	1,0157338	15' 44,77"	23° 26' 17"	-00m 28s
08:00	84° 15' 12"	0,47"	83° 44' 26"	23° 18' 48"	1,0157377	15' 44,76"	23° 26' 17"	-00m 28s
09:00	84° 17' 35"	0,47"	83° 47' 01"	23° 18' 54"	1,0157416	15' 44,76"	23° 26' 17"	-00m 29s
10:00	84° 19' 59"	0,46"	83° 49' 37"	23° 19' 00"	1,0157455	15' 44,75"	23° 26' 17"	-00m 29s
11:00	84° 22' 22"	0,46"	83° 52' 13"	23° 19' 06"	1,0157493	15' 44,75"	23° 26' 17"	-00m 30s
12:00	84° 24' 45"	0,46"	83° 54' 49"	23° 19' 12"	1,0157532	15' 44,75"	23° 26' 17"	-00m 31s
13:00	84° 27' 09"	0,46"	83° 57' 25"	23° 19' 18"	1,0157570	15' 44,74"	23° 26' 17"	-00m 31s
14:00	84° 29' 32"	0,45"	84° 00' 01"	23° 19' 24"	1,0157609	15' 44,74"	23° 26' 17"	-00m 32s
15:00	84° 31' 55"	0,45"	84° 02' 37"	23° 19' 30"	1,0157647	15' 44,74"	23° 26' 17"	-00m 32s
16:00	84° 34' 19"	0,45"	84° 05' 13"	23° 19' 36"	1,0157685	15' 44,73"	23° 26' 17"	-00m 33s
17:00	84° 36' 42"	0,45"	84° 07' 49"	23° 19' 42"	1,0157723	15' 44,73"	23° 26' 17"	-00m 33s
18:00	84° 39' 05"	0,44"	84° 10' 25"	23° 19' 48"	1,0157761	15' 44,73"	23° 26' 17"	-00m 34s
19:00	84° 41' 29"	0,44"	84° 13' 01"	23° 19' 54"	1,0157799	15' 44,72"	23° 26' 17"	-00m 34s
20:00	84° 43' 52"	0,44"	84° 15' 37"	23° 19' 59"	1,0157837	15' 44,72"	23° 26' 17"	-00m 35s
21:00	84° 46' 15"	0,43"	84° 18' 13"	23° 20' 05"	1,0157874	15' 44,72"	23° 26' 17"	-00m 35s
22:00	84° 48' 39"	0,43"	84° 20' 49"	23° 20' 11"	1,0157912	15' 44,71"	23° 26' 17"	-00m 36s
23:00	84° 51' 02"	0,43"	84° 23' 25"	23° 20' 16"	1,0157949	15' 44,71"	23° 26' 17"	-00m 36s
24:00	84° 53' 25"	0,43"	84° 26' 01"	23° 20' 22"	1,0157986	15' 44,70"	23° 26' 17"	-00m 37s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	82° 11' 58"	4° 44' 16"	81° 11' 35"	27° 56' 16"	01' 23"	16' 43,57"	156° 21' 10"	0,19%
01:00	82° 50' 15"	4° 43' 07"	81° 54' 47"	27° 57' 20"	01' 23"	16' 43,56"	163° 12' 58"	0,18%
02:00	83° 28' 32"	4° 41' 55"	82° 37' 59"	27° 58' 12"	01' 23"	16' 43,54"	170° 31' 03"	0,17%
03:00	84° 06' 49"	4° 40' 41"	83° 21' 12"	27° 58' 49"	01' 23"	16' 43,51"	178° 04' 51"	0,17%
04:00	84° 45' 05"	4° 39' 25"	84° 04' 26"	27° 59' 14"	01' 23"	16' 43,47"	185° 41' 03"	0,17%
05:00	85° 23' 22"	4° 38' 08"	84° 47' 39"	27° 59' 24"	01' 23"	16' 43,42"	193° 05' 55"	0,18%
06:00	86° 01' 37"	4° 36' 47"	85° 30' 52"	27° 59' 21"	01' 22"	16' 43,36"	200° 07' 45"	0,19%
07:00	86° 39' 53"	4° 35' 25"	86° 14' 04"	27° 59' 05"	01' 22"	16' 43,29"	206° 38' 27"	0,21%
08:00	87° 18' 08"	4° 34' 01"	86° 57' 16"	27° 58' 35"	01' 22"	16' 43,21"	212° 33' 55"	0,23%
09:00	87° 56' 22"	4° 32' 35"	87° 40' 27"	27° 57' 52"	01' 22"	16' 43,13"	217° 53' 28"	0,26%
10:00	88° 34' 36"	4° 31' 07"	88° 23' 37"	27° 56' 55"	01' 21"	16' 43,03"	222° 38' 42"	0,29%
11:00	89° 12' 49"	4° 29' 37"	89° 06' 45"	27° 55' 44"	01' 21"	16' 42,92"	226° 52' 30"	0,33%
12:00	89° 51' 01"	4° 28' 04"	89° 49' 52"	27° 54' 21"	01' 20"	16' 42,81"	230° 38' 19"	0,38%
13:00	90° 29' 13"	4° 26' 30"	90° 32' 57"	27° 52' 43"	01' 20"	16' 42,68"	233° 59' 37"	0,43%
14:00	91° 07' 24"	4° 24' 54"	91° 16' 00"	27° 50' 53"	01' 20"	16' 42,55"	236° 59' 40"	0,48%
15:00	91° 45' 34"	4° 23' 16"	91° 59' 00"	27° 48' 49"	01' 19"	16' 42,40"	239° 41' 22"	0,55%
16:00	92° 23' 43"	4° 21' 36"	92° 41' 58"	27° 46' 32"	01' 18"	16' 42,25"	242° 07' 18"	0,61%
17:00	93° 01' 51"	4° 19' 54"	93° 24' 54"	27° 44' 01"	01' 18"	16' 42,09"	244° 19' 36"	0,68%
18:00	93° 39' 58"	4° 18' 10"	94° 07' 46"	27° 41' 18"	01' 17"	16' 41,91"	246° 20' 10"	0,76%
19:00	94° 18' 04"	4° 16' 24"	94° 50' 35"	27° 38' 21"	01' 17"	16' 41,73"	248° 10' 33"	0,84%
20:00	94° 56' 10"	4° 14' 37"	95° 33' 20"	27° 35' 11"	01' 16"	16' 41,54"	249° 52' 06"	0,93%
21:00	95° 34' 14"	4° 12' 47"	96° 16' 03"	27° 31' 48"	01' 15"	16' 41,34"	251° 25' 55"	1,02%
22:00	96° 12' 16"	4° 10' 56"	96° 58' 41"	27° 28' 12"	01' 14"	16' 41,13"	252° 52' 59"	1,12%
23:00	96° 50' 18"	4° 09' 03"	97° 41' 15"	27° 24' 23"	01' 14"	16' 40,92"	254° 14' 05"	1,22%
24:00	97° 28' 18"	4° 07' 08"	98° 23' 45"	27° 20' 22"	01' 13"	16' 40,69"	255° 29' 56"	1,33%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	84° 53' 25"	0,43"	84° 26' 01"	23° 20' 22"	1,0157986	15' 44,70"	23° 26' 17"	-00m 37s
01:00	84° 55' 49"	0,42"	84° 28' 37"	23° 20' 27"	1,0158023	15' 44,70"	23° 26' 17"	-00m 38s
02:00	84° 58' 12"	0,42"	84° 31' 13"	23° 20' 33"	1,0158061	15' 44,70"	23° 26' 17"	-00m 38s
03:00	85° 00' 35"	0,42"	84° 33' 49"	23° 20' 38"	1,0158097	15' 44,69"	23° 26' 17"	-00m 39s
04:00	85° 02' 59"	0,41"	84° 36' 25"	23° 20' 44"	1,0158134	15' 44,69"	23° 26' 17"	-00m 39s
05:00	85° 05' 22"	0,41"	84° 39' 01"	23° 20' 49"	1,0158171	15' 44,69"	23° 26' 17"	-00m 40s
06:00	85° 07' 45"	0,41"	84° 41' 37"	23° 20' 54"	1,0158208	15' 44,68"	23° 26' 17"	-00m 40s
07:00	85° 10' 09"	0,40"	84° 44' 13"	23° 20' 59"	1,0158244	15' 44,68"	23° 26' 17"	-00m 41s
08:00	85° 12' 32"	0,40"	84° 46' 49"	23° 21' 05"	1,0158281	15' 44,68"	23° 26' 17"	-00m 41s
09:00	85° 14' 55"	0,40"	84° 49' 25"	23° 21' 10"	1,0158317	15' 44,67"	23° 26' 17"	-00m 42s
10:00	85° 17' 19"	0,39"	84° 52' 01"	23° 21' 15"	1,0158353	15' 44,67"	23° 26' 17"	-00m 42s
11:00	85° 19' 42"	0,39"	84° 54' 37"	23° 21' 20"	1,0158389	15' 44,67"	23° 26' 17"	-00m 43s
12:00	85° 22' 05"	0,38"	84° 57' 13"	23° 21' 25"	1,0158425	15' 44,66"	23° 26' 17"	-00m 44s
13:00	85° 24' 29"	0,38"	84° 59' 49"	23° 21' 30"	1,0158461	15' 44,66"	23° 26' 17"	-00m 44s
14:00	85° 26' 52"	0,38"	85° 02' 25"	23° 21' 35"	1,0158497	15' 44,66"	23° 26' 17"	-00m 45s
15:00	85° 29' 15"	0,37"	85° 05' 01"	23° 21' 40"	1,0158533	15' 44,65"	23° 26' 17"	-00m 45s
16:00	85° 31' 39"	0,37"	85° 07' 37"	23° 21' 45"	1,0158568	15' 44,65"	23° 26' 17"	-00m 46s
17:00	85° 34' 02"	0,37"	85° 10' 14"	23° 21' 50"	1,0158604	15' 44,65"	23° 26' 17"	-00m 46s
18:00	85° 36' 25"	0,36"	85° 12' 50"	23° 21' 54"	1,0158639	15' 44,64"	23° 26' 17"	-00m 47s
19:00	85° 38' 49"	0,36"	85° 15' 26"	23° 21' 59"	1,0158674	15' 44,64"	23° 26' 17"	-00m 47s
20:00	85° 41' 12"	0,35"	85° 18' 02"	23° 22' 04"	1,0158709	15' 44,64"	23° 26' 17"	-00m 48s
21:00	85° 43' 35"	0,35"	85° 20' 38"	23° 22' 08"	1,0158745	15' 44,63"	23° 26' 17"	-00m 48s
22:00	85° 45' 59"	0,35"	85° 23' 14"	23° 22' 13"	1,0158779	15' 44,63"	23° 26' 17"	-00m 49s
23:00	85° 48' 22"	0,34"	85° 25' 50"	23° 22' 18"	1,0158814	15' 44,63"	23° 26' 17"	-00m 50s
24:00	85° 50' 45"	0,34"	85° 28' 26"	23° 22' 22"	1,0158849	15' 44,62"	23° 26' 17"	-00m 50s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	97° 28' 18"	4° 07' 08"	98° 23' 45"	27° 20' 22"	01' 13"	16' 40,69"	255° 29' 56"	1,33%
01:00	98° 06' 17"	4° 05' 11"	99° 06' 11"	27° 16' 07"	01' 12"	16' 40,46"	256° 41' 07"	1,45%
02:00	98° 44' 15"	4° 03' 13"	99° 48' 31"	27° 11' 40"	01' 11"	16' 40,21"	257° 48' 09"	1,57%
03:00	99° 22' 11"	4° 01' 13"	100° 30' 48"	27° 07' 01"	01' 10"	16' 39,96"	258° 51' 27"	1,69%
04:00	100° 00' 06"	3° 59' 11"	101° 12' 59"	27° 02' 09"	01' 09"	16' 39,70"	259° 51' 25"	1,82%
05:00	100° 38' 00"	3° 57' 08"	101° 55' 05"	26° 57' 04"	01' 08"	16' 39,43"	260° 48' 23"	1,95%
06:00	101° 15' 52"	3° 55' 02"	102° 37' 06"	26° 51' 48"	01' 07"	16' 39,15"	261° 42' 36"	2,09%
07:00	101° 53' 42"	3° 52' 55"	103° 19' 01"	26° 46' 19"	01' 06"	16' 38,86"	262° 34' 21"	2,24%
08:00	102° 31' 31"	3° 50' 47"	104° 00' 50"	26° 40' 37"	01' 05"	16' 38,56"	263° 23' 51"	2,38%
09:00	103° 09' 18"	3° 48' 37"	104° 42' 34"	26° 34' 44"	01' 04"	16' 38,26"	264° 11' 17"	2,54%
10:00	103° 47' 03"	3° 46' 25"	105° 24' 11"	26° 28' 39"	01' 03"	16' 37,95"	264° 56' 50"	2,70%
11:00	104° 24' 47"	3° 44' 12"	106° 05' 43"	26° 22' 22"	01' 01"	16' 37,63"	265° 40' 39"	2,86%
12:00	105° 02' 29"	3° 41' 57"	106° 47' 08"	26° 15' 54"	01' 00"	16' 37,30"	266° 22' 51"	3,03%
13:00	105° 40' 09"	3° 39' 41"	107° 28' 27"	26° 09' 14"	00' 59"	16' 36,96"	267° 03' 34"	3,20%
14:00	106° 17' 47"	3° 37' 23"	108° 09' 39"	26° 02' 22"	00' 58"	16' 36,62"	267° 42' 54"	3,38%
15:00	106° 55' 24"	3° 35' 04"	108° 50' 44"	25° 55' 19"	00' 56"	16' 36,26"	268° 20' 57"	3,57%
16:00	107° 32' 58"	3° 32' 43"	109° 31' 43"	25° 48' 05"	00' 55"	16' 35,90"	268° 57' 49"	3,75%
17:00	108° 10' 31"	3° 30' 21"	110° 12' 35"	25° 40' 39"	00' 54"	16' 35,54"	269° 33' 33"	3,95%
18:00	108° 48' 02"	3° 27' 57"	110° 53' 19"	25° 33' 03"	00' 52"	16' 35,16"	270° 08' 15"	4,14%
19:00	109° 25' 30"	3° 25' 32"	111° 33' 56"	25° 25' 16"	00' 51"	16' 34,78"	270° 41' 57"	4,35%
20:00	110° 02' 57"	3° 23' 06"	112° 14' 26"	25° 17' 18"	00' 50"	16' 34,39"	271° 14' 44"	4,55%
21:00	110° 40' 21"	3° 20' 38"	112° 54' 49"	25° 09' 09"	00' 48"	16' 33,99"	271° 46' 37"	4,76%
22:00	111° 17' 43"	3° 18' 09"	113° 35' 04"	25° 00' 50"	00' 47"	16' 33,58"	272° 17' 42"	4,98%
23:00	111° 55' 04"	3° 15' 39"	114° 15' 11"	24° 52' 20"	00' 45"	16' 33,17"	272° 47' 59"	5,20%
24:00	112° 32' 22"	3° 13' 07"	114° 55' 11"	24° 43' 40"	00' 44"	16' 32,75"	273° 17' 31"	5,42%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	85° 50' 45"	0,34"	85° 28' 26"	23° 22' 22"	1,0158849	15' 44,62"	23° 26' 17"	-00m 50s
01:00	85° 53' 09"	0,33"	85° 31' 02"	23° 22' 27"	1,0158884	15' 44,62"	23° 26' 17"	-00m 51s
02:00	85° 55' 32"	0,33"	85° 33' 38"	23° 22' 31"	1,0158918	15' 44,62"	23° 26' 17"	-00m 51s
03:00	85° 57' 55"	0,32"	85° 36' 14"	23° 22' 35"	1,0158953	15' 44,62"	23° 26' 17"	-00m 52s
04:00	86° 00' 19"	0,32"	85° 38' 50"	23° 22' 40"	1,0158987	15' 44,61"	23° 26' 17"	-00m 52s
05:00	86° 02' 42"	0,32"	85° 41' 26"	23° 22' 44"	1,0159021	15' 44,61"	23° 26' 17"	-00m 53s
06:00	86° 05' 05"	0,31"	85° 44' 02"	23° 22' 48"	1,0159055	15' 44,61"	23° 26' 17"	-00m 53s
07:00	86° 07' 28"	0,31"	85° 46' 38"	23° 22' 52"	1,0159089	15' 44,60"	23° 26' 17"	-00m 54s
08:00	86° 09' 52"	0,30"	85° 49' 14"	23° 22' 57"	1,0159123	15' 44,60"	23° 26' 17"	-00m 55s
09:00	86° 12' 15"	0,30"	85° 51' 50"	23° 23' 01"	1,0159157	15' 44,60"	23° 26' 17"	-00m 55s
10:00	86° 14' 38"	0,29"	85° 54' 26"	23° 23' 05"	1,0159191	15' 44,59"	23° 26' 17"	-00m 56s
11:00	86° 17' 02"	0,29"	85° 57' 02"	23° 23' 09"	1,0159224	15' 44,59"	23° 26' 17"	-00m 56s
12:00	86° 19' 25"	0,28"	85° 59' 38"	23° 23' 13"	1,0159258	15' 44,59"	23° 26' 17"	-00m 57s
13:00	86° 21' 48"	0,28"	86° 02' 14"	23° 23' 17"	1,0159291	15' 44,58"	23° 26' 17"	-00m 57s
14:00	86° 24' 12"	0,28"	86° 04' 51"	23° 23' 21"	1,0159325	15' 44,58"	23° 26' 17"	-00m 58s
15:00	86° 26' 35"	0,27"	86° 07' 27"	23° 23' 25"	1,0159358	15' 44,58"	23° 26' 17"	-00m 58s
16:00	86° 28' 58"	0,27"	86° 10' 03"	23° 23' 28"	1,0159391	15' 44,57"	23° 26' 17"	-00m 59s
17:00	86° 31' 21"	0,26"	86° 12' 39"	23° 23' 32"	1,0159424	15' 44,57"	23° 26' 17"	-00m 59s
18:00	86° 33' 45"	0,26"	86° 15' 15"	23° 23' 36"	1,0159457	15' 44,57"	23° 26' 17"	-01m 00s
19:00	86° 36' 08"	0,25"	86° 17' 51"	23° 23' 40"	1,0159490	15' 44,57"	23° 26' 17"	-01m 01s
20:00	86° 38' 31"	0,25"	86° 20' 27"	23° 23' 43"	1,0159522	15' 44,56"	23° 26' 17"	-01m 01s
21:00	86° 40' 55"	0,24"	86° 23' 03"	23° 23' 47"	1,0159555	15' 44,56"	23° 26' 17"	-01m 02s
22:00	86° 43' 18"	0,24"	86° 25' 39"	23° 23' 51"	1,0159587	15' 44,56"	23° 26' 17"	-01m 02s
23:00	86° 45' 41"	0,23"	86° 28' 15"	23° 23' 54"	1,0159620	15' 44,55"	23° 26' 17"	-01m 03s
24:00	86° 48' 04"	0,23"	86° 30' 51"	23° 23' 58"	1,0159652	15' 44,55"	23° 26' 17"	-01m 03s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	112° 32' 22"	3° 13' 07"	114° 55' 11"	24° 43' 40"	00' 44"	16' 32,75"	273° 17' 31"	5,42%
01:00	113° 09' 37"	3° 10' 34"	115° 35' 03"	24° 34' 50"	00' 42"	16' 32,32"	273° 46' 20"	5,65%
02:00	113° 46' 51"	3° 08' 00"	116° 14' 47"	24° 25' 50"	00' 40"	16' 31,89"	274° 14' 29"	5,89%
03:00	114° 24' 02"	3° 05' 25"	116° 54' 23"	24° 16' 41"	00' 39"	16' 31,45"	274° 41' 58"	6,12%
04:00	115° 01' 11"	3° 02' 49"	117° 33' 51"	24° 07' 21"	00' 37"	16' 31,00"	275° 08' 51"	6,37%
05:00	115° 38' 18"	3° 00' 11"	118° 13' 11"	23° 57' 52"	00' 35"	16' 30,55"	275° 35' 08"	6,61%
06:00	116° 15' 22"	2° 57' 33"	118° 52' 23"	23° 48' 13"	00' 34"	16' 30,09"	276° 00' 50"	6,86%
07:00	116° 52' 24"	2° 54' 53"	119° 31' 27"	23° 38' 26"	00' 32"	16' 29,62"	276° 26' 00"	7,12%
08:00	117° 29' 23"	2° 52' 12"	120° 10' 22"	23° 28' 29"	00' 30"	16' 29,15"	276° 50' 38"	7,37%
09:00	118° 06' 20"	2° 49' 30"	120° 49' 09"	23° 18' 22"	00' 29"	16' 28,67"	277° 14' 45"	7,64%
10:00	118° 43' 15"	2° 46' 47"	121° 27' 48"	23° 08' 08"	00' 27"	16' 28,18"	277° 38' 23"	7,90%
11:00	119° 20' 07"	2° 44' 03"	122° 06' 18"	22° 57' 44"	00' 25"	16' 27,69"	278° 01' 32"	8,17%
12:00	119° 56' 56"	2° 41' 18"	122° 44' 40"	22° 47' 12"	00' 23"	16' 27,20"	278° 24' 13"	8,45%
13:00	120° 33' 43"	2° 38' 33"	123° 22' 54"	22° 36' 31"	00' 21"	16' 26,69"	278° 46' 28"	8,73%
14:00	121° 10' 28"	2° 35' 46"	124° 00' 59"	22° 25' 42"	00' 19"	16' 26,19"	279° 08' 16"	9,01%
15:00	121° 47' 10"	2° 32' 58"	124° 38' 56"	22° 14' 44"	00' 18"	16' 25,67"	279° 29' 39"	9,30%
16:00	122° 23' 49"	2° 30' 10"	125° 16' 44"	22° 03' 39"	00' 16"	16' 25,15"	279° 50' 37"	9,59%
17:00	123° 00' 25"	2° 27' 20"	125° 54' 23"	21° 52' 26"	00' 14"	16' 24,63"	280° 11' 12"	9,88%
18:00	123° 36' 59"	2° 24' 30"	126° 31' 54"	21° 41' 05"	00' 12"	16' 24,10"	280° 31' 23"	10,18%
19:00	124° 13' 31"	2° 21' 39"	127° 09' 17"	21° 29' 36"	00' 10"	16' 23,57"	280° 51' 11"	10,48%
20:00	124° 49' 59"	2° 18' 47"	127° 46' 31"	21° 18' 00"	00' 08"	16' 23,03"	281° 10' 37"	10,78%
21:00	125° 26' 25"	2° 15' 55"	128° 23' 37"	21° 06' 16"	00' 06"	16' 22,48"	281° 29' 41"	11,09%
22:00	126° 02' 48"	2° 13' 01"	129° 00' 34"	20° 54' 25"	00' 04"	16' 21,93"	281° 48' 24"	11,40%
23:00	126° 39' 09"	2° 10' 07"	129° 37' 22"	20° 42' 28"	00' 02"	16' 21,38"	282° 06' 47"	11,71%
24:00	127° 15' 26"	2° 07' 13"	130° 14' 02"	20° 30' 23"	00' 00"	16' 20,82"	282° 24' 48"	12,03%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	86° 48' 04"	0,23"	86° 30' 51"	23° 23' 58"	1,0159652	15' 44,55"	23° 26' 17"	-01m 03s
01:00	86° 50' 28"	0,22"	86° 33' 27"	23° 24' 01"	1,0159684	15' 44,55"	23° 26' 17"	-01m 04s
02:00	86° 52' 51"	0,22"	86° 36' 03"	23° 24' 04"	1,0159716	15' 44,54"	23° 26' 17"	-01m 04s
03:00	86° 55' 14"	0,21"	86° 38' 39"	23° 24' 08"	1,0159748	15' 44,54"	23° 26' 17"	-01m 05s
04:00	86° 57' 37"	0,21"	86° 41' 15"	23° 24' 11"	1,0159780	15' 44,54"	23° 26' 17"	-01m 05s
05:00	87° 00' 01"	0,20"	86° 43' 52"	23° 24' 14"	1,0159812	15' 44,54"	23° 26' 17"	-01m 06s
06:00	87° 02' 24"	0,20"	86° 46' 28"	23° 24' 18"	1,0159844	15' 44,53"	23° 26' 17"	-01m 07s
07:00	87° 04' 47"	0,19"	86° 49' 04"	23° 24' 21"	1,0159875	15' 44,53"	23° 26' 17"	-01m 07s
08:00	87° 07' 11"	0,19"	86° 51' 40"	23° 24' 24"	1,0159907	15' 44,53"	23° 26' 17"	-01m 08s
09:00	87° 09' 34"	0,18"	86° 54' 16"	23° 24' 27"	1,0159938	15' 44,52"	23° 26' 17"	-01m 08s
10:00	87° 11' 57"	0,18"	86° 56' 52"	23° 24' 30"	1,0159969	15' 44,52"	23° 26' 17"	-01m 09s
11:00	87° 14' 20"	0,17"	86° 59' 28"	23° 24' 33"	1,0160001	15' 44,52"	23° 26' 17"	-01m 09s
12:00	87° 16' 44"	0,17"	87° 02' 04"	23° 24' 36"	1,0160032	15' 44,51"	23° 26' 17"	-01m 10s
13:00	87° 19' 07"	0,16"	87° 04' 40"	23° 24' 39"	1,0160063	15' 44,51"	23° 26' 17"	-01m 10s
14:00	87° 21' 30"	0,16"	87° 07' 16"	23° 24' 42"	1,0160094	15' 44,51"	23° 26' 17"	-01m 11s
15:00	87° 23' 53"	0,15"	87° 09' 52"	23° 24' 45"	1,0160124	15' 44,51"	23° 26' 17"	-01m 12s
16:00	87° 26' 17"	0,15"	87° 12' 28"	23° 24' 47"	1,0160155	15' 44,50"	23° 26' 17"	-01m 12s
17:00	87° 28' 40"	0,14"	87° 15' 04"	23° 24' 50"	1,0160186	15' 44,50"	23° 26' 17"	-01m 13s
18:00	87° 31' 03"	0,14"	87° 17' 41"	23° 24' 53"	1,0160216	15' 44,50"	23° 26' 17"	-01m 13s
19:00	87° 33' 26"	0,13"	87° 20' 17"	23° 24' 56"	1,0160247	15' 44,49"	23° 26' 17"	-01m 14s
20:00	87° 35' 50"	0,13"	87° 22' 53"	23° 24' 58"	1,0160277	15' 44,49"	23° 26' 17"	-01m 14s
21:00	87° 38' 13"	0,12"	87° 25' 29"	23° 25' 01"	1,0160307	15' 44,49"	23° 26' 17"	-01m 15s
22:00	87° 40' 36"	0,12"	87° 28' 05"	23° 25' 03"	1,0160337	15' 44,49"	23° 26' 17"	-01m 15s
23:00	87° 42' 59"	0,11"	87° 30' 41"	23° 25' 06"	1,0160367	15' 44,48"	23° 26' 17"	-01m 16s
24:00	87° 45' 23"	0,10"	87° 33' 17"	23° 25' 08"	1,0160397	15' 44,48"	23° 26' 17"	-01m 16s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	127° 15' 26"	2° 07' 13"	130° 14' 02"	20° 30' 23"	00' 00"	16' 20,82"	282° 24' 48"	12,03%
01:00	127° 51' 41"	2° 04' 17"	130° 50' 34"	20° 18' 11"	59' 58"	16' 20,26"	282° 42' 30"	12,35%
02:00	128° 27' 53"	2° 01' 21"	131° 26' 57"	20° 05' 53"	59' 56"	16' 19,69"	282° 59' 52"	12,68%
03:00	129° 04' 03"	1° 58' 25"	132° 03' 12"	19° 53' 28"	59' 54"	16' 19,12"	283° 16' 55"	13,01%
04:00	129° 40' 09"	1° 55' 28"	132° 39' 18"	19° 40' 57"	59' 51"	16' 18,55"	283° 33' 39"	13,34%
05:00	130° 16' 13"	1° 52' 30"	133° 15' 16"	19° 28' 19"	59' 49"	16' 17,97"	283° 50' 05"	13,67%
06:00	130° 52' 14"	1° 49' 32"	133° 51' 06"	19° 15' 36"	59' 47"	16' 17,38"	284° 06' 12"	14,01%
07:00	131° 28' 12"	1° 46' 33"	134° 26' 47"	19° 02' 46"	59' 45"	16' 16,80"	284° 22' 02"	14,35%
08:00	132° 04' 07"	1° 43' 34"	135° 02' 20"	18° 49' 51"	59' 43"	16' 16,21"	284° 37' 33"	14,69%
09:00	132° 39' 59"	1° 40' 34"	135° 37' 45"	18° 36' 50"	59' 41"	16' 15,61"	284° 52' 48"	15,04%
10:00	133° 15' 48"	1° 37' 34"	136° 13' 02"	18° 23' 43"	59' 38"	16' 15,02"	285° 07' 45"	15,38%
11:00	133° 51' 35"	1° 34' 34"	136° 48' 10"	18° 10' 31"	59' 36"	16' 14,42"	285° 22' 26"	15,74%
12:00	134° 27' 18"	1° 31' 33"	137° 23' 11"	17° 57' 13"	59' 34"	16' 13,81"	285° 36' 50"	16,09%
13:00	135° 02' 59"	1° 28' 31"	137° 58' 03"	17° 43' 50"	59' 32"	16' 13,21"	285° 50' 57"	16,45%
14:00	135° 38' 36"	1° 25' 30"	138° 32' 48"	17° 30' 22"	59' 30"	16' 12,60"	286° 04' 49"	16,81%
15:00	136° 14' 11"	1° 22' 28"	139° 07' 25"	17° 16' 49"	59' 27"	16' 11,99"	286° 18' 24"	17,17%
16:00	136° 49' 43"	1° 19' 25"	139° 41' 53"	17° 03' 12"	59' 25"	16' 11,37"	286° 31' 44"	17,53%
17:00	137° 25' 12"	1° 16' 23"	140° 16' 14"	16° 49' 29"	59' 23"	16' 10,75"	286° 44' 49"	17,90%
18:00	138° 00' 38"	1° 13' 20"	140° 50' 27"	16° 35' 42"	59' 21"	16' 10,13"	286° 57' 38"	18,27%
19:00	138° 36' 01"	1° 10' 17"	141° 24' 33"	16° 21' 51"	59' 18"	16' 09,51"	287° 10' 12"	18,64%
20:00	139° 11' 21"	1° 07' 14"	141° 58' 31"	16° 07' 55"	59' 16"	16' 08,89"	287° 22' 32"	19,02%
21:00	139° 46' 38"	1° 04' 10"	142° 32' 21"	15° 53' 55"	59' 14"	16' 08,26"	287° 34' 36"	19,39%
22:00	140° 21' 52"	1° 01' 07"	143° 06' 04"	15° 39' 51"	59' 11"	16' 07,63"	287° 46' 27"	19,77%
23:00	140° 57' 03"	0° 58' 03"	143° 39' 39"	15° 25' 43"	59' 09"	16' 07,00"	287° 58' 02"	20,16%
24:00	141° 32' 11"	0° 54' 59"	144° 13' 07"	15° 11' 31"	59' 07"	16' 06,37"	288° 09' 24"	20,54%

19 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	87° 45' 23"	0,10"	87° 33' 17"	23° 25' 08"	1,0160397	15' 44,48"	23° 26' 17"	-01m 16s
01:00	87° 47' 46"	0,10"	87° 35' 53"	23° 25' 11"	1,0160427	15' 44,48"	23° 26' 17"	-01m 17s
02:00	87° 50' 09"	0,09"	87° 38' 29"	23° 25' 13"	1,0160457	15' 44,48"	23° 26' 17"	-01m 18s
03:00	87° 52' 32"	0,09"	87° 41' 05"	23° 25' 15"	1,0160487	15' 44,47"	23° 26' 17"	-01m 18s
04:00	87° 54' 55"	0,08"	87° 43' 41"	23° 25' 18"	1,0160516	15' 44,47"	23° 26' 17"	-01m 19s
05:00	87° 57' 19"	0,08"	87° 46' 17"	23° 25' 20"	1,0160546	15' 44,47"	23° 26' 17"	-01m 19s
06:00	87° 59' 42"	0,07"	87° 48' 53"	23° 25' 22"	1,0160575	15' 44,46"	23° 26' 17"	-01m 20s
07:00	88° 02' 05"	0,07"	87° 51' 30"	23° 25' 24"	1,0160604	15' 44,46"	23° 26' 17"	-01m 20s
08:00	88° 04' 28"	0,06"	87° 54' 06"	23° 25' 26"	1,0160634	15' 44,46"	23° 26' 17"	-01m 21s
09:00	88° 06' 52"	0,06"	87° 56' 42"	23° 25' 28"	1,0160663	15' 44,46"	23° 26' 17"	-01m 21s
10:00	88° 09' 15"	0,05"	87° 59' 18"	23° 25' 30"	1,0160692	15' 44,45"	23° 26' 17"	-01m 22s
11:00	88° 11' 38"	0,05"	88° 01' 54"	23° 25' 32"	1,0160721	15' 44,45"	23° 26' 17"	-01m 22s
12:00	88° 14' 01"	0,04"	88° 04' 30"	23° 25' 34"	1,0160749	15' 44,45"	23° 26' 17"	-01m 23s
13:00	88° 16' 25"	0,04"	88° 07' 06"	23° 25' 36"	1,0160778	15' 44,45"	23° 26' 17"	-01m 24s
14:00	88° 18' 48"	0,03"	88° 09' 42"	23° 25' 38"	1,0160807	15' 44,44"	23° 26' 17"	-01m 24s
15:00	88° 21' 11"	0,02"	88° 12' 18"	23° 25' 40"	1,0160835	15' 44,44"	23° 26' 17"	-01m 25s
16:00	88° 23' 34"	0,02"	88° 14' 54"	23° 25' 42"	1,0160864	15' 44,44"	23° 26' 17"	-01m 25s
17:00	88° 25' 57"	0,01"	88° 17' 30"	23° 25' 43"	1,0160892	15' 44,43"	23° 26' 17"	-01m 26s
18:00	88° 28' 21"	0,01"	88° 20' 06"	23° 25' 45"	1,0160920	15' 44,43"	23° 26' 17"	-01m 26s
19:00	88° 30' 44"	0,00"	88° 22' 42"	23° 25' 47"	1,0160949	15' 44,43"	23° 26' 17"	-01m 27s
20:00	88° 33' 07"	-0,00"	88° 25' 19"	23° 25' 48"	1,0160977	15' 44,43"	23° 26' 17"	-01m 27s
21:00	88° 35' 30"	-0,01"	88° 27' 55"	23° 25' 50"	1,0161005	15' 44,42"	23° 26' 17"	-01m 28s
22:00	88° 37' 53"	-0,01"	88° 30' 31"	23° 25' 51"	1,0161032	15' 44,42"	23° 26' 17"	-01m 29s
23:00	88° 40' 17"	-0,02"	88° 33' 07"	23° 25' 53"	1,0161060	15' 44,42"	23° 26' 17"	-01m 29s
24:00	88° 42' 40"	-0,02"	88° 35' 43"	23° 25' 54"	1,0161088	15' 44,42"	23° 26' 17"	-01m 30s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	141° 32' 11"	0° 54' 59"	144° 13' 07"	15° 11' 31"	59' 07"	16' 06,37"	288° 09' 24"	20,54%
01:00	142° 07' 17"	0° 51' 55"	144° 46' 28"	14° 57' 15"	59' 04"	16' 05,73"	288° 20' 31"	20,92%
02:00	142° 42' 19"	0° 48' 51"	145° 19' 42"	14° 42' 55"	59' 02"	16' 05,10"	288° 31' 25"	21,31%
03:00	143° 17' 18"	0° 45' 47"	145° 52' 48"	14° 28' 33"	59' 00"	16' 04,46"	288° 42' 05"	21,70%
04:00	143° 52' 14"	0° 42' 42"	146° 25' 47"	14° 14' 06"	58' 57"	16' 03,82"	288° 52' 31"	22,09%
05:00	144° 27' 08"	0° 39' 38"	146° 58' 40"	13° 59' 36"	58' 55"	16' 03,18"	289° 02' 44"	22,49%
06:00	145° 01' 58"	0° 36' 34"	147° 31' 25"	13° 45' 04"	58' 53"	16' 02,54"	289° 12' 44"	22,88%
07:00	145° 36' 46"	0° 33' 30"	148° 04' 04"	13° 30' 28"	58' 50"	16' 01,89"	289° 22' 30"	23,28%
08:00	146° 11' 30"	0° 30' 26"	148° 36' 36"	13° 15' 49"	58' 48"	16' 01,25"	289° 32' 04"	23,68%
09:00	146° 46' 11"	0° 27' 21"	149° 09' 01"	13° 01' 07"	58' 46"	16' 00,61"	289° 41' 24"	24,08%
10:00	147° 20' 50"	0° 24' 17"	149° 41' 20"	12° 46' 22"	58' 43"	16' 00,00"	289° 50' 32"	24,48%
11:00	147° 55' 26"	0° 21' 14"	150° 13' 32"	12° 31' 35"	58' 41"	15' 59,31"	289° 59' 27"	24,89%
12:00	148° 29' 58"	0° 18' 10"	150° 45' 38"	12° 16' 45"	58' 38"	15' 58,67"	290° 08' 10"	25,29%
13:00	149° 04' 28"	0° 15' 06"	151° 17' 37"	12° 01' 52"	58' 36"	15' 58,02"	290° 16' 40"	25,70%
14:00	149° 38' 55"	0° 12' 03"	151° 49' 30"	11° 46' 58"	58' 34"	15' 57,37"	290° 24' 58"	26,11%
15:00	150° 13' 18"	0° 08' 59"	152° 21' 18"	11° 32' 01"	58' 31"	15' 56,72"	290° 33' 04"	26,52%
16:00	150° 47' 39"	0° 05' 56"	152° 52' 58"	11° 17' 01"	58' 29"	15' 56,08"	290° 40' 57"	26,93%
17:00	151° 21' 57"	0° 02' 53"	153° 24' 33"	11° 02' 00"	58' 27"	15' 55,43"	290° 48' 39"	27,35%
18:00	151° 56' 12"	-0° 00' 10"	153° 56' 02"	10° 46' 57"	58' 24"	15' 54,78"	290° 56' 09"	27,76%
19:00	152° 30' 24"	-0° 03' 12"	154° 27' 26"	10° 31' 52"	58' 22"	15' 54,13"	291° 03' 27"	28,18%
20:00	153° 04' 34"	-0° 06' 14"	154° 58' 43"	10° 16' 45"	58' 19"	15' 53,48"	291° 10' 33"	28,59%
21:00	153° 38' 40"	-0° 09' 16"	155° 29' 55"	10° 01' 36"	58' 17"	15' 52,83"	291° 17' 28"	29,01%
22:00	154° 12' 43"	-0° 12' 18"	156° 01' 01"	9° 46' 26"	58' 15"	15' 52,19"	291° 24' 12"	29,43%
23:00	154° 46' 44"	-0° 15' 19"	156° 32' 02"	9° 31' 14"	58' 12"	15' 51,54"	291° 30' 44"	29,85%
24:00	155° 20' 42"	-0° 18' 20"	157° 02' 57"	9° 16' 00"	58' 10"	15' 50,89"	291° 37' 05"	30,27%

20 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	88° 42' 40"	-0,02"	88° 35' 43"	23° 25' 54"	1,0161088	15' 44,42"	23° 26' 17"	-01m 30s
01:00	88° 45' 03"	-0,03"	88° 38' 19"	23° 25' 55"	1,0161116	15' 44,41"	23° 26' 17"	-01m 30s
02:00	88° 47' 26"	-0,03"	88° 40' 55"	23° 25' 57"	1,0161143	15' 44,41"	23° 26' 17"	-01m 31s
03:00	88° 49' 50"	-0,04"	88° 43' 31"	23° 25' 58"	1,0161171	15' 44,41"	23° 26' 17"	-01m 31s
04:00	88° 52' 13"	-0,05"	88° 46' 07"	23° 25' 59"	1,0161198	15' 44,41"	23° 26' 17"	-01m 32s
05:00	88° 54' 36"	-0,05"	88° 48' 43"	23° 26' 01"	1,0161225	15' 44,40"	23° 26' 17"	-01m 32s
06:00	88° 56' 59"	-0,06"	88° 51' 19"	23° 26' 02"	1,0161252	15' 44,40"	23° 26' 17"	-01m 33s
07:00	88° 59' 22"	-0,06"	88° 53' 55"	23° 26' 03"	1,0161280	15' 44,40"	23° 26' 17"	-01m 33s
08:00	89° 01' 46"	-0,07"	88° 56' 31"	23° 26' 04"	1,0161307	15' 44,40"	23° 26' 17"	-01m 34s
09:00	89° 04' 09"	-0,07"	88° 59' 07"	23° 26' 05"	1,0161333	15' 44,39"	23° 26' 17"	-01m 35s
10:00	89° 06' 32"	-0,08"	89° 01' 43"	23° 26' 06"	1,0161360	15' 44,39"	23° 26' 17"	-01m 35s
11:00	89° 08' 55"	-0,08"	89° 04' 20"	23° 26' 07"	1,0161387	15' 44,39"	23° 26' 17"	-01m 36s
12:00	89° 11' 18"	-0,09"	89° 06' 56"	23° 26' 08"	1,0161414	15' 44,39"	23° 26' 17"	-01m 36s
13:00	89° 13' 41"	-0,09"	89° 09' 32"	23° 26' 09"	1,0161440	15' 44,38"	23° 26' 17"	-01m 37s
14:00	89° 16' 05"	-0,10"	89° 12' 08"	23° 26' 09"	1,0161467	15' 44,38"	23° 26' 17"	-01m 37s
15:00	89° 18' 28"	-0,10"	89° 14' 44"	23° 26' 10"	1,0161493	15' 44,38"	23° 26' 17"	-01m 38s
16:00	89° 20' 51"	-0,11"	89° 17' 20"	23° 26' 11"	1,0161519	15' 44,38"	23° 26' 17"	-01m 38s
17:00	89° 23' 14"	-0,11"	89° 19' 56"	23° 26' 12"	1,0161546	15' 44,37"	23° 26' 17"	-01m 39s
18:00	89° 25' 37"	-0,12"	89° 22' 32"	23° 26' 12"	1,0161572	15' 44,37"	23° 26' 17"	-01m 39s
19:00	89° 28' 01"	-0,12"	89° 25' 08"	23° 26' 13"	1,0161598	15' 44,37"	23° 26' 17"	-01m 40s
20:00	89° 30' 24"	-0,13"	89° 27' 44"	23° 26' 13"	1,0161624	15' 44,37"	23° 26' 17"	-01m 41s
21:00	89° 32' 47"	-0,14"	89° 30' 20"	23° 26' 14"	1,0161650	15' 44,36"	23° 26' 17"	-01m 41s
22:00	89° 35' 10"	-0,14"	89° 32' 56"	23° 26' 14"	1,0161675	15' 44,36"	23° 26' 17"	-01m 42s
23:00	89° 37' 33"	-0,15"	89° 35' 32"	23° 26' 15"	1,0161701	15' 44,36"	23° 26' 17"	-01m 42s
24:00	89° 39' 56"	-0,15"	89° 38' 08"	23° 26' 15"	1,0161727	15' 44,36"	23° 26' 17"	-01m 43s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	155° 20' 42"	-0° 18' 20"	157° 02' 57"	9° 16' 00"	58' 10"	15' 50,89"	291° 37' 05"	30,27%
01:00	155° 54' 36"	-0° 21' 20"	157° 33' 47"	9° 00' 46"	58' 08"	15' 50,25"	291° 43' 15"	30,70%
02:00	156° 28' 28"	-0° 24' 21"	158° 04' 32"	8° 45' 30"	58' 05"	15' 49,60"	291° 49' 13"	31,12%
03:00	157° 02' 18"	-0° 27' 21"	158° 35' 12"	8° 30' 13"	58' 03"	15' 48,95"	291° 55' 01"	31,55%
04:00	157° 36' 04"	-0° 30' 20"	159° 05' 46"	8° 14' 54"	58' 00"	15' 48,31"	292° 00' 38"	31,97%
05:00	158° 09' 47"	-0° 33' 19"	159° 36' 16"	7° 59' 35"	57' 58"	15' 47,67"	292° 06' 04"	32,40%
06:00	158° 43' 28"	-0° 36' 18"	160° 06' 41"	7° 44' 15"	57' 56"	15' 47,02"	292° 11' 19"	32,83%
07:00	159° 17' 06"	-0° 39' 16"	160° 37' 01"	7° 28' 54"	57' 53"	15' 46,38"	292° 16' 24"	33,25%
08:00	159° 50' 41"	-0° 42' 13"	161° 07' 16"	7° 13' 32"	57' 51"	15' 45,74"	292° 21' 18"	33,68%
09:00	160° 24' 13"	-0° 45' 10"	161° 37' 27"	6° 58' 09"	57' 49"	15' 45,10"	292° 26' 01"	34,11%
10:00	160° 57' 43"	-0° 48' 07"	162° 07' 34"	6° 42' 46"	57' 46"	15' 44,46"	292° 30' 34"	34,54%
11:00	161° 31' 10"	-0° 51' 03"	162° 37' 35"	6° 27' 22"	57' 44"	15' 43,83"	292° 34' 57"	34,97%
12:00	162° 04' 34"	-0° 53' 59"	163° 07' 33"	6° 11' 58"	57' 42"	15' 43,19"	292° 39' 09"	35,40%
13:00	162° 37' 55"	-0° 56' 54"	163° 37' 26"	5° 56' 33"	57' 39"	15' 42,56"	292° 43' 12"	35,84%
14:00	163° 11' 14"	-0° 59' 49"	164° 07' 15"	5° 41' 08"	57' 37"	15' 41,93"	292° 47' 04"	36,27%
15:00	163° 44' 29"	-1° 02' 43"	164° 37' 00"	5° 25' 43"	57' 35"	15' 41,29"	292° 50' 46"	36,70%
16:00	164° 17' 43"	-1° 05' 36"	165° 06' 42"	5° 10' 18"	57' 32"	15' 40,67"	292° 54' 18"	37,13%
17:00	164° 50' 53"	-1° 08' 29"	165° 36' 19"	4° 54' 52"	57' 30"	15' 40,04"	292° 57' 40"	37,57%
18:00	165° 24' 01"	-1° 11' 21"	166° 05' 52"	4° 39' 27"	57' 28"	15' 39,41"	293° 00' 52"	38,00%
19:00	165° 57' 06"	-1° 14' 12"	166° 35' 22"	4° 24' 01"	57' 25"	15' 38,79"	293° 03' 55"	38,44%
20:00	166° 30' 09"	-1° 17' 03"	167° 04' 48"	4° 08' 36"	57' 23"	15' 38,17"	293° 06' 47"	38,87%
21:00	167° 03' 09"	-1° 19' 54"	167° 34' 10"	3° 53' 11"	57' 21"	15' 37,55"	293° 09' 31"	39,31%
22:00	167° 36' 06"	-1° 22' 43"	168° 03' 29"	3° 37' 46"	57' 19"	15' 36,93"	293° 12' 04"	39,74%
23:00	168° 09' 01"	-1° 25' 32"	168° 32' 45"	3° 22' 21"	57' 16"	15' 36,31"	293° 14' 28"	40,18%
24:00	168° 41' 53"	-1° 28' 20"	169° 01' 58"	3° 06' 56"	57' 14"	15' 35,70"	293° 16' 42"	40,61%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	89° 39' 56"	-0,15"	89° 38' 08"	23° 26' 15"	1,0161727	15' 44,36"	23° 26' 17"	-01m 43s
01:00	89° 42' 20"	-0,16"	89° 40' 44"	23° 26' 15"	1,0161752	15' 44,35"	23° 26' 17"	-01m 43s
02:00	89° 44' 43"	-0,16"	89° 43' 20"	23° 26' 16"	1,0161778	15' 44,35"	23° 26' 17"	-01m 44s
03:00	89° 47' 06"	-0,17"	89° 45' 56"	23° 26' 16"	1,0161803	15' 44,35"	23° 26' 17"	-01m 44s
04:00	89° 49' 29"	-0,17"	89° 48' 32"	23° 26' 16"	1,0161828	15' 44,35"	23° 26' 17"	-01m 45s
05:00	89° 51' 52"	-0,18"	89° 51' 08"	23° 26' 16"	1,0161854	15' 44,35"	23° 26' 17"	-01m 45s
06:00	89° 54' 15"	-0,18"	89° 53' 44"	23° 26' 16"	1,0161879	15' 44,34"	23° 26' 17"	-01m 46s
07:00	89° 56' 39"	-0,19"	89° 56' 21"	23° 26' 17"	1,0161904	15' 44,34"	23° 26' 17"	-01m 47s
08:00	89° 59' 02"	-0,19"	89° 58' 57"	23° 26' 17"	1,0161929	15' 44,34"	23° 26' 17"	-01m 47s
09:00	90° 01' 25"	-0,20"	90° 01' 33"	23° 26' 17"	1,0161954	15' 44,34"	23° 26' 17"	-01m 48s
10:00	90° 03' 48"	-0,20"	90° 04' 09"	23° 26' 17"	1,0161978	15' 44,33"	23° 26' 17"	-01m 48s
11:00	90° 06' 11"	-0,21"	90° 06' 45"	23° 26' 16"	1,0162003	15' 44,33"	23° 26' 17"	-01m 49s
12:00	90° 08' 34"	-0,21"	90° 09' 21"	23° 26' 16"	1,0162028	15' 44,33"	23° 26' 17"	-01m 49s
13:00	90° 10' 58"	-0,22"	90° 11' 57"	23° 26' 16"	1,0162052	15' 44,33"	23° 26' 17"	-01m 50s
14:00	90° 13' 21"	-0,22"	90° 14' 33"	23° 26' 16"	1,0162077	15' 44,32"	23° 26' 17"	-01m 50s
15:00	90° 15' 44"	-0,23"	90° 17' 09"	23° 26' 16"	1,0162101	15' 44,32"	23° 26' 17"	-01m 51s
16:00	90° 18' 07"	-0,23"	90° 19' 45"	23° 26' 15"	1,0162125	15' 44,32"	23° 26' 17"	-01m 51s
17:00	90° 20' 30"	-0,24"	90° 22' 21"	23° 26' 15"	1,0162149	15' 44,32"	23° 26' 17"	-01m 52s
18:00	90° 22' 53"	-0,24"	90° 24' 57"	23° 26' 15"	1,0162174	15' 44,32"	23° 26' 17"	-01m 53s
19:00	90° 25' 17"	-0,25"	90° 27' 33"	23° 26' 14"	1,0162198	15' 44,31"	23° 26' 17"	-01m 53s
20:00	90° 27' 40"	-0,25"	90° 30' 09"	23° 26' 14"	1,0162222	15' 44,31"	23° 26' 17"	-01m 54s
21:00	90° 30' 03"	-0,25"	90° 32' 45"	23° 26' 13"	1,0162245	15' 44,31"	23° 26' 17"	-01m 54s
22:00	90° 32' 26"	-0,26"	90° 35' 21"	23° 26' 13"	1,0162269	15' 44,31"	23° 26' 17"	-01m 55s
23:00	90° 34' 49"	-0,26"	90° 37' 57"	23° 26' 12"	1,0162293	15' 44,30"	23° 26' 17"	-01m 55s
24:00	90° 37' 12"	-0,27"	90° 40' 33"	23° 26' 11"	1,0162317	15' 44,30"	23° 26' 17"	-01m 56s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	168° 41' 53"	-1° 28' 20"	169° 01' 58"	3° 06' 56"	57' 14"	15' 35,70"	293° 16' 42"	40,61%
01:00	169° 14' 43"	-1° 31' 08"	169° 31' 07"	2° 51' 32"	57' 12"	15' 35,09"	293° 18' 47"	41,05%
02:00	169° 47' 30"	-1° 33' 55"	170° 00' 13"	2° 36' 09"	57' 10"	15' 34,48"	293° 20' 42"	41,48%
03:00	170° 20' 15"	-1° 36' 41"	170° 29' 16"	2° 20' 46"	57' 07"	15' 33,87"	293° 22' 29"	41,92%
04:00	170° 52' 57"	-1° 39' 26"	170° 58' 16"	2° 05' 24"	57' 05"	15' 33,27"	293° 24' 05"	42,35%
05:00	171° 25' 37"	-1° 42' 11"	171° 27' 13"	1° 50' 02"	57' 03"	15' 32,67"	293° 25' 33"	42,79%
06:00	171° 58' 14"	-1° 44' 54"	171° 56' 08"	1° 34' 41"	57' 01"	15' 32,07"	293° 26' 51"	43,23%
07:00	172° 30' 49"	-1° 47' 37"	172° 25' 00"	1° 19' 21"	56' 59"	15' 31,47"	293° 28' 01"	43,66%
08:00	173° 03' 21"	-1° 50' 20"	172° 53' 49"	1° 04' 02"	56' 56"	15' 30,88"	293° 29' 01"	44,10%
09:00	173° 35' 51"	-1° 53' 01"	173° 22' 36"	0° 48' 44"	56' 54"	15' 30,29"	293° 29' 52"	44,53%
10:00	174° 08' 18"	-1° 55' 42"	173° 51' 20"	0° 33' 26"	56' 52"	15' 29,70"	293° 30' 34"	44,97%
11:00	174° 40' 43"	-1° 58' 22"	174° 20' 02"	0° 18' 10"	56' 50"	15' 29,11"	293° 31' 07"	45,40%
12:00	175° 13' 06"	-2° 01' 01"	174° 48' 41"	0° 02' 55"	56' 48"	15' 28,53"	293° 31' 31"	45,84%
13:00	175° 45' 26"	-2° 03' 39"	175° 17' 19"	-0° 12' 19"	56' 46"	15' 27,95"	293° 31' 46"	46,27%
14:00	176° 17' 44"	-2° 06' 16"	175° 45' 54"	-0° 27' 32"	56' 44"	15' 27,37"	293° 31' 53"	46,70%
15:00	176° 50' 00"	-2° 08' 52"	176° 14' 27"	-0° 42' 44"	56' 41"	15' 26,80"	293° 31' 50"	47,14%
16:00	177° 22' 13"	-2° 11' 28"	176° 42' 59"	-0° 57' 54"	56' 39"	15' 26,23"	293° 31' 39"	47,57%
17:00	177° 54' 24"	-2° 14' 03"	177° 11' 28"	-1° 13' 03"	56' 37"	15' 25,66"	293° 31' 19"	48,00%
18:00	178° 26' 33"	-2° 16' 37"	177° 39' 56"	-1° 28' 11"	56' 35"	15' 25,09"	293° 30' 50"	48,44%
19:00	178° 58' 40"	-2° 19' 09"	178° 08' 22"	-1° 43' 17"	56' 33"	15' 24,53"	293° 30' 13"	48,87%
20:00	179° 30' 44"	-2° 21' 41"	178° 36' 46"	-1° 58' 21"	56' 31"	15' 23,97"	293° 29' 27"	49,30%
21:00	180° 02' 46"	-2° 24' 12"	179° 05' 09"	-2° 13' 24"	56' 29"	15' 23,42"	293° 28' 32"	49,73%
22:00	180° 34' 46"	-2° 26' 43"	179° 33' 31"	-2° 28' 26"	56' 27"	15' 22,86"	293° 27' 29"	50,16%
23:00	181° 06' 44"	-2° 29' 12"	180° 01' 51"	-2° 43' 25"	56' 25"	15' 22,31"	293° 26' 18"	50,59%
24:00	181° 38' 40"	-2° 31' 40"	180° 30' 09"	-2° 58' 23"	56' 23"	15' 21,77"	293° 24' 58"	51,02%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	90° 37' 12"	-0,27"	90° 40' 33"	23° 26' 11"	1,0162317	15' 44,30"	23° 26' 17"	-01m 56s
01:00	90° 39' 35"	-0,27"	90° 43' 09"	23° 26' 11"	1,0162340	15' 44,30"	23° 26' 17"	-01m 56s
02:00	90° 41' 59"	-0,28"	90° 45' 45"	23° 26' 10"	1,0162364	15' 44,30"	23° 26' 17"	-01m 57s
03:00	90° 44' 22"	-0,28"	90° 48' 21"	23° 26' 09"	1,0162387	15' 44,30"	23° 26' 17"	-01m 57s
04:00	90° 46' 45"	-0,29"	90° 50' 57"	23° 26' 08"	1,0162410	15' 44,29"	23° 26' 17"	-01m 58s
05:00	90° 49' 08"	-0,29"	90° 53' 33"	23° 26' 07"	1,0162434	15' 44,29"	23° 26' 17"	-01m 59s
06:00	90° 51' 31"	-0,30"	90° 56' 09"	23° 26' 06"	1,0162457	15' 44,29"	23° 26' 17"	-01m 59s
07:00	90° 53' 54"	-0,30"	90° 58' 45"	23° 26' 05"	1,0162480	15' 44,29"	23° 26' 17"	-02m 00s
08:00	90° 56' 17"	-0,31"	91° 01' 21"	23° 26' 04"	1,0162503	15' 44,29"	23° 26' 17"	-02m 00s
09:00	90° 58' 40"	-0,31"	91° 03' 57"	23° 26' 03"	1,0162526	15' 44,28"	23° 26' 17"	-02m 01s
10:00	91° 01' 04"	-0,31"	91° 06' 33"	23° 26' 02"	1,0162549	15' 44,28"	23° 26' 17"	-02m 01s
11:00	91° 03' 27"	-0,32"	91° 09' 09"	23° 26' 01"	1,0162571	15' 44,28"	23° 26' 17"	-02m 02s
12:00	91° 05' 50"	-0,32"	91° 11' 45"	23° 26' 00"	1,0162594	15' 44,28"	23° 26' 17"	-02m 02s
13:00	91° 08' 13"	-0,33"	91° 14' 21"	23° 25' 59"	1,0162617	15' 44,27"	23° 26' 17"	-02m 03s
14:00	91° 10' 36"	-0,33"	91° 16' 57"	23° 25' 58"	1,0162639	15' 44,27"	23° 26' 17"	-02m 03s
15:00	91° 12' 59"	-0,34"	91° 19' 33"	23° 25' 56"	1,0162662	15' 44,27"	23° 26' 17"	-02m 04s
16:00	91° 15' 22"	-0,34"	91° 22' 09"	23° 25' 55"	1,0162684	15' 44,27"	23° 26' 17"	-02m 05s
17:00	91° 17' 45"	-0,34"	91° 24' 45"	23° 25' 54"	1,0162706	15' 44,27"	23° 26' 17"	-02m 05s
18:00	91° 20' 09"	-0,35"	91° 27' 21"	23° 25' 52"	1,0162729	15' 44,26"	23° 26' 17"	-02m 06s
19:00	91° 22' 32"	-0,35"	91° 29' 57"	23° 25' 51"	1,0162751	15' 44,26"	23° 26' 17"	-02m 06s
20:00	91° 24' 55"	-0,36"	91° 32' 33"	23° 25' 49"	1,0162773	15' 44,26"	23° 26' 17"	-02m 07s
21:00	91° 27' 18"	-0,36"	91° 35' 09"	23° 25' 48"	1,0162795	15' 44,26"	23° 26' 17"	-02m 07s
22:00	91° 29' 41"	-0,36"	91° 37' 45"	23° 25' 46"	1,0162817	15' 44,26"	23° 26' 17"	-02m 08s
23:00	91° 32' 04"	-0,37"	91° 40' 21"	23° 25' 44"	1,0162839	15' 44,25"	23° 26' 17"	-02m 08s
24:00	91° 34' 27"	-0,37"	91° 42' 57"	23° 25' 43"	1,0162860	15' 44,25"	23° 26' 17"	-02m 09s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	181° 38' 40"	-2° 31' 40"	180° 30' 09"	-2° 58' 23"	56' 23"	15' 21,77"	293° 24' 58"	51,02%
01:00	182° 10' 33"	-2° 34' 07"	180° 58' 27"	-3° 13' 19"	56' 21"	15' 21,22"	293° 23' 29"	51,45%
02:00	182° 42' 24"	-2° 36' 34"	181° 26' 43"	-3° 28' 14"	56' 19"	15' 20,68"	293° 21' 52"	51,88%
03:00	183° 14' 14"	-2° 38' 59"	181° 54' 58"	-3° 43' 06"	56' 17"	15' 20,15"	293° 20' 06"	52,30%
04:00	183° 46' 01"	-2° 41' 23"	182° 23' 12"	-3° 57' 57"	56' 15"	15' 19,62"	293° 18' 12"	52,73%
05:00	184° 17' 46"	-2° 43' 47"	182° 51' 26"	-4° 12' 45"	56' 13"	15' 19,09"	293° 16' 10"	53,16%
06:00	184° 49' 29"	-2° 46' 09"	183° 19' 38"	-4° 27' 32"	56' 11"	15' 18,56"	293° 13' 59"	53,58%
07:00	185° 21' 10"	-2° 48' 30"	183° 47' 50"	-4° 42' 16"	56' 09"	15' 18,04"	293° 11' 40"	54,01%
08:00	185° 52' 49"	-2° 50' 51"	184° 16' 01"	-4° 56' 58"	56' 07"	15' 17,52"	293° 09' 13"	54,43%
09:00	186° 24' 26"	-2° 53' 10"	184° 44' 11"	-5° 11' 38"	56' 06"	15' 17,00"	293° 06' 37"	54,85%
10:00	186° 56' 02"	-2° 55' 28"	185° 12' 21"	-5° 26' 16"	56' 04"	15' 16,49"	293° 03' 53"	55,27%
11:00	187° 27' 35"	-2° 57' 46"	185° 40' 30"	-5° 40' 52"	56' 02"	15' 15,98"	293° 01' 01"	55,69%
12:00	187° 59' 06"	-3° 00' 02"	186° 08' 39"	-5° 55' 25"	56' 00"	15' 15,48"	292° 58' 01"	56,11%
13:00	188° 30' 35"	-3° 02' 17"	186° 36' 47"	-6° 09' 56"	55' 58"	15' 14,98"	292° 54' 52"	56,53%
14:00	189° 02' 03"	-3° 04' 31"	187° 04' 55"	-6° 24' 25"	55' 56"	15' 14,48"	292° 51' 35"	56,95%
15:00	189° 33' 28"	-3° 06' 44"	187° 33' 03"	-6° 38' 51"	55' 54"	15' 13,99"	292° 48' 10"	57,37%
16:00	190° 04' 52"	-3° 08' 56"	188° 01' 11"	-6° 53' 14"	55' 53"	15' 13,50"	292° 44' 37"	57,79%
17:00	190° 36' 14"	-3° 11' 07"	188° 29' 19"	-7° 07' 35"	55' 51"	15' 13,01"	292° 40' 56"	58,20%
18:00	191° 07' 34"	-3° 13' 16"	188° 57' 27"	-7° 21' 54"	55' 49"	15' 12,53"	292° 37' 07"	58,61%
19:00	191° 38' 52"	-3° 15' 25"	189° 25' 35"	-7° 36' 10"	55' 47"	15' 12,05"	292° 33' 09"	59,03%
20:00	192° 10' 09"	-3° 17' 33"	189° 53' 43"	-7° 50' 23"	55' 46"	15' 11,58"	292° 29' 03"	59,44%
21:00	192° 41' 24"	-3° 19' 39"	190° 21' 51"	-8° 04' 33"	55' 44"	15' 11,11"	292° 24' 50"	59,85%
22:00	193° 12' 37"	-3° 21' 44"	190° 50' 00"	-8° 18' 41"	55' 42"	15' 10,64"	292° 20' 28"	60,26%
23:00	193° 43' 48"	-3° 23' 49"	191° 18' 09"	-8° 32' 46"	55' 40"	15' 10,18"	292° 15' 58"	60,67%
24:00	194° 14' 58"	-3° 25' 52"	191° 46' 18"	-8° 46' 47"	55' 39"	15' 09,72"	292° 11' 20"	61,07%

23 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	91° 34' 27"	-0,37"	91° 42' 57"	23° 25' 43"	1,0162860	15' 44,25"	23° 26' 17"	-02m 09s
01:00	91° 36' 50"	-0,38"	91° 45' 33"	23° 25' 41"	1,0162882	15' 44,25"	23° 26' 17"	-02m 09s
02:00	91° 39' 14"	-0,38"	91° 48' 09"	23° 25' 39"	1,0162904	15' 44,25"	23° 26' 17"	-02m 10s
03:00	91° 41' 37"	-0,38"	91° 50' 45"	23° 25' 37"	1,0162925	15' 44,25"	23° 26' 17"	-02m 11s
04:00	91° 44' 00"	-0,39"	91° 53' 21"	23° 25' 35"	1,0162947	15' 44,24"	23° 26' 17"	-02m 11s
05:00	91° 46' 23"	-0,39"	91° 55' 56"	23° 25' 34"	1,0162968	15' 44,24"	23° 26' 17"	-02m 12s
06:00	91° 48' 46"	-0,40"	91° 58' 32"	23° 25' 32"	1,0162989	15' 44,24"	23° 26' 17"	-02m 12s
07:00	91° 51' 09"	-0,40"	92° 01' 08"	23° 25' 30"	1,0163011	15' 44,24"	23° 26' 17"	-02m 13s
08:00	91° 53' 32"	-0,40"	92° 03' 44"	23° 25' 28"	1,0163032	15' 44,24"	23° 26' 17"	-02m 13s
09:00	91° 55' 55"	-0,41"	92° 06' 20"	23° 25' 25"	1,0163053	15' 44,23"	23° 26' 17"	-02m 14s
10:00	91° 58' 18"	-0,41"	92° 08' 56"	23° 25' 23"	1,0163074	15' 44,23"	23° 26' 17"	-02m 14s
11:00	92° 00' 42"	-0,41"	92° 11' 32"	23° 25' 21"	1,0163095	15' 44,23"	23° 26' 17"	-02m 15s
12:00	92° 03' 05"	-0,42"	92° 14' 08"	23° 25' 19"	1,0163116	15' 44,23"	23° 26' 17"	-02m 15s
13:00	92° 05' 28"	-0,42"	92° 16' 44"	23° 25' 17"	1,0163136	15' 44,23"	23° 26' 17"	-02m 16s
14:00	92° 07' 51"	-0,42"	92° 19' 20"	23° 25' 14"	1,0163157	15' 44,22"	23° 26' 17"	-02m 16s
15:00	92° 10' 14"	-0,43"	92° 21' 56"	23° 25' 12"	1,0163178	15' 44,22"	23° 26' 17"	-02m 17s
16:00	92° 12' 37"	-0,43"	92° 24' 32"	23° 25' 10"	1,0163198	15' 44,22"	23° 26' 17"	-02m 18s
17:00	92° 15' 00"	-0,43"	92° 27' 08"	23° 25' 07"	1,0163219	15' 44,22"	23° 26' 17"	-02m 18s
18:00	92° 17' 23"	-0,44"	92° 29' 44"	23° 25' 05"	1,0163239	15' 44,22"	23° 26' 17"	-02m 19s
19:00	92° 19' 46"	-0,44"	92° 32' 20"	23° 25' 02"	1,0163260	15' 44,21"	23° 26' 17"	-02m 19s
20:00	92° 22' 09"	-0,44"	92° 34' 55"	23° 25' 00"	1,0163280	15' 44,21"	23° 26' 17"	-02m 20s
21:00	92° 24' 33"	-0,45"	92° 37' 31"	23° 24' 57"	1,0163300	15' 44,21"	23° 26' 17"	-02m 20s
22:00	92° 26' 56"	-0,45"	92° 40' 07"	23° 24' 55"	1,0163320	15' 44,21"	23° 26' 17"	-02m 21s
23:00	92° 29' 19"	-0,45"	92° 42' 43"	23° 24' 52"	1,0163340	15' 44,21"	23° 26' 17"	-02m 21s
24:00	92° 31' 42"	-0,46"	92° 45' 19"	23° 24' 49"	1,0163360	15' 44,21"	23° 26' 17"	-02m 22s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	194° 14' 58"	-3° 25' 52"	191° 46' 18"	-8° 46' 47"	55' 39"	15' 09,72"	292° 11' 20"	61,07%
01:00	194° 46' 05"	-3° 27' 54"	192° 14' 28"	-9° 00' 46"	55' 37"	15' 09,26"	292° 06' 34"	61,48%
02:00	195° 17' 12"	-3° 29' 55"	192° 42' 39"	-9° 14' 43"	55' 35"	15' 08,81"	292° 01' 40"	61,89%
03:00	195° 48' 16"	-3° 31' 54"	193° 10' 50"	-9° 28' 36"	55' 34"	15' 08,36"	291° 56' 37"	62,29%
04:00	196° 19' 19"	-3° 33' 53"	193° 39' 02"	-9° 42' 26"	55' 32"	15' 07,92"	291° 51' 27"	62,69%
05:00	196° 50' 21"	-3° 35' 50"	194° 07' 14"	-9° 56' 13"	55' 31"	15' 07,48"	291° 46' 09"	63,09%
06:00	197° 21' 20"	-3° 37' 46"	194° 35' 27"	-10° 09' 56"	55' 29"	15' 07,04"	291° 40' 43"	63,49%
07:00	197° 52' 19"	-3° 39' 41"	195° 03' 41"	-10° 23' 37"	55' 27"	15' 06,61"	291° 35' 08"	63,89%
08:00	198° 23' 15"	-3° 41' 35"	195° 31' 57"	-10° 37' 14"	55' 26"	15' 06,18"	291° 29' 26"	64,29%
09:00	198° 54' 10"	-3° 43' 28"	196° 00' 13"	-10° 50' 49"	55' 24"	15' 05,76"	291° 23' 36"	64,68%
10:00	199° 25' 04"	-3° 45' 19"	196° 28' 30"	-11° 04' 19"	55' 23"	15' 05,34"	291° 17' 37"	65,08%
11:00	199° 55' 56"	-3° 47' 09"	196° 56' 48"	-11° 17' 47"	55' 21"	15' 04,92"	291° 11' 31"	65,47%
12:00	200° 26' 47"	-3° 48' 58"	197° 25' 08"	-11° 31' 11"	55' 20"	15' 04,51"	291° 05' 16"	65,86%
13:00	200° 57' 36"	-3° 50' 46"	197° 53' 28"	-11° 44' 32"	55' 18"	15' 04,10"	290° 58' 54"	66,25%
14:00	201° 28' 24"	-3° 52' 33"	198° 21' 50"	-11° 57' 49"	55' 17"	15' 03,70"	290° 52' 23"	66,64%
15:00	201° 59' 10"	-3° 54' 18"	198° 50' 14"	-12° 11' 03"	55' 15"	15' 03,30"	290° 45' 45"	67,03%
16:00	202° 29' 55"	-3° 56' 03"	199° 18' 38"	-12° 24' 13"	55' 14"	15' 02,90"	290° 38' 58"	67,41%
17:00	203° 00' 39"	-3° 57' 46"	199° 47' 05"	-12° 37' 19"	55' 12"	15' 02,51"	290° 32' 04"	67,80%
18:00	203° 31' 21"	-3° 59' 27"	200° 15' 32"	-12° 50' 22"	55' 11"	15' 02,12"	290° 25' 01"	68,18%
19:00	204° 02' 02"	-4° 01' 08"	200° 44' 02"	-13° 03' 21"	55' 09"	15' 01,73"	290° 17' 50"	68,56%
20:00	204° 32' 41"	-4° 02' 47"	201° 12' 33"	-13° 16' 16"	55' 08"	15' 01,35"	290° 10' 32"	68,94%
21:00	205° 03' 19"	-4° 04' 25"	201° 41' 05"	-13° 29' 08"	55' 07"	15' 00,98"	290° 03' 05"	69,31%
22:00	205° 33' 56"	-4° 06' 02"	202° 09' 40"	-13° 41' 56"	55' 05"	15' 00,61"	289° 55' 30"	69,69%
23:00	206° 04' 32"	-4° 07' 38"	202° 38' 16"	-13° 54' 40"	55' 04"	15' 00,24"	289° 47' 47"	70,07%
24:00	206° 35' 06"	-4° 09' 12"	203° 06' 54"	-14° 07' 20"	55' 03"	15' 00,00"	289° 39' 56"	70,44%

24 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	92° 31' 42"	-0,46"	92° 45' 19"	23° 24' 49"	1,0163360	15' 44,21"	23° 26' 17"	-02m 22s
01:00	92° 34' 05"	-0,46"	92° 47' 55"	23° 24' 46"	1,0163380	15' 44,20"	23° 26' 17"	-02m 22s
02:00	92° 36' 28"	-0,46"	92° 50' 31"	23° 24' 44"	1,0163400	15' 44,20"	23° 26' 17"	-02m 23s
03:00	92° 38' 51"	-0,47"	92° 53' 07"	23° 24' 41"	1,0163420	15' 44,20"	23° 26' 17"	-02m 23s
04:00	92° 41' 14"	-0,47"	92° 55' 43"	23° 24' 38"	1,0163440	15' 44,20"	23° 26' 17"	-02m 24s
05:00	92° 43' 37"	-0,47"	92° 58' 19"	23° 24' 35"	1,0163459	15' 44,20"	23° 26' 17"	-02m 25s
06:00	92° 46' 00"	-0,47"	93° 00' 54"	23° 24' 32"	1,0163479	15' 44,19"	23° 26' 17"	-02m 25s
07:00	92° 48' 23"	-0,48"	93° 03' 30"	23° 24' 29"	1,0163498	15' 44,19"	23° 26' 17"	-02m 26s
08:00	92° 50' 46"	-0,48"	93° 06' 06"	23° 24' 26"	1,0163518	15' 44,19"	23° 26' 17"	-02m 26s
09:00	92° 53' 10"	-0,48"	93° 08' 42"	23° 24' 23"	1,0163537	15' 44,19"	23° 26' 17"	-02m 27s
10:00	92° 55' 33"	-0,49"	93° 11' 18"	23° 24' 20"	1,0163556	15' 44,19"	23° 26' 17"	-02m 27s
11:00	92° 57' 56"	-0,49"	93° 13' 54"	23° 24' 16"	1,0163575	15' 44,19"	23° 26' 17"	-02m 28s
12:00	93° 00' 19"	-0,49"	93° 16' 30"	23° 24' 13"	1,0163595	15' 44,18"	23° 26' 17"	-02m 28s
13:00	93° 02' 42"	-0,49"	93° 19' 06"	23° 24' 10"	1,0163614	15' 44,18"	23° 26' 17"	-02m 29s
14:00	93° 05' 05"	-0,50"	93° 21' 41"	23° 24' 07"	1,0163633	15' 44,18"	23° 26' 17"	-02m 29s
15:00	93° 07' 28"	-0,50"	93° 24' 17"	23° 24' 03"	1,0163652	15' 44,18"	23° 26' 17"	-02m 30s
16:00	93° 09' 51"	-0,50"	93° 26' 53"	23° 24' 00"	1,0163670	15' 44,18"	23° 26' 17"	-02m 30s
17:00	93° 12' 14"	-0,50"	93° 29' 29"	23° 23' 56"	1,0163689	15' 44,17"	23° 26' 17"	-02m 31s
18:00	93° 14' 37"	-0,51"	93° 32' 05"	23° 23' 53"	1,0163708	15' 44,17"	23° 26' 17"	-02m 31s
19:00	93° 17' 00"	-0,51"	93° 34' 41"	23° 23' 49"	1,0163727	15' 44,17"	23° 26' 17"	-02m 32s
20:00	93° 19' 23"	-0,51"	93° 37' 16"	23° 23' 46"	1,0163745	15' 44,17"	23° 26' 17"	-02m 33s
21:00	93° 21' 46"	-0,51"	93° 39' 52"	23° 23' 42"	1,0163764	15' 44,17"	23° 26' 17"	-02m 33s
22:00	93° 24' 10"	-0,51"	93° 42' 28"	23° 23' 39"	1,0163782	15' 44,17"	23° 26' 17"	-02m 34s
23:00	93° 26' 33"	-0,52"	93° 45' 04"	23° 23' 35"	1,0163801	15' 44,16"	23° 26' 17"	-02m 34s
24:00	93° 28' 56"	-0,52"	93° 47' 40"	23° 23' 31"	1,0163819	15' 44,16"	23° 26' 17"	-02m 35s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	206° 35' 06"	-4° 09' 12"	203° 06' 54"	-14° 07' 20"	55' 03"	15' 00,00"	289° 39' 56"	70,44%
01:00	207° 05' 39"	-4° 10' 45"	203° 35' 34"	-14° 19' 56"	55' 01"	15' 00,00"	289° 31' 57"	70,81%
02:00	207° 36' 11"	-4° 12' 17"	204° 04' 16"	-14° 32' 28"	55' 00"	14' 59,16"	289° 23' 50"	71,18%
03:00	208° 06' 42"	-4° 13' 48"	204° 33' 00"	-14° 44' 56"	54' 59"	14' 58,80"	289° 15' 35"	71,55%
04:00	208° 37' 11"	-4° 15' 17"	205° 01' 46"	-14° 57' 19"	54' 57"	14' 58,46"	289° 07' 11"	71,91%
05:00	209° 07' 40"	-4° 16' 45"	205° 30' 34"	-15° 09' 39"	54' 56"	14' 58,11"	288° 58' 40"	72,28%
06:00	209° 38' 07"	-4° 18' 12"	205° 59' 24"	-15° 21' 55"	54' 55"	14' 57,77"	288° 50' 00"	72,64%
07:00	210° 08' 33"	-4° 19' 37"	206° 28' 17"	-15° 34' 06"	54' 54"	14' 57,44"	288° 41' 13"	73,00%
08:00	210° 38' 58"	-4° 21' 01"	206° 57' 12"	-15° 46' 13"	54' 52"	14' 57,10"	288° 32' 17"	73,36%
09:00	211° 09' 22"	-4° 22' 24"	207° 26' 09"	-15° 58' 16"	54' 51"	14' 56,78"	288° 23' 13"	73,71%
10:00	211° 39' 44"	-4° 23' 46"	207° 55' 08"	-16° 10' 14"	54' 50"	14' 56,45"	288° 14' 00"	74,07%
11:00	212° 10' 06"	-4° 25' 06"	208° 24' 10"	-16° 22' 08"	54' 49"	14' 56,13"	288° 04' 40"	74,42%
12:00	212° 40' 26"	-4° 26' 25"	208° 53' 14"	-16° 33' 58"	54' 48"	14' 55,82"	287° 55' 11"	74,77%
13:00	213° 10' 46"	-4° 27' 43"	209° 22' 20"	-16° 45' 43"	54' 47"	14' 55,50"	287° 45' 34"	75,12%
14:00	213° 41' 04"	-4° 28' 59"	209° 51' 30"	-16° 57' 23"	54' 45"	14' 55,20"	287° 35' 49"	75,47%
15:00	214° 11' 22"	-4° 30' 14"	210° 20' 41"	-17° 08' 59"	54' 44"	14' 54,89"	287° 25' 56"	75,82%
16:00	214° 41' 38"	-4° 31' 28"	210° 49' 55"	-17° 20' 30"	54' 43"	14' 54,59"	287° 15' 54"	76,16%
17:00	215° 11' 54"	-4° 32' 41"	211° 19' 12"	-17° 31' 57"	54' 42"	14' 54,29"	287° 05' 44"	76,50%
18:00	215° 42' 09"	-4° 33' 52"	211° 48' 32"	-17° 43' 19"	54' 41"	14' 54,00"	286° 55' 26"	76,84%
19:00	216° 12' 22"	-4° 35' 02"	212° 17' 54"	-17° 54' 36"	54' 40"	14' 53,71"	286° 44' 59"	77,18%
20:00	216° 42' 35"	-4° 36' 10"	212° 47' 19"	-18° 05' 48"	54' 39"	14' 53,43"	286° 34' 24"	77,52%
21:00	217° 12' 47"	-4° 37' 17"	213° 16' 47"	-18° 16' 56"	54' 38"	14' 53,15"	286° 23' 40"	77,85%
22:00	217° 42' 58"	-4° 38' 23"	213° 46' 17"	-18° 27' 58"	54' 37"	14' 52,87"	286° 12' 48"	78,18%
23:00	218° 13' 08"	-4° 39' 28"	214° 15' 51"	-18° 38' 56"	54' 36"	14' 52,60"	286° 01' 48"	78,51%
24:00	218° 43' 17"	-4° 40' 31"	214° 45' 27"	-18° 49' 49"	54' 35"	14' 52,33"	285° 50' 39"	78,84%

25 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	93° 28' 56"	-0,52"	93° 47' 40"	23° 23' 31"	1,0163819	15' 44,16"	23° 26' 17"	-02m 35s
01:00	93° 31' 19"	-0,52"	93° 50' 16"	23° 23' 27"	1,0163837	15' 44,16"	23° 26' 17"	-02m 35s
02:00	93° 33' 42"	-0,52"	93° 52' 51"	23° 23' 23"	1,0163855	15' 44,16"	23° 26' 17"	-02m 36s
03:00	93° 36' 05"	-0,53"	93° 55' 27"	23° 23' 20"	1,0163873	15' 44,16"	23° 26' 17"	-02m 36s
04:00	93° 38' 28"	-0,53"	93° 58' 03"	23° 23' 16"	1,0163891	15' 44,16"	23° 26' 17"	-02m 37s
05:00	93° 40' 51"	-0,53"	94° 00' 39"	23° 23' 12"	1,0163909	15' 44,15"	23° 26' 17"	-02m 37s
06:00	93° 43' 14"	-0,53"	94° 03' 15"	23° 23' 08"	1,0163927	15' 44,15"	23° 26' 17"	-02m 38s
07:00	93° 45' 37"	-0,53"	94° 05' 50"	23° 23' 04"	1,0163945	15' 44,15"	23° 26' 17"	-02m 38s
08:00	93° 48' 00"	-0,53"	94° 08' 26"	23° 23' 00"	1,0163963	15' 44,15"	23° 26' 17"	-02m 39s
09:00	93° 50' 23"	-0,54"	94° 11' 02"	23° 22' 55"	1,0163980	15' 44,15"	23° 26' 17"	-02m 39s
10:00	93° 52' 46"	-0,54"	94° 13' 38"	23° 22' 51"	1,0163998	15' 44,15"	23° 26' 17"	-02m 40s
11:00	93° 55' 09"	-0,54"	94° 16' 14"	23° 22' 47"	1,0164016	15' 44,14"	23° 26' 17"	-02m 40s
12:00	93° 57' 32"	-0,54"	94° 18' 49"	23° 22' 43"	1,0164033	15' 44,14"	23° 26' 17"	-02m 41s
13:00	93° 59' 55"	-0,54"	94° 21' 25"	23° 22' 38"	1,0164051	15' 44,14"	23° 26' 17"	-02m 42s
14:00	94° 02' 19"	-0,54"	94° 24' 01"	23° 22' 34"	1,0164068	15' 44,14"	23° 26' 17"	-02m 42s
15:00	94° 04' 42"	-0,55"	94° 26' 37"	23° 22' 30"	1,0164085	15' 44,14"	23° 26' 17"	-02m 43s
16:00	94° 07' 05"	-0,55"	94° 29' 13"	23° 22' 25"	1,0164102	15' 44,14"	23° 26' 17"	-02m 43s
17:00	94° 09' 28"	-0,55"	94° 31' 48"	23° 22' 21"	1,0164120	15' 44,13"	23° 26' 17"	-02m 44s
18:00	94° 11' 51"	-0,55"	94° 34' 24"	23° 22' 16"	1,0164137	15' 44,13"	23° 26' 17"	-02m 44s
19:00	94° 14' 14"	-0,55"	94° 37' 00"	23° 22' 12"	1,0164154	15' 44,13"	23° 26' 17"	-02m 45s
20:00	94° 16' 37"	-0,55"	94° 39' 36"	23° 22' 07"	1,0164171	15' 44,13"	23° 26' 17"	-02m 45s
21:00	94° 19' 00"	-0,55"	94° 42' 11"	23° 22' 02"	1,0164188	15' 44,13"	23° 26' 17"	-02m 46s
22:00	94° 21' 23"	-0,55"	94° 44' 47"	23° 21' 58"	1,0164204	15' 44,13"	23° 26' 17"	-02m 46s
23:00	94° 23' 46"	-0,55"	94° 47' 23"	23° 21' 53"	1,0164221	15' 44,13"	23° 26' 17"	-02m 47s
24:00	94° 26' 09"	-0,56"	94° 49' 59"	23° 21' 48"	1,0164238	15' 44,12"	23° 26' 17"	-02m 47s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	218° 43' 17"	-4° 40' 31"	214° 45' 27"	-18° 49' 49"	54' 35"	14' 52,33"	285° 50' 39"	78,84%
01:00	219° 13' 25"	-4° 41' 33"	215° 15' 06"	-19° 00' 36"	54' 34"	14' 52,07"	285° 39' 22"	79,17%
02:00	219° 43' 33"	-4° 42' 33"	215° 44' 48"	-19° 11' 19"	54' 33"	14' 51,81"	285° 27' 56"	79,49%
03:00	220° 13' 39"	-4° 43' 32"	216° 14' 33"	-19° 21' 56"	54' 32"	14' 51,55"	285° 16' 22"	79,81%
04:00	220° 43' 45"	-4° 44' 30"	216° 44' 21"	-19° 32' 29"	54' 31"	14' 51,29"	285° 04' 38"	80,13%
05:00	221° 13' 50"	-4° 45' 27"	217° 14' 12"	-19° 42' 56"	54' 30"	14' 51,05"	284° 52' 47"	80,45%
06:00	221° 43' 55"	-4° 46' 22"	217° 44' 07"	-19° 53' 17"	54' 29"	14' 50,80"	284° 40' 46"	80,77%
07:00	222° 13' 58"	-4° 47' 16"	218° 14' 04"	-20° 03' 34"	54' 28"	14' 50,56"	284° 28' 37"	81,08%
08:00	222° 44' 01"	-4° 48' 08"	218° 44' 04"	-20° 13' 45"	54' 28"	14' 50,32"	284° 16' 20"	81,39%
09:00	223° 14' 03"	-4° 48' 59"	219° 14' 07"	-20° 23' 51"	54' 27"	14' 50,09"	284° 03' 53"	81,70%
10:00	223° 44' 04"	-4° 49' 49"	219° 44' 14"	-20° 33' 51"	54' 26"	14' 49,86"	283° 51' 18"	82,01%
11:00	224° 14' 05"	-4° 50' 38"	220° 14' 24"	-20° 43' 46"	54' 25"	14' 49,63"	283° 38' 33"	82,31%
12:00	224° 44' 05"	-4° 51' 25"	220° 44' 36"	-20° 53' 35"	54' 24"	14' 49,41"	283° 25' 40"	82,61%
13:00	225° 14' 04"	-4° 52' 10"	221° 14' 52"	-21° 03' 19"	54' 23"	14' 49,19"	283° 12' 38"	82,91%
14:00	225° 44' 03"	-4° 52' 55"	221° 45' 12"	-21° 12' 57"	54' 23"	14' 48,97"	282° 59' 27"	83,21%
15:00	226° 14' 01"	-4° 53' 38"	222° 15' 34"	-21° 22' 29"	54' 22"	14' 48,76"	282° 46' 07"	83,51%
16:00	226° 43' 58"	-4° 54' 19"	222° 46' 00"	-21° 31' 56"	54' 21"	14' 48,55"	282° 32' 37"	83,80%
17:00	227° 13' 55"	-4° 54' 59"	223° 16' 29"	-21° 41' 17"	54' 20"	14' 48,35"	282° 18' 59"	84,09%
18:00	227° 43' 51"	-4° 55' 38"	223° 47' 01"	-21° 50' 32"	54' 20"	14' 48,15"	282° 05' 11"	84,38%
19:00	228° 13' 46"	-4° 56' 16"	224° 17' 37"	-21° 59' 42"	54' 19"	14' 47,95"	281° 51' 14"	84,67%
20:00	228° 43' 41"	-4° 56' 52"	224° 48' 15"	-22° 08' 45"	54' 18"	14' 47,76"	281° 37' 08"	84,95%
21:00	229° 13' 36"	-4° 57' 27"	225° 18' 58"	-22° 17' 43"	54' 17"	14' 47,57"	281° 22' 52"	85,23%
22:00	229° 43' 29"	-4° 58' 00"	225° 49' 43"	-22° 26' 34"	54' 17"	14' 47,39"	281° 08' 27"	85,51%
23:00	230° 13' 23"	-4° 58' 32"	226° 20' 32"	-22° 35' 20"	54' 16"	14' 47,20"	280° 53' 53"	85,79%
24:00	230° 43' 15"	-4° 59' 03"	226° 51' 24"	-22° 43' 59"	54' 15"	14' 47,03"	280° 39' 08"	86,07%

26 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	94° 26' 09"	-0,56"	94° 49' 59"	23° 21' 48"	1,0164238	15' 44,12"	23° 26' 17"	-02m 47s
01:00	94° 28' 32"	-0,56"	94° 52' 34"	23° 21' 43"	1,0164254	15' 44,12"	23° 26' 17"	-02m 48s
02:00	94° 30' 55"	-0,56"	94° 55' 10"	23° 21' 39"	1,0164271	15' 44,12"	23° 26' 17"	-02m 48s
03:00	94° 33' 18"	-0,56"	94° 57' 46"	23° 21' 34"	1,0164287	15' 44,12"	23° 26' 17"	-02m 49s
04:00	94° 35' 41"	-0,56"	95° 00' 21"	23° 21' 29"	1,0164304	15' 44,12"	23° 26' 17"	-02m 49s
05:00	94° 38' 04"	-0,56"	95° 02' 57"	23° 21' 24"	1,0164320	15' 44,12"	23° 26' 17"	-02m 50s
06:00	94° 40' 27"	-0,56"	95° 05' 33"	23° 21' 19"	1,0164337	15' 44,11"	23° 26' 17"	-02m 51s
07:00	94° 42' 50"	-0,56"	95° 08' 09"	23° 21' 14"	1,0164353	15' 44,11"	23° 26' 17"	-02m 51s
08:00	94° 45' 13"	-0,56"	95° 10' 44"	23° 21' 09"	1,0164369	15' 44,11"	23° 26' 17"	-02m 52s
09:00	94° 47' 36"	-0,56"	95° 13' 20"	23° 21' 03"	1,0164385	15' 44,11"	23° 26' 17"	-02m 52s
10:00	94° 49' 59"	-0,56"	95° 15' 56"	23° 20' 58"	1,0164401	15' 44,11"	23° 26' 17"	-02m 53s
11:00	94° 52' 23"	-0,56"	95° 18' 31"	23° 20' 53"	1,0164417	15' 44,11"	23° 26' 17"	-02m 53s
12:00	94° 54' 46"	-0,56"	95° 21' 07"	23° 20' 48"	1,0164433	15' 44,11"	23° 26' 17"	-02m 54s
13:00	94° 57' 09"	-0,56"	95° 23' 43"	23° 20' 42"	1,0164449	15' 44,10"	23° 26' 17"	-02m 54s
14:00	94° 59' 32"	-0,57"	95° 26' 18"	23° 20' 37"	1,0164465	15' 44,10"	23° 26' 17"	-02m 55s
15:00	95° 01' 55"	-0,57"	95° 28' 54"	23° 20' 32"	1,0164480	15' 44,10"	23° 26' 17"	-02m 55s
16:00	95° 04' 18"	-0,57"	95° 31' 30"	23° 20' 26"	1,0164496	15' 44,10"	23° 26' 17"	-02m 56s
17:00	95° 06' 41"	-0,57"	95° 34' 05"	23° 20' 21"	1,0164511	15' 44,10"	23° 26' 17"	-02m 56s
18:00	95° 09' 04"	-0,57"	95° 36' 41"	23° 20' 15"	1,0164527	15' 44,10"	23° 26' 17"	-02m 57s
19:00	95° 11' 27"	-0,57"	95° 39' 17"	23° 20' 09"	1,0164542	15' 44,10"	23° 26' 17"	-02m 57s
20:00	95° 13' 50"	-0,57"	95° 41' 52"	23° 20' 04"	1,0164558	15' 44,09"	23° 26' 17"	-02m 58s
21:00	95° 16' 13"	-0,57"	95° 44' 28"	23° 19' 58"	1,0164573	15' 44,09"	23° 26' 17"	-02m 58s
22:00	95° 18' 36"	-0,57"	95° 47' 04"	23° 19' 52"	1,0164588	15' 44,09"	23° 26' 17"	-02m 59s
23:00	95° 20' 59"	-0,57"	95° 49' 39"	23° 19' 47"	1,0164604	15' 44,09"	23° 26' 17"	-02m 59s
24:00	95° 23' 22"	-0,57"	95° 52' 15"	23° 19' 41"	1,0164619	15' 44,09"	23° 26' 17"	-03m 00s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	230° 43' 15"	-4° 59' 03"	226° 51' 24"	-22° 43' 59"	54' 15"	14' 47,03"	280° 39' 08"	86,07%
01:00	231° 13' 08"	-4° 59' 32"	227° 22' 19"	-22° 52' 32"	54' 15"	14' 46,85"	280° 24' 14"	86,34%
02:00	231° 42' 59"	-5° 00' 00"	227° 53' 18"	-23° 01' 00"	54' 14"	14' 46,68"	280° 09' 10"	86,61%
03:00	232° 12' 50"	-5° 00' 27"	228° 24' 19"	-23° 09' 21"	54' 14"	14' 46,51"	279° 53' 57"	86,88%
04:00	232° 42' 41"	-5° 00' 52"	228° 55' 25"	-23° 17' 35"	54' 13"	14' 46,35"	279° 38' 33"	87,14%
05:00	233° 12' 31"	-5° 01' 16"	229° 26' 33"	-23° 25' 44"	54' 12"	14' 46,19"	279° 22' 59"	87,41%
06:00	233° 42' 21"	-5° 01' 38"	229° 57' 45"	-23° 33' 46"	54' 12"	14' 46,03"	279° 07' 15"	87,67%
07:00	234° 12' 11"	-5° 01' 59"	230° 29' 00"	-23° 41' 41"	54' 11"	14' 45,88"	278° 51' 21"	87,92%
08:00	234° 42' 00"	-5° 02' 19"	231° 00' 19"	-23° 49' 31"	54' 11"	14' 45,73"	278° 35' 16"	88,18%
09:00	235° 11' 48"	-5° 02' 37"	231° 31' 41"	-23° 57' 13"	54' 10"	14' 45,58"	278° 19' 01"	88,43%
10:00	235° 41' 36"	-5° 02' 54"	232° 03' 06"	-24° 04' 50"	54' 10"	14' 45,44"	278° 02' 35"	88,68%
11:00	236° 11' 24"	-5° 03' 09"	232° 34' 34"	-24° 12' 19"	54' 09"	14' 45,30"	277° 45' 59"	88,93%
12:00	236° 41' 11"	-5° 03' 23"	233° 06' 05"	-24° 19' 43"	54' 09"	14' 45,16"	277° 29' 11"	89,18%
13:00	237° 10' 58"	-5° 03' 36"	233° 37' 40"	-24° 26' 59"	54' 08"	14' 45,03"	277° 12' 13"	89,42%
14:00	237° 40' 45"	-5° 03' 48"	234° 09' 18"	-24° 34' 09"	54' 08"	14' 44,90"	276° 55' 03"	89,66%
15:00	238° 10' 31"	-5° 03' 58"	234° 40' 59"	-24° 41' 12"	54' 07"	14' 44,78"	276° 37' 42"	89,90%
16:00	238° 40' 17"	-5° 04' 06"	235° 12' 44"	-24° 48' 08"	54' 07"	14' 44,65"	276° 20' 09"	90,13%
17:00	239° 10' 02"	-5° 04' 13"	235° 44' 31"	-24° 54' 58"	54' 06"	14' 44,53"	276° 02' 25"	90,37%
18:00	239° 39' 48"	-5° 04' 19"	236° 16' 22"	-25° 01' 41"	54' 06"	14' 44,42"	275° 44' 28"	90,60%
19:00	240° 09' 33"	-5° 04' 24"	236° 48' 16"	-25° 08' 16"	54' 06"	14' 44,31"	275° 26' 20"	90,83%
20:00	240° 39' 17"	-5° 04' 27"	237° 20' 13"	-25° 14' 45"	54' 05"	14' 44,20"	275° 07' 59"	91,05%
21:00	241° 09' 02"	-5° 04' 29"	237° 52' 13"	-25° 21' 07"	54' 05"	14' 44,09"	274° 49' 25"	91,27%
22:00	241° 38' 46"	-5° 04' 29"	238° 24' 16"	-25° 27' 22"	54' 04"	14' 43,99"	274° 30' 38"	91,49%
23:00	242° 08' 29"	-5° 04' 28"	238° 56' 22"	-25° 33' 30"	54' 04"	14' 43,89"	274° 11' 39"	91,71%
24:00	242° 38' 13"	-5° 04' 25"	239° 28' 31"	-25° 39' 31"	54' 04"	14' 43,79"	273° 52' 25"	91,93%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	95° 23' 22"	-0,57"	95° 52' 15"	23° 19' 41"	1,0164619	15' 44,09"	23° 26' 17"	-03m 00s
01:00	95° 25' 45"	-0,57"	95° 54' 51"	23° 19' 35"	1,0164634	15' 44,09"	23° 26' 17"	-03m 00s
02:00	95° 28' 08"	-0,57"	95° 57' 26"	23° 19' 29"	1,0164649	15' 44,09"	23° 26' 17"	-03m 01s
03:00	95° 30' 31"	-0,57"	96° 00' 02"	23° 19' 23"	1,0164664	15' 44,08"	23° 26' 17"	-03m 01s
04:00	95° 32' 54"	-0,57"	96° 02' 38"	23° 19' 17"	1,0164679	15' 44,08"	23° 26' 17"	-03m 02s
05:00	95° 35' 17"	-0,56"	96° 05' 13"	23° 19' 11"	1,0164693	15' 44,08"	23° 26' 17"	-03m 02s
06:00	95° 37' 40"	-0,56"	96° 07' 49"	23° 19' 05"	1,0164708	15' 44,08"	23° 26' 17"	-03m 03s
07:00	95° 40' 03"	-0,56"	96° 10' 24"	23° 18' 59"	1,0164723	15' 44,08"	23° 26' 17"	-03m 04s
08:00	95° 42' 26"	-0,56"	96° 13' 00"	23° 18' 53"	1,0164737	15' 44,08"	23° 26' 17"	-03m 04s
09:00	95° 44' 49"	-0,56"	96° 15' 36"	23° 18' 47"	1,0164752	15' 44,08"	23° 26' 17"	-03m 05s
10:00	95° 47' 12"	-0,56"	96° 18' 11"	23° 18' 41"	1,0164767	15' 44,07"	23° 26' 17"	-03m 05s
11:00	95° 49' 35"	-0,56"	96° 20' 47"	23° 18' 34"	1,0164781	15' 44,07"	23° 26' 17"	-03m 06s
12:00	95° 51' 58"	-0,56"	96° 23' 22"	23° 18' 28"	1,0164795	15' 44,07"	23° 26' 17"	-03m 06s
13:00	95° 54' 21"	-0,56"	96° 25' 58"	23° 18' 22"	1,0164810	15' 44,07"	23° 26' 17"	-03m 07s
14:00	95° 56' 44"	-0,56"	96° 28' 33"	23° 18' 15"	1,0164824	15' 44,07"	23° 26' 17"	-03m 07s
15:00	95° 59' 07"	-0,56"	96° 31' 09"	23° 18' 09"	1,0164838	15' 44,07"	23° 26' 17"	-03m 08s
16:00	96° 01' 30"	-0,56"	96° 33' 45"	23° 18' 02"	1,0164852	15' 44,07"	23° 26' 17"	-03m 08s
17:00	96° 03' 53"	-0,56"	96° 36' 20"	23° 17' 56"	1,0164866	15' 44,07"	23° 26' 17"	-03m 09s
18:00	96° 06' 16"	-0,56"	96° 38' 56"	23° 17' 49"	1,0164880	15' 44,06"	23° 26' 17"	-03m 09s
19:00	96° 08' 39"	-0,56"	96° 41' 31"	23° 17' 43"	1,0164894	15' 44,06"	23° 26' 17"	-03m 10s
20:00	96° 11' 02"	-0,55"	96° 44' 07"	23° 17' 36"	1,0164908	15' 44,06"	23° 26' 17"	-03m 10s
21:00	96° 13' 25"	-0,55"	96° 46' 42"	23° 17' 29"	1,0164922	15' 44,06"	23° 26' 17"	-03m 11s
22:00	96° 15' 48"	-0,55"	96° 49' 18"	23° 17' 23"	1,0164936	15' 44,06"	23° 26' 17"	-03m 11s
23:00	96° 18' 11"	-0,55"	96° 51' 53"	23° 17' 16"	1,0164949	15' 44,06"	23° 26' 17"	-03m 12s
24:00	96° 20' 35"	-0,55"	96° 54' 29"	23° 17' 09"	1,0164963	15' 44,06"	23° 26' 17"	-03m 12s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	242° 38' 13"	-5° 04' 25"	239° 28' 31"	-25° 39' 31"	54' 04"	14' 43,79"	273° 52' 25"	91,93%
01:00	243° 07' 56"	-5° 04' 22"	240° 00' 43"	-25° 45' 25"	54' 03"	14' 43,70"	273° 32' 59"	92,14%
02:00	243° 37' 39"	-5° 04' 16"	240° 32' 57"	-25° 51' 11"	54' 03"	14' 43,61"	273° 13' 18"	92,35%
03:00	244° 07' 22"	-5° 04' 10"	241° 05' 15"	-25° 56' 50"	54' 03"	14' 43,53"	272° 53' 22"	92,55%
04:00	244° 37' 05"	-5° 04' 02"	241° 37' 36"	-26° 02' 23"	54' 02"	14' 43,44"	272° 33' 12"	92,76%
05:00	245° 06' 47"	-5° 03' 53"	242° 09' 59"	-26° 07' 47"	54' 02"	14' 43,36"	272° 12' 47"	92,96%
06:00	245° 36' 29"	-5° 03' 42"	242° 42' 25"	-26° 13' 05"	54' 02"	14' 43,29"	271° 52' 06"	93,16%
07:00	246° 06' 11"	-5° 03' 30"	243° 14' 54"	-26° 18' 15"	54' 02"	14' 43,21"	271° 31' 10"	93,35%
08:00	246° 35' 53"	-5° 03' 17"	243° 47' 26"	-26° 23' 18"	54' 01"	14' 43,14"	271° 09' 56"	93,55%
09:00	247° 05' 35"	-5° 03' 02"	244° 20' 00"	-26° 28' 13"	54' 01"	14' 43,08"	270° 48' 26"	93,74%
10:00	247° 35' 16"	-5° 02' 46"	244° 52' 37"	-26° 33' 01"	54' 01"	14' 43,01"	270° 26' 39"	93,93%
11:00	248° 04' 58"	-5° 02' 28"	245° 25' 17"	-26° 37' 42"	54' 01"	14' 42,95"	270° 04' 33"	94,11%
12:00	248° 34' 39"	-5° 02' 09"	245° 57' 59"	-26° 42' 15"	54' 00"	14' 42,89"	269° 42' 08"	94,29%
13:00	249° 04' 20"	-5° 01' 49"	246° 30' 43"	-26° 46' 40"	54' 00"	14' 42,84"	269° 19' 24"	94,47%
14:00	249° 34' 01"	-5° 01' 27"	247° 03' 30"	-26° 50' 58"	54' 00"	14' 42,79"	268° 56' 21"	94,65%
15:00	250° 03' 42"	-5° 01' 04"	247° 36' 19"	-26° 55' 09"	54' 00"	14' 42,74"	268° 32' 56"	94,82%
16:00	250° 33' 22"	-5° 00' 40"	248° 09' 11"	-26° 59' 11"	54' 00"	14' 42,69"	268° 09' 09"	94,99%
17:00	251° 03' 03"	-5° 00' 15"	248° 42' 05"	-27° 03' 06"	53' 59"	14' 42,65"	267° 45' 01"	95,16%
18:00	251° 32' 43"	-4° 59' 47"	249° 15' 01"	-27° 06' 54"	53' 59"	14' 42,61"	267° 20' 28"	95,33%
19:00	252° 02' 24"	-4° 59' 19"	249° 47' 59"	-27° 10' 33"	53' 59"	14' 42,57"	266° 55' 31"	95,49%
20:00	252° 32' 04"	-4° 58' 49"	250° 20' 59"	-27° 14' 05"	53' 59"	14' 42,54"	266° 30' 09"	95,65%
21:00	253° 01' 45"	-4° 58' 18"	250° 54' 01"	-27° 17' 29"	53' 59"	14' 42,51"	266° 04' 20"	95,81%
22:00	253° 31' 25"	-4° 57' 46"	251° 27' 06"	-27° 20' 46"	53' 59"	14' 42,48"	265° 38' 03"	95,96%
23:00	254° 01' 05"	-4° 57' 12"	252° 00' 12"	-27° 23' 54"	53' 59"	14' 42,46"	265° 11' 16"	96,11%
24:00	254° 30' 45"	-4° 56' 37"	252° 33' 20"	-27° 26' 55"	53' 59"	14' 42,44"	264° 43' 59"	96,26%

28 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	96° 20' 35"	-0,55"	96° 54' 29"	23° 17' 09"	1,0164963	15' 44,06"	23° 26' 17"	-03m 12s
01:00	96° 22' 58"	-0,55"	96° 57' 04"	23° 17' 02"	1,0164977	15' 44,06"	23° 26' 17"	-03m 13s
02:00	96° 25' 21"	-0,55"	96° 59' 40"	23° 16' 55"	1,0164990	15' 44,05"	23° 26' 17"	-03m 13s
03:00	96° 27' 44"	-0,55"	97° 02' 15"	23° 16' 48"	1,0165003	15' 44,05"	23° 26' 17"	-03m 14s
04:00	96° 30' 07"	-0,54"	97° 04' 51"	23° 16' 41"	1,0165017	15' 44,05"	23° 26' 17"	-03m 14s
05:00	96° 32' 30"	-0,54"	97° 07' 26"	23° 16' 34"	1,0165030	15' 44,05"	23° 26' 17"	-03m 15s
06:00	96° 34' 53"	-0,54"	97° 10' 02"	23° 16' 27"	1,0165043	15' 44,05"	23° 26' 17"	-03m 15s
07:00	96° 37' 16"	-0,54"	97° 12' 37"	23° 16' 20"	1,0165057	15' 44,05"	23° 26' 17"	-03m 16s
08:00	96° 39' 39"	-0,54"	97° 15' 13"	23° 16' 13"	1,0165070	15' 44,05"	23° 26' 17"	-03m 16s
09:00	96° 42' 02"	-0,54"	97° 17' 48"	23° 16' 06"	1,0165083	15' 44,05"	23° 26' 17"	-03m 17s
10:00	96° 44' 25"	-0,54"	97° 20' 24"	23° 15' 58"	1,0165096	15' 44,04"	23° 26' 17"	-03m 17s
11:00	96° 46' 48"	-0,53"	97° 22' 59"	23° 15' 51"	1,0165109	15' 44,04"	23° 26' 17"	-03m 18s
12:00	96° 49' 11"	-0,53"	97° 25' 35"	23° 15' 44"	1,0165122	15' 44,04"	23° 26' 17"	-03m 18s
13:00	96° 51' 34"	-0,53"	97° 28' 10"	23° 15' 36"	1,0165134	15' 44,04"	23° 26' 17"	-03m 19s
14:00	96° 53' 57"	-0,53"	97° 30' 46"	23° 15' 29"	1,0165147	15' 44,04"	23° 26' 17"	-03m 19s
15:00	96° 56' 20"	-0,53"	97° 33' 21"	23° 15' 22"	1,0165160	15' 44,04"	23° 26' 17"	-03m 20s
16:00	96° 58' 43"	-0,52"	97° 35' 57"	23° 15' 14"	1,0165172	15' 44,04"	23° 26' 17"	-03m 20s
17:00	97° 01' 06"	-0,52"	97° 38' 32"	23° 15' 06"	1,0165185	15' 44,04"	23° 26' 17"	-03m 21s
18:00	97° 03' 29"	-0,52"	97° 41' 07"	23° 14' 59"	1,0165198	15' 44,03"	23° 26' 17"	-03m 21s
19:00	97° 05' 52"	-0,52"	97° 43' 43"	23° 14' 51"	1,0165210	15' 44,03"	23° 26' 17"	-03m 22s
20:00	97° 08' 15"	-0,52"	97° 46' 18"	23° 14' 44"	1,0165222	15' 44,03"	23° 26' 17"	-03m 22s
21:00	97° 10' 38"	-0,51"	97° 48' 54"	23° 14' 36"	1,0165235	15' 44,03"	23° 26' 17"	-03m 23s
22:00	97° 13' 01"	-0,51"	97° 51' 29"	23° 14' 28"	1,0165247	15' 44,03"	23° 26' 17"	-03m 23s
23:00	97° 15' 24"	-0,51"	97° 54' 05"	23° 14' 20"	1,0165259	15' 44,03"	23° 26' 17"	-03m 24s
24:00	97° 17' 47"	-0,51"	97° 56' 40"	23° 14' 12"	1,0165271	15' 44,03"	23° 26' 17"	-03m 24s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	254° 30' 45"	-4° 56' 37"	252° 33' 20"	-27° 26' 55"	53' 59"	14' 42,44"	264° 43' 59"	96,26%
01:00	255° 00' 25"	-4° 56' 01"	253° 06' 30"	-27° 29' 47"	53' 59"	14' 42,42"	264° 16' 09"	96,41%
02:00	255° 30' 05"	-4° 55' 23"	253° 39' 41"	-27° 32' 32"	53' 59"	14' 42,40"	263° 47' 44"	96,55%
03:00	255° 59' 46"	-4° 54' 44"	254° 12' 55"	-27° 35' 09"	53' 58"	14' 42,39"	263° 18' 44"	96,69%
04:00	256° 29' 26"	-4° 54' 03"	254° 46' 09"	-27° 37' 38"	53' 58"	14' 42,38"	262° 49' 05"	96,83%
05:00	256° 59' 06"	-4° 53' 21"	255° 19' 26"	-27° 40' 00"	53' 58"	14' 42,37"	262° 18' 45"	96,96%
06:00	257° 28' 46"	-4° 52' 38"	255° 52' 44"	-27° 42' 13"	53' 58"	14' 42,37"	261° 47' 43"	97,09%
07:00	257° 58' 26"	-4° 51' 54"	256° 26' 03"	-27° 44' 18"	53' 58"	14' 42,36"	261° 15' 55"	97,22%
08:00	258° 28' 06"	-4° 51' 08"	256° 59' 24"	-27° 46' 15"	53' 58"	14' 42,36"	260° 43' 18"	97,34%
09:00	258° 57' 46"	-4° 50' 21"	257° 32' 45"	-27° 48' 04"	53' 58"	14' 42,37"	260° 09' 49"	97,47%
10:00	259° 27' 26"	-4° 49' 33"	258° 06' 09"	-27° 49' 45"	53' 58"	14' 42,37"	259° 35' 24"	97,59%
11:00	259° 57' 07"	-4° 48' 43"	258° 39' 33"	-27° 51' 19"	53' 58"	14' 42,38"	259° 00' 01"	97,70%
12:00	260° 26' 47"	-4° 47' 52"	259° 12' 58"	-27° 52' 44"	53' 58"	14' 42,40"	258° 23' 33"	97,82%
13:00	260° 56' 27"	-4° 47' 00"	259° 46' 24"	-27° 54' 00"	53' 59"	14' 42,41"	257° 45' 57"	97,93%
14:00	261° 26' 08"	-4° 46' 06"	260° 19' 52"	-27° 55' 09"	53' 59"	14' 42,43"	257° 07' 07"	98,03%
15:00	261° 55' 48"	-4° 45' 11"	260° 53' 20"	-27° 56' 10"	53' 59"	14' 42,45"	256° 26' 57"	98,14%
16:00	262° 25' 29"	-4° 44' 15"	261° 26' 48"	-27° 57' 03"	53' 59"	14' 42,47"	255° 45' 21"	98,24%
17:00	262° 55' 09"	-4° 43' 17"	262° 00' 18"	-27° 57' 47"	53' 59"	14' 42,50"	255° 02' 11"	98,34%
18:00	263° 24' 50"	-4° 42' 19"	262° 33' 48"	-27° 58' 24"	53' 59"	14' 42,52"	254° 17' 20"	98,43%
19:00	263° 54' 31"	-4° 41' 18"	263° 07' 19"	-27° 58' 52"	53' 59"	14' 42,56"	253° 30' 38"	98,53%
20:00	264° 24' 12"	-4° 40' 17"	263° 40' 50"	-27° 59' 12"	53' 59"	14' 42,59"	252° 41' 55"	98,62%
21:00	264° 53' 53"	-4° 39' 14"	264° 14' 21"	-27° 59' 24"	53' 59"	14' 42,63"	251° 51' 00"	98,70%
22:00	265° 23' 34"	-4° 38' 11"	264° 47' 53"	-27° 59' 28"	53' 59"	14' 42,66"	250° 57' 40"	98,79%
23:00	265° 53' 16"	-4° 37' 05"	265° 21' 25"	-27° 59' 23"	54' 00"	14' 42,71"	250° 01' 40"	98,87%
24:00	266° 22' 57"	-4° 35' 59"	265° 54' 58"	-27° 59' 11"	54' 00"	14' 42,75"	249° 02' 43"	98,94%

29 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	97° 17' 47"	-0,51"	97° 56' 40"	23° 14' 12"	1,0165271	15' 44,03"	23° 26' 17"	-03m 24s
01:00	97° 20' 10"	-0,51"	97° 59' 15"	23° 14' 05"	1,0165283	15' 44,03"	23° 26' 17"	-03m 25s
02:00	97° 22' 33"	-0,50"	98° 01' 51"	23° 13' 57"	1,0165295	15' 44,03"	23° 26' 17"	-03m 25s
03:00	97° 24' 56"	-0,50"	98° 04' 26"	23° 13' 49"	1,0165307	15' 44,02"	23° 26' 17"	-03m 26s
04:00	97° 27' 19"	-0,50"	98° 07' 01"	23° 13' 41"	1,0165319	15' 44,02"	23° 26' 17"	-03m 26s
05:00	97° 29' 42"	-0,50"	98° 09' 37"	23° 13' 33"	1,0165331	15' 44,02"	23° 26' 17"	-03m 27s
06:00	97° 32' 05"	-0,49"	98° 12' 12"	23° 13' 25"	1,0165343	15' 44,02"	23° 26' 17"	-03m 27s
07:00	97° 34' 28"	-0,49"	98° 14' 48"	23° 13' 16"	1,0165355	15' 44,02"	23° 26' 17"	-03m 28s
08:00	97° 36' 51"	-0,49"	98° 17' 23"	23° 13' 08"	1,0165366	15' 44,02"	23° 26' 17"	-03m 28s
09:00	97° 39' 14"	-0,49"	98° 19' 58"	23° 13' 00"	1,0165378	15' 44,02"	23° 26' 17"	-03m 29s
10:00	97° 41' 37"	-0,48"	98° 22' 34"	23° 12' 52"	1,0165389	15' 44,02"	23° 26' 17"	-03m 29s
11:00	97° 44' 00"	-0,48"	98° 25' 09"	23° 12' 43"	1,0165401	15' 44,02"	23° 26' 17"	-03m 30s
12:00	97° 46' 23"	-0,48"	98° 27' 44"	23° 12' 35"	1,0165412	15' 44,01"	23° 26' 17"	-03m 30s
13:00	97° 48' 46"	-0,47"	98° 30' 20"	23° 12' 27"	1,0165424	15' 44,01"	23° 26' 17"	-03m 31s
14:00	97° 51' 09"	-0,47"	98° 32' 55"	23° 12' 18"	1,0165435	15' 44,01"	23° 26' 17"	-03m 31s
15:00	97° 53' 32"	-0,47"	98° 35' 30"	23° 12' 10"	1,0165446	15' 44,01"	23° 26' 17"	-03m 32s
16:00	97° 55' 55"	-0,47"	98° 38' 05"	23° 12' 01"	1,0165457	15' 44,01"	23° 26' 17"	-03m 32s
17:00	97° 58' 18"	-0,46"	98° 40' 41"	23° 11' 53"	1,0165468	15' 44,01"	23° 26' 17"	-03m 33s
18:00	98° 00' 41"	-0,46"	98° 43' 16"	23° 11' 44"	1,0165480	15' 44,01"	23° 26' 17"	-03m 33s
19:00	98° 03' 04"	-0,46"	98° 45' 51"	23° 11' 36"	1,0165491	15' 44,01"	23° 26' 17"	-03m 34s
20:00	98° 05' 27"	-0,45"	98° 48' 27"	23° 11' 27"	1,0165501	15' 44,01"	23° 26' 17"	-03m 34s
21:00	98° 07' 50"	-0,45"	98° 51' 02"	23° 11' 18"	1,0165512	15' 44,01"	23° 26' 17"	-03m 35s
22:00	98° 10' 13"	-0,45"	98° 53' 37"	23° 11' 09"	1,0165523	15' 44,00"	23° 26' 17"	-03m 35s
23:00	98° 12' 36"	-0,44"	98° 56' 12"	23° 11' 01"	1,0165534	15' 44,00"	23° 26' 17"	-03m 36s
24:00	98° 14' 59"	-0,44"	98° 58' 48"	23° 10' 52"	1,0165545	15' 44,00"	23° 26' 17"	-03m 36s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	266° 22' 57"	-4° 35' 59"	265° 54' 58"	-27° 59' 11"	54' 00"	14' 42,75"	249° 02' 43"	98,94%
01:00	266° 52' 39"	-4° 34' 51"	266° 28' 30"	-27° 58' 50"	54' 00"	14' 42,80"	248° 00' 31"	99,02%
02:00	267° 22' 21"	-4° 33' 42"	267° 02' 02"	-27° 58' 21"	54' 00"	14' 42,85"	246° 54' 42"	99,09%
03:00	267° 52' 03"	-4° 32' 32"	267° 35' 35"	-27° 57' 45"	54' 00"	14' 42,90"	245° 44' 51"	99,16%
04:00	268° 21' 45"	-4° 31' 21"	268° 09' 07"	-27° 56' 59"	54' 01"	14' 42,95"	244° 30' 31"	99,22%
05:00	268° 51' 27"	-4° 30' 08"	268° 42' 39"	-27° 56' 06"	54' 01"	14' 43,01"	243° 11' 08"	99,28%
06:00	269° 21' 10"	-4° 28' 54"	269° 16' 11"	-27° 55' 05"	54' 01"	14' 43,07"	241° 46' 05"	99,34%
07:00	269° 50' 52"	-4° 27' 39"	269° 49' 42"	-27° 53' 55"	54' 01"	14' 43,13"	240° 14' 39"	99,40%
08:00	270° 20' 35"	-4° 26' 22"	270° 23' 13"	-27° 52' 37"	54' 01"	14' 43,20"	238° 35' 59"	99,45%
09:00	270° 50' 18"	-4° 25' 05"	270° 56' 44"	-27° 51' 11"	54' 02"	14' 43,26"	236° 49' 07"	99,50%
10:00	271° 20' 02"	-4° 23' 46"	271° 30' 14"	-27° 49' 37"	54' 02"	14' 43,33"	234° 52' 56"	99,55%
11:00	271° 49' 45"	-4° 22' 26"	272° 03' 43"	-27° 47' 55"	54' 02"	14' 43,41"	232° 46' 08"	99,59%
12:00	272° 19' 29"	-4° 21' 05"	272° 37' 11"	-27° 46' 05"	54' 02"	14' 43,48"	230° 27' 11"	99,63%
13:00	272° 49' 13"	-4° 19' 42"	273° 10' 39"	-27° 44' 07"	54' 03"	14' 43,56"	227° 54' 24"	99,67%
14:00	273° 18' 57"	-4° 18' 19"	273° 44' 06"	-27° 42' 00"	54' 03"	14' 43,64"	225° 05' 48"	99,70%
15:00	273° 48' 41"	-4° 16' 54"	274° 17' 32"	-27° 39' 46"	54' 03"	14' 43,72"	221° 59' 15"	99,74%
16:00	274° 18' 26"	-4° 15' 28"	274° 50' 57"	-27° 37' 23"	54' 04"	14' 43,80"	218° 32' 22"	99,76%
17:00	274° 48' 11"	-4° 14' 00"	275° 24' 21"	-27° 34' 53"	54' 04"	14' 43,89"	214° 42' 45"	99,79%
18:00	275° 17' 56"	-4° 12' 32"	275° 57' 43"	-27° 32' 14"	54' 04"	14' 43,98"	210° 28' 04"	99,81%
19:00	275° 47' 41"	-4° 11' 02"	276° 31' 05"	-27° 29' 27"	54' 05"	14' 44,07"	205° 46' 25"	99,83%
20:00	276° 17' 27"	-4° 09' 32"	277° 04' 25"	-27° 26' 33"	54' 05"	14' 44,17"	200° 36' 43"	99,84%
21:00	276° 47' 13"	-4° 08' 00"	277° 37' 44"	-27° 23' 30"	54' 05"	14' 44,26"	194° 59' 20"	99,86%
22:00	277° 16' 59"	-4° 06' 27"	278° 11' 01"	-27° 20' 19"	54' 06"	14' 44,36"	188° 56' 34"	99,87%
23:00	277° 46' 46"	-4° 04' 53"	278° 44' 17"	-27° 17' 01"	54' 06"	14' 44,47"	182° 33' 11"	99,87%
24:00	278° 16' 33"	-4° 03' 17"	279° 17' 32"	-27° 13' 34"	54' 06"	14' 44,57"	175° 56' 19"	99,88%

30 Juni 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	98° 14' 59"	-0,44"	98° 58' 48"	23° 10' 52"	1,0165545	15' 44,00"	23° 26' 17"	-03m 36s
01:00	98° 17' 22"	-0,44"	99° 01' 23"	23° 10' 43"	1,0165555	15' 44,00"	23° 26' 17"	-03m 37s
02:00	98° 19' 45"	-0,43"	99° 03' 58"	23° 10' 34"	1,0165566	15' 44,00"	23° 26' 17"	-03m 37s
03:00	98° 22' 08"	-0,43"	99° 06' 33"	23° 10' 25"	1,0165576	15' 44,00"	23° 26' 17"	-03m 38s
04:00	98° 24' 31"	-0,43"	99° 09' 09"	23° 10' 16"	1,0165587	15' 44,00"	23° 26' 17"	-03m 38s
05:00	98° 26' 54"	-0,42"	99° 11' 44"	23° 10' 07"	1,0165597	15' 44,00"	23° 26' 17"	-03m 39s
06:00	98° 29' 17"	-0,42"	99° 14' 19"	23° 09' 58"	1,0165607	15' 44,00"	23° 26' 17"	-03m 39s
07:00	98° 31' 40"	-0,42"	99° 16' 54"	23° 09' 49"	1,0165618	15' 44,00"	23° 26' 17"	-03m 40s
08:00	98° 34' 03"	-0,41"	99° 19' 30"	23° 09' 39"	1,0165628	15' 43,99"	23° 26' 17"	-03m 40s
09:00	98° 36' 26"	-0,41"	99° 22' 05"	23° 09' 30"	1,0165638	15' 43,99"	23° 26' 17"	-03m 41s
10:00	98° 38' 49"	-0,41"	99° 24' 40"	23° 09' 21"	1,0165648	15' 43,99"	23° 26' 17"	-03m 41s
11:00	98° 41' 12"	-0,40"	99° 27' 15"	23° 09' 12"	1,0165658	15' 43,99"	23° 26' 17"	-03m 42s
12:00	98° 43' 35"	-0,40"	99° 29' 50"	23° 09' 02"	1,0165668	15' 43,99"	23° 26' 17"	-03m 42s
13:00	98° 45' 58"	-0,40"	99° 32' 25"	23° 08' 53"	1,0165678	15' 43,99"	23° 26' 17"	-03m 43s
14:00	98° 48' 21"	-0,39"	99° 35' 01"	23° 08' 43"	1,0165688	15' 43,99"	23° 26' 17"	-03m 43s
15:00	98° 50' 44"	-0,39"	99° 37' 36"	23° 08' 34"	1,0165698	15' 43,99"	23° 26' 17"	-03m 44s
16:00	98° 53' 07"	-0,38"	99° 40' 11"	23° 08' 24"	1,0165707	15' 43,99"	23° 26' 17"	-03m 44s
17:00	98° 55' 30"	-0,38"	99° 42' 46"	23° 08' 15"	1,0165717	15' 43,99"	23° 26' 17"	-03m 45s
18:00	98° 57' 53"	-0,38"	99° 45' 21"	23° 08' 05"	1,0165726	15' 43,99"	23° 26' 17"	-03m 45s
19:00	99° 00' 16"	-0,37"	99° 47' 56"	23° 07' 55"	1,0165736	15' 43,98"	23° 26' 17"	-03m 46s
20:00	99° 02' 39"	-0,37"	99° 50' 32"	23° 07' 46"	1,0165745	15' 43,98"	23° 26' 17"	-03m 46s
21:00	99° 05' 02"	-0,36"	99° 53' 07"	23° 07' 36"	1,0165755	15' 43,98"	23° 26' 17"	-03m 47s
22:00	99° 07' 25"	-0,36"	99° 55' 42"	23° 07' 26"	1,0165764	15' 43,98"	23° 26' 17"	-03m 47s
23:00	99° 09' 48"	-0,36"	99° 58' 17"	23° 07' 16"	1,0165774	15' 43,98"	23° 26' 17"	-03m 48s
24:00	99° 12' 11"	-0,35"	100° 00' 52"	23° 07' 07"	1,0165783	15' 43,98"	23° 26' 17"	-03m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	278° 16' 33"	-4° 03' 17"	279° 17' 32"	-27° 13' 34"	54' 06"	14' 44,57"	175° 56' 19"	99,88%
01:00	278° 46' 20"	-4° 01' 41"	279° 50' 44"	-27° 10' 00"	54' 07"	14' 44,68"	169° 14' 56"	99,88%
02:00	279° 16' 08"	-4° 00' 03"	280° 23' 55"	-27° 06' 17"	54' 07"	14' 44,79"	162° 38' 39"	99,87%
03:00	279° 45' 55"	-3° 58' 24"	280° 57' 05"	-27° 02' 27"	54' 08"	14' 44,90"	156° 16' 23"	99,87%
04:00	280° 15' 44"	-3° 56' 45"	281° 30' 12"	-26° 58' 29"	54' 08"	14' 45,01"	150° 15' 09"	99,86%
05:00	280° 45' 32"	-3° 55' 04"	282° 03' 18"	-26° 54' 23"	54' 09"	14' 45,13"	144° 39' 32"	99,84%
06:00	281° 15' 21"	-3° 53' 22"	282° 36' 21"	-26° 50' 10"	54' 09"	14' 45,25"	139° 31' 47"	99,83%
07:00	281° 45' 10"	-3° 51' 38"	283° 09' 23"	-26° 45' 48"	54' 09"	14' 45,37"	134° 52' 08"	99,81%
08:00	282° 15' 00"	-3° 49' 54"	283° 42' 23"	-26° 41' 19"	54' 10"	14' 45,49"	130° 39' 27"	99,79%
09:00	282° 44' 50"	-3° 48' 09"	284° 15' 20"	-26° 36' 42"	54' 10"	14' 45,62"	126° 51' 48"	99,76%
10:00	283° 14' 40"	-3° 46' 22"	284° 48' 16"	-26° 31' 58"	54' 11"	14' 45,75"	123° 26' 51"	99,73%
11:00	283° 44' 31"	-3° 44' 35"	285° 21' 09"	-26° 27' 06"	54' 11"	14' 45,88"	120° 22' 10"	99,70%
12:00	284° 14' 22"	-3° 42' 46"	285° 54' 00"	-26° 22' 06"	54' 12"	14' 46,01"	117° 35' 25"	99,67%
13:00	284° 44' 13"	-3° 40' 57"	286° 26' 49"	-26° 16' 58"	54' 12"	14' 46,14"	115° 04' 26"	99,63%
14:00	285° 14' 05"	-3° 39' 06"	286° 59' 35"	-26° 11' 43"	54' 13"	14' 46,28"	112° 47' 18"	99,59%
15:00	285° 43' 57"	-3° 37' 14"	287° 32' 19"	-26° 06' 21"	54' 13"	14' 46,42"	110° 42' 18"	99,54%
16:00	286° 13' 50"	-3° 35' 22"	288° 05' 00"	-26° 00' 51"	54' 14"	14' 46,56"	108° 47' 55"	99,50%
17:00	286° 43' 43"	-3° 33' 28"	288° 37' 39"	-25° 55' 13"	54' 14"	14' 46,71"	107° 02' 53"	99,44%
18:00	287° 13' 36"	-3° 31' 33"	289° 10' 16"	-25° 49' 29"	54' 15"	14' 46,86"	105° 26' 04"	99,39%
19:00	287° 43' 30"	-3° 29' 37"	289° 42' 49"	-25° 43' 36"	54' 15"	14' 47,01"	103° 56' 31"	99,33%
20:00	288° 13' 25"	-3° 27' 40"	290° 15' 21"	-25° 37' 37"	54' 16"	14' 47,16"	102° 33' 24"	99,27%
21:00	288° 43' 19"	-3° 25' 43"	290° 47' 49"	-25° 31' 30"	54' 17"	14' 47,31"	101° 16' 00"	99,21%
22:00	289° 13' 15"	-3° 23' 44"	291° 20' 15"	-25° 25' 15"	54' 17"	14' 47,47"	100° 03' 41"	99,14%
23:00	289° 43' 10"	-3° 21' 44"	291° 52' 38"	-25° 18' 54"	54' 18"	14' 47,63"	98° 55' 54"	99,07%
24:00	290° 13' 07"	-3° 19' 43"	292° 24' 58"	-25° 12' 25"	54' 18"	14' 47,79"	97° 52' 13"	99,00%

01 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	99° 12' 11"	-0,35"	100° 00' 52"	23° 07' 07"	1,0165783	15' 43,98"	23° 26' 17"	-03m 48s
01:00	99° 14' 34"	-0,35"	100° 03' 27"	23° 06' 57"	1,0165792	15' 43,98"	23° 26' 17"	-03m 49s
02:00	99° 16' 57"	-0,34"	100° 06' 02"	23° 06' 47"	1,0165801	15' 43,98"	23° 26' 17"	-03m 49s
03:00	99° 19' 20"	-0,34"	100° 08' 37"	23° 06' 37"	1,0165810	15' 43,98"	23° 26' 17"	-03m 50s
04:00	99° 21' 43"	-0,34"	100° 11' 12"	23° 06' 27"	1,0165819	15' 43,98"	23° 26' 17"	-03m 50s
05:00	99° 24' 05"	-0,33"	100° 13' 47"	23° 06' 17"	1,0165828	15' 43,98"	23° 26' 17"	-03m 51s
06:00	99° 26' 28"	-0,33"	100° 16' 22"	23° 06' 07"	1,0165837	15' 43,98"	23° 26' 17"	-03m 51s
07:00	99° 28' 51"	-0,32"	100° 18' 58"	23° 05' 56"	1,0165846	15' 43,97"	23° 26' 17"	-03m 52s
08:00	99° 31' 14"	-0,32"	100° 21' 33"	23° 05' 46"	1,0165854	15' 43,97"	23° 26' 17"	-03m 52s
09:00	99° 33' 37"	-0,31"	100° 24' 08"	23° 05' 36"	1,0165863	15' 43,97"	23° 26' 17"	-03m 52s
10:00	99° 36' 00"	-0,31"	100° 26' 43"	23° 05' 26"	1,0165872	15' 43,97"	23° 26' 17"	-03m 53s
11:00	99° 38' 23"	-0,31"	100° 29' 18"	23° 05' 15"	1,0165880	15' 43,97"	23° 26' 17"	-03m 53s
12:00	99° 40' 46"	-0,30"	100° 31' 53"	23° 05' 05"	1,0165889	15' 43,97"	23° 26' 17"	-03m 54s
13:00	99° 43' 09"	-0,30"	100° 34' 28"	23° 04' 55"	1,0165897	15' 43,97"	23° 26' 17"	-03m 54s
14:00	99° 45' 32"	-0,29"	100° 37' 03"	23° 04' 44"	1,0165905	15' 43,97"	23° 26' 17"	-03m 55s
15:00	99° 47' 55"	-0,29"	100° 39' 38"	23° 04' 34"	1,0165914	15' 43,97"	23° 26' 17"	-03m 55s
16:00	99° 50' 18"	-0,28"	100° 42' 13"	23° 04' 23"	1,0165922	15' 43,97"	23° 26' 17"	-03m 56s
17:00	99° 52' 41"	-0,28"	100° 44' 48"	23° 04' 12"	1,0165930	15' 43,97"	23° 26' 17"	-03m 56s
18:00	99° 55' 04"	-0,27"	100° 47' 23"	23° 04' 02"	1,0165938	15' 43,97"	23° 26' 17"	-03m 57s
19:00	99° 57' 27"	-0,27"	100° 49' 58"	23° 03' 51"	1,0165946	15' 43,97"	23° 26' 17"	-03m 57s
20:00	99° 59' 50"	-0,27"	100° 52' 33"	23° 03' 40"	1,0165954	15' 43,96"	23° 26' 17"	-03m 58s
21:00	100° 02' 13"	-0,26"	100° 55' 08"	23° 03' 30"	1,0165962	15' 43,96"	23° 26' 17"	-03m 58s
22:00	100° 04' 36"	-0,26"	100° 57' 43"	23° 03' 19"	1,0165970	15' 43,96"	23° 26' 17"	-03m 59s
23:00	100° 06' 59"	-0,25"	101° 00' 18"	23° 03' 08"	1,0165978	15' 43,96"	23° 26' 17"	-03m 59s
24:00	100° 09' 22"	-0,25"	101° 02' 53"	23° 02' 57"	1,0165986	15' 43,96"	23° 26' 17"	-04m 00s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	290° 13' 07"	-3° 19' 43"	292° 24' 58"	-25° 12' 25"	54' 18"	14' 47,79"	97° 52' 13"	99,00%
01:00	290° 43' 03"	-3° 17' 42"	292° 57' 15"	-25° 05' 49"	54' 19"	14' 47,95"	96° 52' 12"	98,93%
02:00	291° 13' 00"	-3° 15' 39"	293° 29' 30"	-24° 59' 06"	54' 20"	14' 48,12"	95° 55' 30"	98,85%
03:00	291° 42' 58"	-3° 13' 35"	294° 01' 41"	-24° 52' 16"	54' 20"	14' 48,29"	95° 01' 49"	98,76%
04:00	292° 12' 56"	-3° 11' 31"	294° 33' 50"	-24° 45' 19"	54' 21"	14' 48,46"	94° 10' 51"	98,68%
05:00	292° 42' 55"	-3° 09' 25"	295° 05' 56"	-24° 38' 15"	54' 21"	14' 48,63"	93° 22' 22"	98,59%
06:00	293° 12' 54"	-3° 07' 19"	295° 37' 59"	-24° 31' 04"	54' 22"	14' 48,81"	92° 36' 09"	98,50%
07:00	293° 42' 54"	-3° 05' 11"	296° 09' 58"	-24° 23' 45"	54' 23"	14' 48,98"	91° 52' 01"	98,40%
08:00	294° 12' 54"	-3° 03' 03"	296° 41' 55"	-24° 16' 20"	54' 23"	14' 49,16"	91° 09' 48"	98,30%
09:00	294° 42' 55"	-3° 00' 54"	297° 13' 49"	-24° 08' 49"	54' 24"	14' 49,35"	90° 29' 20"	98,20%
10:00	295° 12' 56"	-2° 58' 44"	297° 45' 39"	-24° 01' 10"	54' 25"	14' 49,53"	89° 50' 30"	98,10%
11:00	295° 42' 58"	-2° 56' 33"	298° 17' 27"	-23° 53' 25"	54' 25"	14' 49,72"	89° 13' 10"	97,99%
12:00	296° 13' 00"	-2° 54' 21"	298° 49' 11"	-23° 45' 32"	54' 26"	14' 49,91"	88° 37' 13"	97,88%
13:00	296° 43' 04"	-2° 52' 08"	299° 20' 52"	-23° 37' 34"	54' 27"	14' 50,10"	88° 02' 34"	97,77%
14:00	297° 13' 07"	-2° 49' 55"	299° 52' 30"	-23° 29' 28"	54' 27"	14' 50,29"	87° 29' 08"	97,65%
15:00	297° 43' 11"	-2° 47' 40"	300° 24' 05"	-23° 21' 16"	54' 28"	14' 50,49"	86° 56' 49"	97,53%
16:00	298° 13' 16"	-2° 45' 25"	300° 55' 37"	-23° 12' 58"	54' 29"	14' 50,69"	86° 25' 34"	97,41%
17:00	298° 43' 22"	-2° 43' 09"	301° 27' 06"	-23° 04' 33"	54' 30"	14' 50,89"	85° 55' 18"	97,28%
18:00	299° 13' 28"	-2° 40' 52"	301° 58' 31"	-22° 56' 01"	54' 30"	14' 51,09"	85° 25' 58"	97,15%
19:00	299° 43' 34"	-2° 38' 34"	302° 29' 53"	-22° 47' 23"	54' 31"	14' 51,30"	84° 57' 30"	97,02%
20:00	300° 13' 41"	-2° 36' 16"	303° 01' 12"	-22° 38' 39"	54' 32"	14' 51,51"	84° 29' 51"	96,88%
21:00	300° 43' 49"	-2° 33' 56"	303° 32' 28"	-22° 29' 48"	54' 33"	14' 51,72"	84° 03' 00"	96,74%
22:00	301° 13' 58"	-2° 31' 36"	304° 03' 40"	-22° 20' 51"	54' 33"	14' 51,93"	83° 36' 52"	96,60%
23:00	301° 44' 07"	-2° 29' 15"	304° 34' 49"	-22° 11' 48"	54' 34"	14' 52,15"	83° 11' 26"	96,46%
24:00	302° 14' 17"	-2° 26' 54"	305° 05' 55"	-22° 02' 39"	54' 35"	14' 52,36"	82° 46' 40"	96,31%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	100° 09' 22"	-0,25"	101° 02' 53"	23° 02' 57"	1,0165986	15' 43,96"	23° 26' 17"	-04m 00s
01:00	100° 11' 45"	-0,24"	101° 05' 27"	23° 02' 46"	1,0165993	15' 43,96"	23° 26' 17"	-04m 00s
02:00	100° 14' 08"	-0,24"	101° 08' 02"	23° 02' 35"	1,0166001	15' 43,96"	23° 26' 17"	-04m 01s
03:00	100° 16' 31"	-0,23"	101° 10' 37"	23° 02' 24"	1,0166009	15' 43,96"	23° 26' 17"	-04m 01s
04:00	100° 18' 54"	-0,23"	101° 13' 12"	23° 02' 13"	1,0166016	15' 43,96"	23° 26' 17"	-04m 02s
05:00	100° 21' 17"	-0,22"	101° 15' 47"	23° 02' 02"	1,0166024	15' 43,96"	23° 26' 17"	-04m 02s
06:00	100° 23' 40"	-0,22"	101° 18' 22"	23° 01' 51"	1,0166031	15' 43,96"	23° 26' 17"	-04m 02s
07:00	100° 26' 03"	-0,21"	101° 20' 57"	23° 01' 40"	1,0166038	15' 43,96"	23° 26' 17"	-04m 03s
08:00	100° 28' 26"	-0,21"	101° 23' 32"	23° 01' 29"	1,0166046	15' 43,96"	23° 26' 17"	-04m 03s
09:00	100° 30' 49"	-0,20"	101° 26' 07"	23° 01' 18"	1,0166053	15' 43,96"	23° 26' 17"	-04m 04s
10:00	100° 33' 12"	-0,20"	101° 28' 42"	23° 01' 06"	1,0166060	15' 43,95"	23° 26' 17"	-04m 04s
11:00	100° 35' 35"	-0,19"	101° 31' 16"	23° 00' 55"	1,0166067	15' 43,95"	23° 26' 17"	-04m 05s
12:00	100° 37' 58"	-0,19"	101° 33' 51"	23° 00' 44"	1,0166074	15' 43,95"	23° 26' 17"	-04m 05s
13:00	100° 40' 21"	-0,18"	101° 36' 26"	23° 00' 32"	1,0166081	15' 43,95"	23° 26' 17"	-04m 06s
14:00	100° 42' 44"	-0,18"	101° 39' 01"	23° 00' 21"	1,0166088	15' 43,95"	23° 26' 17"	-04m 06s
15:00	100° 45' 07"	-0,17"	101° 41' 36"	23° 00' 09"	1,0166095	15' 43,95"	23° 26' 17"	-04m 07s
16:00	100° 47' 30"	-0,17"	101° 44' 11"	22° 59' 58"	1,0166101	15' 43,95"	23° 26' 17"	-04m 07s
17:00	100° 49' 53"	-0,16"	101° 46' 45"	22° 59' 46"	1,0166108	15' 43,95"	23° 26' 17"	-04m 08s
18:00	100° 52' 16"	-0,16"	101° 49' 20"	22° 59' 34"	1,0166115	15' 43,95"	23° 26' 17"	-04m 08s
19:00	100° 54' 39"	-0,15"	101° 51' 55"	22° 59' 23"	1,0166121	15' 43,95"	23° 26' 17"	-04m 09s
20:00	100° 57' 02"	-0,15"	101° 54' 30"	22° 59' 11"	1,0166128	15' 43,95"	23° 26' 17"	-04m 09s
21:00	100° 59' 25"	-0,14"	101° 57' 05"	22° 58' 59"	1,0166134	15' 43,95"	23° 26' 17"	-04m 09s
22:00	101° 01' 48"	-0,14"	101° 59' 39"	22° 58' 47"	1,0166140	15' 43,95"	23° 26' 17"	-04m 10s
23:00	101° 04' 11"	-0,13"	102° 02' 14"	22° 58' 36"	1,0166147	15' 43,95"	23° 26' 17"	-04m 10s
24:00	101° 06' 34"	-0,13"	102° 04' 49"	22° 58' 24"	1,0166153	15' 43,95"	23° 26' 17"	-04m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	302° 14' 17"	-2° 26' 54"	305° 05' 55"	-22° 02' 39"	54' 35"	14' 52,36"	82° 46' 40"	96,31%
01:00	302° 44' 28"	-2° 24' 31"	305° 36' 58"	-21° 53' 24"	54' 36"	14' 52,58"	82° 22' 32"	96,16%
02:00	303° 14' 39"	-2° 22' 08"	306° 07' 57"	-21° 44' 02"	54' 37"	14' 52,81"	81° 59' 00"	96,00%
03:00	303° 44' 51"	-2° 19' 44"	306° 38' 54"	-21° 34' 35"	54' 38"	14' 53,03"	81° 36' 02"	95,85%
04:00	304° 15' 03"	-2° 17' 19"	307° 09' 47"	-21° 25' 02"	54' 38"	14' 53,26"	81° 13' 36"	95,69%
05:00	304° 45' 17"	-2° 14' 54"	307° 40' 36"	-21° 15' 22"	54' 39"	14' 53,49"	80° 51' 42"	95,52%
06:00	305° 15' 31"	-2° 12' 28"	308° 11' 23"	-21° 05' 37"	54' 40"	14' 53,72"	80° 30' 18"	95,36%
07:00	305° 45' 46"	-2° 10' 01"	308° 42' 06"	-20° 55' 46"	54' 41"	14' 53,96"	80° 09' 23"	95,19%
08:00	306° 16' 01"	-2° 07' 34"	309° 12' 46"	-20° 45' 49"	54' 42"	14' 54,19"	79° 48' 56"	95,01%
09:00	306° 46' 18"	-2° 05' 06"	309° 43' 23"	-20° 35' 47"	54' 43"	14' 54,43"	79° 28' 55"	94,84%
10:00	307° 16' 35"	-2° 02' 37"	310° 13' 57"	-20° 25' 38"	54' 44"	14' 54,67"	79° 09' 19"	94,66%
11:00	307° 46' 53"	-2° 00' 07"	310° 44' 28"	-20° 15' 25"	54' 44"	14' 54,92"	78° 50' 08"	94,48%
12:00	308° 17' 11"	-1° 57' 37"	311° 14' 55"	-20° 05' 05"	54' 45"	14' 55,16"	78° 31' 21"	94,29%
13:00	308° 47' 31"	-1° 55' 06"	311° 45' 19"	-19° 54' 40"	54' 46"	14' 55,41"	78° 12' 57"	94,10%
14:00	309° 17' 51"	-1° 52' 35"	312° 15' 40"	-19° 44' 10"	54' 47"	14' 55,66"	77° 54' 55"	93,91%
15:00	309° 48' 12"	-1° 50' 03"	312° 45' 58"	-19° 33' 34"	54' 48"	14' 55,92"	77° 37' 14"	93,72%
16:00	310° 18' 34"	-1° 47' 30"	313° 16' 13"	-19° 22' 52"	54' 49"	14' 56,17"	77° 19' 54"	93,52%
17:00	310° 48' 56"	-1° 44' 57"	313° 46' 25"	-19° 12' 06"	54' 50"	14' 56,43"	77° 02' 55"	93,32%
18:00	311° 19' 20"	-1° 42' 23"	314° 16' 34"	-19° 01' 14"	54' 51"	14' 56,69"	76° 46' 15"	93,12%
19:00	311° 49' 44"	-1° 39' 49"	314° 46' 40"	-18° 50' 17"	54' 52"	14' 56,96"	76° 29' 54"	92,91%
20:00	312° 20' 10"	-1° 37' 14"	315° 16' 42"	-18° 39' 15"	54' 53"	14' 57,22"	76° 13' 51"	92,70%
21:00	312° 50' 36"	-1° 34' 38"	315° 46' 42"	-18° 28' 07"	54' 54"	14' 57,49"	75° 58' 07"	92,49%
22:00	313° 21' 03"	-1° 32' 02"	316° 16' 39"	-18° 16' 55"	54' 55"	14' 57,76"	75° 42' 40"	92,28%
23:00	313° 51' 31"	-1° 29' 26"	316° 46' 33"	-18° 05' 37"	54' 56"	14' 58,04"	75° 27' 30"	92,06%
24:00	314° 22' 00"	-1° 26' 49"	317° 16' 24"	-17° 54' 15"	54' 57"	14' 58,31"	75° 12' 37"	91,84%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	101° 06' 34"	-0,13"	102° 04' 49"	22° 58' 24"	1,0166153	15' 43,95"	23° 26' 17"	-04m 11s
01:00	101° 08' 57"	-0,12"	102° 07' 24"	22° 58' 12"	1,0166159	15' 43,95"	23° 26' 17"	-04m 11s
02:00	101° 11' 20"	-0,12"	102° 09' 58"	22° 58' 00"	1,0166165	15' 43,94"	23° 26' 17"	-04m 12s
03:00	101° 13' 43"	-0,11"	102° 12' 33"	22° 57' 48"	1,0166171	15' 43,94"	23° 26' 17"	-04m 12s
04:00	101° 16' 06"	-0,11"	102° 15' 08"	22° 57' 36"	1,0166177	15' 43,94"	23° 26' 17"	-04m 13s
05:00	101° 18' 29"	-0,10"	102° 17' 43"	22° 57' 24"	1,0166183	15' 43,94"	23° 26' 17"	-04m 13s
06:00	101° 20' 52"	-0,10"	102° 20' 17"	22° 57' 12"	1,0166189	15' 43,94"	23° 26' 17"	-04m 14s
07:00	101° 23' 15"	-0,09"	102° 22' 52"	22° 56' 59"	1,0166195	15' 43,94"	23° 26' 17"	-04m 14s
08:00	101° 25' 38"	-0,09"	102° 25' 27"	22° 56' 47"	1,0166201	15' 43,94"	23° 26' 17"	-04m 15s
09:00	101° 28' 01"	-0,08"	102° 28' 02"	22° 56' 35"	1,0166206	15' 43,94"	23° 26' 17"	-04m 15s
10:00	101° 30' 24"	-0,08"	102° 30' 36"	22° 56' 23"	1,0166212	15' 43,94"	23° 26' 17"	-04m 15s
11:00	101° 32' 47"	-0,07"	102° 33' 11"	22° 56' 10"	1,0166218	15' 43,94"	23° 26' 17"	-04m 16s
12:00	101° 35' 10"	-0,06"	102° 35' 46"	22° 55' 58"	1,0166223	15' 43,94"	23° 26' 17"	-04m 16s
13:00	101° 37' 33"	-0,06"	102° 38' 20"	22° 55' 46"	1,0166228	15' 43,94"	23° 26' 17"	-04m 17s
14:00	101° 39' 56"	-0,05"	102° 40' 55"	22° 55' 33"	1,0166234	15' 43,94"	23° 26' 17"	-04m 17s
15:00	101° 42' 19"	-0,05"	102° 43' 30"	22° 55' 21"	1,0166239	15' 43,94"	23° 26' 17"	-04m 18s
16:00	101° 44' 42"	-0,04"	102° 46' 04"	22° 55' 08"	1,0166244	15' 43,94"	23° 26' 17"	-04m 18s
17:00	101° 47' 05"	-0,04"	102° 48' 39"	22° 54' 56"	1,0166249	15' 43,94"	23° 26' 17"	-04m 19s
18:00	101° 49' 28"	-0,03"	102° 51' 14"	22° 54' 43"	1,0166254	15' 43,94"	23° 26' 17"	-04m 19s
19:00	101° 51' 51"	-0,03"	102° 53' 48"	22° 54' 30"	1,0166259	15' 43,94"	23° 26' 17"	-04m 20s
20:00	101° 54' 14"	-0,02"	102° 56' 23"	22° 54' 18"	1,0166264	15' 43,94"	23° 26' 17"	-04m 20s
21:00	101° 56' 37"	-0,02"	102° 58' 57"	22° 54' 05"	1,0166269	15' 43,94"	23° 26' 17"	-04m 20s
22:00	101° 59' 00"	-0,01"	103° 01' 32"	22° 53' 52"	1,0166274	15' 43,93"	23° 26' 17"	-04m 21s
23:00	102° 01' 23"	-0,01"	103° 04' 07"	22° 53' 39"	1,0166279	15' 43,93"	23° 26' 17"	-04m 21s
24:00	102° 03' 46"	-0,00"	103° 06' 41"	22° 53' 26"	1,0166284	15' 43,93"	23° 26' 17"	-04m 22s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	314° 22' 00"	-1° 26' 49"	317° 16' 24"	-17° 54' 15"	54' 57"	14' 58,31"	75° 12' 37"	91,84%
01:00	314° 52' 29"	-1° 24' 11"	317° 46' 12"	-17° 42' 47"	54' 58"	14' 58,59"	74° 58' 00"	91,61%
02:00	315° 23' 00"	-1° 21' 33"	318° 15' 57"	-17° 31' 15"	54' 59"	14' 58,87"	74° 43' 39"	91,39%
03:00	315° 53' 32"	-1° 18' 54"	318° 45' 39"	-17° 19' 38"	55' 00"	14' 59,16"	74° 29' 34"	91,16%
04:00	316° 24' 04"	-1° 16' 15"	319° 15' 19"	-17° 07' 56"	55' 01"	14' 59,44"	74° 15' 44"	90,92%
05:00	316° 54' 38"	-1° 13' 36"	319° 44' 56"	-16° 56' 09"	55' 02"	15' 00,00"	74° 02' 09"	90,69%
06:00	317° 25' 12"	-1° 10' 56"	320° 14' 30"	-16° 44' 18"	55' 03"	15' 00,02"	73° 48' 49"	90,45%
07:00	317° 55' 48"	-1° 08' 15"	320° 44' 02"	-16° 32' 22"	55' 04"	15' 00,32"	73° 35' 43"	90,21%
08:00	318° 26' 24"	-1° 05' 34"	321° 13' 31"	-16° 20' 21"	55' 05"	15' 00,61"	73° 22' 51"	89,97%
09:00	318° 57' 02"	-1° 02' 53"	321° 42' 57"	-16° 08' 16"	55' 06"	15' 00,91"	73° 10' 13"	89,72%
10:00	319° 27' 41"	-1° 00' 11"	322° 12' 20"	-15° 56' 06"	55' 08"	15' 01,21"	72° 57' 49"	89,47%
11:00	319° 58' 20"	-0° 57' 29"	322° 41' 42"	-15° 43' 53"	55' 09"	15' 01,52"	72° 45' 38"	89,22%
12:00	320° 29' 01"	-0° 54' 47"	323° 11' 00"	-15° 31' 34"	55' 10"	15' 01,82"	72° 33' 40"	88,96%
13:00	320° 59' 43"	-0° 52' 04"	323° 40' 16"	-15° 19' 11"	55' 11"	15' 02,13"	72° 21' 55"	88,70%
14:00	321° 30' 25"	-0° 49' 20"	324° 09' 30"	-15° 06' 45"	55' 12"	15' 02,44"	72° 10' 23"	88,44%
15:00	322° 01' 09"	-0° 46' 37"	324° 38' 42"	-14° 54' 13"	55' 13"	15' 02,75"	71° 59' 04"	88,18%
16:00	322° 31' 54"	-0° 43' 53"	325° 07' 51"	-14° 41' 38"	55' 14"	15' 03,07"	71° 47' 57"	87,91%
17:00	323° 02' 40"	-0° 41' 09"	325° 36' 57"	-14° 28' 59"	55' 16"	15' 03,39"	71° 37' 02"	87,64%
18:00	323° 33' 27"	-0° 38' 24"	326° 06' 02"	-14° 16' 15"	55' 17"	15' 03,71"	71° 26' 19"	87,37%
19:00	324° 04' 16"	-0° 35' 39"	326° 35' 04"	-14° 03' 28"	55' 18"	15' 04,04"	71° 15' 48"	87,09%
20:00	324° 35' 05"	-0° 32' 54"	327° 04' 05"	-13° 50' 36"	55' 19"	15' 04,36"	71° 05' 29"	86,81%
21:00	325° 05' 56"	-0° 30' 08"	327° 33' 03"	-13° 37' 41"	55' 20"	15' 04,69"	70° 55' 22"	86,53%
22:00	325° 36' 48"	-0° 27' 23"	328° 01' 59"	-13° 24' 41"	55' 22"	15' 05,02"	70° 45' 26"	86,25%
23:00	326° 07' 41"	-0° 24' 37"	328° 30' 53"	-13° 11' 38"	55' 23"	15' 05,36"	70° 35' 41"	85,97%
24:00	326° 38' 35"	-0° 21' 50"	328° 59' 45"	-12° 58' 31"	55' 24"	15' 05,69"	70° 26' 08"	85,68%

04 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	102° 03' 46"	-0,00"	103° 06' 41"	22° 53' 26"	1,0166284	15' 43,93"	23° 26' 17"	-04m 22s
01:00	102° 06' 09"	0,00"	103° 09' 16"	22° 53' 13"	1,0166288	15' 43,93"	23° 26' 17"	-04m 22s
02:00	102° 08' 32"	0,01"	103° 11' 50"	22° 53' 00"	1,0166293	15' 43,93"	23° 26' 17"	-04m 23s
03:00	102° 10' 55"	0,02"	103° 14' 25"	22° 52' 47"	1,0166297	15' 43,93"	23° 26' 17"	-04m 23s
04:00	102° 13' 17"	0,02"	103° 16' 59"	22° 52' 34"	1,0166302	15' 43,93"	23° 26' 17"	-04m 24s
05:00	102° 15' 40"	0,03"	103° 19' 34"	22° 52' 21"	1,0166306	15' 43,93"	23° 26' 17"	-04m 24s
06:00	102° 18' 03"	0,03"	103° 22' 08"	22° 52' 08"	1,0166310	15' 43,93"	23° 26' 17"	-04m 24s
07:00	102° 20' 26"	0,04"	103° 24' 43"	22° 51' 55"	1,0166315	15' 43,93"	23° 26' 17"	-04m 25s
08:00	102° 22' 49"	0,04"	103° 27' 17"	22° 51' 42"	1,0166319	15' 43,93"	23° 26' 17"	-04m 25s
09:00	102° 25' 12"	0,05"	103° 29' 52"	22° 51' 29"	1,0166323	15' 43,93"	23° 26' 17"	-04m 26s
10:00	102° 27' 35"	0,05"	103° 32' 26"	22° 51' 15"	1,0166327	15' 43,93"	23° 26' 17"	-04m 26s
11:00	102° 29' 58"	0,06"	103° 35' 01"	22° 51' 02"	1,0166331	15' 43,93"	23° 26' 17"	-04m 27s
12:00	102° 32' 21"	0,06"	103° 37' 35"	22° 50' 49"	1,0166335	15' 43,93"	23° 26' 17"	-04m 27s
13:00	102° 34' 44"	0,07"	103° 40' 10"	22° 50' 35"	1,0166338	15' 43,93"	23° 26' 17"	-04m 28s
14:00	102° 37' 07"	0,07"	103° 42' 44"	22° 50' 22"	1,0166342	15' 43,93"	23° 26' 17"	-04m 28s
15:00	102° 39' 30"	0,08"	103° 45' 19"	22° 50' 08"	1,0166346	15' 43,93"	23° 26' 17"	-04m 28s
16:00	102° 41' 53"	0,09"	103° 47' 53"	22° 49' 55"	1,0166349	15' 43,93"	23° 26' 17"	-04m 29s
17:00	102° 44' 16"	0,09"	103° 50' 28"	22° 49' 41"	1,0166353	15' 43,93"	23° 26' 17"	-04m 29s
18:00	102° 46' 39"	0,10"	103° 53' 02"	22° 49' 27"	1,0166357	15' 43,93"	23° 26' 17"	-04m 30s
19:00	102° 49' 02"	0,10"	103° 55' 37"	22° 49' 14"	1,0166360	15' 43,93"	23° 26' 17"	-04m 30s
20:00	102° 51' 25"	0,11"	103° 58' 11"	22° 49' 00"	1,0166363	15' 43,93"	23° 26' 17"	-04m 31s
21:00	102° 53' 48"	0,11"	104° 00' 45"	22° 48' 46"	1,0166367	15' 43,93"	23° 26' 17"	-04m 31s
22:00	102° 56' 11"	0,12"	104° 03' 20"	22° 48' 33"	1,0166370	15' 43,93"	23° 26' 17"	-04m 32s
23:00	102° 58' 34"	0,12"	104° 05' 54"	22° 48' 19"	1,0166373	15' 43,93"	23° 26' 17"	-04m 32s
24:00	103° 00' 57"	0,13"	104° 08' 29"	22° 48' 05"	1,0166376	15' 43,93"	23° 26' 17"	-04m 32s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	326° 38' 35"	-0° 21' 50"	328° 59' 45"	-12° 58' 31"	55' 24"	15' 05,69"	70° 26' 08"	85,68%
01:00	327° 09' 30"	-0° 19' 04"	329° 28' 35"	-12° 45' 21"	55' 25"	15' 06,03"	70° 16' 46"	85,39%
02:00	327° 40' 27"	-0° 16' 17"	329° 57' 24"	-12° 32' 06"	55' 27"	15' 06,38"	70° 07' 34"	85,09%
03:00	328° 11' 25"	-0° 13' 30"	330° 26' 10"	-12° 18' 49"	55' 28"	15' 06,72"	69° 58' 34"	84,79%
04:00	328° 42' 24"	-0° 10' 43"	330° 54' 55"	-12° 05' 27"	55' 29"	15' 07,07"	69° 49' 44"	84,50%
05:00	329° 13' 25"	-0° 07' 56"	331° 23' 38"	-11° 52' 02"	55' 30"	15' 07,42"	69° 41' 05"	84,19%
06:00	329° 44' 26"	-0° 05' 09"	331° 52' 19"	-11° 38' 34"	55' 32"	15' 07,77"	69° 32' 37"	83,89%
07:00	330° 15' 29"	-0° 02' 21"	332° 20' 59"	-11° 25' 02"	55' 33"	15' 08,12"	69° 24' 19"	83,58%
08:00	330° 46' 34"	0° 00' 27"	332° 49' 38"	-11° 11' 27"	55' 34"	15' 08,48"	69° 16' 12"	83,27%
09:00	331° 17' 39"	0° 03' 15"	333° 18' 15"	-10° 57' 48"	55' 36"	15' 08,84"	69° 08' 15"	82,96%
10:00	331° 48' 46"	0° 06' 03"	333° 46' 50"	-10° 44' 06"	55' 37"	15' 09,20"	69° 00' 28"	82,64%
11:00	332° 19' 55"	0° 08' 51"	334° 15' 24"	-10° 30' 21"	55' 38"	15' 09,57"	68° 52' 52"	82,33%
12:00	332° 51' 04"	0° 11' 39"	334° 43' 57"	-10° 16' 33"	55' 40"	15' 09,94"	68° 45' 25"	82,01%
13:00	333° 22' 15"	0° 14' 27"	335° 12' 28"	-10° 02' 42"	55' 41"	15' 10,31"	68° 38' 09"	81,68%
14:00	333° 53' 28"	0° 17' 15"	335° 40' 59"	-9° 48' 47"	55' 42"	15' 10,68"	68° 31' 02"	81,36%
15:00	334° 24' 42"	0° 20' 04"	336° 09' 28"	-9° 34' 50"	55' 44"	15' 11,06"	68° 24' 05"	81,03%
16:00	334° 55' 57"	0° 22' 52"	336° 37' 56"	-9° 20' 50"	55' 45"	15' 11,44"	68° 17' 19"	80,70%
17:00	335° 27' 14"	0° 25' 41"	337° 06' 23"	-9° 06' 47"	55' 46"	15' 11,82"	68° 10' 42"	80,37%
18:00	335° 58' 32"	0° 28' 29"	337° 34' 49"	-8° 52' 40"	55' 48"	15' 12,20"	68° 04' 14"	80,03%
19:00	336° 29' 52"	0° 31' 18"	338° 03' 15"	-8° 38' 32"	55' 49"	15' 12,59"	67° 57' 57"	79,70%
20:00	337° 01' 13"	0° 34' 06"	338° 31' 39"	-8° 24' 20"	55' 51"	15' 12,98"	67° 51' 49"	79,36%
21:00	337° 32' 35"	0° 36' 54"	339° 00' 03"	-8° 10' 05"	55' 52"	15' 13,37"	67° 45' 51"	79,02%
22:00	338° 04' 00"	0° 39' 43"	339° 28' 26"	-7° 55' 48"	55' 54"	15' 13,76"	67° 40' 02"	78,67%
23:00	338° 35' 25"	0° 42' 31"	339° 56' 48"	-7° 41' 29"	55' 55"	15' 14,16"	67° 34' 22"	78,32%
24:00	339° 06' 52"	0° 45' 19"	340° 25' 10"	-7° 27' 07"	55' 57"	15' 14,56"	67° 28' 52"	77,97%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	103° 00' 57"	0,13"	104° 08' 29"	22° 48' 05"	1,0166376	15' 43,93"	23° 26' 17"	-04m 32s
01:00	103° 03' 20"	0,13"	104° 11' 03"	22° 47' 51"	1,0166379	15' 43,93"	23° 26' 17"	-04m 33s
02:00	103° 05' 43"	0,14"	104° 13' 37"	22° 47' 37"	1,0166382	15' 43,92"	23° 26' 17"	-04m 33s
03:00	103° 08' 06"	0,14"	104° 16' 12"	22° 47' 23"	1,0166385	15' 43,92"	23° 26' 17"	-04m 34s
04:00	103° 10' 29"	0,15"	104° 18' 46"	22° 47' 09"	1,0166387	15' 43,92"	23° 26' 17"	-04m 34s
05:00	103° 12' 52"	0,15"	104° 21' 20"	22° 46' 55"	1,0166390	15' 43,92"	23° 26' 17"	-04m 35s
06:00	103° 15' 15"	0,16"	104° 23' 55"	22° 46' 41"	1,0166393	15' 43,92"	23° 26' 17"	-04m 35s
07:00	103° 17' 38"	0,16"	104° 26' 29"	22° 46' 27"	1,0166395	15' 43,92"	23° 26' 17"	-04m 35s
08:00	103° 20' 01"	0,17"	104° 29' 03"	22° 46' 12"	1,0166398	15' 43,92"	23° 26' 17"	-04m 36s
09:00	103° 22' 24"	0,18"	104° 31' 38"	22° 45' 58"	1,0166400	15' 43,92"	23° 26' 17"	-04m 36s
10:00	103° 24' 47"	0,18"	104° 34' 12"	22° 45' 44"	1,0166403	15' 43,92"	23° 26' 17"	-04m 37s
11:00	103° 27' 10"	0,19"	104° 36' 46"	22° 45' 30"	1,0166405	15' 43,92"	23° 26' 17"	-04m 37s
12:00	103° 29' 33"	0,19"	104° 39' 21"	22° 45' 15"	1,0166407	15' 43,92"	23° 26' 17"	-04m 38s
13:00	103° 31' 56"	0,20"	104° 41' 55"	22° 45' 01"	1,0166409	15' 43,92"	23° 26' 17"	-04m 38s
14:00	103° 34' 19"	0,20"	104° 44' 29"	22° 44' 46"	1,0166411	15' 43,92"	23° 26' 17"	-04m 38s
15:00	103° 36' 42"	0,21"	104° 47' 03"	22° 44' 32"	1,0166413	15' 43,92"	23° 26' 17"	-04m 39s
16:00	103° 39' 05"	0,21"	104° 49' 38"	22° 44' 17"	1,0166415	15' 43,92"	23° 26' 17"	-04m 39s
17:00	103° 41' 28"	0,22"	104° 52' 12"	22° 44' 03"	1,0166417	15' 43,92"	23° 26' 17"	-04m 40s
18:00	103° 43' 51"	0,22"	104° 54' 46"	22° 43' 48"	1,0166419	15' 43,92"	23° 26' 17"	-04m 40s
19:00	103° 46' 14"	0,23"	104° 57' 20"	22° 43' 34"	1,0166421	15' 43,92"	23° 26' 17"	-04m 41s
20:00	103° 48' 37"	0,23"	104° 59' 55"	22° 43' 19"	1,0166422	15' 43,92"	23° 26' 17"	-04m 41s
21:00	103° 51' 00"	0,24"	105° 02' 29"	22° 43' 04"	1,0166424	15' 43,92"	23° 26' 17"	-04m 41s
22:00	103° 53' 23"	0,24"	105° 05' 03"	22° 42' 49"	1,0166425	15' 43,92"	23° 26' 17"	-04m 42s
23:00	103° 55' 46"	0,25"	105° 07' 37"	22° 42' 35"	1,0166427	15' 43,92"	23° 26' 17"	-04m 42s
24:00	103° 58' 09"	0,25"	105° 10' 11"	22° 42' 20"	1,0166428	15' 43,92"	23° 26' 17"	-04m 43s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	339° 06' 52"	0° 45' 19"	340° 25' 10"	-7° 27' 07"	55' 57"	15' 14,56"	67° 28' 52"	77,97%
01:00	339° 38' 21"	0° 48' 07"	340° 53' 31"	-7° 12' 42"	55' 58"	15' 14,96"	67° 23' 32"	77,62%
02:00	340° 09' 52"	0° 50' 56"	341° 21' 52"	-6° 58' 15"	56' 00"	15' 15,36"	67° 18' 21"	77,27%
03:00	340° 41' 23"	0° 53' 44"	341° 50' 13"	-6° 43' 45"	56' 01"	15' 15,77"	67° 13' 19"	76,91%
04:00	341° 12' 57"	0° 56' 31"	342° 18' 33"	-6° 29' 13"	56' 02"	15' 16,18"	67° 08' 26"	76,55%
05:00	341° 44' 32"	0° 59' 19"	342° 46' 53"	-6° 14' 39"	56' 04"	15' 16,59"	67° 03' 43"	76,19%
06:00	342° 16' 09"	1° 02' 07"	343° 15' 13"	-6° 00' 02"	56' 06"	15' 17,01"	66° 59' 09"	75,83%
07:00	342° 47' 47"	1° 04' 54"	343° 43' 32"	-5° 45' 24"	56' 07"	15' 17,42"	66° 54' 44"	75,47%
08:00	343° 19' 27"	1° 07' 41"	344° 11' 52"	-5° 30' 43"	56' 09"	15' 17,84"	66° 50' 29"	75,10%
09:00	343° 51' 09"	1° 10' 28"	344° 40' 12"	-5° 16' 00"	56' 10"	15' 18,26"	66° 46' 22"	74,73%
10:00	344° 22' 53"	1° 13' 15"	345° 08' 31"	-5° 01' 15"	56' 12"	15' 18,69"	66° 42' 25"	74,36%
11:00	344° 54' 38"	1° 16' 02"	345° 36' 51"	-4° 46' 28"	56' 13"	15' 19,12"	66° 38' 37"	73,98%
12:00	345° 26' 24"	1° 18' 48"	346° 05' 12"	-4° 31' 39"	56' 15"	15' 19,55"	66° 34' 58"	73,61%
13:00	345° 58' 13"	1° 21' 34"	346° 33' 32"	-4° 16' 48"	56' 16"	15' 19,98"	66° 31' 28"	73,23%
14:00	346° 30' 03"	1° 24' 20"	347° 01' 53"	-4° 01' 56"	56' 18"	15' 20,41"	66° 28' 07"	72,85%
15:00	347° 01' 55"	1° 27' 05"	347° 30' 14"	-3° 47' 01"	56' 20"	15' 20,85"	66° 24' 55"	72,47%
16:00	347° 33' 49"	1° 29' 51"	347° 58' 36"	-3° 32' 05"	56' 21"	15' 21,29"	66° 21' 52"	72,08%
17:00	348° 05' 45"	1° 32' 36"	348° 26' 59"	-3° 17' 07"	56' 23"	15' 21,73"	66° 18' 58"	71,70%
18:00	348° 37' 42"	1° 35' 20"	348° 55' 22"	-3° 02' 08"	56' 25"	15' 22,18"	66° 16' 13"	71,31%
19:00	349° 09' 42"	1° 38' 05"	349° 23' 46"	-2° 47' 07"	56' 26"	15' 22,62"	66° 13' 37"	70,92%
20:00	349° 41' 43"	1° 40' 49"	349° 52' 11"	-2° 32' 04"	56' 28"	15' 23,07"	66° 11' 10"	70,53%
21:00	350° 13' 46"	1° 43' 32"	350° 20' 36"	-2° 17' 00"	56' 29"	15' 23,53"	66° 08' 52"	70,13%
22:00	350° 45' 51"	1° 46' 15"	350° 49' 03"	-2° 01' 55"	56' 31"	15' 23,98"	66° 06' 43"	69,74%
23:00	351° 17' 57"	1° 48' 58"	351° 17' 31"	-1° 46' 48"	56' 33"	15' 24,44"	66° 04' 43"	69,34%
24:00	351° 50' 06"	1° 51' 41"	351° 46' 00"	-1° 31' 40"	56' 34"	15' 24,90"	66° 02' 52"	68,94%

06 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	103° 58' 09"	0,25"	105° 10' 11"	22° 42' 20"	1,0166428	15' 43,92"	23° 26' 17"	-04m 43s
01:00	104° 00' 32"	0,26"	105° 12' 46"	22° 42' 05"	1,0166429	15' 43,92"	23° 26' 17"	-04m 43s
02:00	104° 02' 55"	0,26"	105° 15' 20"	22° 41' 50"	1,0166431	15' 43,92"	23° 26' 17"	-04m 44s
03:00	104° 05' 18"	0,27"	105° 17' 54"	22° 41' 35"	1,0166432	15' 43,92"	23° 26' 17"	-04m 44s
04:00	104° 07' 41"	0,27"	105° 20' 28"	22° 41' 20"	1,0166433	15' 43,92"	23° 26' 17"	-04m 44s
05:00	104° 10' 04"	0,28"	105° 23' 02"	22° 41' 05"	1,0166434	15' 43,92"	23° 26' 17"	-04m 45s
06:00	104° 12' 27"	0,28"	105° 25' 36"	22° 40' 50"	1,0166435	15' 43,92"	23° 26' 17"	-04m 45s
07:00	104° 14' 50"	0,29"	105° 28' 10"	22° 40' 34"	1,0166436	15' 43,92"	23° 26' 17"	-04m 46s
08:00	104° 17' 13"	0,29"	105° 30' 44"	22° 40' 19"	1,0166436	15' 43,92"	23° 26' 17"	-04m 46s
09:00	104° 19' 36"	0,30"	105° 33' 19"	22° 40' 04"	1,0166437	15' 43,92"	23° 26' 17"	-04m 46s
10:00	104° 21' 59"	0,30"	105° 35' 53"	22° 39' 49"	1,0166438	15' 43,92"	23° 26' 17"	-04m 47s
11:00	104° 24' 22"	0,31"	105° 38' 27"	22° 39' 33"	1,0166438	15' 43,92"	23° 26' 17"	-04m 47s
12:00	104° 26' 45"	0,31"	105° 41' 01"	22° 39' 18"	1,0166439	15' 43,92"	23° 26' 17"	-04m 48s
13:00	104° 29' 08"	0,32"	105° 43' 35"	22° 39' 03"	1,0166439	15' 43,92"	23° 26' 17"	-04m 48s
14:00	104° 31' 31"	0,32"	105° 46' 09"	22° 38' 47"	1,0166439	15' 43,92"	23° 26' 17"	-04m 49s
15:00	104° 33' 54"	0,32"	105° 48' 43"	22° 38' 32"	1,0166440	15' 43,92"	23° 26' 17"	-04m 49s
16:00	104° 36' 17"	0,33"	105° 51' 17"	22° 38' 16"	1,0166440	15' 43,92"	23° 26' 17"	-04m 49s
17:00	104° 38' 40"	0,33"	105° 53' 51"	22° 38' 01"	1,0166440	15' 43,92"	23° 26' 17"	-04m 50s
18:00	104° 41' 03"	0,34"	105° 56' 25"	22° 37' 45"	1,0166440	15' 43,92"	23° 26' 17"	-04m 50s
19:00	104° 43' 26"	0,34"	105° 58' 59"	22° 37' 30"	1,0166440	15' 43,92"	23° 26' 17"	-04m 51s
20:00	104° 45' 49"	0,35"	106° 01' 33"	22° 37' 14"	1,0166440	15' 43,92"	23° 26' 17"	-04m 51s
21:00	104° 48' 12"	0,35"	106° 04' 07"	22° 36' 58"	1,0166439	15' 43,92"	23° 26' 17"	-04m 51s
22:00	104° 50' 35"	0,36"	106° 06' 41"	22° 36' 42"	1,0166439	15' 43,92"	23° 26' 17"	-04m 52s
23:00	104° 52' 58"	0,36"	106° 09' 15"	22° 36' 27"	1,0166439	15' 43,92"	23° 26' 17"	-04m 52s
24:00	104° 55' 22"	0,37"	106° 11' 49"	22° 36' 11"	1,0166438	15' 43,92"	23° 26' 17"	-04m 53s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	351° 50' 06"	1° 51' 41"	351° 46' 00"	-1° 31' 40"	56' 34"	15' 24,90"	66° 02' 52"	68,94%
01:00	352° 22' 17"	1° 54' 22"	352° 14' 30"	-1° 16' 31"	56' 36"	15' 25,36"	66° 01' 10"	68,54%
02:00	352° 54' 29"	1° 57' 04"	352° 43' 01"	-1° 01' 20"	56' 38"	15' 25,82"	65° 59' 37"	68,13%
03:00	353° 26' 43"	1° 59' 45"	353° 11' 34"	-0° 46' 09"	56' 40"	15' 26,29"	65° 58' 13"	67,73%
04:00	353° 59' 00"	2° 02' 26"	353° 40' 08"	-0° 30' 56"	56' 41"	15' 26,76"	65° 56' 58"	67,32%
05:00	354° 31' 18"	2° 05' 06"	354° 08' 43"	-0° 15' 42"	56' 43"	15' 27,23"	65° 55' 52"	66,91%
06:00	355° 03' 39"	2° 07' 45"	354° 37' 20"	-0° 00' 28"	56' 45"	15' 27,70"	65° 54' 54"	66,50%
07:00	355° 36' 01"	2° 10' 24"	355° 05' 59"	0° 14' 48"	56' 47"	15' 28,17"	65° 54' 06"	66,09%
08:00	356° 08' 25"	2° 13' 03"	355° 34' 40"	0° 30' 04"	56' 48"	15' 28,65"	65° 53' 27"	65,68%
09:00	356° 40' 52"	2° 15' 41"	356° 03' 22"	0° 45' 21"	56' 50"	15' 29,13"	65° 52' 56"	65,26%
10:00	357° 13' 20"	2° 18' 19"	356° 32' 07"	1° 00' 39"	56' 52"	15' 29,61"	65° 52' 35"	64,84%
11:00	357° 45' 51"	2° 20' 55"	357° 00' 53"	1° 15' 58"	56' 54"	15' 30,10"	65° 52' 23"	64,42%
12:00	358° 18' 23"	2° 23' 32"	357° 29' 41"	1° 31' 17"	56' 55"	15' 30,58"	65° 52' 19"	64,00%
13:00	358° 50' 58"	2° 26' 07"	357° 58' 32"	1° 46' 37"	56' 57"	15' 31,07"	65° 52' 25"	63,58%
14:00	359° 23' 35"	2° 28' 42"	358° 27' 25"	2° 01' 57"	56' 59"	15' 31,56"	65° 52' 40"	63,16%
15:00	359° 56' 13"	2° 31' 17"	358° 56' 20"	2° 17' 17"	57' 01"	15' 32,06"	65° 53' 03"	62,73%
16:00	0° 28' 54"	2° 33' 51"	359° 25' 17"	2° 32' 38"	57' 03"	15' 32,55"	65° 53' 36"	62,31%
17:00	1° 01' 38"	2° 36' 24"	359° 54' 17"	2° 48' 00"	57' 04"	15' 33,05"	65° 54' 18"	61,88%
18:00	1° 34' 23"	2° 38' 56"	0° 23' 20"	3° 03' 21"	57' 06"	15' 33,55"	65° 55' 09"	61,45%
19:00	2° 07' 10"	2° 41' 28"	0° 52' 25"	3° 18' 43"	57' 08"	15' 34,05"	65° 56' 09"	61,02%
20:00	2° 40' 00"	2° 43' 59"	1° 21' 33"	3° 34' 04"	57' 10"	15' 34,55"	65° 57' 18"	60,59%
21:00	3° 12' 52"	2° 46' 29"	1° 50' 43"	3° 49' 26"	57' 12"	15' 35,05"	65° 58' 37"	60,15%
22:00	3° 45' 46"	2° 48' 58"	2° 19' 57"	4° 04' 48"	57' 14"	15' 35,56"	66° 00' 04"	59,72%
23:00	4° 18' 42"	2° 51' 27"	2° 49' 13"	4° 20' 10"	57' 15"	15' 36,07"	66° 01' 41"	59,28%
24:00	4° 51' 41"	2° 53' 55"	3° 18' 33"	4° 35' 31"	57' 17"	15' 36,58"	66° 03' 27"	58,85%

07 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	104° 55' 22"	0,37"	106° 11' 49"	22° 36' 11"	1,0166438	15' 43,92"	23° 26' 17"	-04m 53s
01:00	104° 57' 45"	0,37"	106° 14' 23"	22° 35' 55"	1,0166438	15' 43,92"	23° 26' 17"	-04m 53s
02:00	105° 00' 08"	0,37"	106° 16' 57"	22° 35' 39"	1,0166437	15' 43,92"	23° 26' 17"	-04m 53s
03:00	105° 02' 31"	0,38"	106° 19' 31"	22° 35' 23"	1,0166436	15' 43,92"	23° 26' 17"	-04m 54s
04:00	105° 04' 54"	0,38"	106° 22' 05"	22° 35' 07"	1,0166436	15' 43,92"	23° 26' 17"	-04m 54s
05:00	105° 07' 17"	0,39"	106° 24' 39"	22° 34' 51"	1,0166435	15' 43,92"	23° 26' 17"	-04m 55s
06:00	105° 09' 40"	0,39"	106° 27' 13"	22° 34' 35"	1,0166434	15' 43,92"	23° 26' 17"	-04m 55s
07:00	105° 12' 03"	0,40"	106° 29' 47"	22° 34' 19"	1,0166433	15' 43,92"	23° 26' 17"	-04m 55s
08:00	105° 14' 26"	0,40"	106° 32' 20"	22° 34' 03"	1,0166432	15' 43,92"	23° 26' 17"	-04m 56s
09:00	105° 16' 49"	0,40"	106° 34' 54"	22° 33' 46"	1,0166430	15' 43,92"	23° 26' 17"	-04m 56s
10:00	105° 19' 12"	0,41"	106° 37' 28"	22° 33' 30"	1,0166429	15' 43,92"	23° 26' 17"	-04m 57s
11:00	105° 21' 35"	0,41"	106° 40' 02"	22° 33' 14"	1,0166428	15' 43,92"	23° 26' 17"	-04m 57s
12:00	105° 23' 58"	0,42"	106° 42' 36"	22° 32' 57"	1,0166426	15' 43,92"	23° 26' 17"	-04m 57s
13:00	105° 26' 21"	0,42"	106° 45' 10"	22° 32' 41"	1,0166425	15' 43,92"	23° 26' 17"	-04m 58s
14:00	105° 28' 44"	0,42"	106° 47' 44"	22° 32' 25"	1,0166423	15' 43,92"	23° 26' 17"	-04m 58s
15:00	105° 31' 07"	0,43"	106° 50' 17"	22° 32' 08"	1,0166422	15' 43,92"	23° 26' 17"	-04m 59s
16:00	105° 33' 30"	0,43"	106° 52' 51"	22° 31' 52"	1,0166420	15' 43,92"	23° 26' 17"	-04m 59s
17:00	105° 35' 53"	0,44"	106° 55' 25"	22° 31' 35"	1,0166418	15' 43,92"	23° 26' 17"	-04m 59s
18:00	105° 38' 16"	0,44"	106° 57' 59"	22° 31' 19"	1,0166416	15' 43,92"	23° 26' 17"	-05m 00s
19:00	105° 40' 39"	0,44"	107° 00' 33"	22° 31' 02"	1,0166414	15' 43,92"	23° 26' 17"	-05m 00s
20:00	105° 43' 02"	0,45"	107° 03' 06"	22° 30' 45"	1,0166412	15' 43,92"	23° 26' 17"	-05m 01s
21:00	105° 45' 25"	0,45"	107° 05' 40"	22° 30' 29"	1,0166410	15' 43,92"	23° 26' 17"	-05m 01s
22:00	105° 47' 48"	0,45"	107° 08' 14"	22° 30' 12"	1,0166408	15' 43,92"	23° 26' 17"	-05m 01s
23:00	105° 50' 11"	0,46"	107° 10' 48"	22° 29' 55"	1,0166406	15' 43,92"	23° 26' 17"	-05m 02s
24:00	105° 52' 34"	0,46"	107° 13' 21"	22° 29' 38"	1,0166403	15' 43,92"	23° 26' 17"	-05m 02s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	4° 51' 41"	2° 53' 55"	3° 18' 33"	4° 35' 31"	57' 17"	15' 36,58"	66° 03' 27"	58,85%
01:00	5° 24' 42"	2° 56' 22"	3° 47' 56"	4° 50' 53"	57' 19"	15' 37,09"	66° 05' 22"	58,41%
02:00	5° 57' 45"	2° 58' 48"	4° 17' 22"	5° 06' 14"	57' 21"	15' 37,60"	66° 07' 27"	57,97%
03:00	6° 30' 50"	3° 01' 14"	4° 46' 51"	5° 21' 35"	57' 23"	15' 38,12"	66° 09' 40"	57,53%
04:00	7° 03' 58"	3° 03' 39"	5° 16' 24"	5° 36' 55"	57' 25"	15' 38,64"	66° 12' 03"	57,09%
05:00	7° 37' 07"	3° 06' 02"	5° 46' 00"	5° 52' 15"	57' 27"	15' 39,15"	66° 14' 36"	56,64%
06:00	8° 10' 20"	3° 08' 25"	6° 15' 39"	6° 07' 34"	57' 29"	15' 39,67"	66° 17' 17"	56,20%
07:00	8° 43' 34"	3° 10' 47"	6° 45' 23"	6° 22' 53"	57' 31"	15' 40,20"	66° 20' 08"	55,75%
08:00	9° 16' 51"	3° 13' 08"	7° 15' 10"	6° 38' 11"	57' 33"	15' 40,72"	66° 23' 09"	55,31%
09:00	9° 50' 10"	3° 15' 28"	7° 45' 00"	6° 53' 28"	57' 35"	15' 41,25"	66° 26' 19"	54,86%
10:00	10° 23' 32"	3° 17' 48"	8° 14' 55"	7° 08' 44"	57' 36"	15' 41,77"	66° 29' 38"	54,41%
11:00	10° 56' 56"	3° 20' 06"	8° 44' 54"	7° 23' 59"	57' 38"	15' 42,30"	66° 33' 07"	53,96%
12:00	11° 30' 22"	3° 22' 23"	9° 14' 57"	7° 39' 14"	57' 40"	15' 42,83"	66° 36' 45"	53,51%
13:00	12° 03' 51"	3° 24' 39"	9° 45' 04"	7° 54' 27"	57' 42"	15' 43,36"	66° 40' 33"	53,06%
14:00	12° 37' 22"	3° 26' 55"	10° 15' 15"	8° 09' 39"	57' 44"	15' 43,89"	66° 44' 31"	52,61%
15:00	13° 10' 56"	3° 29' 09"	10° 45' 31"	8° 24' 50"	57' 46"	15' 44,42"	66° 48' 38"	52,16%
16:00	13° 44' 32"	3° 31' 22"	11° 15' 50"	8° 40' 00"	57' 48"	15' 44,96"	66° 52' 55"	51,71%
17:00	14° 18' 10"	3° 33' 34"	11° 46' 15"	8° 55' 08"	57' 50"	15' 45,49"	66° 57' 21"	51,25%
18:00	14° 51' 51"	3° 35' 45"	12° 16' 44"	9° 10' 15"	57' 52"	15' 46,03"	67° 01' 58"	50,80%
19:00	15° 25' 34"	3° 37' 55"	12° 47' 18"	9° 25' 21"	57' 54"	15' 46,57"	67° 06' 44"	50,34%
20:00	15° 59' 20"	3° 40' 04"	13° 17' 56"	9° 40' 24"	57' 56"	15' 47,11"	67° 11' 40"	49,89%
21:00	16° 33' 08"	3° 42' 12"	13° 48' 40"	9° 55' 26"	57' 58"	15' 47,65"	67° 16' 45"	49,43%
22:00	17° 06' 59"	3° 44' 19"	14° 19' 28"	10° 10' 27"	58' 00"	15' 48,19"	67° 22' 01"	48,98%
23:00	17° 40' 52"	3° 46' 24"	14° 50' 21"	10° 25' 25"	58' 02"	15' 48,73"	67° 27' 26"	48,52%
24:00	18° 14' 48"	3° 48' 28"	15° 21' 19"	10° 40' 21"	58' 04"	15' 49,27"	67° 33' 02"	48,06%

08 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	105° 52' 34"	0,46"	107° 13' 21"	22° 29' 38"	1,0166403	15' 43,92"	23° 26' 17"	-05m 02s
01:00	105° 54' 57"	0,47"	107° 15' 55"	22° 29' 21"	1,0166401	15' 43,92"	23° 26' 17"	-05m 03s
02:00	105° 57' 20"	0,47"	107° 18' 29"	22° 29' 04"	1,0166398	15' 43,92"	23° 26' 17"	-05m 03s
03:00	105° 59' 43"	0,47"	107° 21' 03"	22° 28' 48"	1,0166395	15' 43,92"	23° 26' 17"	-05m 03s
04:00	106° 02' 06"	0,48"	107° 23' 36"	22° 28' 31"	1,0166393	15' 43,92"	23° 26' 17"	-05m 04s
05:00	106° 04' 29"	0,48"	107° 26' 10"	22° 28' 14"	1,0166390	15' 43,92"	23° 26' 17"	-05m 04s
06:00	106° 06' 52"	0,48"	107° 28' 44"	22° 27' 56"	1,0166387	15' 43,92"	23° 26' 17"	-05m 05s
07:00	106° 09' 15"	0,49"	107° 31' 17"	22° 27' 39"	1,0166384	15' 43,92"	23° 26' 17"	-05m 05s
08:00	106° 11' 38"	0,49"	107° 33' 51"	22° 27' 22"	1,0166381	15' 43,92"	23° 26' 17"	-05m 05s
09:00	106° 14' 01"	0,49"	107° 36' 25"	22° 27' 05"	1,0166378	15' 43,93"	23° 26' 17"	-05m 06s
10:00	106° 16' 24"	0,50"	107° 38' 58"	22° 26' 48"	1,0166375	15' 43,93"	23° 26' 17"	-05m 06s
11:00	106° 18' 47"	0,50"	107° 41' 32"	22° 26' 31"	1,0166371	15' 43,93"	23° 26' 17"	-05m 07s
12:00	106° 21' 11"	0,50"	107° 44' 05"	22° 26' 13"	1,0166368	15' 43,93"	23° 26' 17"	-05m 07s
13:00	106° 23' 34"	0,51"	107° 46' 39"	22° 25' 56"	1,0166364	15' 43,93"	23° 26' 17"	-05m 07s
14:00	106° 25' 57"	0,51"	107° 49' 13"	22° 25' 38"	1,0166361	15' 43,93"	23° 26' 17"	-05m 08s
15:00	106° 28' 20"	0,51"	107° 51' 46"	22° 25' 21"	1,0166357	15' 43,93"	23° 26' 17"	-05m 08s
16:00	106° 30' 43"	0,51"	107° 54' 20"	22° 25' 04"	1,0166353	15' 43,93"	23° 26' 17"	-05m 08s
17:00	106° 33' 06"	0,52"	107° 56' 53"	22° 24' 46"	1,0166349	15' 43,93"	23° 26' 17"	-05m 09s
18:00	106° 35' 29"	0,52"	107° 59' 27"	22° 24' 28"	1,0166345	15' 43,93"	23° 26' 17"	-05m 09s
19:00	106° 37' 52"	0,52"	108° 02' 01"	22° 24' 11"	1,0166341	15' 43,93"	23° 26' 17"	-05m 10s
20:00	106° 40' 15"	0,53"	108° 04' 34"	22° 23' 53"	1,0166337	15' 43,93"	23° 26' 17"	-05m 10s
21:00	106° 42' 38"	0,53"	108° 07' 08"	22° 23' 36"	1,0166333	15' 43,93"	23° 26' 17"	-05m 10s
22:00	106° 45' 01"	0,53"	108° 09' 41"	22° 23' 18"	1,0166329	15' 43,93"	23° 26' 17"	-05m 11s
23:00	106° 47' 24"	0,53"	108° 12' 15"	22° 23' 00"	1,0166324	15' 43,93"	23° 26' 17"	-05m 11s
24:00	106° 49' 47"	0,54"	108° 14' 48"	22° 22' 42"	1,0166320	15' 43,93"	23° 26' 17"	-05m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	18° 14' 48"	3° 48' 28"	15° 21' 19"	10° 40' 21"	58' 04"	15' 49,27"	67° 33' 02"	48,06%
01:00	18° 48' 46"	3° 50' 31"	15° 52' 23"	10° 55' 16"	58' 06"	15' 49,81"	67° 38' 47"	47,60%
02:00	19° 22' 47"	3° 52' 33"	16° 23' 32"	11° 10' 08"	58' 08"	15' 50,36"	67° 44' 43"	47,14%
03:00	19° 56' 50"	3° 54' 34"	16° 54' 46"	11° 24' 58"	58' 10"	15' 50,90"	67° 50' 48"	46,69%
04:00	20° 30' 56"	3° 56' 33"	17° 26' 06"	11° 39' 46"	58' 12"	15' 51,45"	67° 57' 04"	46,23%
05:00	21° 05' 04"	3° 58' 31"	17° 57' 31"	11° 54' 31"	58' 14"	15' 51,99"	68° 03' 30"	45,77%
06:00	21° 39' 15"	4° 00' 28"	18° 29' 01"	12° 09' 14"	58' 16"	15' 52,54"	68° 10' 06"	45,31%
07:00	22° 13' 28"	4° 02' 24"	19° 00' 38"	12° 23' 55"	58' 18"	15' 53,08"	68° 16' 52"	44,85%
08:00	22° 47' 44"	4° 04' 18"	19° 32' 20"	12° 38' 33"	58' 20"	15' 53,63"	68° 23' 49"	44,39%
09:00	23° 22' 03"	4° 06' 11"	20° 04' 08"	12° 53' 08"	58' 22"	15' 54,18"	68° 30' 56"	43,93%
10:00	23° 56' 24"	4° 08' 03"	20° 36' 02"	13° 07' 40"	58' 24"	15' 54,72"	68° 38' 13"	43,47%
11:00	24° 30' 47"	4° 09' 53"	21° 08' 02"	13° 22' 09"	58' 26"	15' 55,27"	68° 45' 41"	43,01%
12:00	25° 05' 13"	4° 11' 42"	21° 40' 08"	13° 36' 35"	58' 28"	15' 55,82"	68° 53' 19"	42,55%
13:00	25° 39' 42"	4° 13' 29"	22° 12' 20"	13° 50' 59"	58' 30"	15' 56,37"	69° 01' 07"	42,09%
14:00	26° 14' 13"	4° 15' 15"	22° 44' 39"	14° 05' 18"	58' 32"	15' 56,91"	69° 09' 07"	41,63%
15:00	26° 48' 47"	4° 17' 00"	23° 17' 03"	14° 19' 35"	58' 34"	15' 57,46"	69° 17' 16"	41,17%
16:00	27° 23' 24"	4° 18' 43"	23° 49' 35"	14° 33' 48"	58' 36"	15' 58,01"	69° 25' 37"	40,71%
17:00	27° 58' 03"	4° 20' 25"	24° 22' 12"	14° 47' 58"	58' 38"	15' 58,55"	69° 34' 08"	40,25%
18:00	28° 32' 45"	4° 22' 05"	24° 54' 57"	15° 02' 04"	58' 40"	15' 59,10"	69° 42' 49"	39,79%
19:00	29° 07' 29"	4° 23' 44"	25° 27' 47"	15° 16' 06"	58' 42"	16' 00,00"	69° 51' 42"	39,33%
20:00	29° 42' 16"	4° 25' 21"	26° 00' 45"	15° 30' 05"	58' 44"	16' 00,19"	70° 00' 45"	38,87%
21:00	30° 17' 05"	4° 26' 57"	26° 33' 49"	15° 43' 59"	58' 46"	16' 00,74"	70° 09' 59"	38,42%
22:00	30° 51' 57"	4° 28' 31"	27° 07' 00"	15° 57' 50"	58' 48"	16' 01,28"	70° 19' 24"	37,96%
23:00	31° 26' 52"	4° 30' 04"	27° 40' 18"	16° 11' 36"	58' 50"	16' 01,83"	70° 29' 00"	37,50%
24:00	32° 01' 49"	4° 31' 35"	28° 13' 44"	16° 25' 18"	58' 52"	16' 02,37"	70° 38' 47"	37,05%

09 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	106° 49' 47"	0,54"	108° 14' 48"	22° 22' 42"	1,0166320	15' 43,93"	23° 26' 17"	-05m 11s
01:00	106° 52' 10"	0,54"	108° 17' 22"	22° 22' 24"	1,0166315	15' 43,93"	23° 26' 17"	-05m 12s
02:00	106° 54' 33"	0,54"	108° 19' 55"	22° 22' 07"	1,0166311	15' 43,93"	23° 26' 17"	-05m 12s
03:00	106° 56' 56"	0,54"	108° 22' 29"	22° 21' 49"	1,0166306	15' 43,93"	23° 26' 17"	-05m 13s
04:00	106° 59' 19"	0,55"	108° 25' 02"	22° 21' 31"	1,0166301	15' 43,93"	23° 26' 17"	-05m 13s
05:00	107° 01' 42"	0,55"	108° 27' 36"	22° 21' 13"	1,0166296	15' 43,93"	23° 26' 17"	-05m 13s
06:00	107° 04' 05"	0,55"	108° 30' 09"	22° 20' 55"	1,0166291	15' 43,93"	23° 26' 17"	-05m 14s
07:00	107° 06' 28"	0,55"	108° 32' 42"	22° 20' 37"	1,0166286	15' 43,93"	23° 26' 17"	-05m 14s
08:00	107° 08' 52"	0,55"	108° 35' 16"	22° 20' 19"	1,0166281	15' 43,93"	23° 26' 17"	-05m 14s
09:00	107° 11' 15"	0,56"	108° 37' 49"	22° 20' 00"	1,0166276	15' 43,93"	23° 26' 17"	-05m 15s
10:00	107° 13' 38"	0,56"	108° 40' 23"	22° 19' 42"	1,0166270	15' 43,94"	23° 26' 17"	-05m 15s
11:00	107° 16' 01"	0,56"	108° 42' 56"	22° 19' 24"	1,0166265	15' 43,94"	23° 26' 17"	-05m 16s
12:00	107° 18' 24"	0,56"	108° 45' 29"	22° 19' 06"	1,0166259	15' 43,94"	23° 26' 17"	-05m 16s
13:00	107° 20' 47"	0,56"	108° 48' 03"	22° 18' 47"	1,0166254	15' 43,94"	23° 26' 17"	-05m 16s
14:00	107° 23' 10"	0,57"	108° 50' 36"	22° 18' 29"	1,0166248	15' 43,94"	23° 26' 17"	-05m 17s
15:00	107° 25' 33"	0,57"	108° 53' 09"	22° 18' 11"	1,0166242	15' 43,94"	23° 26' 17"	-05m 17s
16:00	107° 27' 56"	0,57"	108° 55' 43"	22° 17' 52"	1,0166236	15' 43,94"	23° 26' 17"	-05m 17s
17:00	107° 30' 19"	0,57"	108° 58' 16"	22° 17' 34"	1,0166230	15' 43,94"	23° 26' 17"	-05m 18s
18:00	107° 32' 42"	0,57"	109° 00' 49"	22° 17' 15"	1,0166224	15' 43,94"	23° 26' 17"	-05m 18s
19:00	107° 35' 05"	0,57"	109° 03' 23"	22° 16' 57"	1,0166218	15' 43,94"	23° 26' 17"	-05m 19s
20:00	107° 37' 28"	0,58"	109° 05' 56"	22° 16' 38"	1,0166212	15' 43,94"	23° 26' 17"	-05m 19s
21:00	107° 39' 51"	0,58"	109° 08' 29"	22° 16' 19"	1,0166205	15' 43,94"	23° 26' 17"	-05m 19s
22:00	107° 42' 14"	0,58"	109° 11' 03"	22° 16' 01"	1,0166199	15' 43,94"	23° 26' 17"	-05m 20s
23:00	107° 44' 38"	0,58"	109° 13' 36"	22° 15' 42"	1,0166192	15' 43,94"	23° 26' 17"	-05m 20s
24:00	107° 47' 01"	0,58"	109° 16' 09"	22° 15' 23"	1,0166186	15' 43,94"	23° 26' 17"	-05m 20s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	32° 01' 49"	4° 31' 35"	28° 13' 44"	16° 25' 18"	58' 52"	16' 02,37"	70° 38' 47"	37,05%
01:00	32° 36' 49"	4° 33' 05"	28° 47' 16"	16° 38' 56"	58' 54"	16' 02,91"	70° 48' 45"	36,59%
02:00	33° 11' 51"	4° 34' 33"	29° 20' 55"	16° 52' 30"	58' 56"	16' 03,45"	70° 58' 54"	36,13%
03:00	33° 46' 56"	4° 35' 59"	29° 54' 41"	17° 05' 58"	58' 58"	16' 03,99"	71° 09' 13"	35,68%
04:00	34° 22' 03"	4° 37' 24"	30° 28' 35"	17° 19' 22"	59' 00"	16' 04,53"	71° 19' 45"	35,23%
05:00	34° 57' 13"	4° 38' 47"	31° 02' 36"	17° 32' 42"	59' 02"	16' 05,07"	71° 30' 27"	34,77%
06:00	35° 32' 26"	4° 40' 08"	31° 36' 44"	17° 45' 56"	59' 04"	16' 05,61"	71° 41' 20"	34,32%
07:00	36° 07' 41"	4° 41' 28"	32° 11' 00"	17° 59' 06"	59' 06"	16' 06,15"	71° 52' 25"	33,87%
08:00	36° 42' 59"	4° 42' 46"	32° 45' 23"	18° 12' 10"	59' 08"	16' 06,68"	72° 03' 41"	33,42%
09:00	37° 18' 20"	4° 44' 03"	33° 19' 54"	18° 25' 09"	59' 10"	16' 07,21"	72° 15' 08"	32,97%
10:00	37° 53' 43"	4° 45' 17"	33° 54' 32"	18° 38' 02"	59' 12"	16' 07,75"	72° 26' 47"	32,52%
11:00	38° 29' 08"	4° 46' 30"	34° 29' 18"	18° 50' 50"	59' 14"	16' 08,28"	72° 38' 37"	32,07%
12:00	39° 04' 36"	4° 47' 42"	35° 04' 12"	19° 03' 33"	59' 16"	16' 08,80"	72° 50' 38"	31,63%
13:00	39° 40' 07"	4° 48' 51"	35° 39' 13"	19° 16' 10"	59' 18"	16' 09,33"	73° 02' 51"	31,18%
14:00	40° 15' 40"	4° 49' 59"	36° 14' 22"	19° 28' 41"	59' 20"	16' 09,86"	73° 15' 16"	30,74%
15:00	40° 51' 16"	4° 51' 05"	36° 49' 39"	19° 41' 06"	59' 21"	16' 10,38"	73° 27' 52"	30,29%
16:00	41° 26' 54"	4° 52' 09"	37° 25' 04"	19° 53' 25"	59' 23"	16' 10,90"	73° 40' 39"	29,85%
17:00	42° 02' 35"	4° 53' 11"	38° 00' 36"	20° 05' 37"	59' 25"	16' 11,42"	73° 53' 38"	29,41%
18:00	42° 38' 18"	4° 54' 11"	38° 36' 17"	20° 17' 44"	59' 27"	16' 11,93"	74° 06' 49"	28,97%
19:00	43° 14' 03"	4° 55' 10"	39° 12' 06"	20° 29' 43"	59' 29"	16' 12,45"	74° 20' 11"	28,54%
20:00	43° 49' 52"	4° 56' 07"	39° 48' 02"	20° 41' 37"	59' 31"	16' 12,96"	74° 33' 45"	28,10%
21:00	44° 25' 42"	4° 57' 02"	40° 24' 07"	20° 53' 23"	59' 33"	16' 13,47"	74° 47' 31"	27,66%
22:00	45° 01' 36"	4° 57' 55"	41° 00' 19"	21° 05' 03"	59' 35"	16' 13,98"	75° 01' 29"	27,23%
23:00	45° 37' 31"	4° 58' 46"	41° 36' 40"	21° 16' 36"	59' 36"	16' 14,48"	75° 15' 38"	26,80%
24:00	46° 13' 29"	4° 59' 35"	42° 13' 08"	21° 28' 02"	59' 38"	16' 14,98"	75° 29' 59"	26,37%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	107° 47' 01"	0,58"	109° 16' 09"	22° 15' 23"	1,0166186	15' 43,94"	23° 26' 17"	-05m 20s
01:00	107° 49' 24"	0,58"	109° 18' 42"	22° 15' 04"	1,0166179	15' 43,94"	23° 26' 17"	-05m 21s
02:00	107° 51' 47"	0,58"	109° 21' 16"	22° 14' 46"	1,0166172	15' 43,94"	23° 26' 17"	-05m 21s
03:00	107° 54' 10"	0,58"	109° 23' 49"	22° 14' 27"	1,0166165	15' 43,94"	23° 26' 17"	-05m 21s
04:00	107° 56' 33"	0,58"	109° 26' 22"	22° 14' 08"	1,0166158	15' 43,95"	23° 26' 17"	-05m 22s
05:00	107° 58' 56"	0,59"	109° 28' 55"	22° 13' 49"	1,0166151	15' 43,95"	23° 26' 17"	-05m 22s
06:00	108° 01' 19"	0,59"	109° 31' 28"	22° 13' 30"	1,0166143	15' 43,95"	23° 26' 17"	-05m 22s
07:00	108° 03' 42"	0,59"	109° 34' 02"	22° 13' 11"	1,0166136	15' 43,95"	23° 26' 17"	-05m 23s
08:00	108° 06' 05"	0,59"	109° 36' 35"	22° 12' 52"	1,0166129	15' 43,95"	23° 26' 17"	-05m 23s
09:00	108° 08' 28"	0,59"	109° 39' 08"	22° 12' 33"	1,0166121	15' 43,95"	23° 26' 17"	-05m 24s
10:00	108° 10' 51"	0,59"	109° 41' 41"	22° 12' 13"	1,0166114	15' 43,95"	23° 26' 17"	-05m 24s
11:00	108° 13' 14"	0,59"	109° 44' 14"	22° 11' 54"	1,0166106	15' 43,95"	23° 26' 17"	-05m 24s
12:00	108° 15' 38"	0,59"	109° 46' 47"	22° 11' 35"	1,0166098	15' 43,95"	23° 26' 17"	-05m 25s
13:00	108° 18' 01"	0,59"	109° 49' 21"	22° 11' 16"	1,0166090	15' 43,95"	23° 26' 17"	-05m 25s
14:00	108° 20' 24"	0,59"	109° 51' 54"	22° 10' 56"	1,0166082	15' 43,95"	23° 26' 17"	-05m 25s
15:00	108° 22' 47"	0,59"	109° 54' 27"	22° 10' 37"	1,0166074	15' 43,95"	23° 26' 17"	-05m 26s
16:00	108° 25' 10"	0,59"	109° 57' 00"	22° 10' 18"	1,0166066	15' 43,95"	23° 26' 17"	-05m 26s
17:00	108° 27' 33"	0,59"	109° 59' 33"	22° 09' 58"	1,0166057	15' 43,95"	23° 26' 17"	-05m 26s
18:00	108° 29' 56"	0,59"	110° 02' 06"	22° 09' 39"	1,0166049	15' 43,96"	23° 26' 17"	-05m 27s
19:00	108° 32' 19"	0,59"	110° 04' 39"	22° 09' 19"	1,0166040	15' 43,96"	23° 26' 17"	-05m 27s
20:00	108° 34' 42"	0,59"	110° 07' 12"	22° 09' 00"	1,0166032	15' 43,96"	23° 26' 17"	-05m 27s
21:00	108° 37' 05"	0,59"	110° 09' 45"	22° 08' 40"	1,0166023	15' 43,96"	23° 26' 17"	-05m 28s
22:00	108° 39' 28"	0,59"	110° 12' 18"	22° 08' 20"	1,0166014	15' 43,96"	23° 26' 17"	-05m 28s
23:00	108° 41' 51"	0,59"	110° 14' 51"	22° 08' 01"	1,0166005	15' 43,96"	23° 26' 17"	-05m 28s
24:00	108° 44' 15"	0,59"	110° 17' 24"	22° 07' 41"	1,0165996	15' 43,96"	23° 26' 17"	-05m 29s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	46° 13' 29"	4° 59' 35"	42° 13' 08"	21° 28' 02"	59' 38"	16' 14,98"	75° 29' 59"	26,37%
01:00	46° 49' 30"	5° 00' 22"	42° 49' 45"	21° 39' 20"	59' 40"	16' 15,48"	75° 44' 32"	25,94%
02:00	47° 25' 33"	5° 01' 08"	43° 26' 30"	21° 50' 31"	59' 42"	16' 15,97"	75° 59' 17"	25,52%
03:00	48° 01' 38"	5° 01' 51"	44° 03' 23"	22° 01' 35"	59' 44"	16' 16,47"	76° 14' 13"	25,09%
04:00	48° 37' 45"	5° 02' 33"	44° 40' 24"	22° 12' 31"	59' 46"	16' 16,96"	76° 29' 22"	24,67%
05:00	49° 13' 56"	5° 03' 12"	45° 17' 33"	22° 23' 20"	59' 47"	16' 17,44"	76° 44' 42"	24,25%
06:00	49° 50' 08"	5° 03' 50"	45° 54' 51"	22° 34' 00"	59' 49"	16' 17,93"	77° 00' 14"	23,83%
07:00	50° 26' 23"	5° 04' 25"	46° 32' 16"	22° 44' 33"	59' 51"	16' 18,41"	77° 15' 58"	23,42%
08:00	51° 02' 40"	5° 04' 59"	47° 09' 49"	22° 54' 57"	59' 53"	16' 18,88"	77° 31' 55"	23,00%
09:00	51° 38' 59"	5° 05' 30"	47° 47' 31"	23° 05' 14"	59' 54"	16' 19,35"	77° 48' 03"	22,59%
10:00	52° 15' 21"	5° 06' 00"	48° 25' 21"	23° 15' 22"	59' 56"	16' 19,82"	78° 04' 23"	22,18%
11:00	52° 51' 45"	5° 06' 27"	49° 03' 18"	23° 25' 21"	59' 58"	16' 20,29"	78° 20' 55"	21,77%
12:00	53° 28' 11"	5° 06' 53"	49° 41' 24"	23° 35' 12"	59' 59"	16' 20,75"	78° 37' 39"	21,37%
13:00	54° 04' 39"	5° 07' 16"	50° 19' 37"	23° 44' 54"	00' 01"	16' 21,21"	78° 54' 35"	20,96%
14:00	54° 41' 10"	5° 07' 38"	50° 57' 59"	23° 54' 27"	00' 03"	16' 21,66"	79° 11' 44"	20,56%
15:00	55° 17' 43"	5° 07' 57"	51° 36' 28"	24° 03' 51"	00' 04"	16' 22,11"	79° 29' 04"	20,17%
16:00	55° 54' 18"	5° 08' 14"	52° 15' 06"	24° 13' 06"	00' 06"	16' 22,55"	79° 46' 36"	19,77%
17:00	56° 30' 55"	5° 08' 29"	52° 53' 51"	24° 22' 12"	00' 08"	16' 22,99"	80° 04' 21"	19,38%
18:00	57° 07' 35"	5° 08' 42"	53° 32' 44"	24° 31' 09"	00' 09"	16' 23,43"	80° 22' 18"	18,99%
19:00	57° 44' 16"	5° 08' 53"	54° 11' 45"	24° 39' 56"	00' 11"	16' 23,86"	80° 40' 26"	18,60%
20:00	58° 21' 00"	5° 09' 02"	54° 50' 53"	24° 48' 33"	00' 12"	16' 24,29"	80° 58' 47"	18,21%
21:00	58° 57' 45"	5° 09' 09"	55° 30' 09"	24° 57' 00"	00' 14"	16' 24,71"	81° 17' 20"	17,83%
22:00	59° 34' 33"	5° 09' 14"	56° 09' 32"	25° 05' 18"	00' 16"	16' 25,13"	81° 36' 06"	17,45%
23:00	60° 11' 22"	5° 09' 16"	56° 49' 03"	25° 13' 26"	00' 17"	16' 25,54"	81° 55' 03"	17,08%
24:00	60° 48' 14"	5° 09' 17"	57° 28' 41"	25° 21' 23"	00' 19"	16' 25,95"	82° 14' 13"	16,70%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	108° 44' 15"	0,59"	110° 17' 24"	22° 07' 41"	1,0165996	15' 43,96"	23° 26' 17"	-05m 29s
01:00	108° 46' 38"	0,59"	110° 19' 57"	22° 07' 21"	1,0165987	15' 43,96"	23° 26' 17"	-05m 29s
02:00	108° 49' 01"	0,59"	110° 22' 30"	22° 07' 01"	1,0165978	15' 43,96"	23° 26' 17"	-05m 29s
03:00	108° 51' 24"	0,59"	110° 25' 03"	22° 06' 42"	1,0165969	15' 43,96"	23° 26' 17"	-05m 30s
04:00	108° 53' 47"	0,59"	110° 27' 36"	22° 06' 22"	1,0165959	15' 43,96"	23° 26' 17"	-05m 30s
05:00	108° 56' 10"	0,59"	110° 30' 09"	22° 06' 02"	1,0165950	15' 43,96"	23° 26' 17"	-05m 30s
06:00	108° 58' 33"	0,59"	110° 32' 42"	22° 05' 42"	1,0165940	15' 43,97"	23° 26' 17"	-05m 31s
07:00	109° 00' 56"	0,59"	110° 35' 15"	22° 05' 22"	1,0165930	15' 43,97"	23° 26' 17"	-05m 31s
08:00	109° 03' 19"	0,59"	110° 37' 48"	22° 05' 02"	1,0165921	15' 43,97"	23° 26' 17"	-05m 32s
09:00	109° 05' 42"	0,59"	110° 40' 21"	22° 04' 42"	1,0165911	15' 43,97"	23° 26' 17"	-05m 32s
10:00	109° 08' 06"	0,59"	110° 42' 54"	22° 04' 22"	1,0165901	15' 43,97"	23° 26' 17"	-05m 32s
11:00	109° 10' 29"	0,59"	110° 45' 26"	22° 04' 01"	1,0165890	15' 43,97"	23° 26' 17"	-05m 33s
12:00	109° 12' 52"	0,59"	110° 47' 59"	22° 03' 41"	1,0165880	15' 43,97"	23° 26' 17"	-05m 33s
13:00	109° 15' 15"	0,59"	110° 50' 32"	22° 03' 21"	1,0165870	15' 43,97"	23° 26' 17"	-05m 33s
14:00	109° 17' 38"	0,59"	110° 53' 05"	22° 03' 01"	1,0165859	15' 43,97"	23° 26' 17"	-05m 34s
15:00	109° 20' 01"	0,58"	110° 55' 38"	22° 02' 40"	1,0165849	15' 43,97"	23° 26' 17"	-05m 34s
16:00	109° 22' 24"	0,58"	110° 58' 11"	22° 02' 20"	1,0165838	15' 43,98"	23° 26' 17"	-05m 34s
17:00	109° 24' 47"	0,58"	111° 00' 43"	22° 02' 00"	1,0165827	15' 43,98"	23° 26' 17"	-05m 35s
18:00	109° 27' 10"	0,58"	111° 03' 16"	22° 01' 39"	1,0165817	15' 43,98"	23° 26' 17"	-05m 35s
19:00	109° 29' 33"	0,58"	111° 05' 49"	22° 01' 19"	1,0165806	15' 43,98"	23° 26' 17"	-05m 35s
20:00	109° 31' 57"	0,58"	111° 08' 22"	22° 00' 58"	1,0165795	15' 43,98"	23° 26' 17"	-05m 35s
21:00	109° 34' 20"	0,58"	111° 10' 55"	22° 00' 38"	1,0165783	15' 43,98"	23° 26' 17"	-05m 36s
22:00	109° 36' 43"	0,58"	111° 13' 27"	22° 00' 17"	1,0165772	15' 43,98"	23° 26' 17"	-05m 36s
23:00	109° 39' 06"	0,57"	111° 16' 00"	21° 59' 56"	1,0165761	15' 43,98"	23° 26' 17"	-05m 36s
24:00	109° 41' 29"	0,57"	111° 18' 33"	21° 59' 36"	1,0165749	15' 43,98"	23° 26' 17"	-05m 37s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	60° 48' 14"	5° 09' 17"	57° 28' 41"	25° 21' 23"	00' 19"	16' 25,95"	82° 14' 13"	16,70%
01:00	61° 25' 08"	5° 09' 15"	58° 08' 27"	25° 29' 11"	00' 20"	16' 26,35"	82° 33' 35"	16,33%
02:00	62° 02' 03"	5° 09' 11"	58° 48' 20"	25° 36' 48"	00' 22"	16' 26,74"	82° 53' 09"	15,96%
03:00	62° 39' 01"	5° 09' 05"	59° 28' 19"	25° 44' 14"	00' 23"	16' 27,14"	83° 12' 56"	15,60%
04:00	63° 16' 00"	5° 08' 57"	60° 08' 26"	25° 51' 30"	00' 24"	16' 27,52"	83° 32' 54"	15,24%
05:00	63° 53' 01"	5° 08' 46"	60° 48' 40"	25° 58' 35"	00' 26"	16' 27,90"	83° 53' 06"	14,88%
06:00	64° 30' 04"	5° 08' 34"	61° 29' 01"	26° 05' 30"	00' 27"	16' 28,28"	84° 13' 29"	14,52%
07:00	65° 07' 09"	5° 08' 19"	62° 09' 28"	26° 12' 13"	00' 28"	16' 28,65"	84° 34' 06"	14,17%
08:00	65° 44' 16"	5° 08' 02"	62° 50' 02"	26° 18' 46"	00' 30"	16' 29,01"	84° 54' 54"	13,82%
09:00	66° 21' 24"	5° 07' 43"	63° 30' 42"	26° 25' 07"	00' 31"	16' 29,37"	85° 15' 56"	13,48%
10:00	66° 58' 34"	5° 07' 22"	64° 11' 29"	26° 31' 17"	00' 32"	16' 29,72"	85° 37' 10"	13,14%
11:00	67° 35' 46"	5° 06' 59"	64° 52' 22"	26° 37' 16"	00' 34"	16' 30,07"	85° 58' 36"	12,80%
12:00	68° 12' 59"	5° 06' 33"	65° 33' 21"	26° 43' 03"	00' 35"	16' 30,41"	86° 20' 16"	12,47%
13:00	68° 50' 14"	5° 06' 05"	66° 14' 26"	26° 48' 39"	00' 36"	16' 30,74"	86° 42' 08"	12,13%
14:00	69° 27' 31"	5° 05' 36"	66° 55' 37"	26° 54' 03"	00' 37"	16' 31,07"	87° 04' 13"	11,81%
15:00	70° 04' 49"	5° 05' 03"	67° 36' 53"	26° 59' 15"	00' 39"	16' 31,39"	87° 26' 32"	11,48%
16:00	70° 42' 09"	5° 04' 29"	68° 18' 15"	27° 04' 15"	00' 40"	16' 31,71"	87° 49' 04"	11,16%
17:00	71° 19' 30"	5° 03' 53"	68° 59' 42"	27° 09' 04"	00' 41"	16' 32,02"	88° 11' 49"	10,85%
18:00	71° 56' 53"	5° 03' 14"	69° 41' 15"	27° 13' 40"	00' 42"	16' 32,32"	88° 34' 48"	10,53%
19:00	72° 34' 17"	5° 02' 33"	70° 22' 52"	27° 18' 05"	00' 43"	16' 32,61"	88° 58' 00"	10,23%
20:00	73° 11' 42"	5° 01' 50"	71° 04' 35"	27° 22' 17"	00' 44"	16' 32,90"	89° 21' 27"	9,92%
21:00	73° 49' 09"	5° 01' 05"	71° 46' 22"	27° 26' 17"	00' 45"	16' 33,18"	89° 45' 08"	9,62%
22:00	74° 26' 37"	5° 00' 18"	72° 28' 13"	27° 30' 04"	00' 46"	16' 33,46"	90° 09' 03"	9,32%
23:00	75° 04' 06"	4° 59' 28"	73° 10' 09"	27° 33' 39"	00' 47"	16' 33,73"	90° 33' 13"	9,03%
24:00	75° 41' 37"	4° 58' 36"	73° 52' 09"	27° 37' 02"	00' 48"	16' 33,99"	90° 57' 38"	8,74%

