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Nautical Almanac

2025

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The Nautical Almanac 2025

Compiled with *Nautical Almanac* revision V2.7 - Oct 2022, using NOVAS version C3.1 - Mar 2011
The Almanac data have been produced with the JPL Ephemerides DE405

Warning and Terms of Usage:

The following pages have been generated by a computer program. Complex computer programs often have bugs and may produce wrong data. The data in this Nautical Almanac is believed to be accurate but no warranty is given for its correctness.

Use this Nautical Almanac only for training and exercising!

Compiled by Erik De Man (mail2erik@siranah.de) on Tue Oct 1 12:05:56 2024

Introduction

This Nautical Almanac contains the Ephemerides of the Sun, the Moon, Venus, Mars, Jupiter and Saturn. It is designed for determination of Position (geographical Latitude and Longitude) from astronomical observations (Altitude of Celestial Objects).

The data compiled in this Nautical Almanac is based on calculations done with the software package "NOVAS" from the U.S. Naval Observatory (<http://aa.usno.navy.mil/AA/software>). The basic ephemerides are taken from the "DE405" files published by the Jet Propulsion Laboratory (<http://ssd.jpl.nasa.gov>).

Values for "deltaT"

For the astrodynamical calculations, the following values for "delta T" (the difference between terrestrial time realized by atomic clocks and UT defined by the irregular rotation of the Earth) have been used:

Jan : 69.1 s	Apr : 69.1 s	Jul : 69.1 s	Oct : 69.1 s
Feb : 69.1 s	May : 69.1 s	Aug : 69.1 s	Nov : 69.1 s
Mar : 69.1 s	Jun : 69.1 s	Sep : 69.1 s	Dec : 69.1 s

Interpolation of the integral-hour GHA and Dec values

This Nautical Almanac uses a slightly different approach for the interpolation of the integral-hour values of Greenwich Hour Angle and Declination, compared to the techniques used in most commercially available Almanacs.

The almanac pages in this Nautical Almanac are compiled according to the following scheme:

UT	GHA		ddGHA	Dec		dDec
	°	'	"/h	°	'	"/h
...						
13:00	176	41.8	-31.3	S 23	09.6	+01.8
14:00	191	10.5	-31.3	S 23	11.4	+01.8
15:00	205	39.2	-31.3	S 23	13.2	+01.6
16:00	220	07.9	-31.3	S 23	14.8	+01.5
...						

The values for the Greenwich Hour Angle (GHA) and Declination (Dec) are given for the integral hours of Universal Time (UT). In the columns "ddGHA" and "dDec", the increase or decrease of these values for the next full hour of time are recorded. However, for the Greenwich Hour Angle (GHA), this differential value is not the total change. An hour angle basically increases with 15° per hour and the value "ddGHA" is only the variation additional to this fixed increment of 15° per hour.

It is important to note that when interpolating the GHA values, this fixed increase of 15° per hour must also be taken into account.

For more information please refer to the following internet site: "<http://www.siranah.de/>"

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Positions of the Celestial Objects

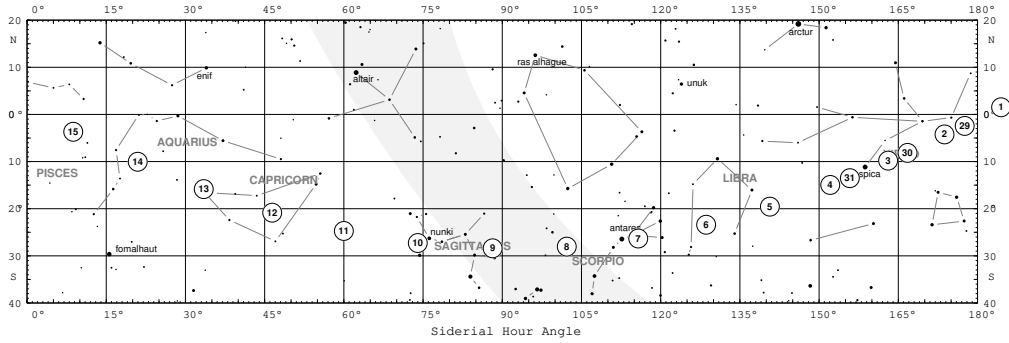
The charts on the following pages show the position of the Celestial Objects used in this Nautical Almanac relative to the stars (celestial background). The charts can be used to find the location of the planets and also for the planning of astronomical observations.

The charts are provided for each month of the year. Each chart has two parts showing a part of the celestial sphere around the ecliptic. Note that the position of the Celestial Equator (Declination = 0°) is not on the same position in the two different parts of each of the charts.

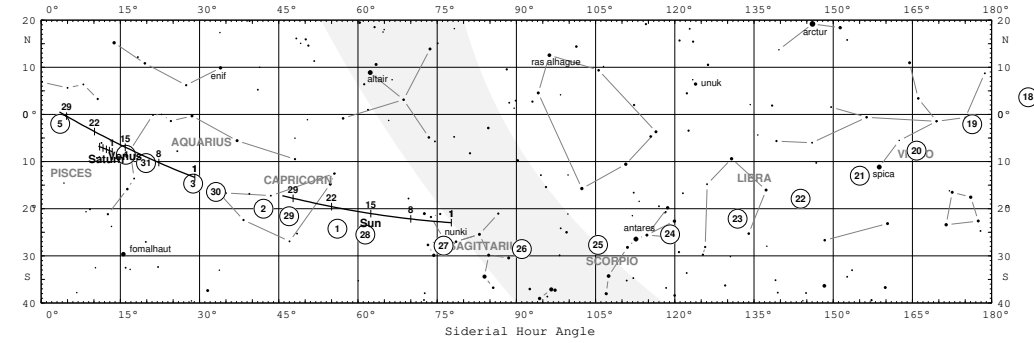
The changing position of a Celestial Object through the month is drawn as a solid line (not for the Moon). Marker tics along this line are shown to indicate the position of the Object on the 1st, 8th, 15th, 22nd and 29th day of the month (at 12:00 UT). For Jupiter and Saturn only the first day is marked since their apparent position does not change significantly over the period of one month. The position of the Moon is shown by a small circle for each individual day of the month. Notice that the circles are much larger than the apparent size of the Moon.

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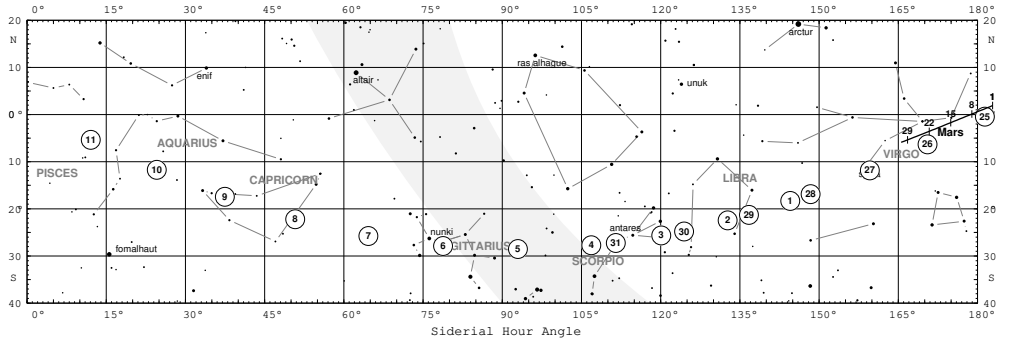
July 2025



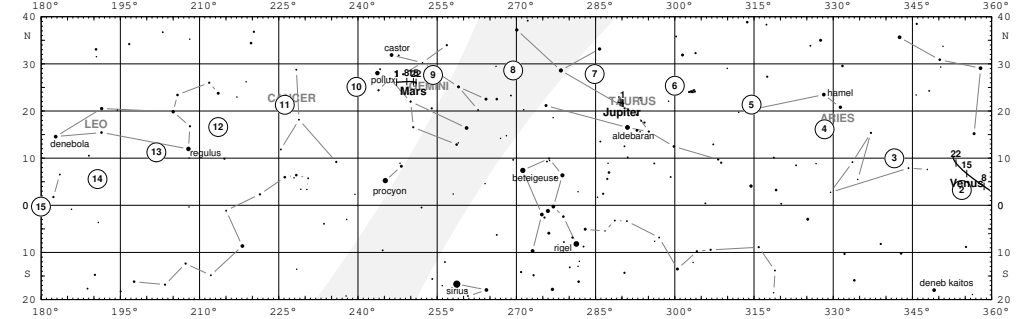
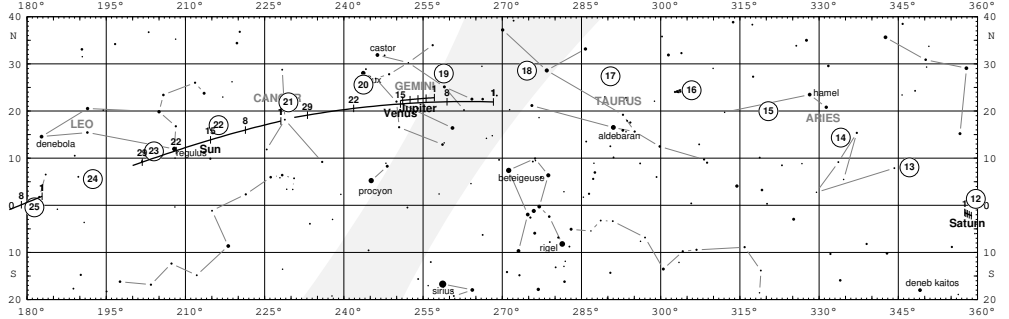
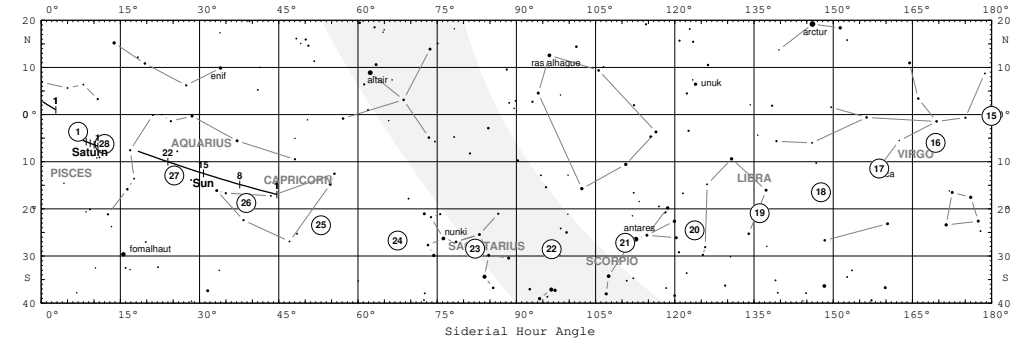
January 2025



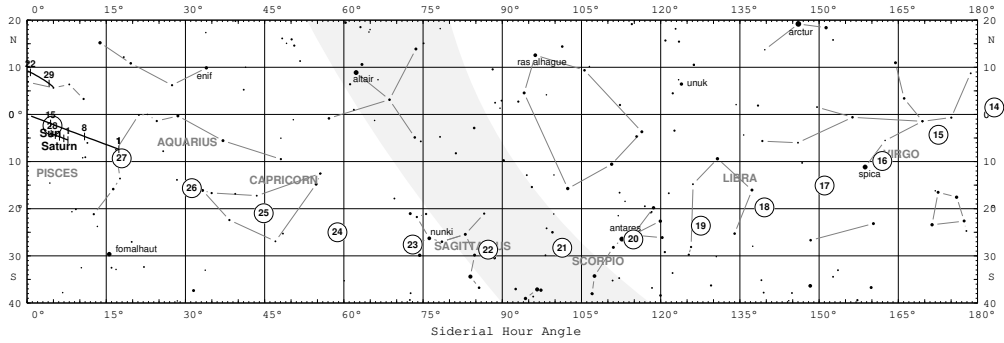
August 2025



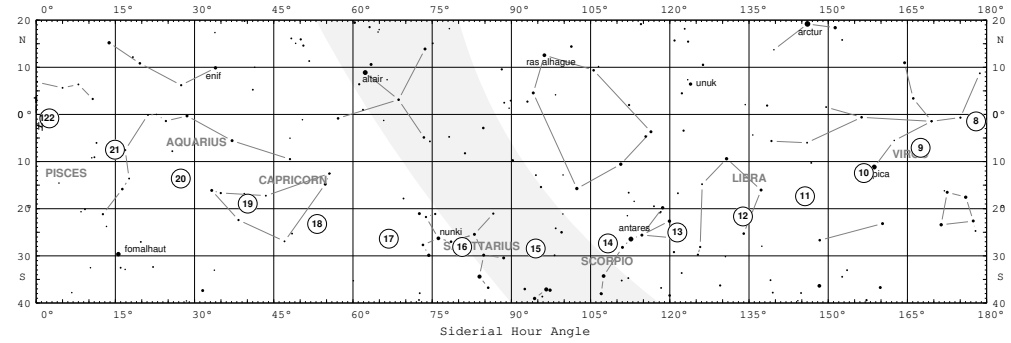
February 2025



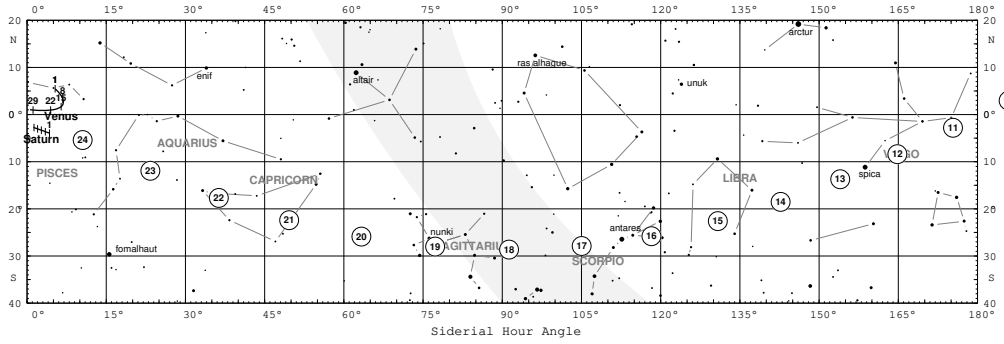
March 2025



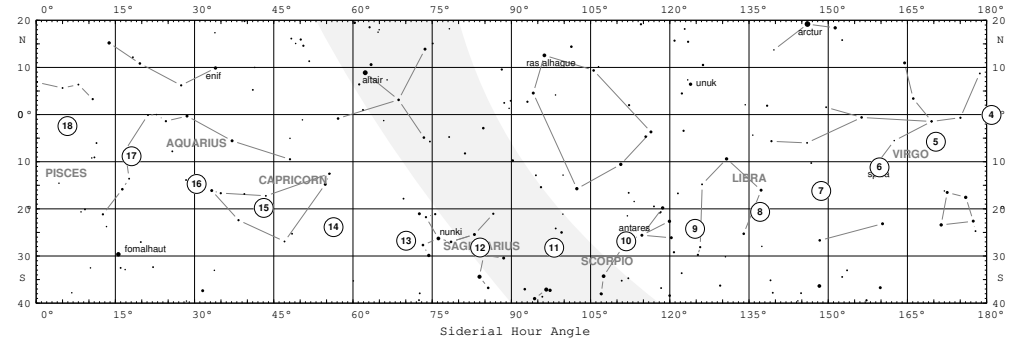
May 2025



April 2025











June 2025



Phases of the Moon

The following table lists the phases of the Moon through the year 2025. The table shows the day and the approximate time (in UTC) when the particular lunar phases occur. The calculations are based on the difference between the GHA of the Sun and the GHA of the Moon ($\Delta GHA = GHA_{sun} - GHA_{moon}$). The constellations "new moon", "first quarter", "full Moon" and "last quarter" are obtained when ΔGHA is equal to 0° , 90° , 180° and 270° respectively.

	 New Moon	 First Quarter	 Full Moon	 Last Quarter
January	Wed 29 10:35	Tue 7 06:46	Mon 13 20:53	Wed 22 09:15
February	Thu 27 23:33	Wed 5 19:06	Wed 12 11:45	Fri 21 03:36
March	Sat 29 11:46	Thu 6 21:15	Fri 14 06:36	Sat 22 10:40
April	Sun 27 21:31	Fri 4 20:47	Sun 13 02:28	Sun 20 15:28
May	Tue 27 04:28	Sun 4 01:56	Mon 12 19:26	Tue 20 01:29
June	Wed 25 10:15	Mon 2 20:11	Wed 11 08:29	Wed 18 18:55
July	Thu 24 17:33	Thu 3 01:53	Thu 10 19:21	Fri 18 10:24
August	Sat 23 04:51	Sat 2 02:27	Sat 9 06:13	Sat 16 15:29
September	Sun 21 20:50	Mon 29 21:05	Sun 7 17:56	Sun 14 13:21
October	Tue 21 15:18	Wed 29 05:09	Tue 7 05:31	Mon 13 11:24
November	Thu 20 09:13	Thu 27 22:24	Wed 5 15:36	Tue 11 18:09
December	Sat 20 01:51	Sat 27 23:21	Fri 5 00:18	Thu 11 17:26
Tidal Phase	spring 	neap 	spring 	neap 

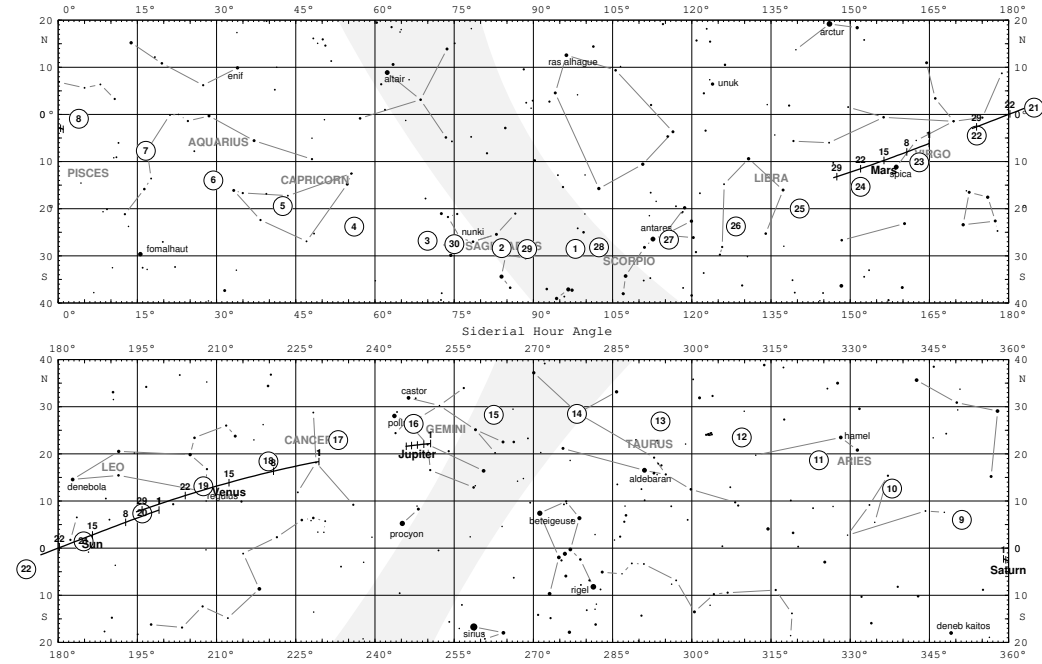
Lunar Phases and Tides

The lunar phases may be used to roughly estimate the occurrence of spring and neap tides. Spring tide occurs around new and full moon. Neap tide occurs around the first and last quarter.

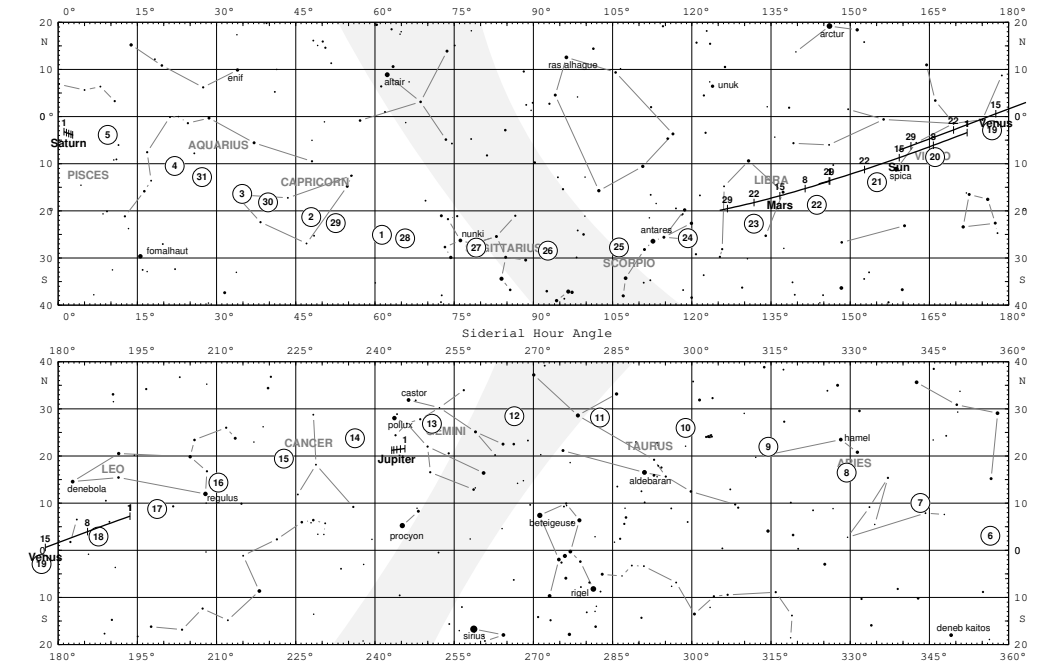
Each tidal region on Earth, has a characteristic "tidal delay" which, specifies the time difference between the occurrence of a particular lunar phase and the occurrence of the resulting tidal phase. The tidal delay can be a couple of hours for the open seas, or up to several days for branched tidal waters such as parts of the North Sea.

Reliable tidal predictions are obtained from a Tidal Almanac.

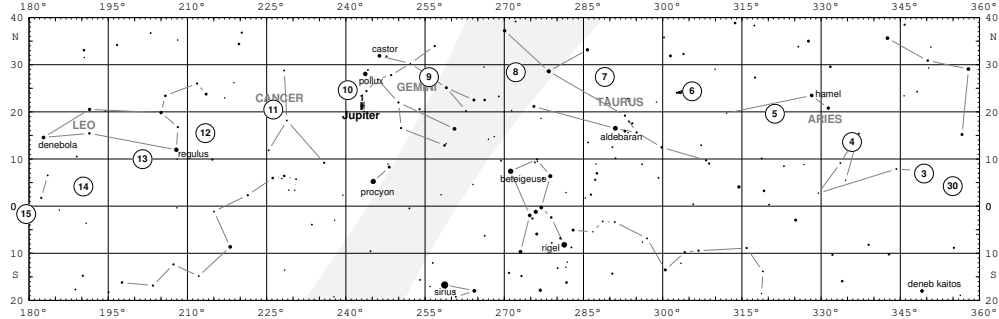
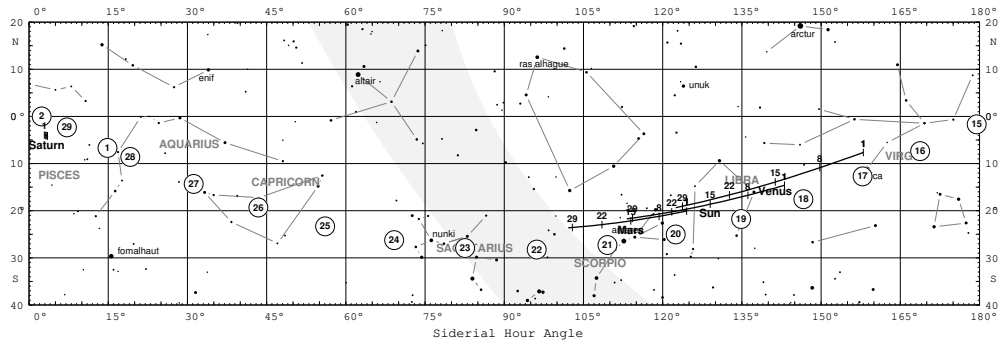
September 2025



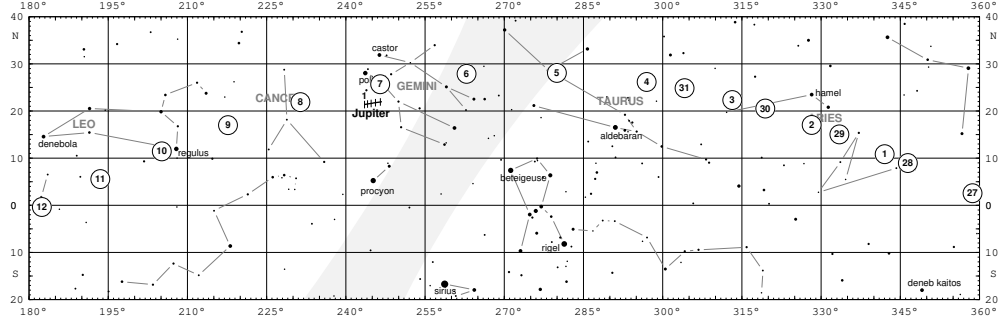
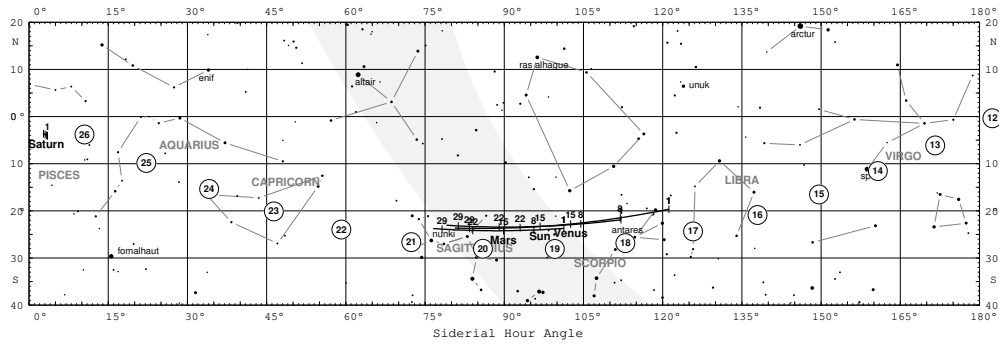
October 2025



November 2025



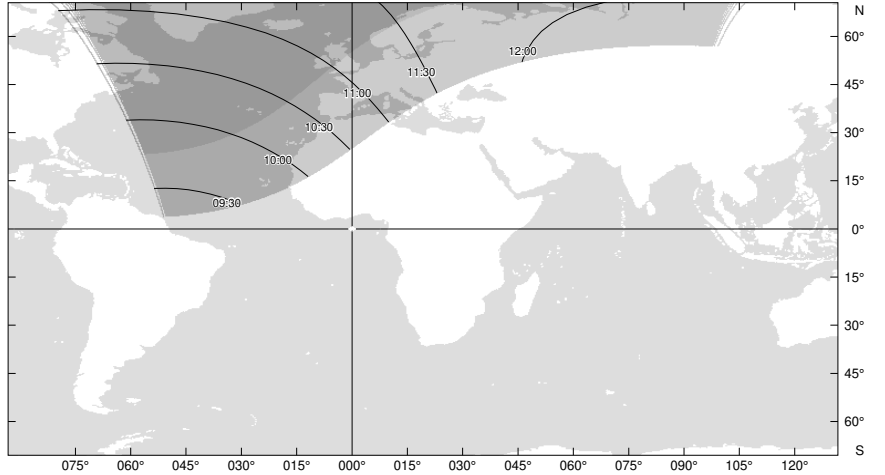
December 2025



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The following solar eclipses may be observed during the year 2025:

March 29 : partial solar eclipse begin [Mar 29, 08:51 UT] / end [Mar 29, 12:44 UT]

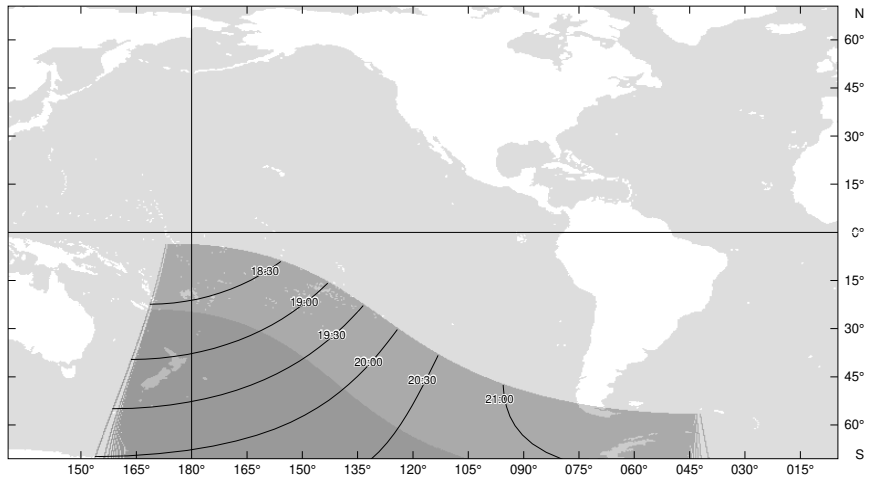


Circumstances at Moment of Greatest Eclipse
Time: 10:48 UT

First Contacts (P1/U1)
Penumbra
08:51 UT

Last Contacts (U4/P4)
Penumbra
12:44 UT

September 21 : partial solar eclipse begin [Sep 21, 17:30 UT] / end [Sep 21, 21:54 UT]



Circumstances at Moment of Greatest Eclipse
Time: 19:42 UT

First Contacts (P1/U1)
Penumbra
17:30 UT

Last Contacts (U4/P4)
Penumbra
21:54 UT

Lunar Eclipses

An eclipse of the Moon - or lunar eclipse - can only occur at Full Moon, and only if the Moon passes through some portion of the Earth's shadow. The Earth's shadow is composed of two concentric cone-shaped components. The outer or penumbral shadow is a region where the Earth blocks part (but not all) of the Sun's light from reaching the Moon. The inner or umbral shadow is a region where the Earth blocks all direct sunlight from reaching the Moon. Based on this, three types of lunar eclipses are distinguished:

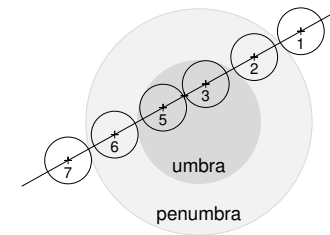
1. Penumbral Lunar Eclipse: the Moon passes through the Earth's penumbral shadow. These kind of eclipses are subtle and very difficult to observe.
2. Partial Lunar Eclipse: a part of the Moon passes through the Earth's umbral shadow.
3. Total Lunar Eclipse: the Moon passes entirely through the Earth's umbral shadow. During this phase of the eclipse the Moon will take a vibrant range of dark red and brown colors.

NOTICE: Eclipse contact times depend on the angular diameters of the Sun and Moon. The calculations in this Almanac are based on a perfect circular form for the limb of the Moon, and do not take into account effects of refraction of the sunlight in the Earth atmosphere. Since this is only an approximation of reality, contact times are accurate only within a couple of minutes.

The following lunar eclipses may be observed during the year 2025:

March 14 : a total lunar eclipse begin [Mar 14, 03:56 UTC] / end [Mar 14, 10:01 UTC]

$R_p = 1.199^\circ$
 $R_u = 0.657^\circ$
 $SD = 0.248^\circ$



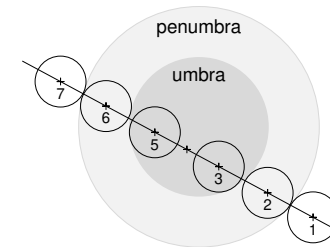
March 14

- 1 - 03:56 UTC begin of penumbral eclipse (P1)
- 2 - 05:09 UTC begin of partial eclipse (U1)
- 3 - 06:25 UTC begin of total eclipse (U2)
- 06:59 UTC moment of greatest eclipse
- 5 - 07:32 UTC end of total eclips (U3)
- 6 - 08:48 UTC end of partial eclipse (U4)
- 7 - 10:01 UTC end of penumbral eclipse (P4)

March 14

September 7 : a total lunar eclipse begin [Sep 7, 15:28 UTC] / end [Sep 7, 20:55 UTC]

$R_p = 1.275^\circ$
 $R_u = 0.740^\circ$
 $SD = 0.269^\circ$



September 7

- 1 - 15:28 UTC begin of penumbral eclipse (P1)
- 2 - 16:27 UTC begin of partial eclipse (U1)
- 3 - 17:30 UTC begin of total eclipse (U2)
- 18:12 UTC moment of greatest eclipse
- 5 - 18:53 UTC end of total eclips (U3)
- 6 - 19:56 UTC end of partial eclipse (U4)
- 7 - 20:55 UTC end of penumbral eclipse (P4)

September 7

Solar Eclipses

An eclipse of the Sun - or solar eclipse - can only occur at New Moon, and only if the Earth passes through some portion of the Moon's shadow. Seen from the Earth, the Moon passes in front of the Sun and thus a part - or all - of the light of the Sun is eclipsed. The shadow cast by the Moon is composed of two concentric cone-shaped components. The outer or *penumbral* shadow zone is the region where the Moon blocks a part of the sunlight. The inner or *umbral* shadow zone is a region where the Moon blocks all sunlight. Based on this, three types of solar eclipses may be distinguished:

1. Total solar eclipse: occurs when the umbra of the Moon's shadow touches a region on the surface of the Earth.
2. Partial solar eclipse: occurs when the penumbra of the Moon's shadow passes over a region on the Earth's surface.
3. Annular solar eclipse: occurs when a region on the Earth's surface is in line with the umbra, but the distances are such that the tip of the umbra does not reach the Earth's surface

Because of the relative sizes of the Moon and Sun and their specific distances from the Earth, only a small part of the Earth surface is covered by the Moon shadow during a solar eclipse. Especially the path of totality is usually very narrow (a few hundreds of kilometers across). A much broader region is covered by the penumbral shadow of the Moon. However, an observer in this region will see only a partial solar eclipse.

The appearance of a specific solar eclipse can be summarized conveniently by mapping the path of totality and the region covered by the penumbral shadow of the Moon for the complete duration the eclipse. The lines of constant time, included in the charts, indicate the instances of greatest eclipse.

Warning: never look directly at the Sun without proper eye protection, even during an eclipse. Even when the Sun is partially covered, your eyes can be seriously damaged by looking directly at it. Sunglasses are not an adequate eye protection for viewing the Sun.

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Equation of Time

The "Equation of Time" is the difference between the Apparent Solar Time and the Mean Solar Time at the Prime Meridian of Greenwich. The value for the Equation of Time (EoT) for a specific day can be obtained from the Nautical Almanac. The section of the Sun records the "Greenwich Culmination Time" (GCT), which is the UT time at which the Geographical Position of the Sun transits the Prime Meridian of Greenwich. This is also the UT time of Local Apparent Noon for the Prime Meridian. Thus, the value for the Equation of Time is obtained from: $EoT = 12:00:00 - GCT$.

Examples:

$$GCT = 11:57:23$$

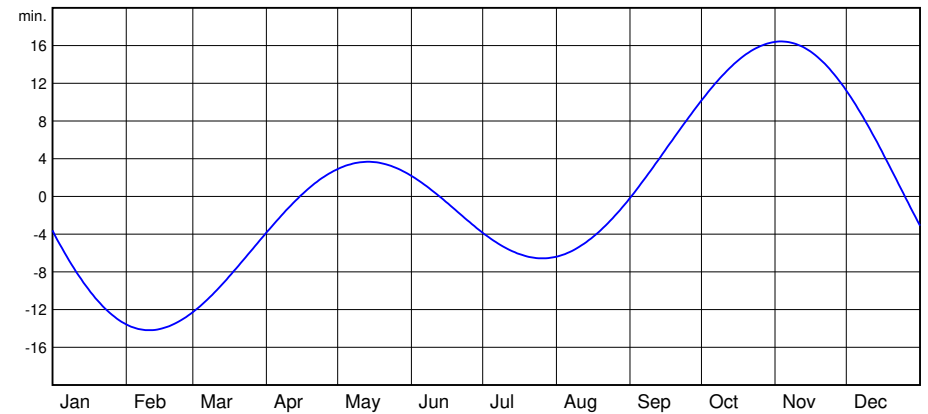
$$GCT = 12:01:57$$

$$EoT = 12:00:00 - 11:57:23 = +00:02:37$$

$$EoT = 12:00:00 - 12:01:57 = -00:01:57$$

Notice that EoT has a sign: positive if the Sun "culminates" before 12 UT (then Apparent Time is "leading" Mean Time) and negative if the Sun "culminates" after 12 UT (then Apparent Time is "lagging" Mean Time).

The graph below shows the values for the "Equation of Time" (in Minutes) for the year 2025.



Nautical Almanac

The following pages contain the coordinates of the Geographical Position (in Greenwich Hour Angle and Declination) for each integral hour of the year for the recorded celestial objects. Each page compiles the complete Almanac data for one day of the year. The time used in this Almanac is Universal Time (UT).

NOTICE:

This Nautical Almanac uses a slightly different approach for the interpolation of the integral-hour values of Greenwich Hour Angle and Declination, compared to the techniques used in most commercially available Almanacs.

For more information please refer to the following web site: "<http://www.siranah.de/>"

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Abbreviations used in the Almanac tables:

UT	Universal Time
GHA	Greenwich Hour Angle
Dec	Declination
ddGHA	the increment of the GHA value for the next hour of time, additional to the "linear" increment of 15°/h
dDec	the increment of the Dec value for the next hour of time
SD	Semi-Diameter of the celestial object
HP	Horizontal Parallax
SHA	the Siderial Hour Angle of the celestial object
A	the "Age" of the moon cycle, according to the following scheme:

Units:

°	[degrees]
°	[degrees]
'	[minutes of arc]
'	[minutes of arc]
'	[minutes of arc]
'	[minutes of arc]
°	[degrees]
A = 00%	: new moon
A = 25%	: first quarter
A = 50%	: full moon
A = 75%	: last quarter

Table with 5 columns: UT, Sun, Venus, Moon, UT. Each planet column has 4 sub-columns: GHA, ddGHA, Dec, dDec. Rows 00-23 show celestial data for Sun, Venus, and Moon.

Table with 5 columns: UT, Sun, Venus, Moon, UT. Each planet column has 4 sub-columns: SD, HP, SHA. Includes Greenwich Culmination Time for each planet.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Each planet column has 4 sub-columns: GHA, ddGHA, Dec, dDec. Rows 00-23 show celestial data for Mars, Jupiter, and Saturn.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Each planet column has 4 sub-columns: SD, HP, SHA. Includes Greenwich Culmination Time for each planet.

Table with 5 columns: UT, Sun, Venus, Moon, UT. Each planet column has 4 sub-columns: GHA, ddGHA, Dec, dDec. Rows 00-23 show celestial data for Sun, Venus, and Moon.

Table with 5 columns: UT, Sun, Venus, Moon, UT. Each planet column has 4 sub-columns: SD, HP, SHA. Includes Greenwich Culmination Time for each planet.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Each planet column has 4 sub-columns: GHA, ddGHA, Dec, dDec. Rows 00-23 show celestial data for Mars, Jupiter, and Saturn.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Each planet column has 4 sub-columns: SD, HP, SHA. Includes Greenwich Culmination Time for each planet.

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23 showing celestial data for Sun, Venus, and Moon on January 2, 2025.

Summary table for Sun, Venus, and Moon on January 2, 2025, including UTC times (02-22) and Greenwich Culmination Times (12:04, 15:18, 14:27).

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23 showing celestial data for Mars, Jupiter, and Saturn on January 2, 2025.

Summary table for Mars, Jupiter, and Saturn on January 2, 2025, including UTC times (02-22) and Greenwich Culmination Times (01:31, 21:55, 16:16).

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23 showing celestial data for Sun, Venus, and Moon on January 3, 2025.

Summary table for Sun, Venus, and Moon on January 3, 2025, including UTC times (02-22) and Greenwich Culmination Times (12:04, 15:18, 15:17).

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23 showing celestial data for Mars, Jupiter, and Saturn on January 3, 2025.

Summary table for Mars, Jupiter, and Saturn on January 3, 2025, including UTC times (02-22) and Greenwich Culmination Times (01:25, 21:51, 16:12).

Table with columns for planet (Sun, Venus, Moon, Mars, Jupiter, Saturn), UT, GHA, ddGHA, Dec, dDec, and A (%). Includes Greenwich Culmination Time and SD/HP/SHA coordinates.

Table with columns for planet (Sun, Venus, Moon, Mars, Jupiter, Saturn), UT, GHA, ddGHA, Dec, dDec, and A (%). Includes Greenwich Culmination Time and SD/HP/SHA coordinates.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 16°3 16°3 16°3 16°3 16°3 16°3
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 064° 064° 064° 063° 063° 063°
Greenwich Culmination Time: 12:09

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 240° 240° 240° 240° 240° 240°
Greenwich Culmination Time: 20:25

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 16°3 16°3 16°3 16°3 16°3 16°3
HP 00°2 00°2 00°2 00°2 00°2 00°2
SHA 016° 016° 016° 016° 016° 016°
Greenwich Culmination Time: 15:15

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°4 00°4 00°4 00°4 00°4 00°4
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 289° 289° 289° 289° 289° 290°
Greenwich Culmination Time: 20:59

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Warning: This page has been generated by a computer program. Complex computer programs usually have bugs and may produce wrong data. The data on this page is believed to be accurate but no warranty is given for its correctness. Use it only for training and exercising!

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 16°3 16°3 16°3 16°3 16°3 16°3
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 060° 060° 059° 059° 059° 059°
Greenwich Culmination Time: 12:10

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 242° 242° 242° 242° 242° 242°
Greenwich Culmination Time: 00:02

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 16°3 16°3 16°3 16°3 16°3 16°3
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 059° 058° 058° 058° 058° 058°
Greenwich Culmination Time: 12:10

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°4 00°4 00°4 00°4 00°4 00°4
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 290° 290° 290° 290° 290° 290°
Greenwich Culmination Time: 20:43

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon A: 81%.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon A: 72%.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

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Table with 5 columns: UT, Sun, Venus, Moon, UT. Includes data for Sun, Venus, and Moon positions and culminations for days 00-23.

Table with 5 columns: UT, Sun, Venus, Moon, UT. Includes data for Sun, Venus, and Moon positions and culminations for days 00-23.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Includes data for Mars, Jupiter, and Saturn positions and culminations for days 00-23.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Includes data for Mars, Jupiter, and Saturn positions and culminations for days 00-23.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 16°2 16°2 16°2 16°2 16°2 16°2
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 051° 051° 051° 051° 051° 050°
Greenwich Culmination Time: 12:12

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 245° 245° 245° 245° 245° 245°
Greenwich Culmination Time: 23:12

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 16°2 16°2 16°2 16°2 16°2 16°2
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 050° 050° 050° 050° 050° 049°
Greenwich Culmination Time: 12:12

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 245° 245° 246° 246° 246° 246°
Greenwich Culmination Time: 23:07

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 16°2 16°2 16°2 16°2 16°2 16°2
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 045° 045° 045° 045° 044° 044°
Greenwich Culmination Time: 12:13

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 247° 247° 247° 247° 247° 247°
Greenwich Culmination Time: 22:40

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 16°2 16°2 16°2 16°2 16°2 16°2
HP 00°3 00°3 00°3 00°3 00°3 00°3
SHA 048° 048° 048° 048° 047° 047°
Greenwich Culmination Time: 12:13

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 00°4 00°4 00°4 00°4 00°4 00°4
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 246° 246° 246° 246° 246° 246°
Greenwich Culmination Time: 22:56

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22
SD 16°2 16°2 16°2 16°2 16°2 16°2
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 041° 041° 041° 041° 041° 041°
Greenwich Culmination Time: 12:13

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 248° 248° 248° 248° 248° 248°
Greenwich Culmination Time: 22:20

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22
SD 16°2 16°2 16°2 16°2 16°2 16°2
HP 00°3 00°3 00°3 00°3 00°3 00°3
SHA 044° 044° 044° 044° 044° 043°
Greenwich Culmination Time: 12:13

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 248° 248° 248° 248° 248° 248°
Greenwich Culmination Time: 22:35

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon (A: 46%), and UT. It contains astronomical data for the first four planets for February 11, 2025.

Table with columns for UT, Sun, Venus, Moon (A: 50%), and UT. It contains astronomical data for the first four planets for February 12, 2025.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. It contains astronomical data for the last three planets for February 11, 2025.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. It contains astronomical data for the last three planets for February 12, 2025.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show astronomical data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show astronomical data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show astronomical data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show astronomical data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show astronomical data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show astronomical data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show astronomical data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show astronomical data for each planet.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes planetary data for Uranus, Neptune, and Pluto.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes planetary data for Uranus, Neptune, and Pluto.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes planetary data for Uranus, Neptune, and Pluto.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes planetary data for Uranus, Neptune, and Pluto.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA coordinates and Greenwich Culmination Time.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial data for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial data for each body.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial data for each body.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial data for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial data for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial data for each body.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial data for each body.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial data for each body.

Table for Feb 27 showing Sun, Venus, and Moon data. Columns include UT, GHA, ddGHA, Dec, dDec, and A: 98%. Rows list times from 00 to 23. Includes UTC times at the bottom.

Table for Feb 28 showing Sun, Venus, and Moon data. Columns include UT, GHA, ddGHA, Dec, dDec, and A: 01%. Rows list times from 00 to 23. Includes UTC times at the bottom.

Table for Feb 27 showing Mars, Jupiter, and Saturn data. Columns include UT, GHA, ddGHA, Dec, dDec, and A: 98%. Rows list times from 00 to 23. Includes UTC times at the bottom.

Table for Feb 28 showing Mars, Jupiter, and Saturn data. Columns include UT, GHA, ddGHA, Dec, dDec, and A: 01%. Rows list times from 00 to 23. Includes UTC times at the bottom.

Table with columns for UT, Sun, Venus, Moon, and A:19%. Rows 00-23 containing astronomical data for each celestial body and a footer with SHA and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and A:08%. Rows 00-23 containing astronomical data for each celestial body and a footer with SHA and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and A:19%. Rows 00-23 containing astronomical data for each celestial body and a footer with SHA and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and A:08%. Rows 00-23 containing astronomical data for each celestial body and a footer with SHA and Greenwich Culmination Time.

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Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for positions (GHA, ddGHA, Dec, dDec) and Greenwich Culmination Time (12:11).

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for positions (GHA, ddGHA, Dec, dDec) and Greenwich Culmination Time (12:11).

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for positions (GHA, ddGHA, Dec, dDec) and Greenwich Culmination Time (20:29).

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for positions (GHA, ddGHA, Dec, dDec) and Greenwich Culmination Time (20:26).

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 010° 010° 010° 010° 010° 010°
Greenwich Culmination Time: 12:10

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 013° 013° 013° 013° 013° 013°
Greenwich Culmination Time: 12:11

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°2 00°2 00°2 00°2 00°2
SHA 250° 250° 250° 250° 250° 250°
Greenwich Culmination Time: 20:09

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 250° 250° 250° 250° 250° 250°
Greenwich Culmination Time: 20:19

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 009° 008° 008° 008° 008° 008°
Greenwich Culmination Time: 12:09

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 008° 007° 007° 007° 007° 007°
Greenwich Culmination Time: 12:09

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 250° 250° 250° 250° 250° 250°
Greenwich Culmination Time: 20:02

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 249° 249° 249° 249° 249° 249°
Greenwich Culmination Time: 19:59

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 003° 003° 003° 003° 002° 002°
Greenwich Culmination Time: 12:08

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 006° 006° 005° 005° 005° 005°
Greenwich Culmination Time: 12:09

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 248° 248° 248° 248° 248° 248°
Greenwich Culmination Time: 19:44

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 249° 249° 249° 249° 249° 249°
Greenwich Culmination Time: 19:53

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Table with columns for UT, Sun, Venus, Moon (A: 53%), and UT. Rows 00-23 show planetary coordinates (GHA, ddGHA, Dec, dDec) and ephemeris data (SD, HP, SHA) for each planet.

Table with columns for UT, Sun, Venus, Moon (A: 55%), and UT. Rows 00-23 show planetary coordinates (GHA, ddGHA, Dec, dDec) and ephemeris data (SD, HP, SHA) for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show planetary coordinates (GHA, ddGHA, Dec, dDec) and ephemeris data (SD, HP, SHA) for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show planetary coordinates (GHA, ddGHA, Dec, dDec) and ephemeris data (SD, HP, SHA) for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 359° 359° 359° 359° 359° 359°
Greenwich Culmination Time: 12:07

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 247° 247° 247° 247° 247° 247°
Greenwich Culmination Time: 19:32

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 002° 002° 002° 002° 002° 001°
Greenwich Culmination Time: 12:07

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°3 00°3 00°3 00°3 00°3 00°3
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 287° 287° 287° 287° 287° 287°
Greenwich Culmination Time: 17:05

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 001° 001° 001° 001° 001° 000°
Greenwich Culmination Time: 12:07

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 000° 000° 360° 360° 360° 360°
Greenwich Culmination Time: 12:07

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 248° 248° 248° 248° 248° 248°
Greenwich Culmination Time: 19:38

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 248° 248° 248° 248° 247°
Greenwich Culmination Time: 19:35

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 356° 356° 355° 355° 355° 355°
Greenwich Culmination Time: 12:05

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°3 00°3 00°3 00°3 00°3 00°3
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 246° 246° 246° 246° 246° 246°
Greenwich Culmination Time: 19:21

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 358° 358° 358° 358° 358° 358°
Greenwich Culmination Time: 12:06

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°3 00°3 00°3 00°3 00°3 00°3
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 287° 287° 287° 287° 287° 287°
Greenwich Culmination Time: 16:51

Table with columns for UT, Sun, Venus, Moon (A: 00%), and UT. Rows 00-23 contain celestial data for the 29th of March. Bottom section contains UT 02-22 with additional data and Greenwich Culmination Time: 12:04.

Table with columns for UT, Sun, Venus, Moon (A: 89%), and UT. Rows 00-23 contain celestial data for the 26th of March. Bottom section contains UT 02-22 with additional data and Greenwich Culmination Time: 12:05.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 contain celestial data for the 29th of March. Bottom section contains UT 02-22 with additional data and Greenwich Culmination Time: 19:11.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 contain celestial data for the 26th of March. Bottom section contains UT 02-22 with additional data and Greenwich Culmination Time: 19:19.

Table with columns: UT, Sun (GHA, ddGHA, Dec, dDec), Venus (GHA, ddGHA, Dec, dDec), Moon (GHA, ddGHA, Dec, dDec), A: 93%, UT. Rows 00-23.

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 354° 354° 354° 353° 353° 353°
Greenwich Culmination Time: 12:05

Table with columns: UT, Sun (GHA, ddGHA, Dec, dDec), Venus (GHA, ddGHA, Dec, dDec), Moon (GHA, ddGHA, Dec, dDec), A: 96%, UT. Rows 00-23.

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 353° 353° 353° 353° 352° 352°
Greenwich Culmination Time: 12:04

Table with columns: UT, Mars (GHA, ddGHA, Dec, dDec), Jupiter (GHA, ddGHA, Dec, dDec), Saturn (GHA, ddGHA, Dec, dDec), UT. Rows 00-23.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 246° 246° 246° 246° 245° 245°
Greenwich Culmination Time: 19:16

Table with columns: UT, Mars (GHA, ddGHA, Dec, dDec), Jupiter (GHA, ddGHA, Dec, dDec), Saturn (GHA, ddGHA, Dec, dDec), UT. Rows 00-23.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 245° 245° 245° 245° 245° 245°
Greenwich Culmination Time: 19:13

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on 2025 April 2, including GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on 2025 March 30, including GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on 2025 April 2, including GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on 2025 March 30, including GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

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Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for UT 00-23 and sub-tables for UT 02, 06, 10, 14, 18, 22.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for UT 00-23 and sub-tables for UT 02, 06, 10, 14, 18, 22.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for UT 00-23 and sub-tables for UT 02, 06, 10, 14, 18, 22.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for UT 00-23 and sub-tables for UT 02, 06, 10, 14, 18, 22.

