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Nautical Almanac

2023

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The Nautical Almanac 2023

Compiled with *Nautical Almanac* revision V2.6 - Sep 2020, 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 Wed Oct 19 11:48:49 2022

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 : 69.2 s	Apr : 69.2 s	Jul : 69.1 s	Oct : 69.1 s
Feb : 69.2 s	May : 69.2 s	Aug : 69.1 s	Nov : 69.1 s
Mar : 69.2 s	Jun : 69.2 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

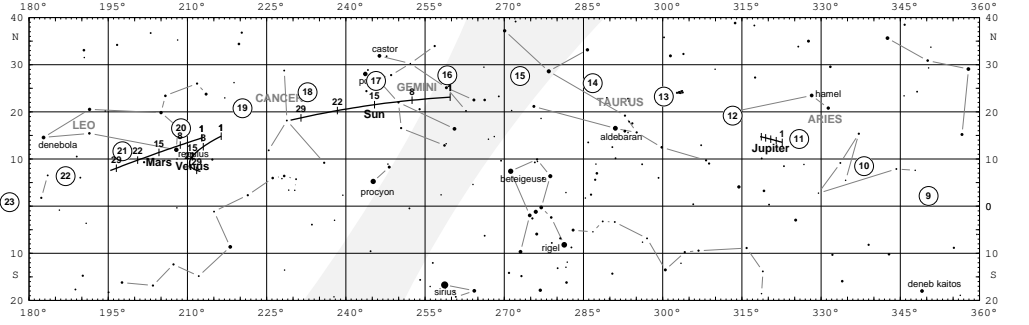
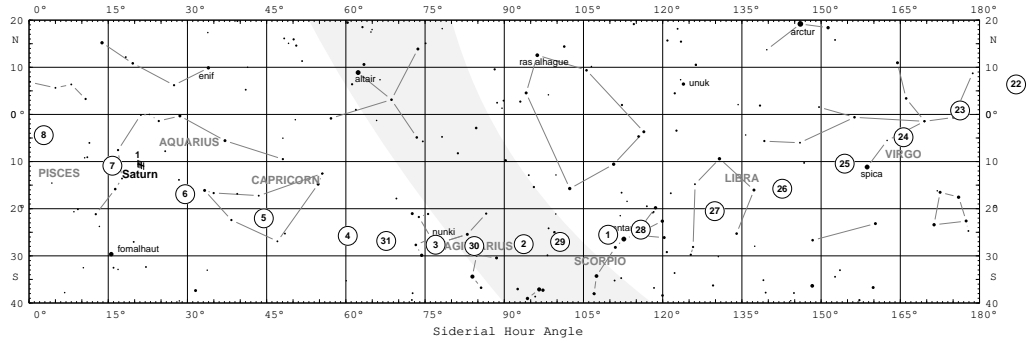
The charts on the following pages show the position of the Celestial Objects used in this Nautical Almanac relative to the stars (celestial background). The charts can be used to find the location of the planets and also for the planning of astronomical observations.

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.

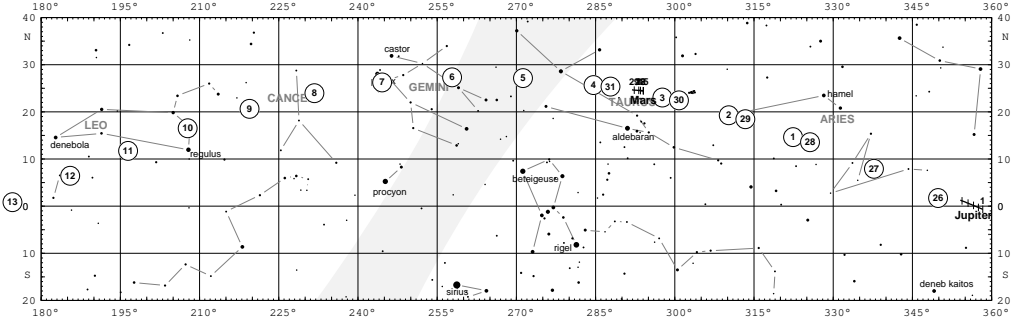
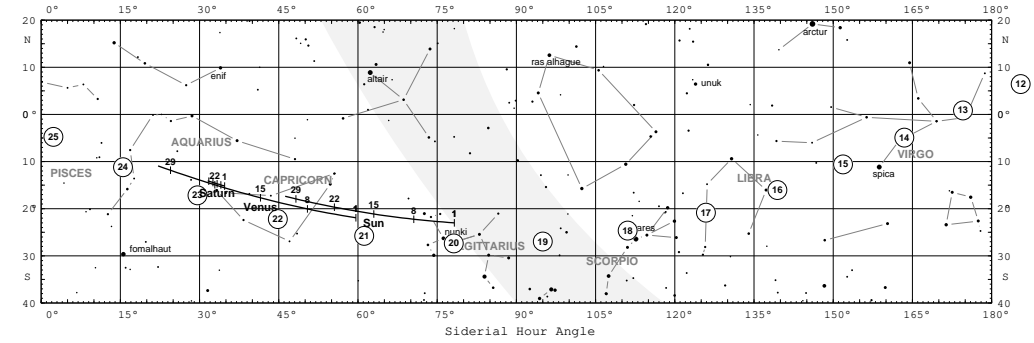
The changing position of a Celestial Object through the month is drawn as a solid line (not for the Moon). Marker tics along this line are shown to indicate the position of the Object on the 1st, 8th, 15th, 22nd and 29th day of the month (at 12:00 UT). For Jupiter and Saturn only the first day is marked 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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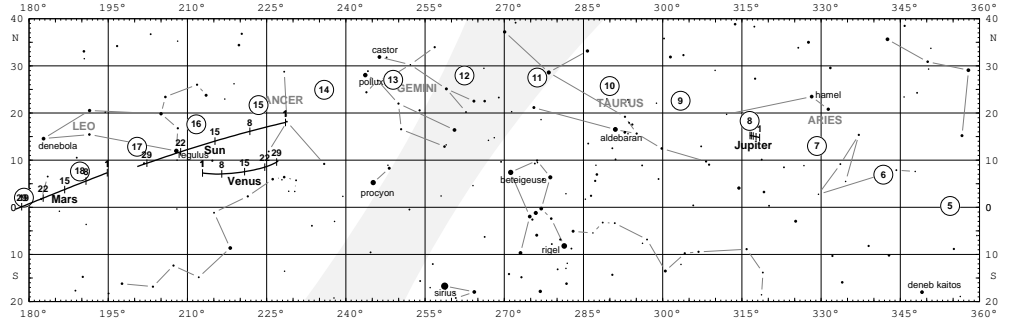
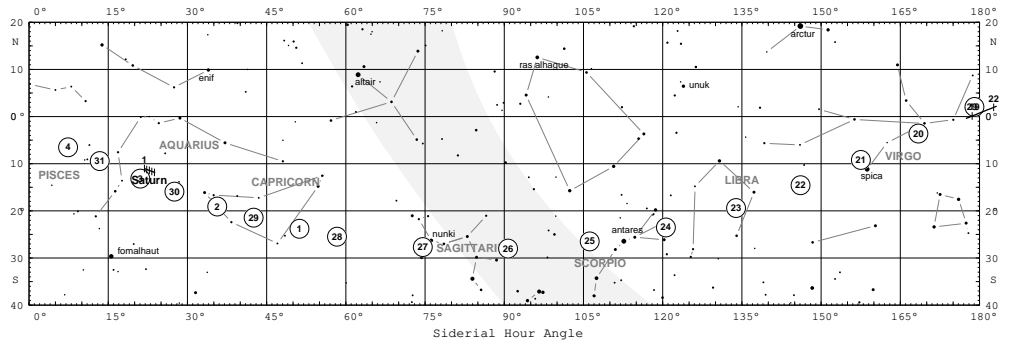
July 2023



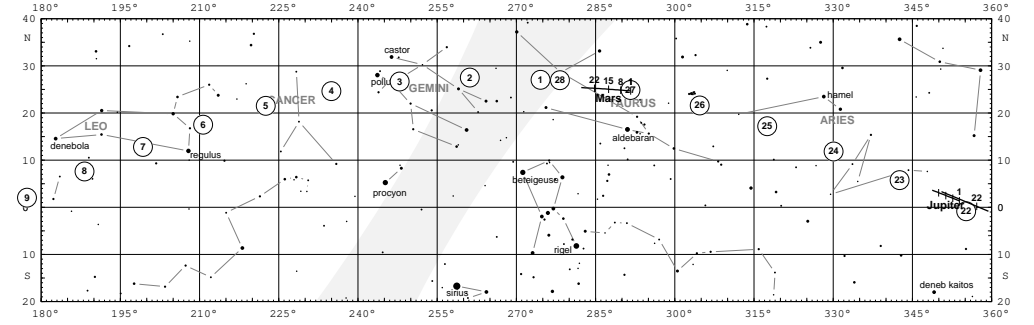
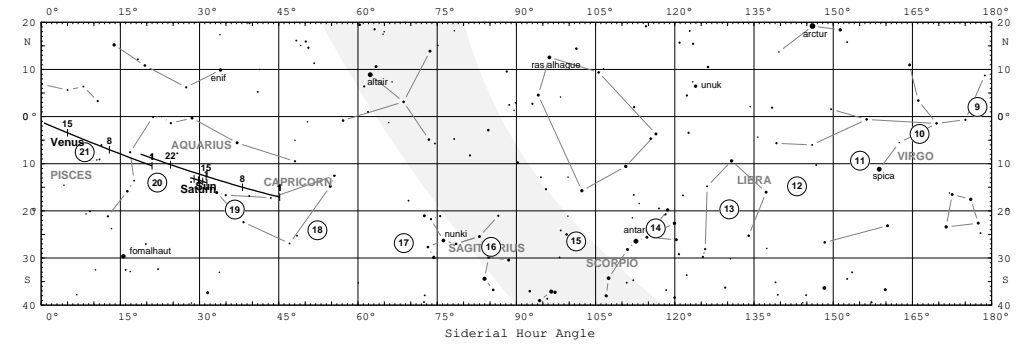
January 2023



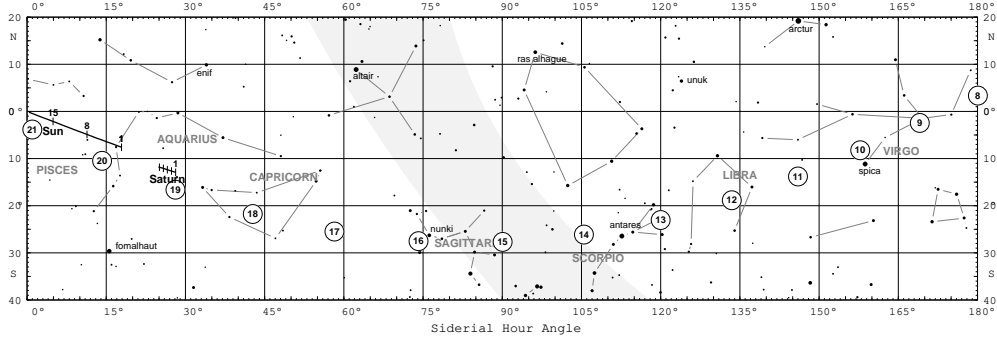
August 2023



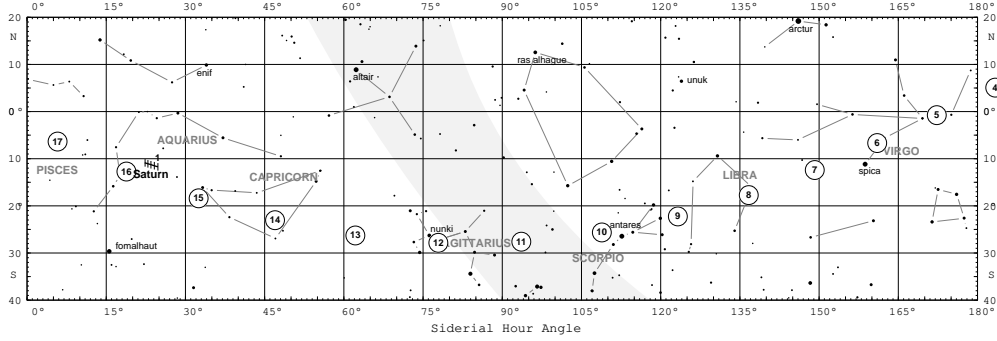
February 2023



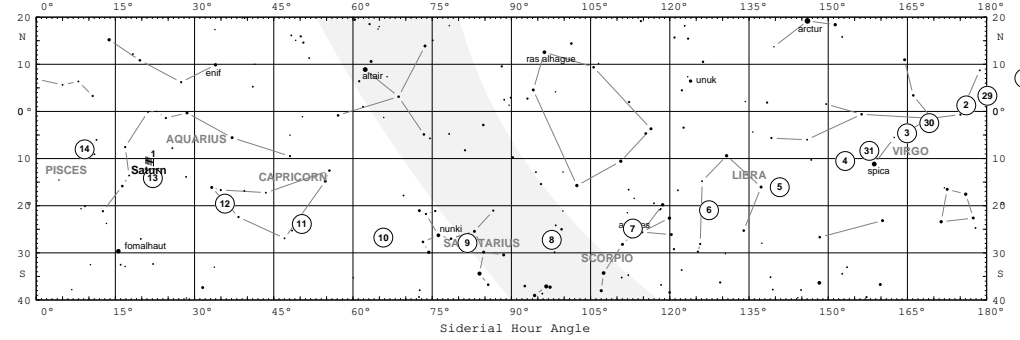
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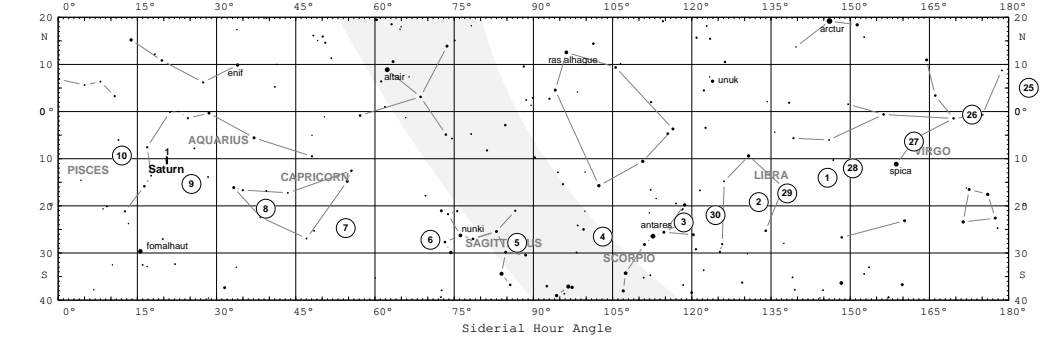
April 2023



May 2023






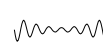




June 2023



Phases of the Moon

The following table lists the phases of the Moon through the year 2023. 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	Sat 21 19:01	Sun 29 01:35	Fri 6 21:55	Sun 15 09:26
February	Mon 20 04:06	Mon 27 15:35	Sun 5 15:02	Tue 14 01:30
March	Tue 21 15:06	Tue 28 23:18	Tue 7 09:07	Wed 15 04:05
April	Thu 20 03:56	Thu 27 08:32	Thu 6 03:08	Thu 13 01:47
May	Fri 19 16:53	Sat 27 02:52	Fri 5 18:10	Fri 12 02:42
June	Sun 18 04:50	Mon 26 07:26	Sun 4 04:27	Sat 10 13:03
July	Mon 17 16:34	Wed 26 08:12	Mon 3 10:57	Mon 10 06:57
August	Wed 16 06:07	Thu 24 18:51	Tue 1 16:15 Wed 30 22:57	Tue 8 21:16
September	Thu 14 22:54	Fri 22 19:42	Fri 29 08:38	Thu 7 04:06
October	Sat 14 17:37	Sat 21 18:33	Sat 28 21:02	Fri 6 08:42
November	Mon 13 10:44	Sun 19 23:26	Mon 27 10:29	Sat 4 19:04
December	Wed 13 00:06	Tue 19 15:58	Wed 27 00:11	Mon 4 19:43
Tidal Phase	spring 	neap 	spring 	neap 

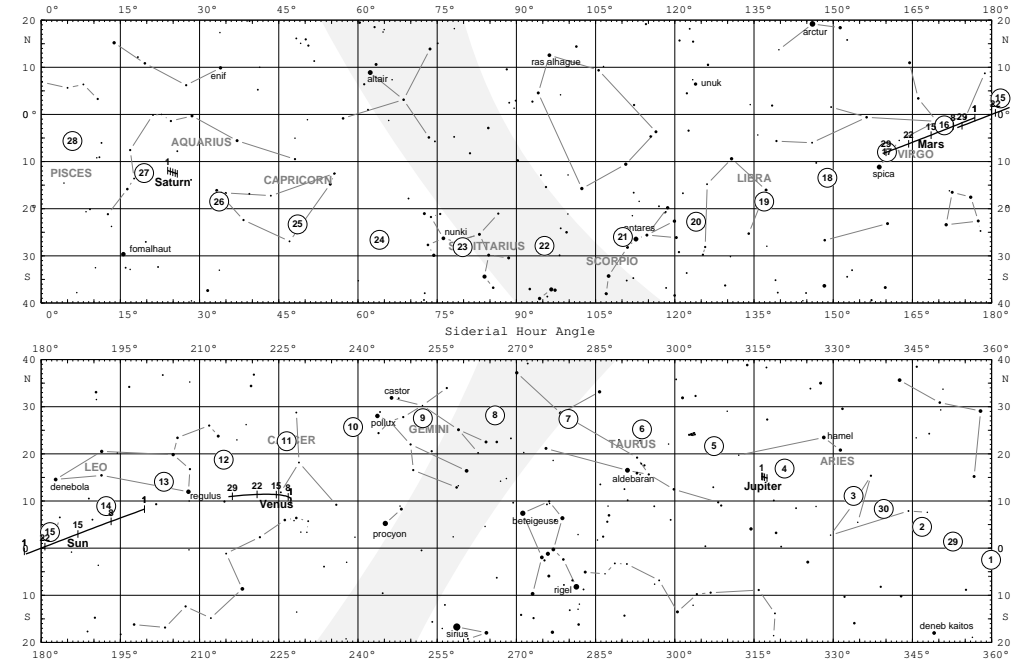
Lunar Phases and Tides

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.

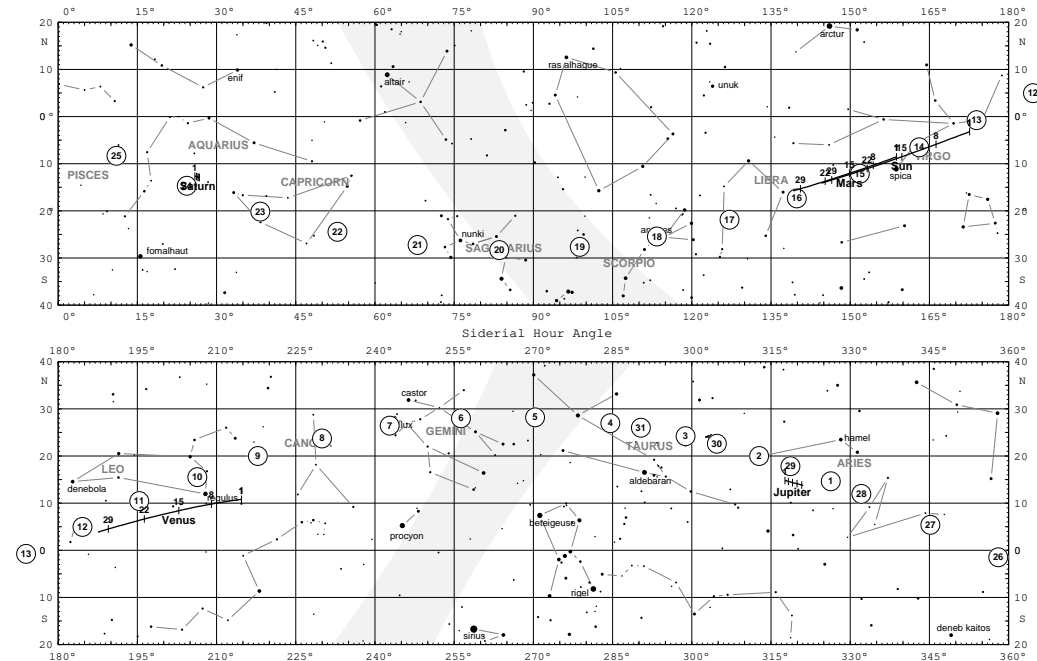
Each tidal region on Earth, has a characteristic "tidal delay" which, specifies the time difference between the occurrence of a particular lunar phase and the occurrence of the resulting tidal phase. The tidal delay can be a couple of hours for the open seas, or up to several days for branched tidal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

Reliable tidal predictions are obtained from a Tidal Almanac.

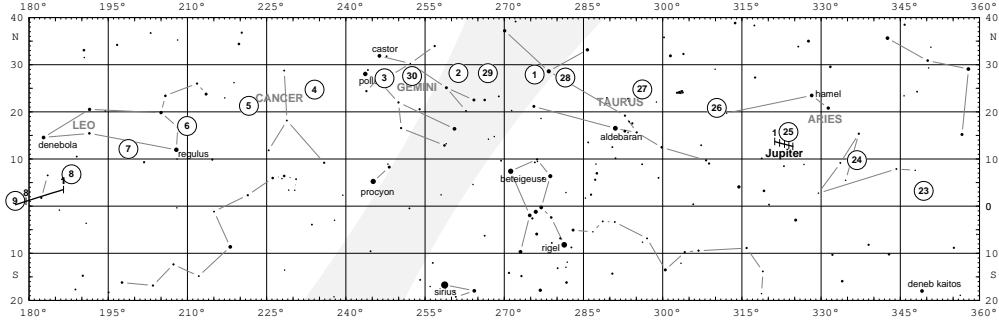
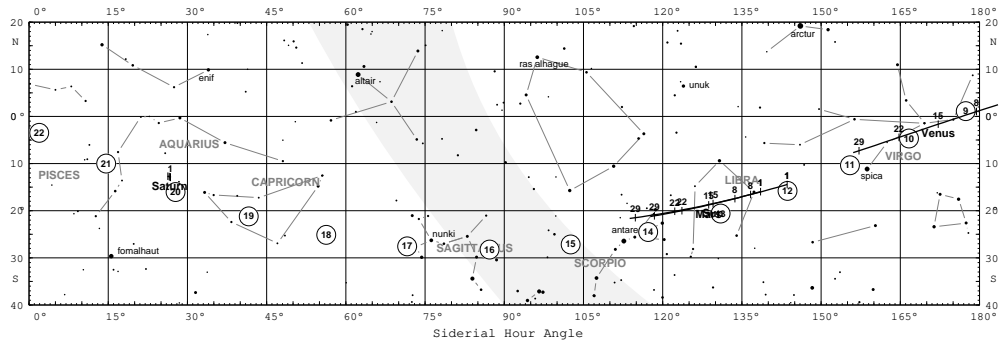
September 2023



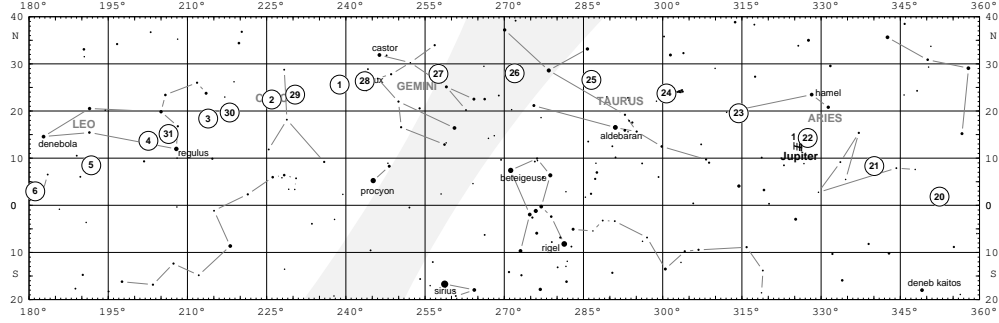
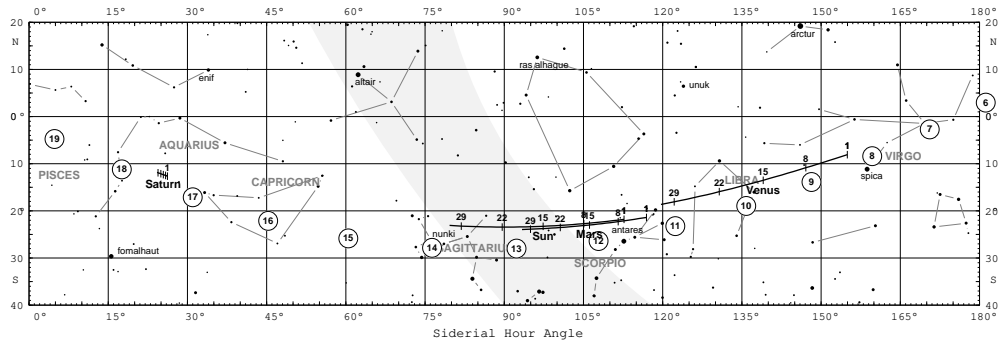
October 2023



November 2023



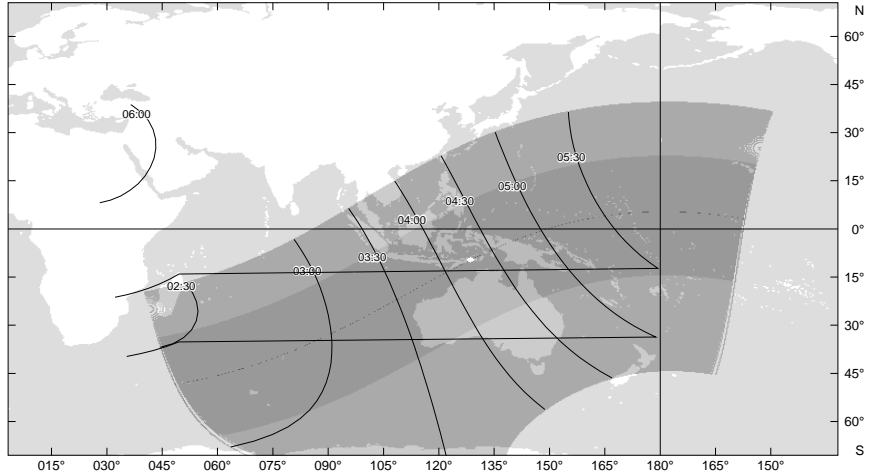
December 2023



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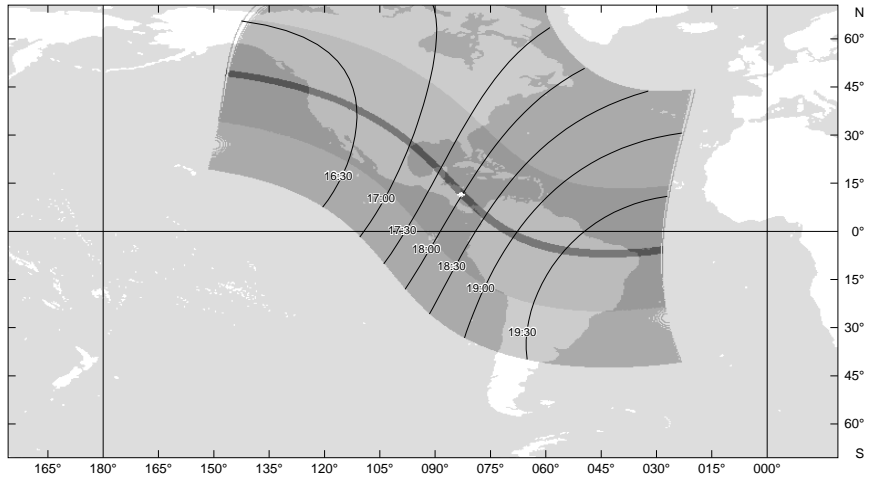
The following solar eclipses may be observed during the year 2023:

April 20 : **annular solar eclipse** begin [Apr 20, 01:34 UT] / end [Apr 20, 06:59 UT]



Circumstances at Moment of Greatest Eclipse		Fist Contacts (P1/U1)		Last Contacts (U4/P4)	
Time:	04:16 UT Duration (full): 1.1 min	Penumbra	Umbral	Umbral	Penumbra
Location:	S 09.7 E 128.6 Path Width: 67 km	01:34 UT	02:37 UT	05:57 UT	06:59 UT

October 14 : **annular solar eclipse** begin [Oct 14, 15:04 UT] / end [Oct 14, 20:55 UT]



Circumstances at Moment of Greatest Eclipse		Fist Contacts (P1/U1)		Last Contacts (U4/P4)	
Time:	17:59 UT Duration (full): 5.2 min	Penumbra	Umbral	Umbral	Penumbra
Location:	N 11.4 W 083.0 Path Width: 307 km	15:04 UT	16:10 UT	19:49 UT	20:55 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.

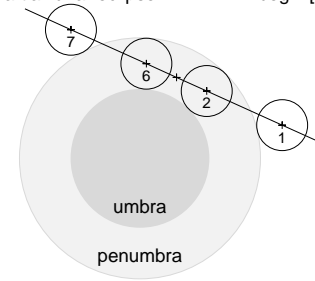
NOTICE: Eclipse contact times depend on the angular diameters of the Sun and Moon. The calculations in this Almanac are based on a perfect circular form for the limb of the Moon, and do not take into account effects of refraction of the sunlight in the Earth atmosphere. Since this is only an approximation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

The following lunar eclipses may be observed during the year 2023:

May 5 : a penumbral lunar eclipse begin [May 5, 15:23 UTC] / end [May 5, 19:31 UTC]

October 28 : a partial lunar eclipse begin [Oct 28, 18:07 UTC] / end [Oct 28, 22:26 UTC]

Rp = 1.279°
Ru = 0.736°
SD = 0.269°



October 28		
1 -	18:07 UTC	begin of penumbral eclipse (P1)
2 -	19:40 UTC	begin of partial eclipse (U1)
	20:17 UTC	moment of greatest eclipse
6 -	20:54 UTC	end of partial eclipse (U4)
7 -	22:26 UTC	end of penumbral eclipse (P4)
October 28		

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:

$$GCT = 11:57:23$$

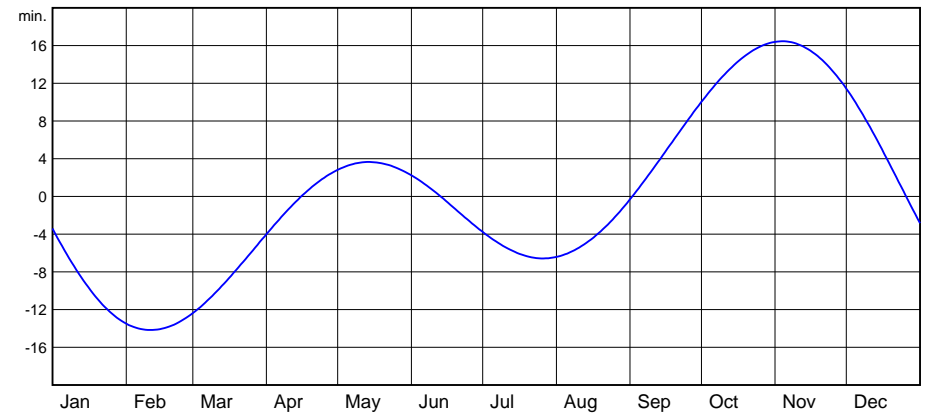
$$GCT = 12:01:57$$

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

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

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 2023.



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.sirarah.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 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 GHA, ddGHA, Dec, dDec 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 073° 073° 073° 073° 072° 072°
Greenwich Culmination Time: 12:05

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 294° 294° 294° 294° 294° 294°
Greenwich Culmination Time: 21:19

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°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 072° 072° 072° 072° 071° 071°
Greenwich Culmination Time: 12:06

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 294° 294° 294° 294° 294° 294°
Greenwich Culmination Time: 21:15

UT	Sun				Venus				Moon				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	178	00.3	-00.3	S 21 43.3	-00.4	157	10.7	-00.8	S 18 55.2	-00.8	302	11.3	-25.0	N 09 07.9	-13.2		
01	193	00.0	-00.2	S 21 42.9	-00.4	172	09.9	-00.7	S 18 54.4	-00.9	316	46.3	-24.9	N 08 54.7	-13.3		
02	207	59.8	-00.2	S 21 42.5	-00.4	187	09.2	-00.7	S 18 53.5	-00.8	331	21.4	-24.9	N 08 41.4	-13.3		
03	222	59.6	-00.3	S 21 42.1	-00.4	202	08.5	-00.7	S 18 52.7	-00.9	345	56.5	-24.9	N 08 28.1	-13.3		
04	237	59.3	-00.2	S 21 41.7	-00.4	217	07.8	-00.7	S 18 51.8	-00.8		0	31.6	-24.9	N 08 14.8	-13.4	
05	252	59.1	-00.3	S 21 41.3	-00.4	232	07.1	-00.7	S 18 51.0	-00.9		15	06.7	-24.9	N 08 01.4	-13.5	
06	267	58.8	-00.2	S 21 40.9	-00.4	247	06.4	-00.7	S 18 50.1	-00.8		29	41.8	-24.8	N 07 47.9	-13.4	
07	282	58.6	-00.3	S 21 40.5	-00.4	262	05.7	-00.8	S 18 49.3	-00.8		44	17.0	-24.8	N 07 34.5	-13.5	
08	297	58.3	-00.2	S 21 40.1	-00.4	277	04.9	-00.7	S 18 48.5	-00.9		58	52.2	-24.9	N 07 21.0	-13.6	
09	312	58.1	-00.2	S 21 39.7	-00.4	292	04.2	-00.7	S 18 47.6	-00.8		73	27.3	-24.8	N 07 07.4	-13.5	
10	327	57.9	-00.3	S 21 39.3	-00.4	307	03.5	-00.7	S 18 46.8	-00.9		88	02.5	-24.8	N 06 53.9	-13.7	
11	342	57.6	-00.2	S 21 38.9	-00.4	322	02.8	-00.7	S 18 45.9	-00.8		102	37.7	-24.8	N 06 40.2	-13.6	
12	357	57.4	-00.3	S 21 38.5	-00.4	337	02.1	-00.7	S 18 45.1	-00.9		117	12.9	-24.8	N 06 26.6	-13.7	
13	12	57.1	-00.2	S 21 38.1	-00.4	352	01.4	-00.7	S 18 44.2	-00.9		131	48.1	-24.8	N 06 12.9	-13.7	
14	27	56.9	-00.2	S 21 37.7	-00.5		7	00.7	-00.7	S 18 43.3	-00.8		146	23.3	-24.8	N 05 59.2	-13.7
15	42	56.7	-00.3	S 21 37.2	-00.4		21	60.0	-00.7	S 18 42.5	-00.9		160	58.5	-24.8	N 05 45.5	-13.8
16	57	56.4	-00.2	S 21 36.8	-00.4		36	59.3	-00.7	S 18 41.6	-00.8		175	33.7	-24.7	N 05 31.7	-13.8
17	72	56.2	-00.3	S 21 36.4	-00.4		51	58.6	-00.8	S 18 40.8	-00.9		190	09.0	-24.8	N 05 17.9	-13.8
18	87	55.9	-00.2	S 21 36.0	-00.4		66	57.8	-00.7	S 18 39.9	-00.8		204	44.2	-24.8	N 05 04.1	-13.9
19	102	55.7	-00.2	S 21 35.6	-00.4		81	57.1	-00.7	S 18 39.1	-00.9		219	19.4	-24.8	N 04 50.2	-13.9
20	117	55.5	-00.3	S 21 35.2	-00.4		96	56.4	-00.7	S 18 38.2	-00.9		233	54.6	-24.8	N 04 36.3	-13.9
21	132	55.2	-00.2	S 21 34.8	-00.4		111	55.7	-00.7	S 18 37.3	-00.8		248	29.8	-24.7	N 04 22.4	-14.0
22	147	55.0	-00.2	S 21 34.4	-00.5		126	55.0	-00.7	S 18 36.5	-00.9		263	05.1	-24.8	N 04 08.4	-13.9
23	162	54.8	-00.3	S 21 33.9	-00.4		141	54.3	-00.7	S 18 35.6	-00.8		277	40.3	-24.8	N 03 54.5	-14.0
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 14°9 14°9 14°9 14°9 15°0 15°0				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 54°6 54°7 54°8 54°9 55°0 55°1				HP 00°1 00°1 00°1 00°1 00°1 00°1					
SHA 067° 067° 066° 066° 066° 066°				SHA 046° 046° 045° 045° 045° 045°				SHA 190° 188° 186° 185° 183° 181°				SHA 070° 070° 070° 069° 069° 069°					
Greenwich Culmination Time: 12:08				Greenwich Culmination Time: 13:31				Greenwich Culmination Time: 03:57				Greenwich Culmination Time: 12:06					

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	178	18.4	-00.2	S 22 10.2	-00.4	158	03.7	-00.7	S 19 53.3	-00.8	333	48.0	-28.2	N 22 25.1	-08.3	
01	193	18.2	-00.3	S 22 09.8	-00.3	173	03.0	-00.8	S 19 52.5	-00.7	348	19.8	-28.2	N 22 16.8	-08.4	
02	208	17.9	-00.2	S 22 09.5	-00.4	188	02.2	-00.8	S 19 51.8	-00.8	2	51.6	-28.1	N 22 08.4	-08.5	
03	223	17.7	-00.3	S 22 09.1	-00.3	203	01.4	-00.7	S 19 51.0	-00.8	17	23.5	-28.0	N 22 01.9	-08.6	
04	238	17.4	-00.3	S 22 08.8	-00.4	218	00.7	-00.8	S 19 50.2	-00.8	31	55.5	-28.0	N 21 51.3	-08.7	
05	253	17.1	-00.2	S 22 08.4	-00.3	232	59.9	-00.7	S 19 49.4	-00.7	46	27.5	-27.9	N 21 42.6	-08.8	
06	268	16.9	-00.3	S 22 08.1	-00.4	247	59.2	-00.8	S 19 48.7	-00.8	60	59.6	-27.8	N 21 33.8	-08.9	
07	283	16.6	-00.2	S 22 07.7	-00.3	262	58.4	-00.7	S 19 47.9	-00.8	75	31.8	-27.8	N 21 24.9	-08.9	
08	298	16.4	-00.3	S 22 07.4	-00.4	277	57.7	-00.8	S 19 47.1	-00.8	90	04.0	-27.8	N 21 16.0	-09.1	
09	313	16.1	-00.3	S 22 07.0	-00.3	292	56.9	-00.7	S 19 46.3	-00.8	104	36.2	-27.6	N 21 06.9	-09.1	
10	328	15.8	-00.2	S 22 06.7	-00.4	307	56.2	-00.8	S 19 45.5	-00.7	119	08.6	-27.6	N 20 57.8	-09.3	
11	343	15.6	-00.3	S 22 06.3	-00.3	322	55.4	-00.7	S 19 44.8	-00.8	133	41.0	-27.6	N 20 48.5	-09.3	
12	358	15.3	-00.2	S 22 06.0	-00.4	337	54.7	-00.8	S 19 44.0	-00.8	148	13.4	-27.5	N 20 39.2	-09.4	
13	13	15.1	-00.3	S 22 05.6	-00.4	352	53.9	-00.7	S 19 43.2	-00.8	162	45.9	-27.4	N 20 29.8	-09.5	
14	28	14.8	-00.2	S 22 05.2	-00.3		7	53.2	-00.8	S 19 42.4	-00.8	177	18.5	-27.4	N 20 20.3	-09.6
15	43	14.6	-00.3	S 22 04.9	-00.4		22	52.4	-00.7	S 19 41.6	-00.8	191	51.1	-27.3	N 20 10.7	-09.7
16	58	14.3	-00.3	S 22 04.5	-00.3		37	51.7	-00.8	S 19 40.8	-00.8	206	23.8	-27.3	N 20 01.0	-09.7
17	73	14.0	-00.2	S 22 04.2	-00.4		52	50.9	-00.7	S 19 40.0	-00.7	220	56.5	-27.2	N 19 51.3	-09.9
18	88	13.8	-00.3	S 22 03.8	-00.4		67	50.2	-00.8	S 19 39.3	-00.8	235	29.3	-27.1	N 19 41.4	-09.9
19	103	13.5	-00.2	S 22 03.4	-00.3		82	49.4	-00.7	S 19 38.5	-00.8	250	02.2	-27.1	N 19 31.5	-10.0
20	118	13.3	-00.3	S 22 03.1	-00.4		97	48.7	-00.8	S 19 37.7	-00.8	264	35.1	-27.0	N 19 21.5	-10.1
21	133	13.0	-00.2	S 22 02.7	-00.3		112	47.9	-00.7	S 19 36.9	-00.8	279	08.1	-27.0	N 19 11.4	-10.2
22	148	12.8	-00.3	S 22 02.4	-00.4		127	47.2	-00.8	S 19 36.1	-00.8	293	41.1	-26.9	N 19 01.2	-10.2
23	163	12.5	-00.3	S 22 02.0	-00.4		142	46.4	-00.7	S 19 35.3	-00.8	308	14.2	-26.9	N 18 51.0	-10.3
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 14°7 14°7 14°7 14°7 14°7 14°7				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 53°9 54°0 54°0 54°0 54°0 54°0				HP 00°0 00°0 00°0 00°0 00°0 00°0				
SHA 070° 070° 070° 069° 069° 069°				SHA 050° 049° 049° 049° 049° 049°				SHA 225° 222° 220° 218° 216° 215°				SHA 034° 034° 034° 034° 034° 034°				
Greenwich Culmination Time: 12:06				Greenwich Culmination Time: 13:28				Greenwich Culmination Time: 01:48				Greenwich Culmination Time: 14:28				

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°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 069° 069° 068° 068° 068° 068°
Greenwich Culmination Time: 12:07

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°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 068° 068° 067° 067° 067° 067°
Greenwich Culmination Time: 12:07

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 294° 294° 294° 294° 294° 294°
Greenwich Culmination Time: 21:03

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 294° 294° 294° 294° 294° 294°
Greenwich Culmination Time: 20:59

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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 02, 06, 10, 14, 18, 22. Includes specific astronomical data for selected days.

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 02, 06, 10, 14, 18, 22. Includes specific astronomical data for selected days.

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 02, 06, 10, 14, 18, 22. Includes specific astronomical data for selected days.

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 02, 06, 10, 14, 18, 22. Includes specific astronomical data for selected days.

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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 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 065° 064° 064° 064° 064° 064°
Greenwich Culmination Time: 12:08

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 294° 294° 294° 294° 294° 294°
Greenwich Culmination Time: 20:47

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°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 063° 063° 063° 063° 063° 063°
Greenwich Culmination Time: 12:09

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 294° 294° 294° 294° 294° 294°
Greenwich Culmination Time: 20:43

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for January 20, 2023, such as GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for January 17, 2023, such as GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for January 20, 2023, such as GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for January 17, 2023, such as 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 GHA, ddGHA, Dec, dDec 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 054° 054° 054° 053° 053° 053°
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°0 00°0 00°0 00°0 00°0
SHA 293° 293° 293° 293° 293° 293°
Greenwich Culmination Time: 20:11

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°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 057° 057° 057° 057° 056° 056°
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°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 294° 294° 294° 294° 294° 294°
Greenwich Culmination Time: 20:21

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 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 for UT, Sun, Venus, Moon, and UT. It includes celestial coordinates and Greenwich Culmination Times for the first half of the year.