12 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	109° 41' 29"	0,57"	111° 18' 33"	21° 59' 36"	1,0165749	15' 43,98"	23° 26' 17"	-05m 37s
01:00	109° 43' 52"	0,57"	111° 21' 06"	21° 59' 15"	1,0165738	15' 43,98"	23° 26' 17"	-05m 37s
02:00	109° 46' 15"	0,57"	111° 23' 38"	21° 58' 54"	1,0165726	15' 43,99"	23° 26' 17"	-05m 37s
03:00	109° 48' 38"	0,57"	111° 26' 11"	21° 58' 34"	1,0165714	15' 43,99"	23° 26' 17"	-05m 38s
04:00	109° 51' 02"	0,57"	111° 28' 44"	21° 58' 13"	1,0165702	15' 43,99"	23° 26' 17"	-05m 38s
05:00	109° 53' 25"	0,56"	111° 31' 16"	21° 57' 52"	1,0165690	15' 43,99"	23° 26' 17"	-05m 38s
06:00	109° 55' 48"	0,56"	111° 33' 49"	21° 57' 31"	1,0165678	15' 43,99"	23° 26' 17"	-05m 39s
07:00	109° 58' 11"	0,56"	111° 36' 22"	21° 57' 10"	1,0165666	15' 43,99"	23° 26' 17"	-05m 39s
08:00	110° 00' 34"	0,56"	111° 38' 54"	21° 56' 49"	1,0165653	15' 43,99"	23° 26' 17"	-05m 39s
09:00	110° 02' 57"	0,56"	111° 41' 27"	21° 56' 28"	1,0165641	15' 43,99"	23° 26' 17"	-05m 40s
10:00	110° 05' 20"	0,55"	111° 43' 59"	21° 56' 07"	1,0165628	15' 43,99"	23° 26' 17"	-05m 40s
11:00	110° 07' 43"	0,55"	111° 46' 32"	21° 55' 46"	1,0165616	15' 44,00"	23° 26' 17"	-05m 40s
12:00	110° 10' 06"	0,55"	111° 49' 05"	21° 55' 25"	1,0165603	15' 44,00"	23° 26' 17"	-05m 41s
13:00	110° 12' 30"	0,55"	111° 51' 37"	21° 55' 03"	1,0165590	15' 44,00"	23° 26' 17"	-05m 41s
14:00	110° 14' 53"	0,55"	111° 54' 10"	21° 54' 42"	1,0165577	15' 44,00"	23° 26' 17"	-05m 41s
15:00	110° 17' 16"	0,54"	111° 56' 42"	21° 54' 21"	1,0165564	15' 44,00"	23° 26' 17"	-05m 42s
16:00	110° 19' 39"	0,54"	111° 59' 15"	21° 54' 00"	1,0165551	15' 44,00"	23° 26' 17"	-05m 42s
17:00	110° 22' 02"	0,54"	112° 01' 47"	21° 53' 38"	1,0165538	15' 44,00"	23° 26' 17"	-05m 42s
18:00	110° 24' 25"	0,54"	112° 04' 20"	21° 53' 17"	1,0165524	15' 44,00"	23° 26' 17"	-05m 43s
19:00	110° 26' 48"	0,53"	112° 06' 52"	21° 52' 56"	1,0165511	15' 44,01"	23° 26' 17"	-05m 43s
20:00	110° 29' 11"	0,53"	112° 09' 25"	21° 52' 34"	1,0165497	15' 44,01"	23° 26' 17"	-05m 43s
21:00	110° 31' 35"	0,53"	112° 11' 57"	21° 52' 13"	1,0165483	15' 44,01"	23° 26' 17"	-05m 43s
22:00	110° 33' 58"	0,53"	112° 14' 30"	21° 51' 51"	1,0165469	15' 44,01"	23° 26' 17"	-05m 44s
23:00	110° 36' 21"	0,52"	112° 17' 02"	21° 51' 30"	1,0165455	15' 44,01"	23° 26' 17"	-05m 44s
24:00	110° 38' 44"	0,52"	112° 19' 35"	21° 51' 08"	1,0165441	15' 44,01"	23° 26' 17"	-05m 44s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	75° 41' 37"	4° 58' 36"	73° 52' 09"	27° 37' 02"	00' 48"	16' 33,99"	90° 57' 38"	8,74%
01:00	76° 19' 09"	4° 57' 43"	74° 34' 13"	27° 40' 12"	00' 49"	16' 34,24"	91° 22' 18"	8,46%
02:00	76° 56' 42"	4° 56' 47"	75° 16' 21"	27° 43' 09"	00' 50"	16' 34,49"	91° 47' 14"	8,18%
03:00	77° 34' 16"	4° 55' 48"	75° 58' 33"	27° 45' 54"	00' 51"	16' 34,72"	92° 12' 26"	7,90%
04:00	78° 11' 51"	4° 54' 48"	76° 40' 48"	27° 48' 26"	00' 52"	16' 34,96"	92° 37' 55"	7,63%
05:00	78° 49' 27"	4° 53' 46"	77° 23' 06"	27° 50' 45"	00' 52"	16' 35,18"	93° 03' 41"	7,36%
06:00	79° 27' 05"	4° 52' 41"	78° 05' 27"	27° 52' 51"	00' 53"	16' 35,40"	93° 29' 45"	7,10%
07:00	80° 04' 43"	4° 51' 34"	78° 47' 51"	27° 54' 45"	00' 54"	16' 35,61"	93° 56' 06"	6,84%
08:00	80° 42' 22"	4° 50' 25"	79° 30' 17"	27° 56' 25"	00' 55"	16' 35,81"	94° 22' 47"	6,58%
09:00	81° 20' 02"	4° 49' 14"	80° 12' 46"	27° 57' 52"	00' 55"	16' 36,00"	94° 49' 48"	6,33%
10:00	81° 57' 43"	4° 48' 01"	80° 55' 17"	27° 59' 07"	00' 56"	16' 36,19"	95° 17' 09"	6,09%
11:00	82° 35' 25"	4° 46' 46"	81° 37' 50"	28° 00' 08"	00' 57"	16' 36,37"	95° 44' 52"	5,85%
12:00	83° 13' 08"	4° 45' 28"	82° 20' 25"	28° 00' 56"	00' 57"	16' 36,54"	96° 12' 57"	5,61%
13:00	83° 50' 51"	4° 44' 09"	83° 03' 01"	28° 01' 31"	00' 58"	16' 36,70"	96° 41' 25"	5,38%
14:00	84° 28' 35"	4° 42' 47"	83° 45' 39"	28° 01' 53"	00' 59"	16' 36,85"	97° 10' 19"	5,15%
15:00	85° 06' 19"	4° 41' 23"	84° 28' 17"	28° 02' 02"	00' 59"	16' 37,00"	97° 39' 39"	4,93%
16:00	85° 44' 05"	4° 39' 58"	85° 10' 57"	28° 01' 58"	01' 00"	16' 37,14"	98° 09' 26"	4,71%
17:00	86° 21' 50"	4° 38' 30"	85° 53' 37"	28° 01' 40"	01' 00"	16' 37,27"	98° 39' 43"	4,49%
18:00	86° 59' 37"	4° 37' 00"	86° 36' 18"	28° 01' 09"	01' 01"	16' 37,39"	99° 10' 32"	4,29%
19:00	87° 37' 24"	4° 35' 28"	87° 18' 59"	28° 00' 25"	01' 01"	16' 37,50"	99° 41' 54"	4,08%
20:00	88° 15' 11"	4° 33' 54"	88° 01' 40"	27° 59' 28"	01' 01"	16' 37,61"	100° 13' 51"	3,88%
21:00	88° 52' 59"	4° 32' 18"	88° 44' 21"	27° 58' 17"	01' 02"	16' 37,71"	100° 46' 27"	3,69%
22:00	89° 30' 47"	4° 30' 40"	89° 27' 01"	27° 56' 54"	01' 02"	16' 37,80"	101° 19' 44"	3,50%
23:00	90° 08' 35"	4° 29' 00"	90° 09' 41"	27° 55' 17"	01' 02"	16' 37,88"	101° 53' 46"	3,31%
24:00	90° 46' 24"	4° 27' 19"	90° 52' 20"	27° 53' 27"	01' 03"	16' 37,95"	102° 28' 35"	3,13%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	110° 38' 44"	0,52"	112° 19' 35"	21° 51' 08"	1,0165441	15' 44,01"	23° 26' 17"	-05m 44s
01:00	110° 41' 07"	0,52"	112° 22' 07"	21° 50' 46"	1,0165427	15' 44,01"	23° 26' 17"	-05m 45s
02:00	110° 43' 30"	0,51"	112° 24' 40"	21° 50' 25"	1,0165413	15' 44,01"	23° 26' 17"	-05m 45s
03:00	110° 45' 53"	0,51"	112° 27' 12"	21° 50' 03"	1,0165399	15' 44,02"	23° 26' 17"	-05m 45s
04:00	110° 48' 16"	0,51"	112° 29' 44"	21° 49' 41"	1,0165384	15' 44,02"	23° 26' 17"	-05m 46s
05:00	110° 50' 40"	0,50"	112° 32' 17"	21° 49' 19"	1,0165369	15' 44,02"	23° 26' 17"	-05m 46s
06:00	110° 53' 03"	0,50"	112° 34' 49"	21° 48' 57"	1,0165355	15' 44,02"	23° 26' 17"	-05m 46s
07:00	110° 55' 26"	0,50"	112° 37' 22"	21° 48' 36"	1,0165340	15' 44,02"	23° 26' 17"	-05m 47s
08:00	110° 57' 49"	0,49"	112° 39' 54"	21° 48' 14"	1,0165325	15' 44,02"	23° 26' 17"	-05m 47s
09:00	111° 00' 12"	0,49"	112° 42' 26"	21° 47' 52"	1,0165310	15' 44,02"	23° 26' 17"	-05m 47s
10:00	111° 02' 35"	0,49"	112° 44' 59"	21° 47' 30"	1,0165295	15' 44,03"	23° 26' 17"	-05m 47s
11:00	111° 04' 58"	0,48"	112° 47' 31"	21° 47' 08"	1,0165280	15' 44,03"	23° 26' 17"	-05m 48s
12:00	111° 07' 22"	0,48"	112° 50' 03"	21° 46' 46"	1,0165264	15' 44,03"	23° 26' 17"	-05m 48s
13:00	111° 09' 45"	0,48"	112° 52' 35"	21° 46' 23"	1,0165249	15' 44,03"	23° 26' 17"	-05m 48s
14:00	111° 12' 08"	0,47"	112° 55' 08"	21° 46' 01"	1,0165233	15' 44,03"	23° 26' 17"	-05m 49s
15:00	111° 14' 31"	0,47"	112° 57' 40"	21° 45' 39"	1,0165217	15' 44,03"	23° 26' 17"	-05m 49s
16:00	111° 16' 54"	0,47"	113° 00' 12"	21° 45' 17"	1,0165202	15' 44,03"	23° 26' 17"	-05m 49s
17:00	111° 19' 17"	0,46"	113° 02' 44"	21° 44' 55"	1,0165186	15' 44,04"	23° 26' 17"	-05m 49s
18:00	111° 21' 40"	0,46"	113° 05' 17"	21° 44' 32"	1,0165170	15' 44,04"	23° 26' 17"	-05m 50s
19:00	111° 24' 04"	0,46"	113° 07' 49"	21° 44' 10"	1,0165154	15' 44,04"	23° 26' 17"	-05m 50s
20:00	111° 26' 27"	0,45"	113° 10' 21"	21° 43' 48"	1,0165137	15' 44,04"	23° 26' 17"	-05m 50s
21:00	111° 28' 50"	0,45"	113° 12' 53"	21° 43' 25"	1,0165121	15' 44,04"	23° 26' 17"	-05m 51s
22:00	111° 31' 13"	0,44"	113° 15' 25"	21° 43' 03"	1,0165104	15' 44,04"	23° 26' 17"	-05m 51s
23:00	111° 33' 36"	0,44"	113° 17' 58"	21° 42' 40"	1,0165088	15' 44,04"	23° 26' 17"	-05m 51s
24:00	111° 35' 59"	0,44"	113° 20' 30"	21° 42' 18"	1,0165071	15' 44,05"	23° 26' 17"	-05m 51s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	90° 46' 24"	4° 27' 19"	90° 52' 20"	27° 53' 27"	01' 03"	16' 37,95"	102° 28' 35"	3,13%
01:00	91° 24' 12"	4° 25' 35"	91° 34' 58"	27° 51' 23"	01' 03"	16' 38,01"	103° 04' 17"	2,96%
02:00	92° 02' 01"	4° 23' 49"	92° 17' 34"	27° 49' 07"	01' 03"	16' 38,07"	103° 40' 56"	2,79%
03:00	92° 39' 51"	4° 22' 01"	93° 00' 09"	27° 46' 38"	01' 03"	16' 38,12"	104° 18' 37"	2,62%
04:00	93° 17' 40"	4° 20' 11"	93° 42' 43"	27° 43' 55"	01' 03"	16' 38,15"	104° 57' 25"	2,46%
05:00	93° 55' 29"	4° 18' 20"	94° 25' 14"	27° 41' 00"	01' 03"	16' 38,18"	105° 37' 29"	2,31%
06:00	94° 33' 19"	4° 16' 26"	95° 07' 43"	27° 37' 51"	01' 04"	16' 38,20"	106° 18' 54"	2,16%
07:00	95° 11' 08"	4° 14' 31"	95° 50' 10"	27° 34' 29"	01' 04"	16' 38,22"	107° 01' 51"	2,02%
08:00	95° 48' 57"	4° 12' 34"	96° 32' 34"	27° 30' 55"	01' 04"	16' 38,22"	107° 46' 28"	1,88%
09:00	96° 26' 46"	4° 10' 34"	97° 14' 56"	27° 27' 08"	01' 04"	16' 38,22"	108° 32' 58"	1,74%
10:00	97° 04' 35"	4° 08' 34"	97° 57' 15"	27° 23' 07"	01' 04"	16' 38,20"	109° 21' 34"	1,61%
11:00	97° 42' 24"	4° 06' 31"	98° 39' 30"	27° 18' 55"	01' 03"	16' 38,18"	110° 12' 30"	1,49%
12:00	98° 20' 12"	4° 04' 26"	99° 21' 42"	27° 14' 29"	01' 03"	16' 38,15"	111° 06' 07"	1,37%
13:00	98° 58' 01"	4° 02' 20"	100° 03' 51"	27° 09' 51"	01' 03"	16' 38,11"	112° 02' 43"	1,26%
14:00	99° 35' 49"	4° 00' 12"	100° 45' 56"	27° 05' 00"	01' 03"	16' 38,06"	113° 02' 45"	1,15%
15:00	100° 13' 36"	3° 58' 02"	101° 27' 57"	26° 59' 57"	01' 03"	16' 38,01"	114° 06' 42"	1,04%
16:00	100° 51' 23"	3° 55' 50"	102° 09' 54"	26° 54' 41"	01' 03"	16' 37,94"	115° 15' 10"	0,95%
17:00	101° 29' 10"	3° 53' 37"	102° 51' 46"	26° 49' 13"	01' 02"	16' 37,87"	116° 28' 51"	0,85%
18:00	102° 06' 56"	3° 51' 22"	103° 33' 34"	26° 43' 32"	01' 02"	16' 37,78"	117° 48' 36"	0,76%
19:00	102° 44' 42"	3° 49' 06"	104° 15' 18"	26° 37' 40"	01' 02"	16' 37,69"	119° 15' 29"	0,68%
20:00	103° 22' 27"	3° 46' 47"	104° 56' 57"	26° 31' 35"	01' 01"	16' 37,59"	120° 50' 46"	0,61%
21:00	104° 00' 11"	3° 44' 27"	105° 38' 30"	26° 25' 18"	01' 01"	16' 37,48"	122° 36' 03"	0,53%
22:00	104° 37' 55"	3° 42' 06"	106° 19' 59"	26° 18' 50"	01' 00"	16' 37,36"	124° 33' 20"	0,47%
23:00	105° 15' 38"	3° 39' 43"	107° 01' 22"	26° 12' 09"	01' 00"	16' 37,24"	126° 45' 06"	0,41%
24:00	105° 53' 20"	3° 37' 18"	107° 42' 40"	26° 05' 17"	01' 00"	16' 37,10"	129° 14' 30"	0,35%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	111° 35' 59"	0,44"	113° 20' 30"	21° 42' 18"	1,0165071	15' 44,05"	23° 26' 17"	-05m 51s
01:00	111° 38' 22"	0,43"	113° 23' 02"	21° 41' 55"	1,0165054	15' 44,05"	23° 26' 17"	-05m 52s
02:00	111° 40' 46"	0,43"	113° 25' 34"	21° 41' 32"	1,0165038	15' 44,05"	23° 26' 17"	-05m 52s
03:00	111° 43' 09"	0,42"	113° 28' 06"	21° 41' 10"	1,0165021	15' 44,05"	23° 26' 17"	-05m 52s
04:00	111° 45' 32"	0,42"	113° 30' 38"	21° 40' 47"	1,0165003	15' 44,05"	23° 26' 17"	-05m 53s
05:00	111° 47' 55"	0,42"	113° 33' 10"	21° 40' 24"	1,0164986	15' 44,05"	23° 26' 17"	-05m 53s
06:00	111° 50' 18"	0,41"	113° 35' 42"	21° 40' 02"	1,0164969	15' 44,06"	23° 26' 17"	-05m 53s
07:00	111° 52' 41"	0,41"	113° 38' 14"	21° 39' 39"	1,0164951	15' 44,06"	23° 26' 17"	-05m 53s
08:00	111° 55' 04"	0,40"	113° 40' 46"	21° 39' 16"	1,0164934	15' 44,06"	23° 26' 17"	-05m 54s
09:00	111° 57' 28"	0,40"	113° 43' 18"	21° 38' 53"	1,0164916	15' 44,06"	23° 26' 17"	-05m 54s
10:00	111° 59' 51"	0,39"	113° 45' 50"	21° 38' 30"	1,0164898	15' 44,06"	23° 26' 17"	-05m 54s
11:00	112° 02' 14"	0,39"	113° 48' 22"	21° 38' 07"	1,0164880	15' 44,06"	23° 26' 17"	-05m 55s
12:00	112° 04' 37"	0,38"	113° 50' 54"	21° 37' 44"	1,0164862	15' 44,07"	23° 26' 17"	-05m 55s
13:00	112° 07' 00"	0,38"	113° 53' 26"	21° 37' 21"	1,0164844	15' 44,07"	23° 26' 17"	-05m 55s
14:00	112° 09' 23"	0,38"	113° 55' 58"	21° 36' 58"	1,0164826	15' 44,07"	23° 26' 17"	-05m 55s
15:00	112° 11' 46"	0,37"	113° 58' 30"	21° 36' 35"	1,0164808	15' 44,07"	23° 26' 17"	-05m 56s
16:00	112° 14' 10"	0,37"	114° 01' 02"	21° 36' 12"	1,0164789	15' 44,07"	23° 26' 17"	-05m 56s
17:00	112° 16' 33"	0,36"	114° 03' 34"	21° 35' 49"	1,0164771	15' 44,07"	23° 26' 17"	-05m 56s
18:00	112° 18' 56"	0,36"	114° 06' 06"	21° 35' 25"	1,0164752	15' 44,08"	23° 26' 17"	-05m 57s
19:00	112° 21' 19"	0,35"	114° 08' 38"	21° 35' 02"	1,0164733	15' 44,08"	23° 26' 17"	-05m 57s
20:00	112° 23' 42"	0,35"	114° 11' 10"	21° 34' 39"	1,0164714	15' 44,08"	23° 26' 17"	-05m 57s
21:00	112° 26' 05"	0,34"	114° 13' 42"	21° 34' 15"	1,0164695	15' 44,08"	23° 26' 17"	-05m 57s
22:00	112° 28' 28"	0,34"	114° 16' 14"	21° 33' 52"	1,0164676	15' 44,08"	23° 26' 17"	-05m 58s
23:00	112° 30' 52"	0,33"	114° 18' 46"	21° 33' 29"	1,0164657	15' 44,08"	23° 26' 17"	-05m 58s
24:00	112° 33' 15"	0,33"	114° 21' 17"	21° 33' 05"	1,0164638	15' 44,09"	23° 26' 17"	-05m 58s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	105° 53' 20"	3° 37' 18"	107° 42' 40"	26° 05' 17"	01' 00"	16' 37,10"	129° 14' 30"	0,35%
01:00	106° 31' 01"	3° 34' 52"	108° 23' 53"	25° 58' 13"	00' 59"	16' 36,96"	132° 05' 34"	0,30%
02:00	107° 08' 42"	3° 32' 24"	109° 04' 59"	25° 50' 58"	00' 58"	16' 36,81"	135° 23' 23"	0,25%
03:00	107° 46' 21"	3° 29' 55"	109° 46' 00"	25° 43' 31"	00' 58"	16' 36,65"	139° 14' 22"	0,21%
04:00	108° 24' 00"	3° 27' 25"	110° 26' 55"	25° 35' 53"	00' 57"	16' 36,48"	143° 46' 30"	0,18%
05:00	109° 01' 38"	3° 24' 52"	111° 07' 43"	25° 28' 04"	00' 57"	16' 36,30"	149° 09' 15"	0,15%
06:00	109° 39' 15"	3° 22' 19"	111° 48' 26"	25° 20' 03"	00' 56"	16' 36,11"	155° 32' 54"	0,12%
07:00	110° 16' 50"	3° 19' 44"	112° 29' 02"	25° 11' 52"	00' 55"	16' 35,92"	163° 06' 33"	0,10%
08:00	110° 54' 25"	3° 17' 08"	113° 09' 32"	25° 03' 30"	00' 54"	16' 35,71"	171° 53' 59"	0,09%
09:00	111° 31' 58"	3° 14' 30"	113° 49' 55"	24° 54' 56"	00' 54"	16' 35,50"	181° 47' 37"	0,08%
10:00	112° 09' 31"	3° 11' 51"	114° 30' 11"	24° 46' 13"	00' 53"	16' 35,28"	192° 23' 47"	0,08%
11:00	112° 47' 02"	3° 09' 10"	115° 10' 20"	24° 37' 19"	00' 52"	16' 35,05"	203° 05' 09"	0,08%
12:00	113° 24' 32"	3° 06' 29"	115° 50' 23"	24° 28' 14"	00' 51"	16' 34,82"	213° 12' 33"	0,09%
13:00	114° 02' 00"	3° 03' 46"	116° 30' 19"	24° 18' 59"	00' 50"	16' 34,57"	222° 18' 03"	0,10%
14:00	114° 39' 27"	3° 01' 02"	117° 10' 07"	24° 09' 34"	00' 49"	16' 34,32"	230° 10' 08"	0,12%
15:00	115° 16' 53"	2° 58' 16"	117° 49' 48"	23° 59' 59"	00' 48"	16' 34,06"	236° 50' 11"	0,14%
16:00	115° 54' 18"	2° 55' 30"	118° 29' 23"	23° 50' 14"	00' 47"	16' 33,79"	242° 26' 26"	0,17%
17:00	116° 31' 41"	2° 52' 42"	119° 08' 49"	23° 40' 19"	00' 46"	16' 33,51"	247° 09' 06"	0,20%
18:00	117° 09' 02"	2° 49' 53"	119° 48' 09"	23° 30' 15"	00' 45"	16' 33,23"	251° 08' 00"	0,24%
19:00	117° 46' 22"	2° 47' 03"	120° 27' 21"	23° 20' 01"	00' 44"	16' 32,93"	254° 31' 31"	0,28%
20:00	118° 23' 41"	2° 44' 12"	121° 06' 25"	23° 09' 38"	00' 43"	16' 32,63"	257° 26' 27"	0,33%
21:00	119° 00' 58"	2° 41' 20"	121° 45' 22"	22° 59' 06"	00' 42"	16' 32,32"	259° 58' 14"	0,39%
22:00	119° 38' 13"	2° 38' 27"	122° 24' 11"	22° 48' 24"	00' 41"	16' 32,01"	262° 11' 08"	0,44%
23:00	120° 15' 27"	2° 35' 32"	123° 02' 53"	22° 37' 34"	00' 40"	16' 31,68"	264° 08' 32"	0,51%
24:00	120° 52' 39"	2° 32' 37"	123° 41' 27"	22° 26' 35"	00' 38"	16' 31,35"	265° 53' 04"	0,58%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	112° 33' 15"	0,33"	114° 21' 17"	21° 33' 05"	1,0164638	15' 44,09"	23° 26' 17"	-05m 58s
01:00	112° 35' 38"	0,32"	114° 23' 49"	21° 32' 42"	1,0164618	15' 44,09"	23° 26' 17"	-05m 58s
02:00	112° 38' 01"	0,32"	114° 26' 21"	21° 32' 18"	1,0164599	15' 44,09"	23° 26' 17"	-05m 59s
03:00	112° 40' 24"	0,31"	114° 28' 53"	21° 31' 54"	1,0164579	15' 44,09"	23° 26' 17"	-05m 59s
04:00	112° 42' 47"	0,31"	114° 31' 25"	21° 31' 31"	1,0164559	15' 44,09"	23° 26' 17"	-05m 59s
05:00	112° 45' 11"	0,30"	114° 33' 56"	21° 31' 07"	1,0164540	15' 44,10"	23° 26' 17"	-05m 59s
06:00	112° 47' 34"	0,30"	114° 36' 28"	21° 30' 44"	1,0164520	15' 44,10"	23° 26' 17"	-06m 00s
07:00	112° 49' 57"	0,29"	114° 39' 00"	21° 30' 20"	1,0164499	15' 44,10"	23° 26' 17"	-06m 00s
08:00	112° 52' 20"	0,29"	114° 41' 32"	21° 29' 56"	1,0164479	15' 44,10"	23° 26' 17"	-06m 00s
09:00	112° 54' 43"	0,28"	114° 44' 03"	21° 29' 32"	1,0164459	15' 44,10"	23° 26' 17"	-06m 00s
10:00	112° 57' 06"	0,28"	114° 46' 35"	21° 29' 08"	1,0164439	15' 44,11"	23° 26' 17"	-06m 01s
11:00	112° 59' 29"	0,27"	114° 49' 07"	21° 28' 44"	1,0164418	15' 44,11"	23° 26' 17"	-06m 01s
12:00	113° 01' 53"	0,27"	114° 51' 38"	21° 28' 21"	1,0164397	15' 44,11"	23° 26' 17"	-06m 01s
13:00	113° 04' 16"	0,26"	114° 54' 10"	21° 27' 57"	1,0164377	15' 44,11"	23° 26' 17"	-06m 01s
14:00	113° 06' 39"	0,26"	114° 56' 42"	21° 27' 33"	1,0164356	15' 44,11"	23° 26' 17"	-06m 02s
15:00	113° 09' 02"	0,25"	114° 59' 13"	21° 27' 09"	1,0164335	15' 44,11"	23° 26' 17"	-06m 02s
16:00	113° 11' 25"	0,25"	115° 01' 45"	21° 26' 44"	1,0164314	15' 44,12"	23° 26' 17"	-06m 02s
17:00	113° 13' 48"	0,24"	115° 04' 16"	21° 26' 20"	1,0164293	15' 44,12"	23° 26' 17"	-06m 02s
18:00	113° 16' 12"	0,24"	115° 06' 48"	21° 25' 56"	1,0164271	15' 44,12"	23° 26' 17"	-06m 03s
19:00	113° 18' 35"	0,23"	115° 09' 20"	21° 25' 32"	1,0164250	15' 44,12"	23° 26' 17"	-06m 03s
20:00	113° 20' 58"	0,23"	115° 11' 51"	21° 25' 08"	1,0164229	15' 44,12"	23° 26' 17"	-06m 03s
21:00	113° 23' 21"	0,22"	115° 14' 23"	21° 24' 44"	1,0164207	15' 44,13"	23° 26' 17"	-06m 03s
22:00	113° 25' 44"	0,21"	115° 16' 54"	21° 24' 19"	1,0164185	15' 44,13"	23° 26' 17"	-06m 04s
23:00	113° 28' 07"	0,21"	115° 19' 26"	21° 23' 55"	1,0164163	15' 44,13"	23° 26' 17"	-06m 04s
24:00	113° 30' 30"	0,20"	115° 21' 57"	21° 23' 31"	1,0164142	15' 44,13"	23° 26' 17"	-06m 04s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	120° 52' 39"	2° 32' 37"	123° 41' 27"	22° 26' 35"	00' 38"	16' 31,35"	265° 53' 04"	0,58%
01:00	121° 29' 49"	2° 29' 41"	124° 19' 53"	22° 15' 27"	00' 37"	16' 31,01"	267° 26' 51"	0,65%
02:00	122° 06' 57"	2° 26' 44"	124° 58' 11"	22° 04' 10"	00' 36"	16' 30,67"	268° 51' 34"	0,73%
03:00	122° 44' 04"	2° 23' 46"	125° 36' 22"	21° 52' 45"	00' 35"	16' 30,31"	270° 08' 36"	0,82%
04:00	123° 21' 09"	2° 20' 47"	126° 14' 25"	21° 41' 12"	00' 33"	16' 29,95"	271° 19' 02"	0,91%
05:00	123° 58' 12"	2° 17' 47"	126° 52' 19"	21° 29' 31"	00' 32"	16' 29,58"	272° 23' 47"	1,00%
06:00	124° 35' 13"	2° 14' 47"	127° 30' 06"	21° 17' 42"	00' 31"	16' 29,20"	273° 23' 36"	1,10%
07:00	125° 12' 12"	2° 11' 45"	128° 07' 45"	21° 05' 45"	00' 29"	16' 28,82"	274° 19' 06"	1,20%
08:00	125° 49' 09"	2° 08' 43"	128° 45' 16"	20° 53' 40"	00' 28"	16' 28,43"	275° 10' 48"	1,31%
09:00	126° 26' 05"	2° 05' 40"	129° 22' 40"	20° 41' 27"	00' 26"	16' 28,03"	275° 59' 09"	1,43%
10:00	127° 02' 58"	2° 02' 37"	129° 59' 55"	20° 29' 08"	00' 25"	16' 27,63"	276° 44' 31"	1,54%
11:00	127° 39' 49"	1° 59' 32"	130° 37' 02"	20° 16' 40"	00' 23"	16' 27,22"	277° 27' 12"	1,67%
12:00	128° 16' 38"	1° 56' 27"	131° 14' 02"	20° 04' 06"	00' 22"	16' 26,80"	278° 07' 30"	1,80%
13:00	128° 53' 25"	1° 53' 21"	131° 50' 53"	19° 51' 25"	00' 20"	16' 26,38"	278° 45' 38"	1,93%
14:00	129° 30' 10"	1° 50' 15"	132° 27' 37"	19° 38' 37"	00' 19"	16' 25,95"	279° 21' 49"	2,07%
15:00	130° 06' 53"	1° 47' 08"	133° 04' 12"	19° 25' 42"	00' 17"	16' 25,51"	279° 56' 12"	2,21%
16:00	130° 43' 34"	1° 44' 01"	133° 40' 40"	19° 12' 40"	00' 15"	16' 25,07"	280° 28' 58"	2,36%
17:00	131° 20' 12"	1° 40' 53"	134° 17' 00"	18° 59' 32"	00' 14"	16' 24,62"	281° 00' 14"	2,51%
18:00	131° 56' 48"	1° 37' 44"	134° 53' 12"	18° 46' 18"	00' 12"	16' 24,16"	281° 30' 08"	2,66%
19:00	132° 33' 22"	1° 34' 35"	135° 29' 17"	18° 32' 58"	00' 10"	16' 23,70"	281° 58' 45"	2,83%
20:00	133° 09' 54"	1° 31' 25"	136° 05' 13"	18° 19' 31"	00' 09"	16' 23,23"	282° 26' 12"	2,99%
21:00	133° 46' 23"	1° 28' 15"	136° 41' 02"	18° 05' 59"	00' 07"	16' 22,76"	282° 52' 33"	3,16%
22:00	134° 22' 50"	1° 25' 05"	137° 16' 43"	17° 52' 21"	00' 05"	16' 22,28"	283° 17' 54"	3,34%
23:00	134° 59' 15"	1° 21' 54"	137° 52' 16"	17° 38' 37"	00' 03"	16' 21,79"	283° 42' 17"	3,51%
24:00	135° 35' 37"	1° 18' 43"	138° 27' 42"	17° 24' 47"	00' 02"	16' 21,30"	284° 05' 46"	3,70%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	113° 30' 30"	0,20"	115° 21' 57"	21° 23' 31"	1,0164142	15' 44,13"	23° 26' 17"	-06m 04s
01:00	113° 32' 54"	0,20"	115° 24' 29"	21° 23' 06"	1,0164120	15' 44,13"	23° 26' 17"	-06m 04s
02:00	113° 35' 17"	0,19"	115° 27' 00"	21° 22' 42"	1,0164097	15' 44,14"	23° 26' 17"	-06m 05s
03:00	113° 37' 40"	0,19"	115° 29' 32"	21° 22' 17"	1,0164075	15' 44,14"	23° 26' 17"	-06m 05s
04:00	113° 40' 03"	0,18"	115° 32' 03"	21° 21' 53"	1,0164053	15' 44,14"	23° 26' 17"	-06m 05s
05:00	113° 42' 26"	0,18"	115° 34' 35"	21° 21' 28"	1,0164030	15' 44,14"	23° 26' 17"	-06m 05s
06:00	113° 44' 49"	0,17"	115° 37' 06"	21° 21' 03"	1,0164008	15' 44,15"	23° 26' 17"	-06m 06s
07:00	113° 47' 13"	0,17"	115° 39' 37"	21° 20' 39"	1,0163985	15' 44,15"	23° 26' 17"	-06m 06s
08:00	113° 49' 36"	0,16"	115° 42' 09"	21° 20' 14"	1,0163962	15' 44,15"	23° 26' 17"	-06m 06s
09:00	113° 51' 59"	0,15"	115° 44' 40"	21° 19' 49"	1,0163940	15' 44,15"	23° 26' 17"	-06m 06s
10:00	113° 54' 22"	0,15"	115° 47' 12"	21° 19' 25"	1,0163917	15' 44,15"	23° 26' 17"	-06m 07s
11:00	113° 56' 45"	0,14"	115° 49' 43"	21° 19' 00"	1,0163893	15' 44,16"	23° 26' 17"	-06m 07s
12:00	113° 59' 08"	0,14"	115° 52' 14"	21° 18' 35"	1,0163870	15' 44,16"	23° 26' 17"	-06m 07s
13:00	114° 01' 32"	0,13"	115° 54' 46"	21° 18' 10"	1,0163847	15' 44,16"	23° 26' 17"	-06m 07s
14:00	114° 03' 55"	0,13"	115° 57' 17"	21° 17' 45"	1,0163824	15' 44,16"	23° 26' 17"	-06m 08s
15:00	114° 06' 18"	0,12"	115° 59' 48"	21° 17' 20"	1,0163800	15' 44,16"	23° 26' 17"	-06m 08s
16:00	114° 08' 41"	0,11"	116° 02' 20"	21° 16' 55"	1,0163776	15' 44,17"	23° 26' 17"	-06m 08s
17:00	114° 11' 04"	0,11"	116° 04' 51"	21° 16' 30"	1,0163753	15' 44,17"	23° 26' 17"	-06m 08s
18:00	114° 13' 27"	0,10"	116° 07' 22"	21° 16' 05"	1,0163729	15' 44,17"	23° 26' 17"	-06m 08s
19:00	114° 15' 51"	0,10"	116° 09' 53"	21° 15' 40"	1,0163705	15' 44,17"	23° 26' 17"	-06m 09s
20:00	114° 18' 14"	0,09"	116° 12' 25"	21° 15' 15"	1,0163681	15' 44,18"	23° 26' 17"	-06m 09s
21:00	114° 20' 37"	0,09"	116° 14' 56"	21° 14' 50"	1,0163657	15' 44,18"	23° 26' 17"	-06m 09s
22:00	114° 23' 00"	0,08"	116° 17' 27"	21° 14' 25"	1,0163633	15' 44,18"	23° 26' 17"	-06m 09s
23:00	114° 25' 23"	0,08"	116° 19' 58"	21° 13' 59"	1,0163608	15' 44,18"	23° 26' 17"	-06m 10s
24:00	114° 27' 46"	0,07"	116° 22' 29"	21° 13' 34"	1,0163584	15' 44,18"	23° 26' 17"	-06m 10s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	135° 35' 37"	1° 18' 43"	138° 27' 42"	17° 24' 47"	00' 02"	16' 21,30"	284° 05' 46"	3,70%
01:00	136° 11' 57"	1° 15' 32"	139° 03' 00"	17° 10' 53"	00' 00"	16' 20,81"	284° 28' 26"	3,89%
02:00	136° 48' 15"	1° 12' 20"	139° 38' 10"	16° 56' 53"	59' 58"	16' 20,30"	284° 50' 18"	4,08%
03:00	137° 24' 30"	1° 09' 08"	140° 13' 13"	16° 42' 48"	59' 56"	16' 19,80"	285° 11' 25"	4,27%
04:00	138° 00' 42"	1° 05' 55"	140° 48' 09"	16° 28' 38"	59' 54"	16' 19,28"	285° 31' 50"	4,47%
05:00	138° 36' 53"	1° 02' 43"	141° 22' 57"	16° 14' 23"	59' 52"	16' 18,77"	285° 51' 35"	4,68%
06:00	139° 13' 00"	0° 59' 30"	141° 57' 38"	16° 00' 03"	59' 50"	16' 18,24"	286° 10' 42"	4,89%
07:00	139° 49' 05"	0° 56' 17"	142° 32' 11"	15° 45' 39"	59' 48"	16' 17,72"	286° 29' 13"	5,10%
08:00	140° 25' 08"	0° 53' 04"	143° 06' 37"	15° 31' 11"	59' 46"	16' 17,18"	286° 47' 09"	5,32%
09:00	141° 01' 08"	0° 49' 50"	143° 40' 56"	15° 16' 38"	59' 44"	16' 16,65"	287° 04' 32"	5,54%
10:00	141° 37' 06"	0° 46' 37"	144° 15' 08"	15° 02' 01"	59' 42"	16' 16,11"	287° 21' 24"	5,77%
11:00	142° 13' 00"	0° 43' 23"	144° 49' 12"	14° 47' 19"	59' 40"	16' 15,56"	287° 37' 45"	5,99%
12:00	142° 48' 53"	0° 40' 10"	145° 23' 10"	14° 32' 34"	59' 38"	16' 15,01"	287° 53' 38"	6,23%
13:00	143° 24' 42"	0° 36' 56"	145° 57' 01"	14° 17' 45"	59' 36"	16' 14,46"	288° 09' 02"	6,47%
14:00	144° 00' 29"	0° 33' 42"	146° 30' 44"	14° 02' 52"	59' 34"	16' 13,90"	288° 23' 59"	6,71%
15:00	144° 36' 14"	0° 30' 29"	147° 04' 21"	13° 47' 56"	59' 32"	16' 13,33"	288° 38' 31"	6,95%
16:00	145° 11' 56"	0° 27' 15"	147° 37' 51"	13° 32' 56"	59' 30"	16' 12,77"	288° 52' 37"	7,20%
17:00	145° 47' 35"	0° 24' 01"	148° 11' 15"	13° 17' 53"	59' 28"	16' 12,20"	289° 06' 19"	7,45%
18:00	146° 23' 11"	0° 20' 48"	148° 44' 32"	13° 02' 47"	59' 26"	16' 11,62"	289° 19' 38"	7,71%
19:00	146° 58' 45"	0° 17' 34"	149° 17' 42"	12° 47' 38"	59' 24"	16' 11,04"	289° 32' 34"	7,97%
20:00	147° 34' 16"	0° 14' 21"	149° 50' 46"	12° 32' 25"	59' 22"	16' 10,46"	289° 45' 08"	8,23%
21:00	148° 09' 44"	0° 11' 08"	150° 23' 43"	12° 17' 10"	59' 20"	16' 09,88"	289° 57' 21"	8,50%
22:00	148° 45' 10"	0° 07' 55"	150° 56' 34"	12° 01' 52"	59' 17"	16' 09,29"	290° 09' 13"	8,77%
23:00	149° 20' 33"	0° 04' 42"	151° 29' 18"	11° 46' 31"	59' 15"	16' 08,70"	290° 20' 44"	9,04%
24:00	149° 55' 53"	0° 01' 29"	152° 01' 57"	11° 31' 08"	59' 13"	16' 08,10"	290° 31' 56"	9,32%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	114° 27' 46"	0,07"	116° 22' 29"	21° 13' 34"	1,0163584	15' 44,18"	23° 26' 17"	-06m 10s
01:00	114° 30' 09"	0,06"	116° 25' 00"	21° 13' 09"	1,0163559	15' 44,19"	23° 26' 17"	-06m 10s
02:00	114° 32' 33"	0,06"	116° 27' 32"	21° 12' 43"	1,0163535	15' 44,19"	23° 26' 17"	-06m 10s
03:00	114° 34' 56"	0,05"	116° 30' 03"	21° 12' 18"	1,0163510	15' 44,19"	23° 26' 17"	-06m 10s
04:00	114° 37' 19"	0,05"	116° 32' 34"	21° 11' 53"	1,0163485	15' 44,19"	23° 26' 17"	-06m 11s
05:00	114° 39' 42"	0,04"	116° 35' 05"	21° 11' 27"	1,0163460	15' 44,20"	23° 26' 17"	-06m 11s
06:00	114° 42' 05"	0,04"	116° 37' 36"	21° 11' 02"	1,0163435	15' 44,20"	23° 26' 17"	-06m 11s
07:00	114° 44' 28"	0,03"	116° 40' 07"	21° 10' 36"	1,0163410	15' 44,20"	23° 26' 17"	-06m 11s
08:00	114° 46' 52"	0,03"	116° 42' 38"	21° 10' 11"	1,0163385	15' 44,20"	23° 26' 17"	-06m 12s
09:00	114° 49' 15"	0,02"	116° 45' 09"	21° 09' 45"	1,0163359	15' 44,21"	23° 26' 17"	-06m 12s
10:00	114° 51' 38"	0,01"	116° 47' 40"	21° 09' 19"	1,0163334	15' 44,21"	23° 26' 17"	-06m 12s
11:00	114° 54' 01"	0,01"	116° 50' 11"	21° 08' 54"	1,0163308	15' 44,21"	23° 26' 17"	-06m 12s
12:00	114° 56' 24"	0,00"	116° 52' 42"	21° 08' 28"	1,0163283	15' 44,21"	23° 26' 17"	-06m 12s
13:00	114° 58' 47"	-0,00"	116° 55' 13"	21° 08' 02"	1,0163257	15' 44,22"	23° 26' 17"	-06m 13s
14:00	115° 01' 11"	-0,01"	116° 57' 44"	21° 07' 36"	1,0163231	15' 44,22"	23° 26' 17"	-06m 13s
15:00	115° 03' 34"	-0,01"	117° 00' 15"	21° 07' 10"	1,0163205	15' 44,22"	23° 26' 17"	-06m 13s
16:00	115° 05' 57"	-0,02"	117° 02' 46"	21° 06' 45"	1,0163179	15' 44,22"	23° 26' 17"	-06m 13s
17:00	115° 08' 20"	-0,03"	117° 05' 17"	21° 06' 19"	1,0163153	15' 44,22"	23° 26' 17"	-06m 13s
18:00	115° 10' 43"	-0,03"	117° 07' 48"	21° 05' 53"	1,0163127	15' 44,23"	23° 26' 17"	-06m 14s
19:00	115° 13' 06"	-0,04"	117° 10' 19"	21° 05' 27"	1,0163100	15' 44,23"	23° 26' 17"	-06m 14s
20:00	115° 15' 30"	-0,04"	117° 12' 50"	21° 05' 01"	1,0163074	15' 44,23"	23° 26' 17"	-06m 14s
21:00	115° 17' 53"	-0,05"	117° 15' 21"	21° 04' 35"	1,0163047	15' 44,23"	23° 26' 17"	-06m 14s
22:00	115° 20' 16"	-0,05"	117° 17' 52"	21° 04' 08"	1,0163021	15' 44,24"	23° 26' 17"	-06m 14s
23:00	115° 22' 39"	-0,06"	117° 20' 22"	21° 03' 42"	1,0162994	15' 44,24"	23° 26' 17"	-06m 15s
24:00	115° 25' 02"	-0,06"	117° 22' 53"	21° 03' 16"	1,0162967	15' 44,24"	23° 26' 17"	-06m 15s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	149° 55' 53"	0° 01' 29"	152° 01' 57"	11° 31' 08"	59' 13"	16' 08,10"	290° 31' 56"	9,32%
01:00	150° 31' 10"	-0° 01' 43"	152° 34' 29"	11° 15' 42"	59' 11"	16' 07,51"	290° 42' 49"	9,60%
02:00	151° 06' 25"	-0° 04' 55"	153° 06' 56"	11° 00' 14"	59' 09"	16' 06,90"	290° 53' 23"	9,88%
03:00	151° 41' 36"	-0° 08' 07"	153° 39' 16"	10° 44' 43"	59' 06"	16' 06,30"	291° 03' 39"	10,17%
04:00	152° 16' 45"	-0° 11' 19"	154° 11' 31"	10° 29' 11"	59' 04"	16' 05,70"	291° 13' 37"	10,46%
05:00	152° 51' 52"	-0° 14' 30"	154° 43' 39"	10° 13' 37"	59' 02"	16' 05,09"	291° 23' 17"	10,76%
06:00	153° 26' 55"	-0° 17' 41"	155° 15' 42"	9° 58' 00"	59' 00"	16' 04,48"	291° 32' 41"	11,05%
07:00	154° 01' 56"	-0° 20' 51"	155° 47' 40"	9° 42' 22"	58' 58"	16' 03,86"	291° 41' 48"	11,35%
08:00	154° 36' 54"	-0° 24' 02"	156° 19' 31"	9° 26' 42"	58' 55"	16' 03,25"	291° 50' 38"	11,66%
09:00	155° 11' 49"	-0° 27' 11"	156° 51' 18"	9° 11' 01"	58' 53"	16' 02,63"	291° 59' 13"	11,96%
10:00	155° 46' 41"	-0° 30' 21"	157° 22' 58"	8° 55' 18"	58' 51"	16' 02,01"	292° 07' 32"	12,27%
11:00	156° 21' 30"	-0° 33' 30"	157° 54' 34"	8° 39' 33"	58' 48"	16' 01,39"	292° 15' 35"	12,58%
12:00	156° 56' 17"	-0° 36' 38"	158° 26' 04"	8° 23' 48"	58' 46"	16' 00,76"	292° 23' 23"	12,90%
13:00	157° 31' 01"	-0° 39' 46"	158° 57' 29"	8° 08' 01"	58' 44"	16' 00,14"	292° 30' 56"	13,22%
14:00	158° 05' 42"	-0° 42' 54"	159° 28' 50"	7° 52' 13"	58' 42"	16' 00,00"	292° 38' 15"	13,54%
15:00	158° 40' 20"	-0° 46' 01"	160° 00' 05"	7° 36' 24"	58' 39"	15' 58,88"	292° 45' 20"	13,86%
16:00	159° 14' 55"	-0° 49' 08"	160° 31' 15"	7° 20' 34"	58' 37"	15' 58,25"	292° 52' 10"	14,19%
17:00	159° 49' 27"	-0° 52' 14"	161° 02' 20"	7° 04' 43"	58' 35"	15' 57,62"	292° 58' 46"	14,52%
18:00	160° 23' 57"	-0° 55' 19"	161° 33' 21"	6° 48' 52"	58' 32"	15' 56,99"	293° 05' 09"	14,85%
19:00	160° 58' 24"	-0° 58' 24"	162° 04' 17"	6° 33' 00"	58' 30"	15' 56,35"	293° 11' 18"	15,18%
20:00	161° 32' 48"	-1° 01' 28"	162° 35' 08"	6° 17' 07"	58' 28"	15' 55,72"	293° 17' 14"	15,52%
21:00	162° 07' 09"	-1° 04' 32"	163° 05' 55"	6° 01' 14"	58' 25"	15' 55,08"	293° 22' 57"	15,86%
22:00	162° 41' 27"	-1° 07' 35"	163° 36' 38"	5° 45' 20"	58' 23"	15' 54,45"	293° 28' 27"	16,20%
23:00	163° 15' 43"	-1° 10' 37"	164° 07' 16"	5° 29' 26"	58' 21"	15' 53,81"	293° 33' 44"	16,54%
24:00	163° 49' 56"	-1° 13' 39"	164° 37' 50"	5° 13' 32"	58' 18"	15' 53,17"	293° 38' 49"	16,89%

18 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	115° 25' 02"	-0,06"	117° 22' 53"	21° 03' 16"	1,0162967	15' 44,24"	23° 26' 17"	-06m 15s
01:00	115° 27' 25"	-0,07"	117° 25' 24"	21° 02' 50"	1,0162940	15' 44,24"	23° 26' 17"	-06m 15s
02:00	115° 29' 49"	-0,07"	117° 27' 55"	21° 02' 24"	1,0162913	15' 44,25"	23° 26' 17"	-06m 15s
03:00	115° 32' 12"	-0,08"	117° 30' 26"	21° 01' 57"	1,0162886	15' 44,25"	23° 26' 17"	-06m 15s
04:00	115° 34' 35"	-0,09"	117° 32' 56"	21° 01' 31"	1,0162859	15' 44,25"	23° 26' 17"	-06m 16s
05:00	115° 36' 58"	-0,09"	117° 35' 27"	21° 01' 05"	1,0162831	15' 44,25"	23° 26' 17"	-06m 16s
06:00	115° 39' 21"	-0,10"	117° 37' 58"	21° 00' 38"	1,0162804	15' 44,26"	23° 26' 17"	-06m 16s
07:00	115° 41' 45"	-0,10"	117° 40' 29"	21° 00' 12"	1,0162777	15' 44,26"	23° 26' 17"	-06m 16s
08:00	115° 44' 08"	-0,11"	117° 42' 59"	20° 59' 45"	1,0162749	15' 44,26"	23° 26' 17"	-06m 16s
09:00	115° 46' 31"	-0,11"	117° 45' 30"	20° 59' 19"	1,0162721	15' 44,26"	23° 26' 17"	-06m 17s
10:00	115° 48' 54"	-0,12"	117° 48' 01"	20° 58' 52"	1,0162693	15' 44,27"	23° 26' 17"	-06m 17s
11:00	115° 51' 17"	-0,12"	117° 50' 31"	20° 58' 26"	1,0162665	15' 44,27"	23° 26' 17"	-06m 17s
12:00	115° 53' 40"	-0,13"	117° 53' 02"	20° 57' 59"	1,0162637	15' 44,27"	23° 26' 17"	-06m 17s
13:00	115° 56' 04"	-0,13"	117° 55' 33"	20° 57' 33"	1,0162609	15' 44,28"	23° 26' 17"	-06m 17s
14:00	115° 58' 27"	-0,14"	117° 58' 03"	20° 57' 06"	1,0162581	15' 44,28"	23° 26' 17"	-06m 18s
15:00	116° 00' 50"	-0,14"	118° 00' 34"	20° 56' 39"	1,0162553	15' 44,28"	23° 26' 17"	-06m 18s
16:00	116° 03' 13"	-0,15"	118° 03' 04"	20° 56' 12"	1,0162525	15' 44,28"	23° 26' 17"	-06m 18s
17:00	116° 05' 36"	-0,15"	118° 05' 35"	20° 55' 46"	1,0162496	15' 44,29"	23° 26' 17"	-06m 18s
18:00	116° 07' 59"	-0,16"	118° 08' 06"	20° 55' 19"	1,0162468	15' 44,29"	23° 26' 17"	-06m 18s
19:00	116° 10' 23"	-0,16"	118° 10' 36"	20° 54' 52"	1,0162439	15' 44,29"	23° 26' 17"	-06m 18s
20:00	116° 12' 46"	-0,17"	118° 13' 07"	20° 54' 25"	1,0162410	15' 44,29"	23° 26' 17"	-06m 19s
21:00	116° 15' 09"	-0,17"	118° 15' 37"	20° 53' 58"	1,0162381	15' 44,30"	23° 26' 17"	-06m 19s
22:00	116° 17' 32"	-0,18"	118° 18' 08"	20° 53' 31"	1,0162352	15' 44,30"	23° 26' 17"	-06m 19s
23:00	116° 19' 55"	-0,18"	118° 20' 38"	20° 53' 04"	1,0162323	15' 44,30"	23° 26' 17"	-06m 19s
24:00	116° 22' 18"	-0,19"	118° 23' 09"	20° 52' 37"	1,0162294	15' 44,30"	23° 26' 17"	-06m 19s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	163° 49' 56"	-1° 13' 39"	164° 37' 50"	5° 13' 32"	58' 18"	15' 53,17"	293° 38' 49"	16,89%
01:00	164° 24' 05"	-1° 16' 40"	165° 08' 20"	4° 57' 38"	58' 16"	15' 52,53"	293° 43' 42"	17,24%
02:00	164° 58' 12"	-1° 19' 40"	165° 38' 46"	4° 41' 44"	58' 14"	15' 51,89"	293° 48' 22"	17,59%
03:00	165° 32' 17"	-1° 22' 40"	166° 09' 08"	4° 25' 49"	58' 11"	15' 51,25"	293° 52' 50"	17,94%
04:00	166° 06' 18"	-1° 25' 38"	166° 39' 26"	4° 09' 55"	58' 09"	15' 50,61"	293° 57' 06"	18,30%
05:00	166° 40' 17"	-1° 28' 36"	167° 09' 40"	3° 54' 01"	58' 07"	15' 49,97"	294° 01' 11"	18,66%
06:00	167° 14' 12"	-1° 31' 34"	167° 39' 50"	3° 38' 08"	58' 04"	15' 49,33"	294° 05' 04"	19,02%
07:00	167° 48' 05"	-1° 34' 30"	168° 09' 57"	3° 22' 14"	58' 02"	15' 48,69"	294° 08' 45"	19,38%
08:00	168° 21' 56"	-1° 37' 26"	168° 40' 00"	3° 06' 21"	57' 59"	15' 48,05"	294° 12' 15"	19,74%
09:00	168° 55' 43"	-1° 40' 21"	169° 10' 00"	2° 50' 29"	57' 57"	15' 47,41"	294° 15' 34"	20,11%
10:00	169° 29' 28"	-1° 43' 15"	169° 39' 56"	2° 34' 37"	57' 55"	15' 46,78"	294° 18' 41"	20,48%
11:00	170° 03' 10"	-1° 46' 09"	170° 09' 50"	2° 18' 46"	57' 52"	15' 46,14"	294° 21' 38"	20,85%
12:00	170° 36' 49"	-1° 49' 01"	170° 39' 39"	2° 02' 55"	57' 50"	15' 45,50"	294° 24' 24"	21,22%
13:00	171° 10' 25"	-1° 51' 53"	171° 09' 26"	1° 47' 05"	57' 48"	15' 44,86"	294° 26' 59"	21,59%
14:00	171° 43' 59"	-1° 54' 43"	171° 39' 10"	1° 31' 17"	57' 45"	15' 44,22"	294° 29' 23"	21,97%
15:00	172° 17' 29"	-1° 57' 33"	172° 08' 51"	1° 15' 29"	57' 43"	15' 43,59"	294° 31' 37"	22,34%
16:00	172° 50' 58"	-2° 00' 22"	172° 38' 28"	0° 59' 42"	57' 41"	15' 42,95"	294° 33' 40"	22,72%
17:00	173° 24' 23"	-2° 03' 10"	173° 08' 03"	0° 43' 56"	57' 38"	15' 42,32"	294° 35' 33"	23,10%
18:00	173° 57' 46"	-2° 05' 57"	173° 37' 36"	0° 28' 11"	57' 36"	15' 41,68"	294° 37' 16"	23,49%
19:00	174° 31' 06"	-2° 08' 44"	174° 07' 05"	0° 12' 27"	57' 34"	15' 41,05"	294° 38' 48"	23,87%
20:00	175° 04' 23"	-2° 11' 29"	174° 36' 33"	-0° 03' 15"	57' 31"	15' 40,42"	294° 40' 11"	24,25%
21:00	175° 37' 37"	-2° 14' 13"	175° 05' 57"	-0° 18' 56"	57' 29"	15' 39,79"	294° 41' 23"	24,64%
22:00	176° 10' 49"	-2° 16' 56"	175° 35' 19"	-0° 34' 35"	57' 27"	15' 39,16"	294° 42' 26"	25,03%
23:00	176° 43' 58"	-2° 19' 39"	176° 04' 39"	-0° 50' 13"	57' 25"	15' 38,53"	294° 43' 18"	25,42%
24:00	177° 17' 05"	-2° 22' 20"	176° 33' 57"	-1° 05' 50"	57' 22"	15' 37,90"	294° 44' 01"	25,81%

19 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	116° 22' 18"	-0,19"	118° 23' 09"	20° 52' 37"	1,0162294	15' 44,30"	23° 26' 17"	-06m 19s
01:00	116° 24' 42"	-0,19"	118° 25' 39"	20° 52' 10"	1,0162265	15' 44,31"	23° 26' 17"	-06m 20s
02:00	116° 27' 05"	-0,20"	118° 28' 10"	20° 51' 43"	1,0162236	15' 44,31"	23° 26' 17"	-06m 20s
03:00	116° 29' 28"	-0,20"	118° 30' 40"	20° 51' 15"	1,0162206	15' 44,31"	23° 26' 17"	-06m 20s
04:00	116° 31' 51"	-0,21"	118° 33' 10"	20° 50' 48"	1,0162177	15' 44,32"	23° 26' 17"	-06m 20s
05:00	116° 34' 14"	-0,21"	118° 35' 41"	20° 50' 21"	1,0162147	15' 44,32"	23° 26' 17"	-06m 20s
06:00	116° 36' 38"	-0,22"	118° 38' 11"	20° 49' 54"	1,0162117	15' 44,32"	23° 26' 17"	-06m 20s
07:00	116° 39' 01"	-0,22"	118° 40' 42"	20° 49' 26"	1,0162088	15' 44,32"	23° 26' 17"	-06m 21s
08:00	116° 41' 24"	-0,23"	118° 43' 12"	20° 48' 59"	1,0162058	15' 44,33"	23° 26' 17"	-06m 21s
09:00	116° 43' 47"	-0,23"	118° 45' 42"	20° 48' 32"	1,0162028	15' 44,33"	23° 26' 17"	-06m 21s
10:00	116° 46' 10"	-0,24"	118° 48' 13"	20° 48' 04"	1,0161998	15' 44,33"	23° 26' 17"	-06m 21s
11:00	116° 48' 33"	-0,24"	118° 50' 43"	20° 47' 37"	1,0161968	15' 44,33"	23° 26' 17"	-06m 21s
12:00	116° 50' 57"	-0,25"	118° 53' 13"	20° 47' 09"	1,0161937	15' 44,34"	23° 26' 17"	-06m 21s
13:00	116° 53' 20"	-0,25"	118° 55' 44"	20° 46' 42"	1,0161907	15' 44,34"	23° 26' 17"	-06m 22s
14:00	116° 55' 43"	-0,26"	118° 58' 14"	20° 46' 14"	1,0161877	15' 44,34"	23° 26' 17"	-06m 22s
15:00	116° 58' 06"	-0,26"	119° 00' 44"	20° 45' 47"	1,0161846	15' 44,35"	23° 26' 17"	-06m 22s
16:00	117° 00' 29"	-0,27"	119° 03' 14"	20° 45' 19"	1,0161816	15' 44,35"	23° 26' 17"	-06m 22s
17:00	117° 02' 52"	-0,27"	119° 05' 45"	20° 44' 51"	1,0161785	15' 44,35"	23° 26' 17"	-06m 22s
18:00	117° 05' 16"	-0,28"	119° 08' 15"	20° 44' 24"	1,0161754	15' 44,35"	23° 26' 17"	-06m 22s
19:00	117° 07' 39"	-0,28"	119° 10' 45"	20° 43' 56"	1,0161723	15' 44,36"	23° 26' 17"	-06m 22s
20:00	117° 10' 02"	-0,28"	119° 13' 15"	20° 43' 28"	1,0161692	15' 44,36"	23° 26' 17"	-06m 23s
21:00	117° 12' 25"	-0,29"	119° 15' 45"	20° 43' 00"	1,0161661	15' 44,36"	23° 26' 17"	-06m 23s
22:00	117° 14' 48"	-0,29"	119° 18' 15"	20° 42' 32"	1,0161630	15' 44,37"	23° 26' 17"	-06m 23s
23:00	117° 17' 12"	-0,30"	119° 20' 46"	20° 42' 04"	1,0161599	15' 44,37"	23° 26' 17"	-06m 23s
24:00	117° 19' 35"	-0,30"	119° 23' 16"	20° 41' 36"	1,0161568	15' 44,37"	23° 26' 17"	-06m 23s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	177° 17' 05"	-2° 22' 20"	176° 33' 57"	-1° 05' 50"	57' 22"	15' 37,90"	294° 44' 01"	25,81%
01:00	177° 50' 09"	-2° 25' 00"	177° 03' 13"	-1° 21' 25"	57' 20"	15' 37,28"	294° 44' 34"	26,20%
02:00	178° 23' 10"	-2° 27' 39"	177° 32' 26"	-1° 36' 58"	57' 18"	15' 36,65"	294° 44' 58"	26,60%
03:00	178° 56' 09"	-2° 30' 18"	178° 01' 38"	-1° 52' 30"	57' 15"	15' 36,03"	294° 45' 12"	26,99%
04:00	179° 29' 05"	-2° 32' 55"	178° 30' 47"	-2° 08' 00"	57' 13"	15' 35,41"	294° 45' 17"	27,39%
05:00	180° 01' 58"	-2° 35' 31"	178° 59' 55"	-2° 23' 28"	57' 11"	15' 34,79"	294° 45' 12"	27,78%
06:00	180° 34' 49"	-2° 38' 06"	179° 29' 01"	-2° 38' 54"	57' 09"	15' 34,18"	294° 44' 58"	28,18%
07:00	181° 07' 37"	-2° 40' 40"	179° 58' 05"	-2° 54' 18"	57' 06"	15' 33,56"	294° 44' 35"	28,58%
08:00	181° 40' 23"	-2° 43' 13"	180° 27' 08"	-3° 09' 40"	57' 04"	15' 32,95"	294° 44' 02"	28,98%
09:00	182° 13' 06"	-2° 45' 45"	180° 56' 09"	-3° 25' 00"	57' 02"	15' 32,34"	294° 43' 21"	29,39%
10:00	182° 45' 47"	-2° 48' 16"	181° 25' 08"	-3° 40' 18"	57' 00"	15' 31,73"	294° 42' 30"	29,79%
11:00	183° 18' 25"	-2° 50' 45"	181° 54' 07"	-3° 55' 34"	56' 57"	15' 31,13"	294° 41' 31"	30,19%
12:00	183° 51' 00"	-2° 53' 14"	182° 23' 04"	-4° 10' 48"	56' 55"	15' 30,52"	294° 40' 22"	30,60%
13:00	184° 23' 33"	-2° 55' 41"	182° 52' 00"	-4° 25' 59"	56' 53"	15' 29,92"	294° 39' 04"	31,00%
14:00	184° 56' 04"	-2° 58' 08"	183° 20' 54"	-4° 41' 08"	56' 51"	15' 29,32"	294° 37' 38"	31,41%
15:00	185° 28' 32"	-3° 00' 33"	183° 49' 48"	-4° 56' 14"	56' 49"	15' 28,73"	294° 36' 03"	31,82%
16:00	186° 00' 58"	-3° 02' 57"	184° 18' 40"	-5° 11' 18"	56' 46"	15' 28,13"	294° 34' 19"	32,22%
17:00	186° 33' 21"	-3° 05' 20"	184° 47' 32"	-5° 26' 20"	56' 44"	15' 27,54"	294° 32' 27"	32,63%
18:00	187° 05' 42"	-3° 07' 41"	185° 16' 23"	-5° 41' 19"	56' 42"	15' 26,95"	294° 30' 26"	33,04%
19:00	187° 38' 00"	-3° 10' 02"	185° 45' 13"	-5° 56' 15"	56' 40"	15' 26,37"	294° 28' 16"	33,45%
20:00	188° 10' 16"	-3° 12' 21"	186° 14' 02"	-6° 11' 09"	56' 38"	15' 25,78"	294° 25' 58"	33,86%
21:00	188° 42' 29"	-3° 14' 39"	186° 42' 50"	-6° 26' 00"	56' 36"	15' 25,20"	294° 23' 31"	34,28%
22:00	189° 14' 41"	-3° 16' 56"	187° 11' 39"	-6° 40' 48"	56' 34"	15' 24,63"	294° 20' 56"	34,69%
23:00	189° 46' 50"	-3° 19' 12"	187° 40' 26"	-6° 55' 34"	56' 31"	15' 24,05"	294° 18' 12"	35,10%
24:00	190° 18' 56"	-3° 21' 26"	188° 09' 13"	-7° 10' 16"	56' 29"	15' 23,48"	294° 15' 20"	35,51%

20 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	117° 19' 35"	-0,30"	119° 23' 16"	20° 41' 36"	1,0161568	15' 44,37"	23° 26' 17"	-06m 23s
01:00	117° 21' 58"	-0,31"	119° 25' 46"	20° 41' 09"	1,0161537	15' 44,37"	23° 26' 17"	-06m 23s
02:00	117° 24' 21"	-0,31"	119° 28' 16"	20° 40' 41"	1,0161505	15' 44,38"	23° 26' 17"	-06m 24s
03:00	117° 26' 44"	-0,31"	119° 30' 46"	20° 40' 12"	1,0161474	15' 44,38"	23° 26' 17"	-06m 24s
04:00	117° 29' 07"	-0,32"	119° 33' 16"	20° 39' 44"	1,0161442	15' 44,38"	23° 26' 17"	-06m 24s
05:00	117° 31' 31"	-0,32"	119° 35' 46"	20° 39' 16"	1,0161410	15' 44,39"	23° 26' 17"	-06m 24s
06:00	117° 33' 54"	-0,33"	119° 38' 16"	20° 38' 48"	1,0161378	15' 44,39"	23° 26' 17"	-06m 24s
07:00	117° 36' 17"	-0,33"	119° 40' 46"	20° 38' 20"	1,0161346	15' 44,39"	23° 26' 17"	-06m 24s
08:00	117° 38' 40"	-0,34"	119° 43' 16"	20° 37' 52"	1,0161314	15' 44,40"	23° 26' 17"	-06m 24s
09:00	117° 41' 03"	-0,34"	119° 45' 46"	20° 37' 23"	1,0161282	15' 44,40"	23° 26' 17"	-06m 25s
10:00	117° 43' 27"	-0,34"	119° 48' 16"	20° 36' 55"	1,0161250	15' 44,40"	23° 26' 17"	-06m 25s
11:00	117° 45' 50"	-0,35"	119° 50' 46"	20° 36' 27"	1,0161218	15' 44,40"	23° 26' 17"	-06m 25s
12:00	117° 48' 13"	-0,35"	119° 53' 16"	20° 35' 58"	1,0161186	15' 44,41"	23° 26' 17"	-06m 25s
13:00	117° 50' 36"	-0,36"	119° 55' 46"	20° 35' 30"	1,0161153	15' 44,41"	23° 26' 17"	-06m 25s
14:00	117° 52' 59"	-0,36"	119° 58' 16"	20° 35' 02"	1,0161121	15' 44,41"	23° 26' 17"	-06m 25s
15:00	117° 55' 23"	-0,36"	120° 00' 46"	20° 34' 33"	1,0161088	15' 44,42"	23° 26' 17"	-06m 25s
16:00	117° 57' 46"	-0,37"	120° 03' 16"	20° 34' 05"	1,0161056	15' 44,42"	23° 26' 17"	-06m 26s
17:00	118° 00' 09"	-0,37"	120° 05' 45"	20° 33' 36"	1,0161023	15' 44,42"	23° 26' 17"	-06m 26s
18:00	118° 02' 32"	-0,37"	120° 08' 15"	20° 33' 08"	1,0160990	15' 44,43"	23° 26' 17"	-06m 26s
19:00	118° 04' 55"	-0,38"	120° 10' 45"	20° 32' 39"	1,0160957	15' 44,43"	23° 26' 17"	-06m 26s
20:00	118° 07' 19"	-0,38"	120° 13' 15"	20° 32' 10"	1,0160924	15' 44,43"	23° 26' 17"	-06m 26s
21:00	118° 09' 42"	-0,38"	120° 15' 45"	20° 31' 42"	1,0160891	15' 44,43"	23° 26' 17"	-06m 26s
22:00	118° 12' 05"	-0,39"	120° 18' 15"	20° 31' 13"	1,0160858	15' 44,44"	23° 26' 17"	-06m 26s
23:00	118° 14' 28"	-0,39"	120° 20' 44"	20° 30' 44"	1,0160825	15' 44,44"	23° 26' 17"	-06m 26s
24:00	118° 16' 51"	-0,39"	120° 23' 14"	20° 30' 15"	1,0160791	15' 44,44"	23° 26' 17"	-06m 27s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	190° 18' 56"	-3° 21' 26"	188° 09' 13"	-7° 10' 16"	56' 29"	15' 23,48"	294° 15' 20"	35,51%
01:00	190° 51' 00"	-3° 23' 40"	188° 38' 00"	-7° 24' 56"	56' 27"	15' 22,91"	294° 12' 20"	35,93%
02:00	191° 23' 02"	-3° 25' 52"	189° 06' 47"	-7° 39' 33"	56' 25"	15' 22,35"	294° 09' 12"	36,34%
03:00	191° 55' 02"	-3° 28' 02"	189° 35' 33"	-7° 54' 06"	56' 23"	15' 21,78"	294° 05' 55"	36,76%
04:00	192° 26' 59"	-3° 30' 12"	190° 04' 19"	-8° 08' 37"	56' 21"	15' 21,22"	294° 02' 30"	37,17%
05:00	192° 58' 54"	-3° 32' 20"	190° 33' 05"	-8° 23' 04"	56' 19"	15' 20,67"	293° 58' 57"	37,59%
06:00	193° 30' 47"	-3° 34' 27"	191° 01' 51"	-8° 37' 29"	56' 17"	15' 20,12"	293° 55' 16"	38,00%
07:00	194° 02' 38"	-3° 36' 33"	191° 30' 37"	-8° 51' 50"	56' 15"	15' 19,57"	293° 51' 27"	38,42%
08:00	194° 34' 27"	-3° 38' 38"	191° 59' 24"	-9° 06' 08"	56' 13"	15' 19,02"	293° 47' 29"	38,84%
09:00	195° 06' 13"	-3° 40' 41"	192° 28' 10"	-9° 20' 23"	56' 11"	15' 18,48"	293° 43' 24"	39,25%
10:00	195° 37' 57"	-3° 42' 43"	192° 56' 57"	-9° 34' 34"	56' 09"	15' 17,94"	293° 39' 11"	39,67%
11:00	196° 09' 39"	-3° 44' 44"	193° 25' 44"	-9° 48' 42"	56' 07"	15' 17,40"	293° 34' 50"	40,09%
12:00	196° 41' 19"	-3° 46' 43"	193° 54' 31"	-10° 02' 46"	56' 05"	15' 16,87"	293° 30' 20"	40,51%
13:00	197° 12' 57"	-3° 48' 42"	194° 23' 19"	-10° 16' 47"	56' 03"	15' 16,34"	293° 25' 43"	40,92%
14:00	197° 44' 32"	-3° 50' 39"	194° 52' 07"	-10° 30' 45"	56' 01"	15' 15,82"	293° 20' 59"	41,34%
15:00	198° 16' 06"	-3° 52' 34"	195° 20' 56"	-10° 44' 38"	55' 59"	15' 15,30"	293° 16' 06"	41,76%
16:00	198° 47' 37"	-3° 54' 28"	195° 49' 46"	-10° 58' 29"	55' 57"	15' 14,78"	293° 11' 05"	42,18%
17:00	199° 19' 07"	-3° 56' 21"	196° 18' 36"	-11° 12' 15"	55' 55"	15' 14,26"	293° 05' 57"	42,59%
18:00	199° 50' 34"	-3° 58' 13"	196° 47' 27"	-11° 25' 58"	55' 54"	15' 13,75"	293° 00' 41"	43,01%
19:00	200° 22' 00"	-4° 00' 04"	197° 16' 19"	-11° 39' 37"	55' 52"	15' 13,25"	292° 55' 17"	43,43%
20:00	200° 53' 23"	-4° 01' 53"	197° 45' 12"	-11° 53' 12"	55' 50"	15' 12,75"	292° 49' 46"	43,85%
21:00	201° 24' 45"	-4° 03' 40"	198° 14' 05"	-12° 06' 44"	55' 48"	15' 12,25"	292° 44' 07"	44,27%
22:00	201° 56' 05"	-4° 05' 27"	198° 43' 00"	-12° 20' 12"	55' 46"	15' 11,75"	292° 38' 21"	44,68%
23:00	202° 27' 22"	-4° 07' 12"	199° 11' 56"	-12° 33' 35"	55' 44"	15' 11,26"	292° 32' 26"	45,10%
24:00	202° 58' 38"	-4° 08' 56"	199° 40' 53"	-12° 46' 55"	55' 43"	15' 10,77"	292° 26' 24"	45,52%

21 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	118° 16' 51"	-0,39"	120° 23' 14"	20° 30' 15"	1,0160791	15' 44,44"	23° 26' 17"	-06m 27s
01:00	118° 19' 14"	-0,40"	120° 25' 44"	20° 29' 46"	1,0160758	15' 44,45"	23° 26' 17"	-06m 27s
02:00	118° 21' 38"	-0,40"	120° 28' 14"	20° 29' 18"	1,0160725	15' 44,45"	23° 26' 17"	-06m 27s
03:00	118° 24' 01"	-0,40"	120° 30' 43"	20° 28' 49"	1,0160691	15' 44,45"	23° 26' 17"	-06m 27s
04:00	118° 26' 24"	-0,41"	120° 33' 13"	20° 28' 20"	1,0160657	15' 44,46"	23° 26' 17"	-06m 27s
05:00	118° 28' 47"	-0,41"	120° 35' 43"	20° 27' 51"	1,0160624	15' 44,46"	23° 26' 17"	-06m 27s
06:00	118° 31' 10"	-0,41"	120° 38' 12"	20° 27' 22"	1,0160590	15' 44,46"	23° 26' 17"	-06m 27s
07:00	118° 33' 34"	-0,42"	120° 40' 42"	20° 26' 53"	1,0160556	15' 44,47"	23° 26' 17"	-06m 27s
08:00	118° 35' 57"	-0,42"	120° 43' 12"	20° 26' 24"	1,0160522	15' 44,47"	23° 26' 17"	-06m 28s
09:00	118° 38' 20"	-0,42"	120° 45' 41"	20° 25' 54"	1,0160488	15' 44,47"	23° 26' 17"	-06m 28s
10:00	118° 40' 43"	-0,43"	120° 48' 11"	20° 25' 25"	1,0160454	15' 44,48"	23° 26' 17"	-06m 28s
11:00	118° 43' 06"	-0,43"	120° 50' 40"	20° 24' 56"	1,0160420	15' 44,48"	23° 26' 17"	-06m 28s
12:00	118° 45' 30"	-0,43"	120° 53' 10"	20° 24' 27"	1,0160385	15' 44,48"	23° 26' 17"	-06m 28s
13:00	118° 47' 53"	-0,44"	120° 55' 40"	20° 23' 58"	1,0160351	15' 44,49"	23° 26' 17"	-06m 28s
14:00	118° 50' 16"	-0,44"	120° 58' 09"	20° 23' 28"	1,0160317	15' 44,49"	23° 26' 17"	-06m 28s
15:00	118° 52' 39"	-0,44"	121° 00' 39"	20° 22' 59"	1,0160282	15' 44,49"	23° 26' 17"	-06m 28s
16:00	118° 55' 02"	-0,44"	121° 03' 08"	20° 22' 30"	1,0160247	15' 44,49"	23° 26' 17"	-06m 28s
17:00	118° 57' 26"	-0,45"	121° 05' 38"	20° 22' 00"	1,0160213	15' 44,50"	23° 26' 17"	-06m 29s
18:00	118° 59' 49"	-0,45"	121° 08' 07"	20° 21' 31"	1,0160178	15' 44,50"	23° 26' 17"	-06m 29s
19:00	119° 02' 12"	-0,45"	121° 10' 37"	20° 21' 01"	1,0160143	15' 44,50"	23° 26' 17"	-06m 29s
20:00	119° 04' 35"	-0,45"	121° 13' 06"	20° 20' 32"	1,0160108	15' 44,51"	23° 26' 17"	-06m 29s
21:00	119° 06' 58"	-0,46"	121° 15' 36"	20° 20' 02"	1,0160073	15' 44,51"	23° 26' 17"	-06m 29s
22:00	119° 09' 22"	-0,46"	121° 18' 05"	20° 19' 33"	1,0160038	15' 44,51"	23° 26' 17"	-06m 29s
23:00	119° 11' 45"	-0,46"	121° 20' 34"	20° 19' 03"	1,0160003	15' 44,52"	23° 26' 17"	-06m 29s
24:00	119° 14' 08"	-0,46"	121° 23' 04"	20° 18' 33"	1,0159968	15' 44,52"	23° 26' 17"	-06m 29s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	202° 58' 38"	-4° 08' 56"	199° 40' 53"	-12° 46' 55"	55' 43"	15' 10,77"	292° 26' 24"	45,52%
01:00	203° 29' 52"	-4° 10' 38"	200° 09' 51"	-13° 00' 11"	55' 41"	15' 10,29"	292° 20' 15"	45,94%
02:00	204° 01' 04"	-4° 12' 19"	200° 38' 50"	-13° 13' 22"	55' 39"	15' 09,81"	292° 13' 58"	46,35%
03:00	204° 32' 14"	-4° 13' 59"	201° 07' 50"	-13° 26' 30"	55' 37"	15' 09,34"	292° 07' 34"	46,77%
04:00	205° 03' 22"	-4° 15' 37"	201° 36' 52"	-13° 39' 33"	55' 36"	15' 08,87"	292° 01' 02"	47,19%
05:00	205° 34' 29"	-4° 17' 14"	202° 05' 56"	-13° 52' 32"	55' 34"	15' 08,40"	291° 54' 23"	47,60%
06:00	206° 05' 34"	-4° 18' 50"	202° 35' 00"	-14° 05' 27"	55' 32"	15' 07,94"	291° 47' 36"	48,02%
07:00	206° 36' 37"	-4° 20' 24"	203° 04' 07"	-14° 18' 18"	55' 31"	15' 07,48"	291° 40' 42"	48,43%
08:00	207° 07' 38"	-4° 21' 57"	203° 33' 14"	-14° 31' 04"	55' 29"	15' 07,03"	291° 33' 41"	48,85%
09:00	207° 38' 37"	-4° 23' 28"	204° 02' 24"	-14° 43' 46"	55' 27"	15' 06,58"	291° 26' 32"	49,26%
10:00	208° 09' 35"	-4° 24' 59"	204° 31' 35"	-14° 56' 24"	55' 26"	15' 06,13"	291° 19' 16"	49,68%
11:00	208° 40' 31"	-4° 26' 27"	205° 00' 47"	-15° 08' 57"	55' 24"	15' 05,69"	291° 11' 52"	50,09%
12:00	209° 11' 26"	-4° 27' 55"	205° 30' 02"	-15° 21' 25"	55' 22"	15' 05,25"	291° 04' 21"	50,51%
13:00	209° 42' 18"	-4° 29' 21"	205° 59' 18"	-15° 33' 49"	55' 21"	15' 04,82"	290° 56' 43"	50,92%
14:00	210° 13' 09"	-4° 30' 46"	206° 28' 36"	-15° 46' 09"	55' 19"	15' 04,39"	290° 48' 58"	51,33%
15:00	210° 43' 59"	-4° 32' 09"	206° 57' 56"	-15° 58' 24"	55' 18"	15' 03,96"	290° 41' 06"	51,74%
16:00	211° 14' 47"	-4° 33' 31"	207° 27' 18"	-16° 10' 34"	55' 16"	15' 03,54"	290° 33' 06"	52,16%
17:00	211° 45' 33"	-4° 34' 51"	207° 56' 42"	-16° 22' 40"	55' 15"	15' 03,13"	290° 24' 59"	52,57%
18:00	212° 16' 18"	-4° 36' 10"	208° 26' 08"	-16° 34' 40"	55' 13"	15' 02,72"	290° 16' 45"	52,98%
19:00	212° 47' 01"	-4° 37' 28"	208° 55' 37"	-16° 46' 36"	55' 12"	15' 02,31"	290° 08' 24"	53,39%
20:00	213° 17' 42"	-4° 38' 45"	209° 25' 07"	-16° 58' 28"	55' 10"	15' 01,91"	289° 59' 56"	53,80%
21:00	213° 48' 23"	-4° 40' 00"	209° 54' 39"	-17° 10' 14"	55' 09"	15' 01,51"	289° 51' 20"	54,20%
22:00	214° 19' 01"	-4° 41' 13"	210° 24' 14"	-17° 21' 55"	55' 07"	15' 01,12"	289° 42' 38"	54,61%
23:00	214° 49' 38"	-4° 42' 25"	210° 53' 51"	-17° 33' 32"	55' 06"	15' 00,73"	289° 33' 48"	55,02%
24:00	215° 20' 14"	-4° 43' 36"	211° 23' 30"	-17° 45' 03"	55' 04"	15' 00,34"	289° 24' 52"	55,43%

22 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	119° 14' 08"	-0,46"	121° 23' 04"	20° 18' 33"	1,0159968	15' 44,52"	23° 26' 17"	-06m 29s
01:00	119° 16' 31"	-0,47"	121° 25' 33"	20° 18' 04"	1,0159933	15' 44,52"	23° 26' 17"	-06m 29s
02:00	119° 18' 54"	-0,47"	121° 28' 02"	20° 17' 34"	1,0159897	15' 44,53"	23° 26' 17"	-06m 30s
03:00	119° 21' 18"	-0,47"	121° 30' 32"	20° 17' 04"	1,0159862	15' 44,53"	23° 26' 17"	-06m 30s
04:00	119° 23' 41"	-0,47"	121° 33' 01"	20° 16' 34"	1,0159826	15' 44,53"	23° 26' 17"	-06m 30s
05:00	119° 26' 04"	-0,48"	121° 35' 30"	20° 16' 05"	1,0159791	15' 44,54"	23° 26' 17"	-06m 30s
06:00	119° 28' 27"	-0,48"	121° 38' 00"	20° 15' 35"	1,0159755	15' 44,54"	23° 26' 17"	-06m 30s
07:00	119° 30' 51"	-0,48"	121° 40' 29"	20° 15' 05"	1,0159719	15' 44,54"	23° 26' 17"	-06m 30s
08:00	119° 33' 14"	-0,48"	121° 42' 58"	20° 14' 35"	1,0159683	15' 44,55"	23° 26' 17"	-06m 30s
09:00	119° 35' 37"	-0,48"	121° 45' 28"	20° 14' 05"	1,0159647	15' 44,55"	23° 26' 17"	-06m 30s
10:00	119° 38' 00"	-0,49"	121° 47' 57"	20° 13' 35"	1,0159611	15' 44,55"	23° 26' 17"	-06m 30s
11:00	119° 40' 23"	-0,49"	121° 50' 26"	20° 13' 05"	1,0159575	15' 44,56"	23° 26' 17"	-06m 30s
12:00	119° 42' 47"	-0,49"	121° 52' 55"	20° 12' 35"	1,0159539	15' 44,56"	23° 26' 17"	-06m 30s
13:00	119° 45' 10"	-0,49"	121° 55' 24"	20° 12' 05"	1,0159503	15' 44,56"	23° 26' 17"	-06m 31s
14:00	119° 47' 33"	-0,49"	121° 57' 54"	20° 11' 35"	1,0159467	15' 44,57"	23° 26' 17"	-06m 31s
15:00	119° 49' 56"	-0,50"	122° 00' 23"	20° 11' 04"	1,0159430	15' 44,57"	23° 26' 17"	-06m 31s
16:00	119° 52' 19"	-0,50"	122° 02' 52"	20° 10' 34"	1,0159394	15' 44,57"	23° 26' 17"	-06m 31s
17:00	119° 54' 43"	-0,50"	122° 05' 21"	20° 10' 04"	1,0159357	15' 44,58"	23° 26' 17"	-06m 31s
18:00	119° 57' 06"	-0,50"	122° 07' 50"	20° 09' 34"	1,0159321	15' 44,58"	23° 26' 17"	-06m 31s
19:00	119° 59' 29"	-0,50"	122° 10' 19"	20° 09' 03"	1,0159284	15' 44,58"	23° 26' 17"	-06m 31s
20:00	120° 01' 52"	-0,50"	122° 12' 48"	20° 08' 33"	1,0159247	15' 44,59"	23° 26' 17"	-06m 31s
21:00	120° 04' 15"	-0,50"	122° 15' 17"	20° 08' 03"	1,0159211	15' 44,59"	23° 26' 17"	-06m 31s
22:00	120° 06' 39"	-0,51"	122° 17' 47"	20° 07' 32"	1,0159174	15' 44,59"	23° 26' 17"	-06m 31s
23:00	120° 09' 02"	-0,51"	122° 20' 16"	20° 07' 02"	1,0159137	15' 44,60"	23° 26' 17"	-06m 31s
24:00	120° 11' 25"	-0,51"	122° 22' 45"	20° 06' 31"	1,0159100	15' 44,60"	23° 26' 17"	-06m 32s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	215° 20' 14"	-4° 43' 36"	211° 23' 30"	-17° 45' 03"	55' 04"	15' 00,34"	289° 24' 52"	55,43%
01:00	215° 50' 49"	-4° 44' 46"	211° 53' 11"	-17° 56' 30"	55' 03"	15' 00,00"	289° 15' 48"	55,83%
02:00	216° 21' 22"	-4° 45' 53"	212° 22' 55"	-18° 07' 51"	55' 02"	15' 00,00"	289° 06' 38"	56,24%
03:00	216° 51' 53"	-4° 47' 00"	212° 52' 41"	-18° 19' 07"	55' 00"	14' 59,21"	288° 57' 20"	56,64%
04:00	217° 22' 23"	-4° 48' 05"	213° 22' 30"	-18° 30' 18"	54' 59"	14' 58,85"	288° 47' 56"	57,04%
05:00	217° 52' 52"	-4° 49' 09"	213° 52' 21"	-18° 41' 24"	54' 58"	14' 58,49"	288° 38' 25"	57,45%
06:00	218° 23' 20"	-4° 50' 11"	214° 22' 15"	-18° 52' 25"	54' 56"	14' 58,13"	288° 28' 46"	57,85%
07:00	218° 53' 46"	-4° 51' 12"	214° 52' 11"	-19° 03' 20"	54' 55"	14' 57,77"	288° 19' 01"	58,25%
08:00	219° 24' 11"	-4° 52' 12"	215° 22' 09"	-19° 14' 10"	54' 54"	14' 57,42"	288° 09' 09"	58,65%
09:00	219° 54' 34"	-4° 53' 10"	215° 52' 11"	-19° 24' 55"	54' 52"	14' 57,08"	287° 59' 11"	59,05%
10:00	220° 24' 57"	-4° 54' 07"	216° 22' 15"	-19° 35' 34"	54' 51"	14' 56,74"	287° 49' 05"	59,45%
11:00	220° 55' 18"	-4° 55' 02"	216° 52' 21"	-19° 46' 08"	54' 50"	14' 56,41"	287° 38' 53"	59,84%
12:00	221° 25' 38"	-4° 55' 56"	217° 22' 31"	-19° 56' 36"	54' 49"	14' 56,07"	287° 28' 34"	60,24%
13:00	221° 55' 57"	-4° 56' 48"	217° 52' 43"	-20° 06' 59"	54' 48"	14' 55,75"	287° 18' 08"	60,64%
14:00	222° 26' 14"	-4° 57' 39"	218° 22' 58"	-20° 17' 16"	54' 46"	14' 55,43"	287° 07' 35"	61,03%
15:00	222° 56' 31"	-4° 58' 29"	218° 53' 15"	-20° 27' 27"	54' 45"	14' 55,11"	286° 56' 56"	61,42%
16:00	223° 26' 46"	-4° 59' 17"	219° 23' 36"	-20° 37' 33"	54' 44"	14' 54,80"	286° 46' 10"	61,82%
17:00	223° 57' 00"	-5° 00' 04"	219° 53' 59"	-20° 47' 33"	54' 43"	14' 54,49"	286° 35' 18"	62,21%
18:00	224° 27' 13"	-5° 00' 49"	220° 24' 25"	-20° 57' 28"	54' 42"	14' 54,19"	286° 24' 19"	62,60%
19:00	224° 57' 25"	-5° 01' 33"	220° 54' 54"	-21° 07' 17"	54' 41"	14' 53,89"	286° 13' 13"	62,99%
20:00	225° 27' 36"	-5° 02' 16"	221° 25' 25"	-21° 16' 59"	54' 40"	14' 53,59"	286° 02' 01"	63,37%
21:00	225° 57' 46"	-5° 02' 57"	221° 56' 00"	-21° 26' 36"	54' 39"	14' 53,30"	285° 50' 43"	63,76%
22:00	226° 27' 55"	-5° 03' 37"	222° 26' 38"	-21° 36' 07"	54' 37"	14' 53,02"	285° 39' 17"	64,15%
23:00	226° 58' 03"	-5° 04' 15"	222° 57' 18"	-21° 45' 32"	54' 36"	14' 52,74"	285° 27' 46"	64,53%
24:00	227° 28' 10"	-5° 04' 52"	223° 28' 02"	-21° 54' 52"	54' 35"	14' 52,46"	285° 16' 08"	64,91%

23 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	120° 11' 25"	-0,51"	122° 22' 45"	20° 06' 31"	1,0159100	15' 44,60"	23° 26' 17"	-06m 32s
01:00	120° 13' 48"	-0,51"	122° 25' 14"	20° 06' 01"	1,0159063	15' 44,60"	23° 26' 17"	-06m 32s
02:00	120° 16' 12"	-0,51"	122° 27' 43"	20° 05' 30"	1,0159026	15' 44,61"	23° 26' 17"	-06m 32s
03:00	120° 18' 35"	-0,51"	122° 30' 12"	20° 05' 00"	1,0158988	15' 44,61"	23° 26' 17"	-06m 32s
04:00	120° 20' 58"	-0,51"	122° 32' 41"	20° 04' 29"	1,0158951	15' 44,62"	23° 26' 17"	-06m 32s
05:00	120° 23' 21"	-0,51"	122° 35' 09"	20° 03' 58"	1,0158914	15' 44,62"	23° 26' 17"	-06m 32s
06:00	120° 25' 44"	-0,52"	122° 37' 38"	20° 03' 28"	1,0158876	15' 44,62"	23° 26' 17"	-06m 32s
07:00	120° 28' 08"	-0,52"	122° 40' 07"	20° 02' 57"	1,0158839	15' 44,63"	23° 26' 17"	-06m 32s
08:00	120° 30' 31"	-0,52"	122° 42' 36"	20° 02' 26"	1,0158801	15' 44,63"	23° 26' 17"	-06m 32s
09:00	120° 32' 54"	-0,52"	122° 45' 05"	20° 01' 55"	1,0158763	15' 44,63"	23° 26' 17"	-06m 32s
10:00	120° 35' 17"	-0,52"	122° 47' 34"	20° 01' 24"	1,0158726	15' 44,64"	23° 26' 17"	-06m 32s
11:00	120° 37' 41"	-0,52"	122° 50' 03"	20° 00' 54"	1,0158688	15' 44,64"	23° 26' 17"	-06m 32s
12:00	120° 40' 04"	-0,52"	122° 52' 32"	20° 00' 23"	1,0158650	15' 44,64"	23° 26' 17"	-06m 32s
13:00	120° 42' 27"	-0,52"	122° 55' 00"	19° 59' 52"	1,0158612	15' 44,65"	23° 26' 17"	-06m 32s
14:00	120° 44' 50"	-0,52"	122° 57' 29"	19° 59' 21"	1,0158574	15' 44,65"	23° 26' 17"	-06m 32s
15:00	120° 47' 14"	-0,52"	122° 59' 58"	19° 58' 50"	1,0158536	15' 44,65"	23° 26' 17"	-06m 33s
16:00	120° 49' 37"	-0,52"	123° 02' 27"	19° 58' 19"	1,0158498	15' 44,66"	23° 26' 17"	-06m 33s
17:00	120° 52' 00"	-0,52"	123° 04' 56"	19° 57' 48"	1,0158460	15' 44,66"	23° 26' 17"	-06m 33s
18:00	120° 54' 23"	-0,52"	123° 07' 24"	19° 57' 17"	1,0158421	15' 44,66"	23° 26' 17"	-06m 33s
19:00	120° 56' 46"	-0,52"	123° 09' 53"	19° 56' 45"	1,0158383	15' 44,67"	23° 26' 17"	-06m 33s
20:00	120° 59' 10"	-0,52"	123° 12' 22"	19° 56' 14"	1,0158344	15' 44,67"	23° 26' 17"	-06m 33s
21:00	121° 01' 33"	-0,52"	123° 14' 50"	19° 55' 43"	1,0158306	15' 44,68"	23° 26' 17"	-06m 33s
22:00	121° 03' 56"	-0,52"	123° 17' 19"	19° 55' 12"	1,0158267	15' 44,68"	23° 26' 17"	-06m 33s
23:00	121° 06' 19"	-0,53"	123° 19' 48"	19° 54' 40"	1,0158229	15' 44,68"	23° 26' 17"	-06m 33s
24:00	121° 08' 43"	-0,53"	123° 22' 16"	19° 54' 09"	1,0158190	15' 44,69"	23° 26' 17"	-06m 33s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	227° 28' 10"	-5° 04' 52"	223° 28' 02"	-21° 54' 52"	54' 35"	14' 52,46"	285° 16' 08"	64,91%
01:00	227° 58' 16"	-5° 05' 27"	223° 58' 48"	-22° 04' 05"	54' 34"	14' 52,19"	285° 04' 23"	65,30%
02:00	228° 28' 21"	-5° 06' 01"	224° 29' 37"	-22° 13' 12"	54' 33"	14' 51,93"	284° 52' 33"	65,68%
03:00	228° 58' 25"	-5° 06' 34"	225° 00' 30"	-22° 22' 12"	54' 33"	14' 51,66"	284° 40' 36"	66,06%
04:00	229° 28' 28"	-5° 07' 05"	225° 31' 25"	-22° 31' 07"	54' 32"	14' 51,41"	284° 28' 32"	66,43%
05:00	229° 58' 30"	-5° 07' 35"	226° 02' 23"	-22° 39' 56"	54' 31"	14' 51,15"	284° 16' 23"	66,81%
06:00	230° 28' 32"	-5° 08' 03"	226° 33' 25"	-22° 48' 38"	54' 30"	14' 50,90"	284° 04' 07"	67,19%
07:00	230° 58' 32"	-5° 08' 30"	227° 04' 29"	-22° 57' 14"	54' 29"	14' 50,66"	283° 51' 45"	67,56%
08:00	231° 28' 32"	-5° 08' 56"	227° 35' 37"	-23° 05' 44"	54' 28"	14' 50,42"	283° 39' 16"	67,93%
09:00	231° 58' 31"	-5° 09' 20"	228° 06' 47"	-23° 14' 07"	54' 27"	14' 50,19"	283° 26' 42"	68,31%
10:00	232° 28' 29"	-5° 09' 43"	228° 38' 01"	-23° 22' 24"	54' 26"	14' 49,96"	283° 14' 01"	68,68%
11:00	232° 58' 26"	-5° 10' 04"	229° 09' 17"	-23° 30' 35"	54' 25"	14' 49,73"	283° 01' 15"	69,05%
12:00	233° 28' 23"	-5° 10' 24"	229° 40' 37"	-23° 38' 39"	54' 25"	14' 49,51"	282° 48' 22"	69,41%
13:00	233° 58' 18"	-5° 10' 42"	230° 11' 59"	-23° 46' 36"	54' 24"	14' 49,29"	282° 35' 24"	69,78%
14:00	234° 28' 14"	-5° 10' 59"	230° 43' 25"	-23° 54' 27"	54' 23"	14' 49,08"	282° 22' 19"	70,14%
15:00	234° 58' 08"	-5° 11' 15"	231° 14' 53"	-24° 02' 11"	54' 22"	14' 48,87"	282° 09' 09"	70,51%
16:00	235° 28' 02"	-5° 11' 29"	231° 46' 25"	-24° 09' 49"	54' 22"	14' 48,67"	281° 55' 52"	70,87%
17:00	235° 57' 55"	-5° 11' 42"	232° 17' 59"	-24° 17' 20"	54' 21"	14' 48,47"	281° 42' 30"	71,23%
18:00	236° 27' 47"	-5° 11' 53"	232° 49' 37"	-24° 24' 45"	54' 20"	14' 48,27"	281° 29' 02"	71,59%
19:00	236° 57' 39"	-5° 12' 03"	233° 21' 18"	-24° 32' 02"	54' 19"	14' 48,08"	281° 15' 29"	71,95%
20:00	237° 27' 30"	-5° 12' 11"	233° 53' 01"	-24° 39' 13"	54' 19"	14' 47,90"	281° 01' 49"	72,30%
21:00	237° 57' 20"	-5° 12' 18"	234° 24' 48"	-24° 46' 17"	54' 18"	14' 47,72"	280° 48' 04"	72,66%
22:00	238° 27' 10"	-5° 12' 24"	234° 56' 37"	-24° 53' 14"	54' 17"	14' 47,54"	280° 34' 14"	73,01%
23:00	238° 56' 59"	-5° 12' 28"	235° 28' 30"	-25° 00' 04"	54' 17"	14' 47,37"	280° 20' 17"	73,36%
24:00	239° 26' 48"	-5° 12' 31"	236° 00' 25"	-25° 06' 48"	54' 16"	14' 47,20"	280° 06' 16"	73,71%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	121° 08' 43"	-0,53"	123° 22' 16"	19° 54' 09"	1,0158190	15' 44,69"	23° 26' 17"	-06m 33s
01:00	121° 11' 06"	-0,53"	123° 24' 45"	19° 53' 38"	1,0158151	15' 44,69"	23° 26' 17"	-06m 33s
02:00	121° 13' 29"	-0,53"	123° 27' 14"	19° 53' 06"	1,0158112	15' 44,69"	23° 26' 17"	-06m 33s
03:00	121° 15' 52"	-0,53"	123° 29' 42"	19° 52' 35"	1,0158073	15' 44,70"	23° 26' 17"	-06m 33s
04:00	121° 18' 16"	-0,53"	123° 32' 11"	19° 52' 03"	1,0158034	15' 44,70"	23° 26' 17"	-06m 33s
05:00	121° 20' 39"	-0,53"	123° 34' 39"	19° 51' 32"	1,0157995	15' 44,70"	23° 26' 17"	-06m 33s
06:00	121° 23' 02"	-0,53"	123° 37' 08"	19° 51' 00"	1,0157956	15' 44,71"	23° 26' 17"	-06m 33s
07:00	121° 25' 25"	-0,52"	123° 39' 37"	19° 50' 29"	1,0157917	15' 44,71"	23° 26' 17"	-06m 33s
08:00	121° 27' 48"	-0,52"	123° 42' 05"	19° 49' 57"	1,0157878	15' 44,72"	23° 26' 17"	-06m 33s
09:00	121° 30' 12"	-0,52"	123° 44' 34"	19° 49' 26"	1,0157839	15' 44,72"	23° 26' 17"	-06m 34s
10:00	121° 32' 35"	-0,52"	123° 47' 02"	19° 48' 54"	1,0157799	15' 44,72"	23° 26' 17"	-06m 34s
11:00	121° 34' 58"	-0,52"	123° 49' 31"	19° 48' 22"	1,0157760	15' 44,73"	23° 26' 17"	-06m 34s
12:00	121° 37' 21"	-0,52"	123° 51' 59"	19° 47' 51"	1,0157720	15' 44,73"	23° 26' 17"	-06m 34s
13:00	121° 39' 45"	-0,52"	123° 54' 27"	19° 47' 19"	1,0157681	15' 44,73"	23° 26' 17"	-06m 34s
14:00	121° 42' 08"	-0,52"	123° 56' 56"	19° 46' 47"	1,0157641	15' 44,74"	23° 26' 17"	-06m 34s
15:00	121° 44' 31"	-0,52"	123° 59' 24"	19° 46' 15"	1,0157601	15' 44,74"	23° 26' 17"	-06m 34s
16:00	121° 46' 54"	-0,52"	124° 01' 53"	19° 45' 43"	1,0157561	15' 44,74"	23° 26' 17"	-06m 34s
17:00	121° 49' 18"	-0,52"	124° 04' 21"	19° 45' 11"	1,0157522	15' 44,75"	23° 26' 17"	-06m 34s
18:00	121° 51' 41"	-0,52"	124° 06' 49"	19° 44' 39"	1,0157482	15' 44,75"	23° 26' 17"	-06m 34s
19:00	121° 54' 04"	-0,52"	124° 09' 18"	19° 44' 07"	1,0157442	15' 44,76"	23° 26' 17"	-06m 34s
20:00	121° 56' 27"	-0,52"	124° 11' 46"	19° 43' 35"	1,0157402	15' 44,76"	23° 26' 17"	-06m 34s
21:00	121° 58' 51"	-0,52"	124° 14' 14"	19° 43' 03"	1,0157361	15' 44,76"	23° 26' 17"	-06m 34s
22:00	122° 01' 14"	-0,52"	124° 16' 43"	19° 42' 31"	1,0157321	15' 44,77"	23° 26' 17"	-06m 34s
23:00	122° 03' 37"	-0,52"	124° 19' 11"	19° 41' 59"	1,0157281	15' 44,77"	23° 26' 17"	-06m 34s
24:00	122° 06' 00"	-0,51"	124° 21' 39"	19° 41' 27"	1,0157241	15' 44,77"	23° 26' 17"	-06m 34s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	239° 26' 48"	-5° 12' 31"	236° 00' 25"	-25° 06' 48"	54' 16"	14' 47,20"	280° 06' 16"	73,71%
01:00	239° 56' 36"	-5° 12' 33"	236° 32' 23"	-25° 13' 24"	54' 16"	14' 47,04"	279° 52' 08"	74,06%
02:00	240° 26' 24"	-5° 12' 33"	237° 04' 25"	-25° 19' 53"	54' 15"	14' 46,88"	279° 37' 56"	74,41%
03:00	240° 56' 11"	-5° 12' 31"	237° 36' 29"	-25° 26' 16"	54' 14"	14' 46,72"	279° 23' 38"	74,75%
04:00	241° 25' 58"	-5° 12' 29"	238° 08' 35"	-25° 32' 31"	54' 14"	14' 46,57"	279° 09' 14"	75,09%
05:00	241° 55' 44"	-5° 12' 24"	238° 40' 45"	-25° 38' 39"	54' 13"	14' 46,43"	278° 54' 45"	75,43%
06:00	242° 25' 30"	-5° 12' 19"	239° 12' 58"	-25° 44' 40"	54' 13"	14' 46,29"	278° 40' 11"	75,77%
07:00	242° 55' 15"	-5° 12' 12"	239° 45' 13"	-25° 50' 34"	54' 12"	14' 46,15"	278° 25' 32"	76,11%
08:00	243° 25' 00"	-5° 12' 04"	240° 17' 31"	-25° 56' 20"	54' 12"	14' 46,01"	278° 10' 48"	76,45%
09:00	243° 54' 44"	-5° 11' 54"	240° 49' 52"	-26° 01' 59"	54' 11"	14' 45,89"	277° 55' 58"	76,78%
10:00	244° 24' 28"	-5° 11' 43"	241° 22' 15"	-26° 07' 31"	54' 11"	14' 45,76"	277° 41' 04"	77,12%
11:00	244° 54' 12"	-5° 11' 30"	241° 54' 41"	-26° 12' 56"	54' 10"	14' 45,64"	277° 26' 04"	77,45%
12:00	245° 23' 56"	-5° 11' 16"	242° 27' 10"	-26° 18' 13"	54' 10"	14' 45,52"	277° 11' 00"	77,78%
13:00	245° 53' 39"	-5° 11' 01"	242° 59' 41"	-26° 23' 23"	54' 10"	14' 45,41"	276° 55' 50"	78,10%
14:00	246° 23' 21"	-5° 10' 44"	243° 32' 15"	-26° 28' 26"	54' 09"	14' 45,31"	276° 40' 36"	78,43%
15:00	246° 53' 04"	-5° 10' 26"	244° 04' 51"	-26° 33' 21"	54' 09"	14' 45,20"	276° 25' 17"	78,75%
16:00	247° 22' 46"	-5° 10' 06"	244° 37' 30"	-26° 38' 08"	54' 08"	14' 45,10"	276° 09' 53"	79,07%
17:00	247° 52' 28"	-5° 09' 45"	245° 10' 11"	-26° 42' 48"	54' 08"	14' 45,01"	275° 54' 25"	79,39%
18:00	248° 22' 09"	-5° 09' 23"	245° 42' 54"	-26° 47' 21"	54' 08"	14' 44,92"	275° 38' 52"	79,71%
19:00	248° 51' 51"	-5° 08' 59"	246° 15' 40"	-26° 51' 46"	54' 07"	14' 44,83"	275° 23' 14"	80,03%
20:00	249° 21' 32"	-5° 08' 34"	246° 48' 29"	-26° 56' 03"	54' 07"	14' 44,75"	275° 07' 32"	80,34%
21:00	249° 51' 12"	-5° 08' 08"	247° 21' 19"	-27° 00' 13"	54' 07"	14' 44,67"	274° 51' 45"	80,66%
22:00	250° 20' 53"	-5° 07' 40"	247° 54' 12"	-27° 04' 15"	54' 07"	14' 44,59"	274° 35' 54"	80,97%
23:00	250° 50' 34"	-5° 07' 11"	248° 27' 07"	-27° 08' 09"	54' 06"	14' 44,52"	274° 19' 58"	81,27%
24:00	251° 20' 14"	-5° 06' 40"	249° 00' 04"	-27° 11' 56"	54' 06"	14' 44,46"	274° 03' 58"	81,58%

25 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	122° 06' 00"	-0,51"	124° 21' 39"	19° 41' 27"	1,0157241	15' 44,77"	23° 26' 17"	-06m 34s
01:00	122° 08' 24"	-0,51"	124° 24' 08"	19° 40' 55"	1,0157200	15' 44,78"	23° 26' 17"	-06m 34s
02:00	122° 10' 47"	-0,51"	124° 26' 36"	19° 40' 23"	1,0157160	15' 44,78"	23° 26' 17"	-06m 34s
03:00	122° 13' 10"	-0,51"	124° 29' 04"	19° 39' 50"	1,0157119	15' 44,79"	23° 26' 17"	-06m 34s
04:00	122° 15' 33"	-0,51"	124° 31' 32"	19° 39' 18"	1,0157079	15' 44,79"	23° 26' 17"	-06m 34s
05:00	122° 17' 57"	-0,51"	124° 34' 00"	19° 38' 46"	1,0157038	15' 44,79"	23° 26' 17"	-06m 34s
06:00	122° 20' 20"	-0,51"	124° 36' 29"	19° 38' 14"	1,0156997	15' 44,80"	23° 26' 17"	-06m 34s
07:00	122° 22' 43"	-0,51"	124° 38' 57"	19° 37' 41"	1,0156957	15' 44,80"	23° 26' 17"	-06m 34s
08:00	122° 25' 06"	-0,50"	124° 41' 25"	19° 37' 09"	1,0156916	15' 44,80"	23° 26' 17"	-06m 34s
09:00	122° 27' 30"	-0,50"	124° 43' 53"	19° 36' 36"	1,0156875	15' 44,81"	23° 26' 17"	-06m 34s
10:00	122° 29' 53"	-0,50"	124° 46' 21"	19° 36' 04"	1,0156834	15' 44,81"	23° 26' 17"	-06m 34s
11:00	122° 32' 16"	-0,50"	124° 48' 49"	19° 35' 31"	1,0156793	15' 44,82"	23° 26' 17"	-06m 34s
12:00	122° 34' 39"	-0,50"	124° 51' 17"	19° 34' 59"	1,0156752	15' 44,82"	23° 26' 17"	-06m 34s
13:00	122° 37' 03"	-0,50"	124° 53' 45"	19° 34' 26"	1,0156711	15' 44,82"	23° 26' 17"	-06m 34s
14:00	122° 39' 26"	-0,50"	124° 56' 14"	19° 33' 54"	1,0156670	15' 44,83"	23° 26' 17"	-06m 34s
15:00	122° 41' 49"	-0,49"	124° 58' 42"	19° 33' 21"	1,0156628	15' 44,83"	23° 26' 17"	-06m 34s
16:00	122° 44' 13"	-0,49"	125° 01' 10"	19° 32' 48"	1,0156587	15' 44,84"	23° 26' 17"	-06m 34s
17:00	122° 46' 36"	-0,49"	125° 03' 38"	19° 32' 16"	1,0156546	15' 44,84"	23° 26' 17"	-06m 34s
18:00	122° 48' 59"	-0,49"	125° 06' 06"	19° 31' 43"	1,0156504	15' 44,84"	23° 26' 17"	-06m 34s
19:00	122° 51' 22"	-0,49"	125° 08' 34"	19° 31' 10"	1,0156463	15' 44,85"	23° 26' 17"	-06m 34s
20:00	122° 53' 46"	-0,48"	125° 11' 02"	19° 30' 37"	1,0156421	15' 44,85"	23° 26' 17"	-06m 34s
21:00	122° 56' 09"	-0,48"	125° 13' 29"	19° 30' 04"	1,0156379	15' 44,85"	23° 26' 17"	-06m 34s
22:00	122° 58' 32"	-0,48"	125° 15' 57"	19° 29' 31"	1,0156338	15' 44,86"	23° 26' 17"	-06m 34s
23:00	123° 00' 55"	-0,48"	125° 18' 25"	19° 28' 59"	1,0156296	15' 44,86"	23° 26' 17"	-06m 34s
24:00	123° 03' 19"	-0,48"	125° 20' 53"	19° 28' 26"	1,0156254	15' 44,87"	23° 26' 17"	-06m 34s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	251° 20' 14"	-5° 06' 40"	249° 00' 04"	-27° 11' 56"	54' 06"	14' 44,46"	274° 03' 58"	81,58%
01:00	251° 49' 54"	-5° 06' 08"	249° 33' 03"	-27° 15' 35"	54' 06"	14' 44,39"	273° 47' 54"	81,89%
02:00	252° 19' 34"	-5° 05' 35"	250° 06' 04"	-27° 19' 06"	54' 06"	14' 44,34"	273° 31' 45"	82,19%
03:00	252° 49' 14"	-5° 05' 00"	250° 39' 07"	-27° 22' 30"	54' 05"	14' 44,28"	273° 15' 33"	82,49%
04:00	253° 18' 54"	-5° 04' 24"	251° 12' 12"	-27° 25' 45"	54' 05"	14' 44,23"	272° 59' 16"	82,79%
05:00	253° 48' 33"	-5° 03' 47"	251° 45' 19"	-27° 28' 53"	54' 05"	14' 44,18"	272° 42' 55"	83,08%
06:00	254° 18' 13"	-5° 03' 08"	252° 18' 28"	-27° 31' 53"	54' 05"	14' 44,14"	272° 26' 30"	83,38%
07:00	254° 47' 52"	-5° 02' 28"	252° 51' 38"	-27° 34' 45"	54' 05"	14' 44,10"	272° 10' 02"	83,67%
08:00	255° 17' 32"	-5° 01' 47"	253° 24' 50"	-27° 37' 29"	54' 05"	14' 44,07"	271° 53' 29"	83,96%
09:00	255° 47' 11"	-5° 01' 04"	253° 58' 04"	-27° 40' 05"	54' 05"	14' 44,04"	271° 36' 52"	84,25%
10:00	256° 16' 50"	-5° 00' 20"	254° 31' 20"	-27° 42' 34"	54' 04"	14' 44,01"	271° 20' 12"	84,53%
11:00	256° 46' 30"	-4° 59' 34"	255° 04' 36"	-27° 44' 54"	54' 04"	14' 43,99"	271° 03' 27"	84,82%
12:00	257° 16' 09"	-4° 58' 48"	255° 37' 55"	-27° 47' 06"	54' 04"	14' 43,97"	270° 46' 39"	85,10%
13:00	257° 45' 48"	-4° 57' 59"	256° 11' 15"	-27° 49' 11"	54' 04"	14' 43,95"	270° 29' 48"	85,38%
14:00	258° 15' 28"	-4° 57' 10"	256° 44' 36"	-27° 51' 07"	54' 04"	14' 43,94"	270° 12' 52"	85,66%
15:00	258° 45' 07"	-4° 56' 19"	257° 17' 58"	-27° 52' 55"	54' 04"	14' 43,93"	269° 55' 53"	85,93%
16:00	259° 14' 46"	-4° 55' 27"	257° 51' 22"	-27° 54' 36"	54' 04"	14' 43,92"	269° 38' 50"	86,20%
17:00	259° 44' 26"	-4° 54' 33"	258° 24' 46"	-27° 56' 08"	54' 04"	14' 43,92"	269° 21' 44"	86,47%
18:00	260° 14' 05"	-4° 53' 39"	258° 58' 12"	-27° 57' 32"	54' 04"	14' 43,93"	269° 04' 34"	86,74%
19:00	260° 43' 45"	-4° 52' 42"	259° 31' 39"	-27° 58' 48"	54' 04"	14' 43,93"	268° 47' 21"	87,01%
20:00	261° 13' 25"	-4° 51' 45"	260° 05' 07"	-27° 59' 56"	54' 04"	14' 43,94"	268° 30' 04"	87,27%
21:00	261° 43' 05"	-4° 50' 46"	260° 38' 35"	-28° 00' 56"	54' 04"	14' 43,96"	268° 12' 44"	87,53%
22:00	262° 12' 45"	-4° 49' 46"	261° 12' 05"	-28° 01' 48"	54' 04"	14' 43,97"	267° 55' 21"	87,79%
23:00	262° 42' 25"	-4° 48' 45"	261° 45' 35"	-28° 02' 31"	54' 04"	14' 43,99"	267° 37' 54"	88,05%
24:00	263° 12' 05"	-4° 47' 42"	262° 19' 06"	-28° 03' 07"	54' 04"	14' 44,02"	267° 20' 23"	88,30%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	123° 03' 19"	-0,48"	125° 20' 53"	19° 28' 26"	1,0156254	15' 44,87"	23° 26' 17"	-06m 34s
01:00	123° 05' 42"	-0,47"	125° 23' 21"	19° 27' 53"	1,0156212	15' 44,87"	23° 26' 17"	-06m 34s
02:00	123° 08' 05"	-0,47"	125° 25' 49"	19° 27' 20"	1,0156170	15' 44,87"	23° 26' 17"	-06m 34s
03:00	123° 10' 29"	-0,47"	125° 28' 17"	19° 26' 47"	1,0156128	15' 44,88"	23° 26' 17"	-06m 34s
04:00	123° 12' 52"	-0,47"	125° 30' 45"	19° 26' 13"	1,0156086	15' 44,88"	23° 26' 17"	-06m 34s
05:00	123° 15' 15"	-0,47"	125° 33' 12"	19° 25' 40"	1,0156044	15' 44,89"	23° 26' 17"	-06m 34s
06:00	123° 17' 38"	-0,46"	125° 35' 40"	19° 25' 07"	1,0156002	15' 44,89"	23° 26' 17"	-06m 34s
07:00	123° 20' 02"	-0,46"	125° 38' 08"	19° 24' 34"	1,0155960	15' 44,89"	23° 26' 17"	-06m 34s
08:00	123° 22' 25"	-0,46"	125° 40' 36"	19° 24' 01"	1,0155917	15' 44,90"	23° 26' 17"	-06m 34s
09:00	123° 24' 48"	-0,46"	125° 43' 04"	19° 23' 28"	1,0155875	15' 44,90"	23° 26' 17"	-06m 34s
10:00	123° 27' 11"	-0,45"	125° 45' 31"	19° 22' 54"	1,0155833	15' 44,91"	23° 26' 17"	-06m 34s
11:00	123° 29' 35"	-0,45"	125° 47' 59"	19° 22' 21"	1,0155790	15' 44,91"	23° 26' 17"	-06m 34s
12:00	123° 31' 58"	-0,45"	125° 50' 27"	19° 21' 48"	1,0155747	15' 44,91"	23° 26' 17"	-06m 34s
13:00	123° 34' 21"	-0,44"	125° 52' 54"	19° 21' 14"	1,0155705	15' 44,92"	23° 26' 17"	-06m 34s
14:00	123° 36' 45"	-0,44"	125° 55' 22"	19° 20' 41"	1,0155662	15' 44,92"	23° 26' 17"	-06m 34s
15:00	123° 39' 08"	-0,44"	125° 57' 50"	19° 20' 07"	1,0155619	15' 44,93"	23° 26' 17"	-06m 34s
16:00	123° 41' 31"	-0,44"	126° 00' 17"	19° 19' 34"	1,0155577	15' 44,93"	23° 26' 17"	-06m 34s
17:00	123° 43' 54"	-0,43"	126° 02' 45"	19° 19' 00"	1,0155534	15' 44,93"	23° 26' 17"	-06m 34s
18:00	123° 46' 18"	-0,43"	126° 05' 13"	19° 18' 27"	1,0155491	15' 44,94"	23° 26' 17"	-06m 34s
19:00	123° 48' 41"	-0,43"	126° 07' 40"	19° 17' 53"	1,0155448	15' 44,94"	23° 26' 17"	-06m 34s
20:00	123° 51' 04"	-0,43"	126° 10' 08"	19° 17' 20"	1,0155405	15' 44,95"	23° 26' 17"	-06m 34s
21:00	123° 53' 28"	-0,42"	126° 12' 35"	19° 16' 46"	1,0155362	15' 44,95"	23° 26' 17"	-06m 34s
22:00	123° 55' 51"	-0,42"	126° 15' 03"	19° 16' 12"	1,0155319	15' 44,95"	23° 26' 17"	-06m 34s
23:00	123° 58' 14"	-0,42"	126° 17' 30"	19° 15' 39"	1,0155275	15' 44,96"	23° 26' 17"	-06m 34s
24:00	124° 00' 37"	-0,41"	126° 19' 58"	19° 15' 05"	1,0155232	15' 44,96"	23° 26' 17"	-06m 34s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	263° 12' 05"	-4° 47' 42"	262° 19' 06"	-28° 03' 07"	54' 04"	14' 44,02"	267° 20' 23"	88,30%
01:00	263° 41' 45"	-4° 46' 38"	262° 52' 38"	-28° 03' 34"	54' 05"	14' 44,05"	267° 02' 49"	88,56%
02:00	264° 11' 26"	-4° 45' 33"	263° 26' 10"	-28° 03' 53"	54' 05"	14' 44,08"	266° 45' 12"	88,81%
03:00	264° 41' 07"	-4° 44' 26"	263° 59' 42"	-28° 04' 04"	54' 05"	14' 44,11"	266° 27' 32"	89,05%
04:00	265° 10' 48"	-4° 43' 18"	264° 33' 15"	-28° 04' 07"	54' 05"	14' 44,15"	266° 09' 48"	89,30%
05:00	265° 40' 29"	-4° 42' 09"	265° 06' 49"	-28° 04' 02"	54' 05"	14' 44,19"	265° 52' 01"	89,54%
06:00	266° 10' 10"	-4° 40' 59"	265° 40' 22"	-28° 03' 49"	54' 05"	14' 44,24"	265° 34' 10"	89,78%
07:00	266° 39' 52"	-4° 39' 47"	266° 13' 56"	-28° 03' 27"	54' 05"	14' 44,29"	265° 16' 16"	90,02%
08:00	267° 09' 34"	-4° 38' 34"	266° 47' 30"	-28° 02' 57"	54' 06"	14' 44,34"	264° 58' 18"	90,26%
09:00	267° 39' 16"	-4° 37' 20"	267° 21' 04"	-28° 02' 19"	54' 06"	14' 44,39"	264° 40' 17"	90,49%
10:00	268° 08' 59"	-4° 36' 04"	267° 54' 38"	-28° 01' 33"	54' 06"	14' 44,45"	264° 22' 13"	90,72%
11:00	268° 38' 41"	-4° 34' 48"	268° 28' 12"	-28° 00' 39"	54' 06"	14' 44,51"	264° 04' 05"	90,95%
12:00	269° 08' 24"	-4° 33' 30"	269° 01' 45"	-27° 59' 36"	54' 07"	14' 44,58"	263° 45' 53"	91,17%
13:00	269° 38' 08"	-4° 32' 10"	269° 35' 19"	-27° 58' 25"	54' 07"	14' 44,65"	263° 27' 38"	91,39%
14:00	270° 07' 51"	-4° 30' 50"	270° 08' 52"	-27° 57' 06"	54' 07"	14' 44,72"	263° 09' 19"	91,61%
15:00	270° 37' 35"	-4° 29' 28"	270° 42' 25"	-27° 55' 39"	54' 07"	14' 44,79"	262° 50' 56"	91,83%
16:00	271° 07' 19"	-4° 28' 05"	271° 15' 57"	-27° 54' 04"	54' 08"	14' 44,87"	262° 32' 29"	92,05%
17:00	271° 37' 04"	-4° 26' 41"	271° 49' 29"	-27° 52' 21"	54' 08"	14' 44,95"	262° 13' 59"	92,26%
18:00	272° 06' 49"	-4° 25' 16"	272° 23' 00"	-27° 50' 29"	54' 08"	14' 45,04"	261° 55' 24"	92,47%
19:00	272° 36' 34"	-4° 23' 49"	272° 56' 31"	-27° 48' 30"	54' 09"	14' 45,12"	261° 36' 45"	92,68%
20:00	273° 06' 20"	-4° 22' 21"	273° 30' 01"	-27° 46' 22"	54' 09"	14' 45,21"	261° 18' 01"	92,88%
21:00	273° 36' 06"	-4° 20' 52"	274° 03' 30"	-27° 44' 06"	54' 09"	14' 45,31"	260° 59' 13"	93,08%
22:00	274° 05' 53"	-4° 19' 22"	274° 36' 58"	-27° 41' 42"	54' 10"	14' 45,41"	260° 40' 20"	93,28%
23:00	274° 35' 40"	-4° 17' 50"	275° 10' 25"	-27° 39' 10"	54' 10"	14' 45,50"	260° 21' 23"	93,48%
24:00	275° 05' 27"	-4° 16' 18"	275° 43' 52"	-27° 36' 30"	54' 10"	14' 45,61"	260° 02' 20"	93,67%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	124° 00' 37"	-0,41"	126° 19' 58"	19° 15' 05"	1,0155232	15' 44,96"	23° 26' 17"	-06m 34s
01:00	124° 03' 01"	-0,41"	126° 22' 25"	19° 14' 31"	1,0155189	15' 44,97"	23° 26' 17"	-06m 34s
02:00	124° 05' 24"	-0,41"	126° 24' 53"	19° 13' 57"	1,0155145	15' 44,97"	23° 26' 17"	-06m 34s
03:00	124° 07' 47"	-0,40"	126° 27' 20"	19° 13' 23"	1,0155102	15' 44,97"	23° 26' 17"	-06m 34s
04:00	124° 10' 11"	-0,40"	126° 29' 48"	19° 12' 49"	1,0155059	15' 44,98"	23° 26' 17"	-06m 34s
05:00	124° 12' 34"	-0,40"	126° 32' 15"	19° 12' 16"	1,0155015	15' 44,98"	23° 26' 17"	-06m 34s
06:00	124° 14' 57"	-0,39"	126° 34' 43"	19° 11' 42"	1,0154971	15' 44,99"	23° 26' 17"	-06m 34s
07:00	124° 17' 21"	-0,39"	126° 37' 10"	19° 11' 08"	1,0154928	15' 44,99"	23° 26' 17"	-06m 34s
08:00	124° 19' 44"	-0,39"	126° 39' 37"	19° 10' 34"	1,0154884	15' 44,99"	23° 26' 17"	-06m 34s
09:00	124° 22' 07"	-0,38"	126° 42' 05"	19° 10' 00"	1,0154840	15' 45,00"	23° 26' 17"	-06m 34s
10:00	124° 24' 30"	-0,38"	126° 44' 32"	19° 09' 25"	1,0154796	15' 45,00"	23° 26' 17"	-06m 34s
11:00	124° 26' 54"	-0,38"	126° 47' 00"	19° 08' 51"	1,0154752	15' 45,01"	23° 26' 17"	-06m 34s
12:00	124° 29' 17"	-0,37"	126° 49' 27"	19° 08' 17"	1,0154708	15' 45,01"	23° 26' 17"	-06m 34s
13:00	124° 31' 40"	-0,37"	126° 51' 54"	19° 07' 43"	1,0154664	15' 45,01"	23° 26' 17"	-06m 34s
14:00	124° 34' 04"	-0,37"	126° 54' 21"	19° 07' 09"	1,0154620	15' 45,02"	23° 26' 17"	-06m 34s
15:00	124° 36' 27"	-0,36"	126° 56' 49"	19° 06' 35"	1,0154576	15' 45,02"	23° 26' 17"	-06m 34s
16:00	124° 38' 50"	-0,36"	126° 59' 16"	19° 06' 00"	1,0154532	15' 45,03"	23° 26' 17"	-06m 34s
17:00	124° 41' 14"	-0,35"	127° 01' 43"	19° 05' 26"	1,0154488	15' 45,03"	23° 26' 17"	-06m 34s
18:00	124° 43' 37"	-0,35"	127° 04' 10"	19° 04' 52"	1,0154443	15' 45,03"	23° 26' 17"	-06m 34s
19:00	124° 46' 00"	-0,35"	127° 06' 38"	19° 04' 17"	1,0154399	15' 45,04"	23° 26' 17"	-06m 34s
20:00	124° 48' 24"	-0,34"	127° 09' 05"	19° 03' 43"	1,0154355	15' 45,04"	23° 26' 17"	-06m 34s
21:00	124° 50' 47"	-0,34"	127° 11' 32"	19° 03' 08"	1,0154310	15' 45,05"	23° 26' 17"	-06m 33s
22:00	124° 53' 10"	-0,34"	127° 13' 59"	19° 02' 34"	1,0154266	15' 45,05"	23° 26' 17"	-06m 33s
23:00	124° 55' 33"	-0,33"	127° 16' 26"	19° 02' 00"	1,0154221	15' 45,06"	23° 26' 17"	-06m 33s
24:00	124° 57' 57"	-0,33"	127° 18' 53"	19° 01' 25"	1,0154176	15' 45,06"	23° 26' 17"	-06m 33s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	275° 05' 27"	-4° 16' 18"	275° 43' 52"	-27° 36' 30"	54' 10"	14' 45,61"	260° 02' 20"	93,67%
01:00	275° 35' 15"	-4° 14' 44"	276° 17' 17"	-27° 33' 42"	54' 11"	14' 45,71"	259° 43' 12"	93,87%
02:00	276° 05' 03"	-4° 13' 09"	276° 50' 41"	-27° 30' 45"	54' 11"	14' 45,82"	259° 23' 58"	94,06%
03:00	276° 34' 52"	-4° 11' 32"	277° 24' 04"	-27° 27' 41"	54' 11"	14' 45,93"	259° 04' 38"	94,24%
04:00	277° 04' 41"	-4° 09' 55"	277° 57' 26"	-27° 24' 29"	54' 12"	14' 46,05"	258° 45' 13"	94,42%
05:00	277° 34' 30"	-4° 08' 16"	278° 30' 46"	-27° 21' 08"	54' 12"	14' 46,16"	258° 25' 40"	94,60%
06:00	278° 04' 20"	-4° 06' 37"	279° 04' 05"	-27° 17' 40"	54' 13"	14' 46,28"	258° 06' 01"	94,78%
07:00	278° 34' 11"	-4° 04' 56"	279° 37' 23"	-27° 14' 04"	54' 13"	14' 46,41"	257° 46' 15"	94,96%
08:00	279° 04' 02"	-4° 03' 14"	280° 10' 39"	-27° 10' 19"	54' 14"	14' 46,53"	257° 26' 21"	95,13%
09:00	279° 33' 53"	-4° 01' 31"	280° 43' 54"	-27° 06' 27"	54' 14"	14' 46,66"	257° 06' 19"	95,30%
10:00	280° 03' 45"	-3° 59' 46"	281° 17' 06"	-27° 02' 27"	54' 15"	14' 46,79"	256° 46' 08"	95,47%
11:00	280° 33' 38"	-3° 58' 01"	281° 50' 18"	-26° 58' 19"	54' 15"	14' 46,93"	256° 25' 48"	95,63%
12:00	281° 03' 31"	-3° 56' 14"	282° 23' 27"	-26° 54' 03"	54' 16"	14' 47,06"	256° 05' 18"	95,79%
13:00	281° 33' 25"	-3° 54' 27"	282° 56' 35"	-26° 49' 39"	54' 16"	14' 47,20"	255° 44' 37"	95,95%
14:00	282° 03' 19"	-3° 52' 38"	283° 29' 41"	-26° 45' 08"	54' 17"	14' 47,35"	255° 23' 46"	96,10%
15:00	282° 33' 13"	-3° 50' 48"	284° 02' 44"	-26° 40' 29"	54' 17"	14' 47,49"	255° 02' 42"	96,26%
16:00	283° 03' 09"	-3° 48' 57"	284° 35' 46"	-26° 35' 41"	54' 18"	14' 47,64"	254° 41' 25"	96,41%
17:00	283° 33' 05"	-3° 47' 05"	285° 08' 46"	-26° 30' 47"	54' 18"	14' 47,79"	254° 19' 55"	96,55%
18:00	284° 03' 01"	-3° 45' 12"	285° 41' 44"	-26° 25' 44"	54' 19"	14' 47,94"	253° 58' 10"	96,70%
19:00	284° 32' 58"	-3° 43' 17"	286° 14' 40"	-26° 20' 34"	54' 19"	14' 48,10"	253° 36' 08"	96,84%
20:00	285° 02' 56"	-3° 41' 22"	286° 47' 33"	-26° 15' 16"	54' 20"	14' 48,25"	253° 13' 50"	96,97%
21:00	285° 32' 54"	-3° 39' 26"	287° 20' 25"	-26° 09' 50"	54' 21"	14' 48,41"	252° 51' 12"	97,11%
22:00	286° 02' 53"	-3° 37' 28"	287° 53' 14"	-26° 04' 17"	54' 21"	14' 48,58"	252° 28' 15"	97,24%
23:00	286° 32' 52"	-3° 35' 30"	288° 26' 01"	-25° 58' 37"	54' 22"	14' 48,74"	252° 04' 56"	97,37%
24:00	287° 02' 53"	-3° 33' 30"	288° 58' 45"	-25° 52' 48"	54' 22"	14' 48,91"	251° 41' 13"	97,50%

28 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	124° 57' 57"	-0,33"	127° 18' 53"	19° 01' 25"	1,0154176	15' 45,06"	23° 26' 17"	-06m 33s
01:00	125° 00' 20"	-0,32"	127° 21' 21"	19° 00' 50"	1,0154132	15' 45,06"	23° 26' 17"	-06m 33s
02:00	125° 02' 43"	-0,32"	127° 23' 48"	19° 00' 16"	1,0154087	15' 45,07"	23° 26' 17"	-06m 33s
03:00	125° 05' 07"	-0,31"	127° 26' 15"	18° 59' 41"	1,0154042	15' 45,07"	23° 26' 17"	-06m 33s
04:00	125° 07' 30"	-0,31"	127° 28' 42"	18° 59' 07"	1,0153997	15' 45,08"	23° 26' 17"	-06m 33s
05:00	125° 09' 53"	-0,31"	127° 31' 09"	18° 58' 32"	1,0153952	15' 45,08"	23° 26' 17"	-06m 33s
06:00	125° 12' 17"	-0,30"	127° 33' 36"	18° 57' 57"	1,0153907	15' 45,08"	23° 26' 17"	-06m 33s
07:00	125° 14' 40"	-0,30"	127° 36' 03"	18° 57' 22"	1,0153862	15' 45,09"	23° 26' 17"	-06m 33s
08:00	125° 17' 03"	-0,29"	127° 38' 30"	18° 56' 48"	1,0153817	15' 45,09"	23° 26' 17"	-06m 33s
09:00	125° 19' 27"	-0,29"	127° 40' 57"	18° 56' 13"	1,0153772	15' 45,10"	23° 26' 17"	-06m 33s
10:00	125° 21' 50"	-0,29"	127° 43' 24"	18° 55' 38"	1,0153727	15' 45,10"	23° 26' 17"	-06m 33s
11:00	125° 24' 13"	-0,28"	127° 45' 51"	18° 55' 03"	1,0153682	15' 45,11"	23° 26' 17"	-06m 33s
12:00	125° 26' 37"	-0,28"	127° 48' 18"	18° 54' 28"	1,0153636	15' 45,11"	23° 26' 17"	-06m 33s
13:00	125° 29' 00"	-0,27"	127° 50' 45"	18° 53' 53"	1,0153591	15' 45,11"	23° 26' 17"	-06m 33s
14:00	125° 31' 23"	-0,27"	127° 53' 12"	18° 53' 18"	1,0153546	15' 45,12"	23° 26' 17"	-06m 33s
15:00	125° 33' 47"	-0,26"	127° 55' 39"	18° 52' 43"	1,0153500	15' 45,12"	23° 26' 17"	-06m 32s
16:00	125° 36' 10"	-0,26"	127° 58' 05"	18° 52' 08"	1,0153455	15' 45,13"	23° 26' 17"	-06m 32s
17:00	125° 38' 33"	-0,25"	128° 00' 32"	18° 51' 33"	1,0153409	15' 45,13"	23° 26' 17"	-06m 32s
18:00	125° 40' 57"	-0,25"	128° 02' 59"	18° 50' 58"	1,0153363	15' 45,14"	23° 26' 17"	-06m 32s
19:00	125° 43' 20"	-0,25"	128° 05' 26"	18° 50' 23"	1,0153318	15' 45,14"	23° 26' 17"	-06m 32s
20:00	125° 45' 43"	-0,24"	128° 07' 53"	18° 49' 47"	1,0153272	15' 45,14"	23° 26' 17"	-06m 32s
21:00	125° 48' 07"	-0,24"	128° 10' 20"	18° 49' 12"	1,0153226	15' 45,15"	23° 26' 17"	-06m 32s
22:00	125° 50' 30"	-0,23"	128° 12' 46"	18° 48' 37"	1,0153180	15' 45,15"	23° 26' 17"	-06m 32s
23:00	125° 52' 53"	-0,23"	128° 15' 13"	18° 48' 02"	1,0153134	15' 45,16"	23° 26' 17"	-06m 32s
24:00	125° 55' 17"	-0,22"	128° 17' 40"	18° 47' 26"	1,0153088	15' 45,16"	23° 26' 17"	-06m 32s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	287° 02' 53"	-3° 33' 30"	288° 58' 45"	-25° 52' 48"	54' 22"	14' 48,91"	251° 41' 13"	97,50%
01:00	287° 32' 53"	-3° 31' 29"	289° 31' 27"	-25° 46' 53"	54' 23"	14' 49,08"	251° 17' 04"	97,62%
02:00	288° 02' 55"	-3° 29' 28"	290° 04' 06"	-25° 40' 49"	54' 24"	14' 49,25"	250° 52' 26"	97,74%
03:00	288° 32' 57"	-3° 27' 25"	290° 36' 43"	-25° 34' 39"	54' 24"	14' 49,43"	250° 27' 19"	97,86%
04:00	289° 03' 00"	-3° 25' 21"	291° 09' 18"	-25° 28' 21"	54' 25"	14' 49,60"	250° 01' 37"	97,97%
05:00	289° 33' 03"	-3° 23' 17"	291° 41' 50"	-25° 21' 55"	54' 26"	14' 49,78"	249° 35' 19"	98,08%
06:00	290° 03' 07"	-3° 21' 11"	292° 14' 19"	-25° 15' 23"	54' 26"	14' 49,97"	249° 08' 21"	98,19%
07:00	290° 33' 12"	-3° 19' 04"	292° 46' 46"	-25° 08' 43"	54' 27"	14' 50,15"	248° 40' 38"	98,29%
08:00	291° 03' 18"	-3° 16' 57"	293° 19' 10"	-25° 01' 56"	54' 28"	14' 50,34"	248° 12' 06"	98,39%
09:00	291° 33' 24"	-3° 14' 48"	293° 51' 31"	-24° 55' 01"	54' 28"	14' 50,52"	247° 42' 41"	98,49%
10:00	292° 03' 31"	-3° 12' 39"	294° 23' 49"	-24° 47' 59"	54' 29"	14' 50,72"	247° 12' 15"	98,59%
11:00	292° 33' 38"	-3° 10' 28"	294° 56' 05"	-24° 40' 51"	54' 30"	14' 50,91"	246° 40' 43"	98,68%
12:00	293° 03' 47"	-3° 08' 17"	295° 28' 18"	-24° 33' 35"	54' 30"	14' 51,10"	246° 07' 57"	98,77%
13:00	293° 33' 56"	-3° 06' 04"	296° 00' 28"	-24° 26' 12"	54' 31"	14' 51,30"	245° 33' 49"	98,86%
14:00	294° 04' 06"	-3° 03' 51"	296° 32' 35"	-24° 18' 42"	54' 32"	14' 51,50"	244° 58' 07"	98,94%
15:00	294° 34' 16"	-3° 01' 37"	297° 04' 39"	-24° 11' 05"	54' 33"	14' 51,70"	244° 20' 41"	99,02%
16:00	295° 04' 28"	-2° 59' 21"	297° 36' 41"	-24° 03' 21"	54' 33"	14' 51,91"	243° 41' 17"	99,10%
17:00	295° 34' 40"	-2° 57' 05"	298° 08' 39"	-23° 55' 30"	54' 34"	14' 52,11"	242° 59' 39"	99,17%
18:00	296° 04' 53"	-2° 54' 48"	298° 40' 34"	-23° 47' 33"	54' 35"	14' 52,32"	242° 15' 28"	99,24%
19:00	296° 35' 06"	-2° 52' 30"	299° 12' 27"	-23° 39' 28"	54' 36"	14' 52,53"	241° 28' 22"	99,31%
20:00	297° 05' 21"	-2° 50' 12"	299° 44' 16"	-23° 31' 17"	54' 36"	14' 52,74"	240° 37' 55"	99,37%
21:00	297° 35' 36"	-2° 47' 52"	300° 16' 03"	-23° 22' 59"	54' 37"	14' 52,96"	239° 43' 34"	99,43%
22:00	298° 05' 52"	-2° 45' 32"	300° 47' 46"	-23° 14' 35"	54' 38"	14' 53,18"	238° 44' 41"	99,49%
23:00	298° 36' 09"	-2° 43' 10"	301° 19' 26"	-23° 06' 04"	54' 39"	14' 53,39"	237° 40' 27"	99,54%
24:00	299° 06' 26"	-2° 40' 48"	301° 51' 04"	-22° 57' 26"	54' 40"	14' 53,61"	236° 29' 55"	99,59%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	125° 55' 17"	-0,22"	128° 17' 40"	18° 47' 26"	1,0153088	15' 45,16"	23° 26' 17"	-06m 32s
01:00	125° 57' 40"	-0,22"	128° 20' 07"	18° 46' 51"	1,0153042	15' 45,16"	23° 26' 17"	-06m 32s
02:00	126° 00' 03"	-0,21"	128° 22' 33"	18° 46' 16"	1,0152996	15' 45,17"	23° 26' 17"	-06m 32s
03:00	126° 02' 27"	-0,21"	128° 25' 00"	18° 45' 40"	1,0152950	15' 45,17"	23° 26' 17"	-06m 32s
04:00	126° 04' 50"	-0,20"	128° 27' 27"	18° 45' 05"	1,0152904	15' 45,18"	23° 26' 17"	-06m 32s
05:00	126° 07' 13"	-0,20"	128° 29' 53"	18° 44' 29"	1,0152858	15' 45,18"	23° 26' 17"	-06m 31s
06:00	126° 09' 37"	-0,19"	128° 32' 20"	18° 43' 54"	1,0152811	15' 45,19"	23° 26' 17"	-06m 31s
07:00	126° 12' 00"	-0,19"	128° 34' 47"	18° 43' 18"	1,0152765	15' 45,19"	23° 26' 17"	-06m 31s
08:00	126° 14' 23"	-0,18"	128° 37' 13"	18° 42' 43"	1,0152719	15' 45,20"	23° 26' 17"	-06m 31s
09:00	126° 16' 47"	-0,18"	128° 39' 40"	18° 42' 07"	1,0152672	15' 45,20"	23° 26' 17"	-06m 31s
10:00	126° 19' 10"	-0,17"	128° 42' 07"	18° 41' 32"	1,0152626	15' 45,20"	23° 26' 17"	-06m 31s
11:00	126° 21' 34"	-0,17"	128° 44' 33"	18° 40' 56"	1,0152579	15' 45,21"	23° 26' 17"	-06m 31s
12:00	126° 23' 57"	-0,16"	128° 47' 00"	18° 40' 20"	1,0152532	15' 45,21"	23° 26' 17"	-06m 31s
13:00	126° 26' 20"	-0,16"	128° 49' 26"	18° 39' 44"	1,0152486	15' 45,22"	23° 26' 17"	-06m 31s
14:00	126° 28' 44"	-0,15"	128° 51' 53"	18° 39' 09"	1,0152439	15' 45,22"	23° 26' 17"	-06m 31s
15:00	126° 31' 07"	-0,15"	128° 54' 19"	18° 38' 33"	1,0152392	15' 45,23"	23° 26' 17"	-06m 31s
16:00	126° 33' 30"	-0,14"	128° 56' 46"	18° 37' 57"	1,0152345	15' 45,23"	23° 26' 17"	-06m 31s
17:00	126° 35' 54"	-0,14"	128° 59' 12"	18° 37' 21"	1,0152299	15' 45,23"	23° 26' 17"	-06m 30s
18:00	126° 38' 17"	-0,13"	129° 01' 39"	18° 36' 45"	1,0152252	15' 45,24"	23° 26' 17"	-06m 30s
19:00	126° 40' 40"	-0,13"	129° 04' 05"	18° 36' 09"	1,0152205	15' 45,24"	23° 26' 17"	-06m 30s
20:00	126° 43' 04"	-0,12"	129° 06' 32"	18° 35' 33"	1,0152158	15' 45,25"	23° 26' 17"	-06m 30s
21:00	126° 45' 27"	-0,12"	129° 08' 58"	18° 34' 58"	1,0152110	15' 45,25"	23° 26' 17"	-06m 30s
22:00	126° 47' 51"	-0,11"	129° 11' 24"	18° 34' 22"	1,0152063	15' 45,26"	23° 26' 17"	-06m 30s
23:00	126° 50' 14"	-0,11"	129° 13' 51"	18° 33' 45"	1,0152016	15' 45,26"	23° 26' 17"	-06m 30s
24:00	126° 52' 37"	-0,10"	129° 16' 17"	18° 33' 09"	1,0151969	15' 45,26"	23° 26' 17"	-06m 30s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	299° 06' 26"	-2° 40' 48"	301° 51' 04"	-22° 57' 26"	54' 40"	14' 53,61"	236° 29' 55"	99,59%
01:00	299° 36' 45"	-2° 38' 25"	302° 22' 38"	-22° 48' 42"	54' 40"	14' 53,84"	235° 11' 51"	99,64%
02:00	300° 07' 04"	-2° 36' 01"	302° 54' 09"	-22° 39' 51"	54' 41"	14' 54,06"	233° 44' 42"	99,69%
03:00	300° 37' 24"	-2° 33' 36"	303° 25' 37"	-22° 30' 54"	54' 42"	14' 54,29"	232° 06' 31"	99,73%
04:00	301° 07' 45"	-2° 31' 11"	303° 57' 02"	-22° 21' 50"	54' 43"	14' 54,51"	230° 14' 46"	99,77%
05:00	301° 38' 07"	-2° 28' 45"	304° 28' 23"	-22° 12' 40"	54' 44"	14' 54,74"	228° 06' 07"	99,80%
06:00	302° 08' 30"	-2° 26' 18"	304° 59' 42"	-22° 03' 24"	54' 45"	14' 54,98"	225° 36' 13"	99,83%
07:00	302° 38' 53"	-2° 23' 50"	305° 30' 57"	-21° 54' 01"	54' 46"	14' 55,21"	222° 39' 14"	99,86%
08:00	303° 09' 18"	-2° 21' 21"	306° 02' 10"	-21° 44' 32"	54' 46"	14' 55,44"	219° 07' 17"	99,89%
09:00	303° 39' 43"	-2° 18' 52"	306° 33' 19"	-21° 34' 58"	54' 47"	14' 55,68"	214° 49' 51"	99,91%
10:00	304° 10' 09"	-2° 16' 22"	307° 04' 25"	-21° 25' 17"	54' 48"	14' 55,92"	209° 33' 00"	99,93%
11:00	304° 40' 36"	-2° 13' 51"	307° 35' 28"	-21° 15' 30"	54' 49"	14' 56,16"	202° 59' 12"	99,94%
12:00	305° 11' 04"	-2° 11' 19"	308° 06' 28"	-21° 05' 36"	54' 50"	14' 56,40"	194° 49' 04"	99,95%
13:00	305° 41' 33"	-2° 08' 47"	308° 37' 24"	-20° 55' 37"	54' 51"	14' 56,65"	184° 47' 46"	99,96%
14:00	306° 12' 02"	-2° 06' 14"	309° 08' 18"	-20° 45' 32"	54' 52"	14' 56,89"	172° 58' 50"	99,97%
15:00	306° 42' 33"	-2° 03' 41"	309° 39' 08"	-20° 35' 22"	54' 53"	14' 57,14"	160° 00' 10"	99,97%
16:00	307° 13' 05"	-2° 01' 06"	310° 09' 56"	-20° 25' 05"	54' 54"	14' 57,39"	147° 01' 34"	99,97%
17:00	307° 43' 37"	-1° 58' 31"	310° 40' 40"	-20° 14' 43"	54' 54"	14' 57,64"	135° 12' 49"	99,96%
18:00	308° 14' 10"	-1° 55' 56"	311° 11' 21"	-20° 04' 15"	54' 55"	14' 57,90"	125° 11' 53"	99,95%
19:00	308° 44' 45"	-1° 53' 19"	311° 41' 59"	-19° 53' 41"	54' 56"	14' 58,15"	117° 02' 20"	99,94%
20:00	309° 15' 20"	-1° 50' 42"	312° 12' 34"	-19° 43' 02"	54' 57"	14' 58,41"	110° 29' 21"	99,93%
21:00	309° 45' 56"	-1° 48' 05"	312° 43' 06"	-19° 32' 17"	54' 58"	14' 58,66"	105° 13' 32"	99,91%
22:00	310° 16' 33"	-1° 45' 27"	313° 13' 35"	-19° 21' 27"	54' 59"	14' 58,92"	100° 57' 23"	99,89%
23:00	310° 47' 11"	-1° 42' 48"	313° 44' 01"	-19° 10' 31"	55' 00"	14' 59,18"	97° 26' 56"	99,86%
24:00	311° 17' 51"	-1° 40' 09"	314° 14' 23"	-18° 59' 30"	55' 01"	14' 59,45"	94° 31' 39"	99,83%

30 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	126° 52' 37"	-0,10"	129° 16' 17"	18° 33' 09"	1,0151969	15' 45,26"	23° 26' 17"	-06m 30s
01:00	126° 55' 01"	-0,10"	129° 18' 44"	18° 32' 33"	1,0151922	15' 45,27"	23° 26' 17"	-06m 30s
02:00	126° 57' 24"	-0,09"	129° 21' 10"	18° 31' 57"	1,0151874	15' 45,27"	23° 26' 17"	-06m 30s
03:00	126° 59' 47"	-0,09"	129° 23' 36"	18° 31' 21"	1,0151827	15' 45,28"	23° 26' 17"	-06m 30s
04:00	127° 02' 11"	-0,08"	129° 26' 03"	18° 30' 45"	1,0151779	15' 45,28"	23° 26' 17"	-06m 29s
05:00	127° 04' 34"	-0,08"	129° 28' 29"	18° 30' 09"	1,0151732	15' 45,29"	23° 26' 17"	-06m 29s
06:00	127° 06' 58"	-0,07"	129° 30' 55"	18° 29' 32"	1,0151684	15' 45,29"	23° 26' 17"	-06m 29s
07:00	127° 09' 21"	-0,07"	129° 33' 21"	18° 28' 56"	1,0151636	15' 45,30"	23° 26' 17"	-06m 29s
08:00	127° 11' 44"	-0,06"	129° 35' 48"	18° 28' 20"	1,0151589	15' 45,30"	23° 26' 17"	-06m 29s
09:00	127° 14' 08"	-0,06"	129° 38' 14"	18° 27' 43"	1,0151541	15' 45,30"	23° 26' 17"	-06m 29s
10:00	127° 16' 31"	-0,05"	129° 40' 40"	18° 27' 07"	1,0151493	15' 45,31"	23° 26' 17"	-06m 29s
11:00	127° 18' 54"	-0,04"	129° 43' 06"	18° 26' 30"	1,0151445	15' 45,31"	23° 26' 17"	-06m 29s
12:00	127° 21' 18"	-0,04"	129° 45' 32"	18° 25' 54"	1,0151397	15' 45,32"	23° 26' 17"	-06m 29s
13:00	127° 23' 41"	-0,03"	129° 47' 59"	18° 25' 18"	1,0151349	15' 45,32"	23° 26' 17"	-06m 28s
14:00	127° 26' 05"	-0,03"	129° 50' 25"	18° 24' 41"	1,0151301	15' 45,33"	23° 26' 17"	-06m 28s
15:00	127° 28' 28"	-0,02"	129° 52' 51"	18° 24' 04"	1,0151253	15' 45,33"	23° 26' 17"	-06m 28s
16:00	127° 30' 51"	-0,02"	129° 55' 17"	18° 23' 28"	1,0151205	15' 45,34"	23° 26' 17"	-06m 28s
17:00	127° 33' 15"	-0,01"	129° 57' 43"	18° 22' 51"	1,0151157	15' 45,34"	23° 26' 17"	-06m 28s
18:00	127° 35' 38"	-0,01"	130° 00' 09"	18° 22' 15"	1,0151109	15' 45,34"	23° 26' 17"	-06m 28s
19:00	127° 38' 02"	-0,00"	130° 02' 35"	18° 21' 38"	1,0151061	15' 45,35"	23° 26' 17"	-06m 28s
20:00	127° 40' 25"	0,00"	130° 05' 01"	18° 21' 01"	1,0151012	15' 45,35"	23° 26' 17"	-06m 28s
21:00	127° 42' 48"	0,01"	130° 07' 27"	18° 20' 25"	1,0150964	15' 45,36"	23° 26' 17"	-06m 27s
22:00	127° 45' 12"	0,01"	130° 09' 53"	18° 19' 48"	1,0150915	15' 45,36"	23° 26' 17"	-06m 27s
23:00	127° 47' 35"	0,02"	130° 12' 19"	18° 19' 11"	1,0150867	15' 45,37"	23° 26' 17"	-06m 27s
24:00	127° 49' 59"	0,03"	130° 14' 45"	18° 18' 34"	1,0150818	15' 45,37"	23° 26' 17"	-06m 27s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	311° 17' 51"	-1° 40' 09"	314° 14' 23"	-18° 59' 30"	55' 01"	14' 59,45"	94° 31' 39"	99,83%
01:00	311° 48' 31"	-1° 37' 29"	314° 44' 43"	-18° 48' 23"	55' 02"	15' 00,00"	92° 03' 42"	99,80%
02:00	312° 19' 12"	-1° 34' 48"	315° 15' 00"	-18° 37' 11"	55' 03"	15' 00,00"	89° 57' 12"	99,76%
03:00	312° 49' 54"	-1° 32' 07"	315° 45' 14"	-18° 25' 54"	55' 04"	15' 00,24"	88° 07' 48"	99,72%
04:00	313° 20' 37"	-1° 29' 25"	316° 15' 25"	-18° 14' 32"	55' 05"	15' 00,51"	86° 32' 11"	99,68%
05:00	313° 51' 21"	-1° 26' 43"	316° 45' 33"	-18° 03' 05"	55' 06"	15' 00,78"	85° 07' 49"	99,64%
06:00	314° 22' 06"	-1° 24' 01"	317° 15' 38"	-17° 51' 32"	55' 07"	15' 01,05"	83° 52' 43"	99,59%
07:00	314° 52' 52"	-1° 21' 17"	317° 45' 40"	-17° 39' 55"	55' 08"	15' 01,33"	82° 45' 22"	99,53%
08:00	315° 23' 39"	-1° 18' 34"	318° 15' 40"	-17° 28' 12"	55' 09"	15' 01,60"	81° 44' 32"	99,48%
09:00	315° 54' 27"	-1° 15' 50"	318° 45' 36"	-17° 16' 25"	55' 10"	15' 01,88"	80° 49' 14"	99,42%
10:00	316° 25' 16"	-1° 13' 05"	319° 15' 30"	-17° 04' 33"	55' 11"	15' 02,15"	79° 58' 41"	99,36%
11:00	316° 56' 06"	-1° 10' 20"	319° 45' 21"	-16° 52' 36"	55' 12"	15' 02,43"	79° 12' 14"	99,29%
12:00	317° 26' 57"	-1° 07' 34"	320° 15' 10"	-16° 40' 34"	55' 13"	15' 02,71"	78° 29' 20"	99,22%
13:00	317° 57' 49"	-1° 04' 48"	320° 44' 55"	-16° 28' 28"	55' 14"	15' 02,99"	77° 49' 34"	99,15%
14:00	318° 28' 42"	-1° 02' 02"	321° 14' 38"	-16° 16' 17"	55' 15"	15' 03,28"	77° 12' 32"	99,07%
15:00	318° 59' 36"	-0° 59' 15"	321° 44' 19"	-16° 04' 01"	55' 16"	15' 03,56"	76° 37' 56"	98,99%
16:00	319° 30' 32"	-0° 56' 28"	322° 13' 56"	-15° 51' 41"	55' 17"	15' 03,85"	76° 05' 30"	98,91%
17:00	320° 01' 28"	-0° 53' 40"	322° 43' 32"	-15° 39' 16"	55' 18"	15' 04,14"	75° 35' 01"	98,82%
18:00	320° 32' 26"	-0° 50' 52"	323° 13' 04"	-15° 26' 47"	55' 19"	15' 04,42"	75° 06' 16"	98,73%
19:00	321° 03' 24"	-0° 48' 04"	323° 42' 34"	-15° 14' 14"	55' 20"	15' 04,71"	74° 39' 05"	98,64%
20:00	321° 34' 24"	-0° 45' 15"	324° 12' 02"	-15° 01' 36"	55' 21"	15' 05,01"	74° 13' 21"	98,54%
21:00	322° 05' 24"	-0° 42' 26"	324° 41' 27"	-14° 48' 54"	55' 23"	15' 05,30"	73° 48' 54"	98,44%
22:00	322° 36' 26"	-0° 39' 37"	325° 10' 50"	-14° 36' 07"	55' 24"	15' 05,59"	73° 25' 39"	98,33%
23:00	323° 07' 29"	-0° 36' 47"	325° 40' 11"	-14° 23' 17"	55' 25"	15' 05,89"	73° 03' 30"	98,23%
24:00	323° 38' 33"	-0° 33' 57"	326° 09' 29"	-14° 10' 23"	55' 26"	15' 06,18"	72° 42' 21"	98,12%