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Table with columns for Sun, Venus, Moon, and UT, containing astronomical data for the date 2025 April 10.

Table with columns for Sun, Venus, Moon, and UT, containing astronomical data for the date 2025 April 7.

Table with columns for Mars, Jupiter, Saturn, and UT, containing astronomical data for the date 2025 April 10.

Table with columns for Mars, Jupiter, Saturn, and UT, containing astronomical data for the date 2025 April 7.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 343° 343° 343° 342° 342° 342°
Greenwich Culmination Time: 12:01

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 342° 342° 342° 342° 341° 341°
Greenwich Culmination Time: 12:01

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 00°3 00°3 00°3 00°3 00°3 00°3
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 241° 241° 241° 241° 241° 241°
Greenwich Culmination Time: 18:46

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each celestial body.

UT 02 06 10 14 18 22
SD 00°3 00°3 00°3 00°3 00°3 00°3
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 284° 284° 284° 284° 284° 284°
Greenwich Culmination Time: 15:52

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 337° 337° 337° 337° 337° 337°
Greenwich Culmination Time: 12:00

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
SHA 239° 239° 239° 239° 239° 239°
Greenwich Culmination Time: 18:32

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 16°0' 16°0' 16°0' 16°0' 16°0' 16°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 340° 340° 340° 340° 340° 339°
Greenwich Culmination Time: 12:00

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°3' 00°3' 00°3' 00°3' 00°3' 00°3'
HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
SHA 283° 283° 283° 283° 283° 283°
Greenwich Culmination Time: 15:46

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 339° 339° 339° 339° 339° 338°
Greenwich Culmination Time: 12:00

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 15°9 15°9
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 338° 338° 338° 338° 338° 338°
Greenwich Culmination Time: 12:00

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 240° 240° 240° 240° 240°
Greenwich Culmination Time: 18:36

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 00°3 00°3 00°3 00°3 00°3 00°3
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 239° 239° 239° 239° 239° 239°
Greenwich Culmination Time: 18:34

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 332° 332° 332° 331° 331° 331°
Greenwich Culmination Time: 11:58

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
SHA 236° 236° 236° 236° 236° 236°
Greenwich Culmination Time: 18:18

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 331° 331° 331° 330° 330° 330°
Greenwich Culmination Time: 11:58

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°3' 00°3' 00°3' 00°3' 00°3' 00°3'
HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
SHA 281° 281° 281° 281° 281° 281°
Greenwich Culmination Time: 09:52

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22 showing sidereal time and SHA for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22 showing sidereal time and SHA for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22 showing sidereal time and SHA for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22 showing sidereal time and SHA for each planet.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 15°9 15°9 15°9 15°9 15°9 15°9
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 328° 328° 328° 328° 327° 327°
Greenwich Culmination Time: 11:58

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 15°9 15°9 15°9 15°9 15°9 15°9
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 327° 327° 327° 327° 327° 326°
Greenwich Culmination Time: 11:57

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 235° 235° 235° 234° 234° 234°
Greenwich Culmination Time: 18:10

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 234° 234° 234° 234° 234° 234°
Greenwich Culmination Time: 18:08

Table with columns for UT, Sun, Venus, Moon, and UT. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and astronomical data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and astronomical data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and astronomical data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and astronomical data for each planet.

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Table with columns UT, Sun, Venus, Moon, UT. Rows 00 to 23. Includes RA, Dec, and Altitude data for Sun, Venus, and Moon.

Table with columns UT, Sun, Venus, Moon, UT. Rows 00 to 23. Includes RA, Dec, and Altitude data for Sun, Venus, and Moon.

Table with columns UT, Mars, Jupiter, Saturn, UT. Rows 00 to 23. Includes RA, Dec, and Altitude data for Mars, Jupiter, and Saturn.

Table with columns UT, Sun, Venus, Moon, UT. Rows 00 to 23. Includes RA, Dec, and Altitude data for Sun, Venus, and Moon.

Table with columns UT, Sun, Venus, Moon, UT. Rows 00 to 23. Includes RA, Dec, and Altitude data for Sun, Venus, and Moon.

Table with columns UT, Mars, Jupiter, Saturn, UT. Rows 00 to 23. Includes RA, Dec, and Altitude data for Mars, Jupiter, and Saturn.

Table for Friday, May 2, 2025. Columns: UT, Sun (GHA, ddGHA, Dec, dDec), Venus (GHA, ddGHA, Dec, dDec), Moon (GHA, ddGHA, Dec, dDec), UT. Rows 00-23. Includes sub-headers for UT 02-06, 10-14, 18-22 and planetary data for SD, HP, SHA, and Greenwich Culmination Time.

Table for Friday, May 2, 2025. Columns: UT, Mars (GHA, ddGHA, Dec, dDec), Jupiter (GHA, ddGHA, Dec, dDec), Saturn (GHA, ddGHA, Dec, dDec), UT. Rows 00-23. Includes sub-headers for UT 02-06, 10-14, 18-22 and planetary data for SD, HP, SHA, and Greenwich Culmination Time.

Table for Saturday, May 3, 2025. Columns: UT, Sun (GHA, ddGHA, Dec, dDec), Venus (GHA, ddGHA, Dec, dDec), Moon (GHA, ddGHA, Dec, dDec), UT. Rows 00-23. Includes sub-headers for UT 02-06, 10-14, 18-22 and planetary data for SD, HP, SHA, and Greenwich Culmination Time.

Table for Saturday, May 3, 2025. Columns: UT, Mars (GHA, ddGHA, Dec, dDec), Jupiter (GHA, ddGHA, Dec, dDec), Saturn (GHA, ddGHA, Dec, dDec), UT. Rows 00-23. Includes sub-headers for UT 02-06, 10-14, 18-22 and planetary data for SD, HP, SHA, and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing planetary parameters and Greenwich Culmination Times.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing planetary parameters and Greenwich Culmination Times.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and distance data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and distance data for each planet.

UT 02 06 10 14 18 22
SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 311° 311° 310° 310° 310° 310°
Greenwich Culmination Time: 11:56

UT 02 06 10 14 18 22
SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 314° 314° 313° 313° 313° 313°
Greenwich Culmination Time: 11:56

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and distance data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and distance data for each planet.

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Table for 2025 May 14 Wednesday showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a small table for Mars, Jupiter, and Saturn at the bottom.

Table for 2025 May 15 Thursday showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a small table for Mars, Jupiter, and Saturn at the bottom.

Table for 2025 May 14 Wednesday showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT.

Table for 2025 May 15 Thursday showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

Table with columns: UT, Sun (GHA, ddGHA, Dec, dDec), Venus (GHA, ddGHA, Dec, dDec), Moon (GHA, ddGHA, Dec, dDec), A: 82%, UT. Rows 00-23. Includes sub-tables for UT 02-06, 10-14, 18-22 with SD, HP, SHA, and Greenwich Culmination Time.

Table with columns: UT, Sun (GHA, ddGHA, Dec, dDec), Venus (GHA, ddGHA, Dec, dDec), Moon (GHA, ddGHA, Dec, dDec), A: 86%, UT. Rows 00-23. Includes sub-tables for UT 02-06, 10-14, 18-22 with SD, HP, SHA, and Greenwich Culmination Time.

Table with columns: UT, Mars (GHA, ddGHA, Dec, dDec), Jupiter (GHA, ddGHA, Dec, dDec), Saturn (GHA, ddGHA, Dec, dDec), UT. Rows 00-23. Includes sub-tables for UT 02-06, 10-14, 18-22 with SD, HP, SHA, and Greenwich Culmination Time.

Table with columns: UT, Mars (GHA, ddGHA, Dec, dDec), Jupiter (GHA, ddGHA, Dec, dDec), Saturn (GHA, ddGHA, Dec, dDec), UT. Rows 00-23. Includes sub-tables for UT 02-06, 10-14, 18-22 with SD, HP, SHA, and Greenwich Culmination Time.

Table for Sun, Venus, and Moon on May 26. Columns include UT, GHA, ddGHA, Dec, dDec, and A: 97%. Rows 00-23 show planetary data and UT 02-22 show Greenwich Culmination Time.

Table for Sun, Venus, and Moon on May 27. Columns include UT, GHA, ddGHA, Dec, dDec, and A: 01%. Rows 00-23 show planetary data and UT 02-22 show Greenwich Culmination Time.

Table for Mars, Jupiter, and Saturn on May 26. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Rows 00-23 show planetary data and UT 02-22 show Greenwich Culmination Time.

Table for Mars, Jupiter, and Saturn on May 27. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Rows 00-23 show planetary data and UT 02-22 show Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for June 1, 2025, such as GHA, ddGHA, Dec, dDec, and A:20%.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for May 29, 2025, such as GHA, ddGHA, Dec, dDec, and A:09%.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for June 1, 2025, such as GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for May 29, 2025, such as GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table for May 30 showing Sun, Venus, and Moon positions. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a table for Mars, Jupiter, and Saturn below.

Table for May 31 showing Sun, Venus, and Moon positions. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a table for Mars, Jupiter, and Saturn below.

Table for May 30 showing Mars, Jupiter, and Saturn positions. Columns include UT, GHA, ddGHA, Dec, dDec, and UT.

Table for May 31 showing Mars, Jupiter, and Saturn positions. Columns include UT, GHA, ddGHA, Dec, dDec, and UT.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing astronomical data including Right Ascension, Declination, and magnitude.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing astronomical data including Right Ascension, Declination, and magnitude.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing astronomical data including Right Ascension, Declination, and magnitude.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing astronomical data including Right Ascension, Declination, and magnitude.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 282° 282° 282° 282° 282° 282°
Greenwich Culmination Time: 11:59

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 212° 212° 212° 212° 211° 211°
Greenwich Culmination Time: 16:40

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'
HP 00°2' 00°2' 00°2' 00°2' 00°2' 00°2'
SHA 286° 285° 285° 285° 285° 285°
Greenwich Culmination Time: 11:58

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 213° 213° 213° 213° 213° 213°
Greenwich Culmination Time: 16:46

Table with columns for UT, Sun, Venus, Moon, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table at the bottom with dates 02, 06, 10, 14, 18, 22.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table at the bottom with dates 02, 06, 10, 14, 18, 22.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table at the bottom with dates 02, 06, 10, 14, 18, 22.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table at the bottom with dates 02, 06, 10, 14, 18, 22.

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Table for Sun, Venus, and Moon on June 13, 2025. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table at the bottom for sidereal time and Greenwich Culmination Time.

Table for Sun, Venus, and Moon on June 10, 2025. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table at the bottom for sidereal time and Greenwich Culmination Time.

Table for Mars, Jupiter, and Saturn on June 13, 2025. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table at the bottom for sidereal time and Greenwich Culmination Time.

Table for Mars, Jupiter, and Saturn on June 10, 2025. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table at the bottom for sidereal time and Greenwich Culmination Time.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial coordinates and magnitudes for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show sunrise/sunset times and Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates and magnitudes for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show sunrise/sunset times and Greenwich Culmination Time for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial coordinates and magnitudes for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show sunrise/sunset times and Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates and magnitudes for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show sunrise/sunset times and Greenwich Culmination Time for each planet.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15°7' 15°7' 15°7' 15°7' 15°7' 15°7'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 274° 274° 274° 274° 274° 273°
Greenwich Culmination Time: 12:00

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 208° 208° 207° 207° 207° 207°
Greenwich Culmination Time: 16:26

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15°7' 15°7' 15°7' 15°7' 15°7' 15°7'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 277° 277° 277° 277° 277° 276°
Greenwich Culmination Time: 12:00

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 209° 209° 209° 209° 209° 209°
Greenwich Culmination Time: 16:31

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial coordinates for each planet.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 272* 272* 272* 272* 271* 271*
Greenwich Culmination Time: 12:01

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates for each planet.

UT 02 06 10 14 18 22
SD 00*0 00*0 00*0 00*0 00*0 00*0
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 207* 206* 206* 206* 206* 206*
Greenwich Culmination Time: 16:22

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial coordinates for each planet.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 271* 271* 271* 271* 270* 270*
Greenwich Culmination Time: 12:01

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates for each planet.

UT 02 06 10 14 18 22
SD 00*0 00*0 00*0 00*0 00*0 00*0
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 206* 206* 206* 206* 206* 206*
Greenwich Culmination Time: 16:20

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 266* 266* 266* 265* 265* 265*
Greenwich Culmination Time: 12:02

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 269* 269* 269* 268* 268* 268*
Greenwich Culmination Time: 12:02

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 00*3 00*3 00*3 00*3 00*3 00*3
HP 00*0 00*0 00*0 00*0 00*0 00*0
SHA 266* 266* 266* 266* 266* 266*
Greenwich Culmination Time: 11:59

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 00*3 00*3 00*3 00*3 00*3 00*3
HP 00*0 00*0 00*0 00*0 00*0 00*0
SHA 267* 267* 267* 267* 267* 267*
Greenwich Culmination Time: 12:08

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on June 23, 2025, such as GHA, ddGHA, Dec, dDec, and SHA.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on June 24, 2025, such as GHA, ddGHA, Dec, dDec, and SHA.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on June 23, 2025, such as GHA, ddGHA, Dec, dDec, and SHA.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on June 24, 2025, such as GHA, ddGHA, Dec, dDec, and SHA.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes data for GHA, ddGHA, Dec, and dDec for each planet. A: 20%. Footer includes Greenwich Culmination Time: 12:03.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes data for GHA, ddGHA, Dec, and dDec for each planet. A: 23%. Footer includes Greenwich Culmination Time: 12:04.

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Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes RA/Dec coordinates and magnitude data for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 253* 253* 253* 253* 253* 253*
Greenwich Culmination Time: 12:05

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes RA/Dec coordinates and magnitude data for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 257* 256* 256* 256* 256* 256*
Greenwich Culmination Time: 12:04

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes RA/Dec coordinates and magnitude data for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00*0 00*0 00*0 00*0 00*0 00*0
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 197* 197* 197* 197* 197* 196*
Greenwich Culmination Time: 15:50

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes RA/Dec coordinates and magnitude data for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00*0 00*0 00*0 00*0 00*0 00*0
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 199* 198* 198* 198* 198* 198*
Greenwich Culmination Time: 15:55

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 15°7' 15°7' 15°7' 15°7' 15°7' 15°7'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 256° 255° 255° 255° 255° 255°
Greenwich Culmination Time: 12:04

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 15°7' 15°7' 15°7' 15°7' 15°7' 15°7'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 254° 254° 254° 254° 254° 254°
Greenwich Culmination Time: 12:04

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 198° 198° 198° 198° 198° 198°
Greenwich Culmination Time: 15:53

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 197° 197° 197° 197° 197° 197°
Greenwich Culmination Time: 15:52

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15°7' 15°7' 15°7' 15°7' 15°7' 15°7'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 251° 251° 251° 251° 251° 251°
Greenwich Culmination Time: 12:05

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 196° 196° 196° 196° 195° 195°
Greenwich Culmination Time: 15:46

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15°7' 15°7' 15°7' 15°7' 15°7' 15°7'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 250° 250° 250° 250° 250° 250°
Greenwich Culmination Time: 12:05

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 195° 195° 195° 195° 195° 195°
Greenwich Culmination Time: 15:44

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial coordinates for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show additional celestial coordinates and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show additional celestial coordinates and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial coordinates for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show additional celestial coordinates and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show additional celestial coordinates and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15°7' 15°7' 15°7' 15°7' 15°7' 15°7'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 239° 239° 239° 239° 239° 238°
Greenwich Culmination Time: 12:06

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 189° 189° 189° 189° 189° 189°
Greenwich Culmination Time: 15:25

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15°7' 15°7' 15°7' 15°7' 15°7' 15°7'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 238° 238° 238° 238° 238° 237°
Greenwich Culmination Time: 12:06

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 189° 189° 188° 188° 188° 188°
Greenwich Culmination Time: 15:24

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 15°7' 15°7' 15°7' 15°8' 15°8' 15°8'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 233° 233° 233° 233° 233° 233°
Greenwich Culmination Time: 12:06

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 186° 186° 186° 186° 185°
Greenwich Culmination Time: 15:15

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 15°7' 15°7' 15°7' 15°7' 15°7' 15°7'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 236° 236° 236° 236° 235° 235°
Greenwich Culmination Time: 12:06

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 188° 187° 187° 187° 187° 187°
Greenwich Culmination Time: 15:20

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 235* 235* 235* 235* 235* 234*
Greenwich Culmination Time: 12:06

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 234* 234* 234* 234* 234* 234*
Greenwich Culmination Time: 12:06

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00*0 00*0 00*0 00*0 00*0 00*0
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 187* 187* 187* 187* 187* 187*
Greenwich Culmination Time: 15:18

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00*0 00*0 00*0 00*0 00*0 00*0
HP 00*1 00*1 00*1 00*1 00*1 00*1
SHA 186* 186* 186* 186* 186* 186*
Greenwich Culmination Time: 15:17

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on July 31, 2025.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on July 28, 2025.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on July 31, 2025.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on July 28, 2025.

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Table with columns for UT, Sun, Venus, Moon, and UT. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and UTC times (UT 00-23) for 2025 August 4. Sub-rows show details for UT 02, 06, 10, 14, 18, 22. Includes Greenwich Culmination Time: 12:06, 09:28, 20:16.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and UTC times (UT 00-23) for 2025 August 4. Sub-rows show details for UT 02, 06, 10, 14, 18, 22. Includes Greenwich Culmination Time: 15:01, 10:01, 03:17.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and UTC times (UT 00-23) for 2025 August 1. Sub-rows show details for UT 02, 06, 10, 14, 18, 22. Includes Greenwich Culmination Time: 12:06, 09:25, 17:50.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and UTC times (UT 00-23) for 2025 August 1. Sub-rows show details for UT 02, 06, 10, 14, 18, 22. Includes Greenwich Culmination Time: 15:06, 10:10, 03:29.

Table for August 2 showing Sun, Venus, and Moon data. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a table for Mars data at the bottom.

Table for August 3 showing Sun, Venus, and Moon data. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a table for Mars data at the bottom.

Table for August 2 showing Mars, Jupiter, and Saturn data. Columns include UT, GHA, ddGHA, Dec, dDec, and UT.

Table for August 3 showing Mars, Jupiter, and Saturn data. Columns include UT, GHA, ddGHA, Dec, dDec, and UT.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22 SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8' HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1' SHA 222° 222° 221° 221° 221° 221° Greenwich Culmination Time: 12:05

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22 SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0' HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1' SHA 179° 179° 179° 179° 179° 179° Greenwich Culmination Time: 14:55

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22 SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8' HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1' SHA 225° 224° 224° 224° 224° 224° Greenwich Culmination Time: 12:06

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22 SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0' HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1' SHA 181° 181° 181° 181° 180° 180° Greenwich Culmination Time: 15:00

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UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	178 30.7	+00.1	N 16 40.9	-00.7	217 28.7	-00.6	N 22 00.5	+00.0	40 41.6	-33.0	S 28 23.9	-01.7	00		
01	193 30.8	+00.0	N 16 40.2	-00.7	232 28.1	-00.7	N 22 00.5	+00.0	55 08.6	-33.1	S 28 22.2	-01.9	01		
02	208 30.8	+00.1	N 16 39.5	-00.7	247 27.4	-00.7	N 22 00.5	-00.1	69 35.5	-33.0	S 28 20.3	-02.0	02		
03	223 30.9	+00.1	N 16 38.8	-00.7	262 26.7	-00.7	N 22 00.4	+00.0	84 02.5	-33.1	S 28 18.3	-02.1	03		
04	238 31.0	+00.0	N 16 38.1	-00.7	277 26.0	-00.7	N 22 00.4	+00.0	98 29.4	-33.1	S 28 16.2	-02.3	04		
05	253 31.0	+00.1	N 16 37.4	-00.7	292 25.3	-00.6	N 22 00.4	+00.0	112 56.3	-33.1	S 28 13.9	-02.5	05		
06	268 31.1	+00.1	N 16 36.7	-00.7	307 24.7	-00.7	N 22 00.4	-00.1	127 23.2	-33.1	S 28 11.4	-02.6	06		
07	283 31.2	+00.1	N 16 36.0	-00.6	322 24.0	-00.7	N 22 00.3	+00.0	141 50.1	-33.1	S 28 08.8	-02.8	07		
08	298 31.3	+00.0	N 16 35.4	-00.7	337 23.3	-00.7	N 22 00.3	+00.0	156 17.0	-33.1	S 28 06.0	-02.9	08		
09	313 31.3	+00.1	N 16 34.7	-00.7	352 22.6	-00.7	N 22 00.3	+00.0	170 43.9	-33.1	S 28 03.1	-03.1	09		
10	328 31.4	+00.1	N 16 34.0	-00.7	7 21.9	-00.6	N 22 00.3	-00.1	185 10.8	-33.1	S 27 60.0	-03.3	10		
11	343 31.5	+00.1	N 16 33.3	-00.7	22 21.3	-00.7	N 22 00.2	+00.0	199 37.7	-33.1	S 27 56.7	-03.4	11		
12	358 31.6	+00.0	N 16 32.6	-00.7	37 20.6	-00.7	N 22 00.2	+00.0	214 04.6	-33.1	S 27 53.3	-03.5	12		
13	13 31.6	+00.1	N 16 31.9	-00.7	52 19.9	-00.7	N 22 00.2	+00.0	228 31.5	-33.1	S 27 49.8	-03.7	13		
14	28 31.7	+00.1	N 16 31.2	-00.7	67 19.2	-00.7	N 22 00.2	-00.1	242 58.4	-33.1	S 27 46.1	-03.9	14		
15	43 31.8	+00.1	N 16 30.5	-00.7	82 18.5	-00.7	N 22 00.1	+00.0	257 25.3	-33.1	S 27 42.2	-04.0	15		
16	58 31.9	+00.0	N 16 29.8	-00.7	97 17.8	-00.6	N 22 00.1	+00.0	271 52.2	-33.1	S 27 38.2	-04.2	16		
17	73 31.9	+00.1	N 16 29.1	-00.7	112 17.2	-00.7	N 22 00.1	-00.1	286 19.1	-33.0	S 27 34.0	-04.3	17		
18	88 32.0	+00.1	N 16 28.4	-00.7	127 16.5	-00.7	N 22 00.0	+00.0	300 46.1	-33.1	S 27 29.7	-04.5	18		
19	103 32.1	+00.1	N 16 27.7	-00.7	142 15.8	-00.7	N 21 60.0	+00.0	315 13.0	-33.0	S 27 25.2	-04.7	19		
20	118 32.2	+00.0	N 16 27.0	-00.7	157 15.1	-00.7	N 21 60.0	-00.1	329 40.0	-33.1	S 27 20.5	-04.8	20		
21	133 32.2	+00.1	N 16 26.3	-00.7	172 14.4	-00.7	N 21 59.9	+00.0	344 06.9	-33.0	S 27 15.7	-04.9	21		
22	148 32.3	+00.1	N 16 25.6	-00.7	187 13.7	-00.6	N 21 59.9	-00.1	358 33.9	-33.0	S 27 10.8	-05.1	22		
23	163 32.4	+00.1	N 16 24.9	-00.7	202 13.1	-00.7	N 21 59.8	+00.0	13 00.9	-33.0	S 27 05.7	-05.3	23		
UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22			
SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'				SD 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'				SD 15°2' 15°2' 15°2' 15°2' 15°3' 15°3'				SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'			
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'				HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'				HP 55°6' 55°7' 55°8' 55°9' 56°0' 56°1'				HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'			
SHA 224° 223° 223° 223° 223° 223°				SHA 263° 262° 262° 262° 262° 262°				SHA 085° 082° 080° 078° 075° 073°				SHA 223° 223° 222° 222° 222° 222°			
Greenwich Culmination Time: 12:05				Greenwich Culmination Time: 09:30				Greenwich Culmination Time: 22:05				Greenwich Culmination Time: 12:05			

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	178 32.5	+00.0	N 16 24.2	-00.7	217 12.4	-00.7	N 21 59.8	+00.0	27 27.9	-32.9	S 27 00.4	-05.4	00		
01	193 32.5	+00.1	N 16 23.5	-00.7	232 11.7	-00.7	N 21 59.8	-00.1	41 55.0	-33.0	S 26 55.0	-05.6	01		
02	208 32.6	+00.1	N 16 22.8	-00.7	247 11.0	-00.7	N 21 59.7	+00.0	56 22.0	-32.9	S 26 49.4	-05.7	02		
03	223 32.7	+00.1	N 16 22.1	-00.7	262 10.3	-00.7	N 21 59.7	-00.1	70 49.1	-32.9	S 26 43.7	-05.9	03		
04	238 32.8	+00.0	N 16 21.4	-00.7	277 09.6	-00.7	N 21 59.6	+00.0	85 16.2	-32.8	S 26 37.8	-06.0	04		
05	253 32.8	+00.1	N 16 20.7	-00.7	292 08.9	-00.6	N 21 59.6	-00.1	99 43.4	-32.9	S 26 31.8	-06.2	05		
06	268 32.9	+00.1	N 16 20.0	-00.7	307 08.3	-00.7	N 21 59.5	+00.0	114 10.5	-32.8	S 26 25.6	-06.3	06		
07	283 33.0	+00.1	N 16 19.3	-00.7	322 07.6	-00.7	N 21 59.5	-00.1	128 37.7	-32.7	S 26 19.3	-06.5	07		
08	298 33.1	+00.1	N 16 18.6	-00.7	337 06.9	-00.7	N 21 59.4	+00.0	143 05.0	-32.8	S 26 12.8	-06.6	08		
09	313 33.2	+00.0	N 16 17.9	-00.7	352 06.2	-00.7	N 21 59.4	-00.1	157 32.2	-32.7	S 26 06.2	-06.8	09		
10	328 33.2	+00.1	N 16 17.2	-00.7	7 05.5	-00.7	N 21 59.3	+00.0	171 59.5	-32.7	S 25 59.4	-06.9	10		
11	343 33.3	+00.1	N 16 16.5	-00.7	22 04.8	-00.7	N 21 59.3	-00.1	186 26.8	-32.6	S 25 52.5	-07.1	11		
12	358 33.4	+00.1	N 16 15.8	-00.7	37 04.1	-00.6	N 21 59.2	+00.0	200 54.2	-32.7	S 25 45.4	-07.2	12		
13	13 33.5	+00.1	N 16 15.1	-00.7	52 03.5	-00.7	N 21 59.2	-00.1	215 21.5	-32.5	S 25 38.2	-07.3	13		
14	28 33.6	+00.0	N 16 14.4	-00.7	67 02.8	-00.7	N 21 59.1	+00.0	229 49.0	-32.6	S 25 30.9	-07.6	14		
15	43 33.6	+00.1	N 16 13.7	-00.7	82 02.1	-00.7	N 21 59.1	-00.1	244 16.4	-32.5	S 25 23.3	-07.6	15		
16	58 33.7	+00.1	N 16 13.0	-00.7	97 01.4	-00.7	N 21 59.0	+00.0	258 43.9	-32.5	S 25 15.7	-07.8	16		
17	73 33.8	+00.1	N 16 12.3	-00.7	112 00.7	-00.7	N 21 59.0	-00.1	273 11.4	-32.4	S 25 07.9	-08.0	17		
18	88 33.9	+00.1	N 16 11.6	-00.7	127 00.0	-00.7	N 21 58.9	-00.1	287 39.0	-32.4	S 24 59.9	-08.1	18		
19	103 34.0	+00.0	N 16 10.9	-00.8	141 59.3	-00.6	N 21 58.8	+00.0	302 06.6	-32.3	S 24 51.8	-08.2	19		
20	118 34.0	+00.1	N 16 10.1	-00.7	156 58.7	-00.7	N 21 58.8	-00.1	316 34.3	-32.3	S 24 43.6	-08.4	20		
21	133 34.1	+00.1	N 16 09.4	-00.7	171 58.0	-00.7	N 21 58.7	+00.0	331 02.0	-32.3	S 24 35.2	-08.5	21		
22	148 34.2	+00.1	N 16 08.7	-00.7	186 57.3	-00.7	N 21 58.7	-00.1	345 29.7	-32.2	S 24 26.7	-08.7	22		
23	163 34.3	+00.1	N 16 08.0	-00.7	201 56.6	-00.7	N 21 58.6	-00.1	359 57.5	-32.2	S 24 18.0	-08.8	23		
UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22			
SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'				SD 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'				SD 15°3' 15°3' 15°4' 15°4' 15°4' 15°5'				SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'			
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'				HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'				HP 56°2' 56°3' 56°4' 56°6' 56°7' 56°8'				HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'			
SHA 224° 223° 223° 223° 223° 223°				SHA 261° 261° 261° 261° 260° 260°				SHA 071° 068° 066° 063° 061° 059°				SHA 223° 223° 223° 223° 223° 223°			
Greenwich Culmination Time: 12:05				Greenwich Culmination Time: 09:31				Greenwich Culmination Time: 23:00				Greenwich Culmination Time: 12:05			

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	135 07.3	+01.0	N 00 45.0	-00.7	210 54.9	+01.9	N 22 45.1	+00.0	312 29.4	+02.5	S 01 36.9	+00.0	00
01	150 08.3	+01.1	N 00 44.3	-00.6	225 56.8	+01.9	N 22 45.1	-00.1	327 31.9	+02.6	S 01 36.9	+00.1	01
02	165 09.4	+01.0	N 00 43.7	-00.7	240 58.7	+01.9	N 22 45.0	+00.0	342 34.5	+02.5	S 01 37.0	+00.0	02
03	180 10.4	+01.1	N 00 43.0	-00.6	256 00.6	+01.9	N 22 45.0	-00.1	357 37.0	+02.6	S 01 37.0	+00.1	03
04	195 11.5	+01.0	N 00 42.4	-00.6	271 02.5	+01.9	N 22 44.9	+00.0	12 39.6	+02.5	S 01 37.1	+00.0	04
05	210 12.5	+01.1	N 00 41.8	-00.7	286 04.4	+01.9	N 22 44.9	-00.1	27 42.1	+02.6	S 01 37.1	+00.1	05
06	225 13.6	+01.0	N 00 41.1	-00.6	301 06.3	+01.9	N 22 44.8	+00.0	42 44.7	+02.5	S 01 37.2	+00.0	06
07	240 14.6	+01.1	N 00 40.5	-00.7	316 08.2	+01.9	N 22 44.8	-00.1	57 47.2	+02.6	S 01 37.2	+00.1	07
08	255 15.7	+01.0	N 00 39.8	-00.6	331 10.1	+01.9	N 22 44.7	+00.0	72 49.8	+02.5	S 01 37.3	+00.0	08
09	270 16.7	+01.1	N 00 39.2	-00.7	346 12.0	+01.9	N 22 44.7	-00.1	87 52.3	+02.6	S 01 37.3	+00.1	09
10													

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA/Dec coordinates and magnitude for each celestial body.

UT 02 06 10 14 18 22
SD 15°8 15°8 15°8 15°8 15°8 15°8
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 218° 218° 218° 217° 217° 217°
Greenwich Culmination Time: 12:05

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA/Dec coordinates and magnitude for each celestial body.

UT 02 06 10 14 18 22
SD 15°8 15°8 15°8 15°8 15°8 15°8
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 221° 221° 220° 220° 220° 220°
Greenwich Culmination Time: 12:05

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA/Dec coordinates and magnitude for each celestial body.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 177° 177° 177° 177° 176° 176°
Greenwich Culmination Time: 14:48

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA/Dec coordinates and magnitude for each celestial body.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 179° 178° 178° 178° 178° 178°
Greenwich Culmination Time: 14:53

Table with columns for UT, Sun, Venus, Moon, and UT. Includes position data (GHA, ddGHA, Dec, dDec) and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes position data (GHA, ddGHA, Dec, dDec) and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes position data (GHA, ddGHA, Dec, dDec) and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes position data (GHA, ddGHA, Dec, dDec) and Greenwich Culmination Time.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 contain celestial data for each planet.

Summary table for Sun, Venus, and Moon with columns: UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA coordinates.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 contain celestial data for each planet.

Summary table for Mars, Jupiter, and Saturn with columns: UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA coordinates.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 contain celestial data for each planet.

Summary table for Sun, Venus, and Moon with columns: UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA coordinates.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 contain celestial data for each planet.

Summary table for Mars, Jupiter, and Saturn with columns: UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA coordinates.

Table with columns for UT, Sun, Venus, Moon (A: 67%), and UT. Rows 00-23 show celestial coordinates and data for each planet. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon (A: 70%), and UT. Rows 00-23 show celestial coordinates and data for each planet. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates and data for each planet. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates and data for each planet. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22 showing specific data points and Greenwich Culmination Times.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates for each body.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22 showing specific data points and Greenwich Culmination Times.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22 showing specific data points and Greenwich Culmination Times.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates for each body.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22 showing specific data points and Greenwich Culmination Times.

Warning: This page has been generated by a computer program. Complex computer programs usually have bugs and may produce wrong data. The data on this page is believed to be accurate but no warranty is given for its correctness. Use it only for training and exercising!

Warning: This page has been generated by a computer program. Complex computer programs usually have bugs and may produce wrong data. The data on this page is believed to be accurate but no warranty is given for its correctness. Use it only for training and exercising!

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for each planet and a small table at the bottom with columns UT, 02, 06, 10, 14, 18, 22. Includes Greenwich Culmination Time: 12:03.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for each planet and a small table at the bottom with columns UT, 02, 06, 10, 14, 18, 22. Includes Greenwich Culmination Time: 12:03.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for each planet and a small table at the bottom with columns UT, 02, 06, 10, 14, 18, 22. Includes Greenwich Culmination Time: 14:38.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for each planet and a small table at the bottom with columns UT, 02, 06, 10, 14, 18, 22. Includes Greenwich Culmination Time: 14:37.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 207° 207° 206° 206° 206° 206°
Greenwich Culmination Time: 12:02

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 210° 209° 209° 209° 209° 209°
Greenwich Culmination Time: 12:03

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 170° 170° 170° 170° 169°
Greenwich Culmination Time: 14:28

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°3' 00°3' 00°3' 00°3' 00°3' 00°3'
HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
SHA 253° 253° 253° 253° 253° 253°
Greenwich Culmination Time: 09:09

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Table with columns for UT, Sun, Venus, Moon, and UT. It provides astronomical data for the first four celestial bodies on August 22, 2025, including GHA, ddGHA, Dec, and dDec values for each hour from 00:00 to 23:00.

Table with columns for UT, Sun, Venus, Moon, and UT. It provides astronomical data for the first four celestial bodies on August 23, 2025, including GHA, ddGHA, Dec, and dDec values for each hour from 00:00 to 23:00.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial coordinates for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show sidereal times and Greenwich Culmination Times for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates for each planet.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial coordinates for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show sidereal times and Greenwich Culmination Times for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates for each planet.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes SD, HP, SHA, Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes SD, HP, SHA, Greenwich Culmination Time for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes SD, HP, SHA, Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes SD, HP, SHA, Greenwich Culmination Time for each planet.

UT	Sun				Venus				Moon				UT															
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec																
00	179 58.4	+00.2	N 08 15.5	-00.9	210 24.8	-00.7	N 18 30.1	-00.7	85 12.1	-31.4	S 28 02.7	+03.1	00															
01	194 58.6	+00.2	N 08 14.6	-00.9	225 24.1	-00.6	N 18 29.4	-00.6	99 40.7	-31.5	S 28 05.8	+02.9	01															
02	209 58.8	+00.2	N 08 13.7	-00.9	240 23.5	-00.6	N 18 28.8	-00.7	114 09.2	-31.5	S 28 08.7	+02.8	02															
03	224 59.0	+00.2	N 08 12.8	-00.9	255 22.9	-00.7	N 18 28.1	-00.6	128 37.7	-31.6	S 28 11.5	+02.6	03															
04	239 59.2	+00.2	N 08 11.9	-00.9	270 22.2	-00.6	N 18 27.5	-00.7	143 06.1	-31.7	S 28 14.1	+02.5	04															
05	254 59.4	+00.2	N 08 11.0	-00.9	285 21.6	-00.6	N 18 26.8	-00.6	157 34.4	-31.7	S 28 16.6	+02.4	05															
06	269 59.6	+00.2	N 08 10.1	-00.9	300 21.0	-00.7	N 18 26.2	-00.6	172 02.7	-31.7	S 28 19.0	+02.3	06															
07	284 59.8	+00.2	N 08 09.2	-00.9	315 20.3	-00.6	N 18 25.5	-00.6	186 31.0	-31.8	S 28 21.3	+02.1	07															
08	300 00.0	+00.2	N 08 08.3	-00.9	330 19.7	-00.6	N 18 24.9	-00.7	200 59.2	-31.9	S 28 23.4	+01.9	08															
09	315 00.2	+00.2	N 08 07.4	-00.9	345 19.1	-00.6	N 18 24.2	-00.6	215 27.3	-31.9	S 28 25.3	+01.8	09															
10	330 00.4	+00.2	N 08 06.5	-01.0	0 18.5	-00.7	N 18 23.6	-00.7	229 55.4	-31.9	S 28 27.1	+01.7	10															
11	345 00.6	+00.2	N 08 05.5	-00.9	15 17.8	-00.6	N 18 22.9	-00.7	244 23.5	-32.0	S 28 28.8	+01.5	11															
12	0 00.8	+00.2	N 08 04.6	-00.9	30 17.2	-00.6	N 18 22.2	-00.6	258 51.5	-32.0	S 28 30.3	+01.4	12															
13	15 01.0	+00.2	N 08 03.7	-00.9	45 16.6	-00.6	N 18 21.6	-00.7	273 19.5	-32.1	S 28 31.7	+01.2	13															
14	30 01.2	+00.2	N 08 02.8	-00.9	60 16.0	-00.7	N 18 20.9	-00.6	287 47.4	-32.1	S 28 32.9	+01.1	14															
15	45 01.4	+00.2	N 08 01.9	-00.9	75 15.3	-00.6	N 18 20.3	-00.9	302 15.3	-32.1	S 28 34.0	+01.0	15															
16	60 01.6	+00.2	N 08 01.0	-00.9	90 14.7	-00.6	N 18 19.6	-00.7	316 43.2	-32.2	S 28 35.0	+00.8	16															
17	75 01.8	+00.2	N 08 00.1	-00.9	105 14.1	-00.6	N 18 18.9	-00.6	331 11.0	-32.2	S 28 35.8	+00.6	17															
18	90 02.0	+00.2	N 07 59.2	-00.9	120 13.5	-00.7	N 18 18.3	-00.6	345 38.8	-32.3	S 28 36.4	+00.5	18															
19	105 02.2	+00.2	N 07 58.3	-00.9	135 12.8	-00.6	N 18 17.6	-00.6	0 06.5	-32.3	S 28 36.9	+00.4	19															
20	120 02.4	+00.2	N 07 57.4	-01.0	150 12.2	-00.6	N 18 17.0	-00.7	14 34.2	-32.3	S 28 37.3	+00.2	20															
21	135 02.6	+00.2	N 07 56.4	-00.9	165 11.6	-00.6	N 18 16.3	-00.7	29 01.9	-32.3	S 28 37.5	+00.1	21															
22	150 02.8	+00.2	N 07 55.5	-00.9	180 11.0	-00.7	N 18 15.6	-00.6	43 29.6	-32.4	S 28 37.6	-00.1	22															
23	165 03.0	+00.2	N 07 54.6	-00.9	195 10.3	-00.6	N 18 15.0	-00.7	57 57.2	-32.4	S 28 37.5	-00.3	23															
<table border="0" style="width:100%; font-size: small;"> <tr><td style="width:25%;">UT 02 06 10 14 18 22</td><td style="width:25%;">UT 02 06 10 14 18 22</td><td style="width:25%;">UT 02 06 10 14 18 22</td><td style="width:25%;">UT 02 06 10 14 18 22</td></tr> <tr><td>SD 15°8 15°8 15°8 15°8 15°9 15°9</td><td>SD 00°1 00°1 00°1 00°1 00°1 00°1</td><td>SD 14°9 14°9 14°9 15°0 15°0 15°0</td><td>SD 15°8 15°8 15°8 15°8 15°8 15°8</td></tr> <tr><td>HP 00°1 00°1 00°1 00°1 00°1 00°1</td><td>HP 00°1 00°1 00°1 00°1 00°1 00°1</td><td>HP 54°7 54°8 54°8 54°9 55°0 55°1</td><td>HP 00°1 00°1 00°1 00°1 00°1 00°1</td></tr> <tr><td>SHA 199° 199° 199° 199° 199° 199°</td><td>SHA 230° 230° 229° 229° 229° 229°</td><td>SHA 104° 101° 099° 097° 094° 092°</td><td>SHA 202° 202° 202° 202° 202° 201°</td></tr> </table> <p style="font-size: x-small;">Greenwich Culmination Time: 11:59 Greenwich Culmination Time: 09:58 Greenwich Culmination Time: 18:59 Greenwich Culmination Time: 12:00</p>													UT 02 06 10 14 18 22	UT 02 06 10 14 18 22	UT 02 06 10 14 18 22	UT 02 06 10 14 18 22	SD 15°8 15°8 15°8 15°8 15°9 15°9	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 14°9 14°9 14°9 15°0 15°0 15°0	SD 15°8 15°8 15°8 15°8 15°8 15°8	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 54°7 54°8 54°8 54°9 55°0 55°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 199° 199° 199° 199° 199° 199°	SHA 230° 230° 229° 229° 229° 229°	SHA 104° 101° 099° 097° 094° 092°	SHA 202° 202° 202° 202° 202° 201°
UT 02 06 10 14 18 22	UT 02 06 10 14 18 22	UT 02 06 10 14 18 22	UT 02 06 10 14 18 22																									
SD 15°8 15°8 15°8 15°8 15°9 15°9	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 14°9 14°9 14°9 15°0 15°0 15°0	SD 15°8 15°8 15°8 15°8 15°8 15°8																									
HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 54°7 54°8 54°8 54°9 55°0 55°1	HP 00°1 00°1 00°1 00°1 00°1 00°1																									
SHA 199° 199° 199° 199° 199° 199°	SHA 230° 230° 229° 229° 229° 229°	SHA 104° 101° 099° 097° 094° 092°	SHA 202° 202° 202° 202° 202° 201°																									

UT	Sun				Venus				Moon				UT															
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec																
00	179 44.5	+00.2	N 09 20.2	-00.9	211 10.8	-00.6	N 19 14.2	-00.6	120 05.2	-26.8	S 19 10.6	+10.9	00															
01	194 44.7	+00.2	N 09 19.3	-00.9	226 10.2	-00.7	N 19 13.6	-00.6	134 38.4	-26.8	S 19 21.5	+10.9	01															
02	209 44.9	+00.2	N 09 18.4	-00.9	241 09.5	-00.6	N 19 13.0	-00.5	149 11.6	-26.8	S 19 32.4	+10.7	02															
03	224 45.1	+00.2	N 09 17.5	-00.9	256 08.9	-00.7	N 19 12.5	-00.6	163 44.8	-26.9	S 19 43.1	+10.7	03															
04	239 45.3	+00.2	N 09 16.6	-00.9	271 08.2	-00.6	N 19 11.9	-00.6	178 17.9	-27.0	S 19 53.8	+10.5	04															
05	254 45.5	+00.2	N 09 15.7	-00.8	286 07.6	-00.7	N 19 11.3	-00.6	192 50.9	-27.0	S 20 04.3	+10.5	05															
06	269 45.7	+00.2	N 09 14.9	-00.9	301 06.9	-00.6	N 19 10.7	-00.6	207 23.9	-27.1	S 20 14.8	+10.4	06															
07	284 45.9	+00.1	N 09 14.0	-00.9	316 06.3	-00.7	N 19 10.1	-00.6	221 56.8	-27.1	S 20 25.2	+10.4	07															
08	299 46.0	+00.2	N 09 13.1	-00.9	331 05.6	-00.6	N 19 09.5	-00.6	236 29.7	-27.2	S 20 35.6	+10.2	08															
09	314 46.2	+00.2	N 09 12.2	-00.9	346 05.0	-00.7	N 19 09.0	-00.6	251 02.5	-27.3	S 20 45.8	+10.2	09															
10	329 46.4	+00.2	N 09 11.3	-00.9	1 04.3	-00.6	N 19 08.4	-00.6	265 35.2	-27.3	S 20 56.0	+10.0	10															
11	344 46.6	+00.2	N 09 10.4	-00.9	16 03.7	-00.7	N 19 07.8	-00.6	280 07.9	-27.4	S 21 06.0	+10.0	11															
12	359 46.8	+00.2	N 09 09.5	-00.9	31 03.0	-00.6	N 19 07.2	-00.6	294 40.5	-27.5	S 21 16.0	+09.9	12															
13	14 47.0	+00.2	N 09 08.6	-00.9	46 02.4	-00.7	N 19 06.6	-00.6	309 13.0	-27.5	S 21 25.9	+09.8	13															
14	29 47.2	+00.2	N 09 07.7	-00.9	61 01.7	-00.6	N 19 06.0	-00.6	323 45.5	-27.6	S 21 35.7	+09.7	14															
15	44 47.4	+00.2	N 09 06.8	-00.9	76 01.1	-00.6	N 19 05.4	-00.6	338 17.9	-27.7	S 21 45.4	+09.6	15															
16	59 47.6	+00.2	N 09 05.9	-00.9	91 00.5	-00.7	N 19 04.8	-00.6	352 50.2	-27.7	S 21 55.0	+09.5	16															
17	74 47.8	+00.1	N 09 05.0	-00.9	105 59.8	-00.6	N 19 04.2	-00.6	7 22.5	-27.8	S 22 04.5	+09.5	17															
18	89 47.9	+00.2	N 09 04.1	-00.8	120 59.2	-00.7	N 19 03.6	-00.6	21 54.7	-27.9	S 22 14.0	+09.3	18															
19	104 48.1	+00.2	N 09 03.3	-00.9	135 58.5	-00.6	N 19 03.0	-00.6	36 26.8	-27.9	S 22 23.3	+09.3	19															
20	119 48.3	+00.2	N 09 02.4	-00.9	150 57.9	-00.7	N 19 02.4	-00.6	50 58.9	-28.0	S 22 32.6	+09.1	20															
21	134 48.5	+00.2	N 09 01.5	-00.9	165 57.2	-00.6	N 19 01.8	-00.6	65 30.9	-28.1	S 22 41.7	+09.1	21															
22	149 48.7	+00.2	N 09 00.6	-00.9	180 56.6	-00.7	N 19 01.2	-00.6	80 02.8	-28.1	S 22 50.8	+08.9	22															
23	164 48.9	+00.2	N 08 59.7	-00.9	195 55.9	-00.6	N 19 00.6	-00.6	94 34.7	-28.2	S 22 59.7	+08.9	23															
<table border="0" style="width:100%; font-size: small;"> <tr><td style="width:25%;">UT 02 06 10 14 18 22</td><td style="width:25%;">UT 02 06 10 14 18 22</td><td style="width:25%;">UT 02 06 10 14 18 22</td><td style="width:25%;">UT 02 06 10 14 18 22</td></tr> <tr><td>SD 15°8 15°8 15°8 15°8 15°8 15°8</td><td>SD 00°1 00°1 00°1 00°1 00°1 00°1</td><td>SD 14°8 14°8 14°8 14°8 14°8 14°8</td><td>SD 00°1 00°1 00°1 00°1 00°1 00°1</td></tr> <tr><td>HP 00°1 00°1 00°1 00°1 00°1 00°1</td><td>HP 00°1 00°1 00°1 00°1 00°1 00°1</td><td>HP 54°2 54°2 54°2 54°2 54°2 54°2</td><td>HP 00°1 00°1 00°1 00°1 00°1 00°1</td></tr> <tr><td>SHA 202° 202° 202° 202° 202° 201°</td><td>SHA 234° 233° 233° 233° 233° 233°</td><td>SHA 142° 140° 138° 136° 134° 132°</td><td>SHA 202° 202° 202° 202° 202° 201°</td></tr> </table> <p style="font-size: x-small;">Greenwich Culmination Time: 12:00 Greenwich Culmination Time: 09:55 Greenwich Culmination Time: 16:29 Greenwich Culmination Time: 08:44</p>													UT 02 06 10 14 18 22	UT 02 06 10 14 18 22	UT 02 06 10 14 18 22	UT 02 06 10 14 18 22	SD 15°8 15°8 15°8 15°8 15°8 15°8	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 14°8 14°8 14°8 14°8 14°8 14°8	SD 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 54°2 54°2 54°2 54°2 54°2 54°2	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 202° 202° 202° 202° 202° 201°	SHA 234° 233° 233° 233° 233° 233°	SHA 142° 140° 138° 136° 134° 132°	SHA 202° 202° 202° 202° 202° 201°
UT 02 06 10 14 18 22	UT 02 06 10 14 18 22	UT 02 06 10 14 18 22	UT 02 06 10 14 18 22																									
SD 15°8 15°8 15°8 15°8 15°8 15°8	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 14°8 14°8 14°8 14°8 14°8 14°8	SD 00°1 00°1 00°1 00°1 00°1 00°1																									
HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 54°2 54°2 54°2 54°2 54°2 54°2	HP 00°1 00°1 00°1 00°1 00°1 00°1																									
SHA 202° 202° 202° 202° 202° 201°	SHA 234° 233° 233° 233° 233° 233°	SHA 142° 140° 138° 136° 134° 132°	SHA 202° 202° 202° 202° 202° 201°																									

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	145 39.4	+01.0	S 06 01.8	+00.7	231 03.2	+02.0	N 22 12.8	-00.1	339 24.3	+02.6	S 02 15.9	+00.1	00
01	160 40.4	+01.0	S 06 02.5	+00.6	246 05.2	+02.0	N 22 12.7	+00.0	354 26.9	+02.6	S 02 16.0	+00.0	01
02	175 41.4	+00.9	S 06 03.1	+00.7	261 07.2	+01.9	N 22 12.7	-00.1	9 29.5	+02.7	S 02 16.0	+00.1	02
03	190 42.3	+01.0	S 06 03.8	+00.6	276 09.1	+02.0	N 22 12.6	+00.0	24 32.2	+02.6	S 02 16.1	+00.1	03
04	205 43.3	+01.0	S 06 04.4	+00.7	291 11.1	+02.0	N 22 12.6	-00.1	39 34.8	+02.6	S 02 16.2	+00.1	04
05	220 44.3	+00.9	S 06 05.1	+00.6	306 13.1	+02.0	N 22 12.5	-00.1	54 37.4	+02.6	S 02 16.3	+00.0	05
06	235 45.2	+01.0	S 06 05.7	+00.7	321 15.1	+02.0	N 22 12.4	+00.0	69 40.0	+02.6	S 02 16.3	+00.1	06
07	250 46.2	+01.0	S 06 06.4	+00.6	336 17.1	+02.0	N 22 12.4	-00.1	84 42.6	+02.7	S 02 16.4	+00.1	07
08	265 47.2	+00.9	S 06 07.0	+00.7	351 19.1	+01.9	N 22 12.3	+00.0	99 45.3	+02.6	S 02 16.5	+00.1	08
09	280 48.1	+01.0	S 06 07.7	+00.6	6 21.0	+02.0	N 22 12.3	-00.1	114 47.9	+02.6	S 02 16.6	+00.0	09
10	295 49.1	+01.0	S 06 08.3	+00.7	21 23.0	+02.0	N 22 12.2	+00.0	129 50.5	+02.6	S 02 16.6	+00.1	10
11	310 50.1	+00.9	S 06 09.0	+00.6	36 25.0	+02.0	N 22 12.2	-00.1	144 53.1	+02.6	S 02 16.7	+00.1	11
12	325 51.0	+01.0	S 06 09.6	+00.7	51 27.0	+02.0	N 22 12.1	+00.0	159 55.7	+02.7	S 02 16.8	+00.1	12
13	340 52.0	+01.0	S 06 10.3	+00.6	66 29.0	+02.0	N 22 12.1	-00.1	174 58.4	+02.6	S 02 16.9	+00.0	13
14	355 53.0	+00.9	S 06 10.9	+00.7	81 31.0	+02.0	N 22 12.0	+00.0	190 01.0	+02.6	S 02 16.9	+00.1	14
15	10 53.9	+01.0	S 06 11.6	+00.6	96 33.0	+01.9	N 22 12.0	-00.1	205 03.6	+02.6	S 02 17.0	+00.1	15
16	25 54.9	+01.0	S 06 12.2	+00.7	111 34.9	+02.0	N 22 11.9	-00.1	220 06.2	+02.7	S 02 17.1	+00.1	16
17	40 55.9	+00.9	S 06 12.9	+00.6	126 36.9	+02.0	N 22 11.8	+00.0	235 08.9	+02.6	S 02 17.2	+00.0	17
18	55 56.8	+01.0	S 06 13.5	+00.7	141 38.9	+02.0	N 22 11.8	-00.1	250 11.5	+02.6	S 02 17.2	+00.1	18
19	70 57.8	+01.0	S 06 14.2	+00.6	156 40.9	+02.0	N 22 11.7	+00.0	265 14.1	+02.6	S 02 17.3	+00.1	19
20	85 58.8	+00.9	S 06 14.8	+00.7	171 42.9	+02.0	N 22 11.7	-00.1	280 16.7	+02.6	S 02 17.4	+00.1	

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 15°8 15°8 15°8 15°8 15°8 15°8
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 201° 201° 201° 201° 201° 201°
Greenwich Culmination Time: 12:00

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 15°8 15°8 15°8 15°8 15°8 15°8
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 200° 200° 200° 200° 200° 200°
Greenwich Culmination Time: 12:00

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 00°3 00°3 00°3 00°3 00°3 00°3
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 166° 166° 166° 166° 166° 166°
Greenwich Culmination Time: 14:19

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

UT 02 06 10 14 18 22
SD 00°3 00°3 00°3 00°3 00°3 00°3
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 166° 166° 166° 165° 165° 165°
Greenwich Culmination Time: 14:17

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes RA, Dec, and magnitude data for each planet.