Table with columns for UT, Sun, Venus, Moon, and UT. It includes celestial coordinates and Greenwich Culmination Times for the second half of the year.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. It includes celestial coordinates and Greenwich Culmination Times for the first half of the year.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. It includes celestial coordinates and Greenwich Culmination Times for the second half of the year.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for January 30, 2023, such as GHA, ddGHA, Dec, and dDec for various celestial bodies.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for January 30, 2023, such as GHA, ddGHA, Dec, and dDec for various celestial bodies.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for January 31, 2023, such as GHA, ddGHA, Dec, and dDec for various celestial bodies.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for January 31, 2023, such as GHA, ddGHA, Dec, and dDec for various celestial bodies.

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°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 042° 041° 041° 041° 041° 041°
Greenwich Culmination Time: 12:13

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°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° 044° 044° 044° 044° 044°
Greenwich Culmination Time: 12:13

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 291° 291° 291° 291° 291° 291°
Greenwich Culmination Time: 19:35

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 292° 291° 291° 291° 291° 291°
Greenwich Culmination Time: 19:43

Table for 2023 February 3 Friday showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a sub-table for Mars and Jupiter with columns for GHA, ddGHA, Dec, dDec, and UT.

Table for 2023 February 4 Saturday showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a sub-table for Mars and Jupiter with columns for GHA, ddGHA, Dec, dDec, and UT.

Table for 2023 February 3 Friday showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a sub-table for Mars and Jupiter with columns for GHA, ddGHA, Dec, dDec, and UT.

Table for 2023 February 4 Saturday showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a sub-table for Mars and Jupiter with columns for GHA, ddGHA, Dec, dDec, and UT.

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°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 038° 037° 037° 037° 037° 037°
Greenwich Culmination Time: 12:14

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°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° 040° 040° 040° 040° 040°
Greenwich Culmination Time: 12:14

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 290° 290° 289° 289° 289° 289°
Greenwich Culmination Time: 19:24

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 353° 353° 353° 353° 353° 353°
Greenwich Culmination Time: 15:22

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon A: 55%.

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 040° 039° 039° 039° 039° 039°
Greenwich Culmination Time: 12:14

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon A: 58%.

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 039° 038° 038° 038° 038° 038°
Greenwich Culmination Time: 12:14

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, 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 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 034° 033° 033° 033° 033° 033°
Greenwich Culmination Time: 12:14

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 288° 288° 288° 288° 288° 288°
Greenwich Culmination Time: 19:13

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 037° 036° 036° 036° 036° 036°
Greenwich Culmination Time: 12:14

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 352° 352° 352° 352° 352° 352°
Greenwich Culmination Time: 15:09

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°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 036° 035° 035° 035° 035° 035°
Greenwich Culmination Time: 12:14

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 035° 034° 034° 034° 034° 034°
Greenwich Culmination Time: 12:14

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 289° 289° 289° 289° 289° 289°
Greenwich Culmination Time: 19:18

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 352° 352° 352° 352° 352° 352°
Greenwich Culmination Time: 15:02

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on February 17, 2023, 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 February 14, 2023, 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 February 17, 2023, 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 February 14, 2023, including GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial data for the first 24 hours of the day.

Summary table for Sun, Venus, and Moon with columns for UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA values and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial data for the first 24 hours of the day.

Summary table for Mars, Jupiter, and Saturn with columns for UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA values and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial data for the first 24 hours of the day.

Summary table for Sun, Venus, and Moon with columns for UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA values and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial data for the first 24 hours of the day.

Summary table for Mars, Jupiter, and Saturn with columns for UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA values and Greenwich Culmination Time.

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Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for days 00-23 and Greenwich Culmination Times.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for days 00-23 and Greenwich Culmination Times.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for days 00-23 and Greenwich Culmination Times.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for days 00-23 and Greenwich Culmination Times.

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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 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 028° 028° 027° 027° 027° 027°
Greenwich Culmination Time: 12:13

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 286° 286° 286° 286° 286° 286°
Greenwich Culmination Time: 18:58

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°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 027° 027° 026° 026° 026° 026°
Greenwich Culmination Time: 12:13

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 286° 286° 286° 286° 285° 285°
Greenwich Culmination Time: 18:56

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Table for Feb 25 showing Sun, Venus, and Moon data. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table for Greenwich Culmination Time at the bottom.

Table for Feb 22 showing Sun, Venus, and Moon data. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table for Greenwich Culmination Time at the bottom.

Table for Feb 25 showing Mars, Jupiter, and Saturn data. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table for Greenwich Culmination Time at the bottom.

Table for Feb 22 showing Mars, Jupiter, and Saturn data. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes a small table for Greenwich Culmination Time at the bottom.

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.

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes SD, HP, and SHA values for each hour of the day.

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.

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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.

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes SD, HP, and SHA values for each hour of the day.

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.

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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 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 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 015° 014° 014° 014° 014° 014°
Greenwich Culmination Time: 12:11

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 017° 017° 017° 017° 017° 017°
Greenwich Culmination Time: 12:12

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 280° 280° 280° 280° 280° 280°
Greenwich Culmination Time: 18:27

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 282° 282° 281° 281° 281° 281°
Greenwich Culmination Time: 18:33

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 016° 016° 016° 016° 016° 016°
Greenwich Culmination Time: 12:11

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 015° 015° 015° 015° 015° 015°
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°0 00°0 00°0 00°0 00°0
SHA 281° 281° 281° 281° 281° 281°
Greenwich Culmination Time: 18:31

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 348° 348° 348° 348° 348° 348°
Greenwich Culmination Time: 14:00

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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°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 011° 011° 011° 010° 010° 010°
Greenwich Culmination Time: 12:10

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°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 014° 013° 013° 013° 013° 013°
Greenwich Culmination Time: 12:11

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°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 278° 278° 278° 278° 278° 278°
Greenwich Culmination Time: 18:19

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°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 280° 280° 280° 280° 279° 279°
Greenwich Culmination Time: 18:25

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° 012° 012° 012° 012°
Greenwich Culmination Time: 12:11

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 012° 012° 011° 011° 011° 011°
Greenwich Culmination Time: 12:10

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 279° 279° 279° 279° 279° 279°
Greenwich Culmination Time: 18:23

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 279° 279° 279° 279° 279° 278°
Greenwich Culmination Time: 18:21

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for Greenwich Culmination Time and SHA coordinates.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for Greenwich Culmination Time and SHA coordinates.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for Greenwich Culmination Time and SHA coordinates.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for Greenwich Culmination Time and SHA coordinates.

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Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section has sub-columns for GHA, ddGHA, Dec, and dDec. Data is provided for each hour from 00 to 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 009° 009° 009° 009° 008° 008°
Greenwich Culmination Time: 12:10

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section has sub-columns for GHA, ddGHA, Dec, and dDec. Data is provided for each hour from 00 to 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 008° 008° 008° 008° 007° 007°
Greenwich Culmination Time: 12:09

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section has sub-columns for GHA, ddGHA, Dec, and dDec. Data is provided for each hour from 00 to 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 277° 277° 277° 277° 277° 277°
Greenwich Culmination Time: 18:15

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section has sub-columns for GHA, ddGHA, Dec, and dDec. Data is provided for each hour from 00 to 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 277° 277° 277° 277° 276° 276°
Greenwich Culmination Time: 18:13

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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 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° 003° 003°
Greenwich Culmination Time: 12:08

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 006° 006° 006° 006° 006° 005°
Greenwich Culmination Time: 12:09

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 274° 274° 274° 274° 274°
Greenwich Culmination Time: 18:03

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 346° 346° 346° 346° 346° 346°
Greenwich Culmination Time: 13:29

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial data for the first 24 hours of the day.

Summary table for Sun, Venus, and Moon with columns for UT, GHA, ddGHA, Dec, dDec, and A: 80%.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial data for the first 24 hours of the day.

Summary table for Mars, Jupiter, and Saturn with columns for UT, GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 show celestial data for the first 24 hours of the day.

Summary table for Sun, Venus, and Moon with columns for UT, GHA, ddGHA, Dec, dDec, and A: 80%.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial data for the first 24 hours of the day.

Summary table for Mars, Jupiter, and Saturn with columns for UT, GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 09.4	+00.2	N 00 02.6	+00.9	145 45.9	-00.4	N 13 28.2	+01.2	185 48.3	-30.5	S 07 11.6	-16.7	00
01	193 09.6	+00.2	N 00 03.5	+01.0	160 45.5	-00.3	N 13 29.4	+01.1	200 17.8	-30.5	S 06 54.9	-16.7	01
02	208 09.8	+00.1	N 00 04.5	+01.0	175 45.2	-00.4	N 13 30.5	+01.1	214 47.3	-30.5	S 06 38.2	-16.8	02
03	223 09.9	+00.2	N 00 05.5	+01.0	190 44.8	-00.4	N 13 31.6	+01.2	229 16.8	-30.4	S 06 21.4	-16.8	03
04	238 10.1	+00.2	N 00 06.5	+01.0	205 44.4	-00.4	N 13 32.8	+01.1	243 46.4	-30.3	S 06 04.6	-16.8	04
05	253 10.3	+00.2	N 00 07.5	+01.0	220 44.0	-00.4	N 13 33.9	+01.2	258 16.1	-30.3	S 05 47.8	-16.9	05
06	268 10.5	+00.2	N 00 08.5	+01.0	235 43.6	-00.4	N 13 35.1	+01.1	272 45.8	-30.2	S 05 30.9	-16.8	06
07	283 10.7	+00.2	N 00 09.5	+01.0	250 43.2	-00.4	N 13 36.2	+01.1	287 15.6	-30.2	S 05 14.1	-16.9	07
08	298 10.9	+00.1	N 00 10.5	+01.0	265 42.8	-00.4	N 13 37.3	+01.2	301 45.4	-30.2	S 04 57.2	-16.9	08
09	313 11.0	+00.2	N 00 11.5	+00.9	280 42.4	-00.4	N 13 38.5	+01.1	316 15.2	-30.1	S 04 40.3	-16.9	09
10	328 11.2	+00.2	N 00 12.4	+01.0	295 42.0	-00.4	N 13 39.6	+01.1	330 45.1	-30.0	S 04 23.4	-16.9	10
11	343 11.4	+00.2	N 00 13.4	+01.0	310 41.6	-00.4	N 13 40.7	+01.1	345 15.1	-30.0	S 04 06.5	-17.0	11
12	358 11.6	+00.2	N 00 14.4	+01.0	325 41.2	-00.4	N 13 41.8	+01.2	359 45.1	-30.0	S 03 49.5	-16.9	12
13	13 11.8	+00.2	N 00 15.4	+01.0	340 40.8	-00.4	N 13 43.0	+01.1	14 15.1	-29.9	S 03 32.6	-17.0	13
14	28 12.0	+00.2	N 00 16.4	+01.0	355 40.4	-00.4	N 13 44.1	+01.1	28 45.2	-29.9	S 03 15.6	-17.0	14
15	43 12.2	+00.1	N 00 17.4	+01.0	10 40.0	-00.4	N 13 45.2	+01.2	43 15.3	-29.9	S 02 58.6	-16.9	15
16	58 12.3	+00.2	N 00 18.4	+01.0	25 39.6	-00.4	N 13 46.4	+01.1	57 45.4	-29.8	S 02 41.7	-17.0	16
17	73 12.5	+00.2	N 00 19.4	+00.9	40 39.2	-00.4	N 13 47.5	+01.1	72 15.6	-29.8	S 02 24.7	-17.0	17
18	88 12.7	+00.2	N 00 20.3	+01.0	55 38.8	-00.4	N 13 48.6	+01.2	86 45.8	-29.7	S 02 07.7	-16.9	18
19	103 12.9	+00.2	N 00 21.3	+01.0	70 38.4	-00.4	N 13 49.8	+01.1	101 16.1	-29.7	S 01 50.8	-17.0	19
20	118 13.1	+00.2	N 00 22.3	+01.0	85 38.0	-00.4	N 13 50.9	+01.1	115 46.4	-29.7	S 01 33.8	-17.0	20
21	133 13.3	+00.1	N 00 23.3	+01.0	100 37.6	-00.4	N 13 52.0	+01.1	130 16.7	-29.6	S 01 16.8	-16.9	21
22	148 13.4	+00.2	N 00 24.3	+01.0	115 37.2	-00.4	N 13 53.1	+01.2	144 47.1	-29.7	S 00 59.9	-17.0	22
23	163 13.6	+00.2	N 00 25.3	+01.0	130 36.8	-00.4	N 13 54.3	+01.1	159 17.4	-29.5	S 00 42.9	-16.9	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	360°	360°	360°	359°	359°	359°
Greenwich Culmination Time: 12:07						

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	327°	327°	327°	327°	327°	326°
Greenwich Culmination Time: 14:17						

UT	02	06	10	14	18	22
SD	16°4	16°4	16°4	16°3	16°3	16°3
HP	60°2	60°1	60°0	60°0	59°9	59°8
SHA	006°	004°	002°	360°	358°	356°
Greenwich Culmination Time: 12:01						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	90 37.8	+01.2	N 25 36.4	+00.0	162 38.5	+01.9	N 05 29.2	+00.2	204 13.2	+02.2	S 12 08.9	-00.1	00
01	105 39.0	+01.1	N 25 36.4	+00.0	177 40.4	+01.9	N 05 29.4	+00.2	219 15.4	+02.2	S 12 08.8	-00.1	01
02	120 40.1	+01.2	N 25 36.4	+00.0	192 42.3	+01.9	N 05 29.6	+00.3	234 17.6	+02.2	S 12 08.7	-00.1	02
03	135 41.3	+01.2	N 25 36.4	+00.0	207 44.2	+02.0	N 05 29.9	+00.2	249 19.8	+02.2	S 12 08.6	-00.1	03
04	150 42.5	+01.1	N 25 36.4	+00.0	222 46.2	+01.9	N 05 30.1	+00.2	264 22.0	+02.1	S 12 08.5	-00.1	04
05	165 43.6	+01.2	N 25 36.4	+00.0	237 48.1	+01.9	N 05 30.3	+00.2	279 24.1	+02.2	S 12 08.4	-00.1	05
06	180 44.8	+01.1	N 25 36.4	+00.0	252 50.0	+01.9	N 05 30.5	+00.3	294 26.3	+02.2	S 12 08.3	-00.1	06
07	195 45.9	+01.2	N 25 36.4	+00.0	267 51.9	+01.9	N 05 30.8	+00.2	309 28.5	+02.2	S 12 08.2	-00.1	07
08	210 47.1	+01.1	N 25 36.4	-00.1	282 53.8	+01.9	N 05 31.0	+00.2	324 30.7	+02.2	S 12 08.1	-00.1	08
09	225 48.2	+01.2	N 25 36.3	+00.0	297 55.7	+02.0	N 05 31.2	+00.3	339 32.9	+02.2	S 12 08.0	-00.1	09
10	240 49.4	+01.2	N 25 36.3	+00.0	312 57.7	+01.9	N 05 31.5	+00.2	354 35.1	+02.2	S 12 07.9	-00.1	10
11	255 50.6	+01.1	N 25 36.3	+00.0	327 59.6	+01.9	N 05 31.7	+00.2	9 37.3	+02.2	S 12 07.8	-00.1	11
12	270 51.7	+01.2	N 25 36.3	+00.0	343 01.5	+01.9	N 05 31.9	+00.3	24 39.5	+02.2	S 12 07.7	-00.1	12
13	285 52.9	+01.1	N 25 36.3	+00.0	358 03.4	+01.9	N 05 32.2	+00.2	39 41.7	+02.2	S 12 07.6	-00.1	13
14	300 54.0	+01.2	N 25 36.3	+00.0	13 05.3	+01.9	N 05 32.4	+00.2	54 43.9	+02.2	S 12 07.5	-00.1	14
15	315 55.2	+01.1	N 25 36.3	+00.0	28 07.2	+01.9	N 05 32.6	+00.2	69 46.1	+02.2	S 12 07.4	-00.1	15
16	330 56.3	+01.2	N 25 36.3	+00.0	43 09.1	+02.0	N 05 32.8	+00.3	84 48.3	+02.2	S 12 07.3	-00.1	16
17	345 57.5	+01.1	N 25 36.3	+00.0	58 11.1	+01.9	N 05 33.1	+00.2	99 50.5	+02.2	S 12 07.2	+00.0	17
18	0 58.6	+01.2	N 25 36.3	-00.1	73 13.0	+01.9	N 05 33.3	+00.2	114 52.7	+02.2	S 12 07.2	-00.1	18
19	15 59.8	+01.1	N 25 36.2	+00.0	88 14.9	+01.9	N 05 33.5	+00.3	129 54.9	+02.2	S 12 07.1	-00.1	19
20	31 00.9	+01.2	N 25 36.2	+00.0	103 16.8	+01.9	N 05 33.8	+00.2	144 57.1	+02.2	S 12 07.0	-00.1	20
21	46 02.1	+01.1	N 25 36.2	+00.0	118 18.7	+01.9	N 05 34.0	+00.2	159 59.3	+02.2	S 12 06.9	-00.1	21
22	61 03.2	+01.2	N 25 36.2	+00.0	133 20.6	+01.9	N 05 34.2	+00.3	175 01.5	+02.2	S 12 06.8	-00.1	22
23	76 04.4	+01.1	N 25 36.2	+00.0	148 22.5	+02.0	N 05 34.5	+00.2	190 03.7	+02.2	S 12 06.7	-00.1	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	272°	272°	272°	272°	272°	272°
Greenwich Culmination Time: 17:56						

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	344°	344°	344°	344°	344°	344°
Greenwich Culmination Time: 13:07						

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	026°	026°	026°	026°	026°	026°
Greenwich Culmination Time: 10:21						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 56.3	+00.2	S 01 08.7	-01.0	146 13.7	-00.4	N 12 05.0	+01.1	225 41.6	-36.1	S 23 48.9	-09.5	00
01	192 56.5	+00.1	S 01 07.7	-01.0	161 13.3	-00.4	N 12 06.1	+01.2	240 05.5	-36.1	S 23 39.4	-09.6	01
02	207 56.6	+00.2	S 01 06.7	-01.0	176 12.9	-00.3	N 12 07.3	+01.2	254 29.4	-36.0	S 23 29.8	-09.8	02
03	222 56.8	+00.2	S 01 05.7	-01.0	191 12.6	-00.4	N 12 08.5	+01.2	268 53.4	-35.8	S 23 20.0	-09.9	03
04	237 57.0	+00.2	S 01 04.7	-01.0	206 12.2	-00.4	N 12 09.7	+01.1	283 17.6	-35.9	S 23 10.1	-10.1	04
05	252 57.2	+00.2	S 01 03.7	-01.0	221 11.8	-00.4	N 12 10.8	+01.2	297 41.7	-35.7	S 22 60.0	-10.3	05
06	267 57.4	+00.1	S 01 02.7	-01.0	236 11.4	-00.3	N 12 12.0	+01.2	312 06.0	-35.7	S 22 49.7	-10.4	06
07	282 57.5	+00.2	S 01 01.7	-01.0	251 11.1	-00.4	N 12 13.2	+01.1	326 30.3	-35.5	S 22 39.3	-10.6	07
08	297 57.7	+00.2	S 01 00.7	-00.9	266 10.7	-00.4	N 12 14.3	+01.2	340 54.8	-35.5	S 22 28.7	-10.7	08
09	312 57.9	+00.2	S 00 59.8	-01.0	281 10.3								

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec. The Moon section also includes A: 92%.

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° 001° 001° 001° 001° 001°
Greenwich Culmination Time: 12:07

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec. The Moon section also includes A: 96%.

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° 000° 000° 000° 360°
Greenwich Culmination Time: 12:07

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec.

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 273° 273° 273° 273° 273° 273°
Greenwich Culmination Time: 17:59

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, and dDec.

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 273° 273° 273° 273° 273° 272°
Greenwich Culmination Time: 17:57

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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° 356° 356° 356° 355°
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 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° 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°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 270° 270° 270° 270° 270° 270°
Greenwich Culmination Time: 17:48

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 344° 344° 344° 344° 344° 344°
Greenwich Culmination Time: 13:04

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 06'0 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 00°1 00'1
SHA 358° 358° 358° 358° 357° 357° 357° 357°
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°1 06'0 00°1 06'0 00°1 06'0 00°1 06'0
HP 00°0 00'0 00°0 00'0 00°0 00'0 00°0 00'0
SHA 271° 271° 271° 271° 271° 271° 271° 271°
Greenwich Culmination Time: 17:52

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 06'0 16°0 06'0 16°0 06'0 16°0 06'0
HP 00°1 00'1 00°1 00'1 00°1 00'1 00°1 00'1
SHA 357° 357° 357° 357° 356° 356° 356° 356°
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°1 06'0 00°1 06'0 00°1 06'0 00°1 06'0
HP 00°0 00'0 00°0 00'0 00°0 00'0 00°0 00'0
SHA 344° 344° 344° 344° 344° 344° 344° 344°
Greenwich Culmination Time: 17:50

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 45.3	+00.2	N 03 11.4	+01.0	144 23.9	-00.5	N 16 55.7	+01.0	88 23.1	-31.5	N 27 53.7	-00.4	00
01	193 45.5	+00.2	N 03 12.4	+00.9	159 23.4	-00.4	N 16 56.7	+01.0	102 51.6	-31.5	N 27 53.3	-00.5	01
02	208 45.7	+00.2	N 03 13.3	+01.0	174 23.0	-00.5	N 16 57.7	+01.0	117 20.1	-31.5	N 27 52.8	-00.7	02
03	223 45.9	+00.1	N 03 14.3	+01.0	189 22.5	-00.4	N 16 58.7	+01.0	131 48.6	-31.4	N 27 52.1	-00.9	03
04	238 46.0	+00.2	N 03 15.3	+01.0	204 22.1	-00.5	N 16 59.7	+01.0	146 17.2	-31.4	N 27 51.2	-01.0	04
05	253 46.2	+00.2	N 03 16.3	+00.9	219 21.6	-00.5	N 17 00.7	+01.0	160 45.8	-31.4	N 27 50.2	-01.1	05
06	268 46.4	+00.2	N 03 17.2	+01.0	234 21.1	-00.4	N 17 01.7	+01.1	175 14.4	-31.3	N 27 49.1	-01.2	06
07	283 46.6	+00.2	N 03 18.2	+01.0	249 20.7	-00.5	N 17 02.8	+01.0	189 43.1	-31.3	N 27 47.9	-01.4	07
08	298 46.8	+00.2	N 03 19.2	+01.0	264 20.2	-00.5	N 17 03.8	+01.0	204 11.8	-31.3	N 27 46.5	-01.5	08
09	313 47.0	+00.2	N 03 20.2	+00.9	279 19.7	-00.4	N 17 04.8	+01.0	218 40.5	-31.2	N 27 45.0	-01.7	09
10	328 47.2	+00.2	N 03 21.1	+01.0	294 19.3	-00.5	N 17 05.8	+01.0	233 09.3	-31.2	N 27 43.3	-01.8	10
11	343 47.4	+00.2	N 03 22.1	+01.0	309 18.8	-00.4	N 17 06.8	+01.0	247 38.1	-31.2	N 27 41.5	-01.9	11
12	358 47.6	+00.1	N 03 23.1	+01.0	324 18.4	-00.5	N 17 07.8	+01.0	262 06.9	-31.1	N 27 39.6	-02.1	12
13	13 47.7	+00.2	N 03 24.1	+01.0	339 17.9	-00.5	N 17 08.8	+01.0	276 35.8	-31.1	N 27 37.5	-02.2	13
14	28 47.9	+00.2	N 03 25.0	+01.0	354 17.4	-00.4	N 17 09.8	+01.0	291 04.7	-31.0	N 27 35.3	-02.3	14
15	43 48.1	+00.2	N 03 26.0	+01.0	9 17.0	-00.5	N 17 10.8	+01.0	305 33.7	-31.1	N 27 33.0	-02.4	15
16	58 48.3	+00.2	N 03 27.0	+01.0	24 16.5	-00.5	N 17 11.8	+01.0	320 02.6	-30.9	N 27 30.6	-02.6	16
17	73 48.5	+00.2	N 03 28.0	+00.9	39 16.0	-00.4	N 17 12.8	+01.1	334 31.7	-31.0	N 27 28.0	-02.8	17
18	88 48.7	+00.2	N 03 28.9	+01.0	54 15.6	-00.5	N 17 13.9	+01.0	349 00.7	-30.8	N 27 25.2	-02.8	18
19	103 48.9	+00.2	N 03 29.9	+01.0	69 15.1	-00.5	N 17 14.9	+01.0	3 29.9	-30.9	N 27 22.4	-03.0	19
20	118 49.1	+00.1	N 03 30.9	+00.9	84 14.6	-00.4	N 17 15.9	+01.0	17 59.0	-30.8	N 27 19.4	-03.1	20
21	133 49.2	+00.2	N 03 31.8	+01.0	99 14.2	-00.5	N 17 16.9	+01.0	32 28.2	-30.7	N 27 16.3	-03.3	21
22	148 49.4	+00.2	N 03 32.8	+01.0	114 13.7	-00.5	N 17 17.9	+01.0	46 57.5	-30.8	N 27 13.0	-03.3	22
23	163 49.6	+00.2	N 03 33.8	+01.0	129 13.2	-00.4	N 17 18.9	+01.0	61 26.7	-30.6	N 27 09.7	-03.5	23

UT 02 06 10 14 18 22	SD 16°0 16°0 16°0 16°0 16°0 16°0	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°9 14°9 14°8 14°8 14°8 14°8
HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 353° 352° 352° 352° 352° 352°	HP 00°1 00°1 00°1 00°1 00°1 00°1	SHA 318° 318° 318° 318° 317° 317°	HP 54°6 54°5 54°5 54°4 54°4 54°3	SHA 261° 259° 257° 254° 252° 250°
Greenwich Culmination Time: 12:04		Greenwich Culmination Time: 14:22		Greenwich Culmination Time: 18:45	

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	94 14.6	+01.1	N 25 31.6	+00.0	168 45.4	+01.9	N 06 13.3	+00.2	211 16.1	+02.2	S 11 51.1	-00.1	00
01	109 15.7	+01.1	N 25 31.6	-00.1	183 47.3	+01.9	N 06 13.5	+00.2	226 18.3	+02.2	S 11 51.0	-00.1	01
02	124 16.8	+01.1	N 25 31.5	+00.0	198 49.2	+01.9	N 06 13.7	+00.3	241 20.5	+02.2	S 11 50.9	-00.1	02
03	139 17.9	+01.1	N 25 31.5	+00.0	213 51.1	+01.9	N 06 14.0	+00.2	256 22.7	+02.3	S 11 50.8	-00.1	03
04	154 19.0	+01.1	N 25 31.5	-00.1	228 53.0	+01.9	N 06 14.2	+00.2	271 25.0	+02.2	S 11 50.7	-00.1	04
05	169 20.1	+01.1	N 25 31.4	+00.0	243 54.9	+01.9	N 06 14.4	+00.3	286 27.2	+02.2	S 11 50.6	-00.1	05
06	184 21.2	+01.1	N 25 31.4	-00.1	258 56.8	+02.0	N 06 14.7	+00.2	301 29.4	+02.2	S 11 50.5	-00.1	06
07	199 22.3	+01.1	N 25 31.3	+00.0	273 58.8	+01.9	N 06 14.9	+00.2	316 31.6	+02.2	S 11 50.4	-00.1	07
08	214 23.4	+01.1	N 25 31.3	-00.1	289 00.7	+01.9	N 06 15.1	+00.2	331 33.8	+02.2	S 11 50.3	+00.0	08
09	229 24.5	+01.1	N 25 31.2	+00.0	304 02.6	+01.9	N 06 15.3	+00.3	346 36.0	+02.2	S 11 50.3	-00.1	09
10	244 25.6	+01.1	N 25 31.2	-00.1	319 04.5	+01.9	N 06 15.6	+00.2	1 38.2	+02.2	S 11 50.2	-00.1	10
11	259 26.7	+01.1	N 25 31.1	+00.0	334 06.4	+01.9	N 06 15.8	+00.2	16 40.4	+02.2	S 11 50.1	-00.1	11
12	274 27.8	+01.1	N 25 31.1	+00.0	349 08.3	+01.9	N 06 16.0	+00.3	31 42.6	+02.3	S 11 50.0	-00.1	12
13	289 28.9	+01.1	N 25 31.1	-00.1	4 10.2	+01.9	N 06 16.3	+00.2	46 44.9	+02.2	S 11 49.9	-00.1	13
14	304 30.0	+01.1	N 25 31.0	+00.0	19 12.1	+01.9	N 06 16.5	+00.2	61 47.1	+02.2	S 11 49.8	-00.1	14
15	319 31.1	+01.1	N 25 31.0	-00.1	34 14.1	+01.9	N 06 16.7	+00.3	76 49.3	+02.2	S 11 49.7	-00.1	15
16	334 32.2	+01.1	N 25 30.9	+00.0	49 15.9	+01.9	N 06 17.0	+00.2	91 51.5	+02.2	S 11 49.6	-00.1	16
17	349 33.3	+01.1	N 25 30.9	-00.1	64 17.8	+01.9	N 06 17.2	+00.2	106 53.7	+02.2	S 11 49.5	-00.1	17
18	4 34.4	+01.0	N 25 30.8	+00.0	79 19.7	+01.9	N 06 17.4	+00.2	121 55.9	+02.2	S 11 49.4	+00.0	18
19	19 35.4	+01.1	N 25 30.8	-00.1	94 21.6	+01.9	N 06 17.6	+00.3	136 58.1	+02.2	S 11 49.4	-00.1	19
20	34 36.5	+01.1	N 25 30.7	+00.0	109 23.5	+01.9	N 06 17.9	+00.2	152 00.3	+02.2	S 11 49.3	-00.1	20
21	49 37.6	+01.1	N 25 30.7	-00.1	124 25.4	+02.0	N 06 18.1	+00.2	167 02.5	+02.3	S 11 49.2	-00.1	21
22	64 38.7	+01.1	N 25 30.6	+00.0	139 27.4	+01.9	N 06 18.3	+00.3	182 04.8	+02.2	S 11 49.1	-00.1	22
23	79 39.8	+01.1	N 25 30.6	-00.1	154 29.3	+01.9	N 06 18.6	+00.2	197 07.0	+02.2	S 11 49.0	-00.1	23

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 00°3 00°3 00°3 00°3 00°3 00°3	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 268° 268° 268° 268° 268° 268°	HP 00°0 00°0 00°0 00°0 00°0 00°0	SHA 343° 343° 343° 342° 342° 342°	HP 00°0 00°0 00°0 00°0 00°0 00°0	SHA 025° 025° 025° 025° 025° 025°
Greenwich Culmination Time: 17:41		Greenwich Culmination Time: 12:43		Greenwich Culmination Time: 09:53	

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 31.7	+00.2	N 02 00.9	+01.0	144 56.1	-00.4	N 15 40.6	+01.1	126 16.1	-30.8	N 22 15.5	+09.5	00
01	193 31.9	+00.2	N 02 01.9	+00.9	159 55.7	-00.5	N 15 41.7	+01.0	140 45.3	-31.0	N 22 25.0	+09.4	01
02	208 32.1	+00.2	N 02 02.8	+01.0	174 55.2	-00.4	N 15 42.7	+01.1	155 14.3	-30.9	N 22 34.4	+09.3	02
03	223 32.3	+00.2	N 02 03.8	+01.0	189 54.8	-00.4	N 15 43.8	+01.1	169 43.4	-31.0	N 22 43.7	+09.1	03
04	238 32.5	+00.2	N 02 04.8	+01.0	204 54.4	-00.5	N 15 44.9	+01.0	184 12.4	-31.0	N 22 52.8	+09.1	04
05	253 32.7	+00.2	N 02 05.8	+01.0	219 53.9	-00.4	N 15 45.9	+01.1	198 41.4	-31.1	N 23 01.9	+08.9	05
06	268 32.9	+00.2	N 02 06.8	+01.0	234 53.5	-00.4	N 15 47.0	+01.1	213 10.3	-31.1	N 23 10.8	+08.7	06
07	283 33.1	+00.2	N 02 07.8	+00.9	249 53.1	-00.5	N 15 48.1	+01.0	227 39.2	-31.1	N 23 19.5	+08.6	07
08	298 33.3	+00.1	N 02 08.7	+01.0	264 52.6	-00.4	N 15 49.1	+01.1	242 08.1	-31.1	N 23 28.1	+08.5	08
09	313 33.4	+00.2	N 02 09.7	+01.0	279 52.2	-00.4	N 15 50.2	+01.0	256 37.0	-31.2	N 23 36.6	+08.4	09
10	328 33.6	+00.2	N 02 10.7	+01.0	294 51.8	-00.5	N 15 51.2	+01.1	271 05.8	-31.2	N 23 45.0	+08.3	10
11	343 33.8	+00.2	N 02 11.7	+01.0	309 51.3	-00.4	N 15 52.3	+01.1	285 34.6	-31.3	N 23 53.3	+08.1	11
12	358 34.0	+00.2	N 02 12.7	+00.9	324 50.9	-00.5	N 15 53.4	+01.0	300 03.3	-31.2	N 24 01.4	+07.9	12
13	13 34.2	+00.2	N 02 13.6	+01.0	339 50.4	-00.4	N 15 54.4	+01.0	314 32.1	-31.3	N 24 09.3	+07.9	13
14	28 34.4	+00.2	N 02 14.6	+01.0	354 50.0	-00.4	N 15 55.5	+01.0	329 00.8	-31.4	N 24 17.2	+07.7	14
15	43 34.6	+00.2	N 02 15.6	+01.0	9 49.6	-00.5	N 15 56.5	+01.0	343 29.4	-31.3	N 24 24.9	+07.6	15
16	58 34.8	+00.1	N 02 16.6	+01.0	24 49.1	-00.4	N 15 57.6	+01.0	357 58.1	-31.4	N 24 32.5	+07.4	16
17	73 34.9	+00.2	N 02 17.6	+01.0	39 48.7	-00.5	N 15 58.6	+01.1	12 26.7	-31.4	N 24 39.9	+07.3	17
18	88 35.1	+00.2	N 02 18.6	+00.9	54 48.2	-00.4	N 15 59.7	+01.1	26 55.3	-31.4	N 24 47.2	+07.2	18
19	103 35.3	+00.2	N 02 19.5	+01.0	69 47.8	-00.5	N 16 00.8	+01.0	41 23.9	-31.5	N 24 54.4	+07.0	19
20	118 35.5	+00.2	N 02 20.5	+01.0	84 47.3	-00.4	N 16 01.8	+01.1	55 52.4	-31.4	N 25 01.4	+06.9	20
21	133 35.7	+00.2	N 02 21.5	+01.0									

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 354° 354° 354° 354° 354° 354°
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°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 269° 269° 269° 269° 269° 269°
Greenwich Culmination Time: 17:45

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 353° 353° 353° 353° 353° 353°
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°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 269° 269° 268° 268° 268° 268°
Greenwich Culmination Time: 17:43

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	179	03.3	+00.1	N 04 44.5	+00.9	143	38.1	-00.5	N 18 29.9	+01.0	41	32.8	-26.7	N 17 58.0	-11.0	00
01	194	03.4	+00.2	N 04 45.4	+01.0	158	37.6	-00.5	N 18 30.9	+00.9	56	06.1	-26.6	N 17 47.0	-11.2	01
02	209	03.6	+00.2	N 04 46.4	+01.0	173	37.1	-00.5	N 18 31.8	+01.0	70	39.5	-26.5	N 17 35.8	-11.2	02
03	224	03.8	+00.2	N 04 47.4	+00.9	188	36.6	-00.5	N 18 32.8	+00.9	85	13.0	-26.5	N 17 24.6	-11.3	03
04	239	04.0	+00.2	N 04 48.3	+01.0	203	36.1	-00.5	N 18 33.7	+01.0	99	46.5	-26.5	N 17 13.3	-11.4	04
05	254	04.2	+00.2	N 04 49.3	+00.9	218	35.6	-00.5	N 18 34.7	+00.9	114	20.0	-26.4	N 17 01.9	-11.5	05
06	269	04.4	+00.1	N 04 50.2	+01.0	233	35.1	-00.4	N 18 35.6	+00.9	128	53.6	-26.3	N 16 50.4	-11.5	06
07	284	04.5	+00.2	N 04 51.2	+01.0	248	34.7	-00.5	N 18 36.5	+01.0	143	27.3	-26.4	N 16 38.9	-11.6	07
08	299	04.7	+00.2	N 04 52.2	+00.9	263	34.2	-00.5	N 18 37.5	+00.9	158	00.9	-26.2	N 16 27.3	-11.7	08
09	314	04.9	+00.2	N 04 53.1	+01.0	278	33.7	-00.5	N 18 38.4	+01.0	172	34.7	-26.3	N 16 15.6	-11.7	09
10	329	05.1	+00.2	N 04 54.1	+00.9	293	33.2	-00.5	N 18 39.4	+00.9	187	08.4	-26.2	N 16 03.9	-11.8	10
11	344	05.3	+00.2	N 04 55.0	+01.0	308	32.7	-00.5	N 18 40.3	+00.9	201	42.2	-26.1	N 15 52.1	-11.9	11
12	359	05.5	+00.2	N 04 56.0	+01.0	323	32.2	-00.5	N 18 41.2	+01.0	216	16.1	-26.1	N 15 40.2	-11.9	12
13	14	05.7	+00.1	N 04 57.0	+00.9	338	31.7	-00.5	N 18 42.2	+00.9	230	50.0	-26.1	N 15 28.3	-12.0	13
14	29	05.8	+00.2	N 04 57.9	+01.0	353	31.2	-00.5	N 18 43.1	+00.9	245	23.9	-26.0	N 15 16.3	-12.1	14
15	44	06.0	+00.2	N 04 58.9	+01.0	8	30.7	-00.5	N 18 44.0	+01.0	259	57.9	-26.0	N 15 04.2	-12.2	15
16	59	06.2	+00.2	N 04 59.9	+00.9	23	30.2	-00.5	N 18 45.0	+00.9	274	31.9	-26.0	N 14 52.0	-12.2	16
17	74	06.4	+00.2	N 05 00.8	+01.0	38	29.7	-00.5	N 18 45.9	+00.9	289	05.9	-25.9	N 14 39.8	-12.3	17
18	89	06.6	+00.2	N 05 01.8	+00.9	53	29.2	-00.5	N 18 46.8	+00.9	303	40.0	-25.9	N 14 27.5	-12.3	18
19	104	06.8	+00.1	N 05 02.7	+01.0	68	28.7	-00.5	N 18 47.8	+00.9	318	14.1	-25.8	N 14 15.2	-12.4	19
20	119	06.9	+00.2	N 05 03.7	+01.0	83	28.2	-00.5	N 18 48.7	+00.9	332	48.3	-25.8	N 14 02.8	-12.5	20
21	134	07.1	+00.2	N 05 04.7	+00.9	98	27.7	-00.5	N 18 49.6	+00.9	347	22.5	-25.8	N 13 50.3	-12.5	21
22	149	07.3	+00.2	N 05 05.6	+01.0	113	27.2	-00.5	N 18 50.5	+01.0	1	56.7	-25.8	N 13 37.8	-12.6	22
23	164	07.5	+00.2	N 05 06.6	+00.9	128	26.7	-00.5	N 18 51.5	+00.9	16	30.9	-25.7	N 13 25.2	-12.6	23
UT 02 06 10 14 18 22	SD 16°0 16°0 16°0 16°0 16°0 16°0	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°8	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	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 54°3 54°4 54°4 54°5 54°5 54°6	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 54°3 54°4 54°4 54°5 54°5 54°6	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°3 54°4 54°4 54°5 54°5 54°6									
SHA 349° 349° 349° 349° 348° 348°	SHA 313° 313° 313° 313° 313° 312°	SHA 210° 209° 207° 205° 203° 201°	SHA 313° 313° 313° 313° 313° 312°	SHA 210° 209° 207° 205° 203° 201°	SHA 313° 313° 313° 313° 313° 312°	SHA 317° 317° 317° 316° 316° 316°	SHA 248° 248° 243° 241° 239° 237°									
Greenwich Culmination Time: 12:03	Greenwich Culmination Time: 14:25	Greenwich Culmination Time: 21:51	Greenwich Culmination Time: 12:03	Greenwich Culmination Time: 14:23	Greenwich Culmination Time: 19:35	Greenwich Culmination Time: 12:04	Greenwich Culmination Time: 14:23									

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	178	49.8	+00.2	N 03 34.8	+00.9	144	12.8	-00.5	N 17 19.9	+01.0	75	56.1	-30.6	N 27 06.2	-03.7	00
01	193	50.0	+00.2	N 03 35.7	+01.0	159	12.3	-00.5	N 17 20.9	+01.0	90	25.5	-30.6	N 27 02.5	-03.7	01
02	208	50.2	+00.2	N 03 36.7	+01.0	174	11.8	-00.4	N 17 21.9	+01.0	104	54.9	-30.5	N 26 58.8	-03.9	02
03	223	50.4	+00.2	N 03 37.7	+01.0	189	11.4	-00.5	N 17 22.9	+01.0	119	24.4	-30.5	N 26 54.9	-04.0	03
04	238	50.6	+00.1	N 03 38.7	+00.9	204	10.9	-00.5	N 17 23.9	+01.0	133	53.9	-30.4	N 26 50.9	-04.2	04
05	253	50.7	+00.2	N 03 39.6	+01.0	219	10.4	-00.5	N 17 24.9	+01.0	148	23.5	-30.4	N 26 46.7	-04.2	05
06	268	50.9	+00.2	N 03 40.6	+01.0	234	09.9	-00.4	N 17 25.9	+01.0	162	53.1	-30.3	N 26 42.5	-04.4	06
07	283	51.1	+00.2	N 03 41.6	+00.9	249	09.5	-00.5	N 17 26.9	+00.9	177	22.8	-30.3	N 26 38.1	-04.5	07
08	298	51.3	+00.2	N 03 42.5	+01.0	264	09.0	-00.5	N 17 27.8	+01.0	191	52.5	-30.2	N 26 33.6	-04.7	08
09	313	51.5	+00.2	N 03 43.5	+01.0	279	08.5	-00.4	N 17 28.8	+01.0	206	22.3	-30.2	N 26 28.9	-04.7	09
10	328	51.7	+00.2	N 03 44.5	+01.0	294	08.1	-00.5	N 17 29.8	+01.0	220	52.1	-30.1	N 26 24.2	-04.9	10
11	343	51.9	+00.2	N 03 45.5	+00.9	309	07.6	-00.5	N 17 30.8	+01.0	235	22.0	-30.1	N 26 19.3	-05.0	11
12	358	52.1	+00.1	N 03 46.4	+01.0	324	07.1	-00.5	N 17 31.8	+01.0	249	51.9	-30.0	N 26 14.3	-05.1	12
13	13	52.2	+00.2	N 03 47.4	+01.0	339	06.6	-00.4	N 17 32.8	+01.0	264	21.9	-29.9	N 26 09.2	-05.3	13
14	28	52.4	+00.2	N 03 48.4	+00.9	354	06.2	-00.5	N 17 33.8	+01.0	278	52.0	-29.9	N 26 03.9	-05.4	14
15	43	52.6	+00.2	N 03 49.3	+01.0	9	05.7	-00.5	N 17 34.8	+01.0	293	22.1	-29.9	N 25 58.5	-05.4	15
16	58	52.8	+00.2	N 03 50.3	+01.0	24	05.2	-00.5	N 17 35.8	+01.0	307	52.2	-29.8	N 25 53.1	-05.6	16
17	73	53.0	+00.2	N 03 51.3	+01.0	39	04.7	-00.4	N 17 36.8	+01.0	322	22.4	-29.7	N 25 47.5	-05.8	17
18	88	53.2	+00.2	N 03 52.3	+00.9	54	04.3	-00.5	N 17 37.8	+00.9	336	52.7	-29.7	N 25 41.7	-05.8	18
19	103	53.4	+00.2	N 03 53.2	+01.0	69	03.8	-00.5	N 17 38.7	+01.0	351	23.0	-29.6	N 25 35.9	-05.9	19
20	118	53.6	+00.1	N 03 54.2	+01.0	84	03.3	-00.5	N 17 39.7	+01.0	5	53.4	-29.6	N 25 30.0	-06.1	20
21	133	53.7	+00.2	N 03 55.2	+00.9	99	02.8	-00.4	N 17 40.7	+01.0	20	23.8	-29.5	N 25 23.9	-06.2	21
22	148	53.9	+00.2	N 03 56.1	+01.0	114	02.4	-00.5	N 17 41.7	+01.0	34	54.3	-29.4	N 25 17.7	-06.3	22
23	163	54.1	+00.2	N 03 57.1	+01.0	129	01.9	-00.5	N 17 42.7	+01.0	49	24.9	-29.4	N 25 11.4	-06.4	23
UT 02 06 10 14 18 22	SD 16°0 16°0 16°0 16°0 16°0 16°0	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°8	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	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 54°3 54°4 54°4 54°5 54°5 54°6	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 54°3 54°4 54°4 54°5 54°5 54°6	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°3 54°4 54°4 54°5 54°5 54°6									
SHA 352° 351° 351° 351° 351° 351°	SHA 317° 317° 317° 316° 316° 316°	SHA 248° 247° 245° 243° 241° 239°	SHA 317° 317° 317° 316° 316° 316°	SHA 248° 247° 245° 243° 241° 239°	SHA 317° 317° 317° 316° 316° 316°	SHA 248° 248° 243° 241° 239° 237°	SHA 248° 248° 243° 241° 239° 237°									
Greenwich Culmination Time: 12:04	Greenwich Culmination Time: 14:23	Greenwich Culmination Time: 19:35	Greenwich Culmination Time: 12:04	Greenwich Culmination Time: 14:23	Greenwich Culmination Time: 19:35	Greenwich Culmination Time: 12:04	Greenwich Culmination Time: 14:23									

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	95	59.2	+01.0	N 25 26.6	-00.1	171	48.3	+01.9	N 06 35.3	+00.2	214	48.6	+02.2	S 11 42.5	+00.0	00
01	111	00.2	+01.1	N 25 26.5	+00.0	186	50.2	+02.0	N 06 35.5	+00.2	229	50.8	+02.2	S 11 42.5	-00.1	01
02	126	01.3	+01.1	N 25 26.5	-00.1	201	52.2	+01.9	N 06 35.7	+00.3	244	53.0	+02.3	S 11 42.4	-00.1	02
03	141	02.4	+01.1	N 25 26.4	+00.1	216	54.1	+01.9	N 06 36.0	+00.2	259	55.3	+02.2	S 11 42.3	-00.1	03
04	156	03.5	+01.1	N 25 26.4	-00.1	231	56.0	+01.9	N 06 36.2	+00.2	274	57.5	+02.2	S 11 42.2	-00.1	04
05	171	04.6	+01.0	N 25 26.3	-00.1	246	57.9	+01.9	N 06 36.4	+00.3	289	59.7	+02.2	S 11 42.1	-00.1	05
06	186	05.6	+01.1	N 25 26.2	+00.2	261	59.8	+01.9	N 06 36.7	+00.2	305	01.1	+02.2	S 11 42.0	-00.1	06
07	201	06.7	+01.1	N 25 26.2	-00.1	277	01.7	+01.9	N 06 36.9	+00.2	320	04.1	+02.2	S 11 41.9	-00.1	07
08	216	07.8	+01.1	N 25 26.1	-00.1	292	03.6	+01.9	N 06 37.1	+00.2	335	06.3	+02.3	S 11 41.8	+00.0	08
09	231	08.9	+01.0	N 25 26.0	+00.0	307	05.5	+01.9	N 06 37.3	+00.2	350	08.6	+02.2	S 11 41.8	-00.1	09
10	246	09.9	+01.1	N 25 26.0	-00.1	322	07.4	+01.9	N 06 37.6	+00.2	5	10.8	+02.2	S 11 41.7	-00.1	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°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 351° 351° 350° 350° 350° 350°
Greenwich Culmination Time: 12:04

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 267° 267° 267° 267° 267° 267°
Greenwich Culmination Time: 17:38

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°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 350° 350° 350° 349° 349° 349°
Greenwich Culmination Time: 12:03

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 266° 266° 266° 266° 266° 266°
Greenwich Culmination Time: 17:36

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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!