31 Juli 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	127° 49' 59"	0,03"	130° 14' 45"	18° 18' 34"	1,0150818	15' 45,37"	23° 26' 17"	-06m 27s
01:00	127° 52' 22"	0,03"	130° 17' 11"	18° 17' 57"	1,0150770	15' 45,38"	23° 26' 17"	-06m 27s
02:00	127° 54' 45"	0,04"	130° 19' 37"	18° 17' 20"	1,0150721	15' 45,38"	23° 26' 17"	-06m 27s
03:00	127° 57' 09"	0,04"	130° 22' 03"	18° 16' 43"	1,0150672	15' 45,39"	23° 26' 17"	-06m 27s
04:00	127° 59' 32"	0,05"	130° 24' 29"	18° 16' 06"	1,0150624	15' 45,39"	23° 26' 17"	-06m 27s
05:00	128° 01' 56"	0,05"	130° 26' 55"	18° 15' 30"	1,0150575	15' 45,39"	23° 26' 17"	-06m 26s
06:00	128° 04' 19"	0,06"	130° 29' 21"	18° 14' 52"	1,0150526	15' 45,40"	23° 26' 17"	-06m 26s
07:00	128° 06' 43"	0,06"	130° 31' 47"	18° 14' 15"	1,0150477	15' 45,40"	23° 26' 17"	-06m 26s
08:00	128° 09' 06"	0,07"	130° 34' 13"	18° 13' 38"	1,0150428	15' 45,41"	23° 26' 17"	-06m 26s
09:00	128° 11' 29"	0,07"	130° 36' 39"	18° 13' 01"	1,0150379	15' 45,41"	23° 26' 17"	-06m 26s
10:00	128° 13' 53"	0,08"	130° 39' 04"	18° 12' 24"	1,0150330	15' 45,42"	23° 26' 17"	-06m 26s
11:00	128° 16' 16"	0,09"	130° 41' 30"	18° 11' 47"	1,0150281	15' 45,42"	23° 26' 17"	-06m 26s
12:00	128° 18' 40"	0,09"	130° 43' 56"	18° 11' 10"	1,0150232	15' 45,43"	23° 26' 17"	-06m 26s
13:00	128° 21' 03"	0,10"	130° 46' 22"	18° 10' 33"	1,0150182	15' 45,43"	23° 26' 17"	-06m 25s
14:00	128° 23' 26"	0,10"	130° 48' 48"	18° 09' 55"	1,0150133	15' 45,44"	23° 26' 17"	-06m 25s
15:00	128° 25' 50"	0,11"	130° 51' 13"	18° 09' 18"	1,0150084	15' 45,44"	23° 26' 17"	-06m 25s
16:00	128° 28' 13"	0,11"	130° 53' 39"	18° 08' 41"	1,0150034	15' 45,45"	23° 26' 17"	-06m 25s
17:00	128° 30' 37"	0,12"	130° 56' 05"	18° 08' 03"	1,0149985	15' 45,45"	23° 26' 17"	-06m 25s
18:00	128° 33' 00"	0,12"	130° 58' 30"	18° 07' 26"	1,0149935	15' 45,45"	23° 26' 17"	-06m 25s
19:00	128° 35' 24"	0,13"	131° 00' 56"	18° 06' 48"	1,0149886	15' 45,46"	23° 26' 17"	-06m 25s
20:00	128° 37' 47"	0,14"	131° 03' 22"	18° 06' 11"	1,0149836	15' 45,46"	23° 26' 17"	-06m 24s
21:00	128° 40' 10"	0,14"	131° 05' 47"	18° 05' 34"	1,0149787	15' 45,47"	23° 26' 17"	-06m 24s
22:00	128° 42' 34"	0,15"	131° 08' 13"	18° 04' 56"	1,0149737	15' 45,47"	23° 26' 17"	-06m 24s
23:00	128° 44' 57"	0,15"	131° 10' 39"	18° 04' 18"	1,0149687	15' 45,48"	23° 26' 17"	-06m 24s
24:00	128° 47' 21"	0,16"	131° 13' 04"	18° 03' 41"	1,0149637	15' 45,48"	23° 26' 17"	-06m 24s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	323° 38' 33"	-0° 33' 57"	326° 09' 29"	-14° 10' 23"	55' 26"	15' 06,18"	72° 42' 21"	98,12%
01:00	324° 09' 38"	-0° 31' 07"	326° 38' 45"	-13° 57' 24"	55' 27"	15' 06,48"	72° 22' 07"	98,00%
02:00	324° 40' 45"	-0° 28' 17"	327° 07' 59"	-13° 44' 22"	55' 28"	15' 06,78"	72° 02' 46"	97,88%
03:00	325° 11' 52"	-0° 25' 26"	327° 37' 10"	-13° 31' 15"	55' 29"	15' 07,08"	71° 44' 12"	97,76%
04:00	325° 43' 00"	-0° 22' 35"	328° 06' 20"	-13° 18' 05"	55' 30"	15' 07,38"	71° 26' 24"	97,64%
05:00	326° 14' 10"	-0° 19' 44"	328° 35' 27"	-13° 04' 51"	55' 31"	15' 07,69"	71° 09' 17"	97,51%
06:00	326° 45' 21"	-0° 16' 52"	329° 04' 32"	-12° 51' 33"	55' 32"	15' 07,99"	70° 52' 49"	97,38%
07:00	327° 16' 33"	-0° 14' 01"	329° 33' 35"	-12° 38' 11"	55' 34"	15' 08,30"	70° 36' 59"	97,24%
08:00	327° 47' 46"	-0° 11' 09"	330° 02' 37"	-12° 24' 46"	55' 35"	15' 08,60"	70° 21' 43"	97,10%
09:00	328° 19' 00"	-0° 08' 17"	330° 31' 36"	-12° 11' 17"	55' 36"	15' 08,91"	70° 07' 00"	96,96%
10:00	328° 50' 16"	-0° 05' 25"	331° 00' 34"	-11° 57' 45"	55' 37"	15' 09,22"	69° 52' 48"	96,82%
11:00	329° 21' 32"	-0° 02' 33"	331° 29' 29"	-11° 44' 09"	55' 38"	15' 09,53"	69° 39' 05"	96,67%
12:00	329° 52' 50"	0° 00' 20"	331° 58' 23"	-11° 30' 29"	55' 39"	15' 09,84"	69° 25' 51"	96,52%
13:00	330° 24' 09"	0° 03' 12"	332° 27' 15"	-11° 16' 47"	55' 40"	15' 10,16"	69° 13' 03"	96,36%
14:00	330° 55' 29"	0° 06' 05"	332° 56' 06"	-11° 03' 01"	55' 42"	15' 10,47"	69° 00' 40"	96,20%
15:00	331° 26' 50"	0° 08' 58"	333° 24' 55"	-10° 49' 12"	55' 43"	15' 10,79"	68° 48' 42"	96,04%
16:00	331° 58' 13"	0° 11' 50"	333° 53' 42"	-10° 35' 19"	55' 44"	15' 11,10"	68° 37' 07"	95,87%
17:00	332° 29' 37"	0° 14' 43"	334° 22' 28"	-10° 21' 23"	55' 45"	15' 11,42"	68° 25' 55"	95,70%
18:00	333° 01' 02"	0° 17' 36"	334° 51' 13"	-10° 07' 25"	55' 46"	15' 11,74"	68° 15' 04"	95,53%
19:00	333° 32' 28"	0° 20' 29"	335° 19' 56"	-9° 53' 23"	55' 47"	15' 12,06"	68° 04' 33"	95,36%
20:00	334° 03' 55"	0° 23' 22"	335° 48' 37"	-9° 39' 18"	55' 49"	15' 12,38"	67° 54' 23"	95,18%
21:00	334° 35' 24"	0° 26' 15"	336° 17' 18"	-9° 25' 11"	55' 50"	15' 12,70"	67° 44' 32"	94,99%
22:00	335° 06' 54"	0° 29' 08"	336° 45' 57"	-9° 11' 00"	55' 51"	15' 13,03"	67° 34' 59"	94,81%
23:00	335° 38' 25"	0° 32' 01"	337° 14' 35"	-8° 56' 47"	55' 52"	15' 13,35"	67° 25' 44"	94,62%
24:00	336° 09' 58"	0° 34' 54"	337° 43' 11"	-8° 42' 31"	55' 53"	15' 13,68"	67° 16' 47"	94,42%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	128° 47' 21"	0,16"	131° 13' 04"	18° 03' 41"	1,0149637	15' 45,48"	23° 26' 17"	-06m 24s
01:00	128° 49' 44"	0,16"	131° 15' 30"	18° 03' 03"	1,0149587	15' 45,49"	23° 26' 17"	-06m 24s
02:00	128° 52' 08"	0,17"	131° 17' 56"	18° 02' 26"	1,0149537	15' 45,49"	23° 26' 17"	-06m 24s
03:00	128° 54' 31"	0,17"	131° 20' 21"	18° 01' 48"	1,0149487	15' 45,50"	23° 26' 17"	-06m 23s
04:00	128° 56' 55"	0,18"	131° 22' 47"	18° 01' 10"	1,0149437	15' 45,50"	23° 26' 17"	-06m 23s
05:00	128° 59' 18"	0,18"	131° 25' 12"	18° 00' 33"	1,0149387	15' 45,51"	23° 26' 17"	-06m 23s
06:00	129° 01' 41"	0,19"	131° 27' 38"	17° 59' 55"	1,0149337	15' 45,51"	23° 26' 17"	-06m 23s
07:00	129° 04' 05"	0,20"	131° 30' 03"	17° 59' 17"	1,0149287	15' 45,51"	23° 26' 17"	-06m 23s
08:00	129° 06' 28"	0,20"	131° 32' 29"	17° 58' 39"	1,0149237	15' 45,52"	23° 26' 17"	-06m 23s
09:00	129° 08' 52"	0,21"	131° 34' 54"	17° 58' 01"	1,0149186	15' 45,52"	23° 26' 17"	-06m 22s
10:00	129° 11' 15"	0,21"	131° 37' 20"	17° 57' 23"	1,0149136	15' 45,53"	23° 26' 17"	-06m 22s
11:00	129° 13' 39"	0,22"	131° 39' 45"	17° 56' 46"	1,0149085	15' 45,53"	23° 26' 17"	-06m 22s
12:00	129° 16' 02"	0,22"	131° 42' 10"	17° 56' 08"	1,0149035	15' 45,54"	23° 26' 17"	-06m 22s
13:00	129° 18' 26"	0,23"	131° 44' 36"	17° 55' 30"	1,0148984	15' 45,54"	23° 26' 17"	-06m 22s
14:00	129° 20' 49"	0,23"	131° 47' 01"	17° 54' 52"	1,0148934	15' 45,55"	23° 26' 17"	-06m 22s
15:00	129° 23' 13"	0,24"	131° 49' 27"	17° 54' 14"	1,0148883	15' 45,55"	23° 26' 17"	-06m 21s
16:00	129° 25' 36"	0,24"	131° 51' 52"	17° 53' 36"	1,0148832	15' 45,56"	23° 26' 17"	-06m 21s
17:00	129° 28' 00"	0,25"	131° 54' 17"	17° 52' 57"	1,0148782	15' 45,56"	23° 26' 17"	-06m 21s
18:00	129° 30' 23"	0,25"	131° 56' 43"	17° 52' 19"	1,0148731	15' 45,57"	23° 26' 17"	-06m 21s
19:00	129° 32' 47"	0,26"	131° 59' 08"	17° 51' 41"	1,0148680	15' 45,57"	23° 26' 17"	-06m 21s
20:00	129° 35' 10"	0,26"	132° 01' 33"	17° 51' 03"	1,0148629	15' 45,58"	23° 26' 17"	-06m 21s
21:00	129° 37' 33"	0,27"	132° 03' 59"	17° 50' 25"	1,0148578	15' 45,58"	23° 26' 17"	-06m 20s
22:00	129° 39' 57"	0,27"	132° 06' 24"	17° 49' 47"	1,0148527	15' 45,59"	23° 26' 17"	-06m 20s
23:00	129° 42' 20"	0,28"	132° 08' 49"	17° 49' 08"	1,0148476	15' 45,59"	23° 26' 17"	-06m 20s
24:00	129° 44' 44"	0,29"	132° 11' 14"	17° 48' 30"	1,0148425	15' 45,60"	23° 26' 17"	-06m 20s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	336° 09' 58"	0° 34' 54"	337° 43' 11"	-8° 42' 31"	55' 53"	15' 13,68"	67° 16' 47"	94,42%
01:00	336° 41' 31"	0° 37' 47"	338° 11' 47"	-8° 28' 12"	55' 55"	15' 14,00"	67° 08' 06"	94,23%
02:00	337° 13' 06"	0° 40' 39"	338° 40' 22"	-8° 13' 50"	55' 56"	15' 14,33"	66° 59' 43"	94,03%
03:00	337° 44' 43"	0° 43' 32"	339° 08' 55"	-7° 59' 26"	55' 57"	15' 14,66"	66° 51' 35"	93,83%
04:00	338° 16' 20"	0° 46' 25"	339° 37' 28"	-7° 45' 00"	55' 58"	15' 14,99"	66° 43' 42"	93,62%
05:00	338° 47' 59"	0° 49' 17"	340° 06' 00"	-7° 30' 31"	55' 59"	15' 15,32"	66° 36' 05"	93,41%
06:00	339° 19' 39"	0° 52' 09"	340° 34' 31"	-7° 15' 59"	56' 01"	15' 15,66"	66° 28' 43"	93,20%
07:00	339° 51' 20"	0° 55' 01"	341° 03' 02"	-7° 01' 25"	56' 02"	15' 15,99"	66° 21' 35"	92,98%
08:00	340° 23' 03"	0° 57' 54"	341° 31' 32"	-6° 46' 49"	56' 03"	15' 16,32"	66° 14' 41"	92,76%
09:00	340° 54' 47"	1° 00' 45"	342° 00' 01"	-6° 32' 11"	56' 04"	15' 16,66"	66° 08' 01"	92,54%
10:00	341° 26' 32"	1° 03' 37"	342° 28' 30"	-6° 17' 30"	56' 06"	15' 17,00"	66° 01' 35"	92,31%
11:00	341° 58' 19"	1° 06' 28"	342° 56' 58"	-6° 02' 47"	56' 07"	15' 17,34"	65° 55' 22"	92,08%
12:00	342° 30' 07"	1° 09' 20"	343° 25' 26"	-5° 48' 03"	56' 08"	15' 17,67"	65° 49' 22"	91,85%
13:00	343° 01' 56"	1° 12' 11"	343° 53' 53"	-5° 33' 16"	56' 09"	15' 18,02"	65° 43' 34"	91,62%
14:00	343° 33' 47"	1° 15' 01"	344° 22' 20"	-5° 18' 27"	56' 10"	15' 18,36"	65° 38' 00"	91,38%
15:00	344° 05' 39"	1° 17' 52"	344° 50' 47"	-5° 03' 36"	56' 12"	15' 18,70"	65° 32' 38"	91,13%
16:00	344° 37' 32"	1° 20' 42"	345° 19' 14"	-4° 48' 44"	56' 13"	15' 19,04"	65° 27' 28"	90,89%
17:00	345° 09' 27"	1° 23' 32"	345° 47' 40"	-4° 33' 50"	56' 14"	15' 19,39"	65° 22' 30"	90,64%
18:00	345° 41' 23"	1° 26' 22"	346° 16' 07"	-4° 18' 53"	56' 16"	15' 19,73"	65° 17' 44"	90,39%
19:00	346° 13' 21"	1° 29' 11"	346° 44' 34"	-4° 03' 56"	56' 17"	15' 20,08"	65° 13' 09"	90,13%
20:00	346° 45' 20"	1° 32' 00"	347° 13' 00"	-3° 48' 56"	56' 18"	15' 20,43"	65° 08' 46"	89,88%
21:00	347° 17' 20"	1° 34' 48"	347° 41' 27"	-3° 33' 56"	56' 19"	15' 20,78"	65° 04' 35"	89,61%
22:00	347° 49' 22"	1° 37' 37"	348° 09' 55"	-3° 18' 53"	56' 21"	15' 21,13"	65° 00' 35"	89,35%
23:00	348° 21' 25"	1° 40' 24"	348° 38' 22"	-3° 03' 49"	56' 22"	15' 21,48"	64° 56' 46"	89,08%
24:00	348° 53' 29"	1° 43' 12"	349° 06' 50"	-2° 48' 44"	56' 23"	15' 21,83"	64° 53' 08"	88,81%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	129° 44' 44"	0,29"	132° 11' 14"	17° 48' 30"	1,0148425	15' 45,60"	23° 26' 17"	-06m 20s
01:00	129° 47' 07"	0,29"	132° 13' 40"	17° 47' 52"	1,0148374	15' 45,60"	23° 26' 17"	-06m 20s
02:00	129° 49' 31"	0,30"	132° 16' 05"	17° 47' 13"	1,0148322	15' 45,60"	23° 26' 17"	-06m 20s
03:00	129° 51' 54"	0,30"	132° 18' 30"	17° 46' 35"	1,0148271	15' 45,61"	23° 26' 17"	-06m 19s
04:00	129° 54' 18"	0,31"	132° 20' 55"	17° 45' 56"	1,0148220	15' 45,61"	23° 26' 17"	-06m 19s
05:00	129° 56' 41"	0,31"	132° 23' 20"	17° 45' 18"	1,0148168	15' 45,62"	23° 26' 17"	-06m 19s
06:00	129° 59' 05"	0,32"	132° 25' 45"	17° 44' 39"	1,0148117	15' 45,62"	23° 26' 17"	-06m 19s
07:00	130° 01' 28"	0,32"	132° 28' 11"	17° 44' 01"	1,0148065	15' 45,63"	23° 26' 17"	-06m 19s
08:00	130° 03' 52"	0,33"	132° 30' 36"	17° 43' 22"	1,0148014	15' 45,63"	23° 26' 17"	-06m 19s
09:00	130° 06' 15"	0,33"	132° 33' 01"	17° 42' 44"	1,0147962	15' 45,64"	23° 26' 17"	-06m 18s
10:00	130° 08' 39"	0,34"	132° 35' 26"	17° 42' 05"	1,0147910	15' 45,64"	23° 26' 17"	-06m 18s
11:00	130° 11' 02"	0,34"	132° 37' 51"	17° 41' 27"	1,0147858	15' 45,65"	23° 26' 17"	-06m 18s
12:00	130° 13' 26"	0,35"	132° 40' 16"	17° 40' 48"	1,0147807	15' 45,65"	23° 26' 17"	-06m 18s
13:00	130° 15' 49"	0,35"	132° 42' 41"	17° 40' 09"	1,0147755	15' 45,66"	23° 26' 17"	-06m 18s
14:00	130° 18' 13"	0,36"	132° 45' 06"	17° 39' 31"	1,0147703	15' 45,66"	23° 26' 17"	-06m 17s
15:00	130° 20' 36"	0,36"	132° 47' 31"	17° 38' 52"	1,0147651	15' 45,67"	23° 26' 17"	-06m 17s
16:00	130° 23' 00"	0,37"	132° 49' 56"	17° 38' 13"	1,0147599	15' 45,67"	23° 26' 17"	-06m 17s
17:00	130° 25' 23"	0,37"	132° 52' 21"	17° 37' 34"	1,0147547	15' 45,68"	23° 26' 17"	-06m 17s
18:00	130° 27' 47"	0,38"	132° 54' 46"	17° 36' 55"	1,0147494	15' 45,68"	23° 26' 17"	-06m 17s
19:00	130° 30' 10"	0,38"	132° 57' 11"	17° 36' 16"	1,0147442	15' 45,69"	23° 26' 17"	-06m 16s
20:00	130° 32' 34"	0,38"	132° 59' 36"	17° 35' 38"	1,0147390	15' 45,69"	23° 26' 17"	-06m 16s
21:00	130° 34' 57"	0,39"	133° 02' 01"	17° 34' 59"	1,0147338	15' 45,70"	23° 26' 17"	-06m 16s
22:00	130° 37' 21"	0,39"	133° 04' 26"	17° 34' 20"	1,0147285	15' 45,70"	23° 26' 17"	-06m 16s
23:00	130° 39' 45"	0,40"	133° 06' 51"	17° 33' 41"	1,0147233	15' 45,71"	23° 26' 17"	-06m 16s
24:00	130° 42' 08"	0,40"	133° 09' 15"	17° 33' 02"	1,0147180	15' 45,71"	23° 26' 17"	-06m 15s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	348° 53' 29"	1° 43' 12"	349° 06' 50"	-2° 48' 44"	56' 23"	15' 21,83"	64° 53' 08"	88,81%
01:00	349° 25' 35"	1° 45' 59"	349° 35' 18"	-2° 33' 37"	56' 25"	15' 22,18"	64° 49' 40"	88,54%
02:00	349° 57' 42"	1° 48' 45"	350° 03' 47"	-2° 18' 30"	56' 26"	15' 22,54"	64° 46' 24"	88,26%
03:00	350° 29' 51"	1° 51' 32"	350° 32' 16"	-2° 03' 21"	56' 27"	15' 22,89"	64° 43' 18"	87,98%
04:00	351° 02' 01"	1° 54' 17"	351° 00' 46"	-1° 48' 10"	56' 28"	15' 23,25"	64° 40' 23"	87,70%
05:00	351° 34' 13"	1° 57' 02"	351° 29' 17"	-1° 32' 59"	56' 30"	15' 23,61"	64° 37' 38"	87,41%
06:00	352° 06' 26"	1° 59' 47"	351° 57' 48"	-1° 17' 47"	56' 31"	15' 23,96"	64° 35' 04"	87,12%
07:00	352° 38' 41"	2° 02' 31"	352° 26' 21"	-1° 02' 34"	56' 32"	15' 24,32"	64° 32' 40"	86,83%
08:00	353° 10' 57"	2° 05' 15"	352° 54' 54"	-0° 47' 20"	56' 34"	15' 24,68"	64° 30' 26"	86,53%
09:00	353° 43' 14"	2° 07' 58"	353° 23' 28"	-0° 32' 05"	56' 35"	15' 25,05"	64° 28' 23"	86,23%
10:00	354° 15' 33"	2° 10' 41"	353° 52' 03"	-0° 16' 49"	56' 36"	15' 25,41"	64° 26' 29"	85,93%
11:00	354° 47' 53"	2° 13' 23"	354° 20' 40"	-0° 01' 32"	56' 38"	15' 25,77"	64° 24' 46"	85,63%
12:00	355° 20' 15"	2° 16' 04"	354° 49' 17"	0° 13' 45"	56' 39"	15' 26,14"	64° 23' 12"	85,32%
13:00	355° 52' 39"	2° 18' 45"	355° 17' 56"	0° 29' 03"	56' 40"	15' 26,50"	64° 21' 49"	85,01%
14:00	356° 25' 04"	2° 21' 25"	355° 46' 36"	0° 44' 21"	56' 42"	15' 26,87"	64° 20' 35"	84,70%
15:00	356° 57' 30"	2° 24' 05"	356° 15' 18"	0° 59' 40"	56' 43"	15' 27,23"	64° 19' 31"	84,38%
16:00	357° 29' 58"	2° 26' 44"	356° 44' 01"	1° 14' 59"	56' 44"	15' 27,60"	64° 18' 37"	84,06%
17:00	358° 02' 28"	2° 29' 22"	357° 12' 46"	1° 30' 18"	56' 46"	15' 27,97"	64° 17' 53"	83,74%
18:00	358° 34' 59"	2° 31' 59"	357° 41' 32"	1° 45' 38"	56' 47"	15' 28,34"	64° 17' 18"	83,42%
19:00	359° 07' 31"	2° 34' 36"	358° 10' 21"	2° 00' 58"	56' 49"	15' 28,71"	64° 16' 53"	83,09%
20:00	359° 40' 05"	2° 37' 12"	358° 39' 10"	2° 16' 19"	56' 50"	15' 29,09"	64° 16' 38"	82,76%
21:00	0° 12' 41"	2° 39' 48"	359° 08' 02"	2° 31' 39"	56' 51"	15' 29,46"	64° 16' 32"	82,43%
22:00	0° 45' 18"	2° 42' 22"	359° 36' 56"	2° 46' 59"	56' 53"	15' 29,83"	64° 16' 35"	82,09%
23:00	1° 17' 57"	2° 44' 56"	0° 05' 52"	3° 02' 19"	56' 54"	15' 30,21"	64° 16' 49"	81,75%
24:00	1° 50' 38"	2° 47' 29"	0° 34' 49"	3° 17' 40"	56' 55"	15' 30,58"	64° 17' 11"	81,41%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	130° 42' 08"	0,40"	133° 09' 15"	17° 33' 02"	1,0147180	15' 45,71"	23° 26' 17"	-06m 15s
01:00	130° 44' 32"	0,41"	133° 11' 40"	17° 32' 23"	1,0147128	15' 45,72"	23° 26' 17"	-06m 15s
02:00	130° 46' 55"	0,41"	133° 14' 05"	17° 31' 43"	1,0147075	15' 45,72"	23° 26' 17"	-06m 15s
03:00	130° 49' 19"	0,42"	133° 16' 30"	17° 31' 04"	1,0147022	15' 45,73"	23° 26' 17"	-06m 15s
04:00	130° 51' 42"	0,42"	133° 18' 55"	17° 30' 25"	1,0146970	15' 45,73"	23° 26' 17"	-06m 15s
05:00	130° 54' 06"	0,43"	133° 21' 20"	17° 29' 46"	1,0146917	15' 45,74"	23° 26' 17"	-06m 14s
06:00	130° 56' 29"	0,43"	133° 23' 44"	17° 29' 07"	1,0146864	15' 45,74"	23° 26' 17"	-06m 14s
07:00	130° 58' 53"	0,44"	133° 26' 09"	17° 28' 28"	1,0146811	15' 45,75"	23° 26' 17"	-06m 14s
08:00	131° 01' 16"	0,44"	133° 28' 34"	17° 27' 48"	1,0146758	15' 45,75"	23° 26' 17"	-06m 14s
09:00	131° 03' 40"	0,44"	133° 30' 59"	17° 27' 09"	1,0146705	15' 45,76"	23° 26' 17"	-06m 14s
10:00	131° 06' 03"	0,45"	133° 33' 23"	17° 26' 30"	1,0146652	15' 45,76"	23° 26' 17"	-06m 13s
11:00	131° 08' 27"	0,45"	133° 35' 48"	17° 25' 50"	1,0146599	15' 45,77"	23° 26' 17"	-06m 13s
12:00	131° 10' 51"	0,46"	133° 38' 13"	17° 25' 11"	1,0146545	15' 45,77"	23° 26' 17"	-06m 13s
13:00	131° 13' 14"	0,46"	133° 40' 37"	17° 24' 32"	1,0146492	15' 45,78"	23° 26' 17"	-06m 13s
14:00	131° 15' 38"	0,47"	133° 43' 02"	17° 23' 52"	1,0146439	15' 45,78"	23° 26' 17"	-06m 13s
15:00	131° 18' 01"	0,47"	133° 45' 27"	17° 23' 13"	1,0146385	15' 45,79"	23° 26' 17"	-06m 12s
16:00	131° 20' 25"	0,47"	133° 47' 51"	17° 22' 33"	1,0146332	15' 45,79"	23° 26' 17"	-06m 12s
17:00	131° 22' 48"	0,48"	133° 50' 16"	17° 21' 54"	1,0146278	15' 45,80"	23° 26' 17"	-06m 12s
18:00	131° 25' 12"	0,48"	133° 52' 40"	17° 21' 14"	1,0146225	15' 45,80"	23° 26' 17"	-06m 12s
19:00	131° 27' 35"	0,49"	133° 55' 05"	17° 20' 34"	1,0146171	15' 45,81"	23° 26' 17"	-06m 11s
20:00	131° 29' 59"	0,49"	133° 57' 30"	17° 19' 55"	1,0146118	15' 45,81"	23° 26' 17"	-06m 11s
21:00	131° 32' 23"	0,49"	133° 59' 54"	17° 19' 15"	1,0146064	15' 45,82"	23° 26' 17"	-06m 11s
22:00	131° 34' 46"	0,50"	134° 02' 19"	17° 18' 35"	1,0146010	15' 45,82"	23° 26' 17"	-06m 11s
23:00	131° 37' 10"	0,50"	134° 04' 43"	17° 17' 56"	1,0145956	15' 45,83"	23° 26' 17"	-06m 11s
24:00	131° 39' 33"	0,51"	134° 07' 08"	17° 17' 16"	1,0145902	15' 45,83"	23° 26' 17"	-06m 10s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	1° 50' 38"	2° 47' 29"	0° 34' 49"	3° 17' 40"	56' 55"	15' 30,58"	64° 17' 11"	81,41%
01:00	2° 23' 19"	2° 50' 02"	1° 03' 49"	3° 33' 00"	56' 57"	15' 30,96"	64° 17' 43"	81,07%
02:00	2° 56' 03"	2° 52' 33"	1° 32' 52"	3° 48' 20"	56' 58"	15' 31,34"	64° 18' 25"	80,72%
03:00	3° 28' 48"	2° 55' 04"	2° 01' 56"	4° 03' 39"	57' 00"	15' 31,72"	64° 19' 16"	80,37%
04:00	4° 01' 35"	2° 57' 34"	2° 31' 03"	4° 18' 58"	57' 01"	15' 32,10"	64° 20' 16"	80,02%
05:00	4° 34' 23"	3° 00' 03"	3° 00' 12"	4° 34' 17"	57' 02"	15' 32,48"	64° 21' 26"	79,66%
06:00	5° 07' 13"	3° 02' 31"	3° 29' 24"	4° 49' 35"	57' 04"	15' 32,86"	64° 22' 45"	79,30%
07:00	5° 40' 05"	3° 04' 59"	3° 58' 39"	5° 04' 53"	57' 05"	15' 33,24"	64° 24' 14"	78,94%
08:00	6° 12' 58"	3° 07' 25"	4° 27' 56"	5° 20' 10"	57' 07"	15' 33,62"	64° 25' 52"	78,58%
09:00	6° 45' 53"	3° 09' 50"	4° 57' 16"	5° 35' 26"	57' 08"	15' 34,01"	64° 27' 39"	78,22%
10:00	7° 18' 49"	3° 12' 15"	5° 26' 39"	5° 50' 42"	57' 09"	15' 34,39"	64° 29' 36"	77,85%
11:00	7° 51' 47"	3° 14' 39"	5° 56' 05"	6° 05' 57"	57' 11"	15' 34,78"	64° 31' 42"	77,48%
12:00	8° 24' 47"	3° 17' 01"	6° 25' 34"	6° 21' 11"	57' 12"	15' 35,16"	64° 33' 57"	77,11%
13:00	8° 57' 48"	3° 19' 23"	6° 55' 06"	6° 36' 24"	57' 14"	15' 35,55"	64° 36' 21"	76,73%
14:00	9° 30' 51"	3° 21' 44"	7° 24' 41"	6° 51' 35"	57' 15"	15' 35,94"	64° 38' 55"	76,35%
15:00	10° 03' 56"	3° 24' 03"	7° 54' 19"	7° 06' 46"	57' 16"	15' 36,33"	64° 41' 38"	75,97%
16:00	10° 37' 03"	3° 26' 22"	8° 24' 01"	7° 21' 56"	57' 18"	15' 36,72"	64° 44' 30"	75,59%
17:00	11° 10' 11"	3° 28' 40"	8° 53' 46"	7° 37' 04"	57' 19"	15' 37,11"	64° 47' 32"	75,21%
18:00	11° 43' 21"	3° 30' 56"	9° 23' 34"	7° 52' 11"	57' 21"	15' 37,50"	64° 50' 43"	74,82%
19:00	12° 16' 32"	3° 33' 12"	9° 53' 26"	8° 07' 16"	57' 22"	15' 37,89"	64° 54' 03"	74,43%
20:00	12° 49' 45"	3° 35' 26"	10° 23' 22"	8° 22' 21"	57' 24"	15' 38,28"	64° 57' 33"	74,04%
21:00	13° 23' 00"	3° 37' 39"	10° 53' 21"	8° 37' 23"	57' 25"	15' 38,67"	65° 01' 12"	73,64%
22:00	13° 56' 17"	3° 39' 52"	11° 23' 24"	8° 52' 24"	57' 27"	15' 39,07"	65° 05' 00"	73,25%
23:00	14° 29' 35"	3° 42' 03"	11° 53' 31"	9° 07' 23"	57' 28"	15' 39,46"	65° 08' 58"	72,85%
24:00	15° 02' 55"	3° 44' 13"	12° 23' 42"	9° 22' 20"	57' 29"	15' 39,86"	65° 13' 04"	72,45%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	131° 39' 33"	0,51"	134° 07' 08"	17° 17' 16"	1,0145902	15' 45,83"	23° 26' 17"	-06m 10s
01:00	131° 41' 57"	0,51"	134° 09' 32"	17° 16' 36"	1,0145848	15' 45,84"	23° 26' 17"	-06m 10s
02:00	131° 44' 20"	0,51"	134° 11' 57"	17° 15' 56"	1,0145794	15' 45,84"	23° 26' 17"	-06m 10s
03:00	131° 46' 44"	0,52"	134° 14' 21"	17° 15' 17"	1,0145740	15' 45,85"	23° 26' 17"	-06m 10s
04:00	131° 49' 08"	0,52"	134° 16' 45"	17° 14' 37"	1,0145686	15' 45,85"	23° 26' 17"	-06m 09s
05:00	131° 51' 31"	0,52"	134° 19' 10"	17° 13' 57"	1,0145631	15' 45,86"	23° 26' 17"	-06m 09s
06:00	131° 53' 55"	0,53"	134° 21' 34"	17° 13' 17"	1,0145577	15' 45,86"	23° 26' 17"	-06m 09s
07:00	131° 56' 18"	0,53"	134° 23' 59"	17° 12' 37"	1,0145523	15' 45,87"	23° 26' 17"	-06m 09s
08:00	131° 58' 42"	0,53"	134° 26' 23"	17° 11' 57"	1,0145468	15' 45,87"	23° 26' 17"	-06m 09s
09:00	132° 01' 06"	0,54"	134° 28' 47"	17° 11' 17"	1,0145414	15' 45,88"	23° 26' 17"	-06m 08s
10:00	132° 03' 29"	0,54"	134° 31' 12"	17° 10' 37"	1,0145359	15' 45,88"	23° 26' 17"	-06m 08s
11:00	132° 05' 53"	0,54"	134° 33' 36"	17° 09' 57"	1,0145304	15' 45,89"	23° 26' 17"	-06m 08s
12:00	132° 08' 16"	0,55"	134° 36' 00"	17° 09' 17"	1,0145250	15' 45,89"	23° 26' 17"	-06m 08s
13:00	132° 10' 40"	0,55"	134° 38' 25"	17° 08' 37"	1,0145195	15' 45,90"	23° 26' 17"	-06m 07s
14:00	132° 13' 04"	0,55"	134° 40' 49"	17° 07' 57"	1,0145140	15' 45,90"	23° 26' 17"	-06m 07s
15:00	132° 15' 27"	0,56"	134° 43' 13"	17° 07' 16"	1,0145085	15' 45,91"	23° 26' 17"	-06m 07s
16:00	132° 17' 51"	0,56"	134° 45' 38"	17° 06' 36"	1,0145030	15' 45,91"	23° 26' 17"	-06m 07s
17:00	132° 20' 14"	0,56"	134° 48' 02"	17° 05' 56"	1,0144975	15' 45,92"	23° 26' 17"	-06m 06s
18:00	132° 22' 38"	0,57"	134° 50' 26"	17° 05' 16"	1,0144920	15' 45,92"	23° 26' 17"	-06m 06s
19:00	132° 25' 02"	0,57"	134° 52' 50"	17° 04' 35"	1,0144865	15' 45,93"	23° 26' 17"	-06m 06s
20:00	132° 27' 25"	0,57"	134° 55' 14"	17° 03' 55"	1,0144810	15' 45,93"	23° 26' 17"	-06m 06s
21:00	132° 29' 49"	0,58"	134° 57' 39"	17° 03' 15"	1,0144755	15' 45,94"	23° 26' 17"	-06m 05s
22:00	132° 32' 12"	0,58"	135° 00' 03"	17° 02' 34"	1,0144699	15' 45,94"	23° 26' 17"	-06m 05s
23:00	132° 34' 36"	0,58"	135° 02' 27"	17° 01' 54"	1,0144644	15' 45,95"	23° 26' 17"	-06m 05s
24:00	132° 37' 00"	0,58"	135° 04' 51"	17° 01' 14"	1,0144588	15' 45,95"	23° 26' 17"	-06m 05s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	15° 02' 55"	3° 44' 13"	12° 23' 42"	9° 22' 20"	57' 29"	15' 39,86"	65° 13' 04"	72,45%
01:00	15° 36' 17"	3° 46' 21"	12° 53' 57"	9° 37' 16"	57' 31"	15' 40,25"	65° 17' 21"	72,05%
02:00	16° 09' 40"	3° 48' 29"	13° 24' 16"	9° 52' 10"	57' 32"	15' 40,65"	65° 21' 46"	71,64%
03:00	16° 43' 05"	3° 50' 35"	13° 54' 39"	10° 07' 01"	57' 34"	15' 41,05"	65° 26' 21"	71,23%
04:00	17° 16' 32"	3° 52' 41"	14° 25' 07"	10° 21' 51"	57' 35"	15' 41,45"	65° 31' 05"	70,83%
05:00	17° 50' 01"	3° 54' 45"	14° 55' 39"	10° 36' 38"	57' 37"	15' 41,84"	65° 35' 59"	70,41%
06:00	18° 23' 32"	3° 56' 47"	15° 26' 15"	10° 51' 23"	57' 38"	15' 42,24"	65° 41' 02"	70,00%
07:00	18° 57' 04"	3° 58' 49"	15° 56' 56"	11° 06' 06"	57' 40"	15' 42,64"	65° 46' 14"	69,59%
08:00	19° 30' 38"	4° 00' 49"	16° 27' 41"	11° 20' 46"	57' 41"	15' 43,04"	65° 51' 36"	69,17%
09:00	20° 04' 13"	4° 02' 48"	16° 58' 31"	11° 35' 24"	57' 43"	15' 43,44"	65° 57' 07"	68,75%
10:00	20° 37' 51"	4° 04' 46"	17° 29' 25"	11° 49' 59"	57' 44"	15' 43,85"	66° 02' 47"	68,33%
11:00	21° 11' 30"	4° 06' 42"	18° 00' 25"	12° 04' 32"	57' 46"	15' 44,25"	66° 08' 37"	67,91%
12:00	21° 45' 11"	4° 08' 37"	18° 31' 29"	12° 19' 02"	57' 47"	15' 44,65"	66° 14' 36"	67,48%
13:00	22° 18' 54"	4° 10' 31"	19° 02' 38"	12° 33' 29"	57' 48"	15' 45,05"	66° 20' 45"	67,05%
14:00	22° 52' 39"	4° 12' 24"	19° 33' 52"	12° 47' 53"	57' 50"	15' 45,45"	66° 27' 03"	66,63%
15:00	23° 26' 25"	4° 14' 15"	20° 05' 11"	13° 02' 14"	57' 51"	15' 45,86"	66° 33' 31"	66,20%
16:00	24° 00' 14"	4° 16' 04"	20° 36' 36"	13° 16' 32"	57' 53"	15' 46,26"	66° 40' 08"	65,76%
17:00	24° 34' 04"	4° 17' 53"	21° 08' 05"	13° 30' 47"	57' 54"	15' 46,67"	66° 46' 55"	65,33%
18:00	25° 07' 55"	4° 19' 39"	21° 39' 40"	13° 44' 59"	57' 56"	15' 47,07"	66° 53' 51"	64,89%
19:00	25° 41' 49"	4° 21' 25"	22° 11' 20"	13° 59' 07"	57' 57"	15' 47,48"	67° 00' 57"	64,46%
20:00	26° 15' 45"	4° 23' 09"	22° 43' 06"	14° 13' 12"	57' 59"	15' 47,88"	67° 08' 12"	64,02%
21:00	26° 49' 42"	4° 24' 51"	23° 14' 57"	14° 27' 14"	58' 00"	15' 48,29"	67° 15' 37"	63,58%
22:00	27° 23' 41"	4° 26' 33"	23° 46' 54"	14° 41' 12"	58' 02"	15' 48,69"	67° 23' 12"	63,14%
23:00	27° 57' 42"	4° 28' 12"	24° 18' 56"	14° 55' 06"	58' 03"	15' 49,10"	67° 30' 56"	62,69%
24:00	28° 31' 45"	4° 29' 50"	24° 51' 04"	15° 08' 56"	58' 05"	15' 49,50"	67° 38' 49"	62,25%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	132° 37' 00"	0,58"	135° 04' 51"	17° 01' 14"	1,0144588	15' 45,95"	23° 26' 17"	-06m 05s
01:00	132° 39' 23"	0,59"	135° 07' 15"	17° 00' 33"	1,0144533	15' 45,96"	23° 26' 17"	-06m 04s
02:00	132° 41' 47"	0,59"	135° 09' 39"	16° 59' 53"	1,0144477	15' 45,96"	23° 26' 17"	-06m 04s
03:00	132° 44' 11"	0,59"	135° 12' 03"	16° 59' 12"	1,0144421	15' 45,97"	23° 26' 17"	-06m 04s
04:00	132° 46' 34"	0,60"	135° 14' 27"	16° 58' 31"	1,0144366	15' 45,97"	23° 26' 17"	-06m 04s
05:00	132° 48' 58"	0,60"	135° 16' 51"	16° 57' 51"	1,0144310	15' 45,98"	23° 26' 17"	-06m 03s
06:00	132° 51' 22"	0,60"	135° 19' 16"	16° 57' 10"	1,0144254	15' 45,98"	23° 26' 17"	-06m 03s
07:00	132° 53' 45"	0,60"	135° 21' 40"	16° 56' 30"	1,0144198	15' 45,99"	23° 26' 17"	-06m 03s
08:00	132° 56' 09"	0,61"	135° 24' 04"	16° 55' 49"	1,0144142	15' 45,99"	23° 26' 17"	-06m 03s
09:00	132° 58' 32"	0,61"	135° 26' 28"	16° 55' 08"	1,0144086	15' 46,00"	23° 26' 17"	-06m 02s
10:00	133° 00' 56"	0,61"	135° 28' 52"	16° 54' 28"	1,0144030	15' 46,00"	23° 26' 17"	-06m 02s
11:00	133° 03' 20"	0,61"	135° 31' 16"	16° 53' 47"	1,0143974	15' 46,01"	23° 26' 17"	-06m 02s
12:00	133° 05' 43"	0,61"	135° 33' 39"	16° 53' 06"	1,0143917	15' 46,02"	23° 26' 17"	-06m 02s
13:00	133° 08' 07"	0,62"	135° 36' 03"	16° 52' 25"	1,0143861	15' 46,02"	23° 26' 17"	-06m 01s
14:00	133° 10' 31"	0,62"	135° 38' 27"	16° 51' 44"	1,0143804	15' 46,03"	23° 26' 17"	-06m 01s
15:00	133° 12' 54"	0,62"	135° 40' 51"	16° 51' 04"	1,0143748	15' 46,03"	23° 26' 17"	-06m 01s
16:00	133° 15' 18"	0,62"	135° 43' 15"	16° 50' 23"	1,0143691	15' 46,04"	23° 26' 17"	-06m 01s
17:00	133° 17' 42"	0,62"	135° 45' 39"	16° 49' 42"	1,0143635	15' 46,04"	23° 26' 17"	-06m 00s
18:00	133° 20' 05"	0,63"	135° 48' 03"	16° 49' 01"	1,0143578	15' 46,05"	23° 26' 17"	-06m 00s
19:00	133° 22' 29"	0,63"	135° 50' 27"	16° 48' 20"	1,0143521	15' 46,05"	23° 26' 17"	-06m 00s
20:00	133° 24' 53"	0,63"	135° 52' 51"	16° 47' 39"	1,0143464	15' 46,06"	23° 26' 17"	-06m 00s
21:00	133° 27' 16"	0,63"	135° 55' 14"	16° 46' 58"	1,0143407	15' 46,06"	23° 26' 17"	-05m 59s
22:00	133° 29' 40"	0,63"	135° 57' 38"	16° 46' 17"	1,0143351	15' 46,07"	23° 26' 17"	-05m 59s
23:00	133° 32' 04"	0,64"	136° 00' 02"	16° 45' 36"	1,0143293	15' 46,07"	23° 26' 17"	-05m 59s
24:00	133° 34' 27"	0,64"	136° 02' 26"	16° 44' 54"	1,0143236	15' 46,08"	23° 26' 17"	-05m 58s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	28° 31' 45"	4° 29' 50"	24° 51' 04"	15° 08' 56"	58' 05"	15' 49,50"	67° 38' 49"	62,25%
01:00	29° 05' 49"	4° 31' 27"	25° 23' 18"	15° 22' 42"	58' 06"	15' 49,91"	67° 46' 52"	61,80%
02:00	29° 39' 56"	4° 33' 02"	25° 55' 38"	15° 36' 25"	58' 08"	15' 50,32"	67° 55' 05"	61,36%
03:00	30° 14' 04"	4° 34' 36"	26° 28' 04"	15° 50' 03"	58' 09"	15' 50,72"	68° 03' 27"	60,91%
04:00	30° 48' 14"	4° 36' 08"	27° 00' 35"	16° 03' 38"	58' 11"	15' 51,13"	68° 11' 59"	60,46%
05:00	31° 22' 26"	4° 37' 38"	27° 33' 13"	16° 17' 08"	58' 12"	15' 51,53"	68° 20' 41"	60,01%
06:00	31° 56' 40"	4° 39' 07"	28° 05' 57"	16° 30' 33"	58' 14"	15' 51,94"	68° 29' 32"	59,55%
07:00	32° 30' 55"	4° 40' 35"	28° 38' 47"	16° 43' 54"	58' 15"	15' 52,35"	68° 38' 33"	59,10%
08:00	33° 05' 13"	4° 42' 00"	29° 11' 43"	16° 57' 11"	58' 17"	15' 52,75"	68° 47' 44"	58,64%
09:00	33° 39' 32"	4° 43' 24"	29° 44' 46"	17° 10' 23"	58' 18"	15' 53,16"	68° 57' 04"	58,19%
10:00	34° 13' 53"	4° 44' 47"	30° 17' 54"	17° 23' 30"	58' 20"	15' 53,57"	69° 06' 34"	57,73%
11:00	34° 48' 16"	4° 46' 08"	30° 51' 10"	17° 36' 33"	58' 21"	15' 53,97"	69° 16' 13"	57,27%
12:00	35° 22' 41"	4° 47' 27"	31° 24' 31"	17° 49' 30"	58' 23"	15' 54,38"	69° 26' 02"	56,81%
13:00	35° 57' 08"	4° 48' 45"	31° 57' 59"	18° 02' 23"	58' 24"	15' 54,78"	69° 36' 01"	56,35%
14:00	36° 31' 36"	4° 50' 01"	32° 31' 34"	18° 15' 10"	58' 26"	15' 55,19"	69° 46' 10"	55,89%
15:00	37° 06' 06"	4° 51' 15"	33° 05' 15"	18° 27' 52"	58' 27"	15' 55,59"	69° 56' 28"	55,43%
16:00	37° 40' 39"	4° 52' 28"	33° 39' 03"	18° 40' 29"	58' 29"	15' 56,00"	70° 06' 56"	54,96%
17:00	38° 15' 13"	4° 53' 38"	34° 12' 58"	18° 53' 00"	58' 30"	15' 56,40"	70° 17' 34"	54,50%
18:00	38° 49' 49"	4° 54' 48"	34° 47' 00"	19° 05' 26"	58' 32"	15' 56,81"	70° 28' 21"	54,04%
19:00	39° 24' 26"	4° 55' 55"	35° 21' 08"	19° 17' 46"	58' 33"	15' 57,21"	70° 39' 18"	53,57%
20:00	39° 59' 06"	4° 57' 01"	35° 55' 23"	19° 30' 01"	58' 35"	15' 57,61"	70° 50' 25"	53,10%
21:00	40° 33' 47"	4° 58' 05"	36° 29' 45"	19° 42' 09"	58' 36"	15' 58,02"	71° 01' 41"	52,64%
22:00	41° 08' 31"	4° 59' 07"	37° 04' 14"	19° 54' 12"	58' 38"	15' 58,42"	71° 13' 07"	52,17%
23:00	41° 43' 16"	5° 00' 07"	37° 38' 50"	20° 06' 08"	58' 39"	15' 58,82"	71° 24' 43"	51,70%
24:00	42° 18' 03"	5° 01' 06"	38° 13' 33"	20° 17' 59"	58' 40"	15' 59,22"	71° 36' 28"	51,23%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	133° 34' 27"	0,64"	136° 02' 26"	16° 44' 54"	1,0143236	15' 46,08"	23° 26' 17"	-05m 58s
01:00	133° 36' 51"	0,64"	136° 04' 50"	16° 44' 13"	1,0143179	15' 46,08"	23° 26' 17"	-05m 58s
02:00	133° 39' 15"	0,64"	136° 07' 13"	16° 43' 32"	1,0143122	15' 46,09"	23° 26' 17"	-05m 58s
03:00	133° 41' 39"	0,64"	136° 09' 37"	16° 42' 51"	1,0143065	15' 46,09"	23° 26' 17"	-05m 58s
04:00	133° 44' 02"	0,64"	136° 12' 01"	16° 42' 10"	1,0143007	15' 46,10"	23° 26' 17"	-05m 57s
05:00	133° 46' 26"	0,64"	136° 14' 24"	16° 41' 28"	1,0142950	15' 46,11"	23° 26' 17"	-05m 57s
06:00	133° 48' 50"	0,65"	136° 16' 48"	16° 40' 47"	1,0142892	15' 46,11"	23° 26' 17"	-05m 57s
07:00	133° 51' 13"	0,65"	136° 19' 12"	16° 40' 06"	1,0142834	15' 46,12"	23° 26' 17"	-05m 57s
08:00	133° 53' 37"	0,65"	136° 21' 35"	16° 39' 24"	1,0142777	15' 46,12"	23° 26' 17"	-05m 56s
09:00	133° 56' 01"	0,65"	136° 23' 59"	16° 38' 43"	1,0142719	15' 46,13"	23° 26' 17"	-05m 56s
10:00	133° 58' 24"	0,65"	136° 26' 23"	16° 38' 02"	1,0142661	15' 46,13"	23° 26' 17"	-05m 56s
11:00	134° 00' 48"	0,65"	136° 28' 46"	16° 37' 20"	1,0142603	15' 46,14"	23° 26' 17"	-05m 55s
12:00	134° 03' 12"	0,65"	136° 31' 10"	16° 36' 39"	1,0142545	15' 46,14"	23° 26' 17"	-05m 55s
13:00	134° 05' 36"	0,65"	136° 33' 33"	16° 35' 57"	1,0142487	15' 46,15"	23° 26' 17"	-05m 55s
14:00	134° 07' 59"	0,65"	136° 35' 57"	16° 35' 16"	1,0142429	15' 46,15"	23° 26' 17"	-05m 55s
15:00	134° 10' 23"	0,65"	136° 38' 21"	16° 34' 34"	1,0142371	15' 46,16"	23° 26' 17"	-05m 54s
16:00	134° 12' 47"	0,65"	136° 40' 44"	16° 33' 53"	1,0142312	15' 46,16"	23° 26' 17"	-05m 54s
17:00	134° 15' 10"	0,66"	136° 43' 08"	16° 33' 11"	1,0142254	15' 46,17"	23° 26' 17"	-05m 54s
18:00	134° 17' 34"	0,66"	136° 45' 31"	16° 32' 29"	1,0142196	15' 46,18"	23° 26' 17"	-05m 53s
19:00	134° 19' 58"	0,66"	136° 47' 55"	16° 31' 48"	1,0142137	15' 46,18"	23° 26' 17"	-05m 53s
20:00	134° 22' 22"	0,66"	136° 50' 18"	16° 31' 06"	1,0142079	15' 46,19"	23° 26' 17"	-05m 53s
21:00	134° 24' 45"	0,66"	136° 52' 42"	16° 30' 24"	1,0142020	15' 46,19"	23° 26' 17"	-05m 53s
22:00	134° 27' 09"	0,66"	136° 55' 05"	16° 29' 43"	1,0141961	15' 46,20"	23° 26' 17"	-05m 52s
23:00	134° 29' 33"	0,66"	136° 57' 28"	16° 29' 01"	1,0141902	15' 46,20"	23° 26' 17"	-05m 52s
24:00	134° 31' 57"	0,66"	136° 59' 52"	16° 28' 19"	1,0141843	15' 46,21"	23° 26' 17"	-05m 52s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	42° 18' 03"	5° 01' 06"	38° 13' 33"	20° 17' 59"	58' 40"	15' 59,22"	71° 36' 28"	51,23%
01:00	42° 52' 51"	5° 02' 03"	38° 48' 23"	20° 29' 43"	58' 42"	16' 00,00"	71° 48' 23"	50,76%
02:00	43° 27' 42"	5° 02' 58"	39° 23' 20"	20° 41' 20"	58' 43"	16' 00,02"	72° 00' 27"	50,29%
03:00	44° 02' 34"	5° 03' 51"	39° 58' 24"	20° 52' 52"	58' 45"	16' 00,42"	72° 12' 41"	49,82%
04:00	44° 37' 29"	5° 04' 42"	40° 33' 35"	21° 04' 16"	58' 46"	16' 00,81"	72° 25' 05"	49,35%
05:00	45° 12' 25"	5° 05' 32"	41° 08' 53"	21° 15' 34"	58' 48"	16' 01,21"	72° 37' 38"	48,88%
06:00	45° 47' 23"	5° 06' 20"	41° 44' 18"	21° 26' 45"	58' 49"	16' 01,61"	72° 50' 21"	48,41%
07:00	46° 22' 23"	5° 07' 05"	42° 19' 51"	21° 37' 49"	58' 51"	16' 02,00"	73° 03' 13"	47,93%
08:00	46° 57' 24"	5° 07' 49"	42° 55' 31"	21° 48' 46"	58' 52"	16' 02,40"	73° 16' 15"	47,46%
09:00	47° 32' 28"	5° 08' 32"	43° 31' 18"	21° 59' 36"	58' 54"	16' 02,79"	73° 29' 26"	46,99%
10:00	48° 07' 33"	5° 09' 12"	44° 07' 12"	22° 10' 19"	58' 55"	16' 03,18"	73° 42' 46"	46,52%
11:00	48° 42' 40"	5° 09' 50"	44° 43' 14"	22° 20' 54"	58' 56"	16' 03,57"	73° 56' 16"	46,04%
12:00	49° 17' 49"	5° 10' 27"	45° 19' 22"	22° 31' 22"	58' 58"	16' 03,96"	74° 09' 55"	45,57%
13:00	49° 52' 59"	5° 11' 01"	45° 55' 38"	22° 41' 42"	58' 59"	16' 04,35"	74° 23' 44"	45,10%
14:00	50° 28' 12"	5° 11' 34"	46° 32' 01"	22° 51' 55"	59' 01"	16' 04,73"	74° 37' 42"	44,63%
15:00	51° 03' 26"	5° 12' 04"	47° 08' 32"	23° 02' 00"	59' 02"	16' 05,12"	74° 51' 48"	44,15%
16:00	51° 38' 42"	5° 12' 33"	47° 45' 09"	23° 11' 56"	59' 04"	16' 05,50"	75° 06' 05"	43,68%
17:00	52° 13' 59"	5° 13' 00"	48° 21' 54"	23° 21' 45"	59' 05"	16' 05,89"	75° 20' 30"	43,21%
18:00	52° 49' 19"	5° 13' 25"	48° 58' 46"	23° 31' 26"	59' 06"	16' 06,27"	75° 35' 04"	42,73%
19:00	53° 24' 40"	5° 13' 48"	49° 35' 45"	23° 40' 58"	59' 08"	16' 06,65"	75° 49' 47"	42,26%
20:00	54° 00' 03"	5° 14' 09"	50° 12' 52"	23° 50' 22"	59' 09"	16' 07,02"	76° 04' 40"	41,79%
21:00	54° 35' 28"	5° 14' 28"	50° 50' 05"	23° 59' 38"	59' 11"	16' 07,40"	76° 19' 41"	41,32%
22:00	55° 10' 54"	5° 14' 45"	51° 27' 26"	24° 08' 45"	59' 12"	16' 07,78"	76° 34' 51"	40,85%
23:00	55° 46' 23"	5° 15' 00"	52° 04' 53"	24° 17' 44"	59' 13"	16' 08,15"	76° 50' 09"	40,38%
24:00	56° 21' 53"	5° 15' 13"	52° 42' 28"	24° 26' 33"	59' 15"	16' 08,52"	77° 05' 37"	39,91%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	134° 31' 57"	0,66"	136° 59' 52"	16° 28' 19"	1,0141843	15' 46,21"	23° 26' 17"	-05m 52s
01:00	134° 34' 20"	0,66"	137° 02' 15"	16° 27' 37"	1,0141785	15' 46,21"	23° 26' 17"	-05m 51s
02:00	134° 36' 44"	0,66"	137° 04' 39"	16° 26' 55"	1,0141725	15' 46,22"	23° 26' 17"	-05m 51s
03:00	134° 39' 08"	0,66"	137° 07' 02"	16° 26' 13"	1,0141666	15' 46,23"	23° 26' 17"	-05m 51s
04:00	134° 41' 32"	0,66"	137° 09' 25"	16° 25' 31"	1,0141607	15' 46,23"	23° 26' 17"	-05m 50s
05:00	134° 43' 55"	0,66"	137° 11' 49"	16° 24' 50"	1,0141548	15' 46,24"	23° 26' 17"	-05m 50s
06:00	134° 46' 19"	0,66"	137° 14' 12"	16° 24' 08"	1,0141489	15' 46,24"	23° 26' 17"	-05m 50s
07:00	134° 48' 43"	0,66"	137° 16' 35"	16° 23' 26"	1,0141429	15' 46,25"	23° 26' 17"	-05m 50s
08:00	134° 51' 07"	0,66"	137° 18' 59"	16° 22' 44"	1,0141370	15' 46,25"	23° 26' 17"	-05m 49s
09:00	134° 53' 30"	0,66"	137° 21' 22"	16° 22' 02"	1,0141310	15' 46,26"	23° 26' 17"	-05m 49s
10:00	134° 55' 54"	0,66"	137° 23' 45"	16° 21' 19"	1,0141250	15' 46,26"	23° 26' 17"	-05m 49s
11:00	134° 58' 18"	0,66"	137° 26' 09"	16° 20' 37"	1,0141191	15' 46,27"	23° 26' 17"	-05m 48s
12:00	135° 00' 42"	0,66"	137° 28' 32"	16° 19' 55"	1,0141131	15' 46,28"	23° 26' 17"	-05m 48s
13:00	135° 03' 05"	0,66"	137° 30' 55"	16° 19' 13"	1,0141071	15' 46,28"	23° 26' 17"	-05m 48s
14:00	135° 05' 29"	0,65"	137° 33' 18"	16° 18' 31"	1,0141011	15' 46,29"	23° 26' 17"	-05m 47s
15:00	135° 07' 53"	0,65"	137° 35' 41"	16° 17' 49"	1,0140951	15' 46,29"	23° 26' 17"	-05m 47s
16:00	135° 10' 17"	0,65"	137° 38' 05"	16° 17' 06"	1,0140891	15' 46,30"	23° 26' 17"	-05m 47s
17:00	135° 12' 41"	0,65"	137° 40' 28"	16° 16' 24"	1,0140830	15' 46,30"	23° 26' 17"	-05m 47s
18:00	135° 15' 04"	0,65"	137° 42' 51"	16° 15' 42"	1,0140770	15' 46,31"	23° 26' 17"	-05m 46s
19:00	135° 17' 28"	0,65"	137° 45' 14"	16° 14' 59"	1,0140710	15' 46,31"	23° 26' 17"	-05m 46s
20:00	135° 19' 52"	0,65"	137° 47' 37"	16° 14' 17"	1,0140649	15' 46,32"	23° 26' 17"	-05m 46s
21:00	135° 22' 16"	0,65"	137° 50' 00"	16° 13' 35"	1,0140589	15' 46,33"	23° 26' 17"	-05m 45s
22:00	135° 24' 39"	0,65"	137° 52' 23"	16° 12' 52"	1,0140528	15' 46,33"	23° 26' 17"	-05m 45s
23:00	135° 27' 03"	0,65"	137° 54' 46"	16° 12' 10"	1,0140467	15' 46,34"	23° 26' 17"	-05m 45s
24:00	135° 29' 27"	0,65"	137° 57' 09"	16° 11' 27"	1,0140407	15' 46,34"	23° 26' 17"	-05m 44s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	56° 21' 53"	5° 15' 13"	52° 42' 28"	24° 26' 33"	59' 15"	16' 08,52"	77° 05' 37"	39,91%
01:00	56° 57' 24"	5° 15' 24"	53° 20' 10"	24° 35' 14"	59' 16"	16' 08,89"	77° 21' 13"	39,44%
02:00	57° 32' 57"	5° 15' 33"	53° 57' 58"	24° 43' 45"	59' 17"	16' 09,25"	77° 36' 57"	38,97%
03:00	58° 08' 33"	5° 15' 40"	54° 35' 54"	24° 52' 08"	59' 19"	16' 09,62"	77° 52' 50"	38,50%
04:00	58° 44' 09"	5° 15' 44"	55° 13' 57"	25° 00' 21"	59' 20"	16' 09,98"	78° 08' 51"	38,03%
05:00	59° 19' 48"	5° 15' 47"	55° 52' 06"	25° 08' 25"	59' 21"	16' 10,34"	78° 25' 01"	37,57%
06:00	59° 55' 28"	5° 15' 48"	56° 30' 22"	25° 16' 20"	59' 23"	16' 10,70"	78° 41' 19"	37,10%
07:00	60° 31' 09"	5° 15' 47"	57° 08' 45"	25° 24' 05"	59' 24"	16' 11,06"	78° 57' 45"	36,63%
08:00	61° 06' 53"	5° 15' 44"	57° 47' 15"	25° 31' 40"	59' 25"	16' 11,41"	79° 14' 18"	36,17%
09:00	61° 42' 38"	5° 15' 39"	58° 25' 51"	25° 39' 06"	59' 27"	16' 11,76"	79° 31' 00"	35,71%
10:00	62° 18' 24"	5° 15' 32"	59° 04' 33"	25° 46' 22"	59' 28"	16' 12,11"	79° 47' 50"	35,24%
11:00	62° 54' 12"	5° 15' 22"	59° 43' 22"	25° 53' 28"	59' 29"	16' 12,46"	80° 04' 47"	34,78%
12:00	63° 30' 02"	5° 15' 11"	60° 22' 18"	26° 00' 24"	59' 30"	16' 12,80"	80° 21' 52"	34,32%
13:00	64° 05' 54"	5° 14' 58"	61° 01' 20"	26° 07' 09"	59' 32"	16' 13,14"	80° 39' 04"	33,86%
14:00	64° 41' 47"	5° 14' 42"	61° 40' 28"	26° 13' 45"	59' 33"	16' 13,48"	80° 56' 23"	33,40%
15:00	65° 17' 41"	5° 14' 25"	62° 19' 42"	26° 20' 10"	59' 34"	16' 13,82"	81° 13' 50"	32,94%
16:00	65° 53' 37"	5° 14' 05"	62° 59' 02"	26° 26' 25"	59' 35"	16' 14,15"	81° 31' 24"	32,49%
17:00	66° 29' 35"	5° 13' 44"	63° 38' 28"	26° 32' 29"	59' 36"	16' 14,48"	81° 49' 05"	32,03%
18:00	67° 05' 34"	5° 13' 20"	64° 18' 00"	26° 38' 22"	59' 38"	16' 14,81"	82° 06' 52"	31,58%
19:00	67° 41' 34"	5° 12' 54"	64° 57' 37"	26° 44' 05"	59' 39"	16' 15,13"	82° 24' 47"	31,13%
20:00	68° 17' 36"	5° 12' 26"	65° 37' 20"	26° 49' 37"	59' 40"	16' 15,45"	82° 42' 48"	30,68%
21:00	68° 53' 40"	5° 11' 56"	66° 17' 09"	26° 54' 58"	59' 41"	16' 15,77"	83° 00' 55"	30,23%
22:00	69° 29' 45"	5° 11' 24"	66° 57' 03"	27° 00' 08"	59' 42"	16' 16,09"	83° 19' 09"	29,78%
23:00	70° 05' 51"	5° 10' 50"	67° 37' 03"	27° 05' 07"	59' 44"	16' 16,40"	83° 37' 28"	29,33%
24:00	70° 41' 59"	5° 10' 14"	68° 17' 07"	27° 09' 55"	59' 45"	16' 16,71"	83° 55' 54"	28,89%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	135° 29' 27"	0,65"	137° 57' 09"	16° 11' 27"	1,0140407	15' 46,34"	23° 26' 17"	-05m 44s
01:00	135° 31' 51"	0,64"	137° 59' 33"	16° 10' 45"	1,0140346	15' 46,35"	23° 26' 17"	-05m 44s
02:00	135° 34' 15"	0,64"	138° 01' 56"	16° 10' 02"	1,0140285	15' 46,35"	23° 26' 17"	-05m 44s
03:00	135° 36' 38"	0,64"	138° 04' 19"	16° 09' 20"	1,0140224	15' 46,36"	23° 26' 17"	-05m 43s
04:00	135° 39' 02"	0,64"	138° 06' 42"	16° 08' 37"	1,0140163	15' 46,37"	23° 26' 17"	-05m 43s
05:00	135° 41' 26"	0,64"	138° 09' 05"	16° 07' 55"	1,0140101	15' 46,37"	23° 26' 17"	-05m 43s
06:00	135° 43' 50"	0,64"	138° 11' 28"	16° 07' 12"	1,0140040	15' 46,38"	23° 26' 17"	-05m 42s
07:00	135° 46' 14"	0,64"	138° 13' 51"	16° 06' 29"	1,0139979	15' 46,38"	23° 26' 17"	-05m 42s
08:00	135° 48' 38"	0,63"	138° 16' 13"	16° 05' 47"	1,0139917	15' 46,39"	23° 26' 17"	-05m 42s
09:00	135° 51' 01"	0,63"	138° 18' 36"	16° 05' 04"	1,0139856	15' 46,39"	23° 26' 17"	-05m 41s
10:00	135° 53' 25"	0,63"	138° 20' 59"	16° 04' 21"	1,0139794	15' 46,40"	23° 26' 17"	-05m 41s
11:00	135° 55' 49"	0,63"	138° 23' 22"	16° 03' 39"	1,0139733	15' 46,41"	23° 26' 17"	-05m 41s
12:00	135° 58' 13"	0,63"	138° 25' 45"	16° 02' 56"	1,0139671	15' 46,41"	23° 26' 17"	-05m 40s
13:00	136° 00' 37"	0,62"	138° 28' 08"	16° 02' 13"	1,0139609	15' 46,42"	23° 26' 17"	-05m 40s
14:00	136° 03' 00"	0,62"	138° 30' 31"	16° 01' 30"	1,0139547	15' 46,42"	23° 26' 17"	-05m 40s
15:00	136° 05' 24"	0,62"	138° 32' 54"	16° 00' 47"	1,0139485	15' 46,43"	23° 26' 17"	-05m 39s
16:00	136° 07' 48"	0,62"	138° 35' 17"	16° 00' 04"	1,0139423	15' 46,43"	23° 26' 17"	-05m 39s
17:00	136° 10' 12"	0,62"	138° 37' 39"	15° 59' 21"	1,0139361	15' 46,44"	23° 26' 17"	-05m 39s
18:00	136° 12' 36"	0,61"	138° 40' 02"	15° 58' 38"	1,0139298	15' 46,45"	23° 26' 17"	-05m 38s
19:00	136° 15' 00"	0,61"	138° 42' 25"	15° 57' 56"	1,0139236	15' 46,45"	23° 26' 17"	-05m 38s
20:00	136° 17' 24"	0,61"	138° 44' 48"	15° 57' 13"	1,0139173	15' 46,46"	23° 26' 17"	-05m 38s
21:00	136° 19' 47"	0,61"	138° 47' 10"	15° 56' 29"	1,0139111	15' 46,46"	23° 26' 17"	-05m 37s
22:00	136° 22' 11"	0,60"	138° 49' 33"	15° 55' 46"	1,0139048	15' 46,47"	23° 26' 17"	-05m 37s
23:00	136° 24' 35"	0,60"	138° 51' 56"	15° 55' 03"	1,0138986	15' 46,48"	23° 26' 17"	-05m 37s
24:00	136° 26' 59"	0,60"	138° 54' 19"	15° 54' 20"	1,0138923	15' 46,48"	23° 26' 17"	-05m 36s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	70° 41' 59"	5° 10' 14"	68° 17' 07"	27° 09' 55"	59' 45"	16' 16,71"	83° 55' 54"	28,89%
01:00	71° 18' 09"	5° 09' 36"	68° 57' 17"	27° 14' 32"	59' 46"	16' 17,01"	84° 14' 26"	28,45%
02:00	71° 54' 19"	5° 08' 56"	69° 37' 31"	27° 18' 58"	59' 47"	16' 17,31"	84° 33' 03"	28,01%
03:00	72° 30' 31"	5° 08' 13"	70° 17' 50"	27° 23' 12"	59' 48"	16' 17,61"	84° 51' 45"	27,57%
04:00	73° 06' 45"	5° 07' 29"	70° 58' 14"	27° 27' 14"	59' 49"	16' 17,91"	85° 10' 34"	27,13%
05:00	73° 42' 59"	5° 06' 42"	71° 38' 43"	27° 31' 05"	59' 50"	16' 18,20"	85° 29' 27"	26,69%
06:00	74° 19' 16"	5° 05' 54"	72° 19' 15"	27° 34' 45"	59' 51"	16' 18,48"	85° 48' 25"	26,26%
07:00	74° 55' 33"	5° 05' 03"	72° 59' 52"	27° 38' 13"	59' 52"	16' 18,77"	86° 07' 28"	25,83%
08:00	75° 31' 52"	5° 04' 10"	73° 40' 33"	27° 41' 29"	59' 53"	16' 19,05"	86° 26' 36"	25,40%
09:00	76° 08' 12"	5° 03' 15"	74° 21' 18"	27° 44' 33"	59' 54"	16' 19,32"	86° 45' 48"	24,97%
10:00	76° 44' 33"	5° 02' 19"	75° 02' 06"	27° 47' 26"	59' 55"	16' 19,59"	87° 05' 05"	24,55%
11:00	77° 20' 55"	5° 01' 20"	75° 42' 58"	27° 50' 06"	59' 56"	16' 19,86"	87° 24' 25"	24,12%
12:00	77° 57' 19"	5° 00' 19"	76° 23' 54"	27° 52' 35"	59' 57"	16' 20,12"	87° 43' 50"	23,70%
13:00	78° 33' 43"	4° 59' 16"	77° 04' 53"	27° 54' 51"	59' 58"	16' 20,38"	88° 03' 19"	23,28%
14:00	79° 10' 09"	4° 58' 11"	77° 45' 55"	27° 56' 56"	59' 59"	16' 20,64"	88° 22' 51"	22,87%
15:00	79° 46' 37"	4° 57' 04"	78° 27' 00"	27° 58' 48"	00' 00"	16' 20,89"	88° 42' 26"	22,45%
16:00	80° 23' 05"	4° 55' 54"	79° 08' 07"	28° 00' 28"	00' 01"	16' 21,13"	89° 02' 05"	22,04%
17:00	80° 59' 34"	4° 54' 43"	79° 49' 17"	28° 01' 57"	00' 02"	16' 21,38"	89° 21' 46"	21,63%
18:00	81° 36' 04"	4° 53' 30"	80° 30' 30"	28° 03' 12"	00' 03"	16' 21,61"	89° 41' 31"	21,23%
19:00	82° 12' 36"	4° 52' 15"	81° 11' 45"	28° 04' 16"	00' 04"	16' 21,85"	90° 01' 18"	20,82%
20:00	82° 49' 08"	4° 50' 58"	81° 53' 02"	28° 05' 07"	00' 04"	16' 22,07"	90° 21' 08"	20,42%
21:00	83° 25' 42"	4° 49' 38"	82° 34' 21"	28° 05' 46"	00' 05"	16' 22,30"	90° 41' 00"	20,02%
22:00	84° 02' 16"	4° 48' 17"	83° 15' 41"	28° 06' 12"	00' 06"	16' 22,52"	91° 00' 54"	19,63%
23:00	84° 38' 52"	4° 46' 54"	83° 57' 03"	28° 06' 26"	00' 07"	16' 22,73"	91° 20' 50"	19,24%
24:00	85° 15' 28"	4° 45' 29"	84° 38' 26"	28° 06' 28"	00' 08"	16' 22,94"	91° 40' 48"	18,85%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	136° 26' 59"	0,60"	138° 54' 19"	15° 54' 20"	1,0138923	15' 46,48"	23° 26' 17"	-05m 36s
01:00	136° 29' 23"	0,60"	138° 56' 41"	15° 53' 37"	1,0138860	15' 46,49"	23° 26' 17"	-05m 36s
02:00	136° 31' 47"	0,59"	138° 59' 04"	15° 52' 54"	1,0138797	15' 46,49"	23° 26' 17"	-05m 36s
03:00	136° 34' 11"	0,59"	139° 01' 27"	15° 52' 11"	1,0138734	15' 46,50"	23° 26' 17"	-05m 35s
04:00	136° 36' 34"	0,59"	139° 03' 49"	15° 51' 28"	1,0138671	15' 46,50"	23° 26' 17"	-05m 35s
05:00	136° 38' 58"	0,59"	139° 06' 12"	15° 50' 44"	1,0138607	15' 46,51"	23° 26' 17"	-05m 35s
06:00	136° 41' 22"	0,58"	139° 08' 35"	15° 50' 01"	1,0138544	15' 46,52"	23° 26' 17"	-05m 34s
07:00	136° 43' 46"	0,58"	139° 10' 57"	15° 49' 18"	1,0138481	15' 46,52"	23° 26' 17"	-05m 34s
08:00	136° 46' 10"	0,58"	139° 13' 20"	15° 48' 34"	1,0138417	15' 46,53"	23° 26' 17"	-05m 34s
09:00	136° 48' 34"	0,57"	139° 15' 42"	15° 47' 51"	1,0138354	15' 46,53"	23° 26' 17"	-05m 33s
10:00	136° 50' 58"	0,57"	139° 18' 05"	15° 47' 08"	1,0138290	15' 46,54"	23° 26' 17"	-05m 33s
11:00	136° 53' 21"	0,57"	139° 20' 27"	15° 46' 24"	1,0138226	15' 46,55"	23° 26' 17"	-05m 33s
12:00	136° 55' 45"	0,57"	139° 22' 50"	15° 45' 41"	1,0138162	15' 46,55"	23° 26' 17"	-05m 32s
13:00	136° 58' 09"	0,56"	139° 25' 12"	15° 44' 57"	1,0138098	15' 46,56"	23° 26' 17"	-05m 32s
14:00	137° 00' 33"	0,56"	139° 27' 35"	15° 44' 14"	1,0138034	15' 46,56"	23° 26' 17"	-05m 31s
15:00	137° 02' 57"	0,56"	139° 29' 57"	15° 43' 30"	1,0137970	15' 46,57"	23° 26' 17"	-05m 31s
16:00	137° 05' 21"	0,55"	139° 32' 20"	15° 42' 47"	1,0137906	15' 46,58"	23° 26' 17"	-05m 31s
17:00	137° 07' 45"	0,55"	139° 34' 42"	15° 42' 03"	1,0137842	15' 46,58"	23° 26' 17"	-05m 30s
18:00	137° 10' 09"	0,55"	139° 37' 05"	15° 41' 20"	1,0137777	15' 46,59"	23° 26' 17"	-05m 30s
19:00	137° 12' 33"	0,54"	139° 39' 27"	15° 40' 36"	1,0137713	15' 46,59"	23° 26' 17"	-05m 30s
20:00	137° 14' 56"	0,54"	139° 41' 50"	15° 39' 52"	1,0137648	15' 46,60"	23° 26' 17"	-05m 29s
21:00	137° 17' 20"	0,53"	139° 44' 12"	15° 39' 09"	1,0137584	15' 46,61"	23° 26' 17"	-05m 29s
22:00	137° 19' 44"	0,53"	139° 46' 35"	15° 38' 25"	1,0137519	15' 46,61"	23° 26' 17"	-05m 29s
23:00	137° 22' 08"	0,53"	139° 48' 57"	15° 37' 41"	1,0137454	15' 46,62"	23° 26' 17"	-05m 28s
24:00	137° 24' 32"	0,52"	139° 51' 19"	15° 36' 58"	1,0137389	15' 46,62"	23° 26' 17"	-05m 28s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	85° 15' 28"	4° 45' 29"	84° 38' 26"	28° 06' 28"	00' 08"	16' 22,94"	91° 40' 48"	18,85%
01:00	85° 52' 06"	4° 44' 02"	85° 19' 51"	28° 06' 17"	00' 08"	16' 23,14"	92° 00' 47"	18,46%
02:00	86° 28' 44"	4° 42' 32"	86° 01' 16"	28° 05' 54"	00' 09"	16' 23,34"	92° 20' 47"	18,07%
03:00	87° 05' 23"	4° 41' 01"	86° 42' 43"	28° 05' 19"	00' 10"	16' 23,54"	92° 40' 49"	17,69%
04:00	87° 42' 03"	4° 39' 28"	87° 24' 09"	28° 04' 30"	00' 10"	16' 23,73"	93° 00' 52"	17,31%
05:00	88° 18' 44"	4° 37' 53"	88° 05' 37"	28° 03' 30"	00' 11"	16' 23,91"	93° 20' 55"	16,94%
06:00	88° 55' 25"	4° 36' 16"	88° 47' 04"	28° 02' 17"	00' 12"	16' 24,09"	93° 40' 59"	16,57%
07:00	89° 32' 08"	4° 34' 37"	89° 28' 32"	28° 00' 51"	00' 12"	16' 24,26"	94° 01' 03"	16,20%
08:00	90° 08' 51"	4° 32' 56"	90° 09' 59"	27° 59' 13"	00' 13"	16' 24,43"	94° 21' 08"	15,83%
09:00	90° 45' 35"	4° 31' 14"	90° 51' 26"	27° 57' 22"	00' 14"	16' 24,59"	94° 41' 12"	15,47%
10:00	91° 22' 19"	4° 29' 29"	91° 32' 53"	27° 55' 19"	00' 14"	16' 24,75"	95° 01' 17"	15,11%
11:00	91° 59' 04"	4° 27' 43"	92° 14' 19"	27° 53' 04"	00' 15"	16' 24,90"	95° 21' 21"	14,75%
12:00	92° 35' 50"	4° 25' 54"	92° 55' 44"	27° 50' 36"	00' 15"	16' 25,05"	95° 41' 24"	14,40%
13:00	93° 12' 36"	4° 24' 04"	93° 37' 07"	27° 47' 56"	00' 16"	16' 25,19"	96° 01' 27"	14,05%
14:00	93° 49' 23"	4° 22' 12"	94° 18' 30"	27° 45' 03"	00' 16"	16' 25,32"	96° 21' 30"	13,71%
15:00	94° 26' 11"	4° 20' 18"	94° 59' 51"	27° 41' 58"	00' 17"	16' 25,45"	96° 41' 31"	13,36%
16:00	95° 02' 59"	4° 18' 22"	95° 41' 11"	27° 38' 40"	00' 17"	16' 25,57"	97° 01' 31"	13,02%
17:00	95° 39' 48"	4° 16' 25"	96° 22' 29"	27° 35' 11"	00' 18"	16' 25,69"	97° 21' 30"	12,69%
18:00	96° 16' 37"	4° 14' 25"	97° 03' 45"	27° 31' 29"	00' 18"	16' 25,80"	97° 41' 27"	12,36%
19:00	96° 53' 26"	4° 12' 24"	97° 44' 58"	27° 27' 34"	00' 18"	16' 25,91"	98° 01' 23"	12,03%
20:00	97° 30' 16"	4° 10' 21"	98° 26' 10"	27° 23' 28"	00' 19"	16' 26,01"	98° 21' 17"	11,71%
21:00	98° 07' 07"	4° 08' 16"	99° 07' 19"	27° 19' 09"	00' 19"	16' 26,10"	98° 41' 09"	11,39%
22:00	98° 43' 57"	4° 06' 10"	99° 48' 25"	27° 14' 38"	00' 19"	16' 26,19"	99° 01' 00"	11,07%
23:00	99° 20' 48"	4° 04' 02"	100° 29' 28"	27° 09' 56"	00' 20"	16' 26,27"	99° 20' 48"	10,76%
24:00	99° 57' 40"	4° 01' 52"	101° 10' 29"	27° 05' 01"	00' 20"	16' 26,35"	99° 40' 34"	10,45%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	137° 24' 32"	0,52"	139° 51' 19"	15° 36' 58"	1,0137389	15' 46,62"	23° 26' 17"	-05m 28s
01:00	137° 26' 56"	0,52"	139° 53' 42"	15° 36' 14"	1,0137324	15' 46,63"	23° 26' 17"	-05m 27s
02:00	137° 29' 20"	0,52"	139° 56' 04"	15° 35' 30"	1,0137259	15' 46,64"	23° 26' 17"	-05m 27s
03:00	137° 31' 44"	0,51"	139° 58' 26"	15° 34' 46"	1,0137194	15' 46,64"	23° 26' 17"	-05m 27s
04:00	137° 34' 08"	0,51"	140° 00' 49"	15° 34' 02"	1,0137128	15' 46,65"	23° 26' 17"	-05m 26s
05:00	137° 36' 32"	0,50"	140° 03' 11"	15° 33' 18"	1,0137063	15' 46,65"	23° 26' 17"	-05m 26s
06:00	137° 38' 56"	0,50"	140° 05' 33"	15° 32' 35"	1,0136997	15' 46,66"	23° 26' 17"	-05m 26s
07:00	137° 41' 20"	0,50"	140° 07' 55"	15° 31' 51"	1,0136932	15' 46,67"	23° 26' 17"	-05m 25s
08:00	137° 43' 43"	0,49"	140° 10' 18"	15° 31' 07"	1,0136866	15' 46,67"	23° 26' 17"	-05m 25s
09:00	137° 46' 07"	0,49"	140° 12' 40"	15° 30' 23"	1,0136800	15' 46,68"	23° 26' 17"	-05m 24s
10:00	137° 48' 31"	0,48"	140° 15' 02"	15° 29' 39"	1,0136735	15' 46,69"	23° 26' 17"	-05m 24s
11:00	137° 50' 55"	0,48"	140° 17' 24"	15° 28' 55"	1,0136669	15' 46,69"	23° 26' 17"	-05m 24s
12:00	137° 53' 19"	0,47"	140° 19' 46"	15° 28' 11"	1,0136603	15' 46,70"	23° 26' 17"	-05m 23s
13:00	137° 55' 43"	0,47"	140° 22' 09"	15° 27' 27"	1,0136536	15' 46,70"	23° 26' 17"	-05m 23s
14:00	137° 58' 07"	0,47"	140° 24' 31"	15° 26' 42"	1,0136470	15' 46,71"	23° 26' 17"	-05m 23s
15:00	138° 00' 31"	0,46"	140° 26' 53"	15° 25' 58"	1,0136404	15' 46,72"	23° 26' 17"	-05m 22s
16:00	138° 02' 55"	0,46"	140° 29' 15"	15° 25' 14"	1,0136338	15' 46,72"	23° 26' 17"	-05m 22s
17:00	138° 05' 19"	0,45"	140° 31' 37"	15° 24' 30"	1,0136271	15' 46,73"	23° 26' 17"	-05m 21s
18:00	138° 07' 43"	0,45"	140° 33' 59"	15° 23' 46"	1,0136204	15' 46,74"	23° 26' 17"	-05m 21s
19:00	138° 10' 07"	0,44"	140° 36' 21"	15° 23' 02"	1,0136138	15' 46,74"	23° 26' 17"	-05m 21s
20:00	138° 12' 31"	0,44"	140° 38' 43"	15° 22' 17"	1,0136071	15' 46,75"	23° 26' 17"	-05m 20s
21:00	138° 14' 55"	0,43"	140° 41' 05"	15° 21' 33"	1,0136004	15' 46,75"	23° 26' 17"	-05m 20s
22:00	138° 17' 19"	0,43"	140° 43' 27"	15° 20' 49"	1,0135937	15' 46,76"	23° 26' 17"	-05m 20s
23:00	138° 19' 43"	0,42"	140° 45' 49"	15° 20' 04"	1,0135870	15' 46,77"	23° 26' 17"	-05m 19s
24:00	138° 22' 07"	0,42"	140° 48' 11"	15° 19' 20"	1,0135803	15' 46,77"	23° 26' 17"	-05m 19s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	99° 57' 40"	4° 01' 52"	101° 10' 29"	27° 05' 01"	00' 20"	16' 26,35"	99° 40' 34"	10,45%
01:00	100° 34' 31"	3° 59' 40"	101° 51' 26"	26° 59' 54"	00' 20"	16' 26,42"	100° 00' 18"	10,14%
02:00	101° 11' 23"	3° 57' 27"	102° 32' 20"	26° 54' 36"	00' 21"	16' 26,48"	100° 20' 00"	9,84%
03:00	101° 48' 15"	3° 55' 12"	103° 13' 11"	26° 49' 05"	00' 21"	16' 26,53"	100° 39' 39"	9,54%
04:00	102° 25' 07"	3° 52' 56"	103° 53' 58"	26° 43' 23"	00' 21"	16' 26,59"	100° 59' 16"	9,25%
05:00	103° 02' 00"	3° 50' 38"	104° 34' 41"	26° 37' 29"	00' 21"	16' 26,63"	101° 18' 50"	8,96%
06:00	103° 38' 52"	3° 48' 18"	105° 15' 20"	26° 31' 23"	00' 21"	16' 26,67"	101° 38' 22"	8,68%
07:00	104° 15' 45"	3° 45' 57"	105° 55' 56"	26° 25' 06"	00' 21"	16' 26,70"	101° 57' 51"	8,40%
08:00	104° 52' 38"	3° 43' 34"	106° 36' 27"	26° 18' 37"	00' 21"	16' 26,72"	102° 17' 17"	8,12%
09:00	105° 29' 30"	3° 41' 09"	107° 16' 53"	26° 11' 57"	00' 21"	16' 26,74"	102° 36' 41"	7,85%
10:00	106° 06' 23"	3° 38' 43"	107° 57' 16"	26° 05' 06"	00' 22"	16' 26,75"	102° 56' 02"	7,58%
11:00	106° 43' 16"	3° 36' 15"	108° 37' 33"	25° 58' 03"	00' 22"	16' 26,76"	103° 15' 21"	7,32%
12:00	107° 20' 08"	3° 33' 46"	109° 17' 46"	25° 50' 50"	00' 22"	16' 26,76"	103° 34' 37"	7,06%
13:00	107° 57' 01"	3° 31' 16"	109° 57' 54"	25° 43' 25"	00' 22"	16' 26,75"	103° 53' 51"	6,80%
14:00	108° 33' 53"	3° 28' 44"	110° 37' 57"	25° 35' 49"	00' 21"	16' 26,73"	104° 13' 02"	6,55%
15:00	109° 10' 46"	3° 26' 10"	111° 17' 55"	25° 28' 02"	00' 21"	16' 26,71"	104° 32' 11"	6,30%
16:00	109° 47' 38"	3° 23' 35"	111° 57' 48"	25° 20' 05"	00' 21"	16' 26,69"	104° 51' 18"	6,06%
17:00	110° 24' 30"	3° 20' 59"	112° 37' 36"	25° 11' 56"	00' 21"	16' 26,65"	105° 10' 23"	5,82%
18:00	111° 01' 21"	3° 18' 21"	113° 17' 18"	25° 03' 37"	00' 21"	16' 26,61"	105° 29' 26"	5,59%
19:00	111° 38' 13"	3° 15' 42"	113° 56' 54"	24° 55' 08"	00' 21"	16' 26,56"	105° 48' 28"	5,36%
20:00	112° 15' 04"	3° 13' 02"	114° 36' 25"	24° 46' 28"	00' 21"	16' 26,51"	106° 07' 28"	5,14%
21:00	112° 51' 55"	3° 10' 20"	115° 15' 51"	24° 37' 38"	00' 20"	16' 26,45"	106° 26' 28"	4,92%
22:00	113° 28' 45"	3° 07' 37"	115° 55' 10"	24° 28' 38"	00' 20"	16' 26,38"	106° 45' 26"	4,70%
23:00	114° 05' 35"	3° 04' 53"	116° 34' 23"	24° 19' 27"	00' 20"	16' 26,30"	107° 04' 25"	4,49%
24:00	114° 42' 25"	3° 02' 07"	117° 13' 31"	24° 10' 07"	00' 20"	16' 26,22"	107° 23' 23"	4,29%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	138° 22' 07"	0,42"	140° 48' 11"	15° 19' 20"	1,0135803	15' 46,77"	23° 26' 17"	-05m 19s
01:00	138° 24' 31"	0,42"	140° 50' 33"	15° 18' 36"	1,0135736	15' 46,78"	23° 26' 17"	-05m 18s
02:00	138° 26' 54"	0,41"	140° 52' 55"	15° 17' 51"	1,0135668	15' 46,79"	23° 26' 17"	-05m 18s
03:00	138° 29' 18"	0,41"	140° 55' 17"	15° 17' 07"	1,0135601	15' 46,79"	23° 26' 17"	-05m 18s
04:00	138° 31' 42"	0,40"	140° 57' 39"	15° 16' 22"	1,0135533	15' 46,80"	23° 26' 17"	-05m 17s
05:00	138° 34' 06"	0,40"	141° 00' 01"	15° 15' 38"	1,0135466	15' 46,80"	23° 26' 17"	-05m 17s
06:00	138° 36' 30"	0,39"	141° 02' 23"	15° 14' 53"	1,0135398	15' 46,81"	23° 26' 17"	-05m 16s
07:00	138° 38' 54"	0,39"	141° 04' 45"	15° 14' 09"	1,0135330	15' 46,82"	23° 26' 17"	-05m 16s
08:00	138° 41' 18"	0,38"	141° 07' 07"	15° 13' 24"	1,0135262	15' 46,82"	23° 26' 17"	-05m 16s
09:00	138° 43' 42"	0,38"	141° 09' 29"	15° 12' 39"	1,0135194	15' 46,83"	23° 26' 17"	-05m 15s
10:00	138° 46' 06"	0,37"	141° 11' 51"	15° 11' 55"	1,0135126	15' 46,84"	23° 26' 17"	-05m 15s
11:00	138° 48' 30"	0,37"	141° 14' 12"	15° 11' 10"	1,0135058	15' 46,84"	23° 26' 17"	-05m 14s
12:00	138° 50' 54"	0,36"	141° 16' 34"	15° 10' 26"	1,0134990	15' 46,85"	23° 26' 17"	-05m 14s
13:00	138° 53' 18"	0,36"	141° 18' 56"	15° 09' 41"	1,0134922	15' 46,85"	23° 26' 17"	-05m 14s
14:00	138° 55' 42"	0,35"	141° 21' 18"	15° 08' 56"	1,0134853	15' 46,86"	23° 26' 17"	-05m 13s
15:00	138° 58' 06"	0,34"	141° 23' 40"	15° 08' 11"	1,0134784	15' 46,87"	23° 26' 17"	-05m 13s
16:00	139° 00' 30"	0,34"	141° 26' 01"	15° 07' 27"	1,0134716	15' 46,87"	23° 26' 17"	-05m 12s
17:00	139° 02' 54"	0,33"	141° 28' 23"	15° 06' 42"	1,0134647	15' 46,88"	23° 26' 17"	-05m 12s
18:00	139° 05' 18"	0,33"	141° 30' 45"	15° 05' 57"	1,0134578	15' 46,89"	23° 26' 17"	-05m 12s
19:00	139° 07' 42"	0,32"	141° 33' 07"	15° 05' 12"	1,0134509	15' 46,89"	23° 26' 17"	-05m 11s
20:00	139° 10' 06"	0,32"	141° 35' 28"	15° 04' 27"	1,0134440	15' 46,90"	23° 26' 17"	-05m 11s
21:00	139° 12' 30"	0,31"	141° 37' 50"	15° 03' 42"	1,0134371	15' 46,91"	23° 26' 17"	-05m 10s
22:00	139° 14' 54"	0,31"	141° 40' 12"	15° 02' 57"	1,0134302	15' 46,91"	23° 26' 17"	-05m 10s
23:00	139° 17' 18"	0,30"	141° 42' 33"	15° 02' 12"	1,0134233	15' 46,92"	23° 26' 17"	-05m 10s
24:00	139° 19' 42"	0,30"	141° 44' 55"	15° 01' 28"	1,0134163	15' 46,93"	23° 26' 17"	-05m 09s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	114° 42' 25"	3° 02' 07"	117° 13' 31"	24° 10' 07"	00' 20"	16' 26,22"	107° 23' 23"	4,29%
01:00	115° 19' 14"	2° 59' 20"	117° 52' 32"	24° 00' 36"	00' 19"	16' 26,13"	107° 42' 23"	4,09%
02:00	115° 56' 02"	2° 56' 32"	118° 31' 28"	23° 50' 56"	00' 19"	16' 26,04"	108° 01' 23"	3,89%
03:00	116° 32' 50"	2° 53' 43"	119° 10' 17"	23° 41' 06"	00' 19"	16' 25,93"	108° 20' 25"	3,70%
04:00	117° 09' 38"	2° 50' 53"	119° 49' 00"	23° 31' 07"	00' 18"	16' 25,82"	108° 39' 30"	3,51%
05:00	117° 46' 25"	2° 48' 01"	120° 27' 36"	23° 20' 58"	00' 18"	16' 25,71"	108° 58' 39"	3,33%
06:00	118° 23' 11"	2° 45' 09"	121° 06' 07"	23° 10' 40"	00' 17"	16' 25,59"	109° 17' 51"	3,15%
07:00	118° 59' 57"	2° 42' 15"	121° 44' 30"	23° 00' 13"	00' 17"	16' 25,46"	109° 37' 09"	2,98%
08:00	119° 36' 42"	2° 39' 20"	122° 22' 48"	22° 49' 36"	00' 16"	16' 25,32"	109° 56' 34"	2,81%
09:00	120° 13' 26"	2° 36' 24"	123° 00' 58"	22° 38' 51"	00' 16"	16' 25,18"	110° 16' 06"	2,65%
10:00	120° 50' 10"	2° 33' 27"	123° 39' 02"	22° 27' 57"	00' 15"	16' 25,03"	110° 35' 48"	2,49%
11:00	121° 26' 53"	2° 30' 29"	124° 17' 00"	22° 16' 54"	00' 15"	16' 24,87"	110° 55' 41"	2,33%
12:00	122° 03' 35"	2° 27' 31"	124° 54' 50"	22° 05' 42"	00' 14"	16' 24,71"	111° 15' 47"	2,19%
13:00	122° 40' 16"	2° 24' 31"	125° 32' 34"	21° 54' 22"	00' 13"	16' 24,54"	111° 36' 08"	2,04%
14:00	123° 16' 57"	2° 21' 30"	126° 10' 12"	21° 42' 53"	00' 13"	16' 24,36"	111° 56' 47"	1,90%
15:00	123° 53' 36"	2° 18' 28"	126° 47' 42"	21° 31' 17"	00' 12"	16' 24,18"	112° 17' 47"	1,77%
16:00	124° 30' 15"	2° 15' 26"	127° 25' 06"	21° 19' 32"	00' 11"	16' 23,99"	112° 39' 11"	1,64%
17:00	125° 06' 52"	2° 12' 22"	128° 02' 23"	21° 07' 39"	00' 11"	16' 23,79"	113° 01' 04"	1,51%
18:00	125° 43' 29"	2° 09' 18"	128° 39' 33"	20° 55' 38"	00' 10"	16' 23,58"	113° 23' 30"	1,39%
19:00	126° 20' 04"	2° 06' 13"	129° 16' 36"	20° 43' 30"	00' 09"	16' 23,37"	113° 46' 34"	1,28%
20:00	126° 56' 39"	2° 03' 07"	129° 53' 32"	20° 31' 14"	00' 08"	16' 23,16"	114° 10' 23"	1,17%
21:00	127° 33' 13"	2° 00' 00"	130° 30' 22"	20° 18' 50"	00' 08"	16' 22,93"	114° 35' 06"	1,07%
22:00	128° 09' 45"	1° 56' 53"	131° 07' 04"	20° 06' 20"	00' 07"	16' 22,70"	115° 00' 51"	0,97%
23:00	128° 46' 16"	1° 53' 45"	131° 43' 40"	19° 53' 41"	00' 06"	16' 22,46"	115° 27' 49"	0,87%
24:00	129° 22' 47"	1° 50' 36"	132° 20' 09"	19° 40' 56"	00' 05"	16' 22,22"	115° 56' 16"	0,78%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	139° 19' 42"	0,30"	141° 44' 55"	15° 01' 28"	1,0134163	15' 46,93"	23° 26' 17"	-05m 09s
01:00	139° 22' 06"	0,29"	141° 47' 17"	15° 00' 43"	1,0134094	15' 46,93"	23° 26' 17"	-05m 09s
02:00	139° 24' 30"	0,29"	141° 49' 38"	14° 59' 57"	1,0134024	15' 46,94"	23° 26' 17"	-05m 08s
03:00	139° 26' 54"	0,28"	141° 52' 00"	14° 59' 12"	1,0133954	15' 46,95"	23° 26' 17"	-05m 08s
04:00	139° 29' 18"	0,27"	141° 54' 22"	14° 58' 27"	1,0133885	15' 46,95"	23° 26' 17"	-05m 07s
05:00	139° 31' 42"	0,27"	141° 56' 43"	14° 57' 42"	1,0133815	15' 46,96"	23° 26' 17"	-05m 07s
06:00	139° 34' 06"	0,26"	141° 59' 05"	14° 56' 57"	1,0133745	15' 46,96"	23° 26' 17"	-05m 07s
07:00	139° 36' 30"	0,26"	142° 01' 26"	14° 56' 12"	1,0133675	15' 46,97"	23° 26' 17"	-05m 06s
08:00	139° 38' 54"	0,25"	142° 03' 48"	14° 55' 27"	1,0133605	15' 46,98"	23° 26' 17"	-05m 06s
09:00	139° 41' 18"	0,25"	142° 06' 09"	14° 54' 42"	1,0133534	15' 46,98"	23° 26' 17"	-05m 05s
10:00	139° 43' 42"	0,24"	142° 08' 31"	14° 53' 56"	1,0133464	15' 46,99"	23° 26' 17"	-05m 05s
11:00	139° 46' 06"	0,24"	142° 10' 52"	14° 53' 11"	1,0133394	15' 47,00"	23° 26' 17"	-05m 05s
12:00	139° 48' 30"	0,23"	142° 13' 14"	14° 52' 26"	1,0133323	15' 47,00"	23° 26' 17"	-05m 04s
13:00	139° 50' 54"	0,22"	142° 15' 35"	14° 51' 41"	1,0133252	15' 47,01"	23° 26' 17"	-05m 04s
14:00	139° 53' 18"	0,22"	142° 17' 57"	14° 50' 55"	1,0133182	15' 47,02"	23° 26' 17"	-05m 03s
15:00	139° 55' 43"	0,21"	142° 20' 18"	14° 50' 10"	1,0133111	15' 47,02"	23° 26' 17"	-05m 03s
16:00	139° 58' 07"	0,21"	142° 22' 39"	14° 49' 25"	1,0133040	15' 47,03"	23° 26' 17"	-05m 02s
17:00	140° 00' 31"	0,20"	142° 25' 01"	14° 48' 39"	1,0132969	15' 47,04"	23° 26' 17"	-05m 02s
18:00	140° 02' 55"	0,20"	142° 27' 22"	14° 47' 54"	1,0132898	15' 47,04"	23° 26' 17"	-05m 02s
19:00	140° 05' 19"	0,19"	142° 29' 44"	14° 47' 08"	1,0132827	15' 47,05"	23° 26' 17"	-05m 01s
20:00	140° 07' 43"	0,18"	142° 32' 05"	14° 46' 23"	1,0132755	15' 47,06"	23° 26' 17"	-05m 01s
21:00	140° 10' 07"	0,18"	142° 34' 26"	14° 45' 37"	1,0132684	15' 47,06"	23° 26' 17"	-05m 00s
22:00	140° 12' 31"	0,17"	142° 36' 48"	14° 44' 52"	1,0132613	15' 47,07"	23° 26' 17"	-05m 00s
23:00	140° 14' 55"	0,17"	142° 39' 09"	14° 44' 06"	1,0132541	15' 47,08"	23° 26' 17"	-04m 59s
24:00	140° 17' 19"	0,16"	142° 41' 30"	14° 43' 21"	1,0132469	15' 47,08"	23° 26' 17"	-04m 59s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	129° 22' 47"	1° 50' 36"	132° 20' 09"	19° 40' 56"	00' 05"	16' 22,22"	115° 56' 16"	0,78%
01:00	129° 59' 16"	1° 47' 27"	132° 56' 31"	19° 28' 04"	00' 04"	16' 21,97"	116° 26' 27"	0,70%
02:00	130° 35' 43"	1° 44' 17"	133° 32' 46"	19° 15' 05"	00' 03"	16' 21,71"	116° 58' 45"	0,62%
03:00	131° 12' 10"	1° 41' 06"	134° 08' 54"	19° 01' 59"	00' 02"	16' 21,45"	117° 33' 38"	0,54%
04:00	131° 48' 35"	1° 37' 55"	134° 44' 56"	18° 48' 47"	00' 01"	16' 21,18"	118° 11' 39"	0,47%
05:00	132° 24' 59"	1° 34' 43"	135° 20' 50"	18° 35' 28"	00' 00"	16' 20,90"	118° 53' 35"	0,41%
06:00	133° 01' 22"	1° 31' 30"	135° 56' 38"	18° 22' 03"	59' 59"	16' 20,62"	119° 40' 27"	0,35%
07:00	133° 37' 43"	1° 28' 18"	136° 32' 19"	18° 08' 31"	59' 58"	16' 20,33"	120° 33' 39"	0,29%
08:00	134° 14' 03"	1° 25' 04"	137° 07' 53"	17° 54' 54"	59' 57"	16' 20,04"	121° 35' 07"	0,24%
09:00	134° 50' 22"	1° 21' 50"	137° 43' 20"	17° 41' 10"	59' 56"	16' 19,74"	122° 47' 36"	0,19%
10:00	135° 26' 39"	1° 18' 36"	138° 18' 41"	17° 27' 21"	59' 55"	16' 19,43"	124° 15' 16"	0,15%
11:00	136° 02' 55"	1° 15' 21"	138° 53' 55"	17° 13' 26"	59' 54"	16' 19,11"	126° 04' 30"	0,12%
12:00	136° 39' 09"	1° 12' 06"	139° 29' 02"	16° 59' 26"	59' 52"	16' 18,79"	128° 25' 46"	0,09%
13:00	137° 15' 22"	1° 08' 51"	140° 04' 03"	16° 45' 20"	59' 51"	16' 18,47"	131° 37' 13"	0,06%
14:00	137° 51' 33"	1° 05' 35"	140° 38' 57"	16° 31' 08"	59' 50"	16' 18,14"	136° 12' 46"	0,04%
15:00	138° 27' 42"	1° 02' 19"	141° 13' 45"	16° 16' 52"	59' 49"	16' 17,80"	143° 21' 53"	0,02%
16:00	139° 03' 50"	0° 59' 03"	141° 48' 26"	16° 02' 30"	59' 47"	16' 17,45"	155° 37' 43"	0,01%
17:00	139° 39' 57"	0° 55' 46"	142° 23' 00"	15° 48' 04"	59' 46"	16' 17,11"	178° 07' 35"	0,01%
18:00	140° 16' 02"	0° 52' 29"	142° 57' 28"	15° 33' 32"	59' 45"	16' 16,75"	212° 32' 41"	0,01%
19:00	140° 52' 05"	0° 49' 12"	143° 31' 50"	15° 18' 56"	59' 43"	16' 16,39"	242° 12' 21"	0,01%
20:00	141° 28' 06"	0° 45' 55"	144° 06' 05"	15° 04' 15"	59' 42"	16' 16,02"	259° 04' 11"	0,02%
21:00	142° 04' 06"	0° 42' 38"	144° 40' 15"	14° 49' 30"	59' 41"	16' 15,65"	268° 26' 25"	0,03%
22:00	142° 40' 04"	0° 39' 20"	145° 14' 17"	14° 34' 41"	59' 39"	16' 15,27"	274° 09' 21"	0,05%
23:00	143° 16' 00"	0° 36' 03"	145° 48' 14"	14° 19' 47"	59' 38"	16' 14,89"	277° 57' 45"	0,07%
24:00	143° 51' 55"	0° 32' 45"	146° 22' 05"	14° 04' 49"	59' 37"	16' 14,50"	280° 40' 33"	0,10%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	140° 17' 19"	0,16"	142° 41' 30"	14° 43' 21"	1,0132469	15' 47,08"	23° 26' 17"	-04m 59s
01:00	140° 19' 43"	0,16"	142° 43' 52"	14° 42' 35"	1,0132398	15' 47,09"	23° 26' 17"	-04m 58s
02:00	140° 22' 07"	0,15"	142° 46' 13"	14° 41' 50"	1,0132326	15' 47,10"	23° 26' 17"	-04m 58s
03:00	140° 24' 31"	0,14"	142° 48' 34"	14° 41' 04"	1,0132254	15' 47,10"	23° 26' 17"	-04m 58s
04:00	140° 26' 55"	0,14"	142° 50' 55"	14° 40' 18"	1,0132182	15' 47,11"	23° 26' 17"	-04m 57s
05:00	140° 29' 19"	0,13"	142° 53' 17"	14° 39' 33"	1,0132110	15' 47,12"	23° 26' 17"	-04m 57s
06:00	140° 31' 43"	0,13"	142° 55' 38"	14° 38' 47"	1,0132037	15' 47,12"	23° 26' 17"	-04m 56s
07:00	140° 34' 07"	0,12"	142° 57' 59"	14° 38' 01"	1,0131965	15' 47,13"	23° 26' 17"	-04m 56s
08:00	140° 36' 31"	0,11"	143° 00' 20"	14° 37' 15"	1,0131893	15' 47,14"	23° 26' 17"	-04m 55s
09:00	140° 38' 55"	0,11"	143° 02' 41"	14° 36' 30"	1,0131820	15' 47,14"	23° 26' 17"	-04m 55s
10:00	140° 41' 20"	0,10"	143° 05' 02"	14° 35' 44"	1,0131748	15' 47,15"	23° 26' 17"	-04m 54s
11:00	140° 43' 44"	0,10"	143° 07' 24"	14° 34' 58"	1,0131675	15' 47,16"	23° 26' 17"	-04m 54s
12:00	140° 46' 08"	0,09"	143° 09' 45"	14° 34' 12"	1,0131602	15' 47,17"	23° 26' 17"	-04m 54s
13:00	140° 48' 32"	0,09"	143° 12' 06"	14° 33' 26"	1,0131529	15' 47,17"	23° 26' 17"	-04m 53s
14:00	140° 50' 56"	0,08"	143° 14' 27"	14° 32' 40"	1,0131456	15' 47,18"	23° 26' 17"	-04m 53s
15:00	140° 53' 20"	0,07"	143° 16' 48"	14° 31' 54"	1,0131383	15' 47,19"	23° 26' 17"	-04m 52s
16:00	140° 55' 44"	0,07"	143° 19' 09"	14° 31' 08"	1,0131310	15' 47,19"	23° 26' 17"	-04m 52s
17:00	140° 58' 08"	0,06"	143° 21' 30"	14° 30' 22"	1,0131237	15' 47,20"	23° 26' 17"	-04m 51s
18:00	141° 00' 32"	0,06"	143° 23' 51"	14° 29' 36"	1,0131164	15' 47,21"	23° 26' 17"	-04m 51s
19:00	141° 02' 56"	0,05"	143° 26' 12"	14° 28' 50"	1,0131090	15' 47,21"	23° 26' 17"	-04m 50s
20:00	141° 05' 20"	0,05"	143° 28' 33"	14° 28' 04"	1,0131017	15' 47,22"	23° 26' 17"	-04m 50s
21:00	141° 07' 44"	0,04"	143° 30' 54"	14° 27' 18"	1,0130943	15' 47,23"	23° 26' 17"	-04m 50s
22:00	141° 10' 09"	0,03"	143° 33' 15"	14° 26' 32"	1,0130869	15' 47,23"	23° 26' 17"	-04m 49s
23:00	141° 12' 33"	0,03"	143° 35' 36"	14° 25' 46"	1,0130796	15' 47,24"	23° 26' 17"	-04m 49s
24:00	141° 14' 57"	0,02"	143° 37' 57"	14° 25' 00"	1,0130722	15' 47,25"	23° 26' 17"	-04m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	143° 51' 55"	0° 32' 45"	146° 22' 05"	14° 04' 49"	59' 37"	16' 14,50"	280° 40' 33"	0,10%
01:00	144° 27' 48"	0° 29' 27"	146° 55' 49"	13° 49' 47"	59' 35"	16' 14,10"	282° 42' 44"	0,13%
02:00	145° 03' 39"	0° 26' 10"	147° 29' 27"	13° 34' 42"	59' 34"	16' 13,70"	284° 18' 11"	0,17%
03:00	145° 39' 28"	0° 22' 52"	148° 03' 00"	13° 19' 32"	59' 32"	16' 13,30"	285° 35' 06"	0,21%
04:00	146° 15' 15"	0° 19' 34"	148° 36' 26"	13° 04' 20"	59' 31"	16' 12,89"	286° 38' 42"	0,26%
05:00	146° 51' 01"	0° 16' 16"	149° 09' 47"	12° 49' 03"	59' 29"	16' 12,47"	287° 32' 22"	0,31%
06:00	147° 26' 44"	0° 12' 59"	149° 43' 02"	12° 33' 43"	59' 28"	16' 12,05"	288° 18' 26"	0,37%
07:00	148° 02' 26"	0° 09' 41"	150° 16' 11"	12° 18' 20"	59' 26"	16' 11,63"	288° 58' 34"	0,43%
08:00	148° 38' 05"	0° 06' 24"	150° 49' 14"	12° 02' 54"	59' 24"	16' 11,20"	289° 33' 57"	0,49%
09:00	149° 13' 43"	0° 03' 06"	151° 22' 12"	11° 47' 24"	59' 23"	16' 10,76"	290° 05' 28"	0,56%
10:00	149° 49' 19"	-0° 00' 11"	151° 55' 04"	11° 31' 52"	59' 21"	16' 10,32"	290° 33' 48"	0,64%
11:00	150° 24' 52"	-0° 03' 28"	152° 27' 51"	11° 16' 17"	59' 20"	16' 09,88"	290° 59' 28"	0,72%
12:00	151° 00' 24"	-0° 06' 45"	153° 00' 33"	11° 00' 39"	59' 18"	16' 09,43"	291° 22' 53"	0,80%
13:00	151° 35' 54"	-0° 10' 01"	153° 33' 09"	10° 44' 59"	59' 16"	16' 08,97"	291° 44' 21"	0,89%
14:00	152° 11' 21"	-0° 13' 18"	154° 05' 39"	10° 29' 16"	59' 15"	16' 08,52"	292° 04' 10"	0,98%
15:00	152° 46' 47"	-0° 16' 34"	154° 38' 05"	10° 13' 31"	59' 13"	16' 08,05"	292° 22' 30"	1,08%
16:00	153° 22' 10"	-0° 19' 49"	155° 10' 25"	9° 57' 43"	59' 11"	16' 07,59"	292° 39' 33"	1,18%
17:00	153° 57' 32"	-0° 23' 05"	155° 42' 41"	9° 41' 54"	59' 09"	16' 07,11"	292° 55' 28"	1,29%
18:00	154° 32' 51"	-0° 26' 20"	156° 14' 51"	9° 26' 02"	59' 08"	16' 06,64"	293° 10' 22"	1,40%
19:00	155° 08' 08"	-0° 29' 35"	156° 46' 57"	9° 10' 08"	59' 06"	16' 06,16"	293° 24' 21"	1,51%
20:00	155° 43' 23"	-0° 32' 49"	157° 18' 57"	8° 54' 13"	59' 04"	16' 05,68"	293° 37' 29"	1,63%
21:00	156° 18' 36"	-0° 36' 03"	157° 50' 53"	8° 38' 16"	59' 02"	16' 05,19"	293° 49' 53"	1,76%
22:00	156° 53' 46"	-0° 39' 16"	158° 22' 44"	8° 22' 17"	59' 01"	16' 04,70"	294° 01' 34"	1,88%
23:00	157° 28' 55"	-0° 42' 30"	158° 54' 30"	8° 06' 16"	58' 59"	16' 04,20"	294° 12' 38"	2,02%
24:00	158° 04' 01"	-0° 45' 42"	159° 26' 12"	7° 50' 14"	58' 57"	16' 03,70"	294° 23' 06"	2,15%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	141° 14' 57"	0,02"	143° 37' 57"	14° 25' 00"	1,0130722	15' 47,25"	23° 26' 17"	-04m 48s
01:00	141° 17' 21"	0,02"	143° 40' 18"	14° 24' 14"	1,0130648	15' 47,25"	23° 26' 17"	-04m 48s
02:00	141° 19' 45"	0,01"	143° 42' 39"	14° 23' 28"	1,0130574	15' 47,26"	23° 26' 17"	-04m 47s
03:00	141° 22' 09"	0,00"	143° 45' 00"	14° 22' 41"	1,0130499	15' 47,27"	23° 26' 17"	-04m 47s
04:00	141° 24' 33"	-0,00"	143° 47' 21"	14° 21' 55"	1,0130425	15' 47,28"	23° 26' 17"	-04m 46s
05:00	141° 26' 57"	-0,01"	143° 49' 42"	14° 21' 09"	1,0130351	15' 47,28"	23° 26' 17"	-04m 46s
06:00	141° 29' 21"	-0,01"	143° 52' 03"	14° 20' 23"	1,0130277	15' 47,29"	23° 26' 17"	-04m 45s
07:00	141° 31' 46"	-0,02"	143° 54' 23"	14° 19' 36"	1,0130202	15' 47,30"	23° 26' 17"	-04m 45s
08:00	141° 34' 10"	-0,02"	143° 56' 44"	14° 18' 50"	1,0130127	15' 47,30"	23° 26' 17"	-04m 44s
09:00	141° 36' 34"	-0,03"	143° 59' 05"	14° 18' 03"	1,0130053	15' 47,31"	23° 26' 17"	-04m 44s
10:00	141° 38' 58"	-0,04"	144° 01' 26"	14° 17' 17"	1,0129978	15' 47,32"	23° 26' 17"	-04m 43s
11:00	141° 41' 22"	-0,04"	144° 03' 47"	14° 16' 31"	1,0129903	15' 47,32"	23° 26' 17"	-04m 43s
12:00	141° 43' 46"	-0,05"	144° 06' 07"	14° 15' 44"	1,0129828	15' 47,33"	23° 26' 17"	-04m 43s
13:00	141° 46' 10"	-0,05"	144° 08' 28"	14° 14' 58"	1,0129753	15' 47,34"	23° 26' 17"	-04m 42s
14:00	141° 48' 34"	-0,06"	144° 10' 49"	14° 14' 11"	1,0129678	15' 47,35"	23° 26' 17"	-04m 42s
15:00	141° 50' 58"	-0,06"	144° 13' 10"	14° 13' 25"	1,0129603	15' 47,35"	23° 26' 17"	-04m 41s
16:00	141° 53' 23"	-0,07"	144° 15' 30"	14° 12' 38"	1,0129527	15' 47,36"	23° 26' 17"	-04m 41s
17:00	141° 55' 47"	-0,07"	144° 17' 51"	14° 11' 52"	1,0129452	15' 47,37"	23° 26' 17"	-04m 40s
18:00	141° 58' 11"	-0,08"	144° 20' 12"	14° 11' 05"	1,0129377	15' 47,37"	23° 26' 17"	-04m 40s
19:00	142° 00' 35"	-0,09"	144° 22' 32"	14° 10' 19"	1,0129301	15' 47,38"	23° 26' 17"	-04m 39s
20:00	142° 02' 59"	-0,09"	144° 24' 53"	14° 09' 32"	1,0129225	15' 47,39"	23° 26' 17"	-04m 39s
21:00	142° 05' 23"	-0,10"	144° 27' 14"	14° 08' 45"	1,0129150	15' 47,39"	23° 26' 17"	-04m 38s
22:00	142° 07' 47"	-0,10"	144° 29' 34"	14° 07' 59"	1,0129074	15' 47,40"	23° 26' 17"	-04m 38s
23:00	142° 10' 12"	-0,11"	144° 31' 55"	14° 07' 12"	1,0128998	15' 47,41"	23° 26' 17"	-04m 37s
24:00	142° 12' 36"	-0,11"	144° 34' 16"	14° 06' 25"	1,0128922	15' 47,42"	23° 26' 17"	-04m 37s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	158° 04' 01"	-0° 45' 42"	159° 26' 12"	7° 50' 14"	58' 57"	16' 03,70"	294° 23' 06"	2,15%
01:00	158° 39' 05"	-0° 48' 54"	159° 57' 50"	7° 34' 11"	58' 55"	16' 03,20"	294° 33' 01"	2,29%
02:00	159° 14' 07"	-0° 52' 06"	160° 29' 23"	7° 18' 07"	58' 53"	16' 02,69"	294° 42' 26"	2,44%
03:00	159° 49' 06"	-0° 55' 17"	161° 00' 51"	7° 02' 01"	58' 51"	16' 02,18"	294° 51' 22"	2,59%
04:00	160° 24' 04"	-0° 58' 27"	161° 32' 15"	6° 45' 55"	58' 49"	16' 01,67"	294° 59' 51"	2,74%
05:00	160° 58' 59"	-1° 01' 37"	162° 03' 36"	6° 29' 47"	58' 48"	16' 01,16"	295° 07' 54"	2,90%
06:00	161° 33' 51"	-1° 04' 47"	162° 34' 52"	6° 13' 39"	58' 46"	16' 00,64"	295° 15' 34"	3,06%
07:00	162° 08' 42"	-1° 07' 55"	163° 06' 04"	5° 57' 30"	58' 44"	16' 00,11"	295° 22' 51"	3,23%
08:00	162° 43' 30"	-1° 11' 04"	163° 37' 12"	5° 41' 20"	58' 42"	16' 00,00"	295° 29' 46"	3,40%
09:00	163° 18' 16"	-1° 14' 11"	164° 08' 16"	5° 25' 10"	58' 40"	15' 59,06"	295° 36' 20"	3,57%
10:00	163° 52' 59"	-1° 17' 18"	164° 39' 16"	5° 08' 59"	58' 38"	15' 58,53"	295° 42' 34"	3,75%
11:00	164° 27' 40"	-1° 20' 24"	165° 10' 13"	4° 52' 48"	58' 36"	15' 58,00"	295° 48' 30"	3,93%
12:00	165° 02' 19"	-1° 23' 29"	165° 41' 06"	4° 36' 37"	58' 34"	15' 57,46"	295° 54' 07"	4,11%
13:00	165° 36' 56"	-1° 26' 34"	166° 11' 55"	4° 20' 25"	58' 32"	15' 56,92"	295° 59' 27"	4,30%
14:00	166° 11' 30"	-1° 29' 38"	166° 42' 41"	4° 04' 14"	58' 30"	15' 56,38"	296° 04' 29"	4,50%
15:00	166° 46' 01"	-1° 32' 41"	167° 13' 23"	3° 48' 02"	58' 28"	15' 55,84"	296° 09' 16"	4,69%
16:00	167° 20' 31"	-1° 35' 44"	167° 44' 02"	3° 31' 50"	58' 26"	15' 55,29"	296° 13' 46"	4,89%
17:00	167° 54' 58"	-1° 38' 45"	168° 14' 38"	3° 15' 39"	58' 24"	15' 54,74"	296° 18' 01"	5,10%
18:00	168° 29' 22"	-1° 41' 46"	168° 45' 10"	2° 59' 28"	58' 22"	15' 54,19"	296° 22' 01"	5,31%
19:00	169° 03' 44"	-1° 44' 46"	169° 15' 40"	2° 43' 17"	58' 20"	15' 53,64"	296° 25' 47"	5,52%
20:00	169° 38' 04"	-1° 47' 45"	169° 46' 06"	2° 27' 06"	58' 18"	15' 53,08"	296° 29' 18"	5,73%
21:00	170° 12' 22"	-1° 50' 44"	170° 16' 29"	2° 10' 56"	58' 16"	15' 52,53"	296° 32' 36"	5,95%
22:00	170° 46' 36"	-1° 53' 41"	170° 46' 50"	1° 54' 47"	58' 14"	15' 51,97"	296° 35' 40"	6,17%
23:00	171° 20' 49"	-1° 56' 38"	171° 17' 08"	1° 38' 38"	58' 12"	15' 51,41"	296° 38' 31"	6,40%
24:00	171° 54' 59"	-1° 59' 33"	171° 47' 22"	1° 22' 30"	58' 10"	15' 50,85"	296° 41' 09"	6,63%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	142° 12' 36"	-0,11"	144° 34' 16"	14° 06' 25"	1,0128922	15' 47,42"	23° 26' 17"	-04m 37s
01:00	142° 15' 00"	-0,12"	144° 36' 36"	14° 05' 39"	1,0128846	15' 47,42"	23° 26' 17"	-04m 36s
02:00	142° 17' 24"	-0,12"	144° 38' 57"	14° 04' 52"	1,0128770	15' 47,43"	23° 26' 17"	-04m 36s
03:00	142° 19' 48"	-0,13"	144° 41' 17"	14° 04' 05"	1,0128693	15' 47,44"	23° 26' 17"	-04m 35s
04:00	142° 22' 12"	-0,13"	144° 43' 38"	14° 03' 18"	1,0128617	15' 47,44"	23° 26' 17"	-04m 35s
05:00	142° 24' 36"	-0,14"	144° 45' 58"	14° 02' 31"	1,0128540	15' 47,45"	23° 26' 17"	-04m 34s
06:00	142° 27' 01"	-0,14"	144° 48' 19"	14° 01' 45"	1,0128464	15' 47,46"	23° 26' 17"	-04m 34s
07:00	142° 29' 25"	-0,15"	144° 50' 40"	14° 00' 58"	1,0128387	15' 47,47"	23° 26' 17"	-04m 33s
08:00	142° 31' 49"	-0,16"	144° 53' 00"	14° 00' 11"	1,0128311	15' 47,47"	23° 26' 17"	-04m 33s
09:00	142° 34' 13"	-0,16"	144° 55' 20"	13° 59' 24"	1,0128234	15' 47,48"	23° 26' 17"	-04m 32s
10:00	142° 36' 37"	-0,17"	144° 57' 41"	13° 58' 37"	1,0128157	15' 47,49"	23° 26' 17"	-04m 32s
11:00	142° 39' 01"	-0,17"	145° 00' 01"	13° 57' 50"	1,0128080	15' 47,49"	23° 26' 17"	-04m 31s
12:00	142° 41' 26"	-0,18"	145° 02' 22"	13° 57' 03"	1,0128003	15' 47,50"	23° 26' 17"	-04m 31s
13:00	142° 43' 50"	-0,18"	145° 04' 42"	13° 56' 16"	1,0127926	15' 47,51"	23° 26' 17"	-04m 30s
14:00	142° 46' 14"	-0,19"	145° 07' 03"	13° 55' 29"	1,0127849	15' 47,52"	23° 26' 17"	-04m 30s
15:00	142° 48' 38"	-0,19"	145° 09' 23"	13° 54' 42"	1,0127771	15' 47,52"	23° 26' 17"	-04m 29s
16:00	142° 51' 02"	-0,20"	145° 11' 43"	13° 53' 55"	1,0127694	15' 47,53"	23° 26' 17"	-04m 29s
17:00	142° 53' 26"	-0,20"	145° 14' 04"	13° 53' 08"	1,0127616	15' 47,54"	23° 26' 17"	-04m 28s
18:00	142° 55' 51"	-0,21"	145° 16' 24"	13° 52' 21"	1,0127539	15' 47,55"	23° 26' 17"	-04m 28s
19:00	142° 58' 15"	-0,21"	145° 18' 45"	13° 51' 33"	1,0127461	15' 47,55"	23° 26' 17"	-04m 27s
20:00	143° 00' 39"	-0,22"	145° 21' 05"	13° 50' 46"	1,0127384	15' 47,56"	23° 26' 17"	-04m 27s
21:00	143° 03' 03"	-0,22"	145° 23' 25"	13° 49' 59"	1,0127306	15' 47,57"	23° 26' 17"	-04m 26s
22:00	143° 05' 27"	-0,23"	145° 25' 45"	13° 49' 12"	1,0127228	15' 47,57"	23° 26' 17"	-04m 26s
23:00	143° 07' 51"	-0,23"	145° 28' 06"	13° 48' 25"	1,0127150	15' 47,58"	23° 26' 17"	-04m 25s
24:00	143° 10' 16"	-0,24"	145° 30' 26"	13° 47' 37"	1,0127072	15' 47,59"	23° 26' 17"	-04m 25s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	171° 54' 59"	-1° 59' 33"	171° 47' 22"	1° 22' 30"	58' 10"	15' 50,85"	296° 41' 09"	6,63%
01:00	172° 29' 07"	-2° 02' 28"	172° 17' 35"	1° 06' 23"	58' 08"	15' 50,28"	296° 43' 35"	6,86%
02:00	173° 03' 12"	-2° 05' 22"	172° 47' 44"	0° 50' 17"	58' 06"	15' 49,72"	296° 45' 48"	7,10%
03:00	173° 37' 14"	-2° 08' 14"	173° 17' 51"	0° 34' 12"	58' 04"	15' 49,15"	296° 47' 49"	7,34%
04:00	174° 11' 15"	-2° 11' 06"	173° 47' 56"	0° 18' 07"	58' 01"	15' 48,59"	296° 49' 38"	7,58%
05:00	174° 45' 13"	-2° 13' 57"	174° 17' 58"	0° 02' 04"	57' 59"	15' 48,02"	296° 51' 15"	7,83%
06:00	175° 19' 08"	-2° 16' 47"	174° 47' 58"	-0° 13' 58"	57' 57"	15' 47,45"	296° 52' 41"	8,07%
07:00	175° 53' 01"	-2° 19' 36"	175° 17' 56"	-0° 29' 58"	57' 55"	15' 46,88"	296° 53' 56"	8,33%
08:00	176° 26' 51"	-2° 22' 24"	175° 47' 52"	-0° 45' 57"	57' 53"	15' 46,31"	296° 54' 59"	8,58%
09:00	177° 00' 39"	-2° 25' 10"	176° 17' 45"	-1° 01' 55"	57' 51"	15' 45,74"	296° 55' 52"	8,84%
10:00	177° 34' 25"	-2° 27' 56"	176° 47' 37"	-1° 17' 52"	57' 49"	15' 45,16"	296° 56' 34"	9,10%
11:00	178° 08' 08"	-2° 30' 41"	177° 17' 27"	-1° 33' 46"	57' 47"	15' 44,59"	296° 57' 05"	9,37%
12:00	178° 41' 49"	-2° 33' 24"	177° 47' 14"	-1° 49' 39"	57' 45"	15' 44,02"	296° 57' 25"	9,64%
13:00	179° 15' 27"	-2° 36' 07"	178° 17' 01"	-2° 05' 31"	57' 43"	15' 43,44"	296° 57' 35"	9,91%
14:00	179° 49' 03"	-2° 38' 48"	178° 46' 45"	-2° 21' 20"	57' 40"	15' 42,87"	296° 57' 35"	10,18%
15:00	180° 22' 36"	-2° 41' 29"	179° 16' 27"	-2° 37' 08"	57' 38"	15' 42,29"	296° 57' 25"	10,46%
16:00	180° 56' 07"	-2° 44' 08"	179° 46' 09"	-2° 52' 54"	57' 36"	15' 41,72"	296° 57' 04"	10,74%
17:00	181° 29' 35"	-2° 46' 46"	180° 15' 48"	-3° 08' 38"	57' 34"	15' 41,14"	296° 56' 34"	11,02%
18:00	182° 03' 01"	-2° 49' 23"	180° 45' 26"	-3° 24' 19"	57' 32"	15' 40,56"	296° 55' 54"	11,31%
19:00	182° 36' 24"	-2° 51' 59"	181° 15' 03"	-3° 39' 59"	57' 30"	15' 39,99"	296° 55' 04"	11,59%
20:00	183° 09' 45"	-2° 54' 33"	181° 44' 39"	-3° 55' 36"	57' 28"	15' 39,41"	296° 54' 05"	11,89%
21:00	183° 43' 04"	-2° 57' 06"	182° 14' 13"	-4° 11' 12"	57' 26"	15' 38,84"	296° 52' 56"	12,18%
22:00	184° 16' 20"	-2° 59' 39"	182° 43' 47"	-4° 26' 44"	57' 24"	15' 38,26"	296° 51' 38"	12,47%
23:00	184° 49' 34"	-3° 02' 10"	183° 13' 19"	-4° 42' 15"	57' 21"	15' 37,69"	296° 50' 10"	12,77%
24:00	185° 22' 45"	-3° 04' 39"	183° 42' 50"	-4° 57' 43"	57' 19"	15' 37,11"	296° 48' 33"	13,08%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	143° 10' 16"	-0,24"	145° 30' 26"	13° 47' 37"	1,0127072	15' 47,59"	23° 26' 17"	-04m 25s
01:00	143° 12' 40"	-0,24"	145° 32' 46"	13° 46' 50"	1,0126994	15' 47,60"	23° 26' 17"	-04m 24s
02:00	143° 15' 04"	-0,24"	145° 35' 07"	13° 46' 03"	1,0126916	15' 47,60"	23° 26' 17"	-04m 24s
03:00	143° 17' 28"	-0,25"	145° 37' 27"	13° 45' 15"	1,0126837	15' 47,61"	23° 26' 17"	-04m 23s
04:00	143° 19' 52"	-0,25"	145° 39' 47"	13° 44' 28"	1,0126759	15' 47,62"	23° 26' 17"	-04m 23s
05:00	143° 22' 17"	-0,26"	145° 42' 07"	13° 43' 41"	1,0126680	15' 47,63"	23° 26' 17"	-04m 22s
06:00	143° 24' 41"	-0,26"	145° 44' 27"	13° 42' 53"	1,0126602	15' 47,63"	23° 26' 17"	-04m 22s
07:00	143° 27' 05"	-0,27"	145° 46' 48"	13° 42' 06"	1,0126523	15' 47,64"	23° 26' 17"	-04m 21s
08:00	143° 29' 29"	-0,27"	145° 49' 08"	13° 41' 18"	1,0126445	15' 47,65"	23° 26' 17"	-04m 21s
09:00	143° 31' 53"	-0,28"	145° 51' 28"	13° 40' 31"	1,0126366	15' 47,65"	23° 26' 17"	-04m 20s
10:00	143° 34' 18"	-0,28"	145° 53' 48"	13° 39' 43"	1,0126287	15' 47,66"	23° 26' 17"	-04m 20s
11:00	143° 36' 42"	-0,29"	145° 56' 08"	13° 38' 56"	1,0126208	15' 47,67"	23° 26' 17"	-04m 19s
12:00	143° 39' 06"	-0,29"	145° 58' 28"	13° 38' 08"	1,0126129	15' 47,68"	23° 26' 17"	-04m 19s
13:00	143° 41' 30"	-0,29"	146° 00' 48"	13° 37' 21"	1,0126050	15' 47,68"	23° 26' 17"	-04m 18s
14:00	143° 43' 54"	-0,30"	146° 03' 08"	13° 36' 33"	1,0125971	15' 47,69"	23° 26' 17"	-04m 18s
15:00	143° 46' 19"	-0,30"	146° 05' 28"	13° 35' 46"	1,0125892	15' 47,70"	23° 26' 17"	-04m 17s
16:00	143° 48' 43"	-0,31"	146° 07' 48"	13° 34' 58"	1,0125812	15' 47,71"	23° 26' 17"	-04m 17s
17:00	143° 51' 07"	-0,31"	146° 10' 08"	13° 34' 10"	1,0125733	15' 47,71"	23° 26' 17"	-04m 16s
18:00	143° 53' 31"	-0,32"	146° 12' 28"	13° 33' 23"	1,0125653	15' 47,72"	23° 26' 17"	-04m 16s
19:00	143° 55' 56"	-0,32"	146° 14' 48"	13° 32' 35"	1,0125574	15' 47,73"	23° 26' 17"	-04m 15s
20:00	143° 58' 20"	-0,32"	146° 17' 08"	13° 31' 47"	1,0125494	15' 47,74"	23° 26' 17"	-04m 15s
21:00	144° 00' 44"	-0,33"	146° 19' 28"	13° 31' 00"	1,0125414	15' 47,74"	23° 26' 17"	-04m 14s
22:00	144° 03' 08"	-0,33"	146° 21' 48"	13° 30' 12"	1,0125335	15' 47,75"	23° 26' 17"	-04m 14s
23:00	144° 05' 32"	-0,34"	146° 24' 08"	13° 29' 24"	1,0125255	15' 47,76"	23° 26' 17"	-04m 13s
24:00	144° 07' 57"	-0,34"	146° 26' 28"	13° 28' 36"	1,0125175	15' 47,77"	23° 26' 17"	-04m 13s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	185° 22' 45"	-3° 04' 39"	183° 42' 50"	-4° 57' 43"	57' 19"	15' 37,11"	296° 48' 33"	13,08%
01:00	185° 55' 54"	-3° 07' 08"	184° 12' 20"	-5° 13' 08"	57' 17"	15' 36,54"	296° 46' 47"	13,38%
02:00	186° 29' 00"	-3° 09' 35"	184° 41' 50"	-5° 28' 31"	57' 15"	15' 35,97"	296° 44' 52"	13,69%
03:00	187° 02' 04"	-3° 12' 01"	185° 11' 18"	-5° 43' 51"	57' 13"	15' 35,39"	296° 42' 48"	13,99%
04:00	187° 35' 05"	-3° 14' 26"	185° 40' 46"	-5° 59' 09"	57' 11"	15' 34,82"	296° 40' 35"	14,31%
05:00	188° 08' 04"	-3° 16' 50"	186° 10' 13"	-6° 14' 24"	57' 09"	15' 34,25"	296° 38' 13"	14,62%
06:00	188° 41' 01"	-3° 19' 12"	186° 39' 40"	-6° 29' 36"	57' 07"	15' 33,68"	296° 35' 42"	14,94%
07:00	189° 13' 55"	-3° 21' 33"	187° 09' 06"	-6° 44' 45"	57' 05"	15' 33,11"	296° 33' 03"	15,26%
08:00	189° 46' 47"	-3° 23' 53"	187° 38' 32"	-6° 59' 51"	57' 03"	15' 32,54"	296° 30' 15"	15,58%
09:00	190° 19' 37"	-3° 26' 11"	188° 07' 57"	-7° 14' 54"	57' 00"	15' 31,97"	296° 27' 18"	15,90%
10:00	190° 52' 24"	-3° 28' 29"	188° 37' 22"	-7° 29' 54"	56' 58"	15' 31,41"	296° 24' 12"	16,22%
11:00	191° 25' 08"	-3° 30' 44"	189° 06' 47"	-7° 44' 51"	56' 56"	15' 30,84"	296° 20' 59"	16,55%
12:00	191° 57' 51"	-3° 32' 59"	189° 36' 11"	-7° 59' 45"	56' 54"	15' 30,28"	296° 17' 36"	16,88%
13:00	192° 30' 30"	-3° 35' 12"	190° 05' 36"	-8° 14' 36"	56' 52"	15' 29,72"	296° 14' 06"	17,21%
14:00	193° 03' 08"	-3° 37' 24"	190° 35' 00"	-8° 29' 23"	56' 50"	15' 29,16"	296° 10' 27"	17,55%
15:00	193° 35' 43"	-3° 39' 35"	191° 04' 25"	-8° 44' 07"	56' 48"	15' 28,60"	296° 06' 39"	17,88%
16:00	194° 08' 16"	-3° 41' 44"	191° 33' 49"	-8° 58' 48"	56' 46"	15' 28,04"	296° 02' 44"	18,22%
17:00	194° 40' 47"	-3° 43' 52"	192° 03' 13"	-9° 13' 25"	56' 44"	15' 27,49"	295° 58' 40"	18,56%
18:00	195° 13' 15"	-3° 45' 58"	192° 32' 38"	-9° 27' 59"	56' 42"	15' 26,93"	295° 54' 28"	18,90%
19:00	195° 45' 41"	-3° 48' 03"	193° 02' 03"	-9° 42' 29"	56' 40"	15' 26,38"	295° 50' 08"	19,25%
20:00	196° 18' 04"	-3° 50' 07"	193° 31' 28"	-9° 56' 55"	56' 38"	15' 25,83"	295° 45' 40"	19,59%
21:00	196° 50' 26"	-3° 52' 09"	194° 00' 54"	-10° 11' 18"	56' 36"	15' 25,28"	295° 41' 04"	19,94%
22:00	197° 22' 45"	-3° 54' 10"	194° 30' 20"	-10° 25' 37"	56' 34"	15' 24,73"	295° 36' 20"	20,29%
23:00	197° 55' 01"	-3° 56' 10"	194° 59' 47"	-10° 39' 52"	56' 32"	15' 24,19"	295° 31' 29"	20,64%
24:00	198° 27' 16"	-3° 58' 08"	195° 29' 14"	-10° 54' 04"	56' 30"	15' 23,65"	295° 26' 29"	20,99%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	144° 07' 57"	-0,34"	146° 26' 28"	13° 28' 36"	1,0125175	15' 47,77"	23° 26' 17"	-04m 13s
01:00	144° 10' 21"	-0,34"	146° 28' 48"	13° 27' 48"	1,0125095	15' 47,77"	23° 26' 17"	-04m 12s
02:00	144° 12' 45"	-0,35"	146° 31' 08"	13° 27' 01"	1,0125015	15' 47,78"	23° 26' 17"	-04m 11s
03:00	144° 15' 09"	-0,35"	146° 33' 28"	13° 26' 13"	1,0124934	15' 47,79"	23° 26' 17"	-04m 11s
04:00	144° 17' 34"	-0,35"	146° 35' 48"	13° 25' 25"	1,0124854	15' 47,80"	23° 26' 17"	-04m 10s
05:00	144° 19' 58"	-0,36"	146° 38' 08"	13° 24' 37"	1,0124774	15' 47,80"	23° 26' 17"	-04m 10s
06:00	144° 22' 22"	-0,36"	146° 40' 28"	13° 23' 49"	1,0124693	15' 47,81"	23° 26' 17"	-04m 09s
07:00	144° 24' 46"	-0,37"	146° 42' 47"	13° 23' 01"	1,0124613	15' 47,82"	23° 26' 17"	-04m 09s
08:00	144° 27' 11"	-0,37"	146° 45' 07"	13° 22' 13"	1,0124532	15' 47,83"	23° 26' 17"	-04m 08s
09:00	144° 29' 35"	-0,37"	146° 47' 27"	13° 21' 25"	1,0124452	15' 47,83"	23° 26' 17"	-04m 08s
10:00	144° 31' 59"	-0,38"	146° 49' 47"	13° 20' 37"	1,0124371	15' 47,84"	23° 26' 17"	-04m 07s
11:00	144° 34' 23"	-0,38"	146° 52' 07"	13° 19' 49"	1,0124290	15' 47,85"	23° 26' 17"	-04m 07s
12:00	144° 36' 48"	-0,38"	146° 54' 26"	13° 19' 01"	1,0124209	15' 47,86"	23° 26' 17"	-04m 06s
13:00	144° 39' 12"	-0,39"	146° 56' 46"	13° 18' 13"	1,0124128	15' 47,86"	23° 26' 17"	-04m 06s
14:00	144° 41' 36"	-0,39"	146° 59' 06"	13° 17' 25"	1,0124047	15' 47,87"	23° 26' 17"	-04m 05s
15:00	144° 44' 00"	-0,39"	147° 01' 26"	13° 16' 37"	1,0123966	15' 47,88"	23° 26' 17"	-04m 05s
16:00	144° 46' 25"	-0,40"	147° 03' 45"	13° 15' 48"	1,0123885	15' 47,89"	23° 26' 17"	-04m 04s
17:00	144° 48' 49"	-0,40"	147° 06' 05"	13° 15' 00"	1,0123804	15' 47,89"	23° 26' 17"	-04m 03s
18:00	144° 51' 13"	-0,40"	147° 08' 25"	13° 14' 12"	1,0123723	15' 47,90"	23° 26' 17"	-04m 03s
19:00	144° 53' 37"	-0,41"	147° 10' 45"	13° 13' 24"	1,0123641	15' 47,91"	23° 26' 17"	-04m 02s
20:00	144° 56' 02"	-0,41"	147° 13' 04"	13° 12' 36"	1,0123560	15' 47,92"	23° 26' 17"	-04m 02s
21:00	144° 58' 26"	-0,41"	147° 15' 24"	13° 11' 47"	1,0123478	15' 47,93"	23° 26' 17"	-04m 01s
22:00	145° 00' 50"	-0,42"	147° 17' 43"	13° 10' 59"	1,0123397	15' 47,93"	23° 26' 17"	-04m 01s
23:00	145° 03' 14"	-0,42"	147° 20' 03"	13° 10' 11"	1,0123315	15' 47,94"	23° 26' 17"	-04m 00s
24:00	145° 05' 39"	-0,42"	147° 22' 23"	13° 09' 22"	1,0123233	15' 47,95"	23° 26' 17"	-04m 00s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	198° 27' 16"	-3° 58' 08"	195° 29' 14"	-10° 54' 04"	56' 30"	15' 23,65"	295° 26' 29"	20,99%
01:00	198° 59' 28"	-4° 00' 05"	195° 58' 41"	-11° 08' 11"	56' 28"	15' 23,11"	295° 21' 21"	21,35%
02:00	199° 31' 38"	-4° 02' 01"	196° 28' 10"	-11° 22' 15"	56' 26"	15' 22,57"	295° 16' 06"	21,70%
03:00	200° 03' 46"	-4° 03' 55"	196° 57' 39"	-11° 36' 15"	56' 24"	15' 22,03"	295° 10' 43"	22,06%
04:00	200° 35' 51"	-4° 05' 47"	197° 27' 08"	-11° 50' 11"	56' 22"	15' 21,50"	295° 05' 12"	22,42%
05:00	201° 07' 54"	-4° 07' 38"	197° 56' 39"	-12° 04' 02"	56' 20"	15' 20,97"	294° 59' 34"	22,78%
06:00	201° 39' 56"	-4° 09' 28"	198° 26' 11"	-12° 17' 50"	56' 18"	15' 20,44"	294° 53' 47"	23,15%
07:00	202° 11' 54"	-4° 11' 17"	198° 55' 43"	-12° 31' 33"	56' 16"	15' 19,92"	294° 47' 54"	23,51%
08:00	202° 43' 51"	-4° 13' 04"	199° 25' 17"	-12° 45' 12"	56' 14"	15' 19,39"	294° 41' 52"	23,87%
09:00	203° 15' 46"	-4° 14' 49"	199° 54' 51"	-12° 58' 47"	56' 12"	15' 18,87"	294° 35' 44"	24,24%
10:00	203° 47' 38"	-4° 16' 33"	200° 24' 27"	-13° 12' 18"	56' 10"	15' 18,36"	294° 29' 27"	24,61%
11:00	204° 19' 28"	-4° 18' 16"	200° 54' 03"	-13° 25' 44"	56' 09"	15' 17,84"	294° 23' 04"	24,98%
12:00	204° 51' 16"	-4° 19' 57"	201° 23' 41"	-13° 39' 06"	56' 07"	15' 17,33"	294° 16' 32"	25,35%
13:00	205° 23' 02"	-4° 21' 37"	201° 53' 20"	-13° 52' 23"	56' 05"	15' 16,82"	294° 09' 54"	25,72%
14:00	205° 54' 46"	-4° 23' 15"	202° 23' 01"	-14° 05' 36"	56' 03"	15' 16,31"	294° 03' 08"	26,10%
15:00	206° 26' 28"	-4° 24' 52"	202° 52' 43"	-14° 18' 44"	56' 01"	15' 15,81"	293° 56' 15"	26,47%
16:00	206° 58' 08"	-4° 26' 27"	203° 22' 26"	-14° 31' 48"	55' 59"	15' 15,31"	293° 49' 14"	26,85%
17:00	207° 29' 46"	-4° 28' 01"	203° 52' 10"	-14° 44' 47"	55' 57"	15' 14,81"	293° 42' 06"	27,23%
18:00	208° 01' 21"	-4° 29' 34"	204° 21' 56"	-14° 57' 41"	55' 56"	15' 14,32"	293° 34' 51"	27,60%
19:00	208° 32' 55"	-4° 31' 05"	204° 51' 44"	-15° 10' 31"	55' 54"	15' 13,83"	293° 27' 29"	27,98%
20:00	209° 04' 26"	-4° 32' 34"	205° 21' 33"	-15° 23' 15"	55' 52"	15' 13,34"	293° 20' 00"	28,37%
21:00	209° 35' 56"	-4° 34' 02"	205° 51' 24"	-15° 35' 55"	55' 50"	15' 12,86"	293° 12' 23"	28,75%
22:00	210° 07' 24"	-4° 35' 29"	206° 21' 17"	-15° 48' 31"	55' 49"	15' 12,38"	293° 04' 39"	29,13%
23:00	210° 38' 49"	-4° 36' 54"	206° 51' 11"	-16° 01' 01"	55' 47"	15' 11,90"	292° 56' 49"	29,51%
24:00	211° 10' 13"	-4° 38' 18"	207° 21' 07"	-16° 13' 26"	55' 45"	15' 11,43"	292° 48' 51"	29,90%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	145° 05' 39"	-0,42"	147° 22' 23"	13° 09' 22"	1,0123233	15' 47,95"	23° 26' 17"	-04m 00s
01:00	145° 08' 03"	-0,42"	147° 24' 42"	13° 08' 34"	1,0123152	15' 47,96"	23° 26' 17"	-03m 59s
02:00	145° 10' 27"	-0,43"	147° 27' 02"	13° 07' 46"	1,0123070	15' 47,96"	23° 26' 17"	-03m 59s
03:00	145° 12' 52"	-0,43"	147° 29' 21"	13° 06' 57"	1,0122988	15' 47,97"	23° 26' 17"	-03m 58s
04:00	145° 15' 16"	-0,43"	147° 31' 41"	13° 06' 09"	1,0122906	15' 47,98"	23° 26' 17"	-03m 57s
05:00	145° 17' 40"	-0,43"	147° 34' 01"	13° 05' 21"	1,0122824	15' 47,99"	23° 26' 17"	-03m 57s
06:00	145° 20' 04"	-0,44"	147° 36' 20"	13° 04' 32"	1,0122741	15' 47,99"	23° 26' 17"	-03m 56s
07:00	145° 22' 29"	-0,44"	147° 38' 40"	13° 03' 44"	1,0122659	15' 48,00"	23° 26' 17"	-03m 56s
08:00	145° 24' 53"	-0,44"	147° 40' 59"	13° 02' 55"	1,0122577	15' 48,01"	23° 26' 17"	-03m 55s
09:00	145° 27' 17"	-0,44"	147° 43' 19"	13° 02' 07"	1,0122495	15' 48,02"	23° 26' 17"	-03m 55s
10:00	145° 29' 42"	-0,45"	147° 45' 38"	13° 01' 18"	1,0122412	15' 48,03"	23° 26' 17"	-03m 54s
11:00	145° 32' 06"	-0,45"	147° 47' 58"	13° 00' 29"	1,0122330	15' 48,03"	23° 26' 17"	-03m 54s
12:00	145° 34' 30"	-0,45"	147° 50' 17"	12° 59' 41"	1,0122247	15' 48,04"	23° 26' 17"	-03m 53s
13:00	145° 36' 55"	-0,45"	147° 52' 36"	12° 58' 52"	1,0122164	15' 48,05"	23° 26' 17"	-03m 52s
14:00	145° 39' 19"	-0,46"	147° 54' 56"	12° 58' 04"	1,0122082	15' 48,06"	23° 26' 17"	-03m 52s
15:00	145° 41' 43"	-0,46"	147° 57' 15"	12° 57' 15"	1,0121999	15' 48,06"	23° 26' 17"	-03m 51s
16:00	145° 44' 07"	-0,46"	147° 59' 35"	12° 56' 26"	1,0121916	15' 48,07"	23° 26' 17"	-03m 51s
17:00	145° 46' 32"	-0,46"	148° 01' 54"	12° 55' 38"	1,0121833	15' 48,08"	23° 26' 17"	-03m 50s
18:00	145° 48' 56"	-0,46"	148° 04' 13"	12° 54' 49"	1,0121750	15' 48,09"	23° 26' 17"	-03m 50s
19:00	145° 51' 20"	-0,47"	148° 06' 33"	12° 54' 00"	1,0121667	15' 48,09"	23° 26' 17"	-03m 49s
20:00	145° 53' 45"	-0,47"	148° 08' 52"	12° 53' 12"	1,0121584	15' 48,10"	23° 26' 17"	-03m 48s
21:00	145° 56' 09"	-0,47"	148° 11' 11"	12° 52' 23"	1,0121501	15' 48,11"	23° 26' 17"	-03m 48s
22:00	145° 58' 33"	-0,47"	148° 13' 31"	12° 51' 34"	1,0121417	15' 48,12"	23° 26' 17"	-03m 47s
23:00	146° 00' 58"	-0,47"	148° 15' 50"	12° 50' 45"	1,0121334	15' 48,13"	23° 26' 17"	-03m 47s
24:00	146° 03' 22"	-0,48"	148° 18' 09"	12° 49' 56"	1,0121251	15' 48,13"	23° 26' 17"	-03m 46s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	211° 10' 13"	-4° 38' 18"	207° 21' 07"	-16° 13' 26"	55' 45"	15' 11,43"	292° 48' 51"	29,90%
01:00	211° 41' 35"	-4° 39' 40"	207° 51' 05"	-16° 25' 46"	55' 43"	15' 10,96"	292° 40' 46"	30,29%
02:00	212° 12' 54"	-4° 41' 01"	208° 21' 04"	-16° 38' 01"	55' 42"	15' 10,49"	292° 32' 35"	30,67%
03:00	212° 44' 12"	-4° 42' 20"	208° 51' 06"	-16° 50' 11"	55' 40"	15' 10,03"	292° 24' 16"	31,06%
04:00	213° 15' 28"	-4° 43' 38"	209° 21' 09"	-17° 02' 16"	55' 38"	15' 09,57"	292° 15' 51"	31,45%
05:00	213° 46' 42"	-4° 44' 54"	209° 51' 14"	-17° 14' 16"	55' 37"	15' 09,11"	292° 07' 18"	31,84%
06:00	214° 17' 55"	-4° 46' 09"	210° 21' 22"	-17° 26' 10"	55' 35"	15' 08,66"	291° 58' 39"	32,23%
07:00	214° 49' 05"	-4° 47' 22"	210° 51' 31"	-17° 37' 59"	55' 33"	15' 08,21"	291° 49' 53"	32,62%
08:00	215° 20' 14"	-4° 48' 34"	211° 21' 43"	-17° 49' 43"	55' 32"	15' 07,76"	291° 41' 00"	33,01%
09:00	215° 51' 20"	-4° 49' 44"	211° 51' 56"	-18° 01' 22"	55' 30"	15' 07,32"	291° 32' 01"	33,40%
10:00	216° 22' 25"	-4° 50' 53"	212° 22' 12"	-18° 12' 55"	55' 28"	15' 06,88"	291° 22' 55"	33,80%
11:00	216° 53' 29"	-4° 52' 00"	212° 52' 30"	-18° 24' 22"	55' 27"	15' 06,45"	291° 13' 42"	34,19%
12:00	217° 24' 30"	-4° 53' 06"	213° 22' 50"	-18° 35' 44"	55' 25"	15' 06,02"	291° 04' 22"	34,59%
13:00	217° 55' 30"	-4° 54' 11"	213° 53' 12"	-18° 47' 01"	55' 24"	15' 05,60"	290° 54' 56"	34,98%
14:00	218° 26' 28"	-4° 55' 13"	214° 23' 36"	-18° 58' 12"	55' 22"	15' 05,17"	290° 45' 24"	35,38%
15:00	218° 57' 24"	-4° 56' 15"	214° 54' 03"	-19° 09' 17"	55' 21"	15' 04,76"	290° 35' 45"	35,77%
16:00	219° 28' 19"	-4° 57' 15"	215° 24' 32"	-19° 20' 17"	55' 19"	15' 04,34"	290° 25' 59"	36,17%
17:00	219° 59' 11"	-4° 58' 13"	215° 55' 04"	-19° 31' 11"	55' 18"	15' 03,93"	290° 16' 07"	36,57%
18:00	220° 30' 03"	-4° 59' 10"	216° 25' 38"	-19° 41' 59"	55' 16"	15' 03,53"	290° 06' 08"	36,97%
19:00	221° 00' 52"	-5° 00' 06"	216° 56' 14"	-19° 52' 42"	55' 15"	15' 03,13"	289° 56' 03"	37,36%
20:00	221° 31' 40"	-5° 01' 00"	217° 26' 52"	-20° 03' 19"	55' 13"	15' 02,73"	289° 45' 52"	37,76%
21:00	222° 02' 26"	-5° 01' 52"	217° 57' 33"	-20° 13' 50"	55' 12"	15' 02,34"	289° 35' 34"	38,16%
22:00	222° 33' 11"	-5° 02' 43"	218° 28' 17"	-20° 24' 14"	55' 10"	15' 01,95"	289° 25' 11"	38,56%
23:00	223° 03' 54"	-5° 03' 33"	218° 59' 03"	-20° 34' 33"	55' 09"	15' 01,56"	289° 14' 41"	38,96%
24:00	223° 34' 36"	-5° 04' 21"	219° 29' 52"	-20° 44' 46"	55' 07"	15' 01,18"	289° 04' 04"	39,36%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	146° 03' 22"	-0,48"	148° 18' 09"	12° 49' 56"	1,0121251	15' 48,13"	23° 26' 17"	-03m 46s
01:00	146° 05' 46"	-0,48"	148° 20' 29"	12° 49' 07"	1,0121167	15' 48,14"	23° 26' 17"	-03m 46s
02:00	146° 08' 11"	-0,48"	148° 22' 48"	12° 48' 19"	1,0121084	15' 48,15"	23° 26' 17"	-03m 45s
03:00	146° 10' 35"	-0,48"	148° 25' 07"	12° 47' 30"	1,0121000	15' 48,16"	23° 26' 17"	-03m 44s
04:00	146° 12' 59"	-0,48"	148° 27' 26"	12° 46' 41"	1,0120917	15' 48,17"	23° 26' 17"	-03m 44s
05:00	146° 15' 24"	-0,48"	148° 29' 46"	12° 45' 52"	1,0120833	15' 48,17"	23° 26' 17"	-03m 43s
06:00	146° 17' 48"	-0,49"	148° 32' 05"	12° 45' 03"	1,0120749	15' 48,18"	23° 26' 17"	-03m 43s
07:00	146° 20' 12"	-0,49"	148° 34' 24"	12° 44' 14"	1,0120665	15' 48,19"	23° 26' 17"	-03m 42s
08:00	146° 22' 37"	-0,49"	148° 36' 43"	12° 43' 25"	1,0120581	15' 48,20"	23° 26' 17"	-03m 42s
09:00	146° 25' 01"	-0,49"	148° 39' 02"	12° 42' 36"	1,0120497	15' 48,20"	23° 26' 17"	-03m 41s
10:00	146° 27' 25"	-0,49"	148° 41' 22"	12° 41' 47"	1,0120413	15' 48,21"	23° 26' 17"	-03m 40s
11:00	146° 29' 50"	-0,49"	148° 43' 41"	12° 40' 58"	1,0120329	15' 48,22"	23° 26' 17"	-03m 40s
12:00	146° 32' 14"	-0,49"	148° 46' 00"	12° 40' 09"	1,0120245	15' 48,23"	23° 26' 17"	-03m 39s
13:00	146° 34' 38"	-0,49"	148° 48' 19"	12° 39' 20"	1,0120161	15' 48,24"	23° 26' 17"	-03m 39s
14:00	146° 37' 03"	-0,50"	148° 50' 38"	12° 38' 30"	1,0120077	15' 48,24"	23° 26' 17"	-03m 38s
15:00	146° 39' 27"	-0,50"	148° 52' 57"	12° 37' 41"	1,0119992	15' 48,25"	23° 26' 17"	-03m 38s
16:00	146° 41' 51"	-0,50"	148° 55' 16"	12° 36' 52"	1,0119908	15' 48,26"	23° 26' 17"	-03m 37s
17:00	146° 44' 16"	-0,50"	148° 57' 35"	12° 36' 03"	1,0119823	15' 48,27"	23° 26' 17"	-03m 36s
18:00	146° 46' 40"	-0,50"	148° 59' 54"	12° 35' 14"	1,0119739	15' 48,28"	23° 26' 17"	-03m 36s
19:00	146° 49' 04"	-0,50"	149° 02' 13"	12° 34' 24"	1,0119654	15' 48,28"	23° 26' 17"	-03m 35s
20:00	146° 51' 29"	-0,50"	149° 04' 32"	12° 33' 35"	1,0119569	15' 48,29"	23° 26' 17"	-03m 35s
21:00	146° 53' 53"	-0,50"	149° 06' 51"	12° 32' 46"	1,0119485	15' 48,30"	23° 26' 17"	-03m 34s
22:00	146° 56' 18"	-0,50"	149° 09' 10"	12° 31' 57"	1,0119400	15' 48,31"	23° 26' 17"	-03m 33s
23:00	146° 58' 42"	-0,50"	149° 11' 29"	12° 31' 07"	1,0119315	15' 48,32"	23° 26' 17"	-03m 33s
24:00	147° 01' 06"	-0,50"	149° 13' 48"	12° 30' 18"	1,0119230	15' 48,32"	23° 26' 17"	-03m 32s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	223° 34' 36"	-5° 04' 21"	219° 29' 52"	-20° 44' 46"	55' 07"	15' 01,18"	289° 04' 04"	39,36%
01:00	224° 05' 16"	-5° 05' 07"	220° 00' 43"	-20° 54' 53"	55' 06"	15' 00,81"	288° 53' 22"	39,76%
02:00	224° 35' 55"	-5° 05' 52"	220° 31' 36"	-21° 04' 54"	55' 05"	15' 00,44"	288° 42' 33"	40,17%
03:00	225° 06' 32"	-5° 06' 36"	221° 02' 32"	-21° 14' 49"	55' 03"	15' 00,07"	288° 31' 39"	40,57%
04:00	225° 37' 07"	-5° 07' 18"	221° 33' 31"	-21° 24' 38"	55' 02"	15' 00,00"	288° 20' 38"	40,97%
05:00	226° 07' 41"	-5° 07' 58"	222° 04' 33"	-21° 34' 20"	55' 01"	14' 59,35"	288° 09' 31"	41,37%
06:00	226° 38' 14"	-5° 08' 37"	222° 35' 37"	-21° 43' 56"	54' 59"	14' 58,99"	287° 58' 19"	41,77%
07:00	227° 08' 45"	-5° 09' 15"	223° 06' 43"	-21° 53' 26"	54' 58"	14' 58,65"	287° 47' 00"	42,17%
08:00	227° 39' 15"	-5° 09' 51"	223° 37' 52"	-22° 02' 50"	54' 57"	14' 58,30"	287° 35' 36"	42,58%
09:00	228° 09' 44"	-5° 10' 26"	224° 09' 04"	-22° 12' 07"	54' 56"	14' 57,96"	287° 24' 06"	42,98%
10:00	228° 40' 11"	-5° 10' 59"	224° 40' 19"	-22° 21' 18"	54' 54"	14' 57,62"	287° 12' 30"	43,38%
11:00	229° 10' 37"	-5° 11' 31"	225° 11' 36"	-22° 30' 23"	54' 53"	14' 57,29"	287° 00' 48"	43,79%
12:00	229° 41' 01"	-5° 12' 01"	225° 42' 56"	-22° 39' 21"	54' 52"	14' 56,97"	286° 49' 01"	44,19%
13:00	230° 11' 24"	-5° 12' 30"	226° 14' 18"	-22° 48' 12"	54' 51"	14' 56,64"	286° 37' 08"	44,59%
14:00	230° 41' 46"	-5° 12' 57"	226° 45' 43"	-22° 56' 57"	54' 50"	14' 56,33"	286° 25' 09"	44,99%
15:00	231° 12' 07"	-5° 13' 23"	227° 17' 11"	-23° 05' 36"	54' 48"	14' 56,01"	286° 13' 05"	45,40%
16:00	231° 42' 26"	-5° 13' 47"	227° 48' 42"	-23° 14' 08"	54' 47"	14' 55,70"	286° 00' 55"	45,80%
17:00	232° 12' 44"	-5° 14' 10"	228° 20' 15"	-23° 22' 33"	54' 46"	14' 55,40"	285° 48' 40"	46,20%
18:00	232° 43' 01"	-5° 14' 31"	228° 51' 51"	-23° 30' 51"	54' 45"	14' 55,10"	285° 36' 20"	46,61%
19:00	233° 13' 17"	-5° 14' 51"	229° 23' 30"	-23° 39' 03"	54' 44"	14' 54,81"	285° 23' 54"	47,01%
20:00	233° 43' 31"	-5° 15' 09"	229° 55' 11"	-23° 47' 08"	54' 43"	14' 54,52"	285° 11' 23"	47,41%
21:00	234° 13' 45"	-5° 15' 26"	230° 26' 55"	-23° 55' 06"	54' 42"	14' 54,23"	284° 58' 47"	47,81%
22:00	234° 43' 57"	-5° 15' 42"	230° 58' 41"	-24° 02' 58"	54' 41"	14' 53,95"	284° 46' 05"	48,22%
23:00	235° 14' 08"	-5° 15' 56"	231° 30' 31"	-24° 10' 42"	54' 40"	14' 53,68"	284° 33' 19"	48,62%
24:00	235° 44' 18"	-5° 16' 08"	232° 02' 23"	-24° 18' 20"	54' 39"	14' 53,41"	284° 20' 27"	49,02%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	147° 01' 06"	-0,50"	149° 13' 48"	12° 30' 18"	1,0119230	15' 48,32"	23° 26' 17"	-03m 32s
01:00	147° 03' 31"	-0,50"	149° 16' 07"	12° 29' 29"	1,0119145	15' 48,33"	23° 26' 17"	-03m 32s
02:00	147° 05' 55"	-0,50"	149° 18' 26"	12° 28' 39"	1,0119060	15' 48,34"	23° 26' 17"	-03m 31s
03:00	147° 08' 19"	-0,51"	149° 20' 45"	12° 27' 50"	1,0118975	15' 48,35"	23° 26' 17"	-03m 30s
04:00	147° 10' 44"	-0,51"	149° 23' 04"	12° 27' 01"	1,0118890	15' 48,36"	23° 26' 17"	-03m 30s
05:00	147° 13' 08"	-0,51"	149° 25' 23"	12° 26' 11"	1,0118805	15' 48,36"	23° 26' 17"	-03m 29s
06:00	147° 15' 33"	-0,51"	149° 27' 42"	12° 25' 22"	1,0118719	15' 48,37"	23° 26' 17"	-03m 29s
07:00	147° 17' 57"	-0,51"	149° 30' 01"	12° 24' 32"	1,0118634	15' 48,38"	23° 26' 17"	-03m 28s
08:00	147° 20' 21"	-0,51"	149° 32' 20"	12° 23' 43"	1,0118549	15' 48,39"	23° 26' 17"	-03m 27s
09:00	147° 22' 46"	-0,51"	149° 34' 39"	12° 22' 53"	1,0118463	15' 48,40"	23° 26' 17"	-03m 27s
10:00	147° 25' 10"	-0,51"	149° 36' 58"	12° 22' 04"	1,0118378	15' 48,40"	23° 26' 17"	-03m 26s
11:00	147° 27' 34"	-0,51"	149° 39' 16"	12° 21' 14"	1,0118292	15' 48,41"	23° 26' 17"	-03m 26s
12:00	147° 29' 59"	-0,51"	149° 41' 35"	12° 20' 24"	1,0118207	15' 48,42"	23° 26' 17"	-03m 25s
13:00	147° 32' 23"	-0,51"	149° 43' 54"	12° 19' 35"	1,0118121	15' 48,43"	23° 26' 17"	-03m 24s
14:00	147° 34' 48"	-0,51"	149° 46' 13"	12° 18' 45"	1,0118035	15' 48,44"	23° 26' 17"	-03m 24s
15:00	147° 37' 12"	-0,51"	149° 48' 32"	12° 17' 56"	1,0117949	15' 48,44"	23° 26' 17"	-03m 23s
16:00	147° 39' 36"	-0,51"	149° 50' 50"	12° 17' 06"	1,0117863	15' 48,45"	23° 26' 17"	-03m 23s
17:00	147° 42' 01"	-0,51"	149° 53' 09"	12° 16' 16"	1,0117778	15' 48,46"	23° 26' 17"	-03m 22s
18:00	147° 44' 25"	-0,51"	149° 55' 28"	12° 15' 27"	1,0117692	15' 48,47"	23° 26' 17"	-03m 21s
19:00	147° 46' 50"	-0,51"	149° 57' 47"	12° 14' 37"	1,0117606	15' 48,48"	23° 26' 17"	-03m 21s
20:00	147° 49' 14"	-0,50"	150° 00' 05"	12° 13' 47"	1,0117519	15' 48,48"	23° 26' 17"	-03m 20s
21:00	147° 51' 38"	-0,50"	150° 02' 24"	12° 12' 57"	1,0117433	15' 48,49"	23° 26' 17"	-03m 20s
22:00	147° 54' 03"	-0,50"	150° 04' 43"	12° 12' 08"	1,0117347	15' 48,50"	23° 26' 17"	-03m 19s
23:00	147° 56' 27"	-0,50"	150° 07' 01"	12° 11' 18"	1,0117261	15' 48,51"	23° 26' 17"	-03m 18s
24:00	147° 58' 52"	-0,50"	150° 09' 20"	12° 10' 28"	1,0117175	15' 48,52"	23° 26' 17"	-03m 18s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	235° 44' 18"	-5° 16' 08"	232° 02' 23"	-24° 18' 20"	54' 39"	14' 53,41"	284° 20' 27"	49,02%
01:00	236° 14' 27"	-5° 16' 20"	232° 34' 17"	-24° 25' 51"	54' 38"	14' 53,14"	284° 07' 31"	49,42%
02:00	236° 44' 35"	-5° 16' 29"	233° 06' 15"	-24° 33' 14"	54' 37"	14' 52,88"	283° 54' 29"	49,82%
03:00	237° 14' 42"	-5° 16' 37"	233° 38' 14"	-24° 40' 31"	54' 36"	14' 52,62"	283° 41' 23"	50,22%
04:00	237° 44' 48"	-5° 16' 44"	234° 10' 17"	-24° 47' 41"	54' 35"	14' 52,37"	283° 28' 12"	50,63%
05:00	238° 14' 52"	-5° 16' 49"	234° 42' 22"	-24° 54' 44"	54' 34"	14' 52,12"	283° 14' 56"	51,03%
06:00	238° 44' 56"	-5° 16' 53"	235° 14' 30"	-25° 01' 39"	54' 33"	14' 51,88"	283° 01' 35"	51,43%
07:00	239° 14' 59"	-5° 16' 56"	235° 46' 40"	-25° 08' 28"	54' 32"	14' 51,64"	282° 48' 10"	51,83%
08:00	239° 45' 01"	-5° 16' 57"	236° 18' 53"	-25° 15' 09"	54' 32"	14' 51,41"	282° 34' 40"	52,23%
09:00	240° 15' 02"	-5° 16' 56"	236° 51' 08"	-25° 21' 43"	54' 31"	14' 51,18"	282° 21' 06"	52,63%
10:00	240° 45' 02"	-5° 16' 54"	237° 23' 26"	-25° 28' 10"	54' 30"	14' 50,96"	282° 07' 27"	53,03%
11:00	241° 15' 02"	-5° 16' 51"	237° 55' 46"	-25° 34' 29"	54' 29"	14' 50,74"	281° 53' 44"	53,42%
12:00	241° 45' 00"	-5° 16' 46"	238° 28' 09"	-25° 40' 42"	54' 28"	14' 50,53"	281° 39' 57"	53,82%
13:00	242° 14' 58"	-5° 16' 40"	239° 00' 34"	-25° 46' 47"	54' 28"	14' 50,32"	281° 26' 05"	54,22%
14:00	242° 44' 55"	-5° 16' 32"	239° 33' 02"	-25° 52' 44"	54' 27"	14' 50,12"	281° 12' 09"	54,62%
15:00	243° 14' 51"	-5° 16' 23"	240° 05' 32"	-25° 58' 34"	54' 26"	14' 49,92"	280° 58' 09"	55,01%
16:00	243° 44' 46"	-5° 16' 13"	240° 38' 04"	-26° 04' 17"	54' 25"	14' 49,72"	280° 44' 06"	55,41%
17:00	244° 14' 40"	-5° 16' 01"	241° 10' 39"	-26° 09' 52"	54' 25"	14' 49,53"	280° 29' 58"	55,81%
18:00	244° 44' 34"	-5° 15' 47"	241° 43' 16"	-26° 15' 20"	54' 24"	14' 49,35"	280° 15' 46"	56,20%
19:00	245° 14' 27"	-5° 15' 32"	242° 15' 56"	-26° 20' 41"	54' 23"	14' 49,17"	280° 01' 31"	56,60%
20:00	245° 44' 19"	-5° 15' 16"	242° 48' 37"	-26° 25' 53"	54' 23"	14' 49,00"	279° 47' 12"	56,99%
21:00	246° 14' 11"	-5° 14' 59"	243° 21' 21"	-26° 30' 59"	54' 22"	14' 48,83"	279° 32' 49"	57,38%
22:00	246° 44' 02"	-5° 14' 40"	243° 54' 07"	-26° 35' 56"	54' 21"	14' 48,66"	279° 18' 22"	57,78%
23:00	247° 13' 52"	-5° 14' 19"	244° 26' 55"	-26° 40' 47"	54' 21"	14' 48,50"	279° 03' 53"	58,17%
24:00	247° 43' 42"	-5° 13' 57"	244° 59' 45"	-26° 45' 29"	54' 20"	14' 48,35"	278° 49' 19"	58,56%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	147° 58' 52"	-0,50"	150° 09' 20"	12° 10' 28"	1,0117175	15' 48,52"	23° 26' 17"	-03m 18s
01:00	148° 01' 16"	-0,50"	150° 11' 39"	12° 09' 38"	1,0117088	15' 48,52"	23° 26' 17"	-03m 17s
02:00	148° 03' 41"	-0,50"	150° 13' 57"	12° 08' 48"	1,0117002	15' 48,53"	23° 26' 17"	-03m 17s
03:00	148° 06' 05"	-0,50"	150° 16' 16"	12° 07' 58"	1,0116915	15' 48,54"	23° 26' 17"	-03m 16s
04:00	148° 08' 29"	-0,50"	150° 18' 35"	12° 07' 09"	1,0116829	15' 48,55"	23° 26' 17"	-03m 15s
05:00	148° 10' 54"	-0,50"	150° 20' 53"	12° 06' 19"	1,0116742	15' 48,56"	23° 26' 17"	-03m 15s
06:00	148° 13' 18"	-0,50"	150° 23' 12"	12° 05' 29"	1,0116656	15' 48,56"	23° 26' 17"	-03m 14s
07:00	148° 15' 43"	-0,50"	150° 25' 30"	12° 04' 39"	1,0116569	15' 48,57"	23° 26' 17"	-03m 13s
08:00	148° 18' 07"	-0,50"	150° 27' 49"	12° 03' 49"	1,0116482	15' 48,58"	23° 26' 17"	-03m 13s
09:00	148° 20' 32"	-0,50"	150° 30' 08"	12° 02' 59"	1,0116395	15' 48,59"	23° 26' 17"	-03m 12s
10:00	148° 22' 56"	-0,49"	150° 32' 26"	12° 02' 09"	1,0116308	15' 48,60"	23° 26' 17"	-03m 12s
11:00	148° 25' 20"	-0,49"	150° 34' 45"	12° 01' 19"	1,0116222	15' 48,61"	23° 26' 17"	-03m 11s
12:00	148° 27' 45"	-0,49"	150° 37' 03"	12° 00' 29"	1,0116135	15' 48,61"	23° 26' 17"	-03m 10s
13:00	148° 30' 09"	-0,49"	150° 39' 22"	11° 59' 39"	1,0116048	15' 48,62"	23° 26' 17"	-03m 10s
14:00	148° 32' 34"	-0,49"	150° 41' 40"	11° 58' 49"	1,0115960	15' 48,63"	23° 26' 17"	-03m 09s
15:00	148° 34' 58"	-0,49"	150° 43' 59"	11° 57' 58"	1,0115873	15' 48,64"	23° 26' 17"	-03m 08s
16:00	148° 37' 23"	-0,49"	150° 46' 17"	11° 57' 08"	1,0115786	15' 48,65"	23° 26' 17"	-03m 08s
17:00	148° 39' 47"	-0,48"	150° 48' 36"	11° 56' 18"	1,0115699	15' 48,65"	23° 26' 17"	-03m 07s
18:00	148° 42' 12"	-0,48"	150° 50' 54"	11° 55' 28"	1,0115612	15' 48,66"	23° 26' 17"	-03m 07s
19:00	148° 44' 36"	-0,48"	150° 53' 13"	11° 54' 38"	1,0115524	15' 48,67"	23° 26' 17"	-03m 06s
20:00	148° 47' 00"	-0,48"	150° 55' 31"	11° 53' 48"	1,0115437	15' 48,68"	23° 26' 17"	-03m 05s
21:00	148° 49' 25"	-0,48"	150° 57' 49"	11° 52' 57"	1,0115350	15' 48,69"	23° 26' 17"	-03m 05s
22:00	148° 51' 49"	-0,48"	151° 00' 08"	11° 52' 07"	1,0115262	15' 48,70"	23° 26' 17"	-03m 04s
23:00	148° 54' 14"	-0,48"	151° 02' 26"	11° 51' 17"	1,0115174	15' 48,70"	23° 26' 17"	-03m 03s
24:00	148° 56' 38"	-0,47"	151° 04' 45"	11° 50' 27"	1,0115087	15' 48,71"	23° 26' 17"	-03m 03s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	247° 43' 42"	-5° 13' 57"	244° 59' 45"	-26° 45' 29"	54' 20"	14' 48,35"	278° 49' 19"	58,56%
01:00	248° 13' 31"	-5° 13' 34"	245° 32' 38"	-26° 50' 04"	54' 20"	14' 48,20"	278° 34' 43"	58,95%
02:00	248° 43' 19"	-5° 13' 09"	246° 05' 32"	-26° 54' 31"	54' 19"	14' 48,05"	278° 20' 03"	59,34%
03:00	249° 13' 07"	-5° 12' 43"	246° 38' 28"	-26° 58' 50"	54' 19"	14' 47,91"	278° 05' 20"	59,73%
04:00	249° 42' 55"	-5° 12' 16"	247° 11' 26"	-27° 03' 02"	54' 18"	14' 47,77"	277° 50' 34"	60,12%
05:00	250° 12' 42"	-5° 11' 47"	247° 44' 26"	-27° 07' 06"	54' 18"	14' 47,64"	277° 35' 45"	60,51%
06:00	250° 42' 28"	-5° 11' 17"	248° 17' 28"	-27° 11' 02"	54' 17"	14' 47,52"	277° 20' 54"	60,89%
07:00	251° 12' 14"	-5° 10' 45"	248° 50' 32"	-27° 14' 50"	54' 17"	14' 47,40"	277° 05' 59"	61,28%
08:00	251° 41' 59"	-5° 10' 12"	249° 23' 38"	-27° 18' 31"	54' 16"	14' 47,28"	276° 51' 02"	61,66%
09:00	252° 11' 44"	-5° 09' 38"	249° 56' 45"	-27° 22' 03"	54' 16"	14' 47,17"	276° 36' 02"	62,05%
10:00	252° 41' 29"	-5° 09' 02"	250° 29' 54"	-27° 25' 28"	54' 16"	14' 47,06"	276° 20' 59"	62,43%
11:00	253° 11' 13"	-5° 08' 25"	251° 03' 05"	-27° 28' 45"	54' 15"	14' 46,96"	276° 05' 54"	62,82%
12:00	253° 40' 57"	-5° 07' 47"	251° 36' 17"	-27° 31' 54"	54' 15"	14' 46,86"	275° 50' 47"	63,20%
13:00	254° 10' 40"	-5° 07' 07"	252° 09' 30"	-27° 34' 55"	54' 15"	14' 46,77"	275° 35' 37"	63,58%
14:00	254° 40' 23"	-5° 06' 26"	252° 42' 46"	-27° 37' 48"	54' 14"	14' 46,68"	275° 20' 26"	63,96%
15:00	255° 10' 06"	-5° 05' 43"	253° 16' 02"	-27° 40' 33"	54' 14"	14' 46,60"	275° 05' 12"	64,34%
16:00	255° 39' 49"	-5° 04' 59"	253° 49' 20"	-27° 43' 11"	54' 14"	14' 46,52"	274° 49' 56"	64,72%
17:00	256° 09' 31"	-5° 04' 14"	254° 22' 39"	-27° 45' 40"	54' 13"	14' 46,45"	274° 34' 38"	65,09%
18:00	256° 39' 13"	-5° 03' 27"	254° 56' 00"	-27° 48' 01"	54' 13"	14' 46,38"	274° 19' 19"	65,47%
19:00	257° 08' 54"	-5° 02' 39"	255° 29' 22"	-27° 50' 14"	54' 13"	14' 46,31"	274° 03' 58"	65,85%
20:00	257° 38' 36"	-5° 01' 50"	256° 02' 44"	-27° 52' 19"	54' 13"	14' 46,25"	273° 48' 35"	66,22%
21:00	258° 08' 17"	-5° 00' 59"	256° 36' 08"	-27° 54' 16"	54' 12"	14' 46,20"	273° 33' 11"	66,59%
22:00	258° 37' 58"	-5° 00' 07"	257° 09' 33"	-27° 56' 05"	54' 12"	14' 46,15"	273° 17' 45"	66,97%
23:00	259° 07' 39"	-4° 59' 14"	257° 42' 59"	-27° 57' 46"	54' 12"	14' 46,10"	273° 02' 18"	67,34%
24:00	259° 37' 19"	-4° 58' 19"	258° 16' 26"	-27° 59' 19"	54' 12"	14' 46,06"	272° 46' 50"	67,71%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	148° 56' 38"	-0,47"	151° 04' 45"	11° 50' 27"	1,0115087	15' 48,71"	23° 26' 17"	-03m 03s
01:00	148° 59' 03"	-0,47"	151° 07' 03"	11° 49' 36"	1,0114999	15' 48,72"	23° 26' 17"	-03m 02s
02:00	149° 01' 27"	-0,47"	151° 09' 21"	11° 48' 46"	1,0114912	15' 48,73"	23° 26' 17"	-03m 02s
03:00	149° 03' 52"	-0,47"	151° 11' 40"	11° 47' 56"	1,0114824	15' 48,74"	23° 26' 17"	-03m 01s
04:00	149° 06' 16"	-0,47"	151° 13' 58"	11° 47' 05"	1,0114736	15' 48,74"	23° 26' 17"	-03m 00s
05:00	149° 08' 41"	-0,46"	151° 16' 16"	11° 46' 15"	1,0114648	15' 48,75"	23° 26' 17"	-03m 00s
06:00	149° 11' 05"	-0,46"	151° 18' 35"	11° 45' 24"	1,0114560	15' 48,76"	23° 26' 17"	-02m 59s
07:00	149° 13' 30"	-0,46"	151° 20' 53"	11° 44' 34"	1,0114472	15' 48,77"	23° 26' 17"	-02m 58s
08:00	149° 15' 54"	-0,46"	151° 23' 11"	11° 43' 44"	1,0114384	15' 48,78"	23° 26' 17"	-02m 58s
09:00	149° 18' 19"	-0,46"	151° 25' 29"	11° 42' 53"	1,0114296	15' 48,79"	23° 26' 17"	-02m 57s
10:00	149° 20' 43"	-0,45"	151° 27' 48"	11° 42' 03"	1,0114208	15' 48,79"	23° 26' 17"	-02m 56s
11:00	149° 23' 07"	-0,45"	151° 30' 06"	11° 41' 12"	1,0114120	15' 48,80"	23° 26' 17"	-02m 56s
12:00	149° 25' 32"	-0,45"	151° 32' 24"	11° 40' 22"	1,0114032	15' 48,81"	23° 26' 17"	-02m 55s
13:00	149° 27' 56"	-0,45"	151° 34' 42"	11° 39' 31"	1,0113944	15' 48,82"	23° 26' 17"	-02m 55s
14:00	149° 30' 21"	-0,44"	151° 37' 01"	11° 38' 41"	1,0113855	15' 48,83"	23° 26' 17"	-02m 54s
15:00	149° 32' 45"	-0,44"	151° 39' 19"	11° 37' 50"	1,0113767	15' 48,84"	23° 26' 17"	-02m 53s
16:00	149° 35' 10"	-0,44"	151° 41' 37"	11° 36' 59"	1,0113679	15' 48,84"	23° 26' 17"	-02m 53s
17:00	149° 37' 34"	-0,44"	151° 43' 55"	11° 36' 09"	1,0113590	15' 48,85"	23° 26' 17"	-02m 52s
18:00	149° 39' 59"	-0,43"	151° 46' 13"	11° 35' 18"	1,0113502	15' 48,86"	23° 26' 17"	-02m 51s
19:00	149° 42' 23"	-0,43"	151° 48' 31"	11° 34' 28"	1,0113413	15' 48,87"	23° 26' 17"	-02m 51s
20:00	149° 44' 48"	-0,43"	151° 50' 50"	11° 33' 37"	1,0113325	15' 48,88"	23° 26' 17"	-02m 50s
21:00	149° 47' 12"	-0,43"	151° 53' 08"	11° 32' 46"	1,0113236	15' 48,89"	23° 26' 17"	-02m 49s
22:00	149° 49' 37"	-0,42"	151° 55' 26"	11° 31' 55"	1,0113147	15' 48,89"	23° 26' 17"	-02m 49s
23:00	149° 52' 01"	-0,42"	151° 57' 44"	11° 31' 05"	1,0113059	15' 48,90"	23° 26' 17"	-02m 48s
24:00	149° 54' 26"	-0,42"	152° 00' 02"	11° 30' 14"	1,0112970	15' 48,91"	23° 26' 17"	-02m 47s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	259° 37' 19"	-4° 58' 19"	258° 16' 26"	-27° 59' 19"	54' 12"	14' 46,06"	272° 46' 50"	67,71%
01:00	260° 07' 00"	-4° 57' 23"	258° 49' 54"	-28° 00' 44"	54' 12"	14' 46,03"	272° 31' 21"	68,08%
02:00	260° 36' 40"	-4° 56' 26"	259° 23' 23"	-28° 02' 00"	54' 12"	14' 45,99"	272° 15' 50"	68,44%
03:00	261° 06' 21"	-4° 55' 27"	259° 56' 52"	-28° 03' 09"	54' 12"	14' 45,97"	272° 00' 19"	68,81%
04:00	261° 36' 01"	-4° 54' 27"	260° 30' 22"	-28° 04' 09"	54' 12"	14' 45,95"	271° 44' 47"	69,17%
05:00	262° 05' 41"	-4° 53' 26"	261° 03' 52"	-28° 05' 02"	54' 11"	14' 45,93"	271° 29' 14"	69,54%
06:00	262° 35' 21"	-4° 52' 23"	261° 37' 24"	-28° 05' 46"	54' 11"	14' 45,92"	271° 13' 41"	69,90%
07:00	263° 05' 01"	-4° 51' 20"	262° 10' 55"	-28° 06' 22"	54' 11"	14' 45,91"	270° 58' 07"	70,26%
08:00	263° 34' 42"	-4° 50' 14"	262° 44' 27"	-28° 06' 49"	54' 11"	14' 45,90"	270° 42' 33"	70,62%
09:00	264° 04' 22"	-4° 49' 08"	263° 18' 00"	-28° 07' 09"	54' 11"	14' 45,90"	270° 26' 59"	70,98%
10:00	264° 34' 02"	-4° 48' 00"	263° 51' 32"	-28° 07' 21"	54' 11"	14' 45,91"	270° 11' 24"	71,34%
11:00	265° 03' 42"	-4° 46' 51"	264° 25' 05"	-28° 07' 24"	54' 11"	14' 45,92"	269° 55' 49"	71,70%
12:00	265° 33' 22"	-4° 45' 41"	264° 58' 39"	-28° 07' 19"	54' 11"	14' 45,93"	269° 40' 14"	72,05%
13:00	266° 03' 03"	-4° 44' 29"	265° 32' 12"	-28° 07' 06"	54' 12"	14' 45,95"	269° 24' 40"	72,41%
14:00	266° 32' 43"	-4° 43' 16"	266° 05' 45"	-28° 06' 45"	54' 12"	14' 45,98"	269° 09' 05"	72,76%
15:00	267° 02' 24"	-4° 42' 02"	266° 39' 19"	-28° 06' 16"	54' 12"	14' 46,00"	268° 53' 31"	73,11%
16:00	267° 32' 05"	-4° 40' 47"	267° 12' 52"	-28° 05' 38"	54' 12"	14' 46,03"	268° 37' 58"	73,46%
17:00	268° 01' 45"	-4° 39' 30"	267° 46' 25"	-28° 04' 52"	54' 12"	14' 46,07"	268° 22' 24"	73,81%
18:00	268° 31' 27"	-4° 38' 12"	268° 19' 58"	-28° 03' 59"	54' 12"	14' 46,11"	268° 06' 52"	74,16%
19:00	269° 01' 08"	-4° 36' 53"	268° 53' 31"	-28° 02' 57"	54' 12"	14' 46,16"	267° 51' 20"	74,50%
20:00	269° 30' 49"	-4° 35' 33"	269° 27' 03"	-28° 01' 46"	54' 12"	14' 46,21"	267° 35' 49"	74,84%
21:00	270° 00' 31"	-4° 34' 11"	270° 00' 35"	-28° 00' 28"	54' 13"	14' 46,26"	267° 20' 19"	75,19%
22:00	270° 30' 13"	-4° 32' 48"	270° 34' 06"	-27° 59' 02"	54' 13"	14' 46,32"	267° 04' 51"	75,53%
23:00	270° 59' 55"	-4° 31' 24"	271° 07' 37"	-27° 57' 27"	54' 13"	14' 46,38"	266° 49' 23"	75,87%
24:00	271° 29' 38"	-4° 29' 59"	271° 41' 08"	-27° 55' 44"	54' 13"	14' 46,45"	266° 33' 57"	76,21%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	149° 54' 26"	-0,42"	152° 00' 02"	11° 30' 14"	1,0112970	15' 48,91"	23° 26' 17"	-02m 47s
01:00	149° 56' 51"	-0,42"	152° 02' 20"	11° 29' 23"	1,0112881	15' 48,92"	23° 26' 17"	-02m 47s
02:00	149° 59' 15"	-0,41"	152° 04' 38"	11° 28' 32"	1,0112792	15' 48,93"	23° 26' 17"	-02m 46s
03:00	150° 01' 40"	-0,41"	152° 06' 56"	11° 27' 42"	1,0112703	15' 48,94"	23° 26' 17"	-02m 45s
04:00	150° 04' 04"	-0,41"	152° 09' 14"	11° 26' 51"	1,0112614	15' 48,94"	23° 26' 17"	-02m 45s
05:00	150° 06' 29"	-0,40"	152° 11' 32"	11° 26' 00"	1,0112526	15' 48,95"	23° 26' 17"	-02m 44s
06:00	150° 08' 53"	-0,40"	152° 13' 50"	11° 25' 09"	1,0112436	15' 48,96"	23° 26' 17"	-02m 44s
07:00	150° 11' 18"	-0,40"	152° 16' 08"	11° 24' 18"	1,0112347	15' 48,97"	23° 26' 17"	-02m 43s
08:00	150° 13' 42"	-0,39"	152° 18' 26"	11° 23' 27"	1,0112258	15' 48,98"	23° 26' 17"	-02m 42s
09:00	150° 16' 07"	-0,39"	152° 20' 44"	11° 22' 36"	1,0112169	15' 48,99"	23° 26' 17"	-02m 42s
10:00	150° 18' 31"	-0,39"	152° 23' 02"	11° 21' 46"	1,0112080	15' 48,99"	23° 26' 17"	-02m 41s
11:00	150° 20' 56"	-0,38"	152° 25' 20"	11° 20' 55"	1,0111991	15' 49,00"	23° 26' 17"	-02m 40s
12:00	150° 23' 20"	-0,38"	152° 27' 38"	11° 20' 04"	1,0111901	15' 49,01"	23° 26' 17"	-02m 40s
13:00	150° 25' 45"	-0,38"	152° 29' 56"	11° 19' 13"	1,0111812	15' 49,02"	23° 26' 17"	-02m 39s
14:00	150° 28' 09"	-0,37"	152° 32' 14"	11° 18' 22"	1,0111723	15' 49,03"	23° 26' 17"	-02m 38s
15:00	150° 30' 34"	-0,37"	152° 34' 32"	11° 17' 31"	1,0111633	15' 49,04"	23° 26' 17"	-02m 38s
16:00	150° 32' 58"	-0,37"	152° 36' 50"	11° 16' 40"	1,0111544	15' 49,04"	23° 26' 17"	-02m 37s
17:00	150° 35' 23"	-0,36"	152° 39' 08"	11° 15' 49"	1,0111454	15' 49,05"	23° 26' 17"	-02m 36s
18:00	150° 37' 48"	-0,36"	152° 41' 26"	11° 14' 57"	1,0111365	15' 49,06"	23° 26' 17"	-02m 36s
19:00	150° 40' 12"	-0,36"	152° 43' 43"	11° 14' 06"	1,0111275	15' 49,07"	23° 26' 17"	-02m 35s
20:00	150° 42' 37"	-0,35"	152° 46' 01"	11° 13' 15"	1,0111185	15' 49,08"	23° 26' 17"	-02m 34s
21:00	150° 45' 01"	-0,35"	152° 48' 19"	11° 12' 24"	1,0111096	15' 49,09"	23° 26' 17"	-02m 34s
22:00	150° 47' 26"	-0,35"	152° 50' 37"	11° 11' 33"	1,0111006	15' 49,09"	23° 26' 17"	-02m 33s
23:00	150° 49' 50"	-0,34"	152° 52' 55"	11° 10' 42"	1,0110916	15' 49,10"	23° 26' 17"	-02m 32s
24:00	150° 52' 15"	-0,34"	152° 55' 13"	11° 09' 51"	1,0110826	15' 49,11"	23° 26' 17"	-02m 32s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	271° 29' 38"	-4° 29' 59"	271° 41' 08"	-27° 55' 44"	54' 13"	14' 46,45"	266° 33' 57"	76,21%
01:00	271° 59' 20"	-4° 28' 32"	272° 14' 38"	-27° 53' 53"	54' 14"	14' 46,52"	266° 18' 32"	76,54%
02:00	272° 29' 03"	-4° 27' 04"	272° 48' 07"	-27° 51' 54"	54' 14"	14' 46,59"	266° 03' 08"	76,88%
03:00	272° 58' 47"	-4° 25' 35"	273° 21' 35"	-27° 49' 47"	54' 14"	14' 46,67"	265° 47' 46"	77,21%
04:00	273° 28' 31"	-4° 24' 05"	273° 55' 03"	-27° 47' 32"	54' 14"	14' 46,76"	265° 32' 26"	77,54%
05:00	273° 58' 15"	-4° 22' 33"	274° 28' 29"	-27° 45' 08"	54' 15"	14' 46,84"	265° 17' 07"	77,87%
06:00	274° 27' 59"	-4° 21' 01"	275° 01' 55"	-27° 42' 37"	54' 15"	14' 46,93"	265° 01' 51"	78,20%
07:00	274° 57' 44"	-4° 19' 27"	275° 35' 20"	-27° 39' 58"	54' 16"	14' 47,03"	264° 46' 36"	78,53%
08:00	275° 27' 30"	-4° 17' 52"	276° 08' 43"	-27° 37' 10"	54' 16"	14' 47,13"	264° 31' 23"	78,85%
09:00	275° 57' 15"	-4° 16' 16"	276° 42' 06"	-27° 34' 14"	54' 16"	14' 47,23"	264° 16' 13"	79,17%
10:00	276° 27' 01"	-4° 14' 38"	277° 15' 27"	-27° 31' 11"	54' 17"	14' 47,34"	264° 01' 05"	79,50%
11:00	276° 56' 48"	-4° 13' 00"	277° 48' 47"	-27° 27' 59"	54' 17"	14' 47,45"	263° 45' 59"	79,82%
12:00	277° 26' 35"	-4° 11' 20"	278° 22' 06"	-27° 24' 40"	54' 17"	14' 47,57"	263° 30' 56"	80,13%
13:00	277° 56' 23"	-4° 09' 39"	278° 55' 23"	-27° 21' 12"	54' 18"	14' 47,69"	263° 15' 56"	80,45%
14:00	278° 26' 11"	-4° 07' 57"	279° 28' 39"	-27° 17' 36"	54' 18"	14' 47,81"	263° 00' 58"	80,76%
15:00	278° 56' 00"	-4° 06' 14"	280° 01' 54"	-27° 13' 53"	54' 19"	14' 47,94"	262° 46' 03"	81,08%
16:00	279° 25' 49"	-4° 04' 29"	280° 35' 07"	-27° 10' 01"	54' 19"	14' 48,07"	262° 31' 11"	81,39%
17:00	279° 55' 39"	-4° 02' 44"	281° 08' 18"	-27° 06' 02"	54' 20"	14' 48,21"	262° 16' 22"	81,70%
18:00	280° 25' 29"	-4° 00' 57"	281° 41' 28"	-27° 01' 55"	54' 20"	14' 48,35"	262° 01' 36"	82,00%
19:00	280° 55' 20"	-3° 59' 09"	282° 14' 37"	-26° 57' 40"	54' 21"	14' 48,49"	261° 46' 53"	82,31%
20:00	281° 25' 12"	-3° 57' 21"	282° 47' 43"	-26° 53' 17"	54' 21"	14' 48,64"	261° 32' 13"	82,61%
21:00	281° 55' 04"	-3° 55' 31"	283° 20' 48"	-26° 48' 46"	54' 22"	14' 48,79"	261° 17' 37"	82,91%
22:00	282° 24' 56"	-3° 53' 39"	283° 53' 51"	-26° 44' 07"	54' 23"	14' 48,94"	261° 03' 05"	83,21%
23:00	282° 54' 50"	-3° 51' 47"	284° 26' 52"	-26° 39' 21"	54' 23"	14' 49,10"	260° 48' 36"	83,51%
24:00	283° 24' 44"	-3° 49' 54"	284° 59' 51"	-26° 34' 27"	54' 24"	14' 49,26"	260° 34' 10"	83,80%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	150° 52' 15"	-0,34"	152° 55' 13"	11° 09' 51"	1,0110826	15' 49,11"	23° 26' 17"	-02m 32s
01:00	150° 54' 39"	-0,33"	152° 57' 30"	11° 08' 59"	1,0110737	15' 49,12"	23° 26' 17"	-02m 31s
02:00	150° 57' 04"	-0,33"	152° 59' 48"	11° 08' 08"	1,0110647	15' 49,13"	23° 26' 17"	-02m 30s
03:00	150° 59' 29"	-0,33"	153° 02' 06"	11° 07' 17"	1,0110557	15' 49,14"	23° 26' 17"	-02m 30s
04:00	151° 01' 53"	-0,32"	153° 04' 24"	11° 06' 26"	1,0110467	15' 49,15"	23° 26' 17"	-02m 29s
05:00	151° 04' 18"	-0,32"	153° 06' 41"	11° 05' 34"	1,0110377	15' 49,15"	23° 26' 17"	-02m 28s
06:00	151° 06' 42"	-0,32"	153° 08' 59"	11° 04' 43"	1,0110287	15' 49,16"	23° 26' 17"	-02m 28s
07:00	151° 09' 07"	-0,31"	153° 11' 17"	11° 03' 52"	1,0110197	15' 49,17"	23° 26' 17"	-02m 27s
08:00	151° 11' 32"	-0,31"	153° 13' 35"	11° 03' 01"	1,0110106	15' 49,18"	23° 26' 17"	-02m 26s
09:00	151° 13' 56"	-0,30"	153° 15' 52"	11° 02' 09"	1,0110016	15' 49,19"	23° 26' 17"	-02m 26s
10:00	151° 16' 21"	-0,30"	153° 18' 10"	11° 01' 18"	1,0109926	15' 49,20"	23° 26' 17"	-02m 25s
11:00	151° 18' 45"	-0,30"	153° 20' 28"	11° 00' 26"	1,0109836	15' 49,20"	23° 26' 17"	-02m 24s
12:00	151° 21' 10"	-0,29"	153° 22' 45"	10° 59' 35"	1,0109746	15' 49,21"	23° 26' 17"	-02m 24s
13:00	151° 23' 34"	-0,29"	153° 25' 03"	10° 58' 44"	1,0109655	15' 49,22"	23° 26' 17"	-02m 23s
14:00	151° 25' 59"	-0,28"	153° 27' 21"	10° 57' 52"	1,0109565	15' 49,23"	23° 26' 17"	-02m 22s
15:00	151° 28' 24"	-0,28"	153° 29' 38"	10° 57' 01"	1,0109474	15' 49,24"	23° 26' 17"	-02m 21s
16:00	151° 30' 48"	-0,27"	153° 31' 56"	10° 56' 09"	1,0109384	15' 49,25"	23° 26' 17"	-02m 21s
17:00	151° 33' 13"	-0,27"	153° 34' 14"	10° 55' 18"	1,0109293	15' 49,26"	23° 26' 17"	-02m 20s
18:00	151° 35' 37"	-0,27"	153° 36' 31"	10° 54' 26"	1,0109203	15' 49,26"	23° 26' 17"	-02m 19s
19:00	151° 38' 02"	-0,26"	153° 38' 49"	10° 53' 35"	1,0109112	15' 49,27"	23° 26' 17"	-02m 19s
20:00	151° 40' 27"	-0,26"	153° 41' 06"	10° 52' 43"	1,0109022	15' 49,28"	23° 26' 17"	-02m 18s
21:00	151° 42' 51"	-0,25"	153° 43' 24"	10° 51' 52"	1,0108931	15' 49,29"	23° 26' 17"	-02m 17s
22:00	151° 45' 16"	-0,25"	153° 45' 42"	10° 51' 00"	1,0108840	15' 49,30"	23° 26' 17"	-02m 17s
23:00	151° 47' 40"	-0,24"	153° 47' 59"	10° 50' 08"	1,0108750	15' 49,31"	23° 26' 17"	-02m 16s
24:00	151° 50' 05"	-0,24"	153° 50' 17"	10° 49' 17"	1,0108659	15' 49,31"	23° 26' 17"	-02m 15s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	283° 24' 44"	-3° 49' 54"	284° 59' 51"	-26° 34' 27"	54' 24"	14' 49,26"	260° 34' 10"	83,80%
01:00	283° 54' 39"	-3° 48' 00"	285° 32' 48"	-26° 29' 25"	54' 24"	14' 49,42"	260° 19' 49"	84,10%
02:00	284° 24' 34"	-3° 46' 04"	286° 05' 43"	-26° 24' 16"	54' 25"	14' 49,59"	260° 05' 31"	84,39%
03:00	284° 54' 30"	-3° 44' 07"	286° 38' 36"	-26° 18' 58"	54' 26"	14' 49,76"	259° 51' 17"	84,68%
04:00	285° 24' 27"	-3° 42' 10"	287° 11' 27"	-26° 13' 34"	54' 26"	14' 49,94"	259° 37' 08"	84,96%
05:00	285° 54' 25"	-3° 40' 11"	287° 44' 16"	-26° 08' 01"	54' 27"	14' 50,12"	259° 23' 02"	85,25%
06:00	286° 24' 23"	-3° 38' 11"	288° 17' 02"	-26° 02' 21"	54' 28"	14' 50,30"	259° 09' 01"	85,53%
07:00	286° 54' 23"	-3° 36' 10"	288° 49' 47"	-25° 56' 34"	54' 28"	14' 50,49"	258° 55' 04"	85,81%
08:00	287° 24' 23"	-3° 34' 09"	289° 22' 29"	-25° 50' 38"	54' 29"	14' 50,68"	258° 41' 12"	86,09%
09:00	287° 54' 23"	-3° 32' 06"	289° 55' 09"	-25° 44' 36"	54' 30"	14' 50,87"	258° 27' 24"	86,37%
10:00	288° 24' 25"	-3° 30' 02"	290° 27' 46"	-25° 38' 26"	54' 30"	14' 51,07"	258° 13' 40"	86,64%
11:00	288° 54' 27"	-3° 27' 57"	291° 00' 21"	-25° 32' 08"	54' 31"	14' 51,27"	258° 00' 02"	86,91%
12:00	289° 24' 30"	-3° 25' 51"	291° 32' 54"	-25° 25' 43"	54' 32"	14' 51,47"	257° 46' 28"	87,18%
13:00	289° 54' 34"	-3° 23' 44"	292° 05' 25"	-25° 19' 11"	54' 33"	14' 51,67"	257° 32' 59"	87,45%
14:00	290° 24' 39"	-3° 21' 36"	292° 37' 52"	-25° 12' 31"	54' 33"	14' 51,88"	257° 19' 35"	87,72%
15:00	290° 54' 45"	-3° 19' 27"	293° 10' 18"	-25° 05' 44"	54' 34"	14' 52,10"	257° 06' 16"	87,98%
16:00	291° 24' 52"	-3° 17' 17"	293° 42' 41"	-24° 58' 50"	54' 35"	14' 52,31"	256° 53' 02"	88,24%
17:00	291° 54' 59"	-3° 15' 06"	294° 15' 01"	-24° 51' 49"	54' 36"	14' 52,53"	256° 39' 54"	88,50%
18:00	292° 25' 08"	-3° 12' 54"	294° 47' 19"	-24° 44' 40"	54' 37"	14' 52,75"	256° 26' 51"	88,75%
19:00	292° 55' 17"	-3° 10' 41"	295° 19' 34"	-24° 37' 24"	54' 37"	14' 52,98"	256° 13' 53"	89,01%
20:00	293° 25' 27"	-3° 08' 27"	295° 51' 46"	-24° 30' 01"	54' 38"	14' 53,20"	256° 01' 01"	89,26%
21:00	293° 55' 39"	-3° 06' 12"	296° 23' 56"	-24° 22' 31"	54' 39"	14' 53,43"	255° 48' 15"	89,51%
22:00	294° 25' 51"	-3° 03' 57"	296° 56' 03"	-24° 14' 54"	54' 40"	14' 53,67"	255° 35' 34"	89,75%
23:00	294° 56' 04"	-3° 01' 40"	297° 28' 07"	-24° 07' 10"	54' 41"	14' 53,91"	255° 22' 59"	90,00%
24:00	295° 26' 18"	-2° 59' 22"	298° 00' 09"	-23° 59' 19"	54' 42"	14' 54,14"	255° 10' 30"	90,24%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	151° 50' 05"	-0,24"	153° 50' 17"	10° 49' 17"	1,0108659	15' 49,31"	23° 26' 17"	-02m 15s
01:00	151° 52' 30"	-0,23"	153° 52' 34"	10° 48' 25"	1,0108568	15' 49,32"	23° 26' 17"	-02m 15s
02:00	151° 54' 54"	-0,23"	153° 54' 52"	10° 47' 34"	1,0108477	15' 49,33"	23° 26' 17"	-02m 14s
03:00	151° 57' 19"	-0,23"	153° 57' 09"	10° 46' 42"	1,0108386	15' 49,34"	23° 26' 17"	-02m 13s
04:00	151° 59' 44"	-0,22"	153° 59' 27"	10° 45' 50"	1,0108295	15' 49,35"	23° 26' 17"	-02m 13s
05:00	152° 02' 08"	-0,22"	154° 01' 44"	10° 44' 58"	1,0108205	15' 49,36"	23° 26' 17"	-02m 12s
06:00	152° 04' 33"	-0,21"	154° 04' 02"	10° 44' 07"	1,0108114	15' 49,37"	23° 26' 17"	-02m 11s
07:00	152° 06' 57"	-0,21"	154° 06' 19"	10° 43' 15"	1,0108023	15' 49,37"	23° 26' 17"	-02m 10s
08:00	152° 09' 22"	-0,20"	154° 08' 37"	10° 42' 23"	1,0107931	15' 49,38"	23° 26' 17"	-02m 10s
09:00	152° 11' 47"	-0,20"	154° 10' 54"	10° 41' 31"	1,0107840	15' 49,39"	23° 26' 17"	-02m 09s
10:00	152° 14' 11"	-0,19"	154° 13' 11"	10° 40' 40"	1,0107749	15' 49,40"	23° 26' 17"	-02m 08s
11:00	152° 16' 36"	-0,19"	154° 15' 29"	10° 39' 48"	1,0107658	15' 49,41"	23° 26' 17"	-02m 08s
12:00	152° 19' 01"	-0,18"	154° 17' 46"	10° 38' 56"	1,0107567	15' 49,42"	23° 26' 17"	-02m 07s
13:00	152° 21' 25"	-0,18"	154° 20' 04"	10° 38' 04"	1,0107476	15' 49,43"	23° 26' 17"	-02m 06s
14:00	152° 23' 50"	-0,17"	154° 22' 21"	10° 37' 12"	1,0107384	15' 49,43"	23° 26' 17"	-02m 06s
15:00	152° 26' 15"	-0,17"	154° 24' 38"	10° 36' 20"	1,0107293	15' 49,44"	23° 26' 17"	-02m 05s
16:00	152° 28' 39"	-0,16"	154° 26' 56"	10° 35' 29"	1,0107202	15' 49,45"	23° 26' 17"	-02m 04s
17:00	152° 31' 04"	-0,16"	154° 29' 13"	10° 34' 37"	1,0107110	15' 49,46"	23° 26' 17"	-02m 04s
18:00	152° 33' 29"	-0,15"	154° 31' 30"	10° 33' 45"	1,0107019	15' 49,47"	23° 26' 17"	-02m 03s
19:00	152° 35' 53"	-0,15"	154° 33' 48"	10° 32' 53"	1,0106927	15' 49,48"	23° 26' 17"	-02m 02s
20:00	152° 38' 18"	-0,14"	154° 36' 05"	10° 32' 01"	1,0106836	15' 49,49"	23° 26' 17"	-02m 01s
21:00	152° 40' 43"	-0,14"	154° 38' 22"	10° 31' 09"	1,0106744	15' 49,49"	23° 26' 17"	-02m 01s
22:00	152° 43' 07"	-0,13"	154° 40' 40"	10° 30' 17"	1,0106653	15' 49,50"	23° 26' 17"	-02m 00s
23:00	152° 45' 32"	-0,13"	154° 42' 57"	10° 29' 25"	1,0106561	15' 49,51"	23° 26' 17"	-01m 59s
24:00	152° 47' 57"	-0,12"	154° 45' 14"	10° 28' 33"	1,0106470	15' 49,52"	23° 26' 17"	-01m 59s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	295° 26' 18"	-2° 59' 22"	298° 00' 09"	-23° 59' 19"	54' 42"	14' 54,14"	255° 10' 30"	90,24%
01:00	295° 56' 34"	-2° 57' 04"	298° 32' 08"	-23° 51' 21"	54' 43"	14' 54,39"	254° 58' 07"	90,48%
02:00	296° 26' 50"	-2° 54' 44"	299° 04' 04"	-23° 43' 16"	54' 43"	14' 54,63"	254° 45' 50"	90,71%
03:00	296° 57' 07"	-2° 52' 24"	299° 35' 57"	-23° 35' 05"	54' 44"	14' 54,88"	254° 33' 39"	90,95%
04:00	297° 27' 25"	-2° 50' 03"	300° 07' 48"	-23° 26' 46"	54' 45"	14' 55,13"	254° 21' 34"	91,18%
05:00	297° 57' 45"	-2° 47' 41"	300° 39' 36"	-23° 18' 21"	54' 46"	14' 55,38"	254° 09' 36"	91,41%
06:00	298° 28' 05"	-2° 45' 18"	301° 11' 21"	-23° 09' 49"	54' 47"	14' 55,64"	253° 57' 44"	91,63%
07:00	298° 58' 26"	-2° 42' 54"	301° 43' 03"	-23° 01' 10"	54' 48"	14' 55,90"	253° 45' 59"	91,86%
08:00	299° 28' 49"	-2° 40' 29"	302° 14' 42"	-22° 52' 25"	54' 49"	14' 56,16"	253° 34' 20"	92,08%
09:00	299° 59' 12"	-2° 38' 04"	302° 46' 19"	-22° 43' 33"	54' 50"	14' 56,43"	253° 22' 49"	92,30%
10:00	300° 29' 37"	-2° 35' 37"	303° 17' 52"	-22° 34' 34"	54' 51"	14' 56,69"	253° 11' 24"	92,51%
11:00	301° 00' 03"	-2° 33' 10"	303° 49' 23"	-22° 25' 29"	54' 52"	14' 56,96"	253° 00' 06"	92,73%
12:00	301° 30' 30"	-2° 30' 42"	304° 20' 51"	-22° 16' 17"	54' 53"	14' 57,23"	252° 48' 55"	92,94%
13:00	302° 00' 58"	-2° 28' 13"	304° 52' 16"	-22° 07' 00"	54' 54"	14' 57,51"	252° 37' 52"	93,15%
14:00	302° 31' 27"	-2° 25' 44"	305° 23' 38"	-21° 57' 35"	54' 55"	14' 57,78"	252° 26' 56"	93,35%
15:00	303° 01' 57"	-2° 23' 13"	305° 54' 58"	-21° 48' 04"	54' 56"	14' 58,06"	252° 16' 07"	93,55%
16:00	303° 32' 29"	-2° 20' 42"	306° 26' 14"	-21° 38' 28"	54' 57"	14' 58,34"	252° 05' 26"	93,75%
17:00	304° 03' 02"	-2° 18' 10"	306° 57' 28"	-21° 28' 44"	54' 58"	14' 58,63"	251° 54' 52"	93,95%
18:00	304° 33' 36"	-2° 15' 37"	307° 28' 38"	-21° 18' 55"	54' 59"	14' 58,91"	251° 44' 26"	94,14%
19:00	305° 04' 11"	-2° 13' 04"	307° 59' 46"	-21° 08' 59"	55' 00"	14' 59,20"	251° 34' 09"	94,33%
20:00	305° 34' 47"	-2° 10' 30"	308° 30' 51"	-20° 58' 58"	55' 01"	14' 59,49"	251° 23' 59"	94,52%
21:00	306° 05' 24"	-2° 07' 55"	309° 01' 53"	-20° 48' 50"	55' 02"	15' 00,00"	251° 13' 58"	94,71%
22:00	306° 36' 03"	-2° 05' 19"	309° 32' 52"	-20° 38' 36"	55' 03"	15' 00,08"	251° 04' 05"	94,89%
23:00	307° 06' 43"	-2° 02' 43"	310° 03' 49"	-20° 28' 16"	55' 04"	15' 00,37"	250° 54' 21"	95,07%
24:00	307° 37' 24"	-2° 00' 06"	310° 34' 42"	-20° 17' 51"	55' 06"	15' 00,67"	250° 44' 45"	95,25%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	152° 47' 57"	-0,12"	154° 45' 14"	10° 28' 33"	1,0106470	15' 49,52"	23° 26' 17"	-01m 59s
01:00	152° 50' 21"	-0,12"	154° 47' 32"	10° 27' 41"	1,0106378	15' 49,53"	23° 26' 17"	-01m 58s
02:00	152° 52' 46"	-0,11"	154° 49' 49"	10° 26' 49"	1,0106286	15' 49,54"	23° 26' 17"	-01m 57s
03:00	152° 55' 11"	-0,11"	154° 52' 06"	10° 25' 57"	1,0106195	15' 49,55"	23° 26' 17"	-01m 56s
04:00	152° 57' 35"	-0,10"	154° 54' 23"	10° 25' 04"	1,0106103	15' 49,55"	23° 26' 17"	-01m 56s
05:00	153° 00' 00"	-0,10"	154° 56' 41"	10° 24' 12"	1,0106011	15' 49,56"	23° 26' 17"	-01m 55s
06:00	153° 02' 25"	-0,09"	154° 58' 58"	10° 23' 20"	1,0105919	15' 49,57"	23° 26' 17"	-01m 54s
07:00	153° 04' 49"	-0,09"	155° 01' 15"	10° 22' 28"	1,0105827	15' 49,58"	23° 26' 17"	-01m 54s
08:00	153° 07' 14"	-0,08"	155° 03' 32"	10° 21' 36"	1,0105735	15' 49,59"	23° 26' 17"	-01m 53s
09:00	153° 09' 39"	-0,08"	155° 05' 49"	10° 20' 44"	1,0105644	15' 49,60"	23° 26' 17"	-01m 52s
10:00	153° 12' 03"	-0,07"	155° 08' 07"	10° 19' 52"	1,0105552	15' 49,61"	23° 26' 17"	-01m 52s
11:00	153° 14' 28"	-0,07"	155° 10' 24"	10° 18' 59"	1,0105460	15' 49,62"	23° 26' 17"	-01m 51s
12:00	153° 16' 53"	-0,06"	155° 12' 41"	10° 18' 07"	1,0105368	15' 49,62"	23° 26' 17"	-01m 50s
13:00	153° 19' 17"	-0,05"	155° 14' 58"	10° 17' 15"	1,0105275	15' 49,63"	23° 26' 17"	-01m 49s
14:00	153° 21' 42"	-0,05"	155° 17' 15"	10° 16' 23"	1,0105183	15' 49,64"	23° 26' 17"	-01m 49s
15:00	153° 24' 07"	-0,04"	155° 19' 32"	10° 15' 30"	1,0105091	15' 49,65"	23° 26' 17"	-01m 48s
16:00	153° 26' 32"	-0,04"	155° 21' 49"	10° 14' 38"	1,0104999	15' 49,66"	23° 26' 17"	-01m 47s
17:00	153° 28' 56"	-0,03"	155° 24' 06"	10° 13' 46"	1,0104907	15' 49,67"	23° 26' 17"	-01m 47s
18:00	153° 31' 21"	-0,03"	155° 26' 24"	10° 12' 53"	1,0104815	15' 49,68"	23° 26' 17"	-01m 46s
19:00	153° 33' 46"	-0,02"	155° 28' 41"	10° 12' 01"	1,0104722	15' 49,68"	23° 26' 17"	-01m 45s
20:00	153° 36' 10"	-0,02"	155° 30' 58"	10° 11' 09"	1,0104630	15' 49,69"	23° 26' 17"	-01m 44s
21:00	153° 38' 35"	-0,01"	155° 33' 15"	10° 10' 16"	1,0104538	15' 49,70"	23° 26' 17"	-01m 44s
22:00	153° 41' 00"	-0,01"	155° 35' 32"	10° 09' 24"	1,0104446	15' 49,71"	23° 26' 17"	-01m 43s
23:00	153° 43' 25"	-0,00"	155° 37' 49"	10° 08' 31"	1,0104353	15' 49,72"	23° 26' 17"	-01m 42s
24:00	153° 45' 49"	0,00"	155° 40' 06"	10° 07' 39"	1,0104261	15' 49,73"	23° 26' 17"	-01m 41s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	307° 37' 24"	-2° 00' 06"	310° 34' 42"	-20° 17' 51"	55' 06"	15' 00,67"	250° 44' 45"	95,25%
01:00	308° 08' 06"	-1° 57' 28"	311° 05' 33"	-20° 07' 19"	55' 07"	15' 00,97"	250° 35' 19"	95,42%
02:00	308° 38' 50"	-1° 54' 49"	311° 36' 21"	-19° 56' 42"	55' 08"	15' 01,27"	250° 26' 01"	95,59%
03:00	309° 09' 35"	-1° 52' 10"	312° 07' 06"	-19° 45' 59"	55' 09"	15' 01,58"	250° 16' 53"	95,76%
04:00	309° 40' 21"	-1° 49' 31"	312° 37' 48"	-19° 35' 10"	55' 10"	15' 01,88"	250° 07' 55"	95,92%
05:00	310° 11' 09"	-1° 46' 50"	313° 08' 28"	-19° 24' 15"	55' 11"	15' 02,19"	249° 59' 06"	96,09%
06:00	310° 41' 57"	-1° 44' 09"	313° 39' 05"	-19° 13' 15"	55' 12"	15' 02,50"	249° 50' 28"	96,24%
07:00	311° 12' 47"	-1° 41' 27"	314° 09' 39"	-19° 02' 10"	55' 13"	15' 02,81"	249° 42' 00"	96,40%
08:00	311° 43' 39"	-1° 38' 45"	314° 40' 10"	-18° 50' 58"	55' 15"	15' 03,13"	249° 33' 42"	96,55%
09:00	312° 14' 31"	-1° 36' 02"	315° 10' 39"	-18° 39' 42"	55' 16"	15' 03,44"	249° 25' 36"	96,70%
10:00	312° 45' 25"	-1° 33' 19"	315° 41' 04"	-18° 28' 20"	55' 17"	15' 03,76"	249° 17' 41"	96,85%
11:00	313° 16' 20"	-1° 30' 35"	316° 11' 28"	-18° 16' 52"	55' 18"	15' 04,08"	249° 09' 57"	96,99%
12:00	313° 47' 17"	-1° 27' 50"	316° 41' 48"	-18° 05' 19"	55' 19"	15' 04,40"	249° 02' 26"	97,13%
13:00	314° 18' 15"	-1° 25' 05"	317° 12' 06"	-17° 53' 41"	55' 20"	15' 04,72"	248° 55' 07"	97,27%
14:00	314° 49' 14"	-1° 22' 19"	317° 42' 22"	-17° 41' 58"	55' 22"	15' 05,04"	248° 48' 01"	97,40%
15:00	315° 20' 15"	-1° 19' 33"	318° 12' 35"	-17° 30' 10"	55' 23"	15' 05,37"	248° 41' 09"	97,54%
16:00	315° 51' 17"	-1° 16' 46"	318° 42' 45"	-17° 18' 16"	55' 24"	15' 05,69"	248° 34' 31"	97,66%
17:00	316° 22' 20"	-1° 13' 59"	319° 12' 53"	-17° 06' 18"	55' 25"	15' 06,02"	248° 28' 08"	97,79%
18:00	316° 53' 25"	-1° 11' 12"	319° 42' 58"	-16° 54' 14"	55' 26"	15' 06,35"	248° 22' 01"	97,91%
19:00	317° 24' 31"	-1° 08' 23"	320° 13' 01"	-16° 42' 06"	55' 28"	15' 06,68"	248° 16' 10"	98,03%
20:00	317° 55' 39"	-1° 05' 35"	320° 43' 01"	-16° 29' 52"	55' 29"	15' 07,01"	248° 10' 36"	98,14%
21:00	318° 26' 48"	-1° 02' 46"	321° 12' 59"	-16° 17' 34"	55' 30"	15' 07,35"	248° 05' 21"	98,25%
22:00	318° 57' 58"	-0° 59' 56"	321° 42' 55"	-16° 05' 11"	55' 31"	15' 07,68"	248° 00' 26"	98,36%
23:00	319° 29' 10"	-0° 57' 06"	322° 12' 48"	-15° 52' 43"	55' 33"	15' 08,02"	247° 55' 51"	98,47%
24:00	320° 00' 23"	-0° 54' 16"	322° 42' 39"	-15° 40' 11"	55' 34"	15' 08,35"	247° 51' 38"	98,57%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	153° 45' 49"	0,00"	155° 40' 06"	10° 07' 39"	1,0104261	15' 49,73"	23° 26' 17"	-01m 41s
01:00	153° 48' 14"	0,01"	155° 42' 23"	10° 06' 46"	1,0104168	15' 49,74"	23° 26' 17"	-01m 41s
02:00	153° 50' 39"	0,02"	155° 44' 40"	10° 05' 54"	1,0104076	15' 49,75"	23° 26' 17"	-01m 40s
03:00	153° 53' 04"	0,02"	155° 46' 57"	10° 05' 01"	1,0103983	15' 49,75"	23° 26' 17"	-01m 39s
04:00	153° 55' 28"	0,03"	155° 49' 14"	10° 04' 09"	1,0103891	15' 49,76"	23° 26' 17"	-01m 39s
05:00	153° 57' 53"	0,03"	155° 51' 31"	10° 03' 16"	1,0103798	15' 49,77"	23° 26' 17"	-01m 38s
06:00	154° 00' 18"	0,04"	155° 53' 48"	10° 02' 24"	1,0103706	15' 49,78"	23° 26' 17"	-01m 37s
07:00	154° 02' 42"	0,04"	155° 56' 05"	10° 01' 31"	1,0103613	15' 49,79"	23° 26' 17"	-01m 36s
08:00	154° 05' 07"	0,05"	155° 58' 22"	10° 00' 39"	1,0103520	15' 49,80"	23° 26' 17"	-01m 36s
09:00	154° 07' 32"	0,05"	156° 00' 39"	9° 59' 46"	1,0103428	15' 49,81"	23° 26' 17"	-01m 35s
10:00	154° 09' 57"	0,06"	156° 02' 56"	9° 58' 54"	1,0103335	15' 49,82"	23° 26' 17"	-01m 34s
11:00	154° 12' 21"	0,06"	156° 05' 13"	9° 58' 01"	1,0103242	15' 49,82"	23° 26' 17"	-01m 34s
12:00	154° 14' 46"	0,07"	156° 07' 29"	9° 57' 08"	1,0103149	15' 49,83"	23° 26' 17"	-01m 33s
13:00	154° 17' 11"	0,08"	156° 09' 46"	9° 56' 16"	1,0103057	15' 49,84"	23° 26' 17"	-01m 32s
14:00	154° 19' 36"	0,08"	156° 12' 03"	9° 55' 23"	1,0102964	15' 49,85"	23° 26' 17"	-01m 31s
15:00	154° 22' 01"	0,09"	156° 14' 20"	9° 54' 30"	1,0102871	15' 49,86"	23° 26' 17"	-01m 31s
16:00	154° 24' 25"	0,09"	156° 16' 37"	9° 53' 38"	1,0102778	15' 49,87"	23° 26' 17"	-01m 30s
17:00	154° 26' 50"	0,10"	156° 18' 54"	9° 52' 45"	1,0102685	15' 49,88"	23° 26' 17"	-01m 29s
18:00	154° 29' 15"	0,10"	156° 21' 11"	9° 51' 52"	1,0102592	15' 49,88"	23° 26' 17"	-01m 28s
19:00	154° 31' 40"	0,11"	156° 23' 28"	9° 50' 59"	1,0102499	15' 49,89"	23° 26' 17"	-01m 28s
20:00	154° 34' 04"	0,11"	156° 25' 44"	9° 50' 07"	1,0102406	15' 49,90"	23° 26' 17"	-01m 27s
21:00	154° 36' 29"	0,12"	156° 28' 01"	9° 49' 14"	1,0102313	15' 49,91"	23° 26' 17"	-01m 26s
22:00	154° 38' 54"	0,13"	156° 30' 18"	9° 48' 21"	1,0102220	15' 49,92"	23° 26' 17"	-01m 25s
23:00	154° 41' 19"	0,13"	156° 32' 35"	9° 47' 28"	1,0102127	15' 49,93"	23° 26' 17"	-01m 25s
24:00	154° 43' 44"	0,14"	156° 34' 52"	9° 46' 35"	1,0102034	15' 49,94"	23° 26' 17"	-01m 24s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	320° 00' 23"	-0° 54' 16"	322° 42' 39"	-15° 40' 11"	55' 34"	15' 08,35"	247° 51' 38"	98,57%
01:00	320° 31' 37"	-0° 51' 25"	323° 12' 28"	-15° 27' 34"	55' 35"	15' 08,69"	247° 47' 50"	98,67%
02:00	321° 02' 53"	-0° 48' 34"	323° 42' 14"	-15° 14' 52"	55' 36"	15' 09,03"	247° 44' 28"	98,76%
03:00	321° 34' 11"	-0° 45' 42"	324° 11' 58"	-15° 02' 06"	55' 37"	15' 09,37"	247° 41' 34"	98,85%
04:00	322° 05' 29"	-0° 42' 50"	324° 41' 40"	-14° 49' 15"	55' 39"	15' 09,71"	247° 39' 12"	98,94%
05:00	322° 36' 50"	-0° 39' 58"	325° 11' 20"	-14° 36' 20"	55' 40"	15' 10,05"	247° 37' 24"	99,02%
06:00	323° 08' 11"	-0° 37' 05"	325° 40' 58"	-14° 23' 21"	55' 41"	15' 10,39"	247° 36' 13"	99,10%
07:00	323° 39' 34"	-0° 34' 13"	326° 10' 34"	-14° 10' 17"	55' 43"	15' 10,74"	247° 35' 45"	99,18%
08:00	324° 10' 59"	-0° 31' 19"	326° 40' 07"	-13° 57' 09"	55' 44"	15' 11,08"	247° 36' 05"	99,26%
09:00	324° 42' 25"	-0° 28' 26"	327° 09' 39"	-13° 43' 57"	55' 45"	15' 11,43"	247° 37' 18"	99,33%
10:00	325° 13' 52"	-0° 25' 32"	327° 39' 09"	-13° 30' 41"	55' 46"	15' 11,78"	247° 39' 33"	99,40%
11:00	325° 45' 21"	-0° 22' 38"	328° 08' 37"	-13° 17' 20"	55' 48"	15' 12,12"	247° 42' 59"	99,46%
12:00	326° 16' 52"	-0° 19' 44"	328° 38' 03"	-13° 03' 56"	55' 49"	15' 12,47"	247° 47' 48"	99,52%
13:00	326° 48' 23"	-0° 16' 49"	329° 07' 27"	-12° 50' 28"	55' 50"	15' 12,82"	247° 54' 15"	99,58%
14:00	327° 19' 57"	-0° 13' 54"	329° 36' 50"	-12° 36' 55"	55' 51"	15' 13,17"	248° 02' 39"	99,63%
15:00	327° 51' 32"	-0° 11' 00"	330° 06' 10"	-12° 23' 19"	55' 53"	15' 13,52"	248° 13' 24"	99,68%
16:00	328° 23' 08"	-0° 08' 04"	330° 35' 29"	-12° 09' 40"	55' 54"	15' 13,87"	248° 27' 04"	99,73%
17:00	328° 54' 46"	-0° 05' 09"	331° 04' 47"	-11° 55' 56"	55' 55"	15' 14,22"	248° 44' 23"	99,77%
18:00	329° 26' 25"	-0° 02' 14"	331° 34' 03"	-11° 42' 09"	55' 57"	15' 14,57"	249° 06' 23"	99,81%
19:00	329° 58' 06"	0° 00' 42"	332° 03' 17"	-11° 28' 18"	55' 58"	15' 14,93"	249° 34' 31"	99,84%
20:00	330° 29' 48"	0° 03' 38"	332° 32' 30"	-11° 14' 24"	55' 59"	15' 15,28"	250° 10' 57"	99,87%
21:00	331° 01' 32"	0° 06' 34"	333° 01' 41"	-11° 00' 26"	56' 00"	15' 15,63"	250° 59' 03"	99,90%
22:00	331° 33' 17"	0° 09' 30"	333° 30' 51"	-10° 46' 24"	56' 02"	15' 15,99"	252° 04' 13"	99,93%
23:00	332° 05' 04"	0° 12' 26"	334° 00' 00"	-10° 32' 20"	56' 03"	15' 16,34"	253° 35' 54"	99,95%
24:00	332° 36' 52"	0° 15' 22"	334° 29' 07"	-10° 18' 12"	56' 04"	15' 16,70"	255° 51' 58"	99,97%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	154° 43' 44"	0,14"	156° 34' 52"	9° 46' 35"	1,0102034	15' 49,94"	23° 26' 17"	-01m 24s
01:00	154° 46' 08"	0,14"	156° 37' 08"	9° 45' 43"	1,0101941	15' 49,95"	23° 26' 17"	-01m 23s
02:00	154° 48' 33"	0,15"	156° 39' 25"	9° 44' 50"	1,0101848	15' 49,95"	23° 26' 17"	-01m 22s
03:00	154° 50' 58"	0,15"	156° 41' 42"	9° 43' 57"	1,0101754	15' 49,96"	23° 26' 17"	-01m 22s
04:00	154° 53' 23"	0,16"	156° 43' 59"	9° 43' 04"	1,0101661	15' 49,97"	23° 26' 17"	-01m 21s
05:00	154° 55' 47"	0,16"	156° 46' 15"	9° 42' 11"	1,0101568	15' 49,98"	23° 26' 17"	-01m 20s
06:00	154° 58' 12"	0,17"	156° 48' 32"	9° 41' 18"	1,0101475	15' 49,99"	23° 26' 17"	-01m 20s
07:00	155° 00' 37"	0,18"	156° 50' 49"	9° 40' 25"	1,0101381	15' 50,00"	23° 26' 17"	-01m 19s
08:00	155° 03' 02"	0,18"	156° 53' 06"	9° 39' 32"	1,0101288	15' 50,01"	23° 26' 17"	-01m 18s
09:00	155° 05' 27"	0,19"	156° 55' 22"	9° 38' 39"	1,0101194	15' 50,02"	23° 26' 17"	-01m 17s
10:00	155° 07' 52"	0,19"	156° 57' 39"	9° 37' 46"	1,0101101	15' 50,03"	23° 26' 17"	-01m 17s
11:00	155° 10' 16"	0,20"	156° 59' 56"	9° 36' 53"	1,0101008	15' 50,03"	23° 26' 17"	-01m 16s
12:00	155° 12' 41"	0,20"	157° 02' 12"	9° 36' 00"	1,0100914	15' 50,04"	23° 26' 17"	-01m 15s
13:00	155° 15' 06"	0,21"	157° 04' 29"	9° 35' 07"	1,0100821	15' 50,05"	23° 26' 17"	-01m 14s
14:00	155° 17' 31"	0,21"	157° 06' 46"	9° 34' 14"	1,0100727	15' 50,06"	23° 26' 17"	-01m 14s
15:00	155° 19' 56"	0,22"	157° 09' 02"	9° 33' 21"	1,0100634	15' 50,07"	23° 26' 17"	-01m 13s
16:00	155° 22' 20"	0,22"	157° 11' 19"	9° 32' 28"	1,0100540	15' 50,08"	23° 26' 17"	-01m 12s
17:00	155° 24' 45"	0,23"	157° 13' 36"	9° 31' 35"	1,0100446	15' 50,09"	23° 26' 17"	-01m 11s
18:00	155° 27' 10"	0,24"	157° 15' 52"	9° 30' 42"	1,0100353	15' 50,10"	23° 26' 17"	-01m 11s
19:00	155° 29' 35"	0,24"	157° 18' 09"	9° 29' 49"	1,0100259	15' 50,10"	23° 26' 17"	-01m 10s
20:00	155° 32' 00"	0,25"	157° 20' 26"	9° 28' 55"	1,0100165	15' 50,11"	23° 26' 17"	-01m 09s
21:00	155° 34' 25"	0,25"	157° 22' 42"	9° 28' 02"	1,0100072	15' 50,12"	23° 26' 17"	-01m 08s
22:00	155° 36' 49"	0,26"	157° 24' 59"	9° 27' 09"	1,0099978	15' 50,13"	23° 26' 17"	-01m 08s
23:00	155° 39' 14"	0,26"	157° 27' 15"	9° 26' 16"	1,0099884	15' 50,14"	23° 26' 17"	-01m 07s
24:00	155° 41' 39"	0,27"	157° 29' 32"	9° 25' 23"	1,0099790	15' 50,15"	23° 26' 17"	-01m 06s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	332° 36' 52"	0° 15' 22"	334° 29' 07"	-10° 18' 12"	56' 04"	15' 16,70"	255° 51' 58"	99,97%
01:00	333° 08' 41"	0° 18' 18"	334° 58' 13"	-10° 04' 00"	56' 06"	15' 17,05"	259° 30' 34"	99,98%
02:00	333° 40' 33"	0° 21' 14"	335° 27' 18"	-9° 49' 46"	56' 07"	15' 17,41"	266° 07' 50"	99,99%
03:00	334° 12' 25"	0° 24' 11"	335° 56' 21"	-9° 35' 28"	56' 08"	15' 17,76"	280° 48' 10"	100,00%
04:00	334° 44' 20"	0° 27' 07"	336° 25' 24"	-9° 21' 07"	56' 10"	15' 18,12"	320° 09' 46"	100,00%
05:00	335° 16' 15"	0° 30' 03"	336° 54' 26"	-9° 06' 44"	56' 11"	15' 18,47"	12° 47' 34"	100,00%
06:00	335° 48' 13"	0° 32' 59"	337° 23' 26"	-8° 52' 17"	56' 12"	15' 18,83"	35° 02' 44"	99,99%
07:00	336° 20' 12"	0° 35' 55"	337° 52' 26"	-8° 37' 47"	56' 14"	15' 19,19"	44° 04' 59"	99,98%
08:00	336° 52' 12"	0° 38' 52"	338° 21' 24"	-8° 23' 15"	56' 15"	15' 19,54"	48° 42' 40"	99,97%
09:00	337° 24' 14"	0° 41' 48"	338° 50' 22"	-8° 08' 40"	56' 16"	15' 19,90"	51° 28' 22"	99,96%
10:00	337° 56' 17"	0° 44' 44"	339° 19' 19"	-7° 54' 02"	56' 17"	15' 20,26"	53° 17' 20"	99,94%
11:00	338° 28' 22"	0° 47' 40"	339° 48' 16"	-7° 39' 21"	56' 19"	15' 20,61"	54° 33' 52"	99,91%
12:00	339° 00' 28"	0° 50' 35"	340° 17' 11"	-7° 24' 38"	56' 20"	15' 20,97"	55° 30' 11"	99,89%
13:00	339° 32' 36"	0° 53' 31"	340° 46' 07"	-7° 09' 52"	56' 21"	15' 21,33"	56° 13' 07"	99,85%
14:00	340° 04' 46"	0° 56' 26"	341° 15' 01"	-6° 55' 04"	56' 23"	15' 21,69"	56° 46' 45"	99,82%
15:00	340° 36' 57"	0° 59' 22"	341° 43' 55"	-6° 40' 13"	56' 24"	15' 22,04"	57° 13' 39"	99,78%
16:00	341° 09' 09"	1° 02' 17"	342° 12' 49"	-6° 25' 20"	56' 25"	15' 22,40"	57° 35' 34"	99,74%
17:00	341° 41' 23"	1° 05' 12"	342° 41' 42"	-6° 10' 24"	56' 27"	15' 22,76"	57° 53' 41"	99,69%
18:00	342° 13' 39"	1° 08' 07"	343° 10' 35"	-5° 55' 27"	56' 28"	15' 23,11"	58° 08' 51"	99,64%
19:00	342° 45' 56"	1° 11' 01"	343° 39' 28"	-5° 40' 27"	56' 29"	15' 23,47"	58° 21' 41"	99,59%
20:00	343° 18' 14"	1° 13' 55"	344° 08' 20"	-5° 25' 25"	56' 31"	15' 23,82"	58° 32' 38"	99,53%
21:00	343° 50' 34"	1° 16' 49"	344° 37' 13"	-5° 10' 21"	56' 32"	15' 24,18"	58° 42' 06"	99,47%
22:00	344° 22' 56"	1° 19' 43"	345° 06' 05"	-4° 55' 16"	56' 33"	15' 24,54"	58° 50' 18"	99,41%
23:00	344° 55' 19"	1° 22' 36"	345° 34' 57"	-4° 40' 08"	56' 34"	15' 24,89"	58° 57' 30"	99,34%
24:00	345° 27' 44"	1° 25' 30"	346° 03' 49"	-4° 24' 58"	56' 36"	15' 25,25"	59° 03' 51"	99,26%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	155° 41' 39"	0,27"	157° 29' 32"	9° 25' 23"	1,0099790	15' 50,15"	23° 26' 17"	-01m 06s
01:00	155° 44' 04"	0,27"	157° 31' 48"	9° 24' 29"	1,0099697	15' 50,16"	23° 26' 17"	-01m 05s
02:00	155° 46' 29"	0,28"	157° 34' 05"	9° 23' 36"	1,0099603	15' 50,17"	23° 26' 17"	-01m 05s
03:00	155° 48' 54"	0,28"	157° 36' 21"	9° 22' 43"	1,0099509	15' 50,17"	23° 26' 17"	-01m 04s
04:00	155° 51' 19"	0,29"	157° 38' 38"	9° 21' 50"	1,0099415	15' 50,18"	23° 26' 17"	-01m 03s
05:00	155° 53' 43"	0,29"	157° 40' 55"	9° 20' 56"	1,0099321	15' 50,19"	23° 26' 17"	-01m 02s
06:00	155° 56' 08"	0,30"	157° 43' 11"	9° 20' 03"	1,0099227	15' 50,20"	23° 26' 17"	-01m 02s
07:00	155° 58' 33"	0,30"	157° 45' 28"	9° 19' 10"	1,0099133	15' 50,21"	23° 26' 17"	-01m 01s
08:00	156° 00' 58"	0,31"	157° 47' 44"	9° 18' 16"	1,0099039	15' 50,22"	23° 26' 17"	-01m 00s
09:00	156° 03' 23"	0,31"	157° 50' 01"	9° 17' 23"	1,0098945	15' 50,23"	23° 26' 17"	-00m 59s
10:00	156° 05' 48"	0,32"	157° 52' 17"	9° 16' 30"	1,0098851	15' 50,24"	23° 26' 17"	-00m 59s
11:00	156° 08' 13"	0,32"	157° 54' 33"	9° 15' 36"	1,0098757	15' 50,25"	23° 26' 17"	-00m 58s
12:00	156° 10' 38"	0,33"	157° 56' 50"	9° 14' 43"	1,0098663	15' 50,25"	23° 26' 17"	-00m 57s
13:00	156° 13' 02"	0,34"	157° 59' 06"	9° 13' 49"	1,0098569	15' 50,26"	23° 26' 17"	-00m 56s
14:00	156° 15' 27"	0,34"	158° 01' 23"	9° 12' 56"	1,0098474	15' 50,27"	23° 26' 17"	-00m 56s
15:00	156° 17' 52"	0,35"	158° 03' 39"	9° 12' 03"	1,0098380	15' 50,28"	23° 26' 17"	-00m 55s
16:00	156° 20' 17"	0,35"	158° 05' 56"	9° 11' 09"	1,0098286	15' 50,29"	23° 26' 17"	-00m 54s
17:00	156° 22' 42"	0,36"	158° 08' 12"	9° 10' 16"	1,0098192	15' 50,30"	23° 26' 17"	-00m 53s
18:00	156° 25' 07"	0,36"	158° 10' 28"	9° 09' 22"	1,0098097	15' 50,31"	23° 26' 17"	-00m 52s
19:00	156° 27' 32"	0,37"	158° 12' 45"	9° 08' 29"	1,0098003	15' 50,32"	23° 26' 17"	-00m 52s
20:00	156° 29' 57"	0,37"	158° 15' 01"	9° 07' 35"	1,0097909	15' 50,33"	23° 26' 17"	-00m 51s
21:00	156° 32' 22"	0,38"	158° 17' 18"	9° 06' 42"	1,0097814	15' 50,33"	23° 26' 17"	-00m 50s
22:00	156° 34' 47"	0,38"	158° 19' 34"	9° 05' 48"	1,0097720	15' 50,34"	23° 26' 17"	-00m 49s
23:00	156° 37' 12"	0,38"	158° 21' 50"	9° 04' 54"	1,0097625	15' 50,35"	23° 26' 17"	-00m 49s
24:00	156° 39' 36"	0,39"	158° 24' 07"	9° 04' 01"	1,0097531	15' 50,36"	23° 26' 17"	-00m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	345° 27' 44"	1° 25' 30"	346° 03' 49"	-4° 24' 58"	56' 36"	15' 25,25"	59° 03' 51"	99,26%
01:00	346° 00' 10"	1° 28' 22"	346° 32' 42"	-4° 09' 47"	56' 37"	15' 25,60"	59° 09' 29"	99,19%
02:00	346° 32' 38"	1° 31' 15"	347° 01' 34"	-3° 54' 34"	56' 38"	15' 25,96"	59° 14' 32"	99,11%
03:00	347° 05' 07"	1° 34' 07"	347° 30' 27"	-3° 39' 19"	56' 40"	15' 26,31"	59° 19' 05"	99,02%
04:00	347° 37' 38"	1° 36' 58"	347° 59' 20"	-3° 24' 02"	56' 41"	15' 26,66"	59° 23' 13"	98,93%
05:00	348° 10' 10"	1° 39' 50"	348° 28' 14"	-3° 08' 44"	56' 42"	15' 27,02"	59° 27' 00"	98,84%
06:00	348° 42' 44"	1° 42' 41"	348° 57' 07"	-2° 53' 25"	56' 44"	15' 27,37"	59° 30' 29"	98,75%
07:00	349° 15' 19"	1° 45' 31"	349° 26' 02"	-2° 38' 04"	56' 45"	15' 27,72"	59° 33' 43"	98,65%
08:00	349° 47' 56"	1° 48' 21"	349° 54' 57"	-2° 22' 42"	56' 46"	15' 28,07"	59° 36' 44"	98,54%
09:00	350° 20' 34"	1° 51' 11"	350° 23' 52"	-2° 07' 19"	56' 47"	15' 28,43"	59° 39' 35"	98,44%
10:00	350° 53' 14"	1° 54' 00"	350° 52' 48"	-1° 51' 54"	56' 49"	15' 28,78"	59° 42' 18"	98,33%
11:00	351° 25' 55"	1° 56' 48"	351° 21' 45"	-1° 36' 28"	56' 50"	15' 29,13"	59° 44' 53"	98,21%
12:00	351° 58' 38"	1° 59' 36"	351° 50' 43"	-1° 21' 01"	56' 51"	15' 29,48"	59° 47' 23"	98,09%
13:00	352° 31' 23"	2° 02' 24"	352° 19' 41"	-1° 05' 34"	56' 53"	15' 29,83"	59° 49' 49"	97,97%
14:00	353° 04' 08"	2° 05' 10"	352° 48' 41"	-0° 50' 05"	56' 54"	15' 30,17"	59° 52' 12"	97,84%
15:00	353° 36' 56"	2° 07' 57"	353° 17' 41"	-0° 34' 35"	56' 55"	15' 30,52"	59° 54' 32"	97,71%
16:00	354° 09' 45"	2° 10' 43"	353° 46' 43"	-0° 19' 05"	56' 56"	15' 30,87"	59° 56' 51"	97,58%
17:00	354° 42' 35"	2° 13' 28"	354° 15' 46"	-0° 03' 34"	56' 58"	15' 31,22"	59° 59' 09"	97,44%
18:00	355° 15' 27"	2° 16' 12"	354° 44' 49"	0° 11' 58"	56' 59"	15' 31,56"	60° 01' 27"	97,30%
19:00	355° 48' 20"	2° 18' 56"	355° 13' 55"	0° 27' 31"	57' 00"	15' 31,91"	60° 03' 46"	97,15%
20:00	356° 21' 15"	2° 21' 40"	355° 43' 01"	0° 43' 04"	57' 01"	15' 32,25"	60° 06' 06"	97,00%
21:00	356° 54' 12"	2° 24' 22"	356° 12' 09"	0° 58' 37"	57' 03"	15' 32,60"	60° 08' 28"	96,85%
22:00	357° 27' 09"	2° 27' 04"	356° 41' 18"	1° 14' 11"	57' 04"	15' 32,94"	60° 10' 52"	96,69%
23:00	358° 00' 09"	2° 29' 45"	357° 10' 29"	1° 29' 45"	57' 05"	15' 33,28"	60° 13' 18"	96,53%
24:00	358° 33' 10"	2° 32' 26"	357° 39' 42"	1° 45' 19"	57' 07"	15' 33,62"	60° 15' 48"	96,37%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	156° 39' 36"	0,39"	158° 24' 07"	9° 04' 01"	1,0097531	15' 50,36"	23° 26' 17"	-00m 48s
01:00	156° 42' 01"	0,39"	158° 26' 23"	9° 03' 07"	1,0097436	15' 50,37"	23° 26' 17"	-00m 47s
02:00	156° 44' 26"	0,40"	158° 28' 39"	9° 02' 14"	1,0097342	15' 50,38"	23° 26' 17"	-00m 46s
03:00	156° 46' 51"	0,40"	158° 30' 56"	9° 01' 20"	1,0097247	15' 50,39"	23° 26' 17"	-00m 46s
04:00	156° 49' 16"	0,41"	158° 33' 12"	9° 00' 26"	1,0097153	15' 50,40"	23° 26' 17"	-00m 45s
05:00	156° 51' 41"	0,41"	158° 35' 28"	8° 59' 33"	1,0097058	15' 50,41"	23° 26' 17"	-00m 44s
06:00	156° 54' 06"	0,42"	158° 37' 45"	8° 58' 39"	1,0096964	15' 50,41"	23° 26' 17"	-00m 43s
07:00	156° 56' 31"	0,42"	158° 40' 01"	8° 57' 45"	1,0096869	15' 50,42"	23° 26' 17"	-00m 42s
08:00	156° 58' 56"	0,43"	158° 42' 17"	8° 56' 52"	1,0096774	15' 50,43"	23° 26' 17"	-00m 42s
09:00	157° 01' 21"	0,43"	158° 44' 34"	8° 55' 58"	1,0096680	15' 50,44"	23° 26' 17"	-00m 41s
10:00	157° 03' 46"	0,44"	158° 46' 50"	8° 55' 04"	1,0096585	15' 50,45"	23° 26' 17"	-00m 40s
11:00	157° 06' 11"	0,44"	158° 49' 06"	8° 54' 10"	1,0096490	15' 50,46"	23° 26' 17"	-00m 39s
12:00	157° 08' 36"	0,45"	158° 51' 22"	8° 53' 17"	1,0096395	15' 50,47"	23° 26' 17"	-00m 39s
13:00	157° 11' 01"	0,45"	158° 53' 39"	8° 52' 23"	1,0096301	15' 50,48"	23° 26' 17"	-00m 38s
14:00	157° 13' 26"	0,45"	158° 55' 55"	8° 51' 29"	1,0096206	15' 50,49"	23° 26' 17"	-00m 37s
15:00	157° 15' 51"	0,46"	158° 58' 11"	8° 50' 35"	1,0096111	15' 50,49"	23° 26' 17"	-00m 36s
16:00	157° 18' 16"	0,46"	159° 00' 27"	8° 49' 41"	1,0096016	15' 50,50"	23° 26' 17"	-00m 36s
17:00	157° 20' 40"	0,47"	159° 02' 43"	8° 48' 48"	1,0095921	15' 50,51"	23° 26' 17"	-00m 35s
18:00	157° 23' 05"	0,47"	159° 05' 00"	8° 47' 54"	1,0095826	15' 50,52"	23° 26' 17"	-00m 34s
19:00	157° 25' 30"	0,48"	159° 07' 16"	8° 47' 00"	1,0095731	15' 50,53"	23° 26' 17"	-00m 33s
20:00	157° 27' 55"	0,48"	159° 09' 32"	8° 46' 06"	1,0095636	15' 50,54"	23° 26' 17"	-00m 32s
21:00	157° 30' 20"	0,48"	159° 11' 48"	8° 45' 12"	1,0095541	15' 50,55"	23° 26' 17"	-00m 32s
22:00	157° 32' 45"	0,49"	159° 14' 04"	8° 44' 18"	1,0095446	15' 50,56"	23° 26' 17"	-00m 31s
23:00	157° 35' 10"	0,49"	159° 16' 21"	8° 43' 24"	1,0095351	15' 50,57"	23° 26' 17"	-00m 30s
24:00	157° 37' 35"	0,50"	159° 18' 37"	8° 42' 30"	1,0095256	15' 50,58"	23° 26' 17"	-00m 29s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	358° 33' 10"	2° 32' 26"	357° 39' 42"	1° 45' 19"	57' 07"	15' 33,62"	60° 15' 48"	96,37%
01:00	359° 06' 12"	2° 35' 06"	358° 08' 56"	2° 00' 54"	57' 08"	15' 33,97"	60° 18' 21"	96,20%
02:00	359° 39' 16"	2° 37' 45"	358° 38' 12"	2° 16' 28"	57' 09"	15' 34,31"	60° 20' 57"	96,03%
03:00	0° 12' 21"	2° 40' 23"	359° 07' 30"	2° 32' 03"	57' 10"	15' 34,65"	60° 23' 38"	95,85%
04:00	0° 45' 28"	2° 43' 00"	359° 36' 49"	2° 47' 37"	57' 12"	15' 34,98"	60° 26' 22"	95,67%
05:00	1° 18' 36"	2° 45' 37"	0° 06' 11"	3° 03' 12"	57' 13"	15' 35,32"	60° 29' 11"	95,49%
06:00	1° 51' 45"	2° 48' 13"	0° 35' 34"	3° 18' 46"	57' 14"	15' 35,66"	60° 32' 05"	95,30%
07:00	2° 24' 56"	2° 50' 48"	1° 05' 00"	3° 34' 20"	57' 15"	15' 35,99"	60° 35' 04"	95,11%
08:00	2° 58' 09"	2° 53' 22"	1° 34' 28"	3° 49' 54"	57' 16"	15' 36,33"	60° 38' 07"	94,91%
09:00	3° 31' 23"	2° 55' 55"	2° 03' 58"	4° 05' 27"	57' 18"	15' 36,66"	60° 41' 16"	94,71%
10:00	4° 04' 39"	2° 58' 27"	2° 33' 30"	4° 21' 00"	57' 19"	15' 37,00"	60° 44' 31"	94,51%
11:00	4° 37' 55"	3° 00' 59"	3° 03' 05"	4° 36' 32"	57' 20"	15' 37,33"	60° 47' 51"	94,30%
12:00	5° 11' 14"	3° 03' 29"	3° 32' 42"	4° 52' 04"	57' 21"	15' 37,66"	60° 51' 17"	94,09%
13:00	5° 44' 34"	3° 05' 59"	4° 02' 22"	5° 07' 35"	57' 23"	15' 37,99"	60° 54' 49"	93,88%
14:00	6° 17' 55"	3° 08' 27"	4° 32' 04"	5° 23' 05"	57' 24"	15' 38,32"	60° 58' 27"	93,66%
15:00	6° 51' 17"	3° 10' 55"	5° 01' 49"	5° 38' 35"	57' 25"	15' 38,65"	61° 02' 11"	93,44%
16:00	7° 24' 42"	3° 13' 22"	5° 31' 37"	5° 54' 03"	57' 26"	15' 38,98"	61° 06' 01"	93,22%
17:00	7° 58' 07"	3° 15' 47"	6° 01' 27"	6° 09' 30"	57' 27"	15' 39,30"	61° 09' 58"	92,99%
18:00	8° 31' 34"	3° 18' 12"	6° 31' 21"	6° 24' 57"	57' 29"	15' 39,63"	61° 14' 01"	92,76%
19:00	9° 05' 02"	3° 20' 36"	7° 01' 17"	6° 40' 22"	57' 30"	15' 39,95"	61° 18' 11"	92,52%
20:00	9° 38' 32"	3° 22' 58"	7° 31' 16"	6° 55' 46"	57' 31"	15' 40,27"	61° 22' 28"	92,28%
21:00	10° 12' 03"	3° 25' 20"	8° 01' 19"	7° 11' 08"	57' 32"	15' 40,60"	61° 26' 51"	92,04%
22:00	10° 45' 36"	3° 27' 40"	8° 31' 24"	7° 26' 29"	57' 33"	15' 40,92"	61° 31' 21"	91,79%
23:00	11° 19' 10"	3° 29' 59"	9° 01' 33"	7° 41' 49"	57' 34"	15' 41,24"	61° 35' 59"	91,54%
24:00	11° 52' 45"	3° 32' 18"	9° 31' 45"	7° 57' 07"	57' 36"	15' 41,56"	61° 40' 43"	91,29%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	157° 37' 35"	0,50"	159° 18' 37"	8° 42' 30"	1,0095256	15' 50,58"	23° 26' 17"	-00m 29s
01:00	157° 40' 00"	0,50"	159° 20' 53"	8° 41' 36"	1,0095161	15' 50,58"	23° 26' 17"	-00m 29s
02:00	157° 42' 25"	0,51"	159° 23' 09"	8° 40' 42"	1,0095065	15' 50,59"	23° 26' 17"	-00m 28s
03:00	157° 44' 50"	0,51"	159° 25' 25"	8° 39' 48"	1,0094970	15' 50,60"	23° 26' 17"	-00m 27s
04:00	157° 47' 15"	0,51"	159° 27' 41"	8° 38' 54"	1,0094875	15' 50,61"	23° 26' 17"	-00m 26s
05:00	157° 49' 40"	0,52"	159° 29' 57"	8° 38' 00"	1,0094780	15' 50,62"	23° 26' 17"	-00m 25s
06:00	157° 52' 05"	0,52"	159° 32' 14"	8° 37' 06"	1,0094684	15' 50,63"	23° 26' 17"	-00m 25s
07:00	157° 54' 30"	0,52"	159° 34' 30"	8° 36' 12"	1,0094589	15' 50,64"	23° 26' 17"	-00m 24s
08:00	157° 56' 55"	0,53"	159° 36' 46"	8° 35' 18"	1,0094494	15' 50,65"	23° 26' 17"	-00m 23s
09:00	157° 59' 20"	0,53"	159° 39' 02"	8° 34' 24"	1,0094398	15' 50,66"	23° 26' 17"	-00m 22s
10:00	158° 01' 45"	0,54"	159° 41' 18"	8° 33' 30"	1,0094303	15' 50,66"	23° 26' 17"	-00m 21s
11:00	158° 04' 10"	0,54"	159° 43' 34"	8° 32' 36"	1,0094207	15' 50,67"	23° 26' 17"	-00m 21s
12:00	158° 06' 35"	0,54"	159° 45' 50"	8° 31' 42"	1,0094112	15' 50,68"	23° 26' 17"	-00m 20s
13:00	158° 09' 01"	0,55"	159° 48' 06"	8° 30' 48"	1,0094016	15' 50,69"	23° 26' 17"	-00m 19s
14:00	158° 11' 26"	0,55"	159° 50' 22"	8° 29' 54"	1,0093921	15' 50,70"	23° 26' 17"	-00m 18s
15:00	158° 13' 51"	0,55"	159° 52' 38"	8° 28' 59"	1,0093825	15' 50,71"	23° 26' 17"	-00m 18s
16:00	158° 16' 16"	0,56"	159° 54' 54"	8° 28' 05"	1,0093730	15' 50,72"	23° 26' 17"	-00m 17s
17:00	158° 18' 41"	0,56"	159° 57' 10"	8° 27' 11"	1,0093634	15' 50,73"	23° 26' 17"	-00m 16s
18:00	158° 21' 06"	0,56"	159° 59' 26"	8° 26' 17"	1,0093539	15' 50,74"	23° 26' 17"	-00m 15s
19:00	158° 23' 31"	0,57"	160° 01' 42"	8° 25' 23"	1,0093443	15' 50,75"	23° 26' 17"	-00m 14s
20:00	158° 25' 56"	0,57"	160° 03' 58"	8° 24' 28"	1,0093347	15' 50,75"	23° 26' 17"	-00m 14s
21:00	158° 28' 21"	0,57"	160° 06' 14"	8° 23' 34"	1,0093251	15' 50,76"	23° 26' 17"	-00m 13s
22:00	158° 30' 46"	0,58"	160° 08' 30"	8° 22' 40"	1,0093156	15' 50,77"	23° 26' 17"	-00m 12s
23:00	158° 33' 11"	0,58"	160° 10' 46"	8° 21' 46"	1,0093060	15' 50,78"	23° 26' 17"	-00m 11s
24:00	158° 35' 36"	0,58"	160° 13' 02"	8° 20' 51"	1,0092964	15' 50,79"	23° 26' 17"	-00m 10s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	11° 52' 45"	3° 32' 18"	9° 31' 45"	7° 57' 07"	57' 36"	15' 41,56"	61° 40' 43"	91,29%
01:00	12° 26' 22"	3° 34' 35"	10° 02' 00"	8° 12' 24"	57' 37"	15' 41,88"	61° 45' 35"	91,03%
02:00	13° 00' 00"	3° 36' 51"	10° 32' 19"	8° 27' 39"	57' 38"	15' 42,19"	61° 50' 33"	90,77%
03:00	13° 33' 39"	3° 39' 05"	11° 02' 41"	8° 42' 52"	57' 39"	15' 42,51"	61° 55' 39"	90,51%
04:00	14° 07' 20"	3° 41' 19"	11° 33' 07"	8° 58' 03"	57' 40"	15' 42,82"	62° 00' 53"	90,24%
05:00	14° 41' 02"	3° 43' 31"	12° 03' 36"	9° 13' 12"	57' 41"	15' 43,14"	62° 06' 14"	89,97%
06:00	15° 14' 46"	3° 45' 42"	12° 34' 09"	9° 28' 19"	57' 43"	15' 43,45"	62° 11' 42"	89,69%
07:00	15° 48' 31"	3° 47' 52"	13° 04' 46"	9° 43' 24"	57' 44"	15' 43,76"	62° 17' 18"	89,42%
08:00	16° 22' 17"	3° 50' 01"	13° 35' 27"	9° 58' 27"	57' 45"	15' 44,07"	62° 23' 01"	89,13%
09:00	16° 56' 05"	3° 52' 08"	14° 06' 12"	10° 13' 28"	57' 46"	15' 44,38"	62° 28' 52"	88,85%
10:00	17° 29' 54"	3° 54' 14"	14° 37' 00"	10° 28' 26"	57' 47"	15' 44,69"	62° 34' 51"	88,56%
11:00	18° 03' 44"	3° 56' 19"	15° 07' 53"	10° 43' 22"	57' 48"	15' 45,00"	62° 40' 57"	88,27%
12:00	18° 37' 36"	3° 58' 23"	15° 38' 50"	10° 58' 15"	57' 49"	15' 45,30"	62° 47' 12"	87,97%
13:00	19° 11' 29"	4° 00' 25"	16° 09' 51"	11° 13' 05"	57' 51"	15' 45,61"	62° 53' 34"	87,67%
14:00	19° 45' 23"	4° 02' 26"	16° 40' 56"	11° 27' 53"	57' 52"	15' 45,91"	63° 00' 04"	87,37%
15:00	20° 19' 19"	4° 04' 26"	17° 12' 05"	11° 42' 38"	57' 53"	15' 46,21"	63° 06' 42"	87,07%
16:00	20° 53' 16"	4° 06' 24"	17° 43' 19"	11° 57' 21"	57' 54"	15' 46,51"	63° 13' 28"	86,76%
17:00	21° 27' 14"	4° 08' 21"	18° 14' 37"	12° 12' 00"	57' 55"	15' 46,81"	63° 20' 22"	86,45%
18:00	22° 01' 14"	4° 10' 16"	18° 46' 00"	12° 26' 36"	57' 56"	15' 47,11"	63° 27' 24"	86,13%
19:00	22° 35' 14"	4° 12' 10"	19° 17' 28"	12° 41' 09"	57' 57"	15' 47,41"	63° 34' 34"	85,81%
20:00	23° 09' 17"	4° 14' 03"	19° 49' 00"	12° 55' 39"	57' 58"	15' 47,70"	63° 41' 52"	85,49%
21:00	23° 43' 20"	4° 15' 54"	20° 20' 36"	13° 10' 05"	57' 59"	15' 48,00"	63° 49' 19"	85,17%
22:00	24° 17' 25"	4° 17' 44"	20° 52' 18"	13° 24' 28"	58' 00"	15' 48,29"	63° 56' 53"	84,84%
23:00	24° 51' 31"	4° 19' 32"	21° 24' 04"	13° 38' 48"	58' 01"	15' 48,59"	64° 04' 36"	84,51%
24:00	25° 25' 38"	4° 21' 19"	21° 55' 55"	13° 53' 04"	58' 03"	15' 48,88"	64° 12' 27"	84,17%