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UT	Sun				Venus				Moon				A: 38%	UT																
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec																		
00	180	08.1	+00.2	N 07 31.8	-01.0	209	54.8	-00.6	N 17 58.0	-00.7	59	21.6	-32.7	S 27 46.3	-04.0	00														
01	195	08.3	+00.2	N 07 30.8	-00.9	224	54.2	-00.6	N 17 57.3	-00.7	73	48.9	-32.7	S 27 42.3	-04.2	01														
02	210	08.5	+00.2	N 07 29.9	-00.9	239	53.6	-00.6	N 17 56.6	-00.7	88	16.2	-32.7	S 27 38.1	-04.3	02														
03	225	08.7	+00.2	N 07 29.0	-00.9	254	53.0	-00.6	N 17 55.9	-00.7	102	43.5	-32.7	S 27 33.8	-04.5	03														
04	240	08.9	+00.2	N 07 28.1	-00.9	269	52.4	-00.6	N 17 55.2	-00.7	117	10.8	-32.6	S 27 29.3	-04.6	04														
05	255	09.1	+00.2	N 07 27.2	-00.9	284	51.8	-00.6	N 17 54.5	-00.7	131	38.2	-32.7	S 27 24.7	-04.8	05														
06	270	09.3	+00.3	N 07 26.3	-01.0	299	51.2	-00.7	N 17 53.8	-00.7	146	05.5	-32.7	S 27 19.9	-05.0	06														
07	285	09.6	+00.2	N 07 25.3	-00.9	314	50.5	-00.6	N 17 53.1	-00.6	160	32.8	-32.6	S 27 14.9	-05.1	07														
08	300	09.8	+00.2	N 07 24.4	-00.9	329	49.9	-00.6	N 17 52.5	-00.7	175	00.2	-32.6	S 27 09.8	-05.2	08														
09	315	10.0	+00.2	N 07 23.5	-00.9	344	49.3	-00.6	N 17 51.8	-00.7	189	27.6	-32.7	S 27 04.6	-05.4	09														
10	330	10.2	+00.2	N 07 22.6	-00.9	359	48.7	-00.6	N 17 51.1	-00.7	203	54.9	-32.6	S 26 59.2	-05.6	10														
11	345	10.4	+00.2	N 07 21.7	-01.0	14	48.1	-00.6	N 17 50.4	-00.7	218	22.3	-32.5	S 26 53.6	-05.7	11														
12	0	10.6	+00.2	N 07 20.7	-00.9	29	47.5	-00.6	N 17 49.7	-00.7	232	49.8	-32.6	S 26 47.9	-05.8	12														
13	15	10.8	+00.2	N 07 19.8	-00.9	44	46.9	-00.7	N 17 49.0	-00.7	247	17.2	-32.5	S 26 42.1	-06.0	13														
14	30	11.0	+00.2	N 07 18.9	-00.9	59	46.2	-00.6	N 17 48.3	-00.7	261	44.7	-32.6	S 26 36.1	-06.2	14														
15	45	11.2	+00.2	N 07 18.0	-00.9	74	45.6	-00.6	N 17 47.6	-00.8	276	12.1	-32.5	S 26 29.9	-06.2	15														
16	60	11.4	+00.2	N 07 17.1	-01.0	89	45.0	-00.6	N 17 46.8	-00.7	290	39.6	-32.5	S 26 23.7	-06.5	16														
17	75	11.6	+00.2	N 07 16.1	-00.9	104	44.4	-00.6	N 17 46.1	-00.7	305	07.1	-32.4	S 26 17.2	-06.6	17														
18	90	11.8	+00.2	N 07 15.2	-00.9	119	43.8	-00.6	N 17 45.4	-00.7	319	34.7	-32.4	S 26 10.6	-06.7	18														
19	105	12.0	+00.2	N 07 14.3	-00.9	134	43.2	-00.6	N 17 44.7	-00.7	334	02.3	-32.4	S 26 03.9	-06.9	19														
20	120	12.2	+00.2	N 07 13.4	-00.9	149	42.6	-00.6	N 17 44.0	-00.7	348	29.9	-32.4	S 25 57.0	-07.1	20														
21	135	12.4	+00.2	N 07 12.5	-01.0	164	42.0	-00.6	N 17 43.3	-00.7	2	57.5	-32.4	S 25 49.9	-07.2	21														
22	150	12.6	+00.3	N 07 11.5	-01.0	179	41.4	-00.7	N 17 42.6	-00.7	17	25.1	-32.3	S 25 42.7	-07.3	22														
23	165	12.9	+00.2	N 07 10.6	-00.9	194	40.7	-00.6	N 17 41.9	-00.7	31	52.8	-32.3	S 25 35.4	-07.5	23														
UT 02 06 10 14 18 22	SD 15°9 15°9 15°9 15°9 15°9 15°9	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 15°2 15°2 15°3 15°3 15°3 15°4	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 15°5 15°5 15°6 15°6 15°6 15°6	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 15°4 15°4 15°5 15°5 15°5 15°6	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1														
	HP 198° 198° 198° 198° 198° 198°	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 198° 198° 198° 198° 198° 198°	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 198° 198° 198° 198° 198° 198°	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 198° 198° 198° 198° 198° 198°	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1														
	SHA 198° 198° 198° 198° 198° 198°	SHA 227° 227° 227° 227° 227° 227°	SHA 227° 227° 227° 227° 227° 227°	SHA 198° 198° 198° 198° 198° 198°	SHA 227° 227° 227° 227° 227° 227°	SHA 227° 227° 227° 227° 227° 227°	SHA 227° 227° 227° 227° 227° 227°	SHA 198° 198° 198° 198° 198° 198°	SHA 226° 226° 226° 226° 226° 226°	SHA 226° 226° 226° 226° 226° 226°	SHA 226° 226° 226° 226° 226° 226°	SHA 226° 226° 226° 226° 226° 226°	SHA 198° 198° 198° 198° 198° 198°	SHA 226° 226° 226° 226° 226° 226°	SHA 226° 226° 226° 226° 226° 226°	SHA 198° 198° 198° 198° 198° 198°														
	Greenwich Culmination Time: 11:59				Greenwich Culmination Time: 10:00				Greenwich Culmination Time: 20:47							Greenwich Culmination Time: 11:58				Greenwich Culmination Time: 10:01				Greenwich Culmination Time: 21:40						

UT	Sun				Venus				Moon				A: 38%	UT																
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec																		
00	180	13.1	+00.2	N 07 09.7	-00.9	209	40.1	-00.6	N 17 41.2	-00.7	46	20.5	-32.3	S 25 27.9	-07.6	00														
01	195	13.3	+00.2	N 07 08.8	-00.9	224	39.5	-00.6	N 17 40.5	-00.7	60	48.2	-32.2	S 25 20.3	-07.8	01														
02	210	13.5	+00.2	N 07 07.9	-01.0	239	38.9	-00.6	N 17 39.8	-00.7	75	16.0	-32.2	S 25 12.5	-07.9	02														
03	225	13.7	+00.2	N 07 06.9	-00.9	254	38.3	-00.6	N 17 39.1	-00.8	89	43.8	-32.2	S 25 04.6	-08.0	03														
04	240	13.9	+00.2	N 07 06.0	-00.9	269	37.7	-00.6	N 17 38.3	-00.7	104	11.6	-32.1	S 24 56.6	-08.2	04														
05	255	14.1	+00.2	N 07 05.1	-00.9	284	37.1	-00.6	N 17 37.6	-00.7	118	39.5	-32.1	S 24 48.4	-08.4	05														
06	270	14.3	+00.2	N 07 04.2	-01.0	299	36.5	-00.6	N 17 36.9	-00.7	133	07.4	-32.1	S 24 40.0	-08.5	06														
07	285	14.5	+00.2	N 07 03.2	-00.9	314	35.9	-00.6	N 17 36.2	-00.7	147	35.3	-32.0	S 24 31.5	-08.6	07														
08	300	14.7	+00.2	N 07 02.3	-00.9	329	35.3	-00.6	N 17 35.5	-00.6	162	03.3	-32.0	S 24 22.9	-08.8	08														
09	315	14.9	+00.2	N 07 01.4	-00.9	344	34.7	-00.6	N 17 34.8	-00.8	176	31.5	-31.9	S 24 14.1	-08.9	09														
10	330	15.1	+00.2	N 07 00.5	-01.0	359	34.1	-00.6	N 17 34.0	-00.7	190	59.4	-31.9	S 24 05.2	-09.0	10														
11	345	15.3	+00.3	N 06 59.5	-00.9	14	33.5	-00.6	N 17 33.3	-00.7	205	27.5	-31.9	S 23 56.2	-09.2	11														
12	0	15.6	+00.2	N 06 58.6	-00.9	29	32.9	-00.7	N 17 32.6	-00.7	219	55.6	-31.9	S 23 47.0	-09.3	12														
13	15	15.8	+00.2	N 06 57.7	-00.9	44	32.2	-00.6	N 17 31.9	-00.7	234	23.7	-31.8	S 23 37.7	-09.5	13														
14	30	16.0	+00.2	N 06 56.8	-00.9	59	31.6	-00.6	N 17 31.2	-00.8	248	51.9	-31.7	S 23 28.2	-09.6	14														
15	45	16.2	+00.2	N 06 55.9	-01.0	74	31.0	-00.6	N 17 30.4	-00.7	263	20.2	-31.8	S 23 18.6	-09.7	15														
16	60	16.4	+00.2	N 06 54.9	-00.9	89	30.4	-00.6	N 17 29.7	-00.7	277	48.4	-31.6	S 23 08.9	-09.9	16														
17	75	16.6	+00.2	N 06 54.0	-00.9	104	29.8	-00.6	N 17 29.0	-00.7	292	16.8	-31.7	S 22 59.0	-10.0	17														
18	90	16.8	+00.2	N 06 53.1	-01.0	119	29.2	-00.6	N 17 28.3	-00.8	306	45.1	-31.6	S 22 49.0	-10.1	18														
19	105	17.0	+00.2	N 06 52.1	-00.9	134	28.6	-00.6	N 17 27.5	-00.7	321	13.5	-31.5	S 22 38.9	-10.3	19														
20	120	17.2	+00.2	N 06 51.2	-00.9	149	28.0	-00.6	N 17 26.8	-00.7	335	42.0	-31.6	S 22 28.6	-10.4	20														
21	135	17.4	+00.2	N 06 50.3	-00.9	164	27.4	-00.6	N 17 26.1	-00.8	350	10.4	-31.4	S 22 18.2	-10.5	21														
22	150	17.6	+00.3	N 06 49.4	-01.0	179	26.8	-00.6	N 17 25.3	-00.7	4	39.0	-31.5	S 22 07.7	-10.7	22														
23	165	17.9	+00.2	N 06 48.4	-00.9	194	26.2	-00.6	N 17 24.6	-00.7	19	07.5	-31.3	S 21 57.0	-10.8	23														
UT 02 06 10 14 18 22	SD 15°9 15°9 15°9 15°9 15°9 15°9	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 15°2 15°2 15°3 15°3 15°3 15°4	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 15°5 15°5 15°6 15°6 15°6 15°6	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 15°4 15°4 15°5 15°5 15°5 15°6	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1														
	HP 197° 197° 197° 197° 197° 197°	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 197° 197° 197° 197° 197° 197°	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 197° 197° 197° 197° 197° 197°	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 197° 197° 197° 197° 197° 197°	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1														
	SHA 197° 197° 196° 196° 196° 196°	SHA 226° 226° 226° 226° 226° 226°	SHA 226° 226° 226° 226° 226° 226°	SHA 197° 197° 196° 196° 196° 196°	SHA 226° 226° 226° 226° 226° 226°	SHA 226° 226° 226° 226° 226° 226°	SHA 226° 226° 226° 226° 226° 226°	SHA 197° 197° 196° 196° 196° 196°	SHA 226° 226° 226° 226° 226° 226°	SHA 226° 226° 226° 226° 226° 226°	SHA 226° 226° 226° 226° 226° 226°	SHA 226° 226° 226° 226° 226° 226°	SHA 197° 197° 196° 196° 196° 196°	SHA 226° 226° 226° 226° 226° 226°	SHA 226° 226° 226° 226° 226° 226°	SHA 197° 197° 196° 196° 196° 196°														
	Greenwich Culmination Time: 11:58				Greenwich Culmination Time: 10:01				Greenwich Culmination Time: 21:40							Greenwich Culmination Time: 11:58				Greenwich Culmination Time: 10:01				Greenwich Culmination Time: 21:40						

UT

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 194° 194° 194° 194° 193° 193°
Greenwich Culmination Time: 11:57

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
SHA 162° 161° 161° 161° 161° 161°
Greenwich Culmination Time: 14:07

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 193° 193° 193° 193° 192° 192°
Greenwich Culmination Time: 11:57

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
SHA 161° 161° 161° 161° 160° 160°
Greenwich Culmination Time: 14:05

Table with 5 columns: UT, Sun, Venus, Moon, UT. It lists celestial coordinates for Sun, Venus, and the Moon from UT 00 to 23.

Table with 5 columns: UT, Sun, Venus, Moon, UT. It lists celestial coordinates for Sun, Venus, and the Moon from UT 00 to 23.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. It lists celestial coordinates for Mars, Jupiter, and Saturn from UT 00 to 23.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. It lists celestial coordinates for Mars, Jupiter, and Saturn from UT 00 to 23.

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UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT										
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec											
00	180	49.2	+00.2	N 04 32.3	-00.9	208	02.2	-00.6	N 15 29.9	-00.8	321	22.3	-32.1	N 15 45.5	+14.9	00							
01	195	49.4	+00.2	N 04 31.4	-01.0	223	01.6	-00.5	N 15 29.1	-00.9	335	50.2	-32.3	N 16 00.4	+14.9	01							
02	210	49.6	+00.2	N 04 30.4	-00.9	238	01.1	-00.6	N 15 28.2	-00.8	350	17.9	-32.3	N 16 15.3	+14.7	02							
03	225	49.8	+00.2	N 04 29.5	-01.0	253	00.5	-00.5	N 15 27.4	-00.9	4	45.6	-32.4	N 16 30.0	+14.6	03							
04	240	50.0	+00.3	N 04 28.5	-00.9	267	60.0	-00.6	N 15 26.5	-00.8	19	13.2	-32.5	N 16 44.6	+14.6	04							
05	255	50.3	+00.2	N 04 27.6	-01.0	282	59.4	-00.6	N 15 25.7	-00.9	33	40.1	-32.6	N 16 59.2	+14.4	05							
06	270	50.5	+00.2	N 04 26.6	-00.9	297	58.8	-00.5	N 15 24.8	-00.9	48	08.1	-32.7	N 17 13.6	+14.3	06							
07	285	50.7	+00.2	N 04 25.7	-01.0	312	58.3	-00.6	N 15 23.9	-00.8	62	35.4	-32.7	N 17 27.9	+14.3	07							
08	300	50.9	+00.2	N 04 24.7	-00.9	327	57.7	-00.5	N 15 23.1	-00.9	77	02.7	-32.8	N 17 42.2	+14.1	08							
09	315	51.1	+00.3	N 04 23.8	-01.0	342	57.2	-00.6	N 15 22.2	-00.8	91	29.9	-32.9	N 17 56.3	+14.0	09							
10	330	51.4	+00.2	N 04 22.8	-00.9	357	56.6	-00.5	N 15 21.4	-00.9	105	57.0	-33.0	N 18 10.3	+13.9	10							
11	345	51.6	+00.2	N 04 21.9	-01.0	12	56.1	-00.6	N 15 20.5	-00.8	120	24.0	-33.1	N 18 24.2	+13.7	11							
12	0	51.8	+00.2	N 04 20.9	-00.9	27	55.5	-00.5	N 15 19.7	-00.9	134	50.9	-33.1	N 18 37.9	+13.7	12							
13	15	52.0	+00.2	N 04 20.0	-01.0	42	55.0	-00.6	N 15 18.8	-00.9	149	17.8	-33.3	N 18 51.6	+13.5	13							
14	30	52.2	+00.3	N 04 19.0	-00.9	57	54.4	-00.5	N 15 17.9	-00.8	163	44.5	-33.3	N 19 05.1	+13.4	14							
15	45	52.5	+00.2	N 04 18.1	-01.0	72	53.9	-00.6	N 15 17.1	-00.9	178	11.2	-33.4	N 19 18.5	+13.3	15							
16	60	52.7	+00.2	N 04 17.1	-01.0	87	53.3	-00.5	N 15 16.2	-00.8	192	37.8	-33.5	N 19 31.8	+13.2	16							
17	75	52.9	+00.2	N 04 16.1	-00.9	102	52.8	-00.6	N 15 15.4	-00.9	207	04.3	-33.5	N 19 45.0	+13.1	17							
18	90	53.1	+00.3	N 04 15.2	-01.0	117	52.2	-00.5	N 15 14.5	-00.9	221	30.8	-33.7	N 19 58.1	+12.9	18							
19	105	53.4	+00.2	N 04 14.2	-00.9	132	51.7	-00.6	N 15 13.6	-00.8	235	57.1	-33.8	N 20 11.0	+12.8	19							
20	120	53.6	+00.2	N 04 13.3	-01.0	147	51.1	-00.5	N 15 12.8	-00.9	250	23.3	-33.8	N 20 23.8	+12.7	20							
21	135	53.8	+00.2	N 04 12.3	-00.9	162	50.6	-00.6	N 15 11.9	-00.9	264	49.5	-33.9	N 20 36.5	+12.5	21							
22	150	54.0	+00.2	N 04 11.4	-01.0	177	50.0	-00.5	N 15 11.0	-00.8	279	15.6	-34.0	N 20 49.0	+12.4	22							
23	165	54.2	+00.3	N 04 10.4	-00.9	192	49.5	-00.6	N 15 10.2	-00.9	293	41.6	-34.1	N 21 01.4	+12.3	23							
UT 02	06	10	14	18	22	UT 02	06	10	14	18	22	UT 02	06	10	14	18	22	UT 02	06	10	14	18	22
SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'	SD 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'	SD 16°4' 16°4' 16°3' 16°3' 16°3' 16°3'																					
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'	HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'	HP 60°0' 60°0' 60°0' 60°0' 59°9' 59°9'																					
SHA 190° 190° 190° 190° 190° 190°	SHA 218° 217° 217° 217° 217° 217°	SHA 330° 328° 325° 323° 321° 318°																					
Greenwich Culmination Time: 11:56	Greenwich Culmination Time: 10:08	Greenwich Culmination Time: 02:40																					

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT										
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec											
00	180	54.5	+00.2	N 04 09.5	-01.0	207	48.9	-00.5	N 15 09.3	-00.9	308	07.5	-34.2	N 21 13.7	+12.1	00							
01	195	54.7	+00.2	N 04 08.5	-00.9	222	48.4	-00.6	N 15 08.4	-00.8	322	33.3	-34.2	N 21 25.8	+12.0	01							
02	210	54.9	+00.2	N 04 07.6	-01.0	237	47.8	-00.5	N 15 07.6	-00.9	336	59.1	-34.4	N 21 37.8	+11.8	02							
03	225	55.1	+00.2	N 04 06.6	-00.9	252	47.3	-00.6	N 15 06.7	-00.9	351	24.7	-34.4	N 21 49.6	+11.7	03							
04	240	55.3	+00.3	N 04 05.7	-01.0	267	46.7	-00.5	N 15 05.8	-00.8	5	50.3	-34.5	N 22 01.3	+11.6	04							
05	255	55.6	+00.2	N 04 04.7	-00.9	282	46.2	-00.6	N 15 05.0	-00.9	20	15.8	-34.6	N 22 12.9	+11.4	05							
06	270	55.8	+00.2	N 04 03.8	-01.0	297	45.6	-00.5	N 15 04.1	-00.9	34	41.2	-34.7	N 22 24.3	+11.3	06							
07	285	56.0	+00.2	N 04 02.8	-01.0	312	45.1	-00.6	N 15 03.2	-00.9	49	06.5	-34.7	N 22 35.6	+11.1	07							
08	300	56.2	+00.3	N 04 01.8	-00.9	327	44.5	-00.5	N 15 02.3	-00.8	63	31.8	-34.9	N 22 46.7	+11.0	08							
09	315	56.5	+00.2	N 04 00.9	-01.0	342	44.0	-00.6	N 15 01.5	-00.9	77	56.9	-34.9	N 22 57.7	+10.8	09							
10	330	56.7	+00.2	N 03 59.9	-00.9	357	43.4	-00.5	N 15 00.6	-00.9	92	22.0	-35.0	N 23 08.5	+10.7	10							
11	345	56.9	+00.2	N 03 59.0	-01.0	12	42.9	-00.6	N 14 59.7	-00.9	106	47.0	-35.1	N 23 19.2	+10.5	11							
12	0	57.1	+00.2	N 03 58.0	-00.9	27	42.3	-00.5	N 14 58.8	-00.8	121	11.9	-35.1	N 23 29.7	+10.4	12							
13	15	57.3	+00.3	N 03 57.1	-01.0	42	41.8	-00.5	N 14 58.0	-00.9	135	36.8	-35.3	N 23 40.1	+10.2	13							
14	30	57.6	+00.2	N 03 56.1	-00.9	57	41.3	-00.6	N 14 57.1	-00.9	150	01.5	-35.3	N 23 50.3	+10.0	14							
15	45	57.8	+00.2	N 03 55.2	-01.0	72	40.7	-00.5	N 14 56.2	-00.9	164	26.2	-35.4	N 24 00.3	+9.9	15							
16	60	58.0	+00.2	N 03 54.2	-01.0	87	40.2	-00.6	N 14 55.3	-00.9	178	50.8	-35.5	N 24 10.2	+9.7	16							
17	75	58.2	+00.3	N 03 53.2	-00.9	102	39.6	-00.5	N 14 54.4	-00.8	193	15.3	-35.5	N 24 19.9	+9.6	17							
18	90	58.5	+00.2	N 03 52.3	-01.0	117	39.1	-00.6	N 14 53.6	-00.9	207	39.8	-35.7	N 24 29.5	+9.4	18							
19	105	58.7	+00.2	N 03 51.3	-00.9	132	38.5	-00.5	N 14 52.7	-00.9	222	04.1	-35.6	N 24 38.9	+9.2	19							
20	120	58.9	+00.2	N 03 50.4	-01.0	147	38.0	-00.5	N 14 51.8	-00.9	236	28.5	-35.8	N 24 48.1	+9.1	20							
21	135	59.1	+00.2	N 03 49.4	-00.9	162	37.5	-00.6	N 14 50.9	-00.9	250	52.7	-35.9	N 24 57.2	+8.9	21							
22	150	59.3	+00.3	N 03 48.5	-01.0	177	36.9	-00.5	N 14 50.0	-00.8	265	16.8	-35.9	N 25 06.1	+8.7	22							
23	165	59.6	+00.2	N 03 47.5	-00.9	192	36.4	-00.6	N 14 49.2	-00.9	279	40.9	-35.9	N 25 14.8	+8.6	23							
UT 02	06	10	14	18	22	UT 02	06	10	14	18	22	UT 02	06	10	14	18	22	UT 02	06	10	14	18	22
SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'	SD 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'	SD 16°3' 16°3' 16°3' 16°3' 16°3' 16°3'																					
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'	HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'	HP 59°9' 59°8' 59°7' 59°7' 59°6' 59°6'																					
SHA 190° 189° 189° 189° 189° 189°	SHA 216° 216° 216° 216° 216° 215°	SHA 316° 313° 311° 308° 306° 303°																					
Greenwich Culmination Time: 11:56	Greenwich Culmination Time: 10:09	Greenwich Culmination Time: 03:35																					

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	149	26.9	+00.9	S 08 36.7	+00.6	239	04.3	+02.1	N 21 59.6	-00.1	349	55.2	+02.6	S 02 34.3	+00.1	00
01	164	27.8	+01.0	S 08 37.3	+00.7	254	06.4	+02.0	N 21 59.5	+00.0	4	57.8	+02.7	S 02 34.4	+00.1	01
02	179	28.8	+00.9	S 08 38.0	+00.6	269	08.4	+02.0	N 21 59.5	-00.1	20	00.5	+02.6	S 02 34.5	+00.0	02
03	194	29.7	+00.9	S 08 38.6	+00.6	284	10.4	+02.0	N 21 59.4	+00.0	35	03.1	+02.6	S 02 34.5	+00.1	03
04	209	30.6	+00.9	S 08 39.2	+00.7	299	12.4	+02.1	N 21 59.4	-00.1	50	05.7	+02.7	S 02 34.6	+00.1	04
05	224	31.5	+01.0	S 08 39.9	+00.6	314	14.5	+02.0	N 21 59.3	+00.0	65	08.4	+02.6	S 02 34.7	+00.1	05
06	239	32.5	+00.9	S 08 40.5	+00.6	329	16.5	+02.0	N 21 59.3	-00.1	80	11.0	+02.6	S 02 34.8	+00.1	06
07	254	33.4	+00.9	S 08 41.1	+00.7	344	18.5	+02.1	N 21 59.2	+00.0	95	13.6	+02.7	S 02 34.9	+00.0	07
08	269	34.3	+00.9	S 08 41.8	+00.6	359	20.6	+02.0	N 21 59.2	-00.1	110	16.3	+02.6	S 02 34.9	+00.1	08
09	284	35.2	+01.0	S 08 42.4	+00.7	14	22.6	+02.0	N 21 59.1	-00.1	125	18.9	+02.6	S 02 35.0	+00.1	09
10	299	36.2	+00.9	S 08 43.1	+00.6	29	24.6	+02.0	N 21 59.0	+00.0	140	21.5	+02.7	S 02 35.1	+00.1	10
11	314	37.1	+00.9	S 08 43.7	+00.6	44	26.6	+02.1	N 21 59.0	-00.1	155	24.2	+02.6	S 02 35.2	+00.1	11
12	329	38.0	+00.9	S 08 44.3	+00.7	59	28.7	+02.0	N 21 58.9	+00.0	170	26.8	+02.7	S 02 35.3	+00.0	12
13	344	38.9	+01.0	S 08 45.0	+00.6	74	30.7	+02.0	N 21 58.9	-00.1	185	29.5	+02.6	S 02 35.3	+00.1	13
14	359	39.9	+00.9	S 08 45.6	+00.7	89	32.7	+02.1	N 21 58.8	+00.0	200	32.1	+02.6	S 02 35.4	+00.1	14
15	14	40.8	+00.9	S 08 46.3	+00.6	104	34.8	+02.0	N 21 58.8	-00.1	215	34.7	+0			

Table for Sun, Venus, and Moon on 2025 September 17. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a sub-table for Mars, Jupiter, and Saturn at the bottom.

Table for Sun, Venus, and Moon on 2025 September 14. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a sub-table for Mars, Jupiter, and Saturn at the bottom.

Table for Mars, Jupiter, and Saturn on 2025 September 17. Columns include UT, GHA, ddGHA, Dec, dDec, and UT.

Table for Mars, Jupiter, and Saturn on 2025 September 14. Columns include UT, GHA, ddGHA, Dec, dDec, and UT.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 187° 187° 187° 186° 186° 186°
Greenwich Culmination Time: 11:55

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 157° 157° 156° 156° 156° 156°
Greenwich Culmination Time: 13:55

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 186° 186° 186° 186° 185° 185°
Greenwich Culmination Time: 11:54

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 156° 156° 156° 156° 156° 156°
Greenwich Culmination Time: 13:54

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates (GHA, ddGHA, Dec, dDec) for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing additional coordinates and Greenwich Culmination Time for each body.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates (GHA, ddGHA, Dec, dDec) for each body.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing additional coordinates and Greenwich Culmination Time for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates (GHA, ddGHA, Dec, dDec) for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing additional coordinates and Greenwich Culmination Time for each body.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates (GHA, ddGHA, Dec, dDec) for each body.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing additional coordinates and Greenwich Culmination Time for each body.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 183° 183° 183° 183° 183° 183°
Greenwich Culmination Time: 11:53

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 154° 154° 154° 154° 154° 154°
Greenwich Culmination Time: 13:49

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 182° 182° 182° 182° 182° 182°
Greenwich Culmination Time: 11:53

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22
SD 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 154° 153° 153° 153° 153° 153°
Greenwich Culmination Time: 13:48

Table for 2025 September 25 (Thursday) showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and A:10%. Rows 00-23.

Table for 2025 September 22 (Monday) showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and A:01%. Rows 00-23.

Table for 2025 September 25 (Thursday) showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time. Rows 00-23.

Table for 2025 September 22 (Monday) showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time. Rows 00-23.

Table for Sun, Venus, and Moon on Tuesday, 2025 September 23. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table for Mars, Jupiter, and Saturn at the bottom of the section.

Table for Sun, Venus, and Moon on Wednesday, 2025 September 24. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table for Mars, Jupiter, and Saturn at the bottom of the section.

Table for Mars, Jupiter, and Saturn on Tuesday, 2025 September 23. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table for Sun, Venus, and Moon at the bottom of the section.

Table for Mars, Jupiter, and Saturn on Wednesday, 2025 September 24. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table for Sun, Venus, and Moon at the bottom of the section.

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Table with columns for UT, Sun, Venus, Moon, and UT. It lists astronomical data for the Sun, Venus, and Moon on September 29, 2025, including GHA, ddGHA, Dec, and dDec values. It also includes a small table for Mars, Jupiter, and Saturn at the bottom.

Table with columns for UT, Sun, Venus, Moon, and UT. It lists astronomical data for the Sun, Venus, and Moon on September 26, 2025, including GHA, ddGHA, Dec, and dDec values. It also includes a small table for Mars, Jupiter, and Saturn at the bottom.

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Table with columns for UT, Sun, Venus, Moon, and UT. It includes astronomical data for three planets, such as Right Ascension (GHA, ddGHA), Declination (Dec, dDec), and magnitude (A: 16%).

Table with columns for UT, Sun, Venus, Moon, and UT. It includes astronomical data for three planets, such as Right Ascension (GHA, ddGHA), Declination (Dec, dDec), and magnitude (A: 20%).

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Table with columns for Sun, Venus, and Moon. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Includes sub-tables for UT 02-06, 10-14, 18-22 and Greenwich Culmination Time.

Table with columns for Sun, Venus, and Moon. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Includes sub-tables for UT 02-06, 10-14, 18-22 and Greenwich Culmination Time.

Table with columns for Mars, Jupiter, and Saturn. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Includes sub-tables for UT 02-06, 10-14, 18-22 and Greenwich Culmination Time.

Table with columns for Mars, Jupiter, and Saturn. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Includes sub-tables for UT 02-06, 10-14, 18-22 and Greenwich Culmination Time.

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 172° 172° 172° 172° 172° 172°
Greenwich Culmination Time: 11:49

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 146° 146° 146° 146° 146° 146°
Greenwich Culmination Time: 13:33

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 172° 171° 171° 171° 171° 171°
Greenwich Culmination Time: 11:49

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 146° 146° 146° 145° 145° 145°
Greenwich Culmination Time: 13:32

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UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	183	01.5	+00.1	S 05 31.0	+00.9	203	10.4	-00.4	N 04 40.7	-01.1	5	52.6	-30.7	N 06 35.4	+17.4
01	198	01.6	+00.2	S 05 31.9	+01.0	218	10.0	-00.4	N 04 39.6	-01.2	20	21.9	-30.7	N 06 52.8	+17.3
02	213	01.8	+00.2	S 05 32.9	+00.9	233	09.6	-00.4	N 04 38.4	-01.2	34	51.2	-30.9	N 07 10.1	+17.3
03	228	02.0	+00.2	S 05 33.8	+01.0	248	09.2	-00.4	N 04 37.2	-01.2	49	20.3	-30.8	N 07 27.4	+17.3
04	243	02.2	+00.2	S 05 34.8	+01.0	263	08.8	-00.4	N 04 36.0	-01.2	63	49.5	-31.0	N 07 44.7	+17.3
05	258	02.4	+00.1	S 05 35.8	+00.9	278	08.4	-00.4	N 04 34.8	-01.1	78	18.5	-31.0	N 08 02.0	+17.2
06	273	02.5	+00.2	S 05 36.7	+01.0	293	08.0	-00.4	N 04 33.7	-01.2	92	47.5	-31.1	N 08 19.2	+17.2
07	288	02.7	+00.2	S 05 37.7	+00.9	308	07.6	-00.4	N 04 32.5	-01.2	107	16.4	-31.1	N 08 36.4	+17.2
08	303	02.9	+00.2	S 05 38.6	+01.0	323	07.2	-00.4	N 04 31.3	-01.2	121	45.3	-31.2	N 08 53.6	+17.1
09	318	03.1	+00.2	S 05 39.6	+00.9	338	06.8	-00.4	N 04 30.1	-01.2	136	14.1	-31.3	N 09 10.7	+17.0
10	333	03.3	+00.1	S 05 40.5	+01.0	353	06.4	-00.4	N 04 28.9	-01.2	150	42.8	-31.4	N 09 27.7	+17.0
11	348	03.4	+00.2	S 05 41.5	+00.9	8	06.0	-00.4	N 04 27.7	-01.1	165	11.4	-31.4	N 09 44.7	+17.0
12	3	03.6	+00.2	S 05 42.4	+01.0	23	05.6	-00.4	N 04 26.6	-01.2	179	40.0	-31.5	N 10 01.7	+16.9
13	18	03.8	+00.2	S 05 43.4	+00.9	38	05.2	-00.4	N 04 25.4	-01.2	194	08.5	-31.5	N 10 18.6	+16.9
14	33	04.0	+00.2	S 05 44.3	+01.0	53	04.8	-00.4	N 04 24.2	-01.2	208	37.0	-31.7	N 10 35.5	+16.8
15	48	04.2	+00.1	S 05 45.3	+01.0	68	04.4	-00.4	N 04 23.0	-01.2	223	05.3	-31.7	N 10 52.3	+16.8
16	63	04.3	+00.2	S 05 46.3	+00.9	83	04.0	-00.4	N 04 21.8	-01.2	237	33.6	-31.8	N 11 09.1	+16.6
17	78	04.5	+00.2	S 05 47.2	+01.0	98	03.6	-00.4	N 04 20.6	-01.1	252	01.8	-31.9	N 11 25.7	+16.7
18	93	04.7	+00.2	S 05 48.2	+00.9	113	03.2	-00.4	N 04 19.5	-01.2	266	29.9	-31.9	N 11 42.4	+16.5
19	108	04.9	+00.1	S 05 49.1	+01.0	128	02.8	-00.4	N 04 18.3	-01.2	280	58.0	-32.1	N 11 58.9	+16.5
20	123	05.0	+00.2	S 05 50.1	+00.9	143	02.4	-00.4	N 04 17.1	-01.2	295	25.9	-32.1	N 12 15.4	+16.5
21	138	05.2	+00.2	S 05 51.0	+01.0	158	02.0	-00.4	N 04 15.9	-01.2	309	53.8	-32.2	N 12 31.9	+16.3
22	153	05.4	+00.2	S 05 52.0	+00.9	173	01.6	-00.4	N 04 14.7	-01.2	324	21.6	-32.3	N 12 48.2	+16.3
23	168	05.6	+00.2	S 05 52.9	+01.0	188	01.2	-00.4	N 04 13.5	-01.1	338	49.3	-32.3	N 13 04.5	+16.2
UT 02 06 10 14 18 22 SD 16°0 16°0 16°0 16°0 16°0 16°0 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 167° 167° 167° 167° 166° 166° Greenwich Culmination Time: 11:47					UT 02 06 10 14 18 22 SD 00°1 00°1 00°1 00°1 00°1 00°1 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 187° 187° 187° 187° 186° 186° Greenwich Culmination Time: 10:27					UT 02 06 10 14 18 22 SD 16°5 16°5 16°5 16°6 16°6 16°6 HP 60°6 60°7 60°7 60°8 60°8 60°9 SHA 349° 347° 344° 342° 340° 338° Greenwich Culmination Time: -1:00					

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	182	48.0	+00.2	S 04 21.9	+00.9	203	39.5	-00.4	N 06 04.9	-01.2	41	23.0	-29.5	S 13 32.2	-14.8
01	197	48.2	+00.1	S 04 22.8	+01.0	218	39.1	-00.4	N 06 03.7	-01.1	55	53.5	-29.5	S 13 17.4	-14.9
02	212	48.3	+00.2	S 04 23.8	+01.0	233	38.7	-00.4	N 06 02.6	-01.2	70	24.0	-29.4	S 13 02.5	-15.0
03	227	48.5	+00.2	S 04 24.8	+00.9	248	38.3	-00.4	N 06 01.4	-01.2	84	56.3	-29.4	S 12 47.5	-15.1
04	242	48.7	+00.2	S 04 25.7	+01.0	263	37.9	-00.4	N 06 00.2	-01.1	99	25.2	-29.4	S 12 32.4	-15.1
05	257	48.9	+00.2	S 04 26.7	+01.0	278	37.5	-00.4	N 05 59.1	-01.2	113	55.8	-29.4	S 12 17.3	-15.3
06	272	49.1	+00.2	S 04 27.7	+00.9	293	37.1	-00.5	N 05 57.9	-01.1	128	26.4	-29.4	S 12 02.0	-15.3
07	287	49.3	+00.2	S 04 28.6	+01.0	308	36.6	-00.4	N 05 56.8	-01.2	142	57.0	-29.4	S 11 46.7	-15.4
08	302	49.5	+00.2	S 04 29.6	+00.9	323	36.2	-00.4	N 05 55.6	-01.2	157	27.6	-29.3	S 11 31.3	-15.5
09	317	49.7	+00.2	S 04 30.5	+01.0	338	35.8	-00.4	N 05 54.4	-01.1	171	58.3	-29.4	S 11 15.8	-15.5
10	332	49.9	+00.2	S 04 31.5	+01.0	353	35.4	-00.4	N 05 53.3	-01.2	186	28.9	-29.3	S 11 00.3	-15.7
11	347	50.1	+00.2	S 04 32.5	+00.9	8	35.0	-00.4	N 05 52.1	-01.1	200	59.6	-29.3	S 10 44.6	-15.7
12	2	50.3	+00.2	S 04 33.4	+01.0	23	34.6	-00.4	N 05 51.0	-01.2	215	30.3	-29.3	S 10 28.9	-15.8
13	17	50.5	+00.2	S 04 34.4	+01.0	38	34.2	-00.4	N 05 49.8	-01.2	230	01.0	-29.3	S 10 13.1	-15.8
14	32	50.7	+00.1	S 04 35.4	+00.9	53	33.8	-00.4	N 05 48.6	-01.1	244	31.7	-29.3	S 09 57.3	-16.0
15	47	50.8	+00.2	S 04 36.3	+01.0	68	33.4	-00.4	N 05 47.5	-01.2	259	02.4	-29.2	S 09 41.3	-16.0
16	62	51.0	+00.2	S 04 37.3	+00.9	83	33.0	-00.4	N 05 46.3	-01.2	273	33.2	-29.3	S 09 25.3	-16.0
17	77	51.2	+00.2	S 04 38.2	+01.0	98	32.6	-00.4	N 05 45.1	-01.1	288	03.9	-29.3	S 09 09.3	-16.1
18	92	51.4	+00.2	S 04 39.2	+01.0	113	32.2	-00.5	N 05 44.0	-01.2	302	34.6	-29.2	S 08 53.2	-16.2
19	107	51.6	+00.2	S 04 40.2	+00.9	128	31.7	-00.4	N 05 42.8	-01.1	317	05.4	-29.3	S 08 37.0	-16.3
20	122	51.8	+00.2	S 04 41.1	+01.0	143	31.3	-00.4	N 05 41.7	-01.2	331	36.1	-29.2	S 08 20.7	-16.3
21	137	52.0	+00.2	S 04 42.1	+00.9	158	30.9	-00.4	N 05 40.5	-01.2	346	06.9	-29.3	S 08 04.4	-16.4
22	152	52.2	+00.2	S 04 43.0	+01.0	173	30.5	-00.4	N 05 39.3	-01.1	0	37.6	-29.2	S 07 48.0	-16.5
23	167	52.4	+00.2	S 04 44.0	+01.0	188	30.1	-00.4	N 05 38.2	-01.2	15	08.4	-29.2	S 07 31.5	-16.5
UT 02 06 10 14 18 22 SD 16°0 16°0 16°0 16°0 16°0 16°0 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 170° 170° 169° 169° 169° 169° Greenwich Culmination Time: 11:48					UT 02 06 10 14 18 22 SD 00°1 00°1 00°1 00°1 00°1 00°1 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 191° 190° 190° 190° 190° 190° Greenwich Culmination Time: 10:25					UT 02 06 10 14 18 22 SD 15°9 16°0 16°0 16°0 16°1 16°1 HP 58°4 58°6 58°7 58°9 59°0 59°2 SHA 027° 025° 023° 021° 019° 017° Greenwich Culmination Time: 21:57					

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 44%				UT																					
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec																						
00	182	52.6	+00.1	S 04 45.0	+00.9	203	29.7	-00.4	N 05 37.0	-01.2	29	39.2	-29.3	S 07 15.0	-16.5	00																		
01	197	52.7	+00.2	S 04 45.9	+01.0	218	29.3	-00.4	N 05 35.8	-01.1	44	09.9	-29.2	S 06 58.5	-16.7	01																		
02	212	52.9	+00.2	S 04 46.9	+01.0	233	28.9	-00.4	N 05 34.7	-01.2	58	40.7	-29.3	S 06 41.8	-16.6	02																		
03	227	53.1	+00.2	S 04 47.9	+00.9	248	28.5	-00.4	N 05 33.5	-01.2	73	11.4	-29.2	S 06 25.2	-16.7	03																		
04	242	53.3	+00.2	S 04 48.8	+01.0	263	28.1	-00.4	N 05 32.3	-01.1	87	42.2	-29.3	S 06 08.5	-16.8	04																		
05	257	53.5	+00.2	S 04 49.8	+00.9	278	27.7	-00.4	N 05 31.2	-01.2	102	12.9	-29.3	S 05 51.7	-16.9	05																		
06	272	53.7	+00.2	S 04 50.7	+01.0	293	27.3	-00.4	N 05 30.0	-01.2	116	43.6	-29.2	S 05 34.8	-16.8	06																		
07	287	53.9	+00.2	S 04 51.7	+01.0	308	26.9	-00.4	N 05 28.8	-01.1	131	14.4	-29.3	S 05 18.0	-16.9	07																		
08	302	54.1	+00.2	S 04 52.7	+00.9	323	26.5	-00.4	N 05 27.7	-01.2	145	45.1	-29.3	S 05 01.1	-17.0	08																		
09	317	54.3	+00.1	S 04 53.6	+01.0	338	26.1	-00.4	N 05 26.5	-01.2	160	15.8	-29.3	S 04 44.1	-17.0	09																		
10	332	54.4	+00.2	S 04 54.6	+00.9	353	25.7	-00.4	N 05 25.3	-01.1	174	46.5	-29.3	S 04 27.1	-17.1	10																		
11	347	54.6	+00.2	S 04 55.5	+01.0	8	25.3	-00.4	N 05 24.2	-01.2	189	17.2	-29.4	S 04 10.0	-17.1	11																		
12	2	54.8	+00.2	S 04 56.5	+01.0	23	24.9	-00.5	N 05 23.0	-01.2	203	47.8	-29.3	S 03 52.9	-17.1	12																		
13	17	55.0	+00.2	S 04 57.5	+00.9	38	24.4	-00.4	N 05 21.8	-01.1	218	18.5	-29.4	S 03 35.8	-17.2	13																		
14	32	55.2	+00.2	S 04 58.4	+01.0	53	24.0	-00.4	N 05 20.7	-01.2	232	49.1	-29.4	S 03 18.6	-17.2	14																		
15	47	55.4	+00.2	S 04 59.4	+00.9	68	23.6	-00.4	N 05 19.5	-01.2	247	19.7	-29.3	S 03 01.4	-17.2	15																		
16	62	55.6	+00.1	S 05 00.3	+01.0	83	23.2	-00.4	N 05 18.3	-01.2	261	50.4	-29.5	S 02 44.2	-17.3	16																		
17	77	55.7	+00.2	S 05 01.3	+01.0	98	22.8	-00.4	N 05 17.1	-01.1	276	20.9	-29.4	S 02 26.9	-17.3	17																		
18	92	55.9	+00.2	S 05 02.3	+00.9	113	22.4	-00.4	N 05 16.0	-01.2	290	51.5	-29.5	S 02 09.6	-17.3	18																		
19	107	56.1	+00.2	S 05 03.2	+01.0	128	22.0	-00.4	N 05 14.8	-01.2	305	22.0	-29.4	S 01 52.3	-17.4	19																		
20	122	56.3	+00.2	S 05 04.2	+00.9	143	21.6	-00.4	N 05 13.6	-01.1	319	52.6	-29.5	S 01 34.9	-17.4	20																		
21	137	56.5	+00.2	S 05 05.1	+01.0	158	21.2	-00.4	N 05 12.5	-01.2	334	23.1	-29.6	S 01 17.5	-17.4	21																		
22	152	56.7	+00.2	S 05 06.1	+00.9	173	20.8	-00.4	N 05 11.3	-01.2	348	53.5	-29.5	S 01 00.1	-17.4	22																		
23	167	56.9	+00.2	S 05 07.0	+01.0	188	20.4	-00.4	N 05 10.1	-01.2	3	24.0	-29.6	S 00 42.7	-17.5	23																		
UT 02 06 10 14 18 22	SD 16°0 16°6 16°10 16°14 16°18 16°22	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 16°2 16°2 16°2 16°3 16°3 16°3	SD 16°2 16°2 16°2 16°2 16°2 16°3	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 59°3 59°4 59°6 59°7 59°8 59°9	SD 59°3 59°4 59°6 59°7 59°8 59°9	SD 01°5 01°3 01°0 00°8 00°6 00°4	SD 01°5 01°3 01°0 00°8 00°6 00°4	SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 60°1 60°2 60°3 60°4 60°4 60°5	SD 02°2 02°0 02°0 02°0 02°0 02°0	SD 16°4 16°4 16°4 16°4 16°5 16°5	SD 16°4 16°4 16°4 16°4 16°5 16°5	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 60°1 60°2 60°3 60°4 60°4 60°5	SD 02°2 02°0 02°0 02°0 02°0 02°0	SD 16°4 16°4 16°4 16°4 16°5 16°5	SD 16°4 16°4 16°4 16°4 16°5 16°5					
	Greenwich Culmination Time: 11:48		Greenwich Culmination Time: 10:26		Greenwich Culmination Time: 22:45		Greenwich Culmination Time: 22:45		Greenwich Culmination Time: 22:45		Greenwich Culmination Time: 11:48		Greenwich Culmination Time: 10:26		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35	

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 47%				UT																					
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec																						
00	182	57.1	+00.1	S 05 08.0	+01.0	203	20.0	-00.4	N 05 08.9	-01.1	17	54.4	-29.6	S 00 25.2	-17.5	00																		
01	197	57.2	+00.2	S 05 09.0	+00.9	218	19.6	-00.4	N 05 07.8	-01.2	32	24.8	-29.7	S 00 07.7	-17.5	01																		
02	212	57.4	+00.2	S 05 09.9	+01.0	233	19.2	-00.4	N 05 06.6	-01.2	46	55.1	-29.7	N 00 09.8	+17.5	02																		
03	227	57.6	+00.2	S 05 10.9	+00.9	248	18.8	-00.4	N 05 05.4	-01.1	61	25.4	-29.7	N 00 27.3	+17.5	03																		
04	242	57.8	+00.2	S 05 11.8	+01.0	263	18.4	-00.4	N 05 04.3	-01.2	75	55.7	-29.7	N 00 44.8	+17.5	04																		
05	257	58.0	+00.2	S 05 12.8	+01.0	278	18.0	-00.4	N 05 03.1	-01.2	90	26.0	-29.8	N 01 02.3	+17.6	05																		
06	272	58.2	+00.1	S 05 13.8	+00.9	293	17.6	-00.4	N 05 01.9	-01.2	104	56.2	-29.8	N 01 19.9	+17.5	06																		
07	287	58.3	+00.2	S 05 14.7	+01.0	308	17.2	-00.4	N 05 00.7	-01.1	119	26.4	-29.9	N 01 37.4	+17.6	07																		
08	302	58.5	+00.2	S 05 15.7	+00.9	323	16.8	-00.4	N 04 59.6	-01.2	133	56.5	-29.9	N 01 55.0	+17.6	08																		
09	317	58.7	+00.2	S 05 16.6	+01.0	338	16.4	-00.4	N 04 58.4	-01.2	148	26.6	-29.9	N 02 12.6	+17.5	09																		
10	332	58.9	+00.2	S 05 17.6	+00.9	353	16.0	-00.4	N 04 57.2	-01.2	162	56.7	-30.0	N 02 30.1	+17.6	10																		
11	347	59.1	+00.2	S 05 18.5	+01.0	8	15.6	-00.4	N 04 56.0	-01.1	177	26.7	-30.0	N 02 47.7	+17.6	11																		
12	2	59.3	+00.1	S 05 19.5	+01.0	23	15.2	-00.4	N 04 54.9	-01.2	191	56.7	-30.1	N 03 05.3	+17.5	12																		
13	17	59.4	+00.2	S 05 20.5	+00.9	38	14.8	-00.4	N 04 53.7	-01.2	206	26.6	-30.1	N 03 22.8	+17.6	13																		
14	32	59.6	+00.2	S 05 21.4	+01.0	53	14.4	-00.4	N 04 52.5	-01.2	220	56.5	-30.2	N 03 40.4	+17.6	14																		
15	47	59.8	+00.2	S 05 22.4	+00.9	68	14.0	-00.4	N 04 51.3	-01.1	235	26.3	-30.2	N 03 58.0	+17.5	15																		
16	62	60.0	+00.2	S 05 23.3	+01.0	83	13.6	-00.4	N 04 50.2	-01.2	249	56.1	-30.2	N 04 15.5	+17.5	16																		
17	77	60.2	+00.2	S 05 24.3	+00.9	98	13.2	-00.4	N 04 49.0	-01.2	264	25.9	-30.3	N 04 33.0	+17.6	17																		
18	92	60.4	+00.1	S 05 25.2	+01.0	113	12.8	-00.4	N 04 47.8	-01.2	278	55.6	-30.4	N 04 50.6	+17.5	18																		
19	107	60.5	+00.2	S 05 26.2	+01.0	128	12.4	-00.4	N 04 46.6	-01.2	293	25.2	-30.4	N 05 08.1	+17.5	19																		
20	123	60.7	+00.2	S 05 27.2	+00.9	143	12.0	-00.4	N 04 45.4	-01.1	307	54.8	-30.5	N 05 25.6	+17.5	20																		
21	138	60.9	+00.2	S 05 28.1	+01.0	158	11.6	-00.4	N 04 44.3	-01.2	322	24.3	-30.5	N 05 43.1	+17.4	21																		
22	153	61.1	+00.2	S 05 29.1	+00.9	173	11.2	-00.4	N 04 43.1	-01.2	336	53.8	-30.6	N 06 00.5	+17.5	22																		
23	168	61.3	+00.2	S 05 30.0	+01.0	188	10.8	-00.4	N 04 41.9	-01.2	351	23.2	-30.6	N 06 18.0	+17.4	23																		
UT 02 06 10 14 18 22	SD 16°0 16°6 16°10 16°14 16°18 16°22	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 59°3 59°4 59°6 59°7 59°8 59°9	SD 59°3 59°4 59°6 59°7 59°8 59°9	SD 01°5 01°3 01°0 00°8 00°6 00°4	SD 01°5 01°3 01°0 00°8 00°6 00°4	SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 60°1 60°2 60°3 60°4 60°4 60°5	SD 02°2 02°0 02°0 02°0 02°0 02°0	SD 16°4 16°4 16°4 16°4 16°5 16°5	SD 16°4 16°4 16°4 16°4 16°5 16°5	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 60°1 60°2 60°3 60°4 60°4 60°5	SD 02°2 02°0 02°0 02°0 02°0 02°0	SD 16°4 16°4 16°4 16°4 16°5 16°5	SD 16°4 16°4 16°4 16°4 16°5 16°5					
	Greenwich Culmination Time: 11:48		Greenwich Culmination Time: 10:26		Greenwich Culmination Time: 22:45		Greenwich Culmination Time: 22:45		Greenwich Culmination Time: 11:48		Greenwich Culmination Time: 10:26		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35		Greenwich Culmination Time: 23:35	

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	157	44.9	+00.8	S 14 28.9	+00.6	259	09.8	+02.2	N 21 31.0	+00.0	15	15.4	+02.7	S 03 18.8	+00.1	00
01	172	45.7	+00.8	S 14 29.5	+00.5	274	12.0	+02.2	N 21 31.0	+00.0	30	18.1	+02.6	S 03 18.9	+00.0	01
02	187	46.5	+00.8	S 14 30.0	+00.6	289	14.2	+02.1	N 21 31.0	-00.1	45	20.7	+02.6	S 03 18.9	+00.1	02
03	202	47.3	+00.8	S 14 30.6	+00.6	304	16.3	+02.2	N 21 30.9	+00.0	60	23.3	+02.7	S 03 19.0	+00.1	03
04	217	48.1	+00.8	S 14 31.2	+00.6	319	18.5	+02.2	N 21 30.9	-00.1	75	26.0	+02.6	S 03 19.1	+00.0	04

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for the Sun, Venus, and Moon on October 11, 2025.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for the Sun, Venus, and Moon on October 8, 2025.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on October 11, 2025.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on October 8, 2025.