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	179	20.8	+00.2	N 06 16.2	+00.9	142	49.1	-00.5	N 19 57.0	+00.8	0	42.5	-25.8	S 03 43.3	+14.7	00
01	194	21.0	+00.1	N 06 17.1	+01.0	157	48.6	-00.6	N 19 57.8	+00.9	15	16.7	-25.8	S 03 58.0	+14.8	01
02	209	21.1	+00.2	N 06 18.1	+00.9	172	48.0	-00.5	N 19 58.7	+00.9	29	50.9	-25.9	S 04 12.8	+14.8	02
03	224	21.3	+00.2	N 06 19.0	+00.9	187	47.5	-00.5	N 19 59.6	+00.9	44	25.0	-25.9	S 04 27.6	+14.8	03
04	239	21.5	+00.2	N 06 19.9	+01.0	202	47.0	-00.6	N 20 00.4	+00.9	58	59.1	-26.0	S 04 42.4	+14.8	04
05	254	21.7	+00.1	N 06 20.9	+00.9	217	46.4	-00.5	N 20 01.3	+00.8	73	33.1	-26.0	S 04 57.2	+14.7	05
06	269	21.8	+00.2	N 06 21.8	+01.0	232	45.9	-00.5	N 20 02.1	+00.9	88	07.1	-26.0	S 05 11.9	+14.8	06
07	284	22.0	+00.2	N 06 22.8	+00.9	247	45.4	-00.5	N 20 03.0	+00.9	102	41.1	-26.1	S 05 26.7	+14.7	07
08	299	22.2	+00.2	N 06 23.7	+01.0	262	44.9	-00.6	N 20 03.9	+00.8	117	15.0	-26.1	S 05 41.4	+14.8	08
09	314	22.4	+00.2	N 06 24.7	+00.9	277	44.3	-00.5	N 20 04.7	+00.9	131	48.9	-26.2	S 05 56.2	+14.7	09
10	329	22.6	+00.1	N 06 25.6	+01.0	292	43.8	-00.5	N 20 05.6	+00.8	146	22.7	-26.2	S 06 10.9	+14.7	10
11	344	22.7	+00.2	N 06 26.6	+00.9	307	43.3	-00.6	N 20 06.4	+00.9	160	56.5	-26.3	S 06 25.6	+14.7	11
12	359	22.9	+00.2	N 06 27.5	+01.0	322	42.7	-00.5	N 20 07.3	+00.8	175	30.2	-26.4	S 06 40.3	+14.6	12
13	14	23.1	+00.2	N 06 28.5	+00.9	337	42.2	-00.5	N 20 08.1	+00.9	190	03.8	-26.3	S 06 54.9	+14.7	13
14	29	23.3	+00.2	N 06 29.4	+00.9	352	41.7	-00.6	N 20 09.0	+00.9	204	37.5	-26.5	S 07 09.6	+14.6	14
15	44	23.5	+00.1	N 06 30.3	+01.0	7	41.1	-00.5	N 20 09.9	+00.8	219	11.0	-26.5	S 07 24.2	+14.7	15
16	59	23.6	+00.2	N 06 31.3	+00.9	22	40.6	-00.5	N 20 10.7	+00.9	233	44.5	-26.5	S 07 38.9	+14.5	16
17	74	23.8	+00.2	N 06 32.2	+01.0	37	40.1	-00.6	N 20 11.6	+00.8	248	18.0	-26.6	S 07 53.4	+14.6	17
18	89	24.0	+00.2	N 06 33.2	+00.9	52	39.5	-00.5	N 20 12.4	+00.9	262	51.4	-26.7	S 08 08.0	+14.6	18
19	104	24.2	+00.1	N 06 34.1	+01.0	67	39.0	-00.5	N 20 13.3	+00.8	277	24.7	-26.7	S 08 22.6	+14.5	19
20	119	24.3	+00.2	N 06 35.1	+00.9	82	38.5	-00.6	N 20 14.1	+00.9	291	58.0	-26.7	S 08 37.1	+14.5	20
21	134	24.5	+00.2	N 06 36.0	+01.0	97	37.9	-00.5	N 20 15.0	+00.8	306	31.3	-26.9	S 08 51.6	+14.5	21
22	149	24.7	+00.2	N 06 36.9	+00.9	112	37.4	-00.5	N 20 15.8	+00.9	321	04.4	-26.9	S 09 06.1	+14.4	22
23	164	24.9	+00.2	N 06 37.9	+00.9	127	36.9	-00.6	N 20 16.7	+00.8	335	37.5	-26.9	S 09 20.5	+14.4	23

UT 02 06 10 14 18 22	SD 16°0 16°0 16°0 16°0 16°0 16°0	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 15°3 15°3 15°3 15°3 15°3 15°4
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°0 56°1 56°2 56°2 56°3 56°4	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 345° 345° 345° 345° 345° 344°	SHA 309° 308° 308° 308° 308° 308°	SHA 166° 164° 162° 160° 158° 156°	SHA 345° 345° 345° 345° 345° 344°	SHA 348° 348° 348° 348° 347° 347°	SHA 312° 312° 312° 312° 311° 311°
Greenwich Culmination Time: 12:02	Greenwich Culmination Time: 14:29	Greenwich Culmination Time: -1:00	Greenwich Culmination Time: 12:03	Greenwich Culmination Time: 14:26	Greenwich Culmination Time: 22:33

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	97	41.7	+01.0	N 25 19.7	-00.1	174	51.0	+01.9	N 06 57.2	+00.2	218	21.8	+02.3	S 11 34.3	-00.1	00
01	112	42.7	+01.1	N 25 19.6	-00.1	189	52.9	+01.9	N 06 57.4	+00.3	233	24.1	+02.2	S 11 34.2	-00.1	01
02	127	43.8	+01.1	N 25 19.5	+00.0	204	54.8	+01.9	N 06 57.7	+00.2	248	26.3	+02.2	S 11 34.1	-00.1	02
03	142	44.9	+01.0	N 25 19.5	-00.1	219	56.7	+01.9	N 06 57.9	+00.2	263	28.5	+02.3	S 11 34.0	+00.0	03
04	157	45.9	+01.1	N 25 19.4	-00.1	234	58.6	+01.9	N 06 58.1	+00.2	278	30.8	+02.2	S 11 34.0	-00.1	04
05	172	47.0	+01.0	N 25 19.3	-00.1	250	00.5	+01.9	N 06 58.3	+00.3	293	33.0	+02.2	S 11 33.9	-00.1	05
06	187	48.0	+01.1	N 25 19.2	-00.1	265	02.4	+02.0	N 06 58.6	+00.2	308	35.2	+02.2	S 11 33.8	-00.1	06
07	202	49.1	+01.1	N 25 19.1	+00.0	280	04.4	+01.9	N 06 58.8	+00.2	323	37.4	+02.3	S 11 33.7	-00.1	07
08	217	50.2	+01.0	N 25 19.1	-00.1	295	06.3	+01.9	N 06 59.0	+00.3	338	39.7	+02.2	S 11 33.6	-00.1	08
09	232	51.2	+01.1	N 25 19.0	-00.1	310	08.2	+01.9	N 06 59.3	+00.2	353	41.9	+02.2	S 11 33.5	-00.1	09
10	247	52.3	+01.0	N 25 18.9	-00.1	325	10.1	+01.9	N 06 59.5	+00.2	8	44.1	+02.2	S 11 33.4	+00.0	10
11	262	53.3	+01.1	N 25 18.8	-00.1	340	12.0	+01.9	N 06 59.7	+00.2	23	46.3	+02.3	S 11 33.4	-00.1	11
12	277	54.4	+01.0	N 25 18.7	-00.1	355	13.9	+01.9	N 06 59.9	+00.3	38	48.6	+02.2	S 11 33.3	-00.1	12
13	292	55.4	+01.1	N 25 18.6	-00.1	10	15.8	+01.9	N 07 00.2	+00.2	53	50.8	+02.2	S 11 33.2	-00.1	13
14	307	56.5	+01.0	N 25 18.5	+00.0	25	17.7	+01.9	N 07 00.4	+00.2	68	53.0	+02.2	S 11 33.1	-00.1	14
15	322	57.5	+01.1	N 25 18.5	-00.1	40	19.6	+01.9	N 07 00.6	+00.3	83	55.2	+02.3	S 11 33.0	-00.1	15
16	337	58.6	+01.1	N 25 18.4	-00.1	55	21.5	+01.9	N 07 00.9	+00.2	98	57.5	+02.2	S 11 32.9	+00.0	16
17	352	59.7	+01.0	N 25 18.3	-00.1	70	23.4	+01.9	N 07 01.1	+00.2	113	59.7	+02.2	S 11 32.9	-00.1	17
18	8	00.7	+01.1	N 25 18.2	-00.1	85	25.3	+01.9	N 07 01.3	+00.2	129	01.9	+02.2	S 11 32.8	-00.1	18
19	23	01.8	+01.0	N 25 18.1	-00.1	100	27.2	+01.9	N 07 01.5	+00.3	144	04.1	+02.3	S 11 32.7	-00.1	19
20	38	02.8	+01.1	N 25 18.0	-00.1	115	29.1	+01.9	N 07 01.8	+00.2	159	06.4	+02.2	S 11 32.6	-00.1	20
21	53	03.9	+01.0	N 25 17.9	+00.0	130	31.0	+01.9	N 07 02.0	+00.2	174	08.6	+02.2	S 11 32.5	-00.1	21
22	68	04.9	+01.1	N 25 17.9	-00.1	145	32.9	+01.9	N 07 02.2	+00.2	189	10.8	+02.3	S 11 32.4	+00.0	22
23	83	06.0	+01.0	N 25 17.8	-00.1	160	34.8	+01.9	N 07 02.4	+00.3	204	13.1	+02.2	S 11 32.4	-00.1	23

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 00°3 00°3 00°3 00°3 00°3 00°3	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	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°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 264° 264° 263° 263° 263° 263°	SHA 341° 341° 341° 341° 341° 341°	SHA 341° 341° 341° 341° 341° 341°	SHA 264° 264° 263° 263° 263° 263°	SHA 341° 341° 341° 341° 341° 341°	SHA 024° 024° 024° 024° 024° 024°
Greenwich Culmination Time: 17:27	Greenwich Culmination Time: 12:19	Greenwich Culmination Time: 09:25	Greenwich Culmination Time: 17:33	Greenwich Culmination Time: 12:28	Greenwich Culmination Time: 09:35

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	179	07.7	+00.2	N 05 07.5	+01.0	143	26.2	-00.5	N 18 52.4	+00.9	31	05.2	-25.6	N 13 12.6	-12.7	00
01	194	07.9	+00.2	N 05 08.5	+01.0	158	25.7	-00.5	N 18 53.3	+01.0	45	39.6	-25.7	N 12 59.9	-12.8	01
02	209	08.1	+00.1	N 05 09.5	+00.9	173	25.2	-00.5	N 18 54.3	+00.9	60	13.9	-25.6	N 12 47.1	-12.8	02
03	224	08.2	+00.2	N 05 10.4	+01.0	188	24.7	-00.5	N 18 55.2	+00.9	74	48.3	-25.6	N 12 34.3	-12.9	03
04	239	08.4	+00.2	N 05 11.4	+00.9	203	24.2	-00.6	N 18 56.1	+00.9	89	22.7	-25.6	N 12 21.4	-12.9	04
05	254	08.6	+00.2	N 05 12.3	+01.0	218	23.6	-00.5	N 18 57.0	+00.9	103	57.1	-25.5	N 12 08.5	-13.0	05
06	269	08.8	+00.2	N 05 13.3	+00.9	233	23.1	-00.5	N 18 57.9	+01.0	118	31.6	-25.5	N 11 55.5	-13.1	06
07	284	09.0	+00.2	N 05 14.2	+01.0	248	22.6	-00.5	N 18 58.9	+00.9	133	06.1	-25.5	N 11 42.4	-13.0	07
08	299	09.2	+00.1	N 05 15.2	+01.0	263	22.1	-00.5	N 18 59.8	+00.9	147	40.6	-25.4	N 11 29.4	-13.2	08
09	314	09.3	+00.2	N 05 16.2	+00.9	278	21.6	-00.5	N 19 00.7	+00.9	162	15.2	-25.4	N 11 16.2	-13.2	09
10	329	09.5	+00.2	N 05 17.1	+01.0	293	21.1	-00.5	N 19 01.6	+00.9	176	49.8	-25.5	N 11 03.0	-13.3	10
11	344	09.7	+00.2	N 05 18.1	+00.9	308	20.6	-00.5	N 19 02.5	+01.0	191	24.3	-25.3	N 10 49.7	-13.3	11
12	359	09.9	+00.2	N 05 19.0	+01.0	323	20.1	-00.5	N 19 03.5	+00.9	205	59.0	-25.4	N 10 36.4	-13.3	12
13	14	10.1	+00.2	N 05 20.0	+00.9	338	19.6	-00.5	N 19 04.4	+00.9	220	33.6	-25.3	N 10 23.1	-13.4	

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 347° 347° 347° 347° 347° 346°
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°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 265° 265° 265° 264° 264° 264°
Greenwich Culmination Time: 17:31

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 346° 346° 346° 346° 346° 345°
Greenwich Culmination Time: 12:02

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°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 264° 264° 264° 264° 264° 264°
Greenwich Culmination Time: 17:29

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 342° 341° 341° 341° 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 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 261° 261° 261° 261° 261° 261°
Greenwich Culmination Time: 17:21

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°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 344° 344° 344° 344° 344° 344°
Greenwich Culmination Time: 12:02

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°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 263° 263° 263° 263° 263° 263°
Greenwich Culmination Time: 17:26

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 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° 343° 343° 343°
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 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 262° 262° 262° 262° 262° 262°
Greenwich Culmination Time: 17:24

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 342° 342° 342° 342° 342° 342°
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 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 340° 340° 340° 340° 340° 340°
Greenwich Culmination Time: 17:22

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.

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	179	45.5	+00.2	N 08 30.4	+00.9	141	29.7	-00.6	N 21 52.4	+00.7	285	43.1	-37.0	S 27 56.2	+00.5	00
01	194	45.7	+00.1	N 08 31.3	+00.9	156	29.1	-00.6	N 21 53.1	+00.8	300	06.1	-36.9	S 27 56.7	+00.3	01
02	209	45.8	+00.2	N 08 32.2	+00.9	171	28.5	-00.6	N 21 53.9	+00.7	314	29.2	-37.0	S 27 57.0	+00.1	02
03	224	46.0	+00.2	N 08 33.1	+00.9	186	27.9	-00.5	N 21 54.6	+00.7	328	52.2	-37.0	S 27 57.1	+00.0	03
04	239	46.2	+00.1	N 08 34.0	+00.9	201	27.4	-00.6	N 21 55.3	+00.8	343	15.2	-37.0	S 27 57.1	-00.3	04
05	254	46.3	+00.2	N 08 34.9	+00.9	216	26.8	-00.6	N 21 56.1	+00.7	357	38.2	-37.0	S 27 56.8	-00.4	05
06	269	46.5	+00.2	N 08 35.8	+01.0	231	26.2	-00.6	N 21 56.8	+00.7	12	01.2	-37.0	S 27 56.4	-00.6	06
07	284	46.7	+00.1	N 08 36.8	+00.9	246	25.6	-00.5	N 21 57.5	+00.8	26	24.2	-37.0	S 27 55.8	-00.9	07
08	299	46.8	+00.2	N 08 37.7	+00.9	261	25.1	-00.6	N 21 58.3	+00.7	40	47.2	-37.1	S 27 54.9	-01.0	08
09	314	47.0	+00.1	N 08 38.6	+00.9	276	24.5	-00.6	N 21 59.0	+00.7	55	10.1	-37.0	S 27 53.9	-01.2	09
10	329	47.1	+00.2	N 08 39.5	+00.9	291	23.9	-00.6	N 21 59.7	+00.7	69	33.1	-37.1	S 27 52.7	-01.3	10
11	344	47.3	+00.2	N 08 40.4	+00.9	306	23.3	-00.5	N 22 00.4	+00.8	83	56.0	-37.0	S 27 51.4	-01.6	11
12	359	47.5	+00.1	N 08 41.3	+00.9	321	22.8	-00.6	N 22 01.2	+00.7	98	19.0	-37.1	S 27 49.8	-01.8	12
13	14	47.6	+00.2	N 08 42.2	+01.0	336	22.2	-00.6	N 22 01.9	+00.7	112	41.9	-37.0	S 27 48.0	-01.9	13
14	29	47.8	+00.1	N 08 43.2	+00.9	351	21.6	-00.6	N 22 02.6	+00.7	127	04.9	-37.0	S 27 46.1	-02.1	14
15	44	47.9	+00.2	N 08 44.1	+00.9	6	21.0	-00.6	N 22 03.3	+00.7	141	27.9	-37.0	S 27 44.0	-02.3	15
16	59	48.1	+00.2	N 08 45.0	+00.9	21	20.4	-00.5	N 22 04.0	+00.8	155	50.9	-37.1	S 27 41.7	-02.5	16
17	74	48.3	+00.1	N 08 45.9	+00.9	36	19.9	-00.6	N 22 04.8	+00.7	170	13.8	-37.0	S 27 39.2	-02.7	17
18	89	48.4	+00.2	N 08 46.8	+00.9	51	19.3	-00.6	N 22 05.5	+00.7	184	36.8	-36.9	S 27 36.5	-02.9	18
19	104	48.6	+00.2	N 08 47.7	+00.9	66	18.7	-00.6	N 22 06.2	+00.7	198	59.9	-37.0	S 27 33.6	-03.1	19
20	119	48.8	+00.1	N 08 48.6	+00.9	81	18.1	-00.6	N 22 06.9	+00.7	213	22.9	-36.9	S 27 30.5	-03.2	20
21	134	48.9	+00.2	N 08 49.5	+00.9	96	17.5	-00.5	N 22 07.6	+00.7	227	46.0	-36.9	S 27 27.3	-03.5	21
22	149	49.1	+00.1	N 08 50.4	+01.0	111	17.0	-00.6	N 22 08.3	+00.8	242	09.1	-36.9	S 27 23.8	-03.6	22
23	164	49.2	+00.2	N 08 51.4	+00.9	126	16.4	-00.6	N 22 09.1	+00.7	256	32.2	-36.9	S 27 20.2	-03.8	23

UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	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	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	HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	58°7	58°8	58°9	58°9	59°0	59°0
SHA	340°	340°	339°	339°	339°	339°	SHA	301°	301°	301°	301°	301°	300°	SHA	084°	082°	079°	077°	074°	071°
Greenwich Culmination Time: 12:00							Greenwich Culmination Time: 14:34							Greenwich Culmination Time: 05:09						

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	100	12.2	+01.0	N 25 05.7	-00.1	179	24.7	+01.9	N 07 29.9	+00.2	223	43.2	+02.3	S 11 22.5	-00.1	00
01	115	13.2	+01.0	N 25 05.6	-00.1	194	26.6	+01.9	N 07 30.1	+00.2	238	45.5	+02.2	S 11 22.4	-00.1	01
02	130	14.2	+01.1	N 25 05.5	-00.2	209	28.5	+01.9	N 07 30.3	+00.2	253	47.7	+02.3	S 11 22.3	+00.0	02
03	145	15.3	+01.0	N 25 05.3	-00.1	224	30.4	+01.9	N 07 30.5	+00.3	268	50.0	+02.2	S 11 22.3	-00.1	03
04	160	16.3	+01.0	N 25 05.2	-00.1	239	32.3	+01.9	N 07 30.8	+00.2	283	52.2	+02.2	S 11 22.2	-00.1	04
05	175	17.3	+01.1	N 25 05.1	-00.1	254	34.2	+01.9	N 07 31.0	+00.2	298	54.4	+02.3	S 11 22.1	-00.1	05
06	190	18.4	+01.0	N 25 05.0	-00.1	269	36.1	+01.9	N 07 31.2	+00.2	313	56.7	+02.2	S 11 22.0	-00.1	06
07	205	19.4	+01.0	N 25 04.9	-00.1	284	38.0	+01.9	N 07 31.4	+00.3	328	58.9	+02.2	S 11 21.9	+00.0	07
08	220	20.4	+01.1	N 25 04.8	-00.1	299	39.9	+01.9	N 07 31.7	+00.2	344	01.1	+02.3	S 11 21.9	-00.1	08
09	235	21.5	+01.0	N 25 04.7	-00.2	314	41.8	+01.9	N 07 31.9	+00.2	359	03.4	+02.2	S 11 21.8	-00.1	09
10	250	22.5	+01.0	N 25 04.5	-00.1	329	43.7	+01.9	N 07 32.1	+00.2	14	05.6	+02.3	S 11 21.7	-00.1	10
11	265	23.5	+01.1	N 25 04.4	-00.1	344	45.6	+01.9	N 07 32.3	+00.3	29	07.9	+02.2	S 11 21.6	-00.1	11
12	280	24.6	+01.0	N 25 04.3	-00.1	359	47.5	+01.9	N 07 32.6	+00.2	44	10.1	+02.2	S 11 21.5	+00.0	12
13	295	25.6	+01.0	N 25 04.2	-00.1	14	49.4	+01.9	N 07 32.8	+00.2	59	12.3	+02.3	S 11 21.5	-00.1	13
14	310	26.6	+01.0	N 25 04.1	-00.1	29	51.3	+01.9	N 07 33.0	+00.2	74	14.6	+02.2	S 11 21.4	-00.1	14
15	325	27.6	+01.1	N 25 04.0	-00.2	44	53.2	+01.9	N 07 33.2	+00.3	89	16.8	+02.3	S 11 21.3	-00.1	15
16	340	28.7	+01.0	N 25 03.8	-00.1	59	55.1	+01.9	N 07 33.5	+00.2	104	19.1	+02.2	S 11 21.2	-00.1	16
17	355	29.7	+01.0	N 25 03.7	-00.1	74	57.0	+01.9	N 07 33.7	+00.2	119	21.3	+02.2	S 11 21.1	+00.0	17
18	10	30.7	+01.1	N 25 03.6	-00.1	89	58.9	+01.9	N 07 33.9	+00.2	134	23.5	+02.3	S 11 21.1	-00.1	18
19	25	31.8	+01.0	N 25 03.5	-00.1	105	00.8	+01.9	N 07 34.1	+00.3	149	25.8	+02.2	S 11 21.0	-00.1	19
20	40	32.8	+01.0	N 25 03.4	-00.1	120	02.7	+01.9	N 07 34.4	+00.2	164	28.0	+02.3	S 11 20.9	-00.1	20
21	55	33.8	+01.1	N 25 03.3	-00.2	135	04.6	+01.9	N 07 34.6	+00.2	179	30.3	+02.2	S 11 20.8	+00.0	21
22	70	34.9	+01.0	N 25 03.1	-00.1	150	06.5	+01.9	N 07 34.8	+00.2	194	32.5	+02.3	S 11 20.8	-00.1	22
23	85	35.9	+01.0	N 25 03.0	-00.1	165	08.4	+01.9	N 07 35.0	+00.3	209	34.8	+02.2	S 11 20.7	-00.1	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°1	00°1	00°1	00°1	00°1	00°1	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°0	00°0	00°0	00°0	00°0	00°0
SHA	260°	260°	260°	260°	260°	260°	SHA	339°	339°	339°	339°	339°	339°	SHA	024°	024°	024°	024°	024°	024°
Greenwich Culmination Time: 17:17							Greenwich Culmination Time: 12:00							Greenwich Culmination Time: 09:03						

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	179	49.4	+00.2	N 08 52.3	+00.9	141	15.8	-00.6	N 22 09.8	+00.7	270	55.3	-36.8	S 27 16.4	-04.0	00
01	194	49.6	+00.1	N 08 53.2	+00.9	156	15.2	-00.6	N 22 10.5	+00.7	285	18.5	-36.8	S 27 12.4	-04.2	01
02	209	49.7	+00.2	N 08 54.1	+00.9	171	14.6	-00.6	N 22 11.2	+00.7	299	41.7	-36.8	S 27 08.2	-04.4	02
03	224	49.9	+00.1	N 08 55.0	+00.9	186	14.0	-00.5	N 22 11.9	+00.7	314	04.9	-36.7	S 27 03.8	-04.5	03
04	239	50.0	+00.2	N 08 55.9	+00.9	201	13.5	-00.6	N 22 12.6	+00.7	328	28.2	-36.7	S 26 59.3	-04.7	04
05	254	50.2	+00.1	N 08 56.8	+00.9	216	12.9	-00.6	N 22 13.3	+00.7	342	51.5	-36.6	S 26 54.6	-04.9	05
06	269	50.3	+00.2	N 08 57.7	+00.9	231	12.3	-00.6	N 22 14.0	+00.7	357	14.9	-36.7	S 26 49.7	-05.1	06
07	284	50.5	+00.2	N 08 58.6	+00.9	246	11.7	-00.6	N 22 14.7	+00.7	11	38.2	-36.5	S 26 44.6	-05.3	07
08	299	50.7	+00.1	N 08 59.5	+00.9	261	11.1	-00.6	N 22 15.4	+00.7	26	01.7	-36.5	S 26 39.3	-05.4	08
09	314	50.8	+00.2	N 09 00.4	+01.0	276	10.5	-00.5	N 22 16.1	+00.7	40	25.2	-36.5	S 26 33.9	-05.7	09
10	329	51.0	+00.1	N 09 01.4	+00.9	291	10.0	-00.6	N 22 16.8	+00.7	54	48.7	-36.4	S 26 28.2	-05.8	10
11	344	51.1	+00.2	N 09 02.3	+00.9	306	09.4	-00.6	N 22 17.5	+00.7	69	12.3	-36.4	S 26 22.4	-06.0	11
12	359	51.3	+00.2	N 09 03.2	+00.9	321	08.8	-00.6	N 22 18.2	+00.7	83	35.9	-36.3	S 26 16.4	-06.1	12
13	14	51.5	+00.1	N 09 04.1	+00.9	336	08.2	-00.6	N 22							

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon column includes A: 94%.

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 334° 334° 334° 334° 334° 333°
Greenwich Culmination Time: 11:59

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon column includes A: 84%.

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° 336° 336°
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°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 257° 257° 257° 256° 256° 256°
Greenwich Culmination Time: 17:08

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 258° 258° 258° 258° 258° 258°
Greenwich Culmination Time: 17:13

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°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 336° 336° 336° 336° 336° 336°
Greenwich Culmination Time: 11:59

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°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 335° 335° 335° 335° 335° 334°
Greenwich Culmination Time: 11:59

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 258° 258° 258° 258° 257°
Greenwich Culmination Time: 17:11

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 257° 257° 257° 257° 257°
Greenwich Culmination Time: 17:09

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	180	14.0	+00.1	N 11 21.2	+00.9	139	34.4	-00.6	N 23 55.1	+00.5	182	09.0	-29.1	N 09 59.2	+15.3	00
01	195	14.1	+00.2	N 11 22.1	+00.8	154	33.8	-00.6	N 23 55.6	+00.6	196	39.9	-29.2	N 10 14.5	+15.3	01
02	210	14.3	+00.1	N 11 22.9	+00.9	169	33.2	-00.7	N 23 56.2	+00.5	211	10.7	-29.1	N 10 29.8	+15.2	02
03	225	14.4	+00.1	N 11 23.8	+00.9	184	32.5	-00.6	N 23 56.7	+00.5	225	41.6	-29.2	N 10 45.0	+15.1	03
04	240	14.5	+00.2	N 11 24.7	+00.8	199	31.9	-00.6	N 23 57.2	+00.6	240	12.4	-29.3	N 11 00.1	+15.0	04
05	255	14.7	+00.1	N 11 25.5	+00.9	214	31.3	-00.6	N 23 57.8	+00.5	254	43.1	-29.2	N 11 15.1	+15.0	05
06	270	14.8	+00.1	N 11 26.4	+00.8	229	30.7	-00.6	N 23 58.3	+00.5	269	13.9	-29.3	N 11 30.1	+14.9	06
07	285	14.9	+00.2	N 11 27.2	+00.9	244	30.1	-00.7	N 23 58.8	+00.6	283	44.6	-29.3	N 11 45.0	+14.8	07
08	300	15.1	+00.1	N 11 28.1	+00.9	259	29.4	-00.6	N 23 59.4	+00.5	298	15.3	-29.3	N 11 59.8	+14.8	08
09	315	15.2	+00.1	N 11 29.0	+00.8	274	28.8	-00.6	N 23 59.9	+00.5	312	46.0	-29.4	N 12 14.6	+14.7	09
10	330	15.3	+00.1	N 11 29.8	+00.9	289	28.2	-00.6	N 24 00.4	+00.5	327	16.6	-29.4	N 12 29.3	+14.6	10
11	345	15.4	+00.2	N 11 30.7	+00.8	304	27.6	-00.7	N 24 00.9	+00.6	341	47.2	-29.5	N 12 43.9	+14.5	11
12	0	15.6	+00.1	N 11 31.5	+00.9	319	26.9	-00.6	N 24 01.5	+00.5	356	17.7	-29.4	N 12 58.4	+14.5	12
13	15	17.7	+00.1	N 11 32.4	+00.9	334	26.3	-00.6	N 24 02.0	+00.5	10	48.3	-29.5	N 13 12.9	+14.3	13
14	30	15.8	+00.2	N 11 33.2	+00.9	349	25.7	-00.6	N 24 02.5	+00.5	25	18.8	-29.6	N 13 27.2	+14.3	14
15	45	16.0	+00.1	N 11 34.1	+00.9	4	25.1	-00.7	N 24 03.0	+00.6	39	49.2	-29.5	N 13 41.5	+14.2	15
16	60	16.1	+00.1	N 11 35.0	+00.8	19	24.4	-00.6	N 24 03.6	+00.5	54	19.7	-29.6	N 13 55.7	+14.2	16
17	75	16.2	+00.1	N 11 35.8	+00.9	34	23.8	-00.6	N 24 04.1	+00.5	68	50.1	-29.7	N 14 09.9	+14.0	17
18	90	16.3	+00.2	N 11 36.7	+00.8	49	23.2	-00.6	N 24 04.6	+00.5	83	20.4	-29.7	N 14 23.9	+14.0	18
19	105	16.5	+00.1	N 11 37.5	+00.9	64	22.6	-00.7	N 24 05.1	+00.5	97	50.7	-29.7	N 14 37.9	+13.9	19
20	120	16.6	+00.1	N 11 38.4	+00.8	79	21.9	-00.6	N 24 05.6	+00.6	112	21.0	-29.7	N 14 51.8	+13.7	20
21	135	16.7	+00.2	N 11 39.2	+00.9	94	21.3	-00.6	N 24 06.2	+00.5	126	51.3	-29.8	N 15 05.5	+13.7	21
22	150	16.9	+00.1	N 11 40.1	+00.9	109	20.7	-00.6	N 24 06.7	+00.5	141	21.5	-29.9	N 15 19.2	+13.6	22
23	165	17.0	+00.1	N 11 40.9	+00.9	124	20.1	-00.7	N 24 07.2	+00.5	155	51.6	-29.8	N 15 32.8	+13.5	23
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° 332° 332° 332°	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 292° 291° 291° 291° 291° 291°	Greenwich Culmination Time: 14:42	UT 02 06 10 14 18 22	SD 15°9' 15°9' 15°8' 15°8' 15°8' 15°8'	HP 58°4' 58°3' 58°2' 58°1' 57°9' 57°8'	SHA 333° 331° 329° 327° 325° 323°	Greenwich Culmination Time: 12:15		

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	180	17.1	+00.1	N 11 41.8	+00.8	139	19.4	-00.6	N 24 07.7	+00.5	170	21.8	-29.9	N 15 46.3	+13.5	00
01	195	17.2	+00.2	N 11 42.6	+00.9	154	18.8	-00.6	N 24 08.2	+00.5	184	51.9	-30.0	N 15 59.8	+13.3	01
02	210	17.4	+00.1	N 11 43.5	+00.9	169	18.2	-00.6	N 24 08.7	+00.5	199	21.9	-30.0	N 16 13.1	+13.2	02
03	225	17.5	+00.1	N 11 44.4	+00.8	184	17.6	-00.7	N 24 09.2	+00.6	213	51.9	-30.0	N 16 26.3	+13.2	03
04	240	17.6	+00.2	N 11 45.2	+00.9	199	16.9	-00.6	N 24 09.8	+00.5	228	21.9	-30.1	N 16 39.5	+13.0	04
05	255	17.8	+00.1	N 11 46.1	+00.8	214	16.3	-00.6	N 24 10.3	+00.5	242	51.8	-30.1	N 16 52.5	+12.9	05
06	270	17.9	+00.1	N 11 46.9	+00.9	229	15.7	-00.6	N 24 10.8	+00.5	257	21.7	-30.1	N 17 05.4	+12.9	06
07	285	18.0	+00.1	N 11 47.8	+00.8	244	15.1	-00.7	N 24 11.3	+00.5	271	51.6	-30.2	N 17 18.3	+12.7	07
08	300	18.1	+00.2	N 11 48.6	+00.9	259	14.4	-00.6	N 24 11.8	+00.5	286	21.4	-30.3	N 17 31.0	+12.6	08
09	315	18.3	+00.1	N 11 49.5	+00.8	274	13.8	-00.6	N 24 12.3	+00.5	300	51.1	-30.2	N 17 43.6	+12.6	09
10	330	18.4	+00.1	N 11 50.3	+00.9	289	13.2	-00.7	N 24 12.8	+00.5	315	20.9	-30.4	N 17 56.2	+12.4	10
11	345	18.5	+00.1	N 11 51.2	+00.8	304	12.5	-00.6	N 24 13.3	+00.5	329	50.5	-30.3	N 18 08.6	+12.3	11
12	0	18.6	+00.2	N 11 52.0	+00.9	319	11.9	-00.6	N 24 13.8	+00.5	344	20.2	-30.4	N 18 20.9	+12.2	12
13	15	18.8	+00.1	N 11 52.9	+00.8	334	11.3	-00.6	N 24 14.3	+00.5	358	49.8	-30.5	N 18 33.1	+12.1	13
14	30	18.9	+00.1	N 11 53.7	+00.9	349	10.7	-00.7	N 24 14.8	+00.5	13	19.3	-30.5	N 18 45.2	+12.0	14
15	45	19.0	+00.1	N 11 54.6	+00.8	4	10.0	-00.6	N 24 15.3	+00.5	27	48.8	-30.5	N 18 57.2	+11.9	15
16	60	19.1	+00.2	N 11 55.4	+00.9	19	09.4	-00.6	N 24 15.8	+00.5	42	18.3	-30.6	N 19 09.1	+11.8	16
17	75	19.3	+00.1	N 11 56.3	+00.8	34	08.8	-00.6	N 24 16.3	+00.5	56	47.7	-30.6	N 19 20.9	+11.6	17
18	90	19.4	+00.1	N 11 57.1	+00.9	49	08.2	-00.7	N 24 16.8	+00.5	71	17.1	-30.7	N 19 32.5	+11.6	18
19	105	19.5	+00.1	N 11 58.0	+00.8	64	07.5	-00.6	N 24 17.3	+00.5	85	46.4	-30.7	N 19 44.1	+11.4	19
20	120	19.6	+00.2	N 11 58.8	+00.8	79	06.9	-00.6	N 24 17.8	+00.5	100	15.7	-30.7	N 19 55.5	+11.4	20
21	135	19.8	+00.1	N 11 59.6	+00.9	94	06.3	-00.7	N 24 18.3	+00.4	114	45.0	-30.8	N 20 06.9	+11.2	21
22	150	19.9	+00.1	N 12 00.5	+00.8	109	05.6	-00.6	N 24 18.7	+00.5	129	14.2	-30.9	N 20 18.1	+11.0	22
23	165	20.0	+00.1	N 12 01.3	+00.9	124	05.0	-00.6	N 24 19.2	+00.5	143	43.3	-30.9	N 20 29.1	+11.0	23
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° 331° 331° 331°	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 290° 290° 290° 290° 290° 289°	Greenwich Culmination Time: 14:43	UT 02 06 10 14 18 22	SD 15°7' 15°7' 15°7' 15°6' 15°6' 15°6'	HP 57°7' 57°6' 57°5' 57°4' 57°3' 57°1'	SHA 320° 318° 316° 314° 312° 310°	Greenwich Culmination Time: 13:04		

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates (GHA, ddGHA, Dec, dDec) and magnitude (A: 22%).

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° 326° 326° 326° 326°
Greenwich Culmination Time: 11:57

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates (GHA, ddGHA, Dec, dDec) and magnitude (A: 11%).

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 330° 329° 329° 329° 329° 329°
Greenwich Culmination Time: 11:58

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates (GHA, ddGHA, Dec, dDec) and magnitude (A: 22%).

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 252° 252° 252° 252° 252° 252°
Greenwich Culmination Time: 16:55

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates (GHA, ddGHA, Dec, dDec) and magnitude (A: 11%).

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 254° 254° 254° 254° 253° 253°
Greenwich Culmination Time: 17:00

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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 for each planet.

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

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

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

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Table for April 30 Sunday showing astronomical data for Sun, Venus, Moon, and Mars. Includes columns for UT, GHA, ddGHA, Dec, dDec, and A: 34%. Contains 24 rows of data and a summary row with dates 02-22 and Greenwich Culmination Time: 11:57.

Table for April 27 Thursday showing astronomical data for Sun, Venus, Moon, and Mars. Includes columns for UT, GHA, ddGHA, Dec, dDec, and A: 25%. Contains 24 rows of data and a summary row with dates 02-22 and Greenwich Culmination Time: 11:57.

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.

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.

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.

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.

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.

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.

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.

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.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon for the date 2023 May 4.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon for the date 2023 May 4.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn for the date 2023 May 4.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon for the date 2023 May 1.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon for the date 2023 May 1.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn for the date 2023 May 1.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for RA, Dec, and magnitude for each planet, along with a small table for planetary rise/set times and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for RA, Dec, and magnitude for each planet, along with a small table for planetary rise/set times and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for RA, Dec, and magnitude for each planet, along with a small table for planetary rise/set times and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for RA, Dec, and magnitude for each planet, along with a small table for planetary rise/set times 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. Moon column includes A: 60%.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes SD, HP, SHA for each planet. Greenwich Culmination Time: 11:56, 15:00, 02:00.

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 for each planet. Greenwich Culmination Time: 16:36, 10:41, 07:29.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon column includes A: 49%.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes SD, HP, SHA for each planet. Greenwich Culmination Time: 11:56, 14:57, -1:00.

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 for each planet. Greenwich Culmination Time: 16:41, 10:51, 07:40.