01 September 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	158° 35' 36"	0,58"	160° 13' 02"	8° 20' 51"	1,0092964	15' 50,79"	23° 26' 17"	-00m 10s
01:00	158° 38' 01"	0,59"	160° 15' 18"	8° 19' 57"	1,0092868	15' 50,80"	23° 26' 17"	-00m 10s
02:00	158° 40' 26"	0,59"	160° 17' 34"	8° 19' 03"	1,0092772	15' 50,81"	23° 26' 17"	-00m 09s
03:00	158° 42' 51"	0,59"	160° 19' 50"	8° 18' 08"	1,0092676	15' 50,82"	23° 26' 17"	-00m 08s
04:00	158° 45' 16"	0,60"	160° 22' 06"	8° 17' 14"	1,0092580	15' 50,83"	23° 26' 17"	-00m 07s
05:00	158° 47' 41"	0,60"	160° 24' 22"	8° 16' 20"	1,0092484	15' 50,84"	23° 26' 17"	-00m 06s
06:00	158° 50' 07"	0,60"	160° 26' 38"	8° 15' 25"	1,0092388	15' 50,85"	23° 26' 17"	-00m 06s
07:00	158° 52' 32"	0,60"	160° 28' 54"	8° 14' 31"	1,0092292	15' 50,85"	23° 26' 17"	-00m 05s
08:00	158° 54' 57"	0,61"	160° 31' 10"	8° 13' 37"	1,0092196	15' 50,86"	23° 26' 17"	-00m 04s
09:00	158° 57' 22"	0,61"	160° 33' 26"	8° 12' 42"	1,0092100	15' 50,87"	23° 26' 17"	-00m 03s
10:00	158° 59' 47"	0,61"	160° 35' 41"	8° 11' 48"	1,0092004	15' 50,88"	23° 26' 17"	-00m 02s
11:00	159° 02' 12"	0,61"	160° 37' 57"	8° 10' 53"	1,0091908	15' 50,89"	23° 26' 17"	-00m 02s
12:00	159° 04' 37"	0,62"	160° 40' 13"	8° 09' 59"	1,0091812	15' 50,90"	23° 26' 17"	-00m 01s
13:00	159° 07' 02"	0,62"	160° 42' 29"	8° 09' 04"	1,0091715	15' 50,91"	23° 26' 17"	-00m 00s
14:00	159° 09' 27"	0,62"	160° 44' 45"	8° 08' 10"	1,0091619	15' 50,92"	23° 26' 17"	00m 01s
15:00	159° 11' 52"	0,62"	160° 47' 01"	8° 07' 15"	1,0091523	15' 50,93"	23° 26' 17"	00m 01s
16:00	159° 14' 18"	0,63"	160° 49' 17"	8° 06' 21"	1,0091427	15' 50,94"	23° 26' 17"	00m 02s
17:00	159° 16' 43"	0,63"	160° 51' 32"	8° 05' 26"	1,0091330	15' 50,95"	23° 26' 17"	00m 03s
18:00	159° 19' 08"	0,63"	160° 53' 48"	8° 04' 32"	1,0091234	15' 50,95"	23° 26' 17"	00m 04s
19:00	159° 21' 33"	0,63"	160° 56' 04"	8° 03' 37"	1,0091137	15' 50,96"	23° 26' 17"	00m 05s
20:00	159° 23' 58"	0,63"	160° 58' 20"	8° 02' 43"	1,0091041	15' 50,97"	23° 26' 17"	00m 06s
21:00	159° 26' 23"	0,64"	161° 00' 36"	8° 01' 48"	1,0090944	15' 50,98"	23° 26' 17"	00m 06s
22:00	159° 28' 48"	0,64"	161° 02' 52"	8° 00' 54"	1,0090848	15' 50,99"	23° 26' 17"	00m 07s
23:00	159° 31' 14"	0,64"	161° 05' 07"	7° 59' 59"	1,0090751	15' 51,00"	23° 26' 17"	00m 08s
24:00	159° 33' 39"	0,64"	161° 07' 23"	7° 59' 04"	1,0090655	15' 51,01"	23° 26' 17"	00m 09s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	25° 25' 38"	4° 21' 19"	21° 55' 55"	13° 53' 04"	58' 03"	15' 48,88"	64° 12' 27"	84,17%
01:00	25° 59' 46"	4° 23' 04"	22° 27' 52"	14° 07' 16"	58' 04"	15' 49,17"	64° 20' 27"	83,84%
02:00	26° 33' 56"	4° 24' 48"	22° 59' 53"	14° 21' 25"	58' 05"	15' 49,46"	64° 28' 34"	83,50%
03:00	27° 08' 07"	4° 26' 30"	23° 31' 59"	14° 35' 29"	58' 06"	15' 49,74"	64° 36' 50"	83,15%
04:00	27° 42' 19"	4° 28' 11"	24° 04' 10"	14° 49' 30"	58' 07"	15' 50,03"	64° 45' 15"	82,81%
05:00	28° 16' 33"	4° 29' 50"	24° 36' 27"	15° 03' 27"	58' 08"	15' 50,32"	64° 53' 48"	82,46%
06:00	28° 50' 48"	4° 31' 28"	25° 08' 49"	15° 17' 19"	58' 09"	15' 50,60"	65° 02' 29"	82,11%
07:00	29° 25' 04"	4° 33' 04"	25° 41' 16"	15° 31' 07"	58' 10"	15' 50,88"	65° 11' 19"	81,75%
08:00	29° 59' 21"	4° 34' 39"	26° 13' 48"	15° 44' 51"	58' 11"	15' 51,16"	65° 20' 17"	81,39%
09:00	30° 33' 39"	4° 36' 11"	26° 46' 26"	15° 58' 31"	58' 12"	15' 51,44"	65° 29' 23"	81,03%
10:00	31° 07' 59"	4° 37' 43"	27° 19' 09"	16° 12' 06"	58' 13"	15' 51,72"	65° 38' 39"	80,67%
11:00	31° 42' 19"	4° 39' 13"	27° 51' 58"	16° 25' 36"	58' 14"	15' 52,00"	65° 48' 02"	80,30%
12:00	32° 16' 41"	4° 40' 41"	28° 24' 53"	16° 39' 02"	58' 15"	15' 52,28"	65° 57' 34"	79,93%
13:00	32° 51' 05"	4° 42' 07"	28° 57' 53"	16° 52' 23"	58' 16"	15' 52,55"	66° 07' 15"	79,56%
14:00	33° 25' 29"	4° 43' 32"	29° 30' 58"	17° 05' 39"	58' 17"	15' 52,83"	66° 17' 04"	79,18%
15:00	33° 59' 55"	4° 44' 55"	30° 04' 10"	17° 18' 50"	58' 18"	15' 53,10"	66° 27' 02"	78,81%
16:00	34° 34' 21"	4° 46' 17"	30° 37' 27"	17° 31' 56"	58' 19"	15' 53,37"	66° 37' 09"	78,43%
17:00	35° 08' 49"	4° 47' 37"	31° 10' 50"	17° 44' 57"	58' 20"	15' 53,64"	66° 47' 23"	78,04%
18:00	35° 43' 18"	4° 48' 55"	31° 44' 18"	17° 57' 52"	58' 21"	15' 53,91"	66° 57' 47"	77,66%
19:00	36° 17' 48"	4° 50' 11"	32° 17' 53"	18° 10' 42"	58' 22"	15' 54,18"	67° 08' 19"	77,27%
20:00	36° 52' 20"	4° 51' 26"	32° 51' 33"	18° 23' 27"	58' 23"	15' 54,44"	67° 19' 00"	76,88%
21:00	37° 26' 52"	4° 52' 39"	33° 25' 20"	18° 36' 06"	58' 24"	15' 54,71"	67° 29' 49"	76,48%
22:00	38° 01' 26"	4° 53' 50"	33° 59' 12"	18° 48' 39"	58' 25"	15' 54,97"	67° 40' 47"	76,09%
23:00	38° 36' 00"	4° 55' 00"	34° 33' 11"	19° 01' 07"	58' 26"	15' 55,23"	67° 51' 53"	75,69%
24:00	39° 10' 36"	4° 56' 08"	35° 07' 15"	19° 13' 29"	58' 27"	15' 55,49"	68° 03' 08"	75,29%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	159° 33' 39"	0,64"	161° 07' 23"	7° 59' 04"	1,0090655	15' 51,01"	23° 26' 17"	00m 09s
01:00	159° 36' 04"	0,64"	161° 09' 39"	7° 58' 10"	1,0090558	15' 51,02"	23° 26' 17"	00m 10s
02:00	159° 38' 29"	0,65"	161° 11' 55"	7° 57' 15"	1,0090461	15' 51,03"	23° 26' 17"	00m 10s
03:00	159° 40' 54"	0,65"	161° 14' 11"	7° 56' 20"	1,0090365	15' 51,04"	23° 26' 17"	00m 11s
04:00	159° 43' 19"	0,65"	161° 16' 26"	7° 55' 26"	1,0090268	15' 51,05"	23° 26' 17"	00m 12s
05:00	159° 45' 44"	0,65"	161° 18' 42"	7° 54' 31"	1,0090171	15' 51,05"	23° 26' 17"	00m 13s
06:00	159° 48' 10"	0,65"	161° 20' 58"	7° 53' 36"	1,0090074	15' 51,06"	23° 26' 17"	00m 14s
07:00	159° 50' 35"	0,65"	161° 23' 14"	7° 52' 42"	1,0089978	15' 51,07"	23° 26' 17"	00m 14s
08:00	159° 53' 00"	0,66"	161° 25' 29"	7° 51' 47"	1,0089881	15' 51,08"	23° 26' 17"	00m 15s
09:00	159° 55' 25"	0,66"	161° 27' 45"	7° 50' 52"	1,0089784	15' 51,09"	23° 26' 17"	00m 16s
10:00	159° 57' 50"	0,66"	161° 30' 01"	7° 49' 57"	1,0089687	15' 51,10"	23° 26' 17"	00m 17s
11:00	160° 00' 16"	0,66"	161° 32' 17"	7° 49' 03"	1,0089590	15' 51,11"	23° 26' 17"	00m 18s
12:00	160° 02' 41"	0,66"	161° 34' 32"	7° 48' 08"	1,0089493	15' 51,12"	23° 26' 17"	00m 18s
13:00	160° 05' 06"	0,66"	161° 36' 48"	7° 47' 13"	1,0089396	15' 51,13"	23° 26' 17"	00m 19s
14:00	160° 07' 31"	0,66"	161° 39' 04"	7° 46' 18"	1,0089299	15' 51,14"	23° 26' 17"	00m 20s
15:00	160° 09' 56"	0,66"	161° 41' 19"	7° 45' 23"	1,0089202	15' 51,15"	23° 26' 17"	00m 21s
16:00	160° 12' 22"	0,67"	161° 43' 35"	7° 44' 29"	1,0089104	15' 51,15"	23° 26' 17"	00m 22s
17:00	160° 14' 47"	0,67"	161° 45' 51"	7° 43' 34"	1,0089007	15' 51,16"	23° 26' 17"	00m 22s
18:00	160° 17' 12"	0,67"	161° 48' 06"	7° 42' 39"	1,0088910	15' 51,17"	23° 26' 17"	00m 23s
19:00	160° 19' 37"	0,67"	161° 50' 22"	7° 41' 44"	1,0088813	15' 51,18"	23° 26' 17"	00m 24s
20:00	160° 22' 02"	0,67"	161° 52' 38"	7° 40' 49"	1,0088716	15' 51,19"	23° 26' 17"	00m 25s
21:00	160° 24' 28"	0,67"	161° 54' 53"	7° 39' 54"	1,0088618	15' 51,20"	23° 26' 17"	00m 26s
22:00	160° 26' 53"	0,67"	161° 57' 09"	7° 38' 59"	1,0088521	15' 51,21"	23° 26' 17"	00m 27s
23:00	160° 29' 18"	0,67"	161° 59' 25"	7° 38' 04"	1,0088423	15' 51,22"	23° 26' 17"	00m 27s
24:00	160° 31' 43"	0,67"	162° 01' 40"	7° 37' 09"	1,0088326	15' 51,23"	23° 26' 17"	00m 28s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	39° 10' 36"	4° 56' 08"	35° 07' 15"	19° 13' 29"	58' 27"	15' 55,49"	68° 03' 08"	75,29%
01:00	39° 45' 13"	4° 57' 14"	35° 41' 26"	19° 25' 45"	58' 28"	15' 55,75"	68° 14' 32"	74,89%
02:00	40° 19' 51"	4° 58' 18"	36° 15' 43"	19° 37' 54"	58' 29"	15' 56,01"	68° 26' 04"	74,48%
03:00	40° 54' 30"	4° 59' 20"	36° 50' 06"	19° 49' 58"	58' 30"	15' 56,27"	68° 37' 45"	74,07%
04:00	41° 29' 11"	5° 00' 21"	37° 24' 35"	20° 01' 55"	58' 31"	15' 56,52"	68° 49' 34"	73,66%
05:00	42° 03' 52"	5° 01' 20"	37° 59' 10"	20° 13' 46"	58' 32"	15' 56,78"	69° 01' 32"	73,25%
06:00	42° 38' 34"	5° 02' 17"	38° 33' 52"	20° 25' 31"	58' 32"	15' 57,03"	69° 13' 38"	72,83%
07:00	43° 13' 18"	5° 03' 12"	39° 08' 40"	20° 37' 08"	58' 33"	15' 57,28"	69° 25' 53"	72,42%
08:00	43° 48' 02"	5° 04' 06"	39° 43' 34"	20° 48' 40"	58' 34"	15' 57,53"	69° 38' 16"	72,00%
09:00	44° 22' 48"	5° 04' 57"	40° 18' 34"	21° 00' 04"	58' 35"	15' 57,78"	69° 50' 48"	71,58%
10:00	44° 57' 35"	5° 05' 47"	40° 53' 41"	21° 11' 22"	58' 36"	15' 58,03"	70° 03' 28"	71,15%
11:00	45° 32' 22"	5° 06' 35"	41° 28' 54"	21° 22' 32"	58' 37"	15' 58,27"	70° 16' 16"	70,73%
12:00	46° 07' 11"	5° 07' 21"	42° 04' 13"	21° 33' 36"	58' 38"	15' 58,52"	70° 29' 13"	70,30%
13:00	46° 42' 01"	5° 08' 05"	42° 39' 39"	21° 44' 32"	58' 39"	15' 58,76"	70° 42' 18"	69,87%
14:00	47° 16' 52"	5° 08' 48"	43° 15' 11"	21° 55' 21"	58' 40"	15' 59,00"	70° 55' 31"	69,44%
15:00	47° 51' 43"	5° 09' 28"	43° 50' 49"	22° 06' 03"	58' 41"	15' 59,24"	71° 08' 53"	69,00%
16:00	48° 26' 36"	5° 10' 07"	44° 26' 34"	22° 16' 37"	58' 41"	15' 59,48"	71° 22' 23"	68,57%
17:00	49° 01' 30"	5° 10' 43"	45° 02' 25"	22° 27' 04"	58' 42"	16' 00,00"	71° 36' 01"	68,13%
18:00	49° 36' 25"	5° 11' 18"	45° 38' 22"	22° 37' 23"	58' 43"	16' 00,00"	71° 49' 47"	67,69%
19:00	50° 11' 21"	5° 11' 51"	46° 14' 26"	22° 47' 34"	58' 44"	16' 00,19"	72° 03' 41"	67,25%
20:00	50° 46' 17"	5° 12' 22"	46° 50' 36"	22° 57' 38"	58' 45"	16' 00,42"	72° 17' 43"	66,81%
21:00	51° 21' 15"	5° 12' 51"	47° 26' 52"	23° 07' 33"	58' 46"	16' 00,65"	72° 31' 53"	66,37%
22:00	51° 56' 14"	5° 13' 18"	48° 03' 14"	23° 17' 21"	58' 47"	16' 00,88"	72° 46' 11"	65,92%
23:00	52° 31' 13"	5° 13' 43"	48° 39' 43"	23° 27' 00"	58' 47"	16' 01,11"	73° 00' 37"	65,47%
24:00	53° 06' 14"	5° 14' 07"	49° 16' 18"	23° 36' 31"	58' 48"	16' 01,34"	73° 15' 11"	65,02%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	160° 31' 43"	0,67"	162° 01' 40"	7° 37' 09"	1,0088326	15' 51,23"	23° 26' 17"	00m 28s
01:00	160° 34' 09"	0,67"	162° 03' 56"	7° 36' 14"	1,0088228	15' 51,24"	23° 26' 17"	00m 29s
02:00	160° 36' 34"	0,67"	162° 06' 12"	7° 35' 19"	1,0088131	15' 51,25"	23° 26' 17"	00m 30s
03:00	160° 38' 59"	0,67"	162° 08' 27"	7° 34' 24"	1,0088033	15' 51,26"	23° 26' 17"	00m 31s
04:00	160° 41' 24"	0,67"	162° 10' 43"	7° 33' 29"	1,0087936	15' 51,26"	23° 26' 17"	00m 31s
05:00	160° 43' 49"	0,67"	162° 12' 58"	7° 32' 34"	1,0087838	15' 51,27"	23° 26' 17"	00m 32s
06:00	160° 46' 15"	0,67"	162° 15' 14"	7° 31' 39"	1,0087740	15' 51,28"	23° 26' 17"	00m 33s
07:00	160° 48' 40"	0,67"	162° 17' 30"	7° 30' 44"	1,0087643	15' 51,29"	23° 26' 17"	00m 34s
08:00	160° 51' 05"	0,67"	162° 19' 45"	7° 29' 49"	1,0087545	15' 51,30"	23° 26' 17"	00m 35s
09:00	160° 53' 31"	0,67"	162° 22' 01"	7° 28' 54"	1,0087447	15' 51,31"	23° 26' 17"	00m 35s
10:00	160° 55' 56"	0,67"	162° 24' 16"	7° 27' 59"	1,0087349	15' 51,32"	23° 26' 17"	00m 36s
11:00	160° 58' 21"	0,67"	162° 26' 32"	7° 27' 04"	1,0087251	15' 51,33"	23° 26' 17"	00m 37s
12:00	161° 00' 46"	0,67"	162° 28' 47"	7° 26' 09"	1,0087154	15' 51,34"	23° 26' 17"	00m 38s
13:00	161° 03' 12"	0,67"	162° 31' 03"	7° 25' 14"	1,0087056	15' 51,35"	23° 26' 17"	00m 39s
14:00	161° 05' 37"	0,67"	162° 33' 19"	7° 24' 19"	1,0086958	15' 51,36"	23° 26' 17"	00m 40s
15:00	161° 08' 02"	0,67"	162° 35' 34"	7° 23' 24"	1,0086860	15' 51,37"	23° 26' 17"	00m 40s
16:00	161° 10' 27"	0,67"	162° 37' 50"	7° 22' 29"	1,0086762	15' 51,38"	23° 26' 17"	00m 41s
17:00	161° 12' 53"	0,67"	162° 40' 05"	7° 21' 33"	1,0086663	15' 51,38"	23° 26' 17"	00m 42s
18:00	161° 15' 18"	0,67"	162° 42' 21"	7° 20' 38"	1,0086565	15' 51,39"	23° 26' 17"	00m 43s
19:00	161° 17' 43"	0,67"	162° 44' 36"	7° 19' 43"	1,0086467	15' 51,40"	23° 26' 17"	00m 44s
20:00	161° 20' 09"	0,67"	162° 46' 52"	7° 18' 48"	1,0086369	15' 51,41"	23° 26' 17"	00m 45s
21:00	161° 22' 34"	0,67"	162° 49' 07"	7° 17' 53"	1,0086271	15' 51,42"	23° 26' 17"	00m 45s
22:00	161° 24' 59"	0,67"	162° 51' 23"	7° 16' 57"	1,0086172	15' 51,43"	23° 26' 17"	00m 46s
23:00	161° 27' 25"	0,67"	162° 53' 38"	7° 16' 02"	1,0086074	15' 51,44"	23° 26' 17"	00m 47s
24:00	161° 29' 50"	0,67"	162° 55' 54"	7° 15' 07"	1,0085975	15' 51,45"	23° 26' 17"	00m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	53° 06' 14"	5° 14' 07"	49° 16' 18"	23° 36' 31"	58' 48"	16' 01,34"	73° 15' 11"	65,02%
01:00	53° 41' 15"	5° 14' 28"	49° 53' 00"	23° 45' 53"	58' 49"	16' 01,56"	73° 29' 52"	64,57%
02:00	54° 16' 18"	5° 14' 47"	50° 29' 47"	23° 55' 08"	58' 50"	16' 01,78"	73° 44' 41"	64,12%
03:00	54° 51' 21"	5° 15' 05"	51° 06' 41"	24° 04' 13"	58' 51"	16' 02,01"	73° 59' 38"	63,67%
04:00	55° 26' 26"	5° 15' 20"	51° 43' 40"	24° 13' 10"	58' 52"	16' 02,23"	74° 14' 42"	63,21%
05:00	56° 01' 31"	5° 15' 34"	52° 20' 46"	24° 21' 58"	58' 52"	16' 02,45"	74° 29' 53"	62,75%
06:00	56° 36' 37"	5° 15' 46"	52° 57' 58"	24° 30' 38"	58' 53"	16' 02,66"	74° 45' 12"	62,30%
07:00	57° 11' 44"	5° 15' 55"	53° 35' 16"	24° 39' 08"	58' 54"	16' 02,88"	75° 00' 39"	61,84%
08:00	57° 46' 52"	5° 16' 03"	54° 12' 40"	24° 47' 30"	58' 55"	16' 03,09"	75° 16' 12"	61,38%
09:00	58° 22' 01"	5° 16' 08"	54° 50' 10"	24° 55' 42"	58' 55"	16' 03,31"	75° 31' 52"	60,91%
10:00	58° 57' 10"	5° 16' 12"	55° 27' 46"	25° 03' 45"	58' 56"	16' 03,52"	75° 47' 40"	60,45%
11:00	59° 32' 21"	5° 16' 14"	56° 05' 27"	25° 11' 39"	58' 57"	16' 03,73"	76° 03' 34"	59,99%
12:00	60° 07' 32"	5° 16' 14"	56° 43' 14"	25° 19' 24"	58' 58"	16' 03,94"	76° 19' 35"	59,52%
13:00	60° 42' 45"	5° 16' 11"	57° 21' 07"	25° 26' 59"	58' 59"	16' 04,14"	76° 35' 43"	59,06%
14:00	61° 17' 58"	5° 16' 07"	57° 59' 06"	25° 34' 24"	58' 59"	16' 04,35"	76° 51' 58"	58,59%
15:00	61° 53' 11"	5° 16' 01"	58° 37' 10"	25° 41' 40"	59' 00"	16' 04,55"	77° 08' 18"	58,12%
16:00	62° 28' 26"	5° 15' 53"	59° 15' 20"	25° 48' 46"	59' 01"	16' 04,75"	77° 24' 46"	57,65%
17:00	63° 03' 42"	5° 15' 43"	59° 53' 35"	25° 55' 42"	59' 02"	16' 04,95"	77° 41' 19"	57,18%
18:00	63° 38' 58"	5° 15' 31"	60° 31' 56"	26° 02' 28"	59' 02"	16' 05,15"	77° 57' 59"	56,71%
19:00	64° 14' 15"	5° 15' 17"	61° 10' 21"	26° 09' 05"	59' 03"	16' 05,34"	78° 14' 45"	56,24%
20:00	64° 49' 33"	5° 15' 00"	61° 48' 52"	26° 15' 31"	59' 04"	16' 05,54"	78° 31' 36"	55,77%
21:00	65° 24' 52"	5° 14' 42"	62° 27' 28"	26° 21' 47"	59' 04"	16' 05,73"	78° 48' 34"	55,29%
22:00	66° 00' 11"	5° 14' 22"	63° 06' 09"	26° 27' 53"	59' 05"	16' 05,92"	79° 05' 37"	54,82%
23:00	66° 35' 32"	5° 14' 00"	63° 44' 55"	26° 33' 48"	59' 06"	16' 06,11"	79° 22' 45"	54,34%
24:00	67° 10' 53"	5° 13' 36"	64° 23' 46"	26° 39' 33"	59' 06"	16' 06,30"	79° 39' 59"	53,87%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	161° 29' 50"	0,67"	162° 55' 54"	7° 15' 07"	1,0085975	15' 51,45"	23° 26' 17"	00m 48s
01:00	161° 32' 15"	0,67"	162° 58' 09"	7° 14' 12"	1,0085877	15' 51,46"	23° 26' 17"	00m 49s
02:00	161° 34' 41"	0,67"	163° 00' 25"	7° 13' 16"	1,0085779	15' 51,47"	23° 26' 17"	00m 49s
03:00	161° 37' 06"	0,66"	163° 02' 40"	7° 12' 21"	1,0085680	15' 51,48"	23° 26' 17"	00m 50s
04:00	161° 39' 31"	0,66"	163° 04' 56"	7° 11' 26"	1,0085581	15' 51,49"	23° 26' 17"	00m 51s
05:00	161° 41' 57"	0,66"	163° 07' 11"	7° 10' 30"	1,0085483	15' 51,50"	23° 26' 17"	00m 52s
06:00	161° 44' 22"	0,66"	163° 09' 27"	7° 09' 35"	1,0085384	15' 51,51"	23° 26' 17"	00m 53s
07:00	161° 46' 47"	0,66"	163° 11' 42"	7° 08' 40"	1,0085285	15' 51,51"	23° 26' 17"	00m 54s
08:00	161° 49' 13"	0,66"	163° 13' 57"	7° 07' 44"	1,0085187	15' 51,52"	23° 26' 17"	00m 54s
09:00	161° 51' 38"	0,66"	163° 16' 13"	7° 06' 49"	1,0085088	15' 51,53"	23° 26' 17"	00m 55s
10:00	161° 54' 03"	0,66"	163° 18' 28"	7° 05' 54"	1,0084989	15' 51,54"	23° 26' 17"	00m 56s
11:00	161° 56' 29"	0,65"	163° 20' 44"	7° 04' 58"	1,0084890	15' 51,55"	23° 26' 17"	00m 57s
12:00	161° 58' 54"	0,65"	163° 22' 59"	7° 04' 03"	1,0084791	15' 51,56"	23° 26' 17"	00m 58s
13:00	162° 01' 19"	0,65"	163° 25' 15"	7° 03' 07"	1,0084692	15' 51,57"	23° 26' 17"	00m 59s
14:00	162° 03' 45"	0,65"	163° 27' 30"	7° 02' 12"	1,0084593	15' 51,58"	23° 26' 17"	00m 59s
15:00	162° 06' 10"	0,65"	163° 29' 45"	7° 01' 17"	1,0084494	15' 51,59"	23° 26' 17"	01m 00s
16:00	162° 08' 35"	0,65"	163° 32' 01"	7° 00' 21"	1,0084395	15' 51,60"	23° 26' 17"	01m 01s
17:00	162° 11' 01"	0,64"	163° 34' 16"	6° 59' 26"	1,0084296	15' 51,61"	23° 26' 17"	01m 02s
18:00	162° 13' 26"	0,64"	163° 36' 32"	6° 58' 30"	1,0084197	15' 51,62"	23° 26' 17"	01m 03s
19:00	162° 15' 52"	0,64"	163° 38' 47"	6° 57' 35"	1,0084097	15' 51,63"	23° 26' 17"	01m 04s
20:00	162° 18' 17"	0,64"	163° 41' 02"	6° 56' 39"	1,0083998	15' 51,64"	23° 26' 17"	01m 04s
21:00	162° 20' 42"	0,64"	163° 43' 18"	6° 55' 44"	1,0083899	15' 51,65"	23° 26' 17"	01m 05s
22:00	162° 23' 08"	0,63"	163° 45' 33"	6° 54' 48"	1,0083799	15' 51,66"	23° 26' 17"	01m 06s
23:00	162° 25' 33"	0,63"	163° 47' 48"	6° 53' 53"	1,0083700	15' 51,66"	23° 26' 17"	01m 07s
24:00	162° 27' 59"	0,63"	163° 50' 04"	6° 52' 57"	1,0083601	15' 51,67"	23° 26' 17"	01m 08s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	67° 10' 53"	5° 13' 36"	64° 23' 46"	26° 39' 33"	59' 06"	16' 06,30"	79° 39' 59"	53,87%
01:00	67° 46' 14"	5° 13' 10"	65° 02' 42"	26° 45' 08"	59' 07"	16' 06,48"	79° 57' 18"	53,39%
02:00	68° 21' 37"	5° 12' 42"	65° 41' 42"	26° 50' 32"	59' 08"	16' 06,67"	80° 14' 43"	52,92%
03:00	68° 57' 00"	5° 12' 12"	66° 20' 47"	26° 55' 46"	59' 08"	16' 06,85"	80° 32' 12"	52,44%
04:00	69° 32' 24"	5° 11' 40"	66° 59' 56"	27° 00' 49"	59' 09"	16' 07,03"	80° 49' 46"	51,96%
05:00	70° 07' 49"	5° 11' 06"	67° 39' 09"	27° 05' 41"	59' 10"	16' 07,20"	81° 07' 24"	51,49%
06:00	70° 43' 14"	5° 10' 30"	68° 18' 27"	27° 10' 22"	59' 10"	16' 07,38"	81° 25' 07"	51,01%
07:00	71° 18' 40"	5° 09' 52"	68° 57' 49"	27° 14' 53"	59' 11"	16' 07,55"	81° 42' 55"	50,53%
08:00	71° 54' 07"	5° 09' 12"	69° 37' 15"	27° 19' 12"	59' 12"	16' 07,73"	82° 00' 46"	50,05%
09:00	72° 29' 34"	5° 08' 30"	70° 16' 44"	27° 23' 21"	59' 12"	16' 07,89"	82° 18' 42"	49,57%
10:00	73° 05' 02"	5° 07' 46"	70° 56' 17"	27° 27' 18"	59' 13"	16' 08,06"	82° 36' 41"	49,09%
11:00	73° 40' 31"	5° 07' 00"	71° 35' 54"	27° 31' 05"	59' 14"	16' 08,23"	82° 54' 44"	48,62%
12:00	74° 16' 00"	5° 06' 12"	72° 15' 35"	27° 34' 40"	59' 14"	16' 08,39"	83° 12' 51"	48,14%
13:00	74° 51' 30"	5° 05' 23"	72° 55' 18"	27° 38' 04"	59' 15"	16' 08,55"	83° 31' 00"	47,66%
14:00	75° 27' 01"	5° 04' 31"	73° 35' 05"	27° 41' 17"	59' 15"	16' 08,71"	83° 49' 13"	47,18%
15:00	76° 02' 32"	5° 03' 37"	74° 14' 55"	27° 44' 18"	59' 16"	16' 08,87"	84° 07' 29"	46,70%
16:00	76° 38' 04"	5° 02' 41"	74° 54' 48"	27° 47' 08"	59' 16"	16' 09,02"	84° 25' 48"	46,22%
17:00	77° 13' 36"	5° 01' 44"	75° 34' 44"	27° 49' 47"	59' 17"	16' 09,18"	84° 44' 09"	45,74%
18:00	77° 49' 09"	5° 00' 44"	76° 14' 42"	27° 52' 14"	59' 18"	16' 09,33"	85° 02' 33"	45,26%
19:00	78° 24' 43"	4° 59' 43"	76° 54' 43"	27° 54' 30"	59' 18"	16' 09,48"	85° 20' 59"	44,79%
20:00	79° 00' 17"	4° 58' 39"	77° 34' 47"	27° 56' 34"	59' 19"	16' 09,62"	85° 39' 27"	44,31%
21:00	79° 35' 52"	4° 57' 34"	78° 14' 52"	27° 58' 27"	59' 19"	16' 09,76"	85° 57' 57"	43,83%
22:00	80° 11' 27"	4° 56' 27"	78° 55' 00"	28° 00' 08"	59' 20"	16' 09,91"	86° 16' 28"	43,36%
23:00	80° 47' 03"	4° 55' 17"	79° 35' 09"	28° 01' 37"	59' 20"	16' 10,05"	86° 35' 01"	42,88%
24:00	81° 22' 39"	4° 54' 06"	80° 15' 20"	28° 02' 55"	59' 21"	16' 10,18"	86° 53' 35"	42,40%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	162° 27' 59"	0,63"	163° 50' 04"	6° 52' 57"	1,0083601	15' 51,67"	23° 26' 17"	01m 08s
01:00	162° 30' 24"	0,63"	163° 52' 19"	6° 52' 02"	1,0083501	15' 51,68"	23° 26' 17"	01m 09s
02:00	162° 32' 49"	0,63"	163° 54' 34"	6° 51' 06"	1,0083401	15' 51,69"	23° 26' 17"	01m 09s
03:00	162° 35' 15"	0,62"	163° 56' 50"	6° 50' 10"	1,0083302	15' 51,70"	23° 26' 17"	01m 10s
04:00	162° 37' 40"	0,62"	163° 59' 05"	6° 49' 15"	1,0083202	15' 51,71"	23° 26' 17"	01m 11s
05:00	162° 40' 06"	0,62"	164° 01' 20"	6° 48' 19"	1,0083102	15' 51,72"	23° 26' 17"	01m 12s
06:00	162° 42' 31"	0,62"	164° 03' 36"	6° 47' 24"	1,0083003	15' 51,73"	23° 26' 17"	01m 13s
07:00	162° 44' 56"	0,61"	164° 05' 51"	6° 46' 28"	1,0082903	15' 51,74"	23° 26' 17"	01m 14s
08:00	162° 47' 22"	0,61"	164° 08' 06"	6° 45' 32"	1,0082803	15' 51,75"	23° 26' 17"	01m 14s
09:00	162° 49' 47"	0,61"	164° 10' 22"	6° 44' 37"	1,0082703	15' 51,76"	23° 26' 17"	01m 15s
10:00	162° 52' 13"	0,61"	164° 12' 37"	6° 43' 41"	1,0082603	15' 51,77"	23° 26' 17"	01m 16s
11:00	162° 54' 38"	0,60"	164° 14' 52"	6° 42' 45"	1,0082503	15' 51,78"	23° 26' 17"	01m 17s
12:00	162° 57' 04"	0,60"	164° 17' 08"	6° 41' 50"	1,0082403	15' 51,79"	23° 26' 17"	01m 18s
13:00	162° 59' 29"	0,60"	164° 19' 23"	6° 40' 54"	1,0082303	15' 51,80"	23° 26' 17"	01m 19s
14:00	163° 01' 54"	0,59"	164° 21' 38"	6° 39' 58"	1,0082203	15' 51,81"	23° 26' 17"	01m 19s
15:00	163° 04' 20"	0,59"	164° 23' 53"	6° 39' 03"	1,0082103	15' 51,82"	23° 26' 17"	01m 20s
16:00	163° 06' 45"	0,59"	164° 26' 09"	6° 38' 07"	1,0082002	15' 51,82"	23° 26' 17"	01m 21s
17:00	163° 09' 11"	0,59"	164° 28' 24"	6° 37' 11"	1,0081902	15' 51,83"	23° 26' 17"	01m 22s
18:00	163° 11' 36"	0,58"	164° 30' 39"	6° 36' 15"	1,0081802	15' 51,84"	23° 26' 17"	01m 23s
19:00	163° 14' 02"	0,58"	164° 32' 54"	6° 35' 20"	1,0081701	15' 51,85"	23° 26' 17"	01m 24s
20:00	163° 16' 27"	0,58"	164° 35' 10"	6° 34' 24"	1,0081601	15' 51,86"	23° 26' 17"	01m 24s
21:00	163° 18' 53"	0,57"	164° 37' 25"	6° 33' 28"	1,0081500	15' 51,87"	23° 26' 17"	01m 25s
22:00	163° 21' 18"	0,57"	164° 39' 40"	6° 32' 32"	1,0081400	15' 51,88"	23° 26' 17"	01m 26s
23:00	163° 23' 44"	0,57"	164° 41' 55"	6° 31' 36"	1,0081299	15' 51,89"	23° 26' 17"	01m 27s
24:00	163° 26' 09"	0,56"	164° 44' 11"	6° 30' 41"	1,0081198	15' 51,90"	23° 26' 17"	01m 28s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	81° 22' 39"	4° 54' 06"	80° 15' 20"	28° 02' 55"	59' 21"	16' 10,18"	86° 53' 35"	42,40%
01:00	81° 58' 16"	4° 52' 53"	80° 55' 33"	28° 04' 01"	59' 21"	16' 10,32"	87° 12' 10"	41,93%
02:00	82° 33' 54"	4° 51' 38"	81° 35' 48"	28° 04' 56"	59' 22"	16' 10,45"	87° 30' 46"	41,45%
03:00	83° 09' 31"	4° 50' 22"	82° 16' 03"	28° 05' 38"	59' 22"	16' 10,58"	87° 49' 23"	40,98%
04:00	83° 45' 10"	4° 49' 03"	82° 56' 20"	28° 06' 09"	59' 23"	16' 10,70"	88° 08' 00"	40,50%
05:00	84° 20' 49"	4° 47' 42"	83° 36' 38"	28° 06' 28"	59' 23"	16' 10,83"	88° 26' 38"	40,03%
06:00	84° 56' 28"	4° 46' 20"	84° 16' 57"	28° 06' 36"	59' 24"	16' 10,95"	88° 45' 15"	39,56%
07:00	85° 32' 08"	4° 44' 55"	84° 57' 16"	28° 06' 31"	59' 24"	16' 11,07"	89° 03' 52"	39,09%
08:00	86° 07' 48"	4° 43' 29"	85° 37' 36"	28° 06' 15"	59' 24"	16' 11,19"	89° 22' 29"	38,62%
09:00	86° 43' 28"	4° 42' 01"	86° 17' 56"	28° 05' 47"	59' 25"	16' 11,30"	89° 41' 06"	38,15%
10:00	87° 19' 09"	4° 40' 31"	86° 58' 17"	28° 05' 07"	59' 25"	16' 11,41"	89° 59' 41"	37,68%
11:00	87° 54' 51"	4° 39' 00"	87° 38' 37"	28° 04' 16"	59' 26"	16' 11,52"	90° 18' 16"	37,21%
12:00	88° 30' 33"	4° 37' 26"	88° 18' 58"	28° 03' 12"	59' 26"	16' 11,63"	90° 36' 49"	36,75%
13:00	89° 06' 15"	4° 35' 51"	88° 59' 18"	28° 01' 57"	59' 26"	16' 11,73"	90° 55' 21"	36,28%
14:00	89° 41' 57"	4° 34' 14"	89° 39' 38"	28° 00' 30"	59' 27"	16' 11,83"	91° 13' 52"	35,82%
15:00	90° 17' 40"	4° 32' 35"	90° 19' 57"	27° 58' 51"	59' 27"	16' 11,93"	91° 32' 20"	35,35%
16:00	90° 53' 24"	4° 30' 54"	91° 00' 15"	27° 57' 00"	59' 27"	16' 12,02"	91° 50' 47"	34,89%
17:00	91° 29' 07"	4° 29' 12"	91° 40' 33"	27° 54' 58"	59' 28"	16' 12,12"	92° 09' 11"	34,43%
18:00	92° 04' 51"	4° 27' 28"	92° 20' 50"	27° 52' 44"	59' 28"	16' 12,21"	92° 27' 33"	33,97%
19:00	92° 40' 35"	4° 25' 42"	93° 01' 05"	27° 50' 18"	59' 28"	16' 12,29"	92° 45' 53"	33,52%
20:00	93° 16' 20"	4° 23' 54"	93° 41' 19"	27° 47' 40"	59' 29"	16' 12,38"	93° 04' 09"	33,06%
21:00	93° 52' 05"	4° 22' 05"	94° 21' 32"	27° 44' 51"	59' 29"	16' 12,46"	93° 22' 23"	32,60%
22:00	94° 27' 50"	4° 20' 13"	95° 01' 43"	27° 41' 50"	59' 29"	16' 12,53"	93° 40' 33"	32,15%
23:00	95° 03' 35"	4° 18' 21"	95° 41' 52"	27° 38' 38"	59' 30"	16' 12,61"	93° 58' 40"	31,70%
24:00	95° 39' 21"	4° 16' 26"	96° 21' 59"	27° 35' 14"	59' 30"	16' 12,68"	94° 16' 43"	31,25%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	163° 26' 09"	0,56"	164° 44' 11"	6° 30' 41"	1,0081198	15' 51,90"	23° 26' 17"	01m 28s
01:00	163° 28' 35"	0,56"	164° 46' 26"	6° 29' 45"	1,0081098	15' 51,91"	23° 26' 17"	01m 29s
02:00	163° 31' 00"	0,56"	164° 48' 41"	6° 28' 49"	1,0080997	15' 51,92"	23° 26' 17"	01m 29s
03:00	163° 33' 26"	0,55"	164° 50' 56"	6° 27' 53"	1,0080896	15' 51,93"	23° 26' 17"	01m 30s
04:00	163° 35' 51"	0,55"	164° 53' 11"	6° 26' 57"	1,0080795	15' 51,94"	23° 26' 17"	01m 31s
05:00	163° 38' 17"	0,54"	164° 55' 27"	6° 26' 01"	1,0080694	15' 51,95"	23° 26' 17"	01m 32s
06:00	163° 40' 42"	0,54"	164° 57' 42"	6° 25' 05"	1,0080593	15' 51,96"	23° 26' 17"	01m 33s
07:00	163° 43' 08"	0,54"	164° 59' 57"	6° 24' 09"	1,0080492	15' 51,97"	23° 26' 17"	01m 34s
08:00	163° 45' 33"	0,53"	165° 02' 12"	6° 23' 14"	1,0080391	15' 51,98"	23° 26' 17"	01m 35s
09:00	163° 47' 59"	0,53"	165° 04' 27"	6° 22' 18"	1,0080290	15' 51,99"	23° 26' 17"	01m 35s
10:00	163° 50' 24"	0,53"	165° 06' 42"	6° 21' 22"	1,0080189	15' 52,00"	23° 26' 17"	01m 36s
11:00	163° 52' 50"	0,52"	165° 08' 58"	6° 20' 26"	1,0080088	15' 52,01"	23° 26' 17"	01m 37s
12:00	163° 55' 15"	0,52"	165° 11' 13"	6° 19' 30"	1,0079986	15' 52,02"	23° 26' 17"	01m 38s
13:00	163° 57' 41"	0,51"	165° 13' 28"	6° 18' 34"	1,0079885	15' 52,02"	23° 26' 17"	01m 39s
14:00	164° 00' 06"	0,51"	165° 15' 43"	6° 17' 38"	1,0079783	15' 52,03"	23° 26' 17"	01m 40s
15:00	164° 02' 32"	0,51"	165° 17' 58"	6° 16' 42"	1,0079682	15' 52,04"	23° 26' 17"	01m 40s
16:00	164° 04' 57"	0,50"	165° 20' 13"	6° 15' 46"	1,0079581	15' 52,05"	23° 26' 17"	01m 41s
17:00	164° 07' 23"	0,50"	165° 22' 29"	6° 14' 50"	1,0079479	15' 52,06"	23° 26' 17"	01m 42s
18:00	164° 09' 48"	0,49"	165° 24' 44"	6° 13' 54"	1,0079377	15' 52,07"	23° 26' 17"	01m 43s
19:00	164° 12' 14"	0,49"	165° 26' 59"	6° 12' 58"	1,0079276	15' 52,08"	23° 26' 17"	01m 44s
20:00	164° 14' 40"	0,48"	165° 29' 14"	6° 12' 02"	1,0079174	15' 52,09"	23° 26' 17"	01m 45s
21:00	164° 17' 05"	0,48"	165° 31' 29"	6° 11' 06"	1,0079072	15' 52,10"	23° 26' 17"	01m 46s
22:00	164° 19' 31"	0,48"	165° 33' 44"	6° 10' 10"	1,0078970	15' 52,11"	23° 26' 17"	01m 46s
23:00	164° 21' 56"	0,47"	165° 35' 59"	6° 09' 14"	1,0078868	15' 52,12"	23° 26' 17"	01m 47s
24:00	164° 24' 22"	0,47"	165° 38' 14"	6° 08' 17"	1,0078766	15' 52,13"	23° 26' 17"	01m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	95° 39' 21"	4° 16' 26"	96° 21' 59"	27° 35' 14"	59' 30"	16' 12,68"	94° 16' 43"	31,25%
01:00	96° 15' 07"	4° 14' 30"	97° 02' 04"	27° 31' 38"	59' 30"	16' 12,75"	94° 34' 42"	30,80%
02:00	96° 50' 53"	4° 12' 32"	97° 42' 07"	27° 27' 51"	59' 30"	16' 12,82"	94° 52' 37"	30,35%
03:00	97° 26' 39"	4° 10' 33"	98° 22' 07"	27° 23' 52"	59' 31"	16' 12,88"	95° 10' 28"	29,91%
04:00	98° 02' 26"	4° 08' 31"	99° 02' 05"	27° 19' 42"	59' 31"	16' 12,94"	95° 28' 14"	29,47%
05:00	98° 38' 12"	4° 06' 29"	99° 42' 01"	27° 15' 20"	59' 31"	16' 12,99"	95° 45' 56"	29,02%
06:00	99° 13' 59"	4° 04' 24"	100° 21' 53"	27° 10' 48"	59' 31"	16' 13,04"	96° 03' 33"	28,59%
07:00	99° 49' 46"	4° 02' 18"	101° 01' 43"	27° 06' 03"	59' 31"	16' 13,09"	96° 21' 05"	28,15%
08:00	100° 25' 34"	4° 00' 11"	101° 41' 29"	27° 01' 08"	59' 32"	16' 13,14"	96° 38' 32"	27,71%
09:00	101° 01' 21"	3° 58' 01"	102° 21' 12"	26° 56' 01"	59' 32"	16' 13,18"	96° 55' 53"	27,28%
10:00	101° 37' 08"	3° 55' 51"	103° 00' 52"	26° 50' 44"	59' 32"	16' 13,22"	97° 13' 09"	26,85%
11:00	102° 12' 56"	3° 53' 38"	103° 40' 29"	26° 45' 15"	59' 32"	16' 13,26"	97° 30' 19"	26,42%
12:00	102° 48' 43"	3° 51' 25"	104° 20' 02"	26° 39' 35"	59' 32"	16' 13,29"	97° 47' 23"	25,99%
13:00	103° 24' 31"	3° 49' 09"	104° 59' 31"	26° 33' 44"	59' 32"	16' 13,32"	98° 04' 21"	25,57%
14:00	104° 00' 19"	3° 46' 52"	105° 38' 57"	26° 27' 42"	59' 32"	16' 13,35"	98° 21' 12"	25,14%
15:00	104° 36' 07"	3° 44' 34"	106° 18' 18"	26° 21' 30"	59' 32"	16' 13,37"	98° 37' 57"	24,72%
16:00	105° 11' 55"	3° 42' 14"	106° 57' 36"	26° 15' 06"	59' 32"	16' 13,39"	98° 54' 35"	24,31%
17:00	105° 47' 43"	3° 39' 53"	107° 36' 49"	26° 08' 32"	59' 33"	16' 13,40"	99° 11' 07"	23,89%
18:00	106° 23' 30"	3° 37' 31"	108° 15' 58"	26° 01' 47"	59' 33"	16' 13,41"	99° 27' 31"	23,48%
19:00	106° 59' 18"	3° 35' 06"	108° 55' 03"	25° 54' 52"	59' 33"	16' 13,42"	99° 43' 48"	23,07%
20:00	107° 35' 06"	3° 32' 41"	109° 34' 03"	25° 47' 46"	59' 33"	16' 13,43"	99° 59' 58"	22,66%
21:00	108° 10' 54"	3° 30' 14"	110° 12' 59"	25° 40' 30"	59' 33"	16' 13,43"	100° 16' 00"	22,25%
22:00	108° 46' 42"	3° 27' 46"	110° 51' 50"	25° 33' 04"	59' 33"	16' 13,42"	100° 31' 54"	21,85%
23:00	109° 22' 30"	3° 25' 16"	111° 30' 37"	25° 25' 27"	59' 33"	16' 13,42"	100° 47' 41"	21,45%
24:00	109° 58' 17"	3° 22' 45"	112° 09' 18"	25° 17' 40"	59' 33"	16' 13,41"	101° 03' 19"	21,05%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	164° 24' 22"	0,47"	165° 38' 14"	6° 08' 17"	1,0078766	15' 52,13"	23° 26' 17"	01m 48s
01:00	164° 26' 47"	0,46"	165° 40' 29"	6° 07' 21"	1,0078664	15' 52,14"	23° 26' 17"	01m 49s
02:00	164° 29' 13"	0,46"	165° 42' 45"	6° 06' 25"	1,0078562	15' 52,15"	23° 26' 17"	01m 50s
03:00	164° 31' 39"	0,45"	165° 45' 00"	6° 05' 29"	1,0078460	15' 52,16"	23° 26' 17"	01m 51s
04:00	164° 34' 04"	0,45"	165° 47' 15"	6° 04' 33"	1,0078358	15' 52,17"	23° 26' 17"	01m 52s
05:00	164° 36' 30"	0,44"	165° 49' 30"	6° 03' 37"	1,0078256	15' 52,18"	23° 26' 17"	01m 52s
06:00	164° 38' 55"	0,44"	165° 51' 45"	6° 02' 41"	1,0078153	15' 52,19"	23° 26' 17"	01m 53s
07:00	164° 41' 21"	0,43"	165° 54' 00"	6° 01' 45"	1,0078051	15' 52,20"	23° 26' 17"	01m 54s
08:00	164° 43' 47"	0,43"	165° 56' 15"	6° 00' 48"	1,0077949	15' 52,21"	23° 26' 17"	01m 55s
09:00	164° 46' 12"	0,42"	165° 58' 30"	5° 59' 52"	1,0077846	15' 52,22"	23° 26' 17"	01m 56s
10:00	164° 48' 38"	0,42"	166° 00' 45"	5° 58' 56"	1,0077743	15' 52,23"	23° 26' 17"	01m 57s
11:00	164° 51' 03"	0,41"	166° 03' 00"	5° 58' 00"	1,0077641	15' 52,24"	23° 26' 17"	01m 57s
12:00	164° 53' 29"	0,41"	166° 05' 15"	5° 57' 04"	1,0077538	15' 52,25"	23° 26' 17"	01m 58s
13:00	164° 55' 55"	0,41"	166° 07' 30"	5° 56' 07"	1,0077436	15' 52,26"	23° 26' 17"	01m 59s
14:00	164° 58' 20"	0,40"	166° 09' 45"	5° 55' 11"	1,0077333	15' 52,27"	23° 26' 17"	02m 00s
15:00	165° 00' 46"	0,40"	166° 12' 00"	5° 54' 15"	1,0077230	15' 52,28"	23° 26' 17"	02m 01s
16:00	165° 03' 11"	0,39"	166° 14' 15"	5° 53' 19"	1,0077127	15' 52,29"	23° 26' 17"	02m 02s
17:00	165° 05' 37"	0,38"	166° 16' 30"	5° 52' 22"	1,0077024	15' 52,30"	23° 26' 17"	02m 03s
18:00	165° 08' 03"	0,38"	166° 18' 45"	5° 51' 26"	1,0076921	15' 52,30"	23° 26' 17"	02m 03s
19:00	165° 10' 28"	0,37"	166° 21' 00"	5° 50' 30"	1,0076818	15' 52,31"	23° 26' 17"	02m 04s
20:00	165° 12' 54"	0,37"	166° 23' 15"	5° 49' 33"	1,0076715	15' 52,32"	23° 26' 17"	02m 05s
21:00	165° 15' 20"	0,36"	166° 25' 30"	5° 48' 37"	1,0076612	15' 52,33"	23° 26' 17"	02m 06s
22:00	165° 17' 45"	0,36"	166° 27' 45"	5° 47' 41"	1,0076508	15' 52,34"	23° 26' 17"	02m 07s
23:00	165° 20' 11"	0,35"	166° 30' 00"	5° 46' 44"	1,0076405	15' 52,35"	23° 26' 17"	02m 08s
24:00	165° 22' 36"	0,35"	166° 32' 15"	5° 45' 48"	1,0076302	15' 52,36"	23° 26' 17"	02m 09s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	109° 58' 17"	3° 22' 45"	112° 09' 18"	25° 17' 40"	59' 33"	16' 13,41"	101° 03' 19"	21,05%
01:00	110° 34' 05"	3° 20' 13"	112° 47' 55"	25° 09' 43"	59' 33"	16' 13,39"	101° 18' 49"	20,65%
02:00	111° 09' 52"	3° 17' 40"	113° 26' 26"	25° 01' 36"	59' 32"	16' 13,38"	101° 34' 11"	20,26%
03:00	111° 45' 40"	3° 15' 05"	114° 04' 53"	24° 53' 19"	59' 32"	16' 13,35"	101° 49' 24"	19,87%
04:00	112° 21' 27"	3° 12' 29"	114° 43' 14"	24° 44' 52"	59' 32"	16' 13,33"	102° 04' 29"	19,49%
05:00	112° 57' 14"	3° 09' 51"	115° 21' 31"	24° 36' 16"	59' 32"	16' 13,30"	102° 19' 25"	19,10%
06:00	113° 33' 01"	3° 07' 13"	115° 59' 41"	24° 27' 29"	59' 32"	16' 13,27"	102° 34' 11"	18,72%
07:00	114° 08' 47"	3° 04' 33"	116° 37' 47"	24° 18' 34"	59' 32"	16' 13,23"	102° 48' 49"	18,34%
08:00	114° 44' 34"	3° 01' 52"	117° 15' 47"	24° 09' 28"	59' 32"	16' 13,19"	103° 03' 17"	17,97%
09:00	115° 20' 20"	2° 59' 10"	117° 53' 42"	24° 00' 14"	59' 32"	16' 13,14"	103° 17' 35"	17,60%
10:00	115° 56' 06"	2° 56' 27"	118° 31' 31"	23° 50' 50"	59' 31"	16' 13,09"	103° 31' 44"	17,23%
11:00	116° 31' 52"	2° 53' 42"	119° 09' 14"	23° 41' 17"	59' 31"	16' 13,04"	103° 45' 43"	16,86%
12:00	117° 07' 37"	2° 50' 57"	119° 46' 52"	23° 31' 35"	59' 31"	16' 12,98"	103° 59' 33"	16,50%
13:00	117° 43' 23"	2° 48' 10"	120° 24' 24"	23° 21' 44"	59' 31"	16' 12,92"	104° 13' 12"	16,14%
14:00	118° 19' 08"	2° 45' 22"	121° 01' 51"	23° 11' 44"	59' 31"	16' 12,86"	104° 26' 40"	15,78%
15:00	118° 54' 52"	2° 42' 34"	121° 39' 11"	23° 01' 35"	59' 30"	16' 12,79"	104° 39' 59"	15,43%
16:00	119° 30' 37"	2° 39' 44"	122° 16' 26"	22° 51' 17"	59' 30"	16' 12,71"	104° 53' 07"	15,08%
17:00	120° 06' 21"	2° 36' 53"	122° 53' 35"	22° 40' 51"	59' 30"	16' 12,64"	105° 06' 04"	14,74%
18:00	120° 42' 04"	2° 34' 01"	123° 30' 38"	22° 30' 17"	59' 29"	16' 12,55"	105° 18' 50"	14,39%
19:00	121° 17' 47"	2° 31' 08"	124° 07' 35"	22° 19' 34"	59' 29"	16' 12,47"	105° 31' 25"	14,05%
20:00	121° 53' 30"	2° 28' 15"	124° 44' 26"	22° 08' 43"	59' 29"	16' 12,38"	105° 43' 49"	13,72%
21:00	122° 29' 13"	2° 25' 20"	125° 21' 12"	21° 57' 43"	59' 28"	16' 12,28"	105° 56' 02"	13,38%
22:00	123° 04' 55"	2° 22' 25"	125° 57' 51"	21° 46' 36"	59' 28"	16' 12,18"	106° 08' 03"	13,06%
23:00	123° 40' 36"	2° 19' 28"	126° 34' 24"	21° 35' 20"	59' 28"	16' 12,08"	106° 19' 53"	12,73%
24:00	124° 16' 17"	2° 16' 31"	127° 10' 51"	21° 23' 57"	59' 27"	16' 11,97"	106° 31' 30"	12,41%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	165° 22' 36"	0,35"	166° 32' 15"	5° 45' 48"	1,0076302	15' 52,36"	23° 26' 17"	02m 09s
01:00	165° 25' 02"	0,34"	166° 34' 30"	5° 44' 52"	1,0076198	15' 52,37"	23° 26' 17"	02m 09s
02:00	165° 27' 28"	0,34"	166° 36' 45"	5° 43' 55"	1,0076095	15' 52,38"	23° 26' 17"	02m 10s
03:00	165° 29' 53"	0,33"	166° 39' 00"	5° 42' 59"	1,0075991	15' 52,39"	23° 26' 17"	02m 11s
04:00	165° 32' 19"	0,33"	166° 41' 15"	5° 42' 03"	1,0075888	15' 52,40"	23° 26' 17"	02m 12s
05:00	165° 34' 45"	0,32"	166° 43' 30"	5° 41' 06"	1,0075784	15' 52,41"	23° 26' 17"	02m 13s
06:00	165° 37' 10"	0,32"	166° 45' 45"	5° 40' 10"	1,0075680	15' 52,42"	23° 26' 17"	02m 14s
07:00	165° 39' 36"	0,31"	166° 48' 00"	5° 39' 13"	1,0075577	15' 52,43"	23° 26' 17"	02m 15s
08:00	165° 42' 02"	0,31"	166° 50' 15"	5° 38' 17"	1,0075473	15' 52,44"	23° 26' 17"	02m 15s
09:00	165° 44' 27"	0,30"	166° 52' 30"	5° 37' 21"	1,0075369	15' 52,45"	23° 26' 17"	02m 16s
10:00	165° 46' 53"	0,29"	166° 54' 45"	5° 36' 24"	1,0075265	15' 52,46"	23° 26' 17"	02m 17s
11:00	165° 49' 19"	0,29"	166° 57' 00"	5° 35' 28"	1,0075161	15' 52,47"	23° 26' 17"	02m 18s
12:00	165° 51' 44"	0,28"	166° 59' 15"	5° 34' 31"	1,0075057	15' 52,48"	23° 26' 17"	02m 19s
13:00	165° 54' 10"	0,28"	167° 01' 30"	5° 33' 35"	1,0074953	15' 52,49"	23° 26' 17"	02m 20s
14:00	165° 56' 36"	0,27"	167° 03' 45"	5° 32' 38"	1,0074848	15' 52,50"	23° 26' 17"	02m 21s
15:00	165° 59' 02"	0,27"	167° 06' 00"	5° 31' 42"	1,0074744	15' 52,51"	23° 26' 17"	02m 21s
16:00	166° 01' 27"	0,26"	167° 08' 15"	5° 30' 45"	1,0074640	15' 52,52"	23° 26' 17"	02m 22s
17:00	166° 03' 53"	0,26"	167° 10' 30"	5° 29' 49"	1,0074535	15' 52,53"	23° 26' 17"	02m 23s
18:00	166° 06' 19"	0,25"	167° 12' 45"	5° 28' 52"	1,0074431	15' 52,54"	23° 26' 17"	02m 24s
19:00	166° 08' 44"	0,24"	167° 14' 59"	5° 27' 56"	1,0074326	15' 52,55"	23° 26' 17"	02m 25s
20:00	166° 11' 10"	0,24"	167° 17' 14"	5° 26' 59"	1,0074222	15' 52,56"	23° 26' 17"	02m 26s
21:00	166° 13' 36"	0,23"	167° 19' 29"	5° 26' 03"	1,0074117	15' 52,57"	23° 26' 17"	02m 27s
22:00	166° 16' 02"	0,23"	167° 21' 44"	5° 25' 06"	1,0074012	15' 52,58"	23° 26' 17"	02m 28s
23:00	166° 18' 27"	0,22"	167° 23' 59"	5° 24' 10"	1,0073908	15' 52,59"	23° 26' 17"	02m 28s
24:00	166° 20' 53"	0,22"	167° 26' 14"	5° 23' 13"	1,0073803	15' 52,60"	23° 26' 17"	02m 29s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	124° 16' 17"	2° 16' 31"	127° 10' 51"	21° 23' 57"	59' 27"	16' 11,97"	106° 31' 30"	12,41%
01:00	124° 51' 58"	2° 13' 33"	127° 47' 12"	21° 12' 26"	59' 27"	16' 11,86"	106° 42' 56"	12,09%
02:00	125° 27' 38"	2° 10' 34"	128° 23' 28"	21° 00' 47"	59' 26"	16' 11,75"	106° 54' 09"	11,77%
03:00	126° 03' 18"	2° 07' 34"	128° 59' 37"	20° 49' 01"	59' 26"	16' 11,63"	107° 05' 11"	11,46%
04:00	126° 38' 57"	2° 04' 33"	129° 35' 40"	20° 37' 08"	59' 26"	16' 11,50"	107° 15' 59"	11,16%
05:00	127° 14' 36"	2° 01' 32"	130° 11' 37"	20° 25' 07"	59' 25"	16' 11,38"	107° 26' 35"	10,85%
06:00	127° 50' 14"	1° 58' 30"	130° 47' 28"	20° 12' 59"	59' 25"	16' 11,24"	107° 36' 58"	10,55%
07:00	128° 25' 51"	1° 55' 27"	131° 23' 12"	20° 00' 43"	59' 24"	16' 11,11"	107° 47' 07"	10,26%
08:00	129° 01' 28"	1° 52' 23"	131° 58' 51"	19° 48' 21"	59' 24"	16' 10,96"	107° 57' 04"	9,96%
09:00	129° 37' 04"	1° 49' 19"	132° 34' 24"	19° 35' 52"	59' 23"	16' 10,82"	108° 06' 47"	9,68%
10:00	130° 12' 40"	1° 46' 14"	133° 09' 51"	19° 23' 16"	59' 22"	16' 10,67"	108° 16' 16"	9,39%
11:00	130° 48' 15"	1° 43' 09"	133° 45' 11"	19° 10' 34"	59' 22"	16' 10,51"	108° 25' 31"	9,11%
12:00	131° 23' 49"	1° 40' 03"	134° 20' 26"	18° 57' 45"	59' 21"	16' 10,35"	108° 34' 31"	8,83%
13:00	131° 59' 23"	1° 36' 56"	134° 55' 35"	18° 44' 49"	59' 21"	16' 10,19"	108° 43' 18"	8,56%
14:00	132° 34' 56"	1° 33' 49"	135° 30' 38"	18° 31' 47"	59' 20"	16' 10,02"	108° 51' 49"	8,29%
15:00	133° 10' 28"	1° 30' 41"	136° 05' 34"	18° 18' 39"	59' 19"	16' 09,85"	109° 00' 05"	8,03%
16:00	133° 46' 00"	1° 27' 33"	136° 40' 25"	18° 05' 25"	59' 19"	16' 09,67"	109° 08' 06"	7,77%
17:00	134° 21' 31"	1° 24' 24"	137° 15' 10"	17° 52' 05"	59' 18"	16' 09,49"	109° 15' 51"	7,51%
18:00	134° 57' 01"	1° 21' 15"	137° 49' 49"	17° 38' 39"	59' 18"	16' 09,31"	109° 23' 20"	7,26%
19:00	135° 32' 30"	1° 18' 05"	138° 24' 23"	17° 25' 07"	59' 17"	16' 09,12"	109° 30' 33"	7,01%
20:00	136° 07' 58"	1° 14' 55"	138° 58' 50"	17° 11' 30"	59' 16"	16' 08,92"	109° 37' 29"	6,76%
21:00	136° 43' 26"	1° 11' 44"	139° 33' 12"	16° 57' 47"	59' 15"	16' 08,73"	109° 44' 08"	6,52%
22:00	137° 18' 53"	1° 08' 33"	140° 07' 28"	16° 43' 59"	59' 15"	16' 08,52"	109° 50' 29"	6,29%
23:00	137° 54' 19"	1° 05' 22"	140° 41' 38"	16° 30' 05"	59' 14"	16' 08,32"	109° 56' 32"	6,05%
24:00	138° 29' 44"	1° 02' 10"	141° 15' 42"	16° 16' 06"	59' 13"	16' 08,10"	110° 02' 16"	5,83%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	166° 20' 53"	0,22"	167° 26' 14"	5° 23' 13"	1,0073803	15' 52,60"	23° 26' 17"	02m 29s
01:00	166° 23' 19"	0,21"	167° 28' 29"	5° 22' 16"	1,0073698	15' 52,61"	23° 26' 17"	02m 30s
02:00	166° 25' 44"	0,20"	167° 30' 44"	5° 21' 20"	1,0073593	15' 52,62"	23° 26' 17"	02m 31s
03:00	166° 28' 10"	0,20"	167° 32' 59"	5° 20' 23"	1,0073488	15' 52,63"	23° 26' 17"	02m 32s
04:00	166° 30' 36"	0,19"	167° 35' 14"	5° 19' 27"	1,0073383	15' 52,64"	23° 26' 17"	02m 33s
05:00	166° 33' 02"	0,19"	167° 37' 28"	5° 18' 30"	1,0073278	15' 52,65"	23° 26' 17"	02m 34s
06:00	166° 35' 27"	0,18"	167° 39' 43"	5° 17' 33"	1,0073173	15' 52,66"	23° 26' 17"	02m 34s
07:00	166° 37' 53"	0,18"	167° 41' 58"	5° 16' 37"	1,0073067	15' 52,67"	23° 26' 17"	02m 35s
08:00	166° 40' 19"	0,17"	167° 44' 13"	5° 15' 40"	1,0072962	15' 52,68"	23° 26' 17"	02m 36s
09:00	166° 42' 45"	0,16"	167° 46' 28"	5° 14' 43"	1,0072857	15' 52,69"	23° 26' 17"	02m 37s
10:00	166° 45' 10"	0,16"	167° 48' 43"	5° 13' 47"	1,0072751	15' 52,70"	23° 26' 17"	02m 38s
11:00	166° 47' 36"	0,15"	167° 50' 58"	5° 12' 50"	1,0072646	15' 52,71"	23° 26' 17"	02m 39s
12:00	166° 50' 02"	0,15"	167° 53' 12"	5° 11' 53"	1,0072540	15' 52,72"	23° 26' 17"	02m 40s
13:00	166° 52' 28"	0,14"	167° 55' 27"	5° 10' 57"	1,0072435	15' 52,73"	23° 26' 17"	02m 40s
14:00	166° 54' 53"	0,14"	167° 57' 42"	5° 10' 00"	1,0072329	15' 52,74"	23° 26' 17"	02m 41s
15:00	166° 57' 19"	0,13"	167° 59' 57"	5° 09' 03"	1,0072223	15' 52,75"	23° 26' 17"	02m 42s
16:00	166° 59' 45"	0,12"	168° 02' 12"	5° 08' 06"	1,0072117	15' 52,76"	23° 26' 17"	02m 43s
17:00	167° 02' 11"	0,12"	168° 04' 27"	5° 07' 10"	1,0072011	15' 52,77"	23° 26' 17"	02m 44s
18:00	167° 04' 37"	0,11"	168° 06' 41"	5° 06' 13"	1,0071905	15' 52,78"	23° 26' 17"	02m 45s
19:00	167° 07' 02"	0,11"	168° 08' 56"	5° 05' 16"	1,0071799	15' 52,79"	23° 26' 17"	02m 46s
20:00	167° 09' 28"	0,10"	168° 11' 11"	5° 04' 19"	1,0071693	15' 52,80"	23° 26' 17"	02m 47s
21:00	167° 11' 54"	0,09"	168° 13' 26"	5° 03' 23"	1,0071587	15' 52,81"	23° 26' 17"	02m 47s
22:00	167° 14' 20"	0,09"	168° 15' 41"	5° 02' 26"	1,0071481	15' 52,82"	23° 26' 17"	02m 48s
23:00	167° 16' 46"	0,08"	168° 17' 55"	5° 01' 29"	1,0071375	15' 52,83"	23° 26' 17"	02m 49s
24:00	167° 19' 11"	0,08"	168° 20' 10"	5° 00' 32"	1,0071269	15' 52,84"	23° 26' 17"	02m 50s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	138° 29' 44"	1° 02' 10"	141° 15' 42"	16° 16' 06"	59' 13"	16' 08,10"	110° 02' 16"	5,83%
01:00	139° 05' 08"	0° 58' 58"	141° 49' 41"	16° 02' 02"	59' 12"	16' 07,89"	110° 07' 41"	5,60%
02:00	139° 40' 31"	0° 55' 46"	142° 23' 34"	15° 47' 53"	59' 11"	16' 07,67"	110° 12' 47"	5,38%
03:00	140° 15' 54"	0° 52' 34"	142° 57' 22"	15° 33' 39"	59' 11"	16' 07,44"	110° 17' 32"	5,17%
04:00	140° 51' 15"	0° 49' 21"	143° 31' 04"	15° 19' 20"	59' 10"	16' 07,22"	110° 21' 55"	4,96%
05:00	141° 26' 36"	0° 46' 08"	144° 04' 41"	15° 04' 57"	59' 09"	16' 06,98"	110° 25' 58"	4,75%
06:00	142° 01' 55"	0° 42' 55"	144° 38' 12"	14° 50' 29"	59' 08"	16' 06,74"	110° 29' 37"	4,55%
07:00	142° 37' 14"	0° 39' 41"	145° 11' 38"	14° 35' 56"	59' 07"	16' 06,50"	110° 32' 53"	4,35%
08:00	143° 12' 32"	0° 36' 28"	145° 44' 59"	14° 21' 20"	59' 06"	16' 06,26"	110° 35' 45"	4,16%
09:00	143° 47' 48"	0° 33' 14"	146° 18' 14"	14° 06' 39"	59' 05"	16' 06,01"	110° 38' 11"	3,97%
10:00	144° 23' 04"	0° 30' 00"	146° 51' 25"	13° 51' 53"	59' 04"	16' 05,75"	110° 40' 10"	3,78%
11:00	144° 58' 18"	0° 26' 47"	147° 24' 30"	13° 37' 04"	59' 03"	16' 05,49"	110° 41' 42"	3,60%
12:00	145° 33' 32"	0° 23' 33"	147° 57' 29"	13° 22' 11"	59' 03"	16' 05,23"	110° 42' 44"	3,42%
13:00	146° 08' 44"	0° 20' 19"	148° 30' 24"	13° 07' 14"	59' 02"	16' 04,96"	110° 43' 15"	3,25%
14:00	146° 43' 55"	0° 17' 05"	149° 03' 14"	12° 52' 14"	59' 01"	16' 04,69"	110° 43' 14"	3,09%
15:00	147° 19' 05"	0° 13' 51"	149° 35' 59"	12° 37' 10"	59' 00"	16' 04,41"	110° 42' 39"	2,92%
16:00	147° 54' 14"	0° 10' 37"	150° 08' 39"	12° 22' 02"	58' 59"	16' 04,13"	110° 41' 27"	2,76%
17:00	148° 29' 22"	0° 07' 23"	150° 41' 14"	12° 06' 51"	58' 57"	16' 03,85"	110° 39' 36"	2,61%
18:00	149° 04' 29"	0° 04' 09"	151° 13' 44"	11° 51' 37"	58' 56"	16' 03,56"	110° 37' 04"	2,46%
19:00	149° 39' 34"	0° 00' 55"	151° 46' 10"	11° 36' 19"	58' 55"	16' 03,27"	110° 33' 48"	2,31%
20:00	150° 14' 39"	-0° 02' 18"	152° 18' 31"	11° 20' 58"	58' 54"	16' 02,97"	110° 29' 44"	2,17%
21:00	150° 49' 42"	-0° 05' 32"	152° 50' 47"	11° 05' 35"	58' 53"	16' 02,67"	110° 24' 48"	2,04%
22:00	151° 24' 44"	-0° 08' 45"	153° 22' 59"	10° 50' 08"	58' 52"	16' 02,37"	110° 18' 57"	1,90%
23:00	151° 59' 44"	-0° 11' 58"	153° 55' 06"	10° 34' 39"	58' 51"	16' 02,06"	110° 12' 05"	1,78%
24:00	152° 34' 43"	-0° 15' 11"	154° 27' 09"	10° 19' 07"	58' 50"	16' 01,75"	110° 04' 07"	1,65%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	167° 19' 11"	0,08"	168° 20' 10"	5° 00' 32"	1,0071269	15' 52,84"	23° 26' 17"	02m 50s
01:00	167° 21' 37"	0,07"	168° 22' 25"	4° 59' 36"	1,0071162	15' 52,85"	23° 26' 17"	02m 51s
02:00	167° 24' 03"	0,07"	168° 24' 40"	4° 58' 39"	1,0071056	15' 52,86"	23° 26' 17"	02m 52s
03:00	167° 26' 29"	0,06"	168° 26' 55"	4° 57' 42"	1,0070949	15' 52,87"	23° 26' 17"	02m 53s
04:00	167° 28' 55"	0,05"	168° 29' 09"	4° 56' 45"	1,0070843	15' 52,88"	23° 26' 17"	02m 54s
05:00	167° 31' 20"	0,05"	168° 31' 24"	4° 55' 48"	1,0070736	15' 52,89"	23° 26' 17"	02m 54s
06:00	167° 33' 46"	0,04"	168° 33' 39"	4° 54' 51"	1,0070629	15' 52,90"	23° 26' 17"	02m 55s
07:00	167° 36' 12"	0,04"	168° 35' 54"	4° 53' 55"	1,0070523	15' 52,91"	23° 26' 17"	02m 56s
08:00	167° 38' 38"	0,03"	168° 38' 08"	4° 52' 58"	1,0070416	15' 52,92"	23° 26' 17"	02m 57s
09:00	167° 41' 04"	0,02"	168° 40' 23"	4° 52' 01"	1,0070309	15' 52,93"	23° 26' 17"	02m 58s
10:00	167° 43' 30"	0,02"	168° 42' 38"	4° 51' 04"	1,0070202	15' 52,94"	23° 26' 17"	02m 59s
11:00	167° 45' 55"	0,01"	168° 44' 53"	4° 50' 07"	1,0070095	15' 52,95"	23° 26' 17"	03m 00s
12:00	167° 48' 21"	0,01"	168° 47' 08"	4° 49' 10"	1,0069988	15' 52,96"	23° 26' 17"	03m 01s
13:00	167° 50' 47"	0,00"	168° 49' 22"	4° 48' 13"	1,0069881	15' 52,97"	23° 26' 17"	03m 01s
14:00	167° 53' 13"	-0,00"	168° 51' 37"	4° 47' 16"	1,0069774	15' 52,98"	23° 26' 17"	03m 02s
15:00	167° 55' 39"	-0,01"	168° 53' 52"	4° 46' 19"	1,0069666	15' 52,99"	23° 26' 17"	03m 03s
16:00	167° 58' 05"	-0,02"	168° 56' 07"	4° 45' 22"	1,0069559	15' 53,00"	23° 26' 17"	03m 04s
17:00	168° 00' 30"	-0,02"	168° 58' 21"	4° 44' 25"	1,0069452	15' 53,01"	23° 26' 17"	03m 05s
18:00	168° 02' 56"	-0,03"	169° 00' 36"	4° 43' 28"	1,0069344	15' 53,02"	23° 26' 17"	03m 06s
19:00	168° 05' 22"	-0,03"	169° 02' 51"	4° 42' 32"	1,0069237	15' 53,03"	23° 26' 17"	03m 07s
20:00	168° 07' 48"	-0,04"	169° 05' 05"	4° 41' 35"	1,0069129	15' 53,04"	23° 26' 17"	03m 07s
21:00	168° 10' 14"	-0,04"	169° 07' 20"	4° 40' 38"	1,0069022	15' 53,05"	23° 26' 17"	03m 08s
22:00	168° 12' 40"	-0,05"	169° 09' 35"	4° 39' 41"	1,0068914	15' 53,06"	23° 26' 17"	03m 09s
23:00	168° 15' 06"	-0,06"	169° 11' 50"	4° 38' 44"	1,0068806	15' 53,07"	23° 26' 17"	03m 10s
24:00	168° 17' 31"	-0,06"	169° 14' 04"	4° 37' 47"	1,0068698	15' 53,08"	23° 26' 17"	03m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	152° 34' 43"	-0° 15' 11"	154° 27' 09"	10° 19' 07"	58' 50"	16' 01,75"	110° 04' 07"	1,65%
01:00	153° 09' 42"	-0° 18' 24"	154° 59' 08"	10° 03' 33"	58' 49"	16' 01,43"	109° 54' 57"	1,54%
02:00	153° 44' 38"	-0° 21' 37"	155° 31' 02"	9° 47' 56"	58' 47"	16' 01,11"	109° 44' 28"	1,42%
03:00	154° 19' 34"	-0° 24' 49"	156° 02' 52"	9° 32' 17"	58' 46"	16' 00,78"	109° 32' 30"	1,31%
04:00	154° 54' 28"	-0° 28' 01"	156° 34' 38"	9° 16' 35"	58' 45"	16' 00,46"	109° 18' 53"	1,21%
05:00	155° 29' 21"	-0° 31' 13"	157° 06' 20"	9° 00' 51"	58' 44"	16' 00,12"	109° 03' 27"	1,11%
06:00	156° 04' 12"	-0° 34' 24"	157° 37' 57"	8° 45' 06"	58' 43"	16' 00,00"	108° 45' 57"	1,01%
07:00	156° 39' 02"	-0° 37' 35"	158° 09' 31"	8° 29' 18"	58' 41"	15' 59,45"	108° 26' 06"	0,92%
08:00	157° 13' 51"	-0° 40' 45"	158° 41' 01"	8° 13' 28"	58' 40"	15' 59,10"	108° 03' 35"	0,83%
09:00	157° 48' 38"	-0° 43' 56"	159° 12' 27"	7° 57' 37"	58' 39"	15' 58,76"	107° 37' 59"	0,75%
10:00	158° 23' 24"	-0° 47' 05"	159° 43' 50"	7° 41' 44"	58' 37"	15' 58,41"	107° 08' 50"	0,67%
11:00	158° 58' 08"	-0° 50' 15"	160° 15' 08"	7° 25' 49"	58' 36"	15' 58,05"	106° 35' 31"	0,60%
12:00	159° 32' 51"	-0° 53' 24"	160° 46' 24"	7° 09' 53"	58' 35"	15' 57,69"	105° 57' 16"	0,53%
13:00	160° 07' 33"	-0° 56' 32"	161° 17' 35"	6° 53' 55"	58' 34"	15' 57,33"	105° 13' 09"	0,46%
14:00	160° 42' 13"	-0° 59' 40"	161° 48' 43"	6° 37' 56"	58' 32"	15' 56,97"	104° 21' 55"	0,40%
15:00	161° 16' 51"	-1° 02' 48"	162° 19' 48"	6° 21' 56"	58' 31"	15' 56,60"	103° 22' 01"	0,35%
16:00	161° 51' 29"	-1° 05' 55"	162° 50' 49"	6° 05' 55"	58' 29"	15' 56,23"	102° 11' 19"	0,29%
17:00	162° 26' 04"	-1° 09' 01"	163° 21' 47"	5° 49' 53"	58' 28"	15' 55,85"	100° 47' 02"	0,25%
18:00	163° 00' 38"	-1° 12' 07"	163° 52' 42"	5° 33' 50"	58' 27"	15' 55,47"	99° 05' 17"	0,21%
19:00	163° 35' 11"	-1° 15' 12"	164° 23' 34"	5° 17' 46"	58' 25"	15' 55,09"	97° 00' 38"	0,17%
20:00	164° 09' 41"	-1° 18' 16"	164° 54' 22"	5° 01' 41"	58' 24"	15' 54,71"	94° 25' 18"	0,13%
21:00	164° 44' 11"	-1° 21' 20"	165° 25' 08"	4° 45' 35"	58' 22"	15' 54,32"	91° 07' 51"	0,10%
22:00	165° 18' 39"	-1° 24' 24"	165° 55' 51"	4° 29' 29"	58' 21"	15' 53,93"	86° 51' 08"	0,08%
23:00	165° 53' 05"	-1° 27' 26"	166° 26' 30"	4° 13' 23"	58' 20"	15' 53,53"	81° 09' 10"	0,06%
24:00	166° 27' 29"	-1° 30' 28"	166° 57' 08"	3° 57' 16"	58' 18"	15' 53,13"	73° 23' 37"	0,04%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	168° 17' 31"	-0,06"	169° 14' 04"	4° 37' 47"	1,0068698	15' 53,08"	23° 26' 17"	03m 11s
01:00	168° 19' 57"	-0,07"	169° 16' 19"	4° 36' 50"	1,0068590	15' 53,09"	23° 26' 17"	03m 12s
02:00	168° 22' 23"	-0,07"	169° 18' 34"	4° 35' 53"	1,0068483	15' 53,10"	23° 26' 17"	03m 13s
03:00	168° 24' 49"	-0,08"	169° 20' 49"	4° 34' 56"	1,0068375	15' 53,11"	23° 26' 17"	03m 14s
04:00	168° 27' 15"	-0,08"	169° 23' 03"	4° 33' 59"	1,0068267	15' 53,12"	23° 26' 17"	03m 15s
05:00	168° 29' 41"	-0,09"	169° 25' 18"	4° 33' 01"	1,0068158	15' 53,13"	23° 26' 17"	03m 15s
06:00	168° 32' 07"	-0,09"	169° 27' 33"	4° 32' 04"	1,0068050	15' 53,14"	23° 26' 17"	03m 16s
07:00	168° 34' 33"	-0,10"	169° 29' 47"	4° 31' 07"	1,0067942	15' 53,15"	23° 26' 17"	03m 17s
08:00	168° 36' 59"	-0,11"	169° 32' 02"	4° 30' 10"	1,0067834	15' 53,16"	23° 26' 17"	03m 18s
09:00	168° 39' 25"	-0,11"	169° 34' 17"	4° 29' 13"	1,0067725	15' 53,17"	23° 26' 17"	03m 19s
10:00	168° 41' 50"	-0,12"	169° 36' 31"	4° 28' 16"	1,0067617	15' 53,18"	23° 26' 17"	03m 20s
11:00	168° 44' 16"	-0,12"	169° 38' 46"	4° 27' 19"	1,0067508	15' 53,20"	23° 26' 17"	03m 21s
12:00	168° 46' 42"	-0,13"	169° 41' 01"	4° 26' 22"	1,0067400	15' 53,21"	23° 26' 17"	03m 22s
13:00	168° 49' 08"	-0,13"	169° 43' 15"	4° 25' 25"	1,0067291	15' 53,22"	23° 26' 17"	03m 22s
14:00	168° 51' 34"	-0,14"	169° 45' 30"	4° 24' 28"	1,0067183	15' 53,23"	23° 26' 17"	03m 23s
15:00	168° 54' 00"	-0,14"	169° 47' 45"	4° 23' 31"	1,0067074	15' 53,24"	23° 26' 17"	03m 24s
16:00	168° 56' 26"	-0,15"	169° 49' 59"	4° 22' 33"	1,0066965	15' 53,25"	23° 26' 17"	03m 25s
17:00	168° 58' 52"	-0,15"	169° 52' 14"	4° 21' 36"	1,0066856	15' 53,26"	23° 26' 17"	03m 26s
18:00	169° 01' 18"	-0,16"	169° 54' 29"	4° 20' 39"	1,0066747	15' 53,27"	23° 26' 17"	03m 27s
19:00	169° 03' 44"	-0,16"	169° 56' 43"	4° 19' 42"	1,0066639	15' 53,28"	23° 26' 17"	03m 28s
20:00	169° 06' 10"	-0,17"	169° 58' 58"	4° 18' 45"	1,0066530	15' 53,29"	23° 26' 17"	03m 29s
21:00	169° 08' 36"	-0,17"	170° 01' 13"	4° 17' 48"	1,0066420	15' 53,30"	23° 26' 17"	03m 29s
22:00	169° 11' 02"	-0,18"	170° 03' 27"	4° 16' 50"	1,0066311	15' 53,31"	23° 26' 17"	03m 30s
23:00	169° 13' 28"	-0,18"	170° 05' 42"	4° 15' 53"	1,0066202	15' 53,32"	23° 26' 17"	03m 31s
24:00	169° 15' 53"	-0,19"	170° 07' 57"	4° 14' 56"	1,0066093	15' 53,33"	23° 26' 17"	03m 32s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	166° 27' 29"	-1° 30' 28"	166° 57' 08"	3° 57' 16"	58' 18"	15' 53,13"	73° 23' 37"	0,04%
01:00	167° 01' 52"	-1° 33' 29"	167° 27' 42"	3° 41' 09"	58' 17"	15' 52,73"	62° 44' 05"	0,03%
02:00	167° 36' 13"	-1° 36' 30"	167° 58' 14"	3° 25' 01"	58' 15"	15' 52,33"	48° 28' 26"	0,02%
03:00	168° 10' 33"	-1° 39' 30"	168° 28' 43"	3° 08' 54"	58' 14"	15' 51,92"	31° 06' 40"	0,02%
04:00	168° 44' 51"	-1° 42' 29"	168° 59' 09"	2° 52' 46"	58' 12"	15' 51,51"	13° 14' 46"	0,02%
05:00	169° 19' 07"	-1° 45' 27"	169° 29' 34"	2° 36' 38"	58' 11"	15' 51,10"	357° 54' 35"	0,03%
06:00	169° 53' 22"	-1° 48' 25"	169° 59' 55"	2° 20' 31"	58' 09"	15' 50,69"	346° 12' 44"	0,04%
07:00	170° 27' 35"	-1° 51' 21"	170° 30' 15"	2° 04' 24"	58' 08"	15' 50,27"	337° 39' 57"	0,05%
08:00	171° 01' 46"	-1° 54' 17"	171° 00' 32"	1° 48' 17"	58' 06"	15' 49,85"	331° 24' 33"	0,07%
09:00	171° 35' 56"	-1° 57' 12"	171° 30' 47"	1° 32' 10"	58' 05"	15' 49,43"	326° 44' 04"	0,10%
10:00	172° 10' 03"	-2° 00' 06"	172° 01' 00"	1° 16' 04"	58' 03"	15' 49,00"	323° 09' 15"	0,12%
11:00	172° 44' 09"	-2° 02' 59"	172° 31' 11"	0° 59' 58"	58' 01"	15' 48,57"	320° 20' 39"	0,15%
12:00	173° 18' 14"	-2° 05' 52"	173° 01' 21"	0° 43' 53"	58' 00"	15' 48,14"	318° 05' 23"	0,19%
13:00	173° 52' 16"	-2° 08' 43"	173° 31' 28"	0° 27' 49"	57' 58"	15' 47,71"	316° 14' 46"	0,23%
14:00	174° 26' 17"	-2° 11' 34"	174° 01' 33"	0° 11' 45"	57' 57"	15' 47,27"	314° 42' 44"	0,27%
15:00	175° 00' 16"	-2° 14' 23"	174° 31' 37"	-0° 04' 17"	57' 55"	15' 46,84"	313° 25' 03"	0,32%
16:00	175° 34' 13"	-2° 17' 12"	175° 01' 39"	-0° 20' 19"	57' 53"	15' 46,40"	312° 18' 37"	0,38%
17:00	176° 08' 08"	-2° 20' 00"	175° 31' 39"	-0° 36' 20"	57' 52"	15' 45,95"	311° 21' 08"	0,43%
18:00	176° 42' 02"	-2° 22' 46"	176° 01' 38"	-0° 52' 19"	57' 50"	15' 45,51"	310° 30' 53"	0,49%
19:00	177° 15' 54"	-2° 25' 32"	176° 31' 35"	-1° 08' 18"	57' 49"	15' 45,06"	309° 46' 34"	0,56%
20:00	177° 49' 44"	-2° 28' 17"	177° 01' 31"	-1° 24' 15"	57' 47"	15' 44,62"	309° 07' 08"	0,63%
21:00	178° 23' 32"	-2° 31' 00"	177° 31' 26"	-1° 40' 11"	57' 45"	15' 44,17"	308° 31' 47"	0,70%
22:00	178° 57' 18"	-2° 33' 43"	178° 01' 19"	-1° 56' 05"	57' 44"	15' 43,71"	307° 59' 53"	0,78%
23:00	179° 31' 02"	-2° 36' 24"	178° 31' 11"	-2° 11' 58"	57' 42"	15' 43,26"	307° 30' 55"	0,86%
24:00	180° 04' 45"	-2° 39' 05"	179° 01' 02"	-2° 27' 50"	57' 40"	15' 42,80"	307° 04' 26"	0,95%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	169° 15' 53"	-0,19"	170° 07' 57"	4° 14' 56"	1,0066093	15' 53,33"	23° 26' 17"	03m 32s
01:00	169° 18' 19"	-0,19"	170° 10' 11"	4° 13' 59"	1,0065984	15' 53,34"	23° 26' 17"	03m 33s
02:00	169° 20' 45"	-0,20"	170° 12' 26"	4° 13' 02"	1,0065874	15' 53,35"	23° 26' 17"	03m 34s
03:00	169° 23' 11"	-0,20"	170° 14' 41"	4° 12' 04"	1,0065765	15' 53,36"	23° 26' 17"	03m 35s
04:00	169° 25' 37"	-0,21"	170° 16' 55"	4° 11' 07"	1,0065655	15' 53,37"	23° 26' 17"	03m 36s
05:00	169° 28' 03"	-0,21"	170° 19' 10"	4° 10' 10"	1,0065546	15' 53,38"	23° 26' 17"	03m 36s
06:00	169° 30' 29"	-0,22"	170° 21' 25"	4° 09' 13"	1,0065436	15' 53,39"	23° 26' 17"	03m 37s
07:00	169° 32' 55"	-0,22"	170° 23' 39"	4° 08' 15"	1,0065326	15' 53,40"	23° 26' 17"	03m 38s
08:00	169° 35' 21"	-0,23"	170° 25' 54"	4° 07' 18"	1,0065217	15' 53,41"	23° 26' 17"	03m 39s
09:00	169° 37' 47"	-0,23"	170° 28' 08"	4° 06' 21"	1,0065107	15' 53,42"	23° 26' 17"	03m 40s
10:00	169° 40' 13"	-0,24"	170° 30' 23"	4° 05' 24"	1,0064997	15' 53,43"	23° 26' 17"	03m 41s
11:00	169° 42' 39"	-0,24"	170° 32' 38"	4° 04' 26"	1,0064887	15' 53,44"	23° 26' 17"	03m 42s
12:00	169° 45' 05"	-0,25"	170° 34' 52"	4° 03' 29"	1,0064777	15' 53,45"	23° 26' 17"	03m 43s
13:00	169° 47' 31"	-0,25"	170° 37' 07"	4° 02' 32"	1,0064667	15' 53,46"	23° 26' 17"	03m 44s
14:00	169° 49' 57"	-0,26"	170° 39' 22"	4° 01' 35"	1,0064557	15' 53,47"	23° 26' 17"	03m 44s
15:00	169° 52' 23"	-0,26"	170° 41' 36"	4° 00' 37"	1,0064447	15' 53,49"	23° 26' 17"	03m 45s
16:00	169° 54' 49"	-0,27"	170° 43' 51"	3° 59' 40"	1,0064337	15' 53,50"	23° 26' 17"	03m 46s
17:00	169° 57' 15"	-0,27"	170° 46' 05"	3° 58' 43"	1,0064227	15' 53,51"	23° 26' 17"	03m 47s
18:00	169° 59' 41"	-0,28"	170° 48' 20"	3° 57' 45"	1,0064116	15' 53,52"	23° 26' 17"	03m 48s
19:00	170° 02' 07"	-0,28"	170° 50' 35"	3° 56' 48"	1,0064006	15' 53,53"	23° 26' 17"	03m 49s
20:00	170° 04' 33"	-0,29"	170° 52' 49"	3° 55' 51"	1,0063896	15' 53,54"	23° 26' 17"	03m 50s
21:00	170° 06' 59"	-0,29"	170° 55' 04"	3° 54' 53"	1,0063785	15' 53,55"	23° 26' 17"	03m 51s
22:00	170° 09' 25"	-0,29"	170° 57' 18"	3° 53' 56"	1,0063675	15' 53,56"	23° 26' 17"	03m 51s
23:00	170° 11' 51"	-0,30"	170° 59' 33"	3° 52' 59"	1,0063564	15' 53,57"	23° 26' 17"	03m 52s
24:00	170° 14' 17"	-0,30"	171° 01' 47"	3° 52' 01"	1,0063454	15' 53,58"	23° 26' 17"	03m 53s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	180° 04' 45"	-2° 39' 05"	179° 01' 02"	-2° 27' 50"	57' 40"	15' 42,80"	307° 04' 26"	0,95%
01:00	180° 38' 25"	-2° 41' 44"	179° 30' 52"	-2° 43' 40"	57' 39"	15' 42,35"	306° 40' 05"	1,03%
02:00	181° 12' 04"	-2° 44' 22"	180° 00' 41"	-2° 59' 28"	57' 37"	15' 41,89"	306° 17' 36"	1,13%
03:00	181° 45' 41"	-2° 47' 00"	180° 30' 29"	-3° 15' 14"	57' 35"	15' 41,43"	305° 56' 43"	1,23%
04:00	182° 19' 16"	-2° 49' 36"	181° 00' 16"	-3° 30' 59"	57' 33"	15' 40,97"	305° 37' 15"	1,33%
05:00	182° 52' 49"	-2° 52' 10"	181° 30' 03"	-3° 46' 41"	57' 32"	15' 40,50"	305° 19' 00"	1,43%
06:00	183° 26' 20"	-2° 54' 44"	181° 59' 48"	-4° 02' 22"	57' 30"	15' 40,04"	305° 01' 50"	1,54%
07:00	183° 59' 50"	-2° 57' 17"	182° 29' 33"	-4° 18' 01"	57' 28"	15' 39,57"	304° 45' 38"	1,65%
08:00	184° 33' 17"	-2° 59' 48"	182° 59' 17"	-4° 33' 37"	57' 27"	15' 39,10"	304° 30' 16"	1,77%
09:00	185° 06' 42"	-3° 02' 18"	183° 29' 01"	-4° 49' 11"	57' 25"	15' 38,63"	304° 15' 38"	1,89%
10:00	185° 40' 06"	-3° 04' 48"	183° 58' 44"	-5° 04' 43"	57' 23"	15' 38,17"	304° 01' 40"	2,02%
11:00	186° 13' 27"	-3° 07' 15"	184° 28' 27"	-5° 20' 13"	57' 21"	15' 37,69"	303° 48' 18"	2,14%
12:00	186° 46' 47"	-3° 09' 42"	184° 58' 09"	-5° 35' 40"	57' 20"	15' 37,22"	303° 35' 27"	2,28%
13:00	187° 20' 05"	-3° 12' 07"	185° 27' 52"	-5° 51' 05"	57' 18"	15' 36,75"	303° 23' 04"	2,41%
14:00	187° 53' 20"	-3° 14' 31"	185° 57' 33"	-6° 06' 27"	57' 16"	15' 36,28"	303° 11' 05"	2,55%
15:00	188° 26' 34"	-3° 16' 54"	186° 27' 15"	-6° 21' 47"	57' 15"	15' 35,80"	302° 59' 30"	2,69%
16:00	188° 59' 46"	-3° 19' 16"	186° 56' 57"	-6° 37' 04"	57' 13"	15' 35,33"	302° 48' 14"	2,84%
17:00	189° 32' 56"	-3° 21' 36"	187° 26' 38"	-6° 52' 18"	57' 11"	15' 34,85"	302° 37' 15"	2,99%
18:00	190° 06' 04"	-3° 23' 55"	187° 56' 20"	-7° 07' 29"	57' 09"	15' 34,37"	302° 26' 33"	3,15%
19:00	190° 39' 10"	-3° 26' 13"	188° 26' 01"	-7° 22' 38"	57' 08"	15' 33,90"	302° 16' 04"	3,30%
20:00	191° 12' 13"	-3° 28' 30"	188° 55' 43"	-7° 37' 43"	57' 06"	15' 33,42"	302° 05' 48"	3,46%
21:00	191° 45' 15"	-3° 30' 45"	189° 25' 25"	-7° 52' 46"	57' 04"	15' 32,94"	301° 55' 43"	3,63%
22:00	192° 18' 15"	-3° 32' 59"	189° 55' 07"	-8° 07' 45"	57' 02"	15' 32,46"	301° 45' 48"	3,80%
23:00	192° 51' 13"	-3° 35' 11"	190° 24' 49"	-8° 22' 42"	57' 01"	15' 31,98"	301° 36' 01"	3,97%
24:00	193° 24' 09"	-3° 37' 23"	190° 54' 32"	-8° 37' 35"	56' 59"	15' 31,50"	301° 26' 22"	4,14%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	170° 14' 17"	-0,30"	171° 01' 47"	3° 52' 01"	1,0063454	15' 53,58"	23° 26' 17"	03m 53s
01:00	170° 16' 43"	-0,31"	171° 04' 02"	3° 51' 04"	1,0063343	15' 53,59"	23° 26' 17"	03m 54s
02:00	170° 19' 09"	-0,31"	171° 06' 17"	3° 50' 06"	1,0063232	15' 53,60"	23° 26' 17"	03m 55s
03:00	170° 21' 35"	-0,32"	171° 08' 31"	3° 49' 09"	1,0063121	15' 53,61"	23° 26' 17"	03m 56s
04:00	170° 24' 01"	-0,32"	171° 10' 46"	3° 48' 12"	1,0063010	15' 53,62"	23° 26' 17"	03m 57s
05:00	170° 26' 27"	-0,32"	171° 13' 00"	3° 47' 14"	1,0062900	15' 53,63"	23° 26' 17"	03m 58s
06:00	170° 28' 53"	-0,33"	171° 15' 15"	3° 46' 17"	1,0062789	15' 53,64"	23° 26' 17"	03m 59s
07:00	170° 31' 19"	-0,33"	171° 17' 30"	3° 45' 19"	1,0062678	15' 53,65"	23° 26' 17"	03m 59s
08:00	170° 33' 45"	-0,34"	171° 19' 44"	3° 44' 22"	1,0062567	15' 53,66"	23° 26' 17"	04m 00s
09:00	170° 36' 12"	-0,34"	171° 21' 59"	3° 43' 24"	1,0062455	15' 53,67"	23° 26' 17"	04m 01s
10:00	170° 38' 38"	-0,34"	171° 24' 13"	3° 42' 27"	1,0062344	15' 53,68"	23° 26' 17"	04m 02s
11:00	170° 41' 04"	-0,35"	171° 26' 28"	3° 41' 30"	1,0062233	15' 53,69"	23° 26' 17"	04m 03s
12:00	170° 43' 30"	-0,35"	171° 28' 42"	3° 40' 32"	1,0062122	15' 53,71"	23° 26' 17"	04m 04s
13:00	170° 45' 56"	-0,36"	171° 30' 57"	3° 39' 35"	1,0062010	15' 53,72"	23° 26' 17"	04m 05s
14:00	170° 48' 22"	-0,36"	171° 33' 11"	3° 38' 37"	1,0061899	15' 53,73"	23° 26' 17"	04m 06s
15:00	170° 50' 48"	-0,36"	171° 35' 26"	3° 37' 40"	1,0061788	15' 53,74"	23° 26' 17"	04m 07s
16:00	170° 53' 14"	-0,37"	171° 37' 41"	3° 36' 42"	1,0061676	15' 53,75"	23° 26' 17"	04m 07s
17:00	170° 55' 40"	-0,37"	171° 39' 55"	3° 35' 45"	1,0061565	15' 53,76"	23° 26' 17"	04m 08s
18:00	170° 58' 06"	-0,37"	171° 42' 10"	3° 34' 47"	1,0061453	15' 53,77"	23° 26' 17"	04m 09s
19:00	171° 00' 32"	-0,38"	171° 44' 24"	3° 33' 50"	1,0061341	15' 53,78"	23° 26' 17"	04m 10s
20:00	171° 02' 58"	-0,38"	171° 46' 39"	3° 32' 52"	1,0061230	15' 53,79"	23° 26' 17"	04m 11s
21:00	171° 05' 24"	-0,38"	171° 48' 53"	3° 31' 55"	1,0061118	15' 53,80"	23° 26' 17"	04m 12s
22:00	171° 07' 50"	-0,39"	171° 51' 08"	3° 30' 57"	1,0061006	15' 53,81"	23° 26' 17"	04m 13s
23:00	171° 10' 17"	-0,39"	171° 53' 22"	3° 30' 00"	1,0060894	15' 53,82"	23° 26' 17"	04m 14s
24:00	171° 12' 43"	-0,39"	171° 55' 37"	3° 29' 02"	1,0060782	15' 53,83"	23° 26' 17"	04m 15s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	193° 24' 09"	-3° 37' 23"	190° 54' 32"	-8° 37' 35"	56' 59"	15' 31,50"	301° 26' 22"	4,14%
01:00	193° 57' 03"	-3° 39' 32"	191° 24' 15"	-8° 52' 25"	56' 57"	15' 31,02"	301° 16' 50"	4,32%
02:00	194° 29' 55"	-3° 41' 41"	191° 53' 59"	-9° 07' 11"	56' 55"	15' 30,54"	301° 07' 23"	4,50%
03:00	195° 02' 45"	-3° 43' 48"	192° 23' 43"	-9° 21' 54"	56' 53"	15' 30,07"	300° 58' 01"	4,69%
04:00	195° 35' 34"	-3° 45' 54"	192° 53' 28"	-9° 36' 34"	56' 52"	15' 29,59"	300° 48' 44"	4,88%
05:00	196° 08' 20"	-3° 47' 58"	193° 23' 13"	-9° 51' 10"	56' 50"	15' 29,11"	300° 39' 29"	5,07%
06:00	196° 41' 04"	-3° 50' 01"	193° 52' 59"	-10° 05' 43"	56' 48"	15' 28,63"	300° 30' 18"	5,26%
07:00	197° 13' 46"	-3° 52' 03"	194° 22' 46"	-10° 20' 12"	56' 46"	15' 28,15"	300° 21' 09"	5,46%
08:00	197° 46' 26"	-3° 54' 03"	194° 52' 33"	-10° 34' 37"	56' 45"	15' 27,67"	300° 12' 02"	5,66%
09:00	198° 19' 04"	-3° 56' 02"	195° 22' 22"	-10° 48' 59"	56' 43"	15' 27,19"	300° 02' 55"	5,87%
10:00	198° 51' 40"	-3° 57' 59"	195° 52' 11"	-11° 03' 16"	56' 41"	15' 26,71"	299° 53' 50"	6,08%
11:00	199° 24' 14"	-3° 59' 55"	196° 22' 01"	-11° 17' 30"	56' 39"	15' 26,23"	299° 44' 45"	6,29%
12:00	199° 56' 46"	-4° 01' 50"	196° 51' 52"	-11° 31' 40"	56' 38"	15' 25,76"	299° 35' 40"	6,50%
13:00	200° 29' 16"	-4° 03' 43"	197° 21' 44"	-11° 45' 46"	56' 36"	15' 25,28"	299° 26' 35"	6,72%
14:00	201° 01' 44"	-4° 05' 35"	197° 51' 38"	-11° 59' 48"	56' 34"	15' 24,81"	299° 17' 29"	6,94%
15:00	201° 34' 10"	-4° 07' 25"	198° 21' 32"	-12° 13' 46"	56' 32"	15' 24,33"	299° 08' 22"	7,16%
16:00	202° 06' 35"	-4° 09' 14"	198° 51' 28"	-12° 27' 39"	56' 31"	15' 23,86"	298° 59' 13"	7,39%
17:00	202° 38' 57"	-4° 11' 01"	199° 21' 25"	-12° 41' 29"	56' 29"	15' 23,38"	298° 50' 04"	7,62%
18:00	203° 11' 17"	-4° 12' 47"	199° 51' 23"	-12° 55' 14"	56' 27"	15' 22,91"	298° 40' 52"	7,85%
19:00	203° 43' 35"	-4° 14' 32"	200° 21' 22"	-13° 08' 55"	56' 25"	15' 22,44"	298° 31' 38"	8,09%
20:00	204° 15' 51"	-4° 16' 15"	200° 51' 23"	-13° 22' 31"	56' 24"	15' 21,97"	298° 22' 22"	8,32%
21:00	204° 48' 05"	-4° 17' 56"	201° 21' 25"	-13° 36' 03"	56' 22"	15' 21,50"	298° 13' 04"	8,57%
22:00	205° 20' 18"	-4° 19' 36"	201° 51' 29"	-13° 49' 31"	56' 20"	15' 21,03"	298° 03' 43"	8,81%
23:00	205° 52' 28"	-4° 21' 15"	202° 21' 34"	-14° 02' 54"	56' 19"	15' 20,56"	297° 54' 19"	9,06%
24:00	206° 24' 36"	-4° 22' 52"	202° 51' 41"	-14° 16' 12"	56' 17"	15' 20,09"	297° 44' 52"	9,30%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	171° 12' 43"	-0,39"	171° 55' 37"	3° 29' 02"	1,0060782	15' 53,83"	23° 26' 17"	04m 15s
01:00	171° 15' 09"	-0,40"	171° 57' 51"	3° 28' 05"	1,0060670	15' 53,84"	23° 26' 17"	04m 15s
02:00	171° 17' 35"	-0,40"	172° 00' 06"	3° 27' 07"	1,0060558	15' 53,85"	23° 26' 17"	04m 16s
03:00	171° 20' 01"	-0,40"	172° 02' 21"	3° 26' 09"	1,0060446	15' 53,86"	23° 26' 17"	04m 17s
04:00	171° 22' 27"	-0,41"	172° 04' 35"	3° 25' 12"	1,0060334	15' 53,87"	23° 26' 17"	04m 18s
05:00	171° 24' 53"	-0,41"	172° 06' 50"	3° 24' 14"	1,0060222	15' 53,89"	23° 26' 17"	04m 19s
06:00	171° 27' 19"	-0,41"	172° 09' 04"	3° 23' 17"	1,0060110	15' 53,90"	23° 26' 17"	04m 20s
07:00	171° 29' 45"	-0,42"	172° 11' 19"	3° 22' 19"	1,0059997	15' 53,91"	23° 26' 17"	04m 21s
08:00	171° 32' 12"	-0,42"	172° 13' 33"	3° 21' 22"	1,0059885	15' 53,92"	23° 26' 17"	04m 22s
09:00	171° 34' 38"	-0,42"	172° 15' 48"	3° 20' 24"	1,0059773	15' 53,93"	23° 26' 17"	04m 22s
10:00	171° 37' 04"	-0,42"	172° 18' 02"	3° 19' 26"	1,0059660	15' 53,94"	23° 26' 17"	04m 23s
11:00	171° 39' 30"	-0,43"	172° 20' 17"	3° 18' 29"	1,0059548	15' 53,95"	23° 26' 17"	04m 24s
12:00	171° 41' 56"	-0,43"	172° 22' 31"	3° 17' 31"	1,0059435	15' 53,96"	23° 26' 17"	04m 25s
13:00	171° 44' 22"	-0,43"	172° 24' 46"	3° 16' 34"	1,0059323	15' 53,97"	23° 26' 17"	04m 26s
14:00	171° 46' 48"	-0,44"	172° 27' 00"	3° 15' 36"	1,0059210	15' 53,98"	23° 26' 17"	04m 27s
15:00	171° 49' 14"	-0,44"	172° 29' 15"	3° 14' 38"	1,0059098	15' 53,99"	23° 26' 17"	04m 28s
16:00	171° 51' 41"	-0,44"	172° 31' 29"	3° 13' 41"	1,0058985	15' 54,00"	23° 26' 17"	04m 29s
17:00	171° 54' 07"	-0,44"	172° 33' 44"	3° 12' 43"	1,0058872	15' 54,01"	23° 26' 17"	04m 30s
18:00	171° 56' 33"	-0,45"	172° 35' 58"	3° 11' 45"	1,0058759	15' 54,02"	23° 26' 17"	04m 30s
19:00	171° 58' 59"	-0,45"	172° 38' 13"	3° 10' 48"	1,0058647	15' 54,03"	23° 26' 17"	04m 31s
20:00	172° 01' 25"	-0,45"	172° 40' 27"	3° 09' 50"	1,0058534	15' 54,05"	23° 26' 17"	04m 32s
21:00	172° 03' 51"	-0,45"	172° 42' 42"	3° 08' 52"	1,0058421	15' 54,06"	23° 26' 17"	04m 33s
22:00	172° 06' 17"	-0,46"	172° 44' 56"	3° 07' 55"	1,0058308	15' 54,07"	23° 26' 17"	04m 34s
23:00	172° 08' 44"	-0,46"	172° 47' 11"	3° 06' 57"	1,0058195	15' 54,08"	23° 26' 17"	04m 35s
24:00	172° 11' 10"	-0,46"	172° 49' 25"	3° 05' 59"	1,0058082	15' 54,09"	23° 26' 17"	04m 36s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	206° 24' 36"	-4° 22' 52"	202° 51' 41"	-14° 16' 12"	56' 17"	15' 20,09"	297° 44' 52"	9,30%
01:00	206° 56' 43"	-4° 24' 28"	203° 21' 49"	-14° 29' 26"	56' 15"	15' 19,63"	297° 35' 22"	9,56%
02:00	207° 28' 47"	-4° 26' 02"	203° 51' 59"	-14° 42' 35"	56' 13"	15' 19,17"	297° 25' 48"	9,81%
03:00	208° 00' 50"	-4° 27' 35"	204° 22' 11"	-14° 55' 39"	56' 12"	15' 18,70"	297° 16' 12"	10,07%
04:00	208° 32' 50"	-4° 29' 06"	204° 52' 24"	-15° 08' 38"	56' 10"	15' 18,24"	297° 06' 31"	10,33%
05:00	209° 04' 49"	-4° 30' 35"	205° 22' 39"	-15° 21' 33"	56' 08"	15' 17,78"	296° 56' 47"	10,59%
06:00	209° 36' 45"	-4° 32' 03"	205° 52' 56"	-15° 34' 22"	56' 07"	15' 17,33"	296° 47' 00"	10,86%
07:00	210° 08' 40"	-4° 33' 30"	206° 23' 15"	-15° 47' 07"	56' 05"	15' 16,87"	296° 37' 08"	11,13%
08:00	210° 40' 33"	-4° 34' 55"	206° 53' 35"	-15° 59' 47"	56' 03"	15' 16,42"	296° 27' 13"	11,40%
09:00	211° 12' 24"	-4° 36' 19"	207° 23' 58"	-16° 12' 21"	56' 02"	15' 15,96"	296° 17' 13"	11,67%
10:00	211° 44' 13"	-4° 37' 41"	207° 54' 22"	-16° 24' 50"	56' 00"	15' 15,51"	296° 07' 09"	11,94%
11:00	212° 16' 00"	-4° 39' 02"	208° 24' 48"	-16° 37' 15"	55' 58"	15' 15,06"	295° 57' 02"	12,22%
12:00	212° 47' 45"	-4° 40' 21"	208° 55' 16"	-16° 49' 34"	55' 57"	15' 14,62"	295° 46' 50"	12,50%
13:00	213° 19' 28"	-4° 41' 38"	209° 25' 47"	-17° 01' 47"	55' 55"	15' 14,17"	295° 36' 33"	12,78%
14:00	213° 51' 09"	-4° 42' 54"	209° 56' 19"	-17° 13' 56"	55' 54"	15' 13,73"	295° 26' 12"	13,07%
15:00	214° 22' 49"	-4° 44' 09"	210° 26' 53"	-17° 25' 59"	55' 52"	15' 13,29"	295° 15' 47"	13,36%
16:00	214° 54' 26"	-4° 45' 22"	210° 57' 30"	-17° 37' 56"	55' 50"	15' 12,85"	295° 05' 17"	13,65%
17:00	215° 26' 02"	-4° 46' 33"	211° 28' 09"	-17° 49' 48"	55' 49"	15' 12,41"	294° 54' 43"	13,94%
18:00	215° 57' 36"	-4° 47' 43"	211° 58' 49"	-18° 01' 35"	55' 47"	15' 11,98"	294° 44' 04"	14,23%
19:00	216° 29' 08"	-4° 48' 52"	212° 29' 32"	-18° 13' 16"	55' 45"	15' 11,55"	294° 33' 21"	14,53%
20:00	217° 00' 38"	-4° 49' 59"	213° 00' 18"	-18° 24' 51"	55' 44"	15' 11,12"	294° 22' 33"	14,83%
21:00	217° 32' 07"	-4° 51' 04"	213° 31' 05"	-18° 36' 21"	55' 42"	15' 10,69"	294° 11' 40"	15,13%
22:00	218° 03' 33"	-4° 52' 08"	214° 01' 55"	-18° 47' 45"	55' 41"	15' 10,27"	294° 00' 43"	15,43%
23:00	218° 34' 58"	-4° 53' 10"	214° 32' 47"	-18° 59' 03"	55' 39"	15' 09,85"	293° 49' 41"	15,74%
24:00	219° 06' 21"	-4° 54' 11"	215° 03' 41"	-19° 10' 15"	55' 38"	15' 09,43"	293° 38' 34"	16,04%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	172° 11' 10"	-0,46"	172° 49' 25"	3° 05' 59"	1,0058082	15' 54,09"	23° 26' 17"	04m 36s
01:00	172° 13' 36"	-0,46"	172° 51' 40"	3° 05' 02"	1,0057968	15' 54,10"	23° 26' 17"	04m 37s
02:00	172° 16' 02"	-0,46"	172° 53' 54"	3° 04' 04"	1,0057855	15' 54,11"	23° 26' 17"	04m 38s
03:00	172° 18' 28"	-0,47"	172° 56' 09"	3° 03' 06"	1,0057742	15' 54,12"	23° 26' 17"	04m 39s
04:00	172° 20' 55"	-0,47"	172° 58' 23"	3° 02' 09"	1,0057629	15' 54,13"	23° 26' 17"	04m 39s
05:00	172° 23' 21"	-0,47"	173° 00' 38"	3° 01' 11"	1,0057516	15' 54,14"	23° 26' 17"	04m 40s
06:00	172° 25' 47"	-0,47"	173° 02' 52"	3° 00' 13"	1,0057402	15' 54,15"	23° 26' 17"	04m 41s
07:00	172° 28' 13"	-0,47"	173° 05' 07"	2° 59' 15"	1,0057289	15' 54,16"	23° 26' 17"	04m 42s
08:00	172° 30' 39"	-0,48"	173° 07' 21"	2° 58' 18"	1,0057175	15' 54,17"	23° 26' 17"	04m 43s
09:00	172° 33' 05"	-0,48"	173° 09' 36"	2° 57' 20"	1,0057062	15' 54,19"	23° 26' 17"	04m 44s
10:00	172° 35' 32"	-0,48"	173° 11' 50"	2° 56' 22"	1,0056948	15' 54,20"	23° 26' 17"	04m 45s
11:00	172° 37' 58"	-0,48"	173° 14' 05"	2° 55' 24"	1,0056835	15' 54,21"	23° 26' 17"	04m 46s
12:00	172° 40' 24"	-0,48"	173° 16' 19"	2° 54' 27"	1,0056721	15' 54,22"	23° 26' 17"	04m 47s
13:00	172° 42' 50"	-0,48"	173° 18' 34"	2° 53' 29"	1,0056607	15' 54,23"	23° 26' 17"	04m 47s
14:00	172° 45' 16"	-0,49"	173° 20' 48"	2° 52' 31"	1,0056494	15' 54,24"	23° 26' 17"	04m 48s
15:00	172° 47' 43"	-0,49"	173° 23' 03"	2° 51' 33"	1,0056380	15' 54,25"	23° 26' 17"	04m 49s
16:00	172° 50' 09"	-0,49"	173° 25' 17"	2° 50' 36"	1,0056266	15' 54,26"	23° 26' 17"	04m 50s
17:00	172° 52' 35"	-0,49"	173° 27' 32"	2° 49' 38"	1,0056152	15' 54,27"	23° 26' 17"	04m 51s
18:00	172° 55' 01"	-0,49"	173° 29' 46"	2° 48' 40"	1,0056038	15' 54,28"	23° 26' 17"	04m 52s
19:00	172° 57' 28"	-0,49"	173° 32' 01"	2° 47' 42"	1,0055925	15' 54,29"	23° 26' 17"	04m 53s
20:00	172° 59' 54"	-0,49"	173° 34' 15"	2° 46' 45"	1,0055811	15' 54,30"	23° 26' 17"	04m 54s
21:00	173° 02' 20"	-0,50"	173° 36' 30"	2° 45' 47"	1,0055697	15' 54,31"	23° 26' 17"	04m 55s
22:00	173° 04' 46"	-0,50"	173° 38' 44"	2° 44' 49"	1,0055583	15' 54,33"	23° 26' 17"	04m 55s
23:00	173° 07' 12"	-0,50"	173° 40' 59"	2° 43' 51"	1,0055468	15' 54,34"	23° 26' 17"	04m 56s
24:00	173° 09' 39"	-0,50"	173° 43' 13"	2° 42' 53"	1,0055354	15' 54,35"	23° 26' 17"	04m 57s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	219° 06' 21"	-4° 54' 11"	215° 03' 41"	-19° 10' 15"	55' 38"	15' 09,43"	293° 38' 34"	16,04%
01:00	219° 37' 42"	-4° 55' 10"	215° 34' 38"	-19° 21' 22"	55' 36"	15' 09,01"	293° 27' 22"	16,35%
02:00	220° 09' 01"	-4° 56' 08"	216° 05' 37"	-19° 32' 23"	55' 35"	15' 08,60"	293° 16' 06"	16,66%
03:00	220° 40' 19"	-4° 57' 04"	216° 36' 38"	-19° 43' 17"	55' 33"	15' 08,18"	293° 04' 45"	16,98%
04:00	221° 11' 35"	-4° 57' 59"	217° 07' 42"	-19° 54' 06"	55' 32"	15' 07,78"	292° 53' 19"	17,29%
05:00	221° 42' 49"	-4° 58' 52"	217° 38' 48"	-20° 04' 49"	55' 30"	15' 07,37"	292° 41' 48"	17,61%
06:00	222° 14' 01"	-4° 59' 43"	218° 09' 57"	-20° 15' 25"	55' 29"	15' 06,97"	292° 30' 12"	17,93%
07:00	222° 45' 12"	-5° 00' 34"	218° 41' 08"	-20° 25' 56"	55' 27"	15' 06,57"	292° 18' 32"	18,25%
08:00	223° 16' 21"	-5° 01' 22"	219° 12' 21"	-20° 36' 20"	55' 26"	15' 06,17"	292° 06' 47"	18,57%
09:00	223° 47' 28"	-5° 02' 09"	219° 43' 37"	-20° 46' 38"	55' 24"	15' 05,78"	291° 54' 57"	18,90%
10:00	224° 18' 33"	-5° 02' 55"	220° 14' 56"	-20° 56' 50"	55' 23"	15' 05,38"	291° 43' 02"	19,22%
11:00	224° 49' 37"	-5° 03' 39"	220° 46' 16"	-21° 06' 55"	55' 21"	15' 05,00"	291° 31' 03"	19,55%
12:00	225° 20' 39"	-5° 04' 21"	221° 17' 40"	-21° 16' 55"	55' 20"	15' 04,61"	291° 18' 58"	19,88%
13:00	225° 51' 40"	-5° 05' 02"	221° 49' 06"	-21° 26' 47"	55' 19"	15' 04,23"	291° 06' 49"	20,21%
14:00	226° 22' 39"	-5° 05' 41"	222° 20' 34"	-21° 36' 34"	55' 17"	15' 03,85"	290° 54' 35"	20,55%
15:00	226° 53' 36"	-5° 06' 19"	222° 52' 05"	-21° 46' 14"	55' 16"	15' 03,48"	290° 42' 17"	20,88%
16:00	227° 24' 31"	-5° 06' 56"	223° 23' 38"	-21° 55' 47"	55' 15"	15' 03,11"	290° 29' 54"	21,22%
17:00	227° 55' 25"	-5° 07' 30"	223° 55' 14"	-22° 05' 14"	55' 13"	15' 02,74"	290° 17' 26"	21,56%
18:00	228° 26' 18"	-5° 08' 04"	224° 26' 53"	-22° 14' 34"	55' 12"	15' 02,37"	290° 04' 53"	21,90%
19:00	228° 57' 08"	-5° 08' 35"	224° 58' 33"	-22° 23' 48"	55' 10"	15' 02,01"	289° 52' 16"	22,24%
20:00	229° 27' 58"	-5° 09' 06"	225° 30' 17"	-22° 32' 55"	55' 09"	15' 01,65"	289° 39' 34"	22,58%
21:00	229° 58' 45"	-5° 09' 35"	226° 02' 03"	-22° 41' 55"	55' 08"	15' 01,30"	289° 26' 47"	22,93%
22:00	230° 29' 31"	-5° 10' 02"	226° 33' 51"	-22° 50' 49"	55' 07"	15' 00,95"	289° 13' 56"	23,27%
23:00	231° 00' 16"	-5° 10' 28"	227° 05' 42"	-22° 59' 35"	55' 05"	15' 00,60"	289° 01' 01"	23,62%
24:00	231° 30' 59"	-5° 10' 52"	227° 37' 36"	-23° 08' 15"	55' 04"	15' 00,26"	288° 48' 01"	23,97%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	173° 09' 39"	-0,50"	173° 43' 13"	2° 42' 53"	1,0055354	15' 54,35"	23° 26' 17"	04m 57s
01:00	173° 12' 05"	-0,50"	173° 45' 28"	2° 41' 55"	1,0055240	15' 54,36"	23° 26' 17"	04m 58s
02:00	173° 14' 31"	-0,50"	173° 47' 42"	2° 40' 58"	1,0055126	15' 54,37"	23° 26' 17"	04m 59s
03:00	173° 16' 57"	-0,50"	173° 49' 56"	2° 40' 00"	1,0055012	15' 54,38"	23° 26' 17"	05m 00s
04:00	173° 19' 24"	-0,50"	173° 52' 11"	2° 39' 02"	1,0054897	15' 54,39"	23° 26' 17"	05m 01s
05:00	173° 21' 50"	-0,50"	173° 54' 25"	2° 38' 04"	1,0054783	15' 54,40"	23° 26' 17"	05m 02s
06:00	173° 24' 16"	-0,50"	173° 56' 40"	2° 37' 06"	1,0054669	15' 54,41"	23° 26' 17"	05m 03s
07:00	173° 26' 42"	-0,50"	173° 58' 54"	2° 36' 08"	1,0054554	15' 54,42"	23° 26' 17"	05m 03s
08:00	173° 29' 09"	-0,51"	174° 01' 09"	2° 35' 11"	1,0054440	15' 54,43"	23° 26' 17"	05m 04s
09:00	173° 31' 35"	-0,51"	174° 03' 23"	2° 34' 13"	1,0054325	15' 54,44"	23° 26' 17"	05m 05s
10:00	173° 34' 01"	-0,51"	174° 05' 38"	2° 33' 15"	1,0054211	15' 54,46"	23° 26' 17"	05m 06s
11:00	173° 36' 28"	-0,51"	174° 07' 52"	2° 32' 17"	1,0054096	15' 54,47"	23° 26' 17"	05m 07s
12:00	173° 38' 54"	-0,51"	174° 10' 07"	2° 31' 19"	1,0053982	15' 54,48"	23° 26' 17"	05m 08s
13:00	173° 41' 20"	-0,51"	174° 12' 21"	2° 30' 21"	1,0053867	15' 54,49"	23° 26' 17"	05m 09s
14:00	173° 43' 46"	-0,51"	174° 14' 36"	2° 29' 23"	1,0053752	15' 54,50"	23° 26' 17"	05m 10s
15:00	173° 46' 13"	-0,51"	174° 16' 50"	2° 28' 25"	1,0053638	15' 54,51"	23° 26' 17"	05m 11s
16:00	173° 48' 39"	-0,51"	174° 19' 05"	2° 27' 28"	1,0053523	15' 54,52"	23° 26' 17"	05m 11s
17:00	173° 51' 05"	-0,51"	174° 21' 19"	2° 26' 30"	1,0053408	15' 54,53"	23° 26' 17"	05m 12s
18:00	173° 53' 31"	-0,51"	174° 23' 33"	2° 25' 32"	1,0053293	15' 54,54"	23° 26' 17"	05m 13s
19:00	173° 55' 58"	-0,51"	174° 25' 48"	2° 24' 34"	1,0053178	15' 54,55"	23° 26' 17"	05m 14s
20:00	173° 58' 24"	-0,51"	174° 28' 02"	2° 23' 36"	1,0053064	15' 54,56"	23° 26' 17"	05m 15s
21:00	174° 00' 50"	-0,51"	174° 30' 17"	2° 22' 38"	1,0052949	15' 54,58"	23° 26' 17"	05m 16s
22:00	174° 03' 17"	-0,51"	174° 32' 31"	2° 21' 40"	1,0052834	15' 54,59"	23° 26' 17"	05m 17s
23:00	174° 05' 43"	-0,51"	174° 34' 46"	2° 20' 42"	1,0052719	15' 54,60"	23° 26' 17"	05m 18s
24:00	174° 08' 09"	-0,51"	174° 37' 00"	2° 19' 44"	1,0052604	15' 54,61"	23° 26' 17"	05m 19s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	231° 30' 59"	-5° 10' 52"	227° 37' 36"	-23° 08' 15"	55' 04"	15' 00,26"	288° 48' 01"	23,97%
01:00	232° 01' 40"	-5° 11' 14"	228° 09' 32"	-23° 16' 48"	55' 03"	15' 00,00"	288° 34' 56"	24,32%
02:00	232° 32' 20"	-5° 11' 36"	228° 41' 30"	-23° 25' 14"	55' 02"	15' 00,00"	288° 21' 47"	24,67%
03:00	233° 02' 59"	-5° 11' 55"	229° 13' 31"	-23° 33' 34"	55' 00"	14' 59,25"	288° 08' 34"	25,03%
04:00	233° 33' 36"	-5° 12' 14"	229° 45' 35"	-23° 41' 46"	54' 59"	14' 58,92"	287° 55' 16"	25,38%
05:00	234° 04' 12"	-5° 12' 30"	230° 17' 41"	-23° 49' 51"	54' 58"	14' 58,59"	287° 41' 54"	25,74%
06:00	234° 34' 46"	-5° 12' 46"	230° 49' 49"	-23° 57' 49"	54' 57"	14' 58,27"	287° 28' 28"	26,10%
07:00	235° 05' 19"	-5° 12' 59"	231° 22' 00"	-24° 05' 40"	54' 56"	14' 57,95"	287° 14' 57"	26,45%
08:00	235° 35' 50"	-5° 13' 12"	231° 54' 13"	-24° 13' 24"	54' 54"	14' 57,64"	287° 01' 23"	26,81%
09:00	236° 06' 20"	-5° 13' 22"	232° 26' 28"	-24° 21' 01"	54' 53"	14' 57,33"	286° 47' 44"	27,17%
10:00	236° 36' 49"	-5° 13' 32"	232° 58' 46"	-24° 28' 31"	54' 52"	14' 57,02"	286° 34' 01"	27,54%
11:00	237° 07' 16"	-5° 13' 39"	233° 31' 07"	-24° 35' 53"	54' 51"	14' 56,72"	286° 20' 14"	27,90%
12:00	237° 37' 42"	-5° 13' 46"	234° 03' 30"	-24° 43' 09"	54' 50"	14' 56,43"	286° 06' 23"	28,26%
13:00	238° 08' 07"	-5° 13' 51"	234° 35' 55"	-24° 50' 17"	54' 49"	14' 56,13"	285° 52' 28"	28,63%
14:00	238° 38' 30"	-5° 13' 54"	235° 08' 22"	-24° 57' 17"	54' 48"	14' 55,84"	285° 38' 29"	29,00%
15:00	239° 08' 53"	-5° 13' 56"	235° 40' 52"	-25° 04' 11"	54' 47"	14' 55,56"	285° 24' 27"	29,37%
16:00	239° 39' 13"	-5° 13' 56"	236° 13' 24"	-25° 10' 56"	54' 46"	14' 55,28"	285° 10' 20"	29,73%
17:00	240° 09' 33"	-5° 13' 55"	236° 45' 58"	-25° 17' 35"	54' 45"	14' 55,00"	284° 56' 10"	30,10%
18:00	240° 39' 51"	-5° 13' 53"	237° 18' 34"	-25° 24' 06"	54' 44"	14' 54,73"	284° 41' 56"	30,48%
19:00	241° 10' 08"	-5° 13' 49"	237° 51' 13"	-25° 30' 30"	54' 43"	14' 54,46"	284° 27' 39"	30,85%
20:00	241° 40' 24"	-5° 13' 44"	238° 23' 53"	-25° 36' 46"	54' 42"	14' 54,19"	284° 13' 18"	31,22%
21:00	242° 10' 39"	-5° 13' 37"	238° 56' 36"	-25° 42' 54"	54' 41"	14' 53,93"	283° 58' 54"	31,59%
22:00	242° 40' 53"	-5° 13' 28"	239° 29' 21"	-25° 48' 56"	54' 40"	14' 53,68"	283° 44' 26"	31,97%
23:00	243° 11' 05"	-5° 13' 19"	240° 02' 08"	-25° 54' 49"	54' 39"	14' 53,43"	283° 29' 55"	32,35%
24:00	243° 41' 16"	-5° 13' 08"	240° 34' 57"	-26° 00' 35"	54' 38"	14' 53,18"	283° 15' 21"	32,72%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	174° 08' 09"	-0,51"	174° 37' 00"	2° 19' 44"	1,0052604	15' 54,61"	23° 26' 17"	05m 19s
01:00	174° 10' 36"	-0,51"	174° 39' 15"	2° 18' 46"	1,0052489	15' 54,62"	23° 26' 17"	05m 20s
02:00	174° 13' 02"	-0,51"	174° 41' 29"	2° 17' 48"	1,0052373	15' 54,63"	23° 26' 17"	05m 20s
03:00	174° 15' 28"	-0,51"	174° 43' 44"	2° 16' 50"	1,0052258	15' 54,64"	23° 26' 17"	05m 21s
04:00	174° 17' 55"	-0,51"	174° 45' 58"	2° 15' 52"	1,0052143	15' 54,65"	23° 26' 17"	05m 22s
05:00	174° 20' 21"	-0,51"	174° 48' 13"	2° 14' 54"	1,0052028	15' 54,66"	23° 26' 17"	05m 23s
06:00	174° 22' 47"	-0,51"	174° 50' 27"	2° 13' 56"	1,0051913	15' 54,67"	23° 26' 17"	05m 24s
07:00	174° 25' 14"	-0,51"	174° 52' 41"	2° 12' 58"	1,0051797	15' 54,68"	23° 26' 17"	05m 25s
08:00	174° 27' 40"	-0,51"	174° 54' 56"	2° 12' 00"	1,0051682	15' 54,70"	23° 26' 17"	05m 26s
09:00	174° 30' 06"	-0,50"	174° 57' 10"	2° 11' 03"	1,0051567	15' 54,71"	23° 26' 17"	05m 27s
10:00	174° 32' 33"	-0,50"	174° 59' 25"	2° 10' 05"	1,0051451	15' 54,72"	23° 26' 17"	05m 28s
11:00	174° 34' 59"	-0,50"	175° 01' 39"	2° 09' 07"	1,0051336	15' 54,73"	23° 26' 17"	05m 28s
12:00	174° 37' 25"	-0,50"	175° 03' 54"	2° 08' 09"	1,0051220	15' 54,74"	23° 26' 17"	05m 29s
13:00	174° 39' 52"	-0,50"	175° 06' 08"	2° 07' 11"	1,0051105	15' 54,75"	23° 26' 17"	05m 30s
14:00	174° 42' 18"	-0,50"	175° 08' 23"	2° 06' 13"	1,0050989	15' 54,76"	23° 26' 17"	05m 31s
15:00	174° 44' 44"	-0,50"	175° 10' 37"	2° 05' 15"	1,0050874	15' 54,77"	23° 26' 17"	05m 32s
16:00	174° 47' 11"	-0,50"	175° 12' 52"	2° 04' 17"	1,0050758	15' 54,78"	23° 26' 17"	05m 33s
17:00	174° 49' 37"	-0,50"	175° 15' 06"	2° 03' 19"	1,0050643	15' 54,79"	23° 26' 17"	05m 34s
18:00	174° 52' 03"	-0,50"	175° 17' 20"	2° 02' 21"	1,0050527	15' 54,81"	23° 26' 17"	05m 35s
19:00	174° 54' 30"	-0,50"	175° 19' 35"	2° 01' 22"	1,0050411	15' 54,82"	23° 26' 17"	05m 36s
20:00	174° 56' 56"	-0,49"	175° 21' 49"	2° 00' 24"	1,0050295	15' 54,83"	23° 26' 17"	05m 36s
21:00	174° 59' 22"	-0,49"	175° 24' 04"	1° 59' 26"	1,0050180	15' 54,84"	23° 26' 17"	05m 37s
22:00	175° 01' 49"	-0,49"	175° 26' 18"	1° 58' 28"	1,0050064	15' 54,85"	23° 26' 17"	05m 38s
23:00	175° 04' 15"	-0,49"	175° 28' 33"	1° 57' 30"	1,0049948	15' 54,86"	23° 26' 17"	05m 39s
24:00	175° 06' 42"	-0,49"	175° 30' 47"	1° 56' 32"	1,0049832	15' 54,87"	23° 26' 17"	05m 40s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	243° 41' 16"	-5° 13' 08"	240° 34' 57"	-26° 00' 35"	54' 38"	14' 53,18"	283° 15' 21"	32,72%
01:00	244° 11' 27"	-5° 12' 55"	241° 07' 48"	-26° 06' 13"	54' 37"	14' 52,94"	283° 00' 44"	33,10%
02:00	244° 41' 36"	-5° 12' 41"	241° 40' 41"	-26° 11' 44"	54' 36"	14' 52,70"	282° 46' 03"	33,48%
03:00	245° 11' 44"	-5° 12' 25"	242° 13' 36"	-26° 17' 07"	54' 35"	14' 52,47"	282° 31' 20"	33,86%
04:00	245° 41' 51"	-5° 12' 09"	242° 46' 33"	-26° 22' 22"	54' 35"	14' 52,24"	282° 16' 33"	34,24%
05:00	246° 11' 57"	-5° 11' 50"	243° 19' 32"	-26° 27' 30"	54' 34"	14' 52,01"	282° 01' 43"	34,62%
06:00	246° 42' 02"	-5° 11' 30"	243° 52' 32"	-26° 32' 29"	54' 33"	14' 51,79"	281° 46' 51"	35,00%
07:00	247° 12' 05"	-5° 11' 09"	244° 25' 35"	-26° 37' 21"	54' 32"	14' 51,58"	281° 31' 56"	35,38%
08:00	247° 42' 08"	-5° 10' 47"	244° 58' 39"	-26° 42' 06"	54' 31"	14' 51,37"	281° 16' 58"	35,76%
09:00	248° 12' 10"	-5° 10' 23"	245° 31' 44"	-26° 46' 42"	54' 31"	14' 51,16"	281° 01' 58"	36,15%
10:00	248° 42' 11"	-5° 09' 57"	246° 04' 52"	-26° 51' 11"	54' 30"	14' 50,96"	280° 46' 55"	36,53%
11:00	249° 12' 11"	-5° 09' 31"	246° 38' 01"	-26° 55' 31"	54' 29"	14' 50,76"	280° 31' 50"	36,92%
12:00	249° 42' 11"	-5° 09' 02"	247° 11' 11"	-26° 59' 44"	54' 29"	14' 50,57"	280° 16' 42"	37,30%
13:00	250° 12' 09"	-5° 08' 33"	247° 44' 23"	-27° 03' 49"	54' 28"	14' 50,38"	280° 01' 32"	37,69%
14:00	250° 42' 06"	-5° 08' 02"	248° 17' 37"	-27° 07' 46"	54' 27"	14' 50,20"	279° 46' 20"	38,08%
15:00	251° 12' 03"	-5° 07' 30"	248° 50' 52"	-27° 11' 35"	54' 26"	14' 50,02"	279° 31' 06"	38,46%
16:00	251° 41' 58"	-5° 06' 56"	249° 24' 08"	-27° 15' 16"	54' 26"	14' 49,85"	279° 15' 49"	38,85%
17:00	252° 11' 53"	-5° 06' 21"	249° 57' 25"	-27° 18' 49"	54' 25"	14' 49,68"	279° 00' 31"	39,24%
18:00	252° 41' 47"	-5° 05' 44"	250° 30' 44"	-27° 22' 15"	54' 25"	14' 49,51"	278° 45' 11"	39,63%
19:00	253° 11' 41"	-5° 05' 06"	251° 04' 04"	-27° 25' 32"	54' 24"	14' 49,35"	278° 29' 49"	40,02%
20:00	253° 41' 33"	-5° 04' 27"	251° 37' 26"	-27° 28' 41"	54' 23"	14' 49,20"	278° 14' 26"	40,41%
21:00	254° 11' 25"	-5° 03' 47"	252° 10' 48"	-27° 31' 42"	54' 23"	14' 49,05"	277° 59' 00"	40,80%
22:00	254° 41' 16"	-5° 03' 05"	252° 44' 11"	-27° 34' 35"	54' 22"	14' 48,91"	277° 43' 34"	41,19%
23:00	255° 11' 07"	-5° 02' 22"	253° 17' 36"	-27° 37' 20"	54' 22"	14' 48,76"	277° 28' 06"	41,58%
24:00	255° 40' 56"	-5° 01' 37"	253° 51' 01"	-27° 39' 57"	54' 21"	14' 48,63"	277° 12' 36"	41,97%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	175° 06' 42"	-0,49"	175° 30' 47"	1° 56' 32"	1,0049832	15' 54,87"	23° 26' 17"	05m 40s
01:00	175° 09' 08"	-0,49"	175° 33' 02"	1° 55' 34"	1,0049716	15' 54,88"	23° 26' 17"	05m 41s
02:00	175° 11' 34"	-0,49"	175° 35' 16"	1° 54' 36"	1,0049601	15' 54,89"	23° 26' 17"	05m 42s
03:00	175° 14' 01"	-0,49"	175° 37' 31"	1° 53' 38"	1,0049485	15' 54,90"	23° 26' 17"	05m 43s
04:00	175° 16' 27"	-0,48"	175° 39' 45"	1° 52' 40"	1,0049369	15' 54,92"	23° 26' 17"	05m 44s
05:00	175° 18' 53"	-0,48"	175° 41' 59"	1° 51' 42"	1,0049253	15' 54,93"	23° 26' 17"	05m 45s
06:00	175° 21' 20"	-0,48"	175° 44' 14"	1° 50' 44"	1,0049137	15' 54,94"	23° 26' 17"	05m 45s
07:00	175° 23' 46"	-0,48"	175° 46' 28"	1° 49' 46"	1,0049021	15' 54,95"	23° 26' 17"	05m 46s
08:00	175° 26' 13"	-0,48"	175° 48' 43"	1° 48' 48"	1,0048905	15' 54,96"	23° 26' 17"	05m 47s
09:00	175° 28' 39"	-0,48"	175° 50' 57"	1° 47' 50"	1,0048788	15' 54,97"	23° 26' 17"	05m 48s
10:00	175° 31' 05"	-0,47"	175° 53' 12"	1° 46' 52"	1,0048672	15' 54,98"	23° 26' 17"	05m 49s
11:00	175° 33' 32"	-0,47"	175° 55' 26"	1° 45' 54"	1,0048556	15' 54,99"	23° 26' 17"	05m 50s
12:00	175° 35' 58"	-0,47"	175° 57' 41"	1° 44' 56"	1,0048440	15' 55,00"	23° 26' 17"	05m 51s
13:00	175° 38' 25"	-0,47"	175° 59' 55"	1° 43' 57"	1,0048324	15' 55,02"	23° 26' 17"	05m 52s
14:00	175° 40' 51"	-0,47"	176° 02' 10"	1° 42' 59"	1,0048208	15' 55,03"	23° 26' 17"	05m 53s
15:00	175° 43' 18"	-0,46"	176° 04' 24"	1° 42' 01"	1,0048091	15' 55,04"	23° 26' 17"	05m 53s
16:00	175° 45' 44"	-0,46"	176° 06' 39"	1° 41' 03"	1,0047975	15' 55,05"	23° 26' 17"	05m 54s
17:00	175° 48' 10"	-0,46"	176° 08' 53"	1° 40' 05"	1,0047859	15' 55,06"	23° 26' 17"	05m 55s
18:00	175° 50' 37"	-0,46"	176° 11' 07"	1° 39' 07"	1,0047742	15' 55,07"	23° 26' 17"	05m 56s
19:00	175° 53' 03"	-0,46"	176° 13' 22"	1° 38' 09"	1,0047626	15' 55,08"	23° 26' 17"	05m 57s
20:00	175° 55' 30"	-0,45"	176° 15' 36"	1° 37' 11"	1,0047510	15' 55,09"	23° 26' 17"	05m 58s
21:00	175° 57' 56"	-0,45"	176° 17' 51"	1° 36' 13"	1,0047393	15' 55,10"	23° 26' 17"	05m 59s
22:00	176° 00' 23"	-0,45"	176° 20' 05"	1° 35' 14"	1,0047277	15' 55,11"	23° 26' 17"	06m 00s
23:00	176° 02' 49"	-0,45"	176° 22' 20"	1° 34' 16"	1,0047160	15' 55,13"	23° 26' 17"	06m 01s
24:00	176° 05' 15"	-0,44"	176° 24' 34"	1° 33' 18"	1,0047044	15' 55,14"	23° 26' 17"	06m 01s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	255° 40' 56"	-5° 01' 37"	253° 51' 01"	-27° 39' 57"	54' 21"	14' 48,63"	277° 12' 36"	41,97%
01:00	256° 10' 46"	-5° 00' 51"	254° 24' 28"	-27° 42' 26"	54' 21"	14' 48,50"	276° 57' 06"	42,36%
02:00	256° 40' 34"	-5° 00' 04"	254° 57' 55"	-27° 44' 47"	54' 20"	14' 48,37"	276° 41' 34"	42,75%
03:00	257° 10' 22"	-4° 59' 15"	255° 31' 23"	-27° 47' 00"	54' 20"	14' 48,25"	276° 26' 02"	43,15%
04:00	257° 40' 09"	-4° 58' 25"	256° 04' 51"	-27° 49' 05"	54' 20"	14' 48,14"	276° 10' 28"	43,54%
05:00	258° 09' 56"	-4° 57' 34"	256° 38' 21"	-27° 51' 01"	54' 19"	14' 48,02"	275° 54' 53"	43,93%
06:00	258° 39' 42"	-4° 56' 41"	257° 11' 51"	-27° 52' 49"	54' 19"	14' 47,92"	275° 39' 18"	44,33%
07:00	259° 09' 27"	-4° 55' 47"	257° 45' 21"	-27° 54' 30"	54' 18"	14' 47,82"	275° 23' 42"	44,72%
08:00	259° 39' 13"	-4° 54' 52"	258° 18' 52"	-27° 56' 02"	54' 18"	14' 47,72"	275° 08' 06"	45,11%
09:00	260° 08' 57"	-4° 53' 56"	258° 52' 24"	-27° 57' 26"	54' 18"	14' 47,63"	274° 52' 29"	45,51%
10:00	260° 38' 41"	-4° 52' 58"	259° 25' 56"	-27° 58' 42"	54' 17"	14' 47,54"	274° 36' 51"	45,90%
11:00	261° 08' 25"	-4° 51' 59"	259° 59' 28"	-27° 59' 50"	54' 17"	14' 47,46"	274° 21' 14"	46,30%
12:00	261° 38' 08"	-4° 50' 58"	260° 33' 01"	-28° 00' 49"	54' 17"	14' 47,38"	274° 05' 36"	46,69%
13:00	262° 07' 51"	-4° 49' 57"	261° 06' 33"	-28° 01' 41"	54' 17"	14' 47,31"	273° 49' 58"	47,08%
14:00	262° 37' 33"	-4° 48' 54"	261° 40' 06"	-28° 02' 24"	54' 16"	14' 47,25"	273° 34' 21"	47,48%
15:00	263° 07' 15"	-4° 47' 49"	262° 13' 39"	-28° 02' 59"	54' 16"	14' 47,18"	273° 18' 43"	47,87%
16:00	263° 36' 57"	-4° 46' 44"	262° 47' 12"	-28° 03' 26"	54' 16"	14' 47,13"	273° 03' 05"	48,27%
17:00	264° 06' 39"	-4° 45' 37"	263° 20' 45"	-28° 03' 45"	54' 16"	14' 47,07"	272° 47' 28"	48,66%
18:00	264° 36' 20"	-4° 44' 29"	263° 54' 18"	-28° 03' 55"	54' 15"	14' 47,03"	272° 31' 52"	49,06%
19:00	265° 06' 00"	-4° 43' 19"	264° 27' 51"	-28° 03' 58"	54' 15"	14' 46,98"	272° 16' 16"	49,45%
20:00	265° 35' 41"	-4° 42' 09"	265° 01' 23"	-28° 03' 52"	54' 15"	14' 46,95"	272° 00' 40"	49,85%
21:00	266° 05' 21"	-4° 40' 57"	265° 34' 56"	-28° 03' 38"	54' 15"	14' 46,92"	271° 45' 05"	50,24%
22:00	266° 35' 01"	-4° 39' 44"	266° 08' 28"	-28° 03' 16"	54' 15"	14' 46,89"	271° 29' 31"	50,64%
23:00	267° 04' 41"	-4° 38' 30"	266° 41' 59"	-28° 02' 46"	54' 15"	14' 46,87"	271° 13' 58"	51,03%
24:00	267° 34' 21"	-4° 37' 14"	267° 15' 30"	-28° 02' 08"	54' 15"	14' 46,85"	270° 58' 26"	51,43%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	176° 05' 15"	-0,44"	176° 24' 34"	1° 33' 18"	1,0047044	15' 55,14"	23° 26' 17"	06m 01s
01:00	176° 07' 42"	-0,44"	176° 26' 49"	1° 32' 20"	1,0046927	15' 55,15"	23° 26' 17"	06m 02s
02:00	176° 10' 08"	-0,44"	176° 29' 03"	1° 31' 22"	1,0046811	15' 55,16"	23° 26' 17"	06m 03s
03:00	176° 12' 35"	-0,44"	176° 31' 18"	1° 30' 24"	1,0046694	15' 55,17"	23° 26' 17"	06m 04s
04:00	176° 15' 01"	-0,43"	176° 33' 32"	1° 29' 26"	1,0046577	15' 55,18"	23° 26' 17"	06m 05s
05:00	176° 17' 28"	-0,43"	176° 35' 47"	1° 28' 27"	1,0046461	15' 55,19"	23° 26' 17"	06m 06s
06:00	176° 19' 54"	-0,43"	176° 38' 01"	1° 27' 29"	1,0046344	15' 55,20"	23° 26' 17"	06m 07s
07:00	176° 22' 21"	-0,43"	176° 40' 15"	1° 26' 31"	1,0046228	15' 55,21"	23° 26' 17"	06m 08s
08:00	176° 24' 47"	-0,42"	176° 42' 30"	1° 25' 33"	1,0046111	15' 55,23"	23° 26' 17"	06m 09s
09:00	176° 27' 14"	-0,42"	176° 44' 44"	1° 24' 35"	1,0045994	15' 55,24"	23° 26' 17"	06m 10s
10:00	176° 29' 40"	-0,42"	176° 46' 59"	1° 23' 37"	1,0045877	15' 55,25"	23° 26' 17"	06m 10s
11:00	176° 32' 07"	-0,41"	176° 49' 13"	1° 22' 39"	1,0045761	15' 55,26"	23° 26' 17"	06m 11s
12:00	176° 34' 33"	-0,41"	176° 51' 28"	1° 21' 40"	1,0045644	15' 55,27"	23° 26' 17"	06m 12s
13:00	176° 36' 59"	-0,41"	176° 53' 42"	1° 20' 42"	1,0045527	15' 55,28"	23° 26' 17"	06m 13s
14:00	176° 39' 26"	-0,41"	176° 55' 57"	1° 19' 44"	1,0045410	15' 55,29"	23° 26' 17"	06m 14s
15:00	176° 41' 52"	-0,40"	176° 58' 11"	1° 18' 46"	1,0045293	15' 55,30"	23° 26' 17"	06m 15s
16:00	176° 44' 19"	-0,40"	177° 00' 26"	1° 17' 48"	1,0045177	15' 55,31"	23° 26' 17"	06m 16s
17:00	176° 46' 45"	-0,40"	177° 02' 40"	1° 16' 49"	1,0045060	15' 55,33"	23° 26' 17"	06m 17s
18:00	176° 49' 12"	-0,39"	177° 04' 55"	1° 15' 51"	1,0044943	15' 55,34"	23° 26' 17"	06m 18s
19:00	176° 51' 38"	-0,39"	177° 07' 09"	1° 14' 53"	1,0044826	15' 55,35"	23° 26' 17"	06m 18s
20:00	176° 54' 05"	-0,39"	177° 09' 24"	1° 13' 55"	1,0044709	15' 55,36"	23° 26' 17"	06m 19s
21:00	176° 56' 31"	-0,38"	177° 11' 38"	1° 12' 57"	1,0044592	15' 55,37"	23° 26' 17"	06m 20s
22:00	176° 58' 58"	-0,38"	177° 13' 53"	1° 11' 58"	1,0044475	15' 55,38"	23° 26' 17"	06m 21s
23:00	177° 01' 24"	-0,38"	177° 16' 07"	1° 11' 00"	1,0044358	15' 55,39"	23° 26' 17"	06m 22s
24:00	177° 03' 51"	-0,37"	177° 18' 22"	1° 10' 02"	1,0044241	15' 55,40"	23° 26' 17"	06m 23s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	267° 34' 21"	-4° 37' 14"	267° 15' 30"	-28° 02' 08"	54' 15"	14' 46,85"	270° 58' 26"	51,43%
01:00	268° 04' 00"	-4° 35' 57"	267° 49' 01"	-28° 01' 22"	54' 15"	14' 46,84"	270° 42' 55"	51,82%
02:00	268° 33' 40"	-4° 34' 39"	268° 22' 31"	-28° 00' 27"	54' 15"	14' 46,83"	270° 27' 25"	52,21%
03:00	269° 03' 19"	-4° 33' 20"	268° 56' 01"	-27° 59' 25"	54' 15"	14' 46,83"	270° 11' 57"	52,61%
04:00	269° 32' 58"	-4° 32' 00"	269° 29' 30"	-27° 58' 14"	54' 15"	14' 46,83"	269° 56' 30"	53,00%
05:00	270° 02' 37"	-4° 30' 38"	270° 02' 58"	-27° 56' 55"	54' 15"	14' 46,84"	269° 41' 05"	53,40%
06:00	270° 32' 17"	-4° 29' 15"	270° 36' 25"	-27° 55' 28"	54' 15"	14' 46,85"	269° 25' 41"	53,79%
07:00	271° 01' 56"	-4° 27' 51"	271° 09' 51"	-27° 53' 53"	54' 15"	14' 46,87"	269° 10' 19"	54,18%
08:00	271° 31' 35"	-4° 26' 26"	271° 43' 17"	-27° 52' 10"	54' 15"	14' 46,89"	268° 54' 59"	54,58%
09:00	272° 01' 14"	-4° 24' 59"	272° 16' 42"	-27° 50' 19"	54' 15"	14' 46,91"	268° 39' 40"	54,97%
10:00	272° 30' 53"	-4° 23' 32"	272° 50' 05"	-27° 48' 20"	54' 15"	14' 46,95"	268° 24' 24"	55,36%
11:00	273° 00' 32"	-4° 22' 03"	273° 23' 28"	-27° 46' 12"	54' 15"	14' 46,98"	268° 09' 10"	55,75%
12:00	273° 30' 11"	-4° 20' 33"	273° 56' 49"	-27° 43' 57"	54' 15"	14' 47,03"	267° 53' 58"	56,15%
13:00	273° 59' 50"	-4° 19' 02"	274° 30' 09"	-27° 41' 34"	54' 16"	14' 47,07"	267° 38' 48"	56,54%
14:00	274° 29' 30"	-4° 17' 29"	275° 03' 28"	-27° 39' 03"	54' 16"	14' 47,12"	267° 23' 41"	56,93%
15:00	274° 59' 09"	-4° 15' 56"	275° 36' 46"	-27° 36' 23"	54' 16"	14' 47,18"	267° 08' 36"	57,32%
16:00	275° 28' 49"	-4° 14' 21"	276° 10' 03"	-27° 33' 36"	54' 16"	14' 47,24"	266° 53' 34"	57,71%
17:00	275° 58' 29"	-4° 12' 45"	276° 43' 18"	-27° 30' 41"	54' 17"	14' 47,31"	266° 38' 35"	58,10%
18:00	276° 28' 09"	-4° 11' 08"	277° 16' 31"	-27° 27' 38"	54' 17"	14' 47,38"	266° 23' 38"	58,49%
19:00	276° 57' 49"	-4° 09' 30"	277° 49' 43"	-27° 24' 27"	54' 17"	14' 47,46"	266° 08' 44"	58,88%
20:00	277° 27' 30"	-4° 07' 51"	278° 22' 54"	-27° 21' 08"	54' 17"	14' 47,54"	265° 53' 54"	59,27%
21:00	277° 57' 11"	-4° 06' 11"	278° 56' 03"	-27° 17' 41"	54' 18"	14' 47,62"	265° 39' 06"	59,65%
22:00	278° 26' 52"	-4° 04' 29"	279° 29' 10"	-27° 14' 07"	54' 18"	14' 47,72"	265° 24' 22"	60,04%
23:00	278° 56' 34"	-4° 02' 47"	280° 02' 16"	-27° 10' 24"	54' 18"	14' 47,81"	265° 09' 40"	60,43%
24:00	279° 26' 15"	-4° 01' 03"	280° 35' 19"	-27° 06' 34"	54' 19"	14' 47,91"	264° 55' 03"	60,82%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	177° 03' 51"	-0,37"	177° 18' 22"	1° 10' 02"	1,0044241	15' 55,40"	23° 26' 17"	06m 23s
01:00	177° 06' 18"	-0,37"	177° 20' 36"	1° 09' 04"	1,0044124	15' 55,41"	23° 26' 17"	06m 24s
02:00	177° 08' 44"	-0,37"	177° 22' 51"	1° 08' 06"	1,0044007	15' 55,43"	23° 26' 17"	06m 25s
03:00	177° 11' 11"	-0,36"	177° 25' 05"	1° 07' 07"	1,0043890	15' 55,44"	23° 26' 17"	06m 26s
04:00	177° 13' 37"	-0,36"	177° 27' 19"	1° 06' 09"	1,0043773	15' 55,45"	23° 26' 17"	06m 26s
05:00	177° 16' 04"	-0,36"	177° 29' 34"	1° 05' 11"	1,0043655	15' 55,46"	23° 26' 17"	06m 27s
06:00	177° 18' 30"	-0,35"	177° 31' 48"	1° 04' 13"	1,0043538	15' 55,47"	23° 26' 17"	06m 28s
07:00	177° 20' 57"	-0,35"	177° 34' 03"	1° 03' 14"	1,0043421	15' 55,48"	23° 26' 17"	06m 29s
08:00	177° 23' 23"	-0,34"	177° 36' 17"	1° 02' 16"	1,0043304	15' 55,49"	23° 26' 17"	06m 30s
09:00	177° 25' 50"	-0,34"	177° 38' 32"	1° 01' 18"	1,0043187	15' 55,50"	23° 26' 17"	06m 31s
10:00	177° 28' 16"	-0,34"	177° 40' 46"	1° 00' 20"	1,0043070	15' 55,51"	23° 26' 17"	06m 32s
11:00	177° 30' 43"	-0,33"	177° 43' 01"	0° 59' 22"	1,0042952	15' 55,53"	23° 26' 17"	06m 33s
12:00	177° 33' 09"	-0,33"	177° 45' 15"	0° 58' 23"	1,0042835	15' 55,54"	23° 26' 17"	06m 34s
13:00	177° 35' 36"	-0,33"	177° 47' 30"	0° 57' 25"	1,0042718	15' 55,55"	23° 26' 17"	06m 34s
14:00	177° 38' 02"	-0,32"	177° 49' 44"	0° 56' 27"	1,0042601	15' 55,56"	23° 26' 17"	06m 35s
15:00	177° 40' 29"	-0,32"	177° 51' 59"	0° 55' 29"	1,0042483	15' 55,57"	23° 26' 17"	06m 36s
16:00	177° 42' 56"	-0,31"	177° 54' 13"	0° 54' 30"	1,0042366	15' 55,58"	23° 26' 17"	06m 37s
17:00	177° 45' 22"	-0,31"	177° 56' 28"	0° 53' 32"	1,0042249	15' 55,59"	23° 26' 17"	06m 38s
18:00	177° 47' 49"	-0,31"	177° 58' 42"	0° 52' 34"	1,0042131	15' 55,60"	23° 26' 17"	06m 39s
19:00	177° 50' 15"	-0,30"	178° 00' 57"	0° 51' 36"	1,0042014	15' 55,62"	23° 26' 17"	06m 40s
20:00	177° 52' 42"	-0,30"	178° 03' 11"	0° 50' 37"	1,0041897	15' 55,63"	23° 26' 17"	06m 41s
21:00	177° 55' 08"	-0,29"	178° 05' 26"	0° 49' 39"	1,0041779	15' 55,64"	23° 26' 17"	06m 42s
22:00	177° 57' 35"	-0,29"	178° 07' 40"	0° 48' 41"	1,0041662	15' 55,65"	23° 26' 17"	06m 42s
23:00	178° 00' 02"	-0,29"	178° 09' 55"	0° 47' 42"	1,0041544	15' 55,66"	23° 26' 17"	06m 43s
24:00	178° 02' 28"	-0,28"	178° 12' 10"	0° 46' 44"	1,0041427	15' 55,67"	23° 26' 17"	06m 44s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	279° 26' 15"	-4° 01' 03"	280° 35' 19"	-27° 06' 34"	54' 19"	14' 47,91"	264° 55' 03"	60,82%
01:00	279° 55' 57"	-3° 59' 19"	281° 08' 22"	-27° 02' 36"	54' 19"	14' 48,02"	264° 40' 28"	61,20%
02:00	280° 25' 40"	-3° 57' 33"	281° 41' 22"	-26° 58' 30"	54' 20"	14' 48,13"	264° 25' 58"	61,59%
03:00	280° 55' 23"	-3° 55' 46"	282° 14' 20"	-26° 54' 17"	54' 20"	14' 48,24"	264° 11' 30"	61,97%
04:00	281° 25' 06"	-3° 53' 58"	282° 47' 17"	-26° 49' 55"	54' 20"	14' 48,36"	263° 57' 07"	62,36%
05:00	281° 54' 50"	-3° 52' 09"	283° 20' 12"	-26° 45' 26"	54' 21"	14' 48,49"	263° 42' 48"	62,74%
06:00	282° 24' 34"	-3° 50' 19"	283° 53' 04"	-26° 40' 50"	54' 21"	14' 48,61"	263° 28' 32"	63,12%
07:00	282° 54' 19"	-3° 48' 27"	284° 25' 55"	-26° 36' 05"	54' 22"	14' 48,75"	263° 14' 20"	63,50%
08:00	283° 24' 04"	-3° 46' 35"	284° 58' 43"	-26° 31' 13"	54' 22"	14' 48,89"	263° 00' 13"	63,89%
09:00	283° 53' 50"	-3° 44' 42"	285° 31' 30"	-26° 26' 14"	54' 23"	14' 49,03"	262° 46' 10"	64,27%
10:00	284° 23' 36"	-3° 42' 47"	286° 04' 14"	-26° 21' 07"	54' 23"	14' 49,18"	262° 32' 10"	64,65%
11:00	284° 53' 23"	-3° 40' 52"	286° 36' 56"	-26° 15' 52"	54' 24"	14' 49,33"	262° 18' 16"	65,02%
12:00	285° 23' 10"	-3° 38' 55"	287° 09' 36"	-26° 10' 30"	54' 25"	14' 49,49"	262° 04' 26"	65,40%
13:00	285° 52' 58"	-3° 36' 58"	287° 42' 14"	-26° 05' 00"	54' 25"	14' 49,65"	261° 50' 40"	65,78%
14:00	286° 22' 47"	-3° 34' 59"	288° 14' 49"	-25° 59' 23"	54' 26"	14' 49,81"	261° 36' 59"	66,16%
15:00	286° 52' 36"	-3° 33' 00"	288° 47' 22"	-25° 53' 38"	54' 26"	14' 49,99"	261° 23' 23"	66,53%
16:00	287° 22' 26"	-3° 30' 59"	289° 19' 53"	-25° 47' 46"	54' 27"	14' 50,16"	261° 09' 51"	66,91%
17:00	287° 52' 17"	-3° 28' 58"	289° 52' 22"	-25° 41' 47"	54' 28"	14' 50,34"	260° 56' 24"	67,28%
18:00	288° 22' 08"	-3° 26' 55"	290° 24' 48"	-25° 35' 40"	54' 28"	14' 50,53"	260° 43' 03"	67,65%
19:00	288° 52' 00"	-3° 24' 52"	290° 57' 11"	-25° 29' 26"	54' 29"	14' 50,71"	260° 29' 46"	68,03%
20:00	289° 21' 53"	-3° 22' 47"	291° 29' 32"	-25° 23' 05"	54' 30"	14' 50,91"	260° 16' 35"	68,40%
21:00	289° 51' 46"	-3° 20' 42"	292° 01' 51"	-25° 16' 36"	54' 30"	14' 51,11"	260° 03' 28"	68,77%
22:00	290° 21' 41"	-3° 18' 35"	292° 34' 07"	-25° 10' 00"	54' 31"	14' 51,31"	259° 50' 27"	69,14%
23:00	290° 51' 36"	-3° 16' 28"	293° 06' 21"	-25° 03' 17"	54' 32"	14' 51,51"	259° 37' 32"	69,51%
24:00	291° 21' 32"	-3° 14' 20"	293° 38' 32"	-24° 56' 27"	54' 33"	14' 51,73"	259° 24' 42"	69,87%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	178° 02' 28"	-0,28"	178° 12' 10"	0° 46' 44"	1,0041427	15' 55,67"	23° 26' 17"	06m 44s
01:00	178° 04' 55"	-0,28"	178° 14' 24"	0° 45' 46"	1,0041310	15' 55,68"	23° 26' 17"	06m 45s
02:00	178° 07' 21"	-0,27"	178° 16' 39"	0° 44' 48"	1,0041192	15' 55,69"	23° 26' 17"	06m 46s
03:00	178° 09' 48"	-0,27"	178° 18' 53"	0° 43' 49"	1,0041075	15' 55,70"	23° 26' 17"	06m 47s
04:00	178° 12' 15"	-0,26"	178° 21' 08"	0° 42' 51"	1,0040957	15' 55,72"	23° 26' 17"	06m 48s
05:00	178° 14' 41"	-0,26"	178° 23' 22"	0° 41' 53"	1,0040840	15' 55,73"	23° 26' 17"	06m 49s
06:00	178° 17' 08"	-0,25"	178° 25' 37"	0° 40' 55"	1,0040722	15' 55,74"	23° 26' 17"	06m 50s
07:00	178° 19' 34"	-0,25"	178° 27' 51"	0° 39' 56"	1,0040605	15' 55,75"	23° 26' 17"	06m 50s
08:00	178° 22' 01"	-0,25"	178° 30' 06"	0° 38' 58"	1,0040487	15' 55,76"	23° 26' 17"	06m 51s
09:00	178° 24' 28"	-0,24"	178° 32' 20"	0° 38' 00"	1,0040370	15' 55,77"	23° 26' 17"	06m 52s
10:00	178° 26' 54"	-0,24"	178° 34' 35"	0° 37' 01"	1,0040252	15' 55,78"	23° 26' 17"	06m 53s
11:00	178° 29' 21"	-0,23"	178° 36' 49"	0° 36' 03"	1,0040134	15' 55,79"	23° 26' 17"	06m 54s
12:00	178° 31' 47"	-0,23"	178° 39' 04"	0° 35' 05"	1,0040017	15' 55,81"	23° 26' 17"	06m 55s
13:00	178° 34' 14"	-0,22"	178° 41' 18"	0° 34' 06"	1,0039899	15' 55,82"	23° 26' 17"	06m 56s
14:00	178° 36' 41"	-0,22"	178° 43' 33"	0° 33' 08"	1,0039782	15' 55,83"	23° 26' 17"	06m 57s
15:00	178° 39' 07"	-0,21"	178° 45' 47"	0° 32' 10"	1,0039664	15' 55,84"	23° 26' 17"	06m 58s
16:00	178° 41' 34"	-0,21"	178° 48' 02"	0° 31' 12"	1,0039546	15' 55,85"	23° 26' 17"	06m 58s
17:00	178° 44' 01"	-0,20"	178° 50' 17"	0° 30' 13"	1,0039429	15' 55,86"	23° 26' 17"	06m 59s
18:00	178° 46' 27"	-0,20"	178° 52' 31"	0° 29' 15"	1,0039311	15' 55,87"	23° 26' 17"	07m 00s
19:00	178° 48' 54"	-0,20"	178° 54' 46"	0° 28' 17"	1,0039193	15' 55,88"	23° 26' 17"	07m 01s
20:00	178° 51' 20"	-0,19"	178° 57' 00"	0° 27' 18"	1,0039076	15' 55,89"	23° 26' 17"	07m 02s
21:00	178° 53' 47"	-0,19"	178° 59' 15"	0° 26' 20"	1,0038958	15' 55,91"	23° 26' 17"	07m 03s
22:00	178° 56' 14"	-0,18"	179° 01' 29"	0° 25' 22"	1,0038840	15' 55,92"	23° 26' 17"	07m 04s
23:00	178° 58' 40"	-0,18"	179° 03' 44"	0° 24' 23"	1,0038723	15' 55,93"	23° 26' 17"	07m 05s
24:00	179° 01' 07"	-0,17"	179° 05' 58"	0° 23' 25"	1,0038605	15' 55,94"	23° 26' 17"	07m 06s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	291° 21' 32"	-3° 14' 20"	293° 38' 32"	-24° 56' 27"	54' 33"	14' 51,73"	259° 24' 42"	69,87%
01:00	291° 51' 29"	-3° 12' 10"	294° 10' 41"	-24° 49' 30"	54' 34"	14' 51,94"	259° 11' 57"	70,24%
02:00	292° 21' 26"	-3° 10' 00"	294° 42' 47"	-24° 42' 26"	54' 34"	14' 52,16"	258° 59' 18"	70,60%
03:00	292° 51' 25"	-3° 07' 49"	295° 14' 50"	-24° 35' 14"	54' 35"	14' 52,38"	258° 46' 45"	70,97%
04:00	293° 21' 25"	-3° 05' 37"	295° 46' 51"	-24° 27' 56"	54' 36"	14' 52,61"	258° 34' 18"	71,33%
05:00	293° 51' 25"	-3° 03' 24"	296° 18' 49"	-24° 20' 30"	54' 37"	14' 52,85"	258° 21' 56"	71,69%
06:00	294° 21' 26"	-3° 01' 10"	296° 50' 45"	-24° 12' 58"	54' 38"	14' 53,08"	258° 09' 40"	72,05%
07:00	294° 51' 29"	-2° 58' 55"	297° 22' 38"	-24° 05' 19"	54' 39"	14' 53,32"	257° 57' 31"	72,41%
08:00	295° 21' 32"	-2° 56' 39"	297° 54' 28"	-23° 57' 32"	54' 40"	14' 53,57"	257° 45' 27"	72,77%
09:00	295° 51' 36"	-2° 54' 23"	298° 26' 16"	-23° 49' 39"	54' 40"	14' 53,82"	257° 33' 30"	73,13%
10:00	296° 21' 42"	-2° 52' 05"	298° 58' 01"	-23° 41' 40"	54' 41"	14' 54,07"	257° 21' 39"	73,48%
11:00	296° 51' 48"	-2° 49' 47"	299° 29' 43"	-23° 33' 33"	54' 42"	14' 54,33"	257° 09' 54"	73,84%
12:00	297° 21' 55"	-2° 47' 27"	300° 01' 22"	-23° 25' 20"	54' 43"	14' 54,59"	256° 58' 16"	74,19%
13:00	297° 52' 04"	-2° 45' 07"	300° 32' 59"	-23° 17' 00"	54' 44"	14' 54,86"	256° 46' 44"	74,54%
14:00	298° 22' 13"	-2° 42' 46"	301° 04' 33"	-23° 08' 33"	54' 45"	14' 55,13"	256° 35' 19"	74,89%
15:00	298° 52' 24"	-2° 40' 25"	301° 36' 05"	-23° 00' 00"	54' 46"	14' 55,40"	256° 24' 00"	75,24%
16:00	299° 22' 36"	-2° 38' 02"	302° 07' 34"	-22° 51' 20"	54' 47"	14' 55,68"	256° 12' 48"	75,59%
17:00	299° 52' 49"	-2° 35' 39"	302° 39' 00"	-22° 42' 33"	54' 48"	14' 55,96"	256° 01' 43"	75,93%
18:00	300° 23' 03"	-2° 33' 14"	303° 10' 23"	-22° 33' 40"	54' 49"	14' 56,24"	255° 50' 45"	76,28%
19:00	300° 53' 19"	-2° 30' 49"	303° 41' 43"	-22° 24' 41"	54' 50"	14' 56,53"	255° 39' 54"	76,62%
20:00	301° 23' 35"	-2° 28' 23"	304° 13' 01"	-22° 15' 35"	54' 51"	14' 56,82"	255° 29' 10"	76,96%
21:00	301° 53' 53"	-2° 25' 57"	304° 44' 16"	-22° 06' 23"	54' 53"	14' 57,12"	255° 18' 32"	77,30%
22:00	302° 24' 12"	-2° 23' 29"	305° 15' 29"	-21° 57' 05"	54' 54"	14' 57,42"	255° 08' 03"	77,64%
23:00	302° 54' 32"	-2° 21' 01"	305° 46' 39"	-21° 47' 40"	54' 55"	14' 57,73"	254° 57' 40"	77,98%
24:00	303° 24' 54"	-2° 18' 32"	306° 17' 46"	-21° 38' 09"	54' 56"	14' 58,03"	254° 47' 25"	78,31%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	179° 01' 07"	-0,17"	179° 05' 58"	0° 23' 25"	1,0038605	15' 55,94"	23° 26' 17"	07m 06s
01:00	179° 03' 34"	-0,17"	179° 08' 13"	0° 22' 27"	1,0038487	15' 55,95"	23° 26' 17"	07m 06s
02:00	179° 06' 00"	-0,16"	179° 10' 28"	0° 21' 28"	1,0038370	15' 55,96"	23° 26' 17"	07m 07s
03:00	179° 08' 27"	-0,16"	179° 12' 42"	0° 20' 30"	1,0038252	15' 55,97"	23° 26' 17"	07m 08s
04:00	179° 10' 54"	-0,15"	179° 14' 57"	0° 19' 32"	1,0038134	15' 55,98"	23° 26' 17"	07m 09s
05:00	179° 13' 20"	-0,15"	179° 17' 11"	0° 18' 33"	1,0038016	15' 56,00"	23° 26' 17"	07m 10s
06:00	179° 15' 47"	-0,14"	179° 19' 26"	0° 17' 35"	1,0037899	15' 56,01"	23° 26' 17"	07m 11s
07:00	179° 18' 14"	-0,14"	179° 21' 40"	0° 16' 37"	1,0037781	15' 56,02"	23° 26' 17"	07m 12s
08:00	179° 20' 40"	-0,13"	179° 23' 55"	0° 15' 38"	1,0037663	15' 56,03"	23° 26' 17"	07m 13s
09:00	179° 23' 07"	-0,13"	179° 26' 10"	0° 14' 40"	1,0037545	15' 56,04"	23° 26' 17"	07m 14s
10:00	179° 25' 34"	-0,12"	179° 28' 24"	0° 13' 42"	1,0037428	15' 56,05"	23° 26' 17"	07m 14s
11:00	179° 28' 00"	-0,12"	179° 30' 39"	0° 12' 43"	1,0037310	15' 56,06"	23° 26' 17"	07m 15s
12:00	179° 30' 27"	-0,11"	179° 32' 53"	0° 11' 45"	1,0037192	15' 56,07"	23° 26' 17"	07m 16s
13:00	179° 32' 54"	-0,11"	179° 35' 08"	0° 10' 47"	1,0037074	15' 56,09"	23° 26' 17"	07m 17s
14:00	179° 35' 20"	-0,10"	179° 37' 23"	0° 09' 48"	1,0036956	15' 56,10"	23° 26' 17"	07m 18s
15:00	179° 37' 47"	-0,10"	179° 39' 37"	0° 08' 50"	1,0036839	15' 56,11"	23° 26' 17"	07m 19s
16:00	179° 40' 14"	-0,09"	179° 41' 52"	0° 07' 52"	1,0036721	15' 56,12"	23° 26' 17"	07m 20s
17:00	179° 42' 41"	-0,09"	179° 44' 06"	0° 06' 53"	1,0036603	15' 56,13"	23° 26' 17"	07m 21s
18:00	179° 45' 07"	-0,08"	179° 46' 21"	0° 05' 55"	1,0036485	15' 56,14"	23° 26' 17"	07m 21s
19:00	179° 47' 34"	-0,07"	179° 48' 36"	0° 04' 57"	1,0036367	15' 56,15"	23° 26' 17"	07m 22s
20:00	179° 50' 01"	-0,07"	179° 50' 50"	0° 03' 58"	1,0036250	15' 56,16"	23° 26' 17"	07m 23s
21:00	179° 52' 27"	-0,06"	179° 53' 05"	0° 03' 00"	1,0036132	15' 56,18"	23° 26' 17"	07m 24s
22:00	179° 54' 54"	-0,06"	179° 55' 19"	0° 02' 02"	1,0036014	15' 56,19"	23° 26' 17"	07m 25s
23:00	179° 57' 21"	-0,05"	179° 57' 34"	0° 01' 03"	1,0035896	15' 56,20"	23° 26' 17"	07m 26s
24:00	179° 59' 48"	-0,05"	179° 59' 49"	0° 00' 05"	1,0035778	15' 56,21"	23° 26' 17"	07m 27s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	303° 24' 54"	-2° 18' 32"	306° 17' 46"	-21° 38' 09"	54' 56"	14' 58,03"	254° 47' 25"	78,31%
01:00	303° 55' 17"	-2° 16' 02"	306° 48' 50"	-21° 28' 31"	54' 57"	14' 58,34"	254° 37' 17"	78,65%
02:00	304° 25' 41"	-2° 13' 32"	307° 19' 52"	-21° 18' 48"	54' 58"	14' 58,66"	254° 27' 17"	78,98%
03:00	304° 56' 07"	-2° 11' 01"	307° 50' 51"	-21° 08' 58"	54' 59"	14' 58,98"	254° 17' 24"	79,31%
04:00	305° 26' 33"	-2° 08' 29"	308° 21' 47"	-20° 59' 03"	55' 01"	14' 59,30"	254° 07' 40"	79,64%
05:00	305° 57' 02"	-2° 05' 56"	308° 52' 41"	-20° 49' 01"	55' 02"	15' 00,00"	253° 58' 02"	79,97%
06:00	306° 27' 31"	-2° 03' 23"	309° 23' 32"	-20° 38' 53"	55' 03"	15' 00,00"	253° 48' 33"	80,29%
07:00	306° 58' 02"	-2° 00' 49"	309° 54' 21"	-20° 28' 39"	55' 04"	15' 00,29"	253° 39' 12"	80,62%
08:00	307° 28' 35"	-1° 58' 14"	310° 25' 07"	-20° 18' 20"	55' 05"	15' 00,62"	253° 29' 59"	80,94%
09:00	307° 59' 09"	-1° 55' 39"	310° 55' 50"	-20° 07' 54"	55' 07"	15' 00,96"	253° 20' 54"	81,26%
10:00	308° 29' 44"	-1° 53' 02"	311° 26' 31"	-19° 57' 23"	55' 08"	15' 01,30"	253° 11' 57"	81,58%
11:00	309° 00' 21"	-1° 50' 26"	311° 57' 09"	-19° 46' 46"	55' 09"	15' 01,65"	253° 03' 08"	81,89%
12:00	309° 30' 59"	-1° 47' 48"	312° 27' 45"	-19° 36' 03"	55' 10"	15' 02,00"	252° 54' 28"	82,21%
13:00	310° 01' 39"	-1° 45' 10"	312° 58' 18"	-19° 25' 14"	55' 12"	15' 02,35"	252° 45' 57"	82,52%
14:00	310° 32' 20"	-1° 42' 31"	313° 28' 49"	-19° 14' 20"	55' 13"	15' 02,70"	252° 37' 34"	82,83%
15:00	311° 03' 03"	-1° 39' 52"	313° 59' 17"	-19° 03' 20"	55' 14"	15' 03,06"	252° 29' 19"	83,14%
16:00	311° 33' 47"	-1° 37' 12"	314° 29' 43"	-18° 52' 15"	55' 16"	15' 03,42"	252° 21' 14"	83,45%
17:00	312° 04' 33"	-1° 34' 32"	315° 00' 06"	-18° 41' 04"	55' 17"	15' 03,79"	252° 13' 17"	83,75%
18:00	312° 35' 20"	-1° 31' 51"	315° 30' 27"	-18° 29' 47"	55' 18"	15' 04,15"	252° 05' 30"	84,05%
19:00	313° 06' 09"	-1° 29' 09"	316° 00' 45"	-18° 18' 25"	55' 20"	15' 04,52"	251° 57' 52"	84,36%
20:00	313° 37' 00"	-1° 26' 27"	316° 31' 02"	-18° 06' 58"	55' 21"	15' 04,89"	251° 50' 23"	84,65%
21:00	314° 07' 52"	-1° 23' 44"	317° 01' 16"	-17° 55' 25"	55' 22"	15' 05,27"	251° 43' 03"	84,95%
22:00	314° 38' 46"	-1° 21' 01"	317° 31' 27"	-17° 43' 47"	55' 24"	15' 05,65"	251° 35' 53"	85,25%
23:00	315° 09' 42"	-1° 18' 17"	318° 01' 37"	-17° 32' 04"	55' 25"	15' 06,03"	251° 28' 52"	85,54%
24:00	315° 40' 39"	-1° 15' 32"	318° 31' 44"	-17° 20' 16"	55' 27"	15' 06,41"	251° 22' 01"	85,83%

23 September 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	179° 59' 48"	-0,05"	179° 59' 49"	0° 00' 05"	1,0035778	15' 56,21"	23° 26' 17"	07m 27s
01:00	180° 02' 14"	-0,04"	180° 02' 03"	-0° 00' 53"	1,0035660	15' 56,22"	23° 26' 17"	07m 28s
02:00	180° 04' 41"	-0,04"	180° 04' 18"	-0° 01' 52"	1,0035542	15' 56,23"	23° 26' 17"	07m 29s
03:00	180° 07' 08"	-0,03"	180° 06' 32"	-0° 02' 50"	1,0035425	15' 56,24"	23° 26' 17"	07m 29s
04:00	180° 09' 35"	-0,03"	180° 08' 47"	-0° 03' 49"	1,0035307	15' 56,25"	23° 26' 17"	07m 30s
05:00	180° 12' 01"	-0,02"	180° 11' 02"	-0° 04' 47"	1,0035189	15' 56,27"	23° 26' 17"	07m 31s
06:00	180° 14' 28"	-0,02"	180° 13' 16"	-0° 05' 45"	1,0035071	15' 56,28"	23° 26' 17"	07m 32s
07:00	180° 16' 55"	-0,01"	180° 15' 31"	-0° 06' 44"	1,0034953	15' 56,29"	23° 26' 17"	07m 33s
08:00	180° 19' 21"	-0,01"	180° 17' 46"	-0° 07' 42"	1,0034835	15' 56,30"	23° 26' 17"	07m 34s
09:00	180° 21' 48"	-0,00"	180° 20' 00"	-0° 08' 40"	1,0034717	15' 56,31"	23° 26' 17"	07m 35s
10:00	180° 24' 15"	0,01"	180° 22' 15"	-0° 09' 39"	1,0034599	15' 56,32"	23° 26' 17"	07m 36s
11:00	180° 26' 42"	0,01"	180° 24' 30"	-0° 10' 37"	1,0034482	15' 56,33"	23° 26' 17"	07m 36s
12:00	180° 29' 09"	0,02"	180° 26' 44"	-0° 11' 35"	1,0034364	15' 56,34"	23° 26' 17"	07m 37s
13:00	180° 31' 35"	0,02"	180° 28' 59"	-0° 12' 34"	1,0034246	15' 56,35"	23° 26' 17"	07m 38s
14:00	180° 34' 02"	0,03"	180° 31' 14"	-0° 13' 32"	1,0034128	15' 56,37"	23° 26' 17"	07m 39s
15:00	180° 36' 29"	0,03"	180° 33' 28"	-0° 14' 31"	1,0034010	15' 56,38"	23° 26' 17"	07m 40s
16:00	180° 38' 56"	0,04"	180° 35' 43"	-0° 15' 29"	1,0033892	15' 56,39"	23° 26' 17"	07m 41s
17:00	180° 41' 22"	0,04"	180° 37' 58"	-0° 16' 27"	1,0033774	15' 56,40"	23° 26' 17"	07m 42s
18:00	180° 43' 49"	0,05"	180° 40' 12"	-0° 17' 26"	1,0033656	15' 56,41"	23° 26' 17"	07m 43s
19:00	180° 46' 16"	0,05"	180° 42' 27"	-0° 18' 24"	1,0033539	15' 56,42"	23° 26' 17"	07m 43s
20:00	180° 48' 43"	0,06"	180° 44' 42"	-0° 19' 22"	1,0033421	15' 56,43"	23° 26' 17"	07m 44s
21:00	180° 51' 09"	0,07"	180° 46' 56"	-0° 20' 21"	1,0033303	15' 56,44"	23° 26' 17"	07m 45s
22:00	180° 53' 36"	0,07"	180° 49' 11"	-0° 21' 19"	1,0033185	15' 56,46"	23° 26' 17"	07m 46s
23:00	180° 56' 03"	0,08"	180° 51' 26"	-0° 22' 18"	1,0033067	15' 56,47"	23° 26' 17"	07m 47s
24:00	180° 58' 30"	0,08"	180° 53' 40"	-0° 23' 16"	1,0032949	15' 56,48"	23° 26' 17"	07m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	315° 40' 39"	-1° 15' 32"	318° 31' 44"	-17° 20' 16"	55' 27"	15' 06,41"	251° 22' 01"	85,83%
01:00	316° 11' 38"	-1° 12' 47"	319° 01' 49"	-17° 08' 23"	55' 28"	15' 06,80"	251° 15' 20"	86,12%
02:00	316° 42' 38"	-1° 10' 02"	319° 31' 52"	-16° 56' 24"	55' 29"	15' 07,19"	251° 08' 49"	86,40%
03:00	317° 13' 40"	-1° 07' 16"	320° 01' 52"	-16° 44' 20"	55' 31"	15' 07,58"	251° 02' 29"	86,69%
04:00	317° 44' 44"	-1° 04' 30"	320° 31' 51"	-16° 32' 12"	55' 32"	15' 07,97"	250° 56' 18"	86,97%
05:00	318° 15' 50"	-1° 01' 43"	321° 01' 47"	-16° 19' 58"	55' 34"	15' 08,37"	250° 50' 18"	87,25%
06:00	318° 46' 57"	-0° 58' 56"	321° 31' 42"	-16° 07' 39"	55' 35"	15' 08,77"	250° 44' 29"	87,52%
07:00	319° 18' 06"	-0° 56' 08"	322° 01' 34"	-15° 55' 16"	55' 37"	15' 09,17"	250° 38' 51"	87,80%
08:00	319° 49' 17"	-0° 53' 20"	322° 31' 25"	-15° 42' 48"	55' 38"	15' 09,57"	250° 33' 23"	88,07%
09:00	320° 20' 30"	-0° 50' 31"	323° 01' 13"	-15° 30' 15"	55' 40"	15' 09,98"	250° 28' 07"	88,34%
10:00	320° 51' 44"	-0° 47' 42"	323° 31' 00"	-15° 17' 37"	55' 41"	15' 10,38"	250° 23' 02"	88,61%
11:00	321° 23' 01"	-0° 44' 53"	324° 00' 45"	-15° 04' 55"	55' 43"	15' 10,79"	250° 18' 08"	88,87%
12:00	321° 54' 19"	-0° 42' 03"	324° 30' 28"	-14° 52' 08"	55' 44"	15' 11,21"	250° 13' 26"	89,13%
13:00	322° 25' 39"	-0° 39' 13"	325° 00' 09"	-14° 39' 16"	55' 46"	15' 11,62"	250° 08' 56"	89,39%
14:00	322° 57' 00"	-0° 36' 22"	325° 29' 49"	-14° 26' 20"	55' 47"	15' 12,04"	250° 04' 39"	89,65%
15:00	323° 28' 24"	-0° 33' 32"	325° 59' 27"	-14° 13' 20"	55' 49"	15' 12,45"	250° 00' 34"	89,91%
16:00	323° 59' 49"	-0° 30' 41"	326° 29' 03"	-14° 00' 15"	55' 50"	15' 12,87"	249° 56' 41"	90,16%
17:00	324° 31' 16"	-0° 27' 49"	326° 58' 38"	-13° 47' 05"	55' 52"	15' 13,29"	249° 53' 01"	90,41%
18:00	325° 02' 45"	-0° 24' 57"	327° 28' 11"	-13° 33' 52"	55' 53"	15' 13,72"	249° 49' 35"	90,66%
19:00	325° 34' 16"	-0° 22' 05"	327° 57' 42"	-13° 20' 34"	55' 55"	15' 14,14"	249° 46' 22"	90,90%
20:00	326° 05' 49"	-0° 19' 13"	328° 27' 13"	-13° 07' 12"	55' 57"	15' 14,57"	249° 43' 23"	91,14%
21:00	326° 37' 24"	-0° 16' 20"	328° 56' 41"	-12° 53' 46"	55' 58"	15' 15,00"	249° 40' 37"	91,38%
22:00	327° 09' 01"	-0° 13' 28"	329° 26' 09"	-12° 40' 15"	56' 00"	15' 15,43"	249° 38' 07"	91,62%
23:00	327° 40' 39"	-0° 10' 35"	329° 55' 35"	-12° 26' 41"	56' 01"	15' 15,86"	249° 35' 51"	91,85%
24:00	328° 12' 20"	-0° 07' 41"	330° 24' 59"	-12° 13' 02"	56' 03"	15' 16,29"	249° 33' 50"	92,08%

24 September 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	180° 58' 30"	0,08"	180° 53' 40"	-0° 23' 16"	1,0032949	15' 56,48"	23° 26' 17"	07m 48s
01:00	181° 00' 57"	0,09"	180° 55' 55"	-0° 24' 14"	1,0032831	15' 56,49"	23° 26' 17"	07m 49s
02:00	181° 03' 23"	0,09"	180° 58' 10"	-0° 25' 13"	1,0032713	15' 56,50"	23° 26' 17"	07m 50s
03:00	181° 05' 50"	0,10"	181° 00' 24"	-0° 26' 11"	1,0032596	15' 56,51"	23° 26' 17"	07m 50s
04:00	181° 08' 17"	0,10"	181° 02' 39"	-0° 27' 09"	1,0032478	15' 56,52"	23° 26' 17"	07m 51s
05:00	181° 10' 44"	0,11"	181° 04' 54"	-0° 28' 08"	1,0032360	15' 56,53"	23° 26' 17"	07m 52s
06:00	181° 13' 11"	0,11"	181° 07' 09"	-0° 29' 06"	1,0032242	15' 56,55"	23° 26' 17"	07m 53s
07:00	181° 15' 38"	0,12"	181° 09' 23"	-0° 30' 05"	1,0032124	15' 56,56"	23° 26' 17"	07m 54s
08:00	181° 18' 04"	0,13"	181° 11' 38"	-0° 31' 03"	1,0032006	15' 56,57"	23° 26' 17"	07m 55s
09:00	181° 20' 31"	0,13"	181° 13' 53"	-0° 32' 01"	1,0031888	15' 56,58"	23° 26' 17"	07m 56s
10:00	181° 22' 58"	0,14"	181° 16' 07"	-0° 33' 00"	1,0031771	15' 56,59"	23° 26' 17"	07m 57s
11:00	181° 25' 25"	0,14"	181° 18' 22"	-0° 33' 58"	1,0031653	15' 56,60"	23° 26' 17"	07m 58s
12:00	181° 27' 52"	0,15"	181° 20' 37"	-0° 34' 57"	1,0031535	15' 56,61"	23° 26' 17"	07m 58s
13:00	181° 30' 18"	0,15"	181° 22' 52"	-0° 35' 55"	1,0031417	15' 56,62"	23° 26' 17"	07m 59s
14:00	181° 32' 45"	0,16"	181° 25' 06"	-0° 36' 53"	1,0031299	15' 56,64"	23° 26' 17"	08m 00s
15:00	181° 35' 12"	0,16"	181° 27' 21"	-0° 37' 52"	1,0031181	15' 56,65"	23° 26' 17"	08m 01s
16:00	181° 37' 39"	0,17"	181° 29' 36"	-0° 38' 50"	1,0031063	15' 56,66"	23° 26' 17"	08m 02s
17:00	181° 40' 06"	0,17"	181° 31' 51"	-0° 39' 48"	1,0030946	15' 56,67"	23° 26' 17"	08m 03s
18:00	181° 42' 33"	0,18"	181° 34' 05"	-0° 40' 47"	1,0030828	15' 56,68"	23° 26' 17"	08m 04s
19:00	181° 45' 00"	0,19"	181° 36' 20"	-0° 41' 45"	1,0030710	15' 56,69"	23° 26' 17"	08m 04s
20:00	181° 47' 26"	0,19"	181° 38' 35"	-0° 42' 44"	1,0030592	15' 56,70"	23° 26' 17"	08m 05s
21:00	181° 49' 53"	0,20"	181° 40' 50"	-0° 43' 42"	1,0030474	15' 56,71"	23° 26' 17"	08m 06s
22:00	181° 52' 20"	0,20"	181° 43' 04"	-0° 44' 40"	1,0030357	15' 56,73"	23° 26' 17"	08m 07s
23:00	181° 54' 47"	0,21"	181° 45' 19"	-0° 45' 39"	1,0030239	15' 56,74"	23° 26' 17"	08m 08s
24:00	181° 57' 14"	0,21"	181° 47' 34"	-0° 46' 37"	1,0030121	15' 56,75"	23° 26' 17"	08m 09s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	328° 12' 20"	-0° 07' 41"	330° 24' 59"	-12° 13' 02"	56' 03"	15' 16,29"	249° 33' 50"	92,08%
01:00	328° 44' 02"	-0° 04' 48"	330° 54' 23"	-11° 59' 20"	56' 04"	15' 16,72"	249° 32' 04"	92,31%
02:00	329° 15' 47"	-0° 01' 54"	331° 23' 45"	-11° 45' 34"	56' 06"	15' 17,16"	249° 30' 35"	92,53%
03:00	329° 47' 33"	0° 01' 00"	331° 53' 06"	-11° 31' 44"	56' 08"	15' 17,60"	249° 29' 22"	92,76%
04:00	330° 19' 21"	0° 03' 54"	332° 22' 26"	-11° 17' 50"	56' 09"	15' 18,03"	249° 28' 26"	92,98%
05:00	330° 51' 12"	0° 06' 48"	332° 51' 45"	-11° 03' 52"	56' 11"	15' 18,47"	249° 27' 48"	93,19%
06:00	331° 23' 04"	0° 09' 42"	333° 21' 03"	-10° 49' 51"	56' 13"	15' 18,91"	249° 27' 27"	93,40%
07:00	331° 54' 58"	0° 12' 36"	333° 50' 21"	-10° 35' 46"	56' 14"	15' 19,35"	249° 27' 25"	93,62%
08:00	332° 26' 54"	0° 15' 31"	334° 19' 37"	-10° 21' 37"	56' 16"	15' 19,80"	249° 27' 42"	93,82%
09:00	332° 58' 53"	0° 18' 25"	334° 48' 52"	-10° 07' 25"	56' 17"	15' 20,24"	249° 28' 18"	94,03%
10:00	333° 30' 53"	0° 21' 20"	335° 18' 07"	-9° 53' 10"	56' 19"	15' 20,68"	249° 29' 15"	94,23%
11:00	334° 02' 55"	0° 24' 15"	335° 47' 21"	-9° 38' 51"	56' 21"	15' 21,13"	249° 30' 34"	94,43%
12:00	334° 34' 59"	0° 27' 10"	336° 16' 34"	-9° 24' 29"	56' 22"	15' 21,58"	249° 32' 14"	94,62%
13:00	335° 07' 06"	0° 30' 04"	336° 45' 47"	-9° 10' 04"	56' 24"	15' 22,02"	249° 34' 17"	94,81%
14:00	335° 39' 14"	0° 32' 59"	337° 14' 59"	-8° 55' 35"	56' 26"	15' 22,47"	249° 36' 44"	95,00%
15:00	336° 11' 24"	0° 35' 54"	337° 44' 10"	-8° 41' 03"	56' 27"	15' 22,92"	249° 39' 36"	95,19%
16:00	336° 43' 36"	0° 38' 49"	338° 13' 21"	-8° 26' 28"	56' 29"	15' 23,36"	249° 42' 54"	95,37%
17:00	337° 15' 51"	0° 41' 43"	338° 42' 32"	-8° 11' 50"	56' 31"	15' 23,81"	249° 46' 39"	95,55%
18:00	337° 48' 07"	0° 44' 38"	339° 11' 42"	-7° 57' 09"	56' 32"	15' 24,26"	249° 50' 52"	95,73%
19:00	338° 20' 26"	0° 47' 33"	339° 40' 53"	-7° 42' 25"	56' 34"	15' 24,71"	249° 55' 34"	95,90%
20:00	338° 52' 46"	0° 50' 27"	340° 10' 02"	-7° 27' 38"	56' 35"	15' 25,16"	250° 00' 48"	96,07%
21:00	339° 25' 09"	0° 53' 21"	340° 39' 12"	-7° 12' 49"	56' 37"	15' 25,61"	250° 06' 35"	96,24%
22:00	339° 57' 33"	0° 56' 16"	341° 08' 22"	-6° 57' 56"	56' 39"	15' 26,06"	250° 12' 57"	96,40%
23:00	340° 30' 00"	0° 59' 10"	341° 37' 31"	-6° 43' 01"	56' 40"	15' 26,51"	250° 19' 55"	96,56%
24:00	341° 02' 28"	1° 02' 04"	342° 06' 41"	-6° 28' 04"	56' 42"	15' 26,96"	250° 27' 31"	96,72%

25 September 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	181° 57' 14"	0,21"	181° 47' 34"	-0° 46' 37"	1,0030121	15' 56,75"	23° 26' 17"	08m 09s
01:00	181° 59' 41"	0,22"	181° 49' 49"	-0° 47' 36"	1,0030003	15' 56,76"	23° 26' 17"	08m 10s
02:00	182° 02' 08"	0,22"	181° 52' 04"	-0° 48' 34"	1,0029885	15' 56,77"	23° 26' 17"	08m 11s
03:00	182° 04' 35"	0,23"	181° 54' 18"	-0° 49' 32"	1,0029768	15' 56,78"	23° 26' 17"	08m 11s
04:00	182° 07' 01"	0,23"	181° 56' 33"	-0° 50' 31"	1,0029650	15' 56,79"	23° 26' 17"	08m 12s
05:00	182° 09' 28"	0,24"	181° 58' 48"	-0° 51' 29"	1,0029532	15' 56,80"	23° 26' 17"	08m 13s
06:00	182° 11' 55"	0,24"	182° 01' 03"	-0° 52' 27"	1,0029414	15' 56,82"	23° 26' 17"	08m 14s
07:00	182° 14' 22"	0,25"	182° 03' 18"	-0° 53' 26"	1,0029296	15' 56,83"	23° 26' 17"	08m 15s
08:00	182° 16' 49"	0,25"	182° 05' 32"	-0° 54' 24"	1,0029179	15' 56,84"	23° 26' 17"	08m 16s
09:00	182° 19' 16"	0,26"	182° 07' 47"	-0° 55' 23"	1,0029061	15' 56,85"	23° 26' 17"	08m 17s
10:00	182° 21' 43"	0,27"	182° 10' 02"	-0° 56' 21"	1,0028943	15' 56,86"	23° 26' 17"	08m 18s
11:00	182° 24' 10"	0,27"	182° 12' 17"	-0° 57' 19"	1,0028825	15' 56,87"	23° 26' 17"	08m 18s
12:00	182° 26' 37"	0,28"	182° 14' 32"	-0° 58' 18"	1,0028708	15' 56,88"	23° 26' 17"	08m 19s
13:00	182° 29' 03"	0,28"	182° 16' 46"	-0° 59' 16"	1,0028590	15' 56,89"	23° 26' 17"	08m 20s
14:00	182° 31' 30"	0,29"	182° 19' 01"	-1° 00' 15"	1,0028472	15' 56,91"	23° 26' 17"	08m 21s
15:00	182° 33' 57"	0,29"	182° 21' 16"	-1° 01' 13"	1,0028355	15' 56,92"	23° 26' 17"	08m 22s
16:00	182° 36' 24"	0,30"	182° 23' 31"	-1° 02' 11"	1,0028237	15' 56,93"	23° 26' 17"	08m 23s
17:00	182° 38' 51"	0,30"	182° 25' 46"	-1° 03' 10"	1,0028119	15' 56,94"	23° 26' 17"	08m 24s
18:00	182° 41' 18"	0,31"	182° 28' 01"	-1° 04' 08"	1,0028002	15' 56,95"	23° 26' 17"	08m 24s
19:00	182° 43' 45"	0,31"	182° 30' 16"	-1° 05' 06"	1,0027884	15' 56,96"	23° 26' 17"	08m 25s
20:00	182° 46' 12"	0,32"	182° 32' 30"	-1° 06' 05"	1,0027766	15' 56,97"	23° 26' 17"	08m 26s
21:00	182° 48' 39"	0,32"	182° 34' 45"	-1° 07' 03"	1,0027649	15' 56,98"	23° 26' 17"	08m 27s
22:00	182° 51' 06"	0,33"	182° 37' 00"	-1° 08' 02"	1,0027531	15' 57,00"	23° 26' 17"	08m 28s
23:00	182° 53' 33"	0,33"	182° 39' 15"	-1° 09' 00"	1,0027413	15' 57,01"	23° 26' 17"	08m 29s
24:00	182° 56' 00"	0,34"	182° 41' 30"	-1° 09' 58"	1,0027296	15' 57,02"	23° 26' 17"	08m 30s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	341° 02' 28"	1° 02' 04"	342° 06' 41"	-6° 28' 04"	56' 42"	15' 26,96"	250° 27' 31"	96,72%
01:00	341° 34' 59"	1° 04' 58"	342° 35' 51"	-6° 13' 03"	56' 44"	15' 27,42"	250° 35' 49"	96,87%
02:00	342° 07' 32"	1° 07' 51"	343° 05' 00"	-5° 58' 01"	56' 45"	15' 27,87"	250° 44' 50"	97,02%
03:00	342° 40' 07"	1° 10' 45"	343° 34' 10"	-5° 42' 55"	56' 47"	15' 28,32"	250° 54' 37"	97,16%
04:00	343° 12' 44"	1° 13' 38"	344° 03' 20"	-5° 27' 48"	56' 49"	15' 28,77"	251° 05' 14"	97,31%
05:00	343° 45' 23"	1° 16' 31"	344° 32' 31"	-5° 12' 38"	56' 50"	15' 29,22"	251° 16' 44"	97,44%
06:00	344° 18' 04"	1° 19' 24"	345° 01' 42"	-4° 57' 26"	56' 52"	15' 29,67"	251° 29' 11"	97,58%
07:00	344° 50' 47"	1° 22' 16"	345° 30' 53"	-4° 42' 11"	56' 54"	15' 30,12"	251° 42' 39"	97,71%
08:00	345° 23' 32"	1° 25' 08"	346° 00' 05"	-4° 26' 55"	56' 55"	15' 30,57"	251° 57' 13"	97,84%
09:00	345° 56' 20"	1° 28' 00"	346° 29' 18"	-4° 11' 36"	56' 57"	15' 31,02"	252° 12' 58"	97,96%
10:00	346° 29' 09"	1° 30' 52"	346° 58' 31"	-3° 56' 16"	56' 59"	15' 31,46"	252° 30' 00"	98,09%
11:00	347° 02' 00"	1° 33' 43"	347° 27' 44"	-3° 40' 53"	57' 00"	15' 31,91"	252° 48' 27"	98,20%
12:00	347° 34' 54"	1° 36' 34"	347° 56' 59"	-3° 25' 29"	57' 02"	15' 32,36"	253° 08' 25"	98,32%
13:00	348° 07' 49"	1° 39' 24"	348° 26' 14"	-3° 10' 03"	57' 04"	15' 32,81"	253° 30' 04"	98,43%
14:00	348° 40' 47"	1° 42' 14"	348° 55' 30"	-2° 54' 35"	57' 05"	15' 33,25"	253° 53' 34"	98,53%
15:00	349° 13' 47"	1° 45' 04"	349° 24' 47"	-2° 39' 05"	57' 07"	15' 33,70"	254° 19' 05"	98,64%
16:00	349° 46' 48"	1° 47' 53"	349° 54' 05"	-2° 23' 34"	57' 08"	15' 34,14"	254° 46' 52"	98,73%
17:00	350° 19' 52"	1° 50' 42"	350° 23' 25"	-2° 08' 01"	57' 10"	15' 34,59"	255° 17' 10"	98,83%
18:00	350° 52' 58"	1° 53' 30"	350° 52' 45"	-1° 52' 27"	57' 12"	15' 35,03"	255° 50' 16"	98,92%
19:00	351° 26' 06"	1° 56' 18"	351° 22' 07"	-1° 36' 51"	57' 13"	15' 35,47"	256° 26' 31"	99,01%
20:00	351° 59' 16"	1° 59' 06"	351° 51' 29"	-1° 21' 15"	57' 15"	15' 35,91"	257° 06' 20"	99,09%
21:00	352° 32' 28"	2° 01' 52"	352° 20' 53"	-1° 05' 36"	57' 17"	15' 36,35"	257° 50' 11"	99,17%
22:00	353° 05' 42"	2° 04' 39"	352° 50' 19"	-0° 49' 57"	57' 18"	15' 36,79"	258° 38' 39"	99,25%
23:00	353° 38' 58"	2° 07' 24"	353° 19' 46"	-0° 34' 17"	57' 20"	15' 37,23"	259° 32' 25"	99,32%
24:00	354° 12' 16"	2° 10' 10"	353° 49' 15"	-0° 18' 35"	57' 21"	15' 37,66"	260° 32' 18"	99,39%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	182° 56' 00"	0,34"	182° 41' 30"	-1° 09' 58"	1,0027296	15' 57,02"	23° 26' 17"	08m 30s
01:00	182° 58' 27"	0,34"	182° 43' 45"	-1° 10' 57"	1,0027178	15' 57,03"	23° 26' 17"	08m 31s
02:00	183° 00' 54"	0,35"	182° 46' 00"	-1° 11' 55"	1,0027060	15' 57,04"	23° 26' 17"	08m 31s
03:00	183° 03' 21"	0,35"	182° 48' 15"	-1° 12' 54"	1,0026943	15' 57,05"	23° 26' 17"	08m 32s
04:00	183° 05' 48"	0,36"	182° 50' 29"	-1° 13' 52"	1,0026825	15' 57,06"	23° 26' 17"	08m 33s
05:00	183° 08' 15"	0,36"	182° 52' 44"	-1° 14' 50"	1,0026708	15' 57,07"	23° 26' 17"	08m 34s
06:00	183° 10' 41"	0,37"	182° 54' 59"	-1° 15' 49"	1,0026590	15' 57,09"	23° 26' 17"	08m 35s
07:00	183° 13' 08"	0,37"	182° 57' 14"	-1° 16' 47"	1,0026473	15' 57,10"	23° 26' 17"	08m 36s
08:00	183° 15' 35"	0,38"	182° 59' 29"	-1° 17' 45"	1,0026355	15' 57,11"	23° 26' 17"	08m 37s
09:00	183° 18' 02"	0,38"	183° 01' 44"	-1° 18' 44"	1,0026237	15' 57,12"	23° 26' 17"	08m 37s
10:00	183° 20' 29"	0,39"	183° 03' 59"	-1° 19' 42"	1,0026120	15' 57,13"	23° 26' 17"	08m 38s
11:00	183° 22' 56"	0,39"	183° 06' 14"	-1° 20' 41"	1,0026002	15' 57,14"	23° 26' 17"	08m 39s
12:00	183° 25' 23"	0,39"	183° 08' 29"	-1° 21' 39"	1,0025885	15' 57,15"	23° 26' 17"	08m 40s
13:00	183° 27' 50"	0,40"	183° 10' 44"	-1° 22' 37"	1,0025767	15' 57,16"	23° 26' 17"	08m 41s
14:00	183° 30' 17"	0,40"	183° 12' 59"	-1° 23' 36"	1,0025650	15' 57,17"	23° 26' 17"	08m 42s
15:00	183° 32' 44"	0,41"	183° 15' 14"	-1° 24' 34"	1,0025532	15' 57,19"	23° 26' 17"	08m 43s
16:00	183° 35' 11"	0,41"	183° 17' 29"	-1° 25' 32"	1,0025415	15' 57,20"	23° 26' 17"	08m 43s
17:00	183° 37' 38"	0,42"	183° 19' 44"	-1° 26' 31"	1,0025297	15' 57,21"	23° 26' 17"	08m 44s
18:00	183° 40' 05"	0,42"	183° 21' 59"	-1° 27' 29"	1,0025180	15' 57,22"	23° 26' 17"	08m 45s
19:00	183° 42' 32"	0,43"	183° 24' 14"	-1° 28' 28"	1,0025063	15' 57,23"	23° 26' 17"	08m 46s
20:00	183° 44' 59"	0,43"	183° 26' 29"	-1° 29' 26"	1,0024945	15' 57,24"	23° 26' 17"	08m 47s
21:00	183° 47' 26"	0,44"	183° 28' 44"	-1° 30' 24"	1,0024828	15' 57,25"	23° 26' 17"	08m 48s
22:00	183° 49' 53"	0,44"	183° 30' 59"	-1° 31' 23"	1,0024710	15' 57,26"	23° 26' 17"	08m 49s
23:00	183° 52' 20"	0,44"	183° 33' 14"	-1° 32' 21"	1,0024593	15' 57,28"	23° 26' 17"	08m 49s
24:00	183° 54' 48"	0,45"	183° 35' 29"	-1° 33' 19"	1,0024475	15' 57,29"	23° 26' 17"	08m 50s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	354° 12' 16"	2° 10' 10"	353° 49' 15"	-0° 18' 35"	57' 21"	15' 37,66"	260° 32' 18"	99,39%
01:00	354° 45' 36"	2° 12' 54"	354° 18' 45"	-0° 02' 53"	57' 23"	15' 38,10"	261° 39' 19"	99,45%
02:00	355° 18' 58"	2° 15' 38"	354° 48' 17"	0° 12' 50"	57' 25"	15' 38,53"	262° 54' 42"	99,51%
03:00	355° 52' 22"	2° 18' 21"	355° 17' 50"	0° 28' 35"	57' 26"	15' 38,96"	264° 19' 57"	99,57%
04:00	356° 25' 48"	2° 21' 04"	355° 47' 26"	0° 44' 19"	57' 28"	15' 39,39"	265° 56' 58"	99,62%
05:00	356° 59' 16"	2° 23' 46"	356° 17' 03"	1° 00' 05"	57' 29"	15' 39,82"	267° 48' 05"	99,67%
06:00	357° 32' 46"	2° 26' 28"	356° 46' 42"	1° 15' 51"	57' 31"	15' 40,25"	269° 56' 18"	99,71%
07:00	358° 06' 19"	2° 29' 08"	357° 16' 23"	1° 31' 38"	57' 32"	15' 40,67"	272° 25' 22"	99,76%
08:00	358° 39' 53"	2° 31' 48"	357° 46' 06"	1° 47' 25"	57' 34"	15' 41,10"	275° 20' 02"	99,79%
09:00	359° 13' 29"	2° 34' 27"	358° 15' 52"	2° 03' 12"	57' 36"	15' 41,52"	278° 46' 18"	99,82%
10:00	359° 47' 07"	2° 37' 06"	358° 45' 39"	2° 19' 00"	57' 37"	15' 41,94"	282° 51' 35"	99,85%
11:00	0° 20' 47"	2° 39' 43"	359° 15' 29"	2° 34' 48"	57' 39"	15' 42,36"	287° 44' 47"	99,88%
12:00	0° 54' 29"	2° 42' 20"	359° 45' 22"	2° 50' 36"	57' 40"	15' 42,78"	293° 35' 43"	99,90%
13:00	1° 28' 13"	2° 44' 56"	0° 15' 16"	3° 06' 24"	57' 42"	15' 43,19"	300° 33' 35"	99,91%
14:00	2° 01' 58"	2° 47' 31"	0° 45' 14"	3° 22' 12"	57' 43"	15' 43,60"	308° 43' 25"	99,92%
15:00	2° 35' 46"	2° 50' 06"	1° 15' 13"	3° 38' 00"	57' 45"	15' 44,02"	318° 00' 45"	99,93%
16:00	3° 09' 36"	2° 52' 39"	1° 45' 16"	3° 53' 48"	57' 46"	15' 44,42"	328° 06' 27"	99,94%
17:00	3° 43' 27"	2° 55' 12"	2° 15' 21"	4° 09' 36"	57' 48"	15' 44,83"	338° 27' 05"	99,94%
18:00	4° 17' 21"	2° 57' 44"	2° 45' 28"	4° 25' 23"	57' 49"	15' 45,24"	348° 24' 10"	99,93%
19:00	4° 51' 16"	3° 00' 14"	3° 15' 39"	4° 41' 10"	57' 51"	15' 45,64"	357° 27' 07"	99,92%
20:00	5° 25' 14"	3° 02' 44"	3° 45' 53"	4° 56' 56"	57' 52"	15' 46,04"	5° 20' 36"	99,91%
21:00	5° 59' 13"	3° 05' 13"	4° 16' 09"	5° 12' 42"	57' 54"	15' 46,44"	12° 02' 57"	99,89%
22:00	6° 33' 14"	3° 07' 41"	4° 46' 29"	5° 28' 27"	57' 55"	15' 46,83"	17° 40' 39"	99,87%
23:00	7° 07' 16"	3° 10' 08"	5° 16' 51"	5° 44' 11"	57' 56"	15' 47,22"	22° 23' 16"	99,84%
24:00	7° 41' 21"	3° 12' 34"	5° 47' 17"	5° 59' 55"	57' 58"	15' 47,62"	26° 20' 29"	99,81%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	183° 54' 48"	0,45"	183° 35' 29"	-1° 33' 19"	1,0024475	15' 57,29"	23° 26' 17"	08m 50s
01:00	183° 57' 15"	0,45"	183° 37' 44"	-1° 34' 18"	1,0024358	15' 57,30"	23° 26' 17"	08m 51s
02:00	183° 59' 42"	0,46"	183° 39' 59"	-1° 35' 16"	1,0024241	15' 57,31"	23° 26' 17"	08m 52s
03:00	184° 02' 09"	0,46"	183° 42' 14"	-1° 36' 14"	1,0024123	15' 57,32"	23° 26' 17"	08m 53s
04:00	184° 04' 36"	0,47"	183° 44' 29"	-1° 37' 13"	1,0024006	15' 57,33"	23° 26' 17"	08m 54s
05:00	184° 07' 03"	0,47"	183° 46' 44"	-1° 38' 11"	1,0023889	15' 57,34"	23° 26' 17"	08m 55s
06:00	184° 09' 30"	0,47"	183° 48' 59"	-1° 39' 10"	1,0023771	15' 57,35"	23° 26' 17"	08m 55s
07:00	184° 11' 57"	0,48"	183° 51' 14"	-1° 40' 08"	1,0023654	15' 57,37"	23° 26' 17"	08m 56s
08:00	184° 14' 24"	0,48"	183° 53' 29"	-1° 41' 06"	1,0023537	15' 57,38"	23° 26' 17"	08m 57s
09:00	184° 16' 51"	0,49"	183° 55' 44"	-1° 42' 05"	1,0023419	15' 57,39"	23° 26' 17"	08m 58s
10:00	184° 19' 18"	0,49"	183° 57' 59"	-1° 43' 03"	1,0023302	15' 57,40"	23° 26' 17"	08m 59s
11:00	184° 21' 45"	0,49"	184° 00' 14"	-1° 44' 01"	1,0023185	15' 57,41"	23° 26' 17"	09m 00s
12:00	184° 24' 12"	0,50"	184° 02' 29"	-1° 45' 00"	1,0023068	15' 57,42"	23° 26' 17"	09m 01s
13:00	184° 26' 39"	0,50"	184° 04' 44"	-1° 45' 58"	1,0022950	15' 57,43"	23° 26' 17"	09m 01s
14:00	184° 29' 06"	0,50"	184° 06' 59"	-1° 46' 56"	1,0022833	15' 57,44"	23° 26' 17"	09m 02s
15:00	184° 31' 33"	0,51"	184° 09' 14"	-1° 47' 55"	1,0022716	15' 57,46"	23° 26' 17"	09m 03s
16:00	184° 34' 01"	0,51"	184° 11' 29"	-1° 48' 53"	1,0022599	15' 57,47"	23° 26' 17"	09m 04s
17:00	184° 36' 28"	0,52"	184° 13' 44"	-1° 49' 51"	1,0022482	15' 57,48"	23° 26' 17"	09m 05s
18:00	184° 38' 55"	0,52"	184° 15' 59"	-1° 50' 50"	1,0022364	15' 57,49"	23° 26' 17"	09m 06s
19:00	184° 41' 22"	0,52"	184° 18' 15"	-1° 51' 48"	1,0022247	15' 57,50"	23° 26' 17"	09m 07s
20:00	184° 43' 49"	0,53"	184° 20' 30"	-1° 52' 46"	1,0022130	15' 57,51"	23° 26' 17"	09m 07s
21:00	184° 46' 16"	0,53"	184° 22' 45"	-1° 53' 45"	1,0022013	15' 57,52"	23° 26' 17"	09m 08s
22:00	184° 48' 43"	0,53"	184° 25' 00"	-1° 54' 43"	1,0021896	15' 57,53"	23° 26' 17"	09m 09s
23:00	184° 51' 10"	0,54"	184° 27' 15"	-1° 55' 41"	1,0021779	15' 57,54"	23° 26' 17"	09m 10s
24:00	184° 53' 37"	0,54"	184° 29' 30"	-1° 56' 40"	1,0021661	15' 57,56"	23° 26' 17"	09m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	7° 41' 21"	3° 12' 34"	5° 47' 17"	5° 59' 55"	57' 58"	15' 47,62"	26° 20' 29"	99,81%
01:00	8° 15' 28"	3° 14' 59"	6° 17' 46"	6° 15' 37"	57' 59"	15' 48,00"	29° 40' 52"	99,78%
02:00	8° 49' 36"	3° 17' 22"	6° 48' 19"	6° 31' 18"	58' 01"	15' 48,39"	32° 31' 29"	99,74%
03:00	9° 23' 46"	3° 19' 45"	7° 18' 55"	6° 46' 59"	58' 02"	15' 48,77"	34° 58' 01"	99,70%
04:00	9° 57' 58"	3° 22' 07"	7° 49' 34"	7° 02' 38"	58' 04"	15' 49,15"	37° 04' 58"	99,65%
05:00	10° 32' 11"	3° 24' 27"	8° 20' 17"	7° 18' 16"	58' 05"	15' 49,53"	38° 55' 52"	99,60%
06:00	11° 06' 27"	3° 26' 47"	8° 51' 03"	7° 33' 52"	58' 06"	15' 49,91"	40° 33' 33"	99,55%
07:00	11° 40' 44"	3° 29' 05"	9° 21' 53"	7° 49' 27"	58' 08"	15' 50,28"	42° 00' 15"	99,49%
08:00	12° 15' 03"	3° 31' 22"	9° 52' 47"	8° 05' 01"	58' 09"	15' 50,65"	43° 17' 45"	99,42%
09:00	12° 49' 23"	3° 33' 38"	10° 23' 44"	8° 20' 33"	58' 10"	15' 51,02"	44° 27' 28"	99,35%
10:00	13° 23' 46"	3° 35' 53"	10° 54' 46"	8° 36' 03"	58' 12"	15' 51,38"	45° 30' 37"	99,28%
11:00	13° 58' 10"	3° 38' 07"	11° 25' 51"	8° 51' 31"	58' 13"	15' 51,74"	46° 28' 07"	99,20%
12:00	14° 32' 35"	3° 40' 19"	11° 57' 00"	9° 06' 58"	58' 14"	15' 52,10"	47° 20' 47"	99,12%
13:00	15° 07' 03"	3° 42' 30"	12° 28' 13"	9° 22' 22"	58' 16"	15' 52,46"	48° 09' 15"	99,04%
14:00	15° 41' 32"	3° 44' 40"	12° 59' 31"	9° 37' 45"	58' 17"	15' 52,81"	48° 54' 06"	98,95%
15:00	16° 16' 02"	3° 46' 48"	13° 30' 53"	9° 53' 05"	58' 18"	15' 53,16"	49° 35' 45"	98,85%
16:00	16° 50' 35"	3° 48' 56"	14° 02' 18"	10° 08' 23"	58' 19"	15' 53,50"	50° 14' 38"	98,75%
17:00	17° 25' 08"	3° 51' 02"	14° 33' 49"	10° 23' 38"	58' 21"	15' 53,85"	50° 51' 04"	98,65%
18:00	17° 59' 44"	3° 53' 06"	15° 05' 23"	10° 38' 51"	58' 22"	15' 54,19"	51° 25' 19"	98,54%
19:00	18° 34' 21"	3° 55' 09"	15° 37' 02"	10° 54' 02"	58' 23"	15' 54,53"	51° 57' 40"	98,43%
20:00	19° 08' 59"	3° 57' 11"	16° 08' 46"	11° 09' 09"	58' 24"	15' 54,86"	52° 28' 18"	98,32%
21:00	19° 43' 40"	3° 59' 12"	16° 40' 34"	11° 24' 14"	58' 26"	15' 55,19"	52° 57' 24"	98,20%
22:00	20° 18' 21"	4° 01' 11"	17° 12' 27"	11° 39' 17"	58' 27"	15' 55,52"	53° 25' 09"	98,07%
23:00	20° 53' 04"	4° 03' 09"	17° 44' 24"	11° 54' 16"	58' 28"	15' 55,84"	53° 51' 41"	97,95%
24:00	21° 27' 49"	4° 05' 05"	18° 16' 26"	12° 09' 12"	58' 29"	15' 56,16"	54° 17' 08"	97,81%