UT	Sun				Venus				Moon				UT																																					
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec																																						
00	183	10.0	+00.1	S 06 16.7	+01.0	202	51.3	-00.4	N 03 43.8	-01.2	339	53.4	-34.6	N 19 21.9	+13.7	00																																		
01	198	10.1	+00.2	S 06 17.7	+00.9	217	50.9	-00.4	N 03 42.6	-01.2	354	18.8	-34.8	N 19 35.6	+13.5	01																																		
02	213	10.3	+00.2	S 06 18.6	+01.0	232	50.5	-00.4	N 03 41.4	-01.1	8	44.0	-34.8	N 19 49.1	+13.4	02																																		
03	228	10.5	+00.1	S 06 19.6	+00.9	247	50.1	-00.4	N 03 40.3	-01.2	23	09.2	-35.0	N 20 02.5	+13.2	03																																		
04	243	10.6	+00.2	S 06 20.5	+01.0	262	49.7	-00.4	N 03 39.1	-01.2	37	34.2	-35.0	N 20 15.7	+13.1	04																																		
05	258	10.8	+00.2	S 06 21.5	+00.9	277	49.3	-00.4	N 03 37.9	-01.2	51	59.2	-35.1	N 20 28.8	+13.0	05																																		
06	273	11.0	+00.2	S 06 22.4	+00.9	292	48.9	-00.4	N 03 36.7	-01.2	66	24.1	-35.2	N 20 41.8	+12.8	06																																		
07	288	11.2	+00.1	S 06 23.3	+01.0	307	48.5	-00.4	N 03 35.5	-01.2	80	48.9	-35.3	N 20 54.6	+12.7	07																																		
08	303	11.3	+00.2	S 06 24.3	+00.9	322	48.1	-00.4	N 03 34.3	-01.2	95	13.6	-35.4	N 21 07.3	+12.6	08																																		
09	318	11.5	+00.2	S 06 25.2	+01.0	337	47.7	-00.4	N 03 33.1	-01.2	109	38.2	-35.5	N 21 19.9	+12.4	09																																		
10	333	11.7	+00.1	S 06 26.2	+00.9	352	47.3	-00.4	N 03 31.9	-01.2	124	02.7	-35.6	N 21 32.3	+12.2	10																																		
11	348	11.8	+00.2	S 06 27.1	+01.0	7	46.9	-00.4	N 03 30.7	-01.2	138	27.1	-35.7	N 21 44.5	+12.1	11																																		
12	3	12.0	+00.2	S 06 28.1	+00.9	22	46.5	-00.4	N 03 29.5	-01.2	152	51.4	-35.8	N 21 56.6	+12.0	12																																		
13	18	12.2	+00.1	S 06 29.0	+01.0	37	46.1	-00.3	N 03 28.3	-01.2	167	15.6	-35.8	N 22 08.6	+11.7	13																																		
14	33	12.3	+00.2	S 06 30.0	+00.9	52	45.8	-00.4	N 03 27.1	-01.2	181	39.8	-36.0	N 22 20.3	+11.7	14																																		
15	48	12.5	+00.2	S 06 30.9	+01.0	67	45.4	-00.4	N 03 25.9	-01.2	196	03.8	-36.0	N 22 32.0	+11.5	15																																		
16	63	12.7	+00.2	S 06 31.9	+00.9	82	45.0	-00.4	N 03 24.7	-01.2	210	27.8	-36.1	N 22 43.5	+11.3	16																																		
17	78	12.9	+00.1	S 06 32.8	+01.0	97	44.6	-00.4	N 03 23.5	-01.2	224	51.7	-36.2	N 22 54.8	+11.1	17																																		
18	93	13.0	+00.2	S 06 33.8	+00.9	112	44.2	-00.4	N 03 22.3	-01.1	239	15.5	-36.3	N 23 05.9	+11.0	18																																		
19	108	13.2	+00.2	S 06 34.7	+01.0	127	43.8	-00.4	N 03 21.2	-01.2	253	39.2	-36.4	N 23 16.9	+10.9	19																																		
20	123	13.4	+00.1	S 06 35.7	+00.9	142	43.4	-00.4	N 03 20.0	-01.2	268	02.8	-36.5	N 23 27.8	+10.6	20																																		
21	138	13.5	+00.2	S 06 36.6	+01.0	157	43.0	-00.4	N 03 18.8	-01.2	282	26.3	-36.5	N 23 38.4	+10.5	21																																		
22	153	13.7	+00.2	S 06 37.6	+00.9	172	42.6	-00.4	N 03 17.6	-01.2	296	49.8	-36.7	N 23 48.9	+10.3	22																																		
23	168	13.9	+00.1	S 06 38.5	+01.0	187	42.2	-00.4	N 03 16.4	-01.2	311	13.1	-36.7	N 23 59.2	+10.2	23																																		
UT 02 06 10 14 18 22	SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 16°6 16°6 16°6 16°6 16°6 16°6	SD 60°9 60°8 60°8 60°8 60°7 60°7	SD 311° 311° 311° 311° 311° 311°	SD 321° 318° 316° 316° 313° 311°	SD 308°	SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 16°5 16°5 16°5 16°4 16°4 16°4	SD 60°6 60°5 60°4 60°3 60°3 60°2	SD 305° 303° 300° 297° 295° 292°	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1																														
Greenwich Culmination Time: 11:47																	Greenwich Culmination Time: 10:28																	Greenwich Culmination Time: 01:23																

UT	Sun				Venus				Moon				UT																																					
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec																																						
00	183	14.0	+00.2	S 06 39.5	+00.9	202	41.8	-00.4	N 03 15.2	-01.2	325	36.4	-36.8	N 24 09.4	+10.0	00																																		
01	198	14.2	+00.2	S 06 40.4	+00.9	217	41.4	-00.4	N 03 14.0	-01.2	339	59.6	-36.9	N 24 19.4	+09.8	01																																		
02	213	14.4	+00.1	S 06 41.3	+01.0	232	41.0	-00.4	N 03 12.8	-01.2	354	22.7	-36.9	N 24 29.2	+09.6	02																																		
03	228	14.5	+00.2	S 06 42.3	+00.9	247	40.6	-00.4	N 03 11.6	-01.2	8	45.8	-37.0	N 24 38.8	+09.4	03																																		
04	243	14.7	+00.2	S 06 43.2	+01.0	262	40.2	-00.4	N 03 10.4	-01.2	23	08.8	-37.1	N 24 48.2	+09.3	04																																		
05	258	14.9	+00.1	S 06 44.2	+00.9	277	39.8	-00.4	N 03 09.2	-01.2	37	31.7	-37.2	N 24 57.5	+09.1	05																																		
06	273	15.0	+00.2	S 06 45.1	+01.0	292	39.4	-00.3	N 03 08.0	-01.2	51	54.5	-37.2	N 25 06.6	+08.9	06																																		
07	288	15.2	+00.2	S 06 46.1	+00.9	307	39.1	-00.4	N 03 06.8	-01.2	66	17.3	-37.3	N 25 15.5	+08.7	07																																		
08	303	15.4	+00.1	S 06 47.0	+01.0	322	38.7	-00.4	N 03 05.6	-01.2	80	40.0	-37.4	N 25 24.2	+08.6	08																																		
09	318	15.5	+00.2	S 06 48.0	+00.9	337	38.3	-00.4	N 03 04.4	-01.2	95	02.6	-37.4	N 25 32.8	+08.3	09																																		
10	333	15.7	+00.2	S 06 48.9	+00.9	352	37.9	-00.4	N 03 03.2	-01.2	109	25.2	-37.5	N 25 41.1	+08.2	10																																		
11	348	15.9	+00.1	S 06 49.8	+01.0	7	37.5	-00.4	N 03 02.0	-01.2	123	47.7	-37.6	N 25 49.3	+07.9	11																																		
12	3	16.0	+00.2	S 06 50.8	+00.9	22	37.1	-00.4	N 03 00.8	-01.2	138	10.1	-37.6	N 25 57.2	+07.8	12																																		
13	18	16.2	+00.2	S 06 51.7	+01.0	37	36.7	-00.4	N 02 59.6	-01.2	152	32.5	-37.7	N 26 05.0	+07.6	13																																		
14	33	16.4	+00.1	S 06 52.7	+00.9	52	36.3	-00.4	N 02 58.4	-01.2	166	54.8	-37.7	N 26 12.6	+07.4	14																																		
15	48	16.5	+00.2	S 06 53.6	+01.0	67	35.9	-00.4	N 02 57.2	-01.2	181	17.1	-37.8	N 26 20.0	+07.2	15																																		
16	63	16.7	+00.2	S 06 54.6	+00.9	82	35.5	-00.4	N 02 56.0	-01.2	195	39.3	-37.8	N 26 27.2	+07.1	16																																		
17	78	16.9	+00.1	S 06 55.5	+01.0	97	35.1	-00.4	N 02 54.8	-01.2	210	01.5	-37.9	N 26 34.3	+06.8	17																																		
18	93	17.0	+00.2	S 06 56.5	+00.9	112	34.7	-00.4	N 02 53.6	-01.2	224	23.6	-37.9	N 26 41.1	+06.6	18																																		
19	108	17.2	+00.1	S 06 57.4	+00.9	127	34.3	-00.4	N 02 52.4	-01.2	238	45.7	-38.0	N 26 47.7	+06.4	19																																		
20	123	17.3	+00.2	S 06 58.3	+01.0	142	33.9	-00.3	N 02 51.2	-01.2	253	07.7	-38.0	N 26 54.1	+06.3	20																																		
21	138	17.5	+00.2	S 06 59.3	+00.9	157	33.6	-00.4	N 02 50.0	-01.2	267	29.7	-38.1	N 27 00.4	+06.0	21																																		
22	153	17.7	+00.1	S 07 00.2	+01.0	172	33.2	-00.4	N 02 48.8	-01.2	281	51.6	-38.1	N 27 06.4	+05.8	22																																		
23	168	17.8	+00.2	S 07 01.2	+00.9	187	32.8	-00.4	N 02 47.6	-01.2	296	13.5	-38.1	N 27 12.2	+05.6	23																																		
UT 02 06 10 14 18 22	SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 60°9 60°8 60°8 60°8 60°7 60°7	SD 311° 311° 311° 311° 311° 311°	SD 321° 318° 316° 316° 313° 311°	SD 308°	SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 16°5 16°5 16°5 16°4 16°4 16°4	SD 60°6 60°5 60°4 60°3 60°3 60°2	SD 305° 303° 300° 297° 295° 292°	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1																														
Greenwich Culmination Time: 11:46																	Greenwich Culmination Time: 10:29																	Greenwich Culmination Time: 02:23																

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UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT						
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec							
00	183	32.5	+00.2	S 08	31.8	+00.9	201	54.8	-00.4	N 00	50.3	-01.2	253	07.7	-31.1	N 21	43.3	-10.8	00
01	198	32.7	+00.1	S 08	32.7	+00.9	216	54.4	-00.3	N 00	49.1	-01.3	267	36.6	-31.0	N 21	32.5	-10.9	01
02	213	32.8	+00.2	S 08	33.6	+00.9	231	54.1	-00.4	N 00	47.8	-01.2	282	05.6	-30.8	N 21	21.6	-11.0	02
03	228	33.0	+00.1	S 08	34.5	+01.0	246	53.7	-00.4	N 00	46.6	-01.2	296	34.8	-30.8	N 21	10.6	-11.1	03
04	243	33.1	+00.1	S 08	35.5	+00.9	261	53.3	-00.4	N 00	45.4	-01.2	311	04.0	-30.6	N 20	59.5	-11.2	04
05	258	33.2	+00.2	S 08	36.4	+00.9	276	52.9	-00.4	N 00	44.2	-01.2	325	33.4	-30.5	N 20	48.3	-11.2	05
06	273	33.4	+00.1	S 08	37.3	+00.9	291	52.5	-00.4	N 00	43.0	-01.2	340	02.9	-30.4	N 20	37.1	-11.4	06
07	288	33.5	+00.1	S 08	38.2	+00.9	306	52.1	-00.4	N 00	41.8	-01.3	354	32.5	-30.3	N 20	25.7	-11.5	07
08	303	33.6	+00.2	S 08	39.1	+01.0	321	51.7	-00.4	N 00	40.5	-01.2	9	02.2	-30.2	N 20	14.2	-11.6	08
09	318	33.8	+00.1	S 08	40.1	+00.9	336	51.3	-00.4	N 00	39.3	-01.2	23	32.0	-30.0	N 20	02.6	-11.6	09
10	333	33.9	+00.2	S 08	41.0	+00.9	351	50.9	-00.4	N 00	38.1	-01.2	38	02.0	-30.0	N 19	51.0	-11.8	10
11	348	34.1	+00.1	S 08	41.9	+00.9	6	50.5	-00.4	N 00	36.9	-01.2	52	32.0	-29.8	N 19	39.2	-11.8	11
12	3	34.2	+00.1	S 08	42.8	+01.0	21	50.1	-00.3	N 00	35.7	-01.3	67	02.2	-29.8	N 19	27.4	-11.9	12
13	18	34.3	+00.2	S 08	43.8	+00.9	36	49.8	-00.4	N 00	34.4	-01.2	81	32.4	-29.6	N 19	15.5	-12.0	13
14	33	34.5	+00.1	S 08	44.7	+00.9	51	49.4	-00.4	N 00	33.2	-01.2	96	02.8	-29.5	N 19	03.5	-12.1	14
15	48	34.6	+00.1	S 08	45.6	+00.9	66	49.0	-00.4	N 00	32.0	-01.2	110	33.3	-29.4	N 18	51.4	-12.1	15
16	63	34.7	+00.2	S 08	46.5	+00.9	81	48.6	-00.4	N 00	30.8	-01.2	125	03.9	-29.4	N 18	39.3	-12.2	16
17	78	34.9	+00.1	S 08	47.4	+01.0	96	48.2	-00.4	N 00	29.6	-01.2	139	34.5	-29.2	N 18	27.1	-12.3	17
18	93	35.0	+00.2	S 08	48.4	+00.9	111	47.8	-00.4	N 00	28.4	-01.3	154	05.3	-29.1	N 18	14.8	-12.4	18
19	108	35.2	+00.1	S 08	49.3	+00.9	126	47.4	-00.4	N 00	27.1	-01.2	168	36.2	-29.0	N 18	02.4	-12.5	19
20	123	35.3	+00.1	S 08	50.2	+00.9	141	47.0	-00.4	N 00	25.9	-01.2	183	07.2	-28.9	N 17	49.9	-12.5	20
21	138	35.4	+00.2	S 08	51.1	+00.9	156	46.6	-00.4	N 00	24.7	-01.2	197	38.3	-28.8	N 17	37.4	-12.6	21
22	153	35.6	+00.1	S 08	52.0	+01.0	171	46.2	-00.4	N 00	23.5	-01.2	212	09.5	-28.7	N 17	24.8	-12.7	22
23	168	35.7	+00.1	S 08	53.0	+00.9	186	45.8	-00.3	N 00	22.3	-01.2	226	40.8	-28.6	N 17	12.1	-12.7	23
UT 02 06 10 14 18 22	SD 16°0 16°0 16°0 16°0 16°0 16°0	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 160° 160° 159° 159° 159° 159°	Greenwich Culmination Time: 11:45	UT 02 06 10 14 18 22	SD 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 178° 178° 178° 177° 177° 177°	Greenwich Culmination Time: 10:32	UT 02 06 10 14 18 22	SD 15°6 15°5 15°5 15°5 15°5 15°4	HP 57°2 57°1 56°9 56°8 56°7 56°6	SHA 228° 228° 224° 222° 220° 217°	Greenwich Culmination Time: 07:22					
UT 02 06 10 14 18 22	SD 16°0 16°0 16°0 16°0 16°0 16°0	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 162° 162° 162° 162° 162° 162°	Greenwich Culmination Time: 11:46	UT 02 06 10 14 18 22	SD 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 181° 181° 181° 181° 181° 181°	Greenwich Culmination Time: 10:30	UT 02 06 10 14 18 22	SD 16°2 16°2 16°1 16°1 16°1 16°0	HP 59°3 59°3 59°2 59°0 58°9 58°8	SHA 273° 270° 268° 265° 262° 260°	Greenwich Culmination Time: 04:30					

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT						
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec							
00	183	21.8	+00.2	S 07	24.7	+00.9	202	23.0	-00.4	N 02	17.5	-01.2	295	17.2	-38.1	N 28	32.1	+00.6	00
01	198	22.0	+00.1	S 07	25.6	+01.0	217	22.6	-00.4	N 02	16.3	-01.2	309	39.1	-38.1	N 28	32.7	+00.3	01
02	213	22.1	+00.2	S 07	26.6	+00.9	232	22.2	-00.4	N 02	15.1	-01.2	324	01.0	-38.0	N 28	33.0	+00.2	02
03	228	22.3	+00.2	S 07	27.5	+00.9	247	21.8	-00.4	N 02	13.9	-01.2	338	23.0	-38.0	N 28	33.2	+00.1	03
04	243	22.5	+00.1	S 07	28.4	+01.0	262	21.4	-00.4	N 02	12.7	-01.2	352	45.0	-37.9	N 28	33.1	-00.2	04
05	258	22.6	+00.2	S 07	29.4	+00.9	277	21.0	-00.4	N 02	11.5	-01.2	7	07.1	-37.9	N 28	32.9	-00.5	05
06	273	22.8	+00.1	S 07	30.3	+00.9	292	20.6	-00.4	N 02	10.3	-01.3	21	29.2	-37.9	N 28	32.4	-00.6	06
07	288	22.9	+00.2	S 07	31.2	+01.0	307	20.2	-00.4	N 02	09.0	-01.2	35	51.3	-37.8	N 28	31.8	-00.9	07
08	303	23.1	+00.1	S 07	32.2	+00.9	322	19.8	-00.4	N 02	07.8	-01.2	50	13.5	-37.7	N 28	30.9	-01.0	08
09	318	23.2	+00.2	S 07	33.1	+00.9	337	19.4	-00.3	N 02	06.6	-01.2	64	35.8	-37.7	N 28	29.9	-01.3	09
10	333	23.4	+00.1	S 07	34.0	+01.0	352	19.1	-00.4	N 02	05.4	-01.2	78	58.1	-37.6	N 28	28.6	-01.4	10
11	348	23.5	+00.2	S 07	35.0	+00.9	7	18.7	-00.4	N 02	04.2	-01.2	93	20.5	-37.5	N 28	27.2	-01.6	11
12	3	23.7	+00.2	S 07	35.9	+01.0	22	18.3	-00.4	N 02	03.0	-01.2	107	43.0	-37.5	N 28	25.6	-01.9	12
13	18	23.9	+00.1	S 07	36.9	+00.9	37	17.9	-00.4	N 02	01.8	-01.2	122	05.5	-37.4	N 28	23.7	-02.0	13
14	33	24.0	+00.2	S 07	37.8	+00.9	52	17.5	-00.4	N 02	00.6	-01.2	136	28.1	-37.4	N 28	21.7	-02.2	14
15	48	24.2	+00.1	S 07	38.7	+01.0	67	17.1	-00.4	N 01	59.4	-01.2	150	50.7	-37.3	N 28	19.5	-02.4	15
16	63	24.3	+00.2	S 07	39.7	+00.9	82	16.7	-00.4	N 01	58.2	-01.2	165	13.4	-37.2	N 28	17.1	-02.5	16
17	78	24.5	+00.1	S 07	40.6	+00.9	97	16.3	-00.4	N 01	57.0	-01.2	179	36.2	-37.1	N 28	14.6	-02.8	17
18	93	24.6	+00.2	S 07	41.5	+01.0	112	15.9	-00.4	N 01	55.8	-01.2	193	59.1	-37.1	N 28	11.8	-03.0	18
19	108	24.8	+00.1	S 07	42.5	+00.9	127	15.5	-00.4	N 01	54.6	-01.3	208	22.0	-36.9	N 28	08.8	-03.1	19
20	123	24.9	+00.2	S 07	43.4	+00.9	142	15.1	-00.3	N 01	53.3	-01.2	222	45.1	-36.9	N 28	05.7	-03.3	20
21	138	25.1	+00.1	S 07	44.3	+01.0	157	14.8	-00.4	N 01	52.1	-01.2	237	08.2	-36.8	N 28	02.4	-03.5	21
22	153	25.2	+00.2	S 07	45.3	+00.9	172	14.4	-00.4	N 01	50.9	-01.2	251	31.4	-36.7	N 27	58.9	-03.7	22
23	168	25.4	+00.1	S 07	46.2	+00.9	187	14.0	-00.4	N 01	49.7	-01.2	265	54.7	-36.6	N 27	55.2	-03.9	23
UT 02 06 10 14 18 22	SD 16°0 16°0 16°0 16°0 16°0 16°0	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 162° 162° 162° 162° 162° 162°	Greenwich Culmination Time: 11:46	UT 02 06 10 14 18 22	SD 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 181° 181° 181° 181° 181° 181°	Greenwich Culmination Time: 10:30	UT 02 06 10 14 18 22	SD 16°2 16°2 16°1 16°1 16°1 16°0	HP 59°3 59°3 59°2 59°0 58°9 58°8	SHA 273° 270° 268° 265° 262° 260°	Greenwich Culmination Time: 04:30					
UT 02 06 10 14 18 22	SD 00°0 00°0 00°0 00°0 00°0 00°0	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 139° 139° 139° 139° 139° 138°	Greenwich Culmination Time: 13:19	UT 02 06 10 14 18 22	SD 00°3 00°3 00°3 00°3 00°3 00°3	HP 00°0 00°0 00°0 00°0 00°0 00°0	SHA 244° 244° 244° 244° 244° 244°	Greenwich Culmination Time: 06:17	UT 02 06 10 14 18 22	SD 00°2 00°2 00°2 00°2 00°2 00°2	HP 00°0 00°0 00°0 00°0 00°0 00°0	SHA 002° 002° 002° 002° 002° 002°	Greenwich Culmination Time: 22:25					

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 162° 161° 161° 161° 161° 161°
Greenwich Culmination Time: 11:46

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 00°3 00°3 00°3 00°3 00°3 00°3
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 138° 138° 138° 138° 138° 138°
Greenwich Culmination Time: 13:18

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 161° 160° 160° 160° 160° 160°
Greenwich Culmination Time: 11:45

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for each planet.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 138° 138° 137° 137° 137° 137°
Greenwich Culmination Time: 13:17

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UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	44.8	+00.1	S 09 59.5	+00.9	201	17.2	-00.4	S 01 06.8	+01.3	209	57.8	-24.6	S 00 00.6	+14.6	00
01	198	44.9	+00.1	S 10 00.4	+00.9	216	16.8	-00.4	S 01 08.1	+01.2	224	33.2	-24.5	S 00 15.2	+14.7	01
02	213	45.0	+00.1	S 10 01.3	+00.9	231	16.4	-00.4	S 01 09.3	+01.2	239	08.7	-24.4	S 00 29.9	+14.6	02
03	228	45.1	+00.1	S 10 02.2	+00.9	246	16.0	-00.4	S 01 10.5	+01.2	253	44.3	-24.5	S 00 44.5	+14.7	03
04	243	45.2	+00.1	S 10 03.1	+00.9	261	15.6	-00.4	S 01 11.7	+01.3	268	19.8	-24.5	S 00 59.2	+14.6	04
05	258	45.3	+00.2	S 10 04.0	+00.9	276	15.2	-00.4	S 01 13.0	+01.2	282	55.3	-24.5	S 01 13.8	+14.6	05
06	273	45.5	+00.1	S 10 04.9	+00.9	291	14.8	-00.4	S 01 14.2	+01.2	297	30.8	-24.4	S 01 28.4	+14.6	06
07	288	45.6	+00.1	S 10 05.8	+00.9	306	14.4	-00.4	S 01 15.4	+01.2	312	06.4	-24.4	S 01 43.0	+14.6	07
08	303	45.7	+00.1	S 10 06.7	+00.9	321	14.0	-00.4	S 01 16.6	+01.2	326	42.0	-24.5	S 01 57.6	+14.5	08
09	318	45.8	+00.1	S 10 07.6	+00.9	336	13.6	-00.4	S 01 17.8	+01.3	341	17.5	-24.4	S 02 12.1	+14.6	09
10	333	45.9	+00.1	S 10 08.5	+00.9	351	13.2	-00.4	S 01 19.1	+01.2	355	53.1	-24.4	S 02 26.7	+14.5	10
11	348	46.0	+00.1	S 10 09.4	+00.9	6	12.8	-00.4	S 01 20.3	+01.2	10	28.7	-24.5	S 02 41.2	+14.5	11
12	3	46.1	+00.1	S 10 10.3	+00.9	21	12.4	-00.4	S 01 21.5	+01.2	25	04.2	-24.4	S 02 55.7	+14.5	12
13	18	46.2	+00.2	S 10 11.2	+00.9	36	12.0	-00.4	S 01 22.7	+01.3	39	39.8	-24.4	S 03 10.2	+14.5	13
14	33	46.4	+00.1	S 10 12.1	+00.9	51	11.6	-00.4	S 01 24.0	+01.2	54	15.4	-24.4	S 03 24.7	+14.5	14
15	48	46.5	+00.1	S 10 13.0	+00.9	66	11.2	-00.4	S 01 25.2	+01.2	68	51.0	-24.5	S 03 39.2	+14.4	15
16	63	46.6	+00.1	S 10 13.9	+00.9	81	10.8	-00.4	S 01 26.4	+01.2	83	26.5	-24.4	S 03 53.6	+14.4	16
17	78	46.7	+00.1	S 10 14.8	+00.9	96	10.4	-00.3	S 01 27.6	+01.3	98	02.1	-24.4	S 04 08.0	+14.4	17
18	93	46.8	+00.1	S 10 15.7	+00.9	111	10.1	-00.4	S 01 28.9	+01.2	112	37.7	-24.5	S 04 22.4	+14.4	18
19	108	46.9	+00.1	S 10 16.6	+00.9	126	09.7	-00.4	S 01 30.1	+01.2	127	13.2	-24.4	S 04 36.8	+14.4	19
20	123	47.0	+00.1	S 10 17.5	+00.9	141	09.3	-00.4	S 01 31.3	+01.2	141	48.8	-24.5	S 04 51.2	+14.3	20
21	138	47.1	+00.1	S 10 18.4	+00.9	156	08.9	-00.4	S 01 32.5	+01.2	156	24.3	-24.4	S 05 05.5	+14.3	21
22	153	47.2	+00.1	S 10 19.3	+00.9	171	08.5	-00.4	S 01 33.7	+01.3	170	59.9	-24.5	S 05 19.8	+14.2	22
23	168	47.3	+00.2	S 10 20.2	+00.9	186	08.1	-00.4	S 01 35.0	+01.2	185	35.4	-24.5	S 05 34.0	+14.3	23

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 156° 156° 156° 155° 155° 155°
Greenwich Culmination Time: 11:44

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 173° 173° 173° 173° 173° 173°
Greenwich Culmination Time: 10:35

UT 02 06 10 14 18 22
SD 15°0 15°0 14°9 14°9 14°9 14°9
HP 55°0 54°9 54°8 54°8 54°7 54°7
SHA 181° 181° 178° 178° 176° 174°
Greenwich Culmination Time: 10:16

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	35.8	+00.2	S 08 53.9	+00.9	201	45.5	-00.4	N 00 21.1	-01.3	241	12.2	-28.5	N 16 59.4	-12.8	00
01	198	36.0	+00.1	S 08 54.8	+00.9	216	45.1	-00.4	N 00 19.8	-01.2	255	43.7	-28.4	N 16 46.6	-12.9	01
02	213	36.1	+00.1	S 08 55.7	+00.9	231	44.7	-00.4	N 00 18.6	-01.2	270	15.3	-28.3	N 16 33.7	-12.9	02
03	228	36.2	+00.2	S 08 56.6	+01.0	246	44.3	-00.4	N 00 17.4	-01.2	284	47.0	-28.2	N 16 20.8	-13.0	03
04	243	36.4	+00.1	S 08 57.6	+00.9	261	43.9	-00.4	N 00 16.2	-01.2	299	18.8	-28.2	N 16 07.8	-13.1	04
05	258	36.5	+00.1	S 08 58.5	+00.9	276	43.5	-00.4	N 00 15.0	-01.3	313	50.6	-28.0	N 15 54.7	-13.1	05
06	273	36.6	+00.2	S 08 59.4	+00.9	291	43.1	-00.4	N 00 13.7	-01.2	328	22.6	-27.9	N 15 41.6	-13.2	06
07	288	36.8	+00.1	S 09 00.3	+00.9	306	42.7	-00.4	N 00 12.5	-01.2	342	54.7	-27.9	N 15 28.4	-13.2	07
08	303	36.9	+00.1	S 09 01.2	+01.0	321	42.3	-00.4	N 00 11.3	-01.2	357	26.8	-27.8	N 15 15.2	-13.3	08
09	318	37.0	+00.1	S 09 02.2	+00.9	336	41.9	-00.4	N 00 10.1	-01.2	11	59.0	-27.6	N 15 01.9	-13.4	09
10	333	37.1	+00.2	S 09 03.1	+00.9	351	41.5	-00.4	N 00 08.9	-01.3	26	31.4	-27.6	N 14 48.5	-13.4	10
11	348	37.3	+00.1	S 09 04.0	+00.9	6	41.1	-00.3	N 00 07.6	-01.2	41	03.8	-27.5	N 14 35.1	-13.4	11
12	3	37.4	+00.1	S 09 04.9	+00.9	21	40.8	-00.4	N 00 06.4	-01.2	55	36.3	-27.5	N 14 21.7	-13.5	12
13	18	37.5	+00.2	S 09 05.8	+00.9	36	40.4	-00.4	N 00 05.2	-01.2	70	08.8	-27.3	N 14 08.2	-13.6	13
14	33	37.7	+00.1	S 09 06.7	+01.0	51	40.0	-00.4	N 00 04.0	-01.2	84	41.5	-27.3	N 13 54.6	-13.6	14
15	48	37.8	+00.1	S 09 07.7	+00.9	66	39.6	-00.4	N 00 02.8	-01.3	99	14.2	-27.1	N 13 41.0	-13.6	15
16	63	37.9	+00.2	S 09 08.6	+00.9	81	39.2	-00.4	N 00 01.5	-01.2	113	47.1	-27.1	N 13 27.4	-13.7	16
17	78	38.1	+00.1	S 09 09.5	+00.9	96	38.8	-00.4	N 00 00.3	-01.2	128	20.0	-27.0	N 13 13.7	-13.8	17
18	93	38.2	+00.1	S 09 10.4	+00.9	111	38.4	-00.4	N 00 00.9	+01.2	142	53.0	-27.0	N 12 59.9	-13.8	18
19	108	38.3	+00.1	S 09 11.3	+00.9	126	38.0	-00.4	S 00 02.1	+01.2	157	26.0	-26.8	N 12 46.1	-13.8	19
20	123	38.4	+00.2	S 09 12.2	+01.0	141	37.6	-00.4	S 00 03.3	+01.3	171	59.2	-26.8	N 12 32.3	-13.9	20
21	138	38.6	+00.1	S 09 13.2	+00.9	156	37.2	-00.4	S 00 04.6	+01.2	186	32.4	-26.8	N 12 18.4	-13.9	21
22	153	38.7	+00.1	S 09 14.1	+00.9	171	36.8	-00.4	S 00 05.8	+01.2	201	05.6	-26.6	N 12 04.5	-14.0	22
23	168	38.8	+00.2	S 09 15.0	+00.9	186	36.4	-00.3	S 00 07.0	+01.2	215	39.0	-26.6	N 11 50.5	-14.0	23

UT 02 06 10 14 18 22
SD 16°0 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 159° 159° 158° 158° 158° 158°
Greenwich Culmination Time: 11:45

UT 02 06 10 14 18 22
SD 00°1 00°1 00°1 00°1 00°1 00°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 177° 177° 177° 176° 176° 176°
Greenwich Culmination Time: 10:33

UT 02 06 10 14 18 22
SD 15°4 15°4 15°3 15°3 15°3 15°3
HP 56°5 56°4 56°3 56°2 56°1 56°0
SHA 215° 215° 211° 209° 207° 205°
Greenwich Culmination Time: 08:10

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	161	58.4	+00.7	S 17 31.6	+00.5	271	33.9	+02.2	N 21 19.2	+00.0	29	56.6	+02.6	S 03 40.7	+00.1	00
01	176	59.1	+00.7	S 17 32.1	+00.6	286	36.1	+02.3	N 21 19.2	+00.0	44	59.2	+02.6	S 03 40.8	+00.0	01
02	191	59.8	+00.7	S 17 32.7	+00.5	301	38.4	+02.3	N 21 19.2	-00.1	60	01.8	+02.6	S 03 40.8	+00.1	02
03	207	00.5	+00.8	S 17 33.2	+00.5	316	40.7	+02.2	N 21 19.1	+00.0	75	04.4	+02.6	S 03 40.9	+00.1	03
04	222	01.3	+00.7	S 17 33.7	+00.5	331	42.9	+02.3	N 21 19.1	+00.0	90	07.0	+02.6	S 03 41.0	+00.0	04
05	237	02.0	+00.7	S 17 34.2	+00.5	346	45.2	+02.3	N 21 19.1	+00.0	105	09.6	+02.7	S 03 41.0	+00.1	05
06	252	02.7	+00.7	S 17 34.7	+00.5	1	47.5	+02.2	N 21 19.1	-00.1	120	12.3	+02.6	S 03 41.1	+00.0	06
07	267	03.4	+00.7	S 17 35.2	+00.5	16	49.7	+02.3	N 21 19.0	+00.0	135	14.9	+02.6	S 03 41.1	+00.1	07
08	282	04.1	+00.7	S 17 35.7	+00.5	31	52.0	+02.3	N 21 19.0	+00.0	150	17.5	+02.6	S 03 41.2	+00.1	08
09	297	04.8	+00.7	S 17 36.2	+00.5	46	54.3	+02.2	N 21 19.0	-00.1	165	20.1	+02.6	S 03 41.3	+00.0	09
10	312	05.5	+00.7	S 17 36.7	+00.5	61	56.5	+02.3	N 21 18.9	+00.0	180	22.7	+02.6	S 03 41.3	+00.1	10
11	327	06.2	+00.7	S 17 37.2	+00.5	76	58.8	+02.3	N 21 18.9	+00.0	195	25.3	+02.6	S 03 41.4	+00.0	11
12	342	06.9	+00.7	S 17 37.7	+00.5	92	01.1	+02.2	N 21 18.9	+00.0	210	27.9	+02.6	S 03 41.4	+00.1	12
13	357	07.6	+00.7	S 17 38.2	+00.6	107	03.3	+02.3	N 21 18.9	-00.1	225	30.5	+02.6	S 03 41.5	+00.0	13
14	12	08.3	+00.7	S 17 38.8	+00.5	122	05.6	+02.3	N 21 18.8	+00.0	240	33.1	+02.6	S 03 41.5	+00.1	14
15	27	09.0	+00.7	S 17 39.3	+00.5	137	07.9	+02.3	N 21 18.8	+00.0	255	35.7	+02.6	S 03 41.6	+00.1	15
16	42	09.7	+00.7	S 17 39.8	+00.5	152	10.2	+02.2	N 21 18.8	+00.0	270	38.3	+02.6	S 03 41.7	+00.0	16
17	57	10.4	+00.7	S 17 40.3	+00.5	167	12.4	+02.3	N 21 18.8	-00.1	285	40.9	+02.6	S 03 41.7	+00.1	17
18	72	11.1	+00.7	S 17												

		Sun				Venus				Moon						
UT		GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT		
00		183	39.0	+00.1	S 09 15.9	+00.9	201	36.1	-00.4	S 00 08.2	+01.2	230	12.4	-26.5	N 11 36.5	-14.0
01		198	39.1	+00.1	S 09 16.8	+00.9	216	35.7	-00.4	S 00 09.4	+01.3	244	45.9	-26.4	N 11 22.5	-14.1
02		213	39.2	+00.1	S 09 17.7	+00.9	231	35.3	-00.4	S 00 10.7	+01.2	259	19.5	-26.4	N 11 08.4	-14.1
03		228	39.3	+00.2	S 09 18.6	+00.9	246	34.9	-00.4	S 00 11.9	+01.2	273	53.1	-26.3	N 10 54.3	-14.1
04		243	39.5	+00.1	S 09 19.5	+01.0	261	34.5	-00.4	S 00 13.1	+01.2	288	26.8	-26.2	N 10 40.2	-14.2
05		258	39.6	+00.1	S 09 20.5	+00.9	276	34.1	-00.4	S 00 14.3	+01.2	303	00.6	-26.2	N 10 26.0	-14.2
06		273	39.7	+00.1	S 09 21.4	+00.9	291	33.7	-00.4	S 00 15.5	+01.3	317	34.4	-26.1	N 10 11.8	-14.2
07		288	39.8	+00.2	S 09 22.3	+00.9	306	33.3	-00.4	S 00 16.8	+01.2	332	08.3	-26.0	N 09 57.6	-14.3
08		303	40.0	+00.1	S 09 23.2	+00.9	321	32.9	-00.4	S 00 18.0	+01.2	346	42.3	-26.0	N 09 43.3	-14.3
09		318	40.1	+00.1	S 09 24.1	+00.9	336	32.5	-00.4	S 00 19.2	+01.2	1	16.3	-25.9	N 09 29.0	-14.3
10		333	40.2	+00.1	S 09 25.0	+00.9	351	32.1	-00.4	S 00 20.4	+01.2	15	50.4	-25.9	N 09 14.7	-14.4
11		348	40.3	+00.2	S 09 25.9	+00.9	6	31.7	-00.4	S 00 21.6	+01.3	30	24.5	-25.8	N 09 00.3	-14.3
12		3	40.5	+00.1	S 09 26.8	+01.0	21	31.3	-00.3	S 00 22.9	+01.2	44	58.7	-25.7	N 08 46.0	-14.4
13		18	40.6	+00.1	S 09 27.8	+00.9	36	31.0	-00.4	S 00 24.1	+01.2	59	33.0	-25.7	N 08 31.6	-14.5
14		33	40.7	+00.1	S 09 28.7	+00.9	51	30.6	-00.4	S 00 25.3	+01.2	74	07.3	-25.7	N 08 17.1	-14.4
15		48	40.8	+00.2	S 09 29.6	+00.9	66	30.2	-00.4	S 00 26.5	+01.2	88	41.6	-25.6	N 08 02.7	-14.5
16		63	41.0	+00.1	S 09 30.5	+00.9	81	29.8	-00.4	S 00 27.7	+01.3	103	16.0	-25.5	N 07 48.2	-14.5
17		78	41.1	+00.1	S 09 31.4	+00.9	96	29.4	-00.4	S 00 29.0	+01.2	117	50.5	-25.5	N 07 33.7	-14.5
18		93	41.2	+00.1	S 09 32.3	+00.9	111	29.0	-00.4	S 00 30.2	+01.2	132	25.0	-25.4	N 07 19.2	-14.5
19		108	41.3	+00.2	S 09 33.2	+00.9	126	28.6	-00.4	S 00 31.4	+01.2	146	59.6	-25.4	N 07 04.7	-14.5
20		123	41.5	+00.1	S 09 34.1	+00.9	141	28.2	-00.4	S 00 32.6	+01.3	161	34.2	-25.4	N 06 50.2	-14.6
21		138	41.6	+00.1	S 09 35.0	+01.0	156	27.8	-00.4	S 00 33.9	+01.2	176	08.8	-25.3	N 06 35.6	-14.6
22		153	41.7	+00.1	S 09 36.0	+01.0	171	27.4	-00.4	S 00 35.1	+01.2	190	43.5	-25.2	N 06 21.0	-14.6
23		168	41.8	+00.1	S 09 36.9	+00.9	186	27.0	-00.4	S 00 36.3	+01.2	205	18.3	-25.3	N 06 06.4	-14.6

UT	02	06	10	14	18	22
SD	16°0	16°0	16°0	16°0	16°1	16°1
HP	00°1	00°1	00°1	00°1	00°1	00°1
SHA	158°	158°	158°	157°	157°	157°

Greenwich Culmination Time: 11:45

UT	02	06	10	14	18	22
SD	00°1	00°1	00°1	00°1	00°1	00°1
HP	00°1	00°1	00°1	00°1	00°1	00°1
SHA	176°	176°	175°	175°	175°	175°

Greenwich Culmination Time: 10:33

UT	02	06	10	14	18	22
SD	15°2	15°2	15°2	15°2	15°1	15°1
HP	55°9	55°8	55°7	55°7	55°6	55°5
SHA	203°	202°	200°	198°	196°	194°

Greenwich Culmination Time: 08:54

		Sun				Venus				Moon						
UT		GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT		
00		183	41.9	+00.2	S 09 37.8	+00.9	201	26.6	-00.4	S 00 37.5	+01.2	219	53.0	-25.1	N 05 51.8	-14.6
01		198	42.1	+00.1	S 09 38.7	+00.9	216	26.2	-00.4	S 00 38.7	+01.3	234	27.9	-25.2	N 05 37.2	-14.6
02		213	42.2	+00.1	S 09 39.6	+00.9	231	25.8	-00.3	S 00 40.0	+01.2	249	02.7	-25.0	N 05 22.6	-14.7
03		228	42.3	+00.1	S 09 40.5	+00.9	246	25.5	-00.4	S 00 41.2	+01.2	263	37.7	-25.1	N 05 07.9	-14.6
04		243	42.4	+00.2	S 09 41.4	+00.9	261	25.1	-00.4	S 00 42.4	+01.2	278	12.6	-25.0	N 04 53.3	-14.7
05		258	42.6	+00.1	S 09 42.3	+00.9	276	24.7	-00.4	S 00 43.6	+01.2	292	47.6	-25.0	N 04 38.6	-14.7
06		273	42.7	+00.1	S 09 43.2	+00.9	291	24.3	-00.4	S 00 44.8	+01.3	307	22.6	-25.0	N 04 23.9	-14.6
07		288	42.8	+00.1	S 09 44.1	+00.9	306	23.9	-00.4	S 00 46.1	+01.2	321	57.6	-24.9	N 04 09.3	-14.7
08		303	42.9	+00.1	S 09 45.0	+00.9	321	23.5	-00.4	S 00 47.3	+01.2	336	32.7	-24.8	N 03 54.6	-14.7
09		318	43.0	+00.1	S 09 45.9	+00.9	336	23.1	-00.4	S 00 48.5	+01.2	351	07.9	-24.9	N 03 39.9	-14.7
10		333	43.1	+00.2	S 09 46.8	+00.9	351	22.7	-00.4	S 00 49.7	+01.3	5	43.0	-24.8	N 03 25.2	-14.7
11		348	43.3	+00.1	S 09 47.7	+01.0	6	22.3	-00.4	S 00 51.0	+01.2	20	18.2	-24.8	N 03 10.5	-14.7
12		3	43.4	+00.1	S 09 48.7	+00.9	21	21.9	-00.4	S 00 52.2	+01.2	34	53.4	-24.8	N 02 55.8	-14.7
13		18	43.5	+00.1	S 09 49.6	+00.9	36	21.5	-00.4	S 00 53.4	+01.2	49	28.6	-24.7	N 02 41.1	-14.7
14		33	43.6	+00.1	S 09 50.5	+00.9	51	21.1	-00.4	S 00 54.6	+01.2	64	03.9	-24.7	N 02 26.4	-14.7
15		48	43.7	+00.2	S 09 51.4	+00.9	66	20.7	-00.4	S 00 55.8	+01.3	78	39.2	-24.7	N 02 11.7	-14.7
16		63	43.9	+00.1	S 09 52.3	+00.9	81	20.3	-00.4	S 00 57.1	+01.2	93	14.5	-24.7	N 01 57.0	-14.8
17		78	44.0	+00.1	S 09 53.2	+00.9	96	19.9	-00.4	S 00 58.3	+01.2	107	49.8	-24.6	N 01 42.2	-14.7
18		93	44.1	+00.1	S 09 54.1	+00.9	111	19.5	-00.4	S 00 59.5	+01.2	122	25.2	-24.6	N 01 27.5	-14.8
19		108	44.2	+00.1	S 09 55.0	+00.9	126	19.1	-00.3	S 01 00.7	+01.3	137	00.6	-24.6	N 01 12.8	-14.6
20		123	44.3	+00.1	S 09 55.9	+00.9	141	18.8	-00.4	S 01 02.0	+01.2	151	36.0	-24.6	N 00 58.2	-14.7
21		138	44.4	+00.1	S 09 56.8	+00.9	156	18.4	-00.4	S 01 03.2	+01.2	166	11.4	-24.6	N 00 43.5	-14.7
22		153	44.5	+00.2	S 09 57.7	+00.9	171	18.0	-00.4	S 01 04.4	+01.2	180	46.8	-24.5	N 00 28.8	-14.7
23		168	44.7	+00.1	S 09 58.6	+00.9	186	17.6	-00.4	S 01 05.6	+01.2	195	22.3	-24.5	N 00 14.1	-14.7

UT	02	06	10	14	18	22
SD	16°1	16°1	16°1	16°1	16°1	16°1
HP	00°1	00°1	00°1	00°1	00°1	00°1
SHA	157°	157°	157°	156°	156°	156°

Greenwich Culmination Time: 11:45

UT	02	06	10	14	18	22
SD	00°1	00°1	00°1	00°1	00°1	00°1
HP	00°1	00°1	00°1	00°1	00°1	00°1
SHA	175°	174°	174°	174°	174°	174°

Greenwich Culmination Time: 10:34

UT	02	06	10	14	18	22
SD	15°1	15°1	15°1	15°0	15°0	15°0
HP	55°4	55°3	55°3	55°2	55°1	55°0
SHA	192°	190°	189°	187°	185°	183°

Greenwich Culmination Time: 09:36

		Mars				Jupiter				Saturn						
UT		GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT		
00		161	24.1	+00.7	S 17 06.9	+00.5	269	45.5	+02.2	N 21 20.6	+00.0	27	51.3	+02.6	S 03 37.9	+00.1
01		176	24.8	+00.7	S 17 07.4	+00.6	284	47.7	+02.3	N 21 20.6	-00.1	42	53.9	+02.6	S 03 38.0	+00.0
02		191	25.5	+00.7	S 17 08.0	+00.5	299	50.0	+02.2	N 21 20.5	+00.0	57	56.5	+02.6	S 03 38.0	+00.1
03		206	26.2	+00.7	S 17 08.5	+00.5	314	52.2	+02.3	N 21 20.5	+00.0	72	59.1	+02.6	S 03 38.1	+00.0
04		221	26.9	+00.8	S 17 09.0	+00.5	329	54.5	+02.2	N 21 20.5	-00.1	88	01.7	+02.6	S 03 38.1	+00.1
05		236	27.7	+00.7	S 17 09.5	+00.5	344	56.7	+02.3	N 21 20.4	+00.0	103	04.3	+02.7	S 03 38.2	+00.1
06		251	28.4	+00.7	S 17 10.0	+00.6	359	59.0	+02.2	N 21 20.4	+00.0	118	07.0	+02.6	S 03 38.3	+00.0
07		266	29.1	+00.7	S 17 10.6	+00.5	15	01.2	+02.3	N 21 20.4	+00.0	133	09.6	+02.6	S 03 38.3	+00.1
08		281	29.8	+00.8	S 17 11.1	+00.5	30	03.5	+02.2	N 21 20.4	-00.1	148	12.2	+02.6	S 03 38.4	+00.0
09		296	30.6	+00.7	S 17 11.6	+00.5	45	05.7	+02.3	N 21 20.3	+00.0	163	14.8	+02.6	S 03 38.4	+00.1
10		311	31.3	+00.7	S 17 12.1	+00.5	60	08.0	+02.2	N 21 20.3	+00.0	178	17.4	+02.6	S 03 38.5	+00.1
11		326	32.0	+00.7	S 17 12.6	+00.5	75									