Table for Saturday, May 6, 2023, showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and A: 52%.

Table for Sunday, May 7, 2023, showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and A: 56%.

Table for Saturday, May 6, 2023, showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table for Sunday, May 7, 2023, showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

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Table with columns for Sun, Venus, Moon, and UT. Includes data for RA, Dec, and magnitude for each planet over a 24-hour period.

Table with columns for Sun, Venus, Moon, and UT. Includes data for RA, Dec, and magnitude for each planet over a 24-hour period.

Table with columns for Mars, Jupiter, Saturn, and UT. Includes data for RA, Dec, and magnitude for each planet over a 24-hour period.

Table with columns for Mars, Jupiter, Saturn, and UT. Includes data for RA, Dec, and magnitude for each planet over a 24-hour period.

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UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	180	54.6	+00.0	N 18 59.4	+00.6	133	19.9	-00.5	N 25 53.4	-00.2	224	04.2	-28.1	N 01 39.0	+16.2	00
01	195	54.6	+00.0	N 18 60.0	+00.6	148	19.4	-00.5	N 25 53.2	-00.1	238	36.1	-28.1	N 01 55.2	+16.1	01
02	210	54.6	-00.1	N 19 00.6	+00.6	163	18.9	-00.5	N 25 53.1	-00.2	253	08.0	-28.1	N 02 11.3	+16.2	02
03	225	54.5	+00.0	N 19 01.2	+00.5	178	18.4	-00.5	N 25 52.9	-00.2	267	39.9	-28.0	N 02 27.5	+16.1	03
04	240	54.5	+00.0	N 19 01.7	+00.6	193	17.9	-00.5	N 25 52.7	-00.1	282	11.9	-28.1	N 02 43.6	+16.0	04
05	255	54.5	+00.0	N 19 02.3	+00.6	208	17.4	-00.5	N 25 52.6	-00.2	296	43.8	-28.1	N 02 59.6	+16.1	05
06	270	54.5	+00.0	N 19 02.9	+00.6	223	16.9	-00.5	N 25 52.4	-00.2	311	15.7	-28.1	N 03 15.7	+16.1	06
07	285	54.5	+00.0	N 19 03.5	+00.6	238	16.4	-00.5	N 25 52.2	-00.1	325	47.6	-28.1	N 03 31.8	+16.0	07
08	300	54.5	+00.0	N 19 04.1	+00.5	253	15.9	-00.4	N 25 52.1	-00.2	340	19.5	-28.0	N 03 47.8	+16.0	08
09	315	54.5	+00.0	N 19 04.6	+00.6	268	15.5	-00.5	N 25 51.9	-00.2	354	51.5	-28.1	N 04 03.8	+15.9	09
10	330	54.5	+00.0	N 19 05.2	+00.6	283	15.0	-00.5	N 25 51.7	-00.1	9	23.4	-28.1	N 04 19.7	+15.9	10
11	345	54.5	-00.1	N 19 05.8	+00.6	298	14.5	-00.5	N 25 51.6	-00.2	23	55.3	-28.1	N 04 35.6	+16.0	11
12	0	54.4	+00.0	N 19 06.4	+00.5	313	14.0	-00.5	N 25 51.4	-00.2	38	27.2	-28.2	N 04 51.6	+15.8	12
13	15	54.4	+00.0	N 19 06.9	+00.6	328	13.5	-00.5	N 25 51.2	-00.2	52	59.0	-28.1	N 05 07.4	+15.9	13
14	30	54.4	+00.0	N 19 07.5	+00.6	343	13.0	-00.5	N 25 51.0	-00.1	67	30.9	-28.1	N 05 23.3	+15.8	14
15	45	54.4	+00.0	N 19 08.1	+00.6	358	12.5	-00.5	N 25 50.9	-00.2	82	02.8	-28.2	N 05 39.3	+15.7	15
16	60	54.4	+00.0	N 19 08.7	+00.5	13	12.0	-00.4	N 25 50.7	-00.2	96	34.6	-28.1	N 05 54.8	+15.8	16
17	75	54.4	+00.0	N 19 09.2	+00.6	28	11.6	-00.5	N 25 50.5	-00.2	111	06.5	-28.2	N 06 10.6	+15.7	17
18	90	54.4	-00.1	N 19 09.8	+00.6	43	11.1	-00.5	N 25 50.3	-00.1	125	38.3	-28.2	N 06 26.3	+15.6	18
19	105	54.3	+00.0	N 19 10.4	+00.6	58	10.6	-00.5	N 25 50.2	-00.2	140	10.1	-28.2	N 06 41.9	+15.7	19
20	120	54.3	+00.0	N 19 11.0	+00.5	73	10.1	-00.5	N 25 50.0	-00.2	154	41.9	-28.2	N 06 57.6	+15.5	20
21	135	54.3	+00.0	N 19 11.5	+00.6	88	09.6	-00.5	N 25 49.8	-00.2	169	13.7	-28.3	N 07 13.1	+15.6	21
22	150	54.3	+00.0	N 19 12.1	+00.6	103	09.1	-00.4	N 25 49.6	-00.2	183	45.4	-28.2	N 07 28.7	+15.4	22
23	165	54.3	+00.0	N 19 12.7	+00.5	118	08.7	-00.5	N 25 49.4	-00.2	198	17.2	-28.3	N 07 44.1	+15.5	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°2 00°2 00°2 00°2 00°2 00°2				SD 15°9 15°9 15°9 15°9 15°8 15°8				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°2 00°2 00°2 00°2 00°2 00°2				HP 58°4 58°3 58°3 58°2 58°1 58°0				HP 00°0 00°0 00°0 00°0 00°0 00°0				
SHA 307° 307° 307° 307° 307° 307°				SHA 260° 260° 259° 259° 259° 259°				SHA 350° 348° 346° 343° 341° 339°				SHA 310° 310° 310° 310° 310° 310°				
Greenwich Culmination Time: 11:56				Greenwich Culmination Time: 15:07				Greenwich Culmination Time: 09:21				Greenwich Culmination Time: 11:56				

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	180	54.7	+00.0	N 18 16.0	+00.6	133	57.0	-00.5	N 26 02.1	+00.0	259	18.6	-31.6	S 16 57.3	-13.6	00
01	195	54.7	+00.0	N 18 16.6	+00.6	148	56.5	-00.5	N 26 02.1	-00.1	273	47.0	-31.6	S 16 43.7	-13.7	01
02	210	54.7	+00.0	N 18 17.2	+00.6	163	56.0	-00.6	N 26 02.0	-00.1	288	15.4	-31.4	S 16 30.0	-13.8	02
03	225	54.7	+00.0	N 18 17.8	+00.7	178	55.4	-00.5	N 26 01.9	-00.1	302	44.0	-31.4	S 16 16.2	-13.9	03
04	240	54.7	+00.0	N 18 18.5	+00.6	193	54.9	-00.5	N 26 01.8	-00.1	317	12.6	-31.3	S 16 02.3	-13.9	04
05	255	54.7	+00.0	N 18 19.1	+00.6	208	54.4	-00.6	N 26 01.7	-00.1	331	41.3	-31.2	S 15 48.4	-14.1	05
06	270	54.7	+00.0	N 18 19.7	+00.6	223	53.8	-00.5	N 26 01.6	-00.1	346	10.1	-31.1	S 15 34.3	-14.1	06
07	285	54.7	+00.0	N 18 20.3	+00.6	238	53.3	-00.5	N 26 01.5	-00.1	0	39.0	-31.0	S 15 20.2	-14.2	07
08	300	54.7	+00.0	N 18 20.9	+00.7	253	52.8	-00.6	N 26 01.4	+00.0	15	08.0	-31.0	S 15 06.0	-14.3	08
09	315	54.7	+00.1	N 18 21.6	+00.6	268	52.2	-00.5	N 26 01.4	-00.1	29	37.0	-30.8	S 14 51.7	-14.3	09
10	330	54.8	+00.0	N 18 22.2	+00.6	283	51.7	-00.5	N 26 01.3	-00.1	44	06.2	-30.8	S 14 37.4	-14.5	10
11	345	54.8	+00.0	N 18 22.8	+00.6	298	51.2	-00.6	N 26 01.2	-00.1	58	35.4	-30.7	S 14 22.9	-14.5	11
12	0	54.8	+00.0	N 18 23.4	+00.6	313	50.6	-00.5	N 26 01.1	-00.1	73	04.7	-30.6	S 14 08.4	-14.5	12
13	15	54.8	+00.0	N 18 24.0	+00.6	328	50.1	-00.5	N 26 01.0	-00.1	87	34.1	-30.6	S 13 53.9	-14.7	13
14	30	54.8	+00.0	N 18 24.6	+00.7	343	49.6	-00.5	N 26 00.9	-00.1	102	03.5	-30.5	S 13 39.2	-14.7	14
15	45	54.8	+00.0	N 18 25.3	+00.6	358	49.1	-00.6	N 26 00.8	-00.1	116	33.0	-30.4	S 13 24.5	-14.8	15
16	60	54.8	+00.0	N 18 25.9	+00.6	13	48.5	-00.5	N 26 00.7	-00.1	131	02.6	-30.3	S 13 09.7	-14.9	16
17	75	54.8	+00.0	N 18 26.5	+00.6	28	48.0	-00.5	N 26 00.6	-00.1	145	32.3	-30.3	S 12 54.8	-14.9	17
18	90	54.8	+00.0	N 18 27.1	+00.6	43	47.5	-00.5	N 26 00.5	-00.1	160	02.0	-30.1	S 12 39.9	-15.0	18
19	105	54.8	+00.0	N 18 27.7	+00.6	58	47.0	-00.6	N 26 00.4	-00.1	174	31.9	-30.1	S 12 24.9	-15.0	19
20	120	54.8	+00.0	N 18 28.3	+00.6	73	46.4	-00.5	N 26 00.3	-00.1	189	01.8	-30.1	S 12 09.9	-15.1	20
21	135	54.8	+00.0	N 18 28.9	+00.6	88	45.9	-00.5	N 26 00.2	-00.1	203	31.7	-29.9	S 11 54.8	-15.1	21
22	150	54.8	+00.0	N 18 29.5	+00.7	103	45.4	-00.5	N 26 00.1	-00.1	218	01.8	-29.9	S 11 39.7	-15.3	22
23	165	54.8	+00.0	N 18 30.2	+00.6	118	44.9	-00.6	N 25 60.0	-00.1	232	31.9	-29.9	S 11 24.4	-15.2	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°2 00°2 00°2 00°2 00°2 00°2				SD 16°1 16°1 16°1 16°1 16°1 16°1				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				HP 00°2 00°2 00°2 00°2 00°2 00°2				HP 59°2 59°2 59°1 59°1 59°1 59°0				HP 00°0 00°0 00°0 00°0 00°0 00°0				
SHA 310° 310° 310° 310° 310° 310°				SHA 263° 263° 263° 263° 263° 262°				SHA 028° 025° 023° 021° 019° 017°				SHA 028° 025° 023° 021° 019° 017°				
Greenwich Culmination Time: 11:56				Greenwich Culmination Time: 15:04				Greenwich Culmination Time: 06:57				Greenwich Culmination Time: 06:57				

Table with columns for UT, Sun, Venus, Moon, and Mars/Jupiter/Saturn. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and Mars/Jupiter/Saturn. Includes celestial coordinates (GHA, ddGHA, Dec, dDec) and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing astronomical data for the first planet set.

Summary table for Sun, Venus, and Moon with columns for UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA values and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing astronomical data for the second planet set.

Summary table for Sun, Venus, and Moon with columns for UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA values and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing astronomical data for the second planet set.

Summary table for Mars, Jupiter, and Saturn with columns for UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA values and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing astronomical data for the second planet set.

Summary table for Mars, Jupiter, and Saturn with columns for UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA values and Greenwich Culmination Time.

Table with columns for Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, dDec, and UT values for days 00 to 23. Includes a small table for planetary positions at 02, 06, 10, 14, 18, 22 hours.

Table with columns for Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, dDec, and UT values for days 00 to 23. Includes a small table for planetary positions at 02, 06, 10, 14, 18, 22 hours.

Table with columns for Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, dDec, and UT values for days 00 to 23. Includes a small table for planetary positions at 02, 06, 10, 14, 18, 22 hours.

Table with columns for Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, dDec, and UT values for days 00 to 23. Includes a small table for planetary positions at 02, 06, 10, 14, 18, 22 hours.

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Table with 5 columns: UT, Sun, Venus, Moon, UT. Each planet column has 4 sub-columns: GHA, ddGHA, Dec, dDec. Includes data for UT 00-23 and a summary row with UT 02-22.

Table with 5 columns: UT, Sun, Venus, Moon, UT. Each planet column has 4 sub-columns: GHA, ddGHA, Dec, dDec. Includes data for UT 00-23 and a summary row with UT 02-22.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Each planet column has 4 sub-columns: GHA, ddGHA, Dec, dDec. Includes data for UT 00-23 and a summary row with UT 02-22.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Each planet column has 4 sub-columns: GHA, ddGHA, Dec, dDec. Includes data for UT 00-23 and a summary row with UT 02-22.

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Table with 15 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Each planet column contains 4 sub-columns: GHA, ddGHA, Dec, dDec. Includes A: 09% for Moon.

Table with 15 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Each planet column contains 4 sub-columns: SD, HP, SHA. Includes Greenwich Culmination Time for each planet.

Table with 15 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Each planet column contains 4 sub-columns: GHA, ddGHA, Dec, dDec. Includes A: 13% for Saturn.

Table with 15 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Each planet column contains 4 sub-columns: SD, HP, SHA. Includes Greenwich Culmination Time for each planet.

Table with 15 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Each planet column contains 4 sub-columns: GHA, ddGHA, Dec, dDec. Includes A: 13% for Moon.

Table with 15 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Each planet column contains 4 sub-columns: SD, HP, SHA. Includes Greenwich Culmination Time for each planet.

Table with 15 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Each planet column contains 4 sub-columns: GHA, ddGHA, Dec, dDec. Includes A: 13% for Saturn.

Table with 15 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Each planet column contains 4 sub-columns: SD, HP, SHA. Includes Greenwich Culmination Time 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 00-23 showing astronomical data like SD, HP, and SHA.

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

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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 00-23 showing astronomical data like SD, HP, and SHA.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing 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. Moon column includes A: 23%.

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 297° 297° 297° 297° 297° 297°
Greenwich Culmination Time: 11:57

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

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 234° 234° 234° 234° 234° 234°
Greenwich Culmination Time: 16:08

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon column includes A: 26%.

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 296° 296° 296° 296° 296° 296°
Greenwich Culmination Time: 11:57

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

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 234° 234° 233° 233° 233° 233°
Greenwich Culmination Time: 16:07

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Table with columns for Sun, Venus, and Moon. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Includes data for days 00-23 and Greenwich Culmination Time: 11:57.

Table with columns for Sun, Venus, and Moon. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Includes data for days 00-23 and Greenwich Culmination Time: 11:57.

Table with columns for Mars, Jupiter, and Saturn. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Includes data for days 00-23 and Greenwich Culmination Time: 15:59.

Table with columns for Mars, Jupiter, and Saturn. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Includes data for days 00-23 and Greenwich Culmination Time: 16:03.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes sub-rows for 02, 06, 10, 14, 18, 22. Sub-rows contain astronomical data for Sun, Venus, and Moon (GHA, ddGHA, Dec, dDec) and a small table for UT (02, 06, 10, 14, 18, 22) with SD, HP, SHA values.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes sub-rows for 02, 06, 10, 14, 18, 22. Sub-rows contain astronomical data for Sun, Venus, and Moon (GHA, ddGHA, Dec, dDec) and a small table for UT (02, 06, 10, 14, 18, 22) with SD, HP, SHA values.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes sub-rows for 02, 06, 10, 14, 18, 22. Sub-rows contain astronomical data for Mars, Jupiter, and Saturn (GHA, ddGHA, Dec, dDec) and a small table for UT (02, 06, 10, 14, 18, 22) with SD, HP, SHA values.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes sub-rows for 02, 06, 10, 14, 18, 22. Sub-rows contain astronomical data for Mars, Jupiter, and Saturn (GHA, ddGHA, Dec, dDec) and a small table for UT (02, 06, 10, 14, 18, 22) with SD, HP, SHA values.

Table for Sun, Venus, and Moon positions for 2023 June 5 Monday. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes data for UT 00 to 23.

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 228° 287° 287° 287° 286° 286°
Greenwich Culmination Time: 11:58

Table for Sun, Venus, and Moon positions for 2023 June 2 Friday. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes data for UT 00 to 23.

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 230° 290° 290° 290° 290° 289°
Greenwich Culmination Time: 11:57

Table for Mars, Jupiter, and Saturn positions for 2023 June 5 Monday. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes data for UT 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 228° 228° 228° 228° 228° 228°
Greenwich Culmination Time: 15:53

Table for Mars, Jupiter, and Saturn positions for 2023 June 2 Friday. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each planet. Includes data for UT 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 230° 230° 230° 230° 230° 230°
Greenwich Culmination Time: 15:57

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 229° 289° 289° 289° 289° 288°
Greenwich Culmination Time: 11:58

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 229° 229° 229° 229° 229° 229°
Greenwich Culmination Time: 15:56

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 288° 288° 288° 288° 287° 287°
Greenwich Culmination Time: 11:58

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 229° 229° 229° 229° 228° 228°
Greenwich Culmination Time: 15:54

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for RA, Dec, and magnitude for each planet across days 00 to 23. Includes a small table at the bottom with UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for RA, Dec, and magnitude for each planet across days 00 to 23. Includes a small table at the bottom with UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for RA, Dec, and magnitude for each planet across days 00 to 23. Includes a small table at the bottom with UT 02-22 and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for RA, Dec, and magnitude for each planet across days 00 to 23. Includes a small table at the bottom with UT 02-22 and Greenwich Culmination Time.

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UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	180	18.7	-00.1	N 22 42.3	+00.2	130	58.3	+00.0	N 22 15.1	-00.6	317	31.0	-37.7	S 26 11.3	-06.4	00				
01	195	18.6	-00.1	N 22 42.5	+00.3	145	58.3	+00.0	N 22 14.5	-00.7	331	53.3	-37.5	S 26 04.9	-06.5	01				
02	210	18.5	-00.1	N 22 42.8	+00.2	160	58.3	+00.0	N 22 13.8	-00.6	346	15.8	-37.5	S 25 58.4	-06.8	02				
03	225	18.4	-00.1	N 22 43.0	+00.3	175	58.3	+00.1	N 22 13.2	-00.6	0	38.3	-37.3	S 25 51.6	-06.9	03				
04	240	18.3	-00.1	N 22 43.3	+00.2	190	58.4	+00.0	N 22 12.6	-00.6	15	01.0	-37.3	S 25 44.7	-07.1	04				
05	255	18.2	-00.2	N 22 43.5	+00.3	205	58.4	+00.0	N 22 12.0	-00.7	29	23.7	-37.3	S 25 37.6	-07.3	05				
06	270	18.0	-00.1	N 22 43.8	+00.2	220	58.4	+00.0	N 22 11.3	-00.6	43	46.4	-37.1	S 25 30.3	-07.5	06				
07	285	17.9	-00.1	N 22 44.0	+00.3	235	58.4	+00.1	N 22 10.7	-00.6	58	09.3	-37.0	S 25 22.8	-07.6	07				
08	300	17.8	-00.1	N 22 44.3	+00.2	250	58.5	+00.0	N 22 10.1	-00.7	72	32.3	-37.0	S 25 15.2	-07.8	08				
09	315	17.7	-00.1	N 22 44.5	+00.2	265	58.5	+00.0	N 22 09.4	-00.6	86	55.3	-36.8	S 25 07.4	-08.0	09				
10	330	17.6	-00.1	N 22 44.7	+00.3	280	58.5	+00.1	N 22 08.8	-00.7	101	18.5	-36.8	S 24 59.4	-08.1	10				
11	345	17.5	-00.2	N 22 45.0	+00.2	295	58.6	+00.0	N 22 08.1	-00.6	115	41.7	-36.6	S 24 51.3	-08.4	11				
12	0	17.3	-00.1	N 22 45.2	+00.3	310	58.6	+00.0	N 22 07.5	-00.6	130	05.1	-36.6	S 24 42.9	-08.5	12				
13	15	17.2	-00.1	N 22 45.5	+00.3	325	58.6	+00.1	N 22 06.9	-00.7	144	28.5	-36.5	S 24 34.4	-08.6	13				
14	30	17.1	-00.1	N 22 45.7	+00.3	340	58.7	+00.0	N 22 06.2	-00.6	158	52.0	-36.4	S 24 25.8	-08.8	14				
15	45	17.0	-00.1	N 22 46.0	+00.2	355	58.7	+00.1	N 22 05.6	-00.6	173	15.6	-36.2	S 24 17.0	-09.0	15				
16	60	16.9	-00.1	N 22 46.2	+00.2	10	58.8	+00.0	N 22 05.0	-00.7	187	39.4	-36.2	S 24 08.0	-09.2	16				
17	75	16.8	-00.2	N 22 46.4	+00.3	25	58.8	+00.0	N 22 04.3	-00.6	202	03.2	-36.1	S 23 58.8	-09.3	17				
18	90	16.6	-00.1	N 22 46.7	+00.2	40	58.8	+00.1	N 22 03.7	-00.6	216	27.1	-35.9	S 23 49.5	-09.4	18				
19	105	16.5	-00.1	N 22 46.9	+00.2	55	58.9	+00.0	N 22 03.0	-00.6	230	51.2	-35.9	S 23 40.1	-09.6	19				
20	120	16.4	-00.1	N 22 47.1	+00.3	70	58.9	+00.1	N 22 02.4	-00.6	245	15.3	-35.8	S 23 30.5	-09.8	20				
21	135	16.3	-00.1	N 22 47.4	+00.2	85	59.0	+00.0	N 22 01.8	-00.7	259	39.5	-35.6	S 23 20.7	-09.9	21				
22	150	16.2	-00.1	N 22 47.6	+00.2	100	59.0	+00.1	N 22 01.1	-00.6	274	03.9	-35.6	S 23 10.8	-10.1	22				
23	165	16.1	-00.2	N 22 47.8	+00.3	115	59.1	+00.0	N 22 00.5	-00.7	288	28.3	-35.4	S 23 00.7	-10.2	23				
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°2'	00°2'	00°2'	00°2'	00°2'	00°2'	SD	16°4'	16°4'	16°4'	16°4'	16°3'	16°3'
HP	00°1'	00°1'	00°1'	00°1'	00°1'	00°1'	HP	00°1'	00°2'	00°2'	00°2'	00°2'	00°2'	HP	60°1'	60°1'	60°0'	60°0'	60°0'	60°0'
SHA	285°	285°	285°	285°	285°	284°	SHA	236°	236°	235°	235°	235°	235°	SHA	061°	058°	056°	053°	051°	048°
Greenwich Culmination Time: 11:58																				

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	180	15.9	-00.1	N 22 48.1	+00.2	130	59.1	+00.1	N 21 59.8	-00.6	302	52.9	-35.3	S 22 50.5	-10.3	00				
01	195	15.8	-00.1	N 22 48.3	+00.2	145	59.2	+00.0	N 21 59.2	-00.7	317	17.6	-35.2	S 22 40.2	-10.5	01				
02	210	15.7	-00.1	N 22 48.5	+00.3	160	59.2	+00.1	N 21 58.5	-00.6	331	42.4	-35.1	S 22 29.7	-10.7	02				
03	225	15.6	-00.1	N 22 48.8	+00.2	175	59.3	+00.0	N 21 57.9	-00.7	346	07.3	-35.0	S 22 19.0	-10.8	03				
04	240	15.5	-00.1	N 22 49.0	+00.2	190	59.3	+00.1	N 21 57.2	-00.6	0	32.3	-34.9	S 22 08.2	-10.9	04				
05	255	15.4	-00.2	N 22 49.2	+00.3	205	59.4	+00.1	N 21 56.6	-00.7	14	57.4	-34.8	S 21 57.3	-11.0	05				
06	270	15.2	-00.1	N 22 49.5	+00.2	220	59.5	+00.0	N 21 55.9	-00.6	29	22.6	-34.7	S 21 46.3	-11.2	06				
07	285	15.1	-00.1	N 22 49.7	+00.2	235	59.5	+00.1	N 21 55.3	-00.7	43	47.9	-34.5	S 21 35.1	-11.4	07				
08	300	15.0	-00.1	N 22 49.9	+00.2	250	59.6	+00.0	N 21 54.6	-00.6	58	13.4	-34.5	S 21 23.7	-11.4	08				
09	315	14.9	-00.1	N 22 50.1	+00.3	265	59.6	+00.1	N 21 54.0	-00.7	72	38.9	-34.3	S 21 12.3	-11.6	09				
10	330	14.8	-00.2	N 22 50.4	+00.2	280	59.7	+00.1	N 21 53.3	-00.6	87	04.6	-34.3	S 21 00.7	-11.7	10				
11	345	14.6	-00.1	N 22 50.6	+00.2	295	59.8	+00.0	N 21 52.7	-00.7	101	30.3	-34.1	S 20 49.0	-11.9	11				
12	0	14.5	-00.1	N 22 50.8	+00.2	310	59.8	+00.1	N 21 52.0	-00.6	115	56.2	-34.0	S 20 37.1	-11.9	12				
13	15	14.4	-00.1	N 22 51.0	+00.3	325	59.9	+00.1	N 21 51.4	-00.7	130	22.2	-33.9	S 20 25.2	-12.1	13				
14	30	14.3	-00.1	N 22 51.3	+00.2	340	60.0	+00.0	N 21 50.7	-00.6	144	48.3	-33.8	S 20 13.1	-12.2	14				
15	45	14.2	-00.2	N 22 51.5	+00.2	356	60.0	+00.1	N 21 50.1	-00.7	159	14.5	-33.6	S 20 00.9	-12.3	15				
16	60	14.0	-00.1	N 22 51.7	+00.2	11	00.1	+00.1	N 21 49.4	-00.6	173	40.9	-33.6	S 19 48.6	-12.5	16				
17	75	13.9	-00.1	N 22 51.9	+00.2	26	00.2	+00.1	N 21 48.8	-00.7	188	07.3	-33.4	S 19 36.1	-12.5	17				
18	90	13.8	-00.1	N 22 52.1	+00.3	41	00.3	+00.0	N 21 48.1	-00.6	202	33.9	-33.4	S 19 23.6	-12.7	18				
19	105	13.7	-00.1	N 22 52.4	+00.2	56	00.3	+00.1	N 21 47.5	-00.7	217	00.5	-33.2	S 19 10.9	-12.7	19				
20	120	13.6	-00.2	N 22 52.6	+00.2	71	00.4	+00.1	N 21 46.8	-00.6	231	27.3	-33.1	S 18 58.2	-12.9	20				
21	135	13.4	-00.1	N 22 52.8	+00.2	86	00.5	+00.1	N 21 46.2	-00.7	245	54.2	-33.0	S 18 45.3	-13.0	21				
22	150	13.3	-00.1	N 22 53.0	+00.2	101	00.6	+00.1	N 21 45.5	-00.7	260	21.2	-33.0	S 18 32.3	-13.1	22				
23	165	13.2	-00.1	N 22 53.2	+00.3	116	00.7	+00.0	N 21 44.8	-00.6	274	48.2	-32.7	S 18 19.2	-13.1	23				
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°2'	00°2'	00°2'	00°2'	00°2'	00°2'	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°2'	00°2'	00°2'	00°2'	00°2'	00°2'	HP	59°9'	59°9'	59°9'	59°8'	59°8'	59°7'
SHA	284°	284°	284°	284°	283°	283°	SHA	235°	235°	234°	234°	234°	234°	SHA	046°	043°	041°	038°	036°	033°
Greenwich Culmination Time: 11:59																				

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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 232° 231° 231° 232° 231° 231°
Greenwich Culmination Time: 11:59

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 232° 231° 231° 232° 231° 231°
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 326° 326° 326° 326° 326° 326°
Greenwich Culmination Time: 08:56

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 326° 326° 326° 326° 326° 326°
Greenwich Culmination Time: 08:53

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Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for positions and times of these celestial bodies from 00:00 to 23:00.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for positions and times of these celestial bodies from 00:00 to 23:00.

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°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 222° 277° 276° 276° 276° 276°
Greenwich Culmination Time: 12:00

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 222° 222° 222° 222° 222° 222°
Greenwich Culmination Time: 15:37

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°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 276° 276° 275° 275° 275° 275°
Greenwich Culmination Time: 12:00

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 222° 222° 222° 221° 221° 221°
Greenwich Culmination Time: 15:35

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for each planet and a summary row at the bottom.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for each planet and a summary row at the bottom.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for each planet and a summary row at the bottom.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for each planet and a summary row at the bottom.

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Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on June 19, 2023, such as GHA, ddGHA, Dec, and dDec.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on June 20, 2023, such as GHA, ddGHA, Dec, and dDec.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on June 19, 2023, such as GHA, ddGHA, Dec, and dDec.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on June 20, 2023, such as GHA, ddGHA, Dec, and dDec.

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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 266* 266* 266* 266* 266* 266*

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*3 00*3 00*3 00*3 00*3 00*3
SHA 223* 223* 222* 222* 222* 222*

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 324* 324* 324* 324* 324* 324*

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 218* 218* 218* 218* 218* 218*

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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 for each planet.

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

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

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for positions (GHA, ddGHA, Dec, dDec) and 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	15.6	-00.1	N 23 20.3	-00.1	134	01.4	+00.8	N 16 17.9	-00.8	82	28.3	-25.0	S 03 29.9	+14.4	00				
01	194	15.5	-00.1	N 23 20.2	+00.0	149	02.2	+00.8	N 16 17.1	-00.8	97	03.3	-25.1	S 03 44.3	+14.4	01				
02	209	15.4	-00.2	N 23 20.2	-00.1	164	03.0	+00.8	N 16 16.3	-00.9	111	38.2	-25.1	S 03 58.7	+14.4	02				
03	224	15.2	-00.1	N 23 20.1	-00.1	179	03.8	+00.8	N 16 15.4	-00.8	126	13.1	-25.2	S 04 13.1	+14.4	03				
04	239	15.1	-00.1	N 23 20.0	-00.1	194	04.6	+00.8	N 16 14.6	-00.8	140	47.9	-25.2	S 04 27.5	+14.3	04				
05	254	15.0	-00.2	N 23 19.9	-00.1	209	05.4	+00.8	N 16 13.8	-00.8	155	22.7	-25.3	S 04 41.8	+14.4	05				
06	269	14.8	-00.1	N 23 19.8	-00.1	224	06.2	+00.8	N 16 13.0	-00.8	169	57.4	-25.3	S 04 56.2	+14.4	06				
07	284	14.7	-00.1	N 23 19.7	-00.1	239	07.0	+00.8	N 16 12.2	-00.8	184	32.1	-25.4	S 05 10.6	+14.4	07				
08	299	14.6	-00.1	N 23 19.6	-00.1	254	07.8	+00.9	N 16 11.4	-00.8	199	06.7	-25.4	S 05 25.0	+14.3	08				
09	314	14.5	-00.2	N 23 19.5	-00.1	269	08.7	+00.8	N 16 10.6	-00.9	213	41.3	-25.5	S 05 39.3	+14.4	09				
10	329	14.3	-00.1	N 23 19.4	-00.1	284	09.5	+00.8	N 16 09.7	-00.8	228	15.8	-25.5	S 05 53.7	+14.4	10				
11	344	14.2	-00.1	N 23 19.3	-00.1	299	10.3	+00.8	N 16 08.9	-00.8	242	50.3	-25.6	S 06 08.1	+14.3	11				
12	359	14.1	-00.2	N 23 19.2	-00.1	314	11.1	+00.9	N 16 08.1	-00.8	257	24.7	-25.6	S 06 22.4	+14.3	12				
13	14	13.9	-00.1	N 23 19.1	-00.1	329	12.0	+00.8	N 16 07.3	-00.8	271	59.1	-25.7	S 06 36.7	+14.4	13				
14	29	13.8	-00.1	N 23 19.0	-00.1	344	12.8	+00.8	N 16 06.5	-00.8	286	33.4	-25.8	S 06 51.1	+14.3	14				
15	44	13.7	-00.2	N 23 18.9	-00.1	359	13.6	+00.9	N 16 05.7	-00.8	301	07.6	-25.8	S 07 05.4	+14.3	15				
16	59	13.5	-00.1	N 23 18.8	-00.1	14	14.5	+00.8	N 16 04.9	-00.9	315	41.8	-25.9	S 07 19.7	+14.3	16				
17	74	13.4	-00.1	N 23 18.7	-00.1	29	15.3	+00.9	N 16 04.0	-00.8	330	15.9	-26.0	S 07 34.0	+14.3	17				
18	89	13.3	-00.1	N 23 18.6	-00.1	44	16.2	+00.8	N 16 03.2	-00.8	344	49.9	-26.0	S 07 48.3	+14.2	18				
19	104	13.2	-00.2	N 23 18.5	-00.2	59	17.0	+00.8	N 16 02.4	-00.8	359	23.9	-26.1	S 08 02.5	+14.3	19				
20	119	13.0	-00.1	N 23 18.3	-00.1	74	17.8	+00.9	N 16 01.6	-00.8	13	57.8	-26.2	S 08 16.8	+14.2	20				
21	134	12.9	-00.1	N 23 18.2	-00.1	89	18.7	+00.8	N 16 00.8	-00.8	28	31.6	-26.2	S 08 31.0	+14.2	21				
22	149	12.8	-00.2	N 23 18.1	-00.1	104	19.5	+00.9	N 15 60.0	-00.8	43	05.4	-26.3	S 08 45.2	+14.2	22				
23	164	12.6	-00.1	N 23 18.0	-00.1	119	20.4	+00.8	N 15 59.2	-00.9	57	39.1	-26.4	S 08 59.4	+14.2	23				
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT	02	06	10	14	18	22
SD	15°7'	15°7'	15°7'	15°7'	15°7'	15°7'	SD	00°3'	00°3'	00°3'	00°3'	00°3'	00°3'	SD	15°1'	15°2'	15°2'	15°2'	15°3'	15°3'
HP	00°1'	00°1'	00°1'	00°1'	00°1'	00°1'	HP	00°3'	00°3'	00°3'	00°3'	00°3'	00°3'	HP	55°5'	55°6'	55°8'	55°9'	56°0'	56°1'
SHA	264°	264°	264°	264°	263°	263°	SHA	219°	219°	219°	219°	219°	219°	SHA	167°	165°	163°	161°	159°	157°
Greenwich Culmination Time: 12:03																				

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	179	12.5	-00.1	N 23 17.9	-00.1	134	21.2	+00.9	N 15 58.3	-00.8	72	12.7	-26.4	S 09 13.6	+14.1	00				
01	194	12.4	-00.1	N 23 17.8	-00.1	149	22.1	+00.9	N 15 57.5	-00.8	86	46.3	-26.6	S 09 27.7	+14.2	01				
02	209	12.3	-00.2	N 23 17.7	-00.1	164	23.0	+00.8	N 15 56.7	-00.8	101	19.7	-26.6	S 09 41.9	+14.1	02				
03	224	12.1	-00.1	N 23 17.6	-00.1	179	23.8	+00.9	N 15 55.9	-00.8	115	53.1	-26.7	S 09 56.0	+14.0	03				
04	239	12.0	-00.1	N 23 17.5	-00.1	194	24.7	+00.8	N 15 55.1	-00.8	130	26.4	-26.7	S 10 10.0	+14.1	04				
05	254	11.9	-00.2	N 23 17.4	-00.2	209	25.5	+00.9	N 15 54.3	-00.8	144	59.7	-26.9	S 10 24.1	+14.0	05				
06	269	11.7	-00.1	N 23 17.2	-00.1	224	26.4	+00.9	N 15 53.5	-00.9	159	32.8	-26.9	S 10 38.1	+14.0	06				
07	284	11.6	-00.1	N 23 17.1	-00.1	239	27.3	+00.8	N 15 52.6	-00.8	174	05.9	-27.0	S 10 52.1	+14.0	07				
08	299	11.5	-00.1	N 23 17.0	-00.1	254	28.1	+00.9	N 15 51.8	-00.8	188	38.9	-27.1	S 11 06.1	+13.9	08				
09	314	11.4	-00.2	N 23 16.9	-00.1	269	29.0	+00.9	N 15 51.0	-00.8	203	11.8	-27.2	S 11 20.0	+14.0	09				
10	329	11.2	-00.1	N 23 16.8	-00.1	284	29.9	+00.9	N 15 50.2	-00.8	217	44.6	-27.2	S 11 34.0	+13.8	10				
11	344	11.1	-00.1	N 23 16.7	-00.2	299	30.8	+00.8	N 15 49.4	-00.8	232	17.4	-27.4	S 11 47.8	+13.9	11				
12	359	11.0	-00.2	N 23 16.5	-00.1	314	31.6	+00.9	N 15 48.6	-00.9	246	50.0	-27.4	S 12 01.7	+13.8	12				
13	14	10.8	-00.1	N 23 16.4	-00.1	329	32.5	+00.9	N 15 47.7	-00.8	261	22.6	-27.6	S 12 15.5	+13.8	13				
14	29	10.7	-00.1	N 23 16.3	-00.1	344	33.4	+00.9	N 15 46.9	-00.8	275	55.0	-27.6	S 12 29.3	+13.7	14				
15	44	10.6	-00.1	N 23 16.2	-00.1	359	34.3	+00.9	N 15 46.1	-00.8	290	27.4	-27.7	S 12 43.0	+13.7	15				
16	59	10.5	-00.2	N 23 16.1	-00.2	14	35.2	+00.9	N 15 45.3	-00.8	304	59.7	-27.9	S 12 56.7	+13.7	16				
17	74	10.3	-00.1	N 23 15.9	-00.1	29	36.1	+00.9	N 15 44.5	-00.8	319	31.8	-27.9	S 13 10.4	+13.6	17				
18	89	10.2	-00.1	N 23 15.8	-00.1	44	37.0	+00.8	N 15 43.7	-00.8	334	03.9	-28.0	S 13 24.0	+13.6	18				
19	104	10.1	-00.1	N 23 15.7	-00.1	59	37.8	+00.9	N 15 42.9	-00.9	348	35.9	-28.1	S 13 37.6	+13.5	19				
20	119	10.0	-00.2	N 23 15.6	-00.1	74	38.7	+00.9	N 15 42.0	-00.8	3	07.8	-28.2	S 13 51.1	+13.5	20				
21	134	09.8	-00.1	N 23 15.5	-00.2	89	39.6	+00.9	N 15 41.2	-00.8	17	39.6	-28.4	S 14 04.6	+13.4	21				
22	149	09.7	-00.1	N 23 15.3	-00.1	104	40.5	+00.9	N 15 40.4	-00.8	32	11.2	-28.4	S 14 18.0	+13.4	22				
23	164	09.6	-00.1	N 23 15.2	-00.1	119	41.4	+00.9	N 15 39.6	-00.8	46	42.8	-28.5	S 14 31.4	+13.4	23				
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT	02	06	10	14	18	22
SD	15°7'	15°7'	15°7'	15°7'	15°7'	15°7'	SD	00°3'	00°3'	00°3'	00°3'	00°3'	00°3'	SD	15°3'	15°4'	15°4'	15°4'	15°5'	15°5'
HP	00°1'	00°1'	00°1'	00°1'	00°1'	00°1'	HP	00°3'	00°3'	00°3'	00°3'	00°3'	00°3'	HP	56°3'	56°4'	56°5'	56°7'	56°8'	57°0'
SHA	263°	263°	263°	263°	262°	262°	SHA	218°	218°	218°	218°	218°	218°	SHA	155°	153°	151°	150°	147°	145°
Greenwich Culmination Time: 12:03																				

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

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

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

Table with columns for Mars, Jupiter, Saturn, and UT. Includes celestial coordinates (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 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 260* 260* 260* 260* 259* 259*
Greenwich Culmination Time: 12:03

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*3 00*3 00*3 00*3 00*3 00*3
SHA 259* 259* 259* 259* 258* 258*
Greenwich Culmination Time: 12:04

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 213* 213* 213* 213* 212* 212*
Greenwich Culmination Time: 15:11

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*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 323* 323* 323* 322* 322* 322*
Greenwich Culmination Time: 07:49

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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: 66%.

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* 253* 253* 253*
Greenwich Culmination Time: 12:04

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 209* 209* 209* 209* 209* 209*
Greenwich Culmination Time: 15:02

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon A: 54%.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*3 00*3 00*3 00*3 00*3 00*3
SHA 215* 215* 215* 215* 215* 215*
Greenwich Culmination Time: 14:51

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 211* 211* 211* 211* 211* 211*
Greenwich Culmination Time: 15:06

Table with columns for UT, Sun, Venus, Moon, and UT. It lists celestial coordinates (GHA, ddGHA, Dec, dDec) for each planet on July 5th.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*0 00*1 00*1 00*1 00*1 00*1
SHA 256* 256* 256* 256* 256* 255*
Greenwich Culmination Time: 12:04

Table with columns for UT, Sun, Venus, Moon, and UT. It lists celestial coordinates (GHA, ddGHA, Dec, dDec) for each planet on July 6th.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*0 00*1 00*1 00*1 00*1 00*1
SHA 255* 255* 255* 255* 254* 254*
Greenwich Culmination Time: 12:04

Table with columns for UT, Mars, Jupiter, Saturn, and UT. It lists celestial coordinates (GHA, ddGHA, Dec, dDec) for each planet on July 5th.

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 211* 211* 210* 210* 210* 210*
Greenwich Culmination Time: 15:05

Table with columns for UT, Mars, Jupiter, Saturn, and UT. It lists celestial coordinates (GHA, ddGHA, Dec, dDec) for each planet on July 6th.

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 210* 210* 210* 210* 210* 210*
Greenwich Culmination Time: 15:03

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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.