28 September 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	184° 53' 37"	0,54"	184° 29' 30"	-1° 56' 40"	1,0021661	15' 57,56"	23° 26' 17"	09m 11s
01:00	184° 56' 04"	0,54"	184° 31' 45"	-1° 57' 38"	1,0021544	15' 57,57"	23° 26' 17"	09m 12s
02:00	184° 58' 32"	0,55"	184° 34' 00"	-1° 58' 36"	1,0021427	15' 57,58"	23° 26' 17"	09m 12s
03:00	185° 00' 59"	0,55"	184° 36' 16"	-1° 59' 35"	1,0021310	15' 57,59"	23° 26' 17"	09m 13s
04:00	185° 03' 26"	0,55"	184° 38' 31"	-2° 00' 33"	1,0021193	15' 57,60"	23° 26' 17"	09m 14s
05:00	185° 05' 53"	0,56"	184° 40' 46"	-2° 01' 31"	1,0021076	15' 57,61"	23° 26' 17"	09m 15s
06:00	185° 08' 20"	0,56"	184° 43' 01"	-2° 02' 30"	1,0020959	15' 57,62"	23° 26' 17"	09m 16s
07:00	185° 10' 47"	0,56"	184° 45' 16"	-2° 03' 28"	1,0020842	15' 57,63"	23° 26' 17"	09m 17s
08:00	185° 13' 14"	0,57"	184° 47' 31"	-2° 04' 26"	1,0020725	15' 57,65"	23° 26' 17"	09m 18s
09:00	185° 15' 42"	0,57"	184° 49' 47"	-2° 05' 25"	1,0020608	15' 57,66"	23° 26' 17"	09m 18s
10:00	185° 18' 09"	0,57"	184° 52' 02"	-2° 06' 23"	1,0020491	15' 57,67"	23° 26' 17"	09m 19s
11:00	185° 20' 36"	0,57"	184° 54' 17"	-2° 07' 21"	1,0020374	15' 57,68"	23° 26' 17"	09m 20s
12:00	185° 23' 03"	0,58"	184° 56' 32"	-2° 08' 20"	1,0020257	15' 57,69"	23° 26' 17"	09m 21s
13:00	185° 25' 30"	0,58"	184° 58' 47"	-2° 09' 18"	1,0020140	15' 57,70"	23° 26' 17"	09m 22s
14:00	185° 27' 57"	0,58"	185° 01' 03"	-2° 10' 16"	1,0020023	15' 57,71"	23° 26' 17"	09m 23s
15:00	185° 30' 25"	0,59"	185° 03' 18"	-2° 11' 15"	1,0019906	15' 57,72"	23° 26' 17"	09m 23s
16:00	185° 32' 52"	0,59"	185° 05' 33"	-2° 12' 13"	1,0019789	15' 57,73"	23° 26' 17"	09m 24s
17:00	185° 35' 19"	0,59"	185° 07' 48"	-2° 13' 11"	1,0019672	15' 57,75"	23° 26' 17"	09m 25s
18:00	185° 37' 46"	0,59"	185° 10' 04"	-2° 14' 10"	1,0019555	15' 57,76"	23° 26' 17"	09m 26s
19:00	185° 40' 13"	0,60"	185° 12' 19"	-2° 15' 08"	1,0019439	15' 57,77"	23° 26' 17"	09m 27s
20:00	185° 42' 40"	0,60"	185° 14' 34"	-2° 16' 06"	1,0019322	15' 57,78"	23° 26' 17"	09m 28s
21:00	185° 45' 08"	0,60"	185° 16' 49"	-2° 17' 04"	1,0019205	15' 57,79"	23° 26' 17"	09m 28s
22:00	185° 47' 35"	0,60"	185° 19' 05"	-2° 18' 03"	1,0019088	15' 57,80"	23° 26' 17"	09m 29s
23:00	185° 50' 02"	0,60"	185° 21' 20"	-2° 19' 01"	1,0018971	15' 57,81"	23° 26' 17"	09m 30s
24:00	185° 52' 29"	0,61"	185° 23' 35"	-2° 19' 59"	1,0018854	15' 57,82"	23° 26' 17"	09m 31s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	21° 27' 49"	4° 05' 05"	18° 16' 26"	12° 09' 12"	58' 29"	15' 56,16"	54° 17' 08"	97,81%
01:00	22° 02' 35"	4° 07' 00"	18° 48' 33"	12° 24' 05"	58' 30"	15' 56,48"	54° 41' 35"	97,68%
02:00	22° 37' 23"	4° 08' 53"	19° 20' 45"	12° 38' 55"	58' 32"	15' 56,80"	55° 05' 09"	97,53%
03:00	23° 12' 12"	4° 10' 45"	19° 53' 02"	12° 53' 41"	58' 33"	15' 57,11"	55° 27' 55"	97,39%
04:00	23° 47' 02"	4° 12' 36"	20° 25' 24"	13° 08' 24"	58' 34"	15' 57,42"	55° 49' 58"	97,24%
05:00	24° 21' 54"	4° 14' 25"	20° 57' 50"	13° 23' 04"	58' 35"	15' 57,72"	56° 11' 22"	97,08%
06:00	24° 56' 47"	4° 16' 12"	21° 30' 22"	13° 37' 40"	58' 36"	15' 58,02"	56° 32' 11"	96,93%
07:00	25° 31' 42"	4° 17' 58"	22° 02' 59"	13° 52' 12"	58' 37"	15' 58,32"	56° 52' 27"	96,76%
08:00	26° 06' 38"	4° 19' 42"	22° 35' 41"	14° 06' 40"	58' 38"	15' 58,61"	57° 12' 15"	96,60%
09:00	26° 41' 35"	4° 21' 25"	23° 08' 29"	14° 21' 04"	58' 39"	15' 58,90"	57° 31' 36"	96,43%
10:00	27° 16' 34"	4° 23' 06"	23° 41' 22"	14° 35' 24"	58' 40"	15' 59,19"	57° 50' 34"	96,25%
11:00	27° 51' 34"	4° 24' 46"	24° 14' 20"	14° 49' 40"	58' 41"	15' 59,48"	58° 09' 10"	96,07%
12:00	28° 26' 35"	4° 26' 24"	24° 47' 23"	15° 03' 52"	58' 42"	16' 00,00"	58° 27' 27"	95,89%
13:00	29° 01' 37"	4° 28' 00"	25° 20' 32"	15° 17' 59"	58' 43"	16' 00,03"	58° 45' 27"	95,70%
14:00	29° 36' 41"	4° 29' 35"	25° 53' 47"	15° 32' 02"	58' 44"	16' 00,31"	59° 03' 11"	95,51%
15:00	30° 11' 46"	4° 31' 08"	26° 27' 07"	15° 46' 01"	58' 45"	16' 00,58"	59° 20' 40"	95,31%
16:00	30° 46' 52"	4° 32' 40"	27° 00' 33"	15° 59' 54"	58' 46"	16' 00,84"	59° 37' 57"	95,11%
17:00	31° 21' 59"	4° 34' 10"	27° 34' 04"	16° 13' 43"	58' 47"	16' 01,11"	59° 55' 03"	94,91%
18:00	31° 57' 08"	4° 35' 38"	28° 07' 41"	16° 27' 27"	58' 48"	16' 01,36"	60° 11' 58"	94,70%
19:00	32° 32' 17"	4° 37' 04"	28° 41' 24"	16° 41' 06"	58' 49"	16' 01,62"	60° 28' 44"	94,48%
20:00	33° 07' 28"	4° 38' 29"	29° 15' 12"	16° 54' 40"	58' 50"	16' 01,87"	60° 45' 23"	94,27%
21:00	33° 42' 40"	4° 39' 52"	29° 49' 06"	17° 08' 09"	58' 51"	16' 02,12"	61° 01' 54"	94,05%
22:00	34° 17' 53"	4° 41' 13"	30° 23' 06"	17° 21' 32"	58' 52"	16' 02,36"	61° 18' 19"	93,82%
23:00	34° 53' 07"	4° 42' 33"	30° 57' 12"	17° 34' 50"	58' 53"	16' 02,60"	61° 34' 39"	93,59%
24:00	35° 28' 22"	4° 43' 50"	31° 31' 24"	17° 48' 02"	58' 54"	16' 02,84"	61° 50' 55"	93,36%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	185° 52' 29"	0,61"	185° 23' 35"	-2° 19' 59"	1,0018854	15' 57,82"	23° 26' 17"	09m 31s
01:00	185° 54' 56"	0,61"	185° 25' 51"	-2° 20' 58"	1,0018737	15' 57,84"	23° 26' 17"	09m 32s
02:00	185° 57' 24"	0,61"	185° 28' 06"	-2° 21' 56"	1,0018621	15' 57,85"	23° 26' 17"	09m 33s
03:00	185° 59' 51"	0,61"	185° 30' 21"	-2° 22' 54"	1,0018504	15' 57,86"	23° 26' 17"	09m 34s
04:00	186° 02' 18"	0,62"	185° 32' 36"	-2° 23' 52"	1,0018387	15' 57,87"	23° 26' 17"	09m 34s
05:00	186° 04' 45"	0,62"	185° 34' 52"	-2° 24' 51"	1,0018270	15' 57,88"	23° 26' 17"	09m 35s
06:00	186° 07' 13"	0,62"	185° 37' 07"	-2° 25' 49"	1,0018153	15' 57,89"	23° 26' 17"	09m 36s
07:00	186° 09' 40"	0,62"	185° 39' 22"	-2° 26' 47"	1,0018037	15' 57,90"	23° 26' 17"	09m 37s
08:00	186° 12' 07"	0,62"	185° 41' 38"	-2° 27' 46"	1,0017920	15' 57,91"	23° 26' 17"	09m 38s
09:00	186° 14' 34"	0,62"	185° 43' 53"	-2° 28' 44"	1,0017803	15' 57,92"	23° 26' 17"	09m 39s
10:00	186° 17' 02"	0,63"	185° 46' 08"	-2° 29' 42"	1,0017687	15' 57,94"	23° 26' 17"	09m 39s
11:00	186° 19' 29"	0,63"	185° 48' 24"	-2° 30' 40"	1,0017570	15' 57,95"	23° 26' 17"	09m 40s
12:00	186° 21' 56"	0,63"	185° 50' 39"	-2° 31' 39"	1,0017453	15' 57,96"	23° 26' 17"	09m 41s
13:00	186° 24' 23"	0,63"	185° 52' 55"	-2° 32' 37"	1,0017336	15' 57,97"	23° 26' 17"	09m 42s
14:00	186° 26' 51"	0,63"	185° 55' 10"	-2° 33' 35"	1,0017220	15' 57,98"	23° 26' 17"	09m 43s
15:00	186° 29' 18"	0,63"	185° 57' 25"	-2° 34' 33"	1,0017103	15' 57,99"	23° 26' 17"	09m 44s
16:00	186° 31' 45"	0,64"	185° 59' 41"	-2° 35' 32"	1,0016986	15' 58,00"	23° 26' 17"	09m 44s
17:00	186° 34' 12"	0,64"	186° 01' 56"	-2° 36' 30"	1,0016870	15' 58,01"	23° 26' 17"	09m 45s
18:00	186° 36' 40"	0,64"	186° 04' 12"	-2° 37' 28"	1,0016753	15' 58,03"	23° 26' 17"	09m 46s
19:00	186° 39' 07"	0,64"	186° 06' 27"	-2° 38' 26"	1,0016636	15' 58,04"	23° 26' 17"	09m 47s
20:00	186° 41' 34"	0,64"	186° 08' 42"	-2° 39' 25"	1,0016520	15' 58,05"	23° 26' 17"	09m 48s
21:00	186° 44' 02"	0,64"	186° 10' 58"	-2° 40' 23"	1,0016403	15' 58,06"	23° 26' 17"	09m 48s
22:00	186° 46' 29"	0,64"	186° 13' 13"	-2° 41' 21"	1,0016287	15' 58,07"	23° 26' 17"	09m 49s
23:00	186° 48' 56"	0,64"	186° 15' 29"	-2° 42' 19"	1,0016170	15' 58,08"	23° 26' 17"	09m 50s
24:00	186° 51' 23"	0,64"	186° 17' 44"	-2° 43' 18"	1,0016053	15' 58,09"	23° 26' 17"	09m 51s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	35° 28' 22"	4° 43' 50"	31° 31' 24"	17° 48' 02"	58' 54"	16' 02,84"	61° 50' 55"	93,36%
01:00	36° 03' 38"	4° 45' 06"	32° 05' 42"	18° 01' 09"	58' 55"	16' 03,08"	62° 07' 06"	93,12%
02:00	36° 38' 55"	4° 46' 21"	32° 40' 06"	18° 14' 10"	58' 55"	16' 03,30"	62° 23' 14"	92,88%
03:00	37° 14' 13"	4° 47' 33"	33° 14' 35"	18° 27' 05"	58' 56"	16' 03,53"	62° 39' 20"	92,63%
04:00	37° 49' 32"	4° 48' 44"	33° 49' 11"	18° 39' 54"	58' 57"	16' 03,75"	62° 55' 24"	92,39%
05:00	38° 24' 52"	4° 49' 52"	34° 23' 53"	18° 52' 38"	58' 58"	16' 03,97"	63° 11' 26"	92,13%
06:00	39° 00' 13"	4° 50' 59"	34° 58' 41"	19° 05' 15"	58' 59"	16' 04,19"	63° 27' 27"	91,88%
07:00	39° 35' 35"	4° 52' 05"	35° 33' 35"	19° 17' 45"	58' 59"	16' 04,40"	63° 43' 28"	91,61%
08:00	40° 10' 58"	4° 53' 08"	36° 08' 35"	19° 30' 10"	59' 00"	16' 04,61"	63° 59' 29"	91,35%
09:00	40° 46' 21"	4° 54' 10"	36° 43' 41"	19° 42' 27"	59' 01"	16' 04,81"	64° 15' 30"	91,08%
10:00	41° 21' 46"	4° 55' 09"	37° 18' 53"	19° 54' 39"	59' 02"	16' 05,01"	64° 31' 31"	90,81%
11:00	41° 57' 11"	4° 56' 07"	37° 54' 11"	20° 06' 43"	59' 02"	16' 05,21"	64° 47' 34"	90,53%
12:00	42° 32' 37"	4° 57' 03"	38° 29' 36"	20° 18' 41"	59' 03"	16' 05,40"	65° 03' 38"	90,25%
13:00	43° 08' 04"	4° 57' 57"	39° 05' 06"	20° 30' 31"	59' 04"	16' 05,59"	65° 19' 43"	89,97%
14:00	43° 43' 31"	4° 58' 49"	39° 40' 43"	20° 42' 15"	59' 05"	16' 05,77"	65° 35' 50"	89,68%
15:00	44° 19' 00"	4° 59' 39"	40° 16' 26"	20° 53' 52"	59' 05"	16' 05,96"	65° 52' 00"	89,39%
16:00	44° 54' 29"	5° 00' 28"	40° 52' 15"	21° 05' 21"	59' 06"	16' 06,13"	66° 08' 12"	89,09%
17:00	45° 29' 59"	5° 01' 14"	41° 28' 11"	21° 16' 43"	59' 06"	16' 06,31"	66° 24' 26"	88,80%
18:00	46° 05' 29"	5° 01' 59"	42° 04' 12"	21° 27' 58"	59' 07"	16' 06,48"	66° 40' 43"	88,49%
19:00	46° 41' 01"	5° 02' 41"	42° 40' 20"	21° 39' 05"	59' 08"	16' 06,65"	66° 57' 04"	88,19%
20:00	47° 16' 32"	5° 03' 22"	43° 16' 33"	21° 50' 04"	59' 08"	16' 06,81"	67° 13' 27"	87,88%
21:00	47° 52' 05"	5° 04' 01"	43° 52' 53"	22° 00' 55"	59' 09"	16' 06,97"	67° 29' 54"	87,57%
22:00	48° 27' 38"	5° 04' 37"	44° 29' 19"	22° 11' 39"	59' 09"	16' 07,13"	67° 46' 24"	87,25%
23:00	49° 03' 12"	5° 05' 12"	45° 05' 51"	22° 22' 15"	59' 10"	16' 07,28"	68° 02' 58"	86,93%
24:00	49° 38' 46"	5° 05' 45"	45° 42' 29"	22° 32' 42"	59' 11"	16' 07,43"	68° 19' 35"	86,61%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	186° 51' 23"	0,64"	186° 17' 44"	-2° 43' 18"	1,0016053	15' 58,09"	23° 26' 17"	09m 51s
01:00	186° 53' 51"	0,64"	186° 20' 00"	-2° 44' 16"	1,0015937	15' 58,10"	23° 26' 17"	09m 52s
02:00	186° 56' 18"	0,65"	186° 22' 15"	-2° 45' 14"	1,0015820	15' 58,11"	23° 26' 17"	09m 53s
03:00	186° 58' 45"	0,65"	186° 24' 31"	-2° 46' 12"	1,0015704	15' 58,13"	23° 26' 17"	09m 53s
04:00	187° 01' 13"	0,65"	186° 26' 46"	-2° 47' 11"	1,0015587	15' 58,14"	23° 26' 17"	09m 54s
05:00	187° 03' 40"	0,65"	186° 29' 02"	-2° 48' 09"	1,0015471	15' 58,15"	23° 26' 17"	09m 55s
06:00	187° 06' 07"	0,65"	186° 31' 17"	-2° 49' 07"	1,0015354	15' 58,16"	23° 26' 17"	09m 56s
07:00	187° 08' 35"	0,65"	186° 33' 33"	-2° 50' 05"	1,0015238	15' 58,17"	23° 26' 17"	09m 57s
08:00	187° 11' 02"	0,65"	186° 35' 48"	-2° 51' 04"	1,0015121	15' 58,18"	23° 26' 17"	09m 58s
09:00	187° 13' 29"	0,65"	186° 38' 04"	-2° 52' 02"	1,0015005	15' 58,19"	23° 26' 17"	09m 58s
10:00	187° 15' 57"	0,65"	186° 40' 19"	-2° 53' 00"	1,0014888	15' 58,20"	23° 26' 17"	09m 59s
11:00	187° 18' 24"	0,65"	186° 42' 35"	-2° 53' 58"	1,0014772	15' 58,21"	23° 26' 17"	10m 00s
12:00	187° 20' 51"	0,65"	186° 44' 50"	-2° 54' 56"	1,0014655	15' 58,23"	23° 26' 17"	10m 01s
13:00	187° 23' 19"	0,65"	186° 47' 06"	-2° 55' 55"	1,0014539	15' 58,24"	23° 26' 17"	10m 02s
14:00	187° 25' 46"	0,65"	186° 49' 21"	-2° 56' 53"	1,0014422	15' 58,25"	23° 26' 17"	10m 02s
15:00	187° 28' 13"	0,65"	186° 51' 37"	-2° 57' 51"	1,0014306	15' 58,26"	23° 26' 17"	10m 03s
16:00	187° 30' 41"	0,65"	186° 53' 52"	-2° 58' 49"	1,0014189	15' 58,27"	23° 26' 17"	10m 04s
17:00	187° 33' 08"	0,65"	186° 56' 08"	-2° 59' 47"	1,0014073	15' 58,28"	23° 26' 17"	10m 05s
18:00	187° 35' 36"	0,65"	186° 58' 24"	-3° 00' 46"	1,0013957	15' 58,29"	23° 26' 17"	10m 06s
19:00	187° 38' 03"	0,65"	187° 00' 39"	-3° 01' 44"	1,0013840	15' 58,30"	23° 26' 17"	10m 07s
20:00	187° 40' 30"	0,65"	187° 02' 55"	-3° 02' 42"	1,0013724	15' 58,31"	23° 26' 17"	10m 07s
21:00	187° 42' 58"	0,65"	187° 05' 10"	-3° 03' 40"	1,0013607	15' 58,33"	23° 26' 17"	10m 08s
22:00	187° 45' 25"	0,65"	187° 07' 26"	-3° 04' 38"	1,0013491	15' 58,34"	23° 26' 17"	10m 09s
23:00	187° 47' 52"	0,65"	187° 09' 42"	-3° 05' 36"	1,0013375	15' 58,35"	23° 26' 17"	10m 10s
24:00	187° 50' 20"	0,65"	187° 11' 57"	-3° 06' 35"	1,0013258	15' 58,36"	23° 26' 17"	10m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	49° 38' 46"	5° 05' 45"	45° 42' 29"	22° 32' 42"	59' 11"	16' 07,43"	68° 19' 35"	86,61%
01:00	50° 14' 21"	5° 06' 16"	46° 19' 13"	22° 43' 02"	59' 11"	16' 07,57"	68° 36' 16"	86,28%
02:00	50° 49' 56"	5° 06' 45"	46° 56' 03"	22° 53' 13"	59' 12"	16' 07,71"	68° 53' 02"	85,95%
03:00	51° 25' 32"	5° 07' 12"	47° 32' 59"	23° 03' 16"	59' 12"	16' 07,85"	69° 09' 51"	85,61%
04:00	52° 01' 08"	5° 07' 37"	48° 10' 01"	23° 13' 10"	59' 13"	16' 07,99"	69° 26' 44"	85,28%
05:00	52° 36' 45"	5° 08' 00"	48° 47' 09"	23° 22' 55"	59' 13"	16' 08,12"	69° 43' 41"	84,94%
06:00	53° 12' 22"	5° 08' 21"	49° 24' 23"	23° 32' 32"	59' 14"	16' 08,25"	70° 00' 43"	84,59%
07:00	53° 48' 00"	5° 08' 40"	50° 01' 43"	23° 42' 01"	59' 14"	16' 08,37"	70° 17' 49"	84,25%
08:00	54° 23' 38"	5° 08' 57"	50° 39' 08"	23° 51' 20"	59' 15"	16' 08,49"	70° 34' 59"	83,90%
09:00	54° 59' 16"	5° 09' 12"	51° 16' 39"	24° 00' 30"	59' 15"	16' 08,61"	70° 52' 13"	83,54%
10:00	55° 34' 55"	5° 09' 25"	51° 54' 16"	24° 09' 31"	59' 15"	16' 08,72"	71° 09' 32"	83,19%
11:00	56° 10' 35"	5° 09' 36"	52° 31' 58"	24° 18' 23"	59' 16"	16' 08,83"	71° 26' 55"	82,83%
12:00	56° 46' 14"	5° 09' 45"	53° 09' 46"	24° 27' 06"	59' 16"	16' 08,94"	71° 44' 22"	82,46%
13:00	57° 21' 54"	5° 09' 53"	53° 47' 40"	24° 35' 40"	59' 17"	16' 09,04"	72° 01' 54"	82,10%
14:00	57° 57' 34"	5° 09' 58"	54° 25' 39"	24° 44' 04"	59' 17"	16' 09,14"	72° 19' 30"	81,73%
15:00	58° 33' 15"	5° 10' 01"	55° 03' 43"	24° 52' 18"	59' 17"	16' 09,23"	72° 37' 10"	81,36%
16:00	59° 08' 55"	5° 10' 02"	55° 41' 53"	25° 00' 23"	59' 18"	16' 09,32"	72° 54' 54"	80,98%
17:00	59° 44' 36"	5° 10' 01"	56° 20' 08"	25° 08' 18"	59' 18"	16' 09,41"	73° 12' 43"	80,60%
18:00	60° 20' 18"	5° 09' 58"	56° 58' 28"	25° 16' 03"	59' 18"	16' 09,50"	73° 30' 36"	80,22%
19:00	60° 55' 59"	5° 09' 53"	57° 36' 53"	25° 23' 39"	59' 19"	16' 09,58"	73° 48' 33"	79,84%
20:00	61° 31' 41"	5° 09' 46"	58° 15' 23"	25° 31' 04"	59' 19"	16' 09,66"	74° 06' 35"	79,45%
21:00	62° 07' 22"	5° 09' 37"	58° 53' 58"	25° 38' 20"	59' 19"	16' 09,74"	74° 24' 40"	79,07%
22:00	62° 43' 04"	5° 09' 26"	59° 32' 38"	25° 45' 25"	59' 19"	16' 09,81"	74° 42' 49"	78,67%
23:00	63° 18' 46"	5° 09' 13"	60° 11' 23"	25° 52' 20"	59' 20"	16' 09,88"	75° 01' 03"	78,28%
24:00	63° 54' 29"	5° 08' 58"	60° 50' 12"	25° 59' 05"	59' 20"	16' 09,94"	75° 19' 20"	77,88%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	187° 50' 20"	0,65"	187° 11' 57"	-3° 06' 35"	1,0013258	15' 58,36"	23° 26' 17"	10m 11s
01:00	187° 52' 47"	0,65"	187° 14' 13"	-3° 07' 33"	1,0013142	15' 58,37"	23° 26' 17"	10m 11s
02:00	187° 55' 15"	0,65"	187° 16' 29"	-3° 08' 31"	1,0013025	15' 58,38"	23° 26' 17"	10m 12s
03:00	187° 57' 42"	0,65"	187° 18' 44"	-3° 09' 29"	1,0012909	15' 58,39"	23° 26' 17"	10m 13s
04:00	188° 00' 10"	0,65"	187° 21' 00"	-3° 10' 27"	1,0012793	15' 58,40"	23° 26' 17"	10m 14s
05:00	188° 02' 37"	0,64"	187° 23' 16"	-3° 11' 25"	1,0012676	15' 58,42"	23° 26' 17"	10m 15s
06:00	188° 05' 04"	0,64"	187° 25' 31"	-3° 12' 24"	1,0012560	15' 58,43"	23° 26' 17"	10m 16s
07:00	188° 07' 32"	0,64"	187° 27' 47"	-3° 13' 22"	1,0012444	15' 58,44"	23° 26' 17"	10m 16s
08:00	188° 09' 59"	0,64"	187° 30' 03"	-3° 14' 20"	1,0012327	15' 58,45"	23° 26' 17"	10m 17s
09:00	188° 12' 27"	0,64"	187° 32' 18"	-3° 15' 18"	1,0012211	15' 58,46"	23° 26' 17"	10m 18s
10:00	188° 14' 54"	0,64"	187° 34' 34"	-3° 16' 16"	1,0012095	15' 58,47"	23° 26' 17"	10m 19s
11:00	188° 17' 22"	0,64"	187° 36' 50"	-3° 17' 14"	1,0011978	15' 58,48"	23° 26' 17"	10m 20s
12:00	188° 19' 49"	0,64"	187° 39' 05"	-3° 18' 12"	1,0011862	15' 58,49"	23° 26' 17"	10m 20s
13:00	188° 22' 16"	0,64"	187° 41' 21"	-3° 19' 10"	1,0011746	15' 58,50"	23° 26' 17"	10m 21s
14:00	188° 24' 44"	0,64"	187° 43' 37"	-3° 20' 09"	1,0011629	15' 58,52"	23° 26' 17"	10m 22s
15:00	188° 27' 11"	0,63"	187° 45' 53"	-3° 21' 07"	1,0011513	15' 58,53"	23° 26' 17"	10m 23s
16:00	188° 29' 39"	0,63"	187° 48' 08"	-3° 22' 05"	1,0011397	15' 58,54"	23° 26' 17"	10m 24s
17:00	188° 32' 06"	0,63"	187° 50' 24"	-3° 23' 03"	1,0011280	15' 58,55"	23° 26' 17"	10m 24s
18:00	188° 34' 34"	0,63"	187° 52' 40"	-3° 24' 01"	1,0011164	15' 58,56"	23° 26' 17"	10m 25s
19:00	188° 37' 01"	0,63"	187° 54' 56"	-3° 24' 59"	1,0011048	15' 58,57"	23° 26' 17"	10m 26s
20:00	188° 39' 29"	0,63"	187° 57' 12"	-3° 25' 57"	1,0010932	15' 58,58"	23° 26' 17"	10m 27s
21:00	188° 41' 56"	0,62"	187° 59' 27"	-3° 26' 55"	1,0010815	15' 58,59"	23° 26' 17"	10m 28s
22:00	188° 44' 24"	0,62"	188° 01' 43"	-3° 27' 53"	1,0010699	15' 58,60"	23° 26' 17"	10m 28s
23:00	188° 46' 51"	0,62"	188° 03' 59"	-3° 28' 52"	1,0010583	15' 58,62"	23° 26' 17"	10m 29s
24:00	188° 49' 19"	0,62"	188° 06' 15"	-3° 29' 50"	1,0010466	15' 58,63"	23° 26' 17"	10m 30s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	63° 54' 29"	5° 08' 58"	60° 50' 12"	25° 59' 05"	59' 20"	16' 09,94"	75° 19' 20"	77,88%
01:00	64° 30' 11"	5° 08' 41"	61° 29' 06"	26° 05' 39"	59' 20"	16' 10,00"	75° 37' 41"	77,48%
02:00	65° 05' 53"	5° 08' 23"	62° 08' 05"	26° 12' 03"	59' 20"	16' 10,06"	75° 56' 05"	77,08%
03:00	65° 41' 36"	5° 08' 02"	62° 47' 07"	26° 18' 16"	59' 20"	16' 10,12"	76° 14' 34"	76,68%
04:00	66° 17' 18"	5° 07' 39"	63° 26' 14"	26° 24' 19"	59' 21"	16' 10,17"	76° 33' 05"	76,27%
05:00	66° 53' 01"	5° 07' 14"	64° 05' 25"	26° 30' 12"	59' 21"	16' 10,22"	76° 51' 41"	75,86%
06:00	67° 28' 44"	5° 06' 47"	64° 44' 40"	26° 35' 53"	59' 21"	16' 10,27"	77° 10' 19"	75,45%
07:00	68° 04' 26"	5° 06' 18"	65° 23' 59"	26° 41' 24"	59' 21"	16' 10,31"	77° 29' 01"	75,03%
08:00	68° 40' 09"	5° 05' 47"	66° 03' 22"	26° 46' 44"	59' 21"	16' 10,35"	77° 47' 46"	74,62%
09:00	69° 15' 51"	5° 05' 14"	66° 42' 49"	26° 51' 53"	59' 21"	16' 10,39"	78° 06' 34"	74,20%
10:00	69° 51' 34"	5° 04' 39"	67° 22' 19"	26° 56' 51"	59' 22"	16' 10,42"	78° 25' 24"	73,77%
11:00	70° 27' 16"	5° 04' 03"	68° 01' 52"	27° 01' 38"	59' 22"	16' 10,45"	78° 44' 18"	73,35%
12:00	71° 02' 59"	5° 03' 24"	68° 41' 29"	27° 06' 13"	59' 22"	16' 10,48"	79° 03' 14"	72,93%
13:00	71° 38' 41"	5° 02' 43"	69° 21' 09"	27° 10' 38"	59' 22"	16' 10,50"	79° 22' 12"	72,50%
14:00	72° 14' 23"	5° 02' 00"	70° 00' 52"	27° 14' 52"	59' 22"	16' 10,52"	79° 41' 13"	72,07%
15:00	72° 50' 05"	5° 01' 16"	70° 40' 38"	27° 18' 54"	59' 22"	16' 10,54"	80° 00' 16"	71,64%
16:00	73° 25' 47"	5° 00' 29"	71° 20' 27"	27° 22' 45"	59' 22"	16' 10,56"	80° 19' 21"	71,20%
17:00	74° 01' 29"	4° 59' 41"	72° 00' 18"	27° 26' 25"	59' 22"	16' 10,57"	80° 38' 28"	70,77%
18:00	74° 37' 11"	4° 58' 50"	72° 40' 12"	27° 29' 53"	59' 22"	16' 10,58"	80° 57' 37"	70,33%
19:00	75° 12' 52"	4° 57' 58"	73° 20' 08"	27° 33' 10"	59' 22"	16' 10,59"	81° 16' 47"	69,89%
20:00	75° 48' 34"	4° 57' 04"	74° 00' 06"	27° 36' 16"	59' 22"	16' 10,59"	81° 35' 59"	69,45%
21:00	76° 24' 15"	4° 56' 07"	74° 40' 07"	27° 39' 10"	59' 22"	16' 10,59"	81° 55' 12"	69,00%
22:00	76° 59' 56"	4° 55' 09"	75° 20' 09"	27° 41' 52"	59' 22"	16' 10,59"	82° 14' 27"	68,56%
23:00	77° 35' 36"	4° 54' 09"	76° 00' 13"	27° 44' 23"	59' 22"	16' 10,59"	82° 33' 42"	68,11%
24:00	78° 11' 17"	4° 53' 07"	76° 40' 19"	27° 46' 43"	59' 22"	16' 10,58"	82° 52' 58"	67,66%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	188° 49' 19"	0,62"	188° 06' 15"	-3° 29' 50"	1,0010466	15' 58,63"	23° 26' 17"	10m 30s
01:00	188° 51' 46"	0,62"	188° 08' 31"	-3° 30' 48"	1,0010350	15' 58,64"	23° 26' 17"	10m 31s
02:00	188° 54' 14"	0,62"	188° 10' 47"	-3° 31' 46"	1,0010234	15' 58,65"	23° 26' 17"	10m 32s
03:00	188° 56' 41"	0,61"	188° 13' 02"	-3° 32' 44"	1,0010118	15' 58,66"	23° 26' 17"	10m 32s
04:00	188° 59' 09"	0,61"	188° 15' 18"	-3° 33' 42"	1,0010001	15' 58,67"	23° 26' 17"	10m 33s
05:00	189° 01' 36"	0,61"	188° 17' 34"	-3° 34' 40"	1,0009885	15' 58,68"	23° 26' 17"	10m 34s
06:00	189° 04' 04"	0,61"	188° 19' 50"	-3° 35' 38"	1,0009769	15' 58,69"	23° 26' 17"	10m 35s
07:00	189° 06' 31"	0,60"	188° 22' 06"	-3° 36' 36"	1,0009652	15' 58,70"	23° 26' 17"	10m 36s
08:00	189° 08' 59"	0,60"	188° 24' 22"	-3° 37' 34"	1,0009536	15' 58,72"	23° 26' 17"	10m 36s
09:00	189° 11' 26"	0,60"	188° 26' 38"	-3° 38' 32"	1,0009420	15' 58,73"	23° 26' 17"	10m 37s
10:00	189° 13' 54"	0,60"	188° 28' 54"	-3° 39' 30"	1,0009304	15' 58,74"	23° 26' 17"	10m 38s
11:00	189° 16' 21"	0,60"	188° 31' 10"	-3° 40' 28"	1,0009187	15' 58,75"	23° 26' 17"	10m 39s
12:00	189° 18' 49"	0,59"	188° 33' 25"	-3° 41' 26"	1,0009071	15' 58,76"	23° 26' 17"	10m 40s
13:00	189° 21' 16"	0,59"	188° 35' 41"	-3° 42' 24"	1,0008955	15' 58,77"	23° 26' 17"	10m 40s
14:00	189° 23' 44"	0,59"	188° 37' 57"	-3° 43' 22"	1,0008839	15' 58,78"	23° 26' 17"	10m 41s
15:00	189° 26' 12"	0,59"	188° 40' 13"	-3° 44' 20"	1,0008722	15' 58,79"	23° 26' 17"	10m 42s
16:00	189° 28' 39"	0,58"	188° 42' 29"	-3° 45' 18"	1,0008606	15' 58,80"	23° 26' 17"	10m 43s
17:00	189° 31' 07"	0,58"	188° 44' 45"	-3° 46' 17"	1,0008490	15' 58,82"	23° 26' 17"	10m 44s
18:00	189° 33' 34"	0,58"	188° 47' 01"	-3° 47' 15"	1,0008374	15' 58,83"	23° 26' 17"	10m 44s
19:00	189° 36' 02"	0,57"	188° 49' 17"	-3° 48' 13"	1,0008257	15' 58,84"	23° 26' 17"	10m 45s
20:00	189° 38' 29"	0,57"	188° 51' 33"	-3° 49' 11"	1,0008141	15' 58,85"	23° 26' 17"	10m 46s
21:00	189° 40' 57"	0,57"	188° 53' 49"	-3° 50' 09"	1,0008025	15' 58,86"	23° 26' 17"	10m 47s
22:00	189° 43' 25"	0,57"	188° 56' 05"	-3° 51' 07"	1,0007909	15' 58,87"	23° 26' 17"	10m 48s
23:00	189° 45' 52"	0,56"	188° 58' 21"	-3° 52' 05"	1,0007792	15' 58,88"	23° 26' 17"	10m 48s
24:00	189° 48' 20"	0,56"	189° 00' 37"	-3° 53' 03"	1,0007676	15' 58,89"	23° 26' 17"	10m 49s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	78° 11' 17"	4° 53' 07"	76° 40' 19"	27° 46' 43"	59' 22"	16' 10,58"	82° 52' 58"	67,66%
01:00	78° 46' 57"	4° 52' 03"	77° 20' 27"	27° 48' 51"	59' 22"	16' 10,57"	83° 12' 15"	67,21%
02:00	79° 22' 37"	4° 50' 58"	78° 00' 35"	27° 50' 47"	59' 22"	16' 10,56"	83° 31' 32"	66,76%
03:00	79° 58' 16"	4° 49' 50"	78° 40' 45"	27° 52' 32"	59' 22"	16' 10,54"	83° 50' 50"	66,31%
04:00	80° 33' 56"	4° 48' 41"	79° 20' 56"	27° 54' 05"	59' 22"	16' 10,52"	84° 10' 08"	65,85%
05:00	81° 09' 35"	4° 47' 29"	80° 01' 08"	27° 55' 26"	59' 22"	16' 10,50"	84° 29' 25"	65,40%
06:00	81° 45' 13"	4° 46' 16"	80° 41' 20"	27° 56' 35"	59' 22"	16' 10,48"	84° 48' 43"	64,94%
07:00	82° 20' 52"	4° 45' 01"	81° 21' 33"	27° 57' 33"	59' 22"	16' 10,45"	85° 08' 00"	64,48%
08:00	82° 56' 30"	4° 43' 45"	82° 01' 46"	27° 58' 19"	59' 22"	16' 10,42"	85° 27' 16"	64,02%
09:00	83° 32' 07"	4° 42' 26"	82° 42' 00"	27° 58' 54"	59' 21"	16' 10,39"	85° 46' 32"	63,56%
10:00	84° 07' 45"	4° 41' 06"	83° 22' 14"	27° 59' 17"	59' 21"	16' 10,36"	86° 05' 47"	63,10%
11:00	84° 43' 22"	4° 39' 43"	84° 02' 28"	27° 59' 28"	59' 21"	16' 10,32"	86° 25' 01"	62,64%
12:00	85° 18' 58"	4° 38' 19"	84° 42' 41"	27° 59' 27"	59' 21"	16' 10,28"	86° 44' 13"	62,17%
13:00	85° 54' 34"	4° 36' 54"	85° 22' 54"	27° 59' 15"	59' 21"	16' 10,24"	87° 03' 24"	61,70%
14:00	86° 30' 10"	4° 35' 26"	86° 03' 07"	27° 58' 51"	59' 21"	16' 10,19"	87° 22' 33"	61,24%
15:00	87° 05' 45"	4° 33' 57"	86° 43' 19"	27° 58' 15"	59' 21"	16' 10,15"	87° 41' 41"	60,77%
16:00	87° 41' 20"	4° 32' 26"	87° 23' 30"	27° 57' 27"	59' 20"	16' 10,10"	88° 00' 46"	60,30%
17:00	88° 16' 55"	4° 30' 53"	88° 03' 40"	27° 56' 28"	59' 20"	16' 10,04"	88° 19' 49"	59,83%
18:00	88° 52' 29"	4° 29' 18"	88° 43' 49"	27° 55' 18"	59' 20"	16' 09,99"	88° 38' 50"	59,36%
19:00	89° 28' 02"	4° 27' 42"	89° 23' 56"	27° 53' 55"	59' 20"	16' 09,93"	88° 57' 49"	58,89%
20:00	90° 03' 35"	4° 26' 04"	90° 04' 03"	27° 52' 21"	59' 20"	16' 09,87"	89° 16' 44"	58,42%
21:00	90° 39' 08"	4° 24' 25"	90° 44' 07"	27° 50' 36"	59' 19"	16' 09,81"	89° 35' 37"	57,94%
22:00	91° 14' 40"	4° 22' 43"	91° 24' 10"	27° 48' 39"	59' 19"	16' 09,75"	89° 54' 26"	57,47%
23:00	91° 50' 12"	4° 21' 00"	92° 04' 11"	27° 46' 30"	59' 19"	16' 09,68"	90° 13' 13"	57,00%
24:00	92° 25' 43"	4° 19' 16"	92° 44' 10"	27° 44' 10"	59' 19"	16' 09,61"	90° 31' 55"	56,52%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	189° 48' 20"	0,56"	189° 00' 37"	-3° 53' 03"	1,0007676	15' 58,89"	23° 26' 17"	10m 49s
01:00	189° 50' 47"	0,56"	189° 02' 53"	-3° 54' 00"	1,0007560	15' 58,91"	23° 26' 17"	10m 50s
02:00	189° 53' 15"	0,55"	189° 05' 09"	-3° 54' 58"	1,0007443	15' 58,92"	23° 26' 17"	10m 51s
03:00	189° 55' 43"	0,55"	189° 07' 25"	-3° 55' 56"	1,0007327	15' 58,93"	23° 26' 17"	10m 51s
04:00	189° 58' 10"	0,55"	189° 09' 42"	-3° 56' 54"	1,0007211	15' 58,94"	23° 26' 17"	10m 52s
05:00	190° 00' 38"	0,54"	189° 11' 58"	-3° 57' 52"	1,0007095	15' 58,95"	23° 26' 17"	10m 53s
06:00	190° 03' 05"	0,54"	189° 14' 14"	-3° 58' 50"	1,0006978	15' 58,96"	23° 26' 17"	10m 54s
07:00	190° 05' 33"	0,54"	189° 16' 30"	-3° 59' 48"	1,0006862	15' 58,97"	23° 26' 17"	10m 55s
08:00	190° 08' 01"	0,53"	189° 18' 46"	-4° 00' 46"	1,0006746	15' 58,98"	23° 26' 17"	10m 55s
09:00	190° 10' 28"	0,53"	189° 21' 02"	-4° 01' 44"	1,0006629	15' 58,99"	23° 26' 17"	10m 56s
10:00	190° 12' 56"	0,53"	189° 23' 18"	-4° 02' 42"	1,0006513	15' 59,01"	23° 26' 17"	10m 57s
11:00	190° 15' 24"	0,52"	189° 25' 34"	-4° 03' 40"	1,0006397	15' 59,02"	23° 26' 17"	10m 58s
12:00	190° 17' 51"	0,52"	189° 27' 50"	-4° 04' 38"	1,0006280	15' 59,03"	23° 26' 17"	10m 59s
13:00	190° 20' 19"	0,51"	189° 30' 07"	-4° 05' 36"	1,0006164	15' 59,04"	23° 26' 17"	10m 59s
14:00	190° 22' 46"	0,51"	189° 32' 23"	-4° 06' 34"	1,0006048	15' 59,05"	23° 26' 17"	11m 00s
15:00	190° 25' 14"	0,51"	189° 34' 39"	-4° 07' 32"	1,0005931	15' 59,06"	23° 26' 17"	11m 01s
16:00	190° 27' 42"	0,50"	189° 36' 55"	-4° 08' 30"	1,0005815	15' 59,07"	23° 26' 17"	11m 02s
17:00	190° 30' 09"	0,50"	189° 39' 11"	-4° 09' 28"	1,0005699	15' 59,08"	23° 26' 17"	11m 02s
18:00	190° 32' 37"	0,50"	189° 41' 27"	-4° 10' 26"	1,0005582	15' 59,09"	23° 26' 17"	11m 03s
19:00	190° 35' 05"	0,49"	189° 43' 44"	-4° 11' 23"	1,0005466	15' 59,11"	23° 26' 17"	11m 04s
20:00	190° 37' 32"	0,49"	189° 46' 00"	-4° 12' 21"	1,0005350	15' 59,12"	23° 26' 17"	11m 05s
21:00	190° 40' 00"	0,48"	189° 48' 16"	-4° 13' 19"	1,0005233	15' 59,13"	23° 26' 17"	11m 06s
22:00	190° 42' 28"	0,48"	189° 50' 32"	-4° 14' 17"	1,0005117	15' 59,14"	23° 26' 17"	11m 06s
23:00	190° 44' 56"	0,48"	189° 52' 49"	-4° 15' 15"	1,0005001	15' 59,15"	23° 26' 17"	11m 07s
24:00	190° 47' 23"	0,47"	189° 55' 05"	-4° 16' 13"	1,0004884	15' 59,16"	23° 26' 17"	11m 08s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	92° 25' 43"	4° 19' 16"	92° 44' 10"	27° 44' 10"	59' 19"	16' 09,61"	90° 31' 55"	56,52%
01:00	93° 01' 13"	4° 17' 30"	93° 24' 07"	27° 41' 38"	59' 18"	16' 09,54"	90° 50' 34"	56,05%
02:00	93° 36' 43"	4° 15' 42"	94° 04' 02"	27° 38' 55"	59' 18"	16' 09,47"	91° 09' 10"	55,57%
03:00	94° 12' 13"	4° 13' 52"	94° 43' 54"	27° 36' 01"	59' 18"	16' 09,39"	91° 27' 41"	55,10%
04:00	94° 47' 42"	4° 12' 01"	95° 23' 43"	27° 32' 55"	59' 18"	16' 09,31"	91° 46' 08"	54,62%
05:00	95° 23' 10"	4° 10' 09"	96° 03' 30"	27° 29' 38"	59' 17"	16' 09,23"	92° 04' 31"	54,14%
06:00	95° 58' 38"	4° 08' 14"	96° 43' 14"	27° 26' 10"	59' 17"	16' 09,15"	92° 22' 49"	53,67%
07:00	96° 34' 06"	4° 06' 19"	97° 22' 55"	27° 22' 30"	59' 17"	16' 09,07"	92° 41' 03"	53,19%
08:00	97° 09' 32"	4° 04' 21"	98° 02' 32"	27° 18' 40"	59' 16"	16' 08,98"	92° 59' 12"	52,71%
09:00	97° 44' 59"	4° 02' 22"	98° 42' 07"	27° 14' 38"	59' 16"	16' 08,89"	93° 17' 15"	52,23%
10:00	98° 20' 24"	4° 00' 22"	99° 21' 38"	27° 10' 25"	59' 16"	16' 08,80"	93° 35' 14"	51,76%
11:00	98° 55' 49"	3° 58' 20"	100° 01' 05"	27° 06' 01"	59' 15"	16' 08,71"	93° 53' 07"	51,28%
12:00	99° 31' 14"	3° 56' 17"	100° 40' 29"	27° 01' 26"	59' 15"	16' 08,61"	94° 10' 54"	50,80%
13:00	100° 06' 38"	3° 54' 12"	101° 19' 49"	26° 56' 40"	59' 15"	16' 08,51"	94° 28' 36"	50,32%
14:00	100° 42' 01"	3° 52' 05"	101° 59' 06"	26° 51' 44"	59' 14"	16' 08,41"	94° 46' 13"	49,84%
15:00	101° 17' 23"	3° 49' 58"	102° 38' 18"	26° 46' 37"	59' 14"	16' 08,31"	95° 03' 43"	49,37%
16:00	101° 52' 45"	3° 47' 49"	103° 17' 26"	26° 41' 19"	59' 13"	16' 08,21"	95° 21' 07"	48,89%
17:00	102° 28' 07"	3° 45' 38"	103° 56' 30"	26° 35' 50"	59' 13"	16' 08,10"	95° 38' 24"	48,41%
18:00	103° 03' 28"	3° 43' 26"	104° 35' 30"	26° 30' 11"	59' 13"	16' 07,99"	95° 55' 36"	47,93%
19:00	103° 38' 48"	3° 41' 13"	105° 14' 25"	26° 24' 21"	59' 12"	16' 07,88"	96° 12' 40"	47,46%
20:00	104° 14' 07"	3° 38' 58"	105° 53' 16"	26° 18' 21"	59' 12"	16' 07,77"	96° 29' 38"	46,98%
21:00	104° 49' 26"	3° 36' 42"	106° 32' 02"	26° 12' 10"	59' 11"	16' 07,66"	96° 46' 29"	46,51%
22:00	105° 24' 44"	3° 34' 24"	107° 10' 44"	26° 05' 49"	59' 11"	16' 07,54"	97° 03' 13"	46,03%
23:00	106° 00' 01"	3° 32' 06"	107° 49' 21"	25° 59' 18"	59' 11"	16' 07,42"	97° 19' 50"	45,56%
24:00	106° 35' 18"	3° 29' 45"	108° 27' 53"	25° 52' 37"	59' 10"	16' 07,30"	97° 36' 20"	45,08%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	190° 47' 23"	0,47"	189° 55' 05"	-4° 16' 13"	1,0004884	15' 59,16"	23° 26' 17"	11m 08s
01:00	190° 49' 51"	0,47"	189° 57' 21"	-4° 17' 11"	1,0004768	15' 59,17"	23° 26' 17"	11m 09s
02:00	190° 52' 19"	0,46"	189° 59' 37"	-4° 18' 09"	1,0004652	15' 59,18"	23° 26' 17"	11m 09s
03:00	190° 54' 46"	0,46"	190° 01' 54"	-4° 19' 06"	1,0004535	15' 59,19"	23° 26' 17"	11m 10s
04:00	190° 57' 14"	0,45"	190° 04' 10"	-4° 20' 04"	1,0004419	15' 59,21"	23° 26' 17"	11m 11s
05:00	190° 59' 42"	0,45"	190° 06' 26"	-4° 21' 02"	1,0004302	15' 59,22"	23° 26' 17"	11m 12s
06:00	191° 02' 09"	0,45"	190° 08' 43"	-4° 22' 00"	1,0004186	15' 59,23"	23° 26' 17"	11m 12s
07:00	191° 04' 37"	0,44"	190° 10' 59"	-4° 22' 58"	1,0004069	15' 59,24"	23° 26' 17"	11m 13s
08:00	191° 07' 05"	0,44"	190° 13' 15"	-4° 23' 56"	1,0003953	15' 59,25"	23° 26' 17"	11m 14s
09:00	191° 09' 33"	0,43"	190° 15' 32"	-4° 24' 53"	1,0003837	15' 59,26"	23° 26' 17"	11m 15s
10:00	191° 12' 00"	0,43"	190° 17' 48"	-4° 25' 51"	1,0003720	15' 59,27"	23° 26' 17"	11m 16s
11:00	191° 14' 28"	0,42"	190° 20' 04"	-4° 26' 49"	1,0003604	15' 59,28"	23° 26' 17"	11m 16s
12:00	191° 16' 56"	0,42"	190° 22' 21"	-4° 27' 47"	1,0003487	15' 59,30"	23° 26' 17"	11m 17s
13:00	191° 19' 24"	0,41"	190° 24' 37"	-4° 28' 45"	1,0003371	15' 59,31"	23° 26' 17"	11m 18s
14:00	191° 21' 51"	0,41"	190° 26' 53"	-4° 29' 43"	1,0003254	15' 59,32"	23° 26' 17"	11m 19s
15:00	191° 24' 19"	0,40"	190° 29' 10"	-4° 30' 40"	1,0003138	15' 59,33"	23° 26' 17"	11m 19s
16:00	191° 26' 47"	0,40"	190° 31' 26"	-4° 31' 38"	1,0003021	15' 59,34"	23° 26' 17"	11m 20s
17:00	191° 29' 15"	0,40"	190° 33' 43"	-4° 32' 36"	1,0002905	15' 59,35"	23° 26' 17"	11m 21s
18:00	191° 31' 42"	0,39"	190° 35' 59"	-4° 33' 34"	1,0002788	15' 59,36"	23° 26' 17"	11m 22s
19:00	191° 34' 10"	0,39"	190° 38' 15"	-4° 34' 31"	1,0002672	15' 59,37"	23° 26' 17"	11m 22s
20:00	191° 36' 38"	0,38"	190° 40' 32"	-4° 35' 29"	1,0002555	15' 59,38"	23° 26' 17"	11m 23s
21:00	191° 39' 06"	0,38"	190° 42' 48"	-4° 36' 27"	1,0002438	15' 59,40"	23° 26' 17"	11m 24s
22:00	191° 41' 33"	0,37"	190° 45' 05"	-4° 37' 25"	1,0002322	15' 59,41"	23° 26' 17"	11m 25s
23:00	191° 44' 01"	0,37"	190° 47' 21"	-4° 38' 22"	1,0002205	15' 59,42"	23° 26' 17"	11m 25s
24:00	191° 46' 29"	0,36"	190° 49' 38"	-4° 39' 20"	1,0002089	15' 59,43"	23° 26' 17"	11m 26s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	106° 35' 18"	3° 29' 45"	108° 27' 53"	25° 52' 37"	59' 10"	16' 07,30"	97° 36' 20"	45,08%
01:00	107° 10' 34"	3° 27' 24"	109° 06' 19"	25° 45' 46"	59' 10"	16' 07,18"	97° 52' 42"	44,61%
02:00	107° 45' 50"	3° 25' 01"	109° 44' 41"	25° 38' 45"	59' 09"	16' 07,05"	98° 08' 56"	44,13%
03:00	108° 21' 04"	3° 22' 38"	110° 22' 58"	25° 31' 34"	59' 09"	16' 06,93"	98° 25' 03"	43,66%
04:00	108° 56' 18"	3° 20' 13"	111° 01' 10"	25° 24' 13"	59' 08"	16' 06,80"	98° 41' 02"	43,19%
05:00	109° 31' 32"	3° 17' 46"	111° 39' 16"	25° 16' 42"	59' 08"	16' 06,67"	98° 56' 54"	42,72%
06:00	110° 06' 44"	3° 15' 19"	112° 17' 17"	25° 09' 02"	59' 07"	16' 06,53"	99° 12' 37"	42,25%
07:00	110° 41' 56"	3° 12' 50"	112° 55' 12"	25° 01' 12"	59' 07"	16' 06,40"	99° 28' 12"	41,78%
08:00	111° 17' 07"	3° 10' 20"	113° 33' 03"	24° 53' 13"	59' 06"	16' 06,26"	99° 43' 38"	41,31%
09:00	111° 52' 18"	3° 07' 49"	114° 10' 47"	24° 45' 04"	59' 06"	16' 06,12"	99° 58' 57"	40,84%
10:00	112° 27' 28"	3° 05' 17"	114° 48' 26"	24° 36' 46"	59' 05"	16' 05,98"	100° 14' 07"	40,37%
11:00	113° 02' 37"	3° 02' 44"	115° 26' 00"	24° 28' 19"	59' 05"	16' 05,84"	100° 29' 08"	39,91%
12:00	113° 37' 45"	3° 00' 09"	116° 03' 27"	24° 19' 43"	59' 04"	16' 05,70"	100° 44' 00"	39,44%
13:00	114° 12' 53"	2° 57' 34"	116° 40' 49"	24° 10' 57"	59' 04"	16' 05,55"	100° 58' 44"	38,98%
14:00	114° 48' 00"	2° 54' 57"	117° 18' 05"	24° 02' 03"	59' 03"	16' 05,40"	101° 13' 19"	38,51%
15:00	115° 23' 06"	2° 52' 20"	117° 55' 16"	23° 53' 00"	59' 03"	16' 05,25"	101° 27' 44"	38,05%
16:00	115° 58' 11"	2° 49' 41"	118° 32' 20"	23° 43' 48"	59' 02"	16' 05,10"	101° 42' 01"	37,59%
17:00	116° 33' 16"	2° 47' 01"	119° 09' 19"	23° 34' 27"	59' 02"	16' 04,95"	101° 56' 08"	37,13%
18:00	117° 08' 19"	2° 44' 21"	119° 46' 12"	23° 24' 58"	59' 01"	16' 04,79"	102° 10' 07"	36,68%
19:00	117° 43' 23"	2° 41' 39"	120° 22' 58"	23° 15' 21"	59' 00"	16' 04,64"	102° 23' 55"	36,22%
20:00	118° 18' 25"	2° 38' 57"	120° 59' 39"	23° 05' 35"	59' 00"	16' 04,48"	102° 37' 35"	35,76%
21:00	118° 53' 27"	2° 36' 13"	121° 36' 14"	22° 55' 41"	58' 59"	16' 04,31"	102° 51' 04"	35,31%
22:00	119° 28' 27"	2° 33' 29"	122° 12' 43"	22° 45' 38"	58' 59"	16' 04,15"	103° 04' 24"	34,86%
23:00	120° 03' 27"	2° 30' 44"	122° 49' 05"	22° 35' 28"	58' 58"	16' 03,99"	103° 17' 35"	34,41%
24:00	120° 38' 27"	2° 27' 57"	123° 25' 22"	22° 25' 09"	58' 57"	16' 03,82"	103° 30' 35"	33,96%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	191° 46' 29"	0,36"	190° 49' 38"	-4° 39' 20"	1,0002089	15' 59,43"	23° 26' 17"	11m 26s
01:00	191° 48' 57"	0,36"	190° 51' 54"	-4° 40' 18"	1,0001972	15' 59,44"	23° 26' 17"	11m 27s
02:00	191° 51' 25"	0,35"	190° 54' 11"	-4° 41' 16"	1,0001855	15' 59,45"	23° 26' 17"	11m 28s
03:00	191° 53' 52"	0,35"	190° 56' 27"	-4° 42' 13"	1,0001739	15' 59,46"	23° 26' 17"	11m 28s
04:00	191° 56' 20"	0,34"	190° 58' 44"	-4° 43' 11"	1,0001622	15' 59,47"	23° 26' 17"	11m 29s
05:00	191° 58' 48"	0,34"	191° 01' 00"	-4° 44' 09"	1,0001506	15' 59,49"	23° 26' 17"	11m 30s
06:00	192° 01' 16"	0,33"	191° 03' 17"	-4° 45' 07"	1,0001389	15' 59,50"	23° 26' 17"	11m 31s
07:00	192° 03' 44"	0,33"	191° 05' 33"	-4° 46' 04"	1,0001272	16' 00,00"	23° 26' 17"	11m 31s
08:00	192° 06' 11"	0,32"	191° 07' 50"	-4° 47' 02"	1,0001156	16' 00,00"	23° 26' 17"	11m 32s
09:00	192° 08' 39"	0,32"	191° 10' 07"	-4° 48' 00"	1,0001039	16' 00,00"	23° 26' 17"	11m 33s
10:00	192° 11' 07"	0,31"	191° 12' 23"	-4° 48' 57"	1,0000922	16' 00,00"	23° 26' 17"	11m 34s
11:00	192° 13' 35"	0,31"	191° 14' 40"	-4° 49' 55"	1,0000805	16' 00,00"	23° 26' 17"	11m 34s
12:00	192° 16' 03"	0,30"	191° 16' 56"	-4° 50' 53"	1,0000689	16' 00,00"	23° 26' 17"	11m 35s
13:00	192° 18' 30"	0,29"	191° 19' 13"	-4° 51' 50"	1,0000572	16' 00,00"	23° 26' 17"	11m 36s
14:00	192° 20' 58"	0,29"	191° 21' 30"	-4° 52' 48"	1,0000455	16' 00,00"	23° 26' 17"	11m 37s
15:00	192° 23' 26"	0,28"	191° 23' 46"	-4° 53' 46"	1,0000338	16' 00,00"	23° 26' 17"	11m 37s
16:00	192° 25' 54"	0,28"	191° 26' 03"	-4° 54' 43"	1,0000222	16' 00,00"	23° 26' 17"	11m 38s
17:00	192° 28' 22"	0,27"	191° 28' 20"	-4° 55' 41"	1,0000105	16' 00,00"	23° 26' 17"	11m 39s
18:00	192° 30' 50"	0,27"	191° 30' 36"	-4° 56' 39"	0,9999988	16' 00,00"	23° 26' 17"	11m 40s
19:00	192° 33' 18"	0,26"	191° 32' 53"	-4° 57' 36"	0,9999871	16' 00,00"	23° 26' 17"	11m 40s
20:00	192° 35' 45"	0,26"	191° 35' 10"	-4° 58' 34"	0,9999754	16' 00,00"	23° 26' 17"	11m 41s
21:00	192° 38' 13"	0,25"	191° 37' 26"	-4° 59' 31"	0,9999637	16' 00,00"	23° 26' 17"	11m 42s
22:00	192° 40' 41"	0,25"	191° 39' 43"	-5° 00' 29"	0,9999521	16' 00,00"	23° 26' 17"	11m 43s
23:00	192° 43' 09"	0,24"	191° 42' 00"	-5° 01' 27"	0,9999404	16' 00,00"	23° 26' 17"	11m 43s
24:00	192° 45' 37"	0,24"	191° 44' 16"	-5° 02' 24"	0,9999287	16' 00,00"	23° 26' 17"	11m 44s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	120° 38' 27"	2° 27' 57"	123° 25' 22"	22° 25' 09"	58' 57"	16' 03,82"	103° 30' 35"	33,96%
01:00	121° 13' 25"	2° 25' 10"	124° 01' 33"	22° 14' 43"	58' 57"	16' 03,65"	103° 43' 26"	33,51%
02:00	121° 48' 23"	2° 22' 23"	124° 37' 37"	22° 04' 09"	58' 56"	16' 03,48"	103° 56' 06"	33,07%
03:00	122° 23' 20"	2° 19' 34"	125° 13' 36"	21° 53' 27"	58' 55"	16' 03,31"	104° 08' 37"	32,62%
04:00	122° 58' 16"	2° 16' 44"	125° 49' 28"	21° 42' 38"	58' 55"	16' 03,13"	104° 20' 57"	32,18%
05:00	123° 33' 11"	2° 13' 54"	126° 25' 14"	21° 31' 41"	58' 54"	16' 02,96"	104° 33' 08"	31,74%
06:00	124° 08' 06"	2° 11' 03"	127° 00' 54"	21° 20' 37"	58' 54"	16' 02,78"	104° 45' 08"	31,30%
07:00	124° 42' 59"	2° 08' 11"	127° 36' 28"	21° 09' 25"	58' 53"	16' 02,60"	104° 56' 57"	30,86%
08:00	125° 17' 52"	2° 05' 19"	128° 11' 56"	20° 58' 07"	58' 52"	16' 02,42"	105° 08' 36"	30,43%
09:00	125° 52' 44"	2° 02' 26"	128° 47' 18"	20° 46' 41"	58' 52"	16' 02,23"	105° 20' 05"	29,99%
10:00	126° 27' 36"	1° 59' 32"	129° 22' 34"	20° 35' 08"	58' 51"	16' 02,05"	105° 31' 24"	29,56%
11:00	127° 02' 26"	1° 56' 37"	129° 57' 44"	20° 23' 28"	58' 50"	16' 01,86"	105° 42' 31"	29,13%
12:00	127° 37' 16"	1° 53' 42"	130° 32' 48"	20° 11' 42"	58' 49"	16' 01,67"	105° 53' 28"	28,70%
13:00	128° 12' 05"	1° 50' 46"	131° 07' 46"	19° 59' 49"	58' 49"	16' 01,48"	106° 04' 14"	28,28%
14:00	128° 46' 53"	1° 47' 49"	131° 42' 37"	19° 47' 49"	58' 48"	16' 01,28"	106° 14' 50"	27,85%
15:00	129° 21' 40"	1° 44' 52"	132° 17' 23"	19° 35' 43"	58' 47"	16' 01,09"	106° 25' 14"	27,43%
16:00	129° 56' 26"	1° 41' 55"	132° 52' 03"	19° 23' 30"	58' 47"	16' 00,89"	106° 35' 28"	27,01%
17:00	130° 31' 12"	1° 38' 56"	133° 26' 37"	19° 11' 12"	58' 46"	16' 00,69"	106° 45' 31"	26,60%
18:00	131° 05' 56"	1° 35' 58"	134° 01' 05"	18° 58' 47"	58' 45"	16' 00,49"	106° 55' 22"	26,18%
19:00	131° 40' 40"	1° 32' 58"	134° 35' 27"	18° 46' 15"	58' 44"	16' 00,29"	107° 05' 03"	25,77%
20:00	132° 15' 23"	1° 29' 59"	135° 09' 43"	18° 33' 38"	58' 44"	16' 00,09"	107° 14' 32"	25,36%
21:00	132° 50' 05"	1° 26' 58"	135° 43' 53"	18° 20' 55"	58' 43"	16' 00,00"	107° 23' 50"	24,95%
22:00	133° 24' 47"	1° 23' 58"	136° 17' 58"	18° 08' 07"	58' 42"	16' 00,00"	107° 32' 57"	24,55%
23:00	133° 59' 27"	1° 20' 57"	136° 51' 57"	17° 55' 12"	58' 41"	15' 59,46"	107° 41' 52"	24,14%
24:00	134° 34' 07"	1° 17' 55"	137° 25' 50"	17° 42' 12"	58' 41"	15' 59,25"	107° 50' 36"	23,74%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	192° 45' 37"	0,24"	191° 44' 16"	-5° 02' 24"	0,9999287	16' 00,00"	23° 26' 17"	11m 44s
01:00	192° 48' 05"	0,23"	191° 46' 33"	-5° 03' 22"	0,9999170	16' 00,00"	23° 26' 17"	11m 45s
02:00	192° 50' 33"	0,22"	191° 48' 50"	-5° 04' 19"	0,9999053	16' 00,00"	23° 26' 17"	11m 46s
03:00	192° 53' 01"	0,22"	191° 51' 07"	-5° 05' 17"	0,9998936	16' 00,00"	23° 26' 17"	11m 46s
04:00	192° 55' 28"	0,21"	191° 53' 23"	-5° 06' 15"	0,9998819	16' 00,00"	23° 26' 17"	11m 47s
05:00	192° 57' 56"	0,21"	191° 55' 40"	-5° 07' 12"	0,9998702	16' 00,00"	23° 26' 17"	11m 48s
06:00	193° 00' 24"	0,20"	191° 57' 57"	-5° 08' 10"	0,9998585	16' 00,00"	23° 26' 17"	11m 49s
07:00	193° 02' 52"	0,20"	192° 00' 14"	-5° 09' 07"	0,9998468	16' 00,00"	23° 26' 17"	11m 49s
08:00	193° 05' 20"	0,19"	192° 02' 31"	-5° 10' 05"	0,9998351	16' 00,00"	23° 26' 17"	11m 50s
09:00	193° 07' 48"	0,19"	192° 04' 47"	-5° 11' 02"	0,9998234	16' 00,00"	23° 26' 17"	11m 51s
10:00	193° 10' 16"	0,18"	192° 07' 04"	-5° 12' 00"	0,9998117	16' 00,00"	23° 26' 17"	11m 52s
11:00	193° 12' 44"	0,17"	192° 09' 21"	-5° 12' 57"	0,9998000	16' 00,00"	23° 26' 17"	11m 52s
12:00	193° 15' 12"	0,17"	192° 11' 38"	-5° 13' 55"	0,9997883	16' 00,00"	23° 26' 17"	11m 53s
13:00	193° 17' 40"	0,16"	192° 13' 55"	-5° 14' 52"	0,9997766	16' 00,00"	23° 26' 17"	11m 54s
14:00	193° 20' 08"	0,16"	192° 16' 12"	-5° 15' 50"	0,9997648	16' 00,00"	23° 26' 17"	11m 54s
15:00	193° 22' 36"	0,15"	192° 18' 29"	-5° 16' 47"	0,9997531	16' 00,00"	23° 26' 17"	11m 55s
16:00	193° 25' 04"	0,15"	192° 20' 45"	-5° 17' 45"	0,9997414	16' 00,00"	23° 26' 17"	11m 56s
17:00	193° 27' 31"	0,14"	192° 23' 02"	-5° 18' 42"	0,9997297	16' 00,00"	23° 26' 17"	11m 57s
18:00	193° 29' 59"	0,14"	192° 25' 19"	-5° 19' 40"	0,9997180	16' 00,00"	23° 26' 17"	11m 57s
19:00	193° 32' 27"	0,13"	192° 27' 36"	-5° 20' 37"	0,9997063	16' 00,00"	23° 26' 17"	11m 58s
20:00	193° 34' 55"	0,12"	192° 29' 53"	-5° 21' 35"	0,9996945	16' 00,00"	23° 26' 17"	11m 59s
21:00	193° 37' 23"	0,12"	192° 32' 10"	-5° 22' 32"	0,9996828	16' 00,00"	23° 26' 17"	12m 00s
22:00	193° 39' 51"	0,11"	192° 34' 27"	-5° 23' 30"	0,9996711	16' 00,00"	23° 26' 17"	12m 00s
23:00	193° 42' 19"	0,11"	192° 36' 44"	-5° 24' 27"	0,9996594	16' 00,00"	23° 26' 17"	12m 01s
24:00	193° 44' 47"	0,10"	192° 39' 01"	-5° 25' 25"	0,9996476	16' 00,00"	23° 26' 17"	12m 02s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	134° 34' 07"	1° 17' 55"	137° 25' 50"	17° 42' 12"	58' 41"	15' 59,25"	107° 50' 36"	23,74%
01:00	135° 08' 45"	1° 14' 53"	137° 59' 37"	17° 29' 06"	58' 40"	15' 59,04"	107° 59' 08"	23,35%
02:00	135° 43' 23"	1° 11' 51"	138° 33' 19"	17° 15' 56"	58' 39"	15' 58,82"	108° 07' 29"	22,95%
03:00	136° 18' 00"	1° 08' 48"	139° 06' 55"	17° 02' 39"	58' 38"	15' 58,61"	108° 15' 39"	22,56%
04:00	136° 52' 36"	1° 05' 45"	139° 40' 26"	16° 49' 18"	58' 37"	15' 58,39"	108° 23' 36"	22,17%
05:00	137° 27' 12"	1° 02' 42"	140° 13' 51"	16° 35' 51"	58' 37"	15' 58,16"	108° 31' 22"	21,78%
06:00	138° 01' 46"	0° 59' 38"	140° 47' 11"	16° 22' 20"	58' 36"	15' 57,94"	108° 38' 56"	21,39%
07:00	138° 36' 19"	0° 56' 34"	141° 20' 25"	16° 08' 44"	58' 35"	15' 57,72"	108° 46' 18"	21,01%
08:00	139° 10' 52"	0° 53' 30"	141° 53' 34"	15° 55' 02"	58' 34"	15' 57,49"	108° 53' 28"	20,63%
09:00	139° 45' 24"	0° 50' 26"	142° 26' 38"	15° 41' 17"	58' 33"	15' 57,26"	109° 00' 26"	20,25%
10:00	140° 19' 54"	0° 47' 21"	142° 59' 36"	15° 27' 26"	58' 32"	15' 57,03"	109° 07' 12"	19,88%
11:00	140° 54' 24"	0° 44' 16"	143° 32' 29"	15° 13' 31"	58' 32"	15' 56,80"	109° 13' 45"	19,51%
12:00	141° 28' 53"	0° 41' 12"	144° 05' 17"	14° 59' 32"	58' 31"	15' 56,57"	109° 20' 07"	19,14%
13:00	142° 03' 21"	0° 38' 06"	144° 38' 00"	14° 45' 28"	58' 30"	15' 56,33"	109° 26' 16"	18,77%
14:00	142° 37' 49"	0° 35' 01"	145° 10' 38"	14° 31' 20"	58' 29"	15' 56,09"	109° 32' 12"	18,41%
15:00	143° 12' 15"	0° 31' 56"	145° 43' 10"	14° 17' 08"	58' 28"	15' 55,85"	109° 37' 56"	18,05%
16:00	143° 46' 40"	0° 28' 50"	146° 15' 38"	14° 02' 52"	58' 27"	15' 55,61"	109° 43' 27"	17,69%
17:00	144° 21' 05"	0° 25' 45"	146° 48' 01"	13° 48' 32"	58' 26"	15' 55,37"	109° 48' 46"	17,34%
18:00	144° 55' 28"	0° 22' 39"	147° 20' 19"	13° 34' 08"	58' 25"	15' 55,12"	109° 53' 52"	16,99%
19:00	145° 29' 51"	0° 19' 33"	147° 52' 33"	13° 19' 40"	58' 25"	15' 54,87"	109° 58' 44"	16,64%
20:00	146° 04' 12"	0° 16' 28"	148° 24' 41"	13° 05' 09"	58' 24"	15' 54,63"	110° 03' 24"	16,30%
21:00	146° 38' 33"	0° 13' 22"	148° 56' 45"	12° 50' 34"	58' 23"	15' 54,37"	110° 07' 50"	15,96%
22:00	147° 12' 53"	0° 10' 16"	149° 28' 45"	12° 35' 56"	58' 22"	15' 54,12"	110° 12' 03"	15,62%
23:00	147° 47' 12"	0° 07' 11"	150° 00' 40"	12° 21' 14"	58' 21"	15' 53,87"	110° 16' 03"	15,28%
24:00	148° 21' 30"	0° 04' 05"	150° 32' 30"	12° 06' 29"	58' 20"	15' 53,61"	110° 19' 49"	14,95%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	193° 44' 47"	0,10"	192° 39' 01"	-5° 25' 25"	0,9996476	16' 00,00"	23° 26' 17"	12m 02s
01:00	193° 47' 15"	0,10"	192° 41' 18"	-5° 26' 22"	0,9996359	16' 00,00"	23° 26' 17"	12m 02s
02:00	193° 49' 43"	0,09"	192° 43' 35"	-5° 27' 20"	0,9996242	16' 00,00"	23° 26' 17"	12m 03s
03:00	193° 52' 11"	0,08"	192° 45' 52"	-5° 28' 17"	0,9996124	16' 00,00"	23° 26' 17"	12m 04s
04:00	193° 54' 39"	0,08"	192° 48' 09"	-5° 29' 14"	0,9996007	16' 00,01"	23° 26' 17"	12m 05s
05:00	193° 57' 07"	0,07"	192° 50' 26"	-5° 30' 12"	0,9995890	16' 00,02"	23° 26' 17"	12m 05s
06:00	193° 59' 35"	0,07"	192° 52' 43"	-5° 31' 09"	0,9995772	16' 00,04"	23° 26' 17"	12m 06s
07:00	194° 02' 03"	0,06"	192° 55' 00"	-5° 32' 07"	0,9995655	16' 00,05"	23° 26' 17"	12m 07s
08:00	194° 04' 31"	0,06"	192° 57' 17"	-5° 33' 04"	0,9995537	16' 00,06"	23° 26' 17"	12m 08s
09:00	194° 06' 59"	0,05"	192° 59' 34"	-5° 34' 01"	0,9995420	16' 00,07"	23° 26' 17"	12m 08s
10:00	194° 09' 27"	0,04"	193° 01' 51"	-5° 34' 59"	0,9995302	16' 00,08"	23° 26' 17"	12m 09s
11:00	194° 11' 55"	0,04"	193° 04' 09"	-5° 35' 56"	0,9995185	16' 00,09"	23° 26' 17"	12m 10s
12:00	194° 14' 23"	0,03"	193° 06' 26"	-5° 36' 53"	0,9995067	16' 00,10"	23° 26' 17"	12m 10s
13:00	194° 16' 51"	0,03"	193° 08' 43"	-5° 37' 51"	0,9994950	16' 00,11"	23° 26' 17"	12m 11s
14:00	194° 19' 19"	0,02"	193° 11' 00"	-5° 38' 48"	0,9994832	16' 00,13"	23° 26' 17"	12m 12s
15:00	194° 21' 47"	0,02"	193° 13' 17"	-5° 39' 45"	0,9994715	16' 00,14"	23° 26' 17"	12m 13s
16:00	194° 24' 15"	0,01"	193° 15' 34"	-5° 40' 43"	0,9994597	16' 00,15"	23° 26' 17"	12m 13s
17:00	194° 26' 43"	0,01"	193° 17' 51"	-5° 41' 40"	0,9994480	16' 00,16"	23° 26' 17"	12m 14s
18:00	194° 29' 11"	-0,00"	193° 20' 09"	-5° 42' 37"	0,9994362	16' 00,17"	23° 26' 17"	12m 15s
19:00	194° 31' 39"	-0,01"	193° 22' 26"	-5° 43' 35"	0,9994244	16' 00,18"	23° 26' 17"	12m 15s
20:00	194° 34' 07"	-0,01"	193° 24' 43"	-5° 44' 32"	0,9994127	16' 00,19"	23° 26' 17"	12m 16s
21:00	194° 36' 35"	-0,02"	193° 27' 00"	-5° 45' 29"	0,9994009	16' 00,21"	23° 26' 17"	12m 17s
22:00	194° 39' 03"	-0,02"	193° 29' 17"	-5° 46' 26"	0,9993891	16' 00,22"	23° 26' 17"	12m 18s
23:00	194° 41' 32"	-0,03"	193° 31' 35"	-5° 47' 24"	0,9993773	16' 00,23"	23° 26' 17"	12m 18s
24:00	194° 44' 00"	-0,03"	193° 33' 52"	-5° 48' 21"	0,9993656	16' 00,24"	23° 26' 17"	12m 19s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	148° 21' 30"	0° 04' 05"	150° 32' 30"	12° 06' 29"	58' 20"	15' 53,61"	110° 19' 49"	14,95%
01:00	148° 55' 46"	0° 00' 59"	151° 04' 16"	11° 51' 41"	58' 19"	15' 53,35"	110° 23' 22"	14,62%
02:00	149° 30' 02"	-0° 02' 06"	151° 35' 58"	11° 36' 50"	58' 18"	15' 53,09"	110° 26' 40"	14,29%
03:00	150° 04' 17"	-0° 05' 11"	152° 07' 35"	11° 21' 55"	58' 17"	15' 52,83"	110° 29' 45"	13,97%
04:00	150° 38' 31"	-0° 08' 16"	152° 39' 09"	11° 06' 58"	58' 16"	15' 52,57"	110° 32' 35"	13,65%
05:00	151° 12' 44"	-0° 11' 22"	153° 10' 38"	10° 51' 58"	58' 15"	15' 52,30"	110° 35' 11"	13,34%
06:00	151° 46' 56"	-0° 14' 26"	153° 42' 03"	10° 36' 55"	58' 14"	15' 52,03"	110° 37' 32"	13,02%
07:00	152° 21' 08"	-0° 17' 31"	154° 13' 24"	10° 21' 50"	58' 13"	15' 51,76"	110° 39' 39"	12,71%
08:00	152° 55' 18"	-0° 20' 35"	154° 44' 41"	10° 06' 41"	58' 12"	15' 51,49"	110° 41' 31"	12,41%
09:00	153° 29' 27"	-0° 23' 40"	155° 15' 54"	9° 51' 31"	58' 11"	15' 51,22"	110° 43' 07"	12,11%
10:00	154° 03' 35"	-0° 26' 44"	155° 47' 04"	9° 36' 18"	58' 10"	15' 50,94"	110° 44' 29"	11,81%
11:00	154° 37' 42"	-0° 29' 47"	156° 18' 09"	9° 21' 03"	58' 09"	15' 50,67"	110° 45' 35"	11,51%
12:00	155° 11' 48"	-0° 32' 51"	156° 49' 11"	9° 05' 45"	58' 08"	15' 50,39"	110° 46' 25"	11,22%
13:00	155° 45' 53"	-0° 35' 54"	157° 20' 10"	8° 50' 26"	58' 07"	15' 50,11"	110° 46' 59"	10,93%
14:00	156° 19' 57"	-0° 38' 57"	157° 51' 05"	8° 35' 04"	58' 06"	15' 49,83"	110° 47' 16"	10,64%
15:00	156° 54' 00"	-0° 41' 59"	158° 21' 56"	8° 19' 40"	58' 05"	15' 49,54"	110° 47' 17"	10,36%
16:00	157° 28' 02"	-0° 45' 01"	158° 52' 44"	8° 04' 15"	58' 04"	15' 49,26"	110° 47' 01"	10,08%
17:00	158° 02' 03"	-0° 48' 03"	159° 23' 29"	7° 48' 48"	58' 03"	15' 48,97"	110° 46' 28"	9,81%
18:00	158° 36' 03"	-0° 51' 04"	159° 54' 10"	7° 33' 19"	58' 02"	15' 48,68"	110° 45' 37"	9,54%
19:00	159° 10' 02"	-0° 54' 05"	160° 24' 48"	7° 17' 48"	58' 01"	15' 48,39"	110° 44' 28"	9,27%
20:00	159° 44' 00"	-0° 57' 06"	160° 55' 24"	7° 02' 16"	58' 00"	15' 48,09"	110° 43' 01"	9,01%
21:00	160° 17' 57"	-1° 00' 06"	161° 25' 56"	6° 46' 42"	57' 59"	15' 47,80"	110° 41' 15"	8,75%
22:00	160° 51' 52"	-1° 03' 05"	161° 56' 25"	6° 31' 07"	57' 57"	15' 47,50"	110° 39' 10"	8,49%
23:00	161° 25' 47"	-1° 06' 04"	162° 26' 51"	6° 15' 31"	57' 56"	15' 47,20"	110° 36' 45"	8,24%
24:00	161° 59' 41"	-1° 09' 03"	162° 57' 14"	5° 59' 54"	57' 55"	15' 46,90"	110° 34' 01"	7,99%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	194° 44' 00"	-0,03"	193° 33' 52"	-5° 48' 21"	0,9993656	16' 00,24"	23° 26' 17"	12m 19s
01:00	194° 46' 28"	-0,04"	193° 36' 09"	-5° 49' 18"	0,9993538	16' 00,25"	23° 26' 17"	12m 20s
02:00	194° 48' 56"	-0,04"	193° 38' 26"	-5° 50' 15"	0,9993420	16' 00,26"	23° 26' 17"	12m 20s
03:00	194° 51' 24"	-0,05"	193° 40' 44"	-5° 51' 13"	0,9993302	16' 00,27"	23° 26' 17"	12m 21s
04:00	194° 53' 52"	-0,06"	193° 43' 01"	-5° 52' 10"	0,9993185	16' 00,28"	23° 26' 17"	12m 22s
05:00	194° 56' 20"	-0,06"	193° 45' 18"	-5° 53' 07"	0,9993067	16' 00,30"	23° 26' 17"	12m 22s
06:00	194° 58' 48"	-0,07"	193° 47' 36"	-5° 54' 04"	0,9992949	16' 00,31"	23° 26' 17"	12m 23s
07:00	195° 01' 16"	-0,07"	193° 49' 53"	-5° 55' 02"	0,9992831	16' 00,32"	23° 26' 17"	12m 24s
08:00	195° 03' 44"	-0,08"	193° 52' 10"	-5° 55' 59"	0,9992713	16' 00,33"	23° 26' 17"	12m 25s
09:00	195° 06' 12"	-0,08"	193° 54' 28"	-5° 56' 56"	0,9992595	16' 00,34"	23° 26' 17"	12m 25s
10:00	195° 08' 40"	-0,09"	193° 56' 45"	-5° 57' 53"	0,9992477	16' 00,35"	23° 26' 17"	12m 26s
11:00	195° 11' 09"	-0,09"	193° 59' 02"	-5° 58' 50"	0,9992359	16' 00,36"	23° 26' 17"	12m 27s
12:00	195° 13' 37"	-0,10"	194° 01' 20"	-5° 59' 48"	0,9992241	16' 00,38"	23° 26' 17"	12m 27s
13:00	195° 16' 05"	-0,10"	194° 03' 37"	-6° 00' 45"	0,9992123	16' 00,39"	23° 26' 17"	12m 28s
14:00	195° 18' 33"	-0,11"	194° 05' 54"	-6° 01' 42"	0,9992005	16' 00,40"	23° 26' 17"	12m 29s
15:00	195° 21' 01"	-0,11"	194° 08' 12"	-6° 02' 39"	0,9991887	16' 00,41"	23° 26' 17"	12m 29s
16:00	195° 23' 29"	-0,12"	194° 10' 29"	-6° 03' 36"	0,9991769	16' 00,42"	23° 26' 17"	12m 30s
17:00	195° 25' 57"	-0,12"	194° 12' 47"	-6° 04' 33"	0,9991651	16' 00,43"	23° 26' 17"	12m 31s
18:00	195° 28' 25"	-0,13"	194° 15' 04"	-6° 05' 30"	0,9991533	16' 00,44"	23° 26' 17"	12m 32s
19:00	195° 30' 54"	-0,14"	194° 17' 22"	-6° 06' 27"	0,9991415	16' 00,45"	23° 26' 17"	12m 32s
20:00	195° 33' 22"	-0,14"	194° 19' 39"	-6° 07' 25"	0,9991297	16' 00,47"	23° 26' 17"	12m 33s
21:00	195° 35' 50"	-0,15"	194° 21' 57"	-6° 08' 22"	0,9991179	16' 00,48"	23° 26' 17"	12m 34s
22:00	195° 38' 18"	-0,15"	194° 24' 14"	-6° 09' 19"	0,9991060	16' 00,49"	23° 26' 17"	12m 34s
23:00	195° 40' 46"	-0,16"	194° 26' 32"	-6° 10' 16"	0,9990942	16' 00,50"	23° 26' 17"	12m 35s
24:00	195° 43' 14"	-0,16"	194° 28' 49"	-6° 11' 13"	0,9990824	16' 00,51"	23° 26' 17"	12m 36s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	161° 59' 41"	-1° 09' 03"	162° 57' 14"	5° 59' 54"	57' 55"	15' 46,90"	110° 34' 01"	7,99%
01:00	162° 33' 33"	-1° 12' 01"	163° 27' 35"	5° 44' 15"	57' 54"	15' 46,60"	110° 30' 55"	7,74%
02:00	163° 07' 24"	-1° 14' 59"	163° 57' 53"	5° 28' 35"	57' 53"	15' 46,30"	110° 27' 28"	7,50%
03:00	163° 41' 15"	-1° 17' 56"	164° 28' 08"	5° 12' 55"	57' 52"	15' 45,99"	110° 23' 40"	7,26%
04:00	164° 15' 04"	-1° 20' 52"	164° 58' 21"	4° 57' 13"	57' 51"	15' 45,68"	110° 19' 29"	7,03%
05:00	164° 48' 52"	-1° 23' 48"	165° 28' 31"	4° 41' 31"	57' 50"	15' 45,38"	110° 14' 55"	6,80%
06:00	165° 22' 39"	-1° 26' 43"	165° 58' 39"	4° 25' 48"	57' 49"	15' 45,06"	110° 09' 57"	6,57%
07:00	165° 56' 25"	-1° 29' 38"	166° 28' 45"	4° 10' 04"	57' 47"	15' 44,75"	110° 04' 34"	6,35%
08:00	166° 30' 10"	-1° 32' 31"	166° 58' 48"	3° 54' 20"	57' 46"	15' 44,44"	109° 58' 46"	6,13%
09:00	167° 03' 54"	-1° 35' 25"	167° 28' 49"	3° 38' 35"	57' 45"	15' 44,12"	109° 52' 31"	5,91%
10:00	167° 37' 36"	-1° 38' 17"	167° 58' 48"	3° 22' 50"	57' 44"	15' 43,81"	109° 45' 49"	5,70%
11:00	168° 11' 18"	-1° 41' 09"	168° 28' 45"	3° 07' 05"	57' 43"	15' 43,49"	109° 38' 39"	5,49%
12:00	168° 44' 58"	-1° 44' 00"	168° 58' 40"	2° 51' 19"	57' 42"	15' 43,17"	109° 30' 59"	5,29%
13:00	169° 18' 37"	-1° 46' 51"	169° 28' 33"	2° 35' 33"	57' 40"	15' 42,84"	109° 22' 49"	5,09%
14:00	169° 52' 15"	-1° 49' 41"	169° 58' 24"	2° 19' 47"	57' 39"	15' 42,52"	109° 14' 06"	4,89%
15:00	170° 25' 52"	-1° 52' 30"	170° 28' 13"	2° 04' 01"	57' 38"	15' 42,19"	109° 04' 50"	4,70%
16:00	170° 59' 27"	-1° 55' 18"	170° 58' 01"	1° 48' 15"	57' 37"	15' 41,87"	108° 55' 00"	4,51%
17:00	171° 33' 02"	-1° 58' 05"	171° 27' 47"	1° 32' 29"	57' 36"	15' 41,54"	108° 44' 32"	4,33%
18:00	172° 06' 35"	-2° 00' 52"	171° 57' 31"	1° 16' 44"	57' 34"	15' 41,21"	108° 33' 27"	4,15%
19:00	172° 40' 07"	-2° 03' 38"	172° 27' 14"	1° 00' 58"	57' 33"	15' 40,88"	108° 21' 41"	3,97%
20:00	173° 13' 38"	-2° 06' 23"	172° 56' 55"	0° 45' 13"	57' 32"	15' 40,54"	108° 09' 12"	3,80%
21:00	173° 47' 08"	-2° 09' 07"	173° 26' 36"	0° 29' 29"	57' 31"	15' 40,21"	107° 55' 59"	3,63%
22:00	174° 20' 37"	-2° 11' 50"	173° 56' 14"	0° 13' 45"	57' 29"	15' 39,87"	107° 41' 59"	3,47%
23:00	174° 54' 04"	-2° 14' 33"	174° 25' 52"	-0° 01' 59"	57' 28"	15' 39,53"	107° 27' 09"	3,30%
24:00	175° 27' 30"	-2° 17' 14"	174° 55' 28"	-0° 17' 41"	57' 27"	15' 39,20"	107° 11' 25"	3,15%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	195° 43' 14"	-0,16"	194° 28' 49"	-6° 11' 13"	0,9990824	16' 00,51"	23° 26' 17"	12m 36s
01:00	195° 45' 42"	-0,17"	194° 31' 07"	-6° 12' 10"	0,9990706	16' 00,52"	23° 26' 17"	12m 36s
02:00	195° 48' 11"	-0,17"	194° 33' 24"	-6° 13' 07"	0,9990587	16' 00,53"	23° 26' 17"	12m 37s
03:00	195° 50' 39"	-0,18"	194° 35' 42"	-6° 14' 04"	0,9990469	16' 00,55"	23° 26' 17"	12m 38s
04:00	195° 53' 07"	-0,18"	194° 37' 59"	-6° 15' 01"	0,9990351	16' 00,56"	23° 26' 17"	12m 38s
05:00	195° 55' 35"	-0,19"	194° 40' 17"	-6° 15' 58"	0,9990233	16' 00,57"	23° 26' 17"	12m 39s
06:00	195° 58' 03"	-0,19"	194° 42' 34"	-6° 16' 55"	0,9990114	16' 00,58"	23° 26' 17"	12m 40s
07:00	196° 00' 31"	-0,20"	194° 44' 52"	-6° 17' 52"	0,9989996	16' 00,59"	23° 26' 17"	12m 40s
08:00	196° 03' 00"	-0,20"	194° 47' 10"	-6° 18' 49"	0,9989878	16' 00,60"	23° 26' 17"	12m 41s
09:00	196° 05' 28"	-0,21"	194° 49' 27"	-6° 19' 46"	0,9989759	16' 00,61"	23° 26' 17"	12m 42s
10:00	196° 07' 56"	-0,21"	194° 51' 45"	-6° 20' 43"	0,9989641	16' 00,63"	23° 26' 17"	12m 43s
11:00	196° 10' 24"	-0,22"	194° 54' 03"	-6° 21' 40"	0,9989522	16' 00,64"	23° 26' 17"	12m 43s
12:00	196° 12' 52"	-0,22"	194° 56' 20"	-6° 22' 37"	0,9989404	16' 00,65"	23° 26' 17"	12m 44s
13:00	196° 15' 21"	-0,22"	194° 58' 38"	-6° 23' 34"	0,9989285	16' 00,66"	23° 26' 17"	12m 45s
14:00	196° 17' 49"	-0,23"	195° 00' 56"	-6° 24' 31"	0,9989167	16' 00,67"	23° 26' 17"	12m 45s
15:00	196° 20' 17"	-0,23"	195° 03' 13"	-6° 25' 28"	0,9989048	16' 00,68"	23° 26' 17"	12m 46s
16:00	196° 22' 45"	-0,24"	195° 05' 31"	-6° 26' 25"	0,9988930	16' 00,69"	23° 26' 17"	12m 47s
17:00	196° 25' 13"	-0,24"	195° 07' 49"	-6° 27' 22"	0,9988811	16' 00,70"	23° 26' 17"	12m 47s
18:00	196° 27' 42"	-0,25"	195° 10' 06"	-6° 28' 19"	0,9988693	16' 00,72"	23° 26' 17"	12m 48s
19:00	196° 30' 10"	-0,25"	195° 12' 24"	-6° 29' 15"	0,9988574	16' 00,73"	23° 26' 17"	12m 49s
20:00	196° 32' 38"	-0,26"	195° 14' 42"	-6° 30' 12"	0,9988455	16' 00,74"	23° 26' 17"	12m 49s
21:00	196° 35' 06"	-0,26"	195° 17' 00"	-6° 31' 09"	0,9988337	16' 00,75"	23° 26' 17"	12m 50s
22:00	196° 37' 34"	-0,27"	195° 19' 17"	-6° 32' 06"	0,9988218	16' 00,76"	23° 26' 17"	12m 51s
23:00	196° 40' 03"	-0,27"	195° 21' 35"	-6° 33' 03"	0,9988100	16' 00,77"	23° 26' 17"	12m 51s
24:00	196° 42' 31"	-0,27"	195° 23' 53"	-6° 34' 00"	0,9987981	16' 00,78"	23° 26' 17"	12m 52s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	175° 27' 30"	-2° 17' 14"	174° 55' 28"	-0° 17' 41"	57' 27"	15' 39,20"	107° 11' 25"	3,15%
01:00	176° 00' 55"	-2° 19' 55"	175° 25' 03"	-0° 33' 23"	57' 26"	15' 38,85"	106° 54' 46"	2,99%
02:00	176° 34' 18"	-2° 22' 34"	175° 54' 38"	-0° 49' 05"	57' 24"	15' 38,51"	106° 37' 06"	2,84%
03:00	177° 07' 41"	-2° 25' 13"	176° 24' 11"	-1° 04' 45"	57' 23"	15' 38,17"	106° 18' 23"	2,70%
04:00	177° 41' 02"	-2° 27' 51"	176° 53' 43"	-1° 20' 24"	57' 22"	15' 37,82"	105° 58' 30"	2,56%
05:00	178° 14' 22"	-2° 30' 28"	177° 23' 15"	-1° 36' 03"	57' 21"	15' 37,48"	105° 37' 25"	2,42%
06:00	178° 47' 41"	-2° 33' 04"	177° 52' 45"	-1° 51' 40"	57' 19"	15' 37,13"	105° 15' 00"	2,29%
07:00	179° 20' 58"	-2° 35' 39"	178° 22' 15"	-2° 07' 16"	57' 18"	15' 36,78"	104° 51' 11"	2,16%
08:00	179° 54' 14"	-2° 38' 12"	178° 51' 45"	-2° 22' 51"	57' 17"	15' 36,43"	104° 25' 50"	2,03%
09:00	180° 27' 29"	-2° 40' 45"	179° 21' 14"	-2° 38' 25"	57' 16"	15' 36,08"	103° 58' 49"	1,91%
10:00	181° 00' 43"	-2° 43' 17"	179° 50' 42"	-2° 53' 57"	57' 14"	15' 35,73"	103° 30' 00"	1,79%
11:00	181° 33' 55"	-2° 45' 48"	180° 20' 10"	-3° 09' 28"	57' 13"	15' 35,37"	102° 59' 13"	1,68%
12:00	182° 07' 06"	-2° 48' 18"	180° 49' 37"	-3° 24' 57"	57' 12"	15' 35,02"	102° 26' 18"	1,57%
13:00	182° 40' 16"	-2° 50' 46"	181° 19' 04"	-3° 40' 25"	57' 10"	15' 34,66"	101° 51' 01"	1,47%
14:00	183° 13' 24"	-2° 53' 14"	181° 48' 31"	-3° 55' 51"	57' 09"	15' 34,31"	101° 13' 10"	1,36%
15:00	183° 46' 31"	-2° 55' 40"	182° 17' 58"	-4° 11' 15"	57' 08"	15' 33,95"	100° 32' 27"	1,27%
16:00	184° 19' 37"	-2° 58' 06"	182° 47' 25"	-4° 26' 37"	57' 06"	15' 33,59"	99° 48' 34"	1,17%
17:00	184° 52' 41"	-3° 00' 30"	183° 16' 51"	-4° 41' 58"	57' 05"	15' 33,23"	99° 01' 10"	1,08%
18:00	185° 25' 45"	-3° 02' 53"	183° 46' 18"	-4° 57' 17"	57' 04"	15' 32,86"	98° 09' 51"	1,00%
19:00	185° 58' 46"	-3° 05' 15"	184° 15' 44"	-5° 12' 33"	57' 02"	15' 32,50"	97° 14' 08"	0,92%
20:00	186° 31' 47"	-3° 07' 36"	184° 45' 11"	-5° 27' 48"	57' 01"	15' 32,14"	96° 13' 29"	0,84%
21:00	187° 04' 46"	-3° 09' 56"	185° 14' 38"	-5° 43' 00"	57' 00"	15' 31,77"	95° 07' 14"	0,77%
22:00	187° 37' 44"	-3° 12' 14"	185° 44' 05"	-5° 58' 11"	56' 58"	15' 31,41"	93° 54' 38"	0,70%
23:00	188° 10' 40"	-3° 14' 32"	186° 13' 32"	-6° 13' 19"	56' 57"	15' 31,04"	92° 34' 49"	0,63%
24:00	188° 43' 35"	-3° 16' 48"	186° 43' 00"	-6° 28' 24"	56' 56"	15' 30,67"	91° 06' 43"	0,57%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	196° 42' 31"	-0,27"	195° 23' 53"	-6° 34' 00"	0,9987981	16' 00,78"	23° 26' 17"	12m 52s
01:00	196° 44' 59"	-0,28"	195° 26' 11"	-6° 34' 57"	0,9987862	16' 00,80"	23° 26' 17"	12m 53s
02:00	196° 47' 27"	-0,28"	195° 28' 29"	-6° 35' 54"	0,9987743	16' 00,81"	23° 26' 17"	12m 53s
03:00	196° 49' 56"	-0,29"	195° 30' 47"	-6° 36' 50"	0,9987625	16' 00,82"	23° 26' 17"	12m 54s
04:00	196° 52' 24"	-0,29"	195° 33' 04"	-6° 37' 47"	0,9987506	16' 00,83"	23° 26' 17"	12m 55s
05:00	196° 54' 52"	-0,30"	195° 35' 22"	-6° 38' 44"	0,9987387	16' 00,84"	23° 26' 17"	12m 55s
06:00	196° 57' 20"	-0,30"	195° 37' 40"	-6° 39' 41"	0,9987268	16' 00,85"	23° 26' 17"	12m 56s
07:00	196° 59' 49"	-0,30"	195° 39' 58"	-6° 40' 38"	0,9987150	16' 00,86"	23° 26' 17"	12m 57s
08:00	197° 02' 17"	-0,31"	195° 42' 16"	-6° 41' 34"	0,9987031	16' 00,88"	23° 26' 17"	12m 57s
09:00	197° 04' 45"	-0,31"	195° 44' 34"	-6° 42' 31"	0,9986912	16' 00,89"	23° 26' 17"	12m 58s
10:00	197° 07' 14"	-0,32"	195° 46' 52"	-6° 43' 28"	0,9986793	16' 00,90"	23° 26' 17"	12m 59s
11:00	197° 09' 42"	-0,32"	195° 49' 10"	-6° 44' 25"	0,9986674	16' 00,91"	23° 26' 17"	12m 59s
12:00	197° 12' 10"	-0,32"	195° 51' 28"	-6° 45' 21"	0,9986555	16' 00,92"	23° 26' 17"	13m 00s
13:00	197° 14' 38"	-0,33"	195° 53' 46"	-6° 46' 18"	0,9986436	16' 00,93"	23° 26' 17"	13m 01s
14:00	197° 17' 07"	-0,33"	195° 56' 04"	-6° 47' 15"	0,9986317	16' 00,94"	23° 26' 17"	13m 01s
15:00	197° 19' 35"	-0,34"	195° 58' 22"	-6° 48' 12"	0,9986198	16' 00,96"	23° 26' 17"	13m 02s
16:00	197° 22' 03"	-0,34"	196° 00' 40"	-6° 49' 08"	0,9986079	16' 00,97"	23° 26' 17"	13m 03s
17:00	197° 24' 32"	-0,34"	196° 02' 58"	-6° 50' 05"	0,9985960	16' 00,98"	23° 26' 17"	13m 03s
18:00	197° 27' 00"	-0,35"	196° 05' 16"	-6° 51' 02"	0,9985841	16' 00,99"	23° 26' 17"	13m 04s
19:00	197° 29' 28"	-0,35"	196° 07' 34"	-6° 51' 58"	0,9985722	16' 01,00"	23° 26' 17"	13m 05s
20:00	197° 31' 57"	-0,35"	196° 09' 52"	-6° 52' 55"	0,9985603	16' 01,01"	23° 26' 17"	13m 05s
21:00	197° 34' 25"	-0,36"	196° 12' 10"	-6° 53' 52"	0,9985484	16' 01,03"	23° 26' 17"	13m 06s
22:00	197° 36' 53"	-0,36"	196° 14' 28"	-6° 54' 48"	0,9985365	16' 01,04"	23° 26' 17"	13m 06s
23:00	197° 39' 21"	-0,37"	196° 16' 46"	-6° 55' 45"	0,9985246	16' 01,05"	23° 26' 17"	13m 07s
24:00	197° 41' 50"	-0,37"	196° 19' 04"	-6° 56' 42"	0,9985127	16' 01,06"	23° 26' 17"	13m 08s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	188° 43' 35"	-3° 16' 48"	186° 43' 00"	-6° 28' 24"	56' 56"	15' 30,67"	91° 06' 43"	0,57%
01:00	189° 16' 29"	-3° 19' 03"	187° 12' 28"	-6° 43' 27"	56' 54"	15' 30,30"	89° 29' 05"	0,51%
02:00	189° 49' 21"	-3° 21' 17"	187° 41' 56"	-6° 58' 28"	56' 53"	15' 29,94"	87° 40' 27"	0,46%
03:00	190° 22' 12"	-3° 23' 29"	188° 11' 26"	-7° 13' 26"	56' 52"	15' 29,57"	85° 39' 05"	0,41%
04:00	190° 55' 02"	-3° 25' 40"	188° 40' 55"	-7° 28' 22"	56' 50"	15' 29,19"	83° 22' 53"	0,36%
05:00	191° 27' 50"	-3° 27' 50"	189° 10' 26"	-7° 43' 15"	56' 49"	15' 28,82"	80° 49' 25"	0,32%
06:00	192° 00' 36"	-3° 29' 59"	189° 39' 57"	-7° 58' 05"	56' 48"	15' 28,45"	77° 55' 51"	0,28%
07:00	192° 33' 22"	-3° 32' 07"	190° 09' 28"	-8° 12' 52"	56' 46"	15' 28,08"	74° 38' 53"	0,25%
08:00	193° 06' 06"	-3° 34' 13"	190° 39' 01"	-8° 27' 37"	56' 45"	15' 27,70"	70° 54' 55"	0,22%
09:00	193° 38' 48"	-3° 36' 18"	191° 08' 34"	-8° 42' 18"	56' 43"	15' 27,33"	66° 40' 08"	0,19%
10:00	194° 11' 29"	-3° 38' 22"	191° 38' 09"	-8° 56' 57"	56' 42"	15' 26,95"	61° 50' 55"	0,17%
11:00	194° 44' 09"	-3° 40' 24"	192° 07' 44"	-9° 11' 32"	56' 41"	15' 26,58"	56° 24' 32"	0,15%
12:00	195° 16' 47"	-3° 42' 25"	192° 37' 20"	-9° 26' 05"	56' 39"	15' 26,20"	50° 20' 01"	0,13%
13:00	195° 49' 24"	-3° 44' 25"	193° 06' 58"	-9° 40' 34"	56' 38"	15' 25,83"	43° 39' 32"	0,12%
14:00	196° 22' 00"	-3° 46' 23"	193° 36' 36"	-9° 55' 00"	56' 37"	15' 25,45"	36° 29' 22"	0,12%
15:00	196° 54' 34"	-3° 48' 20"	194° 06' 16"	-10° 09' 22"	56' 35"	15' 25,07"	29° 00' 13"	0,11%
16:00	197° 27' 06"	-3° 50' 16"	194° 35' 57"	-10° 23' 41"	56' 34"	15' 24,70"	21° 26' 09"	0,11%
17:00	197° 59' 37"	-3° 52' 10"	195° 05' 39"	-10° 37' 57"	56' 32"	15' 24,32"	14° 02' 11"	0,12%
18:00	198° 32' 07"	-3° 54' 03"	195° 35' 22"	-10° 52' 09"	56' 31"	15' 23,94"	7° 01' 22"	0,13%
19:00	199° 04' 35"	-3° 55' 55"	196° 05' 07"	-11° 06' 18"	56' 30"	15' 23,56"	0° 32' 49"	0,14%
20:00	199° 37' 02"	-3° 57' 45"	196° 34' 53"	-11° 20' 23"	56' 28"	15' 23,18"	354° 41' 13"	0,15%
21:00	200° 09' 27"	-3° 59' 34"	197° 04' 41"	-11° 34' 24"	56' 27"	15' 22,80"	349° 27' 26"	0,17%
22:00	200° 41' 51"	-4° 01' 22"	197° 34' 30"	-11° 48' 21"	56' 25"	15' 22,42"	344° 49' 43"	0,20%
23:00	201° 14' 13"	-4° 03' 08"	198° 04' 21"	-12° 02' 15"	56' 24"	15' 22,04"	340° 44' 54"	0,22%
24:00	201° 46' 34"	-4° 04' 53"	198° 34' 13"	-12° 16' 05"	56' 23"	15' 21,66"	337° 09' 15"	0,25%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	197° 41' 50"	-0,37"	196° 19' 04"	-6° 56' 42"	0,9985127	16' 01,06"	23° 26' 17"	13m 08s
01:00	197° 44' 18"	-0,37"	196° 21' 22"	-6° 57' 38"	0,9985008	16' 01,07"	23° 26' 17"	13m 08s
02:00	197° 46' 46"	-0,38"	196° 23' 40"	-6° 58' 35"	0,9984888	16' 01,08"	23° 26' 17"	13m 09s
03:00	197° 49' 15"	-0,38"	196° 25' 58"	-6° 59' 31"	0,9984769	16' 01,09"	23° 26' 17"	13m 10s
04:00	197° 51' 43"	-0,38"	196° 28' 17"	-7° 00' 28"	0,9984650	16' 01,11"	23° 26' 17"	13m 10s
05:00	197° 54' 11"	-0,39"	196° 30' 35"	-7° 01' 25"	0,9984531	16' 01,12"	23° 26' 17"	13m 11s
06:00	197° 56' 40"	-0,39"	196° 32' 53"	-7° 02' 21"	0,9984412	16' 01,13"	23° 26' 17"	13m 12s
07:00	197° 59' 08"	-0,39"	196° 35' 11"	-7° 03' 18"	0,9984292	16' 01,14"	23° 26' 17"	13m 12s
08:00	198° 01' 37"	-0,40"	196° 37' 29"	-7° 04' 14"	0,9984173	16' 01,15"	23° 26' 17"	13m 13s
09:00	198° 04' 05"	-0,40"	196° 39' 48"	-7° 05' 11"	0,9984054	16' 01,16"	23° 26' 17"	13m 14s
10:00	198° 06' 33"	-0,40"	196° 42' 06"	-7° 06' 07"	0,9983935	16' 01,17"	23° 26' 17"	13m 14s
11:00	198° 09' 02"	-0,40"	196° 44' 24"	-7° 07' 04"	0,9983815	16' 01,19"	23° 26' 17"	13m 15s
12:00	198° 11' 30"	-0,41"	196° 46' 42"	-7° 08' 00"	0,9983696	16' 01,20"	23° 26' 17"	13m 16s
13:00	198° 13' 58"	-0,41"	196° 49' 01"	-7° 08' 57"	0,9983577	16' 01,21"	23° 26' 17"	13m 16s
14:00	198° 16' 27"	-0,41"	196° 51' 19"	-7° 09' 53"	0,9983457	16' 01,22"	23° 26' 17"	13m 17s
15:00	198° 18' 55"	-0,42"	196° 53' 37"	-7° 10' 50"	0,9983338	16' 01,23"	23° 26' 17"	13m 17s
16:00	198° 21' 24"	-0,42"	196° 55' 55"	-7° 11' 46"	0,9983218	16' 01,24"	23° 26' 17"	13m 18s
17:00	198° 23' 52"	-0,42"	196° 58' 14"	-7° 12' 43"	0,9983099	16' 01,25"	23° 26' 17"	13m 19s
18:00	198° 26' 20"	-0,42"	197° 00' 32"	-7° 13' 39"	0,9982980	16' 01,27"	23° 26' 17"	13m 19s
19:00	198° 28' 49"	-0,43"	197° 02' 50"	-7° 14' 36"	0,9982860	16' 01,28"	23° 26' 17"	13m 20s
20:00	198° 31' 17"	-0,43"	197° 05' 09"	-7° 15' 32"	0,9982741	16' 01,29"	23° 26' 17"	13m 21s
21:00	198° 33' 45"	-0,43"	197° 07' 27"	-7° 16' 28"	0,9982621	16' 01,30"	23° 26' 17"	13m 21s
22:00	198° 36' 14"	-0,43"	197° 09' 46"	-7° 17' 25"	0,9982502	16' 01,31"	23° 26' 17"	13m 22s
23:00	198° 38' 42"	-0,44"	197° 12' 04"	-7° 18' 21"	0,9982382	16' 01,32"	23° 26' 17"	13m 22s
24:00	198° 41' 11"	-0,44"	197° 14' 22"	-7° 19' 18"	0,9982263	16' 01,34"	23° 26' 17"	13m 23s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	201° 46' 34"	-4° 04' 53"	198° 34' 13"	-12° 16' 05"	56' 23"	15' 21,66"	337° 09' 15"	0,25%
01:00	202° 18' 53"	-4° 06' 36"	199° 04' 07"	-12° 29' 51"	56' 21"	15' 21,28"	333° 58' 59"	0,29%
02:00	202° 51' 11"	-4° 08' 18"	199° 34' 03"	-12° 43' 33"	56' 20"	15' 20,90"	331° 10' 36"	0,33%
03:00	203° 23' 27"	-4° 09' 58"	200° 04' 01"	-12° 57' 10"	56' 18"	15' 20,52"	328° 41' 00"	0,37%
04:00	203° 55' 42"	-4° 11' 38"	200° 34' 00"	-13° 10' 44"	56' 17"	15' 20,14"	326° 27' 28"	0,42%
05:00	204° 27' 55"	-4° 13' 15"	201° 04' 01"	-13° 24' 13"	56' 16"	15' 19,77"	324° 27' 42"	0,46%
06:00	205° 00' 07"	-4° 14' 51"	201° 34' 04"	-13° 37' 39"	56' 14"	15' 19,39"	322° 39' 45"	0,52%
07:00	205° 32' 18"	-4° 16' 26"	202° 04' 08"	-13° 50' 59"	56' 13"	15' 19,01"	321° 01' 58"	0,57%
08:00	206° 04' 26"	-4° 18' 00"	202° 34' 15"	-14° 04' 16"	56' 11"	15' 18,63"	319° 32' 59"	0,63%
09:00	206° 36' 34"	-4° 19' 32"	203° 04' 24"	-14° 17' 28"	56' 10"	15' 18,25"	318° 11' 38"	0,70%
10:00	207° 08' 40"	-4° 21' 02"	203° 34' 34"	-14° 30' 36"	56' 09"	15' 17,87"	316° 56' 55"	0,77%
11:00	207° 40' 44"	-4° 22' 31"	204° 04' 47"	-14° 43' 39"	56' 07"	15' 17,49"	315° 48' 00"	0,84%
12:00	208° 12' 47"	-4° 23' 58"	204° 35' 02"	-14° 56' 37"	56' 06"	15' 17,11"	314° 44' 10"	0,91%
13:00	208° 44' 48"	-4° 25' 25"	205° 05' 18"	-15° 09' 31"	56' 05"	15' 16,74"	313° 44' 49"	0,99%
14:00	209° 16' 48"	-4° 26' 49"	205° 35' 37"	-15° 22' 20"	56' 03"	15' 16,36"	312° 49' 27"	1,07%
15:00	209° 48' 46"	-4° 28' 12"	206° 05' 58"	-15° 35' 04"	56' 02"	15' 15,98"	311° 57' 35"	1,16%
16:00	210° 20' 43"	-4° 29' 34"	206° 36' 22"	-15° 47' 44"	56' 00"	15' 15,61"	311° 08' 51"	1,25%
17:00	210° 52' 38"	-4° 30' 54"	207° 06' 47"	-16° 00' 18"	55' 59"	15' 15,23"	310° 22' 55"	1,34%
18:00	211° 24' 32"	-4° 32' 13"	207° 37' 15"	-16° 12' 48"	55' 58"	15' 14,86"	309° 39' 29"	1,44%
19:00	211° 56' 24"	-4° 33' 30"	208° 07' 45"	-16° 25' 12"	55' 56"	15' 14,48"	308° 58' 18"	1,54%
20:00	212° 28' 15"	-4° 34' 46"	208° 38' 18"	-16° 37' 32"	55' 55"	15' 14,11"	308° 19' 09"	1,64%
21:00	213° 00' 04"	-4° 36' 00"	209° 08' 53"	-16° 49' 46"	55' 54"	15' 13,74"	307° 41' 49"	1,74%
22:00	213° 31' 51"	-4° 37' 13"	209° 39' 30"	-17° 01' 55"	55' 52"	15' 13,36"	307° 06' 08"	1,85%
23:00	214° 03' 38"	-4° 38' 24"	210° 10' 10"	-17° 13' 59"	55' 51"	15' 12,99"	306° 31' 57"	1,97%
24:00	214° 35' 22"	-4° 39' 34"	210° 40' 52"	-17° 25' 58"	55' 49"	15' 12,62"	305° 59' 08"	2,08%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	198° 41' 11"	-0,44"	197° 14' 22"	-7° 19' 18"	0,9982263	16' 01,34"	23° 26' 17"	13m 23s
01:00	198° 43' 39"	-0,44"	197° 16' 41"	-7° 20' 14"	0,9982143	16' 01,35"	23° 26' 17"	13m 24s
02:00	198° 46' 08"	-0,44"	197° 18' 59"	-7° 21' 10"	0,9982024	16' 01,36"	23° 26' 17"	13m 24s
03:00	198° 48' 36"	-0,45"	197° 21' 18"	-7° 22' 07"	0,9981904	16' 01,37"	23° 26' 17"	13m 25s
04:00	198° 51' 04"	-0,45"	197° 23' 36"	-7° 23' 03"	0,9981785	16' 01,38"	23° 26' 17"	13m 26s
05:00	198° 53' 33"	-0,45"	197° 25' 55"	-7° 23' 59"	0,9981665	16' 01,39"	23° 26' 17"	13m 26s
06:00	198° 56' 01"	-0,45"	197° 28' 13"	-7° 24' 56"	0,9981545	16' 01,40"	23° 26' 17"	13m 27s
07:00	198° 58' 30"	-0,45"	197° 30' 32"	-7° 25' 52"	0,9981426	16' 01,42"	23° 26' 17"	13m 28s
08:00	199° 00' 58"	-0,46"	197° 32' 50"	-7° 26' 48"	0,9981306	16' 01,43"	23° 26' 17"	13m 28s
09:00	199° 03' 27"	-0,46"	197° 35' 09"	-7° 27' 45"	0,9981186	16' 01,44"	23° 26' 17"	13m 29s
10:00	199° 05' 55"	-0,46"	197° 37' 27"	-7° 28' 41"	0,9981067	16' 01,45"	23° 26' 17"	13m 29s
11:00	199° 08' 23"	-0,46"	197° 39' 46"	-7° 29' 37"	0,9980947	16' 01,46"	23° 26' 17"	13m 30s
12:00	199° 10' 52"	-0,46"	197° 42' 04"	-7° 30' 34"	0,9980827	16' 01,47"	23° 26' 17"	13m 31s
13:00	199° 13' 20"	-0,47"	197° 44' 23"	-7° 31' 30"	0,9980708	16' 01,48"	23° 26' 17"	13m 31s
14:00	199° 15' 49"	-0,47"	197° 46' 41"	-7° 32' 26"	0,9980588	16' 01,50"	23° 26' 17"	13m 32s
15:00	199° 18' 17"	-0,47"	197° 49' 00"	-7° 33' 22"	0,9980468	16' 01,51"	23° 26' 17"	13m 32s
16:00	199° 20' 46"	-0,47"	197° 51' 19"	-7° 34' 18"	0,9980349	16' 01,52"	23° 26' 17"	13m 33s
17:00	199° 23' 14"	-0,47"	197° 53' 37"	-7° 35' 15"	0,9980229	16' 01,53"	23° 26' 17"	13m 34s
18:00	199° 25' 43"	-0,47"	197° 55' 56"	-7° 36' 11"	0,9980109	16' 01,54"	23° 26' 17"	13m 34s
19:00	199° 28' 11"	-0,48"	197° 58' 15"	-7° 37' 07"	0,9979989	16' 01,55"	23° 26' 17"	13m 35s
20:00	199° 30' 40"	-0,48"	198° 00' 33"	-7° 38' 03"	0,9979870	16' 01,57"	23° 26' 17"	13m 36s
21:00	199° 33' 08"	-0,48"	198° 02' 52"	-7° 38' 59"	0,9979750	16' 01,58"	23° 26' 17"	13m 36s
22:00	199° 35' 37"	-0,48"	198° 05' 11"	-7° 39' 56"	0,9979630	16' 01,59"	23° 26' 17"	13m 37s
23:00	199° 38' 05"	-0,48"	198° 07' 29"	-7° 40' 52"	0,9979510	16' 01,60"	23° 26' 17"	13m 37s
24:00	199° 40' 34"	-0,48"	198° 09' 48"	-7° 41' 48"	0,9979390	16' 01,61"	23° 26' 17"	13m 38s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	214° 35' 22"	-4° 39' 34"	210° 40' 52"	-17° 25' 58"	55' 49"	15' 12,62"	305° 59' 08"	2,08%
01:00	215° 07' 05"	-4° 40' 42"	211° 11' 36"	-17° 37' 51"	55' 48"	15' 12,25"	305° 27' 33"	2,20%
02:00	215° 38' 47"	-4° 41' 49"	211° 42' 23"	-17° 49' 39"	55' 47"	15' 11,88"	304° 57' 06"	2,33%
03:00	216° 10' 27"	-4° 42' 54"	212° 13' 12"	-18° 01' 22"	55' 45"	15' 11,52"	304° 27' 42"	2,45%
04:00	216° 42' 05"	-4° 43' 58"	212° 44' 04"	-18° 12' 59"	55' 44"	15' 11,15"	303° 59' 13"	2,58%
05:00	217° 13' 42"	-4° 45' 00"	213° 14' 59"	-18° 24' 30"	55' 43"	15' 10,78"	303° 31' 37"	2,72%
06:00	217° 45' 18"	-4° 46' 00"	213° 45' 56"	-18° 35' 56"	55' 41"	15' 10,42"	303° 04' 49"	2,85%
07:00	218° 16' 51"	-4° 47' 00"	214° 16' 56"	-18° 47' 16"	55' 40"	15' 10,06"	302° 38' 44"	2,99%
08:00	218° 48' 24"	-4° 47' 57"	214° 47' 58"	-18° 58' 31"	55' 39"	15' 09,69"	302° 13' 20"	3,13%
09:00	219° 19' 55"	-4° 48' 53"	215° 19' 02"	-19° 09' 40"	55' 37"	15' 09,33"	301° 48' 33"	3,28%
10:00	219° 51' 24"	-4° 49' 48"	215° 50' 10"	-19° 20' 42"	55' 36"	15' 08,97"	301° 24' 20"	3,43%
11:00	220° 22' 52"	-4° 50' 41"	216° 21' 20"	-19° 31' 39"	55' 35"	15' 08,61"	301° 00' 39"	3,58%
12:00	220° 54' 18"	-4° 51' 33"	216° 52' 33"	-19° 42' 31"	55' 33"	15' 08,26"	300° 37' 27"	3,74%
13:00	221° 25' 43"	-4° 52' 23"	217° 23' 48"	-19° 53' 16"	55' 32"	15' 07,90"	300° 14' 42"	3,90%
14:00	221° 57' 06"	-4° 53' 11"	217° 55' 06"	-20° 03' 55"	55' 31"	15' 07,55"	299° 52' 22"	4,06%
15:00	222° 28' 28"	-4° 53' 58"	218° 26' 26"	-20° 14' 28"	55' 30"	15' 07,19"	299° 30' 25"	4,22%
16:00	222° 59' 48"	-4° 54' 44"	218° 57' 50"	-20° 24' 55"	55' 28"	15' 06,84"	299° 08' 49"	4,39%
17:00	223° 31' 07"	-4° 55' 28"	219° 29' 16"	-20° 35' 16"	55' 27"	15' 06,49"	298° 47' 33"	4,56%
18:00	224° 02' 25"	-4° 56' 10"	220° 00' 44"	-20° 45' 30"	55' 26"	15' 06,14"	298° 26' 36"	4,73%
19:00	224° 33' 40"	-4° 56' 51"	220° 32' 16"	-20° 55' 38"	55' 24"	15' 05,80"	298° 05' 55"	4,91%
20:00	225° 04' 55"	-4° 57' 31"	221° 03' 50"	-21° 05' 40"	55' 23"	15' 05,45"	297° 45' 30"	5,09%
21:00	225° 36' 07"	-4° 58' 09"	221° 35' 26"	-21° 15' 36"	55' 22"	15' 05,11"	297° 25' 20"	5,27%
22:00	226° 07' 19"	-4° 58' 45"	222° 07' 06"	-21° 25' 25"	55' 21"	15' 04,77"	297° 05' 24"	5,46%
23:00	226° 38' 29"	-4° 59' 20"	222° 38' 48"	-21° 35' 08"	55' 19"	15' 04,43"	296° 45' 40"	5,65%
24:00	227° 09' 37"	-4° 59' 53"	223° 10' 32"	-21° 44' 44"	55' 18"	15' 04,09"	296° 26' 08"	5,84%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	199° 40' 34"	-0,48"	198° 09' 48"	-7° 41' 48"	0,9979390	16' 01,61"	23° 26' 17"	13m 38s
01:00	199° 43' 02"	-0,48"	198° 12' 07"	-7° 42' 44"	0,9979271	16' 01,62"	23° 26' 17"	13m 39s
02:00	199° 45' 31"	-0,48"	198° 14' 26"	-7° 43' 40"	0,9979151	16' 01,63"	23° 26' 17"	13m 39s
03:00	199° 47' 59"	-0,49"	198° 16' 44"	-7° 44' 36"	0,9979031	16' 01,65"	23° 26' 17"	13m 40s
04:00	199° 50' 28"	-0,49"	198° 19' 03"	-7° 45' 32"	0,9978911	16' 01,66"	23° 26' 17"	13m 40s
05:00	199° 52' 56"	-0,49"	198° 21' 22"	-7° 46' 28"	0,9978791	16' 01,67"	23° 26' 17"	13m 41s
06:00	199° 55' 25"	-0,49"	198° 23' 41"	-7° 47' 24"	0,9978671	16' 01,68"	23° 26' 17"	13m 42s
07:00	199° 57' 53"	-0,49"	198° 26' 00"	-7° 48' 20"	0,9978551	16' 01,69"	23° 26' 17"	13m 42s
08:00	200° 00' 22"	-0,49"	198° 28' 18"	-7° 49' 16"	0,9978431	16' 01,70"	23° 26' 17"	13m 43s
09:00	200° 02' 50"	-0,49"	198° 30' 37"	-7° 50' 12"	0,9978312	16' 01,72"	23° 26' 17"	13m 43s
10:00	200° 05' 19"	-0,49"	198° 32' 56"	-7° 51' 08"	0,9978192	16' 01,73"	23° 26' 17"	13m 44s
11:00	200° 07' 47"	-0,49"	198° 35' 15"	-7° 52' 04"	0,9978072	16' 01,74"	23° 26' 17"	13m 45s
12:00	200° 10' 16"	-0,49"	198° 37' 34"	-7° 53' 00"	0,9977952	16' 01,75"	23° 26' 17"	13m 45s
13:00	200° 12' 44"	-0,49"	198° 39' 53"	-7° 53' 56"	0,9977832	16' 01,76"	23° 26' 17"	13m 46s
14:00	200° 15' 13"	-0,49"	198° 42' 12"	-7° 54' 52"	0,9977712	16' 01,77"	23° 26' 17"	13m 46s
15:00	200° 17' 41"	-0,50"	198° 44' 31"	-7° 55' 48"	0,9977592	16' 01,79"	23° 26' 17"	13m 47s
16:00	200° 20' 10"	-0,50"	198° 46' 49"	-7° 56' 44"	0,9977472	16' 01,80"	23° 26' 17"	13m 48s
17:00	200° 22' 38"	-0,50"	198° 49' 08"	-7° 57' 40"	0,9977352	16' 01,81"	23° 26' 17"	13m 48s
18:00	200° 25' 07"	-0,50"	198° 51' 27"	-7° 58' 36"	0,9977232	16' 01,82"	23° 26' 17"	13m 49s
19:00	200° 27' 36"	-0,50"	198° 53' 46"	-7° 59' 32"	0,9977112	16' 01,83"	23° 26' 17"	13m 49s
20:00	200° 30' 04"	-0,50"	198° 56' 05"	-8° 00' 28"	0,9976992	16' 01,84"	23° 26' 17"	13m 50s
21:00	200° 32' 33"	-0,50"	198° 58' 24"	-8° 01' 24"	0,9976872	16' 01,85"	23° 26' 17"	13m 51s
22:00	200° 35' 01"	-0,50"	199° 00' 43"	-8° 02' 20"	0,9976752	16' 01,87"	23° 26' 17"	13m 51s
23:00	200° 37' 30"	-0,50"	199° 03' 02"	-8° 03' 16"	0,9976632	16' 01,88"	23° 26' 17"	13m 52s
24:00	200° 39' 58"	-0,50"	199° 05' 22"	-8° 04' 11"	0,9976512	16' 01,89"	23° 26' 17"	13m 52s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	227° 09' 37"	-4° 59' 53"	223° 10' 32"	-21° 44' 44"	55' 18"	15' 04,09"	296° 26' 08"	5,84%
01:00	227° 40' 44"	-5° 00' 25"	223° 42' 20"	-21° 54' 14"	55' 17"	15' 03,75"	296° 06' 46"	6,04%
02:00	228° 11' 49"	-5° 00' 56"	224° 14' 10"	-22° 03' 37"	55' 16"	15' 03,42"	295° 47' 35"	6,23%
03:00	228° 42' 53"	-5° 01' 24"	224° 46' 03"	-22° 12' 53"	55' 14"	15' 03,09"	295° 28' 33"	6,43%
04:00	229° 13' 56"	-5° 01' 52"	225° 17' 58"	-22° 22' 03"	55' 13"	15' 02,76"	295° 09' 39"	6,64%
05:00	229° 44' 57"	-5° 02' 18"	225° 49' 56"	-22° 31' 06"	55' 12"	15' 02,43"	294° 50' 54"	6,84%
06:00	230° 15' 57"	-5° 02' 42"	226° 21' 57"	-22° 40' 02"	55' 11"	15' 02,10"	294° 32' 16"	7,05%
07:00	230° 46' 55"	-5° 03' 05"	226° 54' 00"	-22° 48' 52"	55' 10"	15' 01,78"	294° 13' 45"	7,26%
08:00	231° 17' 51"	-5° 03' 26"	227° 26' 06"	-22° 57' 34"	55' 08"	15' 01,46"	293° 55' 20"	7,48%
09:00	231° 48' 47"	-5° 03' 46"	227° 58' 14"	-23° 06' 10"	55' 07"	15' 01,14"	293° 37' 02"	7,69%
10:00	232° 19' 41"	-5° 04' 04"	228° 30' 25"	-23° 14' 39"	55' 06"	15' 00,82"	293° 18' 48"	7,91%
11:00	232° 50' 33"	-5° 04' 21"	229° 02' 39"	-23° 23' 00"	55' 05"	15' 00,51"	293° 00' 40"	8,14%
12:00	233° 21' 24"	-5° 04' 36"	229° 34' 55"	-23° 31' 15"	55' 04"	15' 00,19"	292° 42' 37"	8,36%
13:00	233° 52' 14"	-5° 04' 50"	230° 07' 14"	-23° 39' 23"	55' 03"	15' 00,00"	292° 24' 37"	8,59%
14:00	234° 23' 02"	-5° 05' 02"	230° 39' 35"	-23° 47' 24"	55' 02"	15' 00,00"	292° 06' 42"	8,82%
15:00	234° 53' 49"	-5° 05' 13"	231° 11' 59"	-23° 55' 17"	55' 00"	14' 59,27"	291° 48' 51"	9,05%
16:00	235° 24' 34"	-5° 05' 22"	231° 44' 25"	-24° 03' 03"	54' 59"	14' 58,97"	291° 31' 03"	9,29%
17:00	235° 55' 19"	-5° 05' 30"	232° 16' 54"	-24° 10' 42"	54' 58"	14' 58,67"	291° 13' 18"	9,52%
18:00	236° 26' 01"	-5° 05' 37"	232° 49' 25"	-24° 18' 14"	54' 57"	14' 58,37"	290° 55' 35"	9,76%
19:00	236° 56' 43"	-5° 05' 42"	233° 21' 58"	-24° 25' 39"	54' 56"	14' 58,08"	290° 37' 56"	10,01%
20:00	237° 27' 23"	-5° 05' 45"	233° 54' 34"	-24° 32' 56"	54' 55"	14' 57,78"	290° 20' 19"	10,25%
21:00	237° 58' 01"	-5° 05' 47"	234° 27' 12"	-24° 40' 06"	54' 54"	14' 57,49"	290° 02' 44"	10,50%
22:00	238° 28' 39"	-5° 05' 48"	234° 59' 52"	-24° 47' 09"	54' 53"	14' 57,21"	289° 45' 11"	10,75%
23:00	238° 59' 15"	-5° 05' 47"	235° 32' 35"	-24° 54' 04"	54' 52"	14' 56,92"	289° 27' 40"	11,00%
24:00	239° 29' 49"	-5° 05' 44"	236° 05' 20"	-25° 00' 51"	54' 51"	14' 56,64"	289° 10' 11"	11,26%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	200° 39' 58"	-0,50"	199° 05' 22"	-8° 04' 11"	0,9976512	16' 01,89"	23° 26' 17"	13m 52s
01:00	200° 42' 27"	-0,50"	199° 07' 41"	-8° 05' 07"	0,9976392	16' 01,90"	23° 26' 17"	13m 53s
02:00	200° 44' 56"	-0,50"	199° 10' 00"	-8° 06' 03"	0,9976272	16' 01,91"	23° 26' 17"	13m 53s
03:00	200° 47' 24"	-0,50"	199° 12' 19"	-8° 06' 59"	0,9976152	16' 01,92"	23° 26' 17"	13m 54s
04:00	200° 49' 53"	-0,50"	199° 14' 38"	-8° 07' 55"	0,9976032	16' 01,94"	23° 26' 17"	13m 55s
05:00	200° 52' 21"	-0,50"	199° 16' 57"	-8° 08' 51"	0,9975912	16' 01,95"	23° 26' 17"	13m 55s
06:00	200° 54' 50"	-0,50"	199° 19' 16"	-8° 09' 46"	0,9975792	16' 01,96"	23° 26' 17"	13m 56s
07:00	200° 57' 19"	-0,50"	199° 21' 35"	-8° 10' 42"	0,9975672	16' 01,97"	23° 26' 17"	13m 56s
08:00	200° 59' 47"	-0,50"	199° 23' 54"	-8° 11' 38"	0,9975551	16' 01,98"	23° 26' 17"	13m 57s
09:00	201° 02' 16"	-0,50"	199° 26' 14"	-8° 12' 34"	0,9975431	16' 01,99"	23° 26' 17"	13m 58s
10:00	201° 04' 44"	-0,50"	199° 28' 33"	-8° 13' 29"	0,9975311	16' 02,01"	23° 26' 17"	13m 58s
11:00	201° 07' 13"	-0,49"	199° 30' 52"	-8° 14' 25"	0,9975191	16' 02,02"	23° 26' 17"	13m 59s
12:00	201° 09' 42"	-0,49"	199° 33' 11"	-8° 15' 21"	0,9975071	16' 02,03"	23° 26' 17"	13m 59s
13:00	201° 12' 10"	-0,49"	199° 35' 30"	-8° 16' 16"	0,9974951	16' 02,04"	23° 26' 17"	14m 00s
14:00	201° 14' 39"	-0,49"	199° 37' 50"	-8° 17' 12"	0,9974831	16' 02,05"	23° 26' 17"	14m 00s
15:00	201° 17' 07"	-0,49"	199° 40' 09"	-8° 18' 08"	0,9974711	16' 02,06"	23° 26' 17"	14m 01s
16:00	201° 19' 36"	-0,49"	199° 42' 28"	-8° 19' 03"	0,9974591	16' 02,07"	23° 26' 17"	14m 02s
17:00	201° 22' 05"	-0,49"	199° 44' 47"	-8° 19' 59"	0,9974471	16' 02,09"	23° 26' 17"	14m 02s
18:00	201° 24' 33"	-0,49"	199° 47' 07"	-8° 20' 55"	0,9974350	16' 02,10"	23° 26' 17"	14m 03s
19:00	201° 27' 02"	-0,49"	199° 49' 26"	-8° 21' 50"	0,9974230	16' 02,11"	23° 26' 17"	14m 03s
20:00	201° 29' 31"	-0,49"	199° 51' 45"	-8° 22' 46"	0,9974110	16' 02,12"	23° 26' 17"	14m 04s
21:00	201° 31' 59"	-0,49"	199° 54' 05"	-8° 23' 42"	0,9973990	16' 02,13"	23° 26' 17"	14m 04s
22:00	201° 34' 28"	-0,49"	199° 56' 24"	-8° 24' 37"	0,9973870	16' 02,14"	23° 26' 17"	14m 05s
23:00	201° 36' 57"	-0,49"	199° 58' 43"	-8° 25' 33"	0,9973750	16' 02,16"	23° 26' 17"	14m 06s
24:00	201° 39' 25"	-0,48"	200° 01' 03"	-8° 26' 28"	0,9973630	16' 02,17"	23° 26' 17"	14m 06s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	239° 29' 49"	-5° 05' 44"	236° 05' 20"	-25° 00' 51"	54' 51"	14' 56,64"	289° 10' 11"	11,26%
01:00	240° 00' 23"	-5° 05' 40"	236° 38' 07"	-25° 07' 32"	54' 50"	14' 56,36"	288° 52' 43"	11,51%
02:00	240° 30' 55"	-5° 05' 35"	237° 10' 56"	-25° 14' 04"	54' 49"	14' 56,09"	288° 35' 17"	11,77%
03:00	241° 01' 26"	-5° 05' 28"	237° 43' 48"	-25° 20' 29"	54' 48"	14' 55,81"	288° 17' 52"	12,04%
04:00	241° 31' 55"	-5° 05' 20"	238° 16' 41"	-25° 26' 47"	54' 47"	14' 55,54"	288° 00' 28"	12,30%
05:00	242° 02' 24"	-5° 05' 10"	238° 49' 37"	-25° 32' 57"	54' 46"	14' 55,28"	287° 43' 05"	12,57%
06:00	242° 32' 51"	-5° 04' 59"	239° 22' 34"	-25° 38' 59"	54' 45"	14' 55,01"	287° 25' 44"	12,84%
07:00	243° 03' 16"	-5° 04' 47"	239° 55' 34"	-25° 44' 54"	54' 44"	14' 54,75"	287° 08' 23"	13,11%
08:00	243° 33' 41"	-5° 04' 33"	240° 28' 35"	-25° 50' 41"	54' 43"	14' 54,50"	286° 51' 03"	13,38%
09:00	244° 04' 04"	-5° 04' 17"	241° 01' 39"	-25° 56' 20"	54' 42"	14' 54,24"	286° 33' 44"	13,66%
10:00	244° 34' 26"	-5° 04' 00"	241° 34' 44"	-26° 01' 51"	54' 41"	14' 53,99"	286° 16' 25"	13,93%
11:00	245° 04' 47"	-5° 03' 42"	242° 07' 51"	-26° 07' 15"	54' 40"	14' 53,74"	285° 59' 07"	14,21%
12:00	245° 35' 07"	-5° 03' 22"	242° 41' 00"	-26° 12' 31"	54' 39"	14' 53,50"	285° 41' 50"	14,50%
13:00	246° 05' 25"	-5° 03' 01"	243° 14' 10"	-26° 17' 39"	54' 38"	14' 53,26"	285° 24' 33"	14,78%
14:00	246° 35' 43"	-5° 02' 39"	243° 47' 22"	-26° 22' 39"	54' 37"	14' 53,02"	285° 07' 17"	15,07%
15:00	247° 05' 59"	-5° 02' 15"	244° 20' 36"	-26° 27' 32"	54' 37"	14' 52,78"	284° 50' 01"	15,36%
16:00	247° 36' 14"	-5° 01' 50"	244° 53' 51"	-26° 32' 16"	54' 36"	14' 52,55"	284° 32' 46"	15,65%
17:00	248° 06' 28"	-5° 01' 23"	245° 27' 08"	-26° 36' 53"	54' 35"	14' 52,32"	284° 15' 31"	15,94%
18:00	248° 36' 41"	-5° 00' 55"	246° 00' 26"	-26° 41' 21"	54' 34"	14' 52,10"	283° 58' 17"	16,23%
19:00	249° 06' 52"	-5° 00' 25"	246° 33' 46"	-26° 45' 42"	54' 33"	14' 51,88"	283° 41' 03"	16,53%
20:00	249° 37' 03"	-4° 59' 54"	247° 07' 07"	-26° 49' 55"	54' 33"	14' 51,66"	283° 23' 50"	16,83%
21:00	250° 07' 12"	-4° 59' 22"	247° 40' 29"	-26° 54' 00"	54' 32"	14' 51,45"	283° 06' 36"	17,13%
22:00	250° 37' 21"	-4° 58' 49"	248° 13' 53"	-26° 57' 57"	54' 31"	14' 51,24"	282° 49' 24"	17,43%
23:00	251° 07' 28"	-4° 58' 14"	248° 47' 18"	-27° 01' 45"	54' 30"	14' 51,03"	282° 32' 12"	17,73%
24:00	251° 37' 34"	-4° 57' 37"	249° 20' 43"	-27° 05' 26"	54' 29"	14' 50,83"	282° 15' 00"	18,04%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	201° 39' 25"	-0,48"	200° 01' 03"	-8° 26' 28"	0,9973630	16' 02,17"	23° 26' 17"	14m 06s
01:00	201° 41' 54"	-0,48"	200° 03' 22"	-8° 27' 24"	0,9973510	16' 02,18"	23° 26' 17"	14m 07s
02:00	201° 44' 22"	-0,48"	200° 05' 42"	-8° 28' 19"	0,9973389	16' 02,19"	23° 26' 17"	14m 07s
03:00	201° 46' 51"	-0,48"	200° 08' 01"	-8° 29' 15"	0,9973269	16' 02,20"	23° 26' 17"	14m 08s
04:00	201° 49' 20"	-0,48"	200° 10' 21"	-8° 30' 10"	0,9973149	16' 02,21"	23° 26' 17"	14m 08s
05:00	201° 51' 48"	-0,48"	200° 12' 40"	-8° 31' 06"	0,9973029	16' 02,23"	23° 26' 17"	14m 09s
06:00	201° 54' 17"	-0,48"	200° 14' 59"	-8° 32' 01"	0,9972909	16' 02,24"	23° 26' 17"	14m 09s
07:00	201° 56' 46"	-0,48"	200° 17' 19"	-8° 32' 57"	0,9972789	16' 02,25"	23° 26' 17"	14m 10s
08:00	201° 59' 15"	-0,47"	200° 19' 38"	-8° 33' 52"	0,9972669	16' 02,26"	23° 26' 17"	14m 11s
09:00	202° 01' 43"	-0,47"	200° 21' 58"	-8° 34' 48"	0,9972548	16' 02,27"	23° 26' 17"	14m 11s
10:00	202° 04' 12"	-0,47"	200° 24' 18"	-8° 35' 43"	0,9972428	16' 02,28"	23° 26' 17"	14m 12s
11:00	202° 06' 41"	-0,47"	200° 26' 37"	-8° 36' 39"	0,9972308	16' 02,29"	23° 26' 17"	14m 12s
12:00	202° 09' 09"	-0,47"	200° 28' 57"	-8° 37' 34"	0,9972188	16' 02,31"	23° 26' 17"	14m 13s
13:00	202° 11' 38"	-0,47"	200° 31' 16"	-8° 38' 29"	0,9972068	16' 02,32"	23° 26' 17"	14m 13s
14:00	202° 14' 07"	-0,46"	200° 33' 36"	-8° 39' 25"	0,9971948	16' 02,33"	23° 26' 17"	14m 14s
15:00	202° 16' 35"	-0,46"	200° 35' 55"	-8° 40' 20"	0,9971828	16' 02,34"	23° 26' 17"	14m 14s
16:00	202° 19' 04"	-0,46"	200° 38' 15"	-8° 41' 16"	0,9971707	16' 02,35"	23° 26' 17"	14m 15s
17:00	202° 21' 33"	-0,46"	200° 40' 35"	-8° 42' 11"	0,9971587	16' 02,36"	23° 26' 17"	14m 16s
18:00	202° 24' 01"	-0,46"	200° 42' 54"	-8° 43' 06"	0,9971467	16' 02,38"	23° 26' 17"	14m 16s
19:00	202° 26' 30"	-0,45"	200° 45' 14"	-8° 44' 01"	0,9971347	16' 02,39"	23° 26' 17"	14m 17s
20:00	202° 28' 59"	-0,45"	200° 47' 34"	-8° 44' 57"	0,9971227	16' 02,40"	23° 26' 17"	14m 17s
21:00	202° 31' 28"	-0,45"	200° 49' 53"	-8° 45' 52"	0,9971107	16' 02,41"	23° 26' 17"	14m 18s
22:00	202° 33' 56"	-0,45"	200° 52' 13"	-8° 46' 47"	0,9970987	16' 02,42"	23° 26' 17"	14m 18s
23:00	202° 36' 25"	-0,45"	200° 54' 33"	-8° 47' 43"	0,9970867	16' 02,43"	23° 26' 17"	14m 19s
24:00	202° 38' 54"	-0,44"	200° 56' 52"	-8° 48' 38"	0,9970746	16' 02,45"	23° 26' 17"	14m 19s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	251° 37' 34"	-4° 57' 37"	249° 20' 43"	-27° 05' 26"	54' 29"	14' 50,83"	282° 15' 00"	18,04%
01:00	252° 07' 40"	-4° 57' 00"	249° 54' 10"	-27° 08' 59"	54' 29"	14' 50,63"	281° 57' 49"	18,35%
02:00	252° 37' 44"	-4° 56' 21"	250° 27' 38"	-27° 12' 23"	54' 28"	14' 50,43"	281° 40' 38"	18,66%
03:00	253° 07' 47"	-4° 55' 40"	251° 01' 07"	-27° 15' 40"	54' 27"	14' 50,24"	281° 23' 28"	18,97%
04:00	253° 37' 49"	-4° 54' 59"	251° 34' 37"	-27° 18' 48"	54' 27"	14' 50,05"	281° 06' 18"	19,28%
05:00	254° 07' 51"	-4° 54' 16"	252° 08' 08"	-27° 21' 49"	54' 26"	14' 49,87"	280° 49' 09"	19,60%
06:00	254° 37' 51"	-4° 53' 31"	252° 41' 39"	-27° 24' 41"	54' 25"	14' 49,68"	280° 32' 00"	19,92%
07:00	255° 07' 50"	-4° 52' 45"	253° 15' 12"	-27° 27' 25"	54' 25"	14' 49,51"	280° 14' 53"	20,23%
08:00	255° 37' 49"	-4° 51' 58"	253° 48' 44"	-27° 30' 01"	54' 24"	14' 49,33"	279° 57' 45"	20,55%
09:00	256° 07' 46"	-4° 51' 10"	254° 22' 18"	-27° 32' 29"	54' 23"	14' 49,17"	279° 40' 39"	20,88%
10:00	256° 37' 43"	-4° 50' 20"	254° 55' 52"	-27° 34' 49"	54' 23"	14' 49,00"	279° 23' 33"	21,20%
11:00	257° 07' 39"	-4° 49' 29"	255° 29' 26"	-27° 37' 01"	54' 22"	14' 48,84"	279° 06' 29"	21,53%
12:00	257° 37' 34"	-4° 48' 37"	256° 03' 01"	-27° 39' 04"	54' 22"	14' 48,68"	278° 49' 25"	21,85%
13:00	258° 07' 28"	-4° 47' 44"	256° 36' 36"	-27° 40' 59"	54' 21"	14' 48,53"	278° 32' 22"	22,18%
14:00	258° 37' 21"	-4° 46' 49"	257° 10' 12"	-27° 42' 47"	54' 20"	14' 48,38"	278° 15' 20"	22,51%
15:00	259° 07' 13"	-4° 45' 53"	257° 43' 48"	-27° 44' 26"	54' 20"	14' 48,24"	277° 58' 18"	22,84%
16:00	259° 37' 05"	-4° 44' 55"	258° 17' 24"	-27° 45' 56"	54' 19"	14' 48,10"	277° 41' 19"	23,18%
17:00	260° 06' 56"	-4° 43' 56"	258° 51' 00"	-27° 47' 19"	54' 19"	14' 47,96"	277° 24' 20"	23,51%
18:00	260° 36' 46"	-4° 42' 57"	259° 24' 36"	-27° 48' 33"	54' 18"	14' 47,83"	277° 07' 22"	23,85%
19:00	261° 06' 35"	-4° 41' 55"	259° 58' 12"	-27° 49' 40"	54' 18"	14' 47,70"	276° 50' 26"	24,19%
20:00	261° 36' 23"	-4° 40' 53"	260° 31' 48"	-27° 50' 38"	54' 18"	14' 47,57"	276° 33' 31"	24,53%
21:00	262° 06' 11"	-4° 39' 49"	261° 05' 24"	-27° 51' 28"	54' 17"	14' 47,45"	276° 16' 37"	24,87%
22:00	262° 35' 58"	-4° 38' 44"	261° 38' 59"	-27° 52' 10"	54' 17"	14' 47,34"	275° 59' 45"	25,21%
23:00	263° 05' 45"	-4° 37' 38"	262° 12' 34"	-27° 52' 43"	54' 16"	14' 47,23"	275° 42' 54"	25,55%
24:00	263° 35' 30"	-4° 36' 30"	262° 46' 09"	-27° 53' 09"	54' 16"	14' 47,12"	275° 26' 05"	25,90%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	202° 38' 54"	-0,44"	200° 56' 52"	-8° 48' 38"	0,9970746	16' 02,45"	23° 26' 17"	14m 19s
01:00	202° 41' 22"	-0,44"	200° 59' 12"	-8° 49' 33"	0,9970626	16' 02,46"	23° 26' 17"	14m 20s
02:00	202° 43' 51"	-0,44"	201° 01' 32"	-8° 50' 28"	0,9970506	16' 02,47"	23° 26' 17"	14m 20s
03:00	202° 46' 20"	-0,44"	201° 03' 52"	-8° 51' 24"	0,9970386	16' 02,48"	23° 26' 17"	14m 21s
04:00	202° 48' 49"	-0,43"	201° 06' 11"	-8° 52' 19"	0,9970266	16' 02,49"	23° 26' 17"	14m 22s
05:00	202° 51' 17"	-0,43"	201° 08' 31"	-8° 53' 14"	0,9970146	16' 02,50"	23° 26' 17"	14m 22s
06:00	202° 53' 46"	-0,43"	201° 10' 51"	-8° 54' 09"	0,9970026	16' 02,52"	23° 26' 17"	14m 23s
07:00	202° 56' 15"	-0,43"	201° 13' 11"	-8° 55' 04"	0,9969906	16' 02,53"	23° 26' 17"	14m 23s
08:00	202° 58' 44"	-0,42"	201° 15' 31"	-8° 55' 59"	0,9969786	16' 02,54"	23° 26' 17"	14m 24s
09:00	203° 01' 12"	-0,42"	201° 17' 51"	-8° 56' 55"	0,9969665	16' 02,55"	23° 26' 17"	14m 24s
10:00	203° 03' 41"	-0,42"	201° 20' 10"	-8° 57' 50"	0,9969545	16' 02,56"	23° 26' 17"	14m 25s
11:00	203° 06' 10"	-0,42"	201° 22' 30"	-8° 58' 45"	0,9969425	16' 02,57"	23° 26' 17"	14m 25s
12:00	203° 08' 39"	-0,41"	201° 24' 50"	-8° 59' 40"	0,9969305	16' 02,58"	23° 26' 17"	14m 26s
13:00	203° 11' 08"	-0,41"	201° 27' 10"	-9° 00' 35"	0,9969185	16' 02,60"	23° 26' 17"	14m 26s
14:00	203° 13' 36"	-0,41"	201° 29' 30"	-9° 01' 30"	0,9969065	16' 02,61"	23° 26' 17"	14m 27s
15:00	203° 16' 05"	-0,41"	201° 31' 50"	-9° 02' 25"	0,9968945	16' 02,62"	23° 26' 17"	14m 27s
16:00	203° 18' 34"	-0,40"	201° 34' 10"	-9° 03' 20"	0,9968825	16' 02,63"	23° 26' 17"	14m 28s
17:00	203° 21' 03"	-0,40"	201° 36' 30"	-9° 04' 15"	0,9968705	16' 02,64"	23° 26' 17"	14m 28s
18:00	203° 23' 31"	-0,40"	201° 38' 50"	-9° 05' 10"	0,9968585	16' 02,65"	23° 26' 17"	14m 29s
19:00	203° 26' 00"	-0,39"	201° 41' 10"	-9° 06' 05"	0,9968465	16' 02,67"	23° 26' 17"	14m 29s
20:00	203° 28' 29"	-0,39"	201° 43' 30"	-9° 07' 00"	0,9968345	16' 02,68"	23° 26' 17"	14m 30s
21:00	203° 30' 58"	-0,39"	201° 45' 50"	-9° 07' 55"	0,9968225	16' 02,69"	23° 26' 17"	14m 30s
22:00	203° 33' 27"	-0,38"	201° 48' 10"	-9° 08' 50"	0,9968105	16' 02,70"	23° 26' 17"	14m 31s
23:00	203° 35' 55"	-0,38"	201° 50' 30"	-9° 09' 45"	0,9967985	16' 02,71"	23° 26' 17"	14m 32s
24:00	203° 38' 24"	-0,38"	201° 52' 50"	-9° 10' 40"	0,9967865	16' 02,72"	23° 26' 17"	14m 32s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	263° 35' 30"	-4° 36' 30"	262° 46' 09"	-27° 53' 09"	54' 16"	14' 47,12"	275° 26' 05"	25,90%
01:00	264° 05' 16"	-4° 35' 22"	263° 19' 44"	-27° 53' 26"	54' 15"	14' 47,02"	275° 09' 18"	26,25%
02:00	264° 35' 00"	-4° 34' 12"	263° 53' 18"	-27° 53' 35"	54' 15"	14' 46,92"	274° 52' 32"	26,59%
03:00	265° 04' 44"	-4° 33' 01"	264° 26' 51"	-27° 53' 36"	54' 15"	14' 46,83"	274° 35' 48"	26,94%
04:00	265° 34' 27"	-4° 31' 49"	265° 00' 24"	-27° 53' 29"	54' 14"	14' 46,74"	274° 19' 06"	27,29%
05:00	266° 04' 10"	-4° 30' 35"	265° 33' 57"	-27° 53' 14"	54' 14"	14' 46,65"	274° 02' 26"	27,65%
06:00	266° 33' 52"	-4° 29' 20"	266° 07' 28"	-27° 52' 51"	54' 14"	14' 46,57"	273° 45' 48"	28,00%
07:00	267° 03' 33"	-4° 28' 04"	266° 40' 59"	-27° 52' 19"	54' 14"	14' 46,49"	273° 29' 12"	28,35%
08:00	267° 33' 14"	-4° 26' 47"	267° 14' 29"	-27° 51' 40"	54' 13"	14' 46,42"	273° 12' 39"	28,71%
09:00	268° 02' 55"	-4° 25' 29"	267° 47' 58"	-27° 50' 52"	54' 13"	14' 46,36"	272° 56' 07"	29,07%
10:00	268° 32' 35"	-4° 24' 10"	268° 21' 26"	-27° 49' 57"	54' 13"	14' 46,29"	272° 39' 38"	29,42%
11:00	269° 02' 14"	-4° 22' 49"	268° 54' 53"	-27° 48' 53"	54' 13"	14' 46,24"	272° 23' 11"	29,78%
12:00	269° 31' 53"	-4° 21' 27"	269° 28' 19"	-27° 47' 41"	54' 12"	14' 46,18"	272° 06' 46"	30,14%
13:00	270° 01' 32"	-4° 20' 04"	270° 01' 44"	-27° 46' 21"	54' 12"	14' 46,13"	271° 50' 24"	30,51%
14:00	270° 31' 10"	-4° 18' 40"	270° 35' 07"	-27° 44' 53"	54' 12"	14' 46,09"	271° 34' 05"	30,87%
15:00	271° 00' 48"	-4° 17' 15"	271° 08' 30"	-27° 43' 17"	54' 12"	14' 46,05"	271° 17' 49"	31,23%
16:00	271° 30' 26"	-4° 15' 48"	271° 41' 51"	-27° 41' 33"	54' 12"	14' 46,01"	271° 01' 35"	31,60%
17:00	272° 00' 03"	-4° 14' 21"	272° 15' 11"	-27° 39' 42"	54' 12"	14' 45,98"	270° 45' 24"	31,96%
18:00	272° 29' 40"	-4° 12' 52"	272° 48' 29"	-27° 37' 42"	54' 12"	14' 45,96"	270° 29' 16"	32,33%
19:00	272° 59' 16"	-4° 11' 23"	273° 21' 46"	-27° 35' 34"	54' 11"	14' 45,94"	270° 13' 10"	32,70%
20:00	273° 28' 52"	-4° 09' 52"	273° 55' 01"	-27° 33' 18"	54' 11"	14' 45,92"	269° 57' 08"	33,07%
21:00	273° 58' 28"	-4° 08' 20"	274° 28' 14"	-27° 30' 55"	54' 11"	14' 45,91"	269° 41' 09"	33,44%
22:00	274° 28' 04"	-4° 06' 47"	275° 01' 26"	-27° 28' 23"	54' 11"	14' 45,90"	269° 25' 14"	33,81%
23:00	274° 57' 39"	-4° 05' 13"	275° 34' 37"	-27° 25' 44"	54' 11"	14' 45,90"	269° 09' 21"	34,18%
24:00	275° 27' 15"	-4° 03' 37"	276° 07' 45"	-27° 22' 57"	54' 11"	14' 45,90"	268° 53' 32"	34,56%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	203° 38' 24"	-0,38"	201° 52' 50"	-9° 10' 40"	0,9967865	16' 02,72"	23° 26' 17"	14m 32s
01:00	203° 40' 53"	-0,37"	201° 55' 10"	-9° 11' 35"	0,9967745	16' 02,74"	23° 26' 17"	14m 33s
02:00	203° 43' 22"	-0,37"	201° 57' 31"	-9° 12' 30"	0,9967625	16' 02,75"	23° 26' 17"	14m 33s
03:00	203° 45' 51"	-0,37"	201° 59' 51"	-9° 13' 25"	0,9967505	16' 02,76"	23° 26' 17"	14m 34s
04:00	203° 48' 19"	-0,36"	202° 02' 11"	-9° 14' 19"	0,9967385	16' 02,77"	23° 26' 17"	14m 34s
05:00	203° 50' 48"	-0,36"	202° 04' 31"	-9° 15' 14"	0,9967265	16' 02,78"	23° 26' 17"	14m 35s
06:00	203° 53' 17"	-0,36"	202° 06' 51"	-9° 16' 09"	0,9967145	16' 02,79"	23° 26' 17"	14m 35s
07:00	203° 55' 46"	-0,35"	202° 09' 11"	-9° 17' 04"	0,9967025	16' 02,80"	23° 26' 17"	14m 36s
08:00	203° 58' 15"	-0,35"	202° 11' 32"	-9° 17' 59"	0,9966905	16' 02,82"	23° 26' 17"	14m 36s
09:00	204° 00' 44"	-0,35"	202° 13' 52"	-9° 18' 54"	0,9966785	16' 02,83"	23° 26' 17"	14m 37s
10:00	204° 03' 12"	-0,34"	202° 16' 12"	-9° 19' 48"	0,9966666	16' 02,84"	23° 26' 17"	14m 37s
11:00	204° 05' 41"	-0,34"	202° 18' 32"	-9° 20' 43"	0,9966546	16' 02,85"	23° 26' 17"	14m 38s
12:00	204° 08' 10"	-0,34"	202° 20' 52"	-9° 21' 38"	0,9966426	16' 02,86"	23° 26' 17"	14m 38s
13:00	204° 10' 39"	-0,33"	202° 23' 13"	-9° 22' 33"	0,9966306	16' 02,87"	23° 26' 17"	14m 39s
14:00	204° 13' 08"	-0,33"	202° 25' 33"	-9° 23' 27"	0,9966186	16' 02,89"	23° 26' 17"	14m 39s
15:00	204° 15' 37"	-0,33"	202° 27' 53"	-9° 24' 22"	0,9966066	16' 02,90"	23° 26' 17"	14m 40s
16:00	204° 18' 05"	-0,32"	202° 30' 14"	-9° 25' 17"	0,9965946	16' 02,91"	23° 26' 17"	14m 40s
17:00	204° 20' 34"	-0,32"	202° 32' 34"	-9° 26' 12"	0,9965827	16' 02,92"	23° 26' 17"	14m 41s
18:00	204° 23' 03"	-0,31"	202° 34' 54"	-9° 27' 06"	0,9965707	16' 02,93"	23° 26' 17"	14m 41s
19:00	204° 25' 32"	-0,31"	202° 37' 15"	-9° 28' 01"	0,9965587	16' 02,94"	23° 26' 17"	14m 42s
20:00	204° 28' 01"	-0,31"	202° 39' 35"	-9° 28' 56"	0,9965467	16' 02,96"	23° 26' 17"	14m 42s
21:00	204° 30' 30"	-0,30"	202° 41' 56"	-9° 29' 50"	0,9965347	16' 02,97"	23° 26' 17"	14m 43s
22:00	204° 32' 59"	-0,30"	202° 44' 16"	-9° 30' 45"	0,9965228	16' 02,98"	23° 26' 17"	14m 43s
23:00	204° 35' 27"	-0,29"	202° 46' 36"	-9° 31' 39"	0,9965108	16' 02,99"	23° 26' 17"	14m 44s
24:00	204° 37' 56"	-0,29"	202° 48' 57"	-9° 32' 34"	0,9964988	16' 03,00"	23° 26' 17"	14m 44s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	275° 27' 15"	-4° 03' 37"	276° 07' 45"	-27° 22' 57"	54' 11"	14' 45,90"	268° 53' 32"	34,56%
01:00	275° 56' 50"	-4° 02' 01"	276° 40' 52"	-27° 20' 02"	54' 11"	14' 45,91"	268° 37' 46"	34,93%
02:00	276° 26' 24"	-4° 00' 24"	277° 13' 57"	-27° 16' 59"	54' 11"	14' 45,92"	268° 22' 04"	35,31%
03:00	276° 55' 59"	-3° 58' 45"	277° 47' 00"	-27° 13' 48"	54' 12"	14' 45,94"	268° 06' 26"	35,68%
04:00	277° 25' 34"	-3° 57' 05"	278° 20' 01"	-27° 10' 30"	54' 12"	14' 45,96"	267° 50' 51"	36,06%
05:00	277° 55' 08"	-3° 55' 25"	278° 53' 00"	-27° 07' 04"	54' 12"	14' 45,99"	267° 35' 20"	36,44%
06:00	278° 24' 43"	-3° 53' 43"	279° 25' 58"	-27° 03' 30"	54' 12"	14' 46,02"	267° 19' 52"	36,82%
07:00	278° 54' 17"	-3° 52' 01"	279° 58' 53"	-26° 59' 49"	54' 12"	14' 46,06"	267° 04' 29"	37,19%
08:00	279° 23' 51"	-3° 50' 17"	280° 31' 46"	-26° 55' 59"	54' 12"	14' 46,10"	266° 49' 09"	37,57%
09:00	279° 53' 25"	-3° 48' 32"	281° 04' 36"	-26° 52' 03"	54' 12"	14' 46,14"	266° 33' 54"	37,96%
10:00	280° 23' 00"	-3° 46' 46"	281° 37' 25"	-26° 47' 58"	54' 12"	14' 46,20"	266° 18' 42"	38,34%
11:00	280° 52' 34"	-3° 44' 59"	282° 10' 11"	-26° 43' 46"	54' 13"	14' 46,25"	266° 03' 35"	38,72%
12:00	281° 22' 08"	-3° 43' 12"	282° 42' 55"	-26° 39' 27"	54' 13"	14' 46,31"	265° 48' 32"	39,10%
13:00	281° 51' 43"	-3° 41' 23"	283° 15' 37"	-26° 35' 00"	54' 13"	14' 46,38"	265° 33' 33"	39,49%
14:00	282° 21' 17"	-3° 39' 33"	283° 48' 16"	-26° 30' 25"	54' 13"	14' 46,45"	265° 18' 39"	39,87%
15:00	282° 50' 52"	-3° 37' 42"	284° 20' 53"	-26° 25' 43"	54' 14"	14' 46,52"	265° 03' 49"	40,26%
16:00	283° 20' 26"	-3° 35' 50"	284° 53' 28"	-26° 20' 54"	54' 14"	14' 46,60"	264° 49' 04"	40,64%
17:00	283° 50' 01"	-3° 33' 58"	285° 26' 00"	-26° 15' 57"	54' 14"	14' 46,69"	264° 34' 23"	41,03%
18:00	284° 19' 36"	-3° 32' 04"	285° 58' 30"	-26° 10' 53"	54' 15"	14' 46,78"	264° 19' 46"	41,42%
19:00	284° 49' 12"	-3° 30' 09"	286° 30' 57"	-26° 05' 42"	54' 15"	14' 46,88"	264° 05' 15"	41,80%
20:00	285° 18' 47"	-3° 28' 13"	287° 03' 22"	-26° 00' 23"	54' 15"	14' 46,98"	263° 50' 48"	42,19%
21:00	285° 48' 23"	-3° 26' 17"	287° 35' 44"	-25° 54' 57"	54' 16"	14' 47,08"	263° 36' 26"	42,58%
22:00	286° 17' 59"	-3° 24' 19"	288° 08' 03"	-25° 49' 23"	54' 16"	14' 47,19"	263° 22' 09"	42,97%
23:00	286° 47' 35"	-3° 22' 21"	288° 40' 20"	-25° 43' 43"	54' 17"	14' 47,31"	263° 07' 57"	43,36%
24:00	287° 17' 11"	-3° 20' 21"	289° 12' 34"	-25° 37' 55"	54' 17"	14' 47,43"	262° 53' 50"	43,75%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	204° 37' 56"	-0,29"	202° 48' 57"	-9° 32' 34"	0,9964988	16' 03,00"	23° 26' 17"	14m 44s
01:00	204° 40' 25"	-0,29"	202° 51' 17"	-9° 33' 29"	0,9964868	16' 03,01"	23° 26' 17"	14m 45s
02:00	204° 42' 54"	-0,28"	202° 53' 38"	-9° 34' 23"	0,9964749	16' 03,02"	23° 26' 17"	14m 45s
03:00	204° 45' 23"	-0,28"	202° 55' 58"	-9° 35' 18"	0,9964629	16' 03,04"	23° 26' 17"	14m 46s
04:00	204° 47' 52"	-0,27"	202° 58' 19"	-9° 36' 12"	0,9964509	16' 03,05"	23° 26' 17"	14m 46s
05:00	204° 50' 21"	-0,27"	203° 00' 39"	-9° 37' 07"	0,9964390	16' 03,06"	23° 26' 17"	14m 47s
06:00	204° 52' 50"	-0,26"	203° 03' 00"	-9° 38' 01"	0,9964270	16' 03,07"	23° 26' 17"	14m 47s
07:00	204° 55' 19"	-0,26"	203° 05' 20"	-9° 38' 56"	0,9964150	16' 03,08"	23° 26' 17"	14m 48s
08:00	204° 57' 47"	-0,26"	203° 07' 41"	-9° 39' 50"	0,9964031	16' 03,09"	23° 26' 17"	14m 48s
09:00	205° 00' 16"	-0,25"	203° 10' 02"	-9° 40' 45"	0,9963911	16' 03,11"	23° 26' 17"	14m 49s
10:00	205° 02' 45"	-0,25"	203° 12' 22"	-9° 41' 39"	0,9963792	16' 03,12"	23° 26' 17"	14m 49s
11:00	205° 05' 14"	-0,24"	203° 14' 43"	-9° 42' 33"	0,9963672	16' 03,13"	23° 26' 17"	14m 50s
12:00	205° 07' 43"	-0,24"	203° 17' 03"	-9° 43' 28"	0,9963553	16' 03,14"	23° 26' 17"	14m 50s
13:00	205° 10' 12"	-0,23"	203° 19' 24"	-9° 44' 22"	0,9963433	16' 03,15"	23° 26' 17"	14m 50s
14:00	205° 12' 41"	-0,23"	203° 21' 45"	-9° 45' 17"	0,9963314	16' 03,16"	23° 26' 17"	14m 51s
15:00	205° 15' 10"	-0,23"	203° 24' 05"	-9° 46' 11"	0,9963194	16' 03,18"	23° 26' 17"	14m 51s
16:00	205° 17' 39"	-0,22"	203° 26' 26"	-9° 47' 05"	0,9963075	16' 03,19"	23° 26' 17"	14m 52s
17:00	205° 20' 08"	-0,22"	203° 28' 47"	-9° 48' 00"	0,9962955	16' 03,20"	23° 26' 17"	14m 52s
18:00	205° 22' 37"	-0,21"	203° 31' 07"	-9° 48' 54"	0,9962836	16' 03,21"	23° 26' 17"	14m 53s
19:00	205° 25' 05"	-0,21"	203° 33' 28"	-9° 49' 48"	0,9962716	16' 03,22"	23° 26' 17"	14m 53s
20:00	205° 27' 34"	-0,20"	203° 35' 49"	-9° 50' 43"	0,9962597	16' 03,23"	23° 26' 17"	14m 54s
21:00	205° 30' 03"	-0,20"	203° 38' 10"	-9° 51' 37"	0,9962477	16' 03,24"	23° 26' 17"	14m 54s
22:00	205° 32' 32"	-0,19"	203° 40' 31"	-9° 52' 31"	0,9962358	16' 03,26"	23° 26' 17"	14m 55s
23:00	205° 35' 01"	-0,19"	203° 42' 51"	-9° 53' 25"	0,9962239	16' 03,27"	23° 26' 17"	14m 55s
24:00	205° 37' 30"	-0,18"	203° 45' 12"	-9° 54' 20"	0,9962119	16' 03,28"	23° 26' 17"	14m 56s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	287° 17' 11"	-3° 20' 21"	289° 12' 34"	-25° 37' 55"	54' 17"	14' 47,43"	262° 53' 50"	43,75%
01:00	287° 46' 48"	-3° 18' 21"	289° 44' 46"	-25° 32' 00"	54' 17"	14' 47,55"	262° 39' 49"	44,14%
02:00	288° 16' 25"	-3° 16' 20"	290° 16' 55"	-25° 25' 58"	54' 18"	14' 47,68"	262° 25' 52"	44,53%
03:00	288° 46' 03"	-3° 14' 17"	290° 49' 01"	-25° 19' 49"	54' 18"	14' 47,82"	262° 12' 00"	44,93%
04:00	289° 15' 41"	-3° 12' 14"	291° 21' 04"	-25° 13' 32"	54' 19"	14' 47,96"	261° 58' 14"	45,32%
05:00	289° 45' 19"	-3° 10' 10"	291° 53' 05"	-25° 07' 09"	54' 19"	14' 48,10"	261° 44' 33"	45,71%
06:00	290° 14' 58"	-3° 08' 05"	292° 25' 03"	-25° 00' 39"	54' 20"	14' 48,25"	261° 30' 57"	46,10%
07:00	290° 44' 37"	-3° 06' 00"	292° 56' 58"	-24° 54' 02"	54' 21"	14' 48,40"	261° 17' 27"	46,50%
08:00	291° 14' 17"	-3° 03' 53"	293° 28' 50"	-24° 47' 18"	54' 21"	14' 48,56"	261° 04' 03"	46,89%
09:00	291° 43' 58"	-3° 01' 46"	294° 00' 39"	-24° 40' 27"	54' 22"	14' 48,73"	260° 50' 44"	47,29%
10:00	292° 13' 38"	-2° 59' 37"	294° 32' 26"	-24° 33' 29"	54' 22"	14' 48,90"	260° 37' 30"	47,68%
11:00	292° 43' 20"	-2° 57' 28"	295° 04' 10"	-24° 26' 24"	54' 23"	14' 49,07"	260° 24' 23"	48,07%
12:00	293° 13' 02"	-2° 55' 18"	295° 35' 51"	-24° 19' 13"	54' 24"	14' 49,25"	260° 11' 21"	48,47%
13:00	293° 42' 44"	-2° 53' 07"	296° 07' 29"	-24° 11' 54"	54' 24"	14' 49,44"	259° 58' 24"	48,86%
14:00	294° 12' 28"	-2° 50' 55"	296° 39' 04"	-24° 04' 30"	54' 25"	14' 49,63"	259° 45' 34"	49,26%
15:00	294° 42' 12"	-2° 48' 43"	297° 10' 37"	-23° 56' 58"	54' 26"	14' 49,82"	259° 32' 49"	49,66%
16:00	295° 11' 56"	-2° 46' 30"	297° 42' 06"	-23° 49' 20"	54' 26"	14' 50,02"	259° 20' 11"	50,05%
17:00	295° 41' 41"	-2° 44' 15"	298° 13' 33"	-23° 41' 35"	54' 27"	14' 50,22"	259° 07' 38"	50,45%
18:00	296° 11' 27"	-2° 42' 00"	298° 44' 56"	-23° 33' 44"	54' 28"	14' 50,43"	258° 55' 12"	50,84%
19:00	296° 41' 14"	-2° 39' 45"	299° 16' 17"	-23° 25' 46"	54' 29"	14' 50,65"	258° 42' 51"	51,24%
20:00	297° 11' 01"	-2° 37' 28"	299° 47' 35"	-23° 17' 42"	54' 30"	14' 50,87"	258° 30' 37"	51,64%
21:00	297° 40' 50"	-2° 35' 11"	300° 18' 50"	-23° 09' 31"	54' 30"	14' 51,09"	258° 18' 29"	52,03%
22:00	298° 10' 39"	-2° 32' 53"	300° 50' 03"	-23° 01' 14"	54' 31"	14' 51,32"	258° 06' 27"	52,43%
23:00	298° 40' 29"	-2° 30' 34"	301° 21' 12"	-22° 52' 50"	54' 32"	14' 51,55"	257° 54' 31"	52,83%
24:00	299° 10' 19"	-2° 28' 14"	301° 52' 19"	-22° 44' 20"	54' 33"	14' 51,79"	257° 42' 42"	53,22%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	205° 37' 30"	-0,18"	203° 45' 12"	-9° 54' 20"	0,9962119	16' 03,28"	23° 26' 17"	14m 56s
01:00	205° 39' 59"	-0,18"	203° 47' 33"	-9° 55' 14"	0,9962000	16' 03,29"	23° 26' 17"	14m 56s
02:00	205° 42' 28"	-0,17"	203° 49' 54"	-9° 56' 08"	0,9961881	16' 03,30"	23° 26' 17"	14m 57s
03:00	205° 44' 57"	-0,17"	203° 52' 15"	-9° 57' 02"	0,9961761	16' 03,31"	23° 26' 17"	14m 57s
04:00	205° 47' 26"	-0,16"	203° 54' 36"	-9° 57' 56"	0,9961642	16' 03,33"	23° 26' 17"	14m 58s
05:00	205° 49' 55"	-0,16"	203° 56' 56"	-9° 58' 51"	0,9961523	16' 03,34"	23° 26' 17"	14m 58s
06:00	205° 52' 24"	-0,15"	203° 59' 17"	-9° 59' 45"	0,9961404	16' 03,35"	23° 26' 17"	14m 59s
07:00	205° 54' 53"	-0,15"	204° 01' 38"	-10° 00' 39"	0,9961285	16' 03,36"	23° 26' 17"	14m 59s
08:00	205° 57' 22"	-0,15"	204° 03' 59"	-10° 01' 33"	0,9961165	16' 03,37"	23° 26' 17"	14m 59s
09:00	205° 59' 51"	-0,14"	204° 06' 20"	-10° 02' 27"	0,9961046	16' 03,38"	23° 26' 17"	15m 00s
10:00	206° 02' 20"	-0,14"	204° 08' 41"	-10° 03' 21"	0,9960927	16' 03,39"	23° 26' 17"	15m 00s
11:00	206° 04' 49"	-0,13"	204° 11' 02"	-10° 04' 15"	0,9960808	16' 03,41"	23° 26' 17"	15m 01s
12:00	206° 07' 18"	-0,13"	204° 13' 23"	-10° 05' 09"	0,9960689	16' 03,42"	23° 26' 17"	15m 01s
13:00	206° 09' 47"	-0,12"	204° 15' 44"	-10° 06' 03"	0,9960570	16' 03,43"	23° 26' 17"	15m 02s
14:00	206° 12' 16"	-0,12"	204° 18' 05"	-10° 06' 57"	0,9960451	16' 03,44"	23° 26' 17"	15m 02s
15:00	206° 14' 45"	-0,11"	204° 20' 26"	-10° 07' 51"	0,9960332	16' 03,45"	23° 26' 17"	15m 03s
16:00	206° 17' 14"	-0,10"	204° 22' 47"	-10° 08' 45"	0,9960213	16' 03,46"	23° 26' 17"	15m 03s
17:00	206° 19' 43"	-0,10"	204° 25' 09"	-10° 09' 39"	0,9960094	16' 03,47"	23° 26' 17"	15m 04s
18:00	206° 22' 12"	-0,09"	204° 27' 30"	-10° 10' 33"	0,9959975	16' 03,49"	23° 26' 17"	15m 04s
19:00	206° 24' 41"	-0,09"	204° 29' 51"	-10° 11' 27"	0,9959856	16' 03,50"	23° 26' 17"	15m 04s
20:00	206° 27' 10"	-0,08"	204° 32' 12"	-10° 12' 21"	0,9959737	16' 03,51"	23° 26' 17"	15m 05s
21:00	206° 29' 39"	-0,08"	204° 34' 33"	-10° 13' 15"	0,9959618	16' 03,52"	23° 26' 17"	15m 05s
22:00	206° 32' 08"	-0,07"	204° 36' 54"	-10° 14' 09"	0,9959499	16' 03,53"	23° 26' 17"	15m 06s
23:00	206° 34' 37"	-0,07"	204° 39' 15"	-10° 15' 03"	0,9959380	16' 03,54"	23° 26' 17"	15m 06s
24:00	206° 37' 06"	-0,06"	204° 41' 37"	-10° 15' 56"	0,9959262	16' 03,56"	23° 26' 17"	15m 07s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	299° 10' 19"	-2° 28' 14"	301° 52' 19"	-22° 44' 20"	54' 33"	14' 51,79"	257° 42' 42"	53,22%
01:00	299° 40' 11"	-2° 25' 54"	302° 23' 22"	-22° 35' 44"	54' 34"	14' 52,03"	257° 30' 59"	53,62%
02:00	300° 10' 04"	-2° 23' 33"	302° 54' 23"	-22° 27' 02"	54' 35"	14' 52,28"	257° 19' 23"	54,02%
03:00	300° 39' 57"	-2° 21' 11"	303° 25' 21"	-22° 18' 13"	54' 36"	14' 52,54"	257° 07' 53"	54,42%
04:00	301° 09' 52"	-2° 18' 49"	303° 56' 16"	-22° 09' 18"	54' 37"	14' 52,79"	256° 56' 29"	54,81%
05:00	301° 39' 47"	-2° 16' 25"	304° 27' 09"	-22° 00' 17"	54' 38"	14' 53,06"	256° 45' 12"	55,21%
06:00	302° 09' 43"	-2° 14' 01"	304° 57' 58"	-21° 51' 10"	54' 39"	14' 53,32"	256° 34' 02"	55,61%
07:00	302° 39' 41"	-2° 11' 37"	305° 28' 45"	-21° 41' 57"	54' 40"	14' 53,60"	256° 22' 58"	56,00%
08:00	303° 09' 39"	-2° 09' 11"	305° 59' 29"	-21° 32' 38"	54' 41"	14' 53,87"	256° 12' 01"	56,40%
09:00	303° 39' 39"	-2° 06' 45"	306° 30' 10"	-21° 23' 13"	54' 42"	14' 54,15"	256° 01' 11"	56,80%
10:00	304° 09' 40"	-2° 04' 19"	307° 00' 48"	-21° 13' 42"	54' 43"	14' 54,44"	255° 50' 28"	57,19%
11:00	304° 39' 41"	-2° 01' 51"	307° 31' 24"	-21° 04' 05"	54' 44"	14' 54,73"	255° 39' 51"	57,59%
12:00	305° 09' 44"	-1° 59' 23"	308° 01' 57"	-20° 54' 22"	54' 45"	14' 55,03"	255° 29' 21"	57,98%
13:00	305° 39' 48"	-1° 56' 55"	308° 32' 27"	-20° 44' 33"	54' 46"	14' 55,33"	255° 18' 59"	58,38%
14:00	306° 09' 54"	-1° 54' 25"	309° 02' 54"	-20° 34' 39"	54' 47"	14' 55,63"	255° 08' 43"	58,77%
15:00	306° 40' 00"	-1° 51' 55"	309° 33' 19"	-20° 24' 38"	54' 48"	14' 55,94"	254° 58' 34"	59,17%
16:00	307° 10' 08"	-1° 49' 25"	310° 03' 42"	-20° 14' 33"	54' 49"	14' 56,26"	254° 48' 32"	59,56%
17:00	307° 40' 17"	-1° 46' 54"	310° 34' 01"	-20° 04' 21"	54' 51"	14' 56,58"	254° 38' 37"	59,96%
18:00	308° 10' 27"	-1° 44' 22"	311° 04' 18"	-19° 54' 04"	54' 52"	14' 56,90"	254° 28' 50"	60,35%
19:00	308° 40' 38"	-1° 41' 50"	311° 34' 33"	-19° 43' 41"	54' 53"	14' 57,23"	254° 19' 09"	60,75%
20:00	309° 10' 51"	-1° 39' 17"	312° 04' 45"	-19° 33' 13"	54' 54"	14' 57,56"	254° 09' 36"	61,14%
21:00	309° 41' 05"	-1° 36' 43"	312° 34' 54"	-19° 22' 39"	54' 55"	14' 57,90"	254° 00' 10"	61,53%
22:00	310° 11' 21"	-1° 34' 09"	313° 05' 01"	-19° 12' 00"	54' 57"	14' 58,24"	253° 50' 52"	61,92%
23:00	310° 41' 38"	-1° 31' 35"	313° 35' 06"	-19° 01' 15"	54' 58"	14' 58,58"	253° 41' 40"	62,32%
24:00	311° 11' 56"	-1° 28' 59"	314° 05' 08"	-18° 50' 25"	54' 59"	14' 58,94"	253° 32' 37"	62,71%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	206° 37' 06"	-0,06"	204° 41' 37"	-10° 15' 56"	0,9959262	16' 03,56"	23° 26' 17"	15m 07s
01:00	206° 39' 35"	-0,06"	204° 43' 58"	-10° 16' 50"	0,9959143	16' 03,57"	23° 26' 17"	15m 07s
02:00	206° 42' 04"	-0,05"	204° 46' 19"	-10° 17' 44"	0,9959024	16' 03,58"	23° 26' 17"	15m 08s
03:00	206° 44' 33"	-0,05"	204° 48' 40"	-10° 18' 38"	0,9958905	16' 03,59"	23° 26' 17"	15m 08s
04:00	206° 47' 02"	-0,04"	204° 51' 02"	-10° 19' 32"	0,9958787	16' 03,60"	23° 26' 17"	15m 08s
05:00	206° 49' 31"	-0,04"	204° 53' 23"	-10° 20' 26"	0,9958668	16' 03,61"	23° 26' 17"	15m 09s
06:00	206° 52' 00"	-0,03"	204° 55' 44"	-10° 21' 19"	0,9958549	16' 03,62"	23° 26' 17"	15m 09s
07:00	206° 54' 29"	-0,03"	204° 58' 05"	-10° 22' 13"	0,9958431	16' 03,64"	23° 26' 17"	15m 10s
08:00	206° 56' 58"	-0,02"	205° 00' 27"	-10° 23' 07"	0,9958312	16' 03,65"	23° 26' 17"	15m 10s
09:00	206° 59' 27"	-0,02"	205° 02' 48"	-10° 24' 00"	0,9958193	16' 03,66"	23° 26' 17"	15m 11s
10:00	207° 01' 56"	-0,01"	205° 05' 09"	-10° 24' 54"	0,9958075	16' 03,67"	23° 26' 17"	15m 11s
11:00	207° 04' 25"	-0,01"	205° 07' 31"	-10° 25' 48"	0,9957956	16' 03,68"	23° 26' 17"	15m 11s
12:00	207° 06' 54"	-0,00"	205° 09' 52"	-10° 26' 42"	0,9957838	16' 03,69"	23° 26' 17"	15m 12s
13:00	207° 09' 23"	0,00"	205° 12' 14"	-10° 27' 35"	0,9957719	16' 03,70"	23° 26' 17"	15m 12s
14:00	207° 11' 52"	0,01"	205° 14' 35"	-10° 28' 29"	0,9957601	16' 03,72"	23° 26' 17"	15m 13s
15:00	207° 14' 21"	0,02"	205° 16' 57"	-10° 29' 22"	0,9957483	16' 03,73"	23° 26' 17"	15m 13s
16:00	207° 16' 50"	0,02"	205° 19' 18"	-10° 30' 16"	0,9957364	16' 03,74"	23° 26' 17"	15m 14s
17:00	207° 19' 20"	0,03"	205° 21' 39"	-10° 31' 10"	0,9957246	16' 03,75"	23° 26' 17"	15m 14s
18:00	207° 21' 49"	0,03"	205° 24' 01"	-10° 32' 03"	0,9957128	16' 03,76"	23° 26' 17"	15m 14s
19:00	207° 24' 18"	0,04"	205° 26' 22"	-10° 32' 57"	0,9957009	16' 03,77"	23° 26' 17"	15m 15s
20:00	207° 26' 47"	0,04"	205° 28' 44"	-10° 33' 50"	0,9956891	16' 03,78"	23° 26' 17"	15m 15s
21:00	207° 29' 16"	0,05"	205° 31' 06"	-10° 34' 44"	0,9956773	16' 03,80"	23° 26' 17"	15m 16s
22:00	207° 31' 45"	0,05"	205° 33' 27"	-10° 35' 37"	0,9956655	16' 03,81"	23° 26' 17"	15m 16s
23:00	207° 34' 14"	0,06"	205° 35' 49"	-10° 36' 31"	0,9956536	16' 03,82"	23° 26' 17"	15m 17s
24:00	207° 36' 43"	0,06"	205° 38' 10"	-10° 37' 24"	0,9956418	16' 03,83"	23° 26' 17"	15m 17s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	311° 11' 56"	-1° 28' 59"	314° 05' 08"	-18° 50' 25"	54' 59"	14' 58,94"	253° 32' 37"	62,71%
01:00	311° 42' 16"	-1° 26' 24"	314° 35' 07"	-18° 39' 29"	55' 01"	14' 59,29"	253° 23' 40"	63,10%
02:00	312° 12' 37"	-1° 23' 47"	315° 05' 04"	-18° 28' 29"	55' 02"	15' 00,00"	253° 14' 51"	63,49%
03:00	312° 43' 00"	-1° 21' 11"	315° 34' 59"	-18° 17' 23"	55' 03"	15' 00,01"	253° 06' 10"	63,88%
04:00	313° 13' 24"	-1° 18' 33"	316° 04' 52"	-18° 06' 11"	55' 05"	15' 00,38"	252° 57' 36"	64,27%
05:00	313° 43' 50"	-1° 15' 56"	316° 34' 43"	-17° 54' 55"	55' 06"	15' 00,75"	252° 49' 09"	64,66%
06:00	314° 14' 17"	-1° 13' 17"	317° 04' 31"	-17° 43' 34"	55' 07"	15' 01,13"	252° 40' 51"	65,05%
07:00	314° 44' 46"	-1° 10' 39"	317° 34' 17"	-17° 32' 07"	55' 09"	15' 01,51"	252° 32' 40"	65,43%
08:00	315° 15' 17"	-1° 07' 59"	318° 04' 00"	-17° 20' 35"	55' 10"	15' 01,90"	252° 24' 36"	65,82%
09:00	315° 45' 49"	-1° 05' 20"	318° 33' 42"	-17° 08' 59"	55' 11"	15' 02,28"	252° 16' 41"	66,21%
10:00	316° 16' 22"	-1° 02' 40"	319° 03' 22"	-16° 57' 17"	55' 13"	15' 02,68"	252° 08' 53"	66,59%
11:00	316° 46' 58"	-0° 59' 59"	319° 32' 59"	-16° 45' 31"	55' 14"	15' 03,08"	252° 01' 13"	66,98%
12:00	317° 17' 35"	-0° 57' 18"	320° 02' 35"	-16° 33' 39"	55' 16"	15' 03,48"	251° 53' 42"	67,36%
13:00	317° 48' 13"	-0° 54' 37"	320° 32' 08"	-16° 21' 43"	55' 17"	15' 03,88"	251° 46' 18"	67,74%
14:00	318° 18' 54"	-0° 51' 55"	321° 01' 40"	-16° 09' 42"	55' 19"	15' 04,29"	251° 39' 02"	68,13%
15:00	318° 49' 36"	-0° 49' 13"	321° 31' 10"	-15° 57' 36"	55' 20"	15' 04,70"	251° 31' 54"	68,51%
16:00	319° 20' 20"	-0° 46' 30"	322° 00' 38"	-15° 45' 25"	55' 22"	15' 05,12"	251° 24' 54"	68,89%
17:00	319° 51' 06"	-0° 43' 47"	322° 30' 04"	-15° 33' 10"	55' 23"	15' 05,54"	251° 18' 03"	69,27%
18:00	320° 21' 53"	-0° 41' 04"	322° 59' 28"	-15° 20' 50"	55' 25"	15' 05,97"	251° 11' 19"	69,65%
19:00	320° 52' 43"	-0° 38' 20"	323° 28' 51"	-15° 08' 26"	55' 27"	15' 06,40"	251° 04' 44"	70,03%
20:00	321° 23' 34"	-0° 35' 36"	323° 58' 12"	-14° 55' 57"	55' 28"	15' 06,83"	250° 58' 17"	70,40%
21:00	321° 54' 27"	-0° 32' 52"	324° 27' 32"	-14° 43' 23"	55' 30"	15' 07,27"	250° 51' 59"	70,78%
22:00	322° 25' 22"	-0° 30' 07"	324° 56' 49"	-14° 30' 45"	55' 31"	15' 07,71"	250° 45' 49"	71,15%
23:00	322° 56' 19"	-0° 27' 22"	325° 26' 06"	-14° 18' 03"	55' 33"	15' 08,15"	250° 39' 48"	71,53%
24:00	323° 27' 18"	-0° 24' 37"	325° 55' 21"	-14° 05' 16"	55' 35"	15' 08,60"	250° 33' 55"	71,90%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	207° 36' 43"	0,06"	205° 38' 10"	-10° 37' 24"	0,9956418	16' 03,83"	23° 26' 17"	15m 17s
01:00	207° 39' 12"	0,07"	205° 40' 32"	-10° 38' 18"	0,9956300	16' 03,84"	23° 26' 17"	15m 17s
02:00	207° 41' 41"	0,08"	205° 42' 54"	-10° 39' 11"	0,9956182	16' 03,85"	23° 26' 17"	15m 18s
03:00	207° 44' 10"	0,08"	205° 45' 15"	-10° 40' 04"	0,9956064	16' 03,86"	23° 26' 17"	15m 18s
04:00	207° 46' 39"	0,09"	205° 47' 37"	-10° 40' 58"	0,9955946	16' 03,88"	23° 26' 17"	15m 19s
05:00	207° 49' 09"	0,09"	205° 49' 59"	-10° 41' 51"	0,9955828	16' 03,89"	23° 26' 17"	15m 19s
06:00	207° 51' 38"	0,10"	205° 52' 20"	-10° 42' 45"	0,9955710	16' 03,90"	23° 26' 17"	15m 19s
07:00	207° 54' 07"	0,10"	205° 54' 42"	-10° 43' 38"	0,9955592	16' 03,91"	23° 26' 17"	15m 20s
08:00	207° 56' 36"	0,11"	205° 57' 04"	-10° 44' 31"	0,9955474	16' 03,92"	23° 26' 17"	15m 20s
09:00	207° 59' 05"	0,11"	205° 59' 25"	-10° 45' 25"	0,9955356	16' 03,93"	23° 26' 17"	15m 21s
10:00	208° 01' 34"	0,12"	206° 01' 47"	-10° 46' 18"	0,9955239	16' 03,94"	23° 26' 17"	15m 21s
11:00	208° 04' 03"	0,12"	206° 04' 09"	-10° 47' 11"	0,9955121	16' 03,96"	23° 26' 17"	15m 21s
12:00	208° 06' 32"	0,13"	206° 06' 31"	-10° 48' 05"	0,9955003	16' 03,97"	23° 26' 17"	15m 22s
13:00	208° 09' 01"	0,14"	206° 08' 53"	-10° 48' 58"	0,9954885	16' 03,98"	23° 26' 17"	15m 22s
14:00	208° 11' 31"	0,14"	206° 11' 14"	-10° 49' 51"	0,9954768	16' 03,99"	23° 26' 17"	15m 23s
15:00	208° 14' 00"	0,15"	206° 13' 36"	-10° 50' 44"	0,9954650	16' 04,00"	23° 26' 17"	15m 23s
16:00	208° 16' 29"	0,15"	206° 15' 58"	-10° 51' 37"	0,9954532	16' 04,01"	23° 26' 17"	15m 23s
17:00	208° 18' 58"	0,16"	206° 18' 20"	-10° 52' 31"	0,9954415	16' 04,02"	23° 26' 17"	15m 24s
18:00	208° 21' 27"	0,16"	206° 20' 42"	-10° 53' 24"	0,9954297	16' 04,04"	23° 26' 17"	15m 24s
19:00	208° 23' 56"	0,17"	206° 23' 04"	-10° 54' 17"	0,9954180	16' 04,05"	23° 26' 17"	15m 25s
20:00	208° 26' 25"	0,17"	206° 25' 26"	-10° 55' 10"	0,9954062	16' 04,06"	23° 26' 17"	15m 25s
21:00	208° 28' 55"	0,18"	206° 27' 48"	-10° 56' 03"	0,9953945	16' 04,07"	23° 26' 17"	15m 25s
22:00	208° 31' 24"	0,18"	206° 30' 10"	-10° 56' 56"	0,9953827	16' 04,08"	23° 26' 17"	15m 26s
23:00	208° 33' 53"	0,19"	206° 32' 32"	-10° 57' 49"	0,9953710	16' 04,09"	23° 26' 17"	15m 26s
24:00	208° 36' 22"	0,20"	206° 34' 54"	-10° 58' 42"	0,9953593	16' 04,10"	23° 26' 17"	15m 27s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	323° 27' 18"	-0° 24' 37"	325° 55' 21"	-14° 05' 16"	55' 35"	15' 08,60"	250° 33' 55"	71,90%
01:00	323° 58' 18"	-0° 21' 51"	326° 24' 34"	-13° 52' 25"	55' 36"	15' 09,05"	250° 28' 10"	72,27%
02:00	324° 29' 21"	-0° 19' 06"	326° 53' 46"	-13° 39' 30"	55' 38"	15' 09,50"	250° 22' 35"	72,64%
03:00	325° 00' 26"	-0° 16' 19"	327° 22' 57"	-13° 26' 31"	55' 40"	15' 09,96"	250° 17' 08"	73,01%
04:00	325° 31' 32"	-0° 13' 33"	327° 52' 06"	-13° 13' 27"	55' 41"	15' 10,42"	250° 11' 49"	73,38%
05:00	326° 02' 41"	-0° 10' 47"	328° 21' 14"	-13° 00' 19"	55' 43"	15' 10,89"	250° 06' 40"	73,75%
06:00	326° 33' 52"	-0° 08' 00"	328° 50' 22"	-12° 47' 07"	55' 45"	15' 11,36"	250° 01' 40"	74,12%
07:00	327° 05' 05"	-0° 05' 13"	329° 19' 27"	-12° 33' 51"	55' 47"	15' 11,83"	249° 56' 48"	74,48%
08:00	327° 36' 19"	-0° 02' 26"	329° 48' 32"	-12° 20' 31"	55' 48"	15' 12,30"	249° 52' 06"	74,84%
09:00	328° 07' 36"	0° 00' 22"	330° 17' 36"	-12° 07' 07"	55' 50"	15' 12,78"	249° 47' 32"	75,21%
10:00	328° 38' 55"	0° 03' 09"	330° 46' 39"	-11° 53' 39"	55' 52"	15' 13,26"	249° 43' 08"	75,57%
11:00	329° 10' 17"	0° 05' 57"	331° 15' 41"	-11° 40' 07"	55' 54"	15' 13,75"	249° 38' 54"	75,93%
12:00	329° 41' 40"	0° 08' 45"	331° 44' 42"	-11° 26' 31"	55' 55"	15' 14,23"	249° 34' 48"	76,28%
13:00	330° 13' 06"	0° 11' 33"	332° 13' 43"	-11° 12' 52"	55' 57"	15' 14,72"	249° 30' 52"	76,64%
14:00	330° 44' 33"	0° 14' 21"	332° 42' 42"	-10° 59' 09"	55' 59"	15' 15,22"	249° 27' 06"	77,00%
15:00	331° 16' 03"	0° 17' 09"	333° 11' 41"	-10° 45' 22"	56' 01"	15' 15,71"	249° 23' 29"	77,35%
16:00	331° 47' 35"	0° 19' 58"	333° 40' 39"	-10° 31' 32"	56' 03"	15' 16,21"	249° 20' 01"	77,70%
17:00	332° 19' 10"	0° 22' 46"	334° 09' 37"	-10° 17' 37"	56' 04"	15' 16,71"	249° 16' 44"	78,05%
18:00	332° 50' 46"	0° 25' 35"	334° 38' 34"	-10° 03' 40"	56' 06"	15' 17,22"	249° 13' 36"	78,40%
19:00	333° 22' 25"	0° 28' 23"	335° 07' 31"	-9° 49' 39"	56' 08"	15' 17,73"	249° 10' 39"	78,75%
20:00	333° 54' 06"	0° 31' 12"	335° 36' 28"	-9° 35' 34"	56' 10"	15' 18,23"	249° 07' 51"	79,09%
21:00	334° 25' 50"	0° 34' 00"	336° 05' 24"	-9° 21' 26"	56' 12"	15' 18,75"	249° 05' 14"	79,44%
22:00	334° 57' 36"	0° 36' 49"	336° 34' 19"	-9° 07' 15"	56' 14"	15' 19,26"	249° 02' 46"	79,78%
23:00	335° 29' 24"	0° 39' 38"	337° 03' 15"	-8° 53' 00"	56' 16"	15' 19,78"	249° 00' 30"	80,12%
24:00	336° 01' 14"	0° 42' 26"	337° 32' 10"	-8° 38' 42"	56' 18"	15' 20,30"	248° 58' 23"	80,46%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	208° 36' 22"	0,20"	206° 34' 54"	-10° 58' 42"	0,9953593	16' 04,10"	23° 26' 17"	15m 27s
01:00	208° 38' 51"	0,20"	206° 37' 16"	-10° 59' 35"	0,9953475	16' 04,12"	23° 26' 17"	15m 27s
02:00	208° 41' 20"	0,21"	206° 39' 38"	-11° 00' 28"	0,9953358	16' 04,13"	23° 26' 17"	15m 27s
03:00	208° 43' 50"	0,21"	206° 42' 00"	-11° 01' 21"	0,9953241	16' 04,14"	23° 26' 17"	15m 28s
04:00	208° 46' 19"	0,22"	206° 44' 22"	-11° 02' 14"	0,9953124	16' 04,15"	23° 26' 17"	15m 28s
05:00	208° 48' 48"	0,22"	206° 46' 44"	-11° 03' 07"	0,9953006	16' 04,16"	23° 26' 17"	15m 29s
06:00	208° 51' 17"	0,23"	206° 49' 06"	-11° 04' 00"	0,9952889	16' 04,17"	23° 26' 17"	15m 29s
07:00	208° 53' 46"	0,23"	206° 51' 28"	-11° 04' 53"	0,9952772	16' 04,18"	23° 26' 17"	15m 29s
08:00	208° 56' 15"	0,24"	206° 53' 50"	-11° 05' 46"	0,9952655	16' 04,19"	23° 26' 17"	15m 30s
09:00	208° 58' 45"	0,24"	206° 56' 12"	-11° 06' 39"	0,9952538	16' 04,21"	23° 26' 17"	15m 30s
10:00	209° 01' 14"	0,25"	206° 58' 34"	-11° 07' 32"	0,9952421	16' 04,22"	23° 26' 17"	15m 30s
11:00	209° 03' 43"	0,25"	207° 00' 57"	-11° 08' 25"	0,9952304	16' 04,23"	23° 26' 17"	15m 31s
12:00	209° 06' 12"	0,26"	207° 03' 19"	-11° 09' 18"	0,9952187	16' 04,24"	23° 26' 17"	15m 31s
13:00	209° 08' 41"	0,26"	207° 05' 41"	-11° 10' 11"	0,9952071	16' 04,25"	23° 26' 17"	15m 32s
14:00	209° 11' 11"	0,27"	207° 08' 03"	-11° 11' 03"	0,9951954	16' 04,26"	23° 26' 17"	15m 32s
15:00	209° 13' 40"	0,28"	207° 10' 26"	-11° 11' 56"	0,9951837	16' 04,27"	23° 26' 17"	15m 32s
16:00	209° 16' 09"	0,28"	207° 12' 48"	-11° 12' 49"	0,9951720	16' 04,29"	23° 26' 17"	15m 33s
17:00	209° 18' 38"	0,29"	207° 15' 10"	-11° 13' 42"	0,9951604	16' 04,30"	23° 26' 17"	15m 33s
18:00	209° 21' 07"	0,29"	207° 17' 32"	-11° 14' 35"	0,9951487	16' 04,31"	23° 26' 17"	15m 33s
19:00	209° 23' 37"	0,30"	207° 19' 55"	-11° 15' 27"	0,9951370	16' 04,32"	23° 26' 17"	15m 34s
20:00	209° 26' 06"	0,30"	207° 22' 17"	-11° 16' 20"	0,9951254	16' 04,33"	23° 26' 17"	15m 34s
21:00	209° 28' 35"	0,31"	207° 24' 39"	-11° 17' 13"	0,9951137	16' 04,34"	23° 26' 17"	15m 35s
22:00	209° 31' 04"	0,31"	207° 27' 02"	-11° 18' 05"	0,9951021	16' 04,35"	23° 26' 17"	15m 35s
23:00	209° 33' 34"	0,32"	207° 29' 24"	-11° 18' 58"	0,9950904	16' 04,36"	23° 26' 17"	15m 35s
24:00	209° 36' 03"	0,32"	207° 31' 47"	-11° 19' 51"	0,9950788	16' 04,38"	23° 26' 17"	15m 36s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	336° 01' 14"	0° 42' 26"	337° 32' 10"	-8° 38' 42"	56' 18"	15' 20,30"	248° 58' 23"	80,46%
01:00	336° 33' 07"	0° 45' 15"	338° 01' 06"	-8° 24' 21"	56' 20"	15' 20,82"	248° 56' 28"	80,80%
02:00	337° 05' 02"	0° 48' 03"	338° 30' 01"	-8° 09' 57"	56' 21"	15' 21,35"	248° 54' 43"	81,13%
03:00	337° 37' 00"	0° 50' 52"	338° 58' 57"	-7° 55' 30"	56' 23"	15' 21,87"	248° 53' 09"	81,46%
04:00	338° 09' 00"	0° 53' 40"	339° 27' 52"	-7° 41' 00"	56' 25"	15' 22,40"	248° 51' 46"	81,80%
05:00	338° 41' 02"	0° 56' 29"	339° 56' 48"	-7° 26' 26"	56' 27"	15' 22,93"	248° 50' 34"	82,13%
06:00	339° 13' 07"	0° 59' 17"	340° 25' 43"	-7° 11' 50"	56' 29"	15' 23,46"	248° 49' 33"	82,45%
07:00	339° 45' 14"	1° 02' 05"	340° 54' 40"	-6° 57' 11"	56' 31"	15' 24,00"	248° 48' 43"	82,78%
08:00	340° 17' 24"	1° 04' 53"	341° 23' 36"	-6° 42' 29"	56' 33"	15' 24,53"	248° 48' 06"	83,10%
09:00	340° 49' 36"	1° 07' 41"	341° 52' 33"	-6° 27' 44"	56' 35"	15' 25,07"	248° 47' 40"	83,42%
10:00	341° 21' 50"	1° 10' 28"	342° 21' 30"	-6° 12' 57"	56' 37"	15' 25,61"	248° 47' 25"	83,74%
11:00	341° 54' 08"	1° 13' 16"	342° 50' 28"	-5° 58' 06"	56' 39"	15' 26,15"	248° 47' 23"	84,06%
12:00	342° 26' 27"	1° 16' 03"	343° 19' 27"	-5° 43' 14"	56' 41"	15' 26,70"	248° 47' 33"	84,37%
13:00	342° 58' 49"	1° 18' 50"	343° 48' 26"	-5° 28' 18"	56' 43"	15' 27,24"	248° 47' 56"	84,69%
14:00	343° 31' 14"	1° 21' 37"	344° 17' 26"	-5° 13' 20"	56' 45"	15' 27,79"	248° 48' 31"	85,00%
15:00	344° 03' 41"	1° 24' 24"	344° 46' 27"	-4° 58' 20"	56' 47"	15' 28,34"	248° 49' 19"	85,31%
16:00	344° 36' 11"	1° 27' 10"	345° 15' 29"	-4° 43' 17"	56' 49"	15' 28,89"	248° 50' 20"	85,61%
17:00	345° 08' 43"	1° 29' 56"	345° 44' 31"	-4° 28' 12"	56' 51"	15' 29,44"	248° 51' 34"	85,92%
18:00	345° 41' 18"	1° 32' 42"	346° 13' 35"	-4° 13' 05"	56' 53"	15' 29,99"	248° 53' 02"	86,22%
19:00	346° 13' 55"	1° 35' 27"	346° 42' 40"	-3° 57' 55"	56' 55"	15' 30,54"	248° 54' 43"	86,52%
20:00	346° 46' 35"	1° 38' 12"	347° 11' 45"	-3° 42' 44"	56' 57"	15' 31,09"	248° 56' 38"	86,81%
21:00	347° 19' 18"	1° 40' 57"	347° 40' 53"	-3° 27' 30"	56' 59"	15' 31,65"	248° 58' 48"	87,11%
22:00	347° 52' 03"	1° 43' 42"	348° 10' 01"	-3° 12' 14"	57' 01"	15' 32,20"	249° 01' 12"	87,40%
23:00	348° 24' 51"	1° 46' 26"	348° 39' 11"	-2° 56' 56"	57' 03"	15' 32,76"	249° 03' 50"	87,69%
24:00	348° 57' 41"	1° 49' 09"	349° 08' 22"	-2° 41' 37"	57' 05"	15' 33,32"	249° 06' 44"	87,98%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	209° 36' 03"	0,32"	207° 31' 47"	-11° 19' 51"	0,9950788	16' 04,38"	23° 26' 17"	15m 36s
01:00	209° 38' 32"	0,33"	207° 34' 09"	-11° 20' 43"	0,9950671	16' 04,39"	23° 26' 17"	15m 36s
02:00	209° 41' 01"	0,33"	207° 36' 32"	-11° 21' 36"	0,9950555	16' 04,40"	23° 26' 17"	15m 36s
03:00	209° 43' 30"	0,34"	207° 38' 54"	-11° 22' 28"	0,9950439	16' 04,41"	23° 26' 17"	15m 37s
04:00	209° 46' 00"	0,34"	207° 41' 16"	-11° 23' 21"	0,9950323	16' 04,42"	23° 26' 17"	15m 37s
05:00	209° 48' 29"	0,35"	207° 43' 39"	-11° 24' 14"	0,9950206	16' 04,43"	23° 26' 17"	15m 37s
06:00	209° 50' 58"	0,35"	207° 46' 01"	-11° 25' 06"	0,9950090	16' 04,44"	23° 26' 17"	15m 38s
07:00	209° 53' 27"	0,36"	207° 48' 24"	-11° 25' 59"	0,9949974	16' 04,45"	23° 26' 17"	15m 38s
08:00	209° 55' 57"	0,36"	207° 50' 47"	-11° 26' 51"	0,9949858	16' 04,47"	23° 26' 17"	15m 39s
09:00	209° 58' 26"	0,37"	207° 53' 09"	-11° 27' 44"	0,9949742	16' 04,48"	23° 26' 17"	15m 39s
10:00	210° 00' 55"	0,37"	207° 55' 32"	-11° 28' 36"	0,9949626	16' 04,49"	23° 26' 17"	15m 39s
11:00	210° 03' 25"	0,38"	207° 57' 54"	-11° 29' 29"	0,9949510	16' 04,50"	23° 26' 17"	15m 40s
12:00	210° 05' 54"	0,38"	208° 00' 17"	-11° 30' 21"	0,9949394	16' 04,51"	23° 26' 17"	15m 40s
13:00	210° 08' 23"	0,39"	208° 02' 40"	-11° 31' 13"	0,9949279	16' 04,52"	23° 26' 17"	15m 40s
14:00	210° 10' 52"	0,39"	208° 05' 02"	-11° 32' 06"	0,9949163	16' 04,53"	23° 26' 17"	15m 41s
15:00	210° 13' 22"	0,40"	208° 07' 25"	-11° 32' 58"	0,9949047	16' 04,54"	23° 26' 17"	15m 41s
16:00	210° 15' 51"	0,40"	208° 09' 48"	-11° 33' 50"	0,9948931	16' 04,56"	23° 26' 17"	15m 41s
17:00	210° 18' 20"	0,41"	208° 12' 10"	-11° 34' 43"	0,9948816	16' 04,57"	23° 26' 17"	15m 42s
18:00	210° 20' 49"	0,41"	208° 14' 33"	-11° 35' 35"	0,9948700	16' 04,58"	23° 26' 17"	15m 42s
19:00	210° 23' 19"	0,42"	208° 16' 56"	-11° 36' 27"	0,9948584	16' 04,59"	23° 26' 17"	15m 42s
20:00	210° 25' 48"	0,42"	208° 19' 19"	-11° 37' 20"	0,9948469	16' 04,60"	23° 26' 17"	15m 43s
21:00	210° 28' 17"	0,42"	208° 21' 41"	-11° 38' 12"	0,9948353	16' 04,61"	23° 26' 17"	15m 43s
22:00	210° 30' 47"	0,43"	208° 24' 04"	-11° 39' 04"	0,9948238	16' 04,62"	23° 26' 17"	15m 43s
23:00	210° 33' 16"	0,43"	208° 26' 27"	-11° 39' 56"	0,9948123	16' 04,63"	23° 26' 17"	15m 44s
24:00	210° 35' 45"	0,44"	208° 28' 50"	-11° 40' 49"	0,9948007	16' 04,65"	23° 26' 17"	15m 44s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	348° 57' 41"	1° 49' 09"	349° 08' 22"	-2° 41' 37"	57' 05"	15' 33,32"	249° 06' 44"	87,98%
01:00	349° 30' 34"	1° 51' 53"	349° 37' 35"	-2° 26' 15"	57' 07"	15' 33,87"	249° 09' 53"	88,26%
02:00	350° 03' 30"	1° 54' 35"	350° 06' 49"	-2° 10' 52"	57' 09"	15' 34,43"	249° 13' 18"	88,54%
03:00	350° 36' 28"	1° 57' 18"	350° 36' 05"	-1° 55' 27"	57' 12"	15' 34,99"	249° 16' 59"	88,82%
04:00	351° 09' 29"	2° 00' 00"	351° 05' 23"	-1° 40' 00"	57' 14"	15' 35,55"	249° 20' 56"	89,10%
05:00	351° 42' 32"	2° 02' 41"	351° 34' 42"	-1° 24' 31"	57' 16"	15' 36,11"	249° 25' 10"	89,37%
06:00	352° 15' 38"	2° 05' 22"	352° 04' 03"	-1° 09' 02"	57' 18"	15' 36,67"	249° 29' 42"	89,64%
07:00	352° 48' 47"	2° 08' 03"	352° 33' 27"	-0° 53' 30"	57' 20"	15' 37,23"	249° 34' 31"	89,91%
08:00	353° 21' 58"	2° 10' 42"	353° 02' 52"	-0° 37' 57"	57' 22"	15' 37,79"	249° 39' 38"	90,17%
09:00	353° 55' 12"	2° 13' 22"	353° 32' 19"	-0° 22' 23"	57' 24"	15' 38,35"	249° 45' 03"	90,44%
10:00	354° 28' 29"	2° 16' 01"	354° 01' 49"	-0° 06' 48"	57' 26"	15' 38,91"	249° 50' 48"	90,70%
11:00	355° 01' 48"	2° 18' 39"	354° 31' 20"	0° 08' 49"	57' 28"	15' 39,47"	249° 56' 52"	90,95%
12:00	355° 35' 10"	2° 21' 17"	355° 00' 54"	0° 24' 26"	57' 30"	15' 40,03"	250° 03' 16"	91,21%
13:00	356° 08' 35"	2° 23' 54"	355° 30' 31"	0° 40' 05"	57' 32"	15' 40,59"	250° 10' 01"	91,46%
14:00	356° 42' 03"	2° 26' 30"	356° 00' 10"	0° 55' 45"	57' 34"	15' 41,15"	250° 17' 08"	91,70%
15:00	357° 15' 33"	2° 29' 06"	356° 29' 51"	1° 11' 26"	57' 36"	15' 41,71"	250° 24' 36"	91,95%
16:00	357° 49' 05"	2° 31' 41"	356° 59' 35"	1° 27' 07"	57' 38"	15' 42,27"	250° 32' 27"	92,19%
17:00	358° 22' 41"	2° 34' 15"	357° 29' 22"	1° 42' 49"	57' 40"	15' 42,83"	250° 40' 42"	92,43%
18:00	358° 56' 19"	2° 36' 49"	357° 59' 11"	1° 58' 32"	57' 42"	15' 43,38"	250° 49' 21"	92,66%
19:00	359° 29' 59"	2° 39' 21"	358° 29' 03"	2° 14' 16"	57' 44"	15' 43,94"	250° 58' 25"	92,90%
20:00	0° 03' 43"	2° 41' 54"	358° 58' 58"	2° 30' 00"	57' 46"	15' 44,50"	251° 07' 55"	93,12%
21:00	0° 37' 29"	2° 44' 25"	359° 28' 56"	2° 45' 45"	57' 48"	15' 45,05"	251° 17' 52"	93,35%
22:00	1° 11' 17"	2° 46' 56"	359° 58' 57"	3° 01' 30"	57' 51"	15' 45,61"	251° 28' 17"	93,57%
23:00	1° 45' 09"	2° 49' 25"	0° 29' 01"	3° 17' 15"	57' 53"	15' 46,16"	251° 39' 11"	93,79%
24:00	2° 19' 03"	2° 51' 54"	0° 59' 09"	3° 33' 01"	57' 55"	15' 46,71"	251° 50' 35"	94,01%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	210° 35' 45"	0,44"	208° 28' 50"	-11° 40' 49"	0,9948007	16' 04,65"	23° 26' 17"	15m 44s
01:00	210° 38' 15"	0,44"	208° 31' 13"	-11° 41' 41"	0,9947892	16' 04,66"	23° 26' 17"	15m 44s
02:00	210° 40' 44"	0,45"	208° 33' 36"	-11° 42' 33"	0,9947777	16' 04,67"	23° 26' 17"	15m 45s
03:00	210° 43' 13"	0,45"	208° 35' 58"	-11° 43' 25"	0,9947662	16' 04,68"	23° 26' 17"	15m 45s
04:00	210° 45' 43"	0,46"	208° 38' 21"	-11° 44' 17"	0,9947547	16' 04,69"	23° 26' 17"	15m 45s
05:00	210° 48' 12"	0,46"	208° 40' 44"	-11° 45' 09"	0,9947431	16' 04,70"	23° 26' 17"	15m 46s
06:00	210° 50' 41"	0,46"	208° 43' 07"	-11° 46' 01"	0,9947316	16' 04,71"	23° 26' 17"	15m 46s
07:00	210° 53' 10"	0,47"	208° 45' 30"	-11° 46' 54"	0,9947201	16' 04,72"	23° 26' 17"	15m 46s
08:00	210° 55' 40"	0,47"	208° 47' 53"	-11° 47' 46"	0,9947086	16' 04,73"	23° 26' 17"	15m 47s
09:00	210° 58' 09"	0,48"	208° 50' 16"	-11° 48' 38"	0,9946972	16' 04,75"	23° 26' 17"	15m 47s
10:00	211° 00' 38"	0,48"	208° 52' 39"	-11° 49' 30"	0,9946857	16' 04,76"	23° 26' 17"	15m 47s
11:00	211° 03' 08"	0,49"	208° 55' 02"	-11° 50' 22"	0,9946742	16' 04,77"	23° 26' 17"	15m 48s
12:00	211° 05' 37"	0,49"	208° 57' 25"	-11° 51' 14"	0,9946627	16' 04,78"	23° 26' 17"	15m 48s
13:00	211° 08' 07"	0,49"	208° 59' 48"	-11° 52' 06"	0,9946512	16' 04,79"	23° 26' 17"	15m 48s
14:00	211° 10' 36"	0,50"	209° 02' 11"	-11° 52' 58"	0,9946398	16' 04,80"	23° 26' 17"	15m 49s
15:00	211° 13' 05"	0,50"	209° 04' 34"	-11° 53' 49"	0,9946283	16' 04,81"	23° 26' 17"	15m 49s
16:00	211° 15' 35"	0,51"	209° 06' 58"	-11° 54' 41"	0,9946169	16' 04,82"	23° 26' 17"	15m 49s
17:00	211° 18' 04"	0,51"	209° 09' 21"	-11° 55' 33"	0,9946054	16' 04,83"	23° 26' 17"	15m 49s
18:00	211° 20' 33"	0,51"	209° 11' 44"	-11° 56' 25"	0,9945940	16' 04,85"	23° 26' 17"	15m 50s
19:00	211° 23' 03"	0,52"	209° 14' 07"	-11° 57' 17"	0,9945825	16' 04,86"	23° 26' 17"	15m 50s
20:00	211° 25' 32"	0,52"	209° 16' 30"	-11° 58' 09"	0,9945711	16' 04,87"	23° 26' 17"	15m 50s
21:00	211° 28' 01"	0,53"	209° 18' 54"	-11° 59' 01"	0,9945597	16' 04,88"	23° 26' 17"	15m 51s
22:00	211° 30' 31"	0,53"	209° 21' 17"	-11° 59' 52"	0,9945482	16' 04,89"	23° 26' 17"	15m 51s
23:00	211° 33' 00"	0,53"	209° 23' 40"	-12° 00' 44"	0,9945368	16' 04,90"	23° 26' 17"	15m 51s
24:00	211° 35' 30"	0,54"	209° 26' 03"	-12° 01' 36"	0,9945254	16' 04,91"	23° 26' 17"	15m 52s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	2° 19' 03"	2° 51' 54"	0° 59' 09"	3° 33' 01"	57' 55"	15' 46,71"	251° 50' 35"	94,01%
01:00	2° 52' 59"	2° 54' 22"	1° 29' 19"	3° 48' 47"	57' 57"	15' 47,26"	252° 02' 32"	94,22%
02:00	3° 26' 58"	2° 56' 50"	1° 59' 33"	4° 04' 32"	57' 59"	15' 47,81"	252° 15' 01"	94,43%
03:00	4° 01' 00"	2° 59' 16"	2° 29' 51"	4° 20' 18"	58' 01"	15' 48,36"	252° 28' 04"	94,63%
04:00	4° 35' 05"	3° 01' 42"	3° 00' 11"	4° 36' 04"	58' 03"	15' 48,90"	252° 41' 44"	94,83%
05:00	5° 09' 12"	3° 04' 06"	3° 30' 36"	4° 51' 50"	58' 05"	15' 49,45"	252° 56' 02"	95,03%
06:00	5° 43' 22"	3° 06' 30"	4° 01' 04"	5° 07' 35"	58' 07"	15' 49,99"	253° 10' 59"	95,23%
07:00	6° 17' 34"	3° 08' 52"	4° 31' 36"	5° 23' 20"	58' 09"	15' 50,53"	253° 26' 38"	95,42%
08:00	6° 51' 49"	3° 11' 14"	5° 02' 11"	5° 39' 05"	58' 11"	15' 51,07"	253° 43' 01"	95,61%
09:00	7° 26' 07"	3° 13' 35"	5° 32' 51"	5° 54' 49"	58' 13"	15' 51,61"	254° 00' 10"	95,79%
10:00	8° 00' 27"	3° 15' 54"	6° 03' 34"	6° 10' 32"	58' 14"	15' 52,14"	254° 18' 08"	95,97%
11:00	8° 34' 50"	3° 18' 13"	6° 34' 21"	6° 26' 15"	58' 16"	15' 52,67"	254° 36' 57"	96,15%
12:00	9° 09' 15"	3° 20' 31"	7° 05' 13"	6° 41' 57"	58' 18"	15' 53,20"	254° 56' 41"	96,32%
13:00	9° 43' 43"	3° 22' 47"	7° 36' 08"	6° 57' 38"	58' 20"	15' 53,73"	255° 17' 24"	96,49%
14:00	10° 18' 14"	3° 25' 03"	8° 07' 08"	7° 13' 19"	58' 22"	15' 54,26"	255° 39' 08"	96,65%
15:00	10° 52' 47"	3° 27' 17"	8° 38' 12"	7° 28' 58"	58' 24"	15' 54,78"	256° 01' 58"	96,81%
16:00	11° 27' 23"	3° 29' 30"	9° 09' 21"	7° 44' 36"	58' 26"	15' 55,30"	256° 25' 59"	96,97%
17:00	12° 02' 01"	3° 31' 42"	9° 40' 34"	8° 00' 13"	58' 28"	15' 55,82"	256° 51' 15"	97,12%
18:00	12° 36' 41"	3° 33' 53"	10° 11' 51"	8° 15' 48"	58' 30"	15' 56,34"	257° 17' 52"	97,27%
19:00	13° 11' 24"	3° 36' 03"	10° 43' 13"	8° 31' 23"	58' 32"	15' 56,85"	257° 45' 56"	97,42%
20:00	13° 46' 10"	3° 38' 12"	11° 14' 40"	8° 46' 55"	58' 34"	15' 57,36"	258° 15' 33"	97,56%
21:00	14° 20' 58"	3° 40' 19"	11° 46' 11"	9° 02' 26"	58' 36"	15' 57,87"	258° 46' 52"	97,70%
22:00	14° 55' 49"	3° 42' 25"	12° 17' 48"	9° 17' 56"	58' 37"	15' 58,38"	259° 20' 00"	97,83%
23:00	15° 30' 42"	3° 44' 30"	12° 49' 29"	9° 33' 23"	58' 39"	15' 58,88"	259° 55' 08"	97,96%
24:00	16° 05' 37"	3° 46' 33"	13° 21' 15"	9° 48' 49"	58' 41"	15' 59,38"	260° 32' 25"	98,09%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	211° 35' 30"	0,54"	209° 26' 03"	-12° 01' 36"	0,9945254	16' 04,91"	23° 26' 17"	15m 52s
01:00	211° 37' 59"	0,54"	209° 28' 27"	-12° 02' 28"	0,9945140	16' 04,92"	23° 26' 17"	15m 52s
02:00	211° 40' 28"	0,54"	209° 30' 50"	-12° 03' 19"	0,9945026	16' 04,93"	23° 26' 17"	15m 52s
03:00	211° 42' 58"	0,55"	209° 33' 13"	-12° 04' 11"	0,9944912	16' 04,95"	23° 26' 17"	15m 53s
04:00	211° 45' 27"	0,55"	209° 35' 37"	-12° 05' 03"	0,9944798	16' 04,96"	23° 26' 17"	15m 53s
05:00	211° 47' 57"	0,55"	209° 38' 00"	-12° 05' 54"	0,9944684	16' 04,97"	23° 26' 17"	15m 53s
06:00	211° 50' 26"	0,56"	209° 40' 23"	-12° 06' 46"	0,9944570	16' 04,98"	23° 26' 17"	15m 53s
07:00	211° 52' 55"	0,56"	209° 42' 47"	-12° 07' 38"	0,9944456	16' 04,99"	23° 26' 17"	15m 54s
08:00	211° 55' 25"	0,56"	209° 45' 10"	-12° 08' 29"	0,9944343	16' 05,00"	23° 26' 17"	15m 54s
09:00	211° 57' 54"	0,57"	209° 47' 34"	-12° 09' 21"	0,9944229	16' 05,01"	23° 26' 17"	15m 54s
10:00	212° 00' 24"	0,57"	209° 49' 57"	-12° 10' 12"	0,9944115	16' 05,02"	23° 26' 17"	15m 55s
11:00	212° 02' 53"	0,57"	209° 52' 21"	-12° 11' 04"	0,9944002	16' 05,03"	23° 26' 17"	15m 55s
12:00	212° 05' 22"	0,58"	209° 54' 44"	-12° 11' 55"	0,9943888	16' 05,05"	23° 26' 17"	15m 55s
13:00	212° 07' 52"	0,58"	209° 57' 08"	-12° 12' 47"	0,9943775	16' 05,06"	23° 26' 17"	15m 56s
14:00	212° 10' 21"	0,58"	209° 59' 31"	-12° 13' 38"	0,9943661	16' 05,07"	23° 26' 17"	15m 56s
15:00	212° 12' 51"	0,59"	210° 01' 55"	-12° 14' 30"	0,9943548	16' 05,08"	23° 26' 17"	15m 56s
16:00	212° 15' 20"	0,59"	210° 04' 18"	-12° 15' 21"	0,9943435	16' 05,09"	23° 26' 17"	15m 56s
17:00	212° 17' 50"	0,59"	210° 06' 42"	-12° 16' 13"	0,9943322	16' 05,10"	23° 26' 17"	15m 57s
18:00	212° 20' 19"	0,60"	210° 09' 05"	-12° 17' 04"	0,9943208	16' 05,11"	23° 26' 17"	15m 57s
19:00	212° 22' 49"	0,60"	210° 11' 29"	-12° 17' 56"	0,9943095	16' 05,12"	23° 26' 17"	15m 57s
20:00	212° 25' 18"	0,60"	210° 13' 53"	-12° 18' 47"	0,9942982	16' 05,13"	23° 26' 17"	15m 57s
21:00	212° 27' 47"	0,60"	210° 16' 16"	-12° 19' 38"	0,9942869	16' 05,14"	23° 26' 17"	15m 58s
22:00	212° 30' 17"	0,61"	210° 18' 40"	-12° 20' 30"	0,9942756	16' 05,15"	23° 26' 17"	15m 58s
23:00	212° 32' 46"	0,61"	210° 21' 04"	-12° 21' 21"	0,9942643	16' 05,17"	23° 26' 17"	15m 58s
24:00	212° 35' 16"	0,61"	210° 23' 27"	-12° 22' 12"	0,9942530	16' 05,18"	23° 26' 17"	15m 59s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	16° 05' 37"	3° 46' 33"	13° 21' 15"	9° 48' 49"	58' 41"	15' 59,38"	260° 32' 25"	98,09%
01:00	16° 40' 35"	3° 48' 36"	13° 53' 06"	10° 04' 13"	58' 43"	16' 00,00"	261° 12' 04"	98,21%
02:00	17° 15' 35"	3° 50' 37"	14° 25' 02"	10° 19' 34"	58' 45"	16' 00,36"	261° 54' 19"	98,33%
03:00	17° 50' 38"	3° 52' 36"	14° 57' 04"	10° 34' 54"	58' 46"	16' 00,85"	262° 39' 25"	98,44%
04:00	18° 25' 43"	3° 54' 34"	15° 29' 10"	10° 50' 11"	58' 48"	16' 01,34"	263° 27' 39"	98,55%
05:00	19° 00' 51"	3° 56' 31"	16° 01' 22"	11° 05' 25"	58' 50"	16' 01,82"	264° 19' 21"	98,65%
06:00	19° 36' 00"	3° 58' 27"	16° 33' 40"	11° 20' 38"	58' 52"	16' 02,29"	265° 14' 56"	98,75%
07:00	20° 11' 12"	4° 00' 21"	17° 06' 02"	11° 35' 47"	58' 53"	16' 02,77"	266° 14' 48"	98,85%
08:00	20° 46' 27"	4° 02' 14"	17° 38' 31"	11° 50' 54"	58' 55"	16' 03,24"	267° 19' 30"	98,94%
09:00	21° 21' 43"	4° 04' 05"	18° 11' 04"	12° 05' 58"	58' 57"	16' 03,70"	268° 29' 35"	99,03%
10:00	21° 57' 02"	4° 05' 55"	18° 43' 44"	12° 20' 59"	58' 59"	16' 04,17"	269° 45' 47"	99,11%
11:00	22° 32' 23"	4° 07' 43"	19° 16' 29"	12° 35' 57"	59' 00"	16' 04,63"	271° 08' 53"	99,19%
12:00	23° 07' 47"	4° 09' 30"	19° 49' 19"	12° 50' 52"	59' 02"	16' 05,08"	272° 39' 49"	99,26%
13:00	23° 43' 12"	4° 11' 15"	20° 22' 16"	13° 05' 44"	59' 04"	16' 05,53"	274° 19' 41"	99,33%
14:00	24° 18' 40"	4° 12' 59"	20° 55' 19"	13° 20' 32"	59' 05"	16' 05,98"	276° 09' 47"	99,40%
15:00	24° 54' 10"	4° 14' 41"	21° 28' 27"	13° 35' 17"	59' 07"	16' 06,42"	278° 11' 38"	99,46%
16:00	25° 29' 42"	4° 16' 22"	22° 01' 41"	13° 49' 58"	59' 08"	16' 06,85"	280° 26' 59"	99,52%
17:00	26° 05' 16"	4° 18' 01"	22° 35' 02"	14° 04' 35"	59' 10"	16' 07,29"	282° 57' 54"	99,57%
18:00	26° 40' 52"	4° 19' 39"	23° 08' 28"	14° 19' 09"	59' 12"	16' 07,72"	285° 46' 44"	99,62%
19:00	27° 16' 30"	4° 21' 15"	23° 42' 01"	14° 33' 39"	59' 13"	16' 08,14"	288° 56' 09"	99,66%
20:00	27° 52' 11"	4° 22' 49"	24° 15' 40"	14° 48' 05"	59' 15"	16' 08,56"	292° 29' 04"	99,70%
21:00	28° 27' 53"	4° 24' 22"	24° 49' 25"	15° 02' 26"	59' 16"	16' 08,97"	296° 28' 31"	99,73%
22:00	29° 03' 37"	4° 25' 53"	25° 23' 16"	15° 16' 43"	59' 18"	16' 09,38"	300° 57' 25"	99,76%
23:00	29° 39' 24"	4° 27' 22"	25° 57' 14"	15° 30' 56"	59' 19"	16' 09,79"	305° 58' 07"	99,79%
24:00	30° 15' 12"	4° 28' 50"	26° 31' 18"	15° 45' 04"	59' 21"	16' 10,19"	311° 31' 41"	99,81%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	212° 35' 16"	0,61"	210° 23' 27"	-12° 22' 12"	0,9942530	16' 05,18"	23° 26' 17"	15m 59s
01:00	212° 37' 45"	0,61"	210° 25' 51"	-12° 23' 04"	0,9942417	16' 05,19"	23° 26' 17"	15m 59s
02:00	212° 40' 15"	0,62"	210° 28' 15"	-12° 23' 55"	0,9942305	16' 05,20"	23° 26' 17"	15m 59s
03:00	212° 42' 44"	0,62"	210° 30' 39"	-12° 24' 46"	0,9942192	16' 05,21"	23° 26' 17"	15m 59s
04:00	212° 45' 14"	0,62"	210° 33' 03"	-12° 25' 37"	0,9942079	16' 05,22"	23° 26' 17"	16m 00s
05:00	212° 47' 43"	0,62"	210° 35' 26"	-12° 26' 28"	0,9941967	16' 05,23"	23° 26' 17"	16m 00s
06:00	212° 50' 13"	0,63"	210° 37' 50"	-12° 27' 20"	0,9941854	16' 05,24"	23° 26' 17"	16m 00s
07:00	212° 52' 42"	0,63"	210° 40' 14"	-12° 28' 11"	0,9941742	16' 05,25"	23° 26' 17"	16m 00s
08:00	212° 55' 12"	0,63"	210° 42' 38"	-12° 29' 02"	0,9941629	16' 05,26"	23° 26' 17"	16m 01s
09:00	212° 57' 41"	0,63"	210° 45' 02"	-12° 29' 53"	0,9941517	16' 05,28"	23° 26' 17"	16m 01s
10:00	213° 00' 11"	0,63"	210° 47' 26"	-12° 30' 44"	0,9941405	16' 05,29"	23° 26' 17"	16m 01s
11:00	213° 02' 40"	0,64"	210° 49' 50"	-12° 31' 35"	0,9941292	16' 05,30"	23° 26' 17"	16m 02s
12:00	213° 05' 10"	0,64"	210° 52' 14"	-12° 32' 26"	0,9941180	16' 05,31"	23° 26' 17"	16m 02s
13:00	213° 07' 39"	0,64"	210° 54' 38"	-12° 33' 17"	0,9941068	16' 05,32"	23° 26' 17"	16m 02s
14:00	213° 10' 09"	0,64"	210° 57' 02"	-12° 34' 08"	0,9940956	16' 05,33"	23° 26' 17"	16m 02s
15:00	213° 12' 38"	0,64"	210° 59' 26"	-12° 34' 59"	0,9940844	16' 05,34"	23° 26' 17"	16m 03s
16:00	213° 15' 08"	0,65"	211° 01' 50"	-12° 35' 50"	0,9940732	16' 05,35"	23° 26' 17"	16m 03s
17:00	213° 17' 37"	0,65"	211° 04' 14"	-12° 36' 41"	0,9940620	16' 05,36"	23° 26' 17"	16m 03s
18:00	213° 20' 07"	0,65"	211° 06' 38"	-12° 37' 32"	0,9940508	16' 05,37"	23° 26' 17"	16m 03s
19:00	213° 22' 36"	0,65"	211° 09' 02"	-12° 38' 23"	0,9940396	16' 05,38"	23° 26' 17"	16m 04s
20:00	213° 25' 06"	0,65"	211° 11' 26"	-12° 39' 14"	0,9940284	16' 05,39"	23° 26' 17"	16m 04s
21:00	213° 27' 35"	0,65"	211° 13' 50"	-12° 40' 05"	0,9940173	16' 05,41"	23° 26' 17"	16m 04s
22:00	213° 30' 05"	0,65"	211° 16' 14"	-12° 40' 56"	0,9940061	16' 05,42"	23° 26' 17"	16m 04s
23:00	213° 32' 35"	0,66"	211° 18' 38"	-12° 41' 46"	0,9939949	16' 05,43"	23° 26' 17"	16m 05s
24:00	213° 35' 04"	0,66"	211° 21' 03"	-12° 42' 37"	0,9939838	16' 05,44"	23° 26' 17"	16m 05s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	30° 15' 12"	4° 28' 50"	26° 31' 18"	15° 45' 04"	59' 21"	16' 10,19"	311° 31' 41"	99,81%
01:00	30° 51' 02"	4° 30' 16"	27° 05' 28"	15° 59' 08"	59' 22"	16' 10,58"	317° 37' 11"	99,82%
02:00	31° 26' 54"	4° 31' 40"	27° 39' 45"	16° 13' 07"	59' 24"	16' 10,97"	324° 10' 47"	99,83%
03:00	32° 02' 48"	4° 33' 03"	28° 14' 09"	16° 27' 01"	59' 25"	16' 11,36"	331° 05' 18"	99,84%
04:00	32° 38' 44"	4° 34' 24"	28° 48' 39"	16° 40' 50"	59' 26"	16' 11,74"	338° 10' 35"	99,84%
05:00	33° 14' 41"	4° 35' 43"	29° 23' 16"	16° 54' 34"	59' 28"	16' 12,11"	345° 14' 45"	99,84%
06:00	33° 50' 40"	4° 37' 00"	29° 57' 59"	17° 08' 13"	59' 29"	16' 12,48"	352° 06' 08"	99,83%
07:00	34° 26' 42"	4° 38' 15"	30° 32' 49"	17° 21' 46"	59' 30"	16' 12,84"	358° 35' 08"	99,82%
08:00	35° 02' 44"	4° 39' 29"	31° 07' 46"	17° 35' 14"	59' 32"	16' 13,20"	4° 35' 17"	99,80%
09:00	35° 38' 49"	4° 40' 41"	31° 42' 49"	17° 48' 36"	59' 33"	16' 13,56"	10° 03' 24"	99,78%
10:00	36° 14' 55"	4° 41' 51"	32° 17' 59"	18° 01' 53"	59' 34"	16' 13,90"	14° 59' 04"	99,75%
11:00	36° 51' 03"	4° 42' 59"	32° 53' 16"	18° 15' 04"	59' 36"	16' 14,25"	19° 23' 41"	99,72%
12:00	37° 27' 12"	4° 44' 06"	33° 28' 40"	18° 28' 08"	59' 37"	16' 14,58"	23° 19' 45"	99,69%
13:00	38° 03' 23"	4° 45' 10"	34° 04' 11"	18° 41' 07"	59' 38"	16' 14,91"	26° 50' 16"	99,65%
14:00	38° 39' 36"	4° 46' 13"	34° 39' 48"	18° 54' 00"	59' 39"	16' 15,24"	29° 58' 13"	99,60%
15:00	39° 15' 50"	4° 47' 14"	35° 15' 33"	19° 06' 46"	59' 40"	16' 15,56"	32° 46' 30"	99,55%
16:00	39° 52' 05"	4° 48' 13"	35° 51' 24"	19° 19' 25"	59' 42"	16' 15,87"	35° 17' 43"	99,50%
17:00	40° 28' 22"	4° 49' 10"	36° 27' 22"	19° 31' 58"	59' 43"	16' 16,18"	37° 34' 10"	99,44%
18:00	41° 04' 41"	4° 50' 05"	37° 03' 27"	19° 44' 25"	59' 44"	16' 16,48"	39° 37' 48"	99,37%
19:00	41° 41' 00"	4° 50' 58"	37° 39' 39"	19° 56' 44"	59' 45"	16' 16,78"	41° 30' 22"	99,30%
20:00	42° 17' 22"	4° 51' 49"	38° 15' 58"	20° 08' 57"	59' 46"	16' 17,07"	43° 13' 19"	99,23%
21:00	42° 53' 44"	4° 52' 38"	38° 52' 23"	20° 21' 02"	59' 47"	16' 17,36"	44° 47' 53"	99,15%
22:00	43° 30' 08"	4° 53' 26"	39° 28' 56"	20° 33' 01"	59' 48"	16' 17,63"	46° 15' 08"	99,07%
23:00	44° 06' 33"	4° 54' 11"	40° 05' 35"	20° 44' 52"	59' 49"	16' 17,91"	47° 35' 59"	98,98%
24:00	44° 42' 59"	4° 54' 54"	40° 42' 22"	20° 56' 35"	59' 50"	16' 18,17"	48° 51' 13"	98,88%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	213° 35' 04"	0,66"	211° 21' 03"	-12° 42' 37"	0,9939838	16' 05,44"	23° 26' 17"	16m 05s
01:00	213° 37' 34"	0,66"	211° 23' 27"	-12° 43' 28"	0,9939726	16' 05,45"	23° 26' 17"	16m 05s
02:00	213° 40' 03"	0,66"	211° 25' 51"	-12° 44' 19"	0,9939615	16' 05,46"	23° 26' 17"	16m 05s
03:00	213° 42' 33"	0,66"	211° 28' 15"	-12° 45' 10"	0,9939504	16' 05,47"	23° 26' 17"	16m 06s
04:00	213° 45' 02"	0,66"	211° 30' 40"	-12° 46' 00"	0,9939392	16' 05,48"	23° 26' 17"	16m 06s
05:00	213° 47' 32"	0,66"	211° 33' 04"	-12° 46' 51"	0,9939281	16' 05,49"	23° 26' 17"	16m 06s
06:00	213° 50' 01"	0,66"	211° 35' 28"	-12° 47' 42"	0,9939170	16' 05,50"	23° 26' 17"	16m 06s
07:00	213° 52' 31"	0,67"	211° 37' 52"	-12° 48' 32"	0,9939059	16' 05,51"	23° 26' 17"	16m 06s
08:00	213° 55' 01"	0,67"	211° 40' 17"	-12° 49' 23"	0,9938947	16' 05,52"	23° 26' 17"	16m 07s
09:00	213° 57' 30"	0,67"	211° 42' 41"	-12° 50' 14"	0,9938836	16' 05,54"	23° 26' 17"	16m 07s
10:00	214° 00' 00"	0,67"	211° 45' 06"	-12° 51' 04"	0,9938725	16' 05,55"	23° 26' 17"	16m 07s
11:00	214° 02' 29"	0,67"	211° 47' 30"	-12° 51' 55"	0,9938614	16' 05,56"	23° 26' 17"	16m 07s
12:00	214° 04' 59"	0,67"	211° 49' 54"	-12° 52' 45"	0,9938504	16' 05,57"	23° 26' 17"	16m 08s
13:00	214° 07' 29"	0,67"	211° 52' 19"	-12° 53' 36"	0,9938393	16' 05,58"	23° 26' 17"	16m 08s
14:00	214° 09' 58"	0,67"	211° 54' 43"	-12° 54' 26"	0,9938282	16' 05,59"	23° 26' 17"	16m 08s
15:00	214° 12' 28"	0,67"	211° 57' 08"	-12° 55' 17"	0,9938171	16' 05,60"	23° 26' 17"	16m 08s
16:00	214° 14' 57"	0,67"	211° 59' 32"	-12° 56' 07"	0,9938061	16' 05,61"	23° 26' 17"	16m 09s
17:00	214° 17' 27"	0,67"	212° 01' 57"	-12° 56' 58"	0,9937950	16' 05,62"	23° 26' 17"	16m 09s
18:00	214° 19' 57"	0,67"	212° 04' 21"	-12° 57' 48"	0,9937840	16' 05,63"	23° 26' 17"	16m 09s
19:00	214° 22' 26"	0,67"	212° 06' 46"	-12° 58' 39"	0,9937729	16' 05,64"	23° 26' 17"	16m 09s
20:00	214° 24' 56"	0,67"	212° 09' 10"	-12° 59' 29"	0,9937619	16' 05,65"	23° 26' 17"	16m 09s
21:00	214° 27' 25"	0,67"	212° 11' 35"	-13° 00' 19"	0,9937508	16' 05,66"	23° 26' 17"	16m 10s
22:00	214° 29' 55"	0,67"	212° 14' 00"	-13° 01' 10"	0,9937398	16' 05,68"	23° 26' 17"	16m 10s
23:00	214° 32' 25"	0,67"	212° 16' 24"	-13° 02' 00"	0,9937288	16' 05,69"	23° 26' 17"	16m 10s
24:00	214° 34' 54"	0,67"	212° 18' 49"	-13° 02' 50"	0,9937177	16' 05,70"	23° 26' 17"	16m 10s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	44° 42' 59"	4° 54' 54"	40° 42' 22"	20° 56' 35"	59' 50"	16' 18,17"	48° 51' 13"	98,88%
01:00	45° 19' 27"	4° 55' 36"	41° 19' 15"	21° 08' 11"	59' 51"	16' 18,43"	50° 01' 29"	98,79%
02:00	45° 55' 55"	4° 56' 15"	41° 56' 15"	21° 19' 40"	59' 52"	16' 18,69"	51° 07' 22"	98,68%
03:00	46° 32' 25"	4° 56' 52"	42° 33' 22"	21° 31' 00"	59' 53"	16' 18,94"	52° 09' 21"	98,58%
04:00	47° 08' 56"	4° 57' 28"	43° 10' 36"	21° 42' 13"	59' 54"	16' 19,18"	53° 07' 53"	98,46%
05:00	47° 45' 28"	4° 58' 01"	43° 47' 56"	21° 53' 17"	59' 55"	16' 19,42"	54° 03' 18"	98,35%
06:00	48° 22' 01"	4° 58' 32"	44° 25' 24"	22° 04' 13"	59' 55"	16' 19,65"	54° 55' 58"	98,23%
07:00	48° 58' 35"	4° 59' 02"	45° 02' 58"	22° 15' 01"	59' 56"	16' 19,87"	55° 46' 08"	98,10%
08:00	49° 35' 09"	4° 59' 29"	45° 40' 39"	22° 25' 41"	59' 57"	16' 20,09"	56° 34' 05"	97,97%
09:00	50° 11' 45"	4° 59' 54"	46° 18' 26"	22° 36' 12"	59' 58"	16' 20,30"	57° 20' 00"	97,83%
10:00	50° 48' 22"	5° 00' 18"	46° 56' 20"	22° 46' 34"	59' 59"	16' 20,50"	58° 04' 06"	97,69%
11:00	51° 24' 59"	5° 00' 39"	47° 34' 21"	22° 56' 48"	59' 59"	16' 20,70"	58° 46' 33"	97,55%
12:00	52° 01' 38"	5° 00' 58"	48° 12' 28"	23° 06' 53"	00' 00"	16' 20,89"	59° 27' 30"	97,40%
13:00	52° 38' 17"	5° 01' 15"	48° 50' 42"	23° 16' 48"	00' 01"	16' 21,08"	60° 07' 04"	97,24%
14:00	53° 14' 57"	5° 01' 30"	49° 29' 02"	23° 26' 35"	00' 01"	16' 21,26"	60° 45' 25"	97,08%
15:00	53° 51' 38"	5° 01' 43"	50° 07' 28"	23° 36' 12"	00' 02"	16' 21,43"	61° 22' 37"	96,92%
16:00	54° 28' 19"	5° 01' 53"	50° 46' 01"	23° 45' 40"	00' 03"	16' 21,60"	61° 58' 47"	96,75%
17:00	55° 05' 01"	5° 02' 02"	51° 24' 40"	23° 54' 59"	00' 03"	16' 21,76"	62° 33' 59"	96,58%
18:00	55° 41' 43"	5° 02' 09"	52° 03' 25"	24° 04' 08"	00' 04"	16' 21,91"	63° 08' 20"	96,40%
19:00	56° 18' 27"	5° 02' 13"	52° 42' 16"	24° 13' 07"	00' 04"	16' 22,06"	63° 41' 52"	96,22%
20:00	56° 55' 10"	5° 02' 16"	53° 21' 14"	24° 21' 57"	00' 05"	16' 22,20"	64° 14' 40"	96,03%
21:00	57° 31' 54"	5° 02' 16"	54° 00' 17"	24° 30' 37"	00' 05"	16' 22,34"	64° 46' 47"	95,84%
22:00	58° 08' 39"	5° 02' 15"	54° 39' 26"	24° 39' 06"	00' 06"	16' 22,47"	65° 18' 17"	95,65%
23:00	58° 45' 24"	5° 02' 11"	55° 18' 41"	24° 47' 26"	00' 06"	16' 22,59"	65° 49' 12"	95,45%
24:00	59° 22' 10"	5° 02' 05"	55° 58' 01"	24° 55' 36"	00' 07"	16' 22,71"	66° 19' 35"	95,24%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	214° 34' 54"	0,67"	212° 18' 49"	-13° 02' 50"	0,9937177	16' 05,70"	23° 26' 17"	16m 10s
01:00	214° 37' 24"	0,67"	212° 21' 14"	-13° 03' 41"	0,9937067	16' 05,71"	23° 26' 17"	16m 10s
02:00	214° 39' 54"	0,67"	212° 23' 38"	-13° 04' 31"	0,9936957	16' 05,72"	23° 26' 17"	16m 11s
03:00	214° 42' 23"	0,67"	212° 26' 03"	-13° 05' 21"	0,9936847	16' 05,73"	23° 26' 17"	16m 11s
04:00	214° 44' 53"	0,67"	212° 28' 28"	-13° 06' 11"	0,9936737	16' 05,74"	23° 26' 17"	16m 11s
05:00	214° 47' 23"	0,67"	212° 30' 53"	-13° 07' 02"	0,9936627	16' 05,75"	23° 26' 17"	16m 11s
06:00	214° 49' 52"	0,67"	212° 33' 17"	-13° 07' 52"	0,9936517	16' 05,76"	23° 26' 17"	16m 12s
07:00	214° 52' 22"	0,67"	212° 35' 42"	-13° 08' 42"	0,9936408	16' 05,77"	23° 26' 17"	16m 12s
08:00	214° 54' 52"	0,67"	212° 38' 07"	-13° 09' 32"	0,9936298	16' 05,78"	23° 26' 17"	16m 12s
09:00	214° 57' 21"	0,67"	212° 40' 32"	-13° 10' 22"	0,9936188	16' 05,79"	23° 26' 17"	16m 12s
10:00	214° 59' 51"	0,67"	212° 42' 57"	-13° 11' 12"	0,9936078	16' 05,80"	23° 26' 17"	16m 12s
11:00	215° 02' 21"	0,67"	212° 45' 21"	-13° 12' 02"	0,9935969	16' 05,81"	23° 26' 17"	16m 13s
12:00	215° 04' 50"	0,67"	212° 47' 46"	-13° 12' 53"	0,9935859	16' 05,82"	23° 26' 17"	16m 13s
13:00	215° 07' 20"	0,67"	212° 50' 11"	-13° 13' 43"	0,9935750	16' 05,84"	23° 26' 17"	16m 13s
14:00	215° 09' 50"	0,66"	212° 52' 36"	-13° 14' 33"	0,9935640	16' 05,85"	23° 26' 17"	16m 13s
15:00	215° 12' 19"	0,66"	212° 55' 01"	-13° 15' 23"	0,9935531	16' 05,86"	23° 26' 17"	16m 13s
16:00	215° 14' 49"	0,66"	212° 57' 26"	-13° 16' 13"	0,9935422	16' 05,87"	23° 26' 17"	16m 13s
17:00	215° 17' 19"	0,66"	212° 59' 51"	-13° 17' 02"	0,9935312	16' 05,88"	23° 26' 17"	16m 14s
18:00	215° 19' 49"	0,66"	213° 02' 16"	-13° 17' 52"	0,9935203	16' 05,89"	23° 26' 17"	16m 14s
19:00	215° 22' 18"	0,66"	213° 04' 41"	-13° 18' 42"	0,9935094	16' 05,90"	23° 26' 17"	16m 14s
20:00	215° 24' 48"	0,66"	213° 07' 06"	-13° 19' 32"	0,9934985	16' 05,91"	23° 26' 17"	16m 14s
21:00	215° 27' 18"	0,66"	213° 09' 31"	-13° 20' 22"	0,9934876	16' 05,92"	23° 26' 17"	16m 14s
22:00	215° 29' 47"	0,65"	213° 11' 56"	-13° 21' 12"	0,9934767	16' 05,93"	23° 26' 17"	16m 15s
23:00	215° 32' 17"	0,65"	213° 14' 22"	-13° 22' 02"	0,9934658	16' 05,94"	23° 26' 17"	16m 15s
24:00	215° 34' 47"	0,65"	213° 16' 47"	-13° 22' 52"	0,9934549	16' 05,95"	23° 26' 17"	16m 15s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	59° 22' 10"	5° 02' 05"	55° 58' 01"	24° 55' 36"	00' 07"	16' 22,71"	66° 19' 35"	95,24%
01:00	59° 58' 56"	5° 01' 57"	56° 37' 28"	25° 03' 35"	00' 07"	16' 22,82"	66° 49' 28"	95,03%
02:00	60° 35' 42"	5° 01' 47"	57° 16' 59"	25° 11' 23"	00' 07"	16' 22,92"	67° 18' 53"	94,82%
03:00	61° 12' 28"	5° 01' 35"	57° 56' 36"	25° 19' 02"	00' 08"	16' 23,02"	67° 47' 53"	94,60%
04:00	61° 49' 15"	5° 01' 21"	58° 36' 18"	25° 26' 29"	00' 08"	16' 23,11"	68° 16' 29"	94,38%
05:00	62° 26' 02"	5° 01' 05"	59° 16' 06"	25° 33' 47"	00' 08"	16' 23,19"	68° 44' 43"	94,15%
06:00	63° 02' 50"	5° 00' 46"	59° 55' 58"	25° 40' 53"	00' 09"	16' 23,27"	69° 12' 37"	93,92%
07:00	63° 39' 37"	5° 00' 26"	60° 35' 55"	25° 47' 48"	00' 09"	16' 23,34"	69° 40' 11"	93,68%
08:00	64° 16' 24"	5° 00' 04"	61° 15' 58"	25° 54' 33"	00' 09"	16' 23,41"	70° 07' 27"	93,44%
09:00	64° 53' 12"	4° 59' 39"	61° 56' 04"	26° 01' 06"	00' 09"	16' 23,46"	70° 34' 27"	93,20%
10:00	65° 30' 00"	4° 59' 12"	62° 36' 16"	26° 07' 29"	00' 10"	16' 23,52"	71° 01' 11"	92,95%
11:00	66° 06' 48"	4° 58' 44"	63° 16' 31"	26° 13' 40"	00' 10"	16' 23,56"	71° 27' 40"	92,70%
12:00	66° 43' 35"	4° 58' 13"	63° 56' 52"	26° 19' 40"	00' 10"	16' 23,60"	71° 53' 55"	92,44%
13:00	67° 20' 23"	4° 57' 40"	64° 37' 16"	26° 25' 29"	00' 10"	16' 23,64"	72° 19' 57"	92,18%
14:00	67° 57' 11"	4° 57' 05"	65° 17' 44"	26° 31' 06"	00' 10"	16' 23,67"	72° 45' 47"	91,91%
15:00	68° 33' 58"	4° 56' 28"	65° 58' 16"	26° 36' 32"	00' 10"	16' 23,69"	73° 11' 26"	91,64%
16:00	69° 10' 45"	4° 55' 49"	66° 38' 52"	26° 41' 46"	00' 10"	16' 23,70"	73° 36' 53"	91,37%
17:00	69° 47' 33"	4° 55' 08"	67° 19' 31"	26° 46' 49"	00' 10"	16' 23,71"	74° 02' 10"	91,09%
18:00	70° 24' 20"	4° 54' 25"	68° 00' 14"	26° 51' 40"	00' 10"	16' 23,72"	74° 27' 17"	90,81%
19:00	71° 01' 06"	4° 53' 40"	68° 41' 00"	26° 56' 19"	00' 10"	16' 23,71"	74° 52' 15"	90,53%
20:00	71° 37' 53"	4° 52' 53"	69° 21' 49"	27° 00' 47"	00' 10"	16' 23,71"	75° 17' 04"	90,24%
21:00	72° 14' 39"	4° 52' 04"	70° 02' 41"	27° 05' 02"	00' 10"	16' 23,69"	75° 41' 44"	89,94%
22:00	72° 51' 25"	4° 51' 12"	70° 43' 36"	27° 09' 06"	00' 10"	16' 23,67"	76° 06' 17"	89,64%
23:00	73° 28' 11"	4° 50' 19"	71° 24' 34"	27° 12' 58"	00' 10"	16' 23,65"	76° 30' 41"	89,34%
24:00	74° 04' 56"	4° 49' 24"	72° 05' 34"	27° 16' 38"	00' 10"	16' 23,61"	76° 54' 58"	89,04%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	215° 34' 47"	0,65"	213° 16' 47"	-13° 22' 52"	0,9934549	16' 05,95"	23° 26' 17"	16m 15s
01:00	215° 37' 17"	0,65"	213° 19' 12"	-13° 23' 41"	0,9934440	16' 05,96"	23° 26' 17"	16m 15s
02:00	215° 39' 46"	0,65"	213° 21' 37"	-13° 24' 31"	0,9934331	16' 05,97"	23° 26' 17"	16m 15s
03:00	215° 42' 16"	0,65"	213° 24' 02"	-13° 25' 21"	0,9934223	16' 05,98"	23° 26' 17"	16m 16s
04:00	215° 44' 46"	0,65"	213° 26' 27"	-13° 26' 11"	0,9934114	16' 05,99"	23° 26' 17"	16m 16s
05:00	215° 47' 16"	0,64"	213° 28' 53"	-13° 27' 00"	0,9934005	16' 06,01"	23° 26' 17"	16m 16s
06:00	215° 49' 45"	0,64"	213° 31' 18"	-13° 27' 50"	0,9933897	16' 06,02"	23° 26' 17"	16m 16s
07:00	215° 52' 15"	0,64"	213° 33' 43"	-13° 28' 40"	0,9933788	16' 06,03"	23° 26' 17"	16m 16s
08:00	215° 54' 45"	0,64"	213° 36' 09"	-13° 29' 29"	0,9933680	16' 06,04"	23° 26' 17"	16m 16s
09:00	215° 57' 15"	0,64"	213° 38' 34"	-13° 30' 19"	0,9933571	16' 06,05"	23° 26' 17"	16m 17s
10:00	215° 59' 44"	0,63"	213° 40' 59"	-13° 31' 08"	0,9933463	16' 06,06"	23° 26' 17"	16m 17s
11:00	216° 02' 14"	0,63"	213° 43' 25"	-13° 31' 58"	0,9933355	16' 06,07"	23° 26' 17"	16m 17s
12:00	216° 04' 44"	0,63"	213° 45' 50"	-13° 32' 47"	0,9933247	16' 06,08"	23° 26' 17"	16m 17s
13:00	216° 07' 14"	0,63"	213° 48' 15"	-13° 33' 37"	0,9933138	16' 06,09"	23° 26' 17"	16m 17s
14:00	216° 09' 43"	0,63"	213° 50' 41"	-13° 34' 26"	0,9933030	16' 06,10"	23° 26' 17"	16m 17s
15:00	216° 12' 13"	0,62"	213° 53' 06"	-13° 35' 16"	0,9932922	16' 06,11"	23° 26' 17"	16m 18s
16:00	216° 14' 43"	0,62"	213° 55' 32"	-13° 36' 05"	0,9932814	16' 06,12"	23° 26' 17"	16m 18s
17:00	216° 17' 13"	0,62"	213° 57' 57"	-13° 36' 55"	0,9932706	16' 06,13"	23° 26' 17"	16m 18s
18:00	216° 19' 43"	0,62"	214° 00' 23"	-13° 37' 44"	0,9932598	16' 06,14"	23° 26' 17"	16m 18s
19:00	216° 22' 12"	0,61"	214° 02' 48"	-13° 38' 34"	0,9932490	16' 06,15"	23° 26' 17"	16m 18s
20:00	216° 24' 42"	0,61"	214° 05' 14"	-13° 39' 23"	0,9932382	16' 06,16"	23° 26' 17"	16m 18s
21:00	216° 27' 12"	0,61"	214° 07' 39"	-13° 40' 12"	0,9932275	16' 06,17"	23° 26' 17"	16m 18s
22:00	216° 29' 42"	0,61"	214° 10' 05"	-13° 41' 02"	0,9932167	16' 06,18"	23° 26' 17"	16m 19s
23:00	216° 32' 12"	0,60"	214° 12' 31"	-13° 41' 51"	0,9932059	16' 06,19"	23° 26' 17"	16m 19s
24:00	216° 34' 41"	0,60"	214° 14' 56"	-13° 42' 40"	0,9931951	16' 06,20"	23° 26' 17"	16m 19s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	74° 04' 56"	4° 49' 24"	72° 05' 34"	27° 16' 38"	00' 10"	16' 23,61"	76° 54' 58"	89,04%
01:00	74° 41' 41"	4° 48' 27"	72° 46' 36"	27° 20' 06"	00' 10"	16' 23,58"	77° 19' 07"	88,73%
02:00	75° 18' 25"	4° 47' 28"	73° 27' 40"	27° 23' 22"	00' 10"	16' 23,53"	77° 43' 09"	88,42%
03:00	75° 55' 09"	4° 46' 27"	74° 08' 46"	27° 26' 25"	00' 10"	16' 23,48"	78° 07' 05"	88,10%
04:00	76° 31' 52"	4° 45' 24"	74° 49' 54"	27° 29' 17"	00' 09"	16' 23,43"	78° 30' 54"	87,78%
05:00	77° 08' 35"	4° 44' 19"	75° 31' 04"	27° 31' 57"	00' 09"	16' 23,37"	78° 54' 36"	87,46%
06:00	77° 45' 17"	4° 43' 12"	76° 12' 15"	27° 34' 24"	00' 09"	16' 23,30"	79° 18' 12"	87,13%
07:00	78° 21' 59"	4° 42' 03"	76° 53' 27"	27° 36' 39"	00' 09"	16' 23,23"	79° 41' 42"	86,80%
08:00	78° 58' 40"	4° 40' 52"	77° 34' 41"	27° 38' 42"	00' 08"	16' 23,15"	80° 05' 05"	86,46%
09:00	79° 35' 20"	4° 39' 39"	78° 15' 55"	27° 40' 33"	00' 08"	16' 23,07"	80° 28' 23"	86,13%
10:00	80° 12' 00"	4° 38' 25"	78° 57' 10"	27° 42' 11"	00' 08"	16' 22,98"	80° 51' 34"	85,79%
11:00	80° 48' 39"	4° 37' 08"	79° 38' 25"	27° 43' 37"	00' 07"	16' 22,88"	81° 14' 40"	85,44%
12:00	81° 25' 17"	4° 35' 50"	80° 19' 41"	27° 44' 51"	00' 07"	16' 22,78"	81° 37' 39"	85,09%
13:00	82° 01' 55"	4° 34' 29"	81° 00' 57"	27° 45' 53"	00' 07"	16' 22,68"	82° 00' 33"	84,74%
14:00	82° 38' 31"	4° 33' 07"	81° 42' 13"	27° 46' 42"	00' 06"	16' 22,57"	82° 23' 21"	84,39%
15:00	83° 15' 07"	4° 31' 43"	82° 23' 29"	27° 47' 19"	00' 06"	16' 22,45"	82° 46' 03"	84,03%
16:00	83° 51' 42"	4° 30' 18"	83° 04' 44"	27° 47' 44"	00' 05"	16' 22,33"	83° 08' 39"	83,67%
17:00	84° 28' 17"	4° 28' 50"	83° 45' 59"	27° 47' 56"	00' 05"	16' 22,21"	83° 31' 09"	83,30%
18:00	85° 04' 50"	4° 27' 20"	84° 27' 13"	27° 47' 56"	00' 04"	16' 22,07"	83° 53' 33"	82,94%
19:00	85° 41' 22"	4° 25' 49"	85° 08' 26"	27° 47' 44"	00' 04"	16' 21,94"	84° 15' 52"	82,57%
20:00	86° 17' 54"	4° 24' 16"	85° 49' 38"	27° 47' 20"	00' 03"	16' 21,80"	84° 38' 04"	82,19%
21:00	86° 54' 24"	4° 22' 42"	86° 30' 49"	27° 46' 43"	00' 03"	16' 21,65"	85° 00' 10"	81,82%
22:00	87° 30' 54"	4° 21' 05"	87° 11' 58"	27° 45' 55"	00' 02"	16' 21,50"	85° 22' 11"	81,44%
23:00	88° 07' 23"	4° 19' 27"	87° 53' 06"	27° 44' 54"	00' 02"	16' 21,35"	85° 44' 05"	81,05%
24:00	88° 43' 50"	4° 17' 47"	88° 34' 12"	27° 43' 41"	00' 01"	16' 21,19"	86° 05' 53"	80,67%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	216° 34' 41"	0,60"	214° 14' 56"	-13° 42' 40"	0,9931951	16' 06,20"	23° 26' 17"	16m 19s
01:00	216° 37' 11"	0,60"	214° 17' 22"	-13° 43' 29"	0,9931844	16' 06,22"	23° 26' 17"	16m 19s
02:00	216° 39' 41"	0,59"	214° 19' 48"	-13° 44' 19"	0,9931736	16' 06,23"	23° 26' 17"	16m 19s
03:00	216° 42' 11"	0,59"	214° 22' 13"	-13° 45' 08"	0,9931629	16' 06,24"	23° 26' 17"	16m 19s
04:00	216° 44' 41"	0,59"	214° 24' 39"	-13° 45' 57"	0,9931521	16' 06,25"	23° 26' 17"	16m 19s
05:00	216° 47' 11"	0,59"	214° 27' 05"	-13° 46' 46"	0,9931414	16' 06,26"	23° 26' 17"	16m 20s
06:00	216° 49' 40"	0,58"	214° 29' 30"	-13° 47' 35"	0,9931307	16' 06,27"	23° 26' 17"	16m 20s
07:00	216° 52' 10"	0,58"	214° 31' 56"	-13° 48' 24"	0,9931199	16' 06,28"	23° 26' 17"	16m 20s
08:00	216° 54' 40"	0,58"	214° 34' 22"	-13° 49' 14"	0,9931092	16' 06,29"	23° 26' 17"	16m 20s
09:00	216° 57' 10"	0,57"	214° 36' 48"	-13° 50' 03"	0,9930985	16' 06,30"	23° 26' 17"	16m 20s
10:00	216° 59' 40"	0,57"	214° 39' 14"	-13° 50' 52"	0,9930878	16' 06,31"	23° 26' 17"	16m 20s
11:00	217° 02' 10"	0,57"	214° 41' 40"	-13° 51' 41"	0,9930771	16' 06,32"	23° 26' 17"	16m 20s
12:00	217° 04' 40"	0,56"	214° 44' 05"	-13° 52' 30"	0,9930664	16' 06,33"	23° 26' 17"	16m 21s
13:00	217° 07' 09"	0,56"	214° 46' 31"	-13° 53' 19"	0,9930557	16' 06,34"	23° 26' 17"	16m 21s
14:00	217° 09' 39"	0,56"	214° 48' 57"	-13° 54' 08"	0,9930450	16' 06,35"	23° 26' 17"	16m 21s
15:00	217° 12' 09"	0,55"	214° 51' 23"	-13° 54' 57"	0,9930343	16' 06,36"	23° 26' 17"	16m 21s
16:00	217° 14' 39"	0,55"	214° 53' 49"	-13° 55' 45"	0,9930236	16' 06,37"	23° 26' 17"	16m 21s
17:00	217° 17' 09"	0,55"	214° 56' 15"	-13° 56' 34"	0,9930129	16' 06,38"	23° 26' 17"	16m 21s
18:00	217° 19' 39"	0,54"	214° 58' 41"	-13° 57' 23"	0,9930022	16' 06,39"	23° 26' 17"	16m 21s
19:00	217° 22' 09"	0,54"	215° 01' 07"	-13° 58' 12"	0,9929916	16' 06,40"	23° 26' 17"	16m 21s
20:00	217° 24' 39"	0,54"	215° 03' 33"	-13° 59' 01"	0,9929809	16' 06,41"	23° 26' 17"	16m 22s
21:00	217° 27' 09"	0,53"	215° 05' 59"	-13° 59' 50"	0,9929702	16' 06,42"	23° 26' 17"	16m 22s
22:00	217° 29' 38"	0,53"	215° 08' 25"	-14° 00' 38"	0,9929596	16' 06,43"	23° 26' 17"	16m 22s
23:00	217° 32' 08"	0,52"	215° 10' 51"	-14° 01' 27"	0,9929489	16' 06,44"	23° 26' 17"	16m 22s
24:00	217° 34' 38"	0,52"	215° 13' 18"	-14° 02' 16"	0,9929383	16' 06,45"	23° 26' 17"	16m 22s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	88° 43' 50"	4° 17' 47"	88° 34' 12"	27° 43' 41"	00' 01"	16' 21,19"	86° 05' 53"	80,67%
01:00	89° 20' 17"	4° 16' 05"	89° 15' 15"	27° 42' 16"	00' 00"	16' 21,02"	86° 27' 34"	80,28%
02:00	89° 56' 42"	4° 14' 22"	89° 56' 17"	27° 40' 38"	00' 00"	16' 20,85"	86° 49' 10"	79,89%
03:00	90° 33' 06"	4° 12' 37"	90° 37' 16"	27° 38' 49"	59' 59"	16' 20,68"	87° 10' 39"	79,50%
04:00	91° 09' 30"	4° 10' 50"	91° 18' 13"	27° 36' 48"	59' 59"	16' 20,50"	87° 32' 01"	79,10%
05:00	91° 45' 52"	4° 09' 02"	91° 59' 07"	27° 34' 34"	59' 58"	16' 20,31"	87° 53' 17"	78,70%
06:00	92° 22' 13"	4° 07' 12"	92° 39' 59"	27° 32' 09"	59' 57"	16' 20,13"	88° 14' 26"	78,30%
07:00	92° 58' 33"	4° 05' 20"	93° 20' 47"	27° 29' 32"	59' 57"	16' 19,93"	88° 35' 28"	77,90%
08:00	93° 34' 51"	4° 03' 27"	94° 01' 32"	27° 26' 43"	59' 56"	16' 19,74"	88° 56' 23"	77,49%
09:00	94° 11' 09"	4° 01' 32"	94° 42' 14"	27° 23' 43"	59' 55"	16' 19,54"	89° 17' 12"	77,08%
10:00	94° 47' 25"	3° 59' 36"	95° 22' 53"	27° 20' 30"	59' 54"	16' 19,33"	89° 37' 53"	76,67%
11:00	95° 23' 40"	3° 57' 38"	96° 03' 27"	27° 17' 06"	59' 54"	16' 19,12"	89° 58' 27"	76,26%
12:00	95° 59' 54"	3° 55' 38"	96° 43' 58"	27° 13' 31"	59' 53"	16' 18,91"	90° 18' 54"	75,84%
13:00	96° 36' 06"	3° 53' 37"	97° 24' 26"	27° 09' 43"	59' 52"	16' 18,69"	90° 39' 13"	75,42%
14:00	97° 12' 17"	3° 51' 35"	98° 04' 49"	27° 05' 45"	59' 51"	16' 18,47"	90° 59' 25"	75,00%
15:00	97° 48' 27"	3° 49' 31"	98° 45' 08"	27° 01' 35"	59' 50"	16' 18,25"	91° 19' 30"	74,58%
16:00	98° 24' 36"	3° 47' 26"	99° 25' 22"	26° 57' 13"	59' 49"	16' 18,02"	91° 39' 27"	74,16%
17:00	99° 00' 43"	3° 45' 19"	100° 05' 32"	26° 52' 41"	59' 49"	16' 17,78"	91° 59' 16"	73,73%
18:00	99° 36' 49"	3° 43' 10"	100° 45' 38"	26° 47' 57"	59' 48"	16' 17,55"	92° 18' 57"	73,30%
19:00	100° 12' 53"	3° 41' 01"	101° 25' 38"	26° 43' 02"	59' 47"	16' 17,31"	92° 38' 30"	72,87%
20:00	100° 48' 56"	3° 38' 50"	102° 05' 34"	26° 37' 56"	59' 46"	16' 17,06"	92° 57' 55"	72,44%
21:00	101° 24' 58"	3° 36' 37"	102° 45' 25"	26° 32' 39"	59' 45"	16' 16,82"	93° 17' 12"	72,00%
22:00	102° 00' 58"	3° 34' 23"	103° 25' 11"	26° 27' 11"	59' 44"	16' 16,56"	93° 36' 21"	71,57%
23:00	102° 36' 57"	3° 32' 08"	104° 04' 52"	26° 21' 32"	59' 43"	16' 16,31"	93° 55' 21"	71,13%
24:00	103° 12' 55"	3° 29' 52"	104° 44' 27"	26° 15' 43"	59' 42"	16' 16,05"	94° 14' 13"	70,69%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	217° 34' 38"	0,52"	215° 13' 18"	-14° 02' 16"	0,9929383	16' 06,45"	23° 26' 17"	16m 22s
01:00	217° 37' 08"	0,52"	215° 15' 44"	-14° 03' 05"	0,9929276	16' 06,47"	23° 26' 17"	16m 22s
02:00	217° 39' 38"	0,51"	215° 18' 10"	-14° 03' 53"	0,9929170	16' 06,48"	23° 26' 17"	16m 22s
03:00	217° 42' 08"	0,51"	215° 20' 36"	-14° 04' 42"	0,9929064	16' 06,49"	23° 26' 17"	16m 22s
04:00	217° 44' 38"	0,50"	215° 23' 02"	-14° 05' 31"	0,9928957	16' 06,50"	23° 26' 17"	16m 22s
05:00	217° 47' 08"	0,50"	215° 25' 29"	-14° 06' 19"	0,9928851	16' 06,51"	23° 26' 17"	16m 23s
06:00	217° 49' 38"	0,50"	215° 27' 55"	-14° 07' 08"	0,9928745	16' 06,52"	23° 26' 17"	16m 23s
07:00	217° 52' 08"	0,49"	215° 30' 21"	-14° 07' 56"	0,9928639	16' 06,53"	23° 26' 17"	16m 23s
08:00	217° 54' 38"	0,49"	215° 32' 47"	-14° 08' 45"	0,9928533	16' 06,54"	23° 26' 17"	16m 23s
09:00	217° 57' 08"	0,48"	215° 35' 14"	-14° 09' 33"	0,9928427	16' 06,55"	23° 26' 17"	16m 23s
10:00	217° 59' 38"	0,48"	215° 37' 40"	-14° 10' 22"	0,9928321	16' 06,56"	23° 26' 17"	16m 23s
11:00	218° 02' 07"	0,48"	215° 40' 06"	-14° 11' 10"	0,9928215	16' 06,57"	23° 26' 17"	16m 23s
12:00	218° 04' 37"	0,47"	215° 42' 33"	-14° 11' 59"	0,9928109	16' 06,58"	23° 26' 17"	16m 23s
13:00	218° 07' 07"	0,47"	215° 44' 59"	-14° 12' 47"	0,9928003	16' 06,59"	23° 26' 17"	16m 23s
14:00	218° 09' 37"	0,46"	215° 47' 26"	-14° 13' 36"	0,9927897	16' 06,60"	23° 26' 17"	16m 23s
15:00	218° 12' 07"	0,46"	215° 49' 52"	-14° 14' 24"	0,9927791	16' 06,61"	23° 26' 17"	16m 24s
16:00	218° 14' 37"	0,45"	215° 52' 18"	-14° 15' 12"	0,9927685	16' 06,62"	23° 26' 17"	16m 24s
17:00	218° 17' 07"	0,45"	215° 54' 45"	-14° 16' 01"	0,9927580	16' 06,63"	23° 26' 17"	16m 24s
18:00	218° 19' 37"	0,45"	215° 57' 11"	-14° 16' 49"	0,9927474	16' 06,64"	23° 26' 17"	16m 24s
19:00	218° 22' 07"	0,44"	215° 59' 38"	-14° 17' 37"	0,9927368	16' 06,65"	23° 26' 17"	16m 24s
20:00	218° 24' 37"	0,44"	216° 02' 05"	-14° 18' 26"	0,9927263	16' 06,66"	23° 26' 17"	16m 24s
21:00	218° 27' 07"	0,43"	216° 04' 31"	-14° 19' 14"	0,9927157	16' 06,67"	23° 26' 17"	16m 24s
22:00	218° 29' 37"	0,43"	216° 06' 58"	-14° 20' 02"	0,9927052	16' 06,68"	23° 26' 17"	16m 24s
23:00	218° 32' 07"	0,42"	216° 09' 24"	-14° 20' 50"	0,9926946	16' 06,69"	23° 26' 17"	16m 24s
24:00	218° 34' 37"	0,42"	216° 11' 51"	-14° 21' 38"	0,9926841	16' 06,70"	23° 26' 17"	16m 24s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	103° 12' 55"	3° 29' 52"	104° 44' 27"	26° 15' 43"	59' 42"	16' 16,05"	94° 14' 13"	70,69%
01:00	103° 48' 51"	3° 27' 34"	105° 23' 57"	26° 09' 43"	59' 41"	16' 15,79"	94° 32' 56"	70,25%
02:00	104° 24' 45"	3° 25' 15"	106° 03' 21"	26° 03' 32"	59' 40"	16' 15,53"	94° 51' 31"	69,80%
03:00	105° 00' 38"	3° 22' 55"	106° 42' 40"	25° 57' 11"	59' 39"	16' 15,26"	95° 09' 57"	69,36%
04:00	105° 36' 30"	3° 20' 33"	107° 21' 53"	25° 50' 40"	59' 38"	16' 14,99"	95° 28' 14"	68,91%
05:00	106° 12' 20"	3° 18' 10"	108° 01' 00"	25° 43' 58"	59' 37"	16' 14,71"	95° 46' 22"	68,47%
06:00	106° 48' 09"	3° 15' 46"	108° 40' 01"	25° 37' 07"	59' 36"	16' 14,44"	96° 04' 22"	68,02%
07:00	107° 23' 56"	3° 13' 21"	109° 18' 57"	25° 30' 05"	59' 35"	16' 14,16"	96° 22' 12"	67,57%
08:00	107° 59' 41"	3° 10' 54"	109° 57' 46"	25° 22' 53"	59' 34"	16' 13,88"	96° 39' 53"	67,11%
09:00	108° 35' 26"	3° 08' 27"	110° 36' 29"	25° 15' 31"	59' 33"	16' 13,59"	96° 57' 25"	66,66%
10:00	109° 11' 08"	3° 05' 58"	111° 15' 06"	25° 07' 59"	59' 32"	16' 13,30"	97° 14' 47"	66,21%
11:00	109° 46' 49"	3° 03' 28"	111° 53' 37"	25° 00' 18"	59' 31"	16' 13,01"	97° 32' 00"	65,75%
12:00	110° 22' 28"	3° 00' 58"	112° 32' 01"	24° 52' 27"	59' 30"	16' 12,72"	97° 49' 04"	65,30%
13:00	110° 58' 06"	2° 58' 26"	113° 10' 19"	24° 44' 27"	59' 29"	16' 12,42"	98° 05' 58"	64,84%
14:00	111° 33' 43"	2° 55' 53"	113° 48' 30"	24° 36' 17"	59' 28"	16' 12,12"	98° 22' 42"	64,38%
15:00	112° 09' 17"	2° 53' 19"	114° 26' 35"	24° 27' 58"	59' 27"	16' 11,82"	98° 39' 17"	63,92%
16:00	112° 44' 51"	2° 50' 43"	115° 04' 33"	24° 19' 30"	59' 26"	16' 11,52"	98° 55' 42"	63,46%
17:00	113° 20' 22"	2° 48' 07"	115° 42' 24"	24° 10' 52"	59' 24"	16' 11,21"	99° 11' 58"	63,00%
18:00	113° 55' 52"	2° 45' 30"	116° 20' 09"	24° 02' 06"	59' 23"	16' 10,90"	99° 28' 03"	62,53%
19:00	114° 31' 21"	2° 42' 52"	116° 57' 48"	23° 53' 11"	59' 22"	16' 10,59"	99° 43' 59"	62,07%
20:00	115° 06' 47"	2° 40' 13"	117° 35' 19"	23° 44' 07"	59' 21"	16' 10,28"	99° 59' 44"	61,61%
21:00	115° 42' 13"	2° 37' 34"	118° 12' 44"	23° 34' 54"	59' 20"	16' 09,96"	100° 15' 20"	61,14%
22:00	116° 17' 36"	2° 34' 53"	118° 50' 01"	23° 25' 33"	59' 19"	16' 09,64"	100° 30' 46"	60,67%
23:00	116° 52' 58"	2° 32' 11"	119° 27' 12"	23° 16' 04"	59' 18"	16' 09,32"	100° 46' 01"	60,21%
24:00	117° 28' 19"	2° 29' 29"	120° 04' 16"	23° 06' 26"	59' 16"	16' 09,00"	101° 01' 06"	59,74%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	218° 34' 37"	0,42"	216° 11' 51"	-14° 21' 38"	0,9926841	16' 06,70"	23° 26' 17"	16m 24s
01:00	218° 37' 07"	0,41"	216° 14' 18"	-14° 22' 27"	0,9926735	16' 06,71"	23° 26' 17"	16m 24s
02:00	218° 39' 37"	0,41"	216° 16' 44"	-14° 23' 15"	0,9926630	16' 06,72"	23° 26' 17"	16m 25s
03:00	218° 42' 07"	0,40"	216° 19' 11"	-14° 24' 03"	0,9926525	16' 06,73"	23° 26' 17"	16m 25s
04:00	218° 44' 37"	0,40"	216° 21' 38"	-14° 24' 51"	0,9926420	16' 06,74"	23° 26' 17"	16m 25s
05:00	218° 47' 07"	0,39"	216° 24' 04"	-14° 25' 39"	0,9926314	16' 06,75"	23° 26' 17"	16m 25s
06:00	218° 49' 37"	0,39"	216° 26' 31"	-14° 26' 27"	0,9926209	16' 06,76"	23° 26' 17"	16m 25s
07:00	218° 52' 07"	0,38"	216° 28' 58"	-14° 27' 15"	0,9926104	16' 06,77"	23° 26' 17"	16m 25s
08:00	218° 54' 37"	0,38"	216° 31' 25"	-14° 28' 03"	0,9925999	16' 06,78"	23° 26' 17"	16m 25s
09:00	218° 57' 07"	0,37"	216° 33' 52"	-14° 28' 51"	0,9925894	16' 06,79"	23° 26' 17"	16m 25s
10:00	218° 59' 37"	0,37"	216° 36' 18"	-14° 29' 39"	0,9925789	16' 06,80"	23° 26' 17"	16m 25s
11:00	219° 02' 07"	0,36"	216° 38' 45"	-14° 30' 27"	0,9925684	16' 06,81"	23° 26' 17"	16m 25s
12:00	219° 04' 37"	0,36"	216° 41' 12"	-14° 31' 14"	0,9925579	16' 06,83"	23° 26' 17"	16m 25s
13:00	219° 07' 08"	0,35"	216° 43' 39"	-14° 32' 02"	0,9925474	16' 06,84"	23° 26' 17"	16m 25s
14:00	219° 09' 38"	0,35"	216° 46' 06"	-14° 32' 50"	0,9925369	16' 06,85"	23° 26' 17"	16m 25s
15:00	219° 12' 08"	0,34"	216° 48' 33"	-14° 33' 38"	0,9925264	16' 06,86"	23° 26' 17"	16m 25s
16:00	219° 14' 38"	0,34"	216° 51' 00"	-14° 34' 26"	0,9925160	16' 06,87"	23° 26' 17"	16m 25s
17:00	219° 17' 08"	0,33"	216° 53' 27"	-14° 35' 14"	0,9925055	16' 06,88"	23° 26' 17"	16m 26s
18:00	219° 19' 38"	0,33"	216° 55' 54"	-14° 36' 01"	0,9924950	16' 06,89"	23° 26' 17"	16m 26s
19:00	219° 22' 08"	0,32"	216° 58' 21"	-14° 36' 49"	0,9924846	16' 06,90"	23° 26' 17"	16m 26s
20:00	219° 24' 38"	0,32"	217° 00' 48"	-14° 37' 37"	0,9924741	16' 06,91"	23° 26' 17"	16m 26s
21:00	219° 27' 08"	0,31"	217° 03' 15"	-14° 38' 24"	0,9924636	16' 06,92"	23° 26' 17"	16m 26s
22:00	219° 29' 38"	0,31"	217° 05' 42"	-14° 39' 12"	0,9924532	16' 06,93"	23° 26' 17"	16m 26s
23:00	219° 32' 08"	0,30"	217° 08' 09"	-14° 40' 00"	0,9924427	16' 06,94"	23° 26' 17"	16m 26s
24:00	219° 34' 38"	0,30"	217° 10' 36"	-14° 40' 47"	0,9924323	16' 06,95"	23° 26' 17"	16m 26s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	117° 28' 19"	2° 29' 29"	120° 04' 16"	23° 06' 26"	59' 16"	16' 09,00"	101° 01' 06"	59,74%
01:00	118° 03' 37"	2° 26' 45"	120° 41' 14"	22° 56' 39"	59' 15"	16' 08,68"	101° 16' 01"	59,27%
02:00	118° 38' 54"	2° 24' 01"	121° 18' 04"	22° 46' 45"	59' 14"	16' 08,35"	101° 30' 46"	58,81%
03:00	119° 14' 10"	2° 21' 16"	121° 54' 47"	22° 36' 43"	59' 13"	16' 08,02"	101° 45' 21"	58,34%
04:00	119° 49' 24"	2° 18' 31"	122° 31' 24"	22° 26' 33"	59' 12"	16' 07,69"	101° 59' 45"	57,87%
05:00	120° 24' 36"	2° 15' 44"	123° 07' 53"	22° 16' 15"	59' 10"	16' 07,36"	102° 13' 59"	57,40%
06:00	120° 59' 47"	2° 12' 57"	123° 44' 16"	22° 05' 49"	59' 09"	16' 07,03"	102° 28' 03"	56,93%
07:00	121° 34' 56"	2° 10' 09"	124° 20' 31"	21° 55' 16"	59' 08"	16' 06,70"	102° 41' 56"	56,46%
08:00	122° 10' 03"	2° 07' 20"	124° 56' 40"	21° 44' 35"	59' 07"	16' 06,36"	102° 55' 39"	55,99%
09:00	122° 45' 09"	2° 04' 31"	125° 32' 42"	21° 33' 47"	59' 05"	16' 06,02"	103° 09' 11"	55,52%
10:00	123° 20' 13"	2° 01' 41"	126° 08' 36"	21° 22' 51"	59' 04"	16' 05,68"	103° 22' 33"	55,05%
11:00	123° 55' 15"	1° 58' 50"	126° 44' 24"	21° 11' 49"	59' 03"	16' 05,34"	103° 35' 44"	54,58%
12:00	124° 30' 16"	1° 55' 59"	127° 20' 05"	21° 00' 39"	59' 02"	16' 05,00"	103° 48' 45"	54,11%
13:00	125° 05' 15"	1° 53' 07"	127° 55' 39"	20° 49' 23"	59' 00"	16' 04,66"	104° 01' 35"	53,64%
14:00	125° 40' 13"	1° 50' 15"	128° 31' 06"	20° 38' 00"	58' 59"	16' 04,31"	104° 14' 14"	53,17%
15:00	126° 15' 09"	1° 47' 22"	129° 06' 27"	20° 26' 30"	58' 58"	16' 03,97"	104° 26' 43"	52,70%
16:00	126° 50' 03"	1° 44' 28"	129° 41' 40"	20° 14' 53"	58' 57"	16' 03,62"	104° 39' 02"	52,23%
17:00	127° 24' 56"	1° 41' 34"	130° 16' 47"	20° 03' 10"	58' 55"	16' 03,27"	104° 51' 10"	51,76%
18:00	127° 59' 47"	1° 38' 40"	130° 51' 46"	19° 51' 20"	58' 54"	16' 02,92"	105° 03' 07"	51,29%
19:00	128° 34' 36"	1° 35' 45"	131° 26' 39"	19° 39' 25"	58' 53"	16' 02,57"	105° 14' 53"	50,82%
20:00	129° 09' 24"	1° 32' 49"	132° 01' 26"	19° 27' 23"	58' 51"	16' 02,22"	105° 26' 29"	50,35%
21:00	129° 44' 10"	1° 29' 54"	132° 36' 05"	19° 15' 14"	58' 50"	16' 01,86"	105° 37' 54"	49,88%
22:00	130° 18' 54"	1° 26' 57"	133° 10' 38"	19° 03' 00"	58' 49"	16' 01,51"	105° 49' 09"	49,41%
23:00	130° 53' 37"	1° 24' 00"	133° 45' 04"	18° 50' 41"	58' 48"	16' 01,15"	106° 00' 13"	48,94%
24:00	131° 28' 18"	1° 21' 03"	134° 19' 24"	18° 38' 15"	58' 46"	16' 00,80"	106° 11' 06"	48,47%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	219° 34' 38"	0,30"	217° 10' 36"	-14° 40' 47"	0,9924323	16' 06,95"	23° 26' 17"	16m 26s
01:00	219° 37' 08"	0,29"	217° 13' 04"	-14° 41' 35"	0,9924218	16' 06,96"	23° 26' 17"	16m 26s
02:00	219° 39' 38"	0,29"	217° 15' 31"	-14° 42' 22"	0,9924114	16' 06,97"	23° 26' 17"	16m 26s
03:00	219° 42' 09"	0,28"	217° 17' 58"	-14° 43' 10"	0,9924010	16' 06,98"	23° 26' 17"	16m 26s
04:00	219° 44' 39"	0,28"	217° 20' 25"	-14° 43' 57"	0,9923905	16' 06,99"	23° 26' 17"	16m 26s
05:00	219° 47' 09"	0,27"	217° 22' 53"	-14° 44' 45"	0,9923801	16' 07,00"	23° 26' 17"	16m 26s
06:00	219° 49' 39"	0,27"	217° 25' 20"	-14° 45' 32"	0,9923697	16' 07,01"	23° 26' 17"	16m 26s
07:00	219° 52' 09"	0,26"	217° 27' 47"	-14° 46' 20"	0,9923592	16' 07,02"	23° 26' 17"	16m 26s
08:00	219° 54' 39"	0,26"	217° 30' 14"	-14° 47' 07"	0,9923488	16' 07,03"	23° 26' 17"	16m 26s
09:00	219° 57' 09"	0,25"	217° 32' 42"	-14° 47' 54"	0,9923384	16' 07,04"	23° 26' 17"	16m 26s
10:00	219° 59' 39"	0,25"	217° 35' 09"	-14° 48' 42"	0,9923280	16' 07,05"	23° 26' 17"	16m 26s
11:00	220° 02' 09"	0,24"	217° 37' 36"	-14° 49' 29"	0,9923176	16' 07,06"	23° 26' 17"	16m 26s
12:00	220° 04' 40"	0,24"	217° 40' 04"	-14° 50' 16"	0,9923072	16' 07,07"	23° 26' 17"	16m 26s
13:00	220° 07' 10"	0,23"	217° 42' 31"	-14° 51' 03"	0,9922968	16' 07,08"	23° 26' 17"	16m 26s
14:00	220° 09' 40"	0,22"	217° 44' 59"	-14° 51' 51"	0,9922864	16' 07,09"	23° 26' 17"	16m 26s
15:00	220° 12' 10"	0,22"	217° 47' 26"	-14° 52' 38"	0,9922760	16' 07,10"	23° 26' 17"	16m 26s
16:00	220° 14' 40"	0,21"	217° 49' 54"	-14° 53' 25"	0,9922656	16' 07,11"	23° 26' 17"	16m 26s
17:00	220° 17' 10"	0,21"	217° 52' 21"	-14° 54' 12"	0,9922552	16' 07,12"	23° 26' 17"	16m 26s
18:00	220° 19' 40"	0,20"	217° 54' 49"	-14° 54' 59"	0,9922448	16' 07,13"	23° 26' 17"	16m 26s
19:00	220° 22' 11"	0,20"	217° 57' 16"	-14° 55' 47"	0,9922345	16' 07,14"	23° 26' 17"	16m 27s
20:00	220° 24' 41"	0,19"	217° 59' 44"	-14° 56' 34"	0,9922241	16' 07,15"	23° 26' 17"	16m 27s
21:00	220° 27' 11"	0,19"	218° 02' 11"	-14° 57' 21"	0,9922137	16' 07,16"	23° 26' 17"	16m 27s
22:00	220° 29' 41"	0,18"	218° 04' 39"	-14° 58' 08"	0,9922033	16' 07,17"	23° 26' 17"	16m 27s
23:00	220° 32' 11"	0,18"	218° 07' 07"	-14° 58' 55"	0,9921930	16' 07,18"	23° 26' 17"	16m 27s
24:00	220° 34' 41"	0,17"	218° 09' 34"	-14° 59' 42"	0,9921826	16' 07,19"	23° 26' 17"	16m 27s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	131° 28' 18"	1° 21' 03"	134° 19' 24"	18° 38' 15"	58' 46"	16' 00,80"	106° 11' 06"	48,47%
01:00	132° 02' 58"	1° 18' 06"	134° 53' 37"	18° 25' 44"	58' 45"	16' 00,44"	106° 21' 48"	48,01%
02:00	132° 37' 36"	1° 15' 08"	135° 27' 44"	18° 13' 07"	58' 44"	16' 00,08"	106° 32' 20"	47,54%
03:00	133° 12' 12"	1° 12' 10"	136° 01' 44"	18° 00' 24"	58' 42"	16' 00,00"	106° 42' 41"	47,07%
04:00	133° 46' 47"	1° 09' 12"	136° 35' 38"	17° 47' 37"	58' 41"	15' 59,36"	106° 52' 52"	46,61%
05:00	134° 21' 20"	1° 06' 13"	137° 09' 25"	17° 34' 44"	58' 40"	15' 59,00"	107° 02' 52"	46,14%
06:00	134° 55' 52"	1° 03' 14"	137° 43' 06"	17° 21' 46"	58' 38"	15' 58,64"	107° 12' 41"	45,68%
07:00	135° 30' 22"	1° 00' 15"	138° 16' 41"	17° 08' 43"	58' 37"	15' 58,28"	107° 22' 19"	45,21%
08:00	136° 04' 50"	0° 57' 15"	138° 50' 10"	16° 55' 35"	58' 36"	15' 57,92"	107° 31' 47"	44,75%
09:00	136° 39' 17"	0° 54' 15"	139° 23' 32"	16° 42' 22"	58' 34"	15' 57,56"	107° 41' 04"	44,29%
10:00	137° 13' 42"	0° 51' 15"	139° 56' 49"	16° 29' 04"	58' 33"	15' 57,19"	107° 50' 10"	43,83%
11:00	137° 48' 06"	0° 48' 15"	140° 29' 59"	16° 15' 42"	58' 32"	15' 56,83"	107° 59' 06"	43,37%
12:00	138° 22' 28"	0° 45' 15"	141° 03' 03"	16° 02' 15"	58' 30"	15' 56,47"	108° 07' 51"	42,91%
13:00	138° 56' 48"	0° 42' 15"	141° 36' 02"	15° 48' 44"	58' 29"	15' 56,10"	108° 16' 25"	42,45%
14:00	139° 31' 07"	0° 39' 14"	142° 08' 54"	15° 35' 08"	58' 28"	15' 55,74"	108° 24' 49"	41,99%
15:00	140° 05' 25"	0° 36' 14"	142° 41' 41"	15° 21' 29"	58' 26"	15' 55,37"	108° 33' 02"	41,54%
16:00	140° 39' 40"	0° 33' 13"	143° 14' 22"	15° 07' 44"	58' 25"	15' 55,00"	108° 41' 04"	41,08%
17:00	141° 13' 55"	0° 30' 13"	143° 46' 57"	14° 53' 56"	58' 24"	15' 54,64"	108° 48' 56"	40,63%
18:00	141° 48' 07"	0° 27' 12"	144° 19' 27"	14° 40' 04"	58' 22"	15' 54,27"	108° 56' 37"	40,18%
19:00	142° 22' 18"	0° 24' 11"	144° 51' 51"	14° 26' 08"	58' 21"	15' 53,90"	109° 04' 07"	39,72%
20:00	142° 56' 28"	0° 21' 10"	145° 24' 09"	14° 12' 09"	58' 20"	15' 53,54"	109° 11' 27"	39,27%
21:00	143° 30' 36"	0° 18' 10"	145° 56' 22"	13° 58' 05"	58' 18"	15' 53,17"	109° 18' 36"	38,82%
22:00	144° 04' 43"	0° 15' 09"	146° 28' 30"	13° 43' 58"	58' 17"	15' 52,80"	109° 25' 35"	38,38%
23:00	144° 38' 48"	0° 12' 08"	147° 00' 33"	13° 29' 48"	58' 16"	15' 52,43"	109° 32' 23"	37,93%
24:00	145° 12' 51"	0° 09' 08"	147° 32' 30"	13° 15' 34"	58' 14"	15' 52,07"	109° 39' 00"	37,48%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	220° 34' 41"	0,17"	218° 09' 34"	-14° 59' 42"	0,9921826	16' 07,19"	23° 26' 17"	16m 27s
01:00	220° 37' 12"	0,17"	218° 12' 02"	-15° 00' 29"	0,9921722	16' 07,20"	23° 26' 17"	16m 27s
02:00	220° 39' 42"	0,16"	218° 14' 30"	-15° 01' 16"	0,9921619	16' 07,21"	23° 26' 17"	16m 27s
03:00	220° 42' 12"	0,15"	218° 16' 57"	-15° 02' 03"	0,9921515	16' 07,22"	23° 26' 17"	16m 27s
04:00	220° 44' 42"	0,15"	218° 19' 25"	-15° 02' 49"	0,9921412	16' 07,23"	23° 26' 17"	16m 27s
05:00	220° 47' 12"	0,14"	218° 21' 53"	-15° 03' 36"	0,9921308	16' 07,24"	23° 26' 17"	16m 27s
06:00	220° 49' 43"	0,14"	218° 24' 21"	-15° 04' 23"	0,9921205	16' 07,25"	23° 26' 17"	16m 27s
07:00	220° 52' 13"	0,13"	218° 26' 49"	-15° 05' 10"	0,9921101	16' 07,26"	23° 26' 17"	16m 27s
08:00	220° 54' 43"	0,13"	218° 29' 16"	-15° 05' 57"	0,9920998	16' 07,27"	23° 26' 17"	16m 27s
09:00	220° 57' 13"	0,12"	218° 31' 44"	-15° 06' 43"	0,9920895	16' 07,28"	23° 26' 17"	16m 27s
10:00	220° 59' 43"	0,12"	218° 34' 12"	-15° 07' 30"	0,9920791	16' 07,29"	23° 26' 17"	16m 27s
11:00	221° 02' 14"	0,11"	218° 36' 40"	-15° 08' 17"	0,9920688	16' 07,30"	23° 26' 17"	16m 27s
12:00	221° 04' 44"	0,11"	218° 39' 08"	-15° 09' 04"	0,9920585	16' 07,31"	23° 26' 17"	16m 27s
13:00	221° 07' 14"	0,10"	218° 41' 36"	-15° 09' 50"	0,9920482	16' 07,32"	23° 26' 17"	16m 27s
14:00	221° 09' 44"	0,10"	218° 44' 04"	-15° 10' 37"	0,9920378	16' 07,33"	23° 26' 17"	16m 27s
15:00	221° 12' 15"	0,09"	218° 46' 32"	-15° 11' 23"	0,9920275	16' 07,34"	23° 26' 17"	16m 27s
16:00	221° 14' 45"	0,08"	218° 49' 00"	-15° 12' 10"	0,9920172	16' 07,35"	23° 26' 17"	16m 27s
17:00	221° 17' 15"	0,08"	218° 51' 28"	-15° 12' 57"	0,9920069	16' 07,36"	23° 26' 17"	16m 27s
18:00	221° 19' 45"	0,07"	218° 53' 56"	-15° 13' 43"	0,9919966	16' 07,37"	23° 26' 17"	16m 27s
19:00	221° 22' 15"	0,07"	218° 56' 24"	-15° 14' 30"	0,9919863	16' 07,38"	23° 26' 17"	16m 27s
20:00	221° 24' 46"	0,06"	218° 58' 52"	-15° 15' 16"	0,9919760	16' 07,39"	23° 26' 17"	16m 27s
21:00	221° 27' 16"	0,06"	219° 01' 20"	-15° 16' 03"	0,9919657	16' 07,40"	23° 26' 17"	16m 27s
22:00	221° 29' 46"	0,05"	219° 03' 48"	-15° 16' 49"	0,9919554	16' 07,41"	23° 26' 17"	16m 26s
23:00	221° 32' 16"	0,05"	219° 06' 17"	-15° 17' 35"	0,9919451	16' 07,42"	23° 26' 17"	16m 26s
24:00	221° 34' 47"	0,04"	219° 08' 45"	-15° 18' 22"	0,9919348	16' 07,43"	23° 26' 17"	16m 26s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	145° 12' 51"	0° 09' 08"	147° 32' 30"	13° 15' 34"	58' 14"	15' 52,07"	109° 39' 00"	37,48%
01:00	145° 46' 53"	0° 06' 07"	148° 04' 22"	13° 01' 16"	58' 13"	15' 51,70"	109° 45' 26"	37,04%
02:00	146° 20' 54"	0° 03' 07"	148° 36' 09"	12° 46' 56"	58' 12"	15' 51,33"	109° 51' 42"	36,60%
03:00	146° 54' 53"	0° 00' 07"	149° 07' 51"	12° 32' 32"	58' 10"	15' 50,96"	109° 57' 48"	36,16%
04:00	147° 28' 50"	-0° 02' 54"	149° 39' 28"	12° 18' 05"	58' 09"	15' 50,59"	110° 03' 43"	35,72%
05:00	148° 02' 46"	-0° 05' 54"	150° 11' 01"	12° 03' 35"	58' 07"	15' 50,22"	110° 09' 27"	35,28%
06:00	148° 36' 41"	-0° 08' 53"	150° 42' 28"	11° 49' 03"	58' 06"	15' 49,85"	110° 15' 01"	34,84%
07:00	149° 10' 34"	-0° 11' 53"	151° 13' 51"	11° 34' 27"	58' 05"	15' 49,49"	110° 20' 24"	34,41%
08:00	149° 44' 25"	-0° 14' 52"	151° 45' 09"	11° 19' 49"	58' 03"	15' 49,12"	110° 25' 36"	33,98%
09:00	150° 18' 16"	-0° 17' 52"	152° 16' 22"	11° 05' 08"	58' 02"	15' 48,75"	110° 30' 38"	33,55%
10:00	150° 52' 04"	-0° 20' 51"	152° 47' 32"	10° 50' 25"	58' 01"	15' 48,38"	110° 35' 29"	33,12%
11:00	151° 25' 51"	-0° 23' 49"	153° 18' 36"	10° 35' 39"	57' 59"	15' 48,01"	110° 40' 10"	32,69%
12:00	151° 59' 37"	-0° 26' 48"	153° 49' 36"	10° 20' 51"	57' 58"	15' 47,64"	110° 44' 40"	32,26%
13:00	152° 33' 22"	-0° 29' 46"	154° 20' 33"	10° 06' 00"	57' 57"	15' 47,27"	110° 48' 59"	31,84%
14:00	153° 07' 04"	-0° 32' 43"	154° 51' 24"	9° 51' 08"	57' 55"	15' 46,91"	110° 53' 08"	31,42%
15:00	153° 40' 46"	-0° 35' 41"	155° 22' 12"	9° 36' 13"	57' 54"	15' 46,54"	110° 57' 06"	31,00%
16:00	154° 14' 26"	-0° 38' 38"	155° 52' 56"	9° 21' 16"	57' 53"	15' 46,17"	111° 00' 53"	30,58%
17:00	154° 48' 05"	-0° 41' 35"	156° 23' 36"	9° 06' 17"	57' 51"	15' 45,80"	111° 04' 30"	30,16%
18:00	155° 21' 42"	-0° 44' 31"	156° 54' 11"	8° 51' 16"	57' 50"	15' 45,43"	111° 07' 56"	29,75%
19:00	155° 55' 18"	-0° 47' 27"	157° 24' 43"	8° 36' 13"	57' 49"	15' 45,07"	111° 11' 12"	29,33%
20:00	156° 28' 52"	-0° 50' 23"	157° 55' 12"	8° 21' 09"	57' 47"	15' 44,70"	111° 14' 17"	28,92%
21:00	157° 02' 25"	-0° 53' 18"	158° 25' 36"	8° 06' 03"	57' 46"	15' 44,33"	111° 17' 11"	28,51%
22:00	157° 35' 57"	-0° 56' 13"	158° 55' 57"	7° 50' 55"	57' 44"	15' 43,97"	111° 19' 54"	28,11%
23:00	158° 09' 27"	-0° 59' 07"	159° 26' 15"	7° 35' 46"	57' 43"	15' 43,60"	111° 22' 27"	27,70%
24:00	158° 42' 56"	-1° 02' 01"	159° 56' 29"	7° 20' 35"	57' 42"	15' 43,23"	111° 24' 49"	27,30%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	221° 34' 47"	0,04"	219° 08' 45"	-15° 18' 22"	0,9919348	16' 07,43"	23° 26' 17"	16m 26s
01:00	221° 37' 17"	0,04"	219° 11' 13"	-15° 19' 08"	0,9919245	16' 07,44"	23° 26' 17"	16m 26s
02:00	221° 39' 47"	0,03"	219° 13' 41"	-15° 19' 54"	0,9919143	16' 07,45"	23° 26' 17"	16m 26s
03:00	221° 42' 18"	0,03"	219° 16' 09"	-15° 20' 41"	0,9919040	16' 07,46"	23° 26' 17"	16m 26s
04:00	221° 44' 48"	0,02"	219° 18' 38"	-15° 21' 27"	0,9918937	16' 07,47"	23° 26' 17"	16m 26s
05:00	221° 47' 18"	0,02"	219° 21' 06"	-15° 22' 13"	0,9918834	16' 07,48"	23° 26' 17"	16m 26s
06:00	221° 49' 48"	0,01"	219° 23' 34"	-15° 22' 59"	0,9918731	16' 07,49"	23° 26' 17"	16m 26s
07:00	221° 52' 19"	0,01"	219° 26' 03"	-15° 23' 46"	0,9918629	16' 07,50"	23° 26' 17"	16m 26s
08:00	221° 54' 49"	0,00"	219° 28' 31"	-15° 24' 32"	0,9918526	16' 07,51"	23° 26' 17"	16m 26s
09:00	221° 57' 19"	-0,00"	219° 30' 59"	-15° 25' 18"	0,9918424	16' 07,52"	23° 26' 17"	16m 26s
10:00	221° 59' 50"	-0,01"	219° 33' 28"	-15° 26' 04"	0,9918321	16' 07,53"	23° 26' 17"	16m 26s
11:00	222° 02' 20"	-0,02"	219° 35' 56"	-15° 26' 50"	0,9918218	16' 07,54"	23° 26' 17"	16m 26s
12:00	222° 04' 50"	-0,02"	219° 38' 25"	-15° 27' 36"	0,9918116	16' 07,55"	23° 26' 17"	16m 26s
13:00	222° 07' 20"	-0,03"	219° 40' 53"	-15° 28' 22"	0,9918013	16' 07,56"	23° 26' 17"	16m 26s
14:00	222° 09' 51"	-0,03"	219° 43' 21"	-15° 29' 08"	0,9917911	16' 07,57"	23° 26' 17"	16m 26s
15:00	222° 12' 21"	-0,04"	219° 45' 50"	-15° 29' 54"	0,9917808	16' 07,58"	23° 26' 17"	16m 26s
16:00	222° 14' 51"	-0,04"	219° 48' 19"	-15° 30' 40"	0,9917706	16' 07,59"	23° 26' 17"	16m 26s
17:00	222° 17' 22"	-0,05"	219° 50' 47"	-15° 31' 26"	0,9917603	16' 07,60"	23° 26' 17"	16m 26s
18:00	222° 19' 52"	-0,05"	219° 53' 16"	-15° 32' 12"	0,9917501	16' 07,61"	23° 26' 17"	16m 26s
19:00	222° 22' 22"	-0,06"	219° 55' 44"	-15° 32' 58"	0,9917399	16' 07,62"	23° 26' 17"	16m 26s
20:00	222° 24' 53"	-0,06"	219° 58' 13"	-15° 33' 44"	0,9917296	16' 07,63"	23° 26' 17"	16m 26s
21:00	222° 27' 23"	-0,07"	220° 00' 41"	-15° 34' 29"	0,9917194	16' 07,64"	23° 26' 17"	16m 26s
22:00	222° 29' 53"	-0,07"	220° 03' 10"	-15° 35' 15"	0,9917092	16' 07,65"	23° 26' 17"	16m 26s
23:00	222° 32' 24"	-0,08"	220° 05' 39"	-15° 36' 01"	0,9916990	16' 07,66"	23° 26' 17"	16m 26s
24:00	222° 34' 54"	-0,08"	220° 08' 08"	-15° 36' 47"	0,9916887	16' 07,67"	23° 26' 17"	16m 25s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	158° 42' 56"	-1° 02' 01"	159° 56' 29"	7° 20' 35"	57' 42"	15' 43,23"	111° 24' 49"	27,30%
01:00	159° 16' 24"	-1° 04' 54"	160° 26' 40"	7° 05' 23"	57' 40"	15' 42,87"	111° 27' 00"	26,90%
02:00	159° 49' 50"	-1° 07' 47"	160° 56' 47"	6° 50' 10"	57' 39"	15' 42,50"	111° 29' 01"	26,50%
03:00	160° 23' 15"	-1° 10' 39"	161° 26' 52"	6° 34' 56"	57' 38"	15' 42,14"	111° 30' 51"	26,11%
04:00	160° 56' 38"	-1° 13' 31"	161° 56' 53"	6° 19' 40"	57' 36"	15' 41,77"	111° 32' 29"	25,71%
05:00	161° 30' 00"	-1° 16' 22"	162° 26' 51"	6° 04' 23"	57' 35"	15' 41,41"	111° 33' 57"	25,32%
06:00	162° 03' 21"	-1° 19' 13"	162° 56' 46"	5° 49' 06"	57' 34"	15' 41,04"	111° 35' 15"	24,93%
07:00	162° 36' 41"	-1° 22' 03"	163° 26' 39"	5° 33' 47"	57' 32"	15' 40,68"	111° 36' 21"	24,55%
08:00	163° 09' 59"	-1° 24' 52"	163° 56' 28"	5° 18' 28"	57' 31"	15' 40,32"	111° 37' 16"	24,16%
09:00	163° 43' 16"	-1° 27' 41"	164° 26' 15"	5° 03' 08"	57' 30"	15' 39,95"	111° 38' 00"	23,78%
10:00	164° 16' 31"	-1° 30' 29"	164° 55' 59"	4° 47' 47"	57' 28"	15' 39,59"	111° 38' 34"	23,40%
11:00	164° 49' 45"	-1° 33' 17"	165° 25' 41"	4° 32' 25"	57' 27"	15' 39,23"	111° 38' 56"	23,02%
12:00	165° 22' 58"	-1° 36' 04"	165° 55' 20"	4° 17' 03"	57' 26"	15' 38,87"	111° 39' 07"	22,65%
13:00	165° 56' 10"	-1° 38' 50"	166° 24' 56"	4° 01' 41"	57' 24"	15' 38,50"	111° 39' 07"	22,28%
14:00	166° 29' 20"	-1° 41' 36"	166° 54' 31"	3° 46' 18"	57' 23"	15' 38,14"	111° 38' 55"	21,91%
15:00	167° 02' 29"	-1° 44' 20"	167° 24' 03"	3° 30' 54"	57' 22"	15' 37,78"	111° 38' 33"	21,54%
16:00	167° 35' 37"	-1° 47' 05"	167° 53' 33"	3° 15' 31"	57' 20"	15' 37,42"	111° 37' 59"	21,17%
17:00	168° 08' 43"	-1° 49' 48"	168° 23' 00"	3° 00' 07"	57' 19"	15' 37,06"	111° 37' 14"	20,81%
18:00	168° 41' 49"	-1° 52' 31"	168° 52' 26"	2° 44' 43"	57' 18"	15' 36,70"	111° 36' 17"	20,45%
19:00	169° 14' 53"	-1° 55' 13"	169° 21' 50"	2° 29' 19"	57' 17"	15' 36,34"	111° 35' 09"	20,10%
20:00	169° 47' 55"	-1° 57' 54"	169° 51' 12"	2° 13' 55"	57' 15"	15' 35,98"	111° 33' 49"	19,74%
21:00	170° 20' 57"	-2° 00' 34"	170° 20' 32"	1° 58' 31"	57' 14"	15' 35,63"	111° 32' 17"	19,39%
22:00	170° 53' 57"	-2° 03' 14"	170° 49' 50"	1° 43' 07"	57' 13"	15' 35,27"	111° 30' 34"	19,04%
23:00	171° 26' 56"	-2° 05' 53"	171° 19' 06"	1° 27' 44"	57' 11"	15' 34,91"	111° 28' 39"	18,70%
24:00	171° 59' 54"	-2° 08' 31"	171° 48' 21"	1° 12' 20"	57' 10"	15' 34,55"	111° 26' 33"	18,35%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	222° 34' 54"	-0,08"	220° 08' 08"	-15° 36' 47"	0,9916887	16' 07,67"	23° 26' 17"	16m 25s
01:00	222° 37' 24"	-0,09"	220° 10' 36"	-15° 37' 32"	0,9916785	16' 07,68"	23° 26' 17"	16m 25s
02:00	222° 39' 55"	-0,09"	220° 13' 05"	-15° 38' 18"	0,9916683	16' 07,69"	23° 26' 17"	16m 25s
03:00	222° 42' 25"	-0,09"	220° 15' 34"	-15° 39' 04"	0,9916581	16' 07,70"	23° 26' 17"	16m 25s
04:00	222° 44' 56"	-0,10"	220° 18' 03"	-15° 39' 49"	0,9916479	16' 07,71"	23° 26' 17"	16m 25s
05:00	222° 47' 26"	-0,10"	220° 20' 31"	-15° 40' 35"	0,9916377	16' 07,72"	23° 26' 17"	16m 25s
06:00	222° 49' 56"	-0,11"	220° 23' 00"	-15° 41' 21"	0,9916275	16' 07,73"	23° 26' 17"	16m 25s
07:00	222° 52' 27"	-0,11"	220° 25' 29"	-15° 42' 06"	0,9916173	16' 07,74"	23° 26' 17"	16m 25s
08:00	222° 54' 57"	-0,12"	220° 27' 58"	-15° 42' 52"	0,9916071	16' 07,75"	23° 26' 17"	16m 25s
09:00	222° 57' 27"	-0,12"	220° 30' 27"	-15° 43' 37"	0,9915969	16' 07,76"	23° 26' 17"	16m 25s
10:00	222° 59' 58"	-0,13"	220° 32' 56"	-15° 44' 23"	0,9915867	16' 07,77"	23° 26' 17"	16m 25s
11:00	223° 02' 28"	-0,13"	220° 35' 25"	-15° 45' 08"	0,9915765	16' 07,78"	23° 26' 17"	16m 25s
12:00	223° 04' 59"	-0,14"	220° 37' 54"	-15° 45' 54"	0,9915663	16' 07,79"	23° 26' 17"	16m 25s
13:00	223° 07' 29"	-0,14"	220° 40' 23"	-15° 46' 39"	0,9915561	16' 07,80"	23° 26' 17"	16m 25s
14:00	223° 09' 59"	-0,15"	220° 42' 52"	-15° 47' 24"	0,9915459	16' 07,81"	23° 26' 17"	16m 25s
15:00	223° 12' 30"	-0,15"	220° 45' 21"	-15° 48' 10"	0,9915357	16' 07,82"	23° 26' 17"	16m 24s
16:00	223° 15' 00"	-0,15"	220° 47' 50"	-15° 48' 55"	0,9915255	16' 07,83"	23° 26' 17"	16m 24s
17:00	223° 17' 31"	-0,16"	220° 50' 19"	-15° 49' 40"	0,9915154	16' 07,84"	23° 26' 17"	16m 24s
18:00	223° 20' 01"	-0,16"	220° 52' 48"	-15° 50' 25"	0,9915052	16' 07,85"	23° 26' 17"	16m 24s
19:00	223° 22' 31"	-0,17"	220° 55' 17"	-15° 51' 11"	0,9914950	16' 07,86"	23° 26' 17"	16m 24s
20:00	223° 25' 02"	-0,17"	220° 57' 46"	-15° 51' 56"	0,9914848	16' 07,87"	23° 26' 17"	16m 24s
21:00	223° 27' 32"	-0,18"	221° 00' 15"	-15° 52' 41"	0,9914747	16' 07,88"	23° 26' 17"	16m 24s
22:00	223° 30' 03"	-0,18"	221° 02' 45"	-15° 53' 26"	0,9914645	16' 07,89"	23° 26' 17"	16m 24s
23:00	223° 32' 33"	-0,19"	221° 05' 14"	-15° 54' 11"	0,9914543	16' 07,90"	23° 26' 17"	16m 24s
24:00	223° 35' 04"	-0,19"	221° 07' 43"	-15° 54' 56"	0,9914442	16' 07,91"	23° 26' 17"	16m 24s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	171° 59' 54"	-2° 08' 31"	171° 48' 21"	1° 12' 20"	57' 10"	15' 34,55"	111° 26' 33"	18,35%
01:00	172° 32' 50"	-2° 11' 08"	172° 17' 35"	0° 56' 57"	57' 09"	15' 34,20"	111° 24' 14"	18,01%
02:00	173° 05' 45"	-2° 13' 44"	172° 46' 47"	0° 41' 35"	57' 07"	15' 33,84"	111° 21' 43"	17,67%
03:00	173° 38' 39"	-2° 16' 19"	173° 15' 58"	0° 26' 12"	57' 06"	15' 33,49"	111° 19' 00"	17,34%
04:00	174° 11' 32"	-2° 18' 54"	173° 45' 07"	0° 10' 51"	57' 05"	15' 33,13"	111° 16' 05"	17,01%
05:00	174° 44' 24"	-2° 21' 28"	174° 14' 15"	-0° 04' 30"	57' 03"	15' 32,78"	111° 12' 57"	16,68%
06:00	175° 17' 14"	-2° 24' 01"	174° 43' 22"	-0° 19' 51"	57' 02"	15' 32,42"	111° 09' 37"	16,35%
07:00	175° 50' 03"	-2° 26' 32"	175° 12' 28"	-0° 35' 10"	57' 01"	15' 32,07"	111° 06' 04"	16,03%
08:00	176° 22' 51"	-2° 29' 03"	175° 41' 33"	-0° 50' 29"	57' 00"	15' 31,72"	111° 02' 19"	15,71%
09:00	176° 55' 38"	-2° 31' 33"	176° 10' 37"	-1° 05' 47"	56' 58"	15' 31,37"	110° 58' 21"	15,39%
10:00	177° 28' 24"	-2° 34' 02"	176° 39' 40"	-1° 21' 04"	56' 57"	15' 31,01"	110° 54' 09"	15,07%
11:00	178° 01' 08"	-2° 36' 31"	177° 08' 42"	-1° 36' 20"	56' 56"	15' 30,66"	110° 49' 45"	14,76%
12:00	178° 33' 51"	-2° 38' 58"	177° 37' 44"	-1° 51' 35"	56' 54"	15' 30,31"	110° 45' 07"	14,45%
13:00	179° 06' 33"	-2° 41' 24"	178° 06' 45"	-2° 06' 49"	56' 53"	15' 29,96"	110° 40' 16"	14,15%
14:00	179° 39' 14"	-2° 43' 49"	178° 35' 45"	-2° 22' 02"	56' 52"	15' 29,61"	110° 35' 11"	13,84%
15:00	180° 11' 53"	-2° 46' 13"	179° 04' 45"	-2° 37' 14"	56' 51"	15' 29,26"	110° 29' 52"	13,54%
16:00	180° 44' 32"	-2° 48' 36"	179° 33' 44"	-2° 52' 24"	56' 49"	15' 28,92"	110° 24' 20"	13,24%
17:00	181° 17' 09"	-2° 50' 59"	180° 02' 43"	-3° 07' 33"	56' 48"	15' 28,57"	110° 18' 33"	12,95%
18:00	181° 49' 45"	-2° 53' 20"	180° 31' 42"	-3° 22' 40"	56' 47"	15' 28,22"	110° 12' 32"	12,66%
19:00	182° 22' 20"	-2° 55' 40"	181° 00' 40"	-3° 37' 46"	56' 45"	15' 27,87"	110° 06' 16"	12,37%
20:00	182° 54' 54"	-2° 57' 59"	181° 29' 38"	-3° 52' 51"	56' 44"	15' 27,53"	109° 59' 45"	12,09%
21:00	183° 27' 27"	-3° 00' 17"	181° 58' 37"	-4° 07' 53"	56' 43"	15' 27,18"	109° 52' 59"	11,81%
22:00	183° 59' 58"	-3° 02' 34"	182° 27' 35"	-4° 22' 55"	56' 42"	15' 26,84"	109° 45' 58"	11,53%
23:00	184° 32' 28"	-3° 04' 49"	182° 56' 33"	-4° 37' 54"	56' 40"	15' 26,49"	109° 38' 41"	11,25%
24:00	185° 04' 58"	-3° 07' 04"	183° 25' 31"	-4° 52' 52"	56' 39"	15' 26,15"	109° 31' 09"	10,98%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	223° 35' 04"	-0,19"	221° 07' 43"	-15° 54' 56"	0,9914442	16' 07,91"	23° 26' 17"	16m 24s
01:00	223° 37' 34"	-0,19"	221° 10' 12"	-15° 55' 41"	0,9914340	16' 07,92"	23° 26' 17"	16m 24s
02:00	223° 40' 04"	-0,20"	221° 12' 42"	-15° 56' 26"	0,9914239	16' 07,93"	23° 26' 17"	16m 23s
03:00	223° 42' 35"	-0,20"	221° 15' 11"	-15° 57' 11"	0,9914137	16' 07,94"	23° 26' 17"	16m 23s
04:00	223° 45' 05"	-0,21"	221° 17' 40"	-15° 57' 56"	0,9914036	16' 07,95"	23° 26' 17"	16m 23s
05:00	223° 47' 36"	-0,21"	221° 20' 10"	-15° 58' 41"	0,9913934	16' 07,96"	23° 26' 17"	16m 23s
06:00	223° 50' 06"	-0,21"	221° 22' 39"	-15° 59' 26"	0,9913833	16' 07,97"	23° 26' 17"	16m 23s
07:00	223° 52' 37"	-0,22"	221° 25' 08"	-16° 00' 11"	0,9913731	16' 07,98"	23° 26' 17"	16m 23s
08:00	223° 55' 07"	-0,22"	221° 27' 38"	-16° 00' 56"	0,9913630	16' 07,99"	23° 26' 17"	16m 23s
09:00	223° 57' 38"	-0,23"	221° 30' 07"	-16° 01' 41"	0,9913528	16' 08,00"	23° 26' 17"	16m 23s
10:00	224° 00' 08"	-0,23"	221° 32' 37"	-16° 02' 26"	0,9913427	16' 08,01"	23° 26' 17"	16m 23s
11:00	224° 02' 39"	-0,23"	221° 35' 06"	-16° 03' 10"	0,9913326	16' 08,02"	23° 26' 17"	16m 23s
12:00	224° 05' 09"	-0,24"	221° 37' 36"	-16° 03' 55"	0,9913224	16' 08,03"	23° 26' 17"	16m 22s
13:00	224° 07' 39"	-0,24"	221° 40' 05"	-16° 04' 40"	0,9913123	16' 08,04"	23° 26' 17"	16m 22s
14:00	224° 10' 10"	-0,25"	221° 42' 35"	-16° 05' 25"	0,9913022	16' 08,05"	23° 26' 17"	16m 22s
15:00	224° 12' 40"	-0,25"	221° 45' 04"	-16° 06' 09"	0,9912921	16' 08,06"	23° 26' 17"	16m 22s
16:00	224° 15' 11"	-0,25"	221° 47' 34"	-16° 06' 54"	0,9912819	16' 08,07"	23° 26' 17"	16m 22s
17:00	224° 17' 41"	-0,26"	221° 50' 03"	-16° 07' 39"	0,9912718	16' 08,08"	23° 26' 17"	16m 22s
18:00	224° 20' 12"	-0,26"	221° 52' 33"	-16° 08' 23"	0,9912617	16' 08,09"	23° 26' 17"	16m 22s
19:00	224° 22' 42"	-0,26"	221° 55' 03"	-16° 09' 08"	0,9912516	16' 08,10"	23° 26' 17"	16m 22s
20:00	224° 25' 13"	-0,27"	221° 57' 32"	-16° 09' 52"	0,9912415	16' 08,11"	23° 26' 17"	16m 22s
21:00	224° 27' 43"	-0,27"	222° 00' 02"	-16° 10' 37"	0,9912314	16' 08,12"	23° 26' 17"	16m 21s
22:00	224° 30' 14"	-0,27"	222° 02' 32"	-16° 11' 21"	0,9912213	16' 08,13"	23° 26' 17"	16m 21s
23:00	224° 32' 44"	-0,28"	222° 05' 02"	-16° 12' 06"	0,9912112	16' 08,14"	23° 26' 17"	16m 21s
24:00	224° 35' 15"	-0,28"	222° 07' 31"	-16° 12' 50"	0,9912011	16' 08,15"	23° 26' 17"	16m 21s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	185° 04' 58"	-3° 07' 04"	183° 25' 31"	-4° 52' 52"	56' 39"	15' 26,15"	109° 31' 09"	10,98%
01:00	185° 37' 26"	-3° 09' 17"	183° 54' 29"	-5° 07' 47"	56' 38"	15' 25,80"	109° 23' 20"	10,71%
02:00	186° 09' 52"	-3° 11' 30"	184° 23' 28"	-5° 22' 41"	56' 37"	15' 25,46"	109° 15' 15"	10,44%
03:00	186° 42' 18"	-3° 13' 41"	184° 52' 27"	-5° 37' 33"	56' 35"	15' 25,12"	109° 06' 53"	10,18%
04:00	187° 14' 43"	-3° 15' 51"	185° 21' 26"	-5° 52' 23"	56' 34"	15' 24,78"	108° 58' 13"	9,92%
05:00	187° 47' 06"	-3° 18' 00"	185° 50' 25"	-6° 07' 11"	56' 33"	15' 24,43"	108° 49' 17"	9,67%
06:00	188° 19' 28"	-3° 20' 08"	186° 19' 25"	-6° 21' 56"	56' 32"	15' 24,09"	108° 40' 02"	9,41%
07:00	188° 51' 50"	-3° 22' 15"	186° 48' 26"	-6° 36' 40"	56' 30"	15' 23,75"	108° 30' 29"	9,16%
08:00	189° 24' 10"	-3° 24' 20"	187° 17' 27"	-6° 51' 21"	56' 29"	15' 23,41"	108° 20' 37"	8,92%
09:00	189° 56' 28"	-3° 26' 25"	187° 46' 29"	-7° 06' 00"	56' 28"	15' 23,08"	108° 10' 27"	8,67%
10:00	190° 28' 46"	-3° 28' 28"	188° 15' 31"	-7° 20' 36"	56' 27"	15' 22,74"	107° 59' 56"	8,43%
11:00	191° 01' 03"	-3° 30' 30"	188° 44' 35"	-7° 35' 10"	56' 25"	15' 22,40"	107° 49' 05"	8,20%
12:00	191° 33' 18"	-3° 32' 30"	189° 13' 39"	-7° 49' 41"	56' 24"	15' 22,06"	107° 37' 54"	7,96%
13:00	192° 05' 33"	-3° 34' 30"	189° 42' 44"	-8° 04' 10"	56' 23"	15' 21,73"	107° 26' 21"	7,73%
14:00	192° 37' 46"	-3° 36' 28"	190° 11' 50"	-8° 18' 36"	56' 22"	15' 21,39"	107° 14' 27"	7,51%
15:00	193° 09' 58"	-3° 38' 25"	190° 40' 57"	-8° 33' 00"	56' 20"	15' 21,06"	107° 02' 10"	7,28%
16:00	193° 42' 09"	-3° 40' 21"	191° 10' 05"	-8° 47' 20"	56' 19"	15' 20,72"	106° 49' 30"	7,06%
17:00	194° 14' 19"	-3° 42' 16"	191° 39' 14"	-9° 01' 38"	56' 18"	15' 20,39"	106° 36' 25"	6,85%
18:00	194° 46' 28"	-3° 44' 09"	192° 08' 24"	-9° 15' 53"	56' 17"	15' 20,05"	106° 22' 57"	6,63%
19:00	195° 18' 35"	-3° 46' 01"	192° 37' 36"	-9° 30' 05"	56' 15"	15' 19,72"	106° 09' 02"	6,42%
20:00	195° 50' 42"	-3° 47' 51"	193° 06' 49"	-9° 44' 14"	56' 14"	15' 19,39"	105° 54' 41"	6,22%
21:00	196° 22' 47"	-3° 49' 41"	193° 36' 03"	-9° 58' 20"	56' 13"	15' 19,06"	105° 39' 53"	6,01%
22:00	196° 54' 52"	-3° 51' 29"	194° 05' 19"	-10° 12' 23"	56' 12"	15' 18,73"	105° 24' 37"	5,81%
23:00	197° 26' 55"	-3° 53' 16"	194° 34' 36"	-10° 26' 23"	56' 11"	15' 18,40"	105° 08' 51"	5,62%
24:00	197° 58' 57"	-3° 55' 01"	195° 03' 54"	-10° 40' 19"	56' 09"	15' 18,07"	104° 52' 35"	5,43%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	224° 35' 15"	-0,28"	222° 07' 31"	-16° 12' 50"	0,9912011	16' 08,15"	23° 26' 17"	16m 21s
01:00	224° 37' 45"	-0,28"	222° 10' 01"	-16° 13' 35"	0,9911910	16' 08,16"	23° 26' 17"	16m 21s
02:00	224° 40' 16"	-0,29"	222° 12' 31"	-16° 14' 19"	0,9911809	16' 08,17"	23° 26' 17"	16m 21s
03:00	224° 42' 46"	-0,29"	222° 15' 01"	-16° 15' 03"	0,9911708	16' 08,18"	23° 26' 17"	16m 21s
04:00	224° 45' 17"	-0,29"	222° 17' 31"	-16° 15' 48"	0,9911607	16' 08,19"	23° 26' 17"	16m 20s
05:00	224° 47' 48"	-0,30"	222° 20' 00"	-16° 16' 32"	0,9911506	16' 08,20"	23° 26' 17"	16m 20s
06:00	224° 50' 18"	-0,30"	222° 22' 30"	-16° 17' 16"	0,9911405	16' 08,21"	23° 26' 17"	16m 20s
07:00	224° 52' 49"	-0,30"	222° 25' 00"	-16° 18' 00"	0,9911304	16' 08,22"	23° 26' 17"	16m 20s
08:00	224° 55' 19"	-0,31"	222° 27' 30"	-16° 18' 44"	0,9911203	16' 08,23"	23° 26' 17"	16m 20s
09:00	224° 57' 50"	-0,31"	222° 30' 00"	-16° 19' 29"	0,9911102	16' 08,24"	23° 26' 17"	16m 20s
10:00	225° 00' 20"	-0,31"	222° 32' 30"	-16° 20' 13"	0,9911002	16' 08,25"	23° 26' 17"	16m 20s
11:00	225° 02' 51"	-0,31"	222° 35' 00"	-16° 20' 57"	0,9910901	16' 08,26"	23° 26' 17"	16m 20s
12:00	225° 05' 21"	-0,32"	222° 37' 30"	-16° 21' 41"	0,9910800	16' 08,27"	23° 26' 17"	16m 19s
13:00	225° 07' 52"	-0,32"	222° 40' 00"	-16° 22' 25"	0,9910699	16' 08,28"	23° 26' 17"	16m 19s
14:00	225° 10' 22"	-0,32"	222° 42' 30"	-16° 23' 09"	0,9910599	16' 08,29"	23° 26' 17"	16m 19s
15:00	225° 12' 53"	-0,33"	222° 45' 00"	-16° 23' 53"	0,9910498	16' 08,30"	23° 26' 17"	16m 19s
16:00	225° 15' 24"	-0,33"	222° 47' 30"	-16° 24' 37"	0,9910397	16' 08,31"	23° 26' 17"	16m 19s
17:00	225° 17' 54"	-0,33"	222° 50' 01"	-16° 25' 21"	0,9910297	16' 08,32"	23° 26' 17"	16m 19s
18:00	225° 20' 25"	-0,33"	222° 52' 31"	-16° 26' 05"	0,9910196	16' 08,33"	23° 26' 16"	16m 18s
19:00	225° 22' 55"	-0,34"	222° 55' 01"	-16° 26' 49"	0,9910096	16' 08,34"	23° 26' 16"	16m 18s
20:00	225° 25' 26"	-0,34"	222° 57' 31"	-16° 27' 33"	0,9909995	16' 08,35"	23° 26' 16"	16m 18s
21:00	225° 27' 57"	-0,34"	223° 00' 01"	-16° 28' 16"	0,9909895	16' 08,36"	23° 26' 16"	16m 18s
22:00	225° 30' 27"	-0,34"	223° 02' 32"	-16° 29' 00"	0,9909794	16' 08,37"	23° 26' 16"	16m 18s
23:00	225° 32' 58"	-0,35"	223° 05' 02"	-16° 29' 44"	0,9909694	16' 08,38"	23° 26' 16"	16m 18s
24:00	225° 35' 28"	-0,35"	223° 07' 32"	-16° 30' 28"	0,9909593	16' 08,38"	23° 26' 16"	16m 18s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	197° 58' 57"	-3° 55' 01"	195° 03' 54"	-10° 40' 19"	56' 09"	15' 18,07"	104° 52' 35"	5,43%
01:00	198° 30' 58"	-3° 56' 46"	195° 33' 14"	-10° 54' 12"	56' 08"	15' 17,74"	104° 35' 47"	5,24%
02:00	199° 02' 58"	-3° 58' 29"	196° 02' 36"	-11° 08' 02"	56' 07"	15' 17,41"	104° 18' 26"	5,05%
03:00	199° 34' 57"	-4° 00' 10"	196° 32' 00"	-11° 21' 49"	56' 06"	15' 17,08"	104° 00' 31"	4,87%
04:00	200° 06' 54"	-4° 01' 50"	197° 01' 25"	-11° 35' 32"	56' 05"	15' 16,76"	103° 42' 00"	4,69%
05:00	200° 38' 51"	-4° 03' 29"	197° 30' 51"	-11° 49' 11"	56' 03"	15' 16,43"	103° 22' 51"	4,51%
06:00	201° 10' 46"	-4° 05' 07"	198° 00' 20"	-12° 02' 47"	56' 02"	15' 16,11"	103° 03' 03"	4,34%
07:00	201° 42' 40"	-4° 06' 43"	198° 29' 51"	-12° 16' 19"	56' 01"	15' 15,78"	102° 42' 34"	4,17%
08:00	202° 14' 34"	-4° 08' 18"	198° 59' 23"	-12° 29' 47"	56' 00"	15' 15,46"	102° 21' 22"	4,01%
09:00	202° 46' 26"	-4° 09' 51"	199° 28' 57"	-12° 43' 12"	55' 59"	15' 15,13"	101° 59' 25"	3,84%
10:00	203° 18' 17"	-4° 11' 23"	199° 58' 33"	-12° 56' 33"	55' 57"	15' 14,81"	101° 36' 39"	3,69%
11:00	203° 50' 07"	-4° 12' 54"	200° 28' 12"	-13° 09' 50"	55' 56"	15' 14,49"	101° 13' 04"	3,53%
12:00	204° 21' 55"	-4° 14' 24"	200° 57' 52"	-13° 23' 03"	55' 55"	15' 14,17"	100° 48' 36"	3,38%
13:00	204° 53' 43"	-4° 15' 51"	201° 27' 35"	-13° 36' 12"	55' 54"	15' 13,85"	100° 23' 11"	3,23%
14:00	205° 25' 29"	-4° 17' 18"	201° 57' 19"	-13° 49' 17"	55' 53"	15' 13,53"	99° 56' 47"	3,09%
15:00	205° 57' 15"	-4° 18' 43"	202° 27' 06"	-14° 02' 18"	55' 52"	15' 13,21"	99° 29' 21"	2,95%
16:00	206° 28' 59"	-4° 20' 07"	202° 56' 55"	-14° 15' 14"	55' 50"	15' 12,89"	99° 00' 47"	2,81%
17:00	207° 00' 42"	-4° 21' 29"	203° 26' 47"	-14° 28' 07"	55' 49"	15' 12,58"	98° 31' 02"	2,68%
18:00	207° 32' 25"	-4° 22' 50"	203° 56' 40"	-14° 40' 55"	55' 48"	15' 12,26"	98° 00' 02"	2,55%
19:00	208° 04' 06"	-4° 24' 10"	204° 26' 36"	-14° 53' 39"	55' 47"	15' 11,94"	97° 27' 40"	2,42%
20:00	208° 35' 45"	-4° 25' 28"	204° 56' 35"	-15° 06' 18"	55' 46"	15' 11,63"	96° 53' 52"	2,30%
21:00	209° 07' 24"	-4° 26' 45"	205° 26' 36"	-15° 18' 53"	55' 45"	15' 11,32"	96° 18' 31"	2,18%
22:00	209° 39' 02"	-4° 28' 00"	205° 56' 39"	-15° 31' 24"	55' 43"	15' 11,00"	95° 41' 31"	2,06%
23:00	210° 10' 39"	-4° 29' 14"	206° 26' 45"	-15° 43' 50"	55' 42"	15' 10,69"	95° 02' 42"	1,95%
24:00	210° 42' 14"	-4° 30' 26"	206° 56' 53"	-15° 56' 11"	55' 41"	15' 10,38"	94° 21' 58"	1,84%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	225° 35' 28"	-0,35"	223° 07' 32"	-16° 30' 28"	0,9909593	16' 08,38"	23° 26' 16"	16m 18s
01:00	225° 37' 59"	-0,35"	223° 10' 03"	-16° 31' 11"	0,9909493	16' 08,39"	23° 26' 16"	16m 17s
02:00	225° 40' 29"	-0,35"	223° 12' 33"	-16° 31' 55"	0,9909392	16' 08,40"	23° 26' 16"	16m 17s
03:00	225° 43' 00"	-0,36"	223° 15' 03"	-16° 32' 39"	0,9909292	16' 08,41"	23° 26' 16"	16m 17s
04:00	225° 45' 31"	-0,36"	223° 17' 34"	-16° 33' 22"	0,9909192	16' 08,42"	23° 26' 16"	16m 17s
05:00	225° 48' 01"	-0,36"	223° 20' 04"	-16° 34' 06"	0,9909091	16' 08,43"	23° 26' 16"	16m 17s
06:00	225° 50' 32"	-0,36"	223° 22' 34"	-16° 34' 49"	0,9908991	16' 08,44"	23° 26' 16"	16m 16s
07:00	225° 53' 03"	-0,36"	223° 25' 05"	-16° 35' 33"	0,9908891	16' 08,45"	23° 26' 16"	16m 16s
08:00	225° 55' 33"	-0,37"	223° 27' 35"	-16° 36' 16"	0,9908791	16' 08,46"	23° 26' 16"	16m 16s
09:00	225° 58' 04"	-0,37"	223° 30' 06"	-16° 37' 00"	0,9908690	16' 08,47"	23° 26' 16"	16m 16s
10:00	226° 00' 34"	-0,37"	223° 32' 36"	-16° 37' 43"	0,9908590	16' 08,48"	23° 26' 16"	16m 16s
11:00	226° 03' 05"	-0,37"	223° 35' 07"	-16° 38' 27"	0,9908490	16' 08,49"	23° 26' 16"	16m 16s
12:00	226° 05' 36"	-0,37"	223° 37' 38"	-16° 39' 10"	0,9908390	16' 08,50"	23° 26' 16"	16m 15s
13:00	226° 08' 06"	-0,38"	223° 40' 08"	-16° 39' 54"	0,9908290	16' 08,51"	23° 26' 16"	16m 15s
14:00	226° 10' 37"	-0,38"	223° 42' 39"	-16° 40' 37"	0,9908189	16' 08,52"	23° 26' 16"	16m 15s
15:00	226° 13' 08"	-0,38"	223° 45' 09"	-16° 41' 20"	0,9908089	16' 08,53"	23° 26' 16"	16m 15s
16:00	226° 15' 38"	-0,38"	223° 47' 40"	-16° 42' 03"	0,9907989	16' 08,54"	23° 26' 16"	16m 15s
17:00	226° 18' 09"	-0,38"	223° 50' 11"	-16° 42' 47"	0,9907889	16' 08,55"	23° 26' 16"	16m 15s
18:00	226° 20' 40"	-0,38"	223° 52' 41"	-16° 43' 30"	0,9907789	16' 08,56"	23° 26' 16"	16m 14s
19:00	226° 23' 10"	-0,38"	223° 55' 12"	-16° 44' 13"	0,9907689	16' 08,57"	23° 26' 16"	16m 14s
20:00	226° 25' 41"	-0,39"	223° 57' 43"	-16° 44' 56"	0,9907589	16' 08,58"	23° 26' 16"	16m 14s
21:00	226° 28' 12"	-0,39"	224° 00' 14"	-16° 45' 39"	0,9907489	16' 08,59"	23° 26' 16"	16m 14s
22:00	226° 30' 42"	-0,39"	224° 02' 44"	-16° 46' 22"	0,9907389	16' 08,60"	23° 26' 16"	16m 14s
23:00	226° 33' 13"	-0,39"	224° 05' 15"	-16° 47' 05"	0,9907290	16' 08,61"	23° 26' 16"	16m 13s
24:00	226° 35' 44"	-0,39"	224° 07' 46"	-16° 47' 49"	0,9907190	16' 08,62"	23° 26' 16"	16m 13s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	210° 42' 14"	-4° 30' 26"	206° 56' 53"	-15° 56' 11"	55' 41"	15' 10,38"	94° 21' 58"	1,84%
01:00	211° 13' 48"	-4° 31' 37"	207° 27' 04"	-16° 08' 27"	55' 40"	15' 10,07"	93° 39' 09"	1,73%
02:00	211° 45' 22"	-4° 32' 47"	207° 57' 17"	-16° 20' 39"	55' 39"	15' 09,76"	92° 54' 04"	1,63%
03:00	212° 16' 54"	-4° 33' 55"	208° 27' 33"	-16° 32' 46"	55' 38"	15' 09,45"	92° 06' 31"	1,53%
04:00	212° 48' 25"	-4° 35' 02"	208° 57' 52"	-16° 44' 48"	55' 37"	15' 09,14"	91° 16' 18"	1,44%
05:00	213° 19' 55"	-4° 36' 07"	209° 28' 13"	-16° 56' 45"	55' 36"	15' 08,83"	90° 23' 10"	1,34%
06:00	213° 51' 23"	-4° 37' 11"	209° 58' 37"	-17° 08' 38"	55' 34"	15' 08,53"	89° 26' 50"	1,26%
07:00	214° 22' 51"	-4° 38' 13"	210° 29' 04"	-17° 20' 25"	55' 33"	15' 08,22"	88° 27' 00"	1,17%
08:00	214° 54' 18"	-4° 39' 14"	210° 59' 34"	-17° 32' 07"	55' 32"	15' 07,92"	87° 23' 20"	1,09%
09:00	215° 25' 43"	-4° 40' 13"	211° 30' 06"	-17° 43' 44"	55' 31"	15' 07,62"	86° 15' 24"	1,01%
10:00	215° 57' 08"	-4° 41' 11"	212° 00' 41"	-17° 55' 16"	55' 30"	15' 07,31"	85° 02' 48"	0,94%
11:00	216° 28' 31"	-4° 42' 08"	212° 31' 19"	-18° 06' 42"	55' 29"	15' 07,01"	83° 45' 01"	0,87%
12:00	216° 59' 53"	-4° 43' 03"	213° 02' 00"	-18° 18' 04"	55' 28"	15' 06,71"	82° 21' 28"	0,80%
13:00	217° 31' 14"	-4° 43' 56"	213° 32' 43"	-18° 29' 19"	55' 27"	15' 06,41"	80° 51' 30"	0,74%
14:00	218° 02' 34"	-4° 44' 48"	214° 03' 30"	-18° 40' 30"	55' 26"	15' 06,11"	79° 14' 25"	0,68%
15:00	218° 33' 53"	-4° 45' 39"	214° 34' 19"	-18° 51' 35"	55' 24"	15' 05,82"	77° 29' 21"	0,62%
16:00	219° 05' 10"	-4° 46' 28"	215° 05' 11"	-19° 02' 34"	55' 23"	15' 05,52"	75° 35' 23"	0,57%
17:00	219° 36' 27"	-4° 47' 16"	215° 36' 06"	-19° 13' 28"	55' 22"	15' 05,23"	73° 31' 28"	0,52%
18:00	220° 07' 42"	-4° 48' 02"	216° 07' 04"	-19° 24' 16"	55' 21"	15' 04,93"	71° 16' 26"	0,47%
19:00	220° 38' 57"	-4° 48' 46"	216° 38' 05"	-19° 34' 59"	55' 20"	15' 04,64"	68° 48' 59"	0,43%
20:00	221° 10' 10"	-4° 49' 30"	217° 09' 09"	-19° 45' 36"	55' 19"	15' 04,35"	66° 07' 42"	0,39%
21:00	221° 41' 22"	-4° 50' 11"	217° 40' 16"	-19° 56' 07"	55' 18"	15' 04,06"	63° 11' 09"	0,35%
22:00	222° 12' 33"	-4° 50' 52"	218° 11' 26"	-20° 06' 32"	55' 17"	15' 03,77"	59° 57' 48"	0,32%
23:00	222° 43' 43"	-4° 51' 30"	218° 42' 39"	-20° 16' 51"	55' 16"	15' 03,48"	56° 26' 14"	0,29%
24:00	223° 14' 52"	-4° 52' 08"	219° 13' 55"	-20° 27' 05"	55' 15"	15' 03,19"	52° 35' 12"	0,27%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	226° 35' 44"	-0,39"	224° 07' 46"	-16° 47' 49"	0,9907190	16' 08,62"	23° 26' 16"	16m 13s
01:00	226° 38' 14"	-0,39"	224° 10' 17"	-16° 48' 32"	0,9907090	16' 08,63"	23° 26' 16"	16m 13s
02:00	226° 40' 45"	-0,39"	224° 12' 48"	-16° 49' 14"	0,9906990	16' 08,64"	23° 26' 16"	16m 13s
03:00	226° 43' 16"	-0,39"	224° 15' 19"	-16° 49' 57"	0,9906890	16' 08,65"	23° 26' 16"	16m 13s
04:00	226° 45' 46"	-0,40"	224° 17' 50"	-16° 50' 40"	0,9906791	16' 08,66"	23° 26' 16"	16m 12s
05:00	226° 48' 17"	-0,40"	224° 20' 20"	-16° 51' 23"	0,9906691	16' 08,67"	23° 26' 16"	16m 12s
06:00	226° 50' 48"	-0,40"	224° 22' 51"	-16° 52' 06"	0,9906591	16' 08,68"	23° 26' 16"	16m 12s
07:00	226° 53' 18"	-0,40"	224° 25' 22"	-16° 52' 49"	0,9906491	16' 08,69"	23° 26' 16"	16m 12s
08:00	226° 55' 49"	-0,40"	224° 27' 53"	-16° 53' 32"	0,9906392	16' 08,70"	23° 26' 16"	16m 12s
09:00	226° 58' 20"	-0,40"	224° 30' 24"	-16° 54' 14"	0,9906292	16' 08,71"	23° 26' 16"	16m 11s
10:00	227° 00' 50"	-0,40"	224° 32' 55"	-16° 54' 57"	0,9906193	16' 08,72"	23° 26' 16"	16m 11s
11:00	227° 03' 21"	-0,40"	224° 35' 27"	-16° 55' 40"	0,9906093	16' 08,73"	23° 26' 16"	16m 11s
12:00	227° 05' 52"	-0,40"	224° 37' 58"	-16° 56' 23"	0,9905993	16' 08,74"	23° 26' 16"	16m 11s
13:00	227° 08' 23"	-0,40"	224° 40' 29"	-16° 57' 05"	0,9905894	16' 08,75"	23° 26' 16"	16m 10s
14:00	227° 10' 53"	-0,40"	224° 43' 00"	-16° 57' 48"	0,9905794	16' 08,76"	23° 26' 16"	16m 10s
15:00	227° 13' 24"	-0,40"	224° 45' 31"	-16° 58' 30"	0,9905695	16' 08,77"	23° 26' 16"	16m 10s
16:00	227° 15' 55"	-0,40"	224° 48' 02"	-16° 59' 13"	0,9905595	16' 08,78"	23° 26' 16"	16m 10s
17:00	227° 18' 25"	-0,40"	224° 50' 33"	-16° 59' 55"	0,9905496	16' 08,79"	23° 26' 16"	16m 10s
18:00	227° 20' 56"	-0,40"	224° 53' 05"	-17° 00' 38"	0,9905397	16' 08,80"	23° 26' 16"	16m 09s
19:00	227° 23' 27"	-0,41"	224° 55' 36"	-17° 01' 20"	0,9905297	16' 08,80"	23° 26' 16"	16m 09s
20:00	227° 25' 58"	-0,41"	224° 58' 07"	-17° 02' 03"	0,9905198	16' 08,81"	23° 26' 16"	16m 09s
21:00	227° 28' 28"	-0,41"	225° 00' 38"	-17° 02' 45"	0,9905099	16' 08,82"	23° 26' 16"	16m 09s
22:00	227° 30' 59"	-0,41"	225° 03' 10"	-17° 03' 28"	0,9904999	16' 08,83"	23° 26' 16"	16m 08s
23:00	227° 33' 30"	-0,41"	225° 05' 41"	-17° 04' 10"	0,9904900	16' 08,84"	23° 26' 16"	16m 08s
24:00	227° 36' 01"	-0,41"	225° 08' 12"	-17° 04' 52"	0,9904801	16' 08,85"	23° 26' 16"	16m 08s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	223° 14' 52"	-4° 52' 08"	219° 13' 55"	-20° 27' 05"	55' 15"	15' 03,19"	52° 35' 12"	0,27%
01:00	223° 46' 00"	-4° 52' 43"	219° 45' 14"	-20° 37' 12"	55' 14"	15' 02,91"	48° 23' 53"	0,24%
02:00	224° 17' 06"	-4° 53' 18"	220° 16' 35"	-20° 47' 13"	55' 13"	15' 02,62"	43° 52' 02"	0,23%
03:00	224° 48' 12"	-4° 53' 51"	220° 48' 00"	-20° 57' 09"	55' 12"	15' 02,34"	39° 00' 22"	0,21%
04:00	225° 19' 16"	-4° 54' 22"	221° 19' 28"	-21° 06' 58"	55' 11"	15' 02,06"	33° 50' 41"	0,20%
05:00	225° 50' 19"	-4° 54' 52"	221° 50' 59"	-21° 16' 40"	55' 10"	15' 01,77"	28° 26' 09"	0,19%
06:00	226° 21' 21"	-4° 55' 20"	222° 22' 32"	-21° 26' 17"	55' 09"	15' 01,49"	22° 51' 08"	0,19%
07:00	226° 52' 22"	-4° 55' 47"	222° 54' 09"	-21° 35' 47"	55' 08"	15' 01,22"	17° 11' 05"	0,19%
08:00	227° 23' 22"	-4° 56' 12"	223° 25' 49"	-21° 45' 11"	55' 07"	15' 00,94"	11° 31' 55"	0,19%
09:00	227° 54' 21"	-4° 56' 36"	223° 57' 31"	-21° 54' 29"	55' 06"	15' 00,66"	5° 59' 28"	0,19%
10:00	228° 25' 19"	-4° 56' 59"	224° 29' 17"	-22° 03' 40"	55' 05"	15' 00,39"	0° 38' 51"	0,20%
11:00	228° 56' 16"	-4° 57' 20"	225° 01' 05"	-22° 12' 44"	55' 04"	15' 00,12"	355° 34' 05"	0,21%
12:00	229° 27' 11"	-4° 57' 39"	225° 32' 57"	-22° 21' 42"	55' 03"	15' 00,00"	350° 47' 52"	0,23%
13:00	229° 58' 06"	-4° 57' 57"	226° 04' 51"	-22° 30' 34"	55' 02"	15' 00,00"	346° 21' 37"	0,25%
14:00	230° 28' 59"	-4° 58' 14"	226° 36' 49"	-22° 39' 18"	55' 01"	14' 59,30"	342° 15' 42"	0,27%
15:00	230° 59' 51"	-4° 58' 29"	227° 08' 49"	-22° 47' 56"	55' 00"	14' 59,04"	338° 29' 40"	0,30%
16:00	231° 30' 42"	-4° 58' 43"	227° 40' 52"	-22° 56' 28"	54' 59"	14' 58,77"	335° 02' 31"	0,33%
17:00	232° 01' 32"	-4° 58' 55"	228° 12' 58"	-23° 04' 52"	54' 58"	14' 58,51"	331° 52' 56"	0,36%
18:00	232° 32' 21"	-4° 59' 05"	228° 45' 06"	-23° 13' 10"	54' 57"	14' 58,24"	328° 59' 27"	0,40%
19:00	233° 03' 09"	-4° 59' 15"	229° 17' 18"	-23° 21' 21"	54' 56"	14' 57,98"	326° 20' 34"	0,43%
20:00	233° 33' 56"	-4° 59' 22"	229° 49' 32"	-23° 29' 25"	54' 55"	14' 57,72"	323° 54' 50"	0,48%
21:00	234° 04' 41"	-4° 59' 29"	230° 21' 50"	-23° 37' 22"	54' 54"	14' 57,46"	321° 40' 53"	0,52%
22:00	234° 35' 26"	-4° 59' 33"	230° 54' 09"	-23° 45' 12"	54' 53"	14' 57,21"	319° 37' 28"	0,57%
23:00	235° 06' 09"	-4° 59' 37"	231° 26' 32"	-23° 52' 55"	54' 52"	14' 56,95"	317° 43' 27"	0,62%
24:00	235° 36' 52"	-4° 59' 39"	231° 58' 57"	-24° 00' 31"	54' 51"	14' 56,70"	315° 57' 49"	0,68%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	227° 36' 01"	-0,41"	225° 08' 12"	-17° 04' 52"	0,9904801	16' 08,85"	23° 26' 16"	16m 08s
01:00	227° 38' 31"	-0,41"	225° 10' 44"	-17° 05' 35"	0,9904702	16' 08,86"	23° 26' 16"	16m 08s
02:00	227° 41' 02"	-0,41"	225° 13' 15"	-17° 06' 17"	0,9904602	16' 08,87"	23° 26' 16"	16m 07s
03:00	227° 43' 33"	-0,41"	225° 15' 47"	-17° 06' 59"	0,9904503	16' 08,88"	23° 26' 16"	16m 07s
04:00	227° 46' 04"	-0,41"	225° 18' 18"	-17° 07' 41"	0,9904404	16' 08,89"	23° 26' 16"	16m 07s
05:00	227° 48' 34"	-0,41"	225° 20' 50"	-17° 08' 23"	0,9904305	16' 08,90"	23° 26' 16"	16m 07s
06:00	227° 51' 05"	-0,41"	225° 23' 21"	-17° 09' 05"	0,9904206	16' 08,91"	23° 26' 16"	16m 06s
07:00	227° 53' 36"	-0,41"	225° 25' 53"	-17° 09' 48"	0,9904107	16' 08,92"	23° 26' 16"	16m 06s
08:00	227° 56' 07"	-0,40"	225° 28' 24"	-17° 10' 30"	0,9904008	16' 08,93"	23° 26' 16"	16m 06s
09:00	227° 58' 37"	-0,40"	225° 30' 56"	-17° 11' 12"	0,9903909	16' 08,94"	23° 26' 16"	16m 06s
10:00	228° 01' 08"	-0,40"	225° 33' 27"	-17° 11' 54"	0,9903810	16' 08,95"	23° 26' 16"	16m 06s
11:00	228° 03' 39"	-0,40"	225° 35' 59"	-17° 12' 36"	0,9903711	16' 08,96"	23° 26' 16"	16m 05s
12:00	228° 06' 10"	-0,40"	225° 38' 30"	-17° 13' 18"	0,9903612	16' 08,97"	23° 26' 16"	16m 05s
13:00	228° 08' 41"	-0,40"	225° 41' 02"	-17° 14' 00"	0,9903513	16' 08,98"	23° 26' 16"	16m 05s
14:00	228° 11' 11"	-0,40"	225° 43' 34"	-17° 14' 41"	0,9903414	16' 08,99"	23° 26' 16"	16m 05s
15:00	228° 13' 42"	-0,40"	225° 46' 06"	-17° 15' 23"	0,9903315	16' 09,00"	23° 26' 16"	16m 04s
16:00	228° 16' 13"	-0,40"	225° 48' 37"	-17° 16' 05"	0,9903217	16' 09,01"	23° 26' 16"	16m 04s
17:00	228° 18' 44"	-0,40"	225° 51' 09"	-17° 16' 47"	0,9903118	16' 09,02"	23° 26' 16"	16m 04s
18:00	228° 21' 15"	-0,40"	225° 53' 41"	-17° 17' 29"	0,9903019	16' 09,03"	23° 26' 16"	16m 03s
19:00	228° 23' 45"	-0,40"	225° 56' 12"	-17° 18' 10"	0,9902920	16' 09,04"	23° 26' 16"	16m 03s
20:00	228° 26' 16"	-0,40"	225° 58' 44"	-17° 18' 52"	0,9902822	16' 09,05"	23° 26' 16"	16m 03s
21:00	228° 28' 47"	-0,40"	226° 01' 16"	-17° 19' 34"	0,9902723	16' 09,06"	23° 26' 16"	16m 03s
22:00	228° 31' 18"	-0,40"	226° 03' 48"	-17° 20' 15"	0,9902624	16' 09,07"	23° 26' 16"	16m 02s
23:00	228° 33' 49"	-0,39"	226° 06' 20"	-17° 20' 57"	0,9902526	16' 09,08"	23° 26' 16"	16m 02s
24:00	228° 36' 19"	-0,39"	226° 08' 52"	-17° 21' 39"	0,9902427	16' 09,09"	23° 26' 16"	16m 02s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	235° 36' 52"	-4° 59' 39"	231° 58' 57"	-24° 00' 31"	54' 51"	14' 56,70"	315° 57' 49"	0,68%
01:00	236° 07' 33"	-4° 59' 39"	232° 31' 25"	-24° 08' 00"	54' 50"	14' 56,45"	314° 19' 40"	0,74%
02:00	236° 38' 13"	-4° 59' 38"	233° 03' 56"	-24° 15' 21"	54' 49"	14' 56,20"	312° 48' 13"	0,80%
03:00	237° 08' 53"	-4° 59' 36"	233° 36' 29"	-24° 22' 36"	54' 48"	14' 55,95"	311° 22' 45"	0,87%
04:00	237° 39' 31"	-4° 59' 32"	234° 09' 05"	-24° 29' 43"	54' 47"	14' 55,70"	310° 02' 40"	0,93%
05:00	238° 10' 08"	-4° 59' 26"	234° 41' 43"	-24° 36' 43"	54' 46"	14' 55,46"	308° 47' 24"	1,01%
06:00	238° 40' 44"	-4° 59' 20"	235° 14' 24"	-24° 43' 35"	54' 46"	14' 55,21"	307° 36' 29"	1,08%
07:00	239° 11' 18"	-4° 59' 11"	235° 47' 07"	-24° 50' 20"	54' 45"	14' 54,97"	306° 29' 29"	1,16%
08:00	239° 41' 52"	-4° 59' 02"	236° 19' 53"	-24° 56' 58"	54' 44"	14' 54,73"	305° 26' 01"	1,24%
09:00	240° 12' 25"	-4° 58' 51"	236° 52' 41"	-25° 03' 29"	54' 43"	14' 54,50"	304° 25' 45"	1,33%
10:00	240° 42' 57"	-4° 58' 38"	237° 25' 32"	-25° 09' 52"	54' 42"	14' 54,26"	303° 28' 25"	1,41%
11:00	241° 13' 27"	-4° 58' 24"	237° 58' 24"	-25° 16' 07"	54' 41"	14' 54,03"	302° 33' 43"	1,51%
12:00	241° 43' 57"	-4° 58' 09"	238° 31' 19"	-25° 22' 15"	54' 40"	14' 53,79"	301° 41' 26"	1,60%
13:00	242° 14' 26"	-4° 57' 52"	239° 04' 17"	-25° 28' 15"	54' 39"	14' 53,56"	300° 51' 22"	1,70%
14:00	242° 44' 53"	-4° 57' 34"	239° 37' 16"	-25° 34' 08"	54' 39"	14' 53,34"	300° 03' 19"	1,80%
15:00	243° 15' 20"	-4° 57' 14"	240° 10' 18"	-25° 39' 53"	54' 38"	14' 53,11"	299° 17' 07"	1,90%
16:00	243° 45' 45"	-4° 56' 53"	240° 43' 21"	-25° 45' 31"	54' 37"	14' 52,89"	298° 32' 37"	2,01%
17:00	244° 16' 09"	-4° 56' 31"	241° 16' 27"	-25° 51' 01"	54' 36"	14' 52,66"	297° 49' 42"	2,12%
18:00	244° 46' 33"	-4° 56' 07"	241° 49' 34"	-25° 56' 23"	54' 35"	14' 52,44"	297° 08' 13"	2,23%
19:00	245° 16' 55"	-4° 55' 41"	242° 22' 44"	-26° 01' 37"	54' 35"	14' 52,23"	296° 28' 04"	2,35%
20:00	245° 47' 17"	-4° 55' 15"	242° 55' 55"	-26° 06' 44"	54' 34"	14' 52,01"	295° 49' 09"	2,46%
21:00	246° 17' 37"	-4° 54' 47"	243° 29' 08"	-26° 11' 42"	54' 33"	14' 51,80"	295° 11' 23"	2,59%
22:00	246° 47' 56"	-4° 54' 17"	244° 02' 23"	-26° 16' 33"	54' 32"	14' 51,59"	294° 34' 41"	2,71%
23:00	247° 18' 15"	-4° 53' 47"	244° 35' 40"	-26° 21' 17"	54' 31"	14' 51,38"	293° 58' 58"	2,84%
24:00	247° 48' 32"	-4° 53' 15"	245° 08' 58"	-26° 25' 52"	54' 31"	14' 51,17"	293° 24' 10"	2,97%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	228° 36' 19"	-0,39"	226° 08' 52"	-17° 21' 39"	0,9902427	16' 09,09"	23° 26' 16"	16m 02s
01:00	228° 38' 50"	-0,39"	226° 11' 24"	-17° 22' 20"	0,9902329	16' 09,10"	23° 26' 16"	16m 02s
02:00	228° 41' 21"	-0,39"	226° 13' 56"	-17° 23' 02"	0,9902230	16' 09,10"	23° 26' 16"	16m 01s
03:00	228° 43' 52"	-0,39"	226° 16' 28"	-17° 23' 43"	0,9902132	16' 09,11"	23° 26' 16"	16m 01s
04:00	228° 46' 23"	-0,39"	226° 18' 59"	-17° 24' 25"	0,9902033	16' 09,12"	23° 26' 16"	16m 01s
05:00	228° 48' 54"	-0,39"	226° 21' 31"	-17° 25' 06"	0,9901935	16' 09,13"	23° 26' 16"	16m 01s
06:00	228° 51' 24"	-0,39"	226° 24' 03"	-17° 25' 47"	0,9901837	16' 09,14"	23° 26' 16"	16m 00s
07:00	228° 53' 55"	-0,38"	226° 26' 36"	-17° 26' 29"	0,9901738	16' 09,15"	23° 26' 16"	16m 00s
08:00	228° 56' 26"	-0,38"	226° 29' 08"	-17° 27' 10"	0,9901640	16' 09,16"	23° 26' 16"	16m 00s
09:00	228° 58' 57"	-0,38"	226° 31' 40"	-17° 27' 51"	0,9901542	16' 09,17"	23° 26' 16"	15m 59s
10:00	229° 01' 28"	-0,38"	226° 34' 12"	-17° 28' 33"	0,9901443	16' 09,18"	23° 26' 16"	15m 59s
11:00	229° 03' 59"	-0,38"	226° 36' 44"	-17° 29' 14"	0,9901345	16' 09,19"	23° 26' 16"	15m 59s
12:00	229° 06' 29"	-0,38"	226° 39' 16"	-17° 29' 55"	0,9901247	16' 09,20"	23° 26' 16"	15m 59s
13:00	229° 09' 00"	-0,37"	226° 41' 48"	-17° 30' 36"	0,9901149	16' 09,21"	23° 26' 16"	15m 58s
14:00	229° 11' 31"	-0,37"	226° 44' 20"	-17° 31' 17"	0,9901051	16' 09,22"	23° 26' 16"	15m 58s
15:00	229° 14' 02"	-0,37"	226° 46' 53"	-17° 31' 58"	0,9900952	16' 09,23"	23° 26' 16"	15m 58s
16:00	229° 16' 33"	-0,37"	226° 49' 25"	-17° 32' 39"	0,9900854	16' 09,24"	23° 26' 16"	15m 57s
17:00	229° 19' 04"	-0,37"	226° 51' 57"	-17° 33' 20"	0,9900756	16' 09,25"	23° 26' 16"	15m 57s
18:00	229° 21' 35"	-0,37"	226° 54' 29"	-17° 34' 02"	0,9900658	16' 09,26"	23° 26' 16"	15m 57s
19:00	229° 24' 05"	-0,36"	226° 57' 02"	-17° 34' 42"	0,9900560	16' 09,27"	23° 26' 16"	15m 56s
20:00	229° 26' 36"	-0,36"	226° 59' 34"	-17° 35' 23"	0,9900462	16' 09,28"	23° 26' 16"	15m 56s
21:00	229° 29' 07"	-0,36"	227° 02' 06"	-17° 36' 04"	0,9900364	16' 09,29"	23° 26' 16"	15m 56s
22:00	229° 31' 38"	-0,36"	227° 04' 39"	-17° 36' 45"	0,9900267	16' 09,30"	23° 26' 16"	15m 56s
23:00	229° 34' 09"	-0,36"	227° 07' 11"	-17° 37' 26"	0,9900169	16' 09,31"	23° 26' 16"	15m 55s
24:00	229° 36' 40"	-0,35"	227° 09' 44"	-17° 38' 07"	0,9900071	16' 09,32"	23° 26' 16"	15m 55s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	247° 48' 32"	-4° 53' 15"	245° 08' 58"	-26° 25' 52"	54' 31"	14' 51,17"	293° 24' 10"	2,97%
01:00	248° 18' 48"	-4° 52' 41"	245° 42' 18"	-26° 30' 19"	54' 30"	14' 50,97"	292° 50' 13"	3,10%
02:00	248° 49' 04"	-4° 52' 06"	246° 15' 39"	-26° 34' 39"	54' 29"	14' 50,76"	292° 17' 05"	3,24%
03:00	249° 19' 18"	-4° 51' 30"	246° 49' 02"	-26° 38' 50"	54' 28"	14' 50,56"	291° 44' 42"	3,38%
04:00	249° 49' 31"	-4° 50' 52"	247° 22' 26"	-26° 42' 54"	54' 28"	14' 50,37"	291° 13' 01"	3,52%
05:00	250° 19' 44"	-4° 50' 13"	247° 55' 52"	-26° 46' 50"	54' 27"	14' 50,17"	290° 41' 59"	3,67%
06:00	250° 49' 55"	-4° 49' 33"	248° 29' 19"	-26° 50' 37"	54' 26"	14' 49,98"	290° 11' 34"	3,82%
07:00	251° 20' 06"	-4° 48' 52"	249° 02' 47"	-26° 54' 17"	54' 26"	14' 49,79"	289° 41' 45"	3,97%
08:00	251° 50' 15"	-4° 48' 09"	249° 36' 16"	-26° 57' 48"	54' 25"	14' 49,60"	289° 12' 28"	4,12%
09:00	252° 20' 24"	-4° 47' 24"	250° 09' 46"	-27° 01' 12"	54' 24"	14' 49,41"	288° 43' 42"	4,28%
10:00	252° 50' 32"	-4° 46' 39"	250° 43' 17"	-27° 04' 27"	54' 24"	14' 49,23"	288° 15' 25"	4,44%
11:00	253° 20' 39"	-4° 45' 52"	251° 16' 50"	-27° 07' 35"	54' 23"	14' 49,05"	287° 47' 35"	4,60%
12:00	253° 50' 44"	-4° 45' 04"	251° 50' 23"	-27° 10' 34"	54' 22"	14' 48,87"	287° 20' 12"	4,77%
13:00	254° 20' 49"	-4° 44' 14"	252° 23' 57"	-27° 13' 25"	54' 22"	14' 48,69"	286° 53' 14"	4,94%
14:00	254° 50' 53"	-4° 43' 23"	252° 57' 32"	-27° 16' 09"	54' 21"	14' 48,52"	286° 26' 39"	5,11%
15:00	255° 20' 57"	-4° 42' 31"	253° 31' 07"	-27° 18' 44"	54' 20"	14' 48,35"	286° 00' 26"	5,28%
16:00	255° 50' 59"	-4° 41' 38"	254° 04' 43"	-27° 21' 11"	54' 20"	14' 48,18"	285° 34' 34"	5,46%
17:00	256° 21' 00"	-4° 40' 43"	254° 38' 20"	-27° 23' 29"	54' 19"	14' 48,02"	285° 09' 03"	5,64%
18:00	256° 51' 01"	-4° 39' 47"	255° 11' 57"	-27° 25' 40"	54' 19"	14' 47,86"	284° 43' 51"	5,82%
19:00	257° 21' 00"	-4° 38' 50"	255° 45' 34"	-27° 27' 43"	54' 18"	14' 47,70"	284° 18' 57"	6,01%
20:00	257° 50' 59"	-4° 37' 51"	256° 19' 12"	-27° 29' 37"	54' 17"	14' 47,54"	283° 54' 20"	6,20%
21:00	258° 20' 57"	-4° 36' 51"	256° 52' 50"	-27° 31' 23"	54' 17"	14' 47,39"	283° 30' 00"	6,39%
22:00	258° 50' 54"	-4° 35' 50"	257° 26' 28"	-27° 33' 01"	54' 16"	14' 47,23"	283° 05' 57"	6,58%
23:00	259° 20' 50"	-4° 34' 48"	258° 00' 07"	-27° 34' 31"	54' 16"	14' 47,09"	282° 42' 09"	6,78%
24:00	259° 50' 45"	-4° 33' 44"	258° 33' 45"	-27° 35' 53"	54' 15"	14' 46,94"	282° 18' 35"	6,97%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	229° 36' 40"	-0,35"	227° 09' 44"	-17° 38' 07"	0,9900071	16' 09,32"	23° 26' 16"	15m 55s
01:00	229° 39' 11"	-0,35"	227° 12' 16"	-17° 38' 48"	0,9899973	16' 09,33"	23° 26' 16"	15m 55s
02:00	229° 41' 42"	-0,35"	227° 14' 49"	-17° 39' 28"	0,9899875	16' 09,34"	23° 26' 16"	15m 54s
03:00	229° 44' 13"	-0,35"	227° 17' 21"	-17° 40' 09"	0,9899778	16' 09,35"	23° 26' 16"	15m 54s
04:00	229° 46' 43"	-0,34"	227° 19' 54"	-17° 40' 50"	0,9899680	16' 09,35"	23° 26' 16"	15m 54s
05:00	229° 49' 14"	-0,34"	227° 22' 26"	-17° 41' 31"	0,9899582	16' 09,36"	23° 26' 16"	15m 53s
06:00	229° 51' 45"	-0,34"	227° 24' 59"	-17° 42' 11"	0,9899485	16' 09,37"	23° 26' 16"	15m 53s
07:00	229° 54' 16"	-0,34"	227° 27' 31"	-17° 42' 52"	0,9899387	16' 09,38"	23° 26' 16"	15m 53s
08:00	229° 56' 47"	-0,33"	227° 30' 04"	-17° 43' 32"	0,9899290	16' 09,39"	23° 26' 16"	15m 52s
09:00	229° 59' 18"	-0,33"	227° 32' 36"	-17° 44' 13"	0,9899192	16' 09,40"	23° 26' 16"	15m 52s
10:00	230° 01' 49"	-0,33"	227° 35' 09"	-17° 44' 53"	0,9899095	16' 09,41"	23° 26' 16"	15m 52s
11:00	230° 04' 20"	-0,33"	227° 37' 42"	-17° 45' 34"	0,9898997	16' 09,42"	23° 26' 16"	15m 52s
12:00	230° 06' 51"	-0,32"	227° 40' 14"	-17° 46' 14"	0,9898900	16' 09,43"	23° 26' 16"	15m 51s
13:00	230° 09' 22"	-0,32"	227° 42' 47"	-17° 46' 55"	0,9898802	16' 09,44"	23° 26' 16"	15m 51s
14:00	230° 11' 53"	-0,32"	227° 45' 20"	-17° 47' 35"	0,9898705	16' 09,45"	23° 26' 16"	15m 51s
15:00	230° 14' 23"	-0,32"	227° 47' 53"	-17° 48' 15"	0,9898608	16' 09,46"	23° 26' 16"	15m 50s
16:00	230° 16' 54"	-0,31"	227° 50' 25"	-17° 48' 56"	0,9898510	16' 09,47"	23° 26' 16"	15m 50s
17:00	230° 19' 25"	-0,31"	227° 52' 58"	-17° 49' 36"	0,9898413	16' 09,48"	23° 26' 16"	15m 50s
18:00	230° 21' 56"	-0,31"	227° 55' 31"	-17° 50' 16"	0,9898316	16' 09,49"	23° 26' 16"	15m 49s
19:00	230° 24' 27"	-0,30"	227° 58' 04"	-17° 50' 56"	0,9898219	16' 09,50"	23° 26' 16"	15m 49s
20:00	230° 26' 58"	-0,30"	228° 00' 37"	-17° 51' 37"	0,9898122	16' 09,51"	23° 26' 16"	15m 49s
21:00	230° 29' 29"	-0,30"	228° 03' 09"	-17° 52' 17"	0,9898025	16' 09,52"	23° 26' 16"	15m 48s
22:00	230° 32' 00"	-0,29"	228° 05' 42"	-17° 52' 57"	0,9897927	16' 09,53"	23° 26' 16"	15m 48s
23:00	230° 34' 31"	-0,29"	228° 08' 15"	-17° 53' 37"	0,9897830	16' 09,54"	23° 26' 16"	15m 48s
24:00	230° 37' 02"	-0,29"	228° 10' 48"	-17° 54' 17"	0,9897733	16' 09,55"	23° 26' 16"	15m 47s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	259° 50' 45"	-4° 33' 44"	258° 33' 45"	-27° 35' 53"	54' 15"	14' 46,94"	282° 18' 35"	6,97%
01:00	260° 20' 40"	-4° 32' 40"	259° 07' 23"	-27° 37' 06"	54' 15"	14' 46,80"	281° 55' 16"	7,18%
02:00	260° 50' 34"	-4° 31' 34"	259° 41' 02"	-27° 38' 12"	54' 14"	14' 46,66"	281° 32' 10"	7,38%
03:00	261° 20' 27"	-4° 30' 26"	260° 14' 40"	-27° 39' 09"	54' 14"	14' 46,52"	281° 09' 17"	7,59%
04:00	261° 50' 19"	-4° 29' 18"	260° 48' 18"	-27° 39' 58"	54' 13"	14' 46,39"	280° 46' 38"	7,79%
05:00	262° 20' 10"	-4° 28' 08"	261° 21' 55"	-27° 40' 39"	54' 13"	14' 46,26"	280° 24' 10"	8,01%
06:00	262° 50' 01"	-4° 26' 57"	261° 55' 33"	-27° 41' 11"	54' 12"	14' 46,13"	280° 01' 54"	8,22%
07:00	263° 19' 51"	-4° 25' 45"	262° 29' 09"	-27° 41' 36"	54' 12"	14' 46,00"	279° 39' 50"	8,44%
08:00	263° 49' 40"	-4° 24' 32"	263° 02' 46"	-27° 41' 52"	54' 11"	14' 45,88"	279° 17' 57"	8,66%
09:00	264° 19' 29"	-4° 23' 18"	263° 36' 21"	-27° 42' 01"	54' 11"	14' 45,76"	278° 56' 15"	8,88%
10:00	264° 49' 16"	-4° 22' 02"	264° 09' 56"	-27° 42' 01"	54' 10"	14' 45,65"	278° 34' 43"	9,10%
11:00	265° 19' 03"	-4° 20' 45"	264° 43' 31"	-27° 41' 53"	54' 10"	14' 45,54"	278° 13' 21"	9,33%
12:00	265° 48' 49"	-4° 19' 27"	265° 17' 04"	-27° 41' 37"	54' 10"	14' 45,43"	277° 52' 09"	9,56%
13:00	266° 18' 35"	-4° 18' 08"	265° 50' 37"	-27° 41' 13"	54' 09"	14' 45,32"	277° 31' 08"	9,79%
14:00	266° 48' 20"	-4° 16' 48"	266° 24' 08"	-27° 40' 40"	54' 09"	14' 45,22"	277° 10' 15"	10,02%
15:00	267° 18' 04"	-4° 15' 26"	266° 57' 39"	-27° 40' 00"	54' 08"	14' 45,12"	276° 49' 32"	10,26%
16:00	267° 47' 48"	-4° 14' 04"	267° 31' 09"	-27° 39' 12"	54' 08"	14' 45,02"	276° 28' 57"	10,50%
17:00	268° 17' 31"	-4° 12' 40"	268° 04' 37"	-27° 38' 15"	54' 08"	14' 44,93"	276° 08' 32"	10,74%
18:00	268° 47' 13"	-4° 11' 15"	268° 38' 04"	-27° 37' 11"	54' 07"	14' 44,84"	275° 48' 15"	10,98%
19:00	269° 16' 55"	-4° 09' 49"	269° 11' 30"	-27° 35' 58"	54' 07"	14' 44,76"	275° 28' 07"	11,23%
20:00	269° 46' 36"	-4° 08' 22"	269° 44' 55"	-27° 34' 38"	54' 07"	14' 44,67"	275° 08' 07"	11,48%
21:00	270° 16' 16"	-4° 06' 54"	270° 18' 18"	-27° 33' 09"	54' 07"	14' 44,59"	274° 48' 16"	11,73%
22:00	270° 45' 56"	-4° 05' 25"	270° 51' 40"	-27° 31' 33"	54' 06"	14' 44,52"	274° 28' 32"	11,98%
23:00	271° 15' 35"	-4° 03' 55"	271° 25' 00"	-27° 29' 48"	54' 06"	14' 44,45"	274° 08' 57"	12,24%
24:00	271° 45' 14"	-4° 02' 23"	271° 58' 19"	-27° 27' 56"	54' 06"	14' 44,38"	273° 49' 29"	12,50%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	230° 37' 02"	-0,29"	228° 10' 48"	-17° 54' 17"	0,9897733	16' 09,55"	23° 26' 16"	15m 47s
01:00	230° 39' 33"	-0,28"	228° 13' 21"	-17° 54' 57"	0,9897636	16' 09,55"	23° 26' 16"	15m 47s
02:00	230° 42' 04"	-0,28"	228° 15' 54"	-17° 55' 37"	0,9897540	16' 09,56"	23° 26' 16"	15m 47s
03:00	230° 44' 35"	-0,28"	228° 18' 27"	-17° 56' 17"	0,9897443	16' 09,57"	23° 26' 16"	15m 46s
04:00	230° 47' 06"	-0,28"	228° 21' 00"	-17° 56' 57"	0,9897346	16' 09,58"	23° 26' 16"	15m 46s
05:00	230° 49' 37"	-0,27"	228° 23' 33"	-17° 57' 37"	0,9897249	16' 09,59"	23° 26' 16"	15m 45s
06:00	230° 52' 08"	-0,27"	228° 26' 06"	-17° 58' 17"	0,9897152	16' 09,60"	23° 26' 16"	15m 45s
07:00	230° 54' 39"	-0,26"	228° 28' 39"	-17° 58' 56"	0,9897056	16' 09,61"	23° 26' 16"	15m 45s
08:00	230° 57' 10"	-0,26"	228° 31' 13"	-17° 59' 36"	0,9896959	16' 09,62"	23° 26' 16"	15m 44s
09:00	230° 59' 41"	-0,26"	228° 33' 46"	-18° 00' 16"	0,9896862	16' 09,63"	23° 26' 16"	15m 44s
10:00	231° 02' 11"	-0,25"	228° 36' 19"	-18° 00' 56"	0,9896766	16' 09,64"	23° 26' 16"	15m 44s
11:00	231° 04' 42"	-0,25"	228° 38' 52"	-18° 01' 35"	0,9896669	16' 09,65"	23° 26' 16"	15m 43s
12:00	231° 07' 13"	-0,25"	228° 41' 25"	-18° 02' 15"	0,9896572	16' 09,66"	23° 26' 16"	15m 43s
13:00	231° 09' 44"	-0,24"	228° 43' 58"	-18° 02' 55"	0,9896476	16' 09,67"	23° 26' 16"	15m 43s
14:00	231° 12' 15"	-0,24"	228° 46' 32"	-18° 03' 34"	0,9896379	16' 09,68"	23° 26' 16"	15m 42s
15:00	231° 14' 46"	-0,24"	228° 49' 05"	-18° 04' 14"	0,9896283	16' 09,69"	23° 26' 16"	15m 42s
16:00	231° 17' 17"	-0,23"	228° 51' 38"	-18° 04' 53"	0,9896187	16' 09,70"	23° 26' 16"	15m 42s
17:00	231° 19' 48"	-0,23"	228° 54' 12"	-18° 05' 33"	0,9896090	16' 09,71"	23° 26' 16"	15m 41s
18:00	231° 22' 19"	-0,22"	228° 56' 45"	-18° 06' 12"	0,9895994	16' 09,72"	23° 26' 16"	15m 41s
19:00	231° 24' 50"	-0,22"	228° 59' 18"	-18° 06' 52"	0,9895898	16' 09,73"	23° 26' 16"	15m 40s
20:00	231° 27' 21"	-0,22"	229° 01' 52"	-18° 07' 31"	0,9895802	16' 09,73"	23° 26' 16"	15m 40s
21:00	231° 29' 52"	-0,21"	229° 04' 25"	-18° 08' 10"	0,9895705	16' 09,74"	23° 26' 16"	15m 40s
22:00	231° 32' 23"	-0,21"	229° 06' 58"	-18° 08' 50"	0,9895609	16' 09,75"	23° 26' 16"	15m 39s
23:00	231° 34' 54"	-0,21"	229° 09' 32"	-18° 09' 29"	0,9895513	16' 09,76"	23° 26' 16"	15m 39s
24:00	231° 37' 25"	-0,20"	229° 12' 05"	-18° 10' 08"	0,9895417	16' 09,77"	23° 26' 16"	15m 39s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	271° 45' 14"	-4° 02' 23"	271° 58' 19"	-27° 27' 56"	54' 06"	14' 44,38"	273° 49' 29"	12,50%
01:00	272° 14' 52"	-4° 00' 51"	272° 31' 36"	-27° 25' 56"	54' 06"	14' 44,31"	273° 30' 10"	12,76%
02:00	272° 44' 30"	-3° 59' 17"	273° 04' 51"	-27° 23' 48"	54' 05"	14' 44,25"	273° 10' 57"	13,02%
03:00	273° 14' 07"	-3° 57' 42"	273° 38' 04"	-27° 21' 32"	54' 05"	14' 44,19"	272° 51' 53"	13,28%
04:00	273° 43' 44"	-3° 56' 07"	274° 11' 16"	-27° 19' 08"	54' 05"	14' 44,14"	272° 32' 56"	13,55%
05:00	274° 13' 20"	-3° 54' 30"	274° 44' 26"	-27° 16' 36"	54' 05"	14' 44,09"	272° 14' 06"	13,82%
06:00	274° 42' 56"	-3° 52' 52"	275° 17' 33"	-27° 13' 57"	54' 05"	14' 44,04"	271° 55' 24"	14,09%
07:00	275° 12' 31"	-3° 51' 13"	275° 50' 39"	-27° 11' 09"	54' 04"	14' 44,00"	271° 36' 49"	14,36%
08:00	275° 42' 06"	-3° 49' 33"	276° 23' 43"	-27° 08' 14"	54' 04"	14' 43,96"	271° 18' 21"	14,64%
09:00	276° 11' 40"	-3° 47' 53"	276° 56' 45"	-27° 05' 12"	54' 04"	14' 43,92"	271° 00' 01"	14,92%
10:00	276° 41' 14"	-3° 46' 11"	277° 29' 44"	-27° 02' 01"	54' 04"	14' 43,89"	270° 41' 47"	15,19%
11:00	277° 10' 47"	-3° 44' 28"	278° 02' 41"	-26° 58' 43"	54' 04"	14' 43,86"	270° 23' 41"	15,48%
12:00	277° 40' 20"	-3° 42' 44"	278° 35' 36"	-26° 55' 17"	54' 04"	14' 43,84"	270° 05' 42"	15,76%
13:00	278° 09' 53"	-3° 40' 59"	279° 08' 29"	-26° 51' 44"	54' 04"	14' 43,81"	269° 47' 50"	16,05%
14:00	278° 39' 26"	-3° 39' 13"	279° 41' 19"	-26° 48' 03"	54' 04"	14' 43,80"	269° 30' 05"	16,33%
15:00	279° 08' 58"	-3° 37' 26"	280° 14' 07"	-26° 44' 15"	54' 04"	14' 43,78"	269° 12' 27"	16,62%
16:00	279° 38' 29"	-3° 35' 39"	280° 46' 52"	-26° 40' 18"	54' 04"	14' 43,78"	268° 54' 55"	16,92%
17:00	280° 08' 01"	-3° 33' 50"	281° 19' 35"	-26° 36' 15"	54' 04"	14' 43,77"	268° 37' 31"	17,21%
18:00	280° 37' 32"	-3° 32' 00"	281° 52' 15"	-26° 32' 04"	54' 04"	14' 43,77"	268° 20' 14"	17,51%
19:00	281° 07' 03"	-3° 30' 10"	282° 24' 53"	-26° 27' 46"	54' 04"	14' 43,77"	268° 03' 03"	17,80%
20:00	281° 36' 34"	-3° 28' 18"	282° 57' 28"	-26° 23' 20"	54' 04"	14' 43,78"	267° 46' 00"	18,10%
21:00	282° 06' 04"	-3° 26' 25"	283° 30' 00"	-26° 18' 47"	54' 04"	14' 43,79"	267° 29' 03"	18,41%
22:00	282° 35' 34"	-3° 24' 32"	284° 02' 30"	-26° 14' 06"	54' 04"	14' 43,80"	267° 12' 13"	18,71%
23:00	283° 05' 04"	-3° 22' 38"	284° 34' 57"	-26° 09' 18"	54' 04"	14' 43,82"	266° 55' 30"	19,01%
24:00	283° 34' 34"	-3° 20' 42"	285° 07' 21"	-26° 04' 23"	54' 04"	14' 43,84"	266° 38' 54"	19,32%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	231° 37' 25"	-0,20"	229° 12' 05"	-18° 10' 08"	0,9895417	16' 09,77"	23° 26' 16"	15m 39s
01:00	231° 39' 56"	-0,20"	229° 14' 39"	-18° 10' 47"	0,9895321	16' 09,78"	23° 26' 16"	15m 38s
02:00	231° 42' 27"	-0,19"	229° 17' 12"	-18° 11' 27"	0,9895225	16' 09,79"	23° 26' 16"	15m 38s
03:00	231° 44' 58"	-0,19"	229° 19' 46"	-18° 12' 06"	0,9895129	16' 09,80"	23° 26' 16"	15m 37s
04:00	231° 47' 29"	-0,18"	229° 22' 19"	-18° 12' 45"	0,9895033	16' 09,81"	23° 26' 16"	15m 37s
05:00	231° 50' 00"	-0,18"	229° 24' 53"	-18° 13' 24"	0,9894937	16' 09,82"	23° 26' 16"	15m 37s
06:00	231° 52' 32"	-0,18"	229° 27' 27"	-18° 14' 03"	0,9894841	16' 09,83"	23° 26' 16"	15m 36s
07:00	231° 55' 03"	-0,17"	229° 30' 00"	-18° 14' 42"	0,9894746	16' 09,84"	23° 26' 16"	15m 36s
08:00	231° 57' 34"	-0,17"	229° 32' 34"	-18° 15' 21"	0,9894650	16' 09,85"	23° 26' 16"	15m 36s
09:00	232° 00' 05"	-0,16"	229° 35' 07"	-18° 16' 00"	0,9894554	16' 09,86"	23° 26' 16"	15m 35s
10:00	232° 02' 36"	-0,16"	229° 37' 41"	-18° 16' 39"	0,9894459	16' 09,87"	23° 26' 16"	15m 35s
11:00	232° 05' 07"	-0,16"	229° 40' 15"	-18° 17' 18"	0,9894363	16' 09,88"	23° 26' 16"	15m 34s
12:00	232° 07' 38"	-0,15"	229° 42' 49"	-18° 17' 57"	0,9894267	16' 09,88"	23° 26' 16"	15m 34s
13:00	232° 10' 09"	-0,15"	229° 45' 22"	-18° 18' 36"	0,9894172	16' 09,89"	23° 26' 16"	15m 34s
14:00	232° 12' 40"	-0,14"	229° 47' 56"	-18° 19' 14"	0,9894076	16' 09,90"	23° 26' 16"	15m 33s
15:00	232° 15' 11"	-0,14"	229° 50' 30"	-18° 19' 53"	0,9893981	16' 09,91"	23° 26' 16"	15m 33s
16:00	232° 17' 42"	-0,13"	229° 53' 04"	-18° 20' 32"	0,9893886	16' 09,92"	23° 26' 16"	15m 32s
17:00	232° 20' 13"	-0,13"	229° 55' 38"	-18° 21' 11"	0,9893790	16' 09,93"	23° 26' 16"	15m 32s
18:00	232° 22' 44"	-0,12"	229° 58' 11"	-18° 21' 49"	0,9893695	16' 09,94"	23° 26' 16"	15m 32s
19:00	232° 25' 15"	-0,12"	230° 00' 45"	-18° 22' 28"	0,9893600	16' 09,95"	23° 26' 16"	15m 31s
20:00	232° 27' 46"	-0,11"	230° 03' 19"	-18° 23' 06"	0,9893504	16' 09,96"	23° 26' 16"	15m 31s
21:00	232° 30' 17"	-0,11"	230° 05' 53"	-18° 23' 45"	0,9893409	16' 09,97"	23° 26' 16"	15m 30s
22:00	232° 32' 48"	-0,11"	230° 08' 27"	-18° 24' 24"	0,9893314	16' 09,98"	23° 26' 16"	15m 30s
23:00	232° 35' 19"	-0,10"	230° 11' 01"	-18° 25' 02"	0,9893219	16' 09,99"	23° 26' 16"	15m 30s
24:00	232° 37' 50"	-0,10"	230° 13' 35"	-18° 25' 40"	0,9893124	16' 10,00"	23° 26' 16"	15m 29s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	283° 34' 34"	-3° 20' 42"	285° 07' 21"	-26° 04' 23"	54' 04"	14' 43,84"	266° 38' 54"	19,32%
01:00	284° 04' 03"	-3° 18' 46"	285° 39' 43"	-25° 59' 21"	54' 04"	14' 43,87"	266° 22' 24"	19,63%
02:00	284° 33' 33"	-3° 16' 49"	286° 12' 01"	-25° 54' 11"	54' 04"	14' 43,90"	266° 06' 02"	19,94%
03:00	285° 03' 02"	-3° 14' 51"	286° 44' 17"	-25° 48' 55"	54' 04"	14' 43,94"	265° 49' 46"	20,26%
04:00	285° 32' 31"	-3° 12' 53"	287° 16' 29"	-25° 43' 31"	54' 04"	14' 43,98"	265° 33' 37"	20,57%
05:00	286° 02' 00"	-3° 10' 53"	287° 48' 39"	-25° 38' 00"	54' 04"	14' 44,02"	265° 17' 35"	20,89%
06:00	286° 31' 29"	-3° 08' 52"	288° 20' 46"	-25° 32' 22"	54' 05"	14' 44,07"	265° 01' 40"	21,21%
07:00	287° 00' 58"	-3° 06' 51"	288° 52' 49"	-25° 26' 37"	54' 05"	14' 44,12"	264° 45' 52"	21,53%
08:00	287° 30' 27"	-3° 04' 49"	289° 24' 50"	-25° 20' 45"	54' 05"	14' 44,18"	264° 30' 10"	21,85%
09:00	287° 59' 56"	-3° 02' 46"	289° 56' 48"	-25° 14' 46"	54' 05"	14' 44,24"	264° 14' 35"	22,17%
10:00	288° 29' 24"	-3° 00' 42"	290° 28' 42"	-25° 08' 40"	54' 05"	14' 44,30"	263° 59' 08"	22,50%
11:00	288° 58' 53"	-2° 58' 37"	291° 00' 34"	-25° 02' 28"	54' 06"	14' 44,37"	263° 43' 47"	22,83%
12:00	289° 28' 22"	-2° 56' 32"	291° 32' 22"	-24° 56' 08"	54' 06"	14' 44,44"	263° 28' 32"	23,15%
13:00	289° 57' 51"	-2° 54' 25"	292° 04' 08"	-24° 49' 42"	54' 06"	14' 44,52"	263° 13' 25"	23,49%
14:00	290° 27' 20"	-2° 52' 18"	292° 35' 50"	-24° 43' 09"	54' 07"	14' 44,60"	262° 58' 25"	23,82%
15:00	290° 56' 49"	-2° 50' 10"	293° 07' 29"	-24° 36' 29"	54' 07"	14' 44,69"	262° 43' 32"	24,15%
16:00	291° 26' 18"	-2° 48' 02"	293° 39' 05"	-24° 29' 43"	54' 07"	14' 44,78"	262° 28' 45"	24,49%
17:00	291° 55' 47"	-2° 45' 52"	294° 10' 37"	-24° 22' 50"	54' 08"	14' 44,88"	262° 14' 05"	24,82%
18:00	292° 25' 16"	-2° 43' 42"	294° 42' 07"	-24° 15' 50"	54' 08"	14' 44,98"	261° 59' 33"	25,16%
19:00	292° 54' 46"	-2° 41' 31"	295° 13' 33"	-24° 08' 44"	54' 08"	14' 45,08"	261° 45' 07"	25,50%
20:00	293° 24' 15"	-2° 39' 19"	295° 44' 56"	-24° 01' 32"	54' 09"	14' 45,19"	261° 30' 48"	25,85%
21:00	293° 53' 45"	-2° 37' 07"	296° 16' 15"	-23° 54' 12"	54' 09"	14' 45,30"	261° 16' 36"	26,19%
22:00	294° 23' 15"	-2° 34' 54"	296° 47' 32"	-23° 46' 47"	54' 10"	14' 45,42"	261° 02' 31"	26,53%
23:00	294° 52' 46"	-2° 32' 40"	297° 18' 45"	-23° 39' 15"	54' 10"	14' 45,54"	260° 48' 33"	26,88%
24:00	295° 22' 16"	-2° 30' 25"	297° 49' 55"	-23° 31' 37"	54' 11"	14' 45,67"	260° 34' 43"	27,23%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	232° 37' 50"	-0,10"	230° 13' 35"	-18° 25' 40"	0,9893124	16' 10,00"	23° 26' 16"	15m 29s
01:00	232° 40' 21"	-0,09"	230° 16' 09"	-18° 26' 19"	0,9893029	16' 10,01"	23° 26' 16"	15m 29s
02:00	232° 42' 52"	-0,09"	230° 18' 43"	-18° 26' 57"	0,9892934	16' 10,02"	23° 26' 16"	15m 28s
03:00	232° 45' 24"	-0,08"	230° 21' 17"	-18° 27' 36"	0,9892839	16' 10,02"	23° 26' 16"	15m 28s
04:00	232° 47' 55"	-0,08"	230° 23' 51"	-18° 28' 14"	0,9892744	16' 10,03"	23° 26' 16"	15m 28s
05:00	232° 50' 26"	-0,07"	230° 26' 25"	-18° 28' 52"	0,9892649	16' 10,04"	23° 26' 16"	15m 27s
06:00	232° 52' 57"	-0,07"	230° 28' 59"	-18° 29' 30"	0,9892555	16' 10,05"	23° 26' 16"	15m 27s
07:00	232° 55' 28"	-0,06"	230° 31' 33"	-18° 30' 09"	0,9892460	16' 10,06"	23° 26' 16"	15m 26s
08:00	232° 57' 59"	-0,06"	230° 34' 08"	-18° 30' 47"	0,9892365	16' 10,07"	23° 26' 16"	15m 26s
09:00	233° 00' 30"	-0,05"	230° 36' 42"	-18° 31' 25"	0,9892271	16' 10,08"	23° 26' 16"	15m 25s
10:00	233° 03' 01"	-0,05"	230° 39' 16"	-18° 32' 03"	0,9892176	16' 10,09"	23° 26' 16"	15m 25s
11:00	233° 05' 32"	-0,04"	230° 41' 50"	-18° 32' 41"	0,9892082	16' 10,10"	23° 26' 16"	15m 25s
12:00	233° 08' 03"	-0,04"	230° 44' 24"	-18° 33' 19"	0,9891987	16' 10,11"	23° 26' 16"	15m 24s
13:00	233° 10' 34"	-0,03"	230° 46' 59"	-18° 33' 57"	0,9891893	16' 10,12"	23° 26' 16"	15m 24s
14:00	233° 13' 06"	-0,03"	230° 49' 33"	-18° 34' 35"	0,9891798	16' 10,13"	23° 26' 16"	15m 23s
15:00	233° 15' 37"	-0,02"	230° 52' 07"	-18° 35' 13"	0,9891704	16' 10,14"	23° 26' 16"	15m 23s
16:00	233° 18' 08"	-0,02"	230° 54' 42"	-18° 35' 51"	0,9891610	16' 10,15"	23° 26' 16"	15m 22s
17:00	233° 20' 39"	-0,01"	230° 57' 16"	-18° 36' 29"	0,9891515	16' 10,15"	23° 26' 16"	15m 22s
18:00	233° 23' 10"	-0,01"	230° 59' 50"	-18° 37' 07"	0,9891421	16' 10,16"	23° 26' 16"	15m 22s
19:00	233° 25' 41"	-0,00"	231° 02' 25"	-18° 37' 45"	0,9891327	16' 10,17"	23° 26' 16"	15m 21s
20:00	233° 28' 12"	0,00"	231° 04' 59"	-18° 38' 22"	0,9891233	16' 10,18"	23° 26' 16"	15m 21s
21:00	233° 30' 43"	0,01"	231° 07' 34"	-18° 39' 00"	0,9891139	16' 10,19"	23° 26' 16"	15m 20s
22:00	233° 33' 14"	0,01"	231° 10' 08"	-18° 39' 38"	0,9891045	16' 10,20"	23° 26' 16"	15m 20s
23:00	233° 35' 46"	0,02"	231° 12' 42"	-18° 40' 15"	0,9890951	16' 10,21"	23° 26' 16"	15m 19s
24:00	233° 38' 17"	0,02"	231° 15' 17"	-18° 40' 53"	0,9890857	16' 10,22"	23° 26' 16"	15m 19s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	295° 22' 16"	-2° 30' 25"	297° 49' 55"	-23° 31' 37"	54' 11"	14' 45,67"	260° 34' 43"	27,23%
01:00	295° 51' 47"	-2° 28' 10"	298° 21' 02"	-23° 23' 52"	54' 11"	14' 45,80"	260° 20' 59"	27,58%
02:00	296° 21' 18"	-2° 25' 54"	298° 52' 06"	-23° 16' 01"	54' 11"	14' 45,94"	260° 07' 22"	27,93%
03:00	296° 50' 50"	-2° 23' 37"	299° 23' 06"	-23° 08' 04"	54' 12"	14' 46,08"	259° 53' 52"	28,28%
04:00	297° 20' 22"	-2° 21' 19"	299° 54' 03"	-23° 00' 01"	54' 13"	14' 46,22"	259° 40' 29"	28,64%
05:00	297° 49' 54"	-2° 19' 01"	300° 24' 57"	-22° 51' 51"	54' 13"	14' 46,37"	259° 27' 13"	28,99%
06:00	298° 19' 27"	-2° 16' 43"	300° 55' 48"	-22° 43' 36"	54' 14"	14' 46,52"	259° 14' 04"	29,35%
07:00	298° 49' 00"	-2° 14' 23"	301° 26' 35"	-22° 35' 14"	54' 14"	14' 46,68"	259° 01' 03"	29,71%
08:00	299° 18' 33"	-2° 12' 03"	301° 57' 19"	-22° 26' 47"	54' 15"	14' 46,85"	258° 48' 08"	30,07%
09:00	299° 48' 07"	-2° 09' 43"	302° 28' 00"	-22° 18' 13"	54' 15"	14' 47,01"	258° 35' 20"	30,43%
10:00	300° 17' 41"	-2° 07' 21"	302° 58' 38"	-22° 09' 33"	54' 16"	14' 47,19"	258° 22' 40"	30,79%
11:00	300° 47' 16"	-2° 04' 59"	303° 29' 13"	-22° 00' 48"	54' 17"	14' 47,36"	258° 10' 07"	31,15%
12:00	301° 16' 51"	-2° 02' 37"	303° 59' 44"	-21° 51' 57"	54' 17"	14' 47,55"	257° 57' 40"	31,52%
13:00	301° 46' 27"	-2° 00' 14"	304° 30' 12"	-21° 43' 00"	54' 18"	14' 47,73"	257° 45' 21"	31,88%
14:00	302° 16' 04"	-1° 57' 50"	305° 00' 37"	-21° 33' 57"	54' 19"	14' 47,92"	257° 33' 09"	32,25%
15:00	302° 45' 41"	-1° 55' 25"	305° 30' 59"	-21° 24' 48"	54' 20"	14' 48,12"	257° 21' 05"	32,62%
16:00	303° 15' 18"	-1° 53' 00"	306° 01' 18"	-21° 15' 34"	54' 20"	14' 48,32"	257° 09' 07"	32,99%
17:00	303° 44' 57"	-1° 50' 35"	306° 31' 34"	-21° 06' 14"	54' 21"	14' 48,53"	256° 57' 17"	33,36%
18:00	304° 14' 35"	-1° 48' 09"	307° 01' 47"	-20° 56' 49"	54' 22"	14' 48,74"	256° 45' 33"	33,73%
19:00	304° 44' 15"	-1° 45' 42"	307° 31' 56"	-20° 47' 18"	54' 23"	14' 48,95"	256° 33' 57"	34,11%
20:00	305° 13' 55"	-1° 43' 15"	308° 02' 03"	-20° 37' 41"	54' 23"	14' 49,17"	256° 22' 28"	34,48%
21:00	305° 43' 36"	-1° 40' 47"	308° 32' 06"	-20° 27' 59"	54' 24"	14' 49,39"	256° 11' 07"	34,86%
22:00	306° 13' 18"	-1° 38' 19"	309° 02' 07"	-20° 18' 12"	54' 25"	14' 49,62"	255° 59' 52"	35,23%
23:00	306° 43' 01"	-1° 35' 50"	309° 32' 05"	-20° 08' 19"	54' 26"	14' 49,86"	255° 48' 45"	35,61%
24:00	307° 12' 44"	-1° 33' 21"	310° 01' 59"	-19° 58' 21"	54' 27"	14' 50,10"	255° 37' 45"	35,99%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	233° 38' 17"	0,02"	231° 15' 17"	-18° 40' 53"	0,9890857	16' 10,22"	23° 26' 16"	15m 19s
01:00	233° 40' 48"	0,03"	231° 17' 51"	-18° 41' 31"	0,9890763	16' 10,23"	23° 26' 16"	15m 19s
02:00	233° 43' 19"	0,03"	231° 20' 26"	-18° 42' 08"	0,9890669	16' 10,24"	23° 26' 16"	15m 18s
03:00	233° 45' 50"	0,04"	231° 23' 01"	-18° 42' 46"	0,9890576	16' 10,25"	23° 26' 16"	15m 18s
04:00	233° 48' 21"	0,04"	231° 25' 35"	-18° 43' 23"	0,9890482	16' 10,26"	23° 26' 16"	15m 17s
05:00	233° 50' 52"	0,05"	231° 28' 10"	-18° 44' 01"	0,9890388	16' 10,27"	23° 26' 16"	15m 17s
06:00	233° 53' 23"	0,05"	231° 30' 44"	-18° 44' 38"	0,9890295	16' 10,27"	23° 26' 16"	15m 16s
07:00	233° 55' 55"	0,06"	231° 33' 19"	-18° 45' 16"	0,9890201	16' 10,28"	23° 26' 16"	15m 16s
08:00	233° 58' 26"	0,06"	231° 35' 54"	-18° 45' 53"	0,9890108	16' 10,29"	23° 26' 16"	15m 15s
09:00	234° 00' 57"	0,07"	231° 38' 28"	-18° 46' 30"	0,9890014	16' 10,30"	23° 26' 16"	15m 15s
10:00	234° 03' 28"	0,07"	231° 41' 03"	-18° 47' 08"	0,9889921	16' 10,31"	23° 26' 16"	15m 14s
11:00	234° 05' 59"	0,08"	231° 43' 38"	-18° 47' 45"	0,9889827	16' 10,32"	23° 26' 16"	15m 14s
12:00	234° 08' 30"	0,09"	231° 46' 13"	-18° 48' 22"	0,9889734	16' 10,33"	23° 26' 16"	15m 14s
13:00	234° 11' 01"	0,09"	231° 48' 47"	-18° 48' 59"	0,9889641	16' 10,34"	23° 26' 16"	15m 13s
14:00	234° 13' 33"	0,10"	231° 51' 22"	-18° 49' 36"	0,9889548	16' 10,35"	23° 26' 16"	15m 13s
15:00	234° 16' 04"	0,10"	231° 53' 57"	-18° 50' 13"	0,9889455	16' 10,36"	23° 26' 16"	15m 12s
16:00	234° 18' 35"	0,11"	231° 56' 32"	-18° 50' 51"	0,9889361	16' 10,37"	23° 26' 16"	15m 12s
17:00	234° 21' 06"	0,11"	231° 59' 07"	-18° 51' 28"	0,9889268	16' 10,38"	23° 26' 16"	15m 11s
18:00	234° 23' 37"	0,12"	232° 01' 42"	-18° 52' 05"	0,9889175	16' 10,38"	23° 26' 16"	15m 11s
19:00	234° 26' 08"	0,12"	232° 04' 16"	-18° 52' 42"	0,9889083	16' 10,39"	23° 26' 16"	15m 10s
20:00	234° 28' 40"	0,13"	232° 06' 51"	-18° 53' 18"	0,9888990	16' 10,40"	23° 26' 16"	15m 10s
21:00	234° 31' 11"	0,13"	232° 09' 26"	-18° 53' 55"	0,9888897	16' 10,41"	23° 26' 16"	15m 09s
22:00	234° 33' 42"	0,14"	232° 12' 01"	-18° 54' 32"	0,9888804	16' 10,42"	23° 26' 16"	15m 09s
23:00	234° 36' 13"	0,14"	232° 14' 36"	-18° 55' 09"	0,9888711	16' 10,43"	23° 26' 16"	15m 08s
24:00	234° 38' 44"	0,15"	232° 17' 11"	-18° 55' 46"	0,9888619	16' 10,44"	23° 26' 16"	15m 08s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	307° 12' 44"	-1° 33' 21"	310° 01' 59"	-19° 58' 21"	54' 27"	14' 50,10"	255° 37' 45"	35,99%
01:00	307° 42' 28"	-1° 30' 51"	310° 31' 51"	-19° 48' 17"	54' 28"	14' 50,34"	255° 26' 53"	36,37%
02:00	308° 12' 13"	-1° 28' 21"	311° 01' 40"	-19° 38' 08"	54' 29"	14' 50,59"	255° 16' 07"	36,75%
03:00	308° 41' 58"	-1° 25' 51"	311° 31' 26"	-19° 27' 54"	54' 29"	14' 50,84"	255° 05' 29"	37,14%
04:00	309° 11' 45"	-1° 23' 19"	312° 01' 09"	-19° 17' 35"	54' 30"	14' 51,10"	254° 54' 58"	37,52%
05:00	309° 41' 33"	-1° 20' 48"	312° 30' 49"	-19° 07' 11"	54' 31"	14' 51,36"	254° 44' 35"	37,90%
06:00	310° 11' 21"	-1° 18' 16"	313° 00' 27"	-18° 56' 41"	54' 32"	14' 51,63"	254° 34' 18"	38,29%
07:00	310° 41' 11"	-1° 15' 43"	313° 30' 02"	-18° 46' 07"	54' 33"	14' 51,90"	254° 24' 10"	38,68%
08:00	311° 11' 01"	-1° 13' 10"	313° 59' 34"	-18° 35' 27"	54' 34"	14' 52,18"	254° 14' 08"	39,06%
09:00	311° 40' 52"	-1° 10' 37"	314° 29' 04"	-18° 24' 43"	54' 35"	14' 52,46"	254° 04' 14"	39,45%
10:00	312° 10' 45"	-1° 08' 03"	314° 58' 30"	-18° 13' 53"	54' 36"	14' 52,75"	253° 54' 27"	39,84%
11:00	312° 40' 38"	-1° 05' 28"	315° 27' 55"	-18° 02' 59"	54' 38"	14' 53,04"	253° 44' 47"	40,23%
12:00	313° 10' 33"	-1° 02' 54"	315° 57' 16"	-17° 52' 00"	54' 39"	14' 53,33"	253° 35' 15"	40,62%
13:00	313° 40' 28"	-1° 00' 19"	316° 26' 35"	-17° 40' 56"	54' 40"	14' 53,63"	253° 25' 50"	41,01%
14:00	314° 10' 25"	-0° 57' 43"	316° 55' 52"	-17° 29' 47"	54' 41"	14' 53,94"	253° 16' 33"	41,41%
15:00	314° 40' 23"	-0° 55' 08"	317° 25' 06"	-17° 18' 34"	54' 42"	14' 54,25"	253° 07' 23"	41,80%
16:00	315° 10' 22"	-0° 52' 31"	317° 54' 18"	-17° 07' 16"	54' 43"	14' 54,57"	252° 58' 21"	42,19%
17:00	315° 40' 22"	-0° 49' 55"	318° 23' 28"	-16° 55' 53"	54' 44"	14' 54,89"	252° 49' 25"	42,59%
18:00	316° 10' 23"	-0° 47' 18"	318° 52' 35"	-16° 44' 25"	54' 46"	14' 55,21"	252° 40' 38"	42,98%
19:00	316° 40' 26"	-0° 44' 41"	319° 21' 40"	-16° 32' 53"	54' 47"	14' 55,54"	252° 31' 58"	43,38%
20:00	317° 10' 30"	-0° 42' 03"	319° 50' 42"	-16° 21' 17"	54' 48"	14' 55,87"	252° 23' 25"	43,78%
21:00	317° 40' 35"	-0° 39' 26"	320° 19' 43"	-16° 09' 36"	54' 49"	14' 56,21"	252° 14' 59"	44,18%
22:00	318° 10' 41"	-0° 36' 47"	320° 48' 41"	-15° 57' 50"	54' 50"	14' 56,56"	252° 06' 42"	44,57%
23:00	318° 40' 49"	-0° 34' 09"	321° 17' 37"	-15° 46' 00"	54' 52"	14' 56,90"	251° 58' 31"	44,97%
24:00	319° 10' 58"	-0° 31' 30"	321° 46' 31"	-15° 34' 06"	54' 53"	14' 57,26"	251° 50' 28"	45,37%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	234° 38' 44"	0,15"	232° 17' 11"	-18° 55' 46"	0,9888619	16' 10,44"	23° 26' 16"	15m 08s
01:00	234° 41' 15"	0,16"	232° 19' 46"	-18° 56' 23"	0,9888526	16' 10,45"	23° 26' 16"	15m 07s
02:00	234° 43' 47"	0,16"	232° 22' 21"	-18° 56' 59"	0,9888434	16' 10,46"	23° 26' 16"	15m 07s
03:00	234° 46' 18"	0,17"	232° 24' 56"	-18° 57' 36"	0,9888341	16' 10,47"	23° 26' 16"	15m 06s
04:00	234° 48' 49"	0,17"	232° 27' 32"	-18° 58' 13"	0,9888249	16' 10,48"	23° 26' 16"	15m 06s
05:00	234° 51' 20"	0,18"	232° 30' 07"	-18° 58' 49"	0,9888156	16' 10,48"	23° 26' 16"	15m 05s
06:00	234° 53' 51"	0,18"	232° 32' 42"	-18° 59' 26"	0,9888064	16' 10,49"	23° 26' 16"	15m 05s
07:00	234° 56' 23"	0,19"	232° 35' 17"	-19° 00' 02"	0,9887972	16' 10,50"	23° 26' 16"	15m 05s
08:00	234° 58' 54"	0,19"	232° 37' 52"	-19° 00' 39"	0,9887880	16' 10,51"	23° 26' 16"	15m 04s
09:00	235° 01' 25"	0,20"	232° 40' 27"	-19° 01' 15"	0,9887788	16' 10,52"	23° 26' 16"	15m 04s
10:00	235° 03' 56"	0,20"	232° 43' 03"	-19° 01' 52"	0,9887695	16' 10,53"	23° 26' 16"	15m 03s
11:00	235° 06' 27"	0,21"	232° 45' 38"	-19° 02' 28"	0,9887603	16' 10,54"	23° 26' 16"	15m 03s
12:00	235° 08' 59"	0,21"	232° 48' 13"	-19° 03' 05"	0,9887511	16' 10,55"	23° 26' 16"	15m 02s
13:00	235° 11' 30"	0,22"	232° 50' 48"	-19° 03' 41"	0,9887420	16' 10,56"	23° 26' 16"	15m 02s
14:00	235° 14' 01"	0,23"	232° 53' 24"	-19° 04' 17"	0,9887328	16' 10,57"	23° 26' 16"	15m 01s
15:00	235° 16' 32"	0,23"	232° 55' 59"	-19° 04' 54"	0,9887236	16' 10,57"	23° 26' 16"	15m 01s
16:00	235° 19' 03"	0,24"	232° 58' 34"	-19° 05' 30"	0,9887144	16' 10,58"	23° 26' 16"	15m 00s
17:00	235° 21' 35"	0,24"	233° 01' 10"	-19° 06' 06"	0,9887053	16' 10,59"	23° 26' 16"	15m 00s
18:00	235° 24' 06"	0,25"	233° 03' 45"	-19° 06' 42"	0,9886961	16' 10,60"	23° 26' 16"	14m 59s
19:00	235° 26' 37"	0,25"	233° 06' 20"	-19° 07' 18"	0,9886869	16' 10,61"	23° 26' 16"	14m 59s
20:00	235° 29' 08"	0,26"	233° 08' 56"	-19° 07' 54"	0,9886778	16' 10,62"	23° 26' 16"	14m 58s
21:00	235° 31' 40"	0,26"	233° 11' 31"	-19° 08' 30"	0,9886686	16' 10,63"	23° 26' 16"	14m 58s
22:00	235° 34' 11"	0,27"	233° 14' 07"	-19° 09' 06"	0,9886595	16' 10,64"	23° 26' 16"	14m 57s
23:00	235° 36' 42"	0,27"	233° 16' 42"	-19° 09' 42"	0,9886504	16' 10,65"	23° 26' 16"	14m 57s
24:00	235° 39' 13"	0,28"	233° 19' 18"	-19° 10' 18"	0,9886412	16' 10,66"	23° 26' 16"	14m 56s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	319° 10' 58"	-0° 31' 30"	321° 46' 31"	-15° 34' 06"	54' 53"	14' 57,26"	251° 50' 28"	45,37%
01:00	319° 41' 09"	-0° 28' 51"	322° 15' 23"	-15° 22' 08"	54' 54"	14' 57,62"	251° 42' 33"	45,77%
02:00	320° 11' 21"	-0° 26' 12"	322° 44' 13"	-15° 10' 05"	54' 56"	14' 57,98"	251° 34' 45"	46,18%
03:00	320° 41' 34"	-0° 23' 33"	323° 13' 02"	-14° 57' 58"	54' 57"	14' 58,35"	251° 27' 05"	46,58%
04:00	321° 11' 49"	-0° 20' 53"	323° 41' 48"	-14° 45' 46"	54' 58"	14' 58,72"	251° 19' 32"	46,98%
05:00	321° 42' 05"	-0° 18' 13"	324° 10' 32"	-14° 33' 31"	55' 00"	14' 59,10"	251° 12' 07"	47,38%
06:00	322° 12' 23"	-0° 15' 33"	324° 39' 15"	-14° 21' 12"	55' 01"	14' 59,48"	251° 04' 50"	47,79%
07:00	322° 42' 42"	-0° 12' 53"	325° 07' 56"	-14° 08' 48"	55' 03"	15' 00,00"	250° 57' 40"	48,19%
08:00	323° 13' 03"	-0° 10' 12"	325° 36' 36"	-13° 56' 20"	55' 04"	15' 00,25"	250° 50' 38"	48,60%
09:00	323° 43' 25"	-0° 07' 31"	326° 05' 13"	-13° 43' 49"	55' 05"	15' 00,65"	250° 43' 43"	49,00%
10:00	324° 13' 50"	-0° 04' 50"	326° 33' 50"	-13° 31' 13"	55' 07"	15' 01,05"	250° 36' 56"	49,41%
11:00	324° 44' 15"	-0° 02' 09"	327° 02' 24"	-13° 18' 33"	55' 08"	15' 01,45"	250° 30' 17"	49,81%
12:00	325° 14' 42"	0° 00' 32"	327° 30' 58"	-13° 05' 50"	55' 10"	15' 01,86"	250° 23' 45"	50,22%
13:00	325° 45' 11"	0° 03' 13"	327° 59' 29"	-12° 53' 03"	55' 11"	15' 02,28"	250° 17' 21"	50,62%
14:00	326° 15' 42"	0° 05' 55"	328° 28' 00"	-12° 40' 12"	55' 13"	15' 02,69"	250° 11' 05"	51,03%
15:00	326° 46' 14"	0° 08' 37"	328° 56' 29"	-12° 27' 17"	55' 15"	15' 03,12"	250° 04' 56"	51,44%
16:00	327° 16' 49"	0° 11' 18"	329° 24' 57"	-12° 14' 18"	55' 16"	15' 03,54"	249° 58' 55"	51,85%
17:00	327° 47' 24"	0° 14' 00"	329° 53' 24"	-12° 01' 16"	55' 18"	15' 03,98"	249° 53' 02"	52,25%
18:00	328° 18' 02"	0° 16' 42"	330° 21' 50"	-11° 48' 10"	55' 19"	15' 04,41"	249° 47' 17"	52,66%
19:00	328° 48' 42"	0° 19' 24"	330° 50' 15"	-11° 35' 01"	55' 21"	15' 04,85"	249° 41' 40"	53,07%
20:00	329° 19' 23"	0° 22' 06"	331° 18' 38"	-11° 21' 48"	55' 23"	15' 05,30"	249° 36' 10"	53,48%
21:00	329° 50' 06"	0° 24' 48"	331° 47' 01"	-11° 08' 31"	55' 24"	15' 05,75"	249° 30' 48"	53,89%
22:00	330° 20' 51"	0° 27' 31"	332° 15' 23"	-10° 55' 11"	55' 26"	15' 06,20"	249° 25' 35"	54,30%
23:00	330° 51' 38"	0° 30' 13"	332° 43' 44"	-10° 41' 48"	55' 28"	15' 06,66"	249° 20' 29"	54,71%
24:00	331° 22' 27"	0° 32' 55"	333° 12' 04"	-10° 28' 21"	55' 29"	15' 07,12"	249° 15' 31"	55,12%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	235° 39' 13"	0,28"	233° 19' 18"	-19° 10' 18"	0,9886412	16' 10,66"	23° 26' 16"	14m 56s
01:00	235° 41' 44"	0,29"	233° 21' 53"	-19° 10' 54"	0,9886321	16' 10,66"	23° 26' 16"	14m 55s
02:00	235° 44' 16"	0,29"	233° 24' 29"	-19° 11' 30"	0,9886230	16' 10,67"	23° 26' 16"	14m 55s
03:00	235° 46' 47"	0,30"	233° 27' 05"	-19° 12' 06"	0,9886139	16' 10,68"	23° 26' 16"	14m 54s
04:00	235° 49' 18"	0,30"	233° 29' 40"	-19° 12' 42"	0,9886048	16' 10,69"	23° 26' 16"	14m 54s
05:00	235° 51' 49"	0,31"	233° 32' 16"	-19° 13' 18"	0,9885957	16' 10,70"	23° 26' 16"	14m 53s
06:00	235° 54' 21"	0,31"	233° 34' 51"	-19° 13' 53"	0,9885866	16' 10,71"	23° 26' 16"	14m 53s
07:00	235° 56' 52"	0,32"	233° 37' 27"	-19° 14' 29"	0,9885775	16' 10,72"	23° 26' 16"	14m 52s
08:00	235° 59' 23"	0,32"	233° 40' 03"	-19° 15' 05"	0,9885685	16' 10,73"	23° 26' 16"	14m 52s
09:00	236° 01' 54"	0,33"	233° 42' 38"	-19° 15' 40"	0,9885594	16' 10,74"	23° 26' 16"	14m 51s
10:00	236° 04' 26"	0,33"	233° 45' 14"	-19° 16' 16"	0,9885503	16' 10,74"	23° 26' 16"	14m 51s
11:00	236° 06' 57"	0,34"	233° 47' 50"	-19° 16' 51"	0,9885413	16' 10,75"	23° 26' 16"	14m 50s
12:00	236° 09' 28"	0,34"	233° 50' 26"	-19° 17' 27"	0,9885322	16' 10,76"	23° 26' 16"	14m 50s
13:00	236° 11' 59"	0,35"	233° 53' 01"	-19° 18' 02"	0,9885232	16' 10,77"	23° 26' 16"	14m 49s
14:00	236° 14' 31"	0,35"	233° 55' 37"	-19° 18' 38"	0,9885141	16' 10,78"	23° 26' 16"	14m 49s
15:00	236° 17' 02"	0,36"	233° 58' 13"	-19° 19' 13"	0,9885051	16' 10,79"	23° 26' 16"	14m 48s
16:00	236° 19' 33"	0,37"	234° 00' 49"	-19° 19' 49"	0,9884961	16' 10,80"	23° 26' 16"	14m 48s
17:00	236° 22' 04"	0,37"	234° 03' 25"	-19° 20' 24"	0,9884871	16' 10,81"	23° 26' 16"	14m 47s
18:00	236° 24' 36"	0,38"	234° 06' 01"	-19° 20' 59"	0,9884781	16' 10,82"	23° 26' 16"	14m 47s
19:00	236° 27' 07"	0,38"	234° 08' 37"	-19° 21' 34"	0,9884690	16' 10,82"	23° 26' 16"	14m 46s
20:00	236° 29' 38"	0,39"	234° 11' 13"	-19° 22' 10"	0,9884600	16' 10,83"	23° 26' 16"	14m 45s
21:00	236° 32' 10"	0,39"	234° 13' 49"	-19° 22' 45"	0,9884511	16' 10,84"	23° 26' 16"	14m 45s
22:00	236° 34' 41"	0,40"	234° 16' 25"	-19° 23' 20"	0,9884421	16' 10,85"	23° 26' 16"	14m 44s
23:00	236° 37' 12"	0,40"	234° 19' 01"	-19° 23' 55"	0,9884331	16' 10,86"	23° 26' 16"	14m 44s
24:00	236° 39' 43"	0,41"	234° 21' 37"	-19° 24' 30"	0,9884241	16' 10,87"	23° 26' 16"	14m 43s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	331° 22' 27"	0° 32' 55"	333° 12' 04"	-10° 28' 21"	55' 29"	15' 07,12"	249° 15' 31"	55,12%
01:00	331° 53' 18"	0° 35' 37"	333° 40' 24"	-10° 14' 51"	55' 31"	15' 07,59"	249° 10' 41"	55,53%
02:00	332° 24' 11"	0° 38' 20"	334° 08' 43"	-10° 01' 18"	55' 33"	15' 08,06"	249° 05' 59"	55,93%
03:00	332° 55' 05"	0° 41' 02"	334° 37' 02"	-9° 47' 41"	55' 34"	15' 08,53"	249° 01' 25"	56,34%
04:00	333° 26' 02"	0° 43' 44"	335° 05' 20"	-9° 34' 01"	55' 36"	15' 09,01"	248° 56' 59"	56,75%
05:00	333° 57' 01"	0° 46' 26"	335° 33' 37"	-9° 20' 18"	55' 38"	15' 09,50"	248° 52' 41"	57,16%
06:00	334° 28' 02"	0° 49' 08"	336° 01' 54"	-9° 06' 32"	55' 40"	15' 09,99"	248° 48' 31"	57,57%
07:00	334° 59' 05"	0° 51' 50"	336° 30' 11"	-8° 52' 43"	55' 42"	15' 10,48"	248° 44' 29"	57,98%
08:00	335° 30' 11"	0° 54' 32"	336° 58' 28"	-8° 38' 50"	55' 43"	15' 10,97"	248° 40' 35"	58,39%
09:00	336° 01' 18"	0° 57' 14"	337° 26' 44"	-8° 24' 55"	55' 45"	15' 11,47"	248° 36' 50"	58,80%
10:00	336° 32' 27"	0° 59' 56"	337° 55' 00"	-8° 10' 57"	55' 47"	15' 11,98"	248° 33' 12"	59,21%
11:00	337° 03' 39"	1° 02' 38"	338° 23' 17"	-7° 56' 55"	55' 49"	15' 12,49"	248° 29' 43"	59,62%
12:00	337° 34' 53"	1° 05' 19"	338° 51' 33"	-7° 42' 51"	55' 51"	15' 13,00"	248° 26' 23"	60,03%
13:00	338° 06' 09"	1° 08' 01"	339° 19' 49"	-7° 28' 44"	55' 53"	15' 13,51"	248° 23' 10"	60,44%
14:00	338° 37' 28"	1° 10' 42"	339° 48' 06"	-7° 14' 35"	55' 55"	15' 14,03"	248° 20' 06"	60,85%
15:00	339° 08' 48"	1° 13' 23"	340° 16' 22"	-7° 00' 22"	55' 57"	15' 14,56"	248° 17' 10"	61,25%
16:00	339° 40' 11"	1° 16' 04"	340° 44' 39"	-6° 46' 07"	55' 58"	15' 15,09"	248° 14' 23"	61,66%
17:00	340° 11' 36"	1° 18' 44"	341° 12' 57"	-6° 31' 49"	56' 00"	15' 15,62"	248° 11' 44"	62,07%
18:00	340° 43' 04"	1° 21' 25"	341° 41' 15"	-6° 17' 29"	56' 02"	15' 16,15"	248° 09' 14"	62,48%
19:00	341° 14' 34"	1° 24' 05"	342° 09' 33"	-6° 03' 06"	56' 04"	15' 16,69"	248° 06' 52"	62,88%
20:00	341° 46' 06"	1° 26' 45"	342° 37' 52"	-5° 48' 40"	56' 06"	15' 17,23"	248° 04' 39"	63,29%
21:00	342° 17' 41"	1° 29' 25"	343° 06' 11"	-5° 34' 12"	56' 08"	15' 17,78"	248° 02' 34"	63,70%
22:00	342° 49' 18"	1° 32' 04"	343° 34' 31"	-5° 19' 42"	56' 10"	15' 18,33"	248° 00' 38"	64,10%
23:00	343° 20' 58"	1° 34' 44"	344° 02' 52"	-5° 05' 09"	56' 12"	15' 18,88"	247° 58' 51"	64,51%
24:00	343° 52' 40"	1° 37' 23"	344° 31' 14"	-4° 50' 34"	56' 14"	15' 19,44"	247° 57' 13"	64,91%