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	183	54.5	+00.1	S 11 24.9	+00.9	200	38.8	-00.4	S 03 04.2	+01.2	169	27.8	-27.3	S 20 49.1	+10.0					
01	198	54.6	+00.1	S 11 25.8	+00.9	215	38.4	-00.4	S 03 05.4	+01.2	184	00.5	-27.4	S 20 59.1	+09.9					
02	213	54.7	+00.0	S 11 26.7	+00.9	230	38.0	-00.4	S 03 06.6	+01.2	198	33.1	-27.5	S 21 09.0	+09.9					
03	228	54.7	+00.1	S 11 27.6	+00.8	245	37.6	-00.4	S 03 07.8	+01.2	213	05.6	-27.6	S 21 18.9	+09.7					
04	243	54.8	+00.1	S 11 28.4	+00.9	260	37.2	-00.4	S 03 09.0	+01.3	227	38.0	-27.6	S 21 28.6	+09.7					
05	258	54.9	+00.1	S 11 29.3	+00.9	275	36.8	-00.4	S 03 10.3	+01.2	242	10.4	-27.7	S 21 38.3	+09.6					
06	273	55.0	+00.1	S 11 30.2	+00.9	290	36.4	-00.4	S 03 11.5	+01.2	256	42.7	-27.7	S 21 47.9	+09.4					
07	288	55.1	+00.1	S 11 31.1	+00.8	305	36.0	-00.4	S 03 12.7	+01.2	271	15.0	-27.8	S 21 57.3	+09.4					
08	303	55.2	+00.1	S 11 31.9	+00.9	320	35.6	-00.4	S 03 13.9	+01.2	285	47.2	-27.8	S 22 06.7	+09.3					
09	318	55.3	+00.0	S 11 32.8	+00.9	335	35.2	-00.4	S 03 15.1	+01.3	300	19.4	-28.0	S 22 16.0	+09.2					
10	333	55.3	+00.1	S 11 33.7	+00.9	350	34.8	-00.4	S 03 16.4	+01.2	314	51.4	-27.9	S 22 25.2	+09.1					
11	348	55.4	+00.1	S 11 34.6	+00.8	5	34.4	-00.5	S 03 17.6	+01.2	329	23.5	-28.1	S 22 34.3	+09.0					
12	3	55.5	+00.1	S 11 35.4	+00.9	20	33.9	-00.4	S 03 18.8	+01.2	343	55.4	-28.1	S 22 43.3	+08.9					
13	18	55.6	+00.1	S 11 36.3	+00.9	35	33.5	-00.4	S 03 20.0	+01.2	358	27.3	-28.2	S 22 52.2	+08.8					
14	33	55.7	+00.1	S 11 37.2	+00.8	50	33.1	-00.4	S 03 21.2	+01.3	12	59.1	-28.2	S 23 01.0	+08.7					
15	48	55.8	+00.0	S 11 38.0	+00.9	65	32.7	-00.4	S 03 22.5	+01.2	27	30.9	-28.3	S 23 09.7	+08.6					
16	63	55.8	+00.1	S 11 38.9	+00.9	80	32.3	-00.4	S 03 23.7	+01.2	42	02.6	-28.3	S 23 18.3	+08.5					
17	78	55.9	+00.1	S 11 39.8	+00.9	95	31.9	-00.4	S 03 24.9	+01.2	56	34.3	-28.4	S 23 26.8	+08.4					
18	93	56.0	+00.1	S 11 40.7	+00.8	110	31.5	-00.4	S 03 26.1	+01.2	71	05.9	-28.5	S 23 35.2	+08.3					
19	108	56.1	+00.1	S 11 41.5	+00.9	125	31.1	-00.4	S 03 27.3	+01.3	85	37.4	-28.6	S 23 43.5	+08.2					
20	123	56.2	+00.0	S 11 42.4	+00.9	140	30.7	-00.4	S 03 28.6	+01.2	100	08.8	-28.6	S 23 51.7	+08.1					
21	138	56.2	+00.1	S 11 43.3	+00.8	155	30.3	-00.4	S 03 29.8	+01.2	114	40.2	-28.6	S 23 59.8	+08.0					
22	153	56.3	+00.1	S 11 44.1	+00.9	170	29.9	-00.4	S 03 31.0	+01.2	129	11.6	-28.8	S 24 07.8	+07.9					
23	168	56.4	+00.1	S 11 45.0	+00.9	185	29.5	-00.4	S 03 32.2	+01.2	143	42.8	-28.8	S 24 15.7	+07.7					
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT	02	06	10	14	18	22
SD	16°1	16°1	16°1	16°1	16°1	16°1	SD	00°1	00°1	00°1	00°1	00°1	00°1	SD	14°7	14°7	14°7	14°7	14°7	14°7
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	54°0	53°9	53°9	53°9	53°9	53°9
SHA	152°	152°	152°	152°	152°	151°	SHA	169°	169°	169°	168°	168°	168°	SHA	139°	139°	133°	131°	129°	127°
Greenwich Culmination Time: 11:44							Greenwich Culmination Time: 10:37							Greenwich Culmination Time: 13:06						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	183	47.5	+00.1	S 10 21.1	+00.9	201	07.7	-00.4	S 01 36.2	+01.2	200	10.9	-24.4	S 05 48.3	+14.2					
01	198	47.6	+00.1	S 10 22.0	+00.9	216	07.3	-00.4	S 01 37.4	+01.2	214	46.5	-24.5	S 06 02.5	+14.2					
02	213	47.7	+00.1	S 10 22.9	+00.9	231	06.9	-00.4	S 01 38.6	+01.2	229	22.0	-24.5	S 06 16.7	+14.2					
03	228	47.8	+00.1	S 10 23.8	+00.9	246	06.5	-00.4	S 01 39.9	+01.2	243	57.5	-24.6	S 06 30.9	+14.1					
04	243	47.9	+00.1	S 10 24.7	+00.9	261	06.1	-00.4	S 01 41.1	+01.2	258	32.9	-24.5	S 06 45.0	+14.1					
05	258	48.0	+00.1	S 10 25.6	+00.9	276	05.7	-00.4	S 01 42.3	+01.2	273	08.4	-24.6	S 06 59.1	+14.0					
06	273	48.1	+00.1	S 10 26.5	+00.9	291	05.3	-00.4	S 01 43.5	+01.2	287	43.8	-24.5	S 07 13.1	+14.1					
07	288	48.2	+00.1	S 10 27.4	+00.9	306	04.9	-00.4	S 01 44.7	+01.3	302	19.3	-24.6	S 07 27.2	+14.0					
08	303	48.3	+00.1	S 10 28.3	+00.9	321	04.5	-00.4	S 01 46.0	+01.2	316	54.7	-24.6	S 07 41.2	+13.9					
09	318	48.4	+00.1	S 10 29.2	+00.8	336	04.1	-00.4	S 01 47.2	+01.2	331	30.1	-24.6	S 07 55.1	+14.0					
10	333	48.5	+00.1	S 10 30.0	+00.9	351	03.7	-00.4	S 01 48.4	+01.2	346	05.5	-24.7	S 08 09.1	+13.8					
11	348	48.6	+00.1	S 10 30.9	+00.9	6	03.3	-00.4	S 01 49.6	+01.3	0	40.8	-24.6	S 08 22.9	+13.9					
12	3	48.7	+00.1	S 10 31.8	+00.9	21	02.9	-00.4	S 01 50.9	+01.2	15	16.2	-24.7	S 08 36.8	+13.8					
13	18	48.8	+00.1	S 10 32.7	+00.9	36	02.5	-00.4	S 01 52.1	+01.2	29	51.5	-24.7	S 08 50.6	+13.8					
14	33	48.9	+00.1	S 10 33.6	+00.9	51	02.1	-00.4	S 01 53.3	+01.2	44	26.8	-24.7	S 09 04.4	+13.7					
15	48	49.0	+00.1	S 10 34.5	+00.9	66	01.7	-00.4	S 01 54.5	+01.3	59	02.1	-24.8	S 09 18.1	+13.7					
16	63	49.1	+00.1	S 10 35.4	+00.9	81	01.3	-00.4	S 01 55.8	+01.2	73	37.3	-24.8	S 09 31.8	+13.7					
17	78	49.2	+00.1	S 10 36.3	+00.9	96	00.9	-00.4	S 01 57.0	+01.2	88	12.5	-24.8	S 09 45.5	+13.6					
18	93	49.3	+00.2	S 10 37.2	+00.9	111	00.5	-00.4	S 01 58.2	+01.2	102	47.7	-24.8	S 09 59.1	+13.6					
19	108	49.5	+00.1	S 10 38.1	+00.9	126	00.1	-00.4	S 01 59.4	+01.2	117	22.9	-24.9	S 10 12.7	+13.5					
20	123	49.6	+00.1	S 10 39.0	+00.9	140	59.7	-00.4	S 02 00.6	+01.3	131	58.0	-24.9	S 10 26.2	+13.5					
21	138	49.7	+00.1	S 10 39.9	+00.9	155	59.3	-00.4	S 02 01.9	+01.2	146	33.1	-24.9	S 10 39.7	+13.4					
22	153	49.8	+00.1	S 10 40.8	+00.8	170	58.9	-00.4	S 02 03.1	+01.2	161	08.2	-24.9	S 10 53.1	+13.4					
23	168	49.9	+00.1	S 10 41.6	+00.9	185	58.5	-00.4	S 02 04.3	+01.2	175	43.3	-25.0	S 11 06.5	+13.4					
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT	02	06	10	14	18	22
SD	16°1	16°1	16°1	16°1	16°1	16°1	SD	00°1	00°1	00°1	00°1	00°1	00°1	SD	14°9	14°9	14°8	14°8	14°8	14°8
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	54°6	54°6	54°5	54°5	54°4	54°4
SHA	155°	155°	155°	155°	155°	154°	SHA	172°	172°	172°	172°	171°	SHA	171°	169°	167°	165°	163°	162°	
Greenwich Culmination Time: 11:44							Greenwich Culmination Time: 10:35							Greenwich Culmination Time: 10:57						

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 154° 154° 154° 154° 153° 153°
Greenwich Culmination Time: 11:44

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 153° 153° 153° 153° 152° 152°
Greenwich Culmination Time: 11:44

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

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Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

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Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 148° 148° 148° 148° 148° 148°
Greenwich Culmination Time: 11:43

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 16°1 16°1 16°1 16°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 151° 151° 151° 151° 151° 150°
Greenwich Culmination Time: 11:44

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 128° 128° 128° 128° 128° 128°
Greenwich Culmination Time: 13:02

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec values for each hour of the day.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 131° 131° 130° 130° 130° 130°
Greenwich Culmination Time: 13:05

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Table with 12 columns (UT, Sun, Venus, Moon, UT) and 24 rows. Columns 2-5 are Sun, 6-9 are Venus, 10-13 are Moon. Includes data for UT 00-23 and a sub-table for UT 02-22.

Table with 12 columns (UT, Sun, Venus, Moon, UT) and 24 rows. Columns 2-5 are Sun, 6-9 are Venus, 10-13 are Moon. Includes data for UT 00-23 and a sub-table for UT 02-22.

Table with 12 columns (UT, Mars, Jupiter, Saturn, UT) and 24 rows. Columns 2-5 are Mars, 6-9 are Jupiter, 10-13 are Saturn. Includes data for UT 00-23 and a sub-table for UT 02-22.

Table with 12 columns (UT, Mars, Jupiter, Saturn, UT) and 24 rows. Columns 2-5 are Mars, 6-9 are Jupiter, 10-13 are Saturn. Includes data for UT 00-23 and a sub-table for UT 02-22.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 25%				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 03.8	+00.1	S 13 27.8	+00.8	199 38.7	-00.4	S 05 58.7	+01.2	96 40.6	-30.5	S 24 22.2	-08.2	00
01	199 03.9	+00.0	S 13 28.6	+00.8	214 38.3	-00.5	S 05 59.9	+01.2	111 10.1	-30.4	S 24 14.0	-08.4	01
02	214 03.9	+00.1	S 13 29.4	+00.8	229 37.8	-00.4	S 06 01.1	+01.2	125 39.7	-30.3	S 24 05.6	-08.4	02
03	229 04.0	+00.0	S 13 30.2	+00.9	244 37.4	-00.4	S 06 02.3	+01.2	140 09.4	-30.4	S 23 57.2	-08.6	03
04	244 04.0	+00.0	S 13 31.1	+00.8	259 37.0	-00.5	S 06 03.5	+01.2	154 39.0	-30.2	S 23 48.6	-08.7	04
05	259 04.0	+00.1	S 13 31.9	+00.8	274 36.5	-00.4	S 06 04.7	+01.3	169 08.8	-30.3	S 23 39.9	-08.8	05
06	274 04.1	+00.0	S 13 32.7	+00.8	289 36.1	-00.4	S 06 06.0	+01.2	183 38.5	-30.2	S 23 31.1	-09.0	06
07	289 04.1	+00.1	S 13 33.5	+00.9	304 35.7	-00.5	S 06 07.2	+01.1	198 08.3	-30.2	S 23 22.1	-09.0	07
08	304 04.2	+00.0	S 13 34.4	+00.8	319 35.2	-00.4	S 06 08.3	+01.2	212 38.1	-30.1	S 23 13.1	-09.2	08
09	319 04.2	+00.0	S 13 35.2	+00.8	334 34.8	-00.4	S 06 09.5	+01.2	227 08.0	-30.1	S 23 03.9	-09.3	09
10	334 04.2	+00.1	S 13 36.0	+00.8	349 34.4	-00.5	S 06 10.7	+01.2	241 37.9	-30.1	S 22 54.6	-09.5	10
11	349 04.3	+00.0	S 13 36.8	+00.9	4 33.9	-00.4	S 06 11.9	+01.2	256 07.8	-30.0	S 22 45.1	-09.5	11
12	4 04.3	+00.1	S 13 37.7	+00.8	19 33.5	-00.4	S 06 13.1	+01.2	270 37.8	-30.0	S 22 35.6	-09.7	12
13	19 04.4	+00.0	S 13 38.5	+00.8	34 33.1	-00.5	S 06 14.3	+01.2	285 07.8	-29.9	S 22 25.9	-09.8	13
14	34 04.4	+00.0	S 13 39.3	+00.8	49 32.6	-00.4	S 06 15.5	+01.2	299 37.9	-29.9	S 22 16.1	-09.9	14
15	49 04.4	+00.1	S 13 40.1	+00.9	64 32.2	-00.4	S 06 16.7	+01.2	314 08.0	-29.9	S 22 06.2	-10.0	15
16	64 04.5	+00.0	S 13 41.0	+00.8	79 31.8	-00.5	S 06 17.9	+01.2	328 38.1	-29.8	S 21 56.2	-10.2	16
17	79 04.5	+00.0	S 13 41.8	+00.8	94 31.3	-00.4	S 06 19.1	+01.2	343 08.3	-29.8	S 21 46.0	-10.2	17
18	94 04.5	+00.1	S 13 42.6	+00.8	109 30.9	-00.4	S 06 20.3	+01.2	357 38.5	-29.7	S 21 35.8	-10.4	18
19	109 04.6	+00.0	S 13 43.4	+00.8	124 30.5	-00.5	S 06 21.5	+01.2	12 08.8	-29.8	S 21 25.4	-10.5	19
20	124 04.6	+00.1	S 13 44.2	+00.9	139 30.0	-00.4	S 06 22.7	+01.2	26 39.0	-29.6	S 21 14.9	-10.6	20
21	139 04.7	+00.0	S 13 45.1	+00.8	154 29.6	-00.5	S 06 23.9	+01.2	41 09.4	-29.7	S 21 04.3	-10.7	21
22	154 04.7	+00.0	S 13 45.9	+00.8	169 29.1	-00.4	S 06 25.1	+01.2	55 39.7	-29.6	S 20 53.6	-10.9	22
23	169 04.7	+00.1	S 13 46.7	+00.8	184 28.7	-00.4	S 06 26.3	+01.2	70 10.1	-29.5	S 20 42.7	-10.9	23
UT 02 06 10 14 18 22	SD 16°1 16°1 16°1 16°1 16°1 16°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	UT 02 06 10 14 18 22	SD 15°2 15°2 15°2 15°3 15°3 15°3	HP 55°6 55°7 55°9 56°0 56°1 56°3	UT 02 06 10 14 18 22	SD 16°1 16°1 16°1 16°1 16°1 16°1	SD 00°1 00°1 00°1 00°1 00°1 00°1					
HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 55°6 55°7 55°9 56°0 56°1 56°3	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 55°6 55°7 55°9 56°0 56°1 56°3	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 55°6 55°7 55°9 56°0 56°1 56°3					
SHA 146° 146° 146° 146° 146° 146°	SHA 162° 162° 162° 161° 161° 161°	SHA 146° 146° 146° 146° 146° 146°	SHA 162° 162° 162° 161° 161° 161°	SHA 146° 146° 146° 146° 146° 146°	SHA 162° 162° 162° 161° 161° 161°	SHA 146° 146° 146° 146° 146° 146°	SHA 162° 162° 162° 161° 161° 161°	SHA 146° 146° 146° 146° 146° 146°					
Greenwich Culmination Time: 11:43		Greenwich Culmination Time: 10:41		Greenwich Culmination Time: 18:09		Greenwich Culmination Time: 11:43		Greenwich Culmination Time: 10:42		Greenwich Culmination Time: 18:58			

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	164 40.7	+00.7	S 19 27.0	+00.4	280 47.2	+02.3	N 21 14.1	+00.0	40 19.4	+02.6	S 03 53.0	+00.0	00
01	179 41.4	+00.6	S 19 27.4	+00.5	295 49.5	+02.4	N 21 14.1	+00.0	55 22.0	+02.6	S 03 53.0	+00.0	01
02	194 42.0	+00.6	S 19 27.9	+00.4	310 51.9	+02.3	N 21 14.1	+00.0	70 24.6	+02.6	S 03 53.0	+00.1	02
03	209 42.6	+00.7	S 19 28.3	+00.5	325 54.2	+02.3	N 21 14.1	+00.0	85 27.2	+02.6	S 03 53.1	+00.0	03
04	224 43.3	+00.6	S 19 28.8	+00.4	340 56.5	+02.4	N 21 14.1	+00.0	100 29.8	+02.5	S 03 53.1	+00.1	04
05	239 43.9	+00.7	S 19 29.2	+00.5	355 58.9	+02.3	N 21 14.1	+00.0	115 32.3	+02.6	S 03 53.2	+00.0	05
06	254 44.6	+00.6	S 19 29.7	+00.4	11 01.2	+02.4	N 21 14.1	-00.1	130 34.9	+02.6	S 03 53.2	+00.1	06
07	269 45.2	+00.7	S 19 30.1	+00.5	26 03.6	+02.3	N 21 14.0	+00.0	145 37.5	+02.6	S 03 53.3	+00.0	07
08	284 45.9	+00.6	S 19 30.6	+00.4	41 05.9	+02.4	N 21 14.0	+00.0	160 40.1	+02.6	S 03 53.3	+00.1	08
09	299 46.5	+00.6	S 19 31.0	+00.5	56 08.3	+02.3	N 21 14.0	+00.0	175 42.7	+02.5	S 03 53.4	+00.0	09
10	314 47.1	+00.7	S 19 31.5	+00.4	71 10.6	+02.4	N 21 14.0	+00.0	190 45.2	+02.6	S 03 53.4	+00.0	10
11	329 47.8	+00.6	S 19 31.9	+00.4	86 13.0	+02.3	N 21 14.0	+00.0	205 47.8	+02.6	S 03 53.4	+00.1	11
12	344 48.4	+00.7	S 19 32.3	+00.5	101 15.3	+02.4	N 21 14.0	+00.0	220 50.4	+02.6	S 03 53.5	+00.0	12
13	359 49.1	+00.6	S 19 32.8	+00.4	116 17.7	+02.3	N 21 14.0	+00.0	235 53.0	+02.6	S 03 53.5	+00.1	13
14	14 49.7	+00.6	S 19 33.2	+00.5	131 20.0	+02.4	N 21 14.0	-00.1	250 55.6	+02.5	S 03 53.6	+00.0	14
15	29 50.3	+00.7	S 19 33.7	+00.4	146 22.4	+02.3	N 21 13.9	+00.0	265 58.1	+02.6	S 03 53.6	+00.1	15
16	44 51.0	+00.6	S 19 34.1	+00.5	161 24.7	+02.4	N 21 13.9	+00.0	281 00.7	+02.6	S 03 53.7	+00.0	16
17	59 51.6	+00.7	S 19 34.6	+00.4	176 27.1	+02.3	N 21 13.9	+00.0	296 03.3	+02.6	S 03 53.7	+00.0	17
18	74 52.3	+00.6	S 19 35.0	+00.5	191 29.4	+02.4	N 21 13.9	+00.0	311 05.9	+02.5	S 03 53.7	+00.1	18
19	89 52.9	+00.6	S 19 35.5	+00.4	206 31.8	+02.4	N 21 13.9	+00.0	326 08.4	+02.6	S 03 53.8	+00.0	19
20	104 53.5	+00.7	S 19 35.9	+00.5	221 34.2	+02.3	N 21 13.9	+00.0	341 11.0	+02.6	S 03 53.8	+00.1	20
21	119 54.2	+00.6	S 19 36.4	+00.4	236 36.5	+02.3	N 21 13.9	-00.1	356 13.6	+02.6	S 03 53.9	+00.0	21
22	134 54.8	+00.6	S 19 36.8	+00.4	251 38.9	+02.3	N 21 13.8	+00.0	11 16.2	+02.6	S 03 53.9	+00.1	22
23	149 55.4	+00.7	S 19 37.2	+00.5	266 41.2	+02.4	N 21 13.8	+00.0	26 18.8	+02.5	S 03 54.0	+00.0	23
UT 02 06 10 14 18 22	SD 00°0 00°0 00°0 00°0 00°0 00°0	SD 00°3 00°3 00°3 00°3 00°3 00°3	UT 02 06 10 14 18 22	SD 00°0 00°0 00°0 00°0 00°0 00°0	SD 00°0 00°0 00°0 00°0 00°0 00°0	UT 02 06 10 14 18 22	SD 00°0 00°0 00°0 00°0 00°0 00°0	SD 00°3 00°3 00°3 00°3 00°3 00°3					
HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°0 00°0 00°0 00°0 00°0 00°0	HP 00°0 00°0 00°0 00°0 00°0 00°0	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°0 00°0 00°0 00°0 00°0 00°0	HP 00°0 00°0 00°0 00°0 00°0 00°0	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°0 00°0 00°0 00°0 00°0 00°0	HP 00°3 00°3 00°3 00°3 00°3 00°3					
SHA 127° 127° 127° 127° 127° 126°	SHA 243° 243° 243° 243° 243° 243°	SHA 127° 127° 127° 127° 127° 126°	SHA 243° 243° 243° 243° 243° 243°	SHA 126° 126° 126° 126° 126° 126°	SHA 243° 243° 243° 243° 243° 243°	SHA 127° 127° 127° 127° 127° 126°	SHA 243° 243° 243° 243° 243° 243°	SHA 126° 126° 126° 126° 126° 126°					
Greenwich Culmination Time: 13:00		Greenwich Culmination Time: 05:16		Greenwich Culmination Time: 21:15		Greenwich Culmination Time: 12:59		Greenwich Culmination Time: 05:12		Greenwich Culmination Time: 21:10			

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 29%				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 04.8	+00.0	S 13 47.5	+00.8	199 28.3	-00.5	S 06 27.5	+01.2	84 40.6	-29.5	S 20 31.8	-11.1	00
01	199 04.8	+00.0	S 13 48.3	+00.9	214 27.8	-00.4	S 06 28.7	+01.2	99 11.1	-29.5	S 20 20.7	-11.1	01
02	214 04.8	+00.1	S 13 49.2	+00.8	229 27.4	-00.4	S 06 29.9	+01.2	113 41.6	-29.5	S 20 09.6	-11.3	02
03	229 04.9	+00.0	S 13 50.0	+00.8	244 27.0	-00.5	S 06 31.1	+01.2	128 12.1	-29.4	S 19 58.3	-11.4	03
04	244 04.9	+00.0	S 13 50.8	+00.8	259 26.5	-00.4	S 06 32.3	+01.2	142 42.7	-29.4	S 19 46.9	-11.5	04
05	259 04.9	+00.1	S 13 51.6	+00.8	274 26.1	-00.5	S 06 33.5	+01.2	157 13.3	-29.3	S 19 35.4	-11.6	05
06	274 05.0	+00.0	S 13 52.4	+00.8	289 25.6	-00.4	S 06 34.7	+01.2	171 44.0	-29.3	S 19 23.8	-11.7	06
07	289 05.0	+00.0	S 13 53.2	+00.9	304 25.2	-00.4	S 06 35.9	+01.2	186 14.7	-29.3	S 19 12.1	-11.8	07
08	304 05.0	+00.1	S 13 54.1	+00.8	319 24.8	-00.5	S 06 37.1	+01.2	200 45.4	-29.2	S 19 00.3	-12.0	08
09	319 05.1	+00.0	S 13 54.9	+00.8	334 24.3	-00.4	S 06 38.3	+01.2	215 16.2	-29.2	S 18 48.3	-12.0	09
10	334 05.1	+00.0	S 13 55.7	+00.8	349 23.9	-00.5	S 06 39.5	+01.2	229 47.0	-29.2	S 18 36.3	-12.1	10
11	349 05.1	+00.0	S 13 56.5	+00.8	4 23.4	-00.4	S 06 40.7	+01.2	244 17.8	-29.1	S 18 24.2	-12.3	11
12	4 05.1	+00.1	S 13 57.3	+00.8	19 23.0	-00.4	S 06 41.9	+01.2	258 48.7	-29.2	S 18 11.9	-12.3	12
13	19 05.2	+00.0	S 13 58.1	+00.8	34 22.6	-00.5	S 06 43.1	+01.2	273 19.5	-29.0	S 17 59.6	-12.4	13
14	34 05.2	+00.0</											

Table with columns for UT, Sun, Venus, Moon (A: 45%), and UT. Rows 00-23 show celestial data for each day. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon (A: 35%), and UT. Rows 00-23 show celestial data for each day. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial data for each day. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial data for each day. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

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Warning: This page has been generated by a computer program. Complex computer programs usually have bugs and may produce wrong data. The data on this page is believed to be accurate but no warranty is given for its correctness. Use it only for training and exercising!

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon for the date 2025 November 8. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon for the date 2025 November 5. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn for the date 2025 November 8. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn for the date 2025 November 5. Includes sub-tables for UT 02-22 and Greenwich Culmination Time.

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22 SD 16°1 16°1 16°1 16°1 16°1 16°1 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 139° 138° 138° 138° 138° 138° Greenwich Culmination Time: 11:43

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22 SD 00°0 00°0 00°0 00°0 00°0 00°0 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 121° 121° 121° 121° 121° 121° Greenwich Culmination Time: 12:52

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

UT 02 06 10 14 18 22 SD 16°1 16°1 16°1 16°1 16°1 16°1 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 138° 137° 137° 137° 137° 137° Greenwich Culmination Time: 11:43

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

UT 02 06 10 14 18 22 SD 00°0 00°0 00°0 00°0 00°0 00°0 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 120° 120° 120° 120° 120° 120° Greenwich Culmination Time: 12:51

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Sun, Venus, and Moon.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes celestial coordinates and magnitudes for Mars, Jupiter, and Saturn.

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UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	184	01.7	+00.0	S 17 08.9	+00.7	197	21.9	-00.5	S 11 32.8	+01.1	297	18.0	-36.0	N 26 09.9	-07.1	00
01	199	01.7	-00.1	S 17 09.6	+00.7	212	21.4	-00.6	S 11 33.9	+01.1	311	42.0	-35.8	N 26 02.8	-07.2	01
02	214	01.6	+00.0	S 17 10.3	+00.7	227	20.8	-00.5	S 11 35.0	+01.1	326	06.2	-35.7	N 25 55.6	-07.4	02
03	229	01.6	-00.1	S 17 11.0	+00.7	242	20.3	-00.5	S 11 36.1	+01.1	340	30.5	-35.6	N 25 48.2	-07.6	03
04	244	01.5	-00.1	S 17 11.7	+00.7	257	19.8	-00.6	S 11 37.2	+01.2	354	54.9	-35.4	N 25 40.6	-07.7	04
05	259	01.4	+00.0	S 17 12.4	+00.7	272	19.2	-00.5	S 11 38.4	+01.1	9	19.5	-35.3	N 25 32.9	-07.8	05
06	274	01.4	-00.1	S 17 13.1	+00.7	287	18.7	-00.5	S 11 39.5	+01.1	23	44.2	-35.2	N 25 25.1	-08.0	06
07	289	01.3	+00.0	S 17 13.8	+00.7	302	18.2	-00.5	S 11 40.6	+01.1	38	09.0	-35.0	N 25 17.1	-08.2	07
08	304	01.3	-00.1	S 17 14.5	+00.7	317	17.7	-00.6	S 11 41.7	+01.1	52	34.0	-34.9	N 25 08.9	-08.2	08
09	319	01.2	-00.1	S 17 15.2	+00.7	332	17.1	-00.5	S 11 42.8	+01.1	66	59.1	-34.8	N 25 00.7	-08.5	09
10	334	01.1	+00.0	S 17 15.9	+00.7	347	16.6	-00.5	S 11 43.9	+01.1	81	24.3	-34.6	N 24 52.2	-08.6	10
11	349	01.1	-00.1	S 17 16.6	+00.7	2	16.1	-00.6	S 11 45.0	+01.1	95	49.7	-34.5	N 24 43.6	-08.7	11
12	4	01.0	-00.1	S 17 17.3	+00.7	17	15.5	-00.5	S 11 46.1	+01.1	110	15.2	-34.3	N 24 34.9	-08.8	12
13	19	00.9	+00.0	S 17 18.0	+00.7	32	15.0	-00.5	S 11 47.2	+01.1	124	40.9	-34.3	N 24 26.1	-09.0	13
14	34	00.9	-00.1	S 17 18.7	+00.7	47	14.5	-00.6	S 11 48.3	+01.1	139	06.6	-34.0	N 24 17.1	-09.1	14
15	49	00.8	-00.1	S 17 19.4	+00.7	62	13.9	-00.5	S 11 49.4	+01.1	153	32.6	-34.0	N 24 08.0	-09.3	15
16	64	00.7	+00.0	S 17 20.1	+00.7	77	13.4	-00.5	S 11 50.5	+01.1	167	58.6	-33.8	N 23 58.7	-09.4	16
17	79	00.7	-00.1	S 17 20.8	+00.7	92	12.9	-00.6	S 11 51.6	+01.1	182	24.8	-33.6	N 23 49.3	-09.5	17
18	94	00.6	-00.1	S 17 21.5	+00.7	107	12.3	-00.5	S 11 52.7	+01.1	196	51.2	-33.6	N 23 39.8	-09.6	18
19	109	00.5	+00.0	S 17 22.2	+00.7	122	11.8	-00.5	S 11 53.8	+01.1	211	17.6	-33.4	N 23 30.2	-09.8	19
20	124	00.5	-00.1	S 17 22.9	+00.6	137	11.3	-00.6	S 11 54.9	+01.0	225	44.2	-33.2	N 23 20.4	-09.9	20
21	139	00.4	-00.1	S 17 23.5	+00.7	152	10.7	-00.5	S 11 55.9	+01.1	240	11.0	-33.1	N 23 10.5	-10.0	21
22	154	00.3	+00.0	S 17 24.2	+00.7	167	10.2	-00.5	S 11 57.0	+01.1	254	37.9	-33.0	N 23 00.5	-10.1	22
23	169	00.3	-00.1	S 17 24.9	+00.7	182	09.7	-00.6	S 11 58.1	+01.1	269	04.9	-32.9	N 22 50.4	-10.3	23

UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT	02	06	10	14	18	22
SD	16°1	16°2	16°2	16°2	16°2	16°2	SD	00°1	00°1	00°1	00°1	00°1	00°1	SD	16°1	16°0	16°0	16°0	15°9	15°9
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	59°0	58°9	58°7	58°6	58°4	58°3	HP	59°0	58°9	58°7	58°6	58°4	58°3
SHA	135°	134°	134°	134°	134°	134°	SHA	148°	148°	147°	147°	147°	147°	SHA	247°	247°	242°	239°	237°	234°
Greenwich Culmination Time: 11:43							Greenwich Culmination Time: 10:50							Greenwich Culmination Time: 04:21						

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	167	34.8	+00.5	S 21 24.1	+00.4	292	17.4	+02.4	N 21 12.5	+00.0	52	36.9	+02.6	S 04 02.8	+00.0	00
01	182	35.3	+00.6	S 21 24.5	+00.4	307	19.8	+02.5	N 21 12.5	+00.0	67	39.5	+02.5	S 04 02.8	+00.1	01
02	197	35.9	+00.5	S 21 24.9	+00.3	322	22.3	+02.4	N 21 12.5	+00.0	82	42.0	+02.5	S 04 02.9	+00.0	02
03	212	36.4	+00.6	S 21 25.2	+00.4	337	24.7	+02.5	N 21 12.5	+00.0	97	44.5	+02.6	S 04 02.9	+00.0	03
04	227	37.0	+00.6	S 21 25.6	+00.4	352	27.2	+02.4	N 21 12.5	+00.0	112	47.1	+02.5	S 04 02.9	+00.0	04
05	242	37.6	+00.5	S 21 26.0	+00.3	7	29.6	+02.5	N 21 12.5	+00.0	127	49.6	+02.6	S 04 02.9	+00.1	05
06	257	38.1	+00.6	S 21 26.3	+00.4	22	32.1	+02.4	N 21 12.5	+00.1	142	52.2	+02.5	S 04 03.0	+00.0	06
07	272	38.7	+00.6	S 21 26.7	+00.3	37	34.5	+02.5	N 21 12.6	+00.0	157	54.7	+02.5	S 04 03.0	+00.0	07
08	287	39.3	+00.5	S 21 27.0	+00.4	52	37.0	+02.4	N 21 12.6	+00.0	172	57.2	+02.6	S 04 03.0	+00.0	08
09	302	39.8	+00.6	S 21 27.4	+00.3	67	39.4	+02.5	N 21 12.6	+00.0	187	59.8	+02.5	S 04 03.0	+00.1	09
10	317	40.4	+00.6	S 21 27.7	+00.4	82	41.9	+02.4	N 21 12.6	+00.0	203	02.3	+02.5	S 04 03.1	+00.0	10
11	332	41.0	+00.5	S 21 28.1	+00.4	97	44.3	+02.5	N 21 12.6	+00.0	218	04.8	+02.6	S 04 03.1	+00.0	11
12	347	41.5	+00.6	S 21 28.5	+00.3	112	46.8	+02.4	N 21 12.6	+00.0	233	07.4	+02.5	S 04 03.1	+00.0	12
13	2	42.1	+00.5	S 21 28.8	+00.4	127	49.2	+02.5	N 21 12.6	+00.0	248	09.9	+02.6	S 04 03.1	+00.1	13
14	17	42.6	+00.6	S 21 29.2	+00.3	142	51.7	+02.5	N 21 12.6	+00.0	263	12.5	+02.5	S 04 03.2	+00.0	14
15	32	43.2	+00.6	S 21 29.5	+00.4	157	54.2	+02.4	N 21 12.6	+00.0	278	15.0	+02.5	S 04 03.2	+00.0	15
16	47	43.8	+00.5	S 21 29.9	+00.3	172	56.6	+02.5	N 21 12.6	+00.0	293	17.5	+02.6	S 04 03.2	+00.0	16
17	62	44.3	+00.6	S 21 30.2	+00.4	187	59.1	+02.4	N 21 12.6	+00.0	308	20.1	+02.5	S 04 03.2	+00.0	17
18	77	44.9	+00.5	S 21 30.6	+00.4	203	01.5	+02.5	N 21 12.6	+00.0	323	22.6	+02.5	S 04 03.2	+00.1	18
19	92	45.4	+00.6	S 21 31.0	+00.3	218	04.0	+02.4	N 21 12.6	+00.0	338	25.1	+02.6	S 04 03.3	+00.0	19
20	107	46.0	+00.6	S 21 31.3	+00.4	233	06.4	+02.5	N 21 12.6	+00.0	353	27.7	+02.5	S 04 03.3	+00.0	20
21	122	46.6	+00.5	S 21 31.7	+00.3	248	08.9	+02.4	N 21 12.6	+00.0	8	30.2	+02.6	S 04 03.3	+00.0	21
22	137	47.1	+00.6	S 21 32.0	+00.4	263	11.3	+02.5	N 21 12.6	+00.0	23	32.8	+02.5	S 04 03.3	+00.1	22
23	152	47.7	+00.5	S 21 32.4	+00.3	278	13.8	+02.4	N 21 12.6	+00.0	38	35.3	+02.5	S 04 03.4	+00.0	23

UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT	02	06	10	14	18	22
SD	00°0	00°0	00°0	00°0	00°0	00°0	SD	00°3	00°3	00°3	00°3	00°3	00°3	SD	00°2	00°2	00°2	00°2	00°2	00°2
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°0	00°0	00°0	00°0	00°0	00°0	HP	00°0	00°0	00°0	00°0	00°0	00°0
SHA	118°	118°	118°	118°	117°		SHA	243°	243°	243°	243°	243°	243°	SHA	003°	003°	003°	003°	003°	003°
Greenwich Culmination Time: 12:49							Greenwich Culmination Time: 04:30							Greenwich Culmination Time: 20:26						

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	184	00.2	-00.1	S 17 25.6	+00.7	197	09.1	-00.5	S 11 59.2	+01.1	283	32.0	-32.7	N 22 40.1	-10.3	00
01	199	00.1	+00.0	S 17 26.3	+00.7	212	08.6	-00.6	S 12 00.3	+01.1	297	59.3	-32.5	N 22 29.8	-10.5	01
02	214	00.1	-00.1	S 17 27.0	+00.7	227	08.0	-00.5	S 12 01.4	+01.1	312	26.8	-32.5	N 22 19.3	-10.6	02
03	229	00.0	-00.1	S 17 27.7	+00.7	242	07.5	-00.5	S 12 02.5	+01.1	326	54.3	-32.3	N 22 08.7	-10.7	03
04	243	59.9	+00.0	S 17 28.4	+00.7	257	07.0	-00.6	S 12 03.6	+01.1	341	22.0	-32.1	N 21 58.0	-10.7	04
05	258	59.9	-00.1	S 17 29.1	+00.6	272	06.4	-00.5	S 12 04.7	+01.1	355	49.9	-31.9	N 21 47.3	-10.9	05
06	273	59.8	-00.1	S 17 29.7	+00.7	287	05.9	-00.6	S 12 05.8	+01.1	10	17.8	-31.9	N 21 36.4	-11.1	06
07	288	59.7	+00.0	S 17 30.4	+00.7	302	05.3	-00.5	S 12 06.9	+01.1	24	45.9	-31.7	N 21 25.3	-11.1	07
08	303	59.7	-00.1	S 17 31.1	+00.7	317	04.8	-00.5	S 12 08.0	+01.1	39	14.2	-31.7	N 21 14.2	-11.2	08
09	318	59.6	-00.1	S 17 31.8	+00.7	332	04.3	-00.6	S 12 09.1	+01.1	53	42.5	-31.5	N 21 03.0	-11.3	09
10	333	59.5	-00.1	S 17 32.5	+00.7	347	03.7	-00.5	S 12 10.2	+01.0	68	11.0	-31.3	N 20 51.7	-11.4	10
11	348	59.4	+00.0	S 17 33.2	+00.7	2	03.2	-00.6	S 12 11.2	+01.1	82	39.7	-31.3	N 20 40.3	-11.5	11
12	3	59.4	-00.1	S 17 33.9	+00.6	17	02.6	-00.5	S 12 12.3	+01.1	97	08.4	-31.1	N 20 28.8	-11.5	12
13	18	59.3	-00.1	S 17 34.5	+00.6	32	02.1	-00.5	S 12 13.4	+01.1	111	37.3	-31.0	N 2		

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 49.3	-00.1	S 18 44.5	+00.6	196 01.4	-00.6	S 14 06.8	+01.0	229 25.9	-24.3	S 04 32.0	+14.2	00
01	198 49.2	-00.1	S 18 45.1	+00.6	211 00.8	-00.6	S 14 07.8	+01.0	244 01.6	-24.3	S 04 46.2	+14.2	01
02	213 49.1	-00.1	S 18 45.7	+00.7	226 00.2	-00.6	S 14 08.8	+01.0	258 37.3	-24.3	S 05 00.4	+14.1	02
03	228 49.0	-00.2	S 18 46.4	+00.6	240 59.6	-00.6	S 14 09.8	+01.0	273 13.0	-24.4	S 05 14.5	+14.2	03
04	243 48.8	-00.1	S 18 47.0	+00.6	255 59.0	-00.6	S 14 10.9	+01.0	287 48.6	-24.3	S 05 28.7	+14.1	04
05	258 48.7	-00.1	S 18 47.6	+00.6	270 58.4	-00.6	S 14 11.9	+01.0	302 24.3	-24.4	S 05 42.8	+14.0	05
06	273 48.6	-00.1	S 18 48.2	+00.6	285 57.8	-00.5	S 14 12.9	+01.0	316 59.9	-24.3	S 05 56.8	+14.1	06
07	288 48.5	-00.1	S 18 48.8	+00.7	300 57.3	-00.6	S 14 13.9	+01.1	331 35.6	-24.4	S 06 10.9	+14.0	07
08	303 48.4	-00.1	S 18 49.5	+00.6	315 56.7	-00.6	S 14 15.0	+01.0	346 11.2	-24.4	S 06 24.9	+14.0	08
09	318 48.3	-00.2	S 18 50.1	+00.6	330 56.1	-00.6	S 14 16.0	+01.0	0 46.8	-24.4	S 06 38.9	+13.9	09
10	333 48.1	-00.1	S 18 50.7	+00.6	345 55.5	-00.6	S 14 17.0	+01.0	15 22.4	-24.4	S 06 52.8	+14.0	10
11	348 48.0	-00.1	S 18 51.3	+00.6	0 54.9	-00.6	S 14 18.0	+01.1	29 58.0	-24.4	S 07 06.8	+13.9	11
12	3 47.9	-00.1	S 18 51.9	+00.6	15 54.3	-00.6	S 14 19.1	+01.0	44 33.6	-24.5	S 07 20.7	+13.8	12
13	18 47.8	-00.1	S 18 52.5	+00.7	30 53.7	-00.6	S 14 20.1	+01.0	59 09.1	-24.4	S 07 34.5	+13.8	13
14	33 47.7	-00.1	S 18 53.2	+00.6	45 53.1	-00.6	S 14 21.1	+01.0	73 44.7	-24.5	S 07 48.3	+13.8	14
15	48 47.6	-00.2	S 18 53.8	+00.6	60 52.5	-00.6	S 14 22.1	+01.0	88 20.2	-24.5	S 08 02.1	+13.8	15
16	63 47.4	-00.1	S 18 54.4	+00.6	75 51.9	-00.6	S 14 23.1	+01.1	102 55.7	-24.5	S 08 15.9	+13.7	16
17	78 47.3	-00.1	S 18 55.0	+00.6	90 51.3	-00.6	S 14 24.2	+01.0	117 31.2	-24.6	S 08 29.6	+13.7	17
18	93 47.2	-00.1	S 18 55.6	+00.6	105 50.7	-00.6	S 14 25.2	+01.0	132 06.6	-24.5	S 08 43.3	+13.6	18
19	108 47.1	-00.1	S 18 56.2	+00.6	120 50.1	-00.6	S 14 26.2	+01.0	146 42.1	-24.6	S 08 56.9	+13.6	19
20	123 47.0	-00.2	S 18 56.8	+00.7	135 49.5	-00.6	S 14 27.2	+01.0	161 17.5	-24.6	S 09 10.5	+13.6	20
21	138 46.8	-00.1	S 18 57.5	+00.6	150 48.9	-00.6	S 14 28.2	+01.0	175 52.9	-24.7	S 09 24.1	+13.5	21
22	153 46.7	-00.1	S 18 58.1	+00.6	165 48.3	-00.6	S 14 29.2	+01.1	190 28.2	-24.6	S 09 37.6	+13.5	22
23	168 46.6	-00.1	S 18 58.7	+00.6	180 47.7	-00.6	S 14 30.3	+01.0	205 03.6	-24.7	S 09 51.1	+13.4	23
<p>UT 02 06 10 14 18 22 SD 16°2 16°2 16°2 16°2 16°2 16°2 SD 00°1 00°1 00°1 00°1 00°1 00°1 HP 00°1 00°1 00°1 00°1 00°1 00°1 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 128° 128° 128° 128° 128° 128° SHA 141° 140° 140° 140° 140° 140° Greenwich Culmination Time: 11:44 Greenwich Culmination Time: 10:56</p>													

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 56.5	-00.1	S 17 58.1	+00.7	196 42.8	-00.5	S 12 51.2	+01.1	259 41.9	-27.2	N 12 45.9	-13.8	00
01	198 56.4	-00.1	S 17 58.8	+00.6	211 42.3	-00.6	S 12 52.3	+01.0	274 14.7	-27.1	N 12 32.1	-14.0	01
02	213 56.3	-00.1	S 17 59.4	+00.7	226 41.7	-00.6	S 12 53.3	+01.1	288 47.6	-27.0	N 12 18.1	-13.9	02
03	228 56.2	-00.1	S 18 00.1	+00.7	241 41.1	-00.5	S 12 54.4	+01.1	303 20.6	-26.9	N 12 04.2	-14.0	03
04	243 56.1	+00.0	S 18 00.8	+00.6	256 40.6	-00.6	S 12 55.5	+01.0	317 53.7	-26.9	N 11 50.2	-14.0	04
05	258 56.1	-00.1	S 18 01.4	+00.7	271 40.0	-00.5	S 12 56.5	+01.1	332 26.8	-26.7	N 11 36.2	-14.1	05
06	273 56.0	-00.1	S 18 02.1	+00.6	286 39.5	-00.6	S 12 57.6	+01.1	347 00.1	-26.7	N 11 22.1	-14.1	06
07	288 55.9	-00.1	S 18 02.7	+00.7	301 38.9	-00.6	S 12 58.7	+01.0	1 33.4	-26.6	N 11 08.0	-14.1	07
08	303 55.8	-00.1	S 18 03.4	+00.7	316 38.3	-00.5	S 12 59.7	+01.1	16 06.8	-26.6	N 10 53.9	-14.2	08
09	318 55.7	-00.1	S 18 04.1	+00.6	331 37.8	-00.6	S 13 00.8	+01.1	30 40.2	-26.4	N 10 39.7	-14.2	09
10	333 55.6	-00.1	S 18 04.7	+00.7	346 37.2	-00.6	S 13 01.9	+01.0	45 13.8	-26.4	N 10 25.5	-14.2	10
11	348 55.5	-00.1	S 18 05.4	+00.6	1 36.6	-00.5	S 13 02.9	+01.1	59 47.4	-26.3	N 10 11.3	-14.2	11
12	3 55.4	-00.1	S 18 06.0	+00.7	16 36.1	-00.6	S 13 04.0	+01.0	74 21.1	-26.2	N 09 57.1	-14.3	12
13	18 55.3	-00.1	S 18 06.7	+00.7	31 35.5	-00.5	S 13 05.0	+01.0	88 54.9	-26.2	N 09 42.8	-14.3	13
14	33 55.2	+00.0	S 18 07.4	+00.6	46 35.0	-00.6	S 13 06.1	+01.0	103 28.7	-26.1	N 09 28.5	-14.3	14
15	48 55.2	-00.1	S 18 08.0	+00.7	61 34.4	-00.6	S 13 07.2	+01.1	118 02.6	-26.0	N 09 14.2	-14.3	15
16	63 55.1	-00.1	S 18 08.7	+00.6	76 33.8	-00.5	S 13 08.2	+01.1	132 36.6	-26.0	N 08 59.9	-14.4	16
17	78 55.0	-00.1	S 18 09.3	+00.7	91 33.3	-00.6	S 13 09.3	+01.1	147 10.6	-25.9	N 08 45.5	-14.4	17
18	93 54.9	-00.1	S 18 10.0	+00.6	106 32.7	-00.6	S 13 10.4	+01.0	161 44.7	-25.8	N 08 31.1	-14.4	18
19	108 54.8	-00.1	S 18 10.6	+00.7	121 32.1	-00.5	S 13 11.4	+01.1	176 18.9	-25.8	N 08 16.7	-14.4	19
20	123 54.7	-00.1	S 18 11.3	+00.6	136 31.6	-00.6	S 13 12.5	+01.0	190 53.1	-25.7	N 08 02.3	-14.4	20
21	138 54.6	-00.1	S 18 11.9	+00.7	151 31.0	-00.6	S 13 13.5	+01.0	205 27.4	-25.6	N 07 47.9	-14.5	21
22	153 54.5	-00.1	S 18 12.6	+00.6	166 30.4	-00.5	S 13 14.6	+01.0	220 01.8	-25.6	N 07 33.4	-14.5	22
23	168 54.4	-00.1	S 18 13.2	+00.7	181 29.9	-00.6	S 13 15.6	+01.1	234 36.2	-25.6	N 07 18.9	-14.4	23
<p>UT 02 06 10 14 18 22 SD 16°2 16°2 16°2 16°2 16°2 16°2 SD 00°1 00°1 00°1 00°1 00°1 00°1 HP 00°1 00°1 00°1 00°1 00°1 00°1 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 131° 131° 131° 131° 131° 131° SHA 144° 144° 144° 144° 143° 143° Greenwich Culmination Time: 11:44 Greenwich Culmination Time: 10:53</p>													

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	168 53.5	+00.5	S 22 12.7	+00.3	298 13.7	+02.5	N 21 13.7	+00.0	58 41.0	+02.5	S 04 05.6	+00.0	00
01	183 54.0	+00.5	S 22 13.0	+00.3	313 16.2	+02.5	N 21 13.7	+00.0	73 43.5	+02.5	S 04 05.6	+00.0	01
02	198 54.5	+00.5	S 22 13.3	+00.3	328 18.7	+02.5	N 21 13.7	+00.0	88 46.0	+02.6	S 04 05.6	+00.0	02
03	213 55.0	+00.6	S 22 13.6	+00.3	343 21.2	+02.5	N 21 13.7	+00.0	103 48.6	+02.5	S 04 05.6	+00.0	03
04	228 55.6	+00.5	S 22 13.9	+00.3	358 23.7	+02.5	N 21 13.7	+00.0	118 51.1	+02.5	S 04 05.6	+00.0	04
05	243 56.1	+00.5	S 22 14.2	+00.3	13 26.2	+02.5	N 21 13.7	+00.0	133 53.6	+02.5	S 04 05.6	+00.1	05
06	258 56.6	+00.5	S 22 14.5	+00.4	28 28.7	+02.5	N 21 13.7	+00.1	148 56.1	+02.5	S 04 05.7	+00.0	06
07	273 57.1	+00.6	S 22 14.9	+00.3	43 31.2	+02.5	N 21 13.8	+00.0	163 58.6	+02.5	S 04 05.7	+00.0	07
08	288 57.7	+00.5	S 22 15.2	+00.3	58 33.7	+02.5	N 21 13.8	+00.0	179 01.1	+02.5	S 04 05.7	+00.0	08
09	303 58.2	+00.5	S 22 15.5	+00.3	73 36.2	+02.5	N 21 13.8	+00.0	194 03.6	+02.6	S 04 05.7	+00.0	09
10	318 58.7	+00.6	S 22 15.8	+00.3	88 38.7	+02.5	N 21 13.8	+00.0	209 06.2	+02.5	S 04 05.7	+00.0	10
11	333 59.3	+00.5	S 22 16.1	+00.3	103 41.2	+02.6	N 21 13.8	+00.0	224 08.7	+02.5	S 04 05.7	+00.0	11
12	348 59.8	+00.5	S 22 16.4	+00.3	118 43.8	+02.5	N 21 13.8	+00.0	239 11.2	+02.5	S 04 05.7	+00.0	12
13	4 00.3	+00.5	S 22 16.7	+00.3	133 46.3	+02.5	N 21 13.8	+00.1	254 13.7	+02.5	S 04 05.7	+00.1	13
14	19 00.8	+00.6	S 22 17.0	+00.3	148 48.8	+02.5	N 21 13.9	+00.0	269 16.2	+02.5	S 04 05.8	+00.0	14
15	34 01.4	+00.5	S 22 17.3	+00.3	163 51.3	+02.5	N 21 13.9	+00.0	284 18.7	+02.6	S 04 05.8	+00.0	15
16	49 01.9	+00.5	S 22 17.6	+00.3	178 53.8	+02.5	N 21 13.9	+00.0	299 21.3	+02.5	S 04 05.8	+00.0	16
17	64 02.4	+00.5	S 22 17.9	+00.3	193 56.3	+02.5	N 21 13.9	+00.0	314 23.8	+02.5	S 04 05.8	+00.0	17
18	79 02.9	+00.5	S 22 18.2	+00.3	208 58.8	+02.5	N 21 13.9	+00.0	329 26.3	+02.5	S 04 05.8	+00.0	18
19	94 03.4	+00.6	S 22 18.5	+00.3	224 01.3	+02.5	N 21 13.9	+00.0	344 28.8	+02.5	S 04 05.8	+00.0	19
20	109 04.0	+00.5	S 22 18.8	+00.3	239 03.8	+02.5	N 21 13.9	+00.1	359 31.3	+02.5	S 04 05.8	+00.1	20
21	124 04.5	+00.5	S 22 19.1	+00.3	254 06.3	+02.5	N 21 14.0	+00.0	1 33.8	+02.5	S 04 05.9	+00.0	21
22	139 05.0	+00.5	S 22 19.4	+00.4	269 08.8	+02.5	N 21 14.0	+00.0	29 36.3	+02.5	S 04 05.9	+00.0	22
23	154 05.5	+00.6	S 22 19.8	+00.3	284 11.3	+02.5	N 21 14.0	+00.0	44 38.8	+02.6	S 04 05.9	+00.0	23
<p>UT 02 06 10 14 18 22 SD 00°0 00°0 00°0 00°0 00°0 00°0 SD 00°2 00°2 00°2 00°2 00°2 00°2 HP 00°1 00°1 00°1 00°1 00°1 00°1 HP 00°0 00°0 00°0 00°0 00°0 00°0 SHA 114° 113° 113° 113° 113° 113° SHA 243° 243° 243° 243° 243° 243° Greenwich Culmination Time: 12:43 Greenwich Culmination Time: 04:06</p>													

UT				
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Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for Sun, Venus, and Moon with GHA, ddGHA, Dec, and dDec values.