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

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

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for positions (GHA, ddGHA, Dec, dDec) 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 252* 252* 252* 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 208* 208* 208* 208* 208* 208*
Greenwich Culmination Time: 14:58

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*3 00*3 00*3 00*3 00*3 00*3
SHA 212* 212* 212* 212* 212* 212*
Greenwich Culmination Time: 14:38

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*
Greenwich Culmination Time: 14:57

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates (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 246° 246° 246° 245° 245° 245°
Greenwich Culmination Time: 12:05

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates (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 249° 249° 249° 248° 248° 248°
Greenwich Culmination Time: 12:05

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates (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 205° 205° 205° 205° 204° 204°
Greenwich Culmination Time: 14:49

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates (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 207° 206° 206° 206° 206° 206°
Greenwich Culmination Time: 14:53

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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	178	34.4	-00.1	N 21 53.5	-00.3	142	06.7	+01.8	N 11 14.5	-00.7	237	25.3	-30.1	N 21 21.7	+10.0	00
01	193	34.3	-00.1	N 21 53.2	-00.4	157	08.5	+01.8	N 11 13.8	-00.7	251	55.2	-30.2	N 21 31.7	+09.9	01
02	208	34.2	-00.1	N 21 52.8	-00.3	172	10.3	+01.8	N 11 13.1	-00.8	266	25.0	-30.2	N 21 41.6	+09.8	02
03	223	34.1	+00.0	N 21 52.5	-00.4	187	12.1	+01.8	N 11 12.3	-00.7	280	54.8	-30.3	N 21 51.4	+09.7	03
04	238	34.1	-00.1	N 21 52.1	-00.4	202	13.9	+01.8	N 11 11.6	-00.7	295	24.5	-30.3	N 22 01.1	+09.5	04
05	253	34.0	-00.1	N 21 51.7	-00.3	217	15.7	+01.8	N 11 10.9	-00.7	309	54.2	-30.4	N 22 10.6	+09.4	05
06	268	33.9	-00.1	N 21 51.4	-00.4	232	17.5	+01.8	N 11 10.2	-00.8	324	23.8	-30.4	N 22 20.0	+09.3	06
07	283	33.8	+00.0	N 21 51.0	-00.3	247	19.3	+01.8	N 11 09.4	-00.7	338	53.4	-30.5	N 22 29.3	+09.2	07
08	298	33.8	-00.1	N 21 50.7	-00.4	262	21.1	+01.9	N 11 08.7	-00.7	353	22.9	-30.5	N 22 38.5	+09.1	08
09	313	33.7	-00.1	N 21 50.3	-00.4	277	23.0	+01.8	N 11 08.0	-00.7	7	52.4	-30.6	N 22 47.6	+08.9	09
10	328	33.6	-00.1	N 21 49.9	-00.3	292	24.8	+01.8	N 11 07.3	-00.7	22	21.8	-30.6	N 22 56.5	+08.8	10
11	343	33.5	+00.0	N 21 49.6	-00.4	307	26.6	+01.8	N 11 06.6	-00.8	36	51.2	-30.6	N 23 05.3	+08.7	11
12	358	33.5	-00.1	N 21 49.2	-00.4	322	28.4	+01.9	N 11 05.8	-00.7	51	20.6	-30.7	N 23 14.0	+08.6	12
13	13	33.4	-00.1	N 21 48.8	-00.4	337	30.3	+01.8	N 11 05.1	-00.7	65	49.9	-30.8	N 23 22.6	+08.5	13
14	28	33.3	-00.1	N 21 48.5	-00.4	352	32.1	+01.9	N 11 04.4	-00.7	80	19.1	-30.8	N 23 31.1	+08.3	14
15	43	33.2	+00.0	N 21 48.1	-00.4	7	34.0	+01.8	N 11 03.7	-00.7	94	48.3	-30.8	N 23 39.4	+08.2	15
16	58	33.2	-00.1	N 21 47.7	-00.3	22	35.8	+01.9	N 11 03.0	-00.7	109	17.5	-30.9	N 23 47.6	+08.1	16
17	73	33.1	-00.1	N 21 47.4	-00.4	37	37.7	+01.8	N 11 02.3	-00.8	123	46.6	-30.9	N 23 55.7	+08.0	17
18	88	33.0	+00.0	N 21 47.0	-00.4	52	39.5	+01.9	N 11 01.5	-00.8	138	15.7	-31.0	N 24 03.7	+07.8	18
19	103	33.0	-00.1	N 21 46.6	-00.3	67	41.4	+01.8	N 11 00.8	-00.7	152	44.7	-31.0	N 24 11.5	+07.7	19
20	118	32.9	-00.1	N 21 46.3	-00.4	82	43.2	+01.9	N 11 00.1	-00.7	167	13.7	-31.1	N 24 19.2	+07.6	20
21	133	32.8	-00.1	N 21 45.9	-00.4	97	45.1	+01.8	N 10 59.4	-00.7	181	42.6	-31.1	N 24 26.8	+07.4	21
22	148	32.7	+00.0	N 21 45.5	-00.4	112	46.9	+01.9	N 10 58.7	-00.7	196	11.5	-31.2	N 24 34.2	+07.3	22
23	163	32.7	-00.1	N 21 45.2	-00.4	127	48.8	+01.9	N 10 58.0	-00.7	210	40.3	-31.2	N 24 41.5	+07.2	23
UT 02 06 10 14 18 22	SD 15°7' 15°7' 15°7' 15°7' 15°7' 15°7'	SD 00°3' 00°3' 00°3' 00°3' 00°3' 00°3'	SD 15°3' 15°3' 15°3' 15°2' 15°2' 15°2'					SD 15°3' 15°3' 15°3' 15°2' 15°2' 15°2'	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°4' 00°4' 00°4' 00°4' 00°4' 00°4'				HP 56°2' 56°1' 56°0' 55°9' 55°8' 55°7'				HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'				
SHA 248° 248° 248° 247° 247° 247°				SHA 211° 211° 211° 211° 211° 211°				SHA 306° 306° 301° 299° 297° 295°				SHA 247° 247° 247° 246° 246° 246°				
Greenwich Culmination Time: 12:05				Greenwich Culmination Time: 14:29				Greenwich Culmination Time: 08:27				Greenwich Culmination Time: 12:05				

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	178	32.6	-00.1	N 21 44.8	-00.4	142	50.7	+01.8	N 10 57.3	-00.7	225	09.1	-31.2	N 24 48.7	+07.1	00
01	193	32.5	-00.1	N 21 44.4	-00.4	157	52.5	+01.9	N 10 56.6	-00.8	239	37.9	-31.3	N 24 55.8	+06.9	01
02	208	32.4	+00.0	N 21 44.0	-00.3	172	54.4	+01.9	N 10 55.8	-00.7	254	06.6	-31.3	N 25 02.7	+06.8	02
03	223	32.4	-00.1	N 21 43.7	-00.4	187	56.3	+01.9	N 10 55.1	-00.7	268	35.3	-31.3	N 25 09.5	+06.6	03
04	238	32.3	-00.1	N 21 43.3	-00.4	202	58.2	+01.9	N 10 54.4	-00.7	283	04.0	-31.4	N 25 16.1	+06.6	04
05	253	32.2	+00.0	N 21 42.9	-00.4	218	00.1	+01.9	N 10 53.7	-00.7	297	32.6	-31.5	N 25 22.7	+06.4	05
06	268	32.2	-00.1	N 21 42.5	-00.3	233	02.0	+01.9	N 10 53.0	-00.7	312	01.1	-31.4	N 25 29.1	+06.2	06
07	283	32.1	-00.1	N 21 42.2	-00.4	248	03.9	+01.9	N 10 52.3	-00.7	326	29.7	-31.5	N 25 35.3	+06.1	07
08	298	32.0	-00.1	N 21 41.8	-00.4	263	05.8	+01.8	N 10 51.6	-00.7	340	58.2	-31.6	N 25 41.4	+06.0	08
09	313	31.9	+00.0	N 21 41.4	-00.4	278	07.6	+02.0	N 10 50.9	-00.7	355	26.6	-31.5	N 25 47.4	+05.9	09
10	328	31.9	-00.1	N 21 41.0	-00.3	293	09.6	+01.9	N 10 50.2	-00.7	9	55.1	-31.6	N 25 53.3	+05.7	10
11	343	31.8	-00.1	N 21 40.7	-00.4	308	11.5	+01.9	N 10 49.5	-00.7	24	23.5	-31.7	N 25 59.0	+05.6	11
12	358	31.7	+00.0	N 21 40.3	-00.4	323	13.4	+01.9	N 10 48.8	-00.7	38	51.8	-31.7	N 26 04.6	+05.4	12
13	13	31.7	-00.1	N 21 39.9	-00.4	338	15.3	+01.9	N 10 48.1	-00.7	53	20.1	-31.7	N 26 10.0	+05.3	13
14	28	31.6	-00.1	N 21 39.5	-00.4	353	17.2	+01.9	N 10 47.4	-00.7	67	48.4	-31.7	N 26 15.3	+05.2	14
15	43	31.5	+00.0	N 21 39.1	-00.3	8	19.1	+01.9	N 10 46.7	-00.7	82	16.7	-31.7	N 26 20.5	+05.0	15
16	58	31.5	-00.1	N 21 38.8	-00.4	23	21.0	+02.0	N 10 46.0	-00.7	96	45.0	-31.8	N 26 25.5	+04.9	16
17	73	31.4	-00.1	N 21 38.4	-00.4	38	23.0	+01.9	N 10 45.3	-00.7	111	13.2	-31.8	N 26 30.4	+04.7	17
18	88	31.3	+00.0	N 21 38.0	-00.4	53	24.9	+01.9	N 10 44.6	-00.7	125	41.4	-31.9	N 26 35.1	+04.6	18
19	103	31.3	-00.1	N 21 37.6	-00.4	68	26.8	+02.0	N 10 43.9	-00.7	140	09.5	-31.8	N 26 39.7	+04.5	19
20	118	31.2	-00.1	N 21 37.2	-00.4	83	28.8	+01.9	N 10 43.2	-00.7	154	37.7	-31.9	N 26 44.2	+04.3	20
21	133	31.1	+00.0	N 21 36.8	-00.3	98	30.7	+01.9	N 10 42.5	-00.7	169	05.8	-31.9	N 26 48.5	+04.2	21
22	148	31.1	-00.1	N 21 36.5	-00.4	113	32.6	+02.0	N 10 41.8	-00.7	183	33.9	-32.0	N 26 52.7	+04.0	22
23	163	31.0	-00.1	N 21 36.1	-00.4	128	34.6	+01.9	N 10 41.1	-00.7	198	01.9	-31.9	N 26 56.7	+03.9	23
UT 02 06 10 14 18 22	SD 15°7' 15°7' 15°7' 15°7' 15°7' 15°7'	SD 00°3' 00°3' 00°3' 00°3' 00°3' 00°3'	SD 15°3' 15°3' 15°3' 15°2' 15°2' 15°2'					SD 15°3' 15°3' 15°3' 15°2' 15°2' 15°2'	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°4' 00°4' 00°4' 00°4' 00°4' 00°4'				HP 56°2' 56°1' 56°0' 55°9' 55°8' 55°7'				HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'				
SHA 247° 247° 247° 246° 246° 246°				SHA 211° 211° 211° 211° 211° 211°				SHA 306° 306° 301° 299° 297° 295°				SHA 247° 247° 247° 246° 246° 246°				
Greenwich Culmination Time: 12:05				Greenwich Culmination Time: 14:26				Greenwich Culmination Time: 09:18				Greenwich Culmination Time: 12:05				

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon column includes A: 05%.

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 242* 242* 241* 241* 241* 241*
Greenwich Culmination Time: 12:06

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon column includes A: 95%.

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 245* 245* 244* 244* 244* 244*
Greenwich Culmination Time: 12:06

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 203* 202* 202* 202* 202* 202*
Greenwich Culmination Time: 14:42

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 204* 204* 204* 204* 204* 204*
Greenwich Culmination Time: 14:47

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for July 17, 2023, such as GHA, ddGHA, Dec, and dDec for various celestial bodies.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for July 18, 2023, such as GHA, ddGHA, Dec, and dDec for various celestial bodies.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for July 17, 2023, such as GHA, ddGHA, Dec, and dDec for Mars, Jupiter, and Saturn.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for July 18, 2023, such as GHA, ddGHA, Dec, and dDec for Mars, Jupiter, and Saturn.

Table with columns for UT, Sun, Venus, Moon, and UT. Each column contains position data (GHA, ddGHA, Dec, dDec) for each hour of the day. Includes a small table for the Moon's phase (A: 16%).

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* 237* 237* 237* 237*

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each column contains position data (GHA, ddGHA, Dec, dDec) 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 200* 200* 200* 200* 200* 200*

Table with columns for UT, Sun, Venus, Moon, and UT. Each column contains position data (GHA, ddGHA, Dec, dDec) for each hour of the day. Includes a small table for the Moon's phase (A: 08%).

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 241* 241* 240* 240* 240* 240*

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each column contains position data (GHA, ddGHA, Dec, dDec) 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 202* 202* 202* 202* 201* 201*

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon column includes A: 11%.

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 240* 240* 239* 239* 239* 239*
Greenwich Culmination Time: 12:06

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 201* 201* 201* 201* 201* 201*
Greenwich Culmination Time: 14:39

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Moon column includes A: 14%.

UT 02 06 10 14 18 22
SD 15*7 15*7 15*7 15*7 15*7 15*7
HP 00*4 00*4 00*4 00*4 00*4 00*4
SHA 239* 239* 238* 238* 238* 238*
Greenwich Culmination Time: 12:06

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 201* 201* 201* 201* 200* 200*
Greenwich Culmination Time: 14:37

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet and Moon. Includes A: 28% for Moon. Includes UT 02 06 10 14 18 22 and SD, HP, SHA data for each planet and Moon.

Table with 5 columns: UT, Sun, Venus, Moon, UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet and Moon. Includes A: 19% for Moon. Includes UT 02 06 10 14 18 22 and SD, HP, SHA data for each planet and Moon.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Includes UT 02 06 10 14 18 22 and SD, HP, SHA data for each planet.

Table with 5 columns: UT, Mars, Jupiter, Saturn, UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet. Includes UT 02 06 10 14 18 22 and SD, HP, SHA data for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for each planet and a small table at the bottom for Mars, Jupiter, and Saturn.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for each planet and a small table at the bottom for Mars, Jupiter, and Saturn.

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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 230° 230° 230° 229° 229° 229°
Greenwich Culmination Time: 12:06

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and distance 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° 195° 195° 195° 195°
Greenwich Culmination Time: 14:22

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°7' 15°8' 15°8' 15°8' 15°8' 15°8'
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'
SHA 233° 233° 233° 232° 232° 232°
Greenwich Culmination Time: 12:06

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes RA, Dec, and distance 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 197° 197° 197° 197° 197° 197°
Greenwich Culmination Time: 14:27

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 232° 232° 232° 231° 231° 231°
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°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 231° 231° 231° 230° 230° 230°
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 197° 197° 197° 196° 196° 196°
Greenwich Culmination Time: 14:26

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° 196° 196°
Greenwich Culmination Time: 14:24

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

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for each planet and a small table at the bottom with columns UT 02, 06, 10, 14, 18, 22. Includes Greenwich Culmination Time: 13:08.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for each planet and a small table at the bottom with columns UT 02, 06, 10, 14, 18, 22. Includes Greenwich Culmination Time: 14:16.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for each planet and a small table at the bottom with columns UT 02, 06, 10, 14, 18, 22. Includes Greenwich Culmination Time: 14:21.

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 53%				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 24.8 +00.0	N 17 52.7	-00.6		163 24.9 +03.6	N 07 14.4	-00.2		353 38.5 -36.5	S 21 38.1	-11.9		00
01	193 24.8 +00.0	N 17 52.1	-00.6		178 28.5 +03.5	N 07 14.2	-00.1		8 02.0 -36.3	S 21 26.2	-12.1		01
02	208 24.8 +00.1	N 17 51.5	-00.7		193 32.0 +03.6	N 07 14.1	-00.2		22 25.7 -36.3	S 21 14.1	-12.3		02
03	223 24.9 +00.0	N 17 50.8	-00.6		223 35.6 +03.6	N 07 13.9	-00.2		36 49.4 -36.2	S 21 01.8	-12.4		03
04	238 24.9 +00.1	N 17 50.2	-00.7		223 39.2 +03.6	N 07 13.7	-00.2		51 13.2 -36.0	S 20 49.4	-12.5		04
05	253 25.0 +00.0	N 17 49.5	-00.6		238 42.8 +03.5	N 07 13.5	-00.2		65 37.2 -36.0	S 20 36.9	-12.7		05
06	268 25.0 +00.1	N 17 48.9	-00.6		253 46.3 +03.6	N 07 13.3	-00.2		80 01.2 -35.8	S 20 24.2	-12.8		06
07	283 25.1 +00.0	N 17 48.3	-00.7		268 49.9 +03.6	N 07 13.1	-00.1		94 25.4 -35.8	S 20 11.4	-12.9		07
08	298 25.1 +00.0	N 17 47.6	-00.6		283 53.5 +03.6	N 07 13.0	-00.2		108 49.6 -35.6	S 19 58.5	-13.1		08
09	313 25.1 +00.1	N 17 47.0	-00.6		298 57.1 +03.6	N 07 12.8	-00.2		123 14.0 -35.5	S 19 45.4	-13.3		09
10	328 25.2 +00.0	N 17 46.4	-00.7		314 00.7 +03.6	N 07 12.6	-00.1		137 38.5 -35.4	S 19 32.1	-13.3		10
11	343 25.2 +00.1	N 17 45.7	-00.6		329 04.3 +03.6	N 07 12.5	-00.2		152 03.1 -35.3	S 19 18.8	-13.5		11
12	358 25.3 +00.0	N 17 45.1	-00.7		344 07.9 +03.6	N 07 12.3	-00.2		166 27.8 -35.2	S 19 05.3	-13.6		12
13	12 35.3 +00.1	N 17 44.4	-00.6		359 11.5 +03.6	N 07 12.1	-00.1		180 52.6 -35.1	S 18 51.7	-13.8		13
14	28 25.4 +00.0	N 17 43.8	-00.7		14 15.1 +03.6	N 07 12.0	-00.2		195 17.5 -35.0	S 18 37.9	-13.8		14
15	43 25.4 +00.1	N 17 43.1	-00.6		29 18.7 +03.6	N 07 11.8	-00.2		209 42.5 -34.9	S 18 24.1	-14.0		15
16	58 25.5 +00.0	N 17 42.5	-00.6		44 22.3 +03.7	N 07 11.6	-00.1		224 07.6 -34.7	S 18 10.1	-14.1		16
17	73 25.5 +00.1	N 17 41.9	-00.7		59 26.0 +03.6	N 07 11.5	-00.2		238 32.9 -34.7	S 17 56.0	-14.2		17
18	88 25.6 +00.0	N 17 41.2	-00.6		74 29.6 +03.6	N 07 11.3	-00.2		252 58.2 -34.6	S 17 41.8	-14.3		18
19	103 25.6 +00.1	N 17 40.6	-00.7		89 33.2 +03.6	N 07 11.1	-00.1		267 23.6 -34.4	S 17 27.5	-14.4		19
20	118 25.7 +00.0	N 17 39.9	-00.6		104 36.8 +03.7	N 07 11.0	-00.2		281 49.2 -34.3	S 17 13.1	-14.6		20
21	133 25.7 +00.0	N 17 39.3	-00.7		119 40.5 +03.6	N 07 10.8	-00.1		296 14.9 -34.3	S 16 58.5	-14.6		21
22	148 25.7 +00.1	N 17 38.6	-00.6		134 44.1 +03.6	N 07 10.7	-00.2		310 40.6 -34.1	S 16 43.9	-14.8		22
23	163 25.8 +00.0	N 17 38.0	-00.7		149 47.7 +03.7	N 07 10.5	-00.1		325 06.5 -34.0	S 16 29.1	-14.8		23
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 228° 228° 228° 228° 227° 227° Greenwich Culmination Time: 12:06	UT 02 06 10 14 18 22	SD 00°5 00°5 00°5 00°5 00°5 00°5 HP 00°5 00°5 00°5 00°5 00°5 00°5 SHA 213° 213° 213° 213° 213° 213° Greenwich Culmination Time: 13:03	UT 02 06 10 14 18 22	SD 16°7 16°7 16°7 16°7 16°7 16°7 HP 61°3 61°3 61°3 61°3 61°3 61°3 SHA 042° 039° 037° 034° 032° 029° Greenwich Culmination Time: 00:26								

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 57%				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 25.8 +00.1	N 17 37.3	-00.6		164 51.4 +03.6	N 07 10.4	-00.2		339 32.5 -33.9	S 16 14.3	-15.0		00
01	193 25.9 +00.0	N 17 36.7	-00.7		179 55.0 +03.7	N 07 10.2	-00.1		353 58.6 -33.8	S 15 59.3	-15.0		01
02	208 25.9 +00.1	N 17 36.0	-00.6		194 58.7 +03.6	N 07 10.1	-00.2		8 24.8 -33.7	S 15 44.3	-15.2		02
03	223 26.0 +00.0	N 17 35.4	-00.7		220 02.3 +03.7	N 07 09.9	-00.2		22 51.1 -33.6	S 15 29.1	-15.2		03
04	238 26.0 +00.1	N 17 34.7	-00.6		225 06.0 +03.6	N 07 09.8	-00.1		37 17.5 -33.5	S 15 13.9	-15.3		04
05	253 26.1 +00.0	N 17 34.1	-00.7		240 09.6 +03.7	N 07 09.7	-00.2		51 44.0 -33.4	S 14 58.6	-15.4		05
06	268 26.1 +00.1	N 17 33.4	-00.6		255 13.3 +03.6	N 07 09.5	-00.1		66 10.6 -33.3	S 14 43.2	-15.5		06
07	283 26.2 +00.0	N 17 32.8	-00.7		270 16.9 +03.7	N 07 09.4	-00.2		80 37.3 -33.2	S 14 27.7	-15.6		07
08	298 26.2 +00.1	N 17 32.1	-00.6		285 20.6 +03.7	N 07 09.2	-00.1		95 04.1 -33.0	S 14 12.1	-15.6		08
09	313 26.3 +00.0	N 17 31.5	-00.7		300 24.3 +03.6	N 07 09.1	-00.1		109 31.1 -33.0	S 13 56.5	-15.7		09
10	328 26.3 +00.1	N 17 30.8	-00.6		315 27.9 +03.7	N 07 09.0	-00.2		123 58.1 -32.9	S 13 40.8	-15.8		10
11	343 26.4 +00.1	N 17 30.2	-00.7		330 31.6 +03.7	N 07 08.8	-00.1		138 25.2 -32.8	S 13 25.0	-15.9		11
12	358 26.5 +00.0	N 17 29.5	-00.6		345 35.3 +03.7	N 07 08.7	-00.1		152 52.4 -32.7	S 13 09.1	-16.0		12
13	13 26.5 +00.1	N 17 28.9	-00.7		0 39.0 +03.7	N 07 08.6	-00.2		167 19.7 -32.6	S 12 53.1	-16.0		13
14	28 26.6 +00.0	N 17 28.2	-00.6		15 42.7 +03.6	N 07 08.4	-00.1		181 47.1 -32.5	S 12 37.1	-16.1		14
15	43 26.6 +00.1	N 17 27.6	-00.7		30 46.3 +03.7	N 07 08.3	-00.1		196 14.6 -32.4	S 12 21.0	-16.1		15
16	58 26.7 +00.0	N 17 26.9	-00.6		45 50.0 +03.7	N 07 08.2	-00.1		210 42.2 -32.3	S 12 04.9	-16.2		16
17	73 26.7 +00.1	N 17 26.3	-00.7		60 53.7 +03.7	N 07 08.1	-00.1		225 09.9 -32.2	S 11 48.7	-16.3		17
18	88 26.8 +00.0	N 17 25.6	-00.6		75 57.4 +03.7	N 07 08.0	-00.2		239 37.7 -32.1	S 11 32.4	-16.3		18
19	103 26.8 +00.1	N 17 25.0	-00.7		91 01.1 +03.7	N 07 07.8	-00.1		254 05.6 -32.1	S 11 16.1	-16.4		19
20	118 26.9 +00.0	N 17 24.3	-00.7		106 04.8 +03.7	N 07 07.7	-00.1		268 33.5 -31.9	S 10 59.7	-16.4		20
21	133 26.9 +00.1	N 17 23.6	-00.6		121 08.5 +03.7	N 07 07.6	-00.1		283 01.6 -31.9	S 10 43.3	-16.5		21
22	148 27.0 +00.0	N 17 23.0	-00.7		136 12.2 +03.7	N 07 07.5	-00.1		297 29.7 -31.8	S 10 26.8	-16.5		22
23	163 27.0 +00.1	N 17 22.3	-00.6		151 15.9 +03.7	N 07 07.4	-00.1		311 57.9 -31.6	S 10 10.3	-16.6		23
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 227° 227° 227° 227° 226° 226° Greenwich Culmination Time: 12:06	UT 02 06 10 14 18 22	SD 00°5 00°5 00°5 00°5 00°5 00°5 HP 00°5 00°5 00°5 00°5 00°5 00°5 SHA 214° 214° 214° 214° 214° 214° Greenwich Culmination Time: 12:57	UT 02 06 10 14 18 22	SD 16°7 16°7 16°7 16°6 16°6 16°6 HP 61°2 61°2 61°1 61°0 61°0 60°9 SHA 027° 025° 022° 020° 018° 015° Greenwich Culmination Time: 01:25								

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	144 51.1 +01.0	N 07 11.5	-00.6		268 37.6 +02.2	N 14 48.7	+00.0		332 14.0 +02.6	S 11 03.0	+00.1		00
01	159 52.1 +01.0	N 07 10.9	-00.6		283 39.8 +02.2	N 14 48.7	+00.1		347 16.6 +02.6	S 11 03.1	+00.1		01
02	174 53.1 +01.1	N 07 10.3	-00.7		298 42.0 +02.2	N 14 48.8	+00.1		2 19.2 +02.6	S 11 03.2	+00.0		02
03	189 54.2 +01.0	N 07 09.6	-00.6		313 44.2 +02.2	N 14 48.9	+00.1		17 21.8 +02.7	S 11 03.2	+00.1		03
04	204 55.2 +01.0	N 07 09.0	-00.6		328 46.4 +02.2	N 14 49.0	+00.0		32 24.5 +02.6	S 11 03.3	+00.1		04
05	219 56.2 +01.0	N 07 08.4	-00.6		343 48.6 +02.2	N 14 49.0	+00.1		47 27.1 +02.6	S 11 03.4	+00.0		05
06	234 57.2 +01.0	N 07 07.8	-00.6		358 50.8 +02.2	N 14 49.1	+00.1		62 29.7 +02.6	S 11 03.4	+00.1		06
07	249 58.2 +01.1	N 07 07.2	-00.7		13 53.0 +02.2	N 14 49.2	+00.0		77 32.3 +02.6	S 11 03.5	+00.0		07
08	264 59.3 +01.0	N 07 06.5	-00.6		28 55.2 +02.2	N 14 49.2	+00.1		92 34.9 +02.6	S 11 03.5	+00.1		08
09	280 00.3 +01.0	N 07 05.9	-00.6		43 57.4 +02.2	N 14 49.3	+00.1		107 37.5 +02.6	S 11 03.6	+00.1		09
10	295 01.3 +01.0	N 07 05.3	-00.6		58 59.6 +02.3	N 14 49.4	+00.0		122 40.1 +02.6	S 11 03.7	+00.0		10
11	310 02.3 +01.1	N 07 04.7	-00.7		74 01.9 +02.2	N 14 49.4	+00.1		137 42.7 +02.7	S 11 03.7	+00.1		11
12	325 03.4 +01.0	N 07 04.0	-00.6		89 04.1 +02.2	N 14 49.5	+00.1		152 45.4 +02.6	S 11 03.8	+00.1		12
13	340 04.4 +01.0	N 07 03.4	-00.6		104 06.3 +02.2	N 14 49.6	+00.0		167 48.0 +02.6	S 11 03.9	+00.0		13
14	355 05.4 +01.0	N 07 02.8	-00.6		119 08.5 +02.2	N 14 49.6	+00.1		182 50.6 +02.6	S 11 03.9	+00.1		14
15	10 06.4 +01.1	N 07 02.2	-00.6		134 10.7 +02.2	N 14 49.7	+00.1		197 53.2 +02.6	S 11 04.0	+00.1		15
16	25 07.5 +01.0	N 07 01.6	-00.7		149 12.9 +02.2	N 14 49.8	+00.0		212 55.8 +02.6	S 11 04.1	+00.0		16
17	40 08.5 +01.0	N 07 00.9	-00.6		164 15.1 +02.2	N 14 49.8	+00.1		227 58.4 +02.6	S 11 04.1	+00.1		17
18	55 09.5 +01.0	N 07 00.3	-00.6		179 17.3 +02.3	N 14 49.9	+00.1		243 01.0 +02.7	S 11 04.2	+00.1		18
19	70 10.5 +01.1	N 06 59.7	-00.6		194 19.6 +02.2	N 14 50.0	+00.0		258 03.7 +02.6	S 11 04.3	+00.0		19
20	85 11.6 +01.0	N 06 59.1	-00.6		209 21.8 +02.2	N 14 50.0	+00.1		273 06.3 +02.6	S 11 04.3	+00.1		20
21	100 12.6 +01.0	N 06 58.5	-00.7		224 24.0 +02.2	N 14 50.1	+00.1		288 08.9 +02.6	S 11 04.4	+00.1		21
22	115 13.6 +01.0	N 06 57.8	-00.6		239 26.2 +02.2	N 14 50.2	+00.0		303 11.5 +02.6	S 11 04.5	+00.0		22
23	130 14.6 +01.1	N 06 57.2	-00.6		254 28.4 +02.2	N 14 50.2	+00.1		318 14.1 +02.6	S 11 0			

Table for 2023 August 8: Sun, Venus, Moon, Mars, Jupiter, Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes Greenwich Culmination Time and SHA coordinates for each planet.

Table for 2023 August 5: Sun, Venus, Moon, Mars, Jupiter, Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes Greenwich Culmination Time and SHA coordinates for each planet.

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	178 30.0	+00.1	N 16 49.5	-00.7	169 21.0	+03.9	N 07 03.8	+00.0	302 21.1	-29.0	N 03 38.8	+16.5	00		
01	193 30.1	+00.1	N 16 48.8	-00.7	184 24.9	+03.8	N 07 03.8	-00.1	316 52.1	-29.1	N 03 55.3	+16.6	01		
02	208 30.2	+00.0	N 16 48.1	-00.7	199 28.7	+03.8	N 07 03.7	+00.0	331 23.0	-29.0	N 04 11.9	+16.4	02		
03	223 30.2	+00.1	N 16 47.4	-00.7	214 32.5	+03.9	N 07 03.7	+00.0	345 54.0	-29.1	N 04 28.3	+16.5	03		
04	238 30.3	+00.1	N 16 46.7	-00.6	229 36.4	+03.8	N 07 03.7	-00.1	0 24.9	-29.0	N 04 44.8	+16.4	04		
05	253 30.4	+00.0	N 16 46.1	-00.7	244 40.2	+03.9	N 07 03.6	+00.0	14 55.9	-28.9	N 05 01.2	+16.3	05		
06	268 30.4	+00.1	N 16 45.4	-00.7	259 44.1	+03.8	N 07 03.6	+00.0	29 27.0	-29.0	N 05 17.5	+16.3	06		
07	283 30.5	+00.1	N 16 44.7	-00.7	274 47.9	+03.9	N 07 03.6	+00.0	43 58.0	-29.0	N 05 33.8	+16.2	07		
08	298 30.6	+00.0	N 16 44.0	-00.7	289 51.8	+03.9	N 07 03.6	-00.1	58 29.0	-28.9	N 05 50.0	+16.2	08		
09	313 30.6	+00.1	N 16 43.3	-00.7	304 55.7	+03.8	N 07 03.5	+00.0	73 00.1	-29.0	N 06 06.2	+16.2	09		
10	328 30.7	+00.1	N 16 42.6	-00.7	319 59.5	+03.9	N 07 03.5	+00.0	87 31.1	-28.9	N 06 22.4	+16.1	10		
11	343 30.8	+00.0	N 16 41.9	-00.7	335 03.4	+03.8	N 07 03.5	+00.0	102 02.2	-28.9	N 06 38.5	+16.0	11		
12	358 30.8	+00.1	N 16 41.2	-00.6	350 07.2	+03.9	N 07 03.5	+00.0	116 33.3	-28.9	N 06 54.5	+16.0	12		
13	13 30.9	+00.1	N 16 40.6	-00.7	5 11.1	+03.9	N 07 03.5	+00.0	131 04.4	-29.0	N 07 10.5	+15.9	13		
14	28 31.0	+00.1	N 16 39.9	-00.7	20 15.0	+03.9	N 07 03.5	+00.0	145 35.4	-28.9	N 07 26.4	+15.9	14		
15	43 31.1	+00.0	N 16 39.2	-00.7	35 18.9	+03.8	N 07 03.5	-00.1	160 06.5	-28.9	N 07 42.3	+15.8	15		
16	58 31.1	+00.1	N 16 38.5	-00.7	50 22.7	+03.9	N 07 03.4	+00.0	174 37.6	-28.9	N 07 58.1	+15.7	16		
17	73 31.2	+00.1	N 16 37.8	-00.7	65 26.6	+03.9	N 07 03.4	+00.0	189 08.7	-28.9	N 08 13.8	+15.7	17		
18	88 31.3	+00.0	N 16 37.1	-00.7	80 30.5	+03.9	N 07 03.4	+00.0	203 39.8	-28.9	N 08 29.5	+15.7	18		
19	103 31.3	+00.1	N 16 36.4	-00.7	95 34.4	+03.8	N 07 03.4	+00.0	218 10.9	-28.9	N 08 45.2	+15.5	19		
20	118 31.4	+00.1	N 16 35.7	-00.7	110 38.2	+03.9	N 07 03.4	+00.0	232 42.0	-28.9	N 09 00.7	+15.5	20		
21	133 31.5	+00.1	N 16 35.0	-00.7	125 42.1	+03.9	N 07 03.4	+00.0	247 13.1	-28.9	N 09 16.2	+15.4	21		
22	148 31.6	+00.0	N 16 34.3	-00.6	140 46.0	+03.9	N 07 03.4	+00.0	261 44.2	-28.9	N 09 31.6	+15.4	22		
23	163 31.6	+00.1	N 16 33.7	-00.7	155 49.9	+03.9	N 07 03.4	+00.0	276 15.3	-29.0	N 09 47.0	+15.3	23		
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	00°5	00°5	00°5	00°5	00°5	00°5	00°5	00°5	00°5
HP	00°1	00°1	00°1	00°1	00°1	00°1	00°5	00°5	00°5	00°5	00°5	00°5	00°5	00°5	00°5
SHA	224°	224°	224°	224°	224°	224°	215°	215°	215°	215°	215°	216°	216°	216°	216°
Greenwich Culmination Time: 12:05															

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	178 31.7	+00.1	N 16 33.0	-00.7	170 53.8	+03.9	N 07 03.4	+00.0	290 46.3	-28.9	N 10 02.3	+15.2	00		
01	193 31.8	+00.1	N 16 32.3	-00.7	185 57.7	+03.9	N 07 03.4	+00.0	305 17.4	-28.9	N 10 17.5	+15.2	01		
02	208 31.9	+00.0	N 16 31.6	-00.7	201 01.6	+03.9	N 07 03.4	+00.0	319 48.5	-29.0	N 10 32.7	+15.1	02		
03	223 31.9	+00.1	N 16 30.9	-00.7	216 05.5	+03.9	N 07 03.4	+00.1	334 19.5	-29.0	N 10 47.8	+15.0	03		
04	238 32.0	+00.1	N 16 30.2	-00.7	231 09.4	+03.9	N 07 03.5	+00.0	348 50.5	-28.9	N 11 02.8	+14.9	04		
05	253 32.1	+00.0	N 16 29.5	-00.7	246 13.3	+03.9	N 07 03.5	+00.0	3 21.6	-29.0	N 11 17.7	+14.9	05		
06	268 32.1	+00.1	N 16 28.8	-00.7	261 17.2	+03.9	N 07 03.5	+00.0	17 52.6	-29.0	N 11 32.6	+14.8	06		
07	283 32.2	+00.1	N 16 28.1	-00.7	276 21.1	+03.9	N 07 03.5	+00.0	32 23.6	-29.0	N 11 47.4	+14.7	07		
08	298 32.3	+00.1	N 16 27.4	-00.7	291 25.0	+03.9	N 07 03.5	+00.0	46 54.6	-29.1	N 12 02.1	+14.6	08		
09	313 32.4	+00.0	N 16 26.7	-00.7	306 28.9	+03.9	N 07 03.5	+00.0	61 25.5	-29.0	N 12 16.7	+14.6	09		
10	328 32.4	+00.1	N 16 26.0	-00.7	321 32.8	+03.9	N 07 03.5	+00.1	75 56.5	-29.1	N 12 31.3	+14.4	10		
11	343 32.5	+00.1	N 16 25.3	-00.7	336 36.7	+03.9	N 07 03.6	+00.0	90 27.4	-29.1	N 12 45.7	+14.4	11		
12	358 32.6	+00.1	N 16 24.6	-00.7	351 40.6	+03.9	N 07 03.6	+00.0	104 58.3	-29.1	N 13 00.1	+14.3	12		
13	13 32.7	+00.1	N 16 23.9	-00.7	6 44.5	+04.0	N 07 03.6	+00.0	119 29.2	-29.1	N 13 14.4	+14.2	13		
14	28 32.8	+00.0	N 16 23.2	-00.7	21 48.5	+03.9	N 07 03.6	+00.0	134 00.1	-29.1	N 13 28.6	+14.2	14		
15	43 32.8	+00.1	N 16 22.5	-00.7	36 52.4	+03.9	N 07 03.7	+00.0	148 31.0	-29.2	N 13 42.8	+14.0	15		
16	58 32.9	+00.1	N 16 21.8	-00.7	51 56.3	+03.9	N 07 03.7	+00.0	163 01.8	-29.2	N 13 56.8	+14.0	16		
17	73 33.0	+00.1	N 16 21.1	-00.7	67 00.2	+04.0	N 07 03.7	+00.1	177 32.6	-29.2	N 14 10.8	+13.9	17		
18	88 33.1	+00.0	N 16 20.4	-00.7	82 04.2	+03.9	N 07 03.8	+00.0	192 03.4	-29.2	N 14 24.7	+13.8	18		
19	103 33.1	+00.1	N 16 19.7	-00.7	97 08.1	+03.9	N 07 03.8	+00.0	206 34.2	-29.3	N 14 38.5	+13.7	19		
20	118 33.2	+00.1	N 16 19.0	-00.7	112 12.0	+03.9	N 07 03.8	+00.0	221 04.9	-29.3	N 14 52.2	+13.6	20		
21	133 33.3	+00.1	N 16 18.3	-00.7	127 15.9	+04.0	N 07 03.9	+00.1	235 35.6	-29.3	N 15 05.8	+13.5	21		
22	148 33.4	+00.1	N 16 17.6	-00.7	142 19.9	+03.9	N 07 03.9	+00.0	250 06.3	-29.3	N 15 19.3	+13.4	22		
23	163 33.5	+00.0	N 16 16.9	-00.7	157 23.8	+03.9	N 07 03.9	+00.1	264 37.0	-29.4	N 15 32.7	+13.4	23		
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	00°5	00°5	00°5	00°5	00°5	00°5	00°5	00°5	00°5
HP	00°1	00°1	00°1	00°1	00°1	00°1	00°1	00°1	00°1	00°1	00°1	00°1	00°1	00°1	00°1
SHA	223°	223°	223°	223°	223°	223°	216°	216°	216°	216°	216°	216°	216°	216°	216°
Greenwich Culmination Time: 12:05															

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	146 29.4	+01.1	N 06 11.5	-00.6	272 10.7	+02.3	N 14 54.9	+00.1	336 25.2	+02.6	S 11 09.4	+00.0	00
01	161 30.5	+01.0	N 06 10.9	-00.6	287 13.0	+02.2	N 14 55.0	+00.0	351 27.8	+02.6	S 11 09.4	+00.1	01
02	176 31.5	+01.0	N 06 10.3	-00.6	302 15.2	+02.2	N 14 55.0	+00.1	6 30.4	+02.6	S 11 09.5	+00.1	02
03	191 32.5	+01.0	N 06 09.7	-00.7	317 17.4	+02.3	N 14 55.1	+00.1	21 33.0	+02.6	S 11 09.6	+00.0	03
04	206 33.5	+01.1	N 06 09.0	-00.6	332 19.7	+02.2	N 14 55.2	+00.0	36 35.6	+02.7	S 11 09.6	+00.0	04
05	221 34.6	+01.0	N 06 08.4	-00.6	347 21.9	+02.2	N 14 55.2	+00.1	51 38.3	+02.6	S 11 09.7	+00.1	05
06	236 35.6	+01.0	N 06 07.8	-00.7	2 24.1	+02.3	N 14 55.3	+00.0	66 40.9	+02.6	S 11 09.8	+00.6	06
07	251 36.6	+01.0	N 06 07.1	-00.6	17 26.4	+02.2	N 14 55.3	+00.1	81 43.5	+02.6	S 11 09.8	+00.1	07
08	266 37.6	+01.0	N 06 06.5	-00.6	32 28.6	+02.3	N 14 55.4	+00.1	96 46.1	+02.7	S 11 09.9	+00.1	08
09	281 38.6	+01.1	N 06 05.9	-00.6	47 30.9	+02.2	N 14 55.5	+00.0	111 48.8	+02.6	S 11 10.0	+00.0	09
10	296 39.7	+01.0	N 06 05.3	-00.7	62 33.1	+02.2	N 14 55.5	+00.1	126 51.4	+02.6	S 11 10.0	+00.1	10
11	311 40.7	+01.0	N 06 04.6	-00.6	77 35.3	+02.3	N 14 55.6	+00.0	141 54.0	+02.6	S 11 10.1	+00.1	11
12	326 41.7	+01.0	N 06 04.0	-00.6	92 37.6	+02.2	N 14 55.6	+00.1	156 56.6	+02.6	S 11 10.2	+00.0	12
13	341 42.7	+01.1	N 06 03.4	-00.7	107 39.8	+02.2	N 14 55.7	+00.1	171 59.2	+02.7	S 11 10.2	+00.1	13
14	356 43.8	+01.0	N 06 02.7	-00.6	122 42.0	+02.3	N 14 55.8	+00.0	187 01.9	+02.6	S 11 10.3	+00.1	14
15	11 44.8	+01.0	N 06 02.1	-00.6	137 44.3	+02.2	N 14 55.8	+00.1	202 04.5	+02.6	S 11 10.4	+00.0	15
16	26 45.8	+01.0	N 06 01.5	-00.7	152 46.5	+02.3	N 14 55.9	+00.0	217 07.1	+02.6	S 11 10.4	+00.1	16
17	41 46.8	+01.1	N 06 00.8	-00.6	167 48.8	+02.2	N 14 55.9	+00.1	232 09.7	+02.6	S 11 10.5	+00.0	17
18	56 47.9	+01.0	N 06 00.2	-00.6	182 51.0	+02.2	N 14 56.0	+00.0	247 12.3	+02.7	S 11 10.6	+00.0	18
19	71 48.9	+01.0	N 05 59.6	-00.6	197 53.2	+02.3	N 14 56.0	+00.1	262 15.0	+02.6	S 11 10.6	+00.1	19
20	86 49.9	+01.0	N 05 59.0	-00.7	212 55.5	+02.2	N 14 56.1	+00.1	277 17.6	+02.6	S 11 10.7	+00.1	20
21	101 50.9	+01.1	N 05 58.3	-00.6	227 57.7	+02.3	N 14 56.2	+00.0	292 20.2	+02.6	S 11 10.8	+00.0	21