19 November 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	236° 39' 43"	0,41"	234° 21' 37"	-19° 24' 30"	0,9884241	16' 10,87"	23° 26' 16"	14m 43s
01:00	236° 42' 15"	0,41"	234° 24' 13"	-19° 25' 05"	0,9884152	16' 10,88"	23° 26' 16"	14m 43s
02:00	236° 44' 46"	0,42"	234° 26' 49"	-19° 25' 40"	0,9884062	16' 10,89"	23° 26' 16"	14m 42s
03:00	236° 47' 17"	0,42"	234° 29' 25"	-19° 26' 15"	0,9883972	16' 10,90"	23° 26' 16"	14m 42s
04:00	236° 49' 48"	0,43"	234° 32' 01"	-19° 26' 50"	0,9883883	16' 10,90"	23° 26' 16"	14m 41s
05:00	236° 52' 20"	0,43"	234° 34' 37"	-19° 27' 25"	0,9883794	16' 10,91"	23° 26' 16"	14m 41s
06:00	236° 54' 51"	0,44"	234° 37' 13"	-19° 28' 00"	0,9883704	16' 10,92"	23° 26' 16"	14m 40s
07:00	236° 57' 22"	0,44"	234° 39' 49"	-19° 28' 35"	0,9883615	16' 10,93"	23° 26' 16"	14m 39s
08:00	236° 59' 54"	0,45"	234° 42' 25"	-19° 29' 09"	0,9883526	16' 10,94"	23° 26' 16"	14m 39s
09:00	237° 02' 25"	0,45"	234° 45' 02"	-19° 29' 44"	0,9883437	16' 10,95"	23° 26' 16"	14m 38s
10:00	237° 04' 56"	0,46"	234° 47' 38"	-19° 30' 19"	0,9883348	16' 10,96"	23° 26' 16"	14m 38s
11:00	237° 07' 28"	0,46"	234° 50' 14"	-19° 30' 54"	0,9883259	16' 10,97"	23° 26' 16"	14m 37s
12:00	237° 09' 59"	0,47"	234° 52' 50"	-19° 31' 28"	0,9883170	16' 10,97"	23° 26' 16"	14m 37s
13:00	237° 12' 30"	0,47"	234° 55' 27"	-19° 32' 03"	0,9883081	16' 10,98"	23° 26' 16"	14m 36s
14:00	237° 15' 01"	0,48"	234° 58' 03"	-19° 32' 37"	0,9882992	16' 10,99"	23° 26' 16"	14m 36s
15:00	237° 17' 33"	0,48"	235° 00' 39"	-19° 33' 12"	0,9882903	16' 11,00"	23° 26' 16"	14m 35s
16:00	237° 20' 04"	0,49"	235° 03' 16"	-19° 33' 46"	0,9882815	16' 11,01"	23° 26' 16"	14m 34s
17:00	237° 22' 35"	0,49"	235° 05' 52"	-19° 34' 21"	0,9882726	16' 11,02"	23° 26' 16"	14m 34s
18:00	237° 25' 07"	0,50"	235° 08' 28"	-19° 34' 55"	0,9882638	16' 11,03"	23° 26' 16"	14m 33s
19:00	237° 27' 38"	0,50"	235° 11' 05"	-19° 35' 30"	0,9882549	16' 11,03"	23° 26' 16"	14m 33s
20:00	237° 30' 09"	0,51"	235° 13' 41"	-19° 36' 04"	0,9882461	16' 11,04"	23° 26' 16"	14m 32s
21:00	237° 32' 41"	0,51"	235° 16' 18"	-19° 36' 38"	0,9882373	16' 11,05"	23° 26' 16"	14m 32s
22:00	237° 35' 12"	0,51"	235° 18' 54"	-19° 37' 13"	0,9882284	16' 11,06"	23° 26' 16"	14m 31s
23:00	237° 37' 43"	0,52"	235° 21' 31"	-19° 37' 47"	0,9882196	16' 11,07"	23° 26' 16"	14m 30s
24:00	237° 40' 15"	0,52"	235° 24' 07"	-19° 38' 21"	0,9882108	16' 11,08"	23° 26' 16"	14m 30s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	343° 52' 40"	1° 37' 23"	344° 31' 14"	-4° 50' 34"	56' 14"	15' 19,44"	247° 57' 13"	64,91%
01:00	344° 24' 25"	1° 40' 01"	344° 59' 37"	-4° 35' 57"	56' 17"	15' 20,00"	247° 55' 43"	65,32%
02:00	344° 56' 12"	1° 42' 39"	345° 28' 01"	-4° 21' 17"	56' 19"	15' 20,56"	247° 54' 22"	65,72%
03:00	345° 28' 01"	1° 45' 17"	345° 56' 26"	-4° 06' 35"	56' 21"	15' 21,12"	247° 53' 10"	66,12%
04:00	345° 59' 54"	1° 47' 55"	346° 24' 52"	-3° 51' 51"	56' 23"	15' 21,69"	247° 52' 07"	66,53%
05:00	346° 31' 48"	1° 50' 32"	346° 53' 19"	-3° 37' 05"	56' 25"	15' 22,27"	247° 51' 14"	66,93%
06:00	347° 03' 46"	1° 53' 09"	347° 21' 48"	-3° 22' 17"	56' 27"	15' 22,84"	247° 50' 29"	67,33%
07:00	347° 35' 46"	1° 55' 46"	347° 50' 17"	-3° 07' 27"	56' 29"	15' 23,42"	247° 49' 53"	67,73%
08:00	348° 07' 48"	1° 58' 22"	348° 18' 49"	-2° 52' 35"	56' 31"	15' 24,00"	247° 49' 27"	68,13%
09:00	348° 39' 53"	2° 00' 57"	348° 47' 22"	-2° 37' 41"	56' 33"	15' 24,59"	247° 49' 10"	68,53%
10:00	349° 12' 01"	2° 03' 33"	349° 15' 56"	-2° 22' 46"	56' 36"	15' 25,18"	247° 49' 02"	68,93%
11:00	349° 44' 12"	2° 06' 07"	349° 44' 32"	-2° 07' 48"	56' 38"	15' 25,77"	247° 49' 03"	69,32%
12:00	350° 16' 25"	2° 08' 42"	350° 13' 10"	-1° 52' 49"	56' 40"	15' 26,36"	247° 49' 14"	69,72%
13:00	350° 48' 41"	2° 11' 16"	350° 41' 50"	-1° 37' 48"	56' 42"	15' 26,96"	247° 49' 35"	70,11%
14:00	351° 20' 59"	2° 13' 49"	351° 10' 31"	-1° 22' 46"	56' 44"	15' 27,56"	247° 50' 05"	70,51%
15:00	351° 53' 21"	2° 16' 22"	351° 39' 15"	-1° 07' 42"	56' 46"	15' 28,16"	247° 50' 45"	70,90%
16:00	352° 25' 45"	2° 18' 54"	352° 08' 01"	-0° 52' 36"	56' 49"	15' 28,76"	247° 51' 34"	71,30%
17:00	352° 58' 12"	2° 21' 26"	352° 36' 48"	-0° 37' 29"	56' 51"	15' 29,37"	247° 52' 34"	71,69%
18:00	353° 30' 42"	2° 23' 57"	353° 05' 38"	-0° 22' 21"	56' 53"	15' 29,98"	247° 53' 43"	72,08%
19:00	354° 03' 14"	2° 26' 28"	353° 34' 31"	-0° 07' 11"	56' 55"	15' 30,59"	247° 55' 02"	72,47%
20:00	354° 35' 50"	2° 28' 58"	354° 03' 25"	0° 08' 00"	56' 58"	15' 31,20"	247° 56' 32"	72,85%
21:00	355° 08' 28"	2° 31' 27"	354° 32' 22"	0° 23' 12"	57' 00"	15' 31,82"	247° 58' 11"	73,24%
22:00	355° 41' 09"	2° 33' 56"	355° 01' 22"	0° 38' 25"	57' 02"	15' 32,44"	248° 00' 01"	73,63%
23:00	356° 13' 53"	2° 36' 24"	355° 30' 24"	0° 53' 40"	57' 04"	15' 33,06"	248° 02' 01"	74,01%
24:00	356° 46' 40"	2° 38' 51"	355° 59' 29"	1° 08' 55"	57' 07"	15' 33,68"	248° 04' 11"	74,40%

20 November 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	237° 40' 15"	0,52"	235° 24' 07"	-19° 38' 21"	0,9882108	16' 11,08"	23° 26' 16"	14m 30s
01:00	237° 42' 46"	0,53"	235° 26' 44"	-19° 38' 55"	0,9882020	16' 11,09"	23° 26' 16"	14m 29s
02:00	237° 45' 17"	0,53"	235° 29' 20"	-19° 39' 29"	0,9881932	16' 11,10"	23° 26' 16"	14m 29s
03:00	237° 47' 49"	0,54"	235° 31' 57"	-19° 40' 03"	0,9881844	16' 11,10"	23° 26' 16"	14m 28s
04:00	237° 50' 20"	0,54"	235° 34' 34"	-19° 40' 37"	0,9881757	16' 11,11"	23° 26' 16"	14m 27s
05:00	237° 52' 51"	0,55"	235° 37' 10"	-19° 41' 11"	0,9881669	16' 11,12"	23° 26' 16"	14m 27s
06:00	237° 55' 23"	0,55"	235° 39' 47"	-19° 41' 45"	0,9881581	16' 11,13"	23° 26' 16"	14m 26s
07:00	237° 57' 54"	0,56"	235° 42' 24"	-19° 42' 19"	0,9881494	16' 11,14"	23° 26' 16"	14m 26s
08:00	238° 00' 25"	0,56"	235° 45' 00"	-19° 42' 53"	0,9881406	16' 11,15"	23° 26' 16"	14m 25s
09:00	238° 02' 57"	0,56"	235° 47' 37"	-19° 43' 27"	0,9881319	16' 11,16"	23° 26' 16"	14m 25s
10:00	238° 05' 28"	0,57"	235° 50' 14"	-19° 44' 01"	0,9881232	16' 11,16"	23° 26' 16"	14m 24s
11:00	238° 08' 00"	0,57"	235° 52' 50"	-19° 44' 35"	0,9881144	16' 11,17"	23° 26' 16"	14m 23s
12:00	238° 10' 31"	0,58"	235° 55' 27"	-19° 45' 08"	0,9881057	16' 11,18"	23° 26' 16"	14m 23s
13:00	238° 13' 02"	0,58"	235° 58' 04"	-19° 45' 42"	0,9880970	16' 11,19"	23° 26' 16"	14m 22s
14:00	238° 15' 34"	0,59"	236° 00' 41"	-19° 46' 16"	0,9880883	16' 11,20"	23° 26' 16"	14m 22s
15:00	238° 18' 05"	0,59"	236° 03' 18"	-19° 46' 49"	0,9880796	16' 11,21"	23° 26' 16"	14m 21s
16:00	238° 20' 36"	0,59"	236° 05' 54"	-19° 47' 23"	0,9880709	16' 11,22"	23° 26' 16"	14m 20s
17:00	238° 23' 08"	0,60"	236° 08' 31"	-19° 47' 57"	0,9880622	16' 11,22"	23° 26' 16"	14m 20s
18:00	238° 25' 39"	0,60"	236° 11' 08"	-19° 48' 30"	0,9880536	16' 11,23"	23° 26' 16"	14m 19s
19:00	238° 28' 10"	0,61"	236° 13' 45"	-19° 49' 04"	0,9880449	16' 11,24"	23° 26' 16"	14m 19s
20:00	238° 30' 42"	0,61"	236° 16' 22"	-19° 49' 37"	0,9880362	16' 11,25"	23° 26' 16"	14m 18s
21:00	238° 33' 13"	0,61"	236° 18' 59"	-19° 50' 10"	0,9880276	16' 11,26"	23° 26' 16"	14m 17s
22:00	238° 35' 45"	0,62"	236° 21' 36"	-19° 50' 44"	0,9880190	16' 11,27"	23° 26' 16"	14m 17s
23:00	238° 38' 16"	0,62"	236° 24' 13"	-19° 51' 17"	0,9880103	16' 11,28"	23° 26' 16"	14m 16s
24:00	238° 40' 47"	0,62"	236° 26' 50"	-19° 51' 50"	0,9880017	16' 11,28"	23° 26' 16"	14m 16s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	356° 46' 40"	2° 38' 51"	355° 59' 29"	1° 08' 55"	57' 07"	15' 33,68"	248° 04' 11"	74,40%
01:00	357° 19' 29"	2° 41' 18"	356° 28' 37"	1° 24' 12"	57' 09"	15' 34,30"	248° 06' 32"	74,78%
02:00	357° 52' 22"	2° 43' 44"	356° 57' 47"	1° 39' 29"	57' 11"	15' 34,93"	248° 09' 04"	75,16%
03:00	358° 25' 17"	2° 46' 10"	357° 27' 01"	1° 54' 48"	57' 14"	15' 35,56"	248° 11' 46"	75,54%
04:00	358° 58' 16"	2° 48' 34"	357° 56' 17"	2° 10' 07"	57' 16"	15' 36,18"	248° 14' 40"	75,91%
05:00	359° 31' 17"	2° 50' 58"	358° 25' 37"	2° 25' 26"	57' 18"	15' 36,82"	248° 17' 44"	76,29%
06:00	0° 04' 22"	2° 53' 22"	358° 55' 00"	2° 40' 47"	57' 21"	15' 37,45"	248° 20' 59"	76,67%
07:00	0° 37' 29"	2° 55' 44"	359° 24' 26"	2° 56' 08"	57' 23"	15' 38,08"	248° 24' 25"	77,04%
08:00	1° 10' 39"	2° 58' 06"	359° 53' 55"	3° 11' 29"	57' 25"	15' 38,72"	248° 28' 03"	77,41%
09:00	1° 43' 53"	3° 00' 26"	0° 23' 28"	3° 26' 51"	57' 28"	15' 39,35"	248° 31' 52"	77,78%
10:00	2° 17' 09"	3° 02' 46"	0° 53' 04"	3° 42' 14"	57' 30"	15' 39,99"	248° 35' 53"	78,15%
11:00	2° 50' 28"	3° 05' 05"	1° 22' 44"	3° 57' 36"	57' 32"	15' 40,63"	248° 40' 05"	78,52%
12:00	3° 23' 51"	3° 07' 24"	1° 52' 28"	4° 12' 59"	57' 35"	15' 41,27"	248° 44' 30"	78,88%
13:00	3° 57' 16"	3° 09' 41"	2° 22' 15"	4° 28' 23"	57' 37"	15' 41,91"	248° 49' 06"	79,24%
14:00	4° 30' 45"	3° 11' 58"	2° 52' 06"	4° 43' 46"	57' 39"	15' 42,56"	248° 53' 54"	79,61%
15:00	5° 04' 16"	3° 14' 13"	3° 22' 01"	4° 59' 09"	57' 42"	15' 43,20"	248° 58' 55"	79,96%
16:00	5° 37' 51"	3° 16' 28"	3° 52' 01"	5° 14' 32"	57' 44"	15' 43,84"	249° 04' 08"	80,32%
17:00	6° 11' 28"	3° 18' 42"	4° 22' 04"	5° 29' 56"	57' 46"	15' 44,49"	249° 09' 33"	80,68%
18:00	6° 45' 09"	3° 20' 54"	4° 52' 11"	5° 45' 18"	57' 49"	15' 45,13"	249° 15' 11"	81,03%
19:00	7° 18' 53"	3° 23' 06"	5° 22' 23"	6° 00' 41"	57' 51"	15' 45,78"	249° 21' 02"	81,38%
20:00	7° 52' 39"	3° 25' 17"	5° 52' 39"	6° 16' 04"	57' 54"	15' 46,42"	249° 27' 07"	81,73%
21:00	8° 26' 29"	3° 27' 27"	6° 22' 59"	6° 31' 25"	57' 56"	15' 47,07"	249° 33' 24"	82,08%
22:00	9° 00' 22"	3° 29' 35"	6° 53' 24"	6° 46' 47"	57' 58"	15' 47,71"	249° 39' 55"	82,43%
23:00	9° 34' 18"	3° 31' 43"	7° 23' 53"	7° 02' 08"	58' 01"	15' 48,36"	249° 46' 40"	82,77%
24:00	10° 08' 17"	3° 33' 50"	7° 54' 27"	7° 17' 28"	58' 03"	15' 49,01"	249° 53' 38"	83,11%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	238° 40' 47"	0,62"	236° 26' 50"	-19° 51' 50"	0,9880017	16' 11,28"	23° 26' 16"	14m 16s
01:00	238° 43' 19"	0,63"	236° 29' 27"	-19° 52' 24"	0,9879931	16' 11,29"	23° 26' 16"	14m 15s
02:00	238° 45' 50"	0,63"	236° 32' 04"	-19° 52' 57"	0,9879845	16' 11,30"	23° 26' 16"	14m 14s
03:00	238° 48' 22"	0,64"	236° 34' 41"	-19° 53' 30"	0,9879759	16' 11,31"	23° 26' 16"	14m 14s
04:00	238° 50' 53"	0,64"	236° 37' 18"	-19° 54' 03"	0,9879673	16' 11,32"	23° 26' 16"	14m 13s
05:00	238° 53' 24"	0,64"	236° 39' 55"	-19° 54' 36"	0,9879587	16' 11,33"	23° 26' 16"	14m 12s
06:00	238° 55' 56"	0,65"	236° 42' 33"	-19° 55' 09"	0,9879501	16' 11,33"	23° 26' 16"	14m 12s
07:00	238° 58' 27"	0,65"	236° 45' 10"	-19° 55' 42"	0,9879415	16' 11,34"	23° 26' 16"	14m 11s
08:00	239° 00' 59"	0,65"	236° 47' 47"	-19° 56' 15"	0,9879330	16' 11,35"	23° 26' 16"	14m 11s
09:00	239° 03' 30"	0,66"	236° 50' 24"	-19° 56' 48"	0,9879244	16' 11,36"	23° 26' 16"	14m 10s
10:00	239° 06' 01"	0,66"	236° 53' 01"	-19° 57' 21"	0,9879159	16' 11,37"	23° 26' 16"	14m 09s
11:00	239° 08' 33"	0,66"	236° 55' 39"	-19° 57' 54"	0,9879073	16' 11,38"	23° 26' 16"	14m 09s
12:00	239° 11' 04"	0,67"	236° 58' 16"	-19° 58' 27"	0,9878988	16' 11,38"	23° 26' 16"	14m 08s
13:00	239° 13' 36"	0,67"	237° 00' 53"	-19° 59' 00"	0,9878903	16' 11,39"	23° 26' 16"	14m 07s
14:00	239° 16' 07"	0,67"	237° 03' 30"	-19° 59' 33"	0,9878818	16' 11,40"	23° 26' 16"	14m 07s
15:00	239° 18' 38"	0,68"	237° 06' 08"	-20° 00' 05"	0,9878733	16' 11,41"	23° 26' 16"	14m 06s
16:00	239° 21' 10"	0,68"	237° 08' 45"	-20° 00' 38"	0,9878648	16' 11,42"	23° 26' 16"	14m 06s
17:00	239° 23' 41"	0,68"	237° 11' 22"	-20° 01' 11"	0,9878563	16' 11,43"	23° 26' 16"	14m 05s
18:00	239° 26' 13"	0,69"	237° 14' 00"	-20° 01' 43"	0,9878478	16' 11,44"	23° 26' 16"	14m 04s
19:00	239° 28' 44"	0,69"	237° 16' 37"	-20° 02' 16"	0,9878393	16' 11,44"	23° 26' 16"	14m 04s
20:00	239° 31' 16"	0,69"	237° 19' 15"	-20° 02' 48"	0,9878309	16' 11,45"	23° 26' 16"	14m 03s
21:00	239° 33' 47"	0,70"	237° 21' 52"	-20° 03' 21"	0,9878224	16' 11,46"	23° 26' 16"	14m 02s
22:00	239° 36' 18"	0,70"	237° 24' 30"	-20° 03' 53"	0,9878140	16' 11,47"	23° 26' 16"	14m 02s
23:00	239° 38' 50"	0,70"	237° 27' 07"	-20° 04' 26"	0,9878055	16' 11,48"	23° 26' 16"	14m 01s
24:00	239° 41' 21"	0,70"	237° 29' 45"	-20° 04' 58"	0,9877971	16' 11,48"	23° 26' 16"	14m 00s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	10° 08' 17"	3° 33' 50"	7° 54' 27"	7° 17' 28"	58' 03"	15' 49,01"	249° 53' 38"	83,11%
01:00	10° 42' 20"	3° 35' 55"	8° 25' 06"	7° 32' 47"	58' 05"	15' 49,65"	250° 00' 51"	83,45%
02:00	11° 16' 25"	3° 38' 00"	8° 55' 50"	7° 48' 06"	58' 08"	15' 50,30"	250° 08' 18"	83,79%
03:00	11° 50' 34"	3° 40' 03"	9° 26' 38"	8° 03' 23"	58' 10"	15' 50,95"	250° 15' 59"	84,12%
04:00	12° 24' 45"	3° 42' 05"	9° 57' 32"	8° 18' 40"	58' 12"	15' 51,59"	250° 23' 55"	84,45%
05:00	12° 59' 00"	3° 44' 06"	10° 28' 31"	8° 33' 56"	58' 15"	15' 52,24"	250° 32' 07"	84,78%
06:00	13° 33' 18"	3° 46' 06"	10° 59' 34"	8° 49' 10"	58' 17"	15' 52,88"	250° 40' 33"	85,11%
07:00	14° 07' 38"	3° 48' 04"	11° 30' 44"	9° 04' 23"	58' 20"	15' 53,52"	250° 49' 15"	85,44%
08:00	14° 42' 02"	3° 50' 02"	12° 01' 58"	9° 19' 35"	58' 22"	15' 54,17"	250° 58' 13"	85,76%
09:00	15° 16' 30"	3° 51' 58"	12° 33' 18"	9° 34' 45"	58' 24"	15' 54,81"	251° 07' 27"	86,08%
10:00	15° 51' 00"	3° 53' 53"	13° 04' 43"	9° 49' 54"	58' 27"	15' 55,45"	251° 16' 57"	86,39%
11:00	16° 25' 33"	3° 55' 46"	13° 36' 14"	10° 05' 01"	58' 29"	15' 56,09"	251° 26' 44"	86,71%
12:00	17° 00' 09"	3° 57' 39"	14° 07' 51"	10° 20' 06"	58' 31"	15' 56,73"	251° 36' 49"	87,02%
13:00	17° 34' 49"	3° 59' 30"	14° 39' 33"	10° 35' 10"	58' 34"	15' 57,37"	251° 47' 10"	87,33%
14:00	18° 09' 31"	4° 01' 19"	15° 11' 21"	10° 50' 12"	58' 36"	15' 58,00"	251° 57' 50"	87,63%
15:00	18° 44' 17"	4° 03' 08"	15° 43' 15"	11° 05' 11"	58' 38"	15' 58,64"	252° 08' 48"	87,94%
16:00	19° 19' 06"	4° 04' 55"	16° 15' 15"	11° 20' 09"	58' 41"	15' 59,27"	252° 20' 04"	88,24%
17:00	19° 53' 58"	4° 06' 40"	16° 47' 21"	11° 35' 04"	58' 43"	16' 00,00"	252° 31' 39"	88,54%
18:00	20° 28' 52"	4° 08' 25"	17° 19' 33"	11° 49' 57"	58' 45"	16' 00,53"	252° 43' 34"	88,83%
19:00	21° 03' 50"	4° 10' 07"	17° 51' 51"	12° 04' 47"	58' 48"	16' 01,16"	252° 55' 48"	89,12%
20:00	21° 38' 51"	4° 11' 49"	18° 24' 16"	12° 19' 35"	58' 50"	16' 01,79"	253° 08' 23"	89,41%
21:00	22° 13' 55"	4° 13' 29"	18° 56' 47"	12° 34' 21"	58' 52"	16' 02,41"	253° 21' 19"	89,70%
22:00	22° 49' 02"	4° 15' 07"	19° 29' 24"	12° 49' 03"	58' 54"	16' 03,03"	253° 34' 37"	89,98%
23:00	23° 24' 12"	4° 16' 44"	20° 02' 08"	13° 03' 43"	58' 57"	16' 03,65"	253° 48' 16"	90,26%
24:00	23° 59' 25"	4° 18' 20"	20° 34' 58"	13° 18' 20"	58' 59"	16' 04,27"	254° 02' 19"	90,53%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	239° 41' 21"	0,70"	237° 29' 45"	-20° 04' 58"	0,9877971	16' 11,48"	23° 26' 16"	14m 00s
01:00	239° 43' 53"	0,71"	237° 32' 22"	-20° 05' 30"	0,9877887	16' 11,49"	23° 26' 16"	14m 00s
02:00	239° 46' 24"	0,71"	237° 35' 00"	-20° 06' 03"	0,9877803	16' 11,50"	23° 26' 16"	13m 59s
03:00	239° 48' 56"	0,71"	237° 37' 37"	-20° 06' 35"	0,9877719	16' 11,51"	23° 26' 16"	13m 59s
04:00	239° 51' 27"	0,71"	237° 40' 15"	-20° 07' 07"	0,9877635	16' 11,52"	23° 26' 16"	13m 58s
05:00	239° 53' 59"	0,72"	237° 42' 52"	-20° 07' 39"	0,9877551	16' 11,53"	23° 26' 16"	13m 57s
06:00	239° 56' 30"	0,72"	237° 45' 30"	-20° 08' 12"	0,9877467	16' 11,53"	23° 26' 16"	13m 57s
07:00	239° 59' 01"	0,72"	237° 48' 08"	-20° 08' 44"	0,9877383	16' 11,54"	23° 26' 16"	13m 56s
08:00	240° 01' 33"	0,72"	237° 50' 45"	-20° 09' 16"	0,9877300	16' 11,55"	23° 26' 16"	13m 55s
09:00	240° 04' 04"	0,73"	237° 53' 23"	-20° 09' 48"	0,9877216	16' 11,56"	23° 26' 16"	13m 55s
10:00	240° 06' 36"	0,73"	237° 56' 01"	-20° 10' 20"	0,9877133	16' 11,57"	23° 26' 16"	13m 54s
11:00	240° 09' 07"	0,73"	237° 58' 39"	-20° 10' 52"	0,9877049	16' 11,58"	23° 26' 16"	13m 53s
12:00	240° 11' 39"	0,73"	238° 01' 16"	-20° 11' 24"	0,9876966	16' 11,58"	23° 26' 16"	13m 53s
13:00	240° 14' 10"	0,74"	238° 03' 54"	-20° 11' 56"	0,9876883	16' 11,59"	23° 26' 16"	13m 52s
14:00	240° 16' 42"	0,74"	238° 06' 32"	-20° 12' 27"	0,9876800	16' 11,60"	23° 26' 16"	13m 51s
15:00	240° 19' 13"	0,74"	238° 09' 10"	-20° 12' 59"	0,9876717	16' 11,61"	23° 26' 16"	13m 51s
16:00	240° 21' 45"	0,74"	238° 11' 48"	-20° 13' 31"	0,9876634	16' 11,62"	23° 26' 16"	13m 50s
17:00	240° 24' 16"	0,74"	238° 14' 25"	-20° 14' 03"	0,9876551	16' 11,62"	23° 26' 16"	13m 49s
18:00	240° 26' 48"	0,74"	238° 17' 03"	-20° 14' 34"	0,9876468	16' 11,63"	23° 26' 16"	13m 49s
19:00	240° 29' 19"	0,75"	238° 19' 41"	-20° 15' 06"	0,9876385	16' 11,64"	23° 26' 16"	13m 48s
20:00	240° 31' 51"	0,75"	238° 22' 19"	-20° 15' 38"	0,9876303	16' 11,65"	23° 26' 16"	13m 47s
21:00	240° 34' 22"	0,75"	238° 24' 57"	-20° 16' 09"	0,9876220	16' 11,66"	23° 26' 16"	13m 47s
22:00	240° 36' 54"	0,75"	238° 27' 35"	-20° 16' 41"	0,9876138	16' 11,67"	23° 26' 16"	13m 46s
23:00	240° 39' 25"	0,75"	238° 30' 13"	-20° 17' 12"	0,9876056	16' 11,67"	23° 26' 16"	13m 45s
24:00	240° 41' 57"	0,75"	238° 32' 51"	-20° 17' 44"	0,9875973	16' 11,68"	23° 26' 16"	13m 45s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	23° 59' 25"	4° 18' 20"	20° 34' 58"	13° 18' 20"	58' 59"	16' 04,27"	254° 02' 19"	90,53%
01:00	24° 34' 41"	4° 19' 54"	21° 07' 55"	13° 32' 53"	59' 01"	16' 04,88"	254° 16' 44"	90,81%
02:00	25° 10' 01"	4° 21' 26"	21° 40' 59"	13° 47' 24"	59' 03"	16' 05,49"	254° 31' 33"	91,08%
03:00	25° 45' 23"	4° 22' 57"	22° 14' 09"	14° 01' 51"	59' 06"	16' 06,10"	254° 46' 48"	91,34%
04:00	26° 20' 48"	4° 24' 26"	22° 47' 27"	14° 16' 15"	59' 08"	16' 06,71"	255° 02' 27"	91,60%
05:00	26° 56' 16"	4° 25' 54"	23° 20' 51"	14° 30' 35"	59' 10"	16' 07,31"	255° 18' 33"	91,86%
06:00	27° 31' 46"	4° 27' 20"	23° 54' 22"	14° 44' 52"	59' 12"	16' 07,91"	255° 35' 06"	92,12%
07:00	28° 07' 20"	4° 28' 45"	24° 28' 00"	14° 59' 05"	59' 15"	16' 08,51"	255° 52' 07"	92,37%
08:00	28° 42' 57"	4° 30' 07"	25° 01' 46"	15° 13' 14"	59' 17"	16' 09,10"	256° 09' 38"	92,62%
09:00	29° 18' 37"	4° 31' 29"	25° 35' 38"	15° 27' 19"	59' 19"	16' 09,69"	256° 27' 38"	92,87%
10:00	29° 54' 19"	4° 32' 48"	26° 09' 38"	15° 41' 20"	59' 21"	16' 10,28"	256° 46' 09"	93,11%
11:00	30° 30' 04"	4° 34' 06"	26° 43' 45"	15° 55' 17"	59' 23"	16' 10,86"	257° 05' 14"	93,35%
12:00	31° 05' 53"	4° 35' 22"	27° 17' 59"	16° 09' 09"	59' 25"	16' 11,44"	257° 24' 51"	93,58%
13:00	31° 41' 44"	4° 36' 37"	27° 52' 21"	16° 22' 57"	59' 27"	16' 12,01"	257° 45' 04"	93,81%
14:00	32° 17' 37"	4° 37' 49"	28° 26' 50"	16° 36' 40"	59' 30"	16' 12,58"	258° 05' 54"	94,04%
15:00	32° 53' 34"	4° 39' 00"	29° 01' 27"	16° 50' 19"	59' 32"	16' 13,15"	258° 27' 22"	94,26%
16:00	33° 29' 33"	4° 40' 09"	29° 36' 11"	17° 03' 53"	59' 34"	16' 13,71"	258° 49' 29"	94,48%
17:00	34° 05' 35"	4° 41' 17"	30° 11' 03"	17° 17' 22"	59' 36"	16' 14,27"	259° 12' 19"	94,70%
18:00	34° 41' 40"	4° 42' 22"	30° 46' 02"	17° 30' 45"	59' 38"	16' 14,83"	259° 35' 53"	94,91%
19:00	35° 17' 48"	4° 43' 26"	31° 21' 09"	17° 44' 04"	59' 40"	16' 15,38"	260° 00' 12"	95,11%
20:00	35° 53' 58"	4° 44' 28"	31° 56' 24"	17° 57' 17"	59' 42"	16' 15,92"	260° 25' 20"	95,32%
21:00	36° 30' 11"	4° 45' 28"	32° 31' 46"	18° 10' 25"	59' 44"	16' 16,46"	260° 51' 19"	95,52%
22:00	37° 06' 26"	4° 46' 27"	33° 07' 17"	18° 23' 27"	59' 46"	16' 17,00"	261° 18' 12"	95,71%
23:00	37° 42' 44"	4° 47' 23"	33° 42' 55"	18° 36' 23"	59' 48"	16' 17,53"	261° 46' 02"	95,90%
24:00	38° 19' 05"	4° 48' 18"	34° 18' 41"	18° 49' 13"	59' 50"	16' 18,06"	262° 14' 53"	96,09%

23 November 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	240° 41' 57"	0,75"	238° 32' 51"	-20° 17' 44"	0,9875973	16' 11,68"	23° 26' 16"	13m 45s
01:00	240° 44' 28"	0,76"	238° 35' 29"	-20° 18' 15"	0,9875891	16' 11,69"	23° 26' 16"	13m 44s
02:00	240° 47' 00"	0,76"	238° 38' 07"	-20° 18' 47"	0,9875809	16' 11,70"	23° 26' 16"	13m 43s
03:00	240° 49' 31"	0,76"	238° 40' 45"	-20° 19' 18"	0,9875727	16' 11,71"	23° 26' 16"	13m 43s
04:00	240° 52' 03"	0,76"	238° 43' 23"	-20° 19' 49"	0,9875645	16' 11,71"	23° 26' 16"	13m 42s
05:00	240° 54' 34"	0,76"	238° 46' 01"	-20° 20' 20"	0,9875564	16' 11,72"	23° 26' 16"	13m 41s
06:00	240° 57' 06"	0,76"	238° 48' 39"	-20° 20' 52"	0,9875482	16' 11,73"	23° 26' 16"	13m 40s
07:00	240° 59' 37"	0,76"	238° 51' 17"	-20° 21' 23"	0,9875400	16' 11,74"	23° 26' 16"	13m 40s
08:00	241° 02' 09"	0,76"	238° 53' 56"	-20° 21' 54"	0,9875319	16' 11,75"	23° 26' 16"	13m 39s
09:00	241° 04' 40"	0,77"	238° 56' 34"	-20° 22' 25"	0,9875237	16' 11,75"	23° 26' 16"	13m 38s
10:00	241° 07' 12"	0,77"	238° 59' 12"	-20° 22' 56"	0,9875156	16' 11,76"	23° 26' 16"	13m 38s
11:00	241° 09' 43"	0,77"	239° 01' 50"	-20° 23' 27"	0,9875075	16' 11,77"	23° 26' 16"	13m 37s
12:00	241° 12' 15"	0,77"	239° 04' 29"	-20° 23' 58"	0,9874994	16' 11,78"	23° 26' 16"	13m 36s
13:00	241° 14' 46"	0,77"	239° 07' 07"	-20° 24' 29"	0,9874913	16' 11,79"	23° 26' 16"	13m 36s
14:00	241° 17' 18"	0,77"	239° 09' 45"	-20° 25' 00"	0,9874832	16' 11,79"	23° 26' 16"	13m 35s
15:00	241° 19' 49"	0,77"	239° 12' 23"	-20° 25' 31"	0,9874751	16' 11,80"	23° 26' 16"	13m 34s
16:00	241° 22' 21"	0,77"	239° 15' 02"	-20° 26' 02"	0,9874670	16' 11,81"	23° 26' 16"	13m 34s
17:00	241° 24' 52"	0,77"	239° 17' 40"	-20° 26' 33"	0,9874589	16' 11,82"	23° 26' 16"	13m 33s
18:00	241° 27' 24"	0,77"	239° 20' 18"	-20° 27' 03"	0,9874509	16' 11,83"	23° 26' 16"	13m 32s
19:00	241° 29' 55"	0,77"	239° 22' 57"	-20° 27' 34"	0,9874428	16' 11,83"	23° 26' 16"	13m 31s
20:00	241° 32' 27"	0,77"	239° 25' 35"	-20° 28' 05"	0,9874348	16' 11,84"	23° 26' 16"	13m 31s
21:00	241° 34' 59"	0,77"	239° 28' 14"	-20° 28' 35"	0,9874268	16' 11,85"	23° 26' 16"	13m 30s
22:00	241° 37' 30"	0,77"	239° 30' 52"	-20° 29' 06"	0,9874187	16' 11,86"	23° 26' 16"	13m 29s
23:00	241° 40' 02"	0,77"	239° 33' 31"	-20° 29' 37"	0,9874107	16' 11,87"	23° 26' 16"	13m 29s
24:00	241° 42' 33"	0,77"	239° 36' 09"	-20° 30' 07"	0,9874027	16' 11,87"	23° 26' 16"	13m 28s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	38° 19' 05"	4° 48' 18"	34° 18' 41"	18° 49' 13"	59' 50"	16' 18,06"	262° 14' 53"	96,09%
01:00	38° 55' 28"	4° 49' 10"	34° 54' 35"	19° 01' 58"	59' 52"	16' 18,58"	262° 44' 47"	96,27%
02:00	39° 31' 53"	4° 50' 01"	35° 30' 36"	19° 14' 36"	59' 53"	16' 19,09"	263° 15' 50"	96,45%
03:00	40° 08' 22"	4° 50' 50"	36° 06' 46"	19° 27' 08"	59' 55"	16' 19,60"	263° 48' 06"	96,63%
04:00	40° 44' 52"	4° 51' 37"	36° 43' 04"	19° 39' 34"	59' 57"	16' 20,11"	264° 21' 39"	96,80%
05:00	41° 21' 25"	4° 52' 22"	37° 19' 29"	19° 51' 53"	59' 59"	16' 20,61"	264° 56' 35"	96,96%
06:00	41° 58' 01"	4° 53' 05"	37° 56' 03"	20° 04' 05"	00' 01"	16' 21,10"	265° 33' 00"	97,12%
07:00	42° 34' 39"	4° 53' 46"	38° 32' 44"	20° 16' 11"	00' 03"	16' 21,59"	266° 11' 02"	97,28%
08:00	43° 11' 19"	4° 54' 25"	39° 09' 34"	20° 28' 09"	00' 04"	16' 22,07"	266° 50' 47"	97,43%
09:00	43° 48' 01"	4° 55' 02"	39° 46' 32"	20° 40' 01"	00' 06"	16' 22,55"	267° 32' 24"	97,58%
10:00	44° 24' 46"	4° 55' 37"	40° 23' 37"	20° 51' 45"	00' 08"	16' 23,02"	268° 16' 02"	97,72%
11:00	45° 01' 33"	4° 56' 10"	41° 00' 51"	21° 03' 22"	00' 10"	16' 23,48"	269° 01' 52"	97,86%
12:00	45° 38' 22"	4° 56' 41"	41° 38' 12"	21° 14' 52"	00' 11"	16' 23,94"	269° 50' 07"	98,00%
13:00	46° 15' 14"	4° 57' 10"	42° 15' 42"	21° 26' 13"	00' 13"	16' 24,39"	270° 40' 59"	98,13%
14:00	46° 52' 07"	4° 57' 37"	42° 53' 19"	21° 37' 28"	00' 15"	16' 24,84"	271° 34' 43"	98,25%
15:00	47° 29' 03"	4° 58' 02"	43° 31' 04"	21° 48' 34"	00' 16"	16' 25,28"	272° 31' 38"	98,37%
16:00	48° 06' 01"	4° 58' 25"	44° 08' 58"	21° 59' 32"	00' 18"	16' 25,71"	273° 32' 03"	98,49%
17:00	48° 43' 01"	4° 58' 45"	44° 46' 59"	22° 10' 22"	00' 19"	16' 26,14"	274° 36' 21"	98,60%
18:00	49° 20' 02"	4° 59' 04"	45° 25' 08"	22° 21' 04"	00' 21"	16' 26,56"	275° 44' 58"	98,71%
19:00	49° 57' 06"	4° 59' 21"	46° 03' 25"	22° 31' 37"	00' 22"	16' 26,97"	276° 58' 24"	98,81%
20:00	50° 34' 12"	4° 59' 35"	46° 41' 50"	22° 42' 02"	00' 24"	16' 27,38"	278° 17' 15"	98,91%
21:00	51° 11' 20"	4° 59' 48"	47° 20' 22"	22° 52' 18"	00' 25"	16' 27,77"	279° 42' 09"	99,00%
22:00	51° 48' 29"	4° 59' 58"	47° 59' 02"	23° 02' 25"	00' 27"	16' 28,17"	281° 13' 55"	99,08%
23:00	52° 25' 41"	5° 00' 06"	48° 37' 50"	23° 12' 23"	00' 28"	16' 28,55"	282° 53' 27"	99,17%
24:00	53° 02' 54"	5° 00' 12"	49° 16' 46"	23° 22' 12"	00' 30"	16' 28,93"	284° 41' 48"	99,25%

24 November 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	241° 42' 33"	0,77"	239° 36' 09"	-20° 30' 07"	0,9874027	16' 11,87"	23° 26' 16"	13m 28s
01:00	241° 45' 05"	0,77"	239° 38' 47"	-20° 30' 38"	0,9873947	16' 11,88"	23° 26' 16"	13m 27s
02:00	241° 47' 36"	0,77"	239° 41' 26"	-20° 31' 08"	0,9873867	16' 11,89"	23° 26' 16"	13m 27s
03:00	241° 50' 08"	0,77"	239° 44' 05"	-20° 31' 38"	0,9873788	16' 11,90"	23° 26' 16"	13m 26s
04:00	241° 52' 39"	0,77"	239° 46' 43"	-20° 32' 09"	0,9873708	16' 11,90"	23° 26' 16"	13m 25s
05:00	241° 55' 11"	0,77"	239° 49' 22"	-20° 32' 39"	0,9873628	16' 11,91"	23° 26' 16"	13m 24s
06:00	241° 57' 43"	0,77"	239° 52' 00"	-20° 33' 09"	0,9873549	16' 11,92"	23° 26' 16"	13m 24s
07:00	242° 00' 14"	0,77"	239° 54' 39"	-20° 33' 40"	0,9873469	16' 11,93"	23° 26' 16"	13m 23s
08:00	242° 02' 46"	0,77"	239° 57' 18"	-20° 34' 10"	0,9873390	16' 11,94"	23° 26' 16"	13m 22s
09:00	242° 05' 17"	0,77"	239° 59' 56"	-20° 34' 40"	0,9873311	16' 11,94"	23° 26' 16"	13m 21s
10:00	242° 07' 49"	0,77"	240° 02' 35"	-20° 35' 10"	0,9873232	16' 11,95"	23° 26' 16"	13m 21s
11:00	242° 10' 20"	0,77"	240° 05' 14"	-20° 35' 40"	0,9873153	16' 11,96"	23° 26' 16"	13m 20s
12:00	242° 12' 52"	0,77"	240° 07' 52"	-20° 36' 10"	0,9873074	16' 11,97"	23° 26' 16"	13m 19s
13:00	242° 15' 24"	0,77"	240° 10' 31"	-20° 36' 40"	0,9872995	16' 11,97"	23° 26' 16"	13m 19s
14:00	242° 17' 55"	0,77"	240° 13' 10"	-20° 37' 10"	0,9872916	16' 11,98"	23° 26' 16"	13m 18s
15:00	242° 20' 27"	0,77"	240° 15' 49"	-20° 37' 40"	0,9872838	16' 11,99"	23° 26' 16"	13m 17s
16:00	242° 22' 58"	0,77"	240° 18' 27"	-20° 38' 10"	0,9872759	16' 12,00"	23° 26' 16"	13m 16s
17:00	242° 25' 30"	0,77"	240° 21' 06"	-20° 38' 40"	0,9872681	16' 12,01"	23° 26' 16"	13m 16s
18:00	242° 28' 02"	0,77"	240° 23' 45"	-20° 39' 10"	0,9872602	16' 12,01"	23° 26' 16"	13m 15s
19:00	242° 30' 33"	0,77"	240° 26' 24"	-20° 39' 39"	0,9872524	16' 12,02"	23° 26' 16"	13m 14s
20:00	242° 33' 05"	0,76"	240° 29' 03"	-20° 40' 09"	0,9872446	16' 12,03"	23° 26' 16"	13m 13s
21:00	242° 35' 36"	0,76"	240° 31' 42"	-20° 40' 39"	0,9872368	16' 12,04"	23° 26' 16"	13m 13s
22:00	242° 38' 08"	0,76"	240° 34' 21"	-20° 41' 08"	0,9872290	16' 12,04"	23° 26' 16"	13m 12s
23:00	242° 40' 40"	0,76"	240° 37' 00"	-20° 41' 38"	0,9872212	16' 12,05"	23° 26' 16"	13m 11s
24:00	242° 43' 11"	0,76"	240° 39' 39"	-20° 42' 08"	0,9872134	16' 12,06"	23° 26' 16"	13m 10s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	53° 02' 54"	5° 00' 12"	49° 16' 46"	23° 22' 12"	00' 30"	16' 28,93"	284° 41' 48"	99,25%
01:00	53° 40' 09"	5° 00' 16"	49° 55' 49"	23° 31' 52"	00' 31"	16' 29,30"	286° 40' 13"	99,32%
02:00	54° 17' 25"	5° 00' 18"	50° 34' 59"	23° 41' 23"	00' 32"	16' 29,66"	288° 50' 08"	99,39%
03:00	54° 54' 43"	5° 00' 18"	51° 14' 17"	23° 50' 44"	00' 34"	16' 30,02"	291° 13' 14"	99,45%
04:00	55° 32' 03"	5° 00' 15"	51° 53' 43"	23° 59' 55"	00' 35"	16' 30,36"	293° 51' 26"	99,51%
05:00	56° 09' 25"	5° 00' 11"	52° 33' 15"	24° 08' 57"	00' 36"	16' 30,70"	296° 46' 56"	99,56%
06:00	56° 46' 48"	5° 00' 04"	53° 12' 55"	24° 17' 49"	00' 37"	16' 31,04"	300° 02' 12"	99,61%
07:00	57° 24' 12"	4° 59' 55"	53° 52' 42"	24° 26' 30"	00' 38"	16' 31,36"	303° 39' 54"	99,65%
08:00	58° 01' 38"	4° 59' 44"	54° 32' 36"	24° 35' 02"	00' 40"	16' 31,68"	307° 42' 45"	99,69%
09:00	58° 39' 06"	4° 59' 31"	55° 12' 37"	24° 43' 24"	00' 41"	16' 31,99"	312° 13' 20"	99,72%
10:00	59° 16' 35"	4° 59' 15"	55° 52' 45"	24° 51' 35"	00' 42"	16' 32,29"	317° 13' 42"	99,75%
11:00	59° 54' 05"	4° 58' 58"	56° 32' 59"	24° 59' 35"	00' 43"	16' 32,58"	322° 44' 44"	99,77%
12:00	60° 31' 36"	4° 58' 38"	57° 13' 20"	25° 07' 25"	00' 44"	16' 32,87"	328° 45' 32"	99,79%
13:00	61° 09' 09"	4° 58' 16"	57° 53' 48"	25° 15' 04"	00' 45"	16' 33,15"	335° 12' 38"	99,80%
14:00	61° 46' 43"	4° 57' 52"	58° 34' 22"	25° 22' 33"	00' 46"	16' 33,42"	341° 59' 43"	99,81%
15:00	62° 24' 18"	4° 57' 26"	59° 15' 02"	25° 29' 50"	00' 47"	16' 33,68"	348° 57' 47"	99,81%
16:00	63° 01' 54"	4° 56' 57"	59° 55' 49"	25° 36' 57"	00' 48"	16' 33,93"	355° 56' 12"	99,81%
17:00	63° 39' 31"	4° 56' 27"	60° 36' 41"	25° 43' 52"	00' 49"	16' 34,17"	2° 44' 18"	99,80%
18:00	64° 17' 09"	4° 55' 54"	61° 17' 39"	25° 50' 36"	00' 50"	16' 34,41"	9° 12' 59"	99,79%
19:00	64° 54' 48"	4° 55' 19"	61° 58' 43"	25° 57' 09"	00' 50"	16' 34,64"	15° 15' 48"	99,77%
20:00	65° 32' 28"	4° 54' 42"	62° 39' 53"	26° 03' 30"	00' 51"	16' 34,86"	20° 49' 11"	99,75%
21:00	66° 10' 09"	4° 54' 03"	63° 21' 08"	26° 09' 40"	00' 52"	16' 35,07"	25° 52' 09"	99,72%
22:00	66° 47' 51"	4° 53' 22"	64° 02' 29"	26° 15' 37"	00' 53"	16' 35,27"	30° 25' 30"	99,69%
23:00	67° 25' 34"	4° 52' 38"	64° 43' 54"	26° 21' 24"	00' 54"	16' 35,47"	34° 31' 15"	99,65%
24:00	68° 03' 17"	4° 51' 53"	65° 25' 25"	26° 26' 58"	00' 54"	16' 35,66"	38° 11' 58"	99,61%