UT 02 06 10 14 18 22
SD 16°2 16°2 16°2 16°2 16°2 16°2
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 130° 130° 130° 130° 130° 130°
Greenwich Culmination Time: 11:44

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for Mars, Jupiter, and Saturn with GHA, ddGHA, Dec, and dDec values.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 115° 115° 115° 115° 115° 114°
Greenwich Culmination Time: 12:45

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for Sun, Venus, and Moon with GHA, ddGHA, Dec, and dDec values.

UT 02 06 10 14 18 22
SD 16°2 16°2 16°2 16°2 16°2 16°2
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 129° 129° 129° 129° 129° 129°
Greenwich Culmination Time: 11:44

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for Mars, Jupiter, and Saturn with GHA, ddGHA, Dec, and dDec values.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 114° 114° 114° 114° 114° 114°
Greenwich Culmination Time: 12:44

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT										
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec											
00	183 36.7	-00.1	S 19 41.7	+00.5	195 02.3	-00.6	S 15 42.6	+00.9	188 00.7	-28.6	S 23 31.3	+08.2	00										
01	198 36.6	-00.2	S 19 42.2	+00.6	210 01.7	-00.7	S 15 43.5	+01.0	202 32.1	-28.6	S 23 39.5	+08.1	01										
02	213 36.4	-00.1	S 19 42.8	+00.6	225 01.0	-00.6	S 15 44.5	+01.0	217 03.5	-28.6	S 23 47.6	+08.0	02										
03	228 36.3	-00.2	S 19 43.4	+00.5	240 00.4	-00.7	S 15 45.5	+00.9	231 34.1	-28.7	S 23 55.6	+07.9	03										
04	243 36.1	-00.1	S 19 43.9	+00.6	254 59.7	-00.6	S 15 46.4	+01.0	246 06.2	-28.8	S 24 03.5	+07.8	04										
05	258 36.0	-00.2	S 19 44.5	+00.5	269 59.1	-00.6	S 15 47.4	+00.9	260 37.4	-28.8	S 24 11.3	+07.7	05										
06	273 35.8	-00.1	S 19 45.0	+00.6	284 58.5	-00.7	S 15 48.3	+01.0	275 08.6	-28.9	S 24 19.0	+07.5	06										
07	288 35.7	-00.2	S 19 45.6	+00.6	299 57.8	-00.6	S 15 49.3	+01.0	289 39.7	-29.0	S 24 26.5	+07.5	07										
08	303 35.5	-00.1	S 19 46.2	+00.5	314 57.2	-00.7	S 15 50.3	+00.9	304 10.7	-29.0	S 24 34.0	+07.4	08										
09	318 35.4	-00.2	S 19 46.7	+00.6	329 56.5	-00.6	S 15 51.2	+01.0	318 41.7	-29.1	S 24 41.4	+07.2	09										
10	333 35.2	-00.1	S 19 47.3	+00.6	344 55.9	-00.7	S 15 52.2	+00.9	333 12.6	-29.2	S 24 48.6	+07.2	10										
11	348 35.1	-00.2	S 19 47.9	+00.5	359 55.2	-00.6	S 15 53.1	+01.0	347 43.4	-29.2	S 24 55.8	+07.0	11										
12	3 34.9	-00.1	S 19 48.4	+00.6	14 54.6	-00.7	S 15 54.1	+01.0	2 14.2	-29.3	S 25 02.8	+06.9	12										
13	18 34.8	-00.2	S 19 49.0	+00.5	29 53.9	-00.6	S 15 55.1	+00.9	16 44.9	-29.3	S 25 09.7	+06.8	13										
14	33 34.6	-00.1	S 19 49.5	+00.6	44 53.3	-00.7	S 15 56.0	+01.0	31 15.6	-29.4	S 25 16.5	+06.7	14										
15	48 34.5	-00.2	S 19 50.1	+00.5	59 52.6	-00.6	S 15 57.0	+00.9	45 46.2	-29.5	S 25 23.2	+06.6	15										
16	63 34.3	-00.2	S 19 50.6	+00.6	74 52.0	-00.6	S 15 57.9	+01.0	60 16.7	-29.5	S 25 29.8	+06.4	16										
17	78 34.1	-00.1	S 19 51.2	+00.6	89 51.4	-00.7	S 15 58.9	+00.9	74 47.2	-29.6	S 25 36.2	+06.4	17										
18	93 34.0	-00.2	S 19 51.8	+00.5	104 50.7	-00.6	S 15 59.8	+01.0	89 17.6	-29.6	S 25 42.6	+06.2	18										
19	108 33.8	-00.1	S 19 52.3	+00.6	119 50.1	-00.7	S 16 00.8	+00.9	103 48.0	-29.7	S 25 48.8	+06.1	19										
20	123 33.7	-00.2	S 19 52.9	+00.5	134 49.4	-00.6	S 16 01.7	+01.0	118 18.3	-29.8	S 25 54.9	+06.0	20										
21	138 33.5	-00.1	S 19 53.4	+00.6	149 48.8	-00.7	S 16 02.7	+00.9	132 48.5	-29.8	S 26 00.9	+05.9	21										
22	153 33.4	-00.2	S 19 54.0	+00.5	164 48.1	-00.6	S 16 03.6	+01.0	147 18.7	-29.8	S 26 06.8	+05.7	22										
23	168 33.2	-00.1	S 19 54.5	+00.6	179 47.5	-00.7	S 16 04.6	+00.9	161 48.9	-30.0	S 26 12.5	+05.6	23										
UT	02 06 10 14 18 22	SD	16°2 16°2 16°2 16°2 16°2 16°2	UT	02 06 10 14 18 22	SD	00°1 00°1 00°1 00°1 00°1 00°1	UT	02 06 10 14 18 22	SD	14°7 14°7 14°7 14°7 14°7 14°7	UT	02 06 10 14 18 22	SD	16°2 16°2 16°2 16°2 16°2 16°2								
HP	00°1 00°1 00°1 00°1 00°1 00°1	HP	00°1 00°1 00°1 00°1 00°1 00°1	HP	53°9 53°9 53°9 53°9 53°9 53°9	HP	00°1 00°1 00°1 00°1 00°1 00°1	HP	53°9 53°9 53°9 53°9 53°9 53°9	HP	00°1 00°1 00°1 00°1 00°1 00°1	HP	00°1 00°1 00°1 00°1 00°1 00°1										
SHA	124° 124° 124° 124° 124° 123°	SHA	136° 135° 135° 135° 124° 123°	SHA	128° 126° 124° 121° 119° 117°	SHA	127° 127° 127° 127° 127° 127°	SHA	139° 139° 139° 139° 139° 138°	SHA	162° 161° 159° 157° 155° 153°												
Greenwich Culmination Time: 11:45				Greenwich Culmination Time: 11:00				Greenwich Culmination Time: 11:50				Greenwich Culmination Time: 11:44				Greenwich Culmination Time: 10:57				Greenwich Culmination Time: 09:37			

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	183 46.5	-00.2	S 18 59.3	+00.6	195 47.1	-00.6	S 14 31.3	+01.0	219 38.9	-24.7	S 10 04.5	+13.4	00		
01	198 46.3	-00.1	S 18 59.9	+00.6	210 46.5	-00.7	S 14 32.3	+01.0	234 14.2	-24.8	S 10 17.9	+13.4	01		
02	213 46.2	-00.1	S 19 00.5	+00.6	225 45.8	-00.6	S 14 33.3	+01.0	248 49.4	-24.7	S 10 31.3	+13.3	02		
03	228 46.1	-00.1	S 19 01.1	+00.6	240 45.2	-00.6	S 14 34.3	+01.0	263 24.7	-24.9	S 10 44.6	+13.3	03		
04	243 46.0	-00.1	S 19 01.7	+00.6	255 44.6	-00.6	S 14 35.3	+01.0	277 59.8	-24.8	S 10 57.9	+13.2	04		
05	258 45.9	-00.2	S 19 02.3	+00.6	270 44.0	-00.6	S 14 36.3	+01.0	292 35.0	-24.9	S 11 11.1	+13.2	05		
06	273 45.7	-00.1	S 19 02.9	+00.6	285 43.4	-00.6	S 14 37.3	+01.1	307 10.1	-24.9	S 11 24.3	+13.1	06		
07	288 45.6	-00.1	S 19 03.5	+00.7	300 42.8	-00.6	S 14 38.4	+01.0	321 45.2	-24.9	S 11 37.4	+13.1	07		
08	303 45.5	-00.1	S 19 04.2	+00.6	315 42.2	-00.6	S 14 39.4	+01.0	336 20.3	-25.0	S 11 50.5	+13.0	08		
09	318 45.4	-00.2	S 19 04.8	+00.6	330 41.6	-00.6	S 14 40.4	+01.0	350 55.3	-25.0	S 12 03.5	+13.0	09		
10	333 45.2	-00.1	S 19 05.4	+00.6	345 41.0	-00.6	S 14 41.4	+01.0	5 30.3	-25.0	S 12 16.5	+12.9	10		
11	348 45.1	-00.1	S 19 06.0	+00.6	0 40.4	-00.6	S 14 42.4	+01.0	20 05.3	-25.1	S 12 29.4	+12.9	11		
12	3 45.0	-00.2	S 19 06.6	+00.6	15 39.8	-00.6	S 14 43.4	+01.0	34 40.2	-25.1	S 12 42.3	+12.8	12		
13	18 44.8	-00.1	S 19 07.2	+00.6	30 39.2	-00.6	S 14 44.4	+01.0	49 15.1	-25.2	S 12 55.1	+12.8	13		
14	33 44.7	-00.1	S 19 07.8	+00.6	45 38.6	-00.7	S 14 45.4	+01.0	63 49.9	-25.2	S 13 07.9	+12.8	14		
15	48 44.6	-00.1	S 19 08.4	+00.6	60 37.9	-00.6	S 14 46.4	+01.0	78 24.7	-25.2	S 13 20.7	+12.6	15		
16	63 44.5	-00.2	S 19 09.0	+00.6	75 37.3	-00.6	S 14 47.4	+01.0	92 59.5	-25.3	S 13 33.3	+12.6	16		
17	78 44.3	-00.1	S 19 09.6	+00.6	90 36.7	-00.6	S 14 48.4	+01.0	107 34.2	-25.3	S 13 45.9	+12.6	17		
18	93 44.2	-00.1	S 19 10.2	+00.6	105 36.1	-00.6	S 14 49.4	+01.0	122 08.9	-25.4	S 13 58.5	+12.5	18		
19	108 44.1	-00.2	S 19 10.8	+00.6	120 35.5	-00.6	S 14 50.4	+01.0	136 43.5	-25.4	S 14 11.0	+12.5	19		
20	123 43.9	-00.1	S 19 11.4	+00.6	135 34.9	-00.6	S 14 51.4	+01.0	151 18.1	-25.5	S 14 23.5	+12.4	20		
21	138 43.8	-00.1	S 19 12.0	+00.6	150 34.3	-00.6	S 14 52.4	+01.0	165 52.6	-25.5	S 14 35.9	+12.3	21		
22	153 43.7	-00.1	S 19 12.6	+00.6	165 33.7	-00.7	S 14 53.4	+01.0	180 27.1	-25.5	S 14 48.2	+12.3	22		
23	168 43.6	-00.2	S 19 13.2	+00.6	180 33.0	-00.6	S 14 54.4	+01.0	195 01.6	-25.6	S 15 00.5	+12.2	23		
UT	02 06 10 14 18 22	SD	16°2 16°2 16°2 16°2 16°2 16°2	UT	02 06 10 14 18 22	SD	00°1 00°1 00°1 00°1 00°1 00°1	UT	02 06 10 14 18 22	SD	14°8 14°8 14°8 14°8 14°8 14°7	UT	02 06 10 14 18 22	SD	14°8 14°8 14°8 14°8 14°8 14°7
HP	00°1 00°1 00°1 00°1 00°1 00°1	HP	00°1 00°1 00°1 00°1 00°1 00°1	HP	53°9 53°9 53°9 53°9 53°9 53°9	HP	00°1 00°1 00°1 00°1 00°1 00°1	HP	54°3 54°3 54°3 54°3 54°2 54°1	HP	00°1 00°1 00°1 00°1 00°1 00°1	HP	00°1 00°1 00°1 00°1 00°1 00°1		
SHA	127° 127° 127° 127° 127° 127°	SHA	139° 139° 139° 139° 139° 138°	SHA	127° 127° 127° 127° 127° 127°	SHA	139° 139° 139° 139° 139° 138°	SHA	162° 161° 159° 157° 155° 153°						
Greenwich Culmination Time: 11:44				Greenwich Culmination Time: 10:57				Greenwich Culmination Time: 09:37				Greenwich Culmination Time: 19:57			

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 02, 06, 10, 14, 18, 22. Includes SD, HP, SHA, and Greenwich Culmination Time for each planet.

Table for Sun, Venus, Moon on 2025 November 24. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a sub-table with UT 02-22 and Greenwich Culmination Time: 11:46.

Table for Sun, Venus, Moon on 2025 November 21. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a sub-table with UT 02-22 and Greenwich Culmination Time: 11:01.

Table for Mars, Jupiter, Saturn on 2025 November 24. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a sub-table with UT 02-22 and Greenwich Culmination Time: 12:37.

Table for Mars, Jupiter, Saturn on 2025 November 21. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a sub-table with UT 02-22 and Greenwich Culmination Time: 11:01.

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 07%				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	29.2	-00.2	S 20 08.1	+00.6	194	31.0	-00.7	S 16 28.1	+00.9	164	06.2	-31.1	S 27 55.4	+02.4	00
01	198	29.0	-00.1	S 20 08.7	+00.5	209	30.3	-00.6	S 16 29.0	+01.0	178	35.1	-31.0	S 27 57.8	+02.2	01
02	213	28.9	-00.2	S 20 09.2	+00.5	224	29.7	-00.7	S 16 30.0	+00.9	193	04.1	-31.1	S 28 00.0	+02.2	02
03	228	28.7	-00.2	S 20 09.7	+00.6	239	29.0	-00.6	S 16 30.9	+00.9	207	33.0	-31.1	S 28 02.2	+02.0	03
04	243	28.5	-00.1	S 20 10.3	+00.5	254	28.4	-00.7	S 16 31.8	+00.9	222	01.9	-31.2	S 28 04.2	+01.9	04
05	258	28.4	-00.2	S 20 10.8	+00.5	269	27.7	-00.7	S 16 32.7	+01.0	236	30.7	-31.2	S 28 06.1	+01.7	05
06	273	28.2	-00.2	S 20 11.3	+00.6	284	27.0	-00.7	S 16 33.7	+00.9	250	59.5	-31.2	S 28 07.8	+01.6	06
07	288	28.0	-00.1	S 20 11.9	+00.5	299	26.3	-00.6	S 16 34.6	+00.9	265	28.3	-31.2	S 28 09.4	+01.4	07
08	303	27.9	-00.2	S 20 12.4	+00.5	314	25.7	-00.7	S 16 35.5	+00.9	279	57.1	-31.3	S 28 10.8	+01.4	08
09	318	27.7	-00.2	S 20 12.9	+00.6	329	25.0	-00.7	S 16 36.4	+01.0	294	25.8	-31.2	S 28 12.2	+01.1	09
10	333	27.5	-00.1	S 20 13.5	+00.5	344	24.3	-00.6	S 16 37.4	+00.9	308	54.6	-31.3	S 28 13.3	+01.1	10
11	348	27.4	-00.2	S 20 14.0	+00.5	359	23.7	-00.7	S 16 38.3	+00.9	323	23.3	-31.3	S 28 14.4	+00.9	11
12	3	27.2	-00.2	S 20 14.5	+00.5	19	23.0	-00.7	S 16 39.2	+00.9	337	52.0	-31.4	S 28 15.3	+00.8	12
13	18	27.0	-00.1	S 20 15.0	+00.6	24	22.3	-00.6	S 16 40.1	+01.0	352	20.6	-31.3	S 28 16.1	+00.6	13
14	33	26.9	-00.2	S 20 15.6	+00.5	44	21.7	-00.7	S 16 41.1	+00.9	6	49.3	-31.4	S 28 16.7	+00.5	14
15	48	26.7	-00.2	S 20 16.1	+00.5	59	21.0	-00.7	S 16 42.0	+00.9	21	17.9	-31.3	S 28 17.2	+00.3	15
16	63	26.5	-00.2	S 20 16.6	+00.5	74	20.3	-00.7	S 16 42.9	+00.9	35	46.6	-31.4	S 28 17.5	+00.2	16
17	78	26.3	-00.1	S 20 17.1	+00.6	89	19.6	-00.6	S 16 43.8	+00.9	50	15.2	-31.4	S 28 17.7	+00.1	17
18	93	26.2	-00.2	S 20 17.7	+00.5	104	19.0	-00.7	S 16 44.7	+00.9	64	43.8	-31.4	S 28 17.8	-00.1	18
19	108	26.0	-00.2	S 20 18.2	+00.5	119	18.3	-00.7	S 16 45.6	+01.0	79	12.4	-31.5	S 28 17.7	-00.2	19
20	123	25.8	-00.1	S 20 18.7	+00.5	134	17.6	-00.6	S 16 46.6	+00.9	93	40.9	-31.4	S 28 17.5	-00.3	20
21	138	25.7	-00.2	S 20 19.2	+00.6	149	17.0	-00.7	S 16 47.5	+00.9	108	09.5	-31.4	S 28 17.2	-00.5	21
22	153	25.5	-00.2	S 20 19.8	+00.5	164	16.3	-00.7	S 16 48.4	+00.9	122	38.1	-31.4	S 28 16.7	-00.7	22
23	168	25.3	-00.2	S 20 20.3	+00.5	179	15.6	-00.7	S 16 49.3	+00.9	137	06.7	-31.5	S 28 16.0	-00.7	23
UT 02 06 10 14 18 22	SD 16°2 16°2 16°2 16°2 16°2 16°2	UT 02 06 10 14 18 22	SD 00°1 00°1 00°1 00°1 00°1 00°1	UT 02 06 10 14 18 22	SD 14°7 14°7 14°7 14°8 14°8 14°8											
HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 122° 122° 122° 122° 121° 121°	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 133° 133° 133° 133° 132° 132°	HP 54°1 54°1 54°1 54°2 54°2 54°2	SHA 102° 102° 102° 102° 99° 99°											
Greenwich Culmination Time: 11:46		Greenwich Culmination Time: 11:02		Greenwich Culmination Time: 13:31												

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 10%				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	25.1	-00.1	S 20 20.8	+00.5	194	14.9	-00.7	S 16 50.2	+00.9	151	35.2	-31.4	S 28 15.3	-00.9	00
01	198	25.0	-00.2	S 20 21.3	+00.5	209	14.2	-00.6	S 16 51.1	+00.9	166	03.8	-31.5	S 28 14.4	-01.1	01
02	213	24.8	-00.2	S 20 21.8	+00.6	224	13.6	-00.7	S 16 52.0	+01.0	180	32.3	-31.4	S 28 13.3	-01.2	02
03	228	24.6	-00.2	S 20 22.4	+00.5	239	12.9	-00.7	S 16 53.0	+00.9	195	00.9	-31.4	S 28 12.1	-01.3	03
04	243	24.4	-00.1	S 20 22.9	+00.5	254	12.2	-00.7	S 16 53.9	+00.9	209	29.5	-31.5	S 28 10.8	-01.5	04
05	258	24.3	-00.2	S 20 23.4	+00.5	269	11.5	-00.6	S 16 54.8	+00.9	223	58.0	-31.4	S 28 09.3	-01.6	05
06	273	24.1	-00.2	S 20 23.9	+00.5	284	10.9	-00.7	S 16 55.7	+00.9	238	26.6	-31.4	S 28 07.7	-01.7	06
07	288	23.9	-00.2	S 20 24.4	+00.5	299	10.2	-00.7	S 16 56.6	+00.9	252	55.2	-31.4	S 28 06.0	-01.9	07
08	303	23.7	-00.1	S 20 24.9	+00.6	314	09.5	-00.7	S 16 57.5	+00.9	267	23.8	-31.4	S 28 04.1	-02.0	08
09	318	23.6	-00.2	S 20 25.5	+00.5	329	08.8	-00.7	S 16 58.4	+00.9	281	52.4	-31.4	S 28 02.1	-02.2	09
10	333	23.4	-00.2	S 20 26.0	+00.5	344	08.1	-00.7	S 16 59.3	+00.9	296	21.0	-31.4	S 27 59.9	-02.3	10
11	348	23.2	-00.2	S 20 26.5	+00.5	359	07.4	-00.6	S 17 00.2	+00.9	310	49.6	-31.4	S 27 57.6	-02.5	11
12	3	23.0	-00.1	S 20 27.0	+00.5	19	06.8	-00.7	S 17 01.1	+00.9	325	18.2	-31.4	S 27 55.1	-02.6	12
13	18	22.9	-00.2	S 20 27.5	+00.5	24	06.1	-00.7	S 17 02.0	+00.9	339	46.8	-31.3	S 27 52.5	-02.7	13
14	33	22.7	-00.2	S 20 28.0	+00.5	44	05.4	-00.7	S 17 02.9	+00.9	354	15.5	-31.4	S 27 49.8	-02.8	14
15	48	22.5	-00.2	S 20 28.5	+00.6	59	04.7	-00.7	S 17 03.8	+00.9	8	44.1	-31.3	S 27 47.0	-03.1	15
16	63	22.3	-00.2	S 20 29.1	+00.5	74	04.0	-00.7	S 17 04.7	+00.9	23	12.8	-31.3	S 27 43.9	-03.1	16
17	78	22.1	-00.1	S 20 29.6	+00.5	89	03.3	-00.6	S 17 05.6	+00.9	37	41.5	-31.3	S 27 40.8	-03.3	17
18	93	22.0	-00.2	S 20 30.1	+00.5	104	02.7	-00.7	S 17 06.5	+00.9	52	10.2	-31.2	S 27 37.5	-03.4	18
19	108	21.8	-00.2	S 20 30.6	+00.5	119	02.0	-00.7	S 17 07.4	+00.9	66	39.0	-31.3	S 27 34.1	-03.5	19
20	123	21.6	-00.2	S 20 31.1	+00.5	134	01.3	-00.7	S 17 08.3	+00.9	81	07.7	-31.2	S 27 30.6	-03.7	20
21	138	21.4	-00.1	S 20 31.6	+00.5	149	00.6	-00.7	S 17 09.2	+00.9	95	36.5	-31.2	S 27 26.9	-03.9	21
22	153	21.3	-00.2	S 20 32.1	+00.5	163	59.9	-00.7	S 17 10.1	+00.9	110	05.3	-31.2	S 27 23.0	-03.9	22
23	168	21.1	-00.2	S 20 32.6	+00.5	178	59.2	-00.7	S 17 11.0	+00.9	124	34.1	-31.1	S 27 19.1	-04.1	23
UT 02 06 10 14 18 22	SD 16°2 16°2 16°2 16°2 16°2 16°2	UT 02 06 10 14 18 22	SD 00°1 00°1 00°1 00°1 00°1 00°1	UT 02 06 10 14 18 22	SD 14°8 14°8 14°8 14°8 14°8 14°9											
HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 121° 121° 121° 121° 120° 120°	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 132° 132° 132° 131° 131° 131°	HP 54°3 54°3 54°4 54°4 54°5 54°5	SHA 088° 086° 084° 081° 079° 077°											
Greenwich Culmination Time: 11:46		Greenwich Culmination Time: 11:03		Greenwich Culmination Time: 14:23												

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	170	06.9	+00.5	S 22 53.7	+00.3	304	17.7	+02.5	N 21 16.1	+00.1	64	41.7	+02.5	S 04 06.8	+00.0	00
01	185	07.4	+00.5	S 22 54.0	+00.2	319	20.2	+02.6	N 21 16.2	+00.0	79	44.2	+02.5	S 04 06.8	+00.0	01
02	200	07.9	+00.5	S 22 54.2	+00.3	334	22.8	+02.5	N 21 16.2	+00.0	94	46.7	+02.5	S 04 06.8	+00.0	02
03	215	08.4	+00.5	S 22 54.5	+00.3	349	25.3	+02.6	N 21 16.2	+00.0	109	49.2	+02.5	S 04 06.8	+00.0	03
04	230	08.9	+00.5	S 22 54.8	+00.2	4	27.9	+02.5	N 21 16.2	+00.1	124	51.7	+02.5	S 04 06.8	+00.0	04
05	245	09.4	+00.5	S 22 55.0	+00.3	19	30.4	+02.6	N 21 16.3	+00.0	139	54.2	+02.5	S 04 06.8	+00.0	05
06	260	09.9	+00.5	S 22 55.3	+00.2	34	33.0	+02.5	N 21 16.3	+00.0	154	56.7	+02.5	S 04 06.8	+00.0	06
07	275	10.4	+00.5	S 22 55.5	+00.3	49	35.5	+02.6	N 21 16.3	+00.0	169	59.2	+02.5	S 04 06.8	+00.0	07
08	290	10.9	+00.5	S 22 55.8	+00.2	64	38.1	+02.6	N 21 16.3	+00.0	185	01.7	+02.4	S 04 06.8	+00.0	08
09	305	11.4	+00.5	S 22 56.0	+00.3	79	40.7	+02.5	N 21 16.3	+00.1	200	04.1	+02.5	S 04 06.8	+00.0	09
10	320	11.9	+00.5	S 22 56.3	+00.2	94	43.2	+02.6	N 21 16.4	+00.0	215	06.6	+02.5	S 04 06.8	+00.0	10
11	335	12.4	+00.4	S 22 56.5	+00.3	109	45.8	+02.5	N 21 16.4	+00.0	230	09.1	+02.5	S 04 06.8	+00.0	11
12	350	12.8	+00.5	S 22 56.8	+00.2	124	48.3	+02.6	N 21 16.4	+00.0	245	11.6	+02.5	S 04 06.8	+00.0	12
13	5	13.3	+00.5	S 22 57.0	+00.3	139	50.9	+02.5	N 21 16.4	+00.1	260	14.1	+02.5	S 04 06.8	+00.0	13
14	20	13.8	+00.5	S 22 57.3	+00.2	154	53.4	+02.6	N 21 16.5	+00.0	275	16.6	+02.5	S 04 06.8	+00.0	14
15	35	14.3	+00.5	S 22 57.5	+00.3	169	56.0	+02.6	N 21 16.5	+00.0	290	19.1	+02.5	S 04 06.8	+00.0	15
16	50	14.8	+00.5	S 22 57.8	+00.2	184	58.6	+02.5	N 21 16.5	+00.0	305	21.6	+02.5	S 04 06.8	+00.0	16
17	65	15.3	+00.5	S 22 58.0	+00.3	200	01.1	+02.6	N 21 16.							

UT	Sun				Venus				Moon A: 26%				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	02.0	-00.2	S 21 18.5	+00.4	192	50.0	-00.7	S 18 33.9	+00.8	92	18.4	-27.5	S 11 33.2	-14.4	00
01	198	01.8	-00.2	S 21 18.9	+00.4	207	49.3	-00.8	S 18 34.7	+00.8	106	50.9	-27.4	S 11 18.8	-14.4	01
02	213	01.6	-00.2	S 21 19.3	+00.5	222	48.5	-00.7	S 18 35.5	+00.9	121	23.5	-27.5	S 11 04.4	-14.5	02
03	228	01.4	-00.2	S 21 19.8	+00.4	237	47.8	-00.8	S 18 36.4	+00.8	135	56.0	-27.5	S 10 49.9	-14.6	03
04	243	01.2	-00.2	S 21 20.2	+00.5	252	47.0	-00.7	S 18 37.2	+00.8	150	28.5	-27.4	S 10 35.3	-14.6	04
05	258	01.0	-00.2	S 21 20.7	+00.4	267	46.3	-00.7	S 18 38.0	+00.8	165	01.1	-27.5	S 10 20.7	-14.8	05
06	273	00.8	-00.2	S 21 21.1	+00.4	282	45.6	-00.8	S 18 38.8	+00.8	179	33.6	-27.4	S 10 05.9	-14.7	06
07	288	00.6	-00.3	S 21 21.5	+00.5	297	44.8	-00.7	S 18 39.6	+00.8	194	06.2	-27.4	S 09 51.2	-14.9	07
08	303	00.3	-00.2	S 21 22.0	+00.4	312	44.1	-00.8	S 18 40.4	+00.8	208	38.8	-27.4	S 09 36.3	-14.9	08
09	318	00.1	-00.2	S 21 22.4	+00.4	327	43.3	-00.7	S 18 41.2	+00.8	223	11.4	-27.4	S 09 21.4	-14.9	09
10	332	59.9	-00.2	S 21 22.8	+00.5	342	42.6	-00.8	S 18 42.0	+00.8	237	44.0	-27.4	S 09 06.5	-15.0	10
11	347	59.7	-00.2	S 21 23.3	+00.4	357	41.8	-00.7	S 18 42.8	+00.8	252	16.6	-27.4	S 08 51.5	-15.1	11
12	2	59.5	-00.2	S 21 23.7	+00.4	12	41.1	-00.7	S 18 43.6	+00.8	266	49.2	-27.4	S 08 36.4	-15.1	12
13	17	59.3	-00.2	S 21 24.1	+00.4	27	40.4	-00.8	S 18 44.4	+00.8	281	21.8	-27.4	S 08 21.3	-15.2	13
14	32	59.1	-00.3	S 21 24.5	+00.5	42	39.6	-00.7	S 18 45.2	+00.8	295	54.4	-27.4	S 08 06.1	-15.2	14
15	47	58.8	-00.2	S 21 25.0	+00.4	57	38.9	-00.8	S 18 46.0	+00.8	310	27.0	-27.4	S 07 50.9	-15.3	15
16	62	58.6	-00.2	S 21 25.4	+00.4	72	38.1	-00.7	S 18 46.8	+00.8	324	59.6	-27.5	S 07 35.6	-15.4	16
17	77	58.4	-00.2	S 21 25.8	+00.5	87	37.4	-00.8	S 18 47.6	+00.8	339	32.1	-27.4	S 07 20.2	-15.4	17
18	92	58.2	-00.2	S 21 26.3	+00.4	102	36.6	-00.7	S 18 48.4	+00.8	354	04.7	-27.4	S 07 04.8	-15.4	18
19	107	58.0	-00.2	S 21 26.7	+00.4	117	35.9	-00.8	S 18 49.2	+00.8	8	37.3	-27.4	S 06 49.4	-15.5	19
20	122	57.8	-00.3	S 21 27.1	+00.4	132	35.1	-00.7	S 18 50.0	+00.8	23	09.9	-27.4	S 06 33.9	-15.6	20
21	137	57.5	-00.2	S 21 27.5	+00.5	147	34.4	-00.8	S 18 50.8	+00.8	37	42.5	-27.5	S 06 18.3	-15.6	21
22	152	57.3	-00.2	S 21 28.0	+00.4	162	33.6	-00.7	S 18 51.6	+00.8	52	15.0	-27.4	S 06 02.7	-15.7	22
23	167	57.1	-00.2	S 21 28.4	+00.4	177	32.9	-00.8	S 18 52.4	+00.8	66	47.6	-27.5	S 05 47.0	-15.7	23

UT 02 06 10 14 18 22 SD 16°2 16°2 16°2 16°2 16°2 16°2 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 116° 116° 115° 115° 115° 115° Greenwich Culmination Time: 11:48	UT 02 06 10 14 18 22 SD 00°1 00°1 00°1 00°1 00°1 00°1 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 126° 125° 125° 125° 125° 125° Greenwich Culmination Time: 11:09	UT 02 06 10 14 18 22 SD 15°5 15°6 15°6 15°7 15°7 15°7 HP 57°0 57°2 57°3 57°5 57°6 57°8 SHA 024° 022° 020° 018° 016° 014° Greenwich Culmination Time: 18:24
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UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	171	15.7	+00.4	S 23 26.7	+00.2	310	29.1	+02.6	N 21 19.9	+00.0	70	38.9	+02.5	S 04 06.4	+00.0	00
01	186	16.1	+00.5	S 23 26.9	+00.2	325	31.7	+02.6	N 21 19.9	+00.1	85	41.4	+02.5	S 04 06.4	+00.0	01
02	201	16.6	+00.5	S 23 27.1	+00.2	340	34.3	+02.6	N 21 20.0	+00.0	100	43.9	+02.4	S 04 06.4	+00.0	02
03	216	17.1	+00.4	S 23 27.3	+00.2	355	36.9	+02.6	N 21 20.0	+00.0	115	46.3	+02.5	S 04 06.4	+00.0	03
04	231	17.5	+00.5	S 23 27.5	+00.2	10	39.5	+02.6	N 21 20.0	+00.1	130	48.8	+02.5	S 04 06.4	+00.0	04
05	246	18.0	+00.5	S 23 27.7	+00.2	25	42.1	+02.6	N 21 20.1	+00.0	145	51.3	+02.4	S 04 06.4	+00.0	05
06	261	18.5	+00.4	S 23 27.9	+00.2	40	44.7	+02.6	N 21 20.1	+00.0	160	53.7	+02.5	S 04 06.4	+00.0	06
07	276	18.9	+00.5	S 23 28.1	+00.2	55	47.3	+02.7	N 21 20.1	+00.0	175	56.2	+02.5	S 04 06.4	+00.0	07
08	291	19.4	+00.4	S 23 28.3	+00.2	70	50.0	+02.6	N 21 20.1	+00.1	190	58.7	+02.4	S 04 06.4	+00.0	08
09	306	19.8	+00.5	S 23 28.5	+00.2	85	52.6	+02.6	N 21 20.2	+00.0	206	01.1	+02.5	S 04 06.4	+00.0	09
10	321	20.3	+00.5	S 23 28.7	+00.2	100	55.2	+02.6	N 21 20.2	+00.0	221	03.6	+02.5	S 04 06.4	+00.0	10
11	336	20.8	+00.4	S 23 28.9	+00.2	115	57.8	+02.6	N 21 20.2	+00.1	236	06.1	+02.4	S 04 06.4	-00.1	11
12	351	21.2	+00.5	S 23 29.1	+00.2	131	00.4	+02.6	N 21 20.3	+00.0	251	08.5	+02.5	S 04 06.3	+00.0	12
13	6	21.7	+00.4	S 23 29.3	+00.2	146	03.0	+02.6	N 21 20.3	+00.0	266	11.0	+02.5	S 04 06.3	+00.0	13
14	21	22.1	+00.5	S 23 29.5	+00.2	161	05.6	+02.6	N 21 20.3	+00.1	281	13.5	+02.4	S 04 06.3	+00.0	14
15	36	22.6	+00.5	S 23 29.7	+00.2	176	08.2	+02.6	N 21 20.4	+00.0	296	15.9	+02.5	S 04 06.3	+00.0	15
16	51	23.1	+00.4	S 23 29.9	+00.2	191	10.8	+02.6	N 21 20.4	+00.0	311	18.4	+02.5	S 04 06.3	+00.0	16
17	66	23.5	+00.5	S 23 30.1	+00.2	206	13.4	+02.6	N 21 20.4	+00.1	326	20.9	+02.4	S 04 06.3	+00.0	17
18	81	24.0	+00.4	S 23 30.3	+00.2	221	16.0	+02.7	N 21 20.5	+00.0	341	23.3	+02.5	S 04 06.3	+00.0	18
19	96	24.4	+00.5	S 23 30.5	+00.2	236	18.7	+02.6	N 21 20.5	+00.0	356	25.8	+02.5	S 04 06.3	+00.0	19
20	111	24.9	+00.4	S 23 30.7	+00.2	251	21.3	+02.6	N 21 20.5	+00.0	11	28.3	+02.4	S 04 06.3	+00.0	20
21	126	25.3	+00.5	S 23 30.9	+00.1	266	23.9	+02.6	N 21 20.5	+00.1	26	30.7	+02.5	S 04 06.3	+00.0	21
22	141	25.8	+00.5	S 23 31.0	+00.2	281	26.5	+02.6	N 21 20.6	+00.0	41	33.2	+02.5	S 04 06.3	-00.1	22
23	156	26.3	+00.4	S 23 31.2	+00.2	296	29.1	+02.6	N 21 20.6	+00.0	56	35.7	+02.4	S 04 06.2	+00.0	23

UT 02 06 10 14 18 22 SD 00°0 00°0 00°0 00°0 00°0 00°0 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 104° 104° 104° 104° 103° Greenwich Culmination Time: 12:34	UT 02 06 10 14 18 22 SD 00°4 00°4 00°4 00°4 00°4 00°4 HP 00°0 00°0 00°0 00°0 00°0 00°0 SHA 243° 243° 243° 243° 243° 243° Greenwich Culmination Time: 03:17	UT 02 06 10 14 18 22 SD 00°2 00°2 00°2 00°2 00°2 00°2 HP 00°0 00°0 00°0 00°0 00°0 00°0 SHA 003° 003° 003° 003° 003° 003° Greenwich Culmination Time: 19:14
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UT	Sun				Venus				Moon A: 17%				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	16.4	-00.1	S 20 45.0	+00.5	193	41.9	-00.8	S 17 33.1	+00.9	126	45.3	-30.2	S 24 56.7	-07.4	00
01	198	16.3	-00.2	S 20 45.5	+00.5	208	41.1	-00.7	S 17 34.0	+00.9	141	15.1	-30.2	S 24 49.3	-07.5	01
02	213	16.1	-00.2	S 20 46.0	+00.5	223	40.4	-00.7	S 17 34.9	+00.8	155	44.9	-30.2	S 24 41.8	-07.6	02
03	228	15.9	-00.2	S 20 46.5	+00.5	238	39.7	-00.7	S 17 35.7	+00.9	170	14.7	-30.1	S 24 34.2	-07.7	03
04	243	15.7	-00.2	S 20 47.0	+00.5	253	39.0	-00.7	S 17 36.6	+00.9	184	44.6	-30.0	S 24 26.5	-07.9	04
05	258	15.5	-00.2	S 20 47.5	+00.5	268	38.3	-00.7	S 17 37.5	+00.9	199	14.6	-30.1	S 24 18.6	-07.9	05
06	273	15.3	-00.2	S 20 48.0	+00.4	283	37.6	-00.7	S 17 38.4	+00.8	213	44.5	-29.9	S 24 10.7	-08.1	06
07	288	15.1	-00.2	S 20 48.4	+00.5	298	36.9	-00.7	S 17 39.2	+00.9	228	14.6	-30.0	S 24 02.6	-08.2	07
08	303	14.9	-00.2	S 20 48.9	+00.5	313	36.2	-00.7	S 17 40.1	+00.9	242	44.6	-29.8	S 23 54.4	-08.4	08
09	318	14.7	-00.2	S 20 49.4	+00.5	328	35.5	-00.7	S 17 41.0	+00.8	257	14.8	-29.9	S 23 46.0	-08.4	09
10	333	14.5	-00.1	S 20 49.9	+00.5	343	34.8	-00.7	S 17 41.8	+00.9	271	44.9	-29.8	S 23 37.6	-08.6	10
11	348	14.4	-00.2	S 20 50.4	+00.5	358	34.1	-00.7	S 17 42.7	+00.9	286	15.1	-29.7	S 23 29.0	-08.7	11
12	3	14.2	-00.2	S 20 50.9	+00.4	13	33.4	-00.7	S 17 43.6	+00.8	300	45.4	-29.7	S 23 20.3	-08.8	12
13	18	14.0	-00.2	S 20 51.3	+00.5	28	32.7	-00.7	S 17 44.4	+00.9	315	15.7	-29.7	S 23 11.5	-08.9	13
14	33	13.8	-00.2	S 20 51.8	+00.5	43	32.0	-00.7	S 17 45.3	+00.9	329	46.0	-29.6	S 23 02.6	-09.1	14
15	48	13.6	-00.2	S 20 52.3	+00.5	58	31.3	-00.7	S 17 46.2	+00.8	344	16.4	-29.5	S 22 53.5	-09.1	15
16	63	13.4	-00.2	S 20 52.8	+00.4	73	30.6	-00.7	S 17 47.0	+00.9	358	46.9	-29.5	S 22 44.4	-09.3	16
17	78	13.2	-00.2	S 20 53.2	+00.5	88	29.9	-00.8	S 17 47.9	+00.8	13					

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 20%				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	11.8	-00.2	S 20 56.6	+00.4	193	24.9	-00.7	S 17 53.9	+00.8	114	52.1	-29.1	S 21 27.2	-10.2	00
01	198	11.6	-00.2	S 20 57.0	+00.5	208	24.2	-00.8	S 17 54.7	+00.9	129	23.0	-29.1	S 21 17.0	-10.2	01
02	213	11.4	-00.2	S 20 57.5	+00.5	223	23.4	-00.7	S 17 55.6	+00.8	143	53.9	-29.0	S 21 06.8	-10.4	02
03	228	11.2	-00.2	S 20 58.0	+00.5	238	22.7	-00.7	S 17 56.4	+00.9	158	24.9	-29.0	S 20 56.4	-10.5	03
04	243	11.0	-00.2	S 20 58.5	+00.4	253	22.0	-00.7	S 17 57.3	+00.8	172	55.9	-28.9	S 20 45.9	-10.5	04
05	258	10.8	-00.2	S 20 58.9	+00.5	268	21.3	-00.7	S 17 58.1	+00.9	187	27.0	-28.9	S 20 35.4	-10.7	05
06	273	10.6	-00.2	S 20 59.4	+00.5	283	20.6	-00.7	S 17 59.0	+00.8	201	58.1	-28.9	S 20 24.7	-10.8	06
07	288	10.4	-00.2	S 20 59.9	+00.4	298	19.9	-00.8	S 17 59.8	+00.9	216	29.2	-28.8	S 20 13.9	-10.9	07
08	303	10.2	-00.2	S 21 00.3	+00.5	313	19.1	-00.7	S 18 00.7	+00.8	231	00.4	-28.8	S 20 03.0	-10.9	08
09	318	10.0	-00.2	S 21 00.8	+00.5	328	18.4	-00.7	S 18 01.5	+00.9	245	31.6	-28.7	S 19 52.1	-11.1	09
10	333	9.8	-00.2	S 21 01.3	+00.4	343	17.7	-00.7	S 18 02.4	+00.8	260	02.9	-28.7	S 19 41.0	-11.2	10
11	348	9.6	-00.2	S 21 01.7	+00.5	358	17.0	-00.7	S 18 03.2	+00.9	274	34.2	-28.6	S 19 29.8	-11.3	11
12	3	9.4	-00.2	S 21 02.2	+00.5	13	16.3	-00.8	S 18 04.1	+00.8	289	05.6	-28.6	S 19 18.5	-11.4	12
13	18	9.2	-00.2	S 21 02.7	+00.4	28	15.5	-00.7	S 18 04.9	+00.9	303	37.0	-28.6	S 19 07.1	-11.4	13
14	33	9.0	-00.2	S 21 03.1	+00.5	43	14.8	-00.7	S 18 05.8	+00.8	318	08.4	-28.5	S 18 55.7	-11.6	14
15	48	08.8	-00.2	S 21 03.6	+00.4	58	14.1	-00.7	S 18 06.6	+00.8	332	39.9	-28.4	S 18 44.1	-11.7	15
16	63	08.6	-00.2	S 21 04.0	+00.5	73	13.4	-00.7	S 18 07.4	+00.9	347	11.5	-28.5	S 18 32.4	-11.7	16
17	78	08.4	-00.2	S 21 04.5	+00.5	88	12.7	-00.8	S 18 08.3	+00.8	1	43.0	-28.3	S 18 20.7	-11.9	17
18	93	08.2	-00.2	S 21 05.0	+00.4	103	11.9	-00.7	S 18 09.3	+00.8	16	14.7	-28.4	S 18 08.8	-11.9	18
19	108	08.0	-00.2	S 21 05.4	+00.5	118	11.2	-00.7	S 18 10.0	+00.8	30	46.3	-28.3	S 17 56.9	-12.1	19
20	123	07.8	-00.2	S 21 05.9	+00.4	133	10.5	-00.7	S 18 10.8	+00.8	45	18.0	-28.3	S 17 44.8	-12.1	20
21	138	07.6	-00.2	S 21 06.3	+00.5	148	09.8	-00.8	S 18 11.6	+00.9	59	49.7	-28.2	S 17 32.7	-12.3	21
22	153	07.4	-00.2	S 21 06.8	+00.5	163	09.0	-00.7	S 18 12.5	+00.8	74	21.5	-28.2	S 17 20.4	-12.3	22
23	168	07.2	-00.2	S 21 07.3	+00.4	178	08.3	-00.7	S 18 13.3	+00.8	88	53.3	-28.1	S 17 08.1	-12.4	23
UT 02 06 10 14 18 22	SD 16°2 16°2 16°2 16°2 16°2 16°2	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 118° 118° 118° 117° 117° 117°	Greenwich Culmination Time: 11:47	UT 02 06 10 14 18 22	SD 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 128° 128° 128° 127° 127° 127°	Greenwich Culmination Time: 11:06	UT 02 06 10 14 18 22	SD 15°1 15°2 15°2 15°2 15°3 15°3	HP 55°6 55°7 55°8 55°9 56°0 56°1	SHA 049° 047° 044° 042° 040° 038°	Greenwich Culmination Time: 16:52		

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 23%				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	07.0	-00.2	S 21 07.7	+00.5	193	07.6	-00.7	S 18 14.1	+00.9	103	25.2	-28.2	S 16 55.7	-12.5	00
01	198	06.8	-00.2	S 21 08.2	+00.4	208	06.9	-00.8	S 18 15.0	+00.8	117	57.0	-28.0	S 16 43.2	-12.6	01
02	213	06.6	-00.2	S 21 08.6	+00.5	223	06.1	-00.7	S 18 15.8	+00.8	132	29.0	-28.1	S 16 30.6	-12.6	02
03	228	06.4	-00.2	S 21 09.1	+00.4	238	05.4	-00.7	S 18 16.6	+00.9	147	00.9	-28.0	S 16 18.0	-12.8	03
04	243	06.2	-00.2	S 21 09.5	+00.5	253	04.7	-00.8	S 18 17.5	+00.8	161	32.9	-28.0	S 16 05.2	-12.8	04
05	258	06.0	-00.2	S 21 10.0	+00.4	268	03.9	-00.7	S 18 18.3	+00.8	176	04.9	-27.9	S 15 52.4	-13.0	05
06	273	05.8	-00.2	S 21 10.4	+00.5	283	03.2	-00.7	S 18 19.1	+00.9	190	37.0	-28.0	S 15 39.4	-13.0	06
07	288	05.6	-00.2	S 21 10.9	+00.4	298	02.5	-00.7	S 18 20.0	+00.8	205	09.0	-27.9	S 15 26.4	-13.1	07
08	303	05.4	-00.2	S 21 11.3	+00.5	313	01.8	-00.8	S 18 20.8	+00.8	219	41.1	-27.8	S 15 13.3	-13.1	08
09	318	05.2	-00.2	S 21 11.8	+00.4	328	01.0	-00.7	S 18 21.6	+00.8	234	13.3	-27.8	S 15 00.2	-13.3	09
10	333	05.0	-00.2	S 21 12.2	+00.5	343	00.3	-00.7	S 18 22.4	+00.9	248	45.5	-27.8	S 14 46.9	-13.3	10
11	348	04.8	-00.3	S 21 12.7	+00.4	357	59.6	-00.8	S 18 23.3	+00.8	263	17.7	-27.8	S 14 33.6	-13.5	11
12	3	04.5	-00.2	S 21 13.1	+00.5	12	58.8	-00.7	S 18 24.1	+00.8	277	49.9	-27.8	S 14 20.1	-13.5	12
13	18	04.3	-00.2	S 21 13.6	+00.4	27	58.1	-00.7	S 18 24.9	+00.8	292	22.1	-27.7	S 14 06.6	-13.5	13
14	33	04.1	-00.2	S 21 14.0	+00.5	42	57.4	-00.8	S 18 25.7	+00.9	306	54.4	-27.7	S 13 53.1	-13.7	14
15	48	03.9	-00.2	S 21 14.5	+00.4	57	56.6	-00.7	S 18 26.6	+00.9	321	26.7	-27.6	S 13 39.4	-13.7	15
16	63	03.7	-00.2	S 21 14.9	+00.5	72	55.9	-00.7	S 18 27.4	+00.8	335	59.1	-27.7	S 13 25.7	-13.8	16
17	78	03.5	-00.2	S 21 15.4	+00.4	87	55.2	-00.8	S 18 28.2	+00.8	350	31.4	-27.6	S 13 11.9	-13.9	17
18	93	03.3	-00.2	S 21 15.8	+00.5	102	54.4	-00.7	S 18 29.0	+00.8	5	03.8	-27.6	S 12 58.0	-14.0	18
19	108	03.1	-00.2	S 21 16.3	+00.4	117	53.7	-00.7	S 18 29.8	+00.9	19	36.2	-27.6	S 12 44.0	-14.0	19
20	123	02.9	-00.2	S 21 16.7	+00.4	132	53.0	-00.8	S 18 30.7	+00.8	34	08.6	-27.6	S 12 30.0	-14.1	20
21	138	02.7	-00.2	S 21 17.1	+00.5	147	52.2	-00.7	S 18 31.5	+00.8	48	41.0	-27.5	S 12 15.9	-14.1	21
22	153	02.5	-00.3	S 21 17.6	+00.4	162	51.5	-00.8	S 18 32.3	+00.8	63	13.5	-27.5	S 12 01.8	-14.3	22
23	168	02.2	-00.2	S 21 18.0	+00.5	177	50.7	-00.7	S 18 33.1	+00.8	77	46.0	-27.6	S 11 47.5	-14.3	23
UT 02 06 10 14 18 22	SD 16°2 16°2 16°2 16°2 16°2 16°2	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 117° 117° 117° 116° 116° 116°	Greenwich Culmination Time: 11:47	UT 02 06 10 14 18 22	SD 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 127° 127° 126° 126° 126° 126°	Greenwich Culmination Time: 11:08	UT 02 06 10 14 18 22	SD 15°3 15°4 15°4 15°4 15°5 15°5	HP 56°3 56°4 56°5 56°6 56°8 56°9	SHA 036° 034° 032° 030° 028° 026°	Greenwich Culmination Time: 17:39		