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 42.3	+00.1	N 15 06.5	-00.7	178 51.1	+04.0	N 07 14.7	+00.1	229 32.3	-31.9	N 27 55.5	+01.0	00
01	193 42.4	+00.1	N 15 05.8	-00.8	193 55.1	+04.1	N 07 14.8	+00.2	244 00.4	-32.0	N 27 56.5	+00.9	01
02	208 42.5	+00.1	N 15 05.0	-00.7	208 59.2	+04.0	N 07 15.0	+00.2	258 28.4	-31.9	N 27 57.4	+00.7	02
03	223 42.6	+00.1	N 15 04.3	-00.8	223 03.2	+04.0	N 07 15.2	+00.2	272 56.5	-31.9	N 27 58.1	+00.6	03
04	238 42.7	+00.1	N 15 03.5	-00.7	239 07.2	+04.1	N 07 15.4	+00.2	287 24.6	-31.9	N 27 58.7	+00.4	04
05	253 42.8	+00.1	N 15 02.8	-00.8	254 11.3	+04.0	N 07 15.6	+00.2	301 52.7	-31.9	N 27 59.1	+00.3	05
06	268 42.9	+00.1	N 15 02.0	-00.7	269 15.3	+04.0	N 07 15.8	+00.1	316 20.8	-31.9	N 27 59.4	+00.2	06
07	283 43.0	+00.1	N 15 01.3	-00.8	284 19.3	+04.0	N 07 15.9	+00.2	330 48.9	-31.9	N 27 59.6	+00.0	07
08	298 43.1	+00.1	N 15 00.5	-00.7	299 23.3	+04.1	N 07 16.1	+00.2	345 17.0	-31.8	N 27 59.6	-00.1	08
09	313 43.2	+00.1	N 14 59.8	-00.8	314 27.4	+04.0	N 07 16.3	+00.2	359 45.2	-31.8	N 27 59.5	-00.3	09
10	328 43.3	+00.1	N 14 59.0	-00.7	329 31.4	+04.0	N 07 16.5	+00.2	14 13.4	-31.8	N 27 59.2	-00.4	10
11	343 43.4	+00.1	N 14 58.3	-00.8	344 35.4	+04.1	N 07 16.7	+00.2	28 41.6	-31.8	N 27 58.8	-00.6	11
12	358 43.5	+00.1	N 14 57.5	-00.7	359 39.5	+04.0	N 07 16.9	+00.2	43 09.8	-31.8	N 27 58.2	-00.7	12
13	13 43.6	+00.1	N 14 56.8	-00.8	14 43.5	+04.0	N 07 17.1	+00.2	57 38.0	-31.7	N 27 57.5	-00.8	13
14	28 43.7	+00.1	N 14 56.0	-00.7	29 47.5	+04.0	N 07 17.3	+00.2	72 06.3	-31.7	N 27 56.7	-01.0	14
15	43 43.8	+00.1	N 14 55.3	-00.8	44 51.5	+04.1	N 07 17.5	+00.2	86 34.6	-31.6	N 27 55.7	-01.1	15
16	58 43.9	+00.1	N 14 54.5	-00.8	59 55.6	+04.0	N 07 17.7	+00.2	101 03.0	-31.7	N 27 54.6	-01.3	16
17	73 44.0	+00.1	N 14 53.7	-00.7	74 59.6	+04.0	N 07 17.9	+00.2	115 31.3	-31.6	N 27 53.3	-01.4	17
18	88 44.1	+00.1	N 14 53.0	-00.8	90 03.6	+04.1	N 07 18.1	+00.2	129 59.7	-31.6	N 27 51.9	-01.5	18
19	103 44.2	+00.1	N 14 52.2	-00.7	105 07.7	+04.0	N 07 18.3	+00.2	144 28.1	-31.5	N 27 50.4	-01.7	19
20	118 44.3	+00.2	N 14 51.5	-00.8	120 11.7	+04.0	N 07 18.5	+00.2	158 56.6	-31.5	N 27 48.7	-01.8	20
21	133 44.5	+00.1	N 14 50.7	-00.7	135 15.7	+04.0	N 07 18.7	+00.2	173 25.1	-31.5	N 27 46.9	-01.9	21
22	148 44.6	+00.1	N 14 50.0	-00.8	150 19.7	+04.1	N 07 18.9	+00.2	187 53.6	-31.5	N 27 45.0	-02.1	22
23	163 44.7	+00.1	N 14 49.2	-00.7	165 23.8	+04.0	N 07 19.1	+00.2	202 22.1	-31.4	N 27 42.9	-02.3	23

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°5	00°5	00°5	00°5	00°5	00°5	SD	14°9	14°9	14°9	14°9	14°9	14°8
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°5	00°5	00°5	00°5	00°5	00°5	HP	54°8	54°8	54°7	54°6	54°6	54°5
SHA	218°	218°	218°	218°	218°	218°	SHA	219°	219°	219°	219°	219°	219°	SHA	268°	268°	264°	261°	259°	257°
Greenwich Culmination Time: 12:05							Greenwich Culmination Time: 12:01							Greenwich Culmination Time: 09:01						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	148 56.7	+01.0	N 04 40.2	-00.7	277 35.4	+02.3	N 15 02.7	+00.0	342 43.3	+02.6	S 11 19.3	+00.0	00
01	163 57.7	+01.0	N 04 39.5	-00.6	292 37.7	+02.3	N 15 02.7	+00.1	357 45.9	+02.6	S 11 19.3	+00.1	01
02	178 58.7	+01.1	N 04 38.9	-00.6	307 40.0	+02.2	N 15 02.8	+00.0	12 48.5	+02.7	S 11 19.4	+00.1	02
03	193 59.8	+01.0	N 04 38.3	-00.7	322 42.2	+02.3	N 15 02.8	+00.0	27 51.2	+02.6	S 11 19.5	+00.0	03
04	209 00.8	+01.0	N 04 37.6	-00.6	337 44.5	+02.3	N 15 02.9	+00.0	42 53.8	+02.6	S 11 19.5	+00.1	04
05	224 01.8	+01.0	N 04 37.0	-00.7	352 46.8	+02.3	N 15 02.9	+00.1	57 56.4	+02.7	S 11 19.6	+00.1	05
06	239 02.8	+01.0	N 04 36.3	-00.6	7 49.1	+02.3	N 15 03.0	+00.0	72 59.1	+02.6	S 11 19.7	+00.0	06
07	254 03.8	+01.1	N 04 35.7	-00.6	22 51.4	+02.2	N 15 03.0	+00.1	88 01.7	+02.6	S 11 19.7	+00.1	07
08	269 04.9	+01.0	N 04 35.1	-00.7	37 53.6	+02.3	N 15 03.1	+00.0	103 04.3	+02.7	S 11 19.8	+00.1	08
09	284 05.9	+01.0	N 04 34.4	-00.6	52 55.9	+02.3	N 15 03.1	+00.1	118 07.0	+02.6	S 11 19.9	+00.0	09
10	299 06.9	+01.0	N 04 33.8	-00.7	67 58.2	+02.3	N 15 03.2	+00.0	133 09.6	+02.6	S 11 20.0	+00.0	10
11	314 07.9	+01.0	N 04 33.1	-00.6	83 00.5	+02.2	N 15 03.2	+00.1	148 12.2	+02.7	S 11 20.0	+00.1	11
12	329 08.9	+01.1	N 04 32.5	-00.6	98 02.7	+02.3	N 15 03.3	+00.0	163 14.9	+02.6	S 11 20.1	+00.1	12
13	344 10.0	+01.0	N 04 31.9	-00.7	113 05.0	+02.3	N 15 03.3	+00.0	178 17.5	+02.6	S 11 20.2	+00.0	13
14	359 11.0	+01.0	N 04 31.2	-00.6	128 07.3	+02.3	N 15 03.3	+00.1	193 20.1	+02.6	S 11 20.2	+00.0	14
15	14 12.0	+01.0	N 04 30.6	-00.7	143 09.6	+02.3	N 15 03.4	+00.0	208 22.7	+02.7	S 11 20.3	+00.1	15
16	29 13.0	+01.0	N 04 29.9	-00.6	158 11.9	+02.3	N 15 03.4	+00.1	223 25.4	+02.6	S 11 20.4	+00.0	16
17	44 14.0	+01.1	N 04 29.3	-00.6	173 14.2	+02.2	N 15 03.5	+00.0	238 28.0	+02.6	S 11 20.4	+00.1	17
18	59 15.1	+01.0	N 04 28.7	-00.7	188 16.4	+02.3	N 15 03.5	+00.1	253 30.6	+02.7	S 11 20.5	+00.1	18
19	74 16.1	+01.0	N 04 28.0	-00.6	203 18.7	+02.3	N 15 03.6	+00.0	268 33.3	+02.6	S 11 20.6	+00.1	19
20	89 17.1	+01.0	N 04 27.4	-00.7	218 21.0	+02.3	N 15 03.6	+00.1	283 35.9	+02.6	S 11 20.7	+00.0	20
21	104 18.1	+01.0	N 04 26.7	-00.6	233 23.3	+02.3	N 15 03.7	+00.0	298 38.5	+02.7	S 11 20.7	+00.1	21
22	119 19.1	+01.1	N 04 26.1	-00.6	248 25.6	+02.2	N 15 03.7	+00.1	313 41.2	+02.6	S 11 20.8	+00.1	22
23	134 20.2	+01.0	N 04 25.5	-00.7	263 27.8	+02.3	N 15 03.8	+00.0	328 43.8	+02.6	S 11 20.9	+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°2	00°2	00°2	00°2	00°2	00°2	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
SHA	189°	189°	189°	188°	188°	188°	SHA	023°	023°	023°	023°	023°	023°	SHA	190°	190°	190°	190°	190°	190°
Greenwich Culmination Time: 14:03							Greenwich Culmination Time: 05:28							Greenwich Culmination Time: 01:08						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 35.5	+00.1	N 15 59.1	-00.7	174 02.6	+04.0	N 07 05.4	+00.1	267 12.9	-30.2	N 20 35.8	+10.7	00
01	193 35.6	+00.1	N 15 58.4	-00.7	189 06.6	+04.0	N 07 05.5	+00.1	281 42.7	-30.3	N 20 46.5	+10.6	01
02	208 35.7	+00.1	N 15 57.7	-00.7	204 10.6	+04.0	N 07 05.6	+00.0	296 12.4	-30.3	N 20 57.1	+10.5	02
03	223 35.8	+00.0	N 15 57.0	-00.7	219 14.6	+03.9	N 07 05.6	+00.1	310 42.1	-30.4	N 21 07.6	+10.4	03
04	238 35.8	+00.1	N 15 56.3	-00.7	234 18.5	+04.0	N 07 05.7	+00.1	325 11.7	-30.4	N 21 18.0	+10.2	04
05	253 35.9	+00.1	N 15 55.6	-00.8	249 22.5	+04.0	N 07 05.8	+00.1	339 41.3	-30.4	N 21 28.2	+10.2	05
06	268 36.0	+00.1	N 15 54.8	-00.7	264 26.5	+04.0	N 07 05.9	+00.1	354 10.9	-30.5	N 21 38.4	+10.0	06
07	283 36.1	+00.1	N 15 54.1	-00.7	279 30.5	+04.0	N 07 06.0	+00.1	8 40.4	-30.5	N 21 48.4	+09.9	07
08	298 36.2	+00.1	N 15 53.4	-00.7	294 34.5	+03.9	N 07 06.1	+00.0	23 09.9	-30.6	N 21 58.3	+09.7	08
09	313 36.3	+00.1	N 15 52.7	-00.7	309 38.4	+04.0	N 07 06.1	+00.1	37 39.3	-30.6	N 22 08.0	+09.7	09
10	328 36.4	+00.1	N 15 52.0	-00.8	324 42.4	+04.0	N 07 06.2	+00.1	52 08.7	-30.6	N 22 17.7	+09.5	10
11	343 36.5	+00.0	N 15 51.2	-00.7	339 46.4	+04.0	N 07 06.3	+00.1	66 38.1	-30.7	N 22 27.2	+09.4	11
12	358 36.5	+00.1	N 15 50.5	-00.7	354 50.4	+04.0	N 07 06.4	+00.1	81 07.4	-30.7	N 22 36.6	+09.3	12
13	13 36.6	+00.1	N 15 49.8	-00.7	9 54.4	+04.0	N 07 06.5	+00.1	95 36.7	-30.8	N 22 45.9	+09.1	13
14	28 36.7	+00.1	N 15 49.1	-00.7	24 58.4	+04.0	N 07 06.6	+00.1	110 05.9	-30.8	N 22 55.0	+09.1	14
15	43 36.8	+00.1	N 15 48.4	-00.8	40 02.4	+04.0	N 07 06.7	+00.1	124 35.1	-30.8	N 23 04.1	+08.9	15
16	58 36.9	+00.1	N 15 47.6	-00.7	55 06.4	+04.0	N 07 06.8	+00.1	139 04.3	-30.9	N 23 13.0	+08.8	16</

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 220° 220° 220° 220° 220° 220°
Greenwich Culmination Time: 12:05

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 219° 219° 219° 219° 219° 219°
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 190° 190° 190° 190° 189° 189°
Greenwich Culmination Time: 14:06

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: 14:04

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Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for days 00-23 and Greenwich Culmination Times.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for days 00-23 and Greenwich Culmination Times.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for days 00-23 and Greenwich Culmination Times.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for days 00-23 and Greenwich Culmination Times.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for August 14, 2023, such as GHA, ddGHA, Dec, and dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for August 15, 2023, such as GHA, ddGHA, Dec, and dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for August 14, 2023, such as GHA, ddGHA, Dec, and dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for August 15, 2023, such as GHA, ddGHA, Dec, and dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a 24-hour UTC table at the bottom.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a 24-hour UTC table at the bottom.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a 24-hour UTC table at the bottom.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a 24-hour UTC table at the bottom.

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.

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

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.

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

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.

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

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.

Summary table for Mars, Jupiter, and Saturn with columns for UT, 02, 06, 10, 14, 18, 22. Includes SD, HP, and SHA 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°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° 207° 207° 207° 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° 210° 210° 210° 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°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 182° 182° 182° 181° 181° 181°
Greenwich Culmination Time: 13:43

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°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 183° 183° 183° 183° 183° 183°
Greenwich Culmination Time: 13:48

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UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	179	13.5	+00.1	N 11 56.1	-00.8	194	26.7	+03.6	N 08 26.5	+00.3	121	57.0	-26.1	S 11 54.7	+13.4	00
01	194	13.6	+00.2	N 11 55.3	-00.9	209	30.3	+03.6	N 08 26.8	+00.4	136	30.9	-26.2	S 12 08.1	+13.3	01
02	209	13.8	+00.1	N 11 54.4	-00.8	224	33.9	+03.7	N 08 27.2	+00.4	151	04.7	-26.2	S 12 21.4	+13.4	02
03	224	13.9	+00.2	N 11 53.6	-00.9	239	37.6	+03.6	N 08 27.6	+00.4	165	38.5	-26.4	S 12 34.8	+13.2	03
04	239	14.1	+00.1	N 11 52.7	-00.8	254	41.2	+03.6	N 08 28.0	+00.4	180	12.1	-26.4	S 12 48.0	+13.2	04
05	254	14.2	+00.2	N 11 51.9	-00.8	269	44.8	+03.6	N 08 28.4	+00.4	194	45.7	-26.4	S 13 01.2	+13.2	05
06	269	14.4	+00.2	N 11 51.1	-00.9	284	48.4	+03.6	N 08 28.8	+00.3	209	19.3	-26.6	S 13 14.4	+13.2	06
07	284	14.6	+00.1	N 11 50.2	-00.8	299	52.0	+03.6	N 08 29.1	+00.4	223	52.7	-26.6	S 13 27.6	+13.1	07
08	299	14.7	+00.2	N 11 49.4	-00.9	314	55.6	+03.6	N 08 29.5	+00.4	238	26.1	-26.7	S 13 40.7	+13.0	08
09	314	14.9	+00.1	N 11 48.5	-00.8	329	59.2	+03.6	N 08 29.9	+00.4	252	59.4	-26.8	S 13 53.7	+13.0	09
10	329	15.0	+00.2	N 11 47.7	-00.8	345	02.8	+03.6	N 08 30.3	+00.4	267	32.6	-26.9	S 14 06.7	+13.0	10
11	344	15.2	+00.1	N 11 46.9	-00.9	0	06.4	+03.6	N 08 30.7	+00.4	282	05.7	-27.0	S 14 19.7	+12.9	11
12	359	15.3	+00.2	N 11 46.0	-00.8	15	10.0	+03.6	N 08 31.1	+00.3	296	38.7	-27.0	S 14 32.6	+12.9	12
13	14	15.5	+00.2	N 11 45.2	-00.9	30	13.6	+03.6	N 08 31.4	+00.4	311	11.7	-27.1	S 14 45.5	+12.8	13
14	29	15.7	+00.1	N 11 44.3	-00.8	45	17.2	+03.6	N 08 31.8	+00.4	325	44.6	-27.2	S 14 58.3	+12.7	14
15	44	15.8	+00.2	N 11 43.5	-00.8	60	20.8	+03.6	N 08 32.2	+00.4	340	17.4	-27.3	S 15 11.0	+12.7	15
16	59	16.0	+00.1	N 11 42.7	-00.9	75	24.4	+03.5	N 08 32.6	+00.4	354	50.1	-27.4	S 15 23.7	+12.7	16
17	74	16.1	+00.2	N 11 41.8	-00.8	90	27.9	+03.6	N 08 33.0	+00.4	9	22.7	-27.5	S 15 36.4	+12.6	17
18	89	16.3	+00.2	N 11 41.0	-00.9	105	31.5	+03.6	N 08 33.4	+00.4	23	55.2	-27.6	S 15 49.0	+12.5	18
19	104	16.5	+00.1	N 11 40.1	-00.8	120	35.1	+03.5	N 08 33.8	+00.3	38	27.6	-27.6	S 16 01.5	+12.5	19
20	119	16.6	+00.2	N 11 39.3	-00.8	135	38.6	+03.6	N 08 34.1	+00.4	52	60.0	-27.8	S 16 14.0	+12.4	20
21	134	16.8	+00.1	N 11 38.5	-00.9	150	42.2	+03.6	N 08 34.5	+00.4	67	32.2	-27.8	S 16 26.4	+12.4	21
22	149	16.9	+00.2	N 11 37.6	-00.8	165	45.8	+03.5	N 08 34.9	+00.4	82	04.4	-28.0	S 16 38.8	+12.3	22
23	164	17.1	+00.2	N 11 36.8	-00.9	180	49.3	+03.6	N 08 35.3	+00.4	96	36.4	-28.0	S 16 51.1	+12.2	23
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 209° 209° 209° 209° 209° 209°	Greenwich Culmination Time: 12:02	UT 02 06 10 14 18 22	SD 00°5' 00°5' 00°5' 00°5' 00°5' 00°5'	HP 00°5' 00°5' 00°5' 00°5' 00°5' 00°5'	SHA 224° 225° 225° 225° 225° 225°	Greenwich Culmination Time: 10:59	UT 02 06 10 14 18 22	SD 15°1' 15°1' 15°2' 15°2' 15°2' 15°3'	HP 55°5' 55°6' 55°7' 55°8' 55°9' 56°0'	SHA 151° 149° 147° 145° 143° 141°	Greenwich Culmination Time: 16:21		

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	179	17.3	+00.1	N 11 35.9	-00.8	195	52.9	+03.5	N 08 35.7	+00.4	111	08.4	-28.1	S 17 03.3	+12.2	00
01	194	17.4	+00.2	N 11 35.1	-00.9	210	56.4	+03.6	N 08 36.1	+00.4	125	40.3	-28.3	S 17 15.5	+12.1	01
02	209	17.6	+00.2	N 11 34.2	-00.8	225	60.0	+03.5	N 08 36.5	+00.4	140	12.0	-28.3	S 17 27.6	+12.1	02
03	224	17.8	+00.1	N 11 33.4	-00.9	241	03.5	+03.5	N 08 36.9	+00.3	154	43.7	-28.4	S 17 39.7	+11.9	03
04	239	17.9	+00.2	N 11 32.5	-00.8	256	07.0	+03.6	N 08 37.2	+00.4	169	15.3	-28.6	S 17 51.6	+11.9	04
05	254	18.1	+00.1	N 11 31.7	-00.8	271	10.6	+03.5	N 08 37.6	+00.4	183	46.7	-28.6	S 18 03.5	+11.9	05
06	269	18.2	+00.2	N 11 30.9	-00.9	286	14.1	+03.5	N 08 38.0	+00.4	198	18.1	-28.7	S 18 15.4	+11.7	06
07	284	18.4	+00.2	N 11 30.0	-00.8	301	17.6	+03.5	N 08 38.4	+00.4	212	49.4	-28.9	S 18 27.1	+11.7	07
08	299	18.6	+00.1	N 11 29.2	-00.9	316	21.1	+03.6	N 08 38.8	+00.4	227	20.5	-28.9	S 18 38.8	+11.6	08
09	314	18.7	+00.2	N 11 28.3	-00.8	331	24.7	+03.5	N 08 39.2	+00.4	241	51.6	-29.1	S 18 50.4	+11.6	09
10	329	18.9	+00.2	N 11 27.5	-00.9	346	28.2	+03.5	N 08 39.6	+00.4	256	22.5	-29.2	S 19 02.0	+11.5	10
11	344	19.1	+00.1	N 11 26.6	-00.8	1	31.7	+03.5	N 08 40.0	+00.4	270	53.3	-29.2	S 19 13.5	+11.3	11
12	359	19.2	+00.2	N 11 25.8	-00.9	16	35.2	+03.5	N 08 40.4	+00.3	285	24.1	-29.4	S 19 24.8	+11.4	12
13	14	19.4	+00.1	N 11 24.9	-00.8	31	38.7	+03.5	N 08 40.7	+00.4	299	54.7	-29.5	S 19 36.2	+11.2	13
14	29	19.5	+00.2	N 11 24.1	-00.9	46	42.2	+03.5	N 08 41.1	+00.4	314	25.2	-29.6	S 19 47.4	+11.1	14
15	44	19.7	+00.2	N 11 23.2	-00.8	61	45.7	+03.5	N 08 41.5	+00.4	328	55.6	-29.7	S 19 58.5	+11.1	15
16	59	19.9	+00.1	N 11 22.4	-00.9	76	49.2	+03.5	N 08 41.9	+00.4	343	25.9	-29.8	S 20 09.6	+11.0	16
17	74	20.0	+00.2	N 11 21.5	-00.8	91	52.7	+03.5	N 08 42.3	+00.4	357	56.1	-29.9	S 20 20.6	+10.8	17
18	89	20.2	+00.2	N 11 20.7	-00.9	106	56.2	+03.5	N 08 42.7	+00.4	12	26.2	-30.1	S 20 31.4	+10.8	18
19	104	20.4	+00.1	N 11 19.8	-00.8	121	59.7	+03.5	N 08 43.1	+00.4	26	56.1	-30.2	S 20 42.2	+10.8	19
20	119	20.5	+00.2	N 11 19.0	-00.9	137	03.2	+03.4	N 08 43.5	+00.4	41	25.9	-30.2	S 20 53.0	+10.6	20
21	134	20.7	+00.2	N 11 18.1	-00.8	152	06.6	+03.5	N 08 43.9	+00.4	55	55.7	-30.4	S 21 03.6	+10.5	21
22	149	20.9	+00.1	N 11 17.3	-00.9	167	10.1	+03.5	N 08 44.3	+00.4	70	25.3	-30.5	S 21 14.1	+10.4	22
23	164	21.0	+00.2	N 11 16.4	-00.8	182	13.6	+03.4	N 08 44.7	+00.4	84	54.8	-30.7	S 21 24.5	+10.4	23
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 208° 208° 208° 208° 208° 207°	Greenwich Culmination Time: 12:02	UT 02 06 10 14 18 22	SD 00°5' 00°5' 00°5' 00°5' 00°5' 00°5'	HP 00°5' 00°5' 00°5' 00°5' 00°5' 00°5'	SHA 225° 225° 225° 225° 225° 225°	Greenwich Culmination Time: 10:53	UT 02 06 10 14 18 22	SD 15°3' 15°3' 15°4' 15°4' 15°4' 15°5'	HP 56°1' 56°2' 56°4' 56°5' 56°6' 56°7'	SHA 139° 137° 135° 133° 131° 128°	Greenwich Culmination Time: 17:08		

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	153	00.7	+01.0	N 02 04.9	-00.7	286	50.6	+02.4	N 15 11.3	+00.0	353	16.1	+02.7	S 11 36.4	+00.1	00
01	168	01.7	+01.0	N 02 04.2	-00.6	301	53.0	+02.3	N 15 11.3	+00.0	8	18.8	+02.6	S 11 36.5	+00.1	01
02	183	02.7	+01.0	N 02 03.6	-00.7	316	55.3	+02.4	N 15 11.3	+00.1	23	21.4	+02.6	S 11 36.6	+00.0	02
03	198	03.7	+01.0	N 02 02.9	-00.6	331	57.7	+02.3	N 15 11.4	+00.0	38	24.0	+02.7	S 11 36.6	+00.1	03
04	213	04.7	+01.0	N 02 02.3	-00.7	347	00.0	+02.4	N 15 11.4	+00.0	53	26.7	+02.6	S 11 36.7	+00.1	04
05	228	05.7	+01.0	N 02 01.6	-00.6	2	02.4	+02.4	N 15 11.4	+00.0	68	29.3	+02.7	S 11 36.8	+00.0	05
06	243	06.7	+01.0	N 02 01.0	-00.7	17	04.8	+02.3	N 15 11.4	+00.1	83	32.0	+02.6	S 11 36.8	+00.1	06
07	258	07.7	+01.1	N 02 00.3	-00.6	32	07.1	+02.4	N 15 11.5	+00.0	98	34.6	+02.6	S 11 36.9	+00.1	07
08	273	08.8	+01.0	N 01 59.7	-00.7	47	09.5	+02.3	N 15 11.5	+00.0	113	37.2	+02.7	S 11 37.0	+00.1	08
09	288	09.8	+01.0	N 01 59.0	-00.7	62	11.8	+02.4	N 15 11.5	+00.0	128	39.9	+02.6	S 11 37.1	+00.0	09
10	303	10.8	+01.0	N 01 58.3	-00.6	77	14.2	+02.3	N 15 11.5	+00.1	143	42.5	+02.7	S 11 37.1	+00.1	10
11	318	11.8	+01.0	N 01 57.7	-00.7	92	16.5	+02.4	N 15 11.6	+00.0	158	45.2	+02.6	S 11 37.2	+00.1	11
12	333	12.8	+01.0	N 01 57.0	-00.6	107	18.9	+02.3	N 15 11.6	+00.0	173	47.8	+02.7	S 11 37.3	+00.0	12
13	348	13.8	+01.0	N 01 56.4	-00.7	122	21.2	+02.4	N 15 11.6	+00.0	188	50.5	+02.6	S 11 37.3	+00.1	13
14	3	14.8	+01.0	N 01 55.7	-00.6	137	23.6	+02.3	N 15 11.6	+00.1	203	53.1	+02.6	S 11 37.4	+00.1	14
15	18	15.8	+01.0	N 01 55.1	-00.7	152	25.9	+02.4	N 15 11.7	+00.0	218	55.7	+02.7	S 11 37.5	+00.1	15
16	33	16.8	+01.0	N 01 54.4	-00.6	167	28.3	+02.4	N 15 11.7	+00.0	233	58.4				

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	179	38.0	+00.2	N	09	52.5	-00.9	202	31.9	+03.1	N	09	22.8	+00.4	00					
01	194	38.2	+00.1	N	09	51.6	-00.9	217	35.0	+03.1	N	09	23.2	+00.4	01					
02	209	38.3	+00.2	N	09	50.7	-00.8	232	38.1	+03.1	N	09	23.6	+00.4	02					
03	224	38.5	+00.2	N	09	49.9	-00.9	247	41.2	+03.0	N	09	24.0	+00.4	03					
04	239	38.7	+00.2	N	09	49.0	-00.9	262	44.2	+03.1	N	09	24.4	+00.4	04					
05	254	38.9	+00.2	N	09	48.1	-00.9	277	47.3	+03.1	N	09	24.8	+00.4	05					
06	269	39.1	+00.2	N	09	47.2	-00.9	292	50.4	+03.0	N	09	25.2	+00.4	06					
07	284	39.3	+00.1	N	09	46.3	-00.9	307	53.4	+03.1	N	09	25.6	+00.3	07					
08	299	39.4	+00.2	N	09	45.4	-00.8	322	56.5	+03.0	N	09	25.9	+00.4	08					
09	314	39.6	+00.2	N	09	44.6	-00.9	337	59.5	+03.1	N	09	26.3	+00.4	09					
10	329	39.8	+00.2	N	09	43.7	-00.9	353	02.6	+03.0	N	09	26.7	+00.4	10					
11	344	40.0	+00.2	N	09	42.8	-00.9	8	05.6	+03.1	N	09	27.1	+00.4	11					
12	359	40.2	+00.2	N	09	41.9	-00.9	23	08.7	+03.0	N	09	27.5	+00.4	12					
13	14	40.4	+00.2	N	09	41.0	-00.8	38	11.7	+03.0	N	09	27.9	+00.4	13					
14	29	40.6	+00.1	N	09	40.2	-00.9	53	14.7	+03.1	N	09	28.3	+00.4	14					
15	44	40.7	+00.2	N	09	39.3	-00.9	68	17.8	+03.0	N	09	28.7	+00.3	15					
16	59	40.9	+00.2	N	09	38.4	-00.9	83	20.8	+03.0	N	09	29.0	+00.4	16					
17	74	41.1	+00.2	N	09	37.5	-00.9	98	23.8	+03.0	N	09	29.4	+00.4	17					
18	89	41.3	+00.2	N	09	36.6	-00.9	113	26.8	+03.0	N	09	29.8	+00.4	18					
19	104	41.5	+00.2	N	09	35.7	-00.8	128	29.8	+03.0	N	09	30.2	+00.4	19					
20	119	41.7	+00.2	N	09	34.9	-00.9	143	32.8	+03.0	N	09	30.6	+00.4	20					
21	134	41.9	+00.1	N	09	34.0	-00.9	158	35.8	+03.0	N	09	31.0	+00.3	21					
22	149	42.0	+00.2	N	09	33.1	-00.9	173	38.8	+03.0	N	09	31.3	+00.4	22					
23	164	42.2	+00.2	N	09	32.2	-00.9	188	41.8	+03.0	N	09	31.7	+00.4	23					
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	15°8	15°8	15°8	15°8	15°8	15°8	SD	00°4	00°4	00°4	00°4	00°4	00°4	SD	16°4	16°5	16°5	16°5	16°6	16°6
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°5	00°5	00°5	00°5	00°5	00°5	HP	60°3	60°5	60°6	60°7	60°8	60°9
SHA	204°	203°	203°	203°	203°	203°	SHA	227°	227°	227°	227°	227°	227°	SHA	065°	062°	060°	057°	054°	052°

Greenwich Culmination Time: 12:01

Greenwich Culmination Time: 10:27

Greenwich Culmination Time: 22:06

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	179	25.2	+00.2	N	10	55.1	-00.9	198	39.1	+03.4	N	08	54.5	+00.4	00					
01	194	25.4	+00.2	N	10	54.2	-00.9	213	42.5	+03.4	N	08	54.9	+00.4	01					
02	209	25.6	+00.1	N	10	53.3	-00.8	228	45.9	+03.3	N	08	55.3	+00.4	02					
03	224	25.7	+00.2	N	10	52.5	-00.9	243	49.2	+03.4	N	08	55.7	+00.4	03					
04	239	25.9	+00.2	N	10	51.6	-00.8	258	52.6	+03.4	N	08	56.1	+00.4	04					
05	254	26.1	+00.2	N	10	50.8	-00.9	273	56.0	+03.3	N	08	56.5	+00.4	05					
06	269	26.3	+00.1	N	10	49.9	-00.9	288	59.3	+03.4	N	08	56.9	+00.4	06					
07	284	26.4	+00.2	N	10	49.0	-00.8	304	02.7	+03.3	N	08	57.3	+00.4	07					
08	299	26.6	+00.2	N	10	48.2	-00.9	319	06.0	+03.3	N	08	57.7	+00.4	08					
09	314	26.8	+00.1	N	10	47.3	-00.8	334	09.3	+03.4	N	08	58.1	+00.4	09					
10	329	26.9	+00.2	N	10	46.5	-00.9	349	12.7	+03.3	N	08	58.5	+00.4	10					
11	344	27.1	+00.2	N	10	45.6	-00.9	4	16.0	+03.4	N	08	58.9	+00.3	11					
12	359	27.3	+00.2	N	10	44.7	-00.8	19	19.4	+03.3	N	08	59.2	+00.4	12					
13	14	27.5	+00.1	N	10	43.9	-00.9	34	22.7	+03.3	N	08	59.6	+00.4	13					
14	29	27.6	+00.2	N	10	43.0	-00.9	49	26.0	+03.3	N	09	00.0	+00.4	14					
15	44	27.8	+00.2	N	10	42.1	-00.8	64	29.3	+03.3	N	09	00.4	+00.4	15					
16	59	28.0	+00.2	N	10	41.3	-00.9	79	32.6	+03.3	N	09	00.8	+00.4	16					
17	74	28.2	+00.1	N	10	40.4	-00.8	94	35.9	+03.4	N	09	01.2	+00.4	17					
18	89	28.3	+00.2	N	10	39.6	-00.9	109	39.3	+03.3	N	09	01.6	+00.4	18					
19	104	28.5	+00.2	N	10	38.7	-00.9	124	42.6	+03.3	N	09	02.0	+00.4	19					
20	119	28.7	+00.2	N	10	37.8	-00.8	139	45.9	+03.3	N	09	02.4	+00.4	20					
21	134	28.9	+00.1	N	10	37.0	-00.9	154	49.2	+03.2	N	09	02.8	+00.4	21					
22	149	29.0	+00.2	N	10	36.1	-00.9	169	52.4	+03.3	N	09	03.2	+00.4	22					
23	164	29.2	+00.2	N	10	35.2	-00.8	184	55.7	+03.3	N	09	03.6	+00.4	23					
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	15°8	15°8	15°8	15°8	15°8	15°8	SD	00°5	00°5	00°5	00°5	00°4	00°4	SD	15°7	15°8	15°8	15°9	15°9	15°9
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°5	00°5	00°5	00°5	00°5	00°5	HP	57°7	57°9	58°0	58°2	58°3	58°5
SHA	206°	206°	206°	206°	206°	206°	SHA	226°	226°	226°	226°	226°	226°	SHA	112°	110°	107°	105°	102°	100°

Greenwich Culmination Time: 12:02

Greenwich Culmination Time: 10:42

Greenwich Culmination Time: 18:57

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	155	25.8	+01.0	N	00	30.4	-00.7	292	32.7	+02.4	N	15	13.8	+00.0	00					
01	170	26.8	+01.0	N	00	29.7	-00.6	307	35.1	+02.4	N	15	13.8	+00.0	01					
02	185	27.8	+01.0	N	00	29.1	-00.7	322	37.5	+02.4	N	15	13.8	+00.0	02					
03	200	28.8	+01.0	N	00	28.4	-00.6	337	39.9	+02.4	N	15	13.8	+00.0	03					
04	215	29.8	+01.0	N	00	27.8	-00.7	352	42.3	+02.4	N	15	13.8	+00.0	04					
05	230	30.8	+01.0	N	00	27.1	-00.6	7	44.7	+02.4	N	15	13.8	+00.1	05					
06	245	31.8	+01.0	N	00	26.5	-00.7	22	47.1	+02.4	N	15	13.9	+00.1	06					
07	260	32.8	+01.0	N	00	25.8	-00.7	37	49.5	+02.4	N	15	13.9	+00.1	07					
08	275	33.8	+01.0	N	00	25.1	-00.6	52	51.9	+02.4	N	15	13.9	+00.1	08					
09	290	34.8	+01.0	N	00	24.5	-00.7	67	54.3	+02.4	N	15	13.9	+00.0	09					
10	305	35.8	+01.0	N	00	23.8	-00.6	82	56.7	+02.4	N	15	13.9	+00.0	10					
11	320	36.8	+01.0	N	00	23.2	-00.7	97	59.1	+02.4	N	15	13.9	+00.0	11					
12	335	37.8	+01.0	N	00	22.5	-00.7	113	01.5	+02.4	N	15	13.9	+00.0	12					
13	350	38.8	+01.0	N	00	21.8	-00.6	128	03.9	+02.4	N	15	13.9	+00.0	13					
14	5	39.8	+01.0	N	00	21.2	-00.7	143	06.3	+02.5	N	15	13.9	+00.0	14					
15	20	40.8	+01.0	N	00	20.5	-00.6	158	08.8	+02.4	N	15	13.9	+00.0	15					
16	35	41.8	+01.0	N	00	19.9	-00.7	173	11.2	+02.4	N	15	13.9	+00.1	16					
17	50	42.8	+01.0	N	00	19.2	-00.7	188	13.6	+02.4	N	15	14.0	+00.0	17					
18	65	43.8	+01.0	N	00	18.5	-00.6	203	16.0	+02.4	N	15	14.0	+00.0	18					
19	80	44.8	+01.0	N	00	17.9	-00.7	218	18.4	+02.4	N	15	14.0	+00.0	19					
20	95	45.8	+01.0	N	00	17.2	-00.6	233	20.8	+02.4	N	15	14.0	+00.0	20					
21	110	46.8	+01.0	N	00	16.6	-00.7	248	23.2	+02.4	N	15	14.0	+00.0	21					
22	125	47.8	+01.0	N	00	15.9	-00.6	263	25.6	+02.4	N	15	14.0	+00.0	22					
23	140	48.8	+01.0	N	00	15.3	-00.7	278	28.0	+02.4	N	15	14.0	+00.0	23					
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
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°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			

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	179	29.4	+00.1	N 10 34.4	-00.9	199	59.0	+03.3	N 09 04.0	+00.4	72	33.7	-36.3	S 27 27.3	+03.7	00
01	194	29.5	+00.2	N 10 33.5	-00.9	215	02.3	+03.3	N 09 04.4	+00.4	86	57.4	-36.4	S 27 31.0	+03.5	01
02	209	29.7	+00.2	N 10 32.6	-00.8	230	05.6	+03.2	N 09 04.8	+00.4	101	21.0	-36.5	S 27 34.5	+03.3	02
03	224	29.9	+00.2	N 10 31.8	-00.9	245	08.8	+03.3	N 09 05.2	+00.4	115	44.5	-36.6	S 27 37.8	+03.2	03
04	239	30.1	+00.2	N 10 30.9	-00.9	260	12.1	+03.3	N 09 05.6	+00.4	130	07.9	-36.7	S 27 41.0	+03.0	04
05	254	30.3	+00.1	N 10 30.0	-00.8	275	15.4	+03.2	N 09 06.0	+00.4	144	31.2	-36.8	S 27 44.0	+02.8	05
06	269	30.4	+00.2	N 10 29.2	-00.9	290	18.6	+03.3	N 09 06.4	+00.3	158	54.4	-36.8	S 27 46.8	+02.6	06
07	284	30.6	+00.2	N 10 28.3	-00.9	305	21.9	+03.2	N 09 06.7	+00.4	173	17.6	-37.0	S 27 49.4	+02.4	07
08	299	30.8	+00.2	N 10 27.4	-00.8	320	25.1	+03.3	N 09 07.1	+00.4	187	40.6	-37.0	S 27 51.8	+02.3	08
09	314	31.0	+00.1	N 10 26.6	-00.9	335	28.4	+03.2	N 09 07.5	+00.4	202	03.2	-37.1	S 27 54.1	+02.0	09
10	329	31.1	+00.2	N 10 25.7	-00.9	350	31.6	+03.3	N 09 07.9	+00.4	216	26.5	-37.1	S 27 56.1	+01.9	10
11	344	31.3	+00.2	N 10 24.8	-00.8	5	34.9	+03.2	N 09 08.3	+00.4	230	49.4	-37.3	S 27 58.0	+01.7	11
12	359	31.5	+00.2	N 10 24.0	-00.9	20	38.1	+03.3	N 09 08.7	+00.4	245	12.1	-37.3	S 27 59.7	+01.5	12
13	14	31.7	+00.1	N 10 23.1	-00.9	35	41.4	+03.2	N 09 09.1	+00.4	259	34.8	-37.4	S 28 01.2	+01.3	13
14	29	31.8	+00.2	N 10 22.2	-00.9	50	44.6	+03.2	N 09 09.5	+00.4	273	57.4	-37.4	S 28 02.5	+01.2	14
15	44	32.0	+00.2	N 10 21.3	-00.8	65	47.8	+03.2	N 09 09.9	+00.4	288	20.0	-37.6	S 28 03.7	+00.9	15
16	59	32.2	+00.2	N 10 20.5	-00.9	80	51.0	+03.2	N 09 10.3	+00.4	302	42.4	-37.6	S 28 04.6	+00.7	16
17	74	32.4	+00.2	N 10 19.6	-00.9	95	54.2	+03.3	N 09 10.7	+00.4	317	04.8	-37.6	S 28 05.3	+00.6	17
18	89	32.6	+00.1	N 10 18.7	-00.8	110	57.5	+03.2	N 09 11.1	+00.4	331	27.2	-37.7	S 28 05.9	+00.3	18
19	104	32.7	+00.2	N 10 17.9	-00.9	126	00.7	+03.2	N 09 11.5	+00.4	345	49.5	-37.8	S 28 06.2	+00.2	19
20	119	32.9	+00.2	N 10 17.0	-00.9	141	03.9	+03.2	N 09 11.9	+00.4	0	11.7	-37.8	S 28 06.4	+00.0	20
21	134	33.1	+00.2	N 10 16.1	-00.8	156	07.1	+03.2	N 09 12.3	+00.4	14	33.9	-37.8	S 28 06.4	-00.3	21
22	149	33.3	+00.1	N 10 15.3	-00.9	171	10.3	+03.2	N 09 12.7	+00.4	28	56.1	-38.0	S 28 06.1	-00.4	22
23	164	33.4	+00.2	N 10 14.4	-00.9	186	13.5	+03.1	N 09 13.1	+00.3	43	18.1	-37.9	S 28 05.7	-00.6	23

UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	15°8'	15°8'	15°8'	15°8'	15°8'	15°8'	SD	00°4'	00°4'	00°4'	00°4'	00°4'	00°4'	SD	16°0'	16°0'	16°1'	16°1'	16°2'	
HP	00°1'	00°1'	00°1'	00°1'	00°1'	00°1'	HP	00°5'	00°5'	00°5'	00°5'	00°5'	00°5'	HP	58°6'	58°6'	58°9'	59°1'	59°2'	59°4'
SHA	205°	205°	205°	205°	205°	205°	SHA	226°	226°	226°	226°	226°	226°	SHA	087°	095°	092°	089°	087°	084°

Greenwich Culmination Time: 12:01 Greenwich Culmination Time: 10:37 Greenwich Culmination Time: 19:59