25 November 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	242° 43' 11"	0,76"	240° 39' 39"	-20° 42' 08"	0,9872134	16' 12,06"	23° 26' 16"	13m 10s
01:00	242° 45' 43"	0,76"	240° 42' 18"	-20° 42' 37"	0,9872056	16' 12,07"	23° 26' 16"	13m 10s
02:00	242° 48' 14"	0,76"	240° 44' 57"	-20° 43' 07"	0,9871979	16' 12,07"	23° 26' 16"	13m 09s
03:00	242° 50' 46"	0,75"	240° 47' 36"	-20° 43' 36"	0,9871901	16' 12,08"	23° 26' 16"	13m 08s
04:00	242° 53' 18"	0,75"	240° 50' 15"	-20° 44' 05"	0,9871824	16' 12,09"	23° 26' 16"	13m 08s
05:00	242° 55' 49"	0,75"	240° 52' 54"	-20° 44' 35"	0,9871746	16' 12,10"	23° 26' 16"	13m 07s
06:00	242° 58' 21"	0,75"	240° 55' 33"	-20° 45' 04"	0,9871669	16' 12,11"	23° 26' 16"	13m 06s
07:00	243° 00' 53"	0,75"	240° 58' 12"	-20° 45' 33"	0,9871592	16' 12,11"	23° 26' 16"	13m 05s
08:00	243° 03' 24"	0,75"	241° 00' 51"	-20° 46' 03"	0,9871515	16' 12,12"	23° 26' 16"	13m 05s
09:00	243° 05' 56"	0,74"	241° 03' 30"	-20° 46' 32"	0,9871438	16' 12,13"	23° 26' 16"	13m 04s
10:00	243° 08' 28"	0,74"	241° 06' 09"	-20° 47' 01"	0,9871361	16' 12,14"	23° 26' 16"	13m 03s
11:00	243° 10' 59"	0,74"	241° 08' 49"	-20° 47' 30"	0,9871284	16' 12,14"	23° 26' 16"	13m 02s
12:00	243° 13' 31"	0,74"	241° 11' 28"	-20° 47' 59"	0,9871208	16' 12,15"	23° 26' 16"	13m 02s
13:00	243° 16' 02"	0,74"	241° 14' 07"	-20° 48' 28"	0,9871131	16' 12,16"	23° 26' 16"	13m 01s
14:00	243° 18' 34"	0,73"	241° 16' 46"	-20° 48' 57"	0,9871055	16' 12,17"	23° 26' 16"	13m 00s
15:00	243° 21' 06"	0,73"	241° 19' 25"	-20° 49' 26"	0,9870978	16' 12,17"	23° 26' 16"	12m 59s
16:00	243° 23' 37"	0,73"	241° 22' 05"	-20° 49' 55"	0,9870902	16' 12,18"	23° 26' 16"	12m 58s
17:00	243° 26' 09"	0,73"	241° 24' 44"	-20° 50' 24"	0,9870826	16' 12,19"	23° 26' 16"	12m 58s
18:00	243° 28' 41"	0,73"	241° 27' 23"	-20° 50' 53"	0,9870750	16' 12,20"	23° 26' 16"	12m 57s
19:00	243° 31' 12"	0,72"	241° 30' 03"	-20° 51' 22"	0,9870674	16' 12,20"	23° 26' 16"	12m 56s
20:00	243° 33' 44"	0,72"	241° 32' 42"	-20° 51' 51"	0,9870598	16' 12,21"	23° 26' 16"	12m 55s
21:00	243° 36' 16"	0,72"	241° 35' 21"	-20° 52' 19"	0,9870522	16' 12,22"	23° 26' 16"	12m 55s
22:00	243° 38' 47"	0,72"	241° 38' 01"	-20° 52' 48"	0,9870446	16' 12,23"	23° 26' 16"	12m 54s
23:00	243° 41' 19"	0,71"	241° 40' 40"	-20° 53' 17"	0,9870370	16' 12,23"	23° 26' 16"	12m 53s
24:00	243° 43' 51"	0,71"	241° 43' 20"	-20° 53' 45"	0,9870295	16' 12,24"	23° 26' 16"	12m 52s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	68° 03' 17"	4° 51' 53"	65° 25' 25"	26° 26' 58"	00' 54"	16' 35,66"	38° 11' 58"	99,61%
01:00	68° 41' 02"	4° 51' 05"	66° 07' 00"	26° 32' 21"	00' 55"	16' 35,83"	41° 30' 23"	99,56%
02:00	69° 18' 46"	4° 50' 15"	66° 48' 40"	26° 37' 31"	00' 55"	16' 36,00"	44° 29' 10"	99,50%
03:00	69° 56' 32"	4° 49' 23"	67° 30' 25"	26° 42' 29"	00' 56"	16' 36,16"	47° 10' 47"	99,44%
04:00	70° 34' 18"	4° 48' 29"	68° 12' 14"	26° 47' 15"	00' 57"	16' 36,31"	49° 37' 26"	99,38%
05:00	71° 12' 04"	4° 47' 32"	68° 54' 07"	26° 51' 49"	00' 57"	16' 36,46"	51° 51' 04"	99,31%
06:00	71° 49' 51"	4° 46' 34"	69° 36' 04"	26° 56' 11"	00' 58"	16' 36,59"	53° 53' 21"	99,24%
07:00	72° 27' 39"	4° 45' 33"	70° 18' 05"	27° 00' 20"	00' 58"	16' 36,72"	55° 45' 45"	99,16%
08:00	73° 05' 27"	4° 44' 31"	71° 00' 09"	27° 04' 17"	00' 59"	16' 36,84"	57° 29' 30"	99,07%
09:00	73° 43' 15"	4° 43' 26"	71° 42' 17"	27° 08' 01"	00' 59"	16' 36,94"	59° 05' 39"	98,98%
10:00	74° 21' 03"	4° 42' 19"	72° 24' 28"	27° 11' 33"	00' 59"	16' 37,04"	60° 35' 09"	98,89%
11:00	74° 58' 52"	4° 41' 10"	73° 06' 42"	27° 14' 52"	01' 00"	16' 37,14"	61° 58' 45"	98,79%
12:00	75° 36' 41"	4° 39' 59"	73° 48' 59"	27° 17' 58"	01' 00"	16' 37,22"	63° 17' 09"	98,68%
13:00	76° 14' 30"	4° 38' 46"	74° 31' 18"	27° 20' 52"	01' 00"	16' 37,29"	64° 30' 54"	98,57%
14:00	76° 52' 19"	4° 37' 31"	75° 13' 40"	27° 23' 33"	01' 00"	16' 37,36"	65° 40' 32"	98,45%
15:00	77° 30' 08"	4° 36' 14"	75° 56' 04"	27° 26' 01"	01' 01"	16' 37,41"	66° 46' 28"	98,33%
16:00	78° 07' 58"	4° 34' 55"	76° 38' 30"	27° 28' 16"	01' 01"	16' 37,46"	67° 49' 06"	98,21%
17:00	78° 45' 47"	4° 33' 34"	77° 20' 58"	27° 30' 18"	01' 01"	16' 37,50"	68° 48' 44"	98,08%
18:00	79° 23' 36"	4° 32' 11"	78° 03' 27"	27° 32' 07"	01' 01"	16' 37,53"	69° 45' 40"	97,94%
19:00	80° 01' 25"	4° 30' 45"	78° 45' 58"	27° 33' 44"	01' 01"	16' 37,55"	70° 40' 10"	97,80%
20:00	80° 39' 14"	4° 29' 18"	79° 28' 30"	27° 35' 07"	01' 01"	16' 37,57"	71° 32' 27"	97,66%
21:00	81° 17' 03"	4° 27' 49"	80° 11' 03"	27° 36' 18"	01' 01"	16' 37,57"	72° 22' 43"	97,51%
22:00	81° 54' 51"	4° 26' 18"	80° 53' 37"	27° 37' 15"	01' 01"	16' 37,57"	73° 11' 07"	97,35%
23:00	82° 32' 39"	4° 24' 45"	81° 36' 11"	27° 37' 59"	01' 01"	16' 37,55"	73° 57' 50"	97,19%
24:00	83° 10' 27"	4° 23' 10"	82° 18' 45"	27° 38' 31"	01' 01"	16' 37,53"	74° 43' 00"	97,02%

26 November 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	243° 43' 51"	0,71"	241° 43' 20"	-20° 53' 45"	0,9870295	16' 12,24"	23° 26' 16"	12m 52s
01:00	243° 46' 22"	0,71"	241° 45' 59"	-20° 54' 14"	0,9870219	16' 12,25"	23° 26' 16"	12m 52s
02:00	243° 48' 54"	0,71"	241° 48' 39"	-20° 54' 42"	0,9870144	16' 12,26"	23° 26' 16"	12m 51s
03:00	243° 51' 26"	0,70"	241° 51' 18"	-20° 55' 11"	0,9870069	16' 12,26"	23° 26' 16"	12m 50s
04:00	243° 53' 58"	0,70"	241° 53' 58"	-20° 55' 39"	0,9869994	16' 12,27"	23° 26' 16"	12m 49s
05:00	243° 56' 29"	0,70"	241° 56' 37"	-20° 56' 08"	0,9869919	16' 12,28"	23° 26' 16"	12m 48s
06:00	243° 59' 01"	0,69"	241° 59' 17"	-20° 56' 36"	0,9869844	16' 12,28"	23° 26' 16"	12m 48s
07:00	244° 01' 33"	0,69"	242° 01' 56"	-20° 57' 04"	0,9869769	16' 12,29"	23° 26' 16"	12m 47s
08:00	244° 04' 04"	0,69"	242° 04' 36"	-20° 57' 33"	0,9869694	16' 12,30"	23° 26' 16"	12m 46s
09:00	244° 06' 36"	0,68"	242° 07' 16"	-20° 58' 01"	0,9869619	16' 12,31"	23° 26' 16"	12m 45s
10:00	244° 09' 08"	0,68"	242° 09' 55"	-20° 58' 29"	0,9869545	16' 12,31"	23° 26' 16"	12m 45s
11:00	244° 11' 39"	0,68"	242° 12' 35"	-20° 58' 57"	0,9869470	16' 12,32"	23° 26' 16"	12m 44s
12:00	244° 14' 11"	0,68"	242° 15' 14"	-20° 59' 25"	0,9869396	16' 12,33"	23° 26' 16"	12m 43s
13:00	244° 16' 43"	0,67"	242° 17' 54"	-20° 59' 53"	0,9869321	16' 12,34"	23° 26' 16"	12m 42s
14:00	244° 19' 15"	0,67"	242° 20' 34"	-21° 00' 21"	0,9869247	16' 12,34"	23° 26' 16"	12m 41s
15:00	244° 21' 46"	0,67"	242° 23' 14"	-21° 00' 49"	0,9869173	16' 12,35"	23° 26' 16"	12m 41s
16:00	244° 24' 18"	0,66"	242° 25' 53"	-21° 01' 17"	0,9869099	16' 12,36"	23° 26' 16"	12m 40s
17:00	244° 26' 50"	0,66"	242° 28' 33"	-21° 01' 45"	0,9869025	16' 12,37"	23° 26' 16"	12m 39s
18:00	244° 29' 21"	0,65"	242° 31' 13"	-21° 02' 13"	0,9868951	16' 12,37"	23° 26' 16"	12m 38s
19:00	244° 31' 53"	0,65"	242° 33' 53"	-21° 02' 41"	0,9868877	16' 12,38"	23° 26' 16"	12m 37s
20:00	244° 34' 25"	0,65"	242° 36' 33"	-21° 03' 09"	0,9868804	16' 12,39"	23° 26' 16"	12m 37s
21:00	244° 36' 57"	0,64"	242° 39' 12"	-21° 03' 36"	0,9868730	16' 12,39"	23° 26' 16"	12m 36s
22:00	244° 39' 28"	0,64"	242° 41' 52"	-21° 04' 04"	0,9868657	16' 12,40"	23° 26' 16"	12m 35s
23:00	244° 42' 00"	0,64"	242° 44' 32"	-21° 04' 32"	0,9868583	16' 12,41"	23° 26' 16"	12m 34s
24:00	244° 44' 32"	0,63"	242° 47' 12"	-21° 04' 59"	0,9868510	16' 12,42"	23° 26' 16"	12m 33s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	83° 10' 27"	4° 23' 10"	82° 18' 45"	27° 38' 31"	01' 01"	16' 37,53"	74° 43' 00"	97,02%
01:00	83° 48' 15"	4° 21' 33"	83° 01' 19"	27° 38' 49"	01' 01"	16' 37,50"	75° 26' 43"	96,85%
02:00	84° 26' 02"	4° 19' 54"	83° 43' 54"	27° 38' 54"	01' 01"	16' 37,46"	76° 09' 08"	96,68%
03:00	85° 03' 48"	4° 18' 14"	84° 26' 28"	27° 38' 47"	01' 01"	16' 37,42"	76° 50' 18"	96,50%
04:00	85° 41' 34"	4° 16' 31"	85° 09' 01"	27° 38' 26"	01' 00"	16' 37,36"	77° 30' 21"	96,31%
05:00	86° 19' 20"	4° 14' 47"	85° 51' 34"	27° 37' 52"	01' 00"	16' 37,30"	78° 09' 20"	96,12%
06:00	86° 57' 05"	4° 13' 00"	86° 34' 05"	27° 37' 05"	01' 00"	16' 37,23"	78° 47' 20"	95,93%
07:00	87° 34' 49"	4° 11' 12"	87° 16' 36"	27° 36' 06"	01' 00"	16' 37,15"	79° 24' 24"	95,73%
08:00	88° 12' 33"	4° 09' 22"	87° 59' 05"	27° 34' 53"	00' 59"	16' 37,06"	80° 00' 37"	95,53%
09:00	88° 50' 15"	4° 07' 31"	88° 41' 32"	27° 33' 27"	00' 59"	16' 36,96"	80° 36' 01"	95,32%
10:00	89° 27' 57"	4° 05' 37"	89° 23' 57"	27° 31' 49"	00' 59"	16' 36,85"	81° 10' 39"	95,11%
11:00	90° 05' 39"	4° 03' 42"	90° 06' 21"	27° 29' 58"	00' 58"	16' 36,74"	81° 44' 33"	94,89%
12:00	90° 43' 19"	4° 01' 45"	90° 48' 42"	27° 27' 53"	00' 58"	16' 36,62"	82° 17' 47"	94,67%
13:00	91° 20' 59"	3° 59' 46"	91° 31' 01"	27° 25' 37"	00' 57"	16' 36,49"	82° 50' 23"	94,44%
14:00	91° 58' 37"	3° 57' 46"	92° 13' 17"	27° 23' 07"	00' 57"	16' 36,35"	83° 22' 21"	94,21%
15:00	92° 36' 15"	3° 55' 44"	92° 55' 30"	27° 20' 24"	00' 56"	16' 36,21"	83° 53' 45"	93,97%
16:00	93° 13' 52"	3° 53' 40"	93° 37' 40"	27° 17' 29"	00' 56"	16' 36,05"	84° 24' 35"	93,73%
17:00	93° 51' 27"	3° 51' 35"	94° 19' 47"	27° 14' 22"	00' 55"	16' 35,89"	84° 54' 54"	93,49%
18:00	94° 29' 02"	3° 49' 28"	95° 01' 51"	27° 11' 02"	00' 54"	16' 35,72"	85° 24' 42"	93,24%
19:00	95° 06' 35"	3° 47' 19"	95° 43' 50"	27° 07' 29"	00' 54"	16' 35,54"	85° 54' 01"	92,98%
20:00	95° 44' 08"	3° 45' 09"	96° 25' 46"	27° 03' 44"	00' 53"	16' 35,36"	86° 22' 52"	92,73%
21:00	96° 21' 39"	3° 42' 57"	97° 07' 38"	26° 59' 47"	00' 52"	16' 35,17"	86° 51' 17"	92,46%
22:00	96° 59' 09"	3° 40' 43"	97° 49' 26"	26° 55' 37"	00' 52"	16' 34,97"	87° 19' 15"	92,20%
23:00	97° 36' 37"	3° 38' 29"	98° 31' 10"	26° 51' 15"	00' 51"	16' 34,76"	87° 46' 48"	91,93%
24:00	98° 14' 05"	3° 36' 12"	99° 12' 49"	26° 46' 41"	00' 50"	16' 34,54"	88° 13' 57"	91,65%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	244° 44' 32"	0,63"	242° 47' 12"	-21° 04' 59"	0,9868510	16' 12,42"	23° 26' 16"	12m 33s
01:00	244° 47' 04"	0,63"	242° 49' 52"	-21° 05' 27"	0,9868437	16' 12,42"	23° 26' 16"	12m 33s
02:00	244° 49' 35"	0,62"	242° 52' 32"	-21° 05' 55"	0,9868364	16' 12,43"	23° 26' 16"	12m 32s
03:00	244° 52' 07"	0,62"	242° 55' 12"	-21° 06' 22"	0,9868290	16' 12,44"	23° 26' 16"	12m 31s
04:00	244° 54' 39"	0,62"	242° 57' 52"	-21° 06' 50"	0,9868218	16' 12,45"	23° 26' 16"	12m 30s
05:00	244° 57' 11"	0,61"	243° 00' 32"	-21° 07' 17"	0,9868145	16' 12,45"	23° 26' 16"	12m 29s
06:00	244° 59' 42"	0,61"	243° 03' 12"	-21° 07' 44"	0,9868072	16' 12,46"	23° 26' 16"	12m 29s
07:00	245° 02' 14"	0,60"	243° 05' 52"	-21° 08' 12"	0,9867999	16' 12,47"	23° 26' 16"	12m 28s
08:00	245° 04' 46"	0,60"	243° 08' 32"	-21° 08' 39"	0,9867927	16' 12,47"	23° 26' 16"	12m 27s
09:00	245° 07' 18"	0,60"	243° 11' 12"	-21° 09' 06"	0,9867854	16' 12,48"	23° 26' 16"	12m 26s
10:00	245° 09' 49"	0,59"	243° 13' 52"	-21° 09' 33"	0,9867782	16' 12,49"	23° 26' 16"	12m 25s
11:00	245° 12' 21"	0,59"	243° 16' 32"	-21° 10' 01"	0,9867709	16' 12,50"	23° 26' 16"	12m 24s
12:00	245° 14' 53"	0,58"	243° 19' 12"	-21° 10' 28"	0,9867637	16' 12,50"	23° 26' 16"	12m 24s
13:00	245° 17' 25"	0,58"	243° 21' 53"	-21° 10' 55"	0,9867565	16' 12,51"	23° 26' 16"	12m 23s
14:00	245° 19' 56"	0,57"	243° 24' 33"	-21° 11' 22"	0,9867493	16' 12,52"	23° 26' 16"	12m 22s
15:00	245° 22' 28"	0,57"	243° 27' 13"	-21° 11' 49"	0,9867421	16' 12,52"	23° 26' 16"	12m 21s
16:00	245° 25' 00"	0,57"	243° 29' 53"	-21° 12' 16"	0,9867349	16' 12,53"	23° 26' 16"	12m 20s
17:00	245° 27' 32"	0,56"	243° 32' 33"	-21° 12' 43"	0,9867277	16' 12,54"	23° 26' 16"	12m 20s
18:00	245° 30' 04"	0,56"	243° 35' 14"	-21° 13' 10"	0,9867206	16' 12,54"	23° 26' 16"	12m 19s
19:00	245° 32' 35"	0,55"	243° 37' 54"	-21° 13' 37"	0,9867134	16' 12,55"	23° 26' 16"	12m 18s
20:00	245° 35' 07"	0,55"	243° 40' 34"	-21° 14' 03"	0,9867063	16' 12,56"	23° 26' 16"	12m 17s
21:00	245° 37' 39"	0,54"	243° 43' 14"	-21° 14' 30"	0,9866991	16' 12,57"	23° 26' 16"	12m 16s
22:00	245° 40' 11"	0,54"	243° 45' 55"	-21° 14' 57"	0,9866920	16' 12,57"	23° 26' 16"	12m 15s
23:00	245° 42' 43"	0,53"	243° 48' 35"	-21° 15' 23"	0,9866849	16' 12,58"	23° 26' 16"	12m 15s
24:00	245° 45' 14"	0,53"	243° 51' 15"	-21° 15' 50"	0,9866778	16' 12,59"	23° 26' 16"	12m 14s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	98° 14' 05"	3° 36' 12"	99° 12' 49"	26° 46' 41"	00' 50"	16' 34,54"	88° 13' 57"	91,65%
01:00	98° 51' 31"	3° 33' 54"	99° 54' 23"	26° 41' 55"	00' 49"	16' 34,32"	88° 40' 43"	91,37%
02:00	99° 28' 55"	3° 31' 35"	100° 35' 53"	26° 36' 57"	00' 48"	16' 34,09"	89° 07' 06"	91,09%
03:00	100° 06' 18"	3° 29' 14"	101° 17' 17"	26° 31' 48"	00' 48"	16' 33,85"	89° 33' 06"	90,80%
04:00	100° 43' 40"	3° 26' 52"	101° 58' 36"	26° 26' 26"	00' 47"	16' 33,61"	89° 58' 46"	90,51%
05:00	101° 21' 01"	3° 24' 28"	102° 39' 50"	26° 20' 53"	00' 46"	16' 33,36"	90° 24' 04"	90,22%
06:00	101° 58' 20"	3° 22' 03"	103° 20' 59"	26° 15' 08"	00' 45"	16' 33,10"	90° 49' 02"	89,92%
07:00	102° 35' 37"	3° 19' 37"	104° 02' 01"	26° 09' 12"	00' 44"	16' 32,84"	91° 13' 40"	89,62%
08:00	103° 12' 53"	3° 17' 09"	104° 42' 59"	26° 03' 04"	00' 43"	16' 32,56"	91° 37' 58"	89,31%
09:00	103° 50' 07"	3° 14' 40"	105° 23' 50"	25° 56' 45"	00' 42"	16' 32,28"	92° 01' 58"	89,00%
10:00	104° 27' 19"	3° 12' 10"	106° 04' 35"	25° 50' 14"	00' 41"	16' 32,00"	92° 25' 39"	88,69%
11:00	105° 04' 30"	3° 09' 38"	106° 45' 14"	25° 43' 33"	00' 40"	16' 31,71"	92° 49' 01"	88,37%
12:00	105° 41' 40"	3° 07' 05"	107° 25' 47"	25° 36' 41"	00' 39"	16' 31,41"	93° 12' 05"	88,05%
13:00	106° 18' 47"	3° 04' 31"	108° 06' 13"	25° 29' 37"	00' 38"	16' 31,10"	93° 34' 52"	87,72%
14:00	106° 55' 53"	3° 01' 56"	108° 46' 33"	25° 22' 23"	00' 36"	16' 30,79"	93° 57' 21"	87,39%
15:00	107° 32' 57"	2° 59' 19"	109° 26' 47"	25° 14' 59"	00' 35"	16' 30,47"	94° 19' 33"	87,06%
16:00	108° 09' 59"	2° 56' 42"	110° 06' 53"	25° 07' 23"	00' 34"	16' 30,15"	94° 41' 28"	86,72%
17:00	108° 47' 00"	2° 54' 03"	110° 46' 53"	24° 59' 37"	00' 33"	16' 29,82"	95° 03' 06"	86,39%
18:00	109° 23' 59"	2° 51' 23"	111° 26' 46"	24° 51' 41"	00' 32"	16' 29,48"	95° 24' 28"	86,04%
19:00	110° 00' 55"	2° 48' 42"	112° 06' 32"	24° 43' 35"	00' 30"	16' 29,14"	95° 45' 34"	85,70%
20:00	110° 37' 50"	2° 46' 00"	112° 46' 11"	24° 35' 19"	00' 29"	16' 28,79"	96° 06' 23"	85,35%
21:00	111° 14' 43"	2° 43' 17"	113° 25' 43"	24° 26' 52"	00' 28"	16' 28,44"	96° 26' 57"	85,00%
22:00	111° 51' 34"	2° 40' 33"	114° 05' 07"	24° 18' 16"	00' 26"	16' 28,08"	96° 47' 15"	84,64%
23:00	112° 28' 24"	2° 37' 48"	114° 44' 24"	24° 09' 30"	00' 25"	16' 27,72"	97° 07' 17"	84,28%
24:00	113° 05' 11"	2° 35' 02"	115° 23' 34"	24° 00' 35"	00' 24"	16' 27,35"	97° 27' 04"	83,92%

28 November 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	245° 45' 14"	0,53"	243° 51' 15"	-21° 15' 50"	0,9866778	16' 12,59"	23° 26' 16"	12m 14s
01:00	245° 47' 46"	0,52"	243° 53' 56"	-21° 16' 17"	0,9866706	16' 12,59"	23° 26' 16"	12m 13s
02:00	245° 50' 18"	0,52"	243° 56' 36"	-21° 16' 43"	0,9866635	16' 12,60"	23° 26' 16"	12m 12s
03:00	245° 52' 50"	0,51"	243° 59' 17"	-21° 17' 10"	0,9866565	16' 12,61"	23° 26' 16"	12m 11s
04:00	245° 55' 22"	0,51"	244° 01' 57"	-21° 17' 36"	0,9866494	16' 12,62"	23° 26' 16"	12m 10s
05:00	245° 57' 53"	0,50"	244° 04' 38"	-21° 18' 03"	0,9866423	16' 12,62"	23° 26' 16"	12m 10s
06:00	246° 00' 25"	0,50"	244° 07' 18"	-21° 18' 29"	0,9866352	16' 12,63"	23° 26' 16"	12m 09s
07:00	246° 02' 57"	0,50"	244° 09' 58"	-21° 18' 55"	0,9866282	16' 12,64"	23° 26' 16"	12m 08s
08:00	246° 05' 29"	0,49"	244° 12' 39"	-21° 19' 22"	0,9866211	16' 12,64"	23° 26' 16"	12m 07s
09:00	246° 08' 01"	0,49"	244° 15' 20"	-21° 19' 48"	0,9866141	16' 12,65"	23° 26' 16"	12m 06s
10:00	246° 10' 32"	0,48"	244° 18' 00"	-21° 20' 14"	0,9866071	16' 12,66"	23° 26' 16"	12m 05s
11:00	246° 13' 04"	0,48"	244° 20' 41"	-21° 20' 40"	0,9866001	16' 12,66"	23° 26' 16"	12m 04s
12:00	246° 15' 36"	0,47"	244° 23' 21"	-21° 21' 06"	0,9865930	16' 12,67"	23° 26' 16"	12m 04s
13:00	246° 18' 08"	0,46"	244° 26' 02"	-21° 21' 33"	0,9865860	16' 12,68"	23° 26' 16"	12m 03s
14:00	246° 20' 40"	0,46"	244° 28' 42"	-21° 21' 59"	0,9865791	16' 12,68"	23° 26' 16"	12m 02s
15:00	246° 23' 12"	0,45"	244° 31' 23"	-21° 22' 25"	0,9865721	16' 12,69"	23° 26' 16"	12m 01s
16:00	246° 25' 43"	0,45"	244° 34' 04"	-21° 22' 51"	0,9865651	16' 12,70"	23° 26' 16"	12m 00s
17:00	246° 28' 15"	0,44"	244° 36' 44"	-21° 23' 16"	0,9865581	16' 12,70"	23° 26' 16"	11m 59s
18:00	246° 30' 47"	0,44"	244° 39' 25"	-21° 23' 42"	0,9865512	16' 12,71"	23° 26' 16"	11m 58s
19:00	246° 33' 19"	0,43"	244° 42' 06"	-21° 24' 08"	0,9865442	16' 12,72"	23° 26' 16"	11m 58s
20:00	246° 35' 51"	0,43"	244° 44' 47"	-21° 24' 34"	0,9865373	16' 12,73"	23° 26' 16"	11m 57s
21:00	246° 38' 23"	0,42"	244° 47' 27"	-21° 25' 00"	0,9865303	16' 12,73"	23° 26' 16"	11m 56s
22:00	246° 40' 55"	0,42"	244° 50' 08"	-21° 25' 25"	0,9865234	16' 12,74"	23° 26' 16"	11m 55s
23:00	246° 43' 26"	0,41"	244° 52' 49"	-21° 25' 51"	0,9865165	16' 12,75"	23° 26' 16"	11m 54s
24:00	246° 45' 58"	0,41"	244° 55' 30"	-21° 26' 17"	0,9865096	16' 12,75"	23° 26' 16"	11m 53s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	113° 05' 11"	2° 35' 02"	115° 23' 34"	24° 00' 35"	00' 24"	16' 27,35"	97° 27' 04"	83,92%
01:00	113° 41' 56"	2° 32' 15"	116° 02' 37"	23° 51' 30"	00' 22"	16' 26,97"	97° 46' 35"	83,55%
02:00	114° 18' 39"	2° 29' 27"	116° 41' 31"	23° 42' 15"	00' 21"	16' 26,59"	98° 05' 52"	83,19%
03:00	114° 55' 20"	2° 26' 39"	117° 20' 19"	23° 32' 51"	00' 20"	16' 26,20"	98° 24' 53"	82,82%
04:00	115° 31' 59"	2° 23' 49"	117° 58' 59"	23° 23' 19"	00' 18"	16' 25,81"	98° 43' 40"	82,44%
05:00	116° 08' 36"	2° 20' 59"	118° 37' 31"	23° 13' 37"	00' 17"	16' 25,41"	99° 02' 12"	82,07%
06:00	116° 45' 11"	2° 18' 07"	119° 15' 55"	23° 03' 46"	00' 15"	16' 25,01"	99° 20' 29"	81,69%
07:00	117° 21' 44"	2° 15' 15"	119° 54' 12"	22° 53' 47"	00' 14"	16' 24,61"	99° 38' 31"	81,30%
08:00	117° 58' 15"	2° 12' 22"	120° 32' 21"	22° 43' 39"	00' 12"	16' 24,20"	99° 56' 19"	80,92%
09:00	118° 34' 43"	2° 09' 29"	121° 10' 22"	22° 33' 23"	00' 11"	16' 23,78"	100° 13' 53"	80,53%
10:00	119° 11' 10"	2° 06' 34"	121° 48' 16"	22° 22' 58"	00' 09"	16' 23,36"	100° 31' 13"	80,14%
11:00	119° 47' 34"	2° 03' 39"	122° 26' 02"	22° 12' 25"	00' 08"	16' 22,93"	100° 48' 18"	79,75%
12:00	120° 23' 56"	2° 00' 43"	123° 03' 39"	22° 01' 44"	00' 06"	16' 22,51"	101° 05' 10"	79,35%
13:00	121° 00' 16"	1° 57' 47"	123° 41' 09"	21° 50' 55"	00' 04"	16' 22,07"	101° 21' 47"	78,96%
14:00	121° 36' 33"	1° 54' 50"	124° 18' 32"	21° 39' 58"	00' 03"	16' 21,63"	101° 38' 10"	78,56%
15:00	122° 12' 49"	1° 51' 52"	124° 55' 46"	21° 28' 53"	00' 01"	16' 21,19"	101° 54' 20"	78,15%
16:00	122° 49' 02"	1° 48' 54"	125° 32' 52"	21° 17' 41"	59' 59"	16' 20,75"	102° 10' 16"	77,75%
17:00	123° 25' 13"	1° 45' 55"	126° 09' 51"	21° 06' 21"	59' 58"	16' 20,30"	102° 25' 58"	77,34%
18:00	124° 01' 21"	1° 42' 56"	126° 46' 41"	20° 54' 54"	59' 56"	16' 19,84"	102° 41' 27"	76,93%
19:00	124° 37' 28"	1° 39' 56"	127° 23' 24"	20° 43' 20"	59' 55"	16' 19,39"	102° 56' 42"	76,52%
20:00	125° 13' 32"	1° 36' 56"	127° 59' 59"	20° 31' 39"	59' 53"	16' 18,93"	103° 11' 44"	76,11%
21:00	125° 49' 34"	1° 33' 55"	128° 36' 26"	20° 19' 50"	59' 51"	16' 18,46"	103° 26' 33"	75,69%
22:00	126° 25' 33"	1° 30' 53"	129° 12' 46"	20° 07' 55"	59' 49"	16' 18,00"	103° 41' 08"	75,28%
23:00	127° 01' 30"	1° 27' 52"	129° 48' 57"	19° 55' 54"	59' 48"	16' 17,52"	103° 55' 30"	74,86%
24:00	127° 37' 25"	1° 24' 50"	130° 25' 01"	19° 43' 45"	59' 46"	16' 17,05"	104° 09' 39"	74,44%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	246° 45' 58"	0,41"	244° 55' 30"	-21° 26' 17"	0,9865096	16' 12,75"	23° 26' 16"	11m 53s
01:00	246° 48' 30"	0,40"	244° 58' 10"	-21° 26' 42"	0,9865027	16' 12,76"	23° 26' 16"	11m 52s
02:00	246° 51' 02"	0,40"	245° 00' 51"	-21° 27' 08"	0,9864958	16' 12,77"	23° 26' 16"	11m 52s
03:00	246° 53' 34"	0,39"	245° 03' 32"	-21° 27' 33"	0,9864889	16' 12,77"	23° 26' 16"	11m 51s
04:00	246° 56' 06"	0,39"	245° 06' 13"	-21° 27' 59"	0,9864820	16' 12,78"	23° 26' 16"	11m 50s
05:00	246° 58' 38"	0,38"	245° 08' 54"	-21° 28' 24"	0,9864752	16' 12,79"	23° 26' 16"	11m 49s
06:00	247° 01' 10"	0,38"	245° 11' 35"	-21° 28' 50"	0,9864683	16' 12,79"	23° 26' 16"	11m 48s
07:00	247° 03' 41"	0,37"	245° 14' 16"	-21° 29' 15"	0,9864614	16' 12,80"	23° 26' 16"	11m 47s
08:00	247° 06' 13"	0,36"	245° 16' 57"	-21° 29' 40"	0,9864546	16' 12,81"	23° 26' 16"	11m 46s
09:00	247° 08' 45"	0,36"	245° 19' 38"	-21° 30' 06"	0,9864478	16' 12,81"	23° 26' 16"	11m 45s
10:00	247° 11' 17"	0,35"	245° 22' 19"	-21° 30' 31"	0,9864409	16' 12,82"	23° 26' 16"	11m 45s
11:00	247° 13' 49"	0,35"	245° 25' 00"	-21° 30' 56"	0,9864341	16' 12,83"	23° 26' 16"	11m 44s
12:00	247° 16' 21"	0,34"	245° 27' 41"	-21° 31' 21"	0,9864273	16' 12,83"	23° 26' 16"	11m 43s
13:00	247° 18' 53"	0,34"	245° 30' 22"	-21° 31' 46"	0,9864205	16' 12,84"	23° 26' 16"	11m 42s
14:00	247° 21' 25"	0,33"	245° 33' 03"	-21° 32' 11"	0,9864137	16' 12,85"	23° 26' 16"	11m 41s
15:00	247° 23' 57"	0,33"	245° 35' 44"	-21° 32' 36"	0,9864069	16' 12,85"	23° 26' 16"	11m 40s
16:00	247° 26' 28"	0,32"	245° 38' 25"	-21° 33' 01"	0,9864002	16' 12,86"	23° 26' 16"	11m 39s
17:00	247° 29' 00"	0,32"	245° 41' 06"	-21° 33' 26"	0,9863934	16' 12,87"	23° 26' 16"	11m 38s
18:00	247° 31' 32"	0,31"	245° 43' 47"	-21° 33' 51"	0,9863866	16' 12,87"	23° 26' 16"	11m 38s
19:00	247° 34' 04"	0,30"	245° 46' 28"	-21° 34' 16"	0,9863799	16' 12,88"	23° 26' 16"	11m 37s
20:00	247° 36' 36"	0,30"	245° 49' 10"	-21° 34' 40"	0,9863731	16' 12,89"	23° 26' 16"	11m 36s
21:00	247° 39' 08"	0,29"	245° 51' 51"	-21° 35' 05"	0,9863664	16' 12,89"	23° 26' 16"	11m 35s
22:00	247° 41' 40"	0,29"	245° 54' 32"	-21° 35' 30"	0,9863596	16' 12,90"	23° 26' 16"	11m 34s
23:00	247° 44' 12"	0,28"	245° 57' 13"	-21° 35' 54"	0,9863529	16' 12,91"	23° 26' 16"	11m 33s
24:00	247° 46' 44"	0,28"	245° 59' 54"	-21° 36' 19"	0,9863462	16' 12,91"	23° 26' 16"	11m 32s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	127° 37' 25"	1° 24' 50"	130° 25' 01"	19° 43' 45"	59' 46"	16' 17,05"	104° 09' 39"	74,44%
01:00	128° 13' 17"	1° 21' 47"	131° 00' 57"	19° 31' 31"	59' 44"	16' 16,57"	104° 23' 34"	74,01%
02:00	128° 49' 08"	1° 18' 44"	131° 36' 45"	19° 19' 10"	59' 42"	16' 16,09"	104° 37' 17"	73,59%
03:00	129° 24' 55"	1° 15' 41"	132° 12' 26"	19° 06' 42"	59' 41"	16' 15,61"	104° 50' 47"	73,16%
04:00	130° 00' 41"	1° 12' 38"	132° 47' 59"	18° 54' 09"	59' 39"	16' 15,12"	105° 04' 04"	72,73%
05:00	130° 36' 24"	1° 09' 34"	133° 23' 24"	18° 41' 30"	59' 37"	16' 14,63"	105° 17' 08"	72,30%
06:00	131° 12' 05"	1° 06' 30"	133° 58' 42"	18° 28' 45"	59' 35"	16' 14,14"	105° 30' 00"	71,87%
07:00	131° 47' 43"	1° 03' 25"	134° 33' 52"	18° 15' 54"	59' 33"	16' 13,65"	105° 42' 39"	71,44%
08:00	132° 23' 19"	1° 00' 21"	135° 08' 55"	18° 02' 58"	59' 32"	16' 13,15"	105° 55' 05"	71,00%
09:00	132° 58' 53"	0° 57' 16"	135° 43' 50"	17° 49' 56"	59' 30"	16' 12,65"	106° 07' 19"	70,57%
10:00	133° 34' 24"	0° 54' 11"	136° 18' 38"	17° 36' 49"	59' 28"	16' 12,15"	106° 19' 20"	70,13%
11:00	134° 09' 53"	0° 51' 06"	136° 53' 19"	17° 23' 36"	59' 26"	16' 11,65"	106° 31' 09"	69,69%
12:00	134° 45' 19"	0° 48' 01"	137° 27' 52"	17° 10' 19"	59' 24"	16' 11,14"	106° 42' 46"	69,25%
13:00	135° 20' 43"	0° 44' 56"	138° 02' 18"	16° 56' 56"	59' 22"	16' 10,63"	106° 54' 10"	68,81%
14:00	135° 56' 05"	0° 41' 50"	138° 36' 37"	16° 43' 29"	59' 20"	16' 10,12"	107° 05' 22"	68,37%
15:00	136° 31' 24"	0° 38' 45"	139° 10' 49"	16° 29' 57"	59' 19"	16' 09,61"	107° 16' 22"	67,93%
16:00	137° 06' 41"	0° 35' 39"	139° 44' 54"	16° 16' 20"	59' 17"	16' 09,10"	107° 27' 10"	67,48%
17:00	137° 41' 55"	0° 32' 34"	140° 18' 51"	16° 02' 39"	59' 15"	16' 08,58"	107° 37' 46"	67,03%
18:00	138° 17' 08"	0° 29' 28"	140° 52' 42"	15° 48' 53"	59' 13"	16' 08,06"	107° 48' 10"	66,59%
19:00	138° 52' 17"	0° 26' 23"	141° 26' 26"	15° 35' 03"	59' 11"	16' 07,55"	107° 58' 22"	66,14%
20:00	139° 27' 25"	0° 23' 17"	142° 00' 03"	15° 21' 09"	59' 09"	16' 07,03"	108° 08' 22"	65,69%
21:00	140° 02' 29"	0° 20' 12"	142° 33' 33"	15° 07' 11"	59' 07"	16' 06,50"	108° 18' 11"	65,24%
22:00	140° 37' 32"	0° 17' 07"	143° 06' 57"	14° 53' 09"	59' 05"	16' 05,98"	108° 27' 48"	64,79%
23:00	141° 12' 32"	0° 14' 01"	143° 40' 14"	14° 39' 02"	59' 03"	16' 05,46"	108° 37' 13"	64,34%
24:00	141° 47' 30"	0° 10' 56"	144° 13' 24"	14° 24' 53"	59' 01"	16' 04,93"	108° 46' 26"	63,89%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	247° 46' 44"	0,28"	245° 59' 54"	-21° 36' 19"	0,9863462	16' 12,91"	23° 26' 16"	11m 32s
01:00	247° 49' 16"	0,27"	246° 02' 36"	-21° 36' 44"	0,9863395	16' 12,92"	23° 26' 16"	11m 31s
02:00	247° 51' 48"	0,27"	246° 05' 17"	-21° 37' 08"	0,9863328	16' 12,93"	23° 26' 16"	11m 30s
03:00	247° 54' 20"	0,26"	246° 07' 58"	-21° 37' 33"	0,9863261	16' 12,93"	23° 26' 16"	11m 30s
04:00	247° 56' 51"	0,25"	246° 10' 40"	-21° 37' 57"	0,9863194	16' 12,94"	23° 26' 16"	11m 29s
05:00	247° 59' 23"	0,25"	246° 13' 21"	-21° 38' 22"	0,9863128	16' 12,95"	23° 26' 16"	11m 28s
06:00	248° 01' 55"	0,24"	246° 16' 02"	-21° 38' 46"	0,9863061	16' 12,95"	23° 26' 16"	11m 27s
07:00	248° 04' 27"	0,24"	246° 18' 44"	-21° 39' 10"	0,9862994	16' 12,96"	23° 26' 16"	11m 26s
08:00	248° 06' 59"	0,23"	246° 21' 25"	-21° 39' 34"	0,9862928	16' 12,97"	23° 26' 16"	11m 25s
09:00	248° 09' 31"	0,23"	246° 24' 06"	-21° 39' 59"	0,9862861	16' 12,97"	23° 26' 16"	11m 24s
10:00	248° 12' 03"	0,22"	246° 26' 48"	-21° 40' 23"	0,9862795	16' 12,98"	23° 26' 16"	11m 23s
11:00	248° 14' 35"	0,22"	246° 29' 29"	-21° 40' 47"	0,9862729	16' 12,99"	23° 26' 16"	11m 22s
12:00	248° 17' 07"	0,21"	246° 32' 11"	-21° 41' 11"	0,9862662	16' 12,99"	23° 26' 16"	11m 21s
13:00	248° 19' 39"	0,20"	246° 34' 52"	-21° 41' 35"	0,9862596	16' 13,00"	23° 26' 16"	11m 20s
14:00	248° 22' 11"	0,20"	246° 37' 34"	-21° 41' 59"	0,9862530	16' 13,01"	23° 26' 16"	11m 20s
15:00	248° 24' 43"	0,19"	246° 40' 15"	-21° 42' 23"	0,9862464	16' 13,01"	23° 26' 16"	11m 19s
16:00	248° 27' 15"	0,19"	246° 42' 57"	-21° 42' 47"	0,9862398	16' 13,02"	23° 26' 16"	11m 18s
17:00	248° 29' 47"	0,18"	246° 45' 38"	-21° 43' 11"	0,9862332	16' 13,03"	23° 26' 16"	11m 17s
18:00	248° 32' 19"	0,18"	246° 48' 20"	-21° 43' 35"	0,9862267	16' 13,03"	23° 26' 16"	11m 16s
19:00	248° 34' 51"	0,17"	246° 51' 01"	-21° 43' 59"	0,9862201	16' 13,04"	23° 26' 16"	11m 15s
20:00	248° 37' 23"	0,17"	246° 53' 43"	-21° 44' 22"	0,9862135	16' 13,04"	23° 26' 16"	11m 14s
21:00	248° 39' 55"	0,16"	246° 56' 25"	-21° 44' 46"	0,9862070	16' 13,05"	23° 26' 16"	11m 13s
22:00	248° 42' 27"	0,16"	246° 59' 06"	-21° 45' 10"	0,9862004	16' 13,06"	23° 26' 16"	11m 12s
23:00	248° 44' 59"	0,15"	247° 01' 48"	-21° 45' 33"	0,9861939	16' 13,06"	23° 26' 16"	11m 11s
24:00	248° 47' 31"	0,14"	247° 04' 30"	-21° 45' 57"	0,9861874	16' 13,07"	23° 26' 16"	11m 10s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	141° 47' 30"	0° 10' 56"	144° 13' 24"	14° 24' 53"	59' 01"	16' 04,93"	108° 46' 26"	63,89%
01:00	142° 22' 25"	0° 07' 51"	144° 46' 28"	14° 10' 39"	59' 00"	16' 04,41"	108° 55' 28"	63,43%
02:00	142° 57' 18"	0° 04' 46"	145° 19' 26"	13° 56' 22"	58' 58"	16' 03,88"	109° 04' 19"	62,98%
03:00	143° 32' 09"	0° 01' 42"	145° 52' 17"	13° 42' 01"	58' 56"	16' 03,35"	109° 12' 58"	62,53%
04:00	144° 06' 57"	-0° 01' 23"	146° 25' 02"	13° 27' 37"	58' 54"	16' 02,82"	109° 21' 26"	62,07%
05:00	144° 41' 43"	-0° 04' 27"	146° 57' 41"	13° 13' 10"	58' 52"	16' 02,29"	109° 29' 42"	61,62%
06:00	145° 16' 26"	-0° 07' 31"	147° 30' 14"	12° 58' 40"	58' 50"	16' 01,76"	109° 37' 47"	61,16%
07:00	145° 51' 08"	-0° 10' 35"	148° 02' 40"	12° 44' 07"	58' 48"	16' 01,23"	109° 45' 41"	60,71%
08:00	146° 25' 46"	-0° 13' 39"	148° 35' 01"	12° 29' 30"	58' 46"	16' 00,70"	109° 53' 24"	60,25%
09:00	147° 00' 23"	-0° 16' 42"	149° 07' 16"	12° 14' 51"	58' 44"	16' 00,17"	110° 00' 56"	59,79%
10:00	147° 34' 57"	-0° 19' 45"	149° 39' 25"	12° 00' 09"	58' 42"	16' 00,00"	110° 08' 17"	59,34%
11:00	148° 09' 29"	-0° 22' 48"	150° 11' 29"	11° 45' 25"	58' 40"	15' 59,10"	110° 15' 27"	58,88%
12:00	148° 43' 58"	-0° 25' 50"	150° 43' 26"	11° 30' 37"	58' 38"	15' 58,57"	110° 22' 26"	58,42%
13:00	149° 18' 25"	-0° 28' 52"	151° 15' 19"	11° 15' 48"	58' 36"	15' 58,03"	110° 29' 14"	57,96%
14:00	149° 52' 50"	-0° 31' 53"	151° 47' 06"	11° 00' 56"	58' 34"	15' 57,50"	110° 35' 51"	57,50%
15:00	150° 27' 12"	-0° 34' 55"	152° 18' 47"	10° 46' 02"	58' 32"	15' 56,97"	110° 42' 18"	57,05%
16:00	151° 01' 32"	-0° 37' 55"	152° 50' 23"	10° 31' 05"	58' 30"	15' 56,43"	110° 48' 34"	56,59%
17:00	151° 35' 50"	-0° 40' 56"	153° 21' 54"	10° 16' 07"	58' 28"	15' 55,90"	110° 54' 39"	56,13%
18:00	152° 10' 06"	-0° 43' 56"	153° 53' 20"	10° 01' 06"	58' 26"	15' 55,37"	111° 00' 33"	55,67%
19:00	152° 44' 19"	-0° 46' 55"	154° 24' 41"	9° 46' 04"	58' 24"	15' 54,83"	111° 06' 17"	55,21%
20:00	153° 18' 30"	-0° 49' 54"	154° 55' 56"	9° 30' 59"	58' 22"	15' 54,30"	111° 11' 51"	54,76%
21:00	153° 52' 39"	-0° 52' 52"	155° 27' 07"	9° 15' 53"	58' 20"	15' 53,77"	111° 17' 14"	54,30%
22:00	154° 26' 45"	-0° 55' 50"	155° 58' 13"	9° 00' 45"	58' 19"	15' 53,24"	111° 22' 27"	53,84%
23:00	155° 00' 49"	-0° 58' 48"	156° 29' 15"	8° 45' 36"	58' 17"	15' 52,70"	111° 27' 29"	53,38%
24:00	155° 34' 51"	-1° 01' 45"	157° 00' 12"	8° 30' 25"	58' 15"	15' 52,17"	111° 32' 21"	52,93%

01 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	248° 47' 31"	0,14"	247° 04' 30"	-21° 45' 57"	0,9861874	16' 13,07"	23° 26' 16"	11m 10s
01:00	248° 50' 03"	0,14"	247° 07' 11"	-21° 46' 20"	0,9861808	16' 13,08"	23° 26' 16"	11m 09s
02:00	248° 52' 35"	0,13"	247° 09' 53"	-21° 46' 44"	0,9861743	16' 13,08"	23° 26' 16"	11m 09s
03:00	248° 55' 07"	0,13"	247° 12' 35"	-21° 47' 07"	0,9861678	16' 13,09"	23° 26' 16"	11m 08s
04:00	248° 57' 39"	0,12"	247° 15' 17"	-21° 47' 31"	0,9861613	16' 13,10"	23° 26' 16"	11m 07s
05:00	249° 00' 11"	0,12"	247° 17' 58"	-21° 47' 54"	0,9861548	16' 13,10"	23° 26' 16"	11m 06s
06:00	249° 02' 43"	0,11"	247° 20' 40"	-21° 48' 17"	0,9861483	16' 13,11"	23° 26' 16"	11m 05s
07:00	249° 05' 15"	0,11"	247° 23' 22"	-21° 48' 41"	0,9861418	16' 13,12"	23° 26' 16"	11m 04s
08:00	249° 07' 47"	0,10"	247° 26' 04"	-21° 49' 04"	0,9861354	16' 13,12"	23° 26' 16"	11m 03s
09:00	249° 10' 19"	0,10"	247° 28' 45"	-21° 49' 27"	0,9861289	16' 13,13"	23° 26' 16"	11m 02s
10:00	249° 12' 51"	0,09"	247° 31' 27"	-21° 49' 50"	0,9861224	16' 13,13"	23° 26' 16"	11m 01s
11:00	249° 15' 23"	0,09"	247° 34' 09"	-21° 50' 13"	0,9861160	16' 13,14"	23° 26' 16"	11m 00s
12:00	249° 17' 55"	0,08"	247° 36' 51"	-21° 50' 36"	0,9861095	16' 13,15"	23° 26' 16"	10m 59s
13:00	249° 20' 27"	0,07"	247° 39' 33"	-21° 50' 59"	0,9861031	16' 13,15"	23° 26' 16"	10m 58s
14:00	249° 22' 59"	0,07"	247° 42' 15"	-21° 51' 22"	0,9860967	16' 13,16"	23° 26' 16"	10m 57s
15:00	249° 25' 31"	0,06"	247° 44' 57"	-21° 51' 45"	0,9860902	16' 13,17"	23° 26' 16"	10m 56s
16:00	249° 28' 03"	0,06"	247° 47' 39"	-21° 52' 08"	0,9860838	16' 13,17"	23° 26' 16"	10m 56s
17:00	249° 30' 35"	0,05"	247° 50' 21"	-21° 52' 31"	0,9860774	16' 13,18"	23° 26' 16"	10m 55s
18:00	249° 33' 07"	0,05"	247° 53' 03"	-21° 52' 54"	0,9860710	16' 13,19"	23° 26' 16"	10m 54s
19:00	249° 35' 39"	0,04"	247° 55' 45"	-21° 53' 17"	0,9860646	16' 13,19"	23° 26' 16"	10m 53s
20:00	249° 38' 11"	0,04"	247° 58' 27"	-21° 53' 39"	0,9860582	16' 13,20"	23° 26' 16"	10m 52s
21:00	249° 40' 43"	0,03"	248° 01' 09"	-21° 54' 02"	0,9860518	16' 13,20"	23° 26' 16"	10m 51s
22:00	249° 43' 15"	0,03"	248° 03' 51"	-21° 54' 25"	0,9860455	16' 13,21"	23° 26' 16"	10m 50s
23:00	249° 45' 47"	0,02"	248° 06' 33"	-21° 54' 47"	0,9860391	16' 13,22"	23° 26' 16"	10m 49s
24:00	249° 48' 19"	0,02"	248° 09' 15"	-21° 55' 10"	0,9860327	16' 13,22"	23° 26' 16"	10m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	155° 34' 51"	-1° 01' 45"	157° 00' 12"	8° 30' 25"	58' 15"	15' 52,17"	111° 32' 21"	52,93%
01:00	156° 08' 51"	-1° 04' 41"	157° 31' 04"	8° 15' 13"	58' 13"	15' 51,64"	111° 37' 03"	52,47%
02:00	156° 42' 48"	-1° 07' 37"	158° 01' 52"	7° 59' 59"	58' 11"	15' 51,11"	111° 41' 34"	52,01%
03:00	157° 16' 44"	-1° 10' 32"	158° 32' 35"	7° 44' 45"	58' 09"	15' 50,58"	111° 45' 56"	51,56%
04:00	157° 50' 37"	-1° 13' 26"	159° 03' 14"	7° 29' 29"	58' 07"	15' 50,05"	111° 50' 07"	51,10%
05:00	158° 24' 28"	-1° 16' 20"	159° 33' 49"	7° 14' 11"	58' 05"	15' 49,52"	111° 54' 08"	50,65%
06:00	158° 58' 16"	-1° 19' 13"	160° 04' 20"	6° 58' 53"	58' 03"	15' 49,00"	111° 57' 59"	50,19%
07:00	159° 32' 03"	-1° 22' 06"	160° 34' 47"	6° 43' 34"	58' 01"	15' 48,47"	112° 01' 40"	49,74%
08:00	160° 05' 47"	-1° 24' 58"	161° 05' 09"	6° 28' 14"	57' 59"	15' 47,94"	112° 05' 11"	49,28%
09:00	160° 39' 29"	-1° 27' 49"	161° 35' 28"	6° 12' 54"	57' 57"	15' 47,42"	112° 08' 32"	48,83%
10:00	161° 13' 09"	-1° 30' 40"	162° 05' 44"	5° 57' 32"	57' 55"	15' 46,90"	112° 11' 43"	48,38%
11:00	161° 46' 47"	-1° 33' 30"	162° 35' 55"	5° 42' 10"	57' 53"	15' 46,37"	112° 14' 45"	47,93%
12:00	162° 20' 23"	-1° 36' 19"	163° 06' 03"	5° 26' 48"	57' 51"	15' 45,85"	112° 17' 36"	47,48%
13:00	162° 53' 57"	-1° 39' 07"	163° 36' 08"	5° 11' 25"	57' 49"	15' 45,33"	112° 20' 18"	47,03%
14:00	163° 27' 28"	-1° 41' 55"	164° 06' 09"	4° 56' 01"	57' 48"	15' 44,81"	112° 22' 50"	46,58%
15:00	164° 00' 58"	-1° 44' 42"	164° 36' 06"	4° 40' 37"	57' 46"	15' 44,29"	112° 25' 12"	46,13%
16:00	164° 34' 25"	-1° 47' 28"	165° 06' 01"	4° 25' 13"	57' 44"	15' 43,78"	112° 27' 25"	45,68%
17:00	165° 07' 51"	-1° 50' 13"	165° 35' 52"	4° 09' 49"	57' 42"	15' 43,26"	112° 29' 27"	45,23%
18:00	165° 41' 14"	-1° 52' 58"	166° 05' 40"	3° 54' 25"	57' 40"	15' 42,75"	112° 31' 21"	44,79%
19:00	166° 14' 35"	-1° 55' 42"	166° 35' 25"	3° 39' 00"	57' 38"	15' 42,23"	112° 33' 04"	44,34%
20:00	166° 47' 54"	-1° 58' 24"	167° 05' 07"	3° 23' 36"	57' 36"	15' 41,72"	112° 34' 38"	43,90%
21:00	167° 21' 12"	-2° 01' 07"	167° 34' 47"	3° 08' 11"	57' 34"	15' 41,21"	112° 36' 03"	43,45%
22:00	167° 54' 27"	-2° 03' 48"	168° 04' 23"	2° 52' 47"	57' 33"	15' 40,70"	112° 37' 18"	43,01%
23:00	168° 27' 40"	-2° 06' 28"	168° 33' 57"	2° 37' 23"	57' 31"	15' 40,20"	112° 38' 23"	42,57%
24:00	169° 00' 51"	-2° 09' 07"	169° 03' 28"	2° 21' 59"	57' 29"	15' 39,69"	112° 39' 19"	42,13%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	249° 48' 19"	0,02"	248° 09' 15"	-21° 55' 10"	0,9860327	16' 13,22"	23° 26' 16"	10m 48s
01:00	249° 50' 51"	0,01"	248° 11' 57"	-21° 55' 32"	0,9860264	16' 13,23"	23° 26' 16"	10m 47s
02:00	249° 53' 23"	0,01"	248° 14' 39"	-21° 55' 55"	0,9860200	16' 13,24"	23° 26' 16"	10m 46s
03:00	249° 55' 55"	0,00"	248° 17' 21"	-21° 56' 17"	0,9860137	16' 13,24"	23° 26' 16"	10m 45s
04:00	249° 58' 27"	-0,00"	248° 20' 03"	-21° 56' 39"	0,9860074	16' 13,25"	23° 26' 16"	10m 44s
05:00	250° 00' 59"	-0,01"	248° 22' 46"	-21° 57' 02"	0,9860010	16' 13,25"	23° 26' 16"	10m 43s
06:00	250° 03' 31"	-0,01"	248° 25' 28"	-21° 57' 24"	0,9859947	16' 13,26"	23° 26' 16"	10m 42s
07:00	250° 06' 04"	-0,02"	248° 28' 10"	-21° 57' 46"	0,9859884	16' 13,27"	23° 26' 16"	10m 41s
08:00	250° 08' 36"	-0,02"	248° 30' 52"	-21° 58' 08"	0,9859821	16' 13,27"	23° 26' 16"	10m 40s
09:00	250° 11' 08"	-0,03"	248° 33' 34"	-21° 58' 30"	0,9859758	16' 13,28"	23° 26' 16"	10m 39s
10:00	250° 13' 40"	-0,03"	248° 36' 17"	-21° 58' 53"	0,9859695	16' 13,29"	23° 26' 16"	10m 38s
11:00	250° 16' 12"	-0,04"	248° 38' 59"	-21° 59' 15"	0,9859632	16' 13,29"	23° 26' 16"	10m 37s
12:00	250° 18' 44"	-0,04"	248° 41' 41"	-21° 59' 37"	0,9859569	16' 13,30"	23° 26' 16"	10m 36s
13:00	250° 21' 16"	-0,04"	248° 44' 24"	-21° 59' 59"	0,9859507	16' 13,30"	23° 26' 16"	10m 36s
14:00	250° 23' 48"	-0,05"	248° 47' 06"	-22° 00' 20"	0,9859444	16' 13,31"	23° 26' 16"	10m 35s
15:00	250° 26' 20"	-0,05"	248° 49' 48"	-22° 00' 42"	0,9859381	16' 13,32"	23° 26' 16"	10m 34s
16:00	250° 28' 52"	-0,06"	248° 52' 31"	-22° 01' 04"	0,9859319	16' 13,32"	23° 26' 16"	10m 33s
17:00	250° 31' 24"	-0,06"	248° 55' 13"	-22° 01' 26"	0,9859256	16' 13,33"	23° 26' 16"	10m 32s
18:00	250° 33' 56"	-0,07"	248° 57' 55"	-22° 01' 48"	0,9859194	16' 13,34"	23° 26' 16"	10m 31s
19:00	250° 36' 29"	-0,07"	249° 00' 38"	-22° 02' 09"	0,9859132	16' 13,34"	23° 26' 16"	10m 30s
20:00	250° 39' 01"	-0,08"	249° 03' 20"	-22° 02' 31"	0,9859069	16' 13,35"	23° 26' 16"	10m 29s
21:00	250° 41' 33"	-0,08"	249° 06' 03"	-22° 02' 53"	0,9859007	16' 13,35"	23° 26' 16"	10m 28s
22:00	250° 44' 05"	-0,09"	249° 08' 45"	-22° 03' 14"	0,9858945	16' 13,36"	23° 26' 16"	10m 27s
23:00	250° 46' 37"	-0,09"	249° 11' 27"	-22° 03' 36"	0,9858883	16' 13,37"	23° 26' 16"	10m 26s
24:00	250° 49' 09"	-0,09"	249° 14' 10"	-22° 03' 57"	0,9858821	16' 13,37"	23° 26' 16"	10m 25s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	169° 00' 51"	-2° 09' 07"	169° 03' 28"	2° 21' 59"	57' 29"	15' 39,69"	112° 39' 19"	42,13%
01:00	169° 34' 00"	-2° 11' 46"	169° 32' 57"	2° 06' 36"	57' 27"	15' 39,19"	112° 40' 06"	41,69%
02:00	170° 07' 08"	-2° 14' 24"	170° 02' 24"	1° 51' 13"	57' 25"	15' 38,68"	112° 40' 43"	41,25%
03:00	170° 40' 13"	-2° 17' 00"	170° 31' 48"	1° 35' 50"	57' 23"	15' 38,18"	112° 41' 10"	40,82%
04:00	171° 13' 17"	-2° 19' 36"	171° 01' 09"	1° 20' 28"	57' 21"	15' 37,69"	112° 41' 29"	40,38%
05:00	171° 46' 18"	-2° 22' 11"	171° 30' 29"	1° 05' 07"	57' 20"	15' 37,19"	112° 41' 37"	39,95%
06:00	172° 19' 18"	-2° 24' 45"	171° 59' 47"	0° 49' 46"	57' 18"	15' 36,69"	112° 41' 37"	39,51%
07:00	172° 52' 15"	-2° 27' 18"	172° 29' 02"	0° 34' 26"	57' 16"	15' 36,20"	112° 41' 27"	39,08%
08:00	173° 25' 11"	-2° 29' 50"	172° 58' 16"	0° 19' 07"	57' 14"	15' 35,71"	112° 41' 08"	38,65%
09:00	173° 58' 05"	-2° 32' 21"	173° 27' 27"	0° 03' 49"	57' 12"	15' 35,22"	112° 40' 40"	38,22%
10:00	174° 30' 57"	-2° 34' 51"	173° 56' 37"	-0° 11' 29"	57' 11"	15' 34,73"	112° 40' 02"	37,79%
11:00	175° 03' 47"	-2° 37' 20"	174° 25' 45"	-0° 26' 45"	57' 09"	15' 34,24"	112° 39' 15"	37,37%
12:00	175° 36' 36"	-2° 39' 48"	174° 54' 52"	-0° 42' 00"	57' 07"	15' 33,76"	112° 38' 19"	36,94%
13:00	176° 09' 22"	-2° 42' 15"	175° 23' 57"	-0° 57' 15"	57' 05"	15' 33,28"	112° 37' 13"	36,52%
14:00	176° 42' 07"	-2° 44' 41"	175° 53' 01"	-1° 12' 28"	57' 03"	15' 32,80"	112° 35' 59"	36,10%
15:00	177° 14' 50"	-2° 47' 06"	176° 22' 03"	-1° 27' 40"	57' 02"	15' 32,32"	112° 34' 35"	35,68%
16:00	177° 47' 31"	-2° 49' 29"	176° 51' 04"	-1° 42' 50"	57' 00"	15' 31,84"	112° 33' 02"	35,26%
17:00	178° 20' 11"	-2° 51' 52"	177° 20' 03"	-1° 58' 00"	56' 58"	15' 31,37"	112° 31' 19"	34,84%
18:00	178° 52' 48"	-2° 54' 14"	177° 49' 02"	-2° 13' 08"	56' 57"	15' 30,90"	112° 29' 28"	34,43%
19:00	179° 25' 24"	-2° 56' 34"	178° 17' 59"	-2° 28' 14"	56' 55"	15' 30,43"	112° 27' 27"	34,01%
20:00	179° 57' 59"	-2° 58' 54"	178° 46' 56"	-2° 43' 19"	56' 53"	15' 29,96"	112° 25' 17"	33,60%
21:00	180° 30' 31"	-3° 01' 12"	179° 15' 51"	-2° 58' 23"	56' 51"	15' 29,49"	112° 22' 58"	33,19%
22:00	181° 03' 02"	-3° 03' 30"	179° 44' 46"	-3° 13' 25"	56' 50"	15' 29,03"	112° 20' 29"	32,78%
23:00	181° 35' 31"	-3° 05' 46"	180° 13' 40"	-3° 28' 25"	56' 48"	15' 28,57"	112° 17' 52"	32,37%
24:00	182° 07' 58"	-3° 08' 01"	180° 42' 33"	-3° 43' 23"	56' 46"	15' 28,11"	112° 15' 05"	31,97%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	250° 49' 09"	-0,09"	249° 14' 10"	-22° 03' 57"	0,9858821	16' 13,37"	23° 26' 16"	10m 25s
01:00	250° 51' 41"	-0,10"	249° 16' 52"	-22° 04' 19"	0,9858759	16' 13,38"	23° 26' 16"	10m 24s
02:00	250° 54' 13"	-0,10"	249° 19' 35"	-22° 04' 40"	0,9858697	16' 13,38"	23° 26' 16"	10m 23s
03:00	250° 56' 45"	-0,11"	249° 22' 17"	-22° 05' 01"	0,9858635	16' 13,39"	23° 26' 16"	10m 22s
04:00	250° 59' 17"	-0,11"	249° 25' 00"	-22° 05' 23"	0,9858574	16' 13,40"	23° 26' 16"	10m 21s
05:00	251° 01' 50"	-0,12"	249° 27' 43"	-22° 05' 44"	0,9858512	16' 13,40"	23° 26' 16"	10m 20s
06:00	251° 04' 22"	-0,12"	249° 30' 25"	-22° 06' 05"	0,9858450	16' 13,41"	23° 26' 16"	10m 19s
07:00	251° 06' 54"	-0,12"	249° 33' 08"	-22° 06' 26"	0,9858389	16' 13,41"	23° 26' 16"	10m 18s
08:00	251° 09' 26"	-0,13"	249° 35' 50"	-22° 06' 47"	0,9858327	16' 13,42"	23° 26' 16"	10m 17s
09:00	251° 11' 58"	-0,13"	249° 38' 33"	-22° 07' 08"	0,9858266	16' 13,43"	23° 26' 16"	10m 16s
10:00	251° 14' 30"	-0,14"	249° 41' 16"	-22° 07' 29"	0,9858205	16' 13,43"	23° 26' 16"	10m 15s
11:00	251° 17' 02"	-0,14"	249° 43' 58"	-22° 07' 50"	0,9858143	16' 13,44"	23° 26' 16"	10m 14s
12:00	251° 19' 35"	-0,14"	249° 46' 41"	-22° 08' 11"	0,9858082	16' 13,44"	23° 26' 16"	10m 13s
13:00	251° 22' 07"	-0,15"	249° 49' 24"	-22° 08' 32"	0,9858021	16' 13,45"	23° 26' 16"	10m 12s
14:00	251° 24' 39"	-0,15"	249° 52' 06"	-22° 08' 53"	0,9857960	16' 13,46"	23° 26' 16"	10m 11s
15:00	251° 27' 11"	-0,16"	249° 54' 49"	-22° 09' 14"	0,9857899	16' 13,46"	23° 26' 16"	10m 10s
16:00	251° 29' 43"	-0,16"	249° 57' 32"	-22° 09' 35"	0,9857838	16' 13,47"	23° 26' 16"	10m 09s
17:00	251° 32' 15"	-0,16"	250° 00' 15"	-22° 09' 55"	0,9857777	16' 13,48"	23° 26' 16"	10m 08s
18:00	251° 34' 47"	-0,17"	250° 02' 57"	-22° 10' 16"	0,9857716	16' 13,48"	23° 26' 16"	10m 07s
19:00	251° 37' 20"	-0,17"	250° 05' 40"	-22° 10' 37"	0,9857655	16' 13,49"	23° 26' 16"	10m 06s
20:00	251° 39' 52"	-0,17"	250° 08' 23"	-22° 10' 57"	0,9857595	16' 13,49"	23° 26' 16"	10m 05s
21:00	251° 42' 24"	-0,18"	250° 11' 06"	-22° 11' 18"	0,9857534	16' 13,50"	23° 26' 16"	10m 04s
22:00	251° 44' 56"	-0,18"	250° 13' 49"	-22° 11' 38"	0,9857473	16' 13,51"	23° 26' 16"	10m 03s
23:00	251° 47' 28"	-0,19"	250° 16' 31"	-22° 11' 59"	0,9857413	16' 13,51"	23° 26' 16"	10m 02s
24:00	251° 50' 00"	-0,19"	250° 19' 14"	-22° 12' 19"	0,9857352	16' 13,52"	23° 26' 16"	10m 01s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	182° 07' 58"	-3° 08' 01"	180° 42' 33"	-3° 43' 23"	56' 46"	15' 28,11"	112° 15' 05"	31,97%
01:00	182° 40' 24"	-3° 10' 15"	181° 11' 26"	-3° 58' 20"	56' 45"	15' 27,65"	112° 12' 09"	31,56%
02:00	183° 12' 48"	-3° 12' 27"	181° 40' 18"	-4° 13' 14"	56' 43"	15' 27,20"	112° 09' 03"	31,16%
03:00	183° 45' 10"	-3° 14' 39"	182° 09' 09"	-4° 28' 07"	56' 41"	15' 26,74"	112° 05' 49"	30,76%
04:00	184° 17' 31"	-3° 16' 50"	182° 38' 00"	-4° 42' 58"	56' 40"	15' 26,29"	112° 02' 25"	30,36%
05:00	184° 49' 50"	-3° 18' 59"	183° 06' 51"	-4° 57' 47"	56' 38"	15' 25,85"	111° 58' 52"	29,97%
06:00	185° 22' 08"	-3° 21' 07"	183° 35' 42"	-5° 12' 34"	56' 36"	15' 25,40"	111° 55' 10"	29,57%
07:00	185° 54' 24"	-3° 23' 14"	184° 04' 32"	-5° 27' 19"	56' 35"	15' 24,96"	111° 51' 19"	29,18%
08:00	186° 26' 38"	-3° 25' 20"	184° 33' 22"	-5° 42' 01"	56' 33"	15' 24,51"	111° 47' 18"	28,79%
09:00	186° 58' 51"	-3° 27' 24"	185° 02' 13"	-5° 56' 42"	56' 31"	15' 24,08"	111° 43' 08"	28,40%
10:00	187° 31' 02"	-3° 29' 27"	185° 31' 03"	-6° 11' 20"	56' 30"	15' 23,64"	111° 38' 49"	28,01%
11:00	188° 03' 12"	-3° 31' 29"	185° 59' 53"	-6° 25' 56"	56' 28"	15' 23,20"	111° 34' 20"	27,63%
12:00	188° 35' 20"	-3° 33' 30"	186° 28' 43"	-6° 40' 29"	56' 27"	15' 22,77"	111° 29' 42"	27,25%
13:00	189° 07' 26"	-3° 35' 30"	186° 57' 34"	-6° 55' 00"	56' 25"	15' 22,34"	111° 24' 55"	26,86%
14:00	189° 39' 31"	-3° 37' 28"	187° 26' 25"	-7° 09' 28"	56' 24"	15' 21,91"	111° 19' 58"	26,49%
15:00	190° 11' 35"	-3° 39' 25"	187° 55' 16"	-7° 23' 54"	56' 22"	15' 21,49"	111° 14' 52"	26,11%
16:00	190° 43' 37"	-3° 41' 21"	188° 24' 08"	-7° 38' 17"	56' 20"	15' 21,07"	111° 09' 37"	25,73%
17:00	191° 15' 38"	-3° 43' 16"	188° 53' 00"	-7° 52' 38"	56' 19"	15' 20,65"	111° 04' 12"	25,36%
18:00	191° 47' 37"	-3° 45' 09"	189° 21' 53"	-8° 06' 56"	56' 17"	15' 20,23"	110° 58' 38"	24,99%
19:00	192° 19' 35"	-3° 47' 01"	189° 50' 46"	-8° 21' 11"	56' 16"	15' 19,81"	110° 52' 54"	24,62%
20:00	192° 51' 31"	-3° 48' 52"	190° 19' 40"	-8° 35' 23"	56' 14"	15' 19,40"	110° 47' 00"	24,26%
21:00	193° 23' 26"	-3° 50' 42"	190° 48' 35"	-8° 49' 33"	56' 13"	15' 18,99"	110° 40' 57"	23,89%
22:00	193° 55' 19"	-3° 52' 30"	191° 17' 31"	-9° 03' 39"	56' 11"	15' 18,58"	110° 34' 45"	23,53%
23:00	194° 27' 11"	-3° 54' 17"	191° 46' 27"	-9° 17' 43"	56' 10"	15' 18,17"	110° 28' 23"	23,17%
24:00	194° 59' 02"	-3° 56' 02"	192° 15' 25"	-9° 31' 43"	56' 08"	15' 17,77"	110° 21' 51"	22,82%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	251° 50' 00"	-0,19"	250° 19' 14"	-22° 12' 19"	0,9857352	16' 13,52"	23° 26' 16"	10m 01s
01:00	251° 52' 33"	-0,19"	250° 21' 57"	-22° 12' 40"	0,9857292	16' 13,52"	23° 26' 16"	10m 00s
02:00	251° 55' 05"	-0,20"	250° 24' 40"	-22° 13' 00"	0,9857232	16' 13,53"	23° 26' 16"	09m 59s
03:00	251° 57' 37"	-0,20"	250° 27' 23"	-22° 13' 20"	0,9857171	16' 13,53"	23° 26' 16"	09m 58s
04:00	252° 00' 09"	-0,20"	250° 30' 06"	-22° 13' 40"	0,9857111	16' 13,54"	23° 26' 16"	09m 57s
05:00	252° 02' 41"	-0,21"	250° 32' 49"	-22° 14' 01"	0,9857051	16' 13,55"	23° 26' 16"	09m 56s
06:00	252° 05' 13"	-0,21"	250° 35' 32"	-22° 14' 21"	0,9856991	16' 13,55"	23° 26' 16"	09m 55s
07:00	252° 07' 46"	-0,21"	250° 38' 15"	-22° 14' 41"	0,9856931	16' 13,56"	23° 26' 16"	09m 54s
08:00	252° 10' 18"	-0,22"	250° 40' 58"	-22° 15' 01"	0,9856871	16' 13,56"	23° 26' 16"	09m 53s
09:00	252° 12' 50"	-0,22"	250° 43' 41"	-22° 15' 21"	0,9856811	16' 13,57"	23° 26' 16"	09m 52s
10:00	252° 15' 22"	-0,22"	250° 46' 24"	-22° 15' 41"	0,9856751	16' 13,58"	23° 26' 16"	09m 51s
11:00	252° 17' 54"	-0,22"	250° 49' 07"	-22° 16' 01"	0,9856691	16' 13,58"	23° 26' 16"	09m 50s
12:00	252° 20' 27"	-0,23"	250° 51' 50"	-22° 16' 21"	0,9856632	16' 13,59"	23° 26' 16"	09m 49s
13:00	252° 22' 59"	-0,23"	250° 54' 33"	-22° 16' 40"	0,9856572	16' 13,59"	23° 26' 16"	09m 48s
14:00	252° 25' 31"	-0,23"	250° 57' 16"	-22° 17' 00"	0,9856512	16' 13,60"	23° 26' 16"	09m 47s
15:00	252° 28' 03"	-0,24"	250° 59' 59"	-22° 17' 20"	0,9856453	16' 13,61"	23° 26' 16"	09m 46s
16:00	252° 30' 35"	-0,24"	251° 02' 42"	-22° 17' 40"	0,9856393	16' 13,61"	23° 26' 16"	09m 45s
17:00	252° 33' 08"	-0,24"	251° 05' 25"	-22° 17' 59"	0,9856334	16' 13,62"	23° 26' 16"	09m 44s
18:00	252° 35' 40"	-0,24"	251° 08' 09"	-22° 18' 19"	0,9856274	16' 13,62"	23° 26' 16"	09m 43s
19:00	252° 38' 12"	-0,25"	251° 10' 52"	-22° 18' 38"	0,9856215	16' 13,63"	23° 26' 16"	09m 42s
20:00	252° 40' 44"	-0,25"	251° 13' 35"	-22° 18' 58"	0,9856156	16' 13,64"	23° 26' 16"	09m 41s
21:00	252° 43' 16"	-0,25"	251° 16' 18"	-22° 19' 17"	0,9856097	16' 13,64"	23° 26' 16"	09m 40s
22:00	252° 45' 49"	-0,26"	251° 19' 01"	-22° 19' 37"	0,9856038	16' 13,65"	23° 26' 16"	09m 39s
23:00	252° 48' 21"	-0,26"	251° 21' 45"	-22° 19' 56"	0,9855978	16' 13,65"	23° 26' 16"	09m 38s
24:00	252° 50' 53"	-0,26"	251° 24' 28"	-22° 20' 16"	0,9855919	16' 13,66"	23° 26' 16"	09m 37s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	194° 59' 02"	-3° 56' 02"	192° 15' 25"	-9° 31' 43"	56' 08"	15' 17,77"	110° 21' 51"	22,82%
01:00	195° 30' 51"	-3° 57' 47"	192° 44' 23"	-9° 45' 41"	56' 07"	15' 17,37"	110° 15' 10"	22,46%
02:00	196° 02' 39"	-3° 59' 30"	193° 13' 23"	-9° 59' 35"	56' 05"	15' 16,97"	110° 08' 18"	22,11%
03:00	196° 34' 25"	-4° 01' 11"	193° 42' 23"	-10° 13' 26"	56' 04"	15' 16,57"	110° 01' 17"	21,76%
04:00	197° 06' 10"	-4° 02' 52"	194° 11' 25"	-10° 27' 14"	56' 02"	15' 16,18"	109° 54' 07"	21,41%
05:00	197° 37' 54"	-4° 04' 31"	194° 40' 28"	-10° 40' 59"	56' 01"	15' 15,78"	109° 46' 46"	21,06%
06:00	198° 09' 36"	-4° 06' 08"	195° 09' 32"	-10° 54' 40"	56' 00"	15' 15,40"	109° 39' 15"	20,72%
07:00	198° 41' 17"	-4° 07' 45"	195° 38' 38"	-11° 08' 18"	55' 58"	15' 15,01"	109° 31' 35"	20,38%
08:00	199° 12' 57"	-4° 09' 20"	196° 07' 45"	-11° 21' 53"	55' 57"	15' 14,62"	109° 23' 44"	20,04%
09:00	199° 44' 35"	-4° 10' 53"	196° 36' 53"	-11° 35' 24"	55' 55"	15' 14,24"	109° 15' 43"	19,71%
10:00	200° 16' 13"	-4° 12' 26"	197° 06' 03"	-11° 48' 51"	55' 54"	15' 13,86"	109° 07' 32"	19,37%
11:00	200° 47' 48"	-4° 13' 57"	197° 35' 15"	-12° 02' 15"	55' 53"	15' 13,48"	108° 59' 11"	19,04%
12:00	201° 19' 23"	-4° 15' 26"	198° 04' 28"	-12° 15' 35"	55' 51"	15' 13,11"	108° 50' 40"	18,71%
13:00	201° 50' 56"	-4° 16' 54"	198° 33' 43"	-12° 28' 52"	55' 50"	15' 12,74"	108° 41' 58"	18,39%
14:00	202° 22' 28"	-4° 18' 21"	199° 02' 59"	-12° 42' 05"	55' 49"	15' 12,37"	108° 33' 06"	18,06%
15:00	202° 53' 59"	-4° 19' 47"	199° 32' 18"	-12° 55' 14"	55' 47"	15' 12,00"	108° 24' 03"	17,74%
16:00	203° 25' 29"	-4° 21' 11"	200° 01' 38"	-13° 08' 19"	55' 46"	15' 11,63"	108° 14' 50"	17,42%
17:00	203° 56' 57"	-4° 22' 33"	200° 31' 00"	-13° 21' 20"	55' 44"	15' 11,27"	108° 05' 26"	17,11%
18:00	204° 28' 24"	-4° 23' 55"	201° 00' 24"	-13° 34' 17"	55' 43"	15' 10,91"	107° 55' 52"	16,79%
19:00	204° 59' 50"	-4° 25' 15"	201° 29' 50"	-13° 47' 10"	55' 42"	15' 10,55"	107° 46' 06"	16,48%
20:00	205° 31' 15"	-4° 26' 33"	201° 59' 18"	-14° 00' 00"	55' 41"	15' 10,20"	107° 36' 10"	16,18%
21:00	206° 02' 38"	-4° 27' 50"	202° 28' 48"	-14° 12' 45"	55' 39"	15' 09,84"	107° 26' 03"	15,87%
22:00	206° 34' 01"	-4° 29' 06"	202° 58' 20"	-14° 25' 26"	55' 38"	15' 09,49"	107° 15' 44"	15,57%
23:00	207° 05' 22"	-4° 30' 20"	203° 27' 54"	-14° 38' 02"	55' 37"	15' 09,14"	107° 05' 15"	15,27%
24:00	207° 36' 42"	-4° 31' 33"	203° 57' 30"	-14° 50' 35"	55' 35"	15' 08,80"	106° 54' 34"	14,97%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	252° 50' 53"	-0,26"	251° 24' 28"	-22° 20' 16"	0,9855919	16' 13,66"	23° 26' 16"	09m 37s
01:00	252° 53' 25"	-0,26"	251° 27' 11"	-22° 20' 35"	0,9855861	16' 13,66"	23° 26' 16"	09m 36s
02:00	252° 55' 58"	-0,27"	251° 29' 54"	-22° 20' 54"	0,9855802	16' 13,67"	23° 26' 16"	09m 35s
03:00	252° 58' 30"	-0,27"	251° 32' 38"	-22° 21' 13"	0,9855743	16' 13,68"	23° 26' 16"	09m 34s
04:00	253° 01' 02"	-0,27"	251° 35' 21"	-22° 21' 32"	0,9855684	16' 13,68"	23° 26' 16"	09m 33s
05:00	253° 03' 34"	-0,27"	251° 38' 04"	-22° 21' 51"	0,9855625	16' 13,69"	23° 26' 16"	09m 32s
06:00	253° 06' 06"	-0,27"	251° 40' 48"	-22° 22' 11"	0,9855567	16' 13,69"	23° 26' 16"	09m 31s
07:00	253° 08' 39"	-0,28"	251° 43' 31"	-22° 22' 30"	0,9855508	16' 13,70"	23° 26' 16"	09m 30s
08:00	253° 11' 11"	-0,28"	251° 46' 14"	-22° 22' 48"	0,9855450	16' 13,70"	23° 26' 16"	09m 29s
09:00	253° 13' 43"	-0,28"	251° 48' 58"	-22° 23' 07"	0,9855391	16' 13,71"	23° 26' 16"	09m 27s
10:00	253° 16' 15"	-0,28"	251° 51' 41"	-22° 23' 26"	0,9855333	16' 13,72"	23° 26' 16"	09m 26s
11:00	253° 18' 48"	-0,28"	251° 54' 24"	-22° 23' 45"	0,9855274	16' 13,72"	23° 26' 16"	09m 25s
12:00	253° 21' 20"	-0,29"	251° 57' 08"	-22° 24' 04"	0,9855216	16' 13,73"	23° 26' 16"	09m 24s
13:00	253° 23' 52"	-0,29"	251° 59' 51"	-22° 24' 23"	0,9855158	16' 13,73"	23° 26' 16"	09m 23s
14:00	253° 26' 24"	-0,29"	252° 02' 35"	-22° 24' 41"	0,9855100	16' 13,74"	23° 26' 16"	09m 22s
15:00	253° 28' 57"	-0,29"	252° 05' 18"	-22° 25' 00"	0,9855041	16' 13,75"	23° 26' 16"	09m 21s
16:00	253° 31' 29"	-0,29"	252° 08' 02"	-22° 25' 19"	0,9854983	16' 13,75"	23° 26' 16"	09m 20s
17:00	253° 34' 01"	-0,30"	252° 10' 45"	-22° 25' 37"	0,9854925	16' 13,76"	23° 26' 16"	09m 19s
18:00	253° 36' 33"	-0,30"	252° 13' 29"	-22° 25' 56"	0,9854867	16' 13,76"	23° 26' 16"	09m 18s
19:00	253° 39' 06"	-0,30"	252° 16' 12"	-22° 26' 14"	0,9854810	16' 13,77"	23° 26' 16"	09m 17s
20:00	253° 41' 38"	-0,30"	252° 18' 56"	-22° 26' 33"	0,9854752	16' 13,77"	23° 26' 16"	09m 16s
21:00	253° 44' 10"	-0,30"	252° 21' 39"	-22° 26' 51"	0,9854694	16' 13,78"	23° 26' 16"	09m 15s
22:00	253° 46' 43"	-0,30"	252° 24' 23"	-22° 27' 09"	0,9854636	16' 13,79"	23° 26' 16"	09m 14s
23:00	253° 49' 15"	-0,30"	252° 27' 06"	-22° 27' 28"	0,9854579	16' 13,79"	23° 26' 16"	09m 13s
24:00	253° 51' 47"	-0,31"	252° 29' 50"	-22° 27' 46"	0,9854521	16' 13,80"	23° 26' 16"	09m 12s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	207° 36' 42"	-4° 31' 33"	203° 57' 30"	-14° 50' 35"	55' 35"	15' 08,80"	106° 54' 34"	14,97%
01:00	208° 08' 01"	-4° 32' 44"	204° 27' 09"	-15° 03' 03"	55' 34"	15' 08,45"	106° 43' 41"	14,67%
02:00	208° 39' 18"	-4° 33' 54"	204° 56' 50"	-15° 15' 27"	55' 33"	15' 08,11"	106° 32' 37"	14,38%
03:00	209° 10' 35"	-4° 35' 03"	205° 26' 33"	-15° 27' 46"	55' 32"	15' 07,77"	106° 21' 22"	14,09%
04:00	209° 41' 50"	-4° 36' 10"	205° 56' 19"	-15° 40' 01"	55' 30"	15' 07,43"	106° 09' 54"	13,80%
05:00	210° 13' 05"	-4° 37' 16"	206° 26' 07"	-15° 52' 12"	55' 29"	15' 07,10"	105° 58' 15"	13,52%
06:00	210° 44' 18"	-4° 38' 20"	206° 55' 58"	-16° 04' 17"	55' 28"	15' 06,77"	105° 46' 23"	13,24%
07:00	211° 15' 30"	-4° 39' 23"	207° 25' 51"	-16° 16' 19"	55' 27"	15' 06,44"	105° 34' 20"	12,96%
08:00	211° 46' 41"	-4° 40' 25"	207° 55' 46"	-16° 28' 15"	55' 26"	15' 06,11"	105° 22' 04"	12,68%
09:00	212° 17' 51"	-4° 41' 25"	208° 25' 44"	-16° 40' 07"	55' 24"	15' 05,79"	105° 09' 35"	12,41%
10:00	212° 49' 00"	-4° 42' 23"	208° 55' 45"	-16° 51' 54"	55' 23"	15' 05,46"	104° 56' 53"	12,14%
11:00	213° 20' 07"	-4° 43' 20"	209° 25' 48"	-17° 03' 36"	55' 22"	15' 05,14"	104° 43' 59"	11,87%
12:00	213° 51' 14"	-4° 44' 16"	209° 55' 54"	-17° 15' 13"	55' 21"	15' 04,82"	104° 30' 52"	11,61%
13:00	214° 22' 20"	-4° 45' 10"	210° 26' 03"	-17° 26' 46"	55' 20"	15' 04,51"	104° 17' 31"	11,34%
14:00	214° 53' 24"	-4° 46' 03"	210° 56' 14"	-17° 38' 13"	55' 19"	15' 04,20"	104° 03' 56"	11,09%
15:00	215° 24' 28"	-4° 46' 55"	211° 26' 28"	-17° 49' 35"	55' 17"	15' 03,88"	103° 50' 08"	10,83%
16:00	215° 55' 30"	-4° 47' 45"	211° 56' 45"	-18° 00' 53"	55' 16"	15' 03,58"	103° 36' 06"	10,57%
17:00	216° 26' 31"	-4° 48' 33"	212° 27' 05"	-18° 12' 05"	55' 15"	15' 03,27"	103° 21' 50"	10,32%
18:00	216° 57' 32"	-4° 49' 20"	212° 57' 27"	-18° 23' 12"	55' 14"	15' 02,96"	103° 07' 20"	10,08%
19:00	217° 28' 31"	-4° 50' 06"	213° 27' 52"	-18° 34' 13"	55' 13"	15' 02,66"	102° 52' 34"	9,83%
20:00	217° 59' 30"	-4° 50' 50"	213° 58' 21"	-18° 45' 10"	55' 12"	15' 02,36"	102° 37' 34"	9,59%
21:00	218° 30' 27"	-4° 51' 32"	214° 28' 52"	-18° 56' 01"	55' 11"	15' 02,07"	102° 22' 18"	9,35%
22:00	219° 01' 23"	-4° 52' 14"	214° 59' 26"	-19° 06' 47"	55' 10"	15' 01,77"	102° 06' 47"	9,11%
23:00	219° 32' 19"	-4° 52' 53"	215° 30' 02"	-19° 17' 27"	55' 09"	15' 01,48"	101° 51' 00"	8,88%
24:00	220° 03' 13"	-4° 53' 32"	216° 00' 42"	-19° 28' 02"	55' 07"	15' 01,19"	101° 34' 57"	8,65%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	253° 51' 47"	-0,31"	252° 29' 50"	-22° 27' 46"	0,9854521	16' 13,80"	23° 26' 16"	09m 12s
01:00	253° 54' 19"	-0,31"	252° 32' 34"	-22° 28' 04"	0,9854464	16' 13,80"	23° 26' 16"	09m 11s
02:00	253° 56' 52"	-0,31"	252° 35' 17"	-22° 28' 22"	0,9854406	16' 13,81"	23° 26' 16"	09m 10s
03:00	253° 59' 24"	-0,31"	252° 38' 01"	-22° 28' 40"	0,9854349	16' 13,81"	23° 26' 16"	09m 09s
04:00	254° 01' 56"	-0,31"	252° 40' 44"	-22° 28' 58"	0,9854291	16' 13,82"	23° 26' 16"	09m 08s
05:00	254° 04' 28"	-0,31"	252° 43' 28"	-22° 29' 16"	0,9854234	16' 13,83"	23° 26' 16"	09m 07s
06:00	254° 07' 01"	-0,31"	252° 46' 12"	-22° 29' 34"	0,9854177	16' 13,83"	23° 26' 16"	09m 06s
07:00	254° 09' 33"	-0,31"	252° 48' 55"	-22° 29' 52"	0,9854120	16' 13,84"	23° 26' 16"	09m 04s
08:00	254° 12' 05"	-0,31"	252° 51' 39"	-22° 30' 10"	0,9854062	16' 13,84"	23° 26' 16"	09m 03s
09:00	254° 14' 38"	-0,32"	252° 54' 23"	-22° 30' 28"	0,9854005	16' 13,85"	23° 26' 16"	09m 02s
10:00	254° 17' 10"	-0,32"	252° 57' 07"	-22° 30' 46"	0,9853948	16' 13,85"	23° 26' 16"	09m 01s
11:00	254° 19' 42"	-0,32"	252° 59' 50"	-22° 31' 03"	0,9853891	16' 13,86"	23° 26' 16"	09m 00s
12:00	254° 22' 15"	-0,32"	253° 02' 34"	-22° 31' 21"	0,9853834	16' 13,86"	23° 26' 16"	08m 59s
13:00	254° 24' 47"	-0,32"	253° 05' 18"	-22° 31' 39"	0,9853778	16' 13,87"	23° 26' 16"	08m 58s
14:00	254° 27' 19"	-0,32"	253° 08' 02"	-22° 31' 56"	0,9853721	16' 13,88"	23° 26' 16"	08m 57s
15:00	254° 29' 51"	-0,32"	253° 10' 45"	-22° 32' 14"	0,9853664	16' 13,88"	23° 26' 16"	08m 56s
16:00	254° 32' 24"	-0,32"	253° 13' 29"	-22° 32' 31"	0,9853607	16' 13,89"	23° 26' 16"	08m 55s
17:00	254° 34' 56"	-0,32"	253° 16' 13"	-22° 32' 49"	0,9853551	16' 13,89"	23° 26' 16"	08m 54s
18:00	254° 37' 28"	-0,32"	253° 18' 57"	-22° 33' 06"	0,9853494	16' 13,90"	23° 26' 16"	08m 53s
19:00	254° 40' 01"	-0,32"	253° 21' 41"	-22° 33' 24"	0,9853438	16' 13,90"	23° 26' 16"	08m 52s
20:00	254° 42' 33"	-0,32"	253° 24' 25"	-22° 33' 41"	0,9853381	16' 13,91"	23° 26' 16"	08m 51s
21:00	254° 45' 05"	-0,32"	253° 27' 09"	-22° 33' 58"	0,9853325	16' 13,91"	23° 26' 16"	08m 50s
22:00	254° 47' 38"	-0,32"	253° 29' 52"	-22° 34' 15"	0,9853269	16' 13,92"	23° 26' 16"	08m 48s
23:00	254° 50' 10"	-0,32"	253° 32' 36"	-22° 34' 33"	0,9853212	16' 13,93"	23° 26' 16"	08m 47s
24:00	254° 52' 42"	-0,32"	253° 35' 20"	-22° 34' 50"	0,9853156	16' 13,93"	23° 26' 16"	08m 46s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	220° 03' 13"	-4° 53' 32"	216° 00' 42"	-19° 28' 02"	55' 07"	15' 01,19"	101° 34' 57"	8,65%
01:00	220° 34' 06"	-4° 54' 08"	216° 31' 25"	-19° 38' 31"	55' 06"	15' 00,90"	101° 18' 36"	8,42%
02:00	221° 04' 59"	-4° 54' 44"	217° 02' 11"	-19° 48' 55"	55' 05"	15' 00,61"	101° 01' 59"	8,20%
03:00	221° 35' 50"	-4° 55' 18"	217° 33' 00"	-19° 59' 13"	55' 04"	15' 00,33"	100° 45' 05"	7,98%
04:00	222° 06' 41"	-4° 55' 50"	218° 03' 52"	-20° 09' 25"	55' 03"	15' 00,05"	100° 27' 52"	7,76%
05:00	222° 37' 30"	-4° 56' 21"	218° 34' 46"	-20° 19' 31"	55' 02"	15' 00,00"	100° 10' 21"	7,54%
06:00	223° 08' 19"	-4° 56' 51"	219° 05' 44"	-20° 29' 32"	55' 01"	14' 59,49"	99° 52' 32"	7,33%
07:00	223° 39' 07"	-4° 57' 19"	219° 36' 45"	-20° 39' 27"	55' 00"	14' 59,22"	99° 34' 23"	7,12%
08:00	224° 09' 53"	-4° 57' 45"	220° 07' 49"	-20° 49' 16"	54' 59"	14' 58,94"	99° 15' 54"	6,91%
09:00	224° 40' 39"	-4° 58' 10"	220° 38' 56"	-20° 58' 59"	54' 58"	14' 58,67"	98° 57' 05"	6,71%
10:00	225° 11' 24"	-4° 58' 34"	221° 10' 06"	-21° 08' 36"	54' 57"	14' 58,40"	98° 37' 54"	6,51%
11:00	225° 42' 08"	-4° 58' 56"	221° 41' 19"	-21° 18' 08"	54' 56"	14' 58,14"	98° 18' 22"	6,31%
12:00	226° 12' 51"	-4° 59' 17"	222° 12' 35"	-21° 27' 33"	54' 55"	14' 57,87"	97° 58' 27"	6,11%
13:00	226° 43' 33"	-4° 59' 36"	222° 43' 55"	-21° 36' 51"	54' 54"	14' 57,61"	97° 38' 10"	5,92%
14:00	227° 14' 14"	-4° 59' 54"	223° 15' 17"	-21° 46' 04"	54' 53"	14' 57,35"	97° 17' 28"	5,73%
15:00	227° 44' 55"	-5° 00' 10"	223° 46' 42"	-21° 55' 11"	54' 52"	14' 57,09"	96° 56' 21"	5,55%
16:00	228° 15' 34"	-5° 00' 25"	224° 18' 11"	-22° 04' 11"	54' 52"	14' 56,84"	96° 34' 49"	5,37%
17:00	228° 46' 13"	-5° 00' 39"	224° 49' 43"	-22° 13' 05"	54' 51"	14' 56,59"	96° 12' 50"	5,19%
18:00	229° 16' 50"	-5° 00' 51"	225° 21' 17"	-22° 21' 52"	54' 50"	14' 56,33"	95° 50' 23"	5,01%
19:00	229° 47' 27"	-5° 01' 01"	225° 52' 55"	-22° 30' 33"	54' 49"	14' 56,09"	95° 27' 27"	4,84%
20:00	230° 18' 03"	-5° 01' 10"	226° 24' 35"	-22° 39' 08"	54' 48"	14' 55,84"	95° 04' 02"	4,67%
21:00	230° 48' 38"	-5° 01' 18"	226° 56' 19"	-22° 47' 36"	54' 47"	14' 55,59"	94° 40' 05"	4,50%
22:00	231° 19' 12"	-5° 01' 24"	227° 28' 06"	-22° 55' 58"	54' 46"	14' 55,35"	94° 15' 35"	4,34%
23:00	231° 49' 45"	-5° 01' 29"	227° 59' 56"	-23° 04' 13"	54' 45"	14' 55,11"	93° 50' 31"	4,18%
24:00	232° 20' 18"	-5° 01' 32"	228° 31' 48"	-23° 12' 21"	54' 44"	14' 54,87"	93° 24' 51"	4,02%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	254° 52' 42"	-0,32"	253° 35' 20"	-22° 34' 50"	0,9853156	16' 13,93"	23° 26' 16"	08m 46s
01:00	254° 55' 15"	-0,32"	253° 38' 04"	-22° 35' 07"	0,9853100	16' 13,94"	23° 26' 16"	08m 45s
02:00	254° 57' 47"	-0,32"	253° 40' 48"	-22° 35' 24"	0,9853044	16' 13,94"	23° 26' 16"	08m 44s
03:00	255° 00' 19"	-0,32"	253° 43' 32"	-22° 35' 41"	0,9852988	16' 13,95"	23° 26' 16"	08m 43s
04:00	255° 02' 52"	-0,32"	253° 46' 16"	-22° 35' 58"	0,9852932	16' 13,95"	23° 26' 16"	08m 42s
05:00	255° 05' 24"	-0,32"	253° 49' 00"	-22° 36' 15"	0,9852876	16' 13,96"	23° 26' 16"	08m 41s
06:00	255° 07' 56"	-0,32"	253° 51' 44"	-22° 36' 32"	0,9852820	16' 13,96"	23° 26' 16"	08m 40s
07:00	255° 10' 29"	-0,32"	253° 54' 28"	-22° 36' 48"	0,9852764	16' 13,97"	23° 26' 16"	08m 39s
08:00	255° 13' 01"	-0,32"	253° 57' 12"	-22° 37' 05"	0,9852708	16' 13,98"	23° 26' 16"	08m 38s
09:00	255° 15' 33"	-0,32"	253° 59' 56"	-22° 37' 22"	0,9852653	16' 13,98"	23° 26' 16"	08m 37s
10:00	255° 18' 06"	-0,32"	254° 02' 40"	-22° 37' 39"	0,9852597	16' 13,99"	23° 26' 16"	08m 36s
11:00	255° 20' 38"	-0,32"	254° 05' 24"	-22° 37' 55"	0,9852541	16' 13,99"	23° 26' 16"	08m 35s
12:00	255° 23' 10"	-0,32"	254° 08' 08"	-22° 38' 12"	0,9852486	16' 14,00"	23° 26' 16"	08m 33s
13:00	255° 25' 43"	-0,32"	254° 10' 53"	-22° 38' 28"	0,9852430	16' 14,00"	23° 26' 16"	08m 32s
14:00	255° 28' 15"	-0,32"	254° 13' 37"	-22° 38' 45"	0,9852375	16' 14,01"	23° 26' 16"	08m 31s
15:00	255° 30' 47"	-0,32"	254° 16' 21"	-22° 39' 01"	0,9852320	16' 14,01"	23° 26' 16"	08m 30s
16:00	255° 33' 20"	-0,32"	254° 19' 05"	-22° 39' 18"	0,9852264	16' 14,02"	23° 26' 16"	08m 29s
17:00	255° 35' 52"	-0,32"	254° 21' 49"	-22° 39' 34"	0,9852209	16' 14,03"	23° 26' 16"	08m 28s
18:00	255° 38' 25"	-0,32"	254° 24' 33"	-22° 39' 50"	0,9852154	16' 14,03"	23° 26' 16"	08m 27s
19:00	255° 40' 57"	-0,32"	254° 27' 17"	-22° 40' 07"	0,9852099	16' 14,04"	23° 26' 16"	08m 26s
20:00	255° 43' 29"	-0,32"	254° 30' 02"	-22° 40' 23"	0,9852044	16' 14,04"	23° 26' 16"	08m 25s
21:00	255° 46' 02"	-0,32"	254° 32' 46"	-22° 40' 39"	0,9851989	16' 14,05"	23° 26' 16"	08m 24s
22:00	255° 48' 34"	-0,32"	254° 35' 30"	-22° 40' 55"	0,9851934	16' 14,05"	23° 26' 16"	08m 23s
23:00	255° 51' 06"	-0,31"	254° 38' 14"	-22° 41' 11"	0,9851879	16' 14,06"	23° 26' 16"	08m 21s
24:00	255° 53' 39"	-0,31"	254° 40' 58"	-22° 41' 27"	0,9851824	16' 14,06"	23° 26' 16"	08m 20s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	232° 20' 18"	-5° 01' 32"	228° 31' 48"	-23° 12' 21"	54' 44"	14' 54,87"	93° 24' 51"	4,02%
01:00	232° 50' 50"	-5° 01' 34"	229° 03' 44"	-23° 20' 23"	54' 43"	14' 54,64"	92° 58' 34"	3,86%
02:00	233° 21' 20"	-5° 01' 34"	229° 35' 43"	-23° 28' 18"	54' 43"	14' 54,40"	92° 31' 37"	3,71%
03:00	233° 51' 50"	-5° 01' 33"	230° 07' 44"	-23° 36' 06"	54' 42"	14' 54,17"	92° 03' 58"	3,56%
04:00	234° 22' 19"	-5° 01' 31"	230° 39' 49"	-23° 43' 47"	54' 41"	14' 53,94"	91° 35' 37"	3,42%
05:00	234° 52' 48"	-5° 01' 27"	231° 11' 56"	-23° 51' 22"	54' 40"	14' 53,71"	91° 06' 29"	3,28%
06:00	235° 23' 15"	-5° 01' 22"	231° 44' 07"	-23° 58' 49"	54' 39"	14' 53,49"	90° 36' 32"	3,14%
07:00	235° 53' 42"	-5° 01' 15"	232° 16' 20"	-24° 06' 10"	54' 38"	14' 53,27"	90° 05' 44"	3,00%
08:00	236° 24' 07"	-5° 01' 07"	232° 48' 36"	-24° 13' 24"	54' 38"	14' 53,04"	89° 34' 02"	2,87%
09:00	236° 54' 32"	-5° 00' 57"	233° 20' 55"	-24° 20' 30"	54' 37"	14' 52,83"	89° 01' 22"	2,74%
10:00	237° 24' 57"	-5° 00' 46"	233° 53' 16"	-24° 27' 30"	54' 36"	14' 52,61"	88° 27' 40"	2,61%
11:00	237° 55' 20"	-5° 00' 33"	234° 25' 40"	-24° 34' 23"	54' 35"	14' 52,39"	87° 52' 53"	2,49%
12:00	238° 25' 43"	-5° 00' 19"	234° 58' 07"	-24° 41' 08"	54' 34"	14' 52,18"	87° 16' 56"	2,37%
13:00	238° 56' 04"	-5° 00' 04"	235° 30' 37"	-24° 47' 46"	54' 34"	14' 51,97"	86° 39' 44"	2,25%
14:00	239° 26' 25"	-4° 59' 47"	236° 03' 09"	-24° 54' 17"	54' 33"	14' 51,76"	86° 01' 12"	2,14%
15:00	239° 56' 46"	-4° 59' 29"	236° 35' 44"	-25° 00' 41"	54' 32"	14' 51,56"	85° 21' 15"	2,03%
16:00	240° 27' 05"	-4° 59' 10"	237° 08' 22"	-25° 06' 57"	54' 31"	14' 51,35"	84° 39' 45"	1,92%
17:00	240° 57' 24"	-4° 58' 49"	237° 41' 02"	-25° 13' 06"	54' 31"	14' 51,15"	83° 56' 36"	1,82%
18:00	241° 27' 42"	-4° 58' 26"	238° 13' 44"	-25° 19' 08"	54' 30"	14' 50,95"	83° 11' 39"	1,71%
19:00	241° 57' 59"	-4° 58' 02"	238° 46' 29"	-25° 25' 02"	54' 29"	14' 50,75"	82° 24' 46"	1,62%
20:00	242° 28' 15"	-4° 57' 37"	239° 19' 16"	-25° 30' 49"	54' 28"	14' 50,55"	81° 35' 46"	1,52%
21:00	242° 58' 31"	-4° 57' 11"	239° 52' 06"	-25° 36' 29"	54' 28"	14' 50,36"	80° 44' 30"	1,43%
22:00	243° 28' 45"	-4° 56' 43"	240° 24' 58"	-25° 42' 01"	54' 27"	14' 50,17"	79° 50' 44"	1,34%
23:00	243° 59' 00"	-4° 56' 13"	240° 57' 52"	-25° 47' 25"	54' 26"	14' 49,98"	78° 54' 15"	1,26%
24:00	244° 29' 13"	-4° 55' 42"	241° 30' 48"	-25° 52' 42"	54' 26"	14' 49,79"	77° 54' 47"	1,18%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	255° 53' 39"	-0,31"	254° 40' 58"	-22° 41' 27"	0,9851824	16' 14,06"	23° 26' 16"	08m 20s
01:00	255° 56' 11"	-0,31"	254° 43' 43"	-22° 41' 43"	0,9851769	16' 14,07"	23° 26' 16"	08m 19s
02:00	255° 58' 44"	-0,31"	254° 46' 27"	-22° 41' 59"	0,9851715	16' 14,07"	23° 26' 16"	08m 18s
03:00	256° 01' 16"	-0,31"	254° 49' 11"	-22° 42' 15"	0,9851660	16' 14,08"	23° 26' 16"	08m 17s
04:00	256° 03' 48"	-0,31"	254° 51' 56"	-22° 42' 31"	0,9851605	16' 14,08"	23° 26' 16"	08m 16s
05:00	256° 06' 21"	-0,31"	254° 54' 40"	-22° 42' 47"	0,9851551	16' 14,09"	23° 26' 16"	08m 15s
06:00	256° 08' 53"	-0,31"	254° 57' 24"	-22° 43' 02"	0,9851496	16' 14,10"	23° 26' 16"	08m 14s
07:00	256° 11' 25"	-0,31"	255° 00' 08"	-22° 43' 18"	0,9851442	16' 14,10"	23° 26' 16"	08m 13s
08:00	256° 13' 58"	-0,30"	255° 02' 53"	-22° 43' 34"	0,9851387	16' 14,11"	23° 26' 16"	08m 12s
09:00	256° 16' 30"	-0,30"	255° 05' 37"	-22° 43' 49"	0,9851333	16' 14,11"	23° 26' 16"	08m 10s
10:00	256° 19' 03"	-0,30"	255° 08' 21"	-22° 44' 05"	0,9851279	16' 14,12"	23° 26' 16"	08m 09s
11:00	256° 21' 35"	-0,30"	255° 11' 06"	-22° 44' 21"	0,9851224	16' 14,12"	23° 26' 16"	08m 08s
12:00	256° 24' 07"	-0,30"	255° 13' 50"	-22° 44' 36"	0,9851170	16' 14,13"	23° 26' 16"	08m 07s
13:00	256° 26' 40"	-0,30"	255° 16' 35"	-22° 44' 51"	0,9851116	16' 14,13"	23° 26' 16"	08m 06s
14:00	256° 29' 12"	-0,30"	255° 19' 19"	-22° 45' 07"	0,9851062	16' 14,14"	23° 26' 16"	08m 05s
15:00	256° 31' 45"	-0,29"	255° 22' 03"	-22° 45' 22"	0,9851008	16' 14,14"	23° 26' 16"	08m 04s
16:00	256° 34' 17"	-0,29"	255° 24' 48"	-22° 45' 37"	0,9850954	16' 14,15"	23° 26' 16"	08m 03s
17:00	256° 36' 49"	-0,29"	255° 27' 32"	-22° 45' 53"	0,9850900	16' 14,15"	23° 26' 16"	08m 02s
18:00	256° 39' 22"	-0,29"	255° 30' 17"	-22° 46' 08"	0,9850847	16' 14,16"	23° 26' 16"	08m 01s
19:00	256° 41' 54"	-0,29"	255° 33' 01"	-22° 46' 23"	0,9850793	16' 14,17"	23° 26' 16"	07m 59s
20:00	256° 44' 27"	-0,28"	255° 35' 46"	-22° 46' 38"	0,9850739	16' 14,17"	23° 26' 16"	07m 58s
21:00	256° 46' 59"	-0,28"	255° 38' 30"	-22° 46' 53"	0,9850685	16' 14,18"	23° 26' 16"	07m 57s
22:00	256° 49' 31"	-0,28"	255° 41' 15"	-22° 47' 08"	0,9850632	16' 14,18"	23° 26' 16"	07m 56s
23:00	256° 52' 04"	-0,28"	255° 43' 59"	-22° 47' 23"	0,9850578	16' 14,19"	23° 26' 16"	07m 55s
24:00	256° 54' 36"	-0,28"	255° 46' 44"	-22° 47' 38"	0,9850525	16' 14,19"	23° 26' 16"	07m 54s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	244° 29' 13"	-4° 55' 42"	241° 30' 48"	-25° 52' 42"	54' 26"	14' 49,79"	77° 54' 47"	1,18%
01:00	244° 59' 25"	-4° 55' 10"	242° 03' 47"	-25° 57' 51"	54' 25"	14' 49,61"	76° 52' 02"	1,10%
02:00	245° 29' 37"	-4° 54' 37"	242° 36' 48"	-26° 02' 53"	54' 24"	14' 49,42"	75° 45' 41"	1,02%
03:00	245° 59' 48"	-4° 54' 02"	243° 09' 50"	-26° 07' 47"	54' 24"	14' 49,24"	74° 35' 22"	0,95%
04:00	246° 29' 59"	-4° 53' 26"	243° 42' 55"	-26° 12' 33"	54' 23"	14' 49,06"	73° 20' 39"	0,88%
05:00	247° 00' 08"	-4° 52' 48"	244° 16' 02"	-26° 17' 12"	54' 22"	14' 48,88"	72° 01' 02"	0,81%
06:00	247° 30' 17"	-4° 52' 09"	244° 49' 10"	-26° 21' 43"	54' 22"	14' 48,71"	70° 36' 00"	0,75%
07:00	248° 00' 26"	-4° 51' 29"	245° 22' 21"	-26° 26' 06"	54' 21"	14' 48,54"	69° 04' 55"	0,69%
08:00	248° 30' 33"	-4° 50' 47"	245° 55' 33"	-26° 30' 21"	54' 20"	14' 48,36"	67° 27' 05"	0,63%
09:00	249° 00' 40"	-4° 50' 04"	246° 28' 47"	-26° 34' 29"	54' 20"	14' 48,20"	65° 41' 40"	0,58%
10:00	249° 30' 46"	-4° 49' 20"	247° 02' 02"	-26° 38' 29"	54' 19"	14' 48,03"	63° 47' 46"	0,53%
11:00	250° 00' 51"	-4° 48' 34"	247° 35' 19"	-26° 42' 20"	54' 19"	14' 47,86"	61° 44' 20"	0,48%
12:00	250° 30' 56"	-4° 47' 47"	248° 08' 38"	-26° 46' 04"	54' 18"	14' 47,70"	59° 30' 13"	0,44%
13:00	251° 01' 00"	-4° 46' 59"	248° 41' 58"	-26° 49' 40"	54' 17"	14' 47,54"	57° 04' 06"	0,40%
14:00	251° 31' 03"	-4° 46' 09"	249° 15' 20"	-26° 53' 09"	54' 17"	14' 47,38"	54° 24' 31"	0,36%
15:00	252° 01' 06"	-4° 45' 18"	249° 48' 43"	-26° 56' 29"	54' 16"	14' 47,23"	51° 29' 56"	0,33%
16:00	252° 31' 08"	-4° 44' 26"	250° 22' 07"	-26° 59' 41"	54' 16"	14' 47,07"	48° 18' 43"	0,30%
17:00	253° 01' 09"	-4° 43' 32"	250° 55' 32"	-27° 02' 45"	54' 15"	14' 46,92"	44° 49' 12"	0,27%
18:00	253° 31' 10"	-4° 42' 38"	251° 28' 59"	-27° 05' 42"	54' 15"	14' 46,77"	40° 59' 53"	0,24%
19:00	254° 01' 10"	-4° 41' 41"	252° 02' 26"	-27° 08' 30"	54' 14"	14' 46,62"	36° 49' 30"	0,22%
20:00	254° 31' 09"	-4° 40' 44"	252° 35' 55"	-27° 11' 10"	54' 13"	14' 46,48"	32° 17' 23"	0,21%
21:00	255° 01' 08"	-4° 39' 45"	253° 09' 24"	-27° 13' 43"	54' 13"	14' 46,34"	27° 23' 37"	0,19%
22:00	255° 31' 06"	-4° 38' 45"	253° 42' 55"	-27° 16' 07"	54' 12"	14' 46,19"	22° 09' 32"	0,18%
23:00	256° 01' 03"	-4° 37' 44"	254° 16' 26"	-27° 18' 23"	54' 12"	14' 46,06"	16° 37' 47"	0,17%
24:00	256° 31' 00"	-4° 36' 41"	254° 49' 57"	-27° 20' 31"	54' 11"	14' 45,92"	10° 52' 33"	0,16%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	256° 54' 36"	-0,28"	255° 46' 44"	-22° 47' 38"	0,9850525	16' 14,19"	23° 26' 16"	07m 54s
01:00	256° 57' 09"	-0,27"	255° 49' 28"	-22° 47' 53"	0,9850471	16' 14,20"	23° 26' 16"	07m 53s
02:00	256° 59' 41"	-0,27"	255° 52' 13"	-22° 48' 08"	0,9850418	16' 14,20"	23° 26' 16"	07m 52s
03:00	257° 02' 14"	-0,27"	255° 54' 58"	-22° 48' 22"	0,9850365	16' 14,21"	23° 26' 16"	07m 51s
04:00	257° 04' 46"	-0,27"	255° 57' 42"	-22° 48' 37"	0,9850312	16' 14,21"	23° 26' 16"	07m 49s
05:00	257° 07' 18"	-0,27"	256° 00' 27"	-22° 48' 52"	0,9850258	16' 14,22"	23° 26' 16"	07m 48s
06:00	257° 09' 51"	-0,26"	256° 03' 11"	-22° 49' 07"	0,9850205	16' 14,22"	23° 26' 16"	07m 47s
07:00	257° 12' 23"	-0,26"	256° 05' 56"	-22° 49' 21"	0,9850152	16' 14,23"	23° 26' 16"	07m 46s
08:00	257° 14' 56"	-0,26"	256° 08' 41"	-22° 49' 36"	0,9850099	16' 14,23"	23° 26' 16"	07m 45s
09:00	257° 17' 28"	-0,26"	256° 11' 25"	-22° 49' 50"	0,9850046	16' 14,24"	23° 26' 16"	07m 44s
10:00	257° 20' 01"	-0,25"	256° 14' 10"	-22° 50' 05"	0,9849993	16' 14,24"	23° 26' 16"	07m 43s
11:00	257° 22' 33"	-0,25"	256° 16' 54"	-22° 50' 19"	0,9849940	16' 14,25"	23° 26' 16"	07m 42s
12:00	257° 25' 05"	-0,25"	256° 19' 39"	-22° 50' 33"	0,9849888	16' 14,25"	23° 26' 16"	07m 40s
13:00	257° 27' 38"	-0,25"	256° 22' 24"	-22° 50' 48"	0,9849835	16' 14,26"	23° 26' 16"	07m 39s
14:00	257° 30' 10"	-0,24"	256° 25' 09"	-22° 51' 02"	0,9849782	16' 14,27"	23° 26' 16"	07m 38s
15:00	257° 32' 43"	-0,24"	256° 27' 53"	-22° 51' 16"	0,9849730	16' 14,27"	23° 26' 16"	07m 37s
16:00	257° 35' 15"	-0,24"	256° 30' 38"	-22° 51' 30"	0,9849677	16' 14,28"	23° 26' 16"	07m 36s
17:00	257° 37' 48"	-0,23"	256° 33' 23"	-22° 51' 44"	0,9849625	16' 14,28"	23° 26' 16"	07m 35s
18:00	257° 40' 20"	-0,23"	256° 36' 07"	-22° 51' 58"	0,9849572	16' 14,29"	23° 26' 16"	07m 34s
19:00	257° 42' 53"	-0,23"	256° 38' 52"	-22° 52' 12"	0,9849520	16' 14,29"	23° 26' 16"	07m 33s
20:00	257° 45' 25"	-0,23"	256° 41' 37"	-22° 52' 26"	0,9849467	16' 14,30"	23° 26' 16"	07m 31s
21:00	257° 47' 57"	-0,22"	256° 44' 22"	-22° 52' 40"	0,9849415	16' 14,30"	23° 26' 16"	07m 30s
22:00	257° 50' 30"	-0,22"	256° 47' 06"	-22° 52' 54"	0,9849363	16' 14,31"	23° 26' 16"	07m 29s
23:00	257° 53' 02"	-0,22"	256° 49' 51"	-22° 53' 08"	0,9849311	16' 14,31"	23° 26' 16"	07m 28s
24:00	257° 55' 35"	-0,21"	256° 52' 36"	-22° 53' 22"	0,9849259	16' 14,32"	23° 26' 16"	07m 27s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	256° 31' 00"	-4° 36' 41"	254° 49' 57"	-27° 20' 31"	54' 11"	14' 45,92"	10° 52' 33"	0,16%
01:00	257° 00' 56"	-4° 35' 37"	255° 23' 30"	-27° 22' 31"	54' 11"	14' 45,78"	4° 59' 20"	0,16%
02:00	257° 30' 51"	-4° 34' 32"	255° 57' 03"	-27° 24' 23"	54' 10"	14' 45,65"	359° 04' 30"	0,16%
03:00	258° 00' 46"	-4° 33' 26"	256° 30' 36"	-27° 26' 07"	54' 10"	14' 45,52"	353° 14' 35"	0,17%
04:00	258° 30' 40"	-4° 32' 18"	257° 04' 10"	-27° 27' 43"	54' 09"	14' 45,39"	347° 35' 36"	0,17%
05:00	259° 00' 34"	-4° 31' 10"	257° 37' 45"	-27° 29' 11"	54' 09"	14' 45,27"	342° 12' 23"	0,18%
06:00	259° 30' 27"	-4° 30' 00"	258° 11' 19"	-27° 30' 30"	54' 09"	14' 45,14"	337° 08' 21"	0,20%
07:00	260° 00' 19"	-4° 28' 48"	258° 44' 54"	-27° 31' 42"	54' 08"	14' 45,02"	332° 25' 26"	0,21%
08:00	260° 30' 11"	-4° 27' 36"	259° 18' 29"	-27° 32' 45"	54' 08"	14' 44,90"	328° 04' 18"	0,23%
09:00	261° 00' 02"	-4° 26' 22"	259° 52' 04"	-27° 33' 40"	54' 07"	14' 44,79"	324° 04' 35"	0,26%
10:00	261° 29' 52"	-4° 25' 07"	260° 25' 39"	-27° 34' 27"	54' 07"	14' 44,67"	320° 25' 18"	0,28%
11:00	261° 59' 42"	-4° 23' 51"	260° 59' 14"	-27° 35' 06"	54' 06"	14' 44,56"	317° 05' 02"	0,31%
12:00	262° 29' 32"	-4° 22' 34"	261° 32' 48"	-27° 35' 37"	54' 06"	14' 44,45"	314° 02' 10"	0,34%
13:00	262° 59' 20"	-4° 21' 15"	262° 06' 23"	-27° 36' 00"	54' 06"	14' 44,34"	311° 15' 02"	0,38%
14:00	263° 29' 09"	-4° 19' 56"	262° 39' 57"	-27° 36' 15"	54' 05"	14' 44,24"	308° 42' 04"	0,42%
15:00	263° 58' 56"	-4° 18' 35"	263° 13' 30"	-27° 36' 21"	54' 05"	14' 44,13"	306° 21' 45"	0,46%
16:00	264° 28' 43"	-4° 17' 13"	263° 47' 04"	-27° 36' 20"	54' 05"	14' 44,03"	304° 12' 42"	0,50%
17:00	264° 58' 30"	-4° 15' 50"	264° 20' 36"	-27° 36' 10"	54' 04"	14' 43,93"	302° 13' 41"	0,55%
18:00	265° 28' 16"	-4° 14' 25"	264° 54' 08"	-27° 35' 53"	54' 04"	14' 43,84"	300° 23' 36"	0,60%
19:00	265° 58' 02"	-4° 13' 00"	265° 27' 39"	-27° 35' 27"	54' 03"	14' 43,74"	298° 41' 29"	0,66%
20:00	266° 27' 47"	-4° 11' 33"	266° 01' 10"	-27° 34' 53"	54' 03"	14' 43,65"	297° 06' 27"	0,71%
21:00	266° 57' 31"	-4° 10' 06"	266° 34' 40"	-27° 34' 11"	54' 03"	14' 43,56"	295° 37' 46"	0,77%
22:00	267° 27' 15"	-4° 08' 37"	267° 08' 08"	-27° 33' 21"	54' 02"	14' 43,48"	294° 14' 46"	0,84%
23:00	267° 56' 58"	-4° 07' 07"	267° 41' 36"	-27° 32' 23"	54' 02"	14' 43,39"	292° 56' 52"	0,90%
24:00	268° 26' 41"	-4° 05' 36"	268° 15' 03"	-27° 31' 17"	54' 02"	14' 43,31"	291° 43' 33"	0,97%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	257° 55' 35"	-0,21"	256° 52' 36"	-22° 53' 22"	0,9849259	16' 14,32"	23° 26' 16"	07m 27s
01:00	257° 58' 07"	-0,21"	256° 55' 21"	-22° 53' 36"	0,9849207	16' 14,32"	23° 26' 16"	07m 26s
02:00	258° 00' 40"	-0,21"	256° 58' 06"	-22° 53' 49"	0,9849155	16' 14,33"	23° 26' 16"	07m 25s
03:00	258° 03' 12"	-0,20"	257° 00' 51"	-22° 54' 03"	0,9849103	16' 14,33"	23° 26' 16"	07m 24s
04:00	258° 05' 45"	-0,20"	257° 03' 35"	-22° 54' 17"	0,9849051	16' 14,34"	23° 26' 16"	07m 22s
05:00	258° 08' 17"	-0,20"	257° 06' 20"	-22° 54' 30"	0,9848999	16' 14,34"	23° 26' 16"	07m 21s
06:00	258° 10' 50"	-0,20"	257° 09' 05"	-22° 54' 44"	0,9848948	16' 14,35"	23° 26' 16"	07m 20s
07:00	258° 13' 22"	-0,19"	257° 11' 50"	-22° 54' 57"	0,9848896	16' 14,35"	23° 26' 16"	07m 19s
08:00	258° 15' 54"	-0,19"	257° 14' 35"	-22° 55' 10"	0,9848844	16' 14,36"	23° 26' 16"	07m 18s
09:00	258° 18' 27"	-0,18"	257° 17' 20"	-22° 55' 24"	0,9848793	16' 14,36"	23° 26' 16"	07m 17s
10:00	258° 20' 59"	-0,18"	257° 20' 05"	-22° 55' 37"	0,9848741	16' 14,37"	23° 26' 16"	07m 16s
11:00	258° 23' 32"	-0,18"	257° 22' 50"	-22° 55' 50"	0,9848690	16' 14,37"	23° 26' 16"	07m 14s
12:00	258° 26' 04"	-0,17"	257° 25' 35"	-22° 56' 04"	0,9848638	16' 14,38"	23° 26' 16"	07m 13s
13:00	258° 28' 37"	-0,17"	257° 28' 20"	-22° 56' 17"	0,9848587	16' 14,38"	23° 26' 16"	07m 12s
14:00	258° 31' 09"	-0,17"	257° 31' 04"	-22° 56' 30"	0,9848536	16' 14,39"	23° 26' 16"	07m 11s
15:00	258° 33' 42"	-0,16"	257° 33' 49"	-22° 56' 43"	0,9848485	16' 14,39"	23° 26' 16"	07m 10s
16:00	258° 36' 14"	-0,16"	257° 36' 34"	-22° 56' 56"	0,9848434	16' 14,40"	23° 26' 16"	07m 09s
17:00	258° 38' 47"	-0,16"	257° 39' 19"	-22° 57' 09"	0,9848382	16' 14,40"	23° 26' 16"	07m 08s
18:00	258° 41' 19"	-0,15"	257° 42' 04"	-22° 57' 22"	0,9848331	16' 14,41"	23° 26' 16"	07m 06s
19:00	258° 43' 52"	-0,15"	257° 44' 49"	-22° 57' 35"	0,9848280	16' 14,41"	23° 26' 16"	07m 05s
20:00	258° 46' 24"	-0,15"	257° 47' 34"	-22° 57' 48"	0,9848230	16' 14,42"	23° 26' 16"	07m 04s
21:00	258° 48' 57"	-0,14"	257° 50' 19"	-22° 58' 01"	0,9848179	16' 14,42"	23° 26' 16"	07m 03s
22:00	258° 51' 29"	-0,14"	257° 53' 04"	-22° 58' 13"	0,9848128	16' 14,43"	23° 26' 16"	07m 02s
23:00	258° 54' 02"	-0,13"	257° 55' 50"	-22° 58' 26"	0,9848077	16' 14,43"	23° 26' 16"	07m 01s
24:00	258° 56' 34"	-0,13"	257° 58' 35"	-22° 58' 39"	0,9848027	16' 14,44"	23° 26' 16"	07m 00s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	268° 26' 41"	-4° 05' 36"	268° 15' 03"	-27° 31' 17"	54' 02"	14' 43,31"	291° 43' 33"	0,97%
01:00	268° 56' 24"	-4° 04' 03"	268° 48' 28"	-27° 30' 03"	54' 02"	14' 43,23"	290° 34' 22"	1,04%
02:00	269° 26' 05"	-4° 02' 30"	269° 21' 52"	-27° 28' 41"	54' 01"	14' 43,15"	289° 28' 56"	1,12%
03:00	269° 55' 47"	-4° 00' 56"	269° 55' 15"	-27° 27' 11"	54' 01"	14' 43,08"	288° 26' 53"	1,20%
04:00	270° 25' 28"	-3° 59' 20"	270° 28' 37"	-27° 25' 33"	54' 01"	14' 43,00"	287° 27' 54"	1,28%
05:00	270° 55' 08"	-3° 57' 44"	271° 01' 57"	-27° 23' 48"	54' 00"	14' 42,93"	286° 31' 44"	1,36%
06:00	271° 24' 48"	-3° 56' 06"	271° 35' 16"	-27° 21' 54"	54' 00"	14' 42,87"	285° 38' 08"	1,45%
07:00	271° 54' 28"	-3° 54' 27"	272° 08' 33"	-27° 19' 52"	54' 00"	14' 42,80"	284° 46' 53"	1,54%
08:00	272° 24' 07"	-3° 52' 48"	272° 41' 49"	-27° 17' 42"	54' 00"	14' 42,74"	283° 57' 47"	1,63%
09:00	272° 53' 46"	-3° 51' 07"	273° 15' 03"	-27° 15' 25"	54' 00"	14' 42,68"	283° 10' 39"	1,73%
10:00	273° 23' 24"	-3° 49' 25"	273° 48' 15"	-27° 13' 00"	53' 59"	14' 42,62"	282° 25' 21"	1,83%
11:00	273° 53' 02"	-3° 47' 42"	274° 21' 25"	-27° 10' 27"	53' 59"	14' 42,57"	281° 41' 44"	1,93%
12:00	274° 22' 39"	-3° 45' 59"	274° 54' 33"	-27° 07' 46"	53' 59"	14' 42,52"	280° 59' 40"	2,04%
13:00	274° 52' 16"	-3° 44' 14"	275° 27' 40"	-27° 04' 57"	53' 59"	14' 42,47"	280° 19' 03"	2,15%
14:00	275° 21' 52"	-3° 42' 28"	276° 00' 44"	-27° 02' 01"	53' 59"	14' 42,42"	279° 39' 47"	2,26%
15:00	275° 51' 29"	-3° 40' 41"	276° 33' 46"	-26° 58' 57"	53' 58"	14' 42,37"	279° 01' 46"	2,37%
16:00	276° 21' 04"	-3° 38' 53"	277° 06' 46"	-26° 55' 45"	53' 58"	14' 42,33"	278° 24' 55"	2,49%
17:00	276° 50' 40"	-3° 37' 04"	277° 39' 44"	-26° 52' 25"	53' 58"	14' 42,29"	277° 49' 10"	2,61%
18:00	277° 20' 15"	-3° 35' 15"	278° 12' 40"	-26° 48' 58"	53' 58"	14' 42,26"	277° 14' 26"	2,73%
19:00	277° 49' 49"	-3° 33' 24"	278° 45' 34"	-26° 45' 24"	53' 58"	14' 42,22"	276° 40' 39"	2,86%
20:00	278° 19' 24"	-3° 31' 32"	279° 18' 25"	-26° 41' 41"	53' 58"	14' 42,19"	276° 07' 47"	2,99%
21:00	278° 48' 58"	-3° 29' 40"	279° 51' 13"	-26° 37' 51"	53' 58"	14' 42,16"	275° 35' 45"	3,12%
22:00	279° 18' 31"	-3° 27' 46"	280° 23' 59"	-26° 33' 54"	53' 58"	14' 42,14"	275° 04' 31"	3,25%
23:00	279° 48' 05"	-3° 25' 51"	280° 56' 43"	-26° 29' 49"	53' 57"	14' 42,11"	274° 34' 03"	3,39%
24:00	280° 17' 38"	-3° 23' 56"	281° 29' 24"	-26° 25' 37"	53' 57"	14' 42,09"	274° 04' 18"	3,53%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	258° 56' 34"	-0,13"	257° 58' 35"	-22° 58' 39"	0,9848027	16' 14,44"	23° 26' 16"	07m 00s
01:00	258° 59' 07"	-0,13"	258° 01' 20"	-22° 58' 51"	0,9847976	16' 14,44"	23° 26' 16"	06m 58s
02:00	259° 01' 39"	-0,12"	258° 04' 05"	-22° 59' 04"	0,9847925	16' 14,45"	23° 26' 16"	06m 57s
03:00	259° 04' 12"	-0,12"	258° 06' 50"	-22° 59' 16"	0,9847875	16' 14,45"	23° 26' 16"	06m 56s
04:00	259° 06' 44"	-0,11"	258° 09' 35"	-22° 59' 29"	0,9847825	16' 14,46"	23° 26' 16"	06m 55s
05:00	259° 09' 17"	-0,11"	258° 12' 20"	-22° 59' 41"	0,9847774	16' 14,46"	23° 26' 16"	06m 54s
06:00	259° 11' 49"	-0,11"	258° 15' 05"	-22° 59' 54"	0,9847724	16' 14,47"	23° 26' 16"	06m 53s
07:00	259° 14' 22"	-0,10"	258° 17' 50"	-23° 00' 06"	0,9847674	16' 14,47"	23° 26' 16"	06m 52s
08:00	259° 16' 54"	-0,10"	258° 20' 35"	-23° 00' 18"	0,9847624	16' 14,48"	23° 26' 16"	06m 50s
09:00	259° 19' 27"	-0,09"	258° 23' 21"	-23° 00' 30"	0,9847573	16' 14,48"	23° 26' 16"	06m 49s
10:00	259° 21' 59"	-0,09"	258° 26' 06"	-23° 00' 43"	0,9847523	16' 14,49"	23° 26' 16"	06m 48s
11:00	259° 24' 32"	-0,08"	258° 28' 51"	-23° 00' 55"	0,9847473	16' 14,49"	23° 26' 16"	06m 47s
12:00	259° 27' 04"	-0,08"	258° 31' 36"	-23° 01' 07"	0,9847424	16' 14,50"	23° 26' 16"	06m 46s
13:00	259° 29' 37"	-0,08"	258° 34' 21"	-23° 01' 19"	0,9847374	16' 14,50"	23° 26' 16"	06m 45s
14:00	259° 32' 09"	-0,07"	258° 37' 06"	-23° 01' 31"	0,9847324	16' 14,51"	23° 26' 16"	06m 43s
15:00	259° 34' 42"	-0,07"	258° 39' 52"	-23° 01' 43"	0,9847274	16' 14,51"	23° 26' 16"	06m 42s
16:00	259° 37' 14"	-0,06"	258° 42' 37"	-23° 01' 55"	0,9847224	16' 14,52"	23° 26' 16"	06m 41s
17:00	259° 39' 47"	-0,06"	258° 45' 22"	-23° 02' 07"	0,9847175	16' 14,52"	23° 26' 16"	06m 40s
18:00	259° 42' 19"	-0,05"	258° 48' 07"	-23° 02' 18"	0,9847125	16' 14,53"	23° 26' 16"	06m 39s
19:00	259° 44' 52"	-0,05"	258° 50' 53"	-23° 02' 30"	0,9847076	16' 14,53"	23° 26' 16"	06m 38s
20:00	259° 47' 24"	-0,05"	258° 53' 38"	-23° 02' 42"	0,9847026	16' 14,54"	23° 26' 16"	06m 37s
21:00	259° 49' 57"	-0,04"	258° 56' 23"	-23° 02' 53"	0,9846977	16' 14,54"	23° 26' 16"	06m 35s
22:00	259° 52' 29"	-0,04"	258° 59' 08"	-23° 03' 05"	0,9846928	16' 14,55"	23° 26' 16"	06m 34s
23:00	259° 55' 02"	-0,03"	259° 01' 54"	-23° 03' 17"	0,9846878	16' 14,55"	23° 26' 16"	06m 33s
24:00	259° 57' 34"	-0,03"	259° 04' 39"	-23° 03' 28"	0,9846829	16' 14,56"	23° 26' 16"	06m 32s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	280° 17' 38"	-3° 23' 56"	281° 29' 24"	-26° 25' 37"	53' 57"	14' 42,09"	274° 04' 18"	3,53%
01:00	280° 47' 10"	-3° 22' 00"	282° 02' 02"	-26° 21' 17"	53' 57"	14' 42,08"	273° 35' 13"	3,68%
02:00	281° 16' 43"	-3° 20' 02"	282° 34' 38"	-26° 16' 50"	53' 57"	14' 42,06"	273° 06' 46"	3,82%
03:00	281° 46' 15"	-3° 18' 04"	283° 07' 11"	-26° 12' 16"	53' 57"	14' 42,05"	272° 38' 57"	3,97%
04:00	282° 15' 46"	-3° 16' 05"	283° 39' 41"	-26° 07' 34"	53' 57"	14' 42,04"	272° 11' 42"	4,12%
05:00	282° 45' 18"	-3° 14' 05"	284° 12' 09"	-26° 02' 45"	53' 57"	14' 42,03"	271° 45' 00"	4,28%
06:00	283° 14' 49"	-3° 12' 04"	284° 44' 33"	-25° 57' 49"	53' 57"	14' 42,03"	271° 18' 50"	4,44%
07:00	283° 44' 20"	-3° 10' 03"	285° 16' 55"	-25° 52' 45"	53' 57"	14' 42,03"	270° 53' 10"	4,60%
08:00	284° 13' 51"	-3° 08' 00"	285° 49' 13"	-25° 47' 35"	53' 57"	14' 42,03"	270° 28' 00"	4,76%
09:00	284° 43' 22"	-3° 05' 57"	286° 21' 29"	-25° 42' 17"	53' 57"	14' 42,04"	270° 03' 16"	4,92%
10:00	285° 12' 52"	-3° 03' 53"	286° 53' 42"	-25° 36' 52"	53' 57"	14' 42,04"	269° 39' 00"	5,09%
11:00	285° 42' 22"	-3° 01' 48"	287° 25' 51"	-25° 31' 20"	53' 57"	14' 42,05"	269° 15' 09"	5,26%
12:00	286° 11' 52"	-2° 59' 42"	287° 57' 58"	-25° 25' 41"	53' 57"	14' 42,07"	268° 51' 43"	5,44%
13:00	286° 41' 22"	-2° 57' 35"	288° 30' 01"	-25° 19' 55"	53' 57"	14' 42,09"	268° 28' 40"	5,62%
14:00	287° 10' 51"	-2° 55' 28"	289° 02' 02"	-25° 14' 02"	53' 57"	14' 42,10"	268° 06' 00"	5,80%
15:00	287° 40' 21"	-2° 53' 19"	289° 33' 59"	-25° 08' 03"	53' 58"	14' 42,13"	267° 43' 42"	5,98%
16:00	288° 09' 50"	-2° 51' 10"	290° 05' 53"	-25° 01' 56"	53' 58"	14' 42,15"	267° 21' 46"	6,16%
17:00	288° 39' 19"	-2° 49' 01"	290° 37' 43"	-24° 55' 43"	53' 58"	14' 42,18"	267° 00' 10"	6,35%
18:00	289° 08' 48"	-2° 46' 50"	291° 09' 31"	-24° 49' 22"	53' 58"	14' 42,21"	266° 38' 53"	6,54%
19:00	289° 38' 17"	-2° 44' 39"	291° 41' 15"	-24° 42' 55"	53' 58"	14' 42,25"	266° 17' 57"	6,74%
20:00	290° 07' 46"	-2° 42' 27"	292° 12' 56"	-24° 36' 22"	53' 58"	14' 42,29"	265° 57' 18"	6,93%
21:00	290° 37' 14"	-2° 40' 14"	292° 44' 33"	-24° 29' 42"	53' 58"	14' 42,33"	265° 36' 58"	7,13%
22:00	291° 06' 43"	-2° 38' 00"	293° 16' 07"	-24° 22' 55"	53' 58"	14' 42,37"	265° 16' 56"	7,33%
23:00	291° 36' 11"	-2° 35' 46"	293° 47' 38"	-24° 16' 01"	53' 59"	14' 42,42"	264° 57' 11"	7,54%
24:00	292° 05' 40"	-2° 33' 31"	294° 19' 05"	-24° 09' 01"	53' 59"	14' 42,47"	264° 37' 42"	7,74%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	259° 57' 34"	-0,03"	259° 04' 39"	-23° 03' 28"	0,9846829	16' 14,56"	23° 26' 16"	06m 32s
01:00	260° 00' 07"	-0,02"	259° 07' 24"	-23° 03' 40"	0,9846780	16' 14,56"	23° 26' 16"	06m 31s
02:00	260° 02' 39"	-0,02"	259° 10' 09"	-23° 03' 51"	0,9846731	16' 14,57"	23° 26' 16"	06m 30s
03:00	260° 05' 12"	-0,01"	259° 12' 55"	-23° 04' 02"	0,9846682	16' 14,57"	23° 26' 16"	06m 28s
04:00	260° 07' 44"	-0,01"	259° 15' 40"	-23° 04' 14"	0,9846633	16' 14,58"	23° 26' 16"	06m 27s
05:00	260° 10' 17"	-0,00"	259° 18' 25"	-23° 04' 25"	0,9846584	16' 14,58"	23° 26' 16"	06m 26s
06:00	260° 12' 49"	0,00"	259° 21' 11"	-23° 04' 36"	0,9846536	16' 14,59"	23° 26' 16"	06m 25s
07:00	260° 15' 22"	0,01"	259° 23' 56"	-23° 04' 47"	0,9846487	16' 14,59"	23° 26' 16"	06m 24s
08:00	260° 17' 54"	0,01"	259° 26' 41"	-23° 04' 59"	0,9846438	16' 14,60"	23° 26' 16"	06m 23s
09:00	260° 20' 27"	0,02"	259° 29' 27"	-23° 05' 10"	0,9846390	16' 14,60"	23° 26' 16"	06m 21s
10:00	260° 23' 00"	0,02"	259° 32' 12"	-23° 05' 21"	0,9846341	16' 14,61"	23° 26' 16"	06m 20s
11:00	260° 25' 32"	0,03"	259° 34' 58"	-23° 05' 32"	0,9846293	16' 14,61"	23° 26' 16"	06m 19s
12:00	260° 28' 05"	0,03"	259° 37' 43"	-23° 05' 43"	0,9846244	16' 14,62"	23° 26' 16"	06m 18s
13:00	260° 30' 37"	0,03"	259° 40' 28"	-23° 05' 53"	0,9846196	16' 14,62"	23° 26' 16"	06m 17s
14:00	260° 33' 10"	0,04"	259° 43' 14"	-23° 06' 04"	0,9846148	16' 14,62"	23° 26' 16"	06m 16s
15:00	260° 35' 42"	0,04"	259° 45' 59"	-23° 06' 15"	0,9846099	16' 14,63"	23° 26' 16"	06m 14s
16:00	260° 38' 15"	0,05"	259° 48' 45"	-23° 06' 26"	0,9846051	16' 14,63"	23° 26' 16"	06m 13s
17:00	260° 40' 47"	0,05"	259° 51' 30"	-23° 06' 37"	0,9846003	16' 14,64"	23° 26' 16"	06m 12s
18:00	260° 43' 20"	0,06"	259° 54' 16"	-23° 06' 47"	0,9845955	16' 14,64"	23° 26' 16"	06m 11s
19:00	260° 45' 52"	0,06"	259° 57' 01"	-23° 06' 58"	0,9845907	16' 14,65"	23° 26' 16"	06m 10s
20:00	260° 48' 25"	0,07"	259° 59' 46"	-23° 07' 08"	0,9845859	16' 14,65"	23° 26' 16"	06m 08s
21:00	260° 50' 57"	0,07"	260° 02' 32"	-23° 07' 19"	0,9845811	16' 14,66"	23° 26' 16"	06m 07s
22:00	260° 53' 30"	0,08"	260° 05' 17"	-23° 07' 29"	0,9845764	16' 14,66"	23° 26' 16"	06m 06s
23:00	260° 56' 03"	0,08"	260° 08' 03"	-23° 07' 40"	0,9845716	16' 14,67"	23° 26' 16"	06m 05s
24:00	260° 58' 35"	0,09"	260° 10' 48"	-23° 07' 50"	0,9845668	16' 14,67"	23° 26' 16"	06m 04s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	292° 05' 40"	-2° 33' 31"	294° 19' 05"	-24° 09' 01"	53' 59"	14' 42,47"	264° 37' 42"	7,74%
01:00	292° 35' 08"	-2° 31' 15"	294° 50' 29"	-24° 01' 55"	53' 59"	14' 42,52"	264° 18' 30"	7,95%
02:00	293° 04' 37"	-2° 28' 59"	295° 21' 50"	-23° 54' 42"	53' 59"	14' 42,58"	263° 59' 33"	8,16%
03:00	293° 34' 05"	-2° 26' 42"	295° 53' 07"	-23° 47' 23"	53' 59"	14' 42,64"	263° 40' 52"	8,38%
04:00	294° 03' 33"	-2° 24' 24"	296° 24' 20"	-23° 39' 57"	54' 00"	14' 42,71"	263° 22' 27"	8,59%
05:00	294° 33' 02"	-2° 22' 06"	296° 55' 30"	-23° 32' 26"	54' 00"	14' 42,77"	263° 04' 16"	8,81%
06:00	295° 02' 30"	-2° 19' 47"	297° 26' 37"	-23° 24' 48"	54' 00"	14' 42,84"	262° 46' 19"	9,04%
07:00	295° 31' 59"	-2° 17' 27"	297° 57' 40"	-23° 17' 03"	54' 00"	14' 42,92"	262° 28' 37"	9,26%
08:00	296° 01' 27"	-2° 15' 07"	298° 28' 40"	-23° 09' 13"	54' 01"	14' 42,99"	262° 11' 09"	9,49%
09:00	296° 30' 56"	-2° 12' 46"	298° 59' 36"	-23° 01' 16"	54' 01"	14' 43,07"	261° 53' 54"	9,72%
10:00	297° 00' 24"	-2° 10' 24"	299° 30' 29"	-22° 53' 14"	54' 01"	14' 43,16"	261° 36' 52"	9,95%
11:00	297° 29' 53"	-2° 08' 02"	300° 01' 18"	-22° 45' 05"	54' 02"	14' 43,24"	261° 20' 04"	10,18%
12:00	297° 59' 22"	-2° 05' 39"	300° 32' 04"	-22° 36' 50"	54' 02"	14' 43,33"	261° 03' 29"	10,42%
13:00	298° 28' 51"	-2° 03' 16"	301° 02' 46"	-22° 28' 30"	54' 02"	14' 43,43"	260° 47' 06"	10,66%
14:00	298° 58' 20"	-2° 00' 52"	301° 33' 25"	-22° 20' 03"	54' 03"	14' 43,52"	260° 30' 55"	10,90%
15:00	299° 27' 49"	-1° 58' 27"	302° 04' 00"	-22° 11' 31"	54' 03"	14' 43,62"	260° 14' 57"	11,15%
16:00	299° 57' 18"	-1° 56' 02"	302° 34' 32"	-22° 02' 53"	54' 03"	14' 43,73"	259° 59' 11"	11,40%
17:00	300° 26' 48"	-1° 53' 36"	303° 05' 00"	-21° 54' 09"	54' 04"	14' 43,84"	259° 43' 37"	11,64%
18:00	300° 56' 17"	-1° 51' 10"	303° 35' 25"	-21° 45' 20"	54' 04"	14' 43,95"	259° 28' 15"	11,90%
19:00	301° 25' 47"	-1° 48' 43"	304° 05' 46"	-21° 36' 25"	54' 05"	14' 44,06"	259° 13' 04"	12,15%
20:00	301° 55' 17"	-1° 46' 16"	304° 36' 04"	-21° 27' 24"	54' 05"	14' 44,18"	258° 58' 04"	12,41%
21:00	302° 24' 48"	-1° 43' 48"	305° 06' 18"	-21° 18' 17"	54' 05"	14' 44,30"	258° 43' 16"	12,67%
22:00	302° 54' 18"	-1° 41' 20"	305° 36' 29"	-21° 09' 06"	54' 06"	14' 44,43"	258° 28' 39"	12,93%
23:00	303° 23' 49"	-1° 38' 51"	306° 06' 37"	-20° 59' 48"	54' 06"	14' 44,56"	258° 14' 13"	13,19%
24:00	303° 53' 20"	-1° 36' 22"	306° 36' 41"	-20° 50' 26"	54' 07"	14' 44,69"	257° 59' 57"	13,46%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	260° 58' 35"	0,09"	260° 10' 48"	-23° 07' 50"	0,9845668	16' 14,67"	23° 26' 16"	06m 04s
01:00	261° 01' 08"	0,09"	260° 13' 34"	-23° 08' 01"	0,9845621	16' 14,68"	23° 26' 16"	06m 03s
02:00	261° 03' 40"	0,10"	260° 16' 19"	-23° 08' 11"	0,9845573	16' 14,68"	23° 26' 16"	06m 01s
03:00	261° 06' 13"	0,10"	260° 19' 05"	-23° 08' 21"	0,9845526	16' 14,69"	23° 26' 16"	06m 00s
04:00	261° 08' 45"	0,11"	260° 21' 50"	-23° 08' 31"	0,9845478	16' 14,69"	23° 26' 16"	05m 59s
05:00	261° 11' 18"	0,12"	260° 24' 36"	-23° 08' 41"	0,9845431	16' 14,70"	23° 26' 16"	05m 58s
06:00	261° 13' 50"	0,12"	260° 27' 22"	-23° 08' 51"	0,9845384	16' 14,70"	23° 26' 16"	05m 57s
07:00	261° 16' 23"	0,13"	260° 30' 07"	-23° 09' 01"	0,9845337	16' 14,71"	23° 26' 16"	05m 56s
08:00	261° 18' 55"	0,13"	260° 32' 53"	-23° 09' 11"	0,9845290	16' 14,71"	23° 26' 16"	05m 54s
09:00	261° 21' 28"	0,14"	260° 35' 38"	-23° 09' 21"	0,9845243	16' 14,71"	23° 26' 16"	05m 53s
10:00	261° 24' 01"	0,14"	260° 38' 24"	-23° 09' 31"	0,9845196	16' 14,72"	23° 26' 16"	05m 52s
11:00	261° 26' 33"	0,15"	260° 41' 09"	-23° 09' 41"	0,9845149	16' 14,72"	23° 26' 16"	05m 51s
12:00	261° 29' 06"	0,15"	260° 43' 55"	-23° 09' 51"	0,9845102	16' 14,73"	23° 26' 16"	05m 50s
13:00	261° 31' 38"	0,16"	260° 46' 41"	-23° 10' 01"	0,9845055	16' 14,73"	23° 26' 16"	05m 48s
14:00	261° 34' 11"	0,16"	260° 49' 26"	-23° 10' 10"	0,9845008	16' 14,74"	23° 26' 16"	05m 47s
15:00	261° 36' 43"	0,17"	260° 52' 12"	-23° 10' 20"	0,9844962	16' 14,74"	23° 26' 16"	05m 46s
16:00	261° 39' 16"	0,17"	260° 54' 57"	-23° 10' 30"	0,9844915	16' 14,75"	23° 26' 16"	05m 45s
17:00	261° 41' 49"	0,18"	260° 57' 43"	-23° 10' 39"	0,9844869	16' 14,75"	23° 26' 16"	05m 44s
18:00	261° 44' 21"	0,18"	261° 00' 29"	-23° 10' 49"	0,9844822	16' 14,76"	23° 26' 16"	05m 43s
19:00	261° 46' 54"	0,19"	261° 03' 14"	-23° 10' 58"	0,9844776	16' 14,76"	23° 26' 16"	05m 41s
20:00	261° 49' 26"	0,19"	261° 06' 00"	-23° 11' 07"	0,9844730	16' 14,77"	23° 26' 16"	05m 40s
21:00	261° 51' 59"	0,20"	261° 08' 46"	-23° 11' 17"	0,9844683	16' 14,77"	23° 26' 16"	05m 39s
22:00	261° 54' 31"	0,20"	261° 11' 31"	-23° 11' 26"	0,9844637	16' 14,77"	23° 26' 16"	05m 38s
23:00	261° 57' 04"	0,21"	261° 14' 17"	-23° 11' 35"	0,9844591	16' 14,78"	23° 26' 16"	05m 37s
24:00	261° 59' 36"	0,21"	261° 17' 03"	-23° 11' 45"	0,9844545	16' 14,78"	23° 26' 16"	05m 35s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	303° 53' 20"	-1° 36' 22"	306° 36' 41"	-20° 50' 26"	54' 07"	14' 44,69"	257° 59' 57"	13,46%
01:00	304° 22' 52"	-1° 33' 52"	307° 06' 42"	-20° 40' 57"	54' 07"	14' 44,82"	257° 45' 53"	13,73%
02:00	304° 52' 24"	-1° 31' 22"	307° 36' 39"	-20° 31' 24"	54' 08"	14' 44,96"	257° 31' 59"	14,00%
03:00	305° 21' 56"	-1° 28' 51"	308° 06' 34"	-20° 21' 45"	54' 08"	14' 45,11"	257° 18' 15"	14,27%
04:00	305° 51' 28"	-1° 26' 20"	308° 36' 24"	-20° 12' 01"	54' 09"	14' 45,25"	257° 04' 42"	14,55%
05:00	306° 21' 01"	-1° 23' 49"	309° 06' 12"	-20° 02' 12"	54' 10"	14' 45,40"	256° 51' 19"	14,82%
06:00	306° 50' 34"	-1° 21' 17"	309° 35' 56"	-19° 52' 18"	54' 10"	14' 45,56"	256° 38' 06"	15,10%
07:00	307° 20' 08"	-1° 18' 44"	310° 05' 37"	-19° 42' 19"	54' 11"	14' 45,72"	256° 25' 03"	15,39%
08:00	307° 49' 42"	-1° 16' 11"	310° 35' 14"	-19° 32' 14"	54' 11"	14' 45,88"	256° 12' 10"	15,67%
09:00	308° 19' 16"	-1° 13' 38"	311° 04' 49"	-19° 22' 05"	54' 12"	14' 46,04"	255° 59' 27"	15,96%
10:00	308° 48' 51"	-1° 11' 04"	311° 34' 20"	-19° 11' 50"	54' 13"	14' 46,21"	255° 46' 54"	16,25%
11:00	309° 18' 27"	-1° 08' 31"	312° 03' 48"	-19° 01' 31"	54' 13"	14' 46,39"	255° 34' 31"	16,54%
12:00	309° 48' 02"	-1° 05' 56"	312° 33' 13"	-18° 51' 07"	54' 14"	14' 46,57"	255° 22' 17"	16,83%
13:00	310° 17' 39"	-1° 03' 21"	313° 02' 34"	-18° 40' 38"	54' 14"	14' 46,75"	255° 10' 12"	17,13%
14:00	310° 47' 16"	-1° 00' 46"	313° 31' 53"	-18° 30' 04"	54' 15"	14' 46,93"	254° 58' 18"	17,42%
15:00	311° 16' 53"	-0° 58' 11"	314° 01' 09"	-18° 19' 26"	54' 16"	14' 47,12"	254° 46' 32"	17,72%
16:00	311° 46' 31"	-0° 55' 35"	314° 30' 21"	-18° 08' 42"	54' 17"	14' 47,31"	254° 34' 56"	18,03%
17:00	312° 16' 10"	-0° 52' 59"	314° 59' 31"	-17° 57' 55"	54' 17"	14' 47,51"	254° 23' 29"	18,33%
18:00	312° 45' 49"	-0° 50' 23"	315° 28' 38"	-17° 47' 02"	54' 18"	14' 47,71"	254° 12' 12"	18,64%
19:00	313° 15' 28"	-0° 47' 46"	315° 57' 41"	-17° 36' 05"	54' 19"	14' 47,91"	254° 01' 03"	18,95%
20:00	313° 45' 09"	-0° 45' 09"	316° 26' 42"	-17° 25' 04"	54' 20"	14' 48,12"	253° 50' 04"	19,26%
21:00	314° 14' 50"	-0° 42' 32"	316° 55' 40"	-17° 13' 58"	54' 20"	14' 48,33"	253° 39' 14"	19,57%
22:00	314° 44' 31"	-0° 39' 55"	317° 24' 35"	-17° 02' 48"	54' 21"	14' 48,55"	253° 28' 32"	19,88%
23:00	315° 14' 14"	-0° 37' 17"	317° 53' 28"	-16° 51' 33"	54' 22"	14' 48,77"	253° 18' 00"	20,20%
24:00	315° 43' 57"	-0° 34' 39"	318° 22' 17"	-16° 40' 14"	54' 23"	14' 49,00"	253° 07' 37"	20,52%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	261° 59' 36"	0,21"	261° 17' 03"	-23° 11' 45"	0,9844545	16' 14,78"	23° 26' 16"	05m 35s
01:00	262° 02' 09"	0,22"	261° 19' 48"	-23° 11' 54"	0,9844499	16' 14,79"	23° 26' 16"	05m 34s
02:00	262° 04' 42"	0,23"	261° 22' 34"	-23° 12' 03"	0,9844453	16' 14,79"	23° 26' 16"	05m 33s
03:00	262° 07' 14"	0,23"	261° 25' 20"	-23° 12' 12"	0,9844408	16' 14,80"	23° 26' 16"	05m 32s
04:00	262° 09' 47"	0,24"	261° 28' 05"	-23° 12' 21"	0,9844362	16' 14,80"	23° 26' 16"	05m 31s
05:00	262° 12' 19"	0,24"	261° 30' 51"	-23° 12' 30"	0,9844316	16' 14,81"	23° 26' 16"	05m 29s
06:00	262° 14' 52"	0,25"	261° 33' 37"	-23° 12' 39"	0,9844271	16' 14,81"	23° 26' 16"	05m 28s
07:00	262° 17' 24"	0,25"	261° 36' 23"	-23° 12' 48"	0,9844225	16' 14,82"	23° 26' 16"	05m 27s
08:00	262° 19' 57"	0,26"	261° 39' 08"	-23° 12' 57"	0,9844180	16' 14,82"	23° 26' 16"	05m 26s
09:00	262° 22' 30"	0,26"	261° 41' 54"	-23° 13' 05"	0,9844134	16' 14,82"	23° 26' 16"	05m 25s
10:00	262° 25' 02"	0,27"	261° 44' 40"	-23° 13' 14"	0,9844089	16' 14,83"	23° 26' 16"	05m 23s
11:00	262° 27' 35"	0,27"	261° 47' 26"	-23° 13' 23"	0,9844044	16' 14,83"	23° 26' 16"	05m 22s
12:00	262° 30' 07"	0,28"	261° 50' 11"	-23° 13' 31"	0,9843998	16' 14,84"	23° 26' 16"	05m 21s
13:00	262° 32' 40"	0,28"	261° 52' 57"	-23° 13' 40"	0,9843953	16' 14,84"	23° 26' 16"	05m 20s
14:00	262° 35' 13"	0,29"	261° 55' 43"	-23° 13' 49"	0,9843908	16' 14,85"	23° 26' 16"	05m 19s
15:00	262° 37' 45"	0,30"	261° 58' 29"	-23° 13' 57"	0,9843863	16' 14,85"	23° 26' 16"	05m 17s
16:00	262° 40' 18"	0,30"	262° 01' 15"	-23° 14' 06"	0,9843818	16' 14,86"	23° 26' 16"	05m 16s
17:00	262° 42' 50"	0,31"	262° 04' 00"	-23° 14' 14"	0,9843774	16' 14,86"	23° 26' 16"	05m 15s
18:00	262° 45' 23"	0,31"	262° 06' 46"	-23° 14' 22"	0,9843729	16' 14,86"	23° 26' 16"	05m 14s
19:00	262° 47' 55"	0,32"	262° 09' 32"	-23° 14' 31"	0,9843684	16' 14,87"	23° 26' 16"	05m 13s
20:00	262° 50' 28"	0,32"	262° 12' 18"	-23° 14' 39"	0,9843640	16' 14,87"	23° 26' 16"	05m 12s
21:00	262° 53' 01"	0,33"	262° 15' 04"	-23° 14' 47"	0,9843595	16' 14,88"	23° 26' 16"	05m 10s
22:00	262° 55' 33"	0,33"	262° 17' 49"	-23° 14' 55"	0,9843551	16' 14,88"	23° 26' 16"	05m 09s
23:00	262° 58' 06"	0,34"	262° 20' 35"	-23° 15' 03"	0,9843506	16' 14,89"	23° 26' 16"	05m 08s
24:00	263° 00' 38"	0,34"	262° 23' 21"	-23° 15' 11"	0,9843462	16' 14,89"	23° 26' 16"	05m 07s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	315° 43' 57"	-0° 34' 39"	318° 22' 17"	-16° 40' 14"	54' 23"	14' 49,00"	253° 07' 37"	20,52%
01:00	316° 13' 41"	-0° 32' 01"	318° 51' 04"	-16° 28' 50"	54' 24"	14' 49,22"	252° 57' 22"	20,84%
02:00	316° 43' 25"	-0° 29' 22"	319° 19' 49"	-16° 17' 23"	54' 24"	14' 49,46"	252° 47' 16"	21,16%
03:00	317° 13' 10"	-0° 26' 44"	319° 48' 30"	-16° 05' 51"	54' 25"	14' 49,69"	252° 37' 19"	21,49%
04:00	317° 42' 57"	-0° 24' 05"	320° 17' 10"	-15° 54' 15"	54' 26"	14' 49,93"	252° 27' 31"	21,81%
05:00	318° 12' 43"	-0° 21' 26"	320° 45' 46"	-15° 42' 35"	54' 27"	14' 50,18"	252° 17' 51"	22,14%
06:00	318° 42' 31"	-0° 18' 46"	321° 14' 20"	-15° 30' 51"	54' 28"	14' 50,43"	252° 08' 20"	22,47%
07:00	319° 12' 20"	-0° 16' 07"	321° 42' 52"	-15° 19' 03"	54' 29"	14' 50,68"	251° 58' 57"	22,80%
08:00	319° 42' 09"	-0° 13' 27"	322° 11' 21"	-15° 07' 11"	54' 30"	14' 50,94"	251° 49' 43"	23,14%
09:00	320° 11' 59"	-0° 10' 48"	322° 39' 48"	-14° 55' 15"	54' 31"	14' 51,20"	251° 40' 37"	23,47%
10:00	320° 41' 50"	-0° 08' 08"	323° 08' 13"	-14° 43' 15"	54' 32"	14' 51,46"	251° 31' 40"	23,81%
11:00	321° 11' 42"	-0° 05' 28"	323° 36' 35"	-14° 31' 12"	54' 33"	14' 51,73"	251° 22' 52"	24,15%
12:00	321° 41' 35"	-0° 02' 47"	324° 04' 55"	-14° 19' 04"	54' 34"	14' 52,01"	251° 14' 11"	24,49%
13:00	322° 11' 29"	-0° 00' 07"	324° 33' 13"	-14° 06' 53"	54' 35"	14' 52,28"	251° 05' 40"	24,84%
14:00	322° 41' 24"	0° 02' 33"	325° 01' 29"	-13° 54' 38"	54' 36"	14' 52,57"	250° 57' 16"	25,18%
15:00	323° 11' 20"	0° 05' 14"	325° 29' 43"	-13° 42' 19"	54' 37"	14' 52,85"	250° 49' 01"	25,53%
16:00	323° 41' 17"	0° 07' 54"	325° 57' 55"	-13° 29' 57"	54' 38"	14' 53,14"	250° 40' 54"	25,88%
17:00	324° 11' 15"	0° 10' 35"	326° 26' 04"	-13° 17' 31"	54' 39"	14' 53,44"	250° 32' 55"	26,23%
18:00	324° 41' 14"	0° 13' 15"	326° 54' 12"	-13° 05' 02"	54' 40"	14' 53,73"	250° 25' 05"	26,58%
19:00	325° 11' 14"	0° 15' 56"	327° 22' 18"	-12° 52' 29"	54' 41"	14' 54,04"	250° 17' 22"	26,93%
20:00	325° 41' 16"	0° 18' 37"	327° 50' 23"	-12° 39' 52"	54' 42"	14' 54,34"	250° 09' 48"	27,29%
21:00	326° 11' 18"	0° 21' 18"	328° 18' 25"	-12° 27' 13"	54' 43"	14' 54,66"	250° 02' 22"	27,65%
22:00	326° 41' 22"	0° 23' 58"	328° 46' 26"	-12° 14' 29"	54' 45"	14' 54,97"	249° 55' 05"	28,01%
23:00	327° 11' 26"	0° 26' 39"	329° 14' 25"	-12° 01' 43"	54' 46"	14' 55,29"	249° 47' 55"	28,37%
24:00	327° 41' 32"	0° 29' 20"	329° 42' 23"	-11° 48' 53"	54' 47"	14' 55,62"	249° 40' 53"	28,73%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	263° 00' 38"	0,34"	262° 23' 21"	-23° 15' 11"	0,9843462	16' 14,89"	23° 26' 16"	05m 07s
01:00	263° 03' 11"	0,35"	262° 26' 07"	-23° 15' 19"	0,9843418	16' 14,90"	23° 26' 16"	05m 06s
02:00	263° 05' 44"	0,35"	262° 28' 53"	-23° 15' 27"	0,9843374	16' 14,90"	23° 26' 16"	05m 04s
03:00	263° 08' 16"	0,36"	262° 31' 39"	-23° 15' 35"	0,9843330	16' 14,90"	23° 26' 16"	05m 03s
04:00	263° 10' 49"	0,36"	262° 34' 25"	-23° 15' 43"	0,9843286	16' 14,91"	23° 26' 16"	05m 02s
05:00	263° 13' 21"	0,37"	262° 37' 11"	-23° 15' 51"	0,9843242	16' 14,91"	23° 26' 16"	05m 01s
06:00	263° 15' 54"	0,38"	262° 39' 56"	-23° 15' 59"	0,9843198	16' 14,92"	23° 26' 16"	04m 59s
07:00	263° 18' 27"	0,38"	262° 42' 42"	-23° 16' 06"	0,9843154	16' 14,92"	23° 26' 16"	04m 58s
08:00	263° 20' 59"	0,39"	262° 45' 28"	-23° 16' 14"	0,9843110	16' 14,93"	23° 26' 16"	04m 57s
09:00	263° 23' 32"	0,39"	262° 48' 14"	-23° 16' 22"	0,9843067	16' 14,93"	23° 26' 16"	04m 56s
10:00	263° 26' 04"	0,40"	262° 51' 00"	-23° 16' 29"	0,9843023	16' 14,93"	23° 26' 16"	04m 55s
11:00	263° 28' 37"	0,40"	262° 53' 46"	-23° 16' 37"	0,9842980	16' 14,94"	23° 26' 16"	04m 53s
12:00	263° 31' 10"	0,41"	262° 56' 32"	-23° 16' 44"	0,9842936	16' 14,94"	23° 26' 16"	04m 52s
13:00	263° 33' 42"	0,41"	262° 59' 18"	-23° 16' 52"	0,9842893	16' 14,95"	23° 26' 16"	04m 51s
14:00	263° 36' 15"	0,42"	263° 02' 04"	-23° 16' 59"	0,9842849	16' 14,95"	23° 26' 16"	04m 50s
15:00	263° 38' 47"	0,42"	263° 04' 50"	-23° 17' 06"	0,9842806	16' 14,96"	23° 26' 16"	04m 49s
16:00	263° 41' 20"	0,43"	263° 07' 36"	-23° 17' 14"	0,9842763	16' 14,96"	23° 26' 16"	04m 47s
17:00	263° 43' 53"	0,43"	263° 10' 22"	-23° 17' 21"	0,9842720	16' 14,96"	23° 26' 16"	04m 46s
18:00	263° 46' 25"	0,44"	263° 13' 08"	-23° 17' 28"	0,9842677	16' 14,97"	23° 26' 16"	04m 45s
19:00	263° 48' 58"	0,44"	263° 15' 53"	-23° 17' 35"	0,9842634	16' 14,97"	23° 26' 16"	04m 44s
20:00	263° 51' 30"	0,45"	263° 18' 39"	-23° 17' 42"	0,9842592	16' 14,98"	23° 26' 16"	04m 43s
21:00	263° 54' 03"	0,45"	263° 21' 25"	-23° 17' 49"	0,9842549	16' 14,98"	23° 26' 16"	04m 41s
22:00	263° 56' 36"	0,46"	263° 24' 11"	-23° 17' 56"	0,9842506	16' 14,99"	23° 26' 16"	04m 40s
23:00	263° 59' 08"	0,46"	263° 26' 57"	-23° 18' 03"	0,9842464	16' 14,99"	23° 26' 16"	04m 39s
24:00	264° 01' 41"	0,47"	263° 29' 43"	-23° 18' 10"	0,9842421	16' 14,99"	23° 26' 16"	04m 38s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	327° 41' 32"	0° 29' 20"	329° 42' 23"	-11° 48' 53"	54' 47"	14' 55,62"	249° 40' 53"	28,73%
01:00	328° 11' 39"	0° 32' 01"	330° 10' 19"	-11° 36' 00"	54' 48"	14' 55,94"	249° 34' 00"	29,09%
02:00	328° 41' 48"	0° 34' 41"	330° 38' 14"	-11° 23' 04"	54' 49"	14' 56,28"	249° 27' 14"	29,46%
03:00	329° 11' 57"	0° 37' 22"	331° 06' 07"	-11° 10' 05"	54' 51"	14' 56,61"	249° 20' 37"	29,83%
04:00	329° 42' 08"	0° 40' 03"	331° 33' 59"	-10° 57' 02"	54' 52"	14' 56,95"	249° 14' 08"	30,20%
05:00	330° 12' 20"	0° 42' 43"	332° 01' 49"	-10° 43' 56"	54' 53"	14' 57,30"	249° 07' 46"	30,57%
06:00	330° 42' 34"	0° 45' 24"	332° 29' 39"	-10° 30' 48"	54' 54"	14' 57,65"	249° 01' 33"	30,94%
07:00	331° 12' 49"	0° 48' 04"	332° 57' 27"	-10° 17' 36"	54' 56"	14' 58,00"	248° 55' 28"	31,31%
08:00	331° 43' 05"	0° 50' 45"	333° 25' 14"	-10° 04' 22"	54' 57"	14' 58,36"	248° 49' 30"	31,69%
09:00	332° 13' 22"	0° 53' 25"	333° 53' 00"	-9° 51' 04"	54' 58"	14' 58,72"	248° 43' 41"	32,06%
10:00	332° 43' 41"	0° 56' 05"	334° 20' 45"	-9° 37' 44"	55' 00"	14' 59,09"	248° 37' 59"	32,44%
11:00	333° 14' 02"	0° 58' 45"	334° 48' 29"	-9° 24' 20"	55' 01"	14' 59,46"	248° 32' 26"	32,82%
12:00	333° 44' 24"	1° 01' 25"	335° 16' 12"	-9° 10' 54"	55' 03"	15' 00,00"	248° 27' 00"	33,20%
13:00	334° 14' 47"	1° 04' 04"	335° 43' 54"	-8° 57' 26"	55' 04"	15' 00,22"	248° 21' 43"	33,59%
14:00	334° 45' 12"	1° 06' 44"	336° 11' 36"	-8° 43' 54"	55' 05"	15' 00,60"	248° 16' 33"	33,97%
15:00	335° 15' 38"	1° 09' 23"	336° 39' 17"	-8° 30' 20"	55' 07"	15' 00,99"	248° 11' 31"	34,35%
16:00	335° 46' 06"	1° 12' 02"	337° 06' 57"	-8° 16' 43"	55' 08"	15' 01,38"	248° 06' 37"	34,74%
17:00	336° 16' 35"	1° 14' 41"	337° 34' 37"	-8° 03' 04"	55' 10"	15' 01,78"	248° 01' 51"	35,13%
18:00	336° 47' 07"	1° 17' 20"	338° 02' 16"	-7° 49' 22"	55' 11"	15' 02,18"	247° 57' 13"	35,52%
19:00	337° 17' 39"	1° 19' 58"	338° 29' 55"	-7° 35' 37"	55' 13"	15' 02,59"	247° 52' 43"	35,91%
20:00	337° 48' 13"	1° 22' 37"	338° 57' 34"	-7° 21' 51"	55' 14"	15' 03,00"	247° 48' 21"	36,30%
21:00	338° 18' 49"	1° 25' 15"	339° 25' 12"	-7° 08' 01"	55' 16"	15' 03,41"	247° 44' 06"	36,69%
22:00	338° 49' 27"	1° 27' 52"	339° 52' 50"	-6° 54' 10"	55' 17"	15' 03,83"	247° 40' 00"	37,09%
23:00	339° 20' 06"	1° 30' 30"	340° 20' 28"	-6° 40' 16"	55' 19"	15' 04,25"	247° 36' 01"	37,48%
24:00	339° 50' 47"	1° 33' 07"	340° 48' 06"	-6° 26' 19"	55' 20"	15' 04,68"	247° 32' 10"	37,88%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	264° 01' 41"	0,47"	263° 29' 43"	-23° 18' 10"	0,9842421	16' 14,99"	23° 26' 16"	04m 38s
01:00	264° 04' 13"	0,47"	263° 32' 29"	-23° 18' 17"	0,9842379	16' 15,00"	23° 26' 16"	04m 37s
02:00	264° 06' 46"	0,48"	263° 35' 15"	-23° 18' 24"	0,9842336	16' 15,00"	23° 26' 16"	04m 35s
03:00	264° 09' 19"	0,48"	263° 38' 01"	-23° 18' 31"	0,9842294	16' 15,01"	23° 26' 16"	04m 34s
04:00	264° 11' 51"	0,49"	263° 40' 47"	-23° 18' 37"	0,9842252	16' 15,01"	23° 26' 16"	04m 33s
05:00	264° 14' 24"	0,49"	263° 43' 33"	-23° 18' 44"	0,9842210	16' 15,01"	23° 26' 16"	04m 32s
06:00	264° 16' 56"	0,50"	263° 46' 19"	-23° 18' 51"	0,9842168	16' 15,02"	23° 26' 16"	04m 31s
07:00	264° 19' 29"	0,50"	263° 49' 05"	-23° 18' 57"	0,9842126	16' 15,02"	23° 26' 16"	04m 29s
08:00	264° 22' 02"	0,51"	263° 51' 52"	-23° 19' 04"	0,9842084	16' 15,03"	23° 26' 16"	04m 28s
09:00	264° 24' 34"	0,51"	263° 54' 38"	-23° 19' 10"	0,9842042	16' 15,03"	23° 26' 16"	04m 27s
10:00	264° 27' 07"	0,52"	263° 57' 24"	-23° 19' 17"	0,9842000	16' 15,04"	23° 26' 16"	04m 26s
11:00	264° 29' 40"	0,52"	264° 00' 10"	-23° 19' 23"	0,9841959	16' 15,04"	23° 26' 16"	04m 24s
12:00	264° 32' 12"	0,53"	264° 02' 56"	-23° 19' 29"	0,9841917	16' 15,04"	23° 26' 16"	04m 23s
13:00	264° 34' 45"	0,53"	264° 05' 42"	-23° 19' 35"	0,9841876	16' 15,05"	23° 26' 16"	04m 22s
14:00	264° 37' 17"	0,54"	264° 08' 28"	-23° 19' 42"	0,9841834	16' 15,05"	23° 26' 16"	04m 21s
15:00	264° 39' 50"	0,54"	264° 11' 14"	-23° 19' 48"	0,9841793	16' 15,06"	23° 26' 16"	04m 20s
16:00	264° 42' 23"	0,55"	264° 14' 00"	-23° 19' 54"	0,9841752	16' 15,06"	23° 26' 16"	04m 18s
17:00	264° 44' 55"	0,55"	264° 16' 46"	-23° 20' 00"	0,9841711	16' 15,06"	23° 26' 16"	04m 17s
18:00	264° 47' 28"	0,56"	264° 19' 32"	-23° 20' 06"	0,9841670	16' 15,07"	23° 26' 16"	04m 16s
19:00	264° 50' 01"	0,56"	264° 22' 18"	-23° 20' 12"	0,9841629	16' 15,07"	23° 26' 16"	04m 15s
20:00	264° 52' 33"	0,57"	264° 25' 04"	-23° 20' 18"	0,9841588	16' 15,08"	23° 26' 16"	04m 14s
21:00	264° 55' 06"	0,57"	264° 27' 50"	-23° 20' 24"	0,9841547	16' 15,08"	23° 26' 16"	04m 12s
22:00	264° 57' 38"	0,58"	264° 30' 37"	-23° 20' 30"	0,9841506	16' 15,08"	23° 26' 16"	04m 11s
23:00	265° 00' 11"	0,58"	264° 33' 23"	-23° 20' 35"	0,9841465	16' 15,09"	23° 26' 16"	04m 10s
24:00	265° 02' 44"	0,59"	264° 36' 09"	-23° 20' 41"	0,9841425	16' 15,09"	23° 26' 16"	04m 09s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	339° 50' 47"	1° 33' 07"	340° 48' 06"	-6° 26' 19"	55' 20"	15' 04,68"	247° 32' 10"	37,88%
01:00	340° 21' 30"	1° 35' 44"	341° 15' 43"	-6° 12' 21"	55' 22"	15' 05,11"	247° 28' 27"	38,28%
02:00	340° 52' 15"	1° 38' 21"	341° 43' 21"	-5° 58' 20"	55' 23"	15' 05,54"	247° 24' 52"	38,68%
03:00	341° 23' 01"	1° 40' 57"	342° 10' 59"	-5° 44' 17"	55' 25"	15' 05,98"	247° 21' 25"	39,08%
04:00	341° 53' 49"	1° 43' 33"	342° 38' 37"	-5° 30' 12"	55' 27"	15' 06,43"	247° 18' 06"	39,48%
05:00	342° 24' 39"	1° 46' 08"	343° 06' 15"	-5° 16' 05"	55' 28"	15' 06,88"	247° 14' 55"	39,88%
06:00	342° 55' 31"	1° 48' 44"	343° 33' 54"	-5° 01' 56"	55' 30"	15' 07,33"	247° 11' 52"	40,29%
07:00	343° 26' 25"	1° 51' 18"	344° 01' 33"	-4° 47' 45"	55' 32"	15' 07,78"	247° 08' 57"	40,69%
08:00	343° 57' 20"	1° 53' 53"	344° 29' 13"	-4° 33' 32"	55' 33"	15' 08,24"	247° 06' 09"	41,10%
09:00	344° 28' 18"	1° 56' 27"	344° 56' 53"	-4° 19' 17"	55' 35"	15' 08,71"	247° 03' 30"	41,51%
10:00	344° 59' 17"	1° 59' 01"	345° 24' 33"	-4° 05' 00"	55' 37"	15' 09,18"	247° 00' 58"	41,91%
11:00	345° 30' 19"	2° 01' 34"	345° 52' 15"	-3° 50' 41"	55' 39"	15' 09,65"	246° 58' 35"	42,32%
12:00	346° 01' 22"	2° 04' 07"	346° 19' 57"	-3° 36' 21"	55' 40"	15' 10,13"	246° 56' 19"	42,73%
13:00	346° 32' 28"	2° 06' 39"	346° 47' 40"	-3° 21' 59"	55' 42"	15' 10,61"	246° 54' 12"	43,14%
14:00	347° 03' 35"	2° 09' 11"	347° 15' 24"	-3° 07' 35"	55' 44"	15' 11,09"	246° 52' 12"	43,56%
15:00	347° 34' 45"	2° 11' 42"	347° 43' 09"	-2° 53' 10"	55' 46"	15' 11,58"	246° 50' 21"	43,97%
16:00	348° 05' 56"	2° 14' 13"	348° 10' 55"	-2° 38' 42"	55' 47"	15' 12,08"	246° 48' 37"	44,38%
17:00	348° 37' 10"	2° 16' 44"	348° 38' 42"	-2° 24' 14"	55' 49"	15' 12,57"	246° 47' 02"	44,80%
18:00	349° 08' 26"	2° 19' 14"	349° 06' 30"	-2° 09' 44"	55' 51"	15' 13,07"	246° 45' 35"	45,21%
19:00	349° 39' 44"	2° 21' 43"	349° 34' 19"	-1° 55' 12"	55' 53"	15' 13,58"	246° 44' 16"	45,63%
20:00	350° 11' 04"	2° 24' 12"	350° 02' 10"	-1° 40' 39"	55' 55"	15' 14,09"	246° 43' 04"	46,05%
21:00	350° 42' 26"	2° 26' 40"	350° 30' 02"	-1° 26' 05"	55' 57"	15' 14,60"	246° 42' 02"	46,46%
22:00	351° 13' 51"	2° 29' 08"	350° 57' 56"	-1° 11' 29"	55' 59"	15' 15,12"	246° 41' 07"	46,88%
23:00	351° 45' 18"	2° 31' 35"	351° 25' 52"	-0° 56' 52"	56' 01"	15' 15,64"	246° 40' 20"	47,30%
24:00	352° 16' 47"	2° 34' 02"	351° 53' 49"	-0° 42' 14"	56' 02"	15' 16,16"	246° 39' 42"	47,72%

17 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	265° 02' 44"	0,59"	264° 36' 09"	-23° 20' 41"	0,9841425	16' 15,09"	23° 26' 16"	04m 09s
01:00	265° 05' 16"	0,59"	264° 38' 55"	-23° 20' 47"	0,9841384	16' 15,10"	23° 26' 16"	04m 07s
02:00	265° 07' 49"	0,59"	264° 41' 41"	-23° 20' 52"	0,9841344	16' 15,10"	23° 26' 16"	04m 06s
03:00	265° 10' 22"	0,60"	264° 44' 27"	-23° 20' 58"	0,9841304	16' 15,10"	23° 26' 16"	04m 05s
04:00	265° 12' 54"	0,60"	264° 47' 13"	-23° 21' 04"	0,9841263	16' 15,11"	23° 26' 16"	04m 04s
05:00	265° 15' 27"	0,61"	264° 49' 59"	-23° 21' 09"	0,9841223	16' 15,11"	23° 26' 16"	04m 03s
06:00	265° 17' 59"	0,61"	264° 52' 46"	-23° 21' 15"	0,9841183	16' 15,12"	23° 26' 16"	04m 01s
07:00	265° 20' 32"	0,62"	264° 55' 32"	-23° 21' 20"	0,9841143	16' 15,12"	23° 26' 16"	04m 00s
08:00	265° 23' 05"	0,62"	264° 58' 18"	-23° 21' 25"	0,9841103	16' 15,12"	23° 26' 16"	03m 59s
09:00	265° 25' 37"	0,63"	265° 01' 04"	-23° 21' 31"	0,9841063	16' 15,13"	23° 26' 16"	03m 58s
10:00	265° 28' 10"	0,63"	265° 03' 50"	-23° 21' 36"	0,9841024	16' 15,13"	23° 26' 16"	03m 56s
11:00	265° 30' 43"	0,63"	265° 06' 36"	-23° 21' 41"	0,9840984	16' 15,14"	23° 26' 16"	03m 55s
12:00	265° 33' 15"	0,64"	265° 09' 23"	-23° 21' 46"	0,9840944	16' 15,14"	23° 26' 16"	03m 54s
13:00	265° 35' 48"	0,64"	265° 12' 09"	-23° 21' 51"	0,9840905	16' 15,14"	23° 26' 16"	03m 53s
14:00	265° 38' 20"	0,65"	265° 14' 55"	-23° 21' 56"	0,9840866	16' 15,15"	23° 26' 16"	03m 52s
15:00	265° 40' 53"	0,65"	265° 17' 41"	-23° 22' 01"	0,9840826	16' 15,15"	23° 26' 16"	03m 50s
16:00	265° 43' 26"	0,66"	265° 20' 27"	-23° 22' 06"	0,9840787	16' 15,16"	23° 26' 16"	03m 49s
17:00	265° 45' 58"	0,66"	265° 23' 13"	-23° 22' 11"	0,9840748	16' 15,16"	23° 26' 16"	03m 48s
18:00	265° 48' 31"	0,66"	265° 26' 00"	-23° 22' 16"	0,9840709	16' 15,16"	23° 26' 16"	03m 47s
19:00	265° 51' 04"	0,67"	265° 28' 46"	-23° 22' 21"	0,9840670	16' 15,17"	23° 26' 16"	03m 45s
20:00	265° 53' 36"	0,67"	265° 31' 32"	-23° 22' 26"	0,9840631	16' 15,17"	23° 26' 16"	03m 44s
21:00	265° 56' 09"	0,68"	265° 34' 18"	-23° 22' 30"	0,9840592	16' 15,18"	23° 26' 16"	03m 43s
22:00	265° 58' 42"	0,68"	265° 37' 04"	-23° 22' 35"	0,9840553	16' 15,18"	23° 26' 16"	03m 42s
23:00	266° 01' 14"	0,68"	265° 39' 51"	-23° 22' 40"	0,9840515	16' 15,18"	23° 26' 16"	03m 41s
24:00	266° 03' 47"	0,69"	265° 42' 37"	-23° 22' 44"	0,9840476	16' 15,19"	23° 26' 16"	03m 39s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	352° 16' 47"	2° 34' 02"	351° 53' 49"	-0° 42' 14"	56' 02"	15' 16,16"	246° 39' 42"	47,72%
01:00	352° 48' 18"	2° 36' 28"	352° 21' 47"	-0° 27' 35"	56' 04"	15' 16,69"	246° 39' 11"	48,14%
02:00	353° 19' 52"	2° 38' 53"	352° 49' 48"	-0° 12' 54"	56' 06"	15' 17,23"	246° 38' 50"	48,56%
03:00	353° 51' 28"	2° 41' 18"	353° 17' 50"	0° 01' 47"	56' 08"	15' 17,76"	246° 38' 36"	48,99%
04:00	354° 23' 06"	2° 43' 42"	353° 45' 55"	0° 16' 30"	56' 10"	15' 18,30"	246° 38' 30"	49,41%
05:00	354° 54' 47"	2° 46' 05"	354° 14' 01"	0° 31' 13"	56' 12"	15' 18,84"	246° 38' 33"	49,83%
06:00	355° 26' 30"	2° 48' 28"	354° 42' 10"	0° 45' 58"	56' 14"	15' 19,39"	246° 38' 45"	50,26%
07:00	355° 58' 15"	2° 50' 50"	355° 10' 21"	1° 00' 43"	56' 16"	15' 19,94"	246° 39' 04"	50,68%
08:00	356° 30' 03"	2° 53' 11"	355° 38' 34"	1° 15' 29"	56' 18"	15' 20,50"	246° 39' 32"	51,10%
09:00	357° 01' 53"	2° 55' 32"	356° 06' 50"	1° 30' 16"	56' 20"	15' 21,06"	246° 40' 09"	51,53%
10:00	357° 33' 46"	2° 57' 52"	356° 35' 08"	1° 45' 04"	56' 22"	15' 21,62"	246° 40' 54"	51,96%
11:00	358° 05' 42"	3° 00' 11"	357° 03' 28"	1° 59' 52"	56' 25"	15' 22,18"	246° 41' 47"	52,38%
12:00	358° 37' 39"	3° 02' 29"	357° 31' 51"	2° 14' 41"	56' 27"	15' 22,75"	246° 42' 49"	52,81%
13:00	359° 09' 40"	3° 04' 47"	358° 00' 17"	2° 29' 30"	56' 29"	15' 23,32"	246° 44' 00"	53,24%
14:00	359° 41' 42"	3° 07' 04"	358° 28' 46"	2° 44' 20"	56' 31"	15' 23,90"	246° 45' 19"	53,66%
15:00	0° 13' 48"	3° 09' 20"	358° 57' 17"	2° 59' 11"	56' 33"	15' 24,48"	246° 46' 47"	54,09%
16:00	0° 45' 56"	3° 11' 35"	359° 25' 52"	3° 14' 02"	56' 35"	15' 25,06"	246° 48' 24"	54,52%
17:00	1° 18' 07"	3° 13' 49"	359° 54' 29"	3° 28' 53"	56' 37"	15' 25,65"	246° 50' 09"	54,95%
18:00	1° 50' 20"	3° 16' 03"	0° 23' 10"	3° 43' 44"	56' 39"	15' 26,23"	246° 52' 03"	55,37%
19:00	2° 22' 36"	3° 18' 15"	0° 51' 53"	3° 58' 36"	56' 42"	15' 26,83"	246° 54' 06"	55,80%
20:00	2° 54' 54"	3° 20' 27"	1° 20' 40"	4° 13' 27"	56' 44"	15' 27,42"	246° 56' 18"	56,23%
21:00	3° 27' 15"	3° 22' 38"	1° 49' 31"	4° 28' 19"	56' 46"	15' 28,02"	246° 58' 38"	56,66%
22:00	3° 59' 39"	3° 24' 48"	2° 18' 25"	4° 43' 11"	56' 48"	15' 28,62"	247° 01' 08"	57,09%
23:00	4° 32' 06"	3° 26' 57"	2° 47' 22"	4° 58' 03"	56' 50"	15' 29,23"	247° 03' 47"	57,52%
24:00	5° 04' 35"	3° 29' 05"	3° 16' 23"	5° 12' 55"	56' 53"	15' 29,83"	247° 06' 34"	57,95%

18 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	266° 03' 47"	0,69"	265° 42' 37"	-23° 22' 44"	0,9840476	16' 15,19"	23° 26' 16"	03m 39s
01:00	266° 06' 19"	0,69"	265° 45' 23"	-23° 22' 49"	0,9840438	16' 15,19"	23° 26' 16"	03m 38s
02:00	266° 08' 52"	0,69"	265° 48' 09"	-23° 22' 53"	0,9840399	16' 15,19"	23° 26' 16"	03m 37s
03:00	266° 11' 25"	0,70"	265° 50' 56"	-23° 22' 57"	0,9840361	16' 15,20"	23° 26' 16"	03m 36s
04:00	266° 13' 57"	0,70"	265° 53' 42"	-23° 23' 02"	0,9840323	16' 15,20"	23° 26' 16"	03m 34s
05:00	266° 16' 30"	0,71"	265° 56' 28"	-23° 23' 06"	0,9840285	16' 15,21"	23° 26' 16"	03m 33s
06:00	266° 19' 03"	0,71"	265° 59' 14"	-23° 23' 10"	0,9840247	16' 15,21"	23° 26' 16"	03m 32s
07:00	266° 21' 35"	0,71"	266° 02' 01"	-23° 23' 15"	0,9840209	16' 15,21"	23° 26' 16"	03m 31s
08:00	266° 24' 08"	0,72"	266° 04' 47"	-23° 23' 19"	0,9840171	16' 15,22"	23° 26' 16"	03m 30s
09:00	266° 26' 41"	0,72"	266° 07' 33"	-23° 23' 23"	0,9840133	16' 15,22"	23° 26' 16"	03m 28s
10:00	266° 29' 13"	0,72"	266° 10' 19"	-23° 23' 27"	0,9840096	16' 15,22"	23° 26' 16"	03m 27s
11:00	266° 31' 46"	0,73"	266° 13' 06"	-23° 23' 31"	0,9840058	16' 15,23"	23° 26' 16"	03m 26s
12:00	266° 34' 19"	0,73"	266° 15' 52"	-23° 23' 35"	0,9840021	16' 15,23"	23° 26' 16"	03m 25s
13:00	266° 36' 51"	0,73"	266° 18' 38"	-23° 23' 39"	0,9839983	16' 15,24"	23° 26' 16"	03m 23s
14:00	266° 39' 24"	0,74"	266° 21' 24"	-23° 23' 43"	0,9839946	16' 15,24"	23° 26' 16"	03m 22s
15:00	266° 41' 57"	0,74"	266° 24' 11"	-23° 23' 47"	0,9839909	16' 15,24"	23° 26' 16"	03m 21s
16:00	266° 44' 29"	0,74"	266° 26' 57"	-23° 23' 50"	0,9839872	16' 15,25"	23° 26' 16"	03m 20s
17:00	266° 47' 02"	0,75"	266° 29' 43"	-23° 23' 54"	0,9839835	16' 15,25"	23° 26' 16"	03m 18s
18:00	266° 49' 34"	0,75"	266° 32' 29"	-23° 23' 58"	0,9839798	16' 15,25"	23° 26' 16"	03m 17s
19:00	266° 52' 07"	0,75"	266° 35' 16"	-23° 24' 01"	0,9839761	16' 15,26"	23° 26' 16"	03m 16s
20:00	266° 54' 40"	0,76"	266° 38' 02"	-23° 24' 05"	0,9839724	16' 15,26"	23° 26' 16"	03m 15s
21:00	266° 57' 12"	0,76"	266° 40' 48"	-23° 24' 09"	0,9839688	16' 15,26"	23° 26' 16"	03m 14s
22:00	266° 59' 45"	0,76"	266° 43' 35"	-23° 24' 12"	0,9839651	16' 15,27"	23° 26' 16"	03m 12s
23:00	267° 02' 18"	0,76"	266° 46' 21"	-23° 24' 16"	0,9839615	16' 15,27"	23° 26' 16"	03m 11s
24:00	267° 04' 50"	0,77"	266° 49' 07"	-23° 24' 19"	0,9839578	16' 15,28"	23° 26' 16"	03m 10s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	5° 04' 35"	3° 29' 05"	3° 16' 23"	5° 12' 55"	56' 53"	15' 29,83"	247° 06' 34"	57,95%
01:00	5° 37' 08"	3° 31' 12"	3° 45' 28"	5° 27' 47"	56' 55"	15' 30,44"	247° 09' 31"	58,38%
02:00	6° 09' 42"	3° 33' 18"	4° 14' 36"	5° 42' 38"	56' 57"	15' 31,06"	247° 12' 37"	58,80%
03:00	6° 42' 20"	3° 35' 23"	4° 43' 49"	5° 57' 29"	56' 59"	15' 31,67"	247° 15' 51"	59,23%
04:00	7° 15' 01"	3° 37' 28"	5° 13' 05"	6° 12' 20"	57' 02"	15' 32,29"	247° 19' 16"	59,66%
05:00	7° 47' 44"	3° 39' 31"	5° 42' 26"	6° 27' 10"	57' 04"	15' 32,91"	247° 22' 49"	60,09%
06:00	8° 20' 30"	3° 41' 33"	6° 11' 50"	6° 42' 00"	57' 06"	15' 33,53"	247° 26' 32"	60,52%
07:00	8° 53' 19"	3° 43' 34"	6° 41' 19"	6° 56' 50"	57' 09"	15' 34,16"	247° 30' 24"	60,95%
08:00	9° 26' 11"	3° 45' 34"	7° 10' 52"	7° 11' 39"	57' 11"	15' 34,79"	247° 34' 25"	61,38%
09:00	9° 59' 06"	3° 47' 33"	7° 40' 29"	7° 26' 27"	57' 13"	15' 35,42"	247° 38' 36"	61,80%
10:00	10° 32' 03"	3° 49' 31"	8° 10' 11"	7° 41' 14"	57' 15"	15' 36,06"	247° 42' 57"	62,23%
11:00	11° 05' 04"	3° 51' 28"	8° 39' 58"	7° 56' 01"	57' 18"	15' 36,69"	247° 47' 27"	62,66%
12:00	11° 38' 07"	3° 53' 23"	9° 09' 49"	8° 10' 46"	57' 20"	15' 37,33"	247° 52' 07"	63,09%
13:00	12° 11' 14"	3° 55' 18"	9° 39' 45"	8° 25' 31"	57' 22"	15' 37,97"	247° 56' 57"	63,51%
14:00	12° 44' 23"	3° 57' 11"	10° 09' 46"	8° 40' 15"	57' 25"	15' 38,61"	248° 01' 56"	63,94%
15:00	13° 17' 36"	3° 59' 03"	10° 39' 51"	8° 54' 58"	57' 27"	15' 39,26"	248° 07' 05"	64,36%
16:00	13° 50' 51"	4° 00' 54"	11° 10' 02"	9° 09' 39"	57' 30"	15' 39,90"	248° 12' 24"	64,79%
17:00	14° 24' 09"	4° 02' 44"	11° 40' 18"	9° 24' 19"	57' 32"	15' 40,55"	248° 17' 53"	65,21%
18:00	14° 57' 31"	4° 04' 33"	12° 10' 38"	9° 38' 58"	57' 34"	15' 41,20"	248° 23' 32"	65,64%
19:00	15° 30' 55"	4° 06' 20"	12° 41' 05"	9° 53' 36"	57' 37"	15' 41,86"	248° 29' 21"	66,06%
20:00	16° 04' 23"	4° 08' 06"	13° 11' 36"	10° 08' 11"	57' 39"	15' 42,51"	248° 35' 21"	66,48%
21:00	16° 37' 53"	4° 09' 51"	13° 42' 13"	10° 22' 46"	57' 42"	15' 43,17"	248° 41' 30"	66,91%
22:00	17° 11' 27"	4° 11' 35"	14° 12' 55"	10° 37' 19"	57' 44"	15' 43,82"	248° 47' 50"	67,33%
23:00	17° 45' 03"	4° 13' 17"	14° 43' 43"	10° 51' 50"	57' 46"	15' 44,48"	248° 54' 20"	67,75%
24:00	18° 18' 43"	4° 14' 58"	15° 14' 37"	11° 06' 19"	57' 49"	15' 45,14"	249° 01' 01"	68,17%

19 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	267° 04' 50"	0,77"	266° 49' 07"	-23° 24' 19"	0,9839578	16' 15,28"	23° 26' 16"	03m 10s
01:00	267° 07' 23"	0,77"	266° 51' 54"	-23° 24' 22"	0,9839542	16' 15,28"	23° 26' 16"	03m 09s
02:00	267° 09' 56"	0,77"	266° 54' 40"	-23° 24' 26"	0,9839506	16' 15,28"	23° 26' 16"	03m 07s
03:00	267° 12' 28"	0,78"	266° 57' 26"	-23° 24' 29"	0,9839470	16' 15,29"	23° 26' 16"	03m 06s
04:00	267° 15' 01"	0,78"	267° 00' 12"	-23° 24' 32"	0,9839434	16' 15,29"	23° 26' 16"	03m 05s
05:00	267° 17' 34"	0,78"	267° 02' 59"	-23° 24' 35"	0,9839398	16' 15,29"	23° 26' 16"	03m 04s
06:00	267° 20' 06"	0,78"	267° 05' 45"	-23° 24' 38"	0,9839362	16' 15,30"	23° 26' 16"	03m 02s
07:00	267° 22' 39"	0,79"	267° 08' 31"	-23° 24' 41"	0,9839326	16' 15,30"	23° 26' 16"	03m 01s
08:00	267° 25' 12"	0,79"	267° 11' 18"	-23° 24' 44"	0,9839291	16' 15,30"	23° 26' 16"	03m 00s
09:00	267° 27' 44"	0,79"	267° 14' 04"	-23° 24' 47"	0,9839255	16' 15,31"	23° 26' 16"	02m 59s
10:00	267° 30' 17"	0,79"	267° 16' 50"	-23° 24' 50"	0,9839220	16' 15,31"	23° 26' 16"	02m 58s
11:00	267° 32' 50"	0,80"	267° 19' 37"	-23° 24' 53"	0,9839185	16' 15,31"	23° 26' 16"	02m 56s
12:00	267° 35' 22"	0,80"	267° 22' 23"	-23° 24' 56"	0,9839149	16' 15,32"	23° 26' 16"	02m 55s
13:00	267° 37' 55"	0,80"	267° 25' 09"	-23° 24' 59"	0,9839114	16' 15,32"	23° 26' 16"	02m 54s
14:00	267° 40' 28"	0,80"	267° 27' 56"	-23° 25' 01"	0,9839079	16' 15,33"	23° 26' 16"	02m 53s
15:00	267° 43' 00"	0,80"	267° 30' 42"	-23° 25' 04"	0,9839044	16' 15,33"	23° 26' 16"	02m 51s
16:00	267° 45' 33"	0,81"	267° 33' 28"	-23° 25' 07"	0,9839009	16' 15,33"	23° 26' 16"	02m 50s
17:00	267° 48' 06"	0,81"	267° 36' 15"	-23° 25' 09"	0,9838975	16' 15,34"	23° 26' 16"	02m 49s
18:00	267° 50' 38"	0,81"	267° 39' 01"	-23° 25' 12"	0,9838940	16' 15,34"	23° 26' 16"	02m 48s
19:00	267° 53' 11"	0,81"	267° 41' 47"	-23° 25' 14"	0,9838905	16' 15,34"	23° 26' 16"	02m 46s
20:00	267° 55' 44"	0,81"	267° 44' 34"	-23° 25' 16"	0,9838871	16' 15,35"	23° 26' 16"	02m 45s
21:00	267° 58' 16"	0,82"	267° 47' 20"	-23° 25' 19"	0,9838837	16' 15,35"	23° 26' 16"	02m 44s
22:00	268° 00' 49"	0,82"	267° 50' 07"	-23° 25' 21"	0,9838802	16' 15,35"	23° 26' 16"	02m 43s
23:00	268° 03' 22"	0,82"	267° 52' 53"	-23° 25' 23"	0,9838768	16' 15,36"	23° 26' 16"	02m 41s
24:00	268° 05' 54"	0,82"	267° 55' 39"	-23° 25' 26"	0,9838734	16' 15,36"	23° 26' 16"	02m 40s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	18° 18' 43"	4° 14' 58"	15° 14' 37"	11° 06' 19"	57' 49"	15' 45,14"	249° 01' 01"	68,17%
01:00	18° 52' 26"	4° 16' 38"	15° 45' 37"	11° 20' 46"	57' 51"	15' 45,80"	249° 07' 52"	68,59%
02:00	19° 26' 11"	4° 18' 16"	16° 16' 42"	11° 35' 11"	57' 54"	15' 46,47"	249° 14' 54"	69,01%
03:00	20° 00' 00"	4° 19' 53"	16° 47' 53"	11° 49' 34"	57' 56"	15' 47,13"	249° 22' 06"	69,42%
04:00	20° 33' 52"	4° 21' 28"	17° 19' 11"	12° 03' 55"	57' 59"	15' 47,80"	249° 29' 29"	69,84%
05:00	21° 07' 48"	4° 23' 03"	17° 50' 34"	12° 18' 14"	58' 01"	15' 48,46"	249° 37' 03"	70,26%
06:00	21° 41' 46"	4° 24' 35"	18° 22' 04"	12° 32' 31"	58' 03"	15' 49,13"	249° 44' 48"	70,67%
07:00	22° 15' 47"	4° 26' 07"	18° 53' 39"	12° 46' 45"	58' 06"	15' 49,80"	249° 52' 44"	71,08%
08:00	22° 49' 52"	4° 27' 37"	19° 25' 22"	13° 00' 56"	58' 08"	15' 50,47"	250° 00' 51"	71,50%
09:00	23° 24' 00"	4° 29' 05"	19° 57' 10"	13° 15' 05"	58' 11"	15' 51,14"	250° 09' 09"	71,91%
10:00	23° 58' 10"	4° 30' 32"	20° 29' 06"	13° 29' 11"	58' 13"	15' 51,81"	250° 17' 38"	72,32%
11:00	24° 32' 24"	4° 31' 58"	21° 01' 07"	13° 43' 14"	58' 16"	15' 52,48"	250° 26' 19"	72,72%
12:00	25° 06' 42"	4° 33' 22"	21° 33' 16"	13° 57' 15"	58' 18"	15' 53,15"	250° 35' 11"	73,13%
13:00	25° 41' 02"	4° 34' 44"	22° 05' 31"	14° 11' 12"	58' 21"	15' 53,82"	250° 44' 14"	73,54%
14:00	26° 15' 26"	4° 36' 05"	22° 37' 53"	14° 25' 07"	58' 23"	15' 54,49"	250° 53' 29"	73,94%
15:00	26° 49' 52"	4° 37' 24"	23° 10' 22"	14° 38' 58"	58' 26"	15' 55,16"	251° 02' 56"	74,35%
16:00	27° 24' 22"	4° 38' 42"	23° 42' 58"	14° 52' 45"	58' 28"	15' 55,83"	251° 12' 34"	74,75%
17:00	27° 58' 55"	4° 39' 59"	24° 15' 41"	15° 06' 30"	58' 31"	15' 56,50"	251° 22' 25"	75,15%
18:00	28° 33' 32"	4° 41' 13"	24° 48' 31"	15° 20' 11"	58' 33"	15' 57,18"	251° 32' 27"	75,55%
19:00	29° 08' 11"	4° 42' 26"	25° 21' 29"	15° 33' 48"	58' 35"	15' 57,85"	251° 42' 41"	75,94%
20:00	29° 42' 54"	4° 43' 38"	25° 54' 33"	15° 47' 21"	58' 38"	15' 58,52"	251° 53' 07"	76,34%
21:00	30° 17' 39"	4° 44' 48"	26° 27' 45"	16° 00' 51"	58' 40"	15' 59,19"	252° 03' 46"	76,73%
22:00	30° 52' 28"	4° 45' 56"	27° 01' 05"	16° 14' 17"	58' 43"	16' 00,00"	252° 14' 37"	77,13%
23:00	31° 27' 21"	4° 47' 02"	27° 34' 32"	16° 27' 38"	58' 45"	16' 00,53"	252° 25' 41"	77,52%
24:00	32° 02' 16"	4° 48' 07"	28° 08' 06"	16° 40' 56"	58' 48"	16' 01,19"	252° 36' 57"	77,91%

20 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	268° 05' 54"	0,82"	267° 55' 39"	-23° 25' 26"	0,9838734	16' 15,36"	23° 26' 16"	02m 40s
01:00	268° 08' 27"	0,82"	267° 58' 26"	-23° 25' 28"	0,9838700	16' 15,36"	23° 26' 16"	02m 39s
02:00	268° 11' 00"	0,82"	268° 01' 12"	-23° 25' 30"	0,9838666	16' 15,37"	23° 26' 16"	02m 38s
03:00	268° 13' 32"	0,83"	268° 03' 58"	-23° 25' 32"	0,9838633	16' 15,37"	23° 26' 16"	02m 37s
04:00	268° 16' 05"	0,83"	268° 06' 45"	-23° 25' 34"	0,9838599	16' 15,37"	23° 26' 16"	02m 35s
05:00	268° 18' 38"	0,83"	268° 09' 31"	-23° 25' 36"	0,9838565	16' 15,38"	23° 26' 16"	02m 34s
06:00	268° 21' 10"	0,83"	268° 12' 17"	-23° 25' 38"	0,9838532	16' 15,38"	23° 26' 16"	02m 33s
07:00	268° 23' 43"	0,83"	268° 15' 04"	-23° 25' 40"	0,9838499	16' 15,38"	23° 26' 16"	02m 32s
08:00	268° 26' 16"	0,83"	268° 17' 50"	-23° 25' 42"	0,9838465	16' 15,39"	23° 26' 16"	02m 30s
09:00	268° 28' 48"	0,83"	268° 20' 37"	-23° 25' 43"	0,9838432	16' 15,39"	23° 26' 16"	02m 29s
10:00	268° 31' 21"	0,83"	268° 23' 23"	-23° 25' 45"	0,9838399	16' 15,39"	23° 26' 16"	02m 28s
11:00	268° 33' 54"	0,84"	268° 26' 09"	-23° 25' 47"	0,9838366	16' 15,40"	23° 26' 16"	02m 27s
12:00	268° 36' 26"	0,84"	268° 28' 56"	-23° 25' 48"	0,9838333	16' 15,40"	23° 26' 16"	02m 25s
13:00	268° 38' 59"	0,84"	268° 31' 42"	-23° 25' 50"	0,9838301	16' 15,40"	23° 26' 16"	02m 24s
14:00	268° 41' 32"	0,84"	268° 34' 29"	-23° 25' 51"	0,9838268	16' 15,41"	23° 26' 16"	02m 23s
15:00	268° 44' 04"	0,84"	268° 37' 15"	-23° 25' 53"	0,9838236	16' 15,41"	23° 26' 16"	02m 22s
16:00	268° 46' 37"	0,84"	268° 40' 01"	-23° 25' 54"	0,9838203	16' 15,41"	23° 26' 16"	02m 20s
17:00	268° 49' 10"	0,84"	268° 42' 48"	-23° 25' 56"	0,9838171	16' 15,42"	23° 26' 16"	02m 19s
18:00	268° 51' 43"	0,84"	268° 45' 34"	-23° 25' 57"	0,9838139	16' 15,42"	23° 26' 16"	02m 18s
19:00	268° 54' 15"	0,84"	268° 48' 21"	-23° 25' 58"	0,9838106	16' 15,42"	23° 26' 16"	02m 17s
20:00	268° 56' 48"	0,84"	268° 51' 07"	-23° 26' 00"	0,9838074	16' 15,42"	23° 26' 16"	02m 16s
21:00	268° 59' 21"	0,84"	268° 53' 53"	-23° 26' 01"	0,9838043	16' 15,43"	23° 26' 16"	02m 14s
22:00	269° 01' 53"	0,84"	268° 56' 40"	-23° 26' 02"	0,9838011	16' 15,43"	23° 26' 16"	02m 13s
23:00	269° 04' 26"	0,84"	268° 59' 26"	-23° 26' 03"	0,9837979	16' 15,43"	23° 26' 16"	02m 12s
24:00	269° 06' 59"	0,84"	269° 02' 13"	-23° 26' 04"	0,9837947	16' 15,44"	23° 26' 16"	02m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	32° 02' 16"	4° 48' 07"	28° 08' 06"	16° 40' 56"	58' 48"	16' 01,19"	252° 36' 57"	77,91%
01:00	32° 37' 14"	4° 49' 10"	28° 41' 48"	16° 54' 09"	58' 50"	16' 01,86"	252° 48' 25"	78,29%
02:00	33° 12' 16"	4° 50' 12"	29° 15' 38"	17° 07' 18"	58' 53"	16' 02,53"	253° 00' 07"	78,68%
03:00	33° 47' 21"	4° 51' 11"	29° 49' 36"	17° 20' 22"	58' 55"	16' 03,19"	253° 12' 01"	79,06%
04:00	34° 22' 29"	4° 52' 09"	30° 23' 41"	17° 33' 22"	58' 58"	16' 03,86"	253° 24' 08"	79,44%
05:00	34° 57' 40"	4° 53' 05"	30° 57' 54"	17° 46' 17"	59' 00"	16' 04,52"	253° 36' 29"	79,82%
06:00	35° 32' 55"	4° 54' 00"	31° 32' 15"	17° 59' 07"	59' 02"	16' 05,18"	253° 49' 03"	80,20%
07:00	36° 08' 12"	4° 54' 52"	32° 06' 45"	18° 11' 52"	59' 05"	16' 05,84"	254° 01' 50"	80,57%
08:00	36° 43' 33"	4° 55' 43"	32° 41' 22"	18° 24' 32"	59' 07"	16' 06,50"	254° 14' 50"	80,94%
09:00	37° 18' 56"	4° 56' 32"	33° 16' 07"	18° 37' 07"	59' 10"	16' 07,16"	254° 28' 04"	81,31%
10:00	37° 54' 23"	4° 57' 19"	33° 51' 00"	18° 49' 36"	59' 12"	16' 07,81"	254° 41' 32"	81,68%
11:00	38° 29' 53"	4° 58' 05"	34° 26' 02"	19° 02' 00"	59' 14"	16' 08,46"	254° 55' 14"	82,05%
12:00	39° 05' 27"	4° 58' 48"	35° 01' 12"	19° 14' 19"	59' 17"	16' 09,12"	255° 09' 10"	82,41%
13:00	39° 41' 03"	4° 59' 30"	35° 36' 30"	19° 26' 31"	59' 19"	16' 09,76"	255° 23' 20"	82,77%
14:00	40° 16' 42"	5° 00' 10"	36° 11' 56"	19° 38' 38"	59' 22"	16' 10,41"	255° 37' 45"	83,13%
15:00	40° 52' 25"	5° 00' 47"	36° 47' 31"	19° 50' 39"	59' 24"	16' 11,05"	255° 52' 24"	83,49%
16:00	41° 28' 10"	5° 01' 23"	37° 23' 14"	20° 02' 34"	59' 26"	16' 11,69"	256° 07' 18"	83,84%
17:00	42° 03' 59"	5° 01' 57"	37° 59' 05"	20° 14' 23"	59' 29"	16' 12,33"	256° 22' 26"	84,19%
18:00	42° 39' 50"	5° 02' 29"	38° 35' 05"	20° 26' 05"	59' 31"	16' 12,97"	256° 37' 49"	84,54%
19:00	43° 15' 45"	5° 03' 00"	39° 11' 13"	20° 37' 41"	59' 33"	16' 13,60"	256° 53' 28"	84,89%
20:00	43° 51' 43"	5° 03' 28"	39° 47' 30"	20° 49' 10"	59' 36"	16' 14,23"	257° 09' 22"	85,23%
21:00	44° 27' 43"	5° 03' 54"	40° 23' 55"	21° 00' 32"	59' 38"	16' 14,86"	257° 25' 32"	85,57%
22:00	45° 03' 47"	5° 04' 18"	41° 00' 29"	21° 11' 48"	59' 40"	16' 15,48"	257° 41' 57"	85,91%
23:00	45° 39' 53"	5° 04' 41"	41° 37' 12"	21° 22' 56"	59' 42"	16' 16,10"	257° 58' 38"	86,24%
24:00	46° 16' 03"	5° 05' 01"	42° 14' 03"	21° 33' 58"	59' 45"	16' 16,72"	258° 15' 36"	86,57%

21 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	269° 06' 59"	0,84"	269° 02' 13"	-23° 26' 04"	0,9837947	16' 15,44"	23° 26' 16"	02m 11s
01:00	269° 09' 31"	0,84"	269° 04' 59"	-23° 26' 05"	0,9837916	16' 15,44"	23° 26' 16"	02m 09s
02:00	269° 12' 04"	0,84"	269° 07' 45"	-23° 26' 06"	0,9837885	16' 15,44"	23° 26' 16"	02m 08s
03:00	269° 14' 37"	0,84"	269° 10' 32"	-23° 26' 07"	0,9837853	16' 15,45"	23° 26' 16"	02m 07s
04:00	269° 17' 09"	0,84"	269° 13' 18"	-23° 26' 08"	0,9837822	16' 15,45"	23° 26' 16"	02m 06s
05:00	269° 19' 42"	0,84"	269° 16' 05"	-23° 26' 09"	0,9837791	16' 15,45"	23° 26' 16"	02m 04s
06:00	269° 22' 15"	0,84"	269° 18' 51"	-23° 26' 09"	0,9837760	16' 15,46"	23° 26' 16"	02m 03s
07:00	269° 24' 47"	0,84"	269° 21' 38"	-23° 26' 10"	0,9837729	16' 15,46"	23° 26' 16"	02m 02s
08:00	269° 27' 20"	0,84"	269° 24' 24"	-23° 26' 11"	0,9837698	16' 15,46"	23° 26' 16"	02m 01s
09:00	269° 29' 53"	0,84"	269° 27' 10"	-23° 26' 11"	0,9837668	16' 15,46"	23° 26' 16"	01m 59s
10:00	269° 32' 26"	0,84"	269° 29' 57"	-23° 26' 12"	0,9837637	16' 15,47"	23° 26' 16"	01m 58s
11:00	269° 34' 58"	0,84"	269° 32' 43"	-23° 26' 12"	0,9837607	16' 15,47"	23° 26' 16"	01m 57s
12:00	269° 37' 31"	0,84"	269° 35' 30"	-23° 26' 13"	0,9837577	16' 15,47"	23° 26' 16"	01m 56s
13:00	269° 40' 04"	0,84"	269° 38' 16"	-23° 26' 13"	0,9837546	16' 15,48"	23° 26' 16"	01m 54s
14:00	269° 42' 36"	0,84"	269° 41' 02"	-23° 26' 14"	0,9837516	16' 15,48"	23° 26' 16"	01m 53s
15:00	269° 45' 09"	0,84"	269° 43' 49"	-23° 26' 14"	0,9837486	16' 15,48"	23° 26' 16"	01m 52s
16:00	269° 47' 42"	0,84"	269° 46' 35"	-23° 26' 14"	0,9837456	16' 15,49"	23° 26' 16"	01m 51s
17:00	269° 50' 14"	0,84"	269° 49' 22"	-23° 26' 14"	0,9837427	16' 15,49"	23° 26' 16"	01m 50s
18:00	269° 52' 47"	0,84"	269° 52' 08"	-23° 26' 15"	0,9837397	16' 15,49"	23° 26' 16"	01m 48s
19:00	269° 55' 20"	0,84"	269° 54' 55"	-23° 26' 15"	0,9837367	16' 15,49"	23° 26' 16"	01m 47s
20:00	269° 57' 53"	0,84"	269° 57' 41"	-23° 26' 15"	0,9837338	16' 15,50"	23° 26' 16"	01m 46s
21:00	270° 00' 25"	0,84"	270° 00' 27"	-23° 26' 15"	0,9837309	16' 15,50"	23° 26' 16"	01m 45s
22:00	270° 02' 58"	0,83"	270° 03' 14"	-23° 26' 15"	0,9837279	16' 15,50"	23° 26' 16"	01m 43s
23:00	270° 05' 31"	0,83"	270° 06' 00"	-23° 26' 15"	0,9837250	16' 15,51"	23° 26' 16"	01m 42s
24:00	270° 08' 03"	0,83"	270° 08' 47"	-23° 26' 14"	0,9837221	16' 15,51"	23° 26' 16"	01m 41s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	46° 16' 03"	5° 05' 01"	42° 14' 03"	21° 33' 58"	59' 45"	16' 16,72"	258° 15' 36"	86,57%
01:00	46° 52' 16"	5° 05' 19"	42° 51' 02"	21° 44' 52"	59' 47"	16' 17,33"	258° 32' 49"	86,90%
02:00	47° 28' 31"	5° 05' 35"	43° 28' 10"	21° 55' 38"	59' 49"	16' 17,94"	258° 50' 20"	87,23%
03:00	48° 04' 49"	5° 05' 50"	44° 05' 27"	22° 06' 18"	59' 51"	16' 18,55"	259° 08' 07"	87,55%
04:00	48° 41' 10"	5° 06' 02"	44° 42' 52"	22° 16' 49"	59' 54"	16' 19,15"	259° 26' 12"	87,87%
05:00	49° 17' 34"	5° 06' 12"	45° 20' 25"	22° 27' 13"	59' 56"	16' 19,75"	259° 44' 34"	88,18%
06:00	49° 54' 01"	5° 06' 20"	45° 58' 08"	22° 37' 29"	59' 58"	16' 20,34"	260° 03' 14"	88,50%
07:00	50° 30' 31"	5° 06' 26"	46° 35' 58"	22° 47' 36"	00' 00"	16' 20,93"	260° 22' 11"	88,80%
08:00	51° 07' 04"	5° 06' 30"	47° 13' 57"	22° 57' 36"	00' 02"	16' 21,51"	260° 41' 28"	89,11%
09:00	51° 43' 39"	5° 06' 32"	47° 52' 05"	23° 07' 27"	00' 04"	16' 22,09"	261° 01' 02"	89,41%
10:00	52° 20' 17"	5° 06' 32"	48° 30' 21"	23° 17' 09"	00' 07"	16' 22,67"	261° 20' 56"	89,71%
11:00	52° 56' 58"	5° 06' 29"	49° 08' 46"	23° 26' 44"	00' 09"	16' 23,24"	261° 41' 10"	90,01%
12:00	53° 33' 41"	5° 06' 25"	49° 47' 19"	23° 36' 09"	00' 11"	16' 23,81"	262° 01' 43"	90,30%
13:00	54° 10' 27"	5° 06' 18"	50° 26' 00"	23° 45' 25"	00' 13"	16' 24,37"	262° 22' 37"	90,59%
14:00	54° 47' 16"	5° 06' 10"	51° 04' 49"	23° 54' 33"	00' 15"	16' 24,92"	262° 43' 51"	90,88%
15:00	55° 24' 07"	5° 05' 59"	51° 43' 47"	24° 03' 31"	00' 17"	16' 25,47"	263° 05' 27"	91,16%
16:00	56° 01' 01"	5° 05' 46"	52° 22' 53"	24° 12' 20"	00' 19"	16' 26,02"	263° 27' 24"	91,43%
17:00	56° 37' 58"	5° 05' 31"	53° 02' 07"	24° 20' 59"	00' 21"	16' 26,56"	263° 49' 44"	91,71%
18:00	57° 14' 57"	5° 05' 14"	53° 41' 29"	24° 29' 29"	00' 23"	16' 27,09"	264° 12' 27"	91,98%
19:00	57° 51' 58"	5° 04' 54"	54° 20' 59"	24° 37' 49"	00' 25"	16' 27,62"	264° 35' 34"	92,25%
20:00	58° 29' 02"	5° 04' 33"	55° 00' 37"	24° 46' 00"	00' 27"	16' 28,14"	264° 59' 05"	92,51%
21:00	59° 06' 09"	5° 04' 09"	55° 40' 23"	24° 54' 00"	00' 29"	16' 28,66"	265° 23' 02"	92,77%
22:00	59° 43' 18"	5° 03' 43"	56° 20' 16"	25° 01' 51"	00' 30"	16' 29,17"	265° 47' 24"	93,02%
23:00	60° 20' 29"	5° 03' 15"	57° 00' 18"	25° 09' 31"	00' 32"	16' 29,67"	266° 12' 13"	93,27%
24:00	60° 57' 43"	5° 02' 45"	57° 40' 26"	25° 17' 01"	00' 34"	16' 30,17"	266° 37' 30"	93,52%