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UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	182	40.4	-00.2	S 21 57.4	+00.3	191	36.7	-00.8	S 19 47.8	+00.7	46	21.0	-32.1	N 14 00.7	+15.5	00
01	197	40.2	-00.2	S 21 57.7	+00.4	206	35.9	-00.8	S 19 48.5	+00.8	60	48.9	-32.3	N 14 16.2	+15.4	01
02	212	40.0	-00.3	S 21 58.1	+00.4	221	35.1	-00.8	S 19 49.3	+00.7	75	16.6	-32.4	N 14 31.6	+15.3	02
03	227	39.7	-00.2	S 21 58.5	+00.3	236	34.3	-00.8	S 19 50.0	+00.7	89	44.2	-32.5	N 14 46.9	+15.3	03
04	242	39.5	-00.2	S 21 58.8	+00.4	251	33.5	-00.7	S 19 50.7	+00.7	104	11.7	-32.6	N 15 02.2	+15.2	04
05	257	39.3	-00.3	S 21 59.2	+00.4	266	32.8	-00.8	S 19 51.4	+00.7	118	39.1	-32.7	N 15 17.4	+15.1	05
06	272	39.0	-00.2	S 21 59.6	+00.3	281	32.0	-00.8	S 19 52.1	+00.8	133	06.4	-32.9	N 15 32.5	+15.1	06
07	287	38.8	-00.3	S 21 59.9	+00.4	296	31.2	-00.8	S 19 52.9	+00.7	147	33.5	-33.0	N 15 47.6	+14.9	07
08	302	38.5	-00.2	S 22 00.3	+00.4	311	30.4	-00.8	S 19 53.6	+00.7	162	00.5	-33.1	N 16 02.5	+14.9	08
09	317	38.3	-00.2	S 22 00.7	+00.3	326	29.6	-00.8	S 19 54.3	+00.7	176	27.4	-33.2	N 16 17.4	+14.8	09
10	332	38.1	-00.3	S 22 01.0	+00.4	341	28.8	-00.8	S 19 55.0	+00.7	190	54.2	-33.3	N 16 32.2	+14.7	10
11	347	37.8	-00.2	S 22 01.4	+00.4	356	28.0	-00.8	S 19 55.7	+00.7	205	20.9	-33.5	N 16 46.9	+14.6	11
12	2	37.6	-00.3	S 22 01.8	+00.3	11	27.2	-00.8	S 19 56.4	+00.8	219	47.4	-33.6	N 17 01.5	+14.5	12
13	17	37.3	-00.2	S 22 02.1	+00.4	26	26.4	-00.8	S 19 57.2	+00.7	234	13.8	-33.7	N 17 16.0	+14.5	13
14	32	37.1	-00.3	S 22 02.5	+00.3	41	25.6	-00.8	S 19 57.9	+00.7	248	40.1	-33.9	N 17 30.5	+14.3	14
15	47	36.8	-00.2	S 22 02.8	+00.4	56	24.8	-00.8	S 19 58.6	+00.4	263	06.2	-34.0	N 17 44.8	+14.2	15
16	62	36.6	-00.2	S 22 03.2	+00.4	71	24.0	-00.8	S 19 59.3	+00.7	277	32.2	-34.1	N 17 59.0	+14.1	16
17	77	36.4	-00.3	S 22 03.6	+00.3	86	23.2	-00.8	S 19 60.0	+00.7	291	58.1	-34.2	N 18 13.1	+14.0	17
18	92	36.1	-00.2	S 22 03.9	+00.4	101	22.4	-00.8	S 19 60.7	+00.7	306	23.9	-34.4	N 18 27.1	+14.0	18
19	107	35.9	-00.3	S 22 04.3	+00.3	116	21.6	-00.8	S 20 01.4	+00.7	320	49.5	-34.5	N 18 41.1	+13.8	19
20	122	35.6	-00.2	S 22 04.6	+00.4	131	20.8	-00.8	S 20 02.1	+00.7	335	15.0	-34.6	N 18 54.9	+13.6	20
21	137	35.4	-00.3	S 22 05.0	+00.3	146	20.0	-00.7	S 20 02.8	+00.7	349	40.4	-34.7	N 19 08.5	+13.6	21
22	152	35.1	-00.2	S 22 05.3	+00.4	161	19.3	-00.8	S 20 03.5	+00.7	4	05.7	-34.9	N 19 22.1	+13.5	22
23	167	34.9	-00.2	S 22 05.7	+00.3	176	18.5	-00.8	S 20 04.2	+00.7	18	30.8	-35.0	N 19 35.6	+13.3	23

UT 02 06 10 14 18 22
 SD 16°2 16°2 16°2 16°2 16°2 16°2
 HP 00°1 00°1 00°1 00°1 00°1 00°1
 SHA 111° 111° 111° 111° 111° 111°
 Greenwich Culmination Time: 11:49

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	182	56.9	-00.2	S 21 28.8	+00.4	192	32.1	-00.7	S 18 53.2	+00.8	81	20.1	-27.5	S 05 31.3	-15.7	00
01	197	56.7	-00.3	S 21 29.2	+00.4	207	31.4	-00.8	S 18 54.0	+00.8	95	52.6	-27.4	S 05 15.6	-15.8	01
02	212	56.4	-00.2	S 21 29.6	+00.5	222	30.6	-00.7	S 18 54.8	+00.8	110	25.2	-27.5	S 04 59.8	-15.8	02
03	227	56.2	-00.2	S 21 30.1	+00.4	237	29.9	-00.8	S 18 55.6	+00.8	124	57.7	-27.6	S 04 44.0	-15.9	03
04	242	56.0	-00.2	S 21 30.5	+00.4	252	29.1	-00.7	S 18 56.4	+00.7	139	30.1	-27.5	S 04 28.1	-15.9	04
05	257	55.8	-00.2	S 21 30.9	+00.4	267	28.4	-00.8	S 18 57.1	+00.8	154	02.6	-27.6	S 04 12.2	-16.0	05
06	272	55.6	-00.3	S 21 31.3	+00.4	282	27.6	-00.8	S 18 57.9	+00.8	168	35.0	-27.5	S 03 56.2	-16.0	06
07	287	55.3	-00.2	S 21 31.7	+00.5	297	26.8	-00.7	S 18 58.7	+00.8	183	07.5	-27.7	S 03 40.2	-16.0	07
08	302	55.1	-00.2	S 21 32.2	+00.4	312	26.1	-00.8	S 18 59.5	+00.8	197	39.8	-27.6	S 03 24.2	-16.1	08
09	317	54.9	-00.2	S 21 32.6	+00.4	327	25.3	-00.7	S 19 00.3	+00.8	212	12.2	-27.6	S 03 08.1	-16.1	09
10	332	54.7	-00.2	S 21 33.0	+00.4	342	24.6	-00.8	S 19 01.1	+00.7	226	44.6	-27.7	S 02 52.0	-16.1	10
11	347	54.5	-00.3	S 21 33.4	+00.4	357	23.8	-00.7	S 19 01.8	+00.8	241	16.9	-27.7	S 02 35.9	-16.2	11
12	2	54.2	-00.2	S 21 33.8	+00.4	12	23.1	-00.8	S 19 02.6	+00.8	255	49.2	-27.7	S 02 19.7	-16.2	12
13	17	54.0	-00.2	S 21 34.2	+00.5	27	22.3	-00.7	S 19 03.4	+00.8	270	21.5	-27.8	S 02 03.5	-16.2	13
14	32	53.8	-00.2	S 21 34.7	+00.4	42	21.6	-00.8	S 19 04.2	+00.8	284	53.7	-27.8	S 01 47.3	-16.3	14
15	47	53.6	-00.2	S 21 35.1	+00.4	57	20.8	-00.8	S 19 05.0	+00.7	299	25.9	-27.8	S 01 31.0	-16.3	15
16	62	53.4	-00.3	S 21 35.5	+00.4	72	20.0	-00.7	S 19 05.7	+00.8	313	58.1	-27.9	S 01 14.7	-16.3	16
17	77	53.1	-00.2	S 21 35.9	+00.4	87	19.3	-00.8	S 19 06.5	+00.8	328	30.2	-27.9	S 00 58.4	-16.4	17
18	92	52.9	-00.2	S 21 36.3	+00.4	102	18.5	-00.7	S 19 07.3	+00.8	343	02.3	-28.0	S 00 42.0	-16.3	18
19	107	52.7	-00.2	S 21 36.7	+00.4	117	17.8	-00.8	S 19 08.1	+00.7	357	34.3	-27.9	S 00 25.7	-16.4	19
20	122	52.5	-00.3	S 21 37.1	+00.4	132	17.0	-00.8	S 19 08.8	+00.8	12	06.4	-28.1	S 00 09.3	-16.5	20
21	137	52.2	-00.2	S 21 37.5	+00.4	147	16.2	-00.7	S 19 09.6	+00.8	26	38.3	-28.0	N 00 07.2	+16.4	21
22	152	52.0	-00.2	S 21 37.9	+00.4	162	15.5	-00.8	S 19 10.4	+00.8	41	10.3	-28.1	N 00 23.6	+16.5	22
23	167	51.8	-00.2	S 21 38.3	+00.4	177	14.7	-00.8	S 19 11.2	+00.7	55	42.2	-28.2	N 00 40.1	+16.5	23

UT 02 06 10 14 18 22
 SD 16°2 16°2 16°2 16°2 16°2 16°2
 HP 00°1 00°1 00°1 00°1 00°1 00°1
 SHA 115° 115° 114° 114° 114° 114°
 Greenwich Culmination Time: 11:48

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	171	59.2	+00.4	S 23 44.0	+00.2	314	40.8	+02.6	N 21 23.1	+00.0	74	35.1	+02.4	S 04 05.3	+00.0	00
01	186	59.6	+00.5	S 23 44.2	+00.2	329	43.4	+02.6	N 21 23.1	+00.0	89	37.5	+02.5	S 04 05.3	+00.0	01
02	202	00.1	+00.4	S 23 44.4	+00.1	344	46.0	+02.7	N 21 23.1	+00.0	104	40.0	+02.4	S 04 05.3	+00.0	02
03	217	00.5	+00.4	S 23 44.5	+00.2	359	48.7	+02.6	N 21 23.2	+00.1	119	42.4	+02.5	S 04 05.3	+00.0	03
04	232	00.9	+00.5	S 23 44.7	+00.1	14	51.3	+02.7	N 21 23.2	+00.1	134	44.9	+02.5	S 04 05.3	+00.0	04
05	247	01.4	+00.4	S 23 44.8	+00.2	29	54.0	+02.6	N 21 23.3	+00.0	149	47.4	+02.4	S 04 05.3	+00.0	05
06	262	01.8	+00.5	S 23 45.0	+00.2	44	56.6	+02.6	N 21 23.3	+00.0	164	49.8	+02.5	S 04 05.3	-00.1	06
07	277	02.3	+00.4	S 23 45.2	+00.1	59	59.2	+02.7	N 21 23.3	+00.1	179	52.3	+02.4	S 04 05.2	+00.0	07
08	292	02.7	+00.5	S 23 45.3	+00.2	75	01.9	+02.6	N 21 23.4	+00.0	194	54.7	+02.5	S 04 05.2	+00.0	08
09	307	03.2	+00.4	S 23 45.5	+00.1	90	04.5	+02.7	N 21 23.4	+00.0	209	57.2	+02.4	S 04 05.2	+00.0	09
10	322	03.6	+00.4	S 23 45.6	+00.2	105	07.2	+02.6	N 21 23.4	+00.1	224	59.6	+02.5	S 04 05.2	+00.0	10
11	337	04.0	+00.5	S 23 45.8	+00.1	120	09.8	+02.6	N 21 23.5	+00.0	240	02.1	+02.4	S 04 05.2	+00.0	11
12	352	04.5	+00.4	S 23 45.9	+00.2	135	12.4	+02.7	N 21 23.5	+00.0	255	04.5	+02.5	S 04 05.2	-00.1	12
13	7	04.9	+00.5	S 23 46.1	+00.1	150	15.1	+02.6	N 21 23.5	+00.1	270	07.0	+02.4	S 04 05.1	+00.0	13
14	22	05.4	+00.4	S 23 46.2	+00.2	165	17.7	+02.7	N 21 23.6	+00.0	285	09.4	+02.5	S 04 05.1	+00.0	14
15	37	05.8	+00.5	S 23 46.4	+00.1	180	20.4	+02.6	N 21 23.6	+00.0	300	11.9	+02.4	S 04 05.1	+00.0	15
16	52	06.3	+00.4	S 23 46.5	+00.2	195	23.0	+02.7	N 21 23.6	+00.1	315	14.3	+02.5	S 04 05.1	+00.0	16
17	67	06.7	+00.4	S 23 46.7	+00.2	210	25.7	+02.6	N 21 23.7	+00.0	330	16.8	+02.4	S 04 05.1	+00.0	17
18	82	07.1	+00.5	S 23 46.9	+00.1	225	28.3	+02.6	N 21 23.7	+00.1	345	19.2	+02.4	S 04 05.1	-00.1	18
19	97	07.6	+00.4	S 23 47.0	+00.2	240	30.9	+02.7	N 21 23.8	+00.0	0	21.6	+02.5	S 04 05.0	+00.0	19
20	112	08.0	+00.5	S 23 47.2	+00.1	255	33.6	+02.6	N 21 23.8	+00.0	15	24.1	+02.4	S 04 05.0	+00.0	20
21	127	08.5	+00.4	S 23 47.3	+00.2	270	36.2	+02.7	N 21 23.8	+00.1	30	26.5	+02.5	S 04 05.0	+00.0	21
22	1															

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	182	51.6	-00.3	S 21 38.7	+00.4	192	13.9	-00.7	S 19 11.9	+00.8	70	14.0	-28.2	N 00 56.6	+16.5	00
01	197	51.3	-00.2	S 21 39.1	+00.4	207	13.2	-00.8	S 19 12.7	+00.8	84	45.8	-28.2	N 01 13.1	+16.5	01
02	212	51.1	-00.2	S 21 39.5	+00.5	222	12.4	-00.8	S 19 13.5	+00.7	99	17.6	-28.3	N 01 29.6	+16.5	02
03	227	50.9	-00.2	S 21 40.0	+00.4	237	11.6	-00.7	S 19 14.2	+00.8	113	49.3	-28.4	N 01 46.1	+16.6	03
04	242	50.7	-00.3	S 21 40.4	+00.4	252	10.9	-00.8	S 19 15.0	+00.8	128	20.9	-28.4	N 02 02.7	+16.5	04
05	257	50.4	-00.2	S 21 40.8	+00.4	267	10.1	-00.7	S 19 15.8	+00.7	142	52.5	-28.4	N 02 19.2	+16.6	05
06	272	50.2	-00.2	S 21 41.2	+00.4	282	09.4	-00.8	S 19 16.5	+00.8	157	24.1	-28.5	N 02 35.8	+16.6	06
07	287	50.0	-00.2	S 21 41.6	+00.4	297	08.6	-00.8	S 19 17.3	+00.8	171	55.6	-28.6	N 02 52.4	+16.6	07
08	302	49.8	-00.3	S 21 42.0	+00.4	312	07.8	-00.8	S 19 18.1	+00.7	186	27.0	-28.6	N 03 09.0	+16.5	08
09	317	49.5	-00.2	S 21 42.4	+00.4	327	07.0	-00.7	S 19 18.8	+00.8	200	58.4	-28.7	N 03 25.5	+16.6	09
10	332	49.3	-00.2	S 21 42.8	+00.4	342	06.3	-00.8	S 19 19.6	+00.8	215	29.7	-28.7	N 03 42.1	+16.7	10
11	347	49.1	-00.3	S 21 43.2	+00.4	357	05.5	-00.8	S 19 20.4	+00.7	230	01.0	-28.8	N 03 58.8	+16.6	11
12	2 48.8	-00.2	S 21 43.6	+00.3	12	04.7	-00.7	S 19 21.1	+00.8	244	32.2	-28.9	N 04 15.4	+16.6	12	
13	17 48.6	-00.2	S 21 43.9	+00.4	17	04.0	-00.8	S 19 21.9	+00.8	259	03.3	-28.9	N 04 32.0	+16.6	13	
14	32 48.4	-00.2	S 21 44.3	+00.4	42	03.2	-00.8	S 19 22.6	+00.8	273	34.4	-29.0	N 04 48.6	+16.6	14	
15	47 48.2	-00.3	S 21 44.7	+00.4	57	02.4	-00.7	S 19 23.4	+00.4	288	05.4	-29.1	N 05 05.2	+16.6	15	
16	62 47.9	-00.2	S 21 45.1	+00.4	72	01.7	-00.8	S 19 24.1	+00.8	302	36.3	-29.1	N 05 21.8	+16.6	16	
17	77 47.7	-00.2	S 21 45.5	+00.4	87	00.9	-00.8	S 19 24.9	+00.7	317	07.2	-29.3	N 05 38.4	+16.6	17	
18	92 47.5	-00.3	S 21 45.9	+00.4	102	00.1	-00.8	S 19 25.6	+00.8	331	37.9	-29.2	N 05 55.0	+16.5	18	
19	107 47.2	-00.2	S 21 46.3	+00.4	116	59.3	-00.7	S 19 26.4	+00.8	346	08.7	-29.4	N 06 11.5	+16.6	19	
20	122 47.0	-00.2	S 21 46.7	+00.4	131	58.6	-00.8	S 19 27.2	+00.7	0	39.3	-29.4	N 06 28.1	+16.6	20	
21	137 46.8	-00.3	S 21 47.1	+00.4	146	57.8	-00.8	S 19 27.9	+00.8	15	09.9	-29.5	N 06 44.7	+16.5	21	
22	152 46.5	-00.2	S 21 47.5	+00.4	161	57.0	-00.8	S 19 28.7	+00.7	29	40.4	-29.6	N 07 01.2	+16.5	22	
23	167 46.3	-00.2	S 21 47.9	+00.4	176	56.2	-00.7	S 19 29.4	+00.7	44	10.8	-29.7	N 07 17.7	+16.5	23	

UT 02 06 10 14 18 22	SD 16°2 16°2 16°2 16°2 16°2 16°2	UT 02 06 10 14 18 22	SD 00°1 00°1 00°1 00°1 00°1 00°1	UT 02 06 10 14 18 22	SD 16°0 16°1 16°1 16°2 16°2 16°2	UT 02 06 10 14 18 22	SD 16°0 16°1 16°1 16°2 16°2 16°2
HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 58°8 59°0 59°1 59°3 59°4 59°6	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 58°8 59°0 59°1 59°3 59°4 59°6	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 58°8 59°0 59°1 59°3 59°4 59°6	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 58°8 59°0 59°1 59°3 59°4 59°6
SHA 114° 113° 113° 113° 113° 113°	SHA 123° 123° 123° 123° 122° 122°	SHA 114° 113° 113° 113° 113° 113°	SHA 123° 123° 123° 123° 122° 122°	SHA 114° 113° 113° 113° 113° 113°	SHA 123° 123° 123° 123° 122° 122°	SHA 114° 113° 113° 113° 113° 113°	SHA 123° 123° 123° 123° 122° 122°
Greenwich Culmination Time: 11:48		Greenwich Culmination Time: 11:11		Greenwich Culmination Time: 19:57		Greenwich Culmination Time: 11:49	

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	171	37.6	+00.5	S 23 35.9	+00.2	312	34.5	+02.7	N 21 21.4	+00.1	72	37.2	+02.5	S 04 06.0	+00.0	00
01	186	38.1	+00.5	S 23 36.1	+00.1	327	37.2	+02.6	N 21 21.5	+00.0	87	39.7	+02.4	S 04 06.0	+00.0	01
02	201	38.6	+00.4	S 23 36.2	+00.2	342	39.8	+02.6	N 21 21.5	+00.0	102	42.1	+02.5	S 04 06.0	-00.1	02
03	216	39.0	+00.5	S 23 36.4	+00.2	357	42.4	+02.6	N 21 21.5	+00.1	117	44.6	+02.4	S 04 05.9	+00.0	03
04	231	39.5	+00.4	S 23 36.6	+00.2	12	45.0	+02.7	N 21 21.6	+00.0	132	47.0	+02.5	S 04 05.9	+00.0	04
05	246	39.9	+00.5	S 23 36.8	+00.1	27	47.7	+02.6	N 21 21.6	+00.0	147	49.5	+02.5	S 04 05.9	+00.0	05
06	261	40.4	+00.4	S 23 36.9	+00.2	42	50.3	+02.6	N 21 21.6	+00.1	162	52.0	+02.4	S 04 05.9	+00.0	06
07	276	40.8	+00.5	S 23 37.1	+00.2	57	52.9	+02.6	N 21 21.7	+00.0	177	54.4	+02.5	S 04 05.9	+00.0	07
08	291	41.3	+00.4	S 23 37.3	+00.2	72	55.5	+02.6	N 21 21.7	+00.0	192	56.9	+02.4	S 04 05.9	+00.0	08
09	306	41.7	+00.5	S 23 37.5	+00.2	87	58.1	+02.7	N 21 21.7	+00.1	207	59.3	+02.5	S 04 05.9	+00.0	09
10	321	42.2	+00.4	S 23 37.7	+00.1	103	00.8	+02.6	N 21 21.8	+00.0	223	01.8	+02.5	S 04 05.9	+00.0	10
11	336	42.6	+00.5	S 23 37.8	+00.2	118	03.4	+02.6	N 21 21.8	+00.0	238	04.3	+02.4	S 04 05.9	-00.1	11
12	351	43.1	+00.4	S 23 38.0	+00.2	133	06.0	+02.6	N 21 21.8	+00.1	253	06.7	+02.5	S 04 05.8	+00.0	12
13	6 43.5	+00.5	S 23 38.2	+00.2	148	08.6	+02.7	N 21 21.9	+00.0	268	09.2	+02.4	S 04 05.8	+00.0	13	
14	21 44.0	+00.4	S 23 38.4	+00.1	163	11.3	+02.6	N 21 21.9	+00.0	283	11.6	+02.5	S 04 05.8	+00.0	14	
15	36 44.4	+00.5	S 23 38.5	+00.2	178	13.9	+02.6	N 21 21.9	+00.1	298	14.1	+02.4	S 04 05.8	+00.0	15	
16	51 44.9	+00.4	S 23 38.7	+00.2	193	16.5	+02.7	N 21 22.0	+00.0	313	16.5	+02.5	S 04 05.8	+00.0	16	
17	66 45.3	+00.5	S 23 38.9	+00.1	208	19.2	+02.6	N 21 22.0	+00.0	328	19.0	+02.5	S 04 05.8	+00.0	17	
18	81 45.8	+00.4	S 23 39.0	+00.2	223	21.8	+02.6	N 21 22.0	+00.1	343	21.5	+02.4	S 04 05.8	-00.1	18	
19	96 46.2	+00.5	S 23 39.2	+00.2	238	24.4	+02.6	N 21 22.1	+00.0	358	23.9	+02.5	S 04 05.7	+00.0	19	
20	111 46.7	+00.4	S 23 39.4	+00.2	253	27.0	+02.7	N 21 22.1	+00.0	1	26.4	+02.4	S 04 05.7	+00.0	20	
21	126 47.1	+00.5	S 23 39.6	+00.1	268	29.7	+02.6	N 21 22.1	+00.1	2	28.8	+02.5	S 04 05.7	+00.0	21	
22	141 47.6	+00.4	S 23 39.7	+00.2	283	32.3	+02.6	N 21 22.2	+00.0	3	31.3	+02.4	S 04 05.7	+00.0	22	
23	156 48.0	+00.5	S 23 39.9	+00.2	298	34.9	+02.7	N 21 22.2	+00.0	4	33.7	+02.5	S 04 05.7	+00.0	23	

UT 02 06 10 14 18 22	SD 00°0 00°0 00°0 00°0 00°0 00°0	UT 02 06 10 14 18 22	SD 00°4 00°4 00°4 00°4 00°4 00°4	UT 02 06 10 14 18 22	SD 00°2 00°2 00°2 00°2 00°2 00°2	UT 02 06 10 14 18 22	SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°0 00°0 00°0 00°0 00°0 00°0	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°0 00°0 00°0 00°0 00°0 00°0	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°0 00°0 00°0 00°0 00°0 00°0	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 102° 102° 102° 102° 102° 102°	SHA 243° 243° 243° 243° 244° 244°	SHA 102° 102° 102° 102° 102° 102°	SHA 243° 243° 243° 243° 244° 244°	SHA 102° 102° 102° 102° 102° 102°	SHA 243° 243° 243° 243° 244° 244°	SHA 102° 102° 102° 102° 102° 102°	SHA 243° 243° 243° 243° 244° 244°
Greenwich Culmination Time: 12:33		Greenwich Culmination Time: 03:09		Greenwich Culmination Time: 19:06		Greenwich Culmination Time: 12:32	

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	182	46.1	-00.2	S 21 48.3	+00.3	191	55.5	-00.8	S 19 30.1	+00.8	58	41.1	-29.8	N 07 34.2	+16.5	00
01	197	45.9	-00.3	S 21 48.6	+00.4	206	54.7	-00.8	S 19 30.9	+00.7	73	11.3	-29.8	N 07 50.7	+16.5	01
02	212	45.6	-00.2	S 21 49.0	+00.4	221	53.9	-00.8	S 19 31.6	+00.8	87	41.5	-29.9	N 08 07.2	+16.5	02
03	227	45.4	-00.2	S 21 49.4	+00.4	236	53.1	-00.7	S 19 32.4	+00.7	102	11.6	-30.0	N 08 23.7	+16.4	03
04	242	45.2	-00.3	S 21 49.8	+00.4	251	52.4	-00.8	S 19 33.1	+00.8	116	41.6	-30.1	N 08 40.1	+16.4	04
05	257	44.9	-00.2	S 21 50.2	+00.4	266	51.6	-00.8	S 19 33.9	+00.7	131	11.5	-30.2	N 08 56.5	+16.4	05
06	272	44.7	-00.2	S 21 50.6	+00.4	281	50.8	-00.8	S 19 34.6	+00.8	145	41.3	-30.3	N 09 12.9	+16.3	06
07	287	44.5	-00.3	S 21 51.0	+00.3	296	50.0	-00.8	S 19 35.4	+00.7	160	11.0	-30.4	N 09 29.2	+16.3	07
08	302	44.2	-00.2	S 21 51.3	+00.4	311	49.2	-00.7	S 19 36.1	+00.7	174	40.6	-30.5	N 09 45.5	+16.3	08
09	317	44.0	-00.2	S 21 51.7	+00.4	326	48.5	-00.8	S 19 36.8	+00.8	189	10.1	-30.5	N 10 01.8	+16.2	09
10	332	43.8	-00.3	S 21 52.1	+00.4	341	47.7	-00.8	S 19 37.6	+00.7	203	39.6	-30.7	N 10 18.0	+16.3	10
11	347	43.5	-00.2	S 21 52.5	+00.4	356	46.9	-00.8	S 19 38.3	+00.8	218	08.9	-30.7	N 10 34.3	+16.1	11
12	2 43.3	-00.2	S													

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22 SD 16°2 16°2 16°2 16°2 16°2 16°2 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 107° 107° 107° 107° 106° 106° Greenwich Culmination Time: 11:51

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22 SD 16°2 16°2 16°2 16°2 16°2 16°2 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 110° 110° 110° 110° 110° 110° Greenwich Culmination Time: 11:49

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22 SD 00°0 00°0 00°0 00°0 00°0 00°0 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 098° 097° 097° 097° 097° 097° Greenwich Culmination Time: 12:28

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates for each planet.

UT 02 06 10 14 18 22 SD 00°0 00°0 00°0 00°0 00°0 00°0 HP 00°0 00°0 00°0 00°0 00°0 00°0 SHA 100° 100° 100° 100° 099° 099° Greenwich Culmination Time: 12:30

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on Dec 4, 2025, including GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on Dec 5, 2025, including GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on Dec 4, 2025, including GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on Dec 5, 2025, including GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

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Table with columns for UT, Sun, Venus, Moon (A: 71%), and Mars, Jupiter, Saturn. Each column contains 24 rows of astronomical data including GHA, ddGHA, Dec, and dDec. Includes sub-tables for UT 02-06 and 10-14 with additional data and Greenwich Culmination Times.

Table with columns for UT, Sun, Venus, Moon (A: 60%), Mars, Jupiter, Saturn. Each column contains 24 rows of astronomical data including GHA, ddGHA, Dec, and dDec. Includes sub-tables for UT 02-06 and 10-14 with additional data and Greenwich Culmination Times.

Table for Dec 8 showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Data rows range from 00 to 23.

UT 02 06 10 14 18 22
SD 16°2 16°2 16°2 16°2 16°2 16°2
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 105° 105° 105° 104° 104° 104°
Greenwich Culmination Time: 11:51

Table for Dec 9 showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Data rows range from 00 to 23.

UT 02 06 10 14 18 22
SD 16°2 16°2 16°2 16°2 16°2 16°2
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 104° 104° 104° 103° 103° 103°
Greenwich Culmination Time: 11:52

Table for Dec 8 showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Data rows range from 00 to 23.

UT 02 06 10 14 18 22
SD 00°4 00°4 00°4 00°4 00°4 00°4
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 244° 244° 244° 244° 244° 244°
Greenwich Culmination Time: 02:35

Table for Dec 9 showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Data rows range from 00 to 23.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 095° 095° 095° 095° 095° 094°
Greenwich Culmination Time: 12:26

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show astronomical data for each planet.

UT 02 06 10 14 18 22 SD 16°2 16°2 16°2 16°2 16°2 16°2 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 098° 098° 098° 098° 098° 097° Greenwich Culmination Time: 11:54

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show astronomical data for each planet.

UT 02 06 10 14 18 22 SD 16°2 16°2 16°2 16°2 16°2 16°2 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 102° 101° 101° 101° 101° 101° Greenwich Culmination Time: 11:53

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show astronomical data for each planet.

UT 02 06 10 14 18 22 SD 00°0 00°0 00°0 00°0 00°0 00°0 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 091° 091° 091° 091° 090° 090° Greenwich Culmination Time: 12:23

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show astronomical data for each planet.

UT 02 06 10 14 18 22 SD 00°0 00°0 00°0 00°0 00°0 00°0 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 093° 093° 093° 093° 093° 093° Greenwich Culmination Time: 12:25

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UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	181 36.5	-00.3	S 23 04.6	+00.2	188 13.9	-00.8	S 22 12.1	+00.5	268 52.0	-25.2	N 02 35.6	-14.8	00		
01	196 36.2	-00.3	S 23 04.8	+00.2	203 13.1	-00.9	S 22 12.6	+00.4	283 26.8	-25.1	N 02 20.8	-14.8	01		
02	211 35.9	-00.2	S 23 05.0	+00.1	218 12.2	-00.9	S 22 13.0	+00.5	298 01.7	-25.1	N 02 06.0	-14.8	02		
03	226 35.7	-00.3	S 23 05.1	+00.2	233 11.3	-00.9	S 22 13.5	+00.5	312 36.6	-25.1	N 01 51.2	-14.8	03		
04	241 35.4	-00.3	S 23 05.3	+00.2	248 10.4	-00.9	S 22 14.0	+00.4	327 11.5	-25.0	N 01 36.4	-14.8	04		
05	256 35.1	-00.3	S 23 05.5	+00.2	263 09.5	-00.9	S 22 14.4	+00.5	341 46.5	-25.0	N 01 21.6	-14.7	05		
06	271 34.8	-00.3	S 23 05.7	+00.2	278 08.6	-00.9	S 22 14.9	+00.5	356 21.5	-24.9	N 01 06.9	-14.8	06		
07	286 34.5	-00.3	S 23 05.9	+00.2	293 07.7	-00.9	S 22 15.4	+00.4	10 56.6	-24.9	N 00 52.1	-14.7	07		
08	301 34.2	-00.3	S 23 06.1	+00.1	308 06.8	-00.9	S 22 15.8	+00.5	25 31.7	-24.9	N 00 37.4	-14.7	08		
09	316 33.9	-00.3	S 23 06.2	+00.2	323 05.9	-00.9	S 22 16.3	+00.4	40 06.8	-24.9	N 00 22.7	-14.7	09		
10	331 33.6	-00.3	S 23 06.4	+00.2	338 05.0	-00.9	S 22 16.7	+00.5	54 41.9	-24.8	N 00 08.0	-14.7	10		
11	346 33.3	-00.3	S 23 06.6	+00.2	353 04.1	-00.9	S 22 17.2	+00.5	69 17.1	-24.8	S 00 06.7	+14.7	11		
12	1 33.0	-00.3	S 23 06.8	+00.1	8 03.2	-00.9	S 22 17.7	+00.4	83 52.3	-24.8	S 00 21.4	+14.7	12		
13	16 32.7	-00.3	S 23 06.9	+00.2	23 02.3	-00.9	S 22 18.1	+00.5	98 27.5	-24.7	S 00 36.1	+14.6	13		
14	31 32.4	-00.3	S 23 07.1	+00.2	38 01.4	-01.0	S 22 18.6	+00.4	113 02.8	-24.8	S 00 50.7	+14.6	14		
15	46 32.1	-00.2	S 23 07.3	+00.2	53 00.4	-00.9	S 22 19.0	+00.5	127 38.0	-24.7	S 01 05.3	+14.6	15		
16	61 31.9	-00.3	S 23 07.5	+00.1	67 59.5	-00.9	S 22 19.5	+00.4	142 13.3	-24.7	S 01 19.9	+14.6	16		
17	76 31.6	-00.3	S 23 07.6	+00.2	82 58.6	-00.9	S 22 19.9	+00.5	156 48.6	-24.6	S 01 34.5	+14.6	17		
18	91 31.3	-00.3	S 23 07.8	+00.2	97 57.7	-00.9	S 22 20.4	+00.5	171 24.0	-24.7	S 01 49.1	+14.6	18		
19	106 31.0	-00.3	S 23 08.0	+00.2	112 56.8	-00.9	S 22 20.8	+00.5	185 59.3	-24.6	S 02 03.7	+14.5	19		
20	121 30.7	-00.3	S 23 08.2	+00.1	127 55.9	-00.9	S 22 21.3	+00.4	200 34.7	-24.6	S 02 18.2	+14.5	20		
21	136 30.4	-00.3	S 23 08.3	+00.2	142 55.0	-00.9	S 22 21.7	+00.5	215 10.1	-24.6	S 02 32.7	+14.5	21		
22	151 30.1	-00.3	S 23 08.5	+00.2	157 54.1	-00.9	S 22 22.2	+00.4	229 45.5	-24.6	S 02 47.2	+14.4	22		
23	166 29.8	-00.3	S 23 08.7	+00.1	172 53.2	-00.9	S 22 22.6	+00.4	244 20.9	-24.6	S 03 01.6	+14.5	23		
UT	02 06 10 14 18 22				UT	02 06 10 14 18 22			UT	02 06 10 14 18 22					
SD	16°2 16°2 16°2 16°2 16°2 16°2				SD	00°1 00°1 00°1 00°1 00°1 00°1			SD	15°2 15°2 15°1 15°1 15°1 15°0					
HP	00°1 00°1 00°1 00°1 00°1 00°1				HP	00°1 00°1 00°1 00°1 00°1 00°1			HP	55°8 55°6 55°5 55°4 55°3 55°2					
SHA	101° 100° 100° 100° 100° 100°				SHA	107° 107° 107° 106° 106° 106°			SHA	187° 187° 183° 182° 180° 178°					
Greenwich Culmination Time: 11:53				Greenwich Culmination Time: 11:27				Greenwich Culmination Time: 06:14							

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	181 29.5	-00.3	S 23 08.8	+00.2	187 52.3	-00.9	S 22 23.0	+00.5	258 56.3	-24.6	S 03 16.1	+14.4	00		
01	196 29.2	-00.3	S 23 09.0	+00.2	202 51.4	-00.9	S 22 23.5	+00.4	273 31.7	-24.5	S 03 30.5	+14.4	01		
02	211 28.9	-00.3	S 23 09.2	+00.1	217 50.5	-00.9	S 22 23.9	+00.5	288 07.2	-24.6	S 03 44.9	+14.3	02		
03	226 28.6	-00.3	S 23 09.3	+00.2	232 49.6	-00.9	S 22 24.4	+00.4	302 42.6	-24.5	S 03 59.2	+14.4	03		
04	241 28.3	-00.3	S 23 09.5	+00.2	247 48.7	-00.9	S 22 24.8	+00.4	317 18.1	-24.6	S 04 13.6	+14.3	04		
05	256 28.0	-00.3	S 23 09.7	+00.1	262 47.8	-00.9	S 22 25.2	+00.5	331 53.5	-24.5	S 04 27.9	+14.2	05		
06	271 27.7	-00.3	S 23 09.8	+00.2	277 46.9	-00.9	S 22 25.7	+00.4	346 29.0	-24.5	S 04 42.1	+14.3	06		
07	286 27.4	-00.3	S 23 10.0	+00.2	292 46.0	-01.0	S 22 26.1	+00.5	1 04.5	-24.6	S 04 56.4	+14.2	07		
08	301 27.1	-00.3	S 23 10.2	+00.1	307 45.0	-00.9	S 22 26.6	+00.4	15 39.9	-24.5	S 05 10.6	+14.2	08		
09	316 26.8	-00.2	S 23 10.3	+00.2	322 44.1	-00.9	S 22 27.0	+00.4	30 15.4	-24.5	S 05 24.8	+14.2	09		
10	331 26.6	-00.3	S 23 10.5	+00.1	337 43.2	-00.9	S 22 27.4	+00.4	44 50.9	-24.6	S 05 39.0	+14.1	10		
11	346 26.3	-00.3	S 23 10.6	+00.2	352 42.3	-00.9	S 22 27.8	+00.5	59 26.3	-24.5	S 05 53.1	+14.1	11		
12	1 26.0	-00.3	S 23 10.8	+00.2	7 41.4	-00.9	S 22 28.3	+00.4	74 01.8	-24.5	S 06 07.2	+14.0	12		
13	16 25.7	-00.3	S 23 11.0	+00.1	22 40.5	-00.9	S 22 28.7	+00.4	88 37.3	-24.6	S 06 21.2	+14.1	13		
14	31 25.4	-00.3	S 23 11.1	+00.2	37 39.6	-00.9	S 22 29.1	+00.5	103 12.7	-24.5	S 06 35.3	+14.0	14		
15	46 25.1	-00.3	S 23 11.3	+00.1	52 38.7	-00.9	S 22 29.6	+00.4	117 48.2	-24.6	S 06 49.3	+13.9	15		
16	61 24.8	-00.3	S 23 11.4	+00.2	67 37.8	-01.0	S 22 30.0	+00.4	132 23.6	-24.5	S 07 03.2	+13.9	16		
17	76 24.5	-00.3	S 23 11.6	+00.1	82 36.8	-00.9	S 22 30.4	+00.4	146 59.1	-24.6	S 07 17.1	+13.9	17		
18	91 24.2	-00.3	S 23 11.7	+00.2	97 35.9	-00.9	S 22 30.8	+00.5	161 34.5	-24.6	S 07 31.0	+13.9	18		
19	106 23.9	-00.3	S 23 11.9	+00.1	112 35.0	-00.9	S 22 31.3	+00.4	176 09.9	-24.6	S 07 44.9	+13.8	19		
20	121 23.6	-00.3	S 23 12.0	+00.2	127 34.1	-00.9	S 22 31.7	+00.4	190 45.3	-24.6	S 07 58.7	+13.8	20		
21	136 23.3	-00.3	S 23 12.2	+00.1	142 33.2	-00.9	S 22 32.1	+00.4	205 20.7	-24.6	S 08 12.5	+13.7	21		
22	151 23.0	-00.3	S 23 12.3	+00.2	157 32.3	-00.9	S 22 32.5	+00.4	219 56.1	-24.7	S 08 26.2	+13.7	22		
23	166 22.7	-00.3	S 23 12.5	+00.1	172 31.4	-00.9	S 22 32.9	+00.4	234 31.4	-24.6	S 08 39.9	+13.6	23		
UT	02 06 10 14 18 22				UT	02 06 10 14 18 22			UT	02 06 10 14 18 22					
SD	16°2 16°2 16°2 16°2 16°2 16°2				SD	00°1 00°1 00°1 00°1 00°1 00°1			SD	15°0 15°0 15°0 14°9 14°9 14°9					
HP	00°1 00°1 00°1 00°1 00°1 00°1				HP	00°1 00°1 00°1 00°1 00°1 00°1			HP	55°1 55°0 54°9 54°8 54°7 54°7					
SHA	099° 099° 099° 099° 099° 099°				SHA	106° 106° 105° 105° 105° 105°			SHA	176° 174° 173° 171° 169° 167°					
Greenwich Culmination Time: 11:54				Greenwich Culmination Time: 11:29				Greenwich Culmination Time: 06:55							

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UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <small>A: 94%</small>				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	180 53.3	-00.3	S 23 23.2	+00.1	186 01.2	-01.0	S 23 07.6	+00.3	206 16.3	-29.6	S 25 43.7	+06.2	00			
01	195 53.0	-00.3	S 23 23.3	+00.0	201 00.2	-00.9	S 23 07.9	+00.3	220 46.7	-29.8	S 25 49.9	+06.0	01			
02	210 52.7	-00.3	S 23 23.3	+00.1	215 59.3	-01.0	S 23 08.2	+00.3	235 16.9	-29.8	S 25 55.9	+05.9	02			
03	225 52.4	-00.3	S 23 23.4	+00.1	230 58.3	-00.9	S 23 08.5	+00.3	249 47.1	-29.9	S 26 01.8	+05.7	03			
04	240 52.1	-00.4	S 23 23.5	+00.0	245 57.4	-01.0	S 23 08.8	+00.3	264 17.2	-29.9	S 26 07.5	+05.7	04			
05	255 51.7	-00.3	S 23 23.5	+00.1	260 56.4	-00.9	S 23 09.1	+00.3	278 47.3	-30.0	S 26 13.2	+05.5	05			
06	270 51.4	-00.3	S 23 23.6	+00.1	275 55.5	-01.0	S 23 09.4	+00.3	293 17.3	-30.1	S 26 18.7	+05.4	06			
07	285 51.1	-00.3	S 23 23.7	+00.0	290 54.5	-00.9	S 23 09.7	+00.3	307 47.2	-30.1	S 26 24.1	+05.3	07			
08	300 50.8	-00.3	S 23 23.7	+00.1	305 53.6	-00.9	S 23 10.0	+00.3	322 17.1	-30.1	S 26 29.4	+05.2	08			
09	315 50.5	-00.3	S 23 23.8	+00.1	320 52.7	-01.0	S 23 10.3	+00.3	336 47.0	-30.3	S 26 34.6	+05.1	09			
10	330 50.2	-00.3	S 23 23.9	+00.0	335 51.7	-00.9	S 23 10.6	+00.3	351 16.7	-30.2	S 26 39.7	+04.9	10			
11	345 49.9	-00.3	S 23 23.9	+00.1	350 50.8	-01.0	S 23 10.9	+00.3	5 46.5	-30.4	S 26 44.6	+04.8	11			
12	0 49.6	-00.3	S 23 24.0	+00.1	5 49.8	-00.9	S 23 11.2	+00.2	20 16.1	-30.4	S 26 49.4	+04.6	12			
13	15 49.3	-00.3	S 23 24.1	+00.0	20 48.9	-01.0	S 23 11.4	+00.3	34 45.7	-30.4	S 26 54.0	+04.6	13			
14	30 49.0	-00.3	S 23 24.1	+00.1	35 47.9	-00.9	S 23 11.7	+00.3	49 15.3	-30.5	S 26 58.6	+04.4	14			
15	45 48.7	-00.4	S 23 24.2	+00.0	50 47.0	-01.0	S 23 12.0	+00.3	63 44.8	-30.5	S 27 03.0	+04.3	15			
16	60 48.3	-00.3	S 23 24.2	+00.1	65 46.0	-00.9	S 23 12.3	+00.3	78 14.3	-30.6	S 27 07.3	+04.2	16			
17	75 48.0	-00.3	S 23 24.3	+00.0	80 45.1	-01.0	S 23 12.6	+00.2	92 43.7	-30.7	S 27 11.5	+04.0	17			
18	90 47.7	-00.3	S 23 24.3	+00.1	95 44.1	-00.9	S 23 12.8	+00.3	107 13.0	-30.7	S 27 15.5	+03.9	18			
19	105 47.4	-00.3	S 23 24.4	+00.1	110 43.2	-01.0	S 23 13.1	+00.3	121 42.3	-30.7	S 27 19.4	+03.8	19			
20	120 47.1	-00.3	S 23 24.5	+00.0	125 42.2	-00.9	S 23 13.4	+00.3	136 11.6	-30.8	S 27 23.2	+03.6	20			
21	135 46.8	-00.3	S 23 24.5	+00.1	140 41.3	-01.0	S 23 13.7	+00.2	150 40.8	-30.8	S 27 26.8	+03.5	21			
22	150 46.5	-00.3	S 23 24.6	+00.0	155 40.3	-00.9	S 23 13.9	+00.3	165 10.0	-30.9	S 27 30.3	+03.4	22			
23	165 46.2	-00.3	S 23 24.6	+00.1	170 39.4	-01.0	S 23 14.2	+00.3	179 39.1	-30.9	S 27 33.7	+03.3	23			
UT 02 06 10 14 18 22	SD 16°3 16°3 16°3 16°3 16°3 16°3	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 14°7 14°7 14°7 14°7 14°7 14°7	SD 16°2 16°2 16°2 16°2 16°2 16°2	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 14°8 14°8 14°8 14°8 14°8 14°8	SD 16°2 16°2 16°2 16°2 16°2 16°2	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 14°8 14°8 14°8 14°8 14°8 14°8	SD 16°2 16°2 16°2 16°2 16°2 16°2
Greenwich Culmination Time: 11:56																

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <small>A: 85%</small>				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	181 15.2	-00.3	S 23 16.0	+00.1	187 08.4	-00.9	S 22 42.9	+00.4	239 07.5	-25.3	S 14 07.3	+12.4	00			
01	196 14.9	-00.3	S 23 16.1	+00.1	202 07.5	-00.9	S 22 43.3	+00.4	253 42.2	-25.5	S 14 19.7	+12.4	01			
02	211 14.6	-00.3	S 23 16.2	+00.2	217 06.6	-01.0	S 22 43.7	+00.4	268 16.7	-25.4	S 14 32.1	+12.3	02			
03	226 14.3	-00.3	S 23 16.4	+00.1	232 05.6	-00.9	S 22 44.1	+00.4	282 51.3	-25.6	S 14 44.4	+12.2	03			
04	241 14.0	-00.3	S 23 16.5	+00.1	247 04.7	-00.9	S 22 44.5	+00.4	297 25.7	-25.5	S 14 56.6	+12.2	04			
05	256 13.7	-00.3	S 23 16.6	+00.1	262 03.8	-00.9	S 22 44.9	+00.3	312 00.2	-25.6	S 15 08.8	+12.1	05			
06	271 13.4	-00.3	S 23 16.7	+00.2	277 02.9	-01.0	S 22 45.2	+00.4	326 34.6	-25.7	S 15 20.9	+12.0	06			
07	286 13.1	-00.3	S 23 16.9	+00.1	292 01.9	-00.9	S 22 45.6	+00.4	341 08.9	-25.7	S 15 32.9	+12.0	07			
08	301 12.8	-00.3	S 23 17.0	+00.1	307 01.0	-00.9	S 22 46.0	+00.4	355 43.2	-25.7	S 15 44.9	+11.9	08			
09	316 12.5	-00.3	S 23 17.1	+00.1	322 00.1	-00.9	S 22 46.4	+00.4	10 17.5	-25.8	S 15 56.8	+11.9	09			
10	331 12.2	-00.3	S 23 17.2	+00.2	336 59.2	-01.0	S 22 46.8	+00.3	24 51.7	-25.8	S 16 08.7	+11.8	10			
11	346 11.9	-00.3	S 23 17.4	+00.1	351 58.2	-00.9	S 22 47.1	+00.4	39 25.9	-25.9	S 16 20.5	+11.7	11			
12	1 11.6	-00.3	S 23 17.5	+00.1	6 57.3	-00.9	S 22 47.5	+00.4	53 60.0	-26.0	S 16 32.2	+11.7	12			
13	16 11.3	-00.3	S 23 17.6	+00.1	21 56.4	-01.0	S 22 47.9	+00.3	68 34.0	-26.0	S 16 43.9	+11.6	13			
14	31 11.0	-00.3	S 23 17.7	+00.1	36 55.4	-00.9	S 22 48.2	+00.4	83 08.0	-26.0	S 16 55.5	+11.5	14			
15	46 10.7	-00.3	S 23 17.8	+00.1	51 54.5	-00.9	S 22 48.6	+00.4	97 42.0	-26.1	S 17 07.0	+11.5	15			
16	61 10.4	-00.3	S 23 17.9	+00.2	66 53.6	-00.9	S 22 49.0	+00.3	112 15.9	-26.2	S 17 18.5	+11.3	16			
17	76 10.1	-00.3	S 23 18.1	+00.1	81 52.7	-01.0	S 22 49.3	+00.4	126 49.7	-26.2	S 17 29.8	+11.3	17			
18	91 09.8	-00.3	S 23 18.2	+00.1	96 51.7	-00.9	S 22 49.7	+00.4	141 23.5	-26.2	S 17 41.1	+11.3	18			
19	106 09.5	-00.3	S 23 18.3	+00.1	111 50.8	-00.9	S 22 50.1	+00.3	155 57.3	-26.3	S 17 52.4	+11.2	19			
20	121 09.2	-00.3	S 23 18.4	+00.1	126 49.9	-01.0	S 22 50.4	+00.4	170 31.0	-26.4	S 18 03.6	+11.1	20			
21	136 08.9	-00.3	S 23 18.5	+00.1	141 48.9	-00.9	S 22 50.8	+00.4	185 04.6	-26.4	S 18 14.7	+11.0	21			
22	151 08.6	-00.3	S 23 18.6	+00.1	156 48.0	-00.9	S 22 51.2	+00.3	199 38.2	-26.5	S 18 25.7	+10.9	22			
23	166 08.3	-00.3	S 23 18.7	+00.2	171 47.1	-00.9	S 22 51.5	+00.4	214 11.7	-26.6	S 18 36.6	+10.9	23			
UT 02 06 10 14 18 22	SD 16°2 16°2 16°2 16°2 16°2 16°2	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 14°8 14°8 14°8 14°8 14°8 14°8	SD 16°2 16°2 16°2 16°2 16°2 16°2	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 14°8 14°8 14°8 14°8 14°8 14°8	SD 16°2 16°2 16°2 16°2 16°2 16°2	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 00°1 00°1 00°1 00°1 00°1 00°1	SD 14°8 14°8 14°8 14°8 14°8 14°8	SD 16°2 16°2 16°2 16°2 16°2 16°2
Greenwich Culmination Time: 11:55																