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	154	37.5	+01.0	N 01 02.0	-00.7	290	37.9	+02.4	N 15 13.2	+00.0	357	29.8	+02.6	S 11 43.3	+00.1	00
01	169	38.5	+01.0	N 01 01.3	-00.6	305	40.3	+02.4	N 15 13.2	+00.0	12	32.4	+02.6	S 11 43.4	+00.1	01
02	184	39.5	+01.0	N 01 00.7	-00.7	320	42.7	+02.4	N 15 13.2	+00.0	27	35.0	+02.7	S 11 43.5	+00.0	02
03	199	40.5	+01.0	N 01 00.0	-00.7	335	45.1	+02.4	N 15 13.2	+00.0	42	37.7	+02.6	S 11 43.5	+00.1	03
04	214	41.5	+01.1	N 00 59.3	-00.6	350	47.5	+02.3	N 15 13.2	+00.1	57	40.3	+02.7	S 11 43.6	+00.1	04
05	229	42.6	+01.0	N 00 58.7	-00.7	5	49.8	+02.4	N 15 13.3	+00.0	72	43.0	+02.6	S 11 43.7	+00.1	05
06	244	43.6	+01.0	N 00 58.0	-00.6	20	52.2	+02.4	N 15 13.3	+00.0	87	45.6	+02.7	S 11 43.8	+00.0	06
07	259	44.6	+01.0	N 00 57.4	-00.7	35	54.6	+02.4	N 15 13.3	+00.0	102	48.3	+02.6	S 11 43.8	+00.1	07
08	274	45.6	+01.0	N 00 56.7	-00.6	50	57.0	+02.4	N 15 13.3	+00.0	117	50.9	+02.6	S 11 43.9	+00.1	08
09	289	46.6	+01.0	N 00 56.1	-00.7	65	59.4	+02.4	N 15 13.3	+00.0	132	53.5	+02.7	S 11 44.0	+00.0	09
10	304	47.6	+01.0	N 00 55.4	-00.7	81	01.8	+02.4	N 15 13.3	+00.0	147	56.2	+02.6	S 11 44.0	+00.1	10
11	319	48.6	+01.0	N 00 54.7	-00.6	96	04.2	+02.4	N 15 13.3	+00.1	162	58.8	+02.7	S 11 44.1	+00.1	11
12	334	49.6	+01.0	N 00 54.1	-00.7	111	06.6	+02.3	N 15 13.4	+00.0	178	01.5	+02.6	S 11 44.2	+00.1	12
13	349	50.6	+01.0	N 00 53.4	-00.6	126	08.9	+02.4	N 15 13.4	+00.0	193	04.1	+02.7	S 11 44.3	+00.0	13
14	4	51.6	+01.0	N 00 52.8	-00.7	141	11.3	+02.4	N 15 13.4	+00.0	208	06.8	+02.6	S 11 44.3	+00.1	14
15	19	52.6	+01.0	N 00 52.1	-00.6	156	13.7	+02.4	N 15 13.4	+00.0	223	09.4	+02.6	S 11 44.4	+00.1	15
16	34	53.6	+01.0	N 00 51.5	-00.7	171	16.1	+02.4	N 15 13.4	+00.0	238	12.0	+02.7	S 11 44.5	+00.0	16
17	49	54.6	+01.0	N 00 50.8	-00.7	186	18.5	+02.4	N 15 13.4	+00.0	253	14.7	+02.6	S 11 44.5	+00.1	17
18	64	55.6	+01.0	N 00 50.1	-00.6	201	20.9	+02.4	N 15 13.4	+00.1	268	17.3	+02.7	S 11 44.6	+00.1	18
19	79	56.6	+01.0	N 00 49.5	-00.7	216	23.3	+02.4	N 15 13.5	+00.0	283	20.0	+02.6	S 11 44.7	+00.1	19
20	94	57.6	+01.0	N 00 48.8	-00.6	231	25.7	+02.4	N 15 13.5	+00.0	298	22.6	+02.7	S 11 44.8	+00.0	20
21	109	58.6	+01.0	N 00 48.2	-00.7	246	28.1	+02.3	N 15 13.5	+00.0	313	25.3	+02.6	S 11 44.8	+00.1	21
22	124	59.6	+01.1	N 00 47.5	-00.6	261	30.4	+02.4	N 15 13.5	+00.0	328	27.9	+02.6	S 11 44.9	+00.1	22
23	140	00.7	+01.0	N 00 46.9	-00.7	276	32.8	+02.4	N 15 13.5	+00.0	343	30.5	+02.7	S 11 45.0	+00.1	23

UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT					
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'	SD	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	024°	024°	024°	024°	024°
SHA	181°	180°	180°	180°	180°	180°	SHA	317°	317°	317°	317°	317°	317°	SHA	024°	024°	024°	024°	024°

Greenwich Culmination Time: 13:40 Greenwich Culmination Time: 04:36 Greenwich Culmination Time: 00:09

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	179	33.6	+00.2	N 10 13.5	-00.9	201	16.6	+03.2	N 09 13.4	+00.4	57	40.2	-38.0	S 28 05.1	-00.9	00
01	194	33.8	+00.2	N 10 12.6	-00.8	216	19.8	+03.2	N 09 13.8	+00.4	72	02.2	-38.1	S 28 04.2	-01.0	01
02	209	34.0	+00.2	N 10 11.8	-00.9	231	23.0	+03.2	N 09 14.2	+00.4	86	24.1	-38.0	S 28 03.2	-01.2	02
03	224	34.2	+00.1	N 10 10.9	-00.9	246	26.2	+03.2	N 09 14.6	+00.4	100	46.1	-38.1	S 28 02.0	-01.5	03
04	239	34.3	+00.2	N 10 10.0	-00.9	261	29.4	+03.1	N 09 15.0	+00.4	115	08.0	-38.2	S 28 00.5	-01.6	04
05	254	34.5	+00.2	N 10 09.1	-00.8	276	32.5	+03.2	N 09 15.4	+00.4	129	29.8	-38.2	S 27 58.9	-01.8	05
06	269	34.7	+00.2	N 10 08.3	-00.9	291	35.7	+03.1	N 09 15.8	+00.4	143	51.6	-38.2	S 27 57.1	-02.1	06
07	284	34.9	+00.2	N 10 07.4	-00.9	306	38.8	+03.2	N 09 16.2	+00.4	158	13.4	-38.2	S 27 55.0	-02.2	07
08	299	35.1	+00.1	N 10 06.5	-00.9	321	42.0	+03.1	N 09 16.6	+00.4	172	35.2	-38.2	S 27 52.8	-02.4	08
09	314	35.2	+00.2	N 10 05.6	-00.8	336	45.1	+03.2	N 09 17.0	+00.4	186	57.0	-38.3	S 27 50.4	-02.7	09
10	329	35.4	+00.2	N 10 04.8	-00.9	351	48.3	+03.1	N 09 17.4	+00.4	201	18.7	-38.3	S 27 47.7	-02.8	10
11	344	35.6	+00.2	N 10 03.9	-00.9	6	51.4	+03.2	N 09 17.8	+00.4	215	40.4	-38.3	S 27 44.9	-03.1	11
12	359	35.8	+00.2	N 10 03.0	-00.9	21	54.6	+03.1	N 09 18.2	+00.3	230	02.1	-38.3	S 27 41.8	-03.2	12
13	14	36.0	+00.1	N 10 02.1	-00.8	36	57.7	+03.1	N 09 18.5	+00.4	244					

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	179	56.3	+00.2	N 08 26.9	-00.9	207	08.9	+02.7	N 09 58.8	+00.4	346	28.1	-31.2	S 05 59.0	-17.5
01	194	56.5	+00.2	N 08 26.0	-00.9	222	11.6	+02.7	N 09 59.2	+00.3	0	56.9	-31.2	S 05 41.5	-17.5
02	209	56.7	+00.2	N 08 25.1	-00.9	237	14.3	+02.6	N 09 59.5	+00.4	15	25.7	-31.1	S 05 24.0	-17.6
03	224	56.9	+00.2	N 08 24.2	-00.9	252	16.9	+02.7	N 09 59.9	+00.3	29	54.6	-31.0	S 05 06.4	-17.5
04	239	57.1	+00.2	N 08 23.3	-00.9	267	19.6	+02.7	N 10 00.2	+00.4	44	23.6	-31.0	S 04 48.9	-17.6
05	254	57.3	+00.2	N 08 22.4	-00.9	282	22.3	+02.6	N 10 00.6	+00.3	58	52.6	-31.0	S 04 31.3	-17.6
06	269	57.5	+00.2	N 08 21.5	-00.9	297	24.9	+02.7	N 10 00.9	+00.4	73	21.6	-30.8	S 04 13.7	-17.5
07	284	57.7	+00.2	N 08 20.6	-00.9	312	27.6	+02.6	N 10 01.3	+00.4	87	50.8	-30.9	S 03 56.2	-17.6
08	299	57.9	+00.2	N 08 19.7	-00.9	327	30.2	+02.7	N 10 01.7	+00.3	102	19.9	-30.8	S 03 38.6	-17.7
09	314	58.1	+00.2	N 08 18.8	-00.9	342	32.9	+02.6	N 10 02.0	+00.4	116	49.1	-30.7	S 03 20.9	-17.6
10	329	58.3	+00.2	N 08 17.9	-00.9	357	35.5	+02.7	N 10 02.4	+00.3	131	18.4	-30.7	S 03 03.3	-17.6
11	344	58.5	+00.2	N 08 17.0	-00.9	12	38.2	+02.6	N 10 02.7	+00.4	145	47.7	-30.7	S 02 45.7	-17.6
12	359	58.7	+00.2	N 08 16.1	-00.9	27	40.8	+02.6	N 10 03.1	+00.3	160	17.0	-30.6	S 02 28.1	-17.6
13	14	58.9	+00.2	N 08 15.2	-00.9	42	43.4	+02.6	N 10 03.4	+00.4	174	46.4	-30.6	S 02 10.5	-17.6
14	29	59.1	+00.2	N 08 14.3	-00.9	57	46.0	+02.7	N 10 03.8	+00.3	189	15.8	-30.5	S 01 52.9	-17.6
15	44	59.3	+00.2	N 08 13.4	-01.0	72	48.7	+02.6	N 10 04.1	+00.4	203	45.3	-30.5	S 01 35.3	-17.7
16	59	59.5	+00.2	N 08 12.4	-00.9	87	51.3	+02.6	N 10 04.5	+00.3	218	14.8	-30.4	S 01 17.6	-17.5
17	74	59.7	+00.2	N 08 11.5	-00.9	102	53.9	+02.6	N 10 04.8	+00.4	232	44.4	-30.5	S 01 00.1	-17.6
18	89	59.9	+00.2	N 08 10.6	-00.9	117	56.5	+02.6	N 10 05.2	+00.3	247	13.9	-30.4	S 00 42.5	-17.6
19	105	00.1	+00.2	N 08 09.7	-00.9	132	59.1	+02.6	N 10 05.5	+00.3	261	43.5	-30.3	S 00 24.9	-17.6
20	120	00.3	+00.2	N 08 08.8	-00.9	148	01.7	+02.6	N 10 05.8	+00.4	276	13.2	-30.3	S 00 07.3	-17.5
21	135	00.5	+00.2	N 08 07.9	-00.9	163	04.3	+02.6	N 10 06.2	+00.3	290	42.9	-30.3	S 00 10.2	+17.5
22	150	00.7	+00.2	N 08 07.0	-00.9	178	06.9	+02.6	N 10 06.5	+00.4	305	12.6	-30.3	N 00 27.7	+17.5
23	165	00.9	+00.2	N 08 06.1	-00.9	193	09.5	+02.6	N 10 06.9	+00.3	319	42.3	-30.2	N 00 45.2	+17.5
UT 02 06 10 14 18 22	SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'	SD 00°4' 00°4' 00°4' 00°4' 00°4' 00°4'	SD 16°6' 16°6' 16°6' 16°6' 16°6' 16°6'	SD 02°0' 02°0' 02°0' 02°0' 02°0' 02°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 61°0' 60°9' 60°9' 60°8' 60°7' 60°5'	HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'												
SHA 200° 200° 200° 200° 199° 199°	SHA 227° 227° 227° 227° 227° 227°	SHA 005° 003° 001° 359° 357° 354°	SHA 227° 227° 227° 227° 227° 227°												
Greenwich Culmination Time: 12:00	Greenwich Culmination Time: 10:09	Greenwich Culmination Time: 00:56													

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	179	42.4	+00.2	N 09 31.3	-00.9	203	44.8	+03.0	N 09 32.1	+00.4	27	17.2	-37.0	S 23 39.9	-10.2
01	194	42.6	+00.2	N 09 30.4	-00.9	218	47.8	+03.0	N 09 32.5	+00.4	41	40.2	-36.9	S 23 29.7	-10.4
02	209	42.8	+00.2	N 09 29.5	-00.8	233	50.8	+03.0	N 09 32.9	+00.4	56	03.3	-36.9	S 23 19.3	-10.5
03	224	43.0	+00.2	N 09 28.7	-00.9	248	53.8	+02.9	N 09 33.3	+00.3	70	26.4	-36.8	S 23 08.8	-10.7
04	239	43.2	+00.2	N 09 27.8	-00.9	263	56.7	+03.0	N 09 33.6	+00.4	84	49.6	-36.7	S 22 58.1	-10.9
05	254	43.4	+00.1	N 09 26.9	-00.9	278	59.7	+03.0	N 09 34.0	+00.4	99	12.9	-36.6	S 22 47.2	-11.1
06	269	43.5	+00.2	N 09 26.0	-00.9	294	02.7	+02.9	N 09 34.4	+00.4	113	36.3	-36.5	S 22 36.1	-11.2
07	284	43.7	+00.2	N 09 25.1	-00.9	309	05.6	+03.0	N 09 34.8	+00.4	127	59.8	-36.5	S 22 24.9	-11.4
08	299	43.9	+00.2	N 09 24.2	-00.9	324	08.6	+02.9	N 09 35.2	+00.4	142	23.3	-36.4	S 22 13.5	-11.6
09	314	44.1	+00.2	N 09 23.3	-00.8	339	11.5	+03.0	N 09 35.6	+00.3	156	46.9	-36.3	S 22 01.9	-11.7
10	329	44.3	+00.2	N 09 22.5	-00.9	354	14.5	+02.9	N 09 35.9	+00.4	171	10.6	-36.2	S 21 50.2	-11.8
11	344	44.5	+00.2	N 09 21.6	-00.9	9	17.4	+03.0	N 09 36.3	+00.4	185	34.4	-36.1	S 21 38.4	-12.1
12	359	44.7	+00.2	N 09 20.7	-00.9	24	20.4	+02.9	N 09 36.7	+00.4	199	58.3	-36.1	S 21 26.3	-12.2
13	14	44.9	+00.2	N 09 19.8	-00.9	39	23.3	+02.9	N 09 37.1	+00.4	214	22.2	-35.9	S 21 14.1	-12.3
14	29	45.1	+00.1	N 09 18.9	-00.9	54	26.2	+03.0	N 09 37.5	+00.3	228	46.3	-35.9	S 21 01.8	-12.5
15	44	45.2	+00.2	N 09 18.0	-00.9	69	29.2	+02.9	N 09 37.8	+00.4	243	10.4	-35.8	S 20 49.3	-12.6
16	59	45.4	+00.2	N 09 17.1	-00.9	84	32.1	+02.9	N 09 38.2	+00.4	257	34.6	-35.7	S 20 36.7	-12.8
17	74	45.6	+00.2	N 09 16.2	-00.9	99	35.0	+02.9	N 09 38.6	+00.4	271	58.9	-35.6	S 20 23.9	-12.9
18	89	45.8	+00.2	N 09 15.3	-00.9	114	37.9	+02.9	N 09 39.0	+00.3	286	23.3	-35.5	S 20 11.0	-13.1
19	104	46.0	+00.2	N 09 14.4	-00.8	129	40.8	+02.9	N 09 39.3	+00.4	300	47.8	-35.4	S 19 57.9	-13.2
20	119	46.2	+00.2	N 09 13.6	-00.9	144	43.7	+02.9	N 09 39.7	+00.4	315	12.4	-35.4	S 19 44.7	-13.3
21	134	46.4	+00.2	N 09 12.7	-00.9	159	46.6	+02.9	N 09 40.1	+00.4	329	37.0	-35.2	S 19 31.4	-13.5
22	149	46.6	+00.2	N 09 11.8	-00.9	174	49.5	+02.9	N 09 40.5	+00.4	344	01.8	-35.2	S 19 17.9	-13.6
23	164	46.8	+00.2	N 09 10.9	-00.9	189	52.4	+02.9	N 09 40.9	+00.3	358	26.6	-35.0	S 19 04.3	-13.7
UT 02 06 10 14 18 22	SD 15°8' 15°8' 15°8' 15°8' 15°8' 15°8'	SD 00°4' 00°4' 00°4' 00°4' 00°4' 00°4'	SD 16°6' 16°6' 16°6' 16°6' 16°6' 16°6'	SD 02°0' 02°0' 02°0' 02°0' 02°0' 02°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 61°0' 61°0' 61°0' 61°0' 61°0' 61°0'	HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'												
SHA 203° 203° 202° 202° 202° 202°	SHA 203° 203° 202° 202° 202° 202°	SHA 005° 004° 044° 041° 039° 036°	SHA 227° 227° 227° 227° 227° 227°												
Greenwich Culmination Time: 12:01	Greenwich Culmination Time: 10:22	Greenwich Culmination Time: 23:06													

UT	Mars				Jupiter				Saturn				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	157	01.8	+01.0	S 00 32.9	+00.7	296	24.6	+02.5	N 15 14.3	+00.0	3	50.3	+02.7	S 11 53.6	+00.1
01	172	02.8	+01.0	S 00 33.6	+00.6	311	27.1	+02.4	N 15 14.3	+00.0	18	53.0	+02.6	S 11 53.7	+00.0
02	187	03.8	+01.0	S 00 34.2	+00.7	326	29.5	+02.4	N 15 14.3	+00.0	33	55.6	+02.7	S 11 53.7	+00.1
03	202	04.8	+01.0	S 00 34.9	+00.6	341	31.9	+02.5	N 15 14.3	+00.0	48	58.3	+02.6	S 11 53.8	+00.1
04	217	05.8	+00.9	S 00 35.5	+00.7	356	34.4	+02.4	N 15 14.3	+00.0	64	00.9	+02.6	S 11 53.9	+00.1
05	232	06.7	+01.0	S 00 36.2	+00.7	11	36.8	+02.4	N 15 14.3	+00.0	79	03.5	+02.7	S 11 53.9	+00.1
06	247	07.7	+01.0	S 00 36.9	+00.6	26	39.2	+02.5	N 15 14.3	+00.0	94	06.2	+02.6	S 11 54.0	+00.1
07	262	08.7	+01.0	S 00 37.5	+00.7	41	41.7	+02.4	N 15 14.3	+00.0	109	08.8	+02.7	S 11 54.1	+00.1
08	277	09.7	+01.0	S 00 38.2	+00.6	56	44.1	+02.4	N 15 14.3	+00.0	124	11.5	+02.6	S 11 54.2	+00.0
09	292	10.7	+01.0	S 00 38.8	+00.7	71	46.5	+02.5	N 15 14.3	+00.0	139	14.1	+02.7	S 11 54.2	+00.1
10	307	11.7	+01.0	S 00 39.5	+00.7	86	49.0	+02.4	N 15 14.3	+00.0	154	16.8	+02.6	S 11 54.3	+00.1
11	322	12.7	+01.0	S 00 40.2	+00.6	101	51.4	+02.5	N 15 14.3	+00.0	169	19.4	+02.6	S 11 54.4	+00.0
12	337	13.7	+01.0	S 00 40.8	+00.7	116	53.9	+02.4	N 15 14.3	+00.0	184	22.0	+02.7	S 11 54.4	+00.1
13	352	14.7	+01.0	S 00 41.5	+00.7	131	56.3	+02.4	N 15 14.3	+00.0	199	24.7	+02.6	S 11 54.5	+00.1
14	7	15.7	+01.0	S 00 42.2	+00.6	146	58.7	+02.5	N 15 14.3	+00.0	214	27.3	+02.7	S 11 54.6	+00.0
15	22	16.7	+01.0	S 00 42.8	+00.7	162	01.2	+02.4	N 15 14.3	+00.0	229	30.0	+02.6	S 11 54.6	+00.1
16	37	17.7	+01.0	S 00 43.5	+00.6	177	03.6	+02.4	N 15 14.3	+00.0	244	32.6	+02.7	S 11 54.7	+00.1
17	52	18.7	+01.0	S 00 44.1	+00.7	192	06.0	+02.5	N 15 14.3	+00.0	259	35.3	+02.6	S 11 54.8	+00.1
18	67	19.7	+01.0	S 00 44.8	+00.7	207	08.5	+02.4	N 15 14.3	+00.0	274	37.9	+02.6	S 11 54.9	+00.0
19															

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00 to 23. Includes planetary coordinates and moon phase (A: 48%).

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 202° 202° 201° 201° 201° 201°
Greenwich Culmination Time: 12:00

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00 to 23. Includes planetary coordinates and moon phase (A: 51%).

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° 200° 200° 200°
Greenwich Culmination Time: 12:00

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00 to 23. Includes planetary coordinates.

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 178° 178° 178° 178° 178° 178°
Greenwich Culmination Time: 13:34

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00 to 23. Includes planetary coordinates.

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 178° 178° 177° 177° 177° 177°
Greenwich Culmination Time: 13:32

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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	15.8	+00.2	N 06 59.2	-00.9	211	07.0	+02.3	N 10 30.5	+00.3	297	59.5	-30.9	N 19 23.9	+12.0	00									
01	195	16.0	+00.2	N 06 58.3	-01.0	226	09.3	+02.2	N 10 30.8	+00.3	312	28.6	-31.0	N 19 35.9	+11.8	01									
02	210	16.2	+00.2	N 06 57.3	-00.9	241	11.5	+02.3	N 10 31.1	+00.3	326	57.6	-30.9	N 19 47.7	+11.6	02									
03	225	16.4	+00.2	N 06 56.4	-00.9	256	13.8	+02.3	N 10 31.4	+00.3	341	26.7	-31.0	N 19 59.3	+11.6	03									
04	240	16.6	+00.2	N 06 55.5	-00.9	271	16.1	+02.2	N 10 31.7	+00.2	355	55.7	-31.1	N 20 10.9	+11.4	04									
05	255	16.8	+00.3	N 06 54.6	-01.0	286	18.3	+02.3	N 10 31.9	+00.3	10	24.6	-31.1	N 20 22.3	+11.3	05									
06	270	17.1	+00.2	N 06 53.6	-00.9	301	20.6	+02.2	N 10 32.2	+00.3	24	53.5	-31.1	N 20 33.6	+11.2	06									
07	285	17.3	+00.2	N 06 52.7	-00.9	316	22.8	+02.3	N 10 32.5	+00.3	39	22.4	-31.1	N 20 44.8	+11.1	07									
08	300	17.5	+00.2	N 06 51.8	-00.9	331	25.1	+02.2	N 10 32.8	+00.3	53	51.3	-31.2	N 20 55.9	+10.9	08									
09	315	17.7	+00.2	N 06 50.9	-01.0	346	27.3	+02.3	N 10 33.1	+00.3	68	20.1	-31.2	N 21 06.8	+10.9	09									
10	330	17.9	+00.2	N 06 49.9	-00.9	1	29.6	+02.2	N 10 33.4	+00.3	82	48.9	-31.3	N 21 17.7	+10.6	10									
11	345	18.1	+00.2	N 06 49.0	-00.9	16	31.8	+02.3	N 10 33.7	+00.3	97	17.6	-31.3	N 21 28.3	+10.6	11									
12	0	18.3	+00.2	N 06 48.1	-00.9	31	34.1	+02.2	N 10 34.0	+00.3	111	46.3	-31.3	N 21 38.9	+10.4	12									
13	15	18.5	+00.2	N 06 47.2	-01.0	46	36.3	+02.2	N 10 34.3	+00.3	126	15.0	-31.4	N 21 49.3	+10.3	13									
14	30	18.7	+00.2	N 06 46.2	-00.9	61	38.5	+02.2	N 10 34.6	+00.3	140	43.6	-31.4	N 21 59.6	+10.2	14									
15	45	18.9	+00.2	N 06 45.3	-00.9	76	40.7	+02.3	N 10 34.9	+00.3	155	12.2	-31.4	N 22 09.8	+10.0	15									
16	60	19.1	+00.3	N 06 44.4	-00.9	91	43.0	+02.2	N 10 35.2	+00.3	169	40.8	-31.4	N 22 19.8	+10.0	16									
17	75	19.4	+00.2	N 06 43.5	-01.0	106	45.2	+02.2	N 10 35.5	+00.2	184	09.4	-31.5	N 22 29.8	+09.7	17									
18	90	19.6	+00.2	N 06 42.5	-00.9	121	47.4	+02.2	N 10 35.7	+00.3	198	37.9	-31.6	N 22 39.5	+09.7	18									
19	105	19.8	+00.2	N 06 41.6	-00.9	136	49.6	+02.2	N 10 36.0	+00.3	213	06.3	-31.5	N 22 49.2	+09.5	19									
20	120	20.0	+00.2	N 06 40.7	-01.0	151	51.8	+02.2	N 10 36.3	+00.3	227	34.8	-31.6	N 22 58.7	+09.4	20									
21	135	20.2	+00.2	N 06 39.7	-00.9	166	54.0	+02.2	N 10 36.6	+00.3	242	03.2	-31.7	N 23 08.1	+09.2	21									
22	150	20.4	+00.2	N 06 38.8	-00.9	181	56.2	+02.2	N 10 36.9	+00.3	256	31.5	-31.6	N 23 17.3	+09.1	22									
23	165	20.6	+00.2	N 06 37.9	-00.9	196	58.4	+02.2	N 10 37.2	+00.3	270	59.9	-31.7	N 23 26.4	+09.0	23									
UT 02 06 10 14 18 22	SD 15°9' 15°9' 15°9'	00°0' 00°0'	00°0' 00°0'	15°9' 15°9'	00°0' 00°0'	SD 00°4' 00°4'	00°4' 00°4'	00°4' 00°4'	00°4' 00°4'	18 22	SD 15°7' 15°7'	15°6' 15°6'	15°6' 15°6'	22 25	HP 57°7' 57°6'	57°4' 57°2'	57°1' 56°9'	56°9'	SD 02 06 10 14 18 22	HP 57°7' 57°6'	57°4' 57°2'	57°1' 56°9'	56°9'	SHA 313° 311° 309° 306° 304° 302°	Greenwich Culmination Time: 04:16

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	01.1	+00.2	N 08 05.2	-00.9	208	12.1	+02.5	N 10 07.2	+00.4	334	12.1	-30.2	N 01 02.7	+17.5	00									
01	195	01.3	+00.2	N 08 04.3	-00.9	223	14.6	+02.6	N 10 07.6	+00.3	348	41.9	-30.2	N 01 20.2	+17.4	01									
02	210	01.5	+00.2	N 08 03.4	-00.9	238	17.2	+02.6	N 10 07.9	+00.4	3	11.7	-30.1	N 01 37.6	+17.4	02									
03	225	01.7	+00.2	N 08 02.5	-01.0	253	19.8	+02.5	N 10 08.3	+00.3	17	41.6	-30.2	N 01 55.0	+17.4	03									
04	240	01.9	+00.2	N 08 01.5	-00.9	268	22.3	+02.6	N 10 08.6	+00.3	32	11.4	-30.1	N 02 12.4	+17.3	04									
05	255	02.1	+00.2	N 08 00.6	-00.9	283	24.9	+02.6	N 10 08.9	+00.4	46	41.3	-30.0	N 02 29.7	+17.4	05									
06	270	02.3	+00.2	N 07 59.7	-00.9	298	27.5	+02.5	N 10 09.3	+00.3	61	11.3	-30.1	N 02 47.1	+17.3	06									
07	285	02.5	+00.2	N 07 58.8	-00.9	313	30.0	+02.6	N 10 09.6	+00.4	75	41.2	-30.1	N 03 04.4	+17.2	07									
08	300	02.7	+00.2	N 07 57.9	-00.9	328	32.6	+02.5	N 10 10.0	+00.3	90	11.1	-30.0	N 03 21.6	+17.2	08									
09	315	02.9	+00.2	N 07 57.0	-00.9	343	35.1	+02.5	N 10 10.3	+00.3	104	41.1	-30.0	N 03 38.8	+17.2	09									
10	330	03.1	+00.2	N 07 56.1	-00.9	358	37.6	+02.6	N 10 10.6	+00.4	119	11.1	-30.0	N 03 56.0	+17.1	10									
11	345	03.3	+00.2	N 07 55.2	-00.9	13	40.2	+02.5	N 10 11.0	+00.3	133	41.1	-30.0	N 04 13.1	+17.1	11									
12	0	03.5	+00.2	N 07 54.3	-00.9	28	42.7	+02.5	N 10 11.3	+00.3	148	11.1	-29.9	N 04 30.2	+17.0	12									
13	15	03.7	+00.2	N 07 53.4	-01.0	43	45.2	+02.6	N 10 11.6	+00.4	162	41.2	-30.0	N 04 47.2	+17.0	13									
14	30	03.9	+00.2	N 07 52.4	-00.9	58	47.8	+02.5	N 10 12.0	+00.3	177	11.2	-29.9	N 05 04.2	+17.0	14									
15	45	04.1	+00.2	N 07 51.5	-00.9	73	50.3	+02.5	N 10 12.3	+00.4	191	41.3	-30.0	N 05 21.2	+16.9	15									
16	60	04.3	+00.2	N 07 50.6	-00.9	88	52.8	+02.5	N 10 12.7	+00.3	206	11.3	-29.9	N 05 38.1	+16.9	16									
17	75	04.5	+00.2	N 07 49.7	-00.9	103	55.3	+02.5	N 10 13.0	+00.3	220	41.4	-29.9	N 05 55.0	+16.8	17									
18	90	04.7	+00.2	N 07 48.8	-00.9	118	57.8	+02.5	N 10 13.3	+00.4	235	11.5	-29.9	N 06 11.8	+16.7	18									
19	105	04.9	+00.2	N 07 47.9	-00.9	134	00.3	+02.5	N 10 13.7	+00.3	249	41.6	-29.9	N 06 28.5	+16.7	19									
20	120	05.1	+00.2	N 07 47.0	-00.9	149	02.8	+02.5	N 10 14.0	+00.3	264	11.7	-30.0	N 06 45.2	+16.6	20									
21	135	05.3	+00.2	N 07 46.1	-01.0	164	05.3	+02.5	N 10 14.3	+00.4	278	41.7	-29.9	N 07 01.8	+16.6	21									
22	150	05.5	+00.2	N 07 45.1	-00.9	179	07.8	+02.5	N 10 14.7	+00.3	293	11.8	-29.9	N 07 18.4	+16.5	22									
23	165	05.7	+00.2	N 07 44.2	-00.9	194	10.3	+02.5	N 10 15.0	+00.3	307	41.9	-29.9	N 07 34.9	+16.5	23									
UT 02 06 10 14 18 22	SD 15°8' 15°8'	15°9' 15°9'	00°0' 00°0'	15°9' 15°9'	00°0' 00°0'	SD 00°4' 00°4'	00°4' 00°4'	00°4' 00°4'	00°4' 00°4'	18 22	SD 16°5' 16°4'	16°4' 16°4'	16°4' 16°3'	16°3'	HP 60°4' 60°3'	60°2' 60°0'	59°9' 59°8'	59°8'	SD 02 06 10 14 18 22	HP 60°4' 60°3'	60°2' 60°0'	59°9' 59°8'	59°8'	SHA 352° 350° 348° 346° 344° 341°	Greenwich Culmination Time: 01:46

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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	05.9	+00.2	N 07 43.3	-00.9	209	12.8	+02.4	N 10 15.3	+00.3	322	12.0	-29.9	N 07 51.4	+16.4	00
01	195	06.1	+00.2	N 07 42.4	-00.9	224	15.2	+02.5	N 10 15.6	+00.4	336	42.1	-29.9	N 08 07.8	+16.3	01
02	210	06.3	+00.2	N 07 41.5	-00.9	239	17.7	+02.5	N 10 16.0	+00.3	351	12.2	-29.9	N 08 24.1	+16.3	02
03	225	06.5	+00.2	N 07 40.6	-00.9	254	20.2	+02.4	N 10 16.3	+00.3	5	42.3	-29.9	N 08 40.4	+16.2	03
04	240	06.7	+00.2	N 07 39.7	-01.0	269	22.6	+02.5	N 10 16.6	+00.4	20	12.4	-29.9	N 08 56.6	+16.1	04
05	255	06.9	+00.2	N 07 38.7	-00.9	284	25.1	+02.5	N 10 17.0	+00.3	34	42.5	-29.9	N 09 12.7	+16.1	05
06	270	07.1	+00.2	N 07 37.8	-00.9	299	27.6	+02.4	N 10 17.3	+00.3	49	12.6	-29.9	N 09 28.8	+16.0	06
07	285	07.3	+00.2	N 07 36.9	-00.9	314	30.0	+02.5	N 10 17.6	+00.3	63	42.7	-30.0	N 09 44.8	+15.9	07
08	300	07.5	+00.2	N 07 36.0	-00.9	329	32.5	+02.4	N 10 17.9	+00.4	78	12.7	-29.9	N 10 00.7	+15.9	08
09	315	07.7	+00.3	N 07 35.1	-00.9	344	34.9	+02.4	N 10 18.3	+00.3	92	42.8	-30.0	N 10 16.6	+15.7	09
10	330	08.0	+00.2	N 07 34.2	-01.0	359	37.3	+02.5	N 10 18.6	+00.3	107	12.8	-29.9	N 10 32.3	+15.7	10
11	345	08.2	+00.2	N 07 33.2	-00.9	14	39.8	+02.4	N 10 18.9	+00.3	121	42.9	-30.0	N 10 48.0	+15.6	11
12	0	08.4	+00.2	N 07 32.3	-00.9	29	42.2	+02.4	N 10 19.2	+00.4	136	12.9	-30.0	N 11 03.6	+15.6	12
13	15	08.6	+00.2	N 07 31.4	-00.9	44	44.6	+02.5	N 10 19.6	+00.3	150	42.9	-30.0	N 11 19.2	+15.4	13
14	30	08.8	+00.2	N 07 30.5	-00.9	59	47.1	+02.4	N 10 19.9	+00.3	165	12.9	-30.0	N 11 34.6	+15.4	14
15	45	09.0	+00.2	N 07 29.6	-00.9	74	49.5	+02.4	N 10 20.2	+00.3	179	42.9	-30.0	N 11 50.0	+15.3	15
16	60	09.2	+00.2	N 07 28.7	-01.0	89	51.9	+02.4	N 10 20.5	+00.3	194	12.9	-30.1	N 12 05.3	+15.2	16
17	75	09.4	+00.2	N 07 27.7	-00.9	104	54.3	+02.4	N 10 20.8	+00.4	208	42.8	-30.1	N 12 20.5	+15.2	17
18	90	09.6	+00.2	N 07 26.8	-00.9	119	56.7	+02.4	N 10 21.1	+00.3	223	12.7	-30.0	N 12 35.7	+15.0	18
19	105	09.8	+00.2	N 07 25.9	-00.9	134	59.1	+02.4	N 10 21.5	+00.3	237	42.7	-30.1	N 12 50.7	+14.9	19
20	120	10.0	+00.2	N 07 25.0	-00.9	150	01.5	+02.4	N 10 21.8	+00.3	252	12.6	-30.2	N 13 05.6	+14.9	20
21	135	10.2	+00.2	N 07 24.1	-00.9	165	03.9	+02.4	N 10 22.1	+00.3	266	42.4	-30.1	N 13 20.5	+14.8	21
22	150	10.4	+00.2	N 07 23.2	-01.0	180	06.3	+02.4	N 10 22.4	+00.4	281	12.3	-30.2	N 13 35.3	+14.7	22
23	165	10.6	+00.2	N 07 22.2	-00.9	195	08.7	+02.4	N 10 22.8	+00.3	295	42.1	-30.1	N 13 50.0	+14.5	23

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 198° 198° 198° 198° 198° 197° Greenwich Culmination Time: 11:59	UT 02 06 10 14 18 22 SD 00°4' 00°4' 00°4' 00°4' 00°4' 00°4' HP 00°4' 00°4' 00°4' 00°4' 00°4' 00°4' SHA 227° 227° 227° 227° 227° 227° Greenwich Culmination Time: 10:01	UT 02 06 10 14 18 22 SD 16°2' 16°2' 16°2' 16°1' 16°1' 16°0' HP 59°6' 59°5' 59°3' 59°2' 59°0' 58°8' SHA 339° 339° 335° 333° 331° 328° Greenwich Culmination Time: 02:36
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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	49.5	+01.0	S 01 04.6	+00.7	298	21.8	+02.4	N 15 14.3	+00.0	5	57.2	+02.6	S 11 57.0	+00.0	00
01	172	50.5	+01.0	S 01 05.3	+00.6	313	24.2	+02.5	N 15 14.3	+00.0	20	59.8	+02.6	S 11 57.0	+00.1	01
02	187	51.5	+01.0	S 01 05.9	+00.7	328	26.7	+02.4	N 15 14.3	+00.0	36	02.4	+02.7	S 11 57.1	+00.1	02
03	202	52.5	+01.0	S 01 06.6	+00.7	343	29.1	+02.5	N 15 14.3	+00.0	51	05.1	+02.6	S 11 57.2	+00.0	03
04	217	53.5	+01.0	S 01 07.3	+00.6	358	31.6	+02.4	N 15 14.3	-00.1	66	07.7	+02.7	S 11 57.2	+00.1	04
05	232	54.5	+01.0	S 01 07.9	+00.7	13	34.0	+02.5	N 15 14.2	+00.0	81	10.4	+02.6	S 11 57.3	+00.1	05
06	247	55.5	+01.0	S 01 08.6	+00.6	28	36.5	+02.4	N 15 14.2	+00.0	96	13.0	+02.6	S 11 57.4	+00.0	06
07	262	56.5	+00.9	S 01 09.2	+00.7	43	38.9	+02.5	N 15 14.2	+00.0	111	15.6	+02.7	S 11 57.4	+00.1	07
08	277	57.4	+01.0	S 01 09.9	+00.7	58	41.4	+02.4	N 15 14.2	+00.0	126	18.3	+02.6	S 11 57.5	+00.1	08
09	292	58.4	+01.0	S 01 10.6	+00.6	73	43.8	+02.5	N 15 14.2	+00.0	141	20.9	+02.7	S 11 57.6	+00.0	09
10	307	59.4	+01.0	S 01 11.2	+00.7	88	46.3	+02.4	N 15 14.2	+00.0	156	23.6	+02.6	S 11 57.6	+00.1	10
11	323	00.4	+01.0	S 01 11.9	+00.7	103	48.7	+02.5	N 15 14.2	+00.0	171	26.2	+02.6	S 11 57.7	+00.1	11
12	338	01.4	+01.0	S 01 12.6	+00.6	118	51.2	+02.4	N 15 14.2	+00.0	186	28.8	+02.7	S 11 57.8	+00.1	12
13	353	02.4	+01.0	S 01 13.2	+00.7	133	53.6	+02.5	N 15 14.2	+00.0	201	31.5	+02.6	S 11 57.9	+00.0	13
14	8	03.4	+01.0	S 01 13.9	+00.6	148	56.1	+02.4	N 15 14.2	+00.0	216	34.1	+02.7	S 11 57.9	+00.1	14
15	23	04.4	+01.0	S 01 14.5	+00.7	163	58.5	+02.5	N 15 14.2	+00.0	231	36.8	+02.6	S 11 58.0	+00.1	15
16	38	05.4	+01.0	S 01 15.2	+00.7	179	01.0	+02.5	N 15 14.2	+00.0	246	39.4	+02.7	S 11 58.1	+00.0	16
17	53	06.4	+01.0	S 01 15.9	+00.6	194	03.5	+02.4	N 15 14.2	+00.0	261	42.1	+02.6	S 11 58.1	+00.1	17
18	68	07.4	+01.0	S 01 16.5	+00.7	209	05.9	+02.5	N 15 14.2	+00.0	276	44.7	+02.6	S 11 58.2	+00.1	18
19	83	08.4	+00.9	S 01 17.2	+00.6	224	08.4	+02.4	N 15 14.2	+00.0	291	47.3	+02.7	S 11 58.3	+00.0	19
20	98	09.3	+01.0	S 01 17.8	+00.7	239	10.8	+02.5	N 15 14.2	+00.0	306	50.0	+02.6	S 11 58.3	+00.1	20
21	113	10.3	+01.0	S 01 18.5	+00.7	254	13.3	+02.4	N 15 14.2	+00.0	321	52.6	+02.7	S 11 58.4	+00.1	21
22	128	11.3	+01.0	S 01 19.2	+00.6	269	15.7	+02.5	N 15 14.2	+00.0	336	55.3	+02.6	S 11 58.5	+00.1	22
23	143	12.3	+01.0	S 01 19.8	+00.7	284	18.2	+02.4	N 15 14.2	-00.1	351	57.9	+02.6	S 11 58.6	+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°0' 00°1' 00°1' 00°1' 00°1' 00°1' SHA 176° 176° 176° 176° 176° 175° Greenwich Culmination Time: 13:27	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 316° 316° 316° 316° 316° 316° Greenwich Culmination Time: 04:05	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 024° 024° 024° 024° 024° 024° Greenwich Culmination Time: 23:32
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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	10.8	+00.2	N 07 21.3	-00.9	210	11.1	+02.3	N 10 23.1	+00.3	310	12.0	-30.2	N 14 04.5	+14.5	00
01	195	11.0	+00.2	N 07 20.4	-00.9	225	13.4	+02.4	N 10 23.4	+00.3	324	41.8	-30.3	N 14 19.0	+14.4	01
02	210	11.2	+00.2	N 07 19.5	-00.9	240	15.8	+02.4	N 10 23.7	+00.3	339	11.5	-30.2	N 14 33.4	+14.3	02
03	225	11.4	+00.3	N 07 18.6	-01.0	255	18.2	+02.3	N 10 24.0	+00.3	353	41.3	-30.3	N 14 47.7	+14.2	03
04	240	11.7	+00.2	N 07 17.6	-00.9	270	20.5	+02.4	N 10 24.3	+00.3	8	11.0	-30.3	N 15 01.9	+14.1	04
05	255	11.9	+00.2	N 07 16.7	-00.9	285	22.9	+02.4	N 10 24.6	+00.4	22	40.7	-30.3	N 15 16.0	+14.0	05
06	270	12.1	+00.2	N 07 15.8	-00.9	300	25.3	+02.3	N 10 25.0	+00.3	37	10.4	-30.4	N 15 30.0	+14.0	06
07	285	12.3	+00.2	N 07 14.9	-00.9	315	27.6	+02.4	N 10 25.3	+00.3	51	40.0	-30.4	N 15 44.0	+13.8	07
08	300	12.5	+00.2	N 07 14.0	-01.0	330	30.0	+02.3	N 10 25.6	+00.3	66	09.6	-30.4	N 15 57.8	+13.7	08
09	315	12.7	+00.2	N 07 13.0	-00.9	345	32.3	+02.3	N 10 25.9	+00.3	80	39.2	-30.4	N 16 11.5	+13.6	09
10	330	12.9	+00.2	N 07 12.1	-00.9	0	34.6	+02.4	N 10 26.2	+00.3	95	08.8	-30.5	N 16 25.1	+13.4	10
11	345	13.1	+00.2	N 07 11.2	-00.9	15	37.0	+02.3	N 10 26.5	+00.3	109	38.3	-30.5	N 16 38.5	+13.4	11
12	0	13.3	+00.2	N 07 10.3	-01.0	30	39.3	+02.3	N 10 26.8	+00.3	124	07.8	-30.5	N 16 51.9	+13.3	12
13	15	13.5	+00.2	N 07 09.3	-00.9	45	41.6	+02.4	N 10 27.1	+00.3	138	37.3	-30.5	N 17 05.2	+13.2	13
14	30	13.7	+00.2	N 07 08.4	-00.9	60	44.0	+02.3	N 10 27.4	+00.3	153	06.8	-30.6	N 17 18.4	+13.0	14
15	45	13.9	+00.2	N 07 07.5	-00.9	75	46.3	+02.3	N 10 27.7	+00.3	167	36.2	-30.6	N 17 31.4	+13.0	15
16	60	14.1	+00.2	N 07 06.6	-00.9	90	48.6	+02.3	N 10 28.0	+00.3	182	05.6	-30.7	N 17 44.4	+12.8	16
1																