22 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	270° 08' 03"	0,83"	270° 08' 47"	-23° 26' 14"	0,9837221	16' 15,51"	23° 26' 16"	01m 41s
01:00	270° 10' 36"	0,83"	270° 11' 33"	-23° 26' 14"	0,9837192	16' 15,51"	23° 26' 16"	01m 40s
02:00	270° 13' 09"	0,83"	270° 14' 20"	-23° 26' 14"	0,9837163	16' 15,51"	23° 26' 16"	01m 38s
03:00	270° 15' 41"	0,83"	270° 17' 06"	-23° 26' 14"	0,9837135	16' 15,52"	23° 26' 16"	01m 37s
04:00	270° 18' 14"	0,83"	270° 19' 53"	-23° 26' 13"	0,9837106	16' 15,52"	23° 26' 16"	01m 36s
05:00	270° 20' 47"	0,83"	270° 22' 39"	-23° 26' 13"	0,9837078	16' 15,52"	23° 26' 16"	01m 35s
06:00	270° 23' 20"	0,82"	270° 25' 25"	-23° 26' 13"	0,9837049	16' 15,53"	23° 26' 16"	01m 33s
07:00	270° 25' 52"	0,82"	270° 28' 12"	-23° 26' 12"	0,9837021	16' 15,53"	23° 26' 16"	01m 32s
08:00	270° 28' 25"	0,82"	270° 30' 58"	-23° 26' 12"	0,9836993	16' 15,53"	23° 26' 16"	01m 31s
09:00	270° 30' 58"	0,82"	270° 33' 45"	-23° 26' 11"	0,9836965	16' 15,53"	23° 26' 16"	01m 30s
10:00	270° 33' 30"	0,82"	270° 36' 31"	-23° 26' 10"	0,9836937	16' 15,54"	23° 26' 16"	01m 28s
11:00	270° 36' 03"	0,82"	270° 39' 18"	-23° 26' 10"	0,9836909	16' 15,54"	23° 26' 16"	01m 27s
12:00	270° 38' 36"	0,81"	270° 42' 04"	-23° 26' 09"	0,9836882	16' 15,54"	23° 26' 16"	01m 26s
13:00	270° 41' 09"	0,81"	270° 44' 50"	-23° 26' 08"	0,9836854	16' 15,55"	23° 26' 16"	01m 25s
14:00	270° 43' 41"	0,81"	270° 47' 37"	-23° 26' 07"	0,9836827	16' 15,55"	23° 26' 15"	01m 24s
15:00	270° 46' 14"	0,81"	270° 50' 23"	-23° 26' 07"	0,9836799	16' 15,55"	23° 26' 15"	01m 22s
16:00	270° 48' 47"	0,81"	270° 53' 10"	-23° 26' 06"	0,9836772	16' 15,55"	23° 26' 15"	01m 21s
17:00	270° 51' 19"	0,80"	270° 55' 56"	-23° 26' 05"	0,9836745	16' 15,56"	23° 26' 15"	01m 20s
18:00	270° 53' 52"	0,80"	270° 58' 43"	-23° 26' 04"	0,9836718	16' 15,56"	23° 26' 15"	01m 19s
19:00	270° 56' 25"	0,80"	271° 01' 29"	-23° 26' 03"	0,9836691	16' 15,56"	23° 26' 15"	01m 17s
20:00	270° 58' 58"	0,80"	271° 04' 16"	-23° 26' 02"	0,9836664	16' 15,56"	23° 26' 15"	01m 16s
21:00	271° 01' 30"	0,79"	271° 07' 02"	-23° 26' 00"	0,9836638	16' 15,57"	23° 26' 15"	01m 15s
22:00	271° 04' 03"	0,79"	271° 09' 48"	-23° 25' 59"	0,9836611	16' 15,57"	23° 26' 15"	01m 14s
23:00	271° 06' 36"	0,79"	271° 12' 35"	-23° 25' 58"	0,9836585	16' 15,57"	23° 26' 15"	01m 12s
24:00	271° 09' 08"	0,79"	271° 15' 21"	-23° 25' 57"	0,9836558	16' 15,57"	23° 26' 15"	01m 11s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	60° 57' 43"	5° 02' 45"	57° 40' 26"	25° 17' 01"	00' 34"	16' 30,17"	266° 37' 30"	93,52%
01:00	61° 34' 59"	5° 02' 12"	58° 20' 43"	25° 24' 21"	00' 36"	16' 30,66"	267° 03' 17"	93,76%
02:00	62° 12' 17"	5° 01' 38"	59° 01' 06"	25° 31' 30"	00' 38"	16' 31,14"	267° 29' 33"	94,00%
03:00	62° 49' 37"	5° 01' 01"	59° 41' 37"	25° 38' 28"	00' 39"	16' 31,62"	267° 56' 20"	94,23%
04:00	63° 27' 00"	5° 00' 22"	60° 22' 15"	25° 45' 15"	00' 41"	16' 32,09"	268° 23' 41"	94,46%
05:00	64° 04' 25"	4° 59' 41"	61° 03' 01"	25° 51' 52"	00' 43"	16' 32,56"	268° 51' 35"	94,69%
06:00	64° 41' 52"	4° 58' 58"	61° 43' 53"	25° 58' 17"	00' 45"	16' 33,02"	269° 20' 06"	94,91%
07:00	65° 19' 21"	4° 58' 12"	62° 24' 52"	26° 04' 32"	00' 46"	16' 33,47"	269° 49' 14"	95,13%
08:00	65° 56' 52"	4° 57' 25"	63° 05' 57"	26° 10' 35"	00' 48"	16' 33,91"	270° 19' 01"	95,34%
09:00	66° 34' 25"	4° 56' 35"	63° 47' 09"	26° 16' 26"	00' 49"	16' 34,35"	270° 49' 31"	95,55%
10:00	67° 12' 00"	4° 55' 43"	64° 28' 28"	26° 22' 06"	00' 51"	16' 34,77"	271° 20' 44"	95,75%
11:00	67° 49' 38"	4° 54' 49"	65° 09' 52"	26° 27' 35"	00' 53"	16' 35,19"	271° 52' 44"	95,95%
12:00	68° 27' 17"	4° 53' 52"	65° 51' 23"	26° 32' 52"	00' 54"	16' 35,61"	272° 25' 34"	96,15%
13:00	69° 04' 57"	4° 52' 54"	66° 33' 00"	26° 37' 57"	00' 56"	16' 36,01"	272° 59' 17"	96,34%
14:00	69° 42' 40"	4° 51' 53"	67° 14' 43"	26° 42' 50"	00' 57"	16' 36,41"	273° 33' 56"	96,52%
15:00	70° 20' 25"	4° 50' 50"	67° 56' 31"	26° 47' 31"	00' 58"	16' 36,80"	274° 09' 35"	96,70%
16:00	70° 58' 11"	4° 49' 45"	68° 38' 24"	26° 52' 00"	01' 00"	16' 37,18"	274° 46' 20"	96,88%
17:00	71° 35' 59"	4° 48' 38"	69° 20' 23"	26° 56' 17"	01' 01"	16' 37,56"	275° 24' 13"	97,05%
18:00	72° 13' 48"	4° 47' 28"	70° 02' 27"	27° 00' 22"	01' 03"	16' 37,93"	276° 03' 23"	97,22%
19:00	72° 51' 40"	4° 46' 17"	70° 44' 36"	27° 04' 14"	01' 04"	16' 38,28"	276° 43' 53"	97,38%
20:00	73° 29' 33"	4° 45' 03"	71° 26' 50"	27° 07' 54"	01' 05"	16' 38,63"	277° 25' 53"	97,54%
21:00	74° 07' 27"	4° 43' 47"	72° 09' 08"	27° 11' 21"	01' 06"	16' 38,97"	278° 09' 28"	97,69%
22:00	74° 45' 23"	4° 42' 29"	72° 51' 31"	27° 14' 36"	01' 08"	16' 39,31"	278° 54' 49"	97,84%
23:00	75° 23' 20"	4° 41' 09"	73° 33' 57"	27° 17' 38"	01' 09"	16' 39,63"	279° 42' 07"	97,98%
24:00	76° 01' 19"	4° 39' 47"	74° 16' 28"	27° 20' 27"	01' 10"	16' 39,95"	280° 31' 31"	98,12%

23 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	271° 09' 08"	0,79"	271° 15' 21"	-23° 25' 57"	0,9836558	16' 15,57"	23° 26' 15"	01m 11s
01:00	271° 11' 41"	0,78"	271° 18' 08"	-23° 25' 55"	0,9836532	16' 15,58"	23° 26' 15"	01m 10s
02:00	271° 14' 14"	0,78"	271° 20' 54"	-23° 25' 54"	0,9836506	16' 15,58"	23° 26' 15"	01m 09s
03:00	271° 16' 47"	0,78"	271° 23' 41"	-23° 25' 52"	0,9836480	16' 15,58"	23° 26' 15"	01m 07s
04:00	271° 19' 19"	0,78"	271° 26' 27"	-23° 25' 51"	0,9836454	16' 15,59"	23° 26' 15"	01m 06s
05:00	271° 21' 52"	0,77"	271° 29' 14"	-23° 25' 49"	0,9836428	16' 15,59"	23° 26' 15"	01m 05s
06:00	271° 24' 25"	0,77"	271° 32' 00"	-23° 25' 48"	0,9836403	16' 15,59"	23° 26' 15"	01m 04s
07:00	271° 26' 57"	0,77"	271° 34' 46"	-23° 25' 46"	0,9836377	16' 15,59"	23° 26' 15"	01m 02s
08:00	271° 29' 30"	0,76"	271° 37' 33"	-23° 25' 44"	0,9836352	16' 15,60"	23° 26' 15"	01m 01s
09:00	271° 32' 03"	0,76"	271° 40' 19"	-23° 25' 43"	0,9836326	16' 15,60"	23° 26' 15"	01m 00s
10:00	271° 34' 36"	0,76"	271° 43' 06"	-23° 25' 41"	0,9836301	16' 15,60"	23° 26' 15"	00m 59s
11:00	271° 37' 08"	0,75"	271° 45' 52"	-23° 25' 39"	0,9836276	16' 15,60"	23° 26' 15"	00m 57s
12:00	271° 39' 41"	0,75"	271° 48' 39"	-23° 25' 37"	0,9836251	16' 15,61"	23° 26' 15"	00m 56s
13:00	271° 42' 14"	0,75"	271° 51' 25"	-23° 25' 35"	0,9836226	16' 15,61"	23° 26' 15"	00m 55s
14:00	271° 44' 47"	0,74"	271° 54' 11"	-23° 25' 33"	0,9836202	16' 15,61"	23° 26' 15"	00m 54s
15:00	271° 47' 19"	0,74"	271° 56' 58"	-23° 25' 31"	0,9836177	16' 15,61"	23° 26' 15"	00m 53s
16:00	271° 49' 52"	0,74"	271° 59' 44"	-23° 25' 29"	0,9836153	16' 15,62"	23° 26' 15"	00m 51s
17:00	271° 52' 25"	0,73"	272° 02' 31"	-23° 25' 27"	0,9836128	16' 15,62"	23° 26' 15"	00m 50s
18:00	271° 54' 57"	0,73"	272° 05' 17"	-23° 25' 25"	0,9836104	16' 15,62"	23° 26' 15"	00m 49s
19:00	271° 57' 30"	0,73"	272° 08' 04"	-23° 25' 23"	0,9836080	16' 15,62"	23° 26' 15"	00m 48s
20:00	272° 00' 03"	0,72"	272° 10' 50"	-23° 25' 20"	0,9836056	16' 15,62"	23° 26' 15"	00m 46s
21:00	272° 02' 36"	0,72"	272° 13' 36"	-23° 25' 18"	0,9836032	16' 15,63"	23° 26' 15"	00m 45s
22:00	272° 05' 08"	0,72"	272° 16' 23"	-23° 25' 16"	0,9836008	16' 15,63"	23° 26' 15"	00m 44s
23:00	272° 07' 41"	0,71"	272° 19' 09"	-23° 25' 13"	0,9835984	16' 15,63"	23° 26' 15"	00m 43s
24:00	272° 10' 14"	0,71"	272° 21' 56"	-23° 25' 11"	0,9835961	16' 15,63"	23° 26' 15"	00m 41s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	76° 01' 19"	4° 39' 47"	74° 16' 28"	27° 20' 27"	01' 10"	16' 39,95"	280° 31' 31"	98,12%
01:00	76° 39' 19"	4° 38' 23"	74° 59' 03"	27° 23' 04"	01' 11"	16' 40,25"	281° 23' 17"	98,25%
02:00	77° 17' 20"	4° 36' 56"	75° 41' 41"	27° 25' 27"	01' 12"	16' 40,55"	282° 17' 39"	98,38%
03:00	77° 55' 22"	4° 35' 27"	76° 24' 22"	27° 27' 38"	01' 13"	16' 40,84"	283° 14' 56"	98,50%
04:00	78° 33' 26"	4° 33' 57"	77° 07' 07"	27° 29' 36"	01' 14"	16' 41,12"	284° 15' 28"	98,62%
05:00	79° 11' 31"	4° 32' 24"	77° 49' 54"	27° 31' 20"	01' 15"	16' 41,39"	285° 19' 40"	98,73%
06:00	79° 49' 37"	4° 30' 49"	78° 32' 44"	27° 32' 52"	01' 16"	16' 41,65"	286° 28' 00"	98,84%
07:00	80° 27' 44"	4° 29' 12"	79° 15' 37"	27° 34' 10"	01' 17"	16' 41,90"	287° 41' 02"	98,94%
08:00	81° 05' 53"	4° 27' 33"	79° 58' 32"	27° 35' 16"	01' 18"	16' 42,15"	288° 59' 25"	99,04%
09:00	81° 44' 02"	4° 25' 52"	80° 41' 29"	27° 36' 08"	01' 19"	16' 42,38"	290° 23' 58"	99,13%
10:00	82° 22' 12"	4° 24' 09"	81° 24' 28"	27° 36' 47"	01' 20"	16' 42,61"	291° 55' 37"	99,21%
11:00	83° 00' 23"	4° 22' 24"	82° 07' 29"	27° 37' 12"	01' 21"	16' 42,82"	293° 35' 31"	99,30%
12:00	83° 38' 35"	4° 20' 37"	82° 50' 30"	27° 37' 25"	01' 21"	16' 43,03"	295° 25' 01"	99,37%
13:00	84° 16' 47"	4° 18' 48"	83° 33' 34"	27° 37' 24"	01' 22"	16' 43,23"	297° 25' 50"	99,44%
14:00	84° 55' 01"	4° 16' 57"	84° 16' 38"	27° 37' 09"	01' 23"	16' 43,41"	299° 39' 59"	99,51%
15:00	85° 33' 15"	4° 15' 04"	84° 59' 42"	27° 36' 42"	01' 23"	16' 43,59"	302° 09' 58"	99,57%
16:00	86° 11' 29"	4° 13' 09"	85° 42' 47"	27° 36' 01"	01' 24"	16' 43,76"	304° 58' 52"	99,62%
17:00	86° 49' 44"	4° 11' 13"	86° 25' 53"	27° 35' 07"	01' 25"	16' 43,92"	308° 10' 22"	99,67%
18:00	87° 28' 00"	4° 09' 14"	87° 08' 58"	27° 33' 59"	01' 25"	16' 44,07"	311° 48' 57"	99,72%
19:00	88° 06' 16"	4° 07' 13"	87° 52' 04"	27° 32' 38"	01' 26"	16' 44,20"	315° 59' 51"	99,76%
20:00	88° 44' 33"	4° 05' 11"	88° 35' 09"	27° 31' 04"	01' 26"	16' 44,33"	320° 48' 57"	99,79%
21:00	89° 22' 50"	4° 03' 06"	89° 18' 13"	27° 29' 16"	01' 27"	16' 44,45"	326° 22' 17"	99,82%
22:00	90° 01' 08"	4° 01' 00"	90° 01' 16"	27° 27' 15"	01' 27"	16' 44,56"	332° 45' 03"	99,85%
23:00	90° 39' 25"	3° 58' 52"	90° 44' 18"	27° 25' 01"	01' 27"	16' 44,66"	339° 59' 47"	99,86%
24:00	91° 17' 43"	3° 56' 42"	91° 27' 19"	27° 22' 34"	01' 28"	16' 44,75"	348° 03' 44"	99,88%

24 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	272° 10' 14"	0,71"	272° 21' 56"	-23° 25' 11"	0,9835961	16' 15,63"	23° 26' 15"	00m 41s
01:00	272° 12' 47"	0,70"	272° 24' 42"	-23° 25' 08"	0,9835937	16' 15,64"	23° 26' 15"	00m 40s
02:00	272° 15' 19"	0,70"	272° 27' 29"	-23° 25' 06"	0,9835914	16' 15,64"	23° 26' 15"	00m 39s
03:00	272° 17' 52"	0,70"	272° 30' 15"	-23° 25' 03"	0,9835891	16' 15,64"	23° 26' 15"	00m 38s
04:00	272° 20' 25"	0,69"	272° 33' 01"	-23° 25' 00"	0,9835867	16' 15,64"	23° 26' 15"	00m 36s
05:00	272° 22' 58"	0,69"	272° 35' 48"	-23° 24' 57"	0,9835844	16' 15,65"	23° 26' 15"	00m 35s
06:00	272° 25' 30"	0,68"	272° 38' 34"	-23° 24' 55"	0,9835822	16' 15,65"	23° 26' 15"	00m 34s
07:00	272° 28' 03"	0,68"	272° 41' 21"	-23° 24' 52"	0,9835799	16' 15,65"	23° 26' 15"	00m 33s
08:00	272° 30' 36"	0,68"	272° 44' 07"	-23° 24' 49"	0,9835776	16' 15,65"	23° 26' 15"	00m 31s
09:00	272° 33' 09"	0,67"	272° 46' 54"	-23° 24' 46"	0,9835754	16' 15,65"	23° 26' 15"	00m 30s
10:00	272° 35' 41"	0,67"	272° 49' 40"	-23° 24' 43"	0,9835731	16' 15,66"	23° 26' 15"	00m 29s
11:00	272° 38' 14"	0,66"	272° 52' 26"	-23° 24' 40"	0,9835709	16' 15,66"	23° 26' 15"	00m 28s
12:00	272° 40' 47"	0,66"	272° 55' 13"	-23° 24' 37"	0,9835687	16' 15,66"	23° 26' 15"	00m 27s
13:00	272° 43' 19"	0,65"	272° 57' 59"	-23° 24' 34"	0,9835665	16' 15,66"	23° 26' 15"	00m 25s
14:00	272° 45' 52"	0,65"	273° 00' 46"	-23° 24' 31"	0,9835643	16' 15,67"	23° 26' 15"	00m 24s
15:00	272° 48' 25"	0,65"	273° 03' 32"	-23° 24' 28"	0,9835621	16' 15,67"	23° 26' 15"	00m 23s
16:00	272° 50' 58"	0,64"	273° 06' 18"	-23° 24' 24"	0,9835599	16' 15,67"	23° 26' 15"	00m 22s
17:00	272° 53' 30"	0,64"	273° 09' 05"	-23° 24' 21"	0,9835577	16' 15,67"	23° 26' 15"	00m 20s
18:00	272° 56' 03"	0,63"	273° 11' 51"	-23° 24' 18"	0,9835556	16' 15,67"	23° 26' 15"	00m 19s
19:00	272° 58' 36"	0,63"	273° 14' 38"	-23° 24' 14"	0,9835535	16' 15,68"	23° 26' 15"	00m 18s
20:00	273° 01' 09"	0,62"	273° 17' 24"	-23° 24' 11"	0,9835513	16' 15,68"	23° 26' 15"	00m 17s
21:00	273° 03' 41"	0,62"	273° 20' 10"	-23° 24' 07"	0,9835492	16' 15,68"	23° 26' 15"	00m 15s
22:00	273° 06' 14"	0,61"	273° 22' 57"	-23° 24' 04"	0,9835471	16' 15,68"	23° 26' 15"	00m 14s
23:00	273° 08' 47"	0,61"	273° 25' 43"	-23° 24' 00"	0,9835450	16' 15,68"	23° 26' 15"	00m 13s
24:00	273° 11' 20"	0,60"	273° 28' 30"	-23° 23' 56"	0,9835429	16' 15,69"	23° 26' 15"	00m 12s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	91° 17' 43"	3° 56' 42"	91° 27' 19"	27° 22' 34"	01' 28"	16' 44,75"	348° 03' 44"	99,88%
01:00	91° 56' 01"	3° 54' 30"	92° 10' 18"	27° 19' 53"	01' 28"	16' 44,83"	356° 46' 36"	99,88%
02:00	92° 34' 20"	3° 52' 16"	92° 53' 16"	27° 16' 59"	01' 28"	16' 44,90"	5° 49' 57"	99,89%
03:00	93° 12' 38"	3° 50' 01"	93° 36' 12"	27° 13' 52"	01' 28"	16' 44,96"	14° 50' 19"	99,88%
04:00	93° 50' 57"	3° 47' 44"	94° 19' 05"	27° 10' 32"	01' 29"	16' 45,01"	23° 25' 01"	99,87%
05:00	94° 29' 15"	3° 45' 25"	95° 01' 56"	27° 06' 59"	01' 29"	16' 45,05"	31° 17' 26"	99,86%
06:00	95° 07' 33"	3° 43' 05"	95° 44' 44"	27° 03' 12"	01' 29"	16' 45,08"	38° 19' 14"	99,84%
07:00	95° 45' 52"	3° 40' 43"	96° 27' 29"	26° 59' 13"	01' 29"	16' 45,10"	44° 29' 13"	99,82%
08:00	96° 24' 10"	3° 38' 19"	97° 10' 12"	26° 55' 01"	01' 29"	16' 45,11"	49° 50' 47"	99,79%
09:00	97° 02' 28"	3° 35' 53"	97° 52' 51"	26° 50' 36"	01' 29"	16' 45,11"	54° 29' 26"	99,75%
10:00	97° 40' 45"	3° 33' 26"	98° 35' 27"	26° 45' 58"	01' 29"	16' 45,10"	58° 31' 16"	99,71%
11:00	98° 19' 03"	3° 30' 58"	99° 17' 59"	26° 41' 08"	01' 29"	16' 45,08"	62° 02' 02"	99,66%
12:00	98° 57' 20"	3° 28' 27"	100° 00' 27"	26° 36' 05"	01' 29"	16' 45,05"	65° 06' 47"	99,61%
13:00	99° 35' 36"	3° 25' 55"	100° 42' 51"	26° 30' 49"	01' 29"	16' 45,01"	67° 49' 47"	99,55%
14:00	100° 13' 52"	3° 23' 22"	101° 25' 11"	26° 25' 21"	01' 28"	16' 44,96"	70° 14' 35"	99,49%
15:00	100° 52' 08"	3° 20' 47"	102° 07' 26"	26° 19' 40"	01' 28"	16' 44,90"	72° 24' 07"	99,42%
16:00	101° 30' 23"	3° 18' 11"	102° 49' 37"	26° 13' 47"	01' 28"	16' 44,83"	74° 20' 45"	99,35%
17:00	102° 08' 38"	3° 15' 33"	103° 31' 43"	26° 07' 42"	01' 28"	16' 44,76"	76° 06' 26"	99,27%
18:00	102° 46' 52"	3° 12' 54"	104° 13' 44"	26° 01' 25"	01' 27"	16' 44,67"	77° 42' 45"	99,19%
19:00	103° 25' 05"	3° 10' 13"	104° 55' 40"	25° 54' 55"	01' 27"	16' 44,57"	79° 11' 03"	99,10%
20:00	104° 03' 17"	3° 07' 31"	105° 37' 31"	25° 48' 14"	01' 27"	16' 44,46"	80° 32' 25"	99,01%
21:00	104° 41' 29"	3° 04' 48"	106° 19' 16"	25° 41' 20"	01' 26"	16' 44,34"	81° 47' 45"	98,91%
22:00	105° 19' 40"	3° 02' 03"	107° 00' 56"	25° 34' 15"	01' 26"	16' 44,21"	82° 57' 48"	98,80%
23:00	105° 57' 50"	2° 59' 17"	107° 42' 30"	25° 26' 59"	01' 25"	16' 44,08"	84° 03' 12"	98,69%
24:00	106° 35' 59"	2° 56' 29"	108° 23' 58"	25° 19' 30"	01' 25"	16' 43,93"	85° 04' 31"	98,58%

25 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	273° 11' 20"	0,60"	273° 28' 30"	-23° 23' 56"	0,9835429	16' 15,69"	23° 26' 15"	00m 12s
01:00	273° 13' 52"	0,60"	273° 31' 16"	-23° 23' 53"	0,9835409	16' 15,69"	23° 26' 15"	00m 10s
02:00	273° 16' 25"	0,59"	273° 34' 02"	-23° 23' 49"	0,9835388	16' 15,69"	23° 26' 15"	00m 09s
03:00	273° 18' 58"	0,59"	273° 36' 49"	-23° 23' 45"	0,9835368	16' 15,69"	23° 26' 15"	00m 08s
04:00	273° 21' 31"	0,58"	273° 39' 35"	-23° 23' 41"	0,9835347	16' 15,70"	23° 26' 15"	00m 07s
05:00	273° 24' 04"	0,58"	273° 42' 22"	-23° 23' 37"	0,9835327	16' 15,70"	23° 26' 15"	00m 05s
06:00	273° 26' 36"	0,57"	273° 45' 08"	-23° 23' 34"	0,9835307	16' 15,70"	23° 26' 15"	00m 04s
07:00	273° 29' 09"	0,57"	273° 47' 54"	-23° 23' 30"	0,9835287	16' 15,70"	23° 26' 16"	00m 03s
08:00	273° 31' 42"	0,56"	273° 50' 41"	-23° 23' 25"	0,9835267	16' 15,70"	23° 26' 16"	00m 02s
09:00	273° 34' 15"	0,56"	273° 53' 27"	-23° 23' 21"	0,9835247	16' 15,71"	23° 26' 16"	00m 01s
10:00	273° 36' 47"	0,55"	273° 56' 13"	-23° 23' 17"	0,9835227	16' 15,71"	23° 26' 16"	-00m 01s
11:00	273° 39' 20"	0,55"	273° 59' 00"	-23° 23' 13"	0,9835208	16' 15,71"	23° 26' 16"	-00m 02s
12:00	273° 41' 53"	0,54"	274° 01' 46"	-23° 23' 09"	0,9835188	16' 15,71"	23° 26' 16"	-00m 03s
13:00	273° 44' 26"	0,54"	274° 04' 33"	-23° 23' 05"	0,9835169	16' 15,71"	23° 26' 16"	-00m 04s
14:00	273° 46' 58"	0,53"	274° 07' 19"	-23° 23' 00"	0,9835150	16' 15,71"	23° 26' 16"	-00m 06s
15:00	273° 49' 31"	0,53"	274° 10' 05"	-23° 22' 56"	0,9835131	16' 15,72"	23° 26' 16"	-00m 07s
16:00	273° 52' 04"	0,52"	274° 12' 52"	-23° 22' 51"	0,9835112	16' 15,72"	23° 26' 16"	-00m 08s
17:00	273° 54' 37"	0,51"	274° 15' 38"	-23° 22' 47"	0,9835093	16' 15,72"	23° 26' 16"	-00m 09s
18:00	273° 57' 09"	0,51"	274° 18' 24"	-23° 22' 42"	0,9835074	16' 15,72"	23° 26' 16"	-00m 11s
19:00	273° 59' 42"	0,50"	274° 21' 11"	-23° 22' 38"	0,9835056	16' 15,72"	23° 26' 16"	-00m 12s
20:00	274° 02' 15"	0,50"	274° 23' 57"	-23° 22' 33"	0,9835037	16' 15,73"	23° 26' 16"	-00m 13s
21:00	274° 04' 48"	0,49"	274° 26' 43"	-23° 22' 28"	0,9835019	16' 15,73"	23° 26' 16"	-00m 14s
22:00	274° 07' 21"	0,49"	274° 29' 30"	-23° 22' 24"	0,9835000	16' 15,73"	23° 26' 16"	-00m 16s
23:00	274° 09' 53"	0,48"	274° 32' 16"	-23° 22' 19"	0,9834982	16' 15,73"	23° 26' 16"	-00m 17s
24:00	274° 12' 26"	0,48"	274° 35' 02"	-23° 22' 14"	0,9834964	16' 15,73"	23° 26' 16"	-00m 18s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	106° 35' 59"	2° 56' 29"	108° 23' 58"	25° 19' 30"	01' 25"	16' 43,93"	85° 04' 31"	98,58%
01:00	107° 14' 07"	2° 53' 41"	109° 05' 21"	25° 11' 50"	01' 24"	16' 43,77"	86° 02' 12"	98,46%
02:00	107° 52' 14"	2° 50' 51"	109° 46' 37"	25° 03' 59"	01' 23"	16' 43,61"	86° 56' 38"	98,33%
03:00	108° 30' 20"	2° 48' 00"	110° 27' 46"	24° 55' 57"	01' 23"	16' 43,43"	87° 48' 10"	98,20%
04:00	109° 08' 25"	2° 45' 07"	111° 08' 50"	24° 47' 44"	01' 22"	16' 43,25"	88° 37' 04"	98,07%
05:00	109° 46' 29"	2° 42' 14"	111° 49' 47"	24° 39' 19"	01' 21"	16' 43,05"	89° 23' 36"	97,93%
06:00	110° 24' 32"	2° 39' 19"	112° 30' 37"	24° 30' 44"	01' 21"	16' 42,85"	90° 07' 59"	97,78%
07:00	111° 02' 33"	2° 36' 23"	113° 11' 20"	24° 21' 58"	01' 20"	16' 42,63"	90° 50' 25"	97,63%
08:00	111° 40' 34"	2° 33' 27"	113° 51' 57"	24° 13' 02"	01' 19"	16' 42,41"	91° 31' 03"	97,48%
09:00	112° 18' 33"	2° 30' 29"	114° 32' 26"	24° 03' 54"	01' 18"	16' 42,18"	92° 10' 03"	97,32%
10:00	112° 56' 30"	2° 27' 30"	115° 12' 49"	23° 54' 37"	01' 17"	16' 41,94"	92° 47' 31"	97,15%
11:00	113° 34' 26"	2° 24' 30"	115° 53' 04"	23° 45' 09"	01' 16"	16' 41,69"	93° 23' 36"	96,98%
12:00	114° 12' 21"	2° 21' 29"	116° 33' 12"	23° 35' 32"	01' 15"	16' 41,43"	93° 58' 23"	96,81%
13:00	114° 50' 14"	2° 18' 27"	117° 13' 13"	23° 25' 44"	01' 14"	16' 41,17"	94° 31' 58"	96,63%
14:00	115° 28' 06"	2° 15' 25"	117° 53' 07"	23° 15' 46"	01' 13"	16' 40,89"	95° 04' 25"	96,44%
15:00	116° 05' 56"	2° 12' 21"	118° 32' 53"	23° 05' 39"	01' 12"	16' 40,61"	95° 35' 50"	96,25%
16:00	116° 43' 45"	2° 09' 16"	119° 12' 31"	22° 55' 22"	01' 11"	16' 40,31"	96° 06' 15"	96,06%
17:00	117° 21' 32"	2° 06' 11"	119° 52' 02"	22° 44' 56"	01' 10"	16' 40,01"	96° 35' 45"	95,86%
18:00	117° 59' 17"	2° 03' 05"	120° 31' 25"	22° 34' 20"	01' 09"	16' 39,70"	97° 04' 23"	95,66%
19:00	118° 37' 01"	1° 59' 58"	121° 10' 41"	22° 23' 36"	01' 08"	16' 39,38"	97° 32' 12"	95,45%
20:00	119° 14' 43"	1° 56' 50"	121° 49' 49"	22° 12' 42"	01' 07"	16' 39,06"	97° 59' 13"	95,23%
21:00	119° 52' 23"	1° 53' 42"	122° 28' 49"	22° 01' 39"	01' 05"	16' 38,72"	98° 25' 31"	95,02%
22:00	120° 30' 01"	1° 50' 33"	123° 07' 41"	21° 50' 28"	01' 04"	16' 38,38"	98° 51' 07"	94,80%
23:00	121° 07' 38"	1° 47' 23"	123° 46' 25"	21° 39' 08"	01' 03"	16' 38,03"	99° 16' 02"	94,57%
24:00	121° 45' 13"	1° 44' 13"	124° 25' 01"	21° 27' 40"	01' 02"	16' 37,67"	99° 40' 19"	94,34%

26 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	274° 12' 26"	0,48"	274° 35' 02"	-23° 22' 14"	0,9834964	16' 15,73"	23° 26' 16"	-00m 18s
01:00	274° 14' 59"	0,47"	274° 37' 49"	-23° 22' 09"	0,9834946	16' 15,73"	23° 26' 16"	-00m 19s
02:00	274° 17' 32"	0,47"	274° 40' 35"	-23° 22' 04"	0,9834928	16' 15,74"	23° 26' 16"	-00m 20s
03:00	274° 20' 04"	0,46"	274° 43' 21"	-23° 21' 59"	0,9834910	16' 15,74"	23° 26' 16"	-00m 22s
04:00	274° 22' 37"	0,45"	274° 46' 08"	-23° 21' 54"	0,9834893	16' 15,74"	23° 26' 16"	-00m 23s
05:00	274° 25' 10"	0,45"	274° 48' 54"	-23° 21' 49"	0,9834875	16' 15,74"	23° 26' 16"	-00m 24s
06:00	274° 27' 43"	0,44"	274° 51' 40"	-23° 21' 44"	0,9834858	16' 15,74"	23° 26' 16"	-00m 25s
07:00	274° 30' 15"	0,44"	274° 54' 27"	-23° 21' 39"	0,9834841	16' 15,75"	23° 26' 16"	-00m 27s
08:00	274° 32' 48"	0,43"	274° 57' 13"	-23° 21' 34"	0,9834823	16' 15,75"	23° 26' 16"	-00m 28s
09:00	274° 35' 21"	0,43"	274° 59' 59"	-23° 21' 29"	0,9834806	16' 15,75"	23° 26' 16"	-00m 29s
10:00	274° 37' 54"	0,42"	275° 02' 46"	-23° 21' 23"	0,9834789	16' 15,75"	23° 26' 16"	-00m 30s
11:00	274° 40' 27"	0,41"	275° 05' 32"	-23° 21' 18"	0,9834772	16' 15,75"	23° 26' 16"	-00m 32s
12:00	274° 42' 59"	0,41"	275° 08' 18"	-23° 21' 12"	0,9834756	16' 15,75"	23° 26' 16"	-00m 33s
13:00	274° 45' 32"	0,40"	275° 11' 05"	-23° 21' 07"	0,9834739	16' 15,76"	23° 26' 16"	-00m 34s
14:00	274° 48' 05"	0,40"	275° 13' 51"	-23° 21' 01"	0,9834723	16' 15,76"	23° 26' 16"	-00m 35s
15:00	274° 50' 38"	0,39"	275° 16' 37"	-23° 20' 56"	0,9834706	16' 15,76"	23° 26' 16"	-00m 36s
16:00	274° 53' 10"	0,38"	275° 19' 24"	-23° 20' 50"	0,9834690	16' 15,76"	23° 26' 16"	-00m 38s
17:00	274° 55' 43"	0,38"	275° 22' 10"	-23° 20' 45"	0,9834674	16' 15,76"	23° 26' 16"	-00m 39s
18:00	274° 58' 16"	0,37"	275° 24' 56"	-23° 20' 39"	0,9834658	16' 15,76"	23° 26' 16"	-00m 40s
19:00	275° 00' 49"	0,37"	275° 27' 42"	-23° 20' 33"	0,9834642	16' 15,77"	23° 26' 16"	-00m 41s
20:00	275° 03' 22"	0,36"	275° 30' 29"	-23° 20' 27"	0,9834626	16' 15,77"	23° 26' 16"	-00m 43s
21:00	275° 05' 54"	0,36"	275° 33' 15"	-23° 20' 22"	0,9834610	16' 15,77"	23° 26' 16"	-00m 44s
22:00	275° 08' 27"	0,35"	275° 36' 01"	-23° 20' 16"	0,9834594	16' 15,77"	23° 26' 16"	-00m 45s
23:00	275° 11' 00"	0,34"	275° 38' 48"	-23° 20' 10"	0,9834579	16' 15,77"	23° 26' 16"	-00m 46s
24:00	275° 13' 33"	0,34"	275° 41' 34"	-23° 20' 04"	0,9834563	16' 15,77"	23° 26' 16"	-00m 48s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	121° 45' 13"	1° 44' 13"	124° 25' 01"	21° 27' 40"	01' 02"	16' 37,67"	99° 40' 19"	94,34%
01:00	122° 22' 45"	1° 41' 02"	125° 03' 30"	21° 16' 03"	01' 00"	16' 37,30"	100° 04' 00"	94,10%
02:00	123° 00' 16"	1° 37' 50"	125° 41' 50"	21° 04' 18"	00' 59"	16' 36,93"	100° 27' 06"	93,86%
03:00	123° 37' 45"	1° 34' 38"	126° 20' 03"	20° 52' 26"	00' 57"	16' 36,54"	100° 49' 38"	93,62%
04:00	124° 15' 12"	1° 31' 25"	126° 58' 07"	20° 40' 25"	00' 56"	16' 36,15"	101° 11' 38"	93,37%
05:00	124° 52' 37"	1° 28' 12"	127° 36' 04"	20° 28' 17"	00' 55"	16' 35,76"	101° 33' 07"	93,12%
06:00	125° 29' 59"	1° 24' 58"	128° 13' 52"	20° 16' 01"	00' 53"	16' 35,35"	101° 54' 06"	92,86%
07:00	126° 07' 20"	1° 21' 44"	128° 51' 33"	20° 03' 37"	00' 52"	16' 34,94"	102° 14' 36"	92,60%
08:00	126° 44' 39"	1° 18' 30"	129° 29' 05"	19° 51' 06"	00' 50"	16' 34,52"	102° 34' 39"	92,33%
09:00	127° 21' 55"	1° 15' 15"	130° 06' 30"	19° 38' 29"	00' 48"	16' 34,09"	102° 54' 14"	92,07%
10:00	127° 59' 09"	1° 11' 59"	130° 43' 46"	19° 25' 44"	00' 47"	16' 33,66"	103° 13' 23"	91,79%
11:00	128° 36' 21"	1° 08' 44"	131° 20' 55"	19° 12' 52"	00' 45"	16' 33,22"	103° 32' 07"	91,51%
12:00	129° 13' 31"	1° 05' 28"	131° 57' 55"	18° 59' 53"	00' 44"	16' 32,77"	103° 50' 27"	91,23%
13:00	129° 50' 39"	1° 02' 11"	132° 34' 48"	18° 46' 48"	00' 42"	16' 32,32"	104° 08' 22"	90,95%
14:00	130° 27' 44"	0° 58' 55"	133° 11' 32"	18° 33' 37"	00' 40"	16' 31,86"	104° 25' 54"	90,66%
15:00	131° 04' 47"	0° 55' 38"	133° 48' 09"	18° 20' 19"	00' 39"	16' 31,39"	104° 43' 03"	90,37%
16:00	131° 41' 48"	0° 52' 21"	134° 24' 38"	18° 06' 55"	00' 37"	16' 30,92"	104° 59' 51"	90,07%
17:00	132° 18' 46"	0° 49' 04"	135° 00' 59"	17° 53' 25"	00' 35"	16' 30,44"	105° 16' 16"	89,77%
18:00	132° 55' 42"	0° 45' 47"	135° 37' 12"	17° 39' 49"	00' 33"	16' 29,96"	105° 32' 21"	89,47%
19:00	133° 32' 35"	0° 42' 29"	136° 13' 18"	17° 26' 07"	00' 31"	16' 29,47"	105° 48' 05"	89,16%
20:00	134° 09' 26"	0° 39' 12"	136° 49' 15"	17° 12' 20"	00' 30"	16' 28,97"	106° 03' 29"	88,85%
21:00	134° 46' 15"	0° 35' 54"	137° 25' 05"	16° 58' 28"	00' 28"	16' 28,47"	106° 18' 33"	88,53%
22:00	135° 23' 01"	0° 32' 37"	138° 00' 47"	16° 44' 29"	00' 26"	16' 27,96"	106° 33' 17"	88,22%
23:00	135° 59' 45"	0° 29' 19"	138° 36' 22"	16° 30' 26"	00' 24"	16' 27,45"	106° 47' 43"	87,89%
24:00	136° 36' 26"	0° 26' 02"	139° 11' 49"	16° 16' 18"	00' 22"	16' 26,93"	107° 01' 50"	87,57%

27 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	275° 13' 33"	0,34"	275° 41' 34"	-23° 20' 04"	0,9834563	16' 15,77"	23° 26' 16"	-00m 48s
01:00	275° 16' 06"	0,33"	275° 44' 20"	-23° 19' 58"	0,9834548	16' 15,77"	23° 26' 16"	-00m 49s
02:00	275° 18' 38"	0,33"	275° 47' 06"	-23° 19' 52"	0,9834533	16' 15,78"	23° 26' 16"	-00m 50s
03:00	275° 21' 11"	0,32"	275° 49' 53"	-23° 19' 45"	0,9834518	16' 15,78"	23° 26' 16"	-00m 51s
04:00	275° 23' 44"	0,31"	275° 52' 39"	-23° 19' 39"	0,9834503	16' 15,78"	23° 26' 16"	-00m 52s
05:00	275° 26' 17"	0,31"	275° 55' 25"	-23° 19' 33"	0,9834488	16' 15,78"	23° 26' 16"	-00m 54s
06:00	275° 28' 50"	0,30"	275° 58' 11"	-23° 19' 27"	0,9834473	16' 15,78"	23° 26' 16"	-00m 55s
07:00	275° 31' 22"	0,30"	276° 00' 58"	-23° 19' 20"	0,9834458	16' 15,78"	23° 26' 16"	-00m 56s
08:00	275° 33' 55"	0,29"	276° 03' 44"	-23° 19' 14"	0,9834444	16' 15,78"	23° 26' 16"	-00m 57s
09:00	275° 36' 28"	0,28"	276° 06' 30"	-23° 19' 08"	0,9834429	16' 15,79"	23° 26' 16"	-00m 59s
10:00	275° 39' 01"	0,28"	276° 09' 16"	-23° 19' 01"	0,9834415	16' 15,79"	23° 26' 16"	-01m 00s
11:00	275° 41' 34"	0,27"	276° 12' 03"	-23° 18' 55"	0,9834401	16' 15,79"	23° 26' 16"	-01m 01s
12:00	275° 44' 06"	0,27"	276° 14' 49"	-23° 18' 48"	0,9834386	16' 15,79"	23° 26' 16"	-01m 02s
13:00	275° 46' 39"	0,26"	276° 17' 35"	-23° 18' 41"	0,9834372	16' 15,79"	23° 26' 16"	-01m 03s
14:00	275° 49' 12"	0,25"	276° 20' 21"	-23° 18' 35"	0,9834358	16' 15,79"	23° 26' 16"	-01m 05s
15:00	275° 51' 45"	0,25"	276° 23' 08"	-23° 18' 28"	0,9834345	16' 15,79"	23° 26' 16"	-01m 06s
16:00	275° 54' 18"	0,24"	276° 25' 54"	-23° 18' 21"	0,9834331	16' 15,80"	23° 26' 16"	-01m 07s
17:00	275° 56' 50"	0,24"	276° 28' 40"	-23° 18' 14"	0,9834317	16' 15,80"	23° 26' 16"	-01m 08s
18:00	275° 59' 23"	0,23"	276° 31' 26"	-23° 18' 07"	0,9834304	16' 15,80"	23° 26' 16"	-01m 10s
19:00	276° 01' 56"	0,22"	276° 34' 12"	-23° 18' 01"	0,9834290	16' 15,80"	23° 26' 16"	-01m 11s
20:00	276° 04' 29"	0,22"	276° 36' 59"	-23° 17' 54"	0,9834277	16' 15,80"	23° 26' 16"	-01m 12s
21:00	276° 07' 02"	0,21"	276° 39' 45"	-23° 17' 47"	0,9834264	16' 15,80"	23° 26' 16"	-01m 13s
22:00	276° 09' 34"	0,21"	276° 42' 31"	-23° 17' 39"	0,9834251	16' 15,80"	23° 26' 16"	-01m 14s
23:00	276° 12' 07"	0,20"	276° 45' 17"	-23° 17' 32"	0,9834238	16' 15,81"	23° 26' 16"	-01m 16s
24:00	276° 14' 40"	0,20"	276° 48' 03"	-23° 17' 25"	0,9834225	16' 15,81"	23° 26' 16"	-01m 17s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	136° 36' 26"	0° 26' 02"	139° 11' 49"	16° 16' 18"	00' 22"	16' 26,93"	107° 01' 50"	87,57%
01:00	137° 13' 04"	0° 22' 44"	139° 47' 09"	16° 02' 05"	00' 20"	16' 26,40"	107° 15' 39"	87,24%
02:00	137° 49' 41"	0° 19' 26"	140° 22' 21"	15° 47' 47"	00' 18"	16' 25,87"	107° 29' 10"	86,91%
03:00	138° 26' 14"	0° 16' 09"	140° 57' 25"	15° 33' 24"	00' 16"	16' 25,34"	107° 42' 24"	86,57%
04:00	139° 02' 45"	0° 12' 52"	141° 32' 23"	15° 18' 57"	00' 14"	16' 24,80"	107° 55' 20"	86,24%
05:00	139° 39' 13"	0° 09' 34"	142° 07' 13"	15° 04' 25"	00' 12"	16' 24,26"	108° 07' 59"	85,90%
06:00	140° 15' 39"	0° 06' 17"	142° 41' 56"	14° 49' 49"	00' 10"	16' 23,71"	108° 20' 22"	85,55%
07:00	140° 52' 02"	0° 03' 00"	143° 16' 31"	14° 35' 09"	00' 08"	16' 23,15"	108° 32' 28"	85,20%
08:00	141° 28' 23"	-0° 00' 16"	143° 51' 00"	14° 20' 25"	00' 06"	16' 22,60"	108° 44' 18"	84,85%
09:00	142° 04' 41"	-0° 03' 33"	144° 25' 21"	14° 05' 37"	00' 04"	16' 22,03"	108° 55' 51"	84,50%
10:00	142° 40' 56"	-0° 06' 49"	144° 59' 35"	13° 50' 45"	00' 02"	16' 21,47"	109° 07' 10"	84,15%
11:00	143° 17' 08"	-0° 10' 05"	145° 33' 43"	13° 35' 50"	00' 00"	16' 20,90"	109° 18' 12"	83,79%
12:00	143° 53' 18"	-0° 13' 21"	146° 07' 44"	13° 20' 51"	59' 58"	16' 20,32"	109° 28' 59"	83,43%
13:00	144° 29' 25"	-0° 16' 36"	146° 41' 38"	13° 05' 48"	59' 56"	16' 19,74"	109° 39' 32"	83,06%
14:00	145° 05' 30"	-0° 19' 51"	147° 15' 25"	12° 50' 43"	59' 54"	16' 19,16"	109° 49' 49"	82,69%
15:00	145° 41' 32"	-0° 23' 06"	147° 49' 05"	12° 35' 34"	59' 52"	16' 18,57"	109° 59' 52"	82,32%
16:00	146° 17' 31"	-0° 26' 20"	148° 22' 39"	12° 20' 22"	59' 49"	16' 17,99"	110° 09' 40"	81,95%
17:00	146° 53' 27"	-0° 29' 34"	148° 56' 07"	12° 05' 07"	59' 47"	16' 17,39"	110° 19' 14"	81,58%
18:00	147° 29' 20"	-0° 32' 47"	149° 29' 28"	11° 49' 50"	59' 45"	16' 16,80"	110° 28' 33"	81,20%
19:00	148° 05' 11"	-0° 36' 00"	150° 02' 43"	11° 34' 29"	59' 43"	16' 16,20"	110° 37' 39"	80,82%
20:00	148° 40' 59"	-0° 39' 13"	150° 35' 51"	11° 19' 06"	59' 41"	16' 15,59"	110° 46' 31"	80,44%
21:00	149° 16' 44"	-0° 42' 25"	151° 08' 54"	11° 03' 41"	59' 38"	16' 14,99"	110° 55' 09"	80,06%
22:00	149° 52' 26"	-0° 45' 36"	151° 41' 50"	10° 48' 13"	59' 36"	16' 14,38"	111° 03' 34"	79,67%
23:00	150° 28' 06"	-0° 48' 47"	152° 14' 40"	10° 32' 43"	59' 34"	16' 13,77"	111° 11' 45"	79,28%
24:00	151° 03' 43"	-0° 51' 57"	152° 47' 24"	10° 17' 11"	59' 32"	16' 13,16"	111° 19' 44"	78,89%

28 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	276° 14' 40"	0,20"	276° 48' 03"	-23° 17' 25"	0,9834225	16' 15,81"	23° 26' 16"	-01m 17s
01:00	276° 17' 13"	0,19"	276° 50' 49"	-23° 17' 18"	0,9834212	16' 15,81"	23° 26' 16"	-01m 18s
02:00	276° 19' 46"	0,18"	276° 53' 36"	-23° 17' 11"	0,9834199	16' 15,81"	23° 26' 16"	-01m 19s
03:00	276° 22' 18"	0,18"	276° 56' 22"	-23° 17' 03"	0,9834187	16' 15,81"	23° 26' 16"	-01m 21s
04:00	276° 24' 51"	0,17"	276° 59' 08"	-23° 16' 56"	0,9834174	16' 15,81"	23° 26' 16"	-01m 22s
05:00	276° 27' 24"	0,17"	277° 01' 54"	-23° 16' 49"	0,9834162	16' 15,81"	23° 26' 16"	-01m 23s
06:00	276° 29' 57"	0,16"	277° 04' 40"	-23° 16' 41"	0,9834150	16' 15,81"	23° 26' 16"	-01m 24s
07:00	276° 32' 30"	0,15"	277° 07' 26"	-23° 16' 34"	0,9834137	16' 15,82"	23° 26' 16"	-01m 25s
08:00	276° 35' 02"	0,15"	277° 10' 13"	-23° 16' 26"	0,9834125	16' 15,82"	23° 26' 16"	-01m 27s
09:00	276° 37' 35"	0,14"	277° 12' 59"	-23° 16' 19"	0,9834113	16' 15,82"	23° 26' 16"	-01m 28s
10:00	276° 40' 08"	0,14"	277° 15' 45"	-23° 16' 11"	0,9834101	16' 15,82"	23° 26' 16"	-01m 29s
11:00	276° 42' 41"	0,13"	277° 18' 31"	-23° 16' 03"	0,9834090	16' 15,82"	23° 26' 16"	-01m 30s
12:00	276° 45' 14"	0,13"	277° 21' 17"	-23° 15' 55"	0,9834078	16' 15,82"	23° 26' 16"	-01m 32s
13:00	276° 47' 47"	0,12"	277° 24' 03"	-23° 15' 48"	0,9834066	16' 15,82"	23° 26' 16"	-01m 33s
14:00	276° 50' 19"	0,11"	277° 26' 49"	-23° 15' 40"	0,9834055	16' 15,82"	23° 26' 16"	-01m 34s
15:00	276° 52' 52"	0,11"	277° 29' 36"	-23° 15' 32"	0,9834044	16' 15,82"	23° 26' 16"	-01m 35s
16:00	276° 55' 25"	0,10"	277° 32' 22"	-23° 15' 24"	0,9834032	16' 15,83"	23° 26' 16"	-01m 36s
17:00	276° 57' 58"	0,10"	277° 35' 08"	-23° 15' 16"	0,9834021	16' 15,83"	23° 26' 16"	-01m 38s
18:00	277° 00' 31"	0,09"	277° 37' 54"	-23° 15' 08"	0,9834010	16' 15,83"	23° 26' 16"	-01m 39s
19:00	277° 03' 03"	0,09"	277° 40' 40"	-23° 15' 00"	0,9833999	16' 15,83"	23° 26' 16"	-01m 40s
20:00	277° 05' 36"	0,08"	277° 43' 26"	-23° 14' 52"	0,9833988	16' 15,83"	23° 26' 16"	-01m 41s
21:00	277° 08' 09"	0,08"	277° 46' 12"	-23° 14' 43"	0,9833977	16' 15,83"	23° 26' 16"	-01m 43s
22:00	277° 10' 42"	0,07"	277° 48' 58"	-23° 14' 35"	0,9833967	16' 15,83"	23° 26' 16"	-01m 44s
23:00	277° 13' 15"	0,06"	277° 51' 44"	-23° 14' 27"	0,9833956	16' 15,83"	23° 26' 16"	-01m 45s
24:00	277° 15' 48"	0,06"	277° 54' 30"	-23° 14' 19"	0,9833946	16' 15,83"	23° 26' 16"	-01m 46s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	151° 03' 43"	-0° 51' 57"	152° 47' 24"	10° 17' 11"	59' 32"	16' 13,16"	111° 19' 44"	78,89%
01:00	151° 39' 17"	-0° 55' 07"	153° 20' 03"	10° 01' 37"	59' 29"	16' 12,54"	111° 27' 29"	78,50%
02:00	152° 14' 48"	-0° 58' 16"	153° 52' 35"	9° 46' 01"	59' 27"	16' 11,92"	111° 35' 01"	78,10%
03:00	152° 50' 17"	-1° 01' 25"	154° 25' 02"	9° 30' 23"	59' 25"	16' 11,30"	111° 42' 20"	77,70%
04:00	153° 25' 42"	-1° 04' 33"	154° 57' 24"	9° 14' 43"	59' 23"	16' 10,68"	111° 49' 27"	77,30%
05:00	154° 01' 05"	-1° 07' 40"	155° 29' 40"	8° 59' 02"	59' 20"	16' 10,05"	111° 56' 21"	76,90%
06:00	154° 36' 25"	-1° 10' 47"	156° 01' 50"	8° 43' 19"	59' 18"	16' 09,43"	112° 03' 03"	76,50%
07:00	155° 11' 42"	-1° 13' 53"	156° 33' 55"	8° 27' 35"	59' 16"	16' 08,80"	112° 09' 33"	76,10%
08:00	155° 46' 57"	-1° 16' 58"	157° 05' 55"	8° 11' 49"	59' 13"	16' 08,17"	112° 15' 50"	75,69%
09:00	156° 22' 08"	-1° 20' 03"	157° 37' 50"	7° 56' 03"	59' 11"	16' 07,53"	112° 21' 56"	75,28%
10:00	156° 57' 17"	-1° 23' 06"	158° 09' 40"	7° 40' 15"	59' 09"	16' 06,90"	112° 27' 49"	74,87%
11:00	157° 32' 23"	-1° 26' 09"	158° 41' 24"	7° 24' 26"	59' 06"	16' 06,27"	112° 33' 31"	74,46%
12:00	158° 07' 26"	-1° 29' 12"	159° 13' 04"	7° 08' 36"	59' 04"	16' 05,63"	112° 39' 01"	74,05%
13:00	158° 42' 26"	-1° 32' 13"	159° 44' 39"	6° 52' 45"	59' 02"	16' 04,99"	112° 44' 19"	73,63%
14:00	159° 17' 23"	-1° 35' 14"	160° 16' 09"	6° 36' 54"	58' 59"	16' 04,35"	112° 49' 26"	73,22%
15:00	159° 52' 18"	-1° 38' 13"	160° 47' 34"	6° 21' 02"	58' 57"	16' 03,71"	112° 54' 21"	72,80%
16:00	160° 27' 10"	-1° 41' 12"	161° 18' 55"	6° 05' 09"	58' 55"	16' 03,07"	112° 59' 05"	72,38%
17:00	161° 01' 59"	-1° 44' 10"	161° 50' 12"	5° 49' 16"	58' 52"	16' 02,43"	113° 03' 38"	71,96%
18:00	161° 36' 45"	-1° 47' 08"	162° 21' 24"	5° 33' 22"	58' 50"	16' 01,79"	113° 07' 59"	71,54%
19:00	162° 11' 28"	-1° 50' 04"	162° 52' 32"	5° 17' 28"	58' 48"	16' 01,14"	113° 12' 10"	71,11%
20:00	162° 46' 09"	-1° 52' 59"	163° 23' 35"	5° 01' 34"	58' 45"	16' 00,50"	113° 16' 10"	70,69%
21:00	163° 20' 47"	-1° 55' 54"	163° 54' 35"	4° 45' 40"	58' 43"	16' 00,00"	113° 19' 58"	70,26%
22:00	163° 55' 22"	-1° 58' 47"	164° 25' 30"	4° 29' 45"	58' 40"	15' 59,21"	113° 23' 36"	69,84%
23:00	164° 29' 54"	-2° 01' 40"	164° 56' 21"	4° 13' 51"	58' 38"	15' 58,57"	113° 27' 04"	69,41%
24:00	165° 04' 24"	-2° 04' 31"	165° 27' 09"	3° 57' 57"	58' 36"	15' 57,92"	113° 30' 20"	68,98%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	277° 15' 48"	0,06"	277° 54' 30"	-23° 14' 19"	0,9833946	16' 15,83"	23° 26' 16"	-01m 46s
01:00	277° 18' 20"	0,05"	277° 57' 17"	-23° 14' 10"	0,9833935	16' 15,84"	23° 26' 16"	-01m 47s
02:00	277° 20' 53"	0,05"	278° 00' 03"	-23° 14' 02"	0,9833925	16' 15,84"	23° 26' 16"	-01m 49s
03:00	277° 23' 26"	0,04"	278° 02' 49"	-23° 13' 53"	0,9833915	16' 15,84"	23° 26' 16"	-01m 50s
04:00	277° 25' 59"	0,04"	278° 05' 35"	-23° 13' 45"	0,9833905	16' 15,84"	23° 26' 16"	-01m 51s
05:00	277° 28' 32"	0,03"	278° 08' 21"	-23° 13' 36"	0,9833895	16' 15,84"	23° 26' 16"	-01m 52s
06:00	277° 31' 05"	0,03"	278° 11' 07"	-23° 13' 28"	0,9833885	16' 15,84"	23° 26' 16"	-01m 53s
07:00	277° 33' 37"	0,02"	278° 13' 53"	-23° 13' 19"	0,9833875	16' 15,84"	23° 26' 16"	-01m 55s
08:00	277° 36' 10"	0,02"	278° 16' 39"	-23° 13' 10"	0,9833865	16' 15,84"	23° 26' 16"	-01m 56s
09:00	277° 38' 43"	0,01"	278° 19' 25"	-23° 13' 01"	0,9833856	16' 15,84"	23° 26' 16"	-01m 57s
10:00	277° 41' 16"	0,01"	278° 22' 11"	-23° 12' 53"	0,9833846	16' 15,84"	23° 26' 16"	-01m 58s
11:00	277° 43' 49"	-0,00"	278° 24' 57"	-23° 12' 44"	0,9833837	16' 15,84"	23° 26' 16"	-02m 00s
12:00	277° 46' 22"	-0,01"	278° 27' 43"	-23° 12' 35"	0,9833827	16' 15,85"	23° 26' 16"	-02m 01s
13:00	277° 48' 54"	-0,01"	278° 30' 29"	-23° 12' 26"	0,9833818	16' 15,85"	23° 26' 16"	-02m 02s
14:00	277° 51' 27"	-0,02"	278° 33' 15"	-23° 12' 17"	0,9833809	16' 15,85"	23° 26' 16"	-02m 03s
15:00	277° 54' 00"	-0,02"	278° 36' 01"	-23° 12' 08"	0,9833800	16' 15,85"	23° 26' 16"	-02m 04s
16:00	277° 56' 33"	-0,03"	278° 38' 47"	-23° 11' 59"	0,9833791	16' 15,85"	23° 26' 16"	-02m 06s
17:00	277° 59' 06"	-0,03"	278° 41' 33"	-23° 11' 50"	0,9833782	16' 15,85"	23° 26' 16"	-02m 07s
18:00	278° 01' 39"	-0,04"	278° 44' 19"	-23° 11' 40"	0,9833773	16' 15,85"	23° 26' 16"	-02m 08s
19:00	278° 04' 12"	-0,04"	278° 47' 05"	-23° 11' 31"	0,9833765	16' 15,85"	23° 26' 16"	-02m 09s
20:00	278° 06' 44"	-0,05"	278° 49' 51"	-23° 11' 22"	0,9833756	16' 15,85"	23° 26' 16"	-02m 10s
21:00	278° 09' 17"	-0,05"	278° 52' 37"	-23° 11' 12"	0,9833748	16' 15,85"	23° 26' 16"	-02m 12s
22:00	278° 11' 50"	-0,06"	278° 55' 23"	-23° 11' 03"	0,9833739	16' 15,85"	23° 26' 16"	-02m 13s
23:00	278° 14' 23"	-0,06"	278° 58' 09"	-23° 10' 54"	0,9833731	16' 15,86"	23° 26' 16"	-02m 14s
24:00	278° 16' 56"	-0,07"	279° 00' 55"	-23° 10' 44"	0,9833723	16' 15,86"	23° 26' 16"	-02m 15s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	165° 04' 24"	-2° 04' 31"	165° 27' 09"	3° 57' 57"	58' 36"	15' 57,92"	113° 30' 20"	68,98%
01:00	165° 38' 50"	-2° 07' 22"	165° 57' 53"	3° 42' 03"	58' 33"	15' 57,28"	113° 33' 26"	68,55%
02:00	166° 13' 14"	-2° 10' 12"	166° 28' 33"	3° 26' 09"	58' 31"	15' 56,63"	113° 36' 22"	68,12%
03:00	166° 47' 35"	-2° 13' 00"	166° 59' 09"	3° 10' 16"	58' 29"	15' 55,99"	113° 39' 07"	67,69%
04:00	167° 21' 54"	-2° 15' 48"	167° 29' 42"	2° 54' 23"	58' 26"	15' 55,34"	113° 41' 42"	67,26%
05:00	167° 56' 09"	-2° 18' 34"	168° 00' 12"	2° 38' 31"	58' 24"	15' 54,70"	113° 44' 07"	66,82%
06:00	168° 30' 22"	-2° 21' 20"	168° 30' 38"	2° 22' 39"	58' 22"	15' 54,05"	113° 46' 22"	66,39%
07:00	169° 04' 32"	-2° 24' 04"	169° 01' 01"	2° 06' 47"	58' 19"	15' 53,41"	113° 48' 26"	65,95%
08:00	169° 38' 40"	-2° 26' 48"	169° 31' 21"	1° 50' 57"	58' 17"	15' 52,77"	113° 50' 21"	65,52%
09:00	170° 12' 44"	-2° 29' 30"	170° 01' 37"	1° 35' 07"	58' 14"	15' 52,13"	113° 52' 05"	65,08%
10:00	170° 46' 46"	-2° 32' 11"	170° 31' 51"	1° 19' 19"	58' 12"	15' 51,48"	113° 53' 40"	64,64%
11:00	171° 20' 45"	-2° 34' 51"	171° 02' 02"	1° 03' 31"	58' 10"	15' 50,84"	113° 55' 04"	64,21%
12:00	171° 54' 42"	-2° 37' 30"	171° 32' 10"	0° 47' 44"	58' 07"	15' 50,20"	113° 56' 19"	63,77%
13:00	172° 28' 36"	-2° 40' 08"	172° 02' 15"	0° 31' 58"	58' 05"	15' 49,56"	113° 57' 25"	63,33%
14:00	173° 02' 27"	-2° 42' 45"	172° 32' 18"	0° 16' 14"	58' 03"	15' 48,93"	113° 58' 20"	62,89%
15:00	173° 36' 16"	-2° 45' 20"	173° 02' 18"	0° 00' 30"	58' 00"	15' 48,29"	113° 59' 06"	62,45%
16:00	174° 10' 02"	-2° 47' 54"	173° 32' 15"	-0° 15' 12"	57' 58"	15' 47,65"	113° 59' 43"	62,01%
17:00	174° 43' 45"	-2° 50' 28"	174° 02' 10"	-0° 30' 52"	57' 56"	15' 47,02"	114° 00' 10"	61,57%
18:00	175° 17' 25"	-2° 53' 00"	174° 32' 03"	-0° 46' 32"	57' 53"	15' 46,39"	114° 00' 27"	61,13%
19:00	175° 51' 03"	-2° 55' 30"	175° 01' 54"	-1° 02' 09"	57' 51"	15' 45,75"	114° 00' 35"	60,69%
20:00	176° 24' 39"	-2° 58' 00"	175° 31' 42"	-1° 17' 46"	57' 49"	15' 45,12"	114° 00' 34"	60,25%
21:00	176° 58' 11"	-3° 00' 28"	176° 01' 28"	-1° 33' 20"	57' 46"	15' 44,49"	114° 00' 24"	59,81%
22:00	177° 31' 42"	-3° 02' 55"	176° 31' 13"	-1° 48' 53"	57' 44"	15' 43,87"	114° 00' 04"	59,37%
23:00	178° 05' 09"	-3° 05' 21"	177° 00' 55"	-2° 04' 24"	57' 42"	15' 43,24"	113° 59' 35"	58,93%
24:00	178° 38' 34"	-3° 07' 46"	177° 30' 35"	-2° 19' 53"	57' 40"	15' 42,62"	113° 58' 57"	58,49%

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DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	278° 16' 56"	-0,07"	279° 00' 55"	-23° 10' 44"	0,9833723	16' 15,86"	23° 26' 16"	-02m 15s
01:00	278° 19' 29"	-0,07"	279° 03' 41"	-23° 10' 35"	0,9833715	16' 15,86"	23° 26' 16"	-02m 16s
02:00	278° 22' 01"	-0,07"	279° 06' 27"	-23° 10' 25"	0,9833707	16' 15,86"	23° 26' 16"	-02m 18s
03:00	278° 24' 34"	-0,08"	279° 09' 13"	-23° 10' 15"	0,9833699	16' 15,86"	23° 26' 16"	-02m 19s
04:00	278° 27' 07"	-0,08"	279° 11' 59"	-23° 10' 06"	0,9833691	16' 15,86"	23° 26' 16"	-02m 20s
05:00	278° 29' 40"	-0,09"	279° 14' 44"	-23° 09' 56"	0,9833683	16' 15,86"	23° 26' 16"	-02m 21s
06:00	278° 32' 13"	-0,09"	279° 17' 30"	-23° 09' 46"	0,9833675	16' 15,86"	23° 26' 16"	-02m 22s
07:00	278° 34' 46"	-0,10"	279° 20' 16"	-23° 09' 36"	0,9833668	16' 15,86"	23° 26' 16"	-02m 24s
08:00	278° 37' 19"	-0,10"	279° 23' 02"	-23° 09' 26"	0,9833660	16' 15,86"	23° 26' 16"	-02m 25s
09:00	278° 39' 51"	-0,11"	279° 25' 48"	-23° 09' 16"	0,9833653	16' 15,86"	23° 26' 16"	-02m 26s
10:00	278° 42' 24"	-0,11"	279° 28' 34"	-23° 09' 06"	0,9833646	16' 15,86"	23° 26' 16"	-02m 27s
11:00	278° 44' 57"	-0,12"	279° 31' 20"	-23° 08' 56"	0,9833639	16' 15,86"	23° 26' 16"	-02m 29s
12:00	278° 47' 30"	-0,12"	279° 34' 06"	-23° 08' 46"	0,9833631	16' 15,87"	23° 26' 16"	-02m 30s
13:00	278° 50' 03"	-0,12"	279° 36' 52"	-23° 08' 36"	0,9833624	16' 15,87"	23° 26' 16"	-02m 31s
14:00	278° 52' 36"	-0,13"	279° 39' 37"	-23° 08' 26"	0,9833617	16' 15,87"	23° 26' 16"	-02m 32s
15:00	278° 55' 09"	-0,13"	279° 42' 23"	-23° 08' 16"	0,9833611	16' 15,87"	23° 26' 16"	-02m 33s
16:00	278° 57' 42"	-0,14"	279° 45' 09"	-23° 08' 06"	0,9833604	16' 15,87"	23° 26' 16"	-02m 35s
17:00	279° 00' 14"	-0,14"	279° 47' 55"	-23° 07' 55"	0,9833597	16' 15,87"	23° 26' 16"	-02m 36s
18:00	279° 02' 47"	-0,15"	279° 50' 41"	-23° 07' 45"	0,9833591	16' 15,87"	23° 26' 16"	-02m 37s
19:00	279° 05' 20"	-0,15"	279° 53' 27"	-23° 07' 34"	0,9833584	16' 15,87"	23° 26' 16"	-02m 38s
20:00	279° 07' 53"	-0,15"	279° 56' 13"	-23° 07' 24"	0,9833578	16' 15,87"	23° 26' 16"	-02m 39s
21:00	279° 10' 26"	-0,16"	279° 58' 58"	-23° 07' 13"	0,9833571	16' 15,87"	23° 26' 16"	-02m 41s
22:00	279° 12' 59"	-0,16"	280° 01' 44"	-23° 07' 03"	0,9833565	16' 15,87"	23° 26' 16"	-02m 42s
23:00	279° 15' 32"	-0,17"	280° 04' 30"	-23° 06' 52"	0,9833559	16' 15,87"	23° 26' 16"	-02m 43s
24:00	279° 18' 04"	-0,17"	280° 07' 16"	-23° 06' 42"	0,9833553	16' 15,87"	23° 26' 16"	-02m 44s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	178° 38' 34"	-3° 07' 46"	177° 30' 35"	-2° 19' 53"	57' 40"	15' 42,62"	113° 58' 57"	58,49%
01:00	179° 11' 57"	-3° 10' 09"	178° 00' 14"	-2° 35' 21"	57' 37"	15' 41,99"	113° 58' 10"	58,04%
02:00	179° 45' 17"	-3° 12' 32"	178° 29' 51"	-2° 50' 46"	57' 35"	15' 41,37"	113° 57' 14"	57,60%
03:00	180° 18' 34"	-3° 14' 52"	178° 59' 27"	-3° 06' 10"	57' 33"	15' 40,75"	113° 56' 09"	57,16%
04:00	180° 51' 49"	-3° 17' 12"	179° 29' 01"	-3° 21' 31"	57' 30"	15' 40,14"	113° 54' 55"	56,72%
05:00	181° 25' 01"	-3° 19' 30"	179° 58' 33"	-3° 36' 51"	57' 28"	15' 39,52"	113° 53' 32"	56,28%
06:00	181° 58' 11"	-3° 21' 47"	180° 28' 05"	-3° 52' 08"	57' 26"	15' 38,91"	113° 52' 00"	55,84%
07:00	182° 31' 19"	-3° 24' 03"	180° 57' 35"	-4° 07' 23"	57' 24"	15' 38,30"	113° 50' 19"	55,40%
08:00	183° 04' 24"	-3° 26' 18"	181° 27' 03"	-4° 22' 35"	57' 21"	15' 37,69"	113° 48' 30"	54,95%
09:00	183° 37' 26"	-3° 28' 31"	181° 56' 31"	-4° 37' 46"	57' 19"	15' 37,08"	113° 46' 32"	54,51%
10:00	184° 10' 26"	-3° 30' 42"	182° 25' 58"	-4° 52' 54"	57' 17"	15' 36,48"	113° 44' 25"	54,07%
11:00	184° 43' 24"	-3° 32' 53"	182° 55' 23"	-5° 07' 59"	57' 15"	15' 35,88"	113° 42' 09"	53,63%
12:00	185° 16' 19"	-3° 35' 02"	183° 24' 48"	-5° 23' 02"	57' 13"	15' 35,28"	113° 39' 45"	53,19%
13:00	185° 49' 12"	-3° 37' 10"	183° 54' 12"	-5° 38' 02"	57' 10"	15' 34,68"	113° 37' 12"	52,75%
14:00	186° 22' 03"	-3° 39' 16"	184° 23' 35"	-5° 53' 00"	57' 08"	15' 34,09"	113° 34' 31"	52,31%
15:00	186° 54' 51"	-3° 41' 21"	184° 52' 57"	-6° 07' 55"	57' 06"	15' 33,50"	113° 31' 41"	51,88%
16:00	187° 27' 37"	-3° 43' 25"	185° 22' 19"	-6° 22' 47"	57' 04"	15' 32,91"	113° 28' 43"	51,44%
17:00	188° 00' 20"	-3° 45' 27"	185° 51' 41"	-6° 37' 37"	57' 02"	15' 32,32"	113° 25' 36"	51,00%
18:00	188° 33' 01"	-3° 47' 28"	186° 21' 01"	-6° 52' 24"	57' 00"	15' 31,74"	113° 22' 20"	50,56%
19:00	189° 05' 40"	-3° 49' 28"	186° 50' 22"	-7° 07' 07"	56' 57"	15' 31,16"	113° 18' 57"	50,13%
20:00	189° 38' 17"	-3° 51' 26"	187° 19' 42"	-7° 21' 48"	56' 55"	15' 30,58"	113° 15' 24"	49,69%
21:00	190° 10' 51"	-3° 53' 23"	187° 49' 02"	-7° 36' 26"	56' 53"	15' 30,00"	113° 11' 44"	49,25%
22:00	190° 43' 23"	-3° 55' 18"	188° 18' 22"	-7° 51' 01"	56' 51"	15' 29,43"	113° 07' 55"	48,82%
23:00	191° 15' 53"	-3° 57' 12"	188° 47' 42"	-8° 05' 32"	56' 49"	15' 28,86"	113° 03' 58"	48,39%
24:00	191° 48' 20"	-3° 59' 05"	189° 17' 01"	-8° 20' 01"	56' 47"	15' 28,29"	112° 59' 52"	47,95%

31 Desember 2026 M

DATA MATAHARI

Jam	Apparent Ecliptic Longitude	Apparent Ecliptic Latitude	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation of Time
00:00	279° 18' 04"	-0,17"	280° 07' 16"	-23° 06' 42"	0,9833553	16' 15,87"	23° 26' 16"	-02m 44s
01:00	279° 20' 37"	-0,17"	280° 10' 02"	-23° 06' 31"	0,9833547	16' 15,87"	23° 26' 16"	-02m 45s
02:00	279° 23' 10"	-0,18"	280° 12' 47"	-23° 06' 20"	0,9833541	16' 15,87"	23° 26' 16"	-02m 47s
03:00	279° 25' 43"	-0,18"	280° 15' 33"	-23° 06' 09"	0,9833535	16' 15,87"	23° 26' 16"	-02m 48s
04:00	279° 28' 16"	-0,18"	280° 18' 19"	-23° 05' 59"	0,9833530	16' 15,88"	23° 26' 16"	-02m 49s
05:00	279° 30' 49"	-0,19"	280° 21' 05"	-23° 05' 48"	0,9833524	16' 15,88"	23° 26' 16"	-02m 50s
06:00	279° 33' 22"	-0,19"	280° 23' 51"	-23° 05' 37"	0,9833518	16' 15,88"	23° 26' 16"	-02m 51s
07:00	279° 35' 55"	-0,20"	280° 26' 36"	-23° 05' 26"	0,9833513	16' 15,88"	23° 26' 16"	-02m 52s
08:00	279° 38' 27"	-0,20"	280° 29' 22"	-23° 05' 15"	0,9833508	16' 15,88"	23° 26' 16"	-02m 54s
09:00	279° 41' 00"	-0,20"	280° 32' 08"	-23° 05' 04"	0,9833502	16' 15,88"	23° 26' 16"	-02m 55s
10:00	279° 43' 33"	-0,21"	280° 34' 54"	-23° 04' 52"	0,9833497	16' 15,88"	23° 26' 16"	-02m 56s
11:00	279° 46' 06"	-0,21"	280° 37' 39"	-23° 04' 41"	0,9833492	16' 15,88"	23° 26' 16"	-02m 57s
12:00	279° 48' 39"	-0,21"	280° 40' 25"	-23° 04' 30"	0,9833487	16' 15,88"	23° 26' 16"	-02m 58s
13:00	279° 51' 12"	-0,22"	280° 43' 11"	-23° 04' 19"	0,9833482	16' 15,88"	23° 26' 16"	-03m 00s
14:00	279° 53' 45"	-0,22"	280° 45' 56"	-23° 04' 07"	0,9833477	16' 15,88"	23° 26' 16"	-03m 01s
15:00	279° 56' 18"	-0,22"	280° 48' 42"	-23° 03' 56"	0,9833473	16' 15,88"	23° 26' 16"	-03m 02s
16:00	279° 58' 50"	-0,23"	280° 51' 28"	-23° 03' 45"	0,9833468	16' 15,88"	23° 26' 16"	-03m 03s
17:00	280° 01' 23"	-0,23"	280° 54' 14"	-23° 03' 33"	0,9833463	16' 15,88"	23° 26' 16"	-03m 04s
18:00	280° 03' 56"	-0,23"	280° 56' 59"	-23° 03' 22"	0,9833459	16' 15,88"	23° 26' 16"	-03m 06s
19:00	280° 06' 29"	-0,24"	280° 59' 45"	-23° 03' 10"	0,9833454	16' 15,88"	23° 26' 16"	-03m 07s
20:00	280° 09' 02"	-0,24"	281° 02' 31"	-23° 02' 58"	0,9833450	16' 15,88"	23° 26' 16"	-03m 08s
21:00	280° 11' 35"	-0,24"	281° 05' 16"	-23° 02' 47"	0,9833446	16' 15,88"	23° 26' 16"	-03m 09s
22:00	280° 14' 08"	-0,24"	281° 08' 02"	-23° 02' 35"	0,9833441	16' 15,88"	23° 26' 16"	-03m 10s
23:00	280° 16' 41"	-0,25"	281° 10' 48"	-23° 02' 23"	0,9833437	16' 15,88"	23° 26' 16"	-03m 12s
24:00	280° 19' 14"	-0,25"	281° 13' 33"	-23° 02' 11"	0,9833433	16' 15,88"	23° 26' 16"	-03m 13s

DATA BULAN

Jam	Apparent Longitude	Apparent Latitude	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Semi Diameter	Angle Bright Limb	Fraction Illumination
00:00	191° 48' 20"	-3° 59' 05"	189° 17' 01"	-8° 20' 01"	56' 47"	15' 28,29"	112° 59' 52"	47,95%
01:00	192° 20' 46"	-4° 00' 56"	189° 46' 21"	-8° 34' 26"	56' 45"	15' 27,73"	112° 55' 39"	47,52%
02:00	192° 53' 09"	-4° 02' 46"	190° 15' 41"	-8° 48' 48"	56' 43"	15' 27,17"	112° 51' 17"	47,09%
03:00	193° 25' 30"	-4° 04' 34"	190° 45' 01"	-9° 03' 07"	56' 41"	15' 26,61"	112° 46' 47"	46,66%
04:00	193° 57' 49"	-4° 06' 21"	191° 14' 21"	-9° 17' 23"	56' 39"	15' 26,06"	112° 42' 09"	46,22%
05:00	194° 30' 05"	-4° 08' 07"	191° 43' 41"	-9° 31' 35"	56' 37"	15' 25,50"	112° 37' 22"	45,79%
06:00	195° 02' 20"	-4° 09' 51"	192° 13' 02"	-9° 45' 43"	56' 35"	15' 24,95"	112° 32' 28"	45,37%
07:00	195° 34' 32"	-4° 11' 33"	192° 42' 23"	-9° 59' 48"	56' 33"	15' 24,41"	112° 27' 25"	44,94%
08:00	196° 06' 43"	-4° 13' 15"	193° 11' 45"	-10° 13' 50"	56' 31"	15' 23,87"	112° 22' 14"	44,51%
09:00	196° 38' 51"	-4° 14' 54"	193° 41' 08"	-10° 27' 48"	56' 29"	15' 23,33"	112° 16' 56"	44,08%
10:00	197° 10' 57"	-4° 16' 33"	194° 10' 30"	-10° 41' 42"	56' 27"	15' 22,79"	112° 11' 29"	43,66%
11:00	197° 43' 01"	-4° 18' 10"	194° 39' 54"	-10° 55' 32"	56' 25"	15' 22,26"	112° 05' 54"	43,23%
12:00	198° 15' 03"	-4° 19' 45"	195° 09' 19"	-11° 09' 19"	56' 23"	15' 21,73"	112° 00' 11"	42,81%
13:00	198° 47' 03"	-4° 21' 19"	195° 38' 44"	-11° 23' 02"	56' 21"	15' 21,20"	111° 54' 20"	42,39%
14:00	199° 19' 01"	-4° 22' 51"	196° 08' 10"	-11° 36' 41"	56' 19"	15' 20,68"	111° 48' 22"	41,97%
15:00	199° 50' 57"	-4° 24' 22"	196° 37' 37"	-11° 50' 17"	56' 17"	15' 20,16"	111° 42' 15"	41,55%
16:00	200° 22' 51"	-4° 25' 52"	197° 07' 05"	-12° 03' 48"	56' 15"	15' 19,64"	111° 36' 00"	41,13%
17:00	200° 54' 44"	-4° 27' 20"	197° 36' 34"	-12° 17' 15"	56' 13"	15' 19,13"	111° 29' 38"	40,71%
18:00	201° 26' 34"	-4° 28' 47"	198° 06' 04"	-12° 30' 39"	56' 11"	15' 18,62"	111° 23' 07"	40,29%
19:00	201° 58' 22"	-4° 30' 12"	198° 35' 35"	-12° 43' 58"	56' 10"	15' 18,12"	111° 16' 29"	39,88%
20:00	202° 30' 08"	-4° 31' 36"	199° 05' 08"	-12° 57' 13"	56' 08"	15' 17,62"	111° 09' 43"	39,46%
21:00	203° 01' 53"	-4° 32' 58"	199° 34' 42"	-13° 10' 24"	56' 06"	15' 17,12"	111° 02' 49"	39,05%
22:00	203° 33' 36"	-4° 34' 19"	200° 04' 17"	-13° 23' 31"	56' 04"	15' 16,62"	110° 55' 47"	38,64%
23:00	204° 05' 16"	-4° 35' 38"	200° 33' 53"	-13° 36' 33"	56' 02"	15' 16,13"	110° 48' 37"	38,23%
24:00	204° 36' 55"	-4° 36' 56"	201° 03' 31"	-13° 49' 32"	56' 01"	15' 15,64"	110° 41' 20"	37,82%

LAMPIRAN - LAMPIRAN

PRESIDEN
REPUBLIK INDONESIA

KEPUTUSAN PRESIDEN REPUBLIK INDONESIA
NOMOR 41 TAHUN 1987

TENTANG

PEMBAGIAN WILAYAH REPUBLIK INDONESIA
MENJADI 3 (TIGA) WILAYAH WAKTU
PRESIDEN REPUBLIK INDONESIA

Menimbang :

a. bahwa pembagian waktu mempunyai peranan penting dalam menunjang kelancaran penyelenggaraan pemerintahan dalam arti yang seluas-luasnya dan dalam usaha peningkatan efesiensi kerja di segala bidang;
b. bahwa pembagian waktu sekarang ini dinilai tidak sesuai lagi dengan kenyataan waktu dan geografis, khususnya di beberapa daerah Propinsi Daerah Tingkat I Kalimantan Barat, Kalimantan Tengah, dan Propinsi Daerah Tingkat I Bali;
c. bahwa sehubungan dengan hal di atas, dipandang perlu untuk menata kembali pembagian wilayah waktu di Indonesia sebagaimana yang telah ditetapkan dalam Keputusan Presiden nomor 243 tahun 1963.

Mengingat : Pasal 4 ayat (1) Undang-undang Dasar 1945

MEMUTUSKAN :

Menetapkan : KEPUTUSAN PRESIDEN REPUBLIK INDONESIA TENTANG PEMBAGIAN WILAYAH REPUBLIK INDONESIA MENJADI 3 (TIGA) WILAYAH WAKTU

Pasal 1

(1) Wilayah Republik Indonesia dibagi menjadi (tiga) wilayah waktu dengan 3 (tiga) waktu tolok.
(2) 3 (tiga) wilayah waktu sebagaimana dimaksud dalam ayat (1) adalah :
    1. Waktu Indonesia Barat, meliputi :
        a. Seluruh Propinsi Daerah Tingkat I Sumatera
        b. Seluruh Propinsi Daerah Tingkat I Jawa dan Madura

PRESIDEN
REPUBLIK INDONESIA

- 2 -

c. Propinsi Daerah Tingkat I Kalimantan Barat
d. Propinsi Daerah Tingkat I Kalimantan Tengah

2. Waktu Indonesia Tengah, meliputi

a. Propinsi Daerah Tingkat I Kalimantan Timur;
b. Propinsi Daerah Tingkat I Kalimantan Selatan;
c. Propinsi Daerah Tingkat 1 Bali;
d. Propinsi Daerah Tingkat I Nusa Tenggara Barat;
e. Propinsi Daerah Tingkat I Nusa Tenggara Timur;
f. Propinsi Daerah Tingkat I Timor Timur;
g. Propinsi Daerah Tingkat I Sulawesi

3. Waktu Indonesia Timur meliputi
a. Propinsi Daerah Tingkat I Maluku
b. Propinsi Daerah Tingkat I Irian Jaya

(3) 3 (tiga) wilayah waktu sebagaimana dimaksud dalam ayat (2) tersebut, masing-masing ditetapkan dengan waktu tolok sebagai berikut :
a. Waktu Indonesia Barat dengan waktu tolok (GMT + 7 jam) dan derajah tolok 105° Bujur Timur;
b. Waktu IndonesiaTengah dengan waktu tolok (GMT + 8 jam) dan derajah tolok 120° Bujur Timur
c. Waktu Indonesia Timur dengan waktu tolok (GMT + 9 jam) dan derajah tolok 135° Bujur Timur.

Pasal 2

Pada saat mulai berlakunya Keputusan Presiden Ini, Keputusan Presiden Normor 243 Tahun 1963 tentang tentang Pembagian Wilayah Republik Indonesia menjadi 3 (tiga) Wilayah Waktu Dengan 3 (tiga) Waktu Tolok dinyatakan tidak berlaku.

PRESIDEN
REPUBLIK INDONESIA

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Pasal 3

Keputusan Presiden ini mulai berlaku pada tanggal 1 Januari 1988

Ditetapkan di Jakarta
Pada tanggal 26 Nopember 1987
PRESIDEN REPUBLIK INDONESIA

ttd

S O E H A R T O

Salinan sesuai dengan aslinya
SEKRETARIAT KABINET RI
Kepala Biro Hukum
dan Perundang-undangan

Bambang Koesowo, SH, LLM

KEBIJAKAN PEMERINTAH RI
DALAM MENETAPKAN AWAL BULAN QAMARIYAH
DI INDONESIA

MUKADIMAH

1. Undang-undang Nomor 3 Tahun 2006 tentang Perubahan Undang-undang Nomor 7 Tahun 1989 tentang Peradilan Agama pasal 52A Pengadilan Agama memberikan Itsbat Kesaksian Rukyat Hilal dalam penentuan awal bulan pada tahun Hijriyah. Sedangkan penetapan awal bulan qomariyah masih menjadi kewenangan Menteri Agama. Berdasarkan Peraturan Menteri Agama nomor 42tahun 2016 tentang Organisasi dan Tata Kerja Kementerian Agama, Direktorat Urusan Agama Islam dan Pembinaan Syariah mempunyai tugas melaksanakan perumusan dan pelaksanaan kebijakan, standardisasi, bimbingan teknis, dan evaluasi, serta pengawasan di bidang urusan agama islam dan pembinaan syariah sesuai dengan ketentuan peraturan perundang-undangan yang termasuk di dalamnya masalah hisab rukyat, sedangkan pelaksanaan di daerah di tangani oleh Bidang Urusan Agama Islam dan Pembinaan Syariah / Bimas Islam.

2. Menyatukan penentuan awal Ramadan, Syawal dan Zulhijah merupakan salahsatu upaya mewujudkan persatuan umat dalam beribadah sehingga terciptapersatuan umat, baik lahir maupun batin serta adanya kehidupan yang penuhrasa toleransi, selaras, seimbang dan berkesinambungan.

3. Namun dalam kenyataannya penentuan tersebut terdapat perbedaan (Khilaf) di kalangan para ulama dan pemuka agama Islam. Di satu pihak bersikukuh dengan rukyat sedangkan di lain pihak boleh saja dengan hisab.

4. Masalah puasa dan hari raya, disamping merupakan masalah fiqh termasuk juga masalah sosial, masalah yang dikerjakan secara umum bersama-sama,maka perbedaan tersebut dapat berdampak yang kurang baik di kalangan kaum muslimin sendiri maupun masyarakat pada umumnya. Islam adalah Agamarahmatal lil ‘aalamiin dengan membawa konsep ukhuwah telah banyak tercatat dalam sejarah, namun dalam soal puasa dan hari raya, yang seharusnya sama ternyata belum mampu bersatu.

DASAR HUKUM

1. Undang-Undang Nomor 25 Tahun 2004 tentang Sistem Perencanaan Pembangunan Nasional;

2. Undang-Undang Nomor 3 Tahun 2006 tentang Perubahan Atas Undang-Undang Nomor 7 Tahun 1989 tentang Peradilan Agama;
3. Undang-undang Nomor 17 Tahun 2007 tentang Rencana Pembangunan Jangka Panjang Nasional Tahun 2005-2025;
4. Peraturan Presiden Nomor 7 tahun 2015 tentang Organisaasi Kementerian Negara;
5. Peraturan Presiden Nomor 83 tahun 2015 tentang Kementerian Agama;
6. Peraturan Menteri Agama Nomor 42 Tahun 2016 tentang Organisasi dan Tata Kerja Kementerian Agama;
7. Peraturan Menteri Agama Nomor 13 Tahun 2012 tentang Organisasi dan Tata Kerja Instansi Vertikal Kementerian Agama.

SASARAN

1. Meningkatnya kualitas pelayanan kehidupan beragama bagi seluruh lapisan masyarakat;
2. Menyamakan persepsi penentuan awal bulan qomariyah;
3. Meningkatnya kerukunan intern dan antar umat beragama dalam rangka terwujudnya kehidupan yang harmonis, toleransi dan saling menghormati.

KEBIJAKAN

1. Umum :
    a. Menghimpun seluruh pendapat ulama, para ahli dan instansi terkaitdalam masalah hisab rukyat
    b. Mengembangkan ilmu hisab dan rukyat
    c. Melaksanakan musyawarah / pertemuan
    d. Melakukan rukyat bersama
    e. Menyelenggarakan pelatihan bersama
    f. Menyusun dan menyebarkan buku, almanak dan sebagainya
    g. Melakukan kerjasama dalam maupun luar negeri.
2. Kebijakan Penetapan Awal Bulan Qomariyah
    a. Selain Ramadan, Syawal, dan Zulhijah dapat berdasar hisab (tinggi hilal + 2°,elongasi 3° atau umur bulan 8 jam antara saat ijtima' dengan ghurub)

b. Untuk Ramadan, Syawal, dan Zulhijah berdasar hisab dan rukyat, yaitu:

1) Data hisab dan hasil rukyat sebagai masukan

2) Ditetapkan dalam sidang itsbat

3) Rukyat dilaksanakan oleh Pegawai Kementerian Agama, Kanwil Kementerian Agama, Kantor Kementerian Agama Kabupaten/Kota,instansi terkait, Ormas Islam dan masyarakat luas (Koordinator : Kanwil Kementerian Agama/Kantor Kementerian Agama Kab/Kota)

4) Itsbat rukyat hilal oleh hakim Pengadilan Tinggi Agama / Pengadilan Agama

3. Tim Hisab Rukyat Pusat dikoordinasikan oleh Direktorat Urusan Agama Islam dan Pembinaan Syariah, BHR Daerah dikoordinasikan olehKanwil Kementerian Agama Provinsi, sedangkan BHR Kabupaten/Kota dikoordinasikan oleh Kantor Kementerian Agama Kabupaten/Kota.Badan Hisab Rukyat Kementerian Agama dapat terdiri dari unsur :

a. Kementerian Agama

b. Pengadilan Agama

c. Ulama / Majelis Ulama Indonesia

d. Ormas Islam

e. Perguruan Tinggi

f. Badan Meteorologi dan Geofisika/Planetarium

g. Pemerintah Daerah/Instansi terkait

h. Tokoh/Ahli hisab rukyat.

PROSEDUR PENETAPAN

1. Rukyatul Hilal

a. Dirjen Bimbingan Masyarakat Islam Kementerian Agama memeritahkan rukyatul hilal menjelang awal Ramadan, Syawal,dan Zulhijah kepada Kanwil Kementerian Agama dan Kantor Kementerian Agama seluruh Indonesia.

b. Kanwil Kementerian Agama dan Kantor Kementerian Agama sebagai koordinator penyelenggaraan pelaksanaan rukyat di daerah masing-masing.

c. Rukyat dilakukan bersama-sama dengan instansi terkait, perwakilan ormas Islam, tokoh agama, ahli hisab rukyat, dan masyarakat luas.

Untuk mendukung kelancaran kegiatan di atas, Ditjen Badan Peradilan Agama Mahkamah Agung menugaskan Hakim Agama pada Pengadilan Tinggi

Agama/Mahkamah Syariah Provinsi dan Pengadilan Agama/Mahkamah Syariah seluruh Indonesia sebagai tenaga ahli dan petugas menyumpah saksi rukyatul hilal.

Oleh karena itu, Kanwil Kementerian Agama dan Kantor Kementerian Agama sebagai penanggung jawab dan koordinator pelaksanaan rukyat didaerah masing-masing diharapkan melakukan rukyatul hilal di tempat-tempat strategis dan di tempat-tempat lain yang dimungkinkan hilal dapat terlihat dan selalu mengikut sertakan Hakim Pengadilan Agama/Mahkamah Syariah. Sedangkan masyarakat luas yang ingin melakukan rukyat agar bergabung atau berkoordinasi dengan Panitia Rukyat Kanwil Kementerian Agama dan Kantor Kementerian Agama di daerah masing-masing. Masyarakat diharapkan tidak membuat tempat rukyat sendiri-sendiri tanpa sepengetahuan Kanwil Kementerian Agama dan Kantor Kementerian Agama.

Laporan rukyat dari Panitia Rukyat Daerah dan masyarakat luas sesegera mungkin dilaporkan kepada Panitia Rukyat dan Itsbat Awal Ramadan, Syawal dan Zulhijah di Kementerian Agama RI.

2. Penetapan Pemerintah

Dalam madzhab Syafi'i mensyaratkan bahwa penetapan (itsbat) awal bulan qamariyah khususnya awal Ramadan, Syawal, dan Zulhijah harus dilakukan oleh pemerintah/qadli. Apabila pemerintah telah menetapkannya maka seluruh umat Islam wajib mengikuti dan melaksanakannya. Sedang madzhab Hanafi,Maliki, dan Hanbali tidak mensyaratkan harus ditetapkan oleh pemerintah/qadli. Tetapi jika pemerintah telah menetapkannya maka umat Islam wajib mengikuti dan mentaatinya.

Itsbat (penetapan) Pemerintah diperlukan karena ada beberapa keuntungan,antara lain :

1. Itsbat diperlukan untuk mendapatkan keabsahan
2. Itsbat diperlukan untuk mencegah kerancuan dan keraguan sistem pelaporan.
3. Itsbat diperlukan untuk penyatuan umat dan menghilangkan perbedaan pendapat.

Semuanya wajib mengikuti dan mentaati, serta tidak boleh lagi terjadi adanya silang pendapat demi tegaknya ukhuwah Islamiyah. Sesuai dengan kaidah fiqih :

a. *Hukm al hakim ilzam wa yarfa'u al khilaf*.

b. *Tasharruf al imam 'ala raiyatih manuthun bi al mashlahah*.

c. *Inna ijtihada ulil amr huwa al ashlu al tsalits minas-syari'ah al islamiyah wa innahum idza ajma'u ra'yahum wajaba 'ala al amah wa 'ala hukkamiha al 'amalu bih.*

d, Fatwa MUI Nomor 2 Tahun 2004 tentang Penentuan AwalRamadan, Syawal, dan Zulhijah. Menyatakan bahwa "seluruh umat Islam di Indonesia wajib

mentaati ketetapan Pemerintah RI tentang PenetapanAwal Ramadan, Syawal dan Zulhijah".

Pelaksanaan sidang itsbat selalu menjunjung tinggi musyawarah, menghormati sikap perbedaan pendapat, kebersamaan, dan demokratis, serta menerima saran dan pendapat dari peserta sidang. Setelah saran dan pendapat dibahas dan diterima, dengan suasana bersama-sama berupaya mencari keputusan yang terbaik, lalu mengambil musyawarah mufakat, bulat dan maslahah, maka sidang memutuskan "Penetapan tanggal 1 Ramadan, Syawal dan Zulhijah".

KEPUTUSAN FATWA
MAJELIS ULAMA INDONESIA
Nomor 2 tahun 2004
Tentang
PENETAPAN AWAL RAMADHAN, SYAWAL, DAN DZULHIJJAH

بِسْمِ اللهِ الرَّحْمَنِ الرَّحِيْمِ

Majelis Ulama Indonesia,

MENIMBANG :

a. bahwa umat Islam Indonesia dalam melaksanakan puasa Ramadhan, salat Idul Fitri dan Idul Adha, serta ibadah–ibadah lain yang terkait dengan ketiga bulan tersebut terkadang tidak dapat melakukannya pada hari dan tanggal yang sama disebabkan perbedaan dalam penetapan awal bulan-bulan tersebut;

b. bahwa keadaan sebagaimana tersebut pada huruf a dapat menimbulkan citra dan dampak negative terhadap syi'ar dan dakwah Islam;

c. bahwa Ijtima' Ulama Komisi Fatwa se-Indonesia pada tanggal 22 Syawwal 1424 H / 16 Desember 2003 telah menfatwakan tentang penetapan awal bulan Ramadhan, Syawwal, dan Dzulhijjah sebagai upaya mengatasi hal diatas;

d. bahwa oleh karena itu, Majelis Ulama Indonesia memandang perlu menetapkan fatwa tentang penetapan awal bulan Ramadhan, Syawwal dan Dzulhijjah dimaksud untuk dijadikan pedoman.

MENGINGAT :

1. Firman Allah SWT, antara lain

هُوَ الَّذِيْ جَعَلَ الشَّمْسَ ضِيَآءً وَالْقَمَرَ نُوْرًا وَقَدَّرَهُ مَنَازِلَ لِتَعْلَمُوْا عَدَدَ السِّنِيْنَ وَالْحِسَابَ (يونس[١٠]: ٥)

Dia-lah yang menjadikan matahari bersinar dan bulan bercahaya dan ditetapkan-Nya manzilah-manzilah (tempat-tempat) bagi perjalanan bulan itu, supaya kamu mengetahui bilangan tahun dan perhitungan (waktu). (QS Yunus [10]: 5)

يَآءَيُّهَا الَّذِيْنَ أَمَنُوْآ اَطِيْعُوا اللهَ وَأَطِيْعُوا الرَّسُوْلَ وَأُولِى الْأَمْرِ مِنْكُمْ (النساء[٤]:٥٩)

Hai orang-orang yang beriman, taatlah kepada Allah, taatlah kepada Rasul dan ulil-amri diantara kamu (QS. an-Nisa'[4]:59)

2. Hadits – hadits Nabi s.a.w, antara lain

١) لاَ تَصُوْمُوا حَتَّى تَرَوْا الْهِلاَلَ وَلاَ تُفْطِرُوْا حَتَّى تَرَوْهُ فَإِنْ غُمَّ عَلَيْكُمْ فَاقْدُرُوْا لَهُ (رواه البخاري ومسلم عن ابن عمر)

"janganlah kamu berpuasa (Ramadhan) sehingga melihat tanggal (satu Ramadhan) dan janganlah berbuka (mengakhiri puasa Ramadhan) sehingga tanggal (satu Syawwal). Jika dihalangi oleh awan/mendung maka kira-kiralah". (H.R. Bukhari Muslim dari Ibnu Umar).

٢) صُوْمُوْا لِرُؤْيَتِهِ وَأَفْطِرُوْا لِرُؤْيَتِهِ فَإِنْ غُبِيَ عَلَيْكُمْ فَأَكْمِلُوْا عِدَّةَ شَعْبَانَ ثَلاَثِيْنَ

"Berpuasalah (Ramadhan) karena melihat tanggal (satu Ramadhan). Dan berbukalah (mengakhiri puasa Ramadhan) karena melihat tanggal (satu Syawwal). Apabila kamu terhalangi, sehingga tidak dapat melihatnya maka sempurnakanlah bilangan Sya'ban tiga puluh hari". (Bukhari Muslim dari Abu Hurairah).

٣) عَلَيْكُمْ بِالسَّمْعِ وَالطَّاعَةِ وَإِنْ وُلِّيَ عَلَيْكُمْ عَبْدٌ حَبَشِّيٌ

"Wajib bagi kalian untuk taat (kepada pemimpin), meskipun yang memimpin kalian itu seorang hamba sahaya Habsyi". (H.R. Bukhari dari Irbadh bin Sariyah).

3. Qa'idah fiqh:

٤) حُكْمُ الْحَاكِمِ إِلْزَامٌ وَيَرْفَعُ الْخِلاَفَ

"Keputusan pemerintah itu mengikat (wajib dipatuhi) dan menghilangkan silang pendapat".

MEMPERHATIKAN : 1. Pendapat para ulama ahli fiqh; antara lain pendapat Imam al Syarwani dalam Hasyiyah al-Syarwani:

وَمَحَلُّ الْخِلاَفِ إِذَا لَمْ يَحْكُمْ بِهِ حَاكِمٌ، فَإِنْ حَكَمَ بِهِ حَاكِمٌ يَرَاهُ وَجَبَ الصَّوْمُ عَلَى الْكَافَةِ وَلَمْ يُنْقَضِ الْحُكْمُ إِجْمَاعًا. قَالَهُ النَّوَوِيُّ فِيْ مَجْمُوْعِهِ، وَهُوَ صَرِيْحٌ فِي أَنَّ لِلْقَاضِيْ أَنْ يَحْكُمَ بِكَوْنِ اللَّيْلَةِ مِنْ رَمَضَانَ .(حَاشِيَة الشرواني ، جزء ٣ ص ٣٧٦)

2. Keputusan Ijtima Ulama Komisi Fatwa se-Indonesia tentang Fatwa Bunga (interest/fa'idah), tanggal 22 Syawwal 1424/16 Desember 2003.
3. Keputusan Rapat Komisi Fatwa MUI, tanggal 05 Dzulhijjah 1424/24 Januari 2004.

Dengan memohon ridha Allah SWT

MEMUTUSKAN

MENETAPKAN : FATWA TENTANG PENETAPAN AWAL RAMADHAN, SYAWAL DAN DZULHIJJAH

Pertama : **Fatwa**

1. Penetapan awal Ramadhan, Syawal dan Dzulhijjah dilakukan berdasarkan metode ru'yah dan hisab oleh Pemerintah RI cq Menteri Agama dan berlaku secara nasional.

2. Seluruh umat Islam di Indonesia wajib menaati ketetapan pemerintah RI tentang penetapan awal Ramadhan, Syawal dan Dzulhijjah.

3. Dalam menetapkan awal Ramadhan, Syawal dan Dzulhijjah, Menteri Agama wajib berkonsultasi dengan Majelis Ulama Indonesia, ormas-ormas Islam dan Instansi terkait.

4. Hasil rukyat dari daerah yang memungkinkan hilal dirukyat walaupun di luar wilayah Indonesia yang

mathla'nya sama dengan Indonesia dapat dijadikan pedoman oleh Menteri Agama RI.

Kedua : **Rekomendasi**

Agar Majelis Ulama Indonesia mengusahakan adanya kriteria penentuan awal Ramadhan, Syawal dan Dzulhijjah untuk dijadikan pedoman oleh Menteri Agama dengan membahasnya bersama ormas-ormas Islam dan para ahli terkait.

Jakarta, 05 Dzulhijjah 1424 H
24 Januari 2004 M

MAJELIS ULAMA INDONESIA
KOMISI FATWA,

Ketua,	Sekretaris,
ttd	ttd
KH. MA'RUF AMIN	HASANUDIN

FATWA
MAJELIS ULAMA INDONESIA
Nomor : 05 Tahun 2010
Tentang
ARAH KIBLAT

بِسْمِ اللهِ الرَّحْمَنِ الرَّحِيْمِ

Komisi Fatwa Majelis Ulama Indonesia

Menimbang : a. bahwa dalam rangka memberikan pedoman kepada masyarakat tentang arah Kiblat,Majelis Ulama Indonesia menetapkan Fatwa Nomor 3 Tahun 2010 tentang Kiblat,yang pada bagian ketentuan Hukum Nomor 3 disebutkan:"Letak geografis Indonesia yang berada di bagian timur Ka'bah/Mekkah Maka kiblat umat islam Indonesia adalah menghadap ke arah barat".

b. bahwa terhadap diktum fatwa tersebut muncul pertanyaan di masyarakat, yang bisa menimbulkan kesimpangsiuran penafsiran serta pertanyaan mengenai keabsahan shalat yang arah kiblatnya menghadap ke barat laut;

c. bahwa oleh karena itu, Komisi Fatwa Majelils Ulama Indonesia memandang perlu menetapkan fatwa tentang arah kiblat untuk dijadikan pedoman bagi masyarakat.

Mengingat : 1. Firman Allah SWT:

قَدْ نَرَىٰ تَقَلُّبَ وَجْهِكَ فِي ٱلسَّمَآءِ ۖ فَلَنُوَلِّيَنَّكَ قِبْلَةً تَرْضَىٰهَا ۚ فَوَلِّ
وَجْهَكَ شَطْرَ ٱلْمَسْجِدِ ٱلْحَرَامِ ۚ وَحَيْثُ مَا كُنتُمْ فَوَلُّوا۟ وُجُوهَكُمْ
شَطْرَهُۥ ۗ وَإِنَّ ٱلَّذِينَ أُوتُوا۟ ٱلْكِتَٰبَ لَيَعْلَمُونَ أَنَّهُ ٱلْحَقُّ مِن رَّبِّهِمْ ۗ وَمَا
ٱللَّهُ بِغَٰفِلٍ عَمَّا يَعْمَلُونَ ﴿١٤٤﴾

Sungguh Kami (sering) melihat mukamu menengadah ke langit, maka sungguh Kami akan memalingkan kamu ke kiblat yang kamu sukai. Palingkanlah mukamu ke arah Masjidil Haram, dan di mana saja kamu berada, palingkanlah mukamu ke arahnya, dan sesungguhnya orang-orang (Yahudi dan Nasrani)

yang diberi Al-Kitab (Taurat dan Injil) memang mengetahui bahwa berpaling ke Masjidil Haram itu adalah benar dari Tuhannya; dan Allah sekali-kali tidak lengah dari apa yang mereka kerjakan. (QS. Al-Baqarah [2]:144)

2. Firman Allah SWT:

وَمِنْ حَيْثُ خَرَجْتَ فَوَلِّ وَجْهَكَ شَطْرَ ٱلْمَسْجِدِ ٱلْحَرَامِ ۖ وَإِنَّهُۥ لَلْحَقُّ مِن رَّبِّكَ ۗ وَمَا ٱللَّهُ بِغَٰفِلٍ عَمَّا تَعْمَلُونَ ﴿١٤٩﴾

Dan dari mana saja kamu keluar (datang), maka palingkanlah wajahmu ke arah Masjidil Haram; Sesungguhnya ketentuan itu benar-benar sesuatu yang haq dari Tuhanmu. Dan Allah sekali-kali tidak lengah dari apa yang kamu kerjakan. (QS. Al-Baqarah [2]:149)

3. Firman Allah SWT:

وَمِنْ حَيْثُ خَرَجْتَ فَوَلِّ وَجْهَكَ شَطْرَ ٱلْمَسْجِدِ ٱلْحَرَامِ ۖ وَحَيْثُ مَا كُنتُمْ فَوَلُّوا۟ وُجُوهَكُمْ شَطْرَهُۥ لِئَلَّا يَكُونَ لِلنَّاسِ عَلَيْكُمْ حُجَّةٌ إِلَّا ٱلَّذِينَ ظَلَمُوا۟ مِنْهُمْ فَلَا تَخْشَوْهُمْ وَٱخْشَوْنِى وَلِأُتِمَّ نِعْمَتِى عَلَيْكُمْ وَلَعَلَّكُمْ تَهْتَدُونَ ﴿١٥٠﴾

Dan dari mana saja kamu (keluar), maka palingkanlah wajahmu ke arah Masjidil Haram. Dan di mana saja kamu (sekalian) berada, maka palingkanlah wajahmu ke arahnya, agar tidak ada hujjah bagi manusia atas kamu, kecuali orang-orang yang zalim di antara mereka. Maka janganlah kamu takut kepada mereka dan takutlah kepada-Ku (saja). Dan agar Ku sempurnakan nikmat-Ku atasmu, dan supaya kamu mendapat petunjuk. (QS. Al-Baqarah [2] : 150)

4. Firman Allah SWT:

وَلِلَّهِ ٱلْمَشْرِقُ وَٱلْمَغْرِبُ ۚ فَأَيْنَمَا تُوَلُّوا۟ فَثَمَّ وَجْهُ ٱللَّهِ ۚ إِنَّ ٱللَّهَ وَٰسِعٌ عَلِيمٌ ﴿١١٥﴾

Dan kepunyaan Allah-lah Timur dan Barat, maka ke manapun kamu menghadap di situlah wajah Allah. Sesungguhnya Allah

Maha Luas (rahmat-Nya) lagi Maha Mengetahui. (QS. Al-Baqarah [2] : 115)

5. Firman Allah SWT:

وَجَٰهِدُواْ فِي ٱللَّهِ حَقَّ جِهَادِهِۦۚ هُوَ ٱجۡتَبَىٰكُمۡ وَمَا جَعَلَ عَلَيۡكُمۡ فِي ٱلدِّينِ مِنۡ حَرَجٖۚ مِّلَّةَ أَبِيكُمۡ إِبۡرَٰهِيمَۚ هُوَ سَمَّىٰكُمُ ٱلۡمُسۡلِمِينَ مِن قَبۡلُ وَفِي هَٰذَا لِيَكُونَ ٱلرَّسُولُ شَهِيدًا عَلَيۡكُمۡ وَتَكُونُواْ شُهَدَآءَ عَلَى ٱلنَّاسِۚ فَأَقِيمُواْ ٱلصَّلَوٰةَ وَءَاتُواْ ٱلزَّكَوٰةَ وَٱعۡتَصِمُواْ بِٱللَّهِ هُوَ مَوۡلَىٰكُمۡۖ فَنِعۡمَ ٱلۡمَوۡلَىٰ وَنِعۡمَ ٱلنَّصِيرُ ٧٨

Dan berjihadlah kamu di jalan Allah dengan jihad yang sebenar-benarnya. Dia telah memilih kamu dan Dia sekali-kali tidak menjadikan untuk kamu dalam agama suatu kesempitan. (Ikutilah) agama orang tuamu Ibrahim. Dia (Allah) telah menamai kamu sekalian orang-orang muslim dari dahulu, dan (begitu pula) dalam (al-Qur'an) ini, supaya Rasul itu menjadi saksi atas dirimu dan supaya kamu semua menjadi saksi atas segenap manusia, maka dirikanlah shalat, tunaikanlah zakat dan berpeganglah kamu pada tali Allah. Dia adalah Pelindungmu, maka Dialah sebaik-baik Pelindung dan sebaik-baik Penolong. (QS. Al-Hajj [22]:78)

6. Hadits Nabi SAW:

عَنْ عَطَاءٍ قَالَ : سَمِعْتُ ابْنَ عَبَّاسٍ قَالَ لَمَّا دَخَلَ النَّبِيُّ صلى الله عليه و سلم الْبَيْتَ دَعَا فِي نَوَاحِيهِ كُلِّهَا وَلَمْ يُصَلِّ حَتَّى خَرَجَ مِنْهُ فَلَمَّا خَرَجَ رَكَعَ رَكْعَتَيْنِ فِي قِبَلِ الْكَعْبَةِ وَقَالَ (هَذِهِ الْقِبْلَةُ)

Dari `Atho, ia berkata: aku mendengar Ibnu `Abbas berkata: setelah Rasulullah SAW masuk ke Ka`bah beliau berdo`a pada setiap sudutnya dan beliau tidak shalat (di dalamnya) sampai beliau keluar Ka`bah. Setelah beliau keluar Ka`bah, beliau lalu shalat dua raka`at di hadapan Ka`bah. Rasulullah SAW lalu bersabda : "Inilah kiblat". (HR. Imam Bukhari dan Imam Muslim)

7. Hadits Nabi SAW:

قَالَ أَبُو هُرَيْرَةَ قَالَ النَّبِيُّ –صلى الله عليه السلام– اِسْتَقْبِلِ الْقِبْلَةَ وَكَبِّرْ

(رواه البخارى)

Abu Hurairah berkata, Rasulullah SAW bersabda: "Menghadaplah kiblat, kemudian bertakbirlah (takbiratul ihram)" (HR. Imam Bukhari)

8. Hadits Nabi SAW:

عَنْ مَالِك عَنْ عَبْد اللَّه بْن دِينَار عَن ابْن عُمَرَ قَالَ بَيْنَمَا النَّاسُ فِى صَلاَةِ الصُّبْحِ بِقُبَاءٍ إِذْ جَاءَهُمْ آت فَقَالَ إِنَّ رَسُولَ اللَّه – صلى الله عليه وسلم – قَدْ أُنْزِلَ عَلَيْه اللَّيْلَةَ ، وَقَدْ أُمِرَ أَنْ يَسْتَقْبِلَ الْكَعْبَةَ ، فَاسْتَقْبِلُوهَا . وَكَانَتْ وُجُوهُهُمْ إِلَى الشَّأْمِ فَاسْتَدَارُوا إِلَى الْقِبْلَةِ . أطرافه

(رواه البخارى)

Dari Malik dari Abdullah bin Dinar dari Ibnu Umar berkata: ketika orang-orang sedang shalat Shubuh di Masjid Quba`, tiba-tiba datang seseorang berkata bahwa Rasulullah SAW tadi malam menerima wahyu dan diperintahkan untuk menghadap Ka`bah. Mereka lalu mengubah arah (shalat), yang ketika itu menghadap ke arah Syam (Baitul Maqdis), ke arah kiblat (Masjidil Haram). (HR. Imam Bukhari)

9. Hadits Nabi SAW:

عَنْ سَعِيد بْن أَبِى سَعِيد الْمَقْبُرِىِّ عَنْ أَبِى هُرَيْرَةَ – رضى الله عنه أَنَّ رَجُلاً دَخَلَ الْمَسْجِدَ وَرَسُولُ اللَّه – صلى الله عليه وسلم – جَالِسٌ فِى نَاحِيَةِ الْمَسْجِدِ فَصَلَّى ، ثُمَّ جَاءَ فَسَلَّمَ عَلَيْه فَقَالَ لَهُ رَسُولُ اللَّه – صلى الله عليه وسلم – « وَعَلَيْكَ السَّلاَمُ ارْجِعْ فَصَلِّ فَإِنَّكَ لَمْ تُصَلِّ » . فَرَجَعَ فَصَلَّى ، ثُمَّ جَاءَ فَسَلَّمَ . فَقَالَ « وَعَلَيْكَ السَّلاَمُ فَارْجِعْ فَصَلِّ ، فَإِنَّكَ لَمْ تُصَلِّ » . فَقَالَ فِى الثَّانِيَةِ أَوْ فِى الَّتِى بَعْدَهَا عَلِّمْنِى يَا رَسُولَ اللَّه . فَقَالَ « إِذَا قُمْتَ إِلَى الصَّلاَةِ فَأَسْبِغِ الْوُضُوءَ ، ثُمَّ اسْتَقْبِلِ الْقِبْلَةَ فَكَبِّرْ ، ثُمَّ اقْرَأْ بِمَا تَيَسَّرَ مَعَكَ مِنَ الْقُرْآنِ ، ثُمَّ ارْكَعْ حَتَّى تَطْمَئِنَّ رَاكِعًا ، ثُمَّ ارْفَعْ حَتَّى تَسْتَوِىَ قَائِمًا ، ثُمَّ اسْجُدْ حَتَّى تَطْمَئِنَّ سَاجِدًا ،

ثُمَّ ارْفَعْ حَتَّى تَطْمَئِنَّ جَالِسًا ، ثُمَّ اسْجُدْ حَتَّى تَطْمَئِنَّ سَاجِدًا ، ثُمَّ ارْفَعْ حَتَّى تَطْمَئِنَّ جَالِسًا ، ثُمَّ افْعَلْ ذَلِكَ فِي صَلاَتِكَ كُلِّهَا »

Dari Sa`id ibn Sa`id al-Maqburi dari Abu Hurairah r.a. bahwa ada seorang laki-laki masuk ke masjid kemudian ia shalat dan saat itu ada Rasulullah sedang duduk di salah satu sudut masjid. Setelah shalat orang itu mendatangi Rasul dan memberi salam kepada beliau. Rasul lalu menjawab: "Wa`alaikum al-salam, kembalilah/ulangilah shalatmu karena sesungguhnya kamu belum shalat". Laki-laki itu kemudian mengulangi shalatnya dan kembali mendatangi Rasul serta memberi salam kepada beliau. Rasul menjawab salam dan berkata: "ulangi kembali shalatmu karena kamu belum shalat". Kemudian laki-laki itu berkata di pengulangan shalat yang kedua atau sesudahnya; "Ajarilah aku wahai Rasulullah" Rasulullah menjawab : "Apabila engkau akan menunaikan shalat maka sempurnakanlah wudlu, menghadaplah kiblat lalu bertakbirlah (takbiratul ihram), kemudian bacalah apa yang mudah bagimu dari ayat-ayat al-Qur`an, lalu ruku`lah dengan thuma`ninah, lalu berdiri dengan sempurna, lalu sujud dengan thuma`ninah, lalu duduk dengan thuma`ninah, lalu sujud dengan thuma`ninah, kemudian bangun dan duduk dengan thuma`ninah. Maka lakukanlah seperti itu pada setiap shalat kamu" (HR. Imam Bukhari)

10. Hadits Nabi SAW:

أَبِي هُرَيْرَةَ رضي الله عنه أَنَّ النَّبِيَّ –صلى الله عليه السلام– قَالَ :" مَا بَيْنَ الْمَشْرِقِ وَالْمَغْرِبِ قِبْلَةٌ " (رواه الترمذي)

Dari Abu Hurairah r.a. bahwa Nabi SAW bersabda: "Arah antara Timur dan Barat adalah Kiblat". (HR. Imam al-Turmudzi)

11. Hadits Nabi SAW:

عَنِ ابْنِ عَبَّاسٍ أَنَّ رَسُولَ اللَّهِ صلى الله عليه وسلم قَالَ : الْبَيْتُ قِبْلَةٌ لأَهْلِ الْمَسْجِدِ ، وَالْمَسْجِدُ قِبْلَةٌ لأَهْلِ الْحَرَمِ ، وَالْحَرَمُ قِبْلَةٌ لأَهْلِ الأَرْضِ فِى مَشَارِقِهَا وَمَغَارِبِهَا مِنْ أُمَّتِى.

Dari Ibnu `Abbas bahwa Nabi SAW bersabda: Ka`bah adalah kiblat bagi orang yang shalat di masjidil haram, dan masjidil haram adalah kiblat bagi penduduk yang tinggal di tanah haram (Mekkah), dan tanah haram (Mekkah) adalah kiblat bagi penduduk bumi di timurnya dan di baratnya dari umatku".

Memperhatikan : 1. Pendapat Imam 'Ala al-Din al-Kasani al-Hanafi dalam kitab *Badai' Shanai' fi Tartib al-Syarai'*:

أَنَّ الْمُصَلِّيَ لَا يَخْلُو إمَّا إنْ كَانَ قَادِرًا عَلَى الاسْتِقْبَالِ أَوْ كَانَ عَاجِزًا عَنْهُ فَإِنْ كَانَ قَادِرًا يَجِبُ عَلَيْهِ التَّوَجُّهُ إلَى الْقِبْلَةِ إنْ كَانَ فِي حَالِ مُشَاهَدَةِ الْكَعْبَةِ فَإِلَى عَيْنِهَا ، أَيْ : أَيِّ جِهَةٍ كَانَتْ مِنْ جِهَاتِ الْكَعْبَةِ ، حَتَّى لَوْ كَانَ مُنْحَرِفًا عَنْهَا غَيْرَ مُتَوَجِّهٍ إلَى شَيْءٍ مِنْهَا لَمْ يَجُزْ ، لِقَوْلِهِ تَعَالَى :

{وَحَيْثُ مَا كُنْتُمْ فَوَلُّوا وُجُوهَكُمْ شَطْرَهُ } ، وَفِي وُسْعِهِ تَوْلِيَةُ الْوَجْهِ إلَى عَيْنِهَا فَيَجِبُ ذَلِكَ ، وَإِنْ كَانَ غَائِبًا عَنْ الْكَعْبَةِ يَجِبُ عَلَيْهِ التَّوَجُّهُ إلَى جِهَتِهَا ، وَهِيَ الْمَحَارِيبُ الْمَنْصُوبَةُ بِالْإِمَارَاتِ الدَّالَّةِ عَلَيْهَا لَا إلَى عَيْنِهَا ، وَتُعْتَبَرُ الْجِهَةُ دُونَ الْعَيْنِ . كَذَا ذَكَرَ الْكَرْخِيُّ وَالرَّازِي ، وَهُوَ قَوْلُ عَامَّةِ مَشَايِخِنَا بِمَا وَرَاءَ النَّهْرِ

"Sesungguhnya bagi orang yang shalat tidak boleh kosong/lepas, apakah ia mampu atau tidak, untuk

menghadap kiblat. Apabila ia mampu maka wajib baginya menghadap kiblat, jika ia dapat menyaksikannya (Ka'bah) maka ia harus menghadap kepada 'ainul Ka'bah atau kepada arah dari arah kiblat. Jika ia tidak menghadap salah satunya maka itu tidak diperbolehkan, sebagaimana firman Allah *"…dan dimana saja kamu berada, palingkanlah mukamu ke arahnya..."*. Dan dalam keadaan yang memungkinkan menghadap tepat

ke 'ainul ka'bah maka wajib dilakukan. Namun jika ghaib (tidak dapat melihat ka'bah) maka wajib menghadap ke arah Ka'bah (*jihatul Ka'bah*)…"

2. Pendapat Imam al-Qurtubi dalam Kitab *Jami` al-Ahkam Al-Qur'an* :

واختلفوا هل فرض الغائب استقبال العين أو الجهة؟ فمهنم من قال بالأول قال ابن العربي (ت ٥٤٣ هـ) وهو ضعيف لأنه تكليف لما لا يصل إليه . ومنهم من قال بالجهة ، وهو الصحيح لثلاثة أمور:

الأول : أنه الممكن الذي يرتبط به التكليف

الثاني : أنه المأمور به في القرآن لقوله تعالى : {فَوَلِّ وَجْهَكَ شَطْرَ الْمَسْجِدِ الْحَرَامِ وَحَيْثُ مَا كُنْتُمْ} يعني من الأرض من شرق أو غرب {فَوَلُّوا وُجُوهَكُمْ شَطْرَهُ }

الثالث : أن العلماء احتجوا بالصف الطويل الذي يعلم قطعا أنه أضعاف عرض البيت

"Mereka berbeda pendapat apakah wajib bagi si ghaib (orang yang shalat dan tidak dapat melihat Ka'bah) untuk menghadap tepat ke bangunan Ka'bah (*`ainul Ka'bah*) atau ke arah Ka'bah (*jihatul Ka'bah*)? sebagian berpendapat pertama (yaitu, menghadap *'ainul Ka'bah*) berkata Ibnu `Arabi (W.534 H) : pendapat ini adalah lemah karena membebani orang yang tidak dapat shalat dengan menghadap tepat *`ainul Ka'bah*. Sebagian lain berpendapat cukup menghadap arah Ka'bah (*Jihatul Ka'bah*). Pendapat terakhir inilah yang benar, dengan tiga alasan: (1) Bahwa hal inilah yang memungkinkan bagi ketentuan sebuah taklif (pembebanan hukum). (2) Bahwa hal inilah yang

diperintahkan oleh al-Qur'an dalam ayat فَوَلِّ وَجْهَكَ شَطْرَ الْمَسْجِدِ الْحَرَامِ (maka palingkanlah wajahmu ke arah Masjidil Haram) yakni belahan bumi di timur dan barat فَوَلُّوا وُجُوْهَكُمْ شَطْرَهُ (palingkanlah mukamu ke arahnya). (3) Bahwa para ulama berhujjah dengan (kebolehan) shalat dengan shaf yang panjang, yang sangat lemah (kecil kemungkinan) dapat menghadap tepat ke bangunan Ka'bah (*'ainul Ka'bah*)."

3. Pendapat Imam Al-Syirazi dalam kitab al-Muhadzdzab:

وإن لم يكن شيء من ذلك نظرت فإن كان ممن يعرف الدلائل فإن كان غائبا عن مكة اجتهد في طلب القبلة لأن له طريقا إلى معرفتها بالشمس والقمر والجبال والرياح ولهذا قال الله تعالى : { وَعَلاَمَاتٍ وَبِالنَّجْمِ هُمْ يَهْتَدُوْنْ } [النحل : ١٦] فكان له أن يجتهد كالعالم في الحادثة وفي فرضه قولان : قال في الأم : فرضها إصابة العين لأن من لزمه فرض القبلة لزمه إصابة العين المكي وظاهر ما نقله المزني أن الفرض هو الجهة لأنه لو كان الفرض هو العين لما صحت صلاة الصف الطويل لأن فيهم من يخرج عن العين

"Jika sama sekali ia tidak memiliki petunjuk apapun, maka dilihat maslahatnya. Jika ia termasuk orang yang mengetahui tanda-tanda atau petunjuk kiblat, maka meskipun ia tidak dapat melihat Ka'bah, ia harus tetap berijtihad mengetahi kiblat. Karena ia memiliki cara untuk mengetahuinya melalui keberadaan matahari, bulan, gunung, dan angin karena Allah SWT berfirman:

وَعَلاَمَاتٍ وَبِالنَّجْمِ هُمْ يَهْتَدُوْنْ

"Dan (Dia ciptakan) tanda-tanda (penunjuk jalan). Dan dengan bintang-bintang itulah mereka mendapat petunjuk". (Qs An-Nahl:16).

Dengan begitu ia berhak berijtihad (dalam menentukan letak Ka'bah) seperti orang yang paham tentang fenomena alam mengenai kewajibannya ada dua pendapat. Dalam kitab al-Umm, Imam al-Syafi'i berkata : "Yang wajib dalam berkiblat adalah menghadap secara tepat ke bangunan Ka'bah. Karena orang yang diwajibkan

untuk menghadap kiblat, ia wajib menghadap ke bangunan Ka'bah, seperti halnya orang Mekkah. "Sedangkan teks yang jelas yang dikutip oleh imam al-Muzanni (murid Imam al-Syafi'i) dari Imam al-Syafi'i mengatakan bahwa yang wajib adalah menghadap ke arah Ka'bah (Jihatul Ka'bah) karena seandainya yang wajib itu adalah menghadap ke bangunan Ka'bah secara fisik, maka shalat jama'ah yang shafnya memanjang adalah tidak sah, sebab diantara mereka terdapat orang yang menghadap ke arah di luar dari bangunan Ka'bah."

4. Pendapat Ibnu Qudamah al-Hanbali:

ولنا، قول النبي صلى الله عليه السلام :" ما بين المشرق والمغرب قبلة " رواه الترمذي وقال: حديث حسن صحيح وظاهره أن جميع ما بينهما قبلة . ولانه لو كان الفرض إصابة العين ، لما صحت صلاة اهل الصف الطويل على خط مستو، ولا صلاة اثنين متباعدين يستقبلان قبلة واحدة . فإنه لا يجوز أن يتوجه إلى الكعبة مع طول الصف إلا بقدرها . فإن قيل : مع البعيد يتسع المحاذي . قلنا : انما يتسع مع تقوس الصف ،أما مع استوائه فلا . وشطر البيت : نحوه و قبله.

"Dan bagi kita adalah sabda Nabi SAW:" Arah antara timur dan barat adalah kiblat"(HR.Imam At-Tirmidzi), menurut sebuah pendapat hadist ini adalah hasan shahih.yang jelas bahwa arah antara keduanya adalah kiblat karena jika yang diwajibkan adalah menghadap tepat ke bangunan Ka'bah ('ainul Ka'bah) maka tidaklah sah shalat orang dengan shaf yang panjang…"

5. Makalah Drs.KH.A.Ghazaly Masroeri tentang" arah kiblat dari Indonesia" Dan "Posisi Arah Barat Indonesia" dalam rapat komisi Fatwa MUI tanggal 1 Juli 2010;
6. Pandangan dan pendapat rapat Komisi Fatwa MUI pada hari senin tanggal 1 Februari 2010 dan 1 Juli 2010.

MEMUTUSKAN

Menetapkan : FATWA TENTANG ARAH KIBLAT

Pertama : Ketentuan Hukum

1. Kiblat bagi orang yang shalat dan dapat melihat Ka`bah adalah menghadap ke bangunan Ka`bah (*ainul Ka`bah*)
2. Kiblat bagi orang yang shalat dan tidak dapat melihat Ka`bah adalah arah Ka`bah (*Jihat al-Ka`bah*)
3. Kiblat umat Islam Indonesia adalah menghadap ke barat laut dengan posisi bervariasi sesuai dengan letak kawasan masing-masing.

Kedua : **Rekomendasi**
Bangunan masjid/musholla yang tidak tepat arah kiblatnya, perlu ditata ulang shafnya tanpa membongkar bangunannya

Ditetapkan di : Jakarta

Tanggal : 18 Rajab 1431 H
01 Juli 2010 M

KOMISI FATWA
MAJELIS ULAMA INDONESIA

Ketua,	Sekretaris,
ttd	ttd
DR. H. M. ANWAR IBRAHIM	DR. H. HASANUDIN, M.Ag.

CONTOH PERHITUNGAN DAN PENGUKURAN ARAH KIBLAT DENGAN THEODOLIT

Pada dasarnya semua theodolit itu sama, hanya berbeda dalam hal ketelitiannya saja. Dalam uraian ini akan digunakan theodolit merek "Topcon" tipe "DT–104".

A. Arah Kiblat menurut Al–Qur'an dan Hadis

Dalam kitab suci Al–Qur'an terdapat beberapa ayat yang menerangkan mengenai arah kiblat ini antara lain dalam surat al–Baqarah ayat 144 sebagai berikut:

قَدْ نَرَى تَقَلُّبَ وَجْهِكَ فِي السَّمَاءِ فَلَنُوَلِّيَنَّكَ قِبْلَةً تَرْضَاهَا فَوَلِّ وَجْهَكَ شَطْرَ الْمَسْجِدِ الْحَرَامِ وَحَيْثُ مَا كُنْتُمْ فَوَلُّوا وُجُوهَكُمْ شَطْرَهُ وَإِنَّ الَّذِينَ أُوتُوا الْكِتَابَ لَيَعْلَمُونَ أَنَّهُ الْحَقُّ مِنْ رَبِّهِمْ وَمَا اللَّهُ بِغَافِلٍ عَمَّا يَعْمَلُونَ...(البقرة : ١٤٤)

"Sungguh, Kami melihat wajahmu (Nabi Muhammad) sering menengadah ke langit. Maka, pasti akan Kami palingkan engkau ke kiblat yang engkau sukai. Lalu, hadapkanlah wajahmu ke arah Masjidilharam. Di mana pun kamu sekalian berada, hadapkanlah wajahmu ke arah itu. Sesungguhnya orang–orang yang diberi kitab41) benar–benar mengetahui bahwa (pemindahan kiblat ke Masjidilharam) itu adalah kebenaran dari Tuhan mereka. Allah tidak lengah terhadap apa yang mereka kerjakan." (QS. al–Baqarah:144)

Selain ayat–ayat Al–Qur'an arah kiblat juga dijelaskan dalam banyak hadis Rasulullah SAW, antara lain sebagai berikut :

Dalam *Sahih al–Bukhari* :

حَدَّثَنَا إِسْحَاقُ بْنُ نَصْرٍ قَالَ حَدَّثَنَا عَبْدُ الرَّزَّاقِ أَخْبَرَنَا ابْنُ جُرَيْجٍ عَنْ عَطَاءٍ قَالَ سَمِعْتُ ابْنَ عَبَّاسٍ قَالَ لَمَّا دَخَلَ النَّبِيُّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ الْبَيْتَ دَعَا فِي نَوَاحِيهِ كُلِّهَا وَلَمْ يُصَلِّ حَتَّى خَرَجَ مِنْهُ فَلَمَّا خَرَجَ رَكَعَ رَكْعَتَيْنِ فِي قُبُلِ الْكَعْبَةِ وَقَالَ "هَذِهِ الْقِبْلَةُ" (رواه البخارى)

Artinya : .... *Atha berkata: "Aku mendengar ibn Abbas berkata bahwa ketika Rasulullah SAW. memasuki Baitullah (Ka'bah), beliau berdoa di seantero Ka'bah itu, tetapi beliau tidak*

melakukan salat di dalamnya, sampai beliau keluar. Ketika sudah berada di luar Ka'bah beliau salat dua rakaat menghadap Ka'bah, lalu berkata inilah kiblat." (HR al–Bukhari).

Dalam kitab *Sunan al–Kubra li al–Baihaqi*, ia menulis :

حَدَّثَنَا عُمَرُ بْنُ حَفْصٍ الْمَكِّيُّ مِنْ وَلَدِ عَبْدِ الدَّارِحَدَّثَنَا ابْنُ جُرَيْجٍ عَنْ عَطَاءٍ عَنِ ابْنِ عَبَّاسٍ أَنَّ رَسُولَ اللَّهِ - صلى الله عليه وسلم - قَالَ : الْبَيْتُ قِبْلَةٌ لِأَهْلِ الْمَسْجِدِ , وَالْمَسْجِدُ قِبْلَةٌ لِأَهْلِ الْحَرَمِ , وَالْحَرَمُ قِبْلَةٌ لِأَهْلِ الأَرْضِ فِي مَشَارِقِهَا وَمَغَارِبِهَا مِنْ أُمَّتِي. تَفَرَدَبِهِ عُمَرُ بْنُ حَفْصٍ الْمَكِّيُّ وَهُوَ ضَعِيفٌ لاَ يُحْتَجُّ بِهِ وَرُوِىَ بِإِسْنَادٍ آخَرَ ضَعِيفٍ عَنْ عَبْدِ اللَّهِ بْنِ حُبْشِيٍّ كَذَلِكَ مَرْفُوعًا, وَلاَ يُحْتَجُّ بِمِثْلِهِ وَاللَّهُ أَعْلَم.(رواه البيهقى)

Artinya: … *Dari ibn Abbas, Rasulullah bersabda: "Baitullah adalah kiblat bagi orang yang berada di dalam masjid al–Haram, dan masjid al–Haram adalah kiblat bagi mereka yang berada di tanah Haram, dan tanah Haram kiblat bagi seluruh umatku di muka bumi baik di timur maupun di barat". (Al–Baihaqi berkata "Umar ibnu Hafsh meriwayatkan hadis ini seorang diri, dan dia tergolong daif, tidak dapat dijadikan hujjah". Hadis ini diriwayatkan juga dengan sanad lain yang daif juga, dari Abdillah ibnu Hubaisy, yang sanadnya marfu', tetapi juga tidak dapat dijadikan hujjah, Wallahu a'lam). (HR Al–Baihaqi).*

Dari ayat dan hadis–hadis dapat kita simpulkan bahwa kiblat umat Islam adalah Baitullah (Ka'bah), sebagaimana dijelaskan oleh hadis al–Bukhari tersebut. Sedangkan ayat Al–Qur'an memerintahkan menghadap ke "arah" Masjid al–Haram karena Ka'bah itu berada dalam Masjid al–Haram, dan ayat itu diturunkan di Madinah.

Sedangkan hadis al–Baihaqi yang menyatakan "Baitullah kiblat ahli Masjid (al–Haram), dan Masjid (al–Haram) kiblat bagi penduduk Tanah Haram, lalu Tanah Haram adalah kiblat bagi semua penghuni bumi timur dan barat, diakui sendiri oleh al–Baihaqi bahwa hadis itu lemah dan tidak dapat dijadikan hujjah. Oleh karena itu, semaksimal mungkin kita harus berusaha untuk menghadap Ka'bah, sesuai dengan petunjuk hadis di atas. Tentu saja kita tidak diberati dengan hal–hal yang di luar kemampuan kita, tetapi hal ini tidak mengurangi kewajiban kita untuk berusaha meningkatkan kemampuan kita untuk menghadap kiblat yang benar. Sama halnya dengan salat, bagi yang belum mampu membaca al–Fatihah, tidak apa–apa, tetapi tentu tidak mengurangi kewajibannya untuk berusaha mampu membaca al–Fatihah dan memenuhi semua syarat dan rukun salat yang lain termasuk menghadap kiblat.

B. Mencari Titik Utara

Arah (Utara, Timur, Selatan dan Barat) dapat ditentukan dengan langkah sebagai berikut:

1. Cocokkan jam yang akan dipakai dalam pengukuran ini dengan jam RRI/TVRI, hanya jam RRI/TVRI yang selalu dikontrol oleh Badan Meteorologi, Klimatologi dan Geofisika (BMKG).
2. Pasanglah theodolit pada tripod (tiang/kaki tiga)nya dengan benar dengan memperhatikan keseimbangan level–nya, agar tegak lurus dengan titik pusat bumi di atas suatu pelataran yang tidak terlindung dari sinar matahari.
3. Bidiklah titik pusat matahari, dan catat jam berapa pada saat itu, lalu kunci theodolit agar tidak berubah arahnya. Biarkan menghadap matahari pada saat pembidikan. Misalkan pembidikan dilakukan di Jakarta pada hari Jumat tanggal 14 Agustus 2026 jam 10:31:28 WIB = jam 03:31:28 UT.
4. Lihat Equation of time (e) dalam buku Ephemeris Hisab Rukyat tahun 2026 tanggal 14 Agustus 2026 jam 05:00 UT (jam 12:00 WIB = 05:00 UT). e = -00:04:46. Jadi Merpass= 12 – e = 12 – (-00:04:46) = jam 12:04:46 WIB.
5. Cari data deklinasi matahari, dalam buku Ephemeris Hisab Rukyat Tahun 2026 tanggal 14 Agustus 2026 jam 03:31:28 UT.

   Deklinasi

Jam 03 UT	=	14° 22’ 41” (utara)			=>	14° 22’ 41”
Jam 04 UT	=	14° 21’ 55” (utara)	_			
	=	0° 00’ 46”	×	0h 31m 28d	=>	0° 00’ 24” _
Deklinasi matahari (δ) pada jam 10:31:28 WIB						14° 22’ 17”

6. Hitung Sudut Waktu matahari dengan rumus :

$$\boxed{t = 15 \times (W - M) + \lambda - \omega}$$

Waktu pengukuran (W)	=	10 : 31 : 28	
Merpass (M)	=	12:04:46	_
W–M	=	-01:33:18	
		15	×
15 (W – M)	=	-23° 19’ 27”	
Bujur Tempat (λ)	=	106° 49’ 00’	+

		83° 29’ 33”
Bujur Waktu Standar WIB	=	105° 00’ 00” _
Sudut Waktu Matahari (t)	=	-21° 30’ 27”

7. Hitung azimut matahari pada jam pengukuran dengan rumus :

$$\cot A_m = (\tan \delta \times \cos \varphi : \sin t) - (\sin \varphi : \tan t)$$

Keterangan A_m = Azimut Matahari

δ = Deklinasi Matahari = 14° 22’ 17”

φ = Lintang Jakarta = –6° 10’

t = Sudut Waktu Matahari = -21° 30’ 27”

Perhitungan:

$\cot A_m$ = $(\tan \delta \times \cos \varphi : \sin t) - (\sin \varphi : \tan t)$

= (tan 14° 22’ 17” × cos –6° 10′ : sin -21° 30’ 27”) – (sin –6° 10′ : tan -21° 30’ 27”)

= (0,2562243730 × 0,9942136272 : -0,3666246403) – (-0,1074209639 : -0,3940637125)

= -0,9674278621

$\tan A_m$ = 1 : -0,9674278621 = -1,0336688028

Am = $\tan^{-1}$(-1,0336688028)

= -45° 56’ 55”

Jadi, azimut matahari di Jakarta pada tanggal 14 Agustus 2026 jam 10:31:28 WIB adalah = **45° 56’ 55”**

8. Hasil perhitungan itu diambil angka mutlaknya, menunjukkan :
   - Bila pengukuran dilakukan pagi hari, theodolit menghadap ke timur/matahari.
   - Bila pengukuran dilakukan sore hari, theodolit menghadap ke barat/matahari.
   - Bila deklinasi matahari di utara (+), angka itu adalah jarak matahari dari titik utara.
   - Bila deklinasi matahari di selatan (–), angka itu adalah jarak matahari dari titik selatan.

   Karena pengukuran (pembidikan matahari) dilakukan pada waktu pagi (jam 10:31:28), berarti theodolit menghadap ke timur, dan deklinasi matahari positif (utara), jadi titik utara berada di sebelah kiri theodolit.
9. Tekan tombol "R/L" agar display theodolit menunjukkan –HL 0° 0′ 0″.
10. Putar theodolit ke kiri (berlawanan dengan arah jarum jam) sebesar **45° 56’ 55”** . Inilah True North (titik utara sejati).

C. Menghitung Arah Kiblat di Lokasi Pengukuran

1. Untuk menghitung Azimut kiblat digunakan rumus :

$$\cot Q = (\tan \varphi_K \times \cos \varphi : \sin SB) - (\sin \varphi : \tan SB)$$

Keterangan

Q = Arah Kiblat

φ = Lintang Jakarta = –06° 10’ (S)

λ = Bujur Jakarta = 106° 49’ (T)

ϕ_K = Lintang Ka’bah = 21° 25’ (U)

λ_K = Bujur Ka’bah = 39° 50’ (T)

SB = Selisih Bujur = Bujur Jakarta – Bujur Ka’bah
= 106° 49’ – 39° 50’
= 66° 59’

Perhitungan :

$\cot Q = (\tan \varphi_K \times \cos \varphi : \sin SB) - (\sin \varphi : \tan SB)$

$= (\tan 21° 25' \times \cos -06° 10' : \sin 66° 59') - (\sin -06° 10' : \tan 66° 59')$

$= (0.3922313164 \times 0.9942136272 : 0.9203911554) - (-0.1074209639 : 2.353948341)$

$= 0.4693256702$

$\tan Q = 1 : 0.4693256702 = 2.130716608$

$Q = \tan^{-1}(2.130716608)$

$= 64° 51' 29.27''$

Jadi arah kiblat di tempat yang diukur adalah 64° 51’ 29,27” dari titik Utara ke arah barat , atau 25° 08’ 30,73” dari titik Barat ke arah utara.

2. Tekan tombol “0–Set” agar display theodolit menunjukkan –HL 0° 0’ 0”.

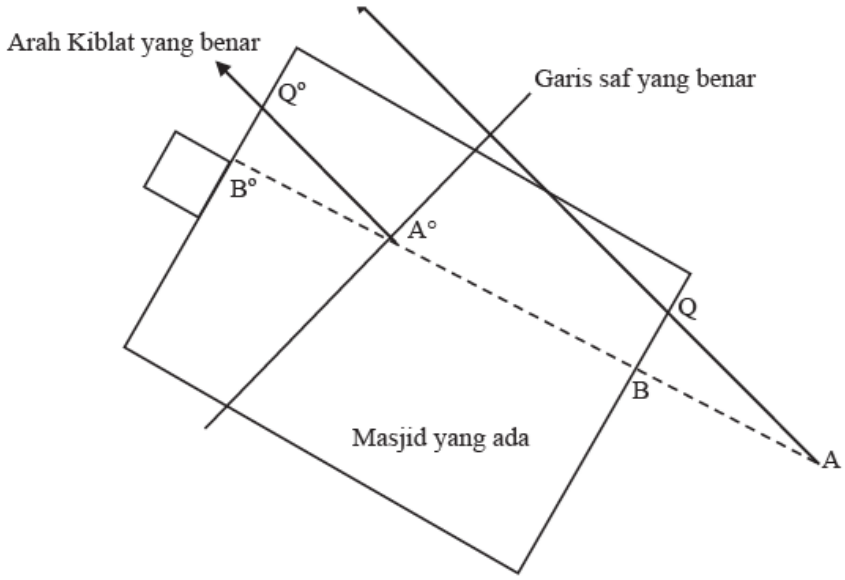
D. Menentukan Arah Kiblat

Untuk mengukur arah kiblat (64° 51’ 29,27” dari titik Utara ke arah barat), maka theodolit ini harus diputar lagi ke kiri (berlawanan dengan arah jarum jam), sebanyak 64° 51’ 29,27”.

E. Memindahkan Garis Arah Kiblat ke dalam Masjid

Kalau masjid yang bersangkutan sudah jadi (hanya perlu memperbaiki arah kiblatnya saja), sedangkan pengukuran dengan theodolit yang menggunakan sinar matahari tentu dilakukan di luar masjid, maka perlu memindahkan Garis Arah Kiblat itu ke dalam masjid.

Perhatikan gambar berikut ini:



1. Buat garis AB tegak lurus dengan saf kiblat masjid yang sudah ada dimulai dari titik pengukuran (A).
2. Buat garis arah kiblat yang benar sampai ke badan masjid. AQ adalah garis kiblat yang telah diukur.
3. Ukur panjang AB dan BQ.
4. Buat segitiga siku–siku $A^o\ B^o\ Q^o$ di dalam masjid dekat mihrab sebagaimana terlihat dalam gambar, dan pastikan bahwa sudut $B^o = 90^o$, panjang garis $A^o\ Q^o = AQ$, dan garis $B^o\ Q^o = BQ$.
5. Garis $A^o\ Q^o$ adalah arah kiblat yang benar yang telah dimasukkan ke dalam masjid.
6. Buat garis tegak lurus dengan garis $A^o\ Q^o$ untuk membuat saf.

CONTOH PERHITUNGAN DAN PENGUKURAN ARAH KIBLAT DENGAN SINAR MATAHARI

A. PERALATAN YANG DIPERLUKAN

1. Sebatang kayu atau besi sepanjang ± 1 meter, dengan diameter ± 2 cm.
2. Sebuah segitiga siku–siku yang besar.
3. Sebuah meteran gulung minimal 12,5 meter.
4. Segulung benang besar atau tali plastik kecil.

B. MEMPERSIAPKAN BAHAN–BAHAN DAN PERHITUNGAN

1. **Menghitung Sudut Arah Kiblat**

Dalam contoh ini pengukuran akan dilaksanakan di Jakarta (06° 10′ LS dan 106° 49′ BT) tanggal 16 Agustus 2026, jam 10.00 WIB.

Untuk menghitung Azimut Kiblat digunakan rumus :

$$\text{cotan } Q = (\tan \varphi_K \times \cos \varphi : \sin SB) - (\sin \varphi : \tan SB)$$

Keterangan

Q = Arah Kiblat
φ = Lintang Jakarta = –06° 10’ (S)
λ = Bujur Jakarta = 106° 49’ (T)
φ_K = Lintang Ka’bah = 21° 25’ (U)
λ_K = Bujur Ka’bah = 39° 50’ (T)
SB = Selisih Bujur = Bujur Jakarta – Bujur Ka’bah
106° 49’ – 39° 50’ = 66° 59’

Perhitungan :

cotan Q = (tan φ_K × cos φ : sin SB) – (sin φ : tan SB)
= (tan 21° 25′ × cos –06° 10′ : sin 66° 59′) –
(sin –06° 10′ : tan 66° 59′)
= (0.3922313164 × 0.9942136272 : 0.9203911554) –
(–0.1074209639 : 2.353948341)
= 0.4693256702
tan Q = 1: 0.4693256702 = 2.130716608

Q = $\tan^{-1}$ (2.130716608)

= 64º 51′ 29.27″

Inilah arah kiblat di Jakarta (64º 51’ 29.27” dari titik Utara ke barat), atau 25º 08’ 30.73” dari titik Barat ke utara.

2. Menghitung Azimut Matahari

a. Lihat *Equation of Time* (e) dalam buku Ephemeris Hisab Rukyat tahun 2026 tanggal 16 Agustus 2026 jam 12:00 WIB (jam 05:00 UT). e = -00:04:22. Jadi Merpass = 12 – e = 12 – (-00:04:22) = jam 12° 04’ 22” .

b. Cari data deklinasi matahari, dalam buku Ephemeris Hisab Rukyat Tahun 2026 tanggal 16 Agustus 2026 jam 10:00 WIB (jam 03:00 UT) = 13° 45’ 15”

c. Hitung sudut waktu matahari dengan rumus :

$$t = 15 \times (W - M) + \lambda - \omega$$

Waktu pengukuran (W)	=	10 : 00 : 00	
Merpass (M)	=	12° 04’ 22” .	–
W – M	=	-02:04:22.	
		15	×
15 (W – M)	=	-31° 05’ 36”	
		.	
Bujur Tempat (λ)	=	106º 49’	+
		75° 43’ 24”	
Bujur Waktu Standar WIB	=	105º	–
Sudut Waktu Matahari (t)	=	-29° 16’ 36”	

d. Hitung azimut matahari pada jam pengukuran dengan rumus :

$$\tan A_m = \sin t \ : \ ((\cos \phi \times \tan \delta) - (\sin \phi \times \cos t))$$

Keterangan Am = Azimut Matahari

δ	=	Deklinasi Matahari	=	13° 45’ 15”
φ	=	Lintang Jakarta	=	–6º 10’
t	=	Sudut Waktu Matahari	=	-29° 16’ 36”

Perhitungan:

$\tan A_m$ = sin t : ((cos ϕ × tan δ) – (sin ϕ × cos t))

$\tan A_m$ = sin -29° 16’ 36” : ((cos –6º 10’ × tan 13° 45’ 15”)
– (sin –6º 10’ × cos -29° 16’ 36”))

= -0,4890278987 : ((0,9942136272 × 0,2447775123)
– (-0,1074209639 × 0,8722681436))

= -0,4890278987 : ((0,2433611384) – (-0,0936998847))

= -0,4890278987 : 0,3370610231

= -1,4508586433

Am = $\tan^{-1}$ -1,4508586433

= -55° 25’ 25” => 55° 25’ 25”

Jadi, azimut matahari di Jakarta pada tanggal 16 Agustus 2026 jam 10.00 WIB adalah = 55° 25’ 25”

C. MENGUKUR ARAH KIBLAT

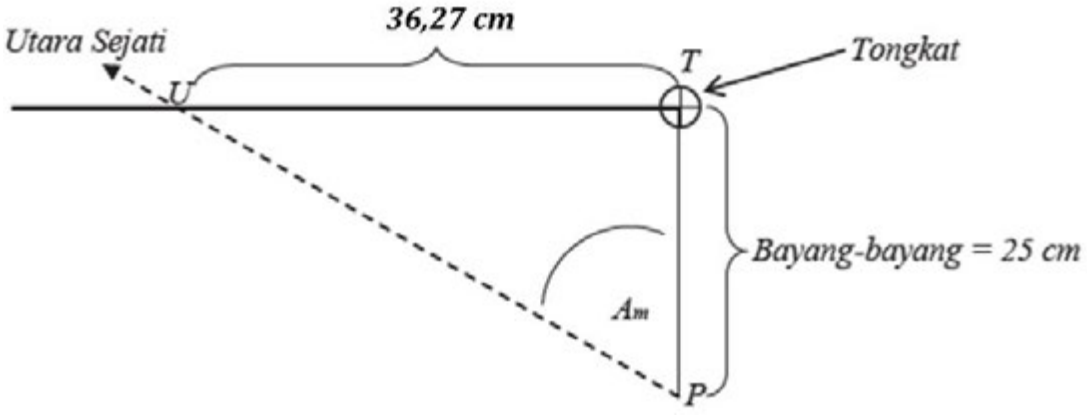
1. Mencari Titik Utara

Untuk penentuan arah (Utara, Timur, Selatan, dan Barat) dilakukan langkah–langkah sebagai berikut :

a. Tegakkan sebuah tiang/tongkat sepanjang ± 1 meter di suatu lapangan yang tidak terhalang dari sinar matahari. Pastikan tiang tersebut betul–betul tegak lurus (gantungkan benang yang diberi pemberat);

b. Tunggu tepat jam 10:00 WIB, dan ukur panjang bayang–bayang tongkat, misalnya 25 cm, lalu buat garis sepanjang bayang–bayang tersebut.

c. Buat garis (T–U) tegak lurus dengan garis bayang–bayang tersebut di tempat kedudukan tongkat ke arah utara. (Karena pengukuran jam 10 pagi berarti matahari berada di sebelah timur). Perhatikan gambar berikut ini:



d. Ukur azimut matahari dari derajat menjadi cm dengan rumus :

TU = tan Am × Panjang bayang–bayang

a. = tan 55° 25’ 25” × 25 cm

b. = 36,27 cm

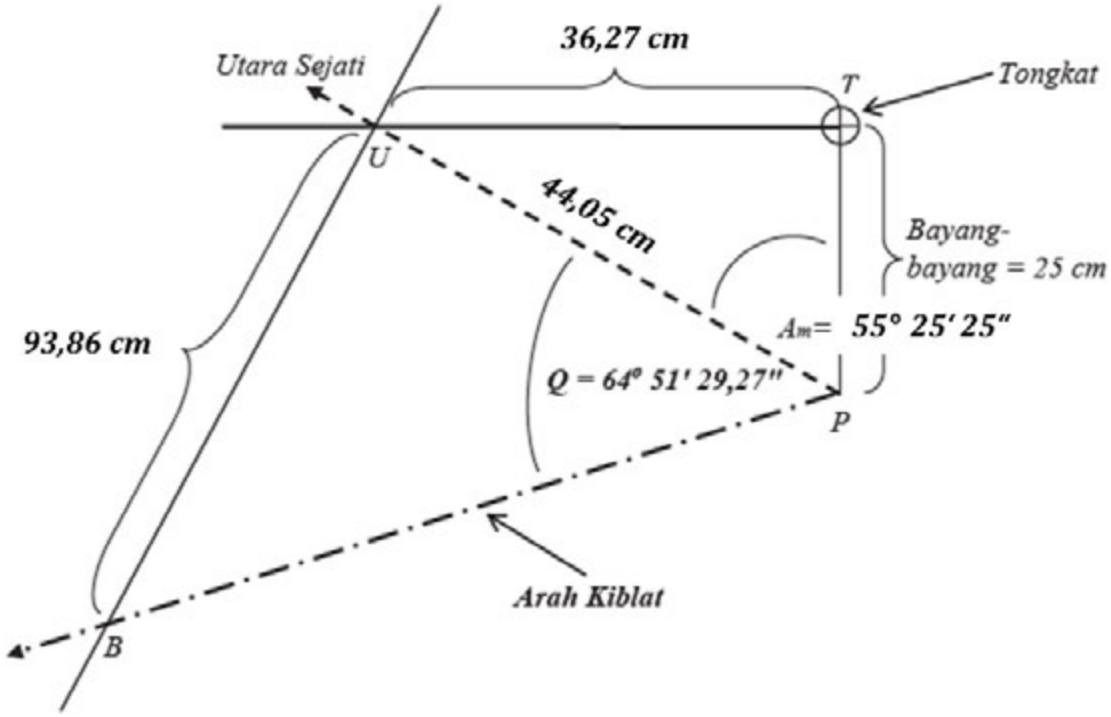
e. Ukur garis TU sepanjang 36,27 cm.

f. Hubungkan titik P dan titik U; dan inilah arah Utara–Selatan.

g. Ukur panjang garis P–U atau hitung dengan rumus Phytagoras didapat 44,05 cm.

2. Mencari Arah Kiblat

a. Buat garis (U – B) tegak lurus dengan garis P–U di tempat kedudukan titik U ke arah barat. (Karena pengukuran jam 10 pagi berarti matahari di sebelah timur). Perhatikan gambar berikut ini :



b. Ubah sudut arah kiblat dari derajat menjadi centimeter dengan rumus :

UB = tan Q × Panjang garis P–U

= tan 64° 51’ 29.27” × 44,05 cm = 93,86 cm.

c. Ukur garis U–B sepanjang 93,86 cm.

d. Hubungkan titik P dan titik B; dan inilah arah kiblat yang dicari.

D. Memindahkan Garis Arah Kiblat ke dalam Masjid.

Untuk memindahkan arah kiblat ke dalam masjid dapat dilakukan langkah–langkah seperti dalam Contoh Cara Pengukuran Arah Kiblat dengan theodolit dalam buku Ephemeris ini.

CONTOH PERHITUNGAN AWAL WAKTU SHALAT UNTUK JAKARTA

Pada tanggal 17 Agustus 2026

Data :

1. Lintang Tempat (φ) = –06º 10’ (LS)
2. Bujur Tempat (λ) = 106º 49’ (BT)
3. Deklinasi Matahari ($\delta_\odot$) jam 5 GMT = 13° 24’ 37”
4. Equation of Time (e) jam 5 GMT = -00h 04m 10s

   $\delta_\odot$ dan e jam 5 UT untuk WIB, 4 untuk WITA dan 3 untuk WIT.
5. cotan h_{asar} = tan [φ – δ] + 1
   = tan [–06º 10’ – 13° 24’ 37”] + 1
   = tan 19° 34’ 37” + 1
   = 0,35563025938 + 1

   tan h_{asar} = $1{,}35563025938^{-1}$
   = 0,73766426581

   hasar = $\tan^{-1}$ 0,73766426581 = 36° 24’ 54”

   a. h_{asar} = 36° 24’ 54”
   b. h_{magrib} = –01º
   c. $h_{isya'}$ = –18º
   d. h_{subuh} = –20º
   e. h_{imsak} = 10 menit sebelum subuh
   f. h_{terbit} = –01º
   g. h_{dhuha} = 04º 30’

   6. Mer. Pass = 12h 00m 00^d – (-00h 04m 10s)
   = 12h 04m 10s
7. Interpolasi = (106º 49’ – 105º) : 15
   = 00h 07m 16s

1. Awal Waktu Zuhur :

Mer. Pass	=	12h 04m 10s	(LMT)
Interpolasi	=	00h 07m 16s	–
		11h 56m 54s	
		11h 57m	
Ikhtiyat	=	00h 03m	+
		12h 00m	(WIB)

2. Awal Waktu Ashar :

$$\cos t = -\tan \varphi \times \tan \delta_{\odot} + \sin h_{as} : \cos \varphi : \cos \delta_{\odot}$$

cos t = – tan –06º 10’ × tan 13° 24’ 37” + sin 36° 24’ 54” :
cos –06º 10’ : cos 13° 24’ 37”
= 0.108046159232 × 0,238422826165 + 0,59362776311 :
0.994213627205 : 0,972734367734
= 0,63957953634

t = 50° 14’ 22”

Mer. Pass	=	12h 04m 10s	
t : 15	=	03h 20m 57s	+
		15h 25m 07s	(LMT)
Interpolasi	=	00h 07m16s	–
		15h 17m 51s	
		15h 18m	
Ikhtiyat	=	00h 02m	+
Ashar	=	15h 20m	(WIB)

3. Awal Waktu Maghrib :

$$\cos t = -\tan \varphi \times \tan \delta_{\odot} + \sin h_{mg} : \cos \varphi : \cos \delta_{\odot}$$

cos t = –tan –06 º 10’ × tan 13° 24’ 37” + sin –01º : cos –06 º 10’ :
cos 13° 24’ 37”
= 0.108046159232 × 0,238422826165 + –0.01745240644 :
0.994213627205 : 0,972734367734
= 0,00771465428

t = 89° 33’ 29”

Mer. Pass	=	12h 04m 10s	
t : 15	=	05h 58m 14s	+
		18h 02m 24s	(LMT)
Interpolasi	=	00h 07m16s	–

		17h 55m 08s	
		17h 56m	
Ikhtiyat	=	00h 02m	+
Maghrib	=	17h 58m	(WIB)

4. **Awal Waktu Isya' :**

$$\cos t = -\tan \varphi \times \tan \delta_{\odot} + \sin h_{is} : \cos \varphi : \cos \delta_{\odot}$$

cos t = – tan –06 º 10' × tan 13° 24' 37" + sin –18º :
cos –06 º 10' : cos 13° 24' 37"
= 0.108046159232 × 0,238422826165 + -0.309016994375 :
0.994213627205 : 0,972734367734
= -0,29376694036

t = 107° 05' 01"

Mer. Pass	=	12h 04m 10s	
t : 15	=	07h 08m 20s	+
		19h 12m 30s	(LMT)
Interpolasi	=	00h 07m16s	_
		19h 05m 14s	
		19h 06m	
Ikhtiyat	=	00h 02m	+
Isya'	=	19h 08m	(WIB)

5. Awal Waktu Subuh :

$$\cos t = -\tan \varphi \times \tan \delta_{\odot} + \sin h_{sb} : \cos \varphi : \cos \delta_{\odot}$$

cos t = – tan –06 º 10' × tan 13° 24' 37" + sin –20º :
cos –06 º 10' : cos 13° 24' 37"
= 0. 108046159232 × 0,238422826165 + –0.3420201433 :
0.994213627205 : 0,972734367734

= -0,32789262770

t = 109° 08’ 27”

Mer. Pass = 12h 04m 10s

t : 15 = 07h 16m 34s _

04h 47m 36s (LMT)

Interpolasi = 00h 07m16s _

04h 40m 20s

04h 41m

Ikhtiyat = 00h 02m +

Subuh = 04h 43m (WIB)

6. Waktu Imsak :

Imsak = Waktu Subuh – 10m

Subuh = 04h 43m (WIB)

= 00h 10m –

Imsak = 04h 33m (WIB)

7. Waktu Terbit :

$\cos t = -\tan \varphi \times \tan \delta_\odot + \sin h_{tb} : \cos \varphi : \cos \delta_\odot$

cos t = – tan –06o 10’ × tan 13° 24’ 37” + sin –01° :

cos –06o 10’ : cos 13° 24’ 37”

= 0.108046159232 × 0,238422826165 + –0.01745240644 :

0.994213627205 : 0,972734367734

= 0,00771465428

t = 89° 33’ 29”

Mer. Pass = 12h 04m 10s

t : 15 = 05h 58m 14s _

06h 05m 56s (LMT)

Interpolasi	=	00h 07m16s	_
		05h 58m 40s	
		05h 58m	
Ikhtiyat	=	00h 02m	_
Terbit	=	05h 56m	(WIB)

8. Awal Waktu Duha :

$$\cos t = -\tan \varphi \times \tan \delta_{\odot} + \sin h_{dh} : \cos \varphi : \cos \delta_{\odot}$$

cos t = – tan –06° 10’ × tan 13° 24’ 37” + sin 04° 30’ :
cos –06° 10’ : cos 13° 24’ 37”
= 0.108046159232 × 0,238422826165 + 0.07845909573 :
0.994213627205 : 0,972734367734
= 0,10688840108
t = 83° 51’ 50”

Mer. Pass	=	12h 04m 10s	
t : 15	=	05h 35m 27s	+
		06h 28m 43s	(LMT)
Interpolasi	=	00h 07m16.00^{d}	_
		06h 21m 27s	
		06h 22m	
Ikhtiyat	=	00h 02m	+
Dhuha	=	06h 24m	(WIB)

Hasil Perhitungan

Awal waktu–waktu shalat untuk Jakarta pada tanggal 17 Agustus 2026

Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Maghrib	Isya
04h 33m	04h 43m	05h 56m	06h 24m	12h 00m	15h 20m	17h 58m	19h 08m

CONTOH PERHITUNGAN AWAL BULAN RAMADAN 1447 H

1. Menentukan bulan dan tahun

   Sebagai contoh, dihitung waktu ijtima' dan posisi hilal menjelang bulan Ramadan 1447 H.

2. Menentukan Lokasi

   Perhitungan untuk lokasi POB Cibeas, Sukabumi, Jawa Barat dengan posisi

   Lintang Tempat (φ) = –07° 04' 26″

   Bujur Tempat (λ) = 106° 31' 52"

   Tinggi tempat = 137 meter di atas rata–rata muka laut

3. Konversi Tanggal

   29 Sya`ban 1447 H atau tanggal 29–08–1447 H

   Waktu yang telah dilalui sebanyak 1446 tahun, lebih 07 bl, lebih 29 hr.

   1446 tahun :

   30 tahun = 48 daur lebih 6 tahun

   48 daur = 48 × 10631 hari = 510288 hari

   6 tahun = 6 × 354 + 2 = 2126 hari

   07 bulan = (30 × 4) + (29 × 3) = 207 hari

   29 hari = 29 hari +

   JUMLAH = 512650 hari

   Selisih kalender Masehi – Hijriah = 227016 hari

   Anggaran baru Gregorius = 13 hari +

   JUMLAH = 739679 hari

   512650: 7 = 73235 lebih 5 = Selasa *(dihitung mulai Jum'at)*

   512650: 5 = 102530 lebih 0 = Kliwon *(dihitung mulai Legi)*

   739679: 1461 = 506 siklus lebih 413 hari

   506 siklus = 506 × 4 = 2024 tahun

   413 hari = 1 tahun lebih 48 hari

   Waktu yang dilewati = 2025 tahun + 1 bulan + 17 hari

   atau 2025 tahun lebih 1 bulan lebih 17 hari

   Jadi 29 Sya'ban 1447 H bertepatan 17 Februari 2026 M (Selasa Kliwon).

4. Menyiapkan data astronomi pada tanggal masehi tersebut atau sehari sebelumnya, yakni di mana terdapat nilai FIB (Fraksi Iluminasi Bulan) terkecil

5. FIB terkecil bertepatan pada tanggal 17 Februari 2026 M yaitu 0,0001, pada jam 11 (UT)

6. Ecliptic Longitude Matahari (ELM):

ELM Jam 12	=	328° 49’ 41”	
ELM Jam 11	=	328° 47’ 10”	–
Selisih (B_1)	=	0° 02’ 31”	

7. Apparent Longitude Bulan (ALB):

ALB Jam 12	=	328° 49’ 10”	
ALB Jam 11	=	328° 16’ 15”	–
Selisih (B_2)	=	0° 32’ 55”	

8.

ELM Jam 11	=	328° 47’ 10”	
ALB Jam 11	=	328° 16’ 15”	–
MB	=	0° 30’ 55”	

9. Menghitung Sabak Bulan Mu’addal (SB) dengan rumus SB = B2 – B1

B2	=	0° 32’ 55”	
B1	=	0° 02’ 31”	–
SB	=	0° 30’ 24”	

10. Titik Ijtimak = MB : SB
= 0° 30’ 55” : 0° 30’ 24”
= 01h 01m 01,18s

11.

Waktu FIB terkecil	=	11h 00m 00s	
Titik Ijtimak	=	01h 01m 01,18s	+
Ijtimak	=	12h 01m 01,18s	
Koreksi WIB	=	07h 00m 00.00s	+
Ijtimak	=	19h 01m 01,18s	

Kesimpulan:

Ijtimak terjadi pada tanggal 17 Februari 2026 , pada jam 19:01:01 WIB.

12. Perkiraan Matahari terbenam untuk POB Cibeas, Sukabumi, Jawa Barat pada tanggal 17 Februari 2026 M (29 Sya'ban 1447 H)

φ	=	–07° 04' 26"
λ	=	106° 31' 52"
Tt	=	137 m
δ (jam 11 UT)	=	-11° 53' 45"
e (jam 11 UT)	=	-00h 13m 57s
Dip	=	$\sqrt{137 \times 0.0293}$ = 00° 20′ 34.61″
h	=	–(00° 16' + 00° 34' 30" + Dip) = –01° 11' 04.61"
cos t	=	–tan φ tan δ + sin h : cos φ : cos δ
	=	–tan –07° 04' 26" × tan -11° 53' 45" + sin –01° 11' 04.61"
		: cos –07° 04' 26" : cos -11° 53' 45"
	=	-0,04743117
t	=	92° 43' 07"
12 – e	=	12h 13m 57s
t : 15	=	06h 10m 52s +
12 – e + t : 15	=	18h 24m 48s
λ : 15	=	07h 06m 07.47s –
Matahari terbenam	=	11h 18m 40,49s

13. Data dari Ephemeris pada jam 11 : 18 : 40.53 (UT)

a) Deklinasi matahari (δ☉)

δ☉ jam 11	=	-11° 53' 45"	-11° 53' 45"
δ☉ jam 12	=	-11° 52' 53" –	
		-0° 00' 53"	
		00°18' 40.53" ×	
		-0° 00' 16.5"	-0° 00' 16.5" –
δ☉ jam 11:18:40.53	=	-11° 53' 28.5"	

b) Semi diameter matahari (SDo)

SD☉ jam 11	=	00° 16’ 11.09”		00° 16’ 11.09”
SD☉ jam 12	=	00° 16’ 11.09”	–	
		00° 00’ 00.00”		
		00° 18’ 40.53”	×	
		00° 00’ 00.00”		00° 00’ 00.00” –
SD☉ jam 11:18:40.53	=			00° 16’ 11.09”

c) Equation *of Time* (e)

e jam 11	=	-00h 13m 57.00s		-00h 13m 57.00s
e jam 12	=	-00h 13m 57.00s	–	
		00° 00’ 00.00”		
		00° 18’ 40.53”	×	
		00° 00’ 00.00”		00° 00’ 00.00” –
e jam 11:18:40.53	=			-00h 13m 57.00s

14. Menghitung Tinggi Matahari dengan rumus:

h☉ = –(SDo + 00° 34’ 30” + Dip)
= –(00° 16’ 11.09” + 00° 34’ 30” + 00° 20’ 34.61”)
h☉ = –01° 11’ 15.7”

15. Menghitung Sudut Jam (Hour Angle) Matahari dengan rumus:

cos t☉ = –tan φ tan δ + sin h : cos φ : cos δ
= –tan –07° 04’ 26” × tan -11° 53’ 28.5” + sin –01° 11’ 15.7”
: cos –07° 04’ 26” : cos -11° 53’ 28.5”
= –0.0474756044316
t☉ = 92° 43’ 16.23”

16. Menghitung waktu Matahari terbenam (Ghurub) dengan rumus:

Ghurub = 12 – e + (to : 15) – (λ : 15)

12 – e	=	12h 13m 57.00s	
t☉ : 15	=	06h 10m 53.08s	+
12 – e + t☉ : 15	=	18h 24m 50.08s	
λ : 15	=	07h 06m 07.47s	–
Ghurub (UT)	=	11h 18m 42.61s	
Koreksi WIB	=	07h 00m 00.00s	+
Ghurub (WIB)	=	18h 18m 42.61s	

17. Menghitung Asensio Rekta Matahari dengan cara interpolasi

$AR_{\odot}$ jam 11	= 330° 55’ 40”		330° 55’ 40”
$AR_{\odot}$ jam 12	= 330° 58’ 06”	–	
	–00° 02’ 26”		
	00° 18’ 42.61”	×	
	–00°00’ 45.53”		–00°00’ 45.53” –
$AR_{\odot}$ jam 11:18:42.61		=	330°56’ 25.53”

18. Menghitung Asensio Rekta Bulan dengan cara interpolasi

$AR_{(}$ jam 11	= 330° 46’ 53”		330° 46’ 53”
$AR_{(}$ jam 12	= 331° 17’ 28”	–	
	–00° 30’ 35”		
	00° 18’ 42.61”	×	
	–00°09’ 32.22”		–00° 09’ 32.22” –
$AR_{(}$ jam 11:18:42.61		=	330° 56’ 25.22”

19. Menghitung Deklinasi Bulan dengan cara interpolasi

$\delta_{(}$ jam 11	= -12° 59’ 34”		-12° 59’ 34”
$\delta_{(}$ jam 12	= -12° 45’ 19”	–	
	–00°14’ 15”		
	00° 18’ 42.61”	×	
	–00°04’ 26.62”		–00° 04’ 26.62” –
$\delta_{(}$ jam 11:18:42.61		=	-12° 55’ 07.38”

20. Menghitung Semi Diameter Bulan dengan cara interpolasi

$SD_{(}$ jam 11	= 00° 15’ 31.93”		00° 15’ 31.93”
$SD_{(}$ jam 12	= 00° 15’ 32.32”	–	
	–00°00’ 00.39”		
	00° 18’ 42.61”	×	
	–00°00’ 00.12”		–00° 00’ 00.12” –
$SD_{(}$ jam 11:18:42.61		=	00° 15’ 32.05”

21. Menghitung *Horizontal Parallax* Bulan dengan cara interpolasi

$HP_{(}$ jam 11	= 00° 57’ 00”		00° 57’ 00”
$HP_{(}$ jam 12	= 00° 57’ 02”	–	

	–00°00’ 02.00”			
	00° 18’ 42.61”	×		
	–00°00’ 00.62”		–00° 00’ 00.62”	–
$HP_($ jam 11:18:42.61		=	00° 57’ 00.62”	

22. Menghitung Sudut Jam *(Hour Angle)* Bulan dengan rumus:

$t_($ = $AR_\odot$ – $AR_($ + to

= 330° 56’ 25.53” – 330° 56’ 25.22” + 92° 43’ 16.23”

$t_($ = 92° 43’ 16.54”

23. Menghitung tinggi hilal hakiki dengan rumus:

$\sin h_($ = $\sin \varphi \sin \delta_(+ \cos \varphi \cos \delta_(\cos t_(

= sin –07° 04’ 26” × sin -12° 55’ 07.38” + cos –07° 04’ 26”
× cos -12° 55’ 07.38” × cos 92° 43’ 16.54”

= -0.0183908480024

$h_($ = -1° 03’ 13.06”

24. Menghitung Paralaks Bulan dengan rumus:

P(= cos h(× HP(

= cos -1° 03’ 13.06” × 00° 57’ 00.62”

P(= 00° 57’ 00.04”

25. Menghitung tinggi hilal dengan rumus:

$h_(^o$ = $h_($ – $P_($ + $SD_(

$h_($ = -01° 03’ 13.06”

$P_($ = 00° 57’ 00.04” –

-02° 00’ 13.1”

$SD_($ = 00° 15’ 32.05” +

=

$h_(^o$ -01° 44’ 41.05”

26. Menghitung Refraksi dengan rumus:

Refr = 0.01695 : tan ($h_(^o$ + 10.3 : ($h_(^o$ + 5.1255))

= 0.01695 : tan (-01° 44’ 41.05” + 10.3 : (-01° 44’ 41.05” + 5.1255))

Refr = 00° 44’ 44.96’’

Karena $h_{(^o} < 0°$, maka Refr = 0° 34' 30"

27. Menghitung tinggi hilal mar'i:

A. Tepi Atas *(Upper Limb)* dengan rumus:

$h_{('}$ = $h_{(^o}$ + Refr + Dip

h(o = -01° 44' 41.05"

Refr = 00° 34' 30"

Dip = 00° 20′ 34.61″ +

h(' Tepi Atas = -00° 49' 36.44"

B. Pusat *(Center)* dengan rumus:

$h_{('\ Pusat}$ = $h_{('Tepi\ Atas} - SD_{(}$

= -00° 49' 36.44" – 00° 15' 32.05"

$h_{('\ Pusat}$ = -01° 05' 08.49"

C. Tepi *Bawah (Lower Limb)* dengan rumus:

$h_{('}$ Tepi Bawah = h('Pusat – $SD_{(}$

= -01° 05' 08.49" – 00° 15' 32.05"

$h_{('}$ Tepi Bawah = -01° 20' 40.54"

28. Menghitung *Nisful Fudlah* Bulan dengan rumus:

sin NF = (sin φ sin $\delta_{(}$) : (cos φ cos $\delta_{(}$)

= (sin –07° 04' 26" × sin -12° 55' 07.38") :
(cos –07° 04' 26" × cos -12° 55' 07.38")

= 0.0284639448067

NF = 01° 37' 51.9"

29. Menghitung Paralaks *Nisful Fudlah* Bulan dengan rumus:

PNF = cos NF × $HP_{(}$

= cos 01° 37' 51.9" × 00° 57' 00.62"

PNF = 00° 56' 59.23"

30. Menghitung Setengah Busur Siang Bulan Hakiki (SBSH) dengan rumus:

SBSH = 90° + NF

= 90° + 01° 37' 51.9"

SBSH = 91° 37' 51,9"

31. Menghitung Setengah Busur Siang Bulan (SBS) dengan rumus:

Jika SBSH ≥ 90 maka menggunakan rumus:

SBS = 90° + NF – PNF + ($SD_{(}$ + 0.575 + Dip)

Jika SBSH < 90 maka menggunakan rumus:

SBS = 90° + NF + PNF – (SD(+ 0.575 + Dip)

Karena nilai SBSH > 90°, maka:

SBS = 90° + NF – PNF + (SD(+ 0.575 + Dip)

= 90° + 01° 37’ 51.9” - 00° 56’ 59.23” +

(00° 15’ 32.05”+ 0.575 + 00° 20′ 34.61″)

SBS = 91° 51’ 29.33”

32. Menghitung Lama Hilal di atas ufuk *(Lag)* dengan rumus:

$Lm_($ = (SBS – $t_($) : 15

= (91° 51’ 29.33” – 92° 43’ 16.54”) : 15

$Lm_($ = -00h 03m 27.15s

33. Menghitung Waktu Terbenam Bulan dengan rumus:

$Terb_($ = Ghurub + $Lm_($

= 18h 18m 42.61s + -00h 03m 27.15s

$Terb_($ = 18h 15m 15.46s

34. Menghitung Azimut Matahari dengan rumus:

$\tan A_\odot$ = –sin φ : tan $t_\odot$ + cos φ tan $\delta_\odot$: sin $t_\odot$

= –sin –07° 04’ 26” : tan 92° 43’ 16.23” + cos –07° 04’ 26”

× tan -11° 53’ 28.5” : sin 92° 43’ 16.23”

= -0.2150597949536

$A_\odot$ = -12° 08’ 13.76” (dihitung dari barat)

Karena azimut diukur dari utara ke arah timur, maka

$Az_\odot$ = 270° + $A_\odot$

= 270° + -12° 08’ 13.76”

$Az_\odot$ = 257° 51′ 46.24″

35. Menghitung Azimut Bulan dengan rumus:

$\tan A_($ = –sin φ : tan $t_($ + cos φ tan $\delta_($: sin $t_($

= –sin –07° 04’ 26” : tan 92° 43’ 16.54” + cos –07° 04′ 26″

× tan -12° 55’ 07.38” : sin 92° 43’ 16.54”

= -0.2337387932744

$A_($ = -13° 09′ 21.79″ (dihitung dari barat)

Karena azimut dihitung dari utara ke arah timur, maka

$Az_($ = 270° + $A_($

= 270° + -13° 09′ 21.79″

$Az_($ = 256° 50′ 38.21″

36. Menghitung Posisi Hilal (selisih azimut Bulan dan Matahari) dengan rumus:

PH = $A_(– A_☉$

= 256° 50′ 38.21″– 257° 51′ 46.24″

PH = -01° 01′ 08.03″

37. Menghitung Azimut Terbenam Bulan

tan $AT_($ = –sin φ : tan SBS + cos φ tan $δ_($: sin SBS

= –sin –07° 04′ 26″ : tan 91° 51’ 29.33” + cos –07° 04′ 26″
× tan -12° 55’ 07.38” : sin 91° 51’ 29.33”

= -0.2317434267894

$AT_($ = -13° 02′ 51.36″ (dihitung dari barat)

Karena azimut dihitung dari utara ke arah timur, maka

$AzT_($ = 270° + $AT_($

= 270° + -13° 02′ 51.36″

$AzT_($ = 256° 57′ 08.64″

38. Menghitung Fraksi Iluminasi Bulan dengan cara interpolasi

FI jam 11 = 0.0001 0.0001

FI jam 12 = 0.0001 –
0.0000
00:18:42.61 ×
0.0000 0.0000 _
0.0001

FI jam 11: 18:42.61 = 0.0001 × 100% = 0.01%

39. Menghitung Lebar Nurul Hilal dengan satuan ukur *ushbu’* (jari) dengan rumus:

NH = (√ [$PH^2 + h_(’^2$]) : 15

= (√ -01° 01′ 08.03″)2 + -00° 49’ 36.44”)2]) : 15

= (√ [01° 02’ 17.35” + 00° 41’ 00.89”]) : 15

= (√ 01° 43’ 18.24”) : 15

= 01° 18’ 43.73” : 15

NH = 0.08747656 Jari

40. Menghitung Sudut Kemiringan Hilal dengan rumus:

tan MRG = [PH : $h_(’$]

= [-01° 01′ 08.03″ : -00° 49’ 36.44”]

= 1.232354759377

MRG = 50° 56’ 32.05”

Jika MRG ≤ 15° maka hilal telentang

Jika MRG > 15° dan PH positif maka hilal miring ke utara

Jika MRG > 15° dan PH negatif maka hilal miring ke selatan

Karena $h_{(’\ Pusat}$ Hilal < 0° dan PH < 0°, maka hilal telungkup, tanduknya miring ke Utara

41. Menghitung Elongasi (Jarak Busur) Bulan–Matahari (JB)

A. Toposentrik

$\cos JB_t$ = cos ($h_{(’Pusat}$ + $SD_☉$ + $Refr_☉$) × cos PH

= cos (-01° 05’ 08.49” + 00° 16’ 11.09” + 00° 34’ 30″)
× cos -01° 01′ 08.03″

= 0.9998330438907

JBt = 01° 02′ 49.18″

B. Geosentrik

Cos JBg = sin $δ_☉$ × sin δ(+ cos $δ_☉$ × cos δ(× cos ($AR_☉$ – AR()

= sin -11° 53’ 28.5” × sin -12° 55’ 07.38” + cos -11° 53’ 28.5” ×
cos -12° 55’ 07.38” × cos (330° 56’ 25.53” – 330° 56’ 25.22”)

= -0.2060547487116 × -0.2235685268554 + 0.9785404644333
× 0.9746882136354 × 0.9999999999989

= 09998392139684

JBg = 01° 01’ 38.88"

42. Menghitung Umur Hilal

Umur Hilal = Saat Matahari Terbenam – Ijtimak

= 18h 18m 42.61s – 19h 01m 01,18s = -0 jam 42 menit 18.57 detik

Dari perhitungan di atas dapat diketahui bahwa ijtimak menjelang bulan Ramadan 1447 H terjadi pada hari Selasa Kliwon tanggal 17 Februari 2026 M jam 19:01:01.18 WIB.

Untuk lokasi POB Cibeas, Sukabumi, Jawa Barat:

Matahari Terbenam	=	18 : 18 : 42.61 WIB
Azimut Matahari	=	257° 51′ 46.24″
Tinggi Hilal Tepi Atas *(Upper Limb)*	=	-00° 49’ 36.44” (di bawah ufuk mar’i)
Tinggi Hilal Pusat *(Center)*	=	-01° 05’ 08.49” (di bawah ufuk mar’i)
Tinggi Hilal Tepi Bawah *(Lower Limb)*	=	-01° 20’ 40.54” (di bawah ufuk mar’i)
Azimut Bulan	=	256° 50′ 38.21″
Posisi Bulan	=	-01° 01′ 08.03″ (Selatan Matahari)

Elongasi Toposentrik	=	01° 02′ 49.18″
Elongasi Geosentrik	=	01° 01’ 38.88"
Keadaan Hilal	=	Telungkup, Miring ke Utara
Lama Hilal (Lag)	=	-00h 03m 27.15s (Bulan terbenam sebelum Matahari terbenam)
Terbenam Bulan	=	18h 15m 15.46s
Azimut Terbenam Bulan	=	256° 57′ 08.64″
Illuminasi Bulan	=	0.01%
Nurul Hilal	=	0.09 jari
Umur Hilal	=	-0 jam 42 menit 18.57 detik (Ijtimak terjadi sebelum Matahari terbenam)

CONTOH PERHITUNGAN GERHANA MATAHARI PADA BULAN SHAFAR 1448 H

1. Menukar tanggal hijriah kemungkinan terjadinya gerhana matahari ke kalender Masehi.

   Tanggal 29 Shafar 1448 H atau 29 – 02 – 1448 H

   Waktu yang telah dilalui sebanyak 1447 tahun + 1 bulan + 29 hari

   1447 tahun : 30 tahun = 48 daur lebih 7 tahun

   48 Daur = 48 × 10.631 hari = 510.288 hari

   7 tahun = (7 × 354) + 3 hari = 2.481 hari

   1 bulan = (1 × 29) + 1 hari = 30 hari

   29 hari = 29 hari +

   Jumlah = 512.828 hari

   Selisih kalender Masehi – Hijriah = 227.016 hari

   Anggaran baru Gregorius = 13 hari +

   JUMLAH = 739.857 hari

   512.828 : 7 = 73.261 lebih 1 = Jumat (*dihitung mulai Jum'at*)

   512.828 : 5 = 102.565 lebih 3 = Pon (*dihitung mulai Legi*)

   739.857 : 1461 = 506 Siklus lebih 591 hari

   506 Siklus = 506 × 4 tahun = 2024 tahun

   591 hari = 591 : 365 = 01 tahun lebih 226 hari

   226 hari = 07 bulan lebih 14 hari

   Waktu yang dilewati 2025 tahun (2024 +1) lebih 07 bulan lebih 14 hari

   Waktu yang berjalan adalah hari ke 14 bulan ke 08 tahun ke 2026

   Jadi 29 Shafar 1448 H bertepatan dengan tgl. 14 Agustus 2026 M (Jumat Pon)

2. Menyiapkan data astronomi pada tanggal masehi tersebut di atas atau sekitar tanggal tersebut, yakni di mana terdapat nilai FIB (Fraksi Iluminasi Bulan) terkecil.

3. FIB terkecil pada tanggal 12 Agustus 2026 M yaitu 0.0001, pada jam 16 (UT)

4. ELM jam 16 = 139o 58′ 07″

   ELM jam 17 = 140o 00′ 31″ _

Selisih (B1) = 00o 02′ 24″

5. ALB jam 16 = 139o 03′ 50″
   ALB jam 17 = 139o 39′ 57″ _
   Selisih (B2) = 00o 36′ 07″

6. Menghitung jarak Matahari dan Bulan (MB)
   ELM jam 16 = 139o 58′ 07″
   ALB jam 16 = 139o 03′ 50″ _
   MB = 00o 54′ 17″

7. Menghitung Sabak Bulan Mu'addal (SB) dengan rumus SB = B2 – B1
   B2 = 00° 36′ 07″
   B1 = 00° 02′ 24″ _
   SB = 00° 33′ 43″

8. Menghitung Titik Ijtimak dengan rumus :
   Titik Ijtimak = MB : SB
   = 00° 54′ 17″ : 00° 33′ 43″
   = 01° 36′ 35.95″

9. Menghitung waktu Ijtimak dengan rumus :
   Waktu FIB terkecil = 16h 00m 00d
   Titik Ijtimak = 01o 36′ 35.95″ +
   Ijtimak = 17h 36m 35.95d

10. Menentukan terjadi atau tidaknya gerhana matahari

    a) Menentukan harga *Apparent Latitude* atau lintang Bulan (L☾) pada saat ijtimak jam 17h 36m 35.95s

    L☾ jam 17 = 00° 55′ 46.00″ 00° 55′ 46.00″
    L☾ jam 18 = 00° 52′ 29.00″ –
    00° 03′ 17.00″
    00° 36′ 35.95″ ×
    00° 02′ 00.17″ 00° 02′ 00.17″ –
    L☾ jam 17:36:35.95 = 00° 53′ 45.83″

    b) Menentukan batas terjadinya gerhana matahari dengan melihat besarnya L☾

    (1) L☾ > 1° 34′ 46″ = tidak mungkin terjadi gerhana matahari

(2) $1^o\,24'\,46'' < L\mathbb{C} < 1^o\,34'\,46''$ = mungkin terjadi gerhana matahari

(3) $L\mathbb{C} < 1^o\,24'\,46''$ = pasti terjadi gerhana matahari

Karena harga mutlak *Apparent Latitude Bulan* ($L\mathbb{C}$) lebih kecil dari $1^o\,24'\,46''$, maka pasti terjadi gerhana matahari.

11). a) Menentukan besarnya Semidiameter Bulan ($SD\mathbb{C}$) pada saat ijtimak

$SD\mathbb{C}$ jam 17	=	$00^o\,16'\,17.11''$	$00^o\,16'\,17.11''$
$SD\mathbb{C}$ jam 18	=	$00^o\,16'\,16.75''$ _	
		$00^o\,00'\,00.36''$	
		$00^o\,36'\,35.95''$ ×	
		$00^o\,00'\,00.22''$	$00^o\,00'\,00.22''$ _
$SD\mathbb{C}$ jam 17:36:35.95	=		$00^o\,16'\,16.89''$

b) Menentukan besarnya *Horizontal Parallax* Bulan ($HP\mathbb{C}$) pada saat ijtimak

$HP\mathbb{C}$ jam 17	=	$00^o\,59'\,46.00''$	$00^o\,59'\,46.00''$
$HP\mathbb{C}$ jam 18	=	$00^o\,59'\,45.00''$ _	
		$00^o\,00'\,01.00''$	
		$00^o\,36'\,35.95''$ ×	
		$00^o\,00'\,00.61''$	$00^o\,00'\,00.61''$ _
$HP\mathbb{C}$ jam 17:36:35.95			$00^o\,59'\,45.39''$

c) Menentukan besarnya Semidiameter Matahari ($SD\odot$) pada saat ijtimak

$SD\odot$ jam 17	=	$00^o\,15'\,47.04''$	$00^o\,15'\,47.04''$
$SD\odot$ jam 18	=	$00^o\,15'\,47.04''$ _	
		$00^o\,00'\,00.0''$	
		$00^o\,36'\,35.95''$ ×	
		$00^o\,00'\,00.00''$	$00^o\,00'\,00.00''$ _
$SD\odot$ jam 17:36:35.95	=		$00^o\,15'\,47.04''$

d) Menentukan Jarak Bumi (JB) pada kolom *True Geocentric Distance* pada saat ijtimak

JB jam 17 = 1.0132969 1.0132969

JB jam 18 = 1.0132898 _

0.0000071

00º 36′ 35.95″ ×

0.0000043 0.0000043 _

JB jam 17:36:35.95 = 1.0132926

12. Menghitung Horizontal Parallax Matahari (HP⊙) dengan rumus :

sin HP⊙ = sin 08.794” : JB

= sin 00º 00’ 08.794” : 1.0132926

HP⊙ = 00º 00’ 08.68”

13. Menghitung jarak bulan dari titik simpul (H) dengan rumus :

sin H = sin L☾ : sin 5o

= sin 00o 53′ 45.83″: sin 5o

H = 10º 20′ 12.27″ , Jika H itu negatif (–) tambahkan 360

14. Menghitung Lintang Bulan maksimum terkoresi (U) dengan rumus :

tan U = [tan L☾ : sin H]

= [tan 00º 53′ 45.83″ : sin 10º 20′ 12.27″]

= 0.0871664129839

U = 4º 58’ 54.03”

15. Menghitung Lintang Bulan minimum terkoreksi (Z) dengan rumus :

sin Z = [sin U × sin H]

= [sin 4º 58′ 54.03″ × sin 10º 20′ 12.27″]

= 0.0155814549581

Z = 00º 53’ 34.04”

16. Menghitung koreksi kecepatan bulan relatif terhadap matahari (K) dengan rumus :

K = cos L☾ × SB : cos U

= cos 00º 53′ 45.83″ × 00º 33′ 43″ : cos 4º 58’ 54.03”

= 0.5640062448133

= 00º 33’ 50.42”

17. Menghitung besarnya semidiameter anti bayangan inti bumi (D) dengan rumus :

D = HP☾ + SD⊙ – HP⊙
= 00º 59′ 45.39″ + 00º 15′ 47.04″ ⁻ 00º 00’ 08.68”
= 01º 15’ 23.75”

18. Menghitung jarak titik pusat anti bayangan inti bumi sampai titik pusat bulan ketika piringan bulan mulai bersentuhan dengan piringan matahari (X) dengan rumus :

X = D + SD☾
= 01º 15’ 23.75” + 00º 16′ 16.89″
= 01º 31’ 40.64”

19. Menghitung jarak titik pusat anti bayangan inti bumi sampai titik pusat bulan ketika seluruh piringan bulan mulai menutupi piringan matahari (Y) dengan rumus :

Y = D – SD☾
= 01o 15’ 23.75” – 00o 16′ 16.89″
= 00o 59’ 06.86”

20. Menghitung jarak titik pusat bulan ketika piringan bulan mulai menutupi matahari sampai titik pusat bulan ketika ia segaris dengan anti bayangan inti bumi (C) dengan rumus :

cos C = cos X : cos Z
= cos 01º 31’ 40.64” : cos 00º 53’ 34.04”
= 0.9997658039415
C = 01º 14’ 24.15”

21. Menghitung waktu yang diperlukan oleh bulan untuk berjalan mulai ketika piringan bulan menutupi piringan matahari sampai titik pusat bulan ketika segaris dengan anti bayangan inti bumi (T1) dengan rumus :

T1 = C : K
= 01º 14’ 24.15” : 00º 33’ 50.42”
= 02h 11m 55.08d

Karena Y (00º 59’ 06.86”) lebih besar daripada Z (00º 53’ 34.04”) dan SD⊙ (00º 15′ 47.04″) lebih kecil daripada SD☾ (00º 16′ 16.89″), maka terjadi gerhana matahari total.

22. Menghitung jarak titik pusat bulan saat segaris dengan anti bayangan inti bumi sampai titik pusat bulan ketika seluruh piringan bulan menutupi piringan matahari (E) dengan rumus :

cos E = cos Y : cos Z
= cos 00º 59’ 06.86” : cos 00º 53’ 34.04”
= 0.9999735535792

E = 00º 25’ 00.11”

23. Menghitung waktu yang diperlukan untuk berjalan mulai ketika titik pusat bulan saat segaris dengan anti bayangan inti bumi sampai titik pusat bulan ketika seluruh piringan bulan menutupi piringan matahari (T2) dengan rumus :

T2 = E : K
= 00º 25’ 00.11” : 00º 33’ 50.42”
= 00h 44m 19.74d

24. Koreksi pertama terhadap kecepatan bulan (Ta) dengan rumus :

Ta = cos H : sin K
= cos 10º 20′ 12.27″ : sin 00º 33’ 50.42”
= 99º 56’ 24.47”

25. Koreksi kedua terhadap kecepatan bulan (Tb) dengan rumus :

Tb = sin L☾ : sin K
= sin 00º 53′ 45.83″ : sin 00º 33’ 50.42”
= 01º 35’ 19.36”

26. Menghitung waktu gerhana (T0) dengan rumus :

T0 = [sin 0.05º × Ta × Tb]
= [sin 0.05º × 99º 56’ 24.47” × 01º 35’ 19.36”]
= 00h 08m 18.81d

27. Menghitung waktu titik tengah gerhana (Tgh). Karena harga mutlak Lintang Bulan L☾ semakin mengecil, maka menggunakan rumus:

Tgh = Ijtimak + T0 – Δ T ; Δ T adalah koreksi waktu TT menjadi UT
= 17h 36m 35.95d + 00h 08m 18.81d ⁻ 00h 02m 16.61d
= 17h 42m 38.15d

Δ T adalah koreksi waktu TT menjadi UT

Δ T = (102.3 + 123.5 × t + 32.5 × t^2) : 3600 (J. Meeus)

t = (2026 –2000) : 100 = 0.26

28. Menghitung waktu mulai gerhana dengan rumus :

Mulai Gerhana = Tgh – T1
= 17h 42m 38.15d ⁻ 02h 11m 55.08d
= 15h 30m 43.07d

29. Menghitung waktu mulai gerhana total dengan rumus :

Mulai Total = Tgh – T2
= 17h 42m 38.15d ⁻ 00h 44m 19.74d

= 16h 58m 18.41d

30. Menghitung waktu selesai gerhana total dengan rumus :

Selesai Total = Tgh + T2

= 17h 42m 38.15d + 00h 44m 19.74d

= 18h 26m 57.89d

31. Menghitung waktu selesai gerhana dengan rumus :

Selesai Gerhana = Tgh + T1

= 17h 42m 38.15d + 02h 11m 55.08d

= 19h 54m 33.23d

Kesimpulan :

Gerhana Matahari Total terjadi pada hari Rabu Legi, tanggal 12 Agustus 2026.

Mulai gerhana (P1)	:	15:30:43 UT	atau	22:30:43 WIB
		(12 Agustus 2026)		(12 Agustus 2026)
Mulai total (U1)	:	16: 58:18 UT	atau	23: 58:18 WIB
		(12 Agustus 2026)		(12 Agustus 2026)
Maksimal gerhana	:	17:42:38 UT	atau	00:42:38 WIB
		(12 Agustus 2026)		(13 Agustus 2026)
Selesai total (U4)	:	18:26:58 UT	atau	01:26:58 WIB
		(12 Agustus 2026)		(13 Agustus 2026)
Selesai gerhana (P4)	:	19:54:33 UT	atau	02:54:33 WIB
		(12 Agustus 2026)		(13 Agustus 2026)

Catatan :

Gerhana Matahari 12 Agustus 2026 merupakan jenis total. Tidak dapat diamati di wilayah Indonesia. Gerhana sebagian dapat diamati di: Amerika Utara bagian Utara, Afrika bagian barat, Eropa. Gerhana total dapat diamati di: Arktik, Greenland, Islandia, Spanyol.

CONTOH PERHITUNGAN GERHANA BULAN PADA PERTENGAHAN BULAN RAMADAN 1447 H

1. Konversi tanggal kemungkinan terjadinya gerhana ke kalender Masehi
   Tanggal 15 Ramadan 1447 H atau 15 – 09 – 1447 H
   Waktu yang telah dilalui sebanyak 1446 tahun + 08 bulan + 15 hari

1446 tahun : 30 tahun	=	48 Daur lebih 6 tahun			
48 Daur	=	48 × 10.631 hari	=	510.288 hari	
6 tahun	=	(6 × 354) + 2 hari	=	2126 hari	
8 bulan	=	(8 × 29) + 4 hari	=	236 hari	
15 hari			=	15 hari	+
		JUMLAH	=	512.665 hari	
Selisih kalender Masehi – Hijriah			=	227.016 hari	
Anggaran baru Gregorius			=	13 hari	+
		JUMLAH	=	739694 hari	

512.665 : 7 = 73.237 lebih 6 = Rabu (*dihitung mulai Jum'at*)

512.665 : 5 = 102.533 lebih 0 = Kliwon (*dihitung mulai legi*)

739.694 : 1461 = 506 siklus lebih 428 hari

506 siklus = 506 × 4 tahun = 2024 tahun

428 hari = 428 : 365 = 1 tahun lebih 63 hari

63 hari = 2 bulan lebih 4 hari

Waktu yang dilewati 2025 th (2024+1) + 2 bulan + 4 hari

Waktu yang sedang berjalan adalah hari ke 4 bulan ke 3 tahun ke 2026

Jadi 15 Ramadan 1447 H bertepatan dengan 4 Maret 2026 M (Rabu Kliwon).

2. Menyiapkan data Astronomis dari Ephemeris. Karena pada tanggal 4 Maret 2026 tidak terjadi FIB terbesar, maka diambil data tanggal 3 Maret 2026 yang memuat FIB terbesar adalah 1.0000 pada jam 11 UT.

   Pada jam 11 UT tersebut harga mutlak lintang bulan pada kolom *Apparent Latitude* bulan sebesar 0º 19' 45". Harga ini lebih kecil dari 01º 00' 24", sehingga benar akan terjadi gerhana bulan.

3. ELM jam 11 = 342º 52′ 19.00″
   ELM jam 12 = 342º 54′ 49.00″ _
   Selisih (B1) = 00º 02′ 30.00″

4. ALB jam 11 = 162o 32′ 58.00″
   ALB jam 12 = 163o 06′ 12.00″ _
   Selisih (B2) = 00o 33′ 14.00″

5. MB = ELM – (ALB – 180)
   = 342º 52′ 19.00″ ⁻ (162º 32′ 58.00″ ⁻ 180)
   = 360º 19‘ 21“ = 00º 19‘ 21“

6. SB = B2 – B1 = 00º 33′ 14.00″ ⁻ 00º 02′ 30.00″
   = 00º 30‘ 44“

7. Titik Istiqbal = MB : SB = 00º 19‘ 21“ : 00º 30‘ 44“
   = 00h 37m 46.59d

8. Istiqbal = Waku FIB + Titik Istiqbal – 00:01:49.29
   Waktu FIB = 11h 00m 00.00d
   Titik Istiqbal = 00h 37m 46.59d +
   11h 37m 46.59d
   00h 01m 49,29d _
   Istiqbal = 11h 35m 57.30d

9. Melacak data :

   a) Menghitung Semidiameter Bulan (SD☾) pada saat istiqbal jam 11h 35m 57.30d

   SD☾ jam 11 = 00º 15′ 37.16″ 00º 15′ 37.16″
   SD☾ jam 12 = 00º 15′ 36.76″ –
   00º 00′ 00.40″
   00º 35′ 57.30″ ×
   00º 00′ 00.24″ 00º 00′ 00.24″ –
   SD☾ jam 11h 35m 57.30d = 00º 15′ 36.92″

b) Menghitung Horizontal Parallax Bulan (HP☾) pada saat istiqbal jam 11h 35m 57.30d

HP☾ jam 11	=	00° 57′ 20.00″		00° 57′ 20.00″
HP☾ jam 12	=	00° 57′ 18.00″	–	
		00° 00′ 02.00″		
		00° 35′ 57.30″	×	
		00° 00′ 01.20″		00° 00′ 01.20″ –
HP☾ jam 11h 35m 57.30d		=		00° 57′ 18.80″

c) Menghitung Lintang Bulan (L☾) pada kolom Apparent Latitude Bulan saat istiqbal yakni pada jam 11h 35m 57.30d

L☾ jam 11	=	-00° 19′ 45.00″		-00° 19′ 45.00″
L☾ jam 12	=	-00° 22′ 49.00″	–	
		00° 03′ 04.00″		
		00° 35′ 57.30″	×	
		00° 01′ 50.26″		00° 01′ 50.26″ –
L☾ jam 11h 35m 57.30d		=		-00° 21′ 35.26″

d) Menghitung Semidiameter Matahari (SD☉) pada saat istiqbal jam 11h 35m 57.30d

SD☉ jam 11	=	00° 16′ 08.04″		00° 16′ 08.04″
SD☉ jam 12	=	00° 16′ 08.03″	–	
		00° 00′ 00.01″		
		00° 35′ 57.30″	×	
		00° 00′ 00.01″		00° 00′ 00.01″ –
SD☉ jam 11h 35m 57.30d		=		00° 16′ 08.03″

e) Menghitung Jarak Bumi (JB) pada kolom True Geocentric Distance Matahari pada saat istiqbal jam 11h 35m 57.30d

JB jam 11	=	0.9913095		0.9913095
JB jam 12	=	0.9913198	–	
		-0.0000103		
		00º 35′ 57.30″	×	
		-0.0000062		-0.0000062 –
jam 11h 35m 57.30d		=		0.9913157

10. Menghitung Horizontal Parallax Matahari (HP⊙)

    sin HP⊙ = sin 08.794" : JB = sin 00º 00' 08.794" : 0.9913157

    = 0.0000430080096

    HP⊙ = 00º 00' 08.87"

11. Menghitung jarak bulan dari titik simpul (H) dengan rumus :

    sin H = sin L☾ : sin 5º = sin -00º 21′ 35.26″ : sin 5º

    = -0.0720498296168

    H = -04º 07' 54.23″

12. Menghitung Lintang Bulan maksimum terkoreksi (U) dengan rumus :

    tan U = [tan L☾ : sin H] = [tan -00º 21′ 35.26″ : sin -04º 07' 54.23″]

    = 0.0871574743945

    U = 04º 58' 52.20"

13. Menghitung Lintang Bulan minimum terkoreksi (Z) dengan rumus :

    sin Z = [sin U × sin H] = [sin 04º 58′ 52.20″ × sin -04º 07' 54.23″]

    = 0.0062559622063

    Z = 00º 21' 30.39"

14. Menghitung koreksi kecepatan bulan relatif terhadap matahari (K) dengan rumus :

    K = cos L☾ × SB : cos U = cos -00º 21′ 35.26″ × 00º 30‘ 44“ : cos 04º 58' 52.20"

    = 00º 30' 50.95"

15. Menghitung besarnya semidiameter anti bayangan inti bumi (D) dengan rumus :

    D = (HP☾ + HP⊙ - SD⊙) × 1.02

    = (00º 57′ 18.80″+ 00º 00' 08.87" -0º 16′ 08.03″) × 1.02

= 00º 42’ 09.23”

16. Menghitung jarak titik pusat anti bayangan inti bumi sampai titik pusat bulan ketika piringan bulan mulai bersentuhan dengan piringan matahari (X) dengan rumus :

X = D + SD☾

= 00º 42’ 09.23” + 00º 15′ 36.92″

= 00º 57’ 46.15”

17. Menghitung jarak titik pusat anti bayangan inti bumi sampai titik pusat bulan ketika seluruh piringan bulan mulai bersentuhan dengan piringan matahari (Y) dengan rumus :

Y = D – SD☾

= 00º 42’ 09.23” – 00º 15′ 36.92″

= 00º 26’ 32.31”

Y (00º 26’ 32.31”) > Z (00º 21’ 30.39”) sehingga terjadi gerhana total

18. Menghitung jarak titik pusat bulan ketika piringan bulan mulai bersentuhan dengan bayangan inti bumi sampai titik pusat bulan saat segaris dengan bayangan inti bumi (C) dengan rumus :

cos C = cos X : cos Z

= cos 00º 57’ 46.15” : cos 00º 21’ 30.39”

= 0.9998783761514

C = 00º 53’ 37.02”

19. Menghitung waktu yang diperlukan oleh bulan untuk berjalan mulai ketika piringan bulan bersentuhan dengan bayangan inti bumi sampai ketika titik pusat bulan segaris dengan bayangan inti bumi (**T1**) dengan rumus :

T1 = C : K

= 00º 53’ 37.02” : 00º 30’ 50.95”

T1 = 01h 44m 16.93d

20. Menghitung jarak titik pusat bulan saat segaris dengan bayangan inti bumi sampai titik pusat bulan ketika seluruh piringan bulan masuk pada bayangan inti bumi (E) dengan rumus :

cos E = cos Y : cos Z

= cos 00º 26’ 32.31” : cos 00º 21’ 30.39”

= 0.9999897714047

E = 00h 15m 32.93d

21. Menghitung waktu yang diperlukan oleh bulan untuk berjalan mulai titik pusat bulan saat segaris dengan bayangan inti bumi sampai titik pusat bulan ketika seluruh piringan bulan masuk pada bayangan inti bumi (T2) dengan rumus :

T2 = E : K

= 00h 15m 32.93d : 00° 30’ 50.95”

T2 = 00h 30m 14.5d

22. Koreksi pertama terhadap kecepatan bulan (Ta) dengan rumus :

Ta = cos H : sin K

= cos -04° 07' 54.23″ : sin 00° 30’ 50.95”

Ta = 111° 08' 56.89"

23. Koreksi kedua terhadap kecepatan bulan (Tb) dengan rumus :

Tb = sin L☾ : sin K

= sin -00° 21′ 35.26″ : sin 00° 30’ 50.95”

Tb = -00° 41’ 59.23”

24. Menghitung waktu gerhana (T0) dengan rumus :

T0 = [sin 0.05 × Ta × Tb]

= [sin 0.05° × 111° 08' 56.89" × -00° 41’ 59.23”]

T0 = 00h 00m 24.51d

25. Karena harga mutlak Lintang Bulan semakin membesar, maka Menghitung waktu tengah gerhana (Tgh) dengan rumus :

Tgh = Istiqbal – T0 – ΔT

= 11h 35m 57.30d – 00h 00m 24.51d – 00h 02m 16.61d

= 11h 33m 16.18d UT

07h 00m 00d +

Tgh = 18h 33m 16.18d WIB

Δ T = (102.3 + 123.5 × t + 32.5 × t^2) : 3600 (J. Meeus)

t = (2026 –2000) : 100 = 0.26

26. Menghitung waktu mulai gerhana dengan rumus :

Mulai Gerhana = Tgh – T_1

= 18h 33m 16.18d – 01h 44m 16.93d

= 16h 48m 59.25 WIB

27. Menghitung waktu mulai gerhana total dengan rumus :

Mulai Total = Tgh – T_2

= 18h 33m 16.18d – 00h 30m 14.5d

= 18h 03m 01.68d WIB

28. Menghitung waktu selesai gerhana total dengan rumus :

Selesai Total = Tgh + T_2

= 18h 33m 16.18d + 00h 30m 14.5d

= 19h 03m 30.68d WIB

29. Menghitung waktu selesai gerhana dengan rumus :

Selesai gerhana = Tgh + T_1

= 18h 33m 16.18d + 01h 44m 16.93d

= 20h 17m 33.11d WIB

30. Kesimpulan :

Gerhana Bulan Total di Indonesia terjadi pada hari Selasa Wage, tanggal 3 Maret 2026.

Mulai Gerhana	:	16:48:59 WIB
Mulai Total	:	18:03:02 WIB
Tengah Gerhana	:	18:33:40 WIB
Selesai Total	:	19:03:31 WIB
Selesai Gerhana	:	20:17:33 WIB

DAFTAR REFRAKSI

h	Refr	h`	h	Refr	h`	h	Refr	h`	h	Refr	h`
-0° 35`	34.5`	0° 00`	2° 14`	16.1`	2° 30`	5° 51`	08.5`	6° 00`	15° 00`	03.5`	15° 04`
-0° 31`	33.8`	0° 03`	2° 19`	15.8`	2° 35`	6° 02`	08.3`	6° 10	15° 27`	03.4`	15° 30`
-0° 27`	33.2`	0° 06`	2° 24`	15.5`	2° 40`	6° 12`	08.1`	6° 20	15° 54`	03.3`	15° 57`
-0° 24`	32.6`	0° 09`	2° 30`	15.2`	2° 45`	6° 22`	07.9`	6° 30	16° 23`	03.2`	16° 26`
-0° 20`	32.0`	0° 12`	2° 35`	14.9`	2° 50`	6° 32`	07.7`	6° 40	16° 53`	03.1`	16° 56`
-0° 16`	31.4`	0° 15`	2° 40`	14.7`	2° 55`	6° 42`	07.6`	6° 50	17° 25`	03.0`	17° 28`
-0° 13`	30.8`	0° 18`	2° 46`	14.4`	3° 00`	6° 53`	07.4`	7° 00`	17° 59`	02.9`	18° 02`
-0° 09`	30.3`	0° 21`	2° 51`	14.1`	3° 05`	7° 03`	07.2`	7° 10	18° 35`	02.8`	18° 38`
-0° 06`	29.8`	0° 24`	2° 56`	13.9`	3° 10`	7° 13`	07.1`	7° 20	19° 14`	02.7`	19° 17`
-0° 02`	29.2`	0° 27`	3° 01`	13.7`	3° 15`	7° 23`	07.0`	7° 30	19° 55`	02.6`	19° 58`
+0 01`	28.7`	0° 30`	3° 07`	13.4`	3° 20`	7° 33`	06.8`	7° 40	20° 39`	02.5`	20° 42`
+0 05`	28.2`	0° 33`	3° 12`	13.2`	3° 25`	7° 43`	06.7`	7° 50	21° 26`	02.4`	21° 28`
0° 08`	27.8`	0° 36`	3° 17`	13.0`	3° 30`	7° 53`	06.6`	8° 00`	22° 17`	02.3`	22° 19`
0° 12`	27.3`	0° 39`	3° 22`	12.7`	3° 35`	8° 04`	06.4`	8° 10	23° 11`	02.2`	23° 13`
0° 15`	26.8`	0° 42`	3° 27`	12.5`	3° 40`	8° 14`	06.3`	8° 20	24° 09`	02.1`	24° 11`
0° 19`	26.4`	0° 45`	3° 33`	12.3`	3° 45`	8° 24`	06.2`	8° 30	25° 12`	02.0`	25° 14`
0° 22`	25.9`	0° 48`	3° 38`	12.1`	3° 50`	8° 34`	06.1`	8° 40	26° 20`	01.9`	26° 22`
0° 26`	25.5`	0° 51`	3° 43`	11.9`	3° 55`	8° 44`	06.0`	8° 50	27° 34`	01.8`	27° 36`
0° 29`	25.1`	0° 54`	3° 48`	11.8`	4° 00`	8° 54`	05.9`	9° 00`	28° 54`	01.7`	28° 56`
0° 32`	24.7`	0° 57`	3° 53`	11.6`	4° 05`	9° 04`	05.8`	9° 10	30° 22`	01.6`	30° 24`
0° 36`	24.3`	1° 00`	3° 59`	11.4`	4° 10`	9° 14`	05.7`	9° 20	31° 58`	01.5`	32° 00`
0° 39`	24.0`	1° 03`	4° 04`	11.2`	4° 15`	9° 24`	05.6`	9° 30	33° 44`	01.4`	33° 45`
0° 42`	23.6`	1° 06`	4° 09`	11.1`	4° 20`	9° 34`	05.5`	9° 40	35° 39`	01.3`	35° 40`
0° 46`	23.2`	1° 09`	4° 14`	10.9`	4° 25`	9° 45`	05.4`	9° 50	37° 47`	01.2`	37° 48`
0° 49`	22.9`	1° 12`	4° 19`	10.7`	4° 30`	9° 51`	05.3`	9° 56`	40° 07`	01.1`	40° 08`
0° 52`	22.5`	1° 15`	4° 24`	10.6`	4° 35`	10° 03`	05.2`	10° 08`	42° 43`	01.0`	42° 44`
0° 56`	22.2`	1° 18`	4° 30`	10.4`	4° 40`	10° 15`	05.1`	10° 20`	45° 35`	00.9`	45° 36`
0° 59`	21.9`	1° 21`	4° 35`	10.3`	4° 45`	10° 28`	05.0`	10° 33`	48° 46`	00.8`	48° 47`
1° 02`	21.6`	1° 24`	4° 40`	10.1`	4° 50`	10° 41`	04.9`	10° 46`	52° 17`	00.7`	52° 18`
1° 06`	21.2`	1° 27`	4° 45`	10.0`	4° 55`	10° 55`	04.8`	11° 00`	56° 10`	00.6`	56° 11`
1° 09`	20.9`	1° 30`	4° 50`	09.9`	5° 00`	11° 09`	04.7`	11° 14`	60° 27`	00.5`	60° 28`
1° 14`	20.5`	1° 35`	4° 55`	09.7`	5° 05`	11° 24`	04.6`	11° 29`	65° 08`	00.4`	65° 08`
1° 20`	20.0`	1° 40`	5° 00`	09.6`	5° 10`	11° 40`	04.5`	11° 45`	70° 11`	00.3`	70° 11`
1° 25`	19.5`	1° 45`	5° 05`	09.5`	5° 15`	11° 57`	04.4`	12° 01`	75° 34`	00.2`	75° 34`
1° 31`	19.1`	1° 50`	5° 11`	09.4`	5° 20`	12° 14`	04.3`	12° 18`	81° 13`	00.1`	81° 13`
1° 36`	18.7`	1° 55`	5° 16`	09.2`	5° 25`	12° 31`	04.2`	12° 35`	87° 03`	00.0`	87° 03`
1° 42`	18.3`	2° 00`	5° 21`	09.1`	5° 30`	12° 50`	04.1`	12° 54`			
1° 47`	17.9`	2° 05`	5° 26`	09.0`	5° 35`	13° 09`	04.0`	13° 13`			
1° 52`	17.5`	2° 10`	5° 31`	08.9`	5° 40`	13° 29`	03.9`	13° 33`			
1° 58`	17.2`	2° 15`	5° 36`	08.8`	5° 45`	13° 50`	03.8`	13° 54`			
2° 03`	16.8`	2° 20`	5° 41`	08.7`	5° 50`	14° 12`	03.7`	14° 16`			
2° 08`	16.5`	2° 25`	5° 46`	08.6`	5° 55`	14° 36`	03.6`	14° 40`			

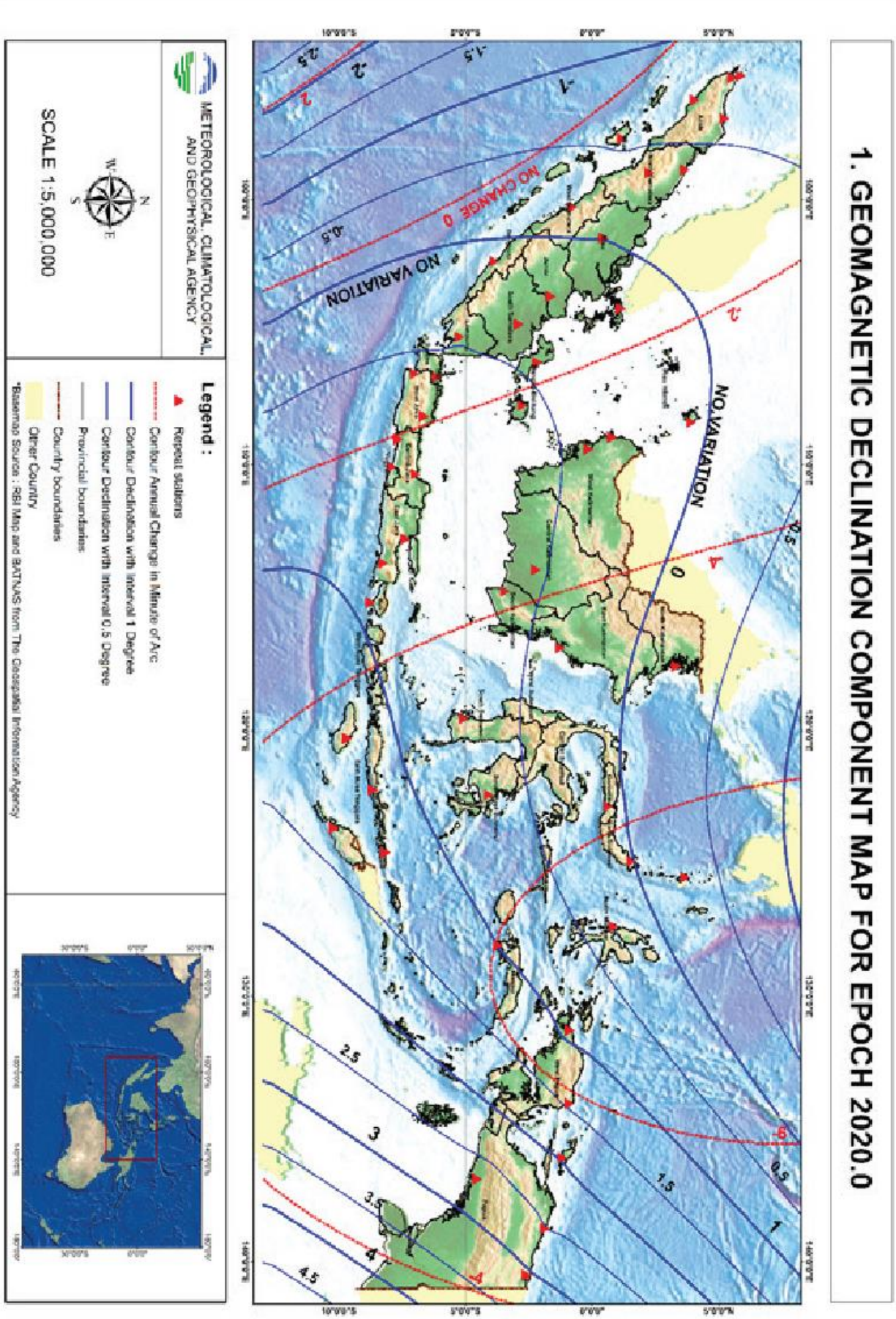
Keterangan:

h = Tinggi Nyata
Refr = Refraksi
h` = Tinggi Lihat
h` = h + Refr

DAFTAR KERENDAHAN UFUK

(Berdasarkan rumus D` = 1,76`√ m)

Tinggi	Rendah Ufuk	Tinggi	Rendah Ufuk	Tinggi	Rendah Ufuk	Tinggi	Rendah Ufuk
Meter	`	Meter	`	Meter	`	Meter	`
1	1.8	34	10.3	160	22.3	475	38.4
2	2.5	36	10.6	170	23.0	500	39.4
3	3.0	38	10.8	180	23.6	525	40.3
4	3.5	40	11.1	190	24.3	550	41.3
5	3.9	45	11.8	200	24.9	575	42.2
6	4.3	50	12.4	210	25.5	600	43.1
7	4.7	55	13.1	220	26.1	625	44.0
8	5.0	60	13.6	230	26.7	650	44.9
9	5.3	65	14.2	240	27.3	675	45.7
10	5.6	70	14.7	250	27.8	700	46.6
12	6.1	75	15.2	260	28.4	725	47.4
14	6.6	80	15.7	270	28.9	750	48.2
16	7.0	85	16.2	280	29.4	775	49.0
18	7.5	90	16.7	290	30.0	800	49.8
20	7.9	95	17.2	300	30.5	825	50.5
22	8.3	100	17.6	325	31.7	850	51.3
24	8.6	110	18.5	350	32.9	875	52.1
26	9.0	120	19.3	375	34.1	900	52.8
28	9.3	130	20.1	400	35.2	925	53.5
30	9.6	140	20.8	425	36.3	950	54.2
32	10.0	150	21.6	450	37.3	975	55.0


1. GEOMAGNETIC DECLINATION COMPONENT MAP FOR EPOCH 2020.0
NO VARIATION
NO CHANGE 0
METEOROLOGICAL, CLIMATOLOGICAL, AND GEOPHYSICAL AGENCY
SCALE 1:5.000.000
Legend :
Repeat stations
Contour Annual Change in Minute of Arc
Contour Declination with Interval 1 Degree
Contour Declination with Interval 0.5 Degree
Provincial boundaries
Country boundaries
Other Country
*Basemap Source : RBI Map and BATNAS from The Geospatial Information Agency

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