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	174 38.4	+00.4	S 24 13.1	+00.0	331 56.5	+02.8	N 21 40.2	+00.0	90 04.0	+02.4	S 03 54.1	+00.0	00
01	189 38.8	+00.4	S 24 13.1	+00.0	346 59.3	+02.7	N 21 40.2	+00.1	105 06.4	+02.4	S 03 54.1	-00.1	01
02	204 39.2	+00.4	S 24 13.1	+00.0	2 02.0	+02.8	N 21 40.3	+00.0	120 08.8	+02.4	S 03 54.0	+00.0	02
03	219 39.6	+00.4	S 24 13.1	+00.0	17 04.8	+02.7	N 21 40.3	+00.1	135 11.2	+02.4	S 03 54.0	-00.1	03
04	234 40.0	+00.4	S 24 13.1	+00.0	32 07.5	+02.8	N 21 40.4	+00.0	150 13.6	+02.4	S 03 53.9	+00.0	04
05	249 40.4	+00.3	S 24 13.1	+00.0	47 10.3	+02.7	N 21 40.4	+00.1	165 16.0	+02.4	S 03 53.9	-00.1	05
06	264 40.7	+00.4	S 24 13.1	-00.1	62 13.0	+02.8	N 21 40.5	+00.0	180 18.4	+02.3	S 03 53.8	+00.0	06
07	279 41.1	+00.4	S 24 13.0	+00.0	77 15.8	+02.7	N 21 40.5	+00.1	195 20.7	+02.4	S 03 53.8	+00.0	07
08	294 41.5	+00.4	S 24 13.0	+00.0	92 18.5	+02.8	N 21 40.6	+00.0	210 23.1	+02.4	S 03 53.8	-00.1	08
09	309 41.9	+00.4	S 24 13.0	+00.0	107 21.3	+02.8	N 21 40.6	+00.1	225 25.5	+02.4	S 03 53.7	+00.0	09
10	324 42.3	+00.4	S 24 13.0	+00.0	122 24.1	+02.7	N 21 40.7	+00.0	240 27.9	+02.4	S 03 53.7	-00.1	10
11	339 42.7	+00.4	S 24 13.0	+00.0	137 26.8	+02.8	N 21 40.7	+00.1	255 30.3	+02.4	S 03 53.6	+00.0	11
12	354 43.1	+00.4	S 24 13.0	-00.1	152 29.6	+02.7	N 21 40.8	+00.0	270 32.7	+02.3	S 03 53.6	-00.1	12
13	9 43.5	+00.4	S 24 12.9	+00.0	167 32.3	+02.8	N 21 40.8	+00.1	285 35.0	+02.4	S 03 53.5	+00.0	13
14	24 43.9	+00.4	S 24 12.9	+00.0	182 35.1	+02.7	N 21 40.9	+00.0	300 37.4	+02.4	S 03 53.5	+00.0	14
15	39 44.3	+00.3	S 24 12.9	+00.0	197 37.8	+02.8	N 21 41.0	+00.1	315 39.8	+02.4	S 03 53.5	-00.1	15
16	54 44.6	+00.4	S 24 12.9	+00.0	212 40.6	+02.7	N 21 41.0	+00.1	330 42.2	+02.4	S 03 53.4	+00.0	16
17	69 45.0	+00.4	S 24 12.9	+00.0	227 43.3	+02.8	N 21 41.1	+00.0	345 44.6	+02.4	S 03 53.4	-00.1	17
18	84 45.4	+00.4	S 24 12.9	-00.1	242 46.1	+02.7	N 21 41.1	+00.1	0 47.0	+02.4	S 03 53.3	+00.0	18
19	99 45.8	+00.4	S 24 12.8	+00.0	257 48.8	+02.8	N 21 41.2	+00.0	15 49.4	+02.3	S 03 53.3	-00.1	19
20	114 46.2	+00.4	S 24 12.8	+00.0	272 51.6	+02.8	N 21 41.2	+00.1	30 51.7	+02.4	S 03 53.2	+00.0	20
21	129												

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 16°3 16°3 16°3 16°3 16°3 16°3
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 096° 096° 096° 096° 095° 095°
Greenwich Culmination Time: 11:55

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 089° 089° 089° 089° 089° 089°
Greenwich Culmination Time: 12:22

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 16°3 16°3 16°3 16°3 16°3 16°3
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 095° 095° 095° 094° 094° 094°
Greenwich Culmination Time: 11:56

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and magnitude data for each planet.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 089° 088° 088° 088° 088° 088°
Greenwich Culmination Time: 12:21

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	180	23.5	-00.3	S 23 26.3	+00.0	184	29.5	-01.0	S 23 30.7	+00.2	156	30.9	-30.7	S 25 26.8	-06.8	00
01	195	23.2	-00.3	S 23 26.3	-00.1	199	28.5	-00.9	S 23 30.9	+00.1	171	00.2	-30.6	S 25 20.0	-06.9	01
02	210	22.9	-00.3	S 23 26.2	+00.0	214	27.6	-01.0	S 23 31.0	+00.2	185	29.6	-30.5	S 25 13.1	-07.1	02
03	225	22.6	-00.3	S 23 26.2	+00.0	229	26.6	-01.0	S 23 31.2	+00.2	199	59.1	-30.5	S 25 06.0	-07.1	03
04	240	22.3	-00.4	S 23 26.2	+00.0	244	25.6	-00.9	S 23 31.4	+00.2	214	28.6	-30.5	S 24 58.9	-07.3	04
05	255	21.9	-00.3	S 23 26.2	+00.0	259	24.7	-01.0	S 23 31.6	+00.2	228	58.1	-30.4	S 24 51.6	-07.5	05
06	270	21.6	-00.3	S 23 26.2	+00.0	274	23.7	-01.0	S 23 31.8	+00.1	243	27.7	-30.4	S 24 44.1	-07.5	06
07	285	21.3	-00.3	S 23 26.2	+00.0	289	22.7	-00.9	S 23 31.9	+00.2	257	57.3	-30.3	S 24 36.6	-07.7	07
08	300	21.0	-00.3	S 23 26.2	+00.0	304	21.8	-01.0	S 23 32.1	+00.2	272	27.0	-30.2	S 24 28.9	-07.8	08
09	315	20.7	-00.3	S 23 26.2	-00.1	319	20.8	-01.0	S 23 32.3	+00.1	286	56.8	-30.3	S 24 21.1	-07.9	09
10	330	20.4	-00.3	S 23 26.1	+00.0	334	19.8	-00.9	S 23 32.4	+00.2	301	26.5	-30.1	S 24 13.2	-08.0	10
11	345	20.1	-00.3	S 23 26.1	+00.0	349	18.9	-01.0	S 23 32.6	+00.2	315	56.4	-30.1	S 24 05.2	-08.2	11
12	0	19.8	-00.4	S 23 26.1	+00.0	4	17.9	-01.0	S 23 32.8	+00.1	330	26.3	-30.1	S 23 57.0	-08.3	12
13	15	19.4	-00.3	S 23 26.1	+00.0	19	16.9	-00.9	S 23 32.9	+00.2	344	56.2	-30.0	S 23 48.7	-08.4	13
14	30	19.1	-00.3	S 23 26.1	+00.0	34	16.0	-01.0	S 23 33.1	+00.2	359	26.2	-29.9	S 23 40.3	-08.5	14
15	45	18.8	-00.3	S 23 26.1	-00.1	49	15.0	-00.9	S 23 33.3	+00.1	13	56.3	-29.9	S 23 31.8	-08.6	15
16	60	18.5	-00.3	S 23 26.0	+00.0	64	14.1	-01.0	S 23 33.4	+00.2	28	26.4	-29.9	S 23 23.2	-08.8	16
17	75	18.2	-00.3	S 23 26.0	+00.0	79	13.1	-01.0	S 23 33.6	+00.1	42	56.5	-29.8	S 23 14.4	-08.8	17
18	90	17.9	-00.3	S 23 26.0	+00.0	94	12.1	-00.9	S 23 33.7	+00.2	57	26.7	-29.7	S 23 05.6	-09.0	18
19	105	17.6	-00.3	S 23 26.0	+00.0	109	11.2	-01.0	S 23 33.9	+00.1	71	57.0	-29.7	S 22 56.6	-09.1	19
20	120	17.3	-00.3	S 23 26.0	-00.1	124	10.2	-01.0	S 23 34.0	+00.2	86	27.3	-29.7	S 22 47.5	-09.2	20
21	135	17.0	-00.4	S 23 25.9	+00.0	139	09.2	-00.9	S 23 34.2	+00.2	100	57.6	-29.5	S 22 38.3	-09.3	21
22	150	16.6	-00.3	S 23 25.9	+00.0	154	08.3	-01.0	S 23 34.4	+00.1	115	28.1	-29.6	S 22 29.0	-09.4	22
23	165	16.3	-00.3	S 23 25.9	-00.1	169	07.3	-01.0	S 23 34.5	+00.2	129	58.5	-29.5	S 22 19.6	-09.6	23
UT 02 06 10 14 18 22	SD 16°3 16°3 16°3 16°3 16°3 16°3	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 084° 089° 089° 089° 089° 089°	Greenwich Culmination Time: 11:58	UT 02 06 10 14 18 22	SD 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 094° 093° 093° 093° 093° 093°	Greenwich Culmination Time: 11:42	UT 02 06 10 14 18 22	SD 15°0 15°0 15°0 15°0 15°0 15°1	HP 55°0 55°0 55°1 55°2 55°2 55°3	SHA 065° 062° 060° 058° 056° 054°	Greenwich Culmination Time: 14:02		

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	180	45.9	-00.3	S 23 24.7	+00.0	185	38.4	-00.9	S 23 14.5	+00.2	194	08.2	-31.0	S 27 37.0	+03.1	00
01	195	45.6	-00.3	S 23 24.7	+00.1	200	37.5	-01.0	S 23 14.7	+00.3	208	37.2	-31.0	S 27 40.1	+03.0	01
02	210	45.3	-00.4	S 23 24.8	+00.0	215	36.5	-00.9	S 23 15.0	+00.3	223	06.2	-31.0	S 27 43.1	+02.8	02
03	225	44.9	-00.3	S 23 24.8	+00.1	230	35.6	-01.0	S 23 15.3	+00.2	237	35.2	-31.1	S 27 45.9	+02.7	03
04	240	44.6	-00.3	S 23 24.9	+00.0	245	34.6	-00.9	S 23 15.5	+00.3	252	04.1	-31.1	S 27 48.6	+02.6	04
05	255	44.3	-00.3	S 23 24.9	+00.1	260	33.7	-01.0	S 23 15.8	+00.3	266	33.0	-31.1	S 27 51.2	+02.4	05
06	270	44.0	-00.3	S 23 25.0	+00.0	275	32.7	-00.9	S 23 16.1	+00.2	281	01.9	-31.2	S 27 53.6	+02.3	06
07	285	43.7	-00.3	S 23 25.0	+00.1	290	31.8	-01.0	S 23 16.3	+00.3	295	30.7	-31.3	S 27 55.9	+02.2	07
08	300	43.4	-00.3	S 23 25.1	+00.0	305	30.8	-00.9	S 23 16.6	+00.3	309	59.4	-31.2	S 27 58.1	+02.1	08
09	315	43.1	-00.3	S 23 25.1	+00.0	320	29.9	-01.0	S 23 16.9	+00.2	324	28.2	-31.3	S 28 00.2	+01.9	09
10	330	42.8	-00.3	S 23 25.1	+00.1	335	28.9	-00.9	S 23 17.1	+00.3	338	56.9	-31.3	S 28 02.1	+01.7	10
11	345	42.5	-00.3	S 23 25.2	+00.0	350	28.0	-01.0	S 23 17.4	+00.2	353	25.6	-31.4	S 28 03.8	+01.6	11
12	0	42.2	-00.3	S 23 25.2	+00.1	5	27.0	-00.9	S 23 17.6	+00.3	7	54.2	-31.3	S 28 05.4	+01.5	12
13	15	41.9	-00.4	S 23 25.3	+00.0	20	26.1	-01.0	S 23 17.9	+00.2	22	22.9	-31.5	S 28 06.9	+01.4	13
14	30	41.5	-00.3	S 23 25.3	+00.1	35	25.1	-00.9	S 23 18.1	+00.3	36	51.4	-31.4	S 28 08.3	+01.2	14
15	45	41.2	-00.3	S 23 25.4	+00.0	50	24.2	-01.0	S 23 18.4	+00.2	51	20.0	-31.4	S 28 09.5	+01.0	15
16	60	40.9	-00.3	S 23 25.4	+00.0	65	23.2	-01.0	S 23 18.6	+00.3	65	48.6	-31.5	S 28 10.5	+01.0	16
17	75	40.6	-00.3	S 23 25.4	+00.1	80	22.2	-00.9	S 23 18.9	+00.2	80	17.1	-31.5	S 28 11.5	+00.8	17
18	90	40.3	-00.3	S 23 25.5	+00.0	95	21.3	-01.0	S 23 19.1	+00.3	94	45.6	-31.5	S 28 12.3	+00.6	18
19	105	40.0	-00.3	S 23 25.5	+00.0	110	20.3	-00.9	S 23 19.4	+00.2	109	14.1	-31.5	S 28 12.9	+00.5	19
20	120	39.7	-00.3	S 23 25.5	+00.1	125	19.4	-01.0	S 23 19.6	+00.3	123	42.6	-31.6	S 28 13.4	+00.4	20
21	135	39.4	-00.3	S 23 25.6	+00.0	140	18.4	-00.9	S 23 19.9	+00.2	138	11.0	-31.6	S 28 13.8	+00.2	21
22	150	39.1	-00.4	S 23 25.6	+00.0	155	17.5	-01.0	S 23 20.1	+00.3	152	39.4	-31.5	S 28 14.0	+00.1	22
23	165	38.7	-00.3	S 23 25.6	+00.1	170	16.5	-00.9	S 23 20.4	+00.2	167	07.9	-31.6	S 28 14.1	+00.0	23
UT 02 06 10 14 18 22	SD 16°3 16°3 16°3 16°3 16°3 16°3	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 093° 093° 092° 092° 092° 092°	Greenwich Culmination Time: 11:57	UT 02 06 10 14 18 22	SD 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 098° 097° 097° 097° 097° 097°	Greenwich Culmination Time: 11:38	UT 02 06 10 14 18 22	SD 14°7 14°8 14°8 14°8 14°8 14°8	HP 54°1 54°1 54°2 54°2 54°2 54°3	SHA 105° 103° 101° 098° 096° 094°	Greenwich Culmination Time: 11:27		

Table for December 20 showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes Greenwich Culmination Time: 11:57.

Table for December 21 showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes Greenwich Culmination Time: 11:58.

Table for December 20 showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes Greenwich Culmination Time: 12:19.

Table for December 21 showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes Greenwich Culmination Time: 12:19.

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	179	53.7	-00.4	S 23 21.8	-00.1	182	56.4	-01.0	S 23 42.2	+00.0	111	05.8	-26.8	S 06 51.3	-15.1	00
01	194	53.3	-00.3	S 23 21.7	-00.1	197	55.4	-00.9	S 23 42.2	+00.1	125	39.0	-26.8	S 06 36.2	-15.2	01
02	209	53.0	-00.3	S 23 21.6	-00.1	212	54.5	-01.0	S 23 42.3	+00.0	140	12.2	-26.8	S 06 21.0	-15.3	02
03	224	52.7	-00.3	S 23 21.5	-00.1	227	53.5	-01.0	S 23 42.3	+00.1	154	45.4	-26.8	S 06 05.7	-15.2	03
04	239	52.4	-00.3	S 23 21.4	-00.1	242	52.5	-01.0	S 23 42.4	+00.0	169	18.6	-26.8	S 05 50.5	-15.4	04
05	254	52.1	-00.3	S 23 21.3	+00.0	257	51.5	-00.9	S 23 42.4	+00.1	183	51.8	-26.8	S 05 35.1	-15.3	05
06	269	51.8	-00.3	S 23 21.3	-00.1	272	50.6	-01.0	S 23 42.5	+00.0	198	25.0	-26.8	S 05 19.8	-15.4	06
07	284	51.5	-00.3	S 23 21.2	-00.1	287	49.6	-01.0	S 23 42.5	+00.1	212	58.2	-26.8	S 05 04.4	-15.4	07
08	299	51.2	-00.3	S 23 21.1	-00.1	302	48.6	-01.0	S 23 42.6	+00.0	227	31.4	-26.8	S 04 49.0	-15.5	08
09	314	50.9	-00.3	S 23 21.0	-00.1	317	47.6	-00.9	S 23 42.6	+00.1	242	04.6	-26.8	S 04 33.5	-15.5	09
10	329	50.6	-00.3	S 23 20.9	-00.1	332	46.7	-01.0	S 23 42.7	+00.0	256	37.8	-26.8	S 04 18.0	-15.5	10
11	344	50.3	-00.3	S 23 20.8	-00.1	347	45.7	-01.0	S 23 42.7	+00.1	271	11.0	-26.9	S 04 02.5	-15.6	11
12	359	50.0	-00.4	S 23 20.7	-00.1	2	44.7	-00.9	S 23 42.8	+00.0	285	44.1	-26.8	S 03 46.9	-15.6	12
13	14	49.6	-00.3	S 23 20.6	-00.1	17	43.8	-01.0	S 23 42.8	+00.1	300	17.3	-26.9	S 03 31.3	-15.6	13
14	29	49.3	-00.3	S 23 20.5	-00.1	32	42.8	-01.0	S 23 42.9	+00.0	314	50.4	-26.8	S 03 15.7	-15.7	14
15	44	49.0	-00.3	S 23 20.4	-00.1	47	41.8	-01.0	S 23 42.9	+00.1	329	23.6	-26.9	S 03 00.0	-15.6	15
16	59	48.7	-00.3	S 23 20.3	-00.1	62	40.8	-00.9	S 23 42.9	+00.1	343	56.7	-26.9	S 02 44.4	-15.7	16
17	74	48.4	-00.3	S 23 20.2	-00.1	77	39.9	-01.0	S 23 43.0	+00.0	358	29.8	-26.9	S 02 28.7	-15.8	17
18	89	48.1	-00.3	S 23 20.1	-00.1	92	38.9	-01.0	S 23 43.0	+00.0	13	02.9	-26.9	S 02 12.9	-15.7	18
19	104	47.8	-00.3	S 23 20.0	-00.1	107	37.9	-01.0	S 23 43.0	+00.1	27	36.0	-27.0	S 01 57.2	-15.8	19
20	119	47.5	-00.3	S 23 19.9	-00.1	122	36.9	-00.9	S 23 43.1	+00.0	42	09.0	-26.9	S 01 41.4	-15.8	20
21	134	47.2	-00.3	S 23 19.8	-00.1	137	36.0	-01.0	S 23 43.1	+00.0	56	42.1	-27.0	S 01 25.6	-15.9	21
22	149	46.9	-00.3	S 23 19.7	-00.1	152	35.0	-01.0	S 23 43.1	+00.1	71	15.1	-27.0	S 01 09.7	-15.8	22
23	164	46.6	-00.3	S 23 19.6	-00.1	167	34.0	-01.0	S 23 43.2	+00.0	85	48.1	-27.1	S 00 53.9	-15.9	23

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	180	16.0	-00.3	S 23 25.8	+00.0	184	06.3	-01.0	S 23 34.7	+00.1	144	29.0	-29.4	S 22 10.0	-09.6	00
01	195	15.7	-00.3	S 23 25.8	+00.0	199	05.3	-00.9	S 23 34.8	+00.2	158	59.6	-29.3	S 22 00.4	-09.8	01
02	210	15.4	-00.3	S 23 25.8	+00.0	214	04.4	-01.0	S 23 35.0	+00.1	173	30.3	-29.4	S 21 50.6	-09.8	02
03	225	15.1	-00.3	S 23 25.8	-00.1	229	03.4	-01.0	S 23 35.1	+00.1	188	00.9	-29.2	S 21 40.8	-10.0	03
04	240	14.8	-00.3	S 23 25.7	+00.0	244	02.4	-00.9	S 23 35.2	+00.2	202	31.7	-29.2	S 21 30.8	-10.1	04
05	255	14.5	-00.3	S 23 25.7	+00.0	259	01.5	-01.0	S 23 35.4	+00.1	217	02.5	-29.2	S 21 20.7	-10.1	05
06	270	14.2	-00.4	S 23 25.7	-00.1	274	00.5	-01.0	S 23 35.5	+00.2	231	33.3	-29.1	S 21 10.6	-10.3	06
07	285	13.8	-00.3	S 23 25.6	+00.0	288	59.5	-00.9	S 23 35.7	+00.1	246	04.2	-29.0	S 21 00.3	-10.4	07
08	300	13.5	-00.3	S 23 25.6	+00.0	303	58.6	-01.0	S 23 35.8	+00.2	260	35.2	-29.0	S 20 49.9	-10.5	08
09	315	13.2	-00.3	S 23 25.6	-00.1	318	57.6	-01.0	S 23 36.0	+00.1	275	06.2	-29.0	S 20 39.4	-10.6	09
10	330	12.9	-00.3	S 23 25.5	+00.0	333	56.6	-00.9	S 23 36.1	+00.1	289	37.2	-28.8	S 20 28.8	-10.7	10
11	345	12.6	-00.3	S 23 25.5	+00.0	348	55.7	-01.0	S 23 36.2	+00.2	304	08.4	-28.9	S 20 18.1	-10.8	11
12	0	12.3	-00.3	S 23 25.5	-00.1	3	54.7	-01.0	S 23 36.4	+00.1	318	39.5	-28.8	S 20 07.3	-10.9	12
13	15	12.0	-00.3	S 23 25.4	+00.0	18	53.7	-00.9	S 23 36.5	+00.1	333	10.7	-28.7	S 19 56.4	-11.0	13
14	30	11.7	-00.4	S 23 25.4	+00.0	33	52.8	-01.0	S 23 36.6	+00.2	347	42.0	-28.7	S 19 45.4	-11.1	14
15	45	11.3	-00.3	S 23 25.4	-00.1	48	51.8	-01.0	S 23 36.8	+00.1	2	13.3	-28.6	S 19 34.3	-11.1	15
16	60	11.0	-00.3	S 23 25.3	+00.0	63	50.8	-00.9	S 23 36.9	+00.1	16	44.7	-28.6	S 19 23.2	-11.3	16
17	75	10.7	-00.3	S 23 25.3	-00.1	78	49.9	-01.0	S 23 37.0	+00.1	31	16.1	-28.5	S 19 11.9	-11.4	17
18	90	10.4	-00.3	S 23 25.2	+00.0	93	48.9	-01.0	S 23 37.1	+00.2	45	47.6	-28.5	S 19 00.5	-11.5	18
19	105	10.1	-00.3	S 23 25.2	-00.1	108	47.9	-01.0	S 23 37.3	+00.1	60	19.1	-28.4	S 18 49.0	-11.5	19
20	120	09.8	-00.3	S 23 25.1	+00.0	123	46.9	-00.9	S 23 37.4	+00.1	74	50.7	-28.4	S 18 37.5	-11.7	20
21	135	09.5	-00.3	S 23 25.1	+00.0	138	46.0	-01.0	S 23 37.5	+00.1	89	22.3	-28.3	S 18 25.8	-11.7	21
22	150	09.2	-00.3	S 23 25.1	-00.1	153	45.0	-01.0	S 23 37.6	+00.2	103	54.0	-28.2	S 18 14.1	-11.9	22
23	165	08.9	-00.4	S 23 25.0	+00.0	168	44.0	-00.9	S 23 37.8	+00.1	118	25.8	-28.3	S 18 02.2	-11.9	23

UT 02 06 10 14 18 22 SD 16°3 16°3 16°3 16°3 16°3 16°3 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 085° 085° 085° 084° 084° 084° Greenwich Culmination Time: 12:00	UT 02 06 10 14 18 22 SD 00°1 00°1 00°1 00°1 00°1 00°1 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 088° 088° 088° 087° 087° 087° Greenwich Culmination Time: 11:49	UT 02 06 10 14 18 22 SD 15°5 15°6 15°6 15°6 15°7 15°7 HP 57°0 57°2 57°3 57°4 57°5 57°6 SHA 015° 013° 011° 010° 008° 008° Greenwich Culmination Time: 17:06
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UT 02 06 10 14 18 22 SD 16°3 16°3 16°3 16°3 16°3 16°3 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 088° 088° 088° 088° 088° 087° Greenwich Culmination Time: 11:59	UT 02 06 10 14 18 22 SD 00°1 00°1 00°1 00°1 00°1 00°1 HP 00°1 00°1 00°1 00°1 00°1 00°1 SHA 092° 092° 092° 091° 091° 091° Greenwich Culmination Time: 11:44	UT 02 06 10 14 18 22 SD 15°1 15°1 15°1 15°2 15°2 15°2 HP 55°4 55°5 55°5 55°6 55°7 55°8 SHA 052° 050° 047° 045° 043° 041° Greenwich Culmination Time: 14:50
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UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	175	52.3	+00.4	S 24 02.5	-00.1	340	48.8	+02.8	N 21 50.6	+00.0	97	39.3	+02.3	S 03 44.5	+00.0	00
01	190	52.7	+00.4	S 24 02.4	-00.1	355	51.6	+02.8	N 21 50.6	+00.1	112	41.6	+02.4	S 03 44.5	-00.1	01
02	205	53.1	+00.3	S 24 02.3	-00.1	10	54.4	+02.8	N 21 50.7	+00.1	127	44.0	+02.3	S 03 44.4	+00.0	02
03	220	53.4	+00.4	S 24 02.2	-00.1	25	57.2	+02.8	N 21 50.8	+00.0	142	46.3	+02.4	S 03 44.4	-00.1	03
04	235	53.8	+00.4	S 24 02.1	-00.1	40	60.0	+02.8	N 21 50.8	+00.1	157	48.7	+02.3	S 03 44.3	+00.0	04
05	250	54.2	+00.4	S 24 02.0	-00.1	56	02.8	+02.8	N 21 50.9	+00.0	172	51.0	+02.4	S 03 44.3	-00.1	05
06	265	54.6	+00.4	S 24 01.9	-00.1	71	05.6	+02.8	N 21 50.9	+00.1	187	53.4	+02.4	S 03 44.2	+00.0	06
07	280	55.0	+00.3	S 24 01.8	-00.1	86	08.4	+02.8	N 21 51.0	+00.0	202	55.8	+02.3	S 03 44.2	-00.1	07
08	295	55.3	+00.4	S 24 01.7	-00.2	101	11.2	+02.7	N 21 51.0	+00.1	217	58.1	+02.4	S 03 44.1	-00.1	08
09	310	55.7	+00.4	S 24 01.5	-00.1	116	13.9	+02.8	N 21 51.1	+00.0	233	00.5	+02.3	S 03 44.0	+00.0	09
10	325	56.1	+00.4	S 24 01.4	-00.1	131	16.7	+02.8	N 21 51.1	+00.1	248	02.8	+02.4	S 03 44.0	-00.1	10
11	340	56.5	+00.4	S 24 01.3	-00.1	146	19.5	+02.8	N 21 51.2	+00.1	263	05.2	+02.3	S 03 43.9	+00.0	11
12	355	56.9	+00.3	S 24 01.2	-00.1	161	22.3	+02.8	N 21 51.3	+00.1	278	07.5	+02.4	S 03 43.9	-00.1	12
13	10	57.2	+00.4	S 24 01.1	-00.1	176	25.1	+02.8	N 21 51.3	+00.0	293	09.9	+02.3	S 03 43.8	+00.0	13
14	25	57.6	+00.4	S 24 01.0	-00.1	191	27.9	+02.8	N 21 51.4	+00.0	308	12.2	+02.4	S 03 43.8	-00.1	14
15	40	58.0	+00.4	S 24 00.9	-00.1	206	30.7	+02.8	N 21 51.4	+00.1	323	14.6	+02.3	S 03 43.7	-00.1	15
16	55	58.4	+00.4	S 24 00.8	-00.1	221	33.5	+02.8	N 21 51.5	+00.0	338	16.9	+02.4	S 03 43.6	+00.0	16
17	70	58.8	+00.3	S 24 00.7	-00.1	236	36.3	+02.8	N 2							

Table with 5 columns: UT, Sun, Venus, Moon, UT. Each planet section contains 4 sub-columns: GHA, ddGHA, Dec, dDec. Rows 00-23 show celestial data.

UT 02 06 10 14 18 22
SD 16°3 16°3 16°3 16°3 16°3 16°3
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 087° 087° 087° 087° 087° 086°
Greenwich Culmination Time: 11:59

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Each planet section contains 4 sub-columns: GHA, ddGHA, Dec, dDec. Rows 00-23 show celestial data.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 083° 083° 082° 082° 082° 082°
Greenwich Culmination Time: 12:17

Table with 5 columns: UT, Sun, Venus, Moon, UT. Each planet section contains 4 sub-columns: GHA, ddGHA, Dec, dDec. Rows 00-23 show celestial data.

UT 02 06 10 14 18 22
SD 16°3 16°3 16°3 16°3 16°3 16°3
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 086° 086° 086° 086° 085° 085°
Greenwich Culmination Time: 12:00

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Each planet section contains 4 sub-columns: GHA, ddGHA, Dec, dDec. Rows 00-23 show celestial data.

UT 02 06 10 14 18 22
SD 00°0 00°0 00°0 00°0 00°0 00°0
HP 00°0 00°0 00°0 00°0 00°0 00°0
SHA 082° 082° 082° 081° 081° 081°
Greenwich Culmination Time: 12:16

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	179 24.3	-00.3	S 23 09.8	-00.2	181 22.9	-00.9	S 23 41.9	-00.1	65 16.3	-32.7	N 17 53.4	+13.6	00		
01	194 24.0	-00.3	S 23 09.6	-00.1	196 22.0	-01.0	S 23 41.8	+00.0	79 43.6	-32.8	N 18 07.0	+13.6	01		
02	209 23.7	-00.3	S 23 09.5	-00.2	211 21.0	-01.0	S 23 41.8	-00.1	94 10.8	-33.0	N 18 20.6	+13.4	02		
03	224 23.4	-00.3	S 23 09.3	-00.2	226 20.0	-01.0	S 23 41.7	-00.1	108 37.8	-33.0	N 18 34.0	+13.3	03		
04	239 23.1	-00.3	S 23 09.1	-00.1	241 19.0	-00.9	S 23 41.6	+00.0	123 04.8	-33.2	N 18 47.3	+13.3	04		
05	254 22.8	-00.3	S 23 09.0	-00.2	256 18.1	-01.0	S 23 41.6	-00.1	137 31.6	-33.3	N 19 00.6	+13.1	05		
06	269 22.5	-00.3	S 23 08.8	-00.2	271 17.1	-01.0	S 23 41.5	-00.1	151 58.3	-33.4	N 19 13.7	+13.1	06		
07	284 22.2	-00.3	S 23 08.6	-00.1	286 16.1	-01.0	S 23 41.4	-00.1	166 24.9	-33.6	N 19 26.8	+12.9	07		
08	299 21.9	-00.3	S 23 08.5	-00.2	301 15.1	-00.9	S 23 41.3	+00.0	180 51.3	-33.7	N 19 39.7	+12.8	08		
09	314 21.6	-00.3	S 23 08.3	-00.2	316 14.2	-01.0	S 23 41.3	+00.0	195 17.6	-33.8	N 19 52.5	+12.7	09		
10	329 21.3	-00.3	S 23 08.1	-00.1	331 13.2	-01.0	S 23 41.2	-00.1	209 43.8	-33.9	N 20 05.2	+12.6	10		
11	344 21.0	-00.3	S 23 08.0	-00.2	346 12.2	-00.9	S 23 41.1	-00.1	224 09.9	-34.1	N 20 17.8	+12.5	11		
12	359 20.7	-00.3	S 23 07.8	-00.2	1 11.3	-01.0	S 23 41.0	+00.0	238 35.8	-34.2	N 20 30.3	+12.3	12		
13	14 20.4	-00.3	S 23 07.6	-00.2	16 10.3	-01.0	S 23 41.0	-00.1	253 01.6	-34.4	N 20 42.6	+12.3	13		
14	29 20.1	-00.3	S 23 07.4	-00.1	31 09.3	-01.0	S 23 40.9	-00.1	267 27.2	-34.4	N 20 54.9	+12.1	14		
15	44 19.8	-00.3	S 23 07.3	-00.2	46 08.3	-00.9	S 23 40.8	-00.1	281 52.8	-34.6	N 21 07.0	+12.0	15		
16	59 19.5	-00.3	S 23 07.1	-00.2	61 07.4	-01.0	S 23 40.7	-00.1	296 18.2	-34.8	N 21 19.0	+11.9	16		
17	74 19.2	-00.3	S 23 06.9	-00.2	76 06.4	-01.0	S 23 40.6	-00.1	310 43.4	-34.8	N 21 30.9	+11.7	17		
18	89 18.9	-00.3	S 23 06.7	-00.1	91 05.4	-00.9	S 23 40.5	-00.1	325 08.6	-35.0	N 21 42.6	+11.6	18		
19	104 18.6	-00.2	S 23 06.6	-00.2	106 04.5	-01.0	S 23 40.4	+00.0	339 33.6	-35.1	N 21 54.2	+11.5	19		
20	119 18.4	-00.3	S 23 06.4	-00.2	121 03.5	-01.0	S 23 40.4	-00.1	353 58.5	-35.3	N 22 05.7	+11.3	20		
21	134 18.1	-00.3	S 23 06.2	-00.2	136 02.5	-01.0	S 23 40.3	-00.1	8 23.2	-35.4	N 22 17.0	+11.2	21		
22	149 17.8	-00.3	S 23 06.0	-00.2	151 01.5	-00.9	S 23 40.2	-00.1	22 47.8	-35.5	N 22 28.2	+11.1	22		
23	164 17.5	-00.3	S 23 05.8	-00.1	166 00.6	-01.0	S 23 40.1	-00.1	37 12.3	-35.6	N 22 39.3	+10.9	23		
UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22			
SD 16°3 16°3 16°3 16°3 16°3 16°3				SD 00°1 00°1 00°1 00°1 00°1 00°1				SD 16°3 16°3 16°4 16°4 16°4 16°4				SD 16°3 16°3 16°3 16°3 16°3 16°3			
HP 00°1 00°1 00°1 00°1 00°1 00°1				HP 00°1 00°1 00°1 00°1 00°1 00°1				HP 59°8 59°9 60°0 60°1 60°2 60°3				HP 00°1 00°1 00°1 00°1 00°1 00°1			
SHA 081° 080° 080° 080° 080° 081°				SHA 083° 082° 082° 082° 082° 081°				SHA 325° 323° 321° 318° 316° 313°				SHA 084° 084° 084° 083° 083° 083°			
Greenwich Culmination Time: 12:02				Greenwich Culmination Time: 11:55				Greenwich Culmination Time: 20:25				Greenwich Culmination Time: 12:01			

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	179 46.3	-00.4	S 23 19.5	-00.1	182 33.0	-00.9	S 23 43.2	+00.0	100 21.0	-27.0	S 00 38.0	-15.9	00		
01	194 45.9	-00.3	S 23 19.4	-00.1	197 32.1	-01.0	S 23 43.2	+00.1	114 54.0	-27.1	S 00 22.1	-15.9	01		
02	209 45.6	-00.3	S 23 19.3	-00.1	212 31.1	-01.0	S 23 43.3	+00.0	129 26.9	-27.2	S 00 06.2	-15.9	02		
03	224 45.3	-00.3	S 23 19.2	-00.1	227 30.1	-01.0	S 23 43.3	+00.0	143 59.7	-27.1	N 00 09.7	+15.9	03		
04	239 45.0	-00.3	S 23 19.1	-00.1	242 29.1	-00.9	S 23 43.3	+00.0	158 32.6	-27.2	N 00 25.6	+16.0	04		
05	254 44.7	-00.3	S 23 19.0	-00.2	257 28.2	-01.0	S 23 43.3	+00.0	173 05.4	-27.2	N 00 41.6	+15.9	05		
06	269 44.4	-00.3	S 23 18.8	-00.1	272 27.2	-01.0	S 23 43.3	+00.1	187 38.2	-27.3	N 00 57.5	+16.0	06		
07	284 44.1	-00.3	S 23 18.7	-00.1	287 26.2	-01.0	S 23 43.4	+00.0	202 10.9	-27.2	N 01 13.5	+16.0	07		
08	299 43.8	-00.3	S 23 18.6	-00.1	302 25.2	-00.9	S 23 43.4	+00.0	216 43.7	-27.4	N 01 29.5	+16.0	08		
09	314 43.5	-00.3	S 23 18.5	-00.1	317 24.3	-01.0	S 23 43.4	+00.0	231 16.3	-27.3	N 01 45.5	+16.0	09		
10	329 43.2	-00.3	S 23 18.4	-00.1	332 23.3	-01.0	S 23 43.4	+00.0	245 49.0	-27.4	N 02 01.5	+16.0	10		
11	344 42.9	-00.3	S 23 18.3	-00.1	347 22.3	-01.0	S 23 43.4	+00.0	260 21.6	-27.5	N 02 17.5	+16.0	11		
12	359 42.6	-00.3	S 23 18.2	-00.1	2 21.3	-00.9	S 23 43.4	+00.1	274 54.1	-27.5	N 02 33.5	+16.1	12		
13	14 42.3	-00.3	S 23 18.1	-00.2	17 20.4	-01.0	S 23 43.5	+00.0	289 26.6	-27.5	N 02 49.6	+16.0	13		
14	29 42.0	-00.3	S 23 17.9	-00.1	32 19.4	-01.0	S 23 43.5	+00.0	303 59.1	-27.6	N 03 05.6	+16.0	14		
15	44 41.7	-00.4	S 23 17.8	-00.1	47 18.4	-01.0	S 23 43.5	+00.0	318 31.5	-27.6	N 03 21.6	+16.0	15		
16	59 41.3	-00.3	S 23 17.7	-00.1	62 17.4	-00.9	S 23 43.5	+00.0	333 03.9	-27.7	N 03 37.6	+16.1	16		
17	74 41.0	-00.3	S 23 17.6	-00.1	77 16.5	-01.0	S 23 43.5	+00.0	347 36.2	-27.7	N 03 53.7	+16.0	17		
18	89 40.7	-00.3	S 23 17.5	-00.2	92 15.5	-01.0	S 23 43.5	+00.0	2 08.5	-27.8	N 04 09.7	+16.0	18		
19	104 40.4	-00.3	S 23 17.3	-00.1	107 14.5	-01.0	S 23 43.5	+00.0	16 40.7	-27.8	N 04 25.7	+16.1	19		
20	119 40.1	-00.3	S 23 17.2	-00.1	122 13.5	-00.9	S 23 43.5	+00.0	31 12.9	-27.9	N 04 41.8	+16.0	20		
21	134 39.8	-00.3	S 23 17.1	-00.1	137 12.6	-01.0	S 23 43.5	+00.0	45 45.0	-27.9	N 04 57.8	+16.0	21		
22	149 39.5	-00.3	S 23 17.0	-00.1	152 11.6	-01.0	S 23 43.5	+00.0	60 17.1	-28.0	N 05 13.8	+16.0	22		
23	164 39.2	-00.3	S 23 16.9	-00.2	167 10.6	-00.9	S 23 43.5	+00.0	74 49.1	-28.1	N 05 29.8	+16.0	23		
UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22			
SD 16°3 16°3 16°3 16°3 16°3 16°3				SD 00°1 00°1 00°1 00°1 00°1 00°1				SD 15°7 15°8 15°8 15°8 15°9 15°9				SD 16°3 16°3 16°3 16°3 16°3 16°3			
HP 00°1 00°1 00°1 00°1 00°1 00°1				HP 00°1 00°1 00°1 00°1 00°1 00°1				HP 57°7 57°8 58°0 58°1 58°2 58°3				HP 00°0 00°0 00°0 00°0 00°0 00°0			
SHA 084° 084° 084° 083° 083° 083°				SHA 087° 086° 086° 086° 086° 086°				SHA 004° 002° 360° 358° 356° 354°				SHA 003° 003° 003° 003° 003° 003°			
Greenwich Culmination Time: 12:01				Greenwich Culmination Time: 11:50				Greenwich Culmination Time: 17:51				Greenwich Culmination Time: 17:22			

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Warning: This page has been generated by a computer program. Complex computer programs usually have bugs and may produce wrong data. The data on this page is believed to be accurate but no warranty is given for its correctness. Use it only for training and exercising!

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section has sub-columns for GHA, ddGHA, Dec, and dDec. Rows are numbered 00 to 23.

Summary table with columns for UT, Sun, Venus, Moon, and UT. Each planet section has sub-columns for SD, HP, and SHA. Includes Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section has sub-columns for GHA, ddGHA, Dec, and dDec. Rows are numbered 00 to 23.

Warning: This page has been generated by a computer program. Complex computer programs usually have bugs and may produce wrong data. The data on this page is believed to be accurate but no warranty is given for its correctness. Use it only for training and exercising!

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section has sub-columns for GHA, ddGHA, Dec, and dDec. Rows are numbered 00 to 23.

Summary table with columns for UT, Sun, Venus, Moon, and UT. Each planet section has sub-columns for SD, HP, and SHA. Includes Greenwich Culmination Time for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section has sub-columns for GHA, ddGHA, Dec, and dDec. Rows are numbered 00 to 23.

Warning: This page has been generated by a computer program. Complex computer programs usually have bugs and may produce wrong data. The data on this page is believed to be accurate but no warranty is given for its correctness. Use it only for training and exercising!

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "			
00	179	17.2	-00.3	S 23 05.7	-00.2	180	59.6	-01.0	S 23 40.0	-00.1	51	36.7	-35.8	N 22 50.2	+10.8
01	194	16.9	-00.3	S 23 05.5	-00.2	195	58.6	-00.9	S 23 39.9	-00.1	66	00.9	-35.9	N 23 01.0	+10.6
02	209	16.6	-00.3	S 23 05.3	-00.2	210	57.7	-01.0	S 23 39.8	-00.1	80	25.0	-36.0	N 23 11.6	+10.5
03	224	16.3	-00.3	S 23 05.1	-00.2	225	56.7	-01.0	S 23 39.7	-00.1	94	49.0	-36.2	N 23 22.1	+10.3
04	239	16.0	-00.3	S 23 04.9	-00.2	240	55.7	-00.9	S 23 39.6	-00.1	109	12.8	-36.3	N 23 32.4	+10.2
05	254	15.7	-00.3	S 23 04.7	-00.2	255	54.8	-01.0	S 23 39.5	-00.1	123	36.5	-36.4	N 23 42.6	+10.0
06	269	15.4	-00.3	S 23 04.5	-00.1	270	53.8	-01.0	S 23 39.4	-00.1	138	00.1	-36.5	N 23 52.6	+09.9
07	284	15.1	-00.3	S 23 04.4	-00.2	285	52.8	-01.0	S 23 39.3	-00.1	152	23.6	-36.7	N 24 02.5	+09.7
08	299	14.8	-00.3	S 23 04.2	-00.2	300	51.8	-00.9	S 23 39.2	-00.1	166	46.9	-36.7	N 24 12.2	+09.6
09	314	14.5	-00.3	S 23 04.0	-00.2	315	50.9	-01.0	S 23 39.1	-00.1	181	10.2	-37.0	N 24 21.8	+09.3
10	329	14.2	-00.3	S 23 03.8	-00.2	330	49.9	-01.0	S 23 39.0	-00.1	195	33.2	-37.0	N 24 31.1	+09.3
11	344	13.9	-00.3	S 23 03.6	-00.2	345	48.9	-00.9	S 23 38.9	-00.1	209	56.2	-37.1	N 24 40.4	+09.0
12	359	13.6	-00.3	S 23 03.4	-00.2	0	48.0	-01.0	S 23 38.8	-00.2	224	19.1	-37.3	N 24 49.4	+08.9
13	14	13.3	-00.3	S 23 03.2	-00.2	15	47.0	-01.0	S 23 38.6	-00.2	238	41.8	-37.4	N 24 58.3	+08.7
14	29	13.0	-00.3	S 23 03.0	-00.2	30	46.0	-00.9	S 23 38.5	-00.1	253	04.4	-37.5	N 25 07.0	+08.5
15	44	12.7	-00.3	S 23 02.8	-00.2	45	45.1	-01.0	S 23 38.4	-00.1	267	26.9	-37.6	N 25 15.5	+08.4
16	59	12.4	-00.3	S 23 02.6	-00.2	60	44.1	-01.0	S 23 38.3	-00.1	281	49.3	-37.7	N 25 23.9	+08.2
17	74	12.1	-00.3	S 23 02.4	-00.2	75	43.1	-00.9	S 23 38.2	-00.1	296	11.6	-37.8	N 25 32.1	+08.0
18	89	11.8	-00.3	S 23 02.2	-00.2	90	42.2	-01.0	S 23 38.1	-00.1	310	33.8	-38.0	N 25 40.1	+07.8
19	104	11.5	-00.3	S 23 02.0	-00.2	105	41.2	-01.0	S 23 38.0	-00.2	324	55.8	-38.0	N 25 47.9	+07.6
20	119	11.2	-00.3	S 23 01.8	-00.2	120	40.2	-01.0	S 23 37.8	-00.1	339	17.8	-38.2	N 25 55.5	+07.5
21	134	10.9	-00.3	S 23 01.6	-00.2	135	39.2	-00.9	S 23 37.7	-00.1	353	39.6	-38.3	N 26 03.0	+07.3
22	149	10.6	-00.3	S 23 01.4	-00.2	150	38.3	-01.0	S 23 37.6	-00.1	8	01.3	-38.3	N 26 10.3	+07.0
23	164	10.3	-00.2	S 23 01.2	-00.2	165	37.3	-01.0	S 23 37.5	-00.2	22	23.0	-38.5	N 26 17.3	+06.9
	UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					UT 02 06 10 14 18 22				
	SD 16°3 16'3 16"3 16°3 16'3 16"3					SD 00°1 00'1 00"1 00°1 00'1 00"1					SD 16°5 16'5 16"5 16°5 16'5 16"5				
	HP 00°1 00'1 00"1 00°1 00'1 00"1					HP 00°1 00'1 00"1 00°1 00'1 00"1					HP 60°4 60'5 60"5 60°6 60'6 60"7				
	SHA 080° 079° 079° 079° 079° 079°					SHA 081° 081° 081° 081° 080° 080°					SHA 311° 308° 305° 303° 300° 297°				
	Greenwich Culmination Time: 12:03					Greenwich Culmination Time: 11:56					Greenwich Culmination Time: 21:26				

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "			
00	176	37.8	+00.4	S 23 47.1	-00.2	346	24.8	+02.9	N 21 57.4	+00.0	102	20.8	+02.4	S 03 37.3	+00.0
01	191	38.2	+00.4	S 23 46.9	-00.1	1	27.7	+02.8	N 21 57.4	+00.1	117	23.2	+02.3	S 03 37.3	-00.1
02	206	38.6	+00.4	S 23 46.8	-00.2	16	30.5	+02.8	N 21 57.5	+00.1	132	25.5	+02.3	S 03 37.2	-00.1
03	221	39.0	+00.4	S 23 46.6	-00.1	31	33.3	+02.8	N 21 57.6	+00.0	147	27.8	+02.4	S 03 37.1	+00.0
04	236	39.4	+00.3	S 23 46.5	-00.2	46	36.1	+02.8	N 21 57.6	+00.1	162	30.2	+02.3	S 03 37.1	-00.1
05	251	39.7	+00.4	S 23 46.3	-00.2	61	38.9	+02.8	N 21 57.7	+00.0	177	32.5	+02.3	S 03 37.0	+00.0
06	266	40.1	+00.4	S 23 46.1	-00.1	76	41.7	+02.8	N 21 57.7	+00.1	192	34.8	+02.4	S 03 37.0	-00.1
07	281	40.5	+00.4	S 23 46.0	-00.2	91	44.5	+02.8	N 21 57.8	+00.0	207	37.2	+02.3	S 03 36.9	-00.1
08	296	40.9	+00.4	S 23 45.8	-00.1	106	47.3	+02.8	N 21 57.8	+00.1	222	39.5	+02.4	S 03 36.8	+00.0
09	311	41.3	+00.3	S 23 45.7	-00.2	121	50.1	+02.8	N 21 57.9	+00.1	237	41.9	+02.3	S 03 36.8	-00.1
10	326	41.6	+00.4	S 23 45.5	-00.2	136	52.9	+02.8	N 21 58.0	+00.0	252	44.2	+02.3	S 03 36.7	-00.1
11	341	42.0	+00.4	S 23 45.3	-00.1	151	55.7	+02.8	N 21 58.0	+00.1	267	46.5	+02.4	S 03 36.6	+00.0
12	356	42.4	+00.4	S 23 45.2	-00.2	166	58.5	+02.9	N 21 58.1	+00.0	282	48.9	+02.3	S 03 36.6	-00.1
13	11	42.8	+00.4	S 23 45.0	-00.2	182	01.4	+02.8	N 21 58.1	+00.1	297	51.2	+02.3	S 03 36.5	-00.1
14	26	43.2	+00.3	S 23 44.8	-00.1	197	04.2	+02.8	N 21 58.2	+00.0	312	53.5	+02.4	S 03 36.4	+00.0
15	41	43.5	+00.4	S 23 44.7	-00.2	212	07.0	+02.8	N 21 58.2	+00.1	327	55.9	+02.3	S 03 36.4	-00.1
16	56	43.9	+00.4	S 23 44.5	-00.1	227	09.8	+02.8	N 21 58.3	+00.0	342	58.2	+02.3	S 03 36.3	-00.1
17	71	44.3	+00.4	S 23 44.4	-00.2	242	12.6	+02.8	N 21 58.3	+00.1	358	00.5	+02.4	S 03 36.2	+00.0
18	86	44.7	+00.4	S 23 44.2	-00.2	257	15.4	+02.8	N 21 58.4	+00.1	13	02.9	+02.3	S 03 36.2	-00.1
19	101	45.1	+00.3	S 23 44.0	-00.1	272	18.2	+02.8	N 21 58.5	+00.0	28	05.2	+02.3	S 03 36.1	-00.1
20	116	45.4	+00.4	S 23 43.9	-00.2	287	21.0	+02.8	N 21 58.5	+00.1	43	07.5	+02.4	S 03 36.0	+00.0
21	131	45.8	+00.4	S 23 43.7	-00.2	302	23.8	+02.9	N 21 58.6	+00.0	58	09.9	+02.3	S 03 36.0	-00.1
22	146	46.2	+00.4	S 23 43.5	-00.1	317	26.7	+02.8	N 21 58.6	+00.1	73	12.2	+02.3	S 03 35.9	-00.1
23	161	46.6	+00.4	S 23 43.4	-00.2	332	29.5	+02.8	N 21 58.7	+00.0	88	14.5	+02.4	S 03 35.8	+00.0
	UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					UT 02 06 10 14 18 22				
	SD 00°0 00'0 00"0 00°0 00'0 00"0					SD 00°4 00'4 00"4 00°4 00'4 00"4					SD 00°1 00'1 00"1 00°1 00'1 00"1				
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	SHA 077° 077° 077° 076° 076° 076°					SHA 247° 247° 247° 247° 247° 247°					SHA 003° 003° 003° 003° 003° 003°				
	Greenwich Culmination Time: 12:13					Greenwich Culmination Time: 00:54					Greenwich Culmination Time: 17:07				