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	180	36.2	+00.2	N 05 29.6	-00.9	214	27.8	+01.9	N 10 55.9	+00.3	246	51.1	-31.8	N 28 02.4	-01.7
01	195	36.4	+00.2	N 05 28.7	-01.0	229	29.7	+01.9	N 10 56.2	+00.2	261	19.3	-31.7	N 28 00.7	-01.7
02	210	36.6	+00.2	N 05 27.7	-00.9	244	31.6	+01.9	N 10 56.4	+00.2	275	47.6	-31.6	N 27 59.0	-01.9
03	225	36.8	+00.3	N 05 26.8	-01.0	259	33.5	+01.9	N 10 56.6	+00.2	290	16.0	-31.6	N 27 57.1	-02.0
04	240	37.1	+00.2	N 05 25.8	-00.9	274	35.4	+01.9	N 10 56.8	+00.3	304	44.4	-31.6	N 27 55.1	-02.2
05	255	37.3	+00.2	N 05 24.9	-00.9	289	37.3	+01.9	N 10 57.1	+00.2	319	12.8	-31.5	N 27 52.9	-02.3
06	270	37.5	+00.2	N 05 24.0	-01.0	304	39.2	+01.9	N 10 57.3	+00.2	333	41.3	-31.5	N 27 50.6	-02.4
07	285	37.7	+00.2	N 05 23.0	-00.9	319	41.1	+01.9	N 10 57.5	+00.2	348	09.8	-31.4	N 27 48.2	-02.6
08	300	37.9	+00.2	N 05 22.1	-01.0	334	43.0	+01.9	N 10 57.7	+00.3	2	38.4	-31.4	N 27 45.6	-02.7
09	315	38.1	+00.3	N 05 21.1	-00.9	349	44.9	+01.8	N 10 58.0	+00.2	17	07.0	-31.4	N 27 42.9	-02.9
10	330	38.4	+00.2	N 05 20.2	-01.0	4	46.7	+01.9	N 10 58.2	+00.2	31	35.6	-31.3	N 27 40.0	-03.0
11	345	38.6	+00.2	N 05 19.2	-00.9	19	48.6	+01.9	N 10 58.4	+00.2	46	04.3	-31.2	N 27 37.0	-03.1
12	0	38.8	+00.2	N 05 18.3	-00.9	34	50.5	+01.8	N 10 58.6	+00.2	60	33.1	-31.2	N 27 33.9	-03.2
13	15	39.0	+00.2	N 05 17.4	-01.0	49	52.3	+01.9	N 10 58.8	+00.2	75	01.9	-31.1	N 27 30.7	-03.4
14	30	39.2	+00.2	N 05 16.4	-00.9	64	54.2	+01.9	N 10 59.0	+00.3	89	30.8	-31.1	N 27 27.3	-03.5
15	45	39.4	+00.3	N 05 15.5	-01.0	79	56.1	+01.8	N 10 59.3	+00.2	103	59.7	-31.0	N 27 23.8	-03.7
16	60	39.7	+00.2	N 05 14.5	-00.9	94	57.9	+01.9	N 10 59.5	+00.2	118	28.7	-31.0	N 27 20.1	-03.8
17	75	39.9	+00.2	N 05 13.6	-01.0	109	59.8	+01.8	N 10 59.7	+00.2	132	57.7	-30.9	N 27 16.3	-03.9
18	90	40.1	+00.2	N 05 12.6	-00.9	125	01.6	+01.8	N 10 59.9	+00.2	147	26.8	-30.9	N 27 12.4	-04.0
19	105	40.3	+00.2	N 05 11.7	-01.0	140	03.4	+01.9	N 11 00.1	+00.2	161	55.9	-30.8	N 27 08.4	-04.2
20	120	40.5	+00.2	N 05 10.7	-00.9	155	05.3	+01.8	N 11 00.3	+00.2	176	25.1	-30.7	N 27 04.2	-04.3
21	135	40.7	+00.3	N 05 09.8	-00.9	170	07.1	+01.9	N 11 00.5	+00.3	190	54.4	-30.7	N 26 59.9	-04.4
22	150	41.0	+00.2	N 05 08.9	-01.0	185	09.0	+01.8	N 11 00.8	+00.2	205	23.7	-30.7	N 26 55.5	-04.6
23	165	41.2	+00.2	N 05 07.9	-00.9	200	10.8	+01.8	N 11 01.0	+00.2	219	53.0	-30.5	N 26 50.9	-04.7
UT 02 06 10 14 18 22	SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'	SD 00°4' 00°4' 00°4' 00°4' 00°4' 00°4'	UT 02 06 10 14 18 22	SD 14°9' 14°9' 14°9' 14°9' 14°8' 14°8'	SD 00°4' 00°4' 00°4' 00°4' 00°4' 00°4'										
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'	HP 00°4' 00°4' 00°4' 00°4' 00°4' 00°4'	HP 54°7' 54°7' 54°6' 54°5' 54°5' 54°4'	HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'	HP 56°8' 56°8' 56°8' 56°8' 56°8' 56°8'	HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'										
SHA 193° 193° 192° 192° 192° 192°	SHA 227° 227° 227° 227° 227° 227°	SHA 258° 256° 253° 251° 249° 244°	SHA 195° 195° 195° 195° 195° 195°	SHA 229° 229° 229° 229° 229° 228°	SHA 024° 024° 024° 024° 024° 024°										
Greenwich Culmination Time: 11:57	Greenwich Culmination Time: 09:40	Greenwich Culmination Time: 07:49	Greenwich Culmination Time: 11:58	Greenwich Culmination Time: 09:50	Greenwich Culmination Time: 05:09										

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	180	20.8	+00.2	N 06 37.0	-01.0	212	00.6	+02.1	N 10 37.5	+00.2	285	28.2	-31.7	N 23 35.4	+08.8
01	195	21.0	+00.2	N 06 36.0	-00.9	227	02.7	+02.2	N 10 37.7	+00.3	299	56.5	-31.8	N 23 44.2	+08.7
02	210	21.2	+00.3	N 06 35.1	-00.9	242	04.9	+02.2	N 10 38.0	+00.3	314	24.7	-31.8	N 23 52.9	+08.6
03	225	21.5	+00.2	N 06 34.2	-01.0	257	07.1	+02.2	N 10 38.3	+00.3	328	52.9	-31.8	N 24 01.5	+08.4
04	240	21.7	+00.2	N 06 33.2	-00.9	272	09.3	+02.1	N 10 38.6	+00.3	343	21.1	-31.8	N 24 09.9	+08.3
05	255	21.9	+00.2	N 06 32.3	-00.9	287	11.4	+02.2	N 10 38.9	+00.2	357	49.3	-31.9	N 24 18.2	+08.2
06	270	22.1	+00.2	N 06 31.4	-00.9	302	13.6	+02.2	N 10 39.1	+00.3	12	17.4	-31.9	N 24 26.4	+08.0
07	285	22.3	+00.2	N 06 30.5	-01.0	317	15.8	+02.1	N 10 39.4	+00.3	26	45.5	-32.0	N 24 34.4	+07.8
08	300	22.5	+00.2	N 06 29.5	-00.9	332	17.9	+02.2	N 10 39.7	+00.3	41	13.5	-31.9	N 24 42.2	+07.8
09	315	22.7	+00.2	N 06 28.6	-00.9	347	20.1	+02.1	N 10 40.0	+00.3	55	41.6	-32.0	N 24 50.0	+07.5
10	330	22.9	+00.2	N 06 27.7	-01.0	2	22.2	+02.2	N 10 40.3	+00.2	70	09.6	-32.0	N 24 57.5	+07.5
11	345	23.1	+00.3	N 06 26.7	-00.9	17	24.4	+02.1	N 10 40.5	+00.3	84	37.6	-32.1	N 25 05.0	+07.3
12	0	23.4	+00.2	N 06 25.8	-00.9	32	26.5	+02.1	N 10 40.8	+00.3	99	05.5	-32.0	N 25 12.3	+07.2
13	15	23.6	+00.2	N 06 24.9	-01.0	47	28.6	+02.2	N 10 41.1	+00.3	113	33.5	-32.1	N 25 19.5	+07.0
14	30	23.8	+00.2	N 06 23.9	-00.9	62	30.8	+02.1	N 10 41.4	+00.2	128	01.4	-32.1	N 25 26.5	+06.8
15	45	24.0	+00.2	N 06 23.0	-00.9	77	32.9	+02.1	N 10 41.6	+00.3	142	29.3	-32.2	N 25 33.3	+06.8
16	60	24.2	+00.2	N 06 22.1	-01.0	92	35.0	+02.1	N 10 41.9	+00.3	156	57.1	-32.1	N 25 40.1	+06.6
17	75	24.4	+00.2	N 06 21.1	-00.9	107	37.1	+02.2	N 10 42.2	+00.2	171	25.0	-32.2	N 25 46.7	+06.4
18	90	24.6	+00.2	N 06 20.2	-00.9	122	39.3	+02.1	N 10 42.4	+00.3	185	52.8	-32.2	N 25 53.1	+06.3
19	105	24.8	+00.3	N 06 19.3	-01.0	137	41.4	+02.1	N 10 42.7	+00.3	200	20.6	-32.3	N 25 59.4	+06.1
20	120	25.1	+00.2	N 06 18.3	-00.9	152	43.5	+02.1	N 10 43.0	+00.2	214	48.3	-32.2	N 26 05.5	+06.0
21	135	25.3	+00.2	N 06 17.4	-00.9	167	45.6	+02.1	N 10 43.2	+00.3	229	16.1	-32.3	N 26 11.5	+05.9
22	150	25.5	+00.2	N 06 16.5	-01.0	182	47.7	+02.1	N 10 43.5	+00.3	243	43.8	-32.2	N 26 17.4	+05.7
23	165	25.7	+00.2	N 06 15.5	-00.9	197	49.8	+02.1	N 10 43.8	+00.2	258	11.6	-32.3	N 26 23.1	+05.6
UT 02 06 10 14 18 22	SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'	SD 00°4' 00°4' 00°4' 00°4' 00°4' 00°4'	UT 02 06 10 14 18 22	SD 15°5' 15°4' 15°4' 15°4' 15°4' 15°3'	SD 00°4' 00°4' 00°4' 00°4' 00°4' 00°4'										
HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'	HP 00°4' 00°4' 00°4' 00°4' 00°4' 00°4'	HP 56°8' 56°8' 56°8' 56°8' 56°8' 56°8'	HP 00°1' 00°1' 00°1' 00°1' 00°1' 00°1'	HP 56°8' 56°8' 56°8' 56°8' 56°8' 56°8'	HP 00°0' 00°0' 00°0' 00°0' 00°0' 00°0'										
SHA 195° 195° 195° 195° 195° 195°	SHA 227° 227° 227° 227° 227° 227°	SHA 299° 297° 295° 293° 290° 288°	SHA 195° 195° 195° 195° 195° 195°	SHA 229° 229° 229° 229° 229° 228°	SHA 024° 024° 024° 024° 024° 024°										
Greenwich Culmination Time: 11:58	Greenwich Culmination Time: 09:50	Greenwich Culmination Time: 05:09	Greenwich Culmination Time: 13:23	Greenwich Culmination Time: 03:54	Greenwich Culmination Time: 23:19										

UT	Mars				Jupiter				Saturn				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	160	11.5	+01.0	S 02 39.9	+00.7	304	18.0	+02.5	N 15 12.7	+00.0	12	17.2	+02.7	S 12 06.8	+00.0
01	175	12.5	+01.0	S 02 40.6	+00.6	319	20.5	+02.5	N 15 12.7	+00.0	27	19.9	+02.6	S 12 06.8	+00.1
02	190	13.5	+01.0	S 02 41.2	+00.7	334	23.0	+02.5	N 15 12.7	-00.1	42	22.5	+02.6	S 12 06.9	+00.1
03	205	14.5	+00.9	S 02 41.9	+00.6	349	25.5	+02.5	N 15 12.6	+00.0	57	25.1	+02.7	S 12 07.0	+00.0
04	220	15.4	+01.0	S 02 42.5	+00.7	4	28.0	+02.5	N 15 12.6	+00.0	72	27.8	+02.6	S 12 07.0	+00.1
05	235	16.4	+01.0	S 02 43.2	+00.7	19	30.5	+02.5	N 15 12.6	+00.0	87	30.4	+02.7	S 12 07.1	+00.1
06	250	17.4	+01.0	S 02 43.9	+00.6	34	33.0	+02.5	N 15 12.6	+00.0	102	33.1	+02.6	S 12 07.2	+00.0
07	265	18.4	+00.9	S 02 44.5	+00.7	49	35.5	+02.5	N 15 12.6	+00.0	117	35.7	+02.6	S 12 07.2	+00.1
08	280	19.3	+01.0	S 02 45.2	+00.7	64	38.0	+02.5	N 15 12.6	-00.1	132	38.3	+02.7	S 12 07.3	+00.1
09	295	20.3	+01.0	S 02 45.9	+00.6	79	40.5	+02.5	N 15 12.5	+00.0	147	41.0	+02.6	S 12 07.4	+00.0
10	310	21.3	+01.0	S 02 46.5	+00.7	94	43.0	+02.5	N 15 12.5	+00.0	162	43.6	+02.6	S 12 07.4	+00.1
11	325	22.3	+01.0	S 02 47.2	+00.6	109	45.5	+02.5	N 15 12.5	+00.0	177	46.2	+02.7	S 12 07.5	+00.1
12	340	23.3	+00.9	S 02 47.8	+00.7	124	48.0	+02.5	N 15 12.5	+00.0	192	48.9	+02.6	S 12 07.6	+00.0
13	355	24.2	+01.0	S 02 48.5	+00.7	139	50.5	+02.5	N 15 12.5	-00.1	207	51.5	+02.6	S 12 07.6	+00.1
14	10	25.2	+01.0	S 02 49.2	+00.6	154	53.0	+02.5	N 15 12.4	+00.0	222	54.1	+02.7	S 12 07.7	+00.1
15	25	26.2	+01.0	S 02 49.8	+00.7	169	55.5	+02.5	N 15 12.4	+00.0	237	56.8	+02.6	S 12 07.8	+00.0
16	40														

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	180	25.9	+00.2	N 06 14.6	-00.9	212	51.9	+02.1	N 10 44.0	+00.3	272	39.3	-32.3	N 26 28.7	+05.4	00				
01	195	26.1	+00.2	N 06 13.7	-01.0	227	54.0	+02.0	N 10 44.3	+00.3	287	07.0	-32.4	N 26 34.1	+05.3	01				
02	210	26.3	+00.2	N 06 12.7	-00.9	242	56.0	+02.1	N 10 44.6	+00.2	301	34.6	-32.3	N 26 39.4	+05.1	02				
03	225	26.5	+00.3	N 06 11.8	-00.9	257	58.1	+02.1	N 10 44.8	+00.3	316	02.3	-32.4	N 26 44.5	+05.0	03				
04	240	26.8	+00.2	N 06 10.9	-01.0	273	00.2	+02.1	N 10 45.1	+00.3	330	29.9	-32.3	N 26 49.5	+04.8	04				
05	255	27.0	+00.2	N 06 09.9	-00.9	288	02.3	+02.0	N 10 45.4	+00.2	344	57.6	-32.4	N 26 54.3	+04.7	05				
06	270	27.2	+00.2	N 06 09.0	-00.9	303	04.3	+02.1	N 10 45.6	+00.3	359	25.2	-32.4	N 26 59.0	+04.5	06				
07	285	27.4	+00.2	N 06 08.1	-01.0	318	06.4	+02.1	N 10 45.9	+00.3	13	52.8	-32.4	N 27 03.5	+04.4	07				
08	300	27.6	+00.2	N 06 07.1	-00.9	333	08.5	+02.0	N 10 46.2	+00.2	28	20.4	-32.4	N 27 07.9	+04.3	08				
09	315	27.8	+00.2	N 06 06.2	-00.9	348	10.5	+02.1	N 10 46.4	+00.3	42	48.0	-32.4	N 27 12.2	+04.0	09				
10	330	28.0	+00.2	N 06 05.3	-01.0	3	12.6	+02.0	N 10 46.7	+00.2	57	15.6	-32.4	N 27 16.2	+04.0	10				
11	345	28.2	+00.3	N 06 04.3	-00.9	18	14.6	+02.1	N 10 46.9	+00.3	71	43.2	-32.4	N 27 20.2	+03.8	11				
12	0	28.5	+00.2	N 06 03.4	-00.9	33	16.7	+02.0	N 10 47.2	+00.2	86	10.8	-32.4	N 27 24.0	+03.6	12				
13	15	28.7	+00.2	N 06 02.5	-01.0	48	18.7	+02.1	N 10 47.4	+00.3	100	38.4	-32.4	N 27 27.6	+03.5	13				
14	30	28.9	+00.2	N 06 01.5	-00.9	63	20.8	+02.0	N 10 47.7	+00.3	115	06.0	-32.5	N 27 31.1	+03.4	14				
15	45	29.1	+00.2	N 06 00.6	-00.9	78	22.8	+02.0	N 10 48.0	+00.2	129	33.5	-32.4	N 27 34.5	+03.2	15				
16	60	29.3	+00.2	N 05 59.7	-01.0	93	24.8	+02.1	N 10 48.2	+00.3	144	01.1	-32.4	N 27 37.7	+03.0	16				
17	75	29.5	+00.2	N 05 58.7	-00.9	108	26.9	+02.0	N 10 48.5	+00.2	158	28.7	-32.4	N 27 40.7	+02.9	17				
18	90	29.7	+00.3	N 05 57.8	-01.0	123	28.9	+02.0	N 10 48.7	+00.3	172	56.3	-32.4	N 27 43.6	+02.8	18				
19	105	30.0	+00.2	N 05 56.8	-00.9	138	30.9	+02.0	N 10 49.0	+00.2	187	23.9	-32.4	N 27 46.4	+02.6	19				
20	120	30.2	+00.2	N 05 55.9	-00.9	153	32.9	+02.0	N 10 49.2	+00.3	201	51.5	-32.4	N 27 49.0	+02.4	20				
21	135	30.4	+00.2	N 05 55.0	-01.0	168	34.9	+02.0	N 10 49.5	+00.2	216	19.1	-32.4	N 27 51.4	+02.4	21				
22	150	30.6	+00.2	N 05 54.0	-00.9	183	36.9	+02.0	N 10 49.7	+00.3	230	46.7	-32.4	N 27 53.8	+02.1	22				
23	165	30.8	+00.2	N 05 53.1	-00.9	198	38.9	+02.0	N 10 50.0	+00.2	245	14.3	-32.4	N 27 55.9	+02.0	23				
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°4	00°4	00°4	00°4	00°4	00°4	SD	15°2	15°2	15°2	15°2	15°1	15°1
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°4	00°4	00°4	00°4	00°4	00°4	HP	56°0	55°8	55°7	55°6	55°5	55°4
SHA	195°	194°	194°	194°	194°	194°	SHA	227°	227°	227°	227°	227°	227°	SHA	286°	283°	281°	279°	276°	274°
Greenwich Culmination Time: 11:58				Greenwich Culmination Time: 09:47				Greenwich Culmination Time: 06:02												

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	180	31.0	+00.2	N 05 52.2	-01.0	213	40.9	+02.0	N 10 50.2	+00.3	259	41.9	-32.3	N 27 57.9	+01.9	00				
01	195	31.2	+00.3	N 05 51.2	-00.9	228	42.9	+02.0	N 10 50.5	+00.2	274	09.6	-32.4	N 27 59.8	+01.7	01				
02	210	31.5	+00.2	N 05 50.3	-01.0	243	44.9	+02.0	N 10 50.7	+00.2	288	37.2	-32.3	N 28 01.5	+01.6	02				
03	225	31.7	+00.2	N 05 49.3	-00.9	258	46.9	+02.0	N 10 50.9	+00.3	303	04.9	-32.3	N 28 03.1	+01.4	03				
04	240	31.9	+00.2	N 05 48.4	-00.9	273	48.9	+02.0	N 10 51.2	+00.2	317	32.6	-32.3	N 28 04.5	+01.3	04				
05	255	32.1	+00.2	N 05 47.5	-01.0	288	50.9	+02.0	N 10 51.4	+00.3	332	00.3	-32.3	N 28 05.8	+01.1	05				
06	270	32.3	+00.2	N 05 46.5	-00.9	303	52.9	+01.9	N 10 51.7	+00.2	346	28.0	-32.3	N 28 06.9	+01.0	06				
07	285	32.5	+00.2	N 05 45.6	-00.9	318	54.8	+02.0	N 10 51.9	+00.3	0	55.7	-32.3	N 28 07.9	+00.8	07				
08	300	32.7	+00.3	N 05 44.7	-01.0	333	56.8	+02.0	N 10 52.2	+00.2	15	23.4	-32.2	N 28 08.7	+00.7	08				
09	315	33.0	+00.2	N 05 43.7	-00.9	348	58.8	+01.9	N 10 52.4	+00.2	29	51.2	-32.2	N 28 09.4	+00.5	09				
10	330	33.2	+00.2	N 05 42.8	-01.0	4	00.7	+02.0	N 10 52.6	+00.3	44	19.0	-32.2	N 28 09.9	+00.4	10				
11	345	33.4	+00.2	N 05 41.8	-00.9	19	02.7	+02.0	N 10 52.9	+00.2	58	46.8	-32.1	N 28 10.3	+00.3	11				
12	0	33.6	+00.2	N 05 40.9	-00.9	34	04.7	+01.9	N 10 53.1	+00.3	73	14.7	-32.2	N 28 10.6	+00.1	12				
13	15	33.8	+00.2	N 05 40.0	-01.0	49	06.6	+02.0	N 10 53.4	+00.2	87	42.5	-32.1	N 28 10.7	+00.0	13				
14	30	34.0	+00.3	N 05 39.0	-00.9	64	08.6	+01.9	N 10 53.6	+00.2	102	10.4	-32.1	N 28 10.7	-00.2	14				
15	45	34.3	+00.2	N 05 38.1	-01.0	79	10.5	+01.9	N 10 53.8	+00.3	116	38.3	-32.0	N 28 10.5	-00.4	15				
16	60	34.5	+00.2	N 05 37.1	-00.9	94	12.4	+02.0	N 10 54.1	+00.2	131	06.3	-32.0	N 28 10.1	-00.4	16				
17	75	34.7	+00.2	N 05 36.2	-00.9	109	14.4	+01.9	N 10 54.3	+00.2	145	34.3	-32.0	N 28 09.7	-00.7	17				
18	90	34.9	+00.2	N 05 35.3	-01.0	124	16.3	+01.9	N 10 54.5	+00.3	160	02.3	-32.0	N 28 09.0	-00.7	18				
19	105	35.1	+00.2	N 05 34.3	-00.9	139	18.2	+02.0	N 10 54.8	+00.2	174	30.3	-31.9	N 28 08.3	-00.9	19				
20	120	35.3	+00.2	N 05 33.4	-01.0	154	20.2	+01.9	N 10 55.0	+00.2	188	58.4	-31.9	N 28 07.4	-01.1	20				
21	135	35.5	+00.3	N 05 32.4	-00.9	169	22.1	+01.9	N 10 55.2	+00.3	203	26.5	-31.8	N 28 06.3	-01.1	21				
22	150	35.8	+00.2	N 05 31.5	-00.9	184	24.0	+01.9	N 10 55.5	+00.2	217	54.7	-31.9	N 28 05.2	-01.4	22				
23	165	36.0	+00.2	N 05 30.6	-01.0	199	25.9	+01.9	N 10 55.7	+00.2	232	22.8	-31.7	N 28 03.8	-01.4	23				
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°4	00°4	00°4	00°4	00°4	00°4	SD	15°1	15°0	15°0	15°0	15°0	14°9
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°4	00°4	00°4	00°4	00°4	00°4	HP	55°3	55°2	55°1	55°0	54°9	54°8
SHA	194°	193°	193°	193°	193°	193°	SHA	227°	227°	227°	227°	227°	227°	SHA	272°	269°	267°	265°	262°	260°
Greenwich Culmination Time: 11:57				Greenwich Culmination Time: 09:43				Greenwich Culmination Time: 06:56												

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	159	24.4	+01.0	S 02 08.1	+00.7	302	18.4	+02.5	N 15 13.4	+00.0	10	10.6	+02.7	S 12 03.6	+00.0	00
01	174	25.4	+01.0	S 02 08.8	+00.7	317	20.9	+02.5	N 15 13.4	+00.0	25	13.3	+02.6	S 12 03.6	+00.1	01
02	189	26.4	+01.0	S 02 09.5	+00.6	332	23.4	+02.5	N 15 13.4	+00.0	40	15.9	+02.6	S 12 03.7	+00.1	02
03	204	27.4	+00.9	S 02 10.1	+00.7	347	25.9	+02.5	N 15 13.4	+00.0	55	18.5	+02.7	S 12 03.8	+00.0	03
04	219	28.3	+01.0	S 02 10.8	+00.6	2	28.4	+02.4	N 15 13.4	+00.0	70	21.2	+02.6	S 12 03.8	+00.1	04
05	234	29.3	+01.0	S 02 11.4	+00.7	17	30.8	+02.5	N 15 13.4	+00.0	85	23.8	+02.7	S 12 03.9	+00.1	05
06	249	30.3	+01.0	S 02 12.1	+00.7	32	33.3	+02.5	N 15 13.4	+00.0	100	26.5	+02.6	S 12 04.0	+00.0	06
07	264	31.3	+01.0	S 02 12.8	+00.6	47	35.8	+02.5	N 15 13.4	-00.1	115	29.1	+02.6	S 12 04.0	+00.1	07
08	279	32.3	+01.0	S 02 13.4	+00.7	62	38.3	+02.5	N 15 13.3	+00.0	130	31.7	+02.7	S 12 04.1	+00.1	08
09	294	33.3	+00.9	S 02 14.1	+00.6	77	40.8	+02.5	N 15 13.3	+00.0	145	34.4	+02.6	S 12 04.2	+00.0	09
10	309	34.2	+01.0	S 02 14.7	+00.7	92	43.3	+02.5	N 15 13.3	+00.0	160	37.0	+02.6	S 12 04.2	+00.1	10
11	324	35.2	+01.0	S 02 15.4	+00.7	107	45.8	+02.4	N 15 13.3	+00.0	175	39.6	+02.7	S 12 04.3	+00.1	11
12	339	36.2	+01.0	S 02 16.1	+00.6	122	48.2	+02.5	N 15 13.3	+00.0	190	42.3	+02.6	S 12 04.4	+00.0	12
13	354	37.2	+01.0	S 02 16.7	+00.7	137	50.7	+02.5	N 15 13.3	+00.0	205	44.9	+02.7	S 12 04.4	+00.1	13
14	9	38.2	+00.9	S												

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for September 13, 2023, such as GHA, ddGHA, Dec, and dDec for each planet.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for September 10, 2023, such as GHA, ddGHA, Dec, and dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for September 13, 2023, such as GHA, ddGHA, Dec, and dDec for each planet.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for September 10, 2023, such as GHA, ddGHA, Dec, and dDec for each planet.

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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.

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

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

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UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	181	18.5	+00.2	N 02 26.3	-01.0	219	32.1	+01.3	N 11 24.1	+00.0	161	18.5	-24.6	S 05 10.3	+14.2	00
01	196	18.7	+00.3	N 02 25.3	-00.9	234	33.4	+01.3	N 11 24.1	+00.1	175	53.9	-24.7	S 05 24.5	+14.2	01
02	211	19.0	+00.2	N 02 24.4	-01.0	249	34.7	+01.3	N 11 24.2	+00.1	190	29.2	-24.7	S 05 38.7	+14.2	02
03	226	19.2	+00.2	N 02 23.4	-01.0	264	36.0	+01.3	N 11 24.3	+00.0	205	04.5	-24.7	S 05 52.9	+14.2	03
04	241	19.4	+00.2	N 02 22.4	-00.9	279	37.3	+01.2	N 11 24.3	+00.1	219	39.8	-24.8	S 06 07.1	+14.2	04
05	256	19.6	+00.2	N 02 21.5	-01.0	294	38.5	+01.3	N 11 24.4	+00.0	234	15.0	-24.8	S 06 21.3	+14.1	05
06	271	19.8	+00.3	N 02 20.5	-01.0	309	39.8	+01.3	N 11 24.4	+00.1	248	50.2	-24.9	S 06 35.4	+14.1	06
07	286	20.1	+00.2	N 02 19.5	-00.9	324	41.1	+01.2	N 11 24.5	+00.0	263	25.3	-24.9	S 06 49.5	+14.2	07
08	301	20.3	+00.2	N 02 18.6	-01.0	339	42.3	+01.3	N 11 24.5	+00.1	278	00.4	-25.0	S 07 03.7	+14.0	08
09	316	20.5	+00.2	N 02 17.6	-01.0	354	43.6	+01.3	N 11 24.6	+00.0	292	35.4	-24.9	S 07 17.7	+14.1	09
10	331	20.7	+00.3	N 02 16.6	-00.9	9	44.9	+01.2	N 11 24.6	+00.1	307	10.5	-25.1	S 07 31.8	+14.1	10
11	346	21.0	+00.2	N 02 15.7	-01.0	24	46.1	+01.3	N 11 24.7	+00.1	321	45.4	-25.1	S 07 45.9	+14.0	11
12	1	21.2	+00.2	N 02 14.7	-01.0	39	47.4	+01.2	N 11 24.8	+00.0	336	20.3	-25.1	S 07 59.9	+14.0	12
13	16	21.4	+00.2	N 02 13.7	-00.9	54	48.6	+01.3	N 11 24.8	+00.0	350	55.2	-25.2	S 08 13.9	+14.0	13
14	31	21.6	+00.2	N 02 12.8	-01.0	69	49.9	+01.2	N 11 24.8	+00.1	5	30.0	-25.2	S 08 27.9	+13.9	14
15	46	21.8	+00.3	N 02 11.8	-01.0	84	51.1	+01.3	N 11 24.9	+00.0	20	04.8	-25.2	S 08 41.8	+14.0	15
16	61	22.1	+00.2	N 02 10.8	-00.9	99	52.4	+01.2	N 11 24.9	+00.1	34	39.6	-25.4	S 08 55.8	+13.9	16
17	76	22.3	+00.2	N 02 09.9	-01.0	114	53.6	+01.3	N 11 25.0	+00.0	49	14.2	-25.3	S 09 09.7	+13.9	17
18	91	22.5	+00.2	N 02 08.9	-01.0	129	54.9	+01.2	N 11 25.0	+00.1	63	48.9	-25.5	S 09 23.6	+13.8	18
19	106	22.7	+00.3	N 02 07.9	-00.9	144	56.1	+01.3	N 11 25.1	+00.0	78	23.4	-25.4	S 09 37.4	+13.8	19
20	121	23.0	+00.2	N 02 07.0	-01.0	159	57.4	+01.2	N 11 25.1	+00.1	92	58.0	-25.6	S 09 51.2	+13.8	20
21	136	23.2	+00.2	N 02 06.0	-01.0	174	58.6	+01.2	N 11 25.2	+00.0	107	32.4	-25.6	S 10 05.0	+13.8	21
22	151	23.4	+00.2	N 02 05.0	-00.9	189	59.8	+01.2	N 11 25.2	+00.0	122	06.8	-25.6	S 10 18.8	+13.7	22
23	166	23.6	+00.3	N 02 04.1	-01.0	205	01.0	+01.3	N 11 25.2	+00.1	136	41.2	-25.7	S 10 32.5	+13.7	23

UT 02 06 10 14 18 22	SD 15°9' 15°9' 15°9' 15°9' 15°9' 15°9'	UT 02 06 10 14 18 22	SD 00°3' 00°3' 00°3' 00°3' 00°3' 00°3'	UT 02 06 10 14 18 22	SD 14°9' 15°0' 15°0' 15°0' 15°0' 15°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 54°8' 54°9' 54°9' 55°0' 55°1' 55°2'	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 54°8' 54°9' 54°9' 55°0' 55°1' 55°2'
SHA 186° 185° 185° 185° 185° 185°	SHA 224° 224° 224° 224° 224° 224°	SHA 168° 167° 167° 167° 167° 167°	SHA 224° 224° 224° 224° 224° 224°	SHA 168° 168° 168° 168° 168° 168°	SHA 186° 186° 186° 186° 186° 186°
Greenwich Culmination Time: 11:54		Greenwich Culmination Time: 09:21		Greenwich Culmination Time: 13:37	

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	163	17.5	+00.9	S 04 46.7	+00.7	312	24.1	+02.5	N 15 07.4	+00.0	20	42.5	+02.6	S 12 19.0	+00.1	00
01	178	18.4	+01.0	S 04 47.4	+00.7	327	26.6	+02.6	N 15 07.4	+00.0	35	45.1	+02.6	S 12 19.1	+00.0	01
02	193	19.4	+00.9	S 04 48.1	+00.6	342	29.2	+02.6	N 15 07.4	-00.1	50	47.7	+02.7	S 12 19.1	+00.1	02
03	208	20.3	+01.0	S 04 48.7	+00.7	357	31.8	+02.5	N 15 07.3	+00.0	65	50.4	+02.6	S 12 19.2	+00.1	03
04	223	21.3	+00.9	S 04 49.4	+00.6	12	34.3	+02.6	N 15 07.3	+00.0	80	53.0	+02.6	S 12 19.3	+00.0	04
05	238	22.2	+01.0	S 04 50.0	+00.7	27	36.9	+02.6	N 15 07.3	-00.1	95	55.6	+02.6	S 12 19.3	+00.1	05
06	253	23.2	+01.0	S 04 50.7	+00.7	42	39.5	+02.5	N 15 07.2	+00.0	110	58.2	+02.7	S 12 19.4	+00.0	06
07	268	24.2	+00.9	S 04 51.4	+00.6	57	42.0	+02.6	N 15 07.2	-00.1	126	00.9	+02.6	S 12 19.4	+00.1	07
08	283	25.1	+01.0	S 04 52.0	+00.7	72	44.6	+02.6	N 15 07.1	+00.0	141	03.5	+02.6	S 12 19.5	+00.1	08
09	298	26.1	+00.9	S 04 52.7	+00.6	87	47.2	+02.5	N 15 07.1	+00.0	156	06.1	+02.6	S 12 19.6	+00.0	09
10	313	27.0	+01.0	S 04 53.3	+00.7	102	49.7	+02.6	N 15 07.1	-00.1	171	08.7	+02.7	S 12 19.6	+00.1	10
11	328	28.0	+00.9	S 04 54.0	+00.6	117	52.3	+02.6	N 15 07.0	+00.0	186	11.4	+02.6	S 12 19.7	+00.0	11
12	343	28.9	+01.0	S 04 54.6	+00.7	132	54.9	+02.5	N 15 07.0	+00.0	201	14.0	+02.6	S 12 19.7	+00.1	12
13	358	29.9	+01.0	S 04 55.3	+00.7	147	57.4	+02.6	N 15 07.0	-00.1	216	16.6	+02.6	S 12 19.8	+00.1	13
14	1	30.9	+00.9	S 04 56.0	+00.6	163	00.0	+02.6	N 15 06.9	+00.0	231	19.2	+02.7	S 12 19.9	+00.0	14
15	28	31.8	+01.0	S 04 56.6	+00.7	178	02.6	+02.6	N 15 06.9	-00.1	246	21.9	+02.6	S 12 19.9	+00.1	15
16	43	32.8	+00.9	S 04 57.3	+00.6	193	05.2	+02.5	N 15 06.8	+00.0	261	24.5	+02.6	S 12 20.0	+00.0	16
17	58	33.7	+01.0	S 04 57.9	+00.7	208	07.7	+02.6	N 15 06.8	+00.0	276	27.1	+02.6	S 12 20.0	+00.1	17
18	73	34.7	+00.9	S 04 58.6	+00.7	223	10.3	+02.6	N 15 06.8	-00.1	291	29.7	+02.7	S 12 20.1	+00.1	18
19	88	35.6	+01.0	S 04 59.3	+00.6	238	12.9	+02.5	N 15 06.7	+00.0	306	32.4	+02.6	S 12 20.2	+00.0	19
20	103	36.6	+00.9	S 04 59.9	+00.7	253	15.4	+02.6	N 15 06.7	-00.1	321	35.0	+02.6	S 12 20.2	+00.1	20
21	118	37.5	+01.0	S 05 00.6	+00.6	268	18.0	+02.6	N 15 06.6	+00.0	336	37.6	+02.6	S 12 20.3	+00.0	21
22	133	38.5	+00.9	S 05 01.2	+00.7	283	20.6	+02.6	N 15 06.6	+00.0	351	40.2	+02.7	S 12 20.3	+00.1	22
23	148	39.4	+01.0	S 05 01.9	+00.6	298	23.2	+02.5	N 15 06.6	-00.1	6	42.9	+02.6	S 12 20.4	+00.1	23

UT 02 06 10 14 18 22	SD 05°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'
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°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°0' 00°0' 00°0' 00°0' 00°0' 00°0'
SHA 168° 167° 167° 167° 167° 167°	SHA 317° 317° 317° 317° 317° 317°	SHA 168° 167° 167° 167° 167° 167°	SHA 317° 317° 317° 317° 317° 317°	SHA 169° 169° 169° 169° 169° 169°	SHA 168° 168° 168° 168° 168° 168°
Greenwich Culmination Time: 13:06		Greenwich Culmination Time: 03:09		Greenwich Culmination Time: 22:33	

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	181	02.5	+00.2	N 03 35.6	-01.0	217	51.8	+01.5	N 11 17.3	+00.2	190	27.6	-24.8	N 11 33.5	-13.0	00
01	196	02.7	+00.2	N 03 34.6	-01.0	232	53.3	+01.5	N 11 17.5	+00.1	205	02.8	-24.8	N 11 20.5	-13.0	01
02	211	02.9	+00.3	N 03 33.6	-00.9	247	54.8	+01.5	N 11 17.6	+00.1	219	38.0	-24.7	N 11 07.5	-13.1	02
03	226	03.2	+00.2	N 03 32.7	-01.0	262	56.3	+01.5	N 11 17.7	+00.1	234	13.3	-24.7	N 10 54.4	-13.1	03
04	241	03.4	+00.2	N 03 31.7	-00.9	277	57.8	+01.5	N 11 17.8	+00.2	248	48.7	-24.7	N 10 41.3	-13.2	04
05	256	03.6	+00.2	N 03 30.8	-01.0	292	59.3	+01.5	N 11 18.0	+00.1	263	24.0	-24.6	N 10 28.1	-13.2	05
06	271	03.8	+00.2	N 03 29.8	-01.0	308	00.8	+01.4	N 11 18.1	+00.1	277	59.4	-24.6	N 10 14.9	-13.3	06
07	286	04.0	+00.3	N 03 28.8	-00.9	323	02.2	+01.5	N 11 18.2	+00.1	292	34.8	-24.5	N 10 01.6	-13.3	07
08	301	04.3	+00.2	N 03 27.9	-01.0	338	03.7	+01.5	N 11 18.3	+00.1	307	10.3	-24.6	N 09 48.3	-13.3	08
09	316	04.5	+00.2	N 03 26.9	-00.9	353	05.2	+01.5	N 11 18.4	+00.2	321	45.7	-24.5	N 09 35.0	-13.4	09
10	331	04.7	+00.2	N 03 26.0	-01.0	8	06.7	+01.4	N 11 18.6	+00.1	336	21.2	-24.4	N 09 21.6	-13.4	10
11	346	04.9	+00.3	N 03 25.0	-00.9	23	08.1	+01.5	N 11 18.7	+00.1	350	56.8	-24.5	N 09 08.2	-13.4	11
12	1	05.2	+00.2	N 03 24.1	-01.0	38	09.6	+01.5	N 11 18.8	+00.1	5	32.3	-24.4	N 08 54.8	-13.5	12
13	16	05.4	+00.2	N 03 23.1	-01.0	53	11.1	+01.4	N 11 18.9	+00.1	20	07.9	-24.4	N 08 41.3	-13.5	

UT	Sun				Venus				Moon				UT										
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec											
00	181	07.8	+00.2	N 03 12.5	-00.9	218	27.0	+01.4	N 11 20.1	+00.1	180	40.8	-24.2	N 06 10.8	-13.9	00							
01	196	08.0	+00.3	N 03 11.6	-01.0	233	28.4	+01.4	N 11 20.2	+00.1	195	16.6	-24.2	N 05 56.9	-13.9	01							
02	211	08.3	+00.2	N 03 10.6	-01.0	248	29.8	+01.4	N 11 20.3	+00.1	209	52.4	-24.1	N 05 43.0	-13.9	02							
03	226	08.5	+00.2	N 03 09.6	-00.9	263	31.2	+01.4	N 11 20.4	+00.1	224	28.3	-24.2	N 05 29.1	-13.9	03							
04	241	08.7	+00.2	N 03 08.7	-01.0	278	32.6	+01.5	N 11 20.5	+00.1	239	04.1	-24.1	N 05 15.2	-14.0	04							
05	256	08.9	+00.3	N 03 07.7	-00.9	293	34.1	+01.4	N 11 20.6	+00.1	253	40.0	-24.1	N 05 01.2	-13.9	05							
06	271	09.2	+00.2	N 03 06.8	-01.0	308	35.5	+01.4	N 11 20.7	+00.1	268	15.9	-24.2	N 04 47.3	-14.0	06							
07	286	09.4	+00.2	N 03 05.8	-01.0	323	36.9	+01.4	N 11 20.8	+00.1	282	51.7	-24.1	N 04 33.3	-14.1	07							
08	301	09.6	+00.2	N 03 04.8	-00.9	338	38.3	+01.4	N 11 20.9	+00.1	297	27.6	-24.1	N 04 19.2	-14.0	08							
09	316	09.8	+00.2	N 03 03.9	-01.0	353	39.7	+01.4	N 11 21.0	+00.1	312	03.5	-24.1	N 04 05.2	-14.1	09							
10	331	10.0	+00.3	N 03 02.9	-00.9	8	41.1	+01.4	N 11 21.1	+00.1	326	39.4	-24.0	N 03 51.1	-14.1	10							
11	346	10.3	+00.2	N 03 02.0	-01.0	23	42.5	+01.4	N 11 21.2	+00.1	341	15.4	-24.1	N 03 37.0	-14.1	11							
12	1	10.5	+00.2	N 03 01.0	-01.0	38	43.9	+01.4	N 11 21.3	+00.1	355	51.3	-24.1	N 03 22.9	-14.1	12							
13	16	10.7	+00.2	N 03 00.0	-00.9	53	45.3	+01.4	N 11 21.4	+00.1	10	27.2	-24.1	N 03 08.8	-14.1	13							
14	31	10.9	+00.3	N 02 59.1	-01.0	68	46.7	+01.3	N 11 21.5	+00.1	25	03.1	-24.1	N 02 54.7	-14.2	14							
15	46	11.2	+00.2	N 02 58.1	-01.0	83	48.0	+01.4	N 11 21.6	+00.1	39	39.0	-24.0	N 02 40.5	-14.2	15							
16	61	11.4	+00.2	N 02 57.1	-00.9	98	49.4	+01.4	N 11 21.7	+00.1	54	15.0	-24.1	N 02 26.3	-14.1	16							
17	76	11.6	+00.2	N 02 56.2	-01.0	113	50.8	+01.4	N 11 21.8	+00.0	68	50.9	-24.1	N 02 12.2	-14.2	17							
18	91	11.8	+00.2	N 02 55.2	-00.9	128	52.2	+01.4	N 11 21.8	+00.0	83	26.8	-24.1	N 01 58.0	-14.2	18							
19	106	12.0	+00.3	N 02 54.3	-01.0	143	53.6	+01.3	N 11 21.9	+00.1	98	02.7	-24.1	N 01 43.8	-14.3	19							
20	121	12.3	+00.2	N 02 53.3	-01.0	158	54.9	+01.4	N 11 22.0	+00.1	112	38.6	-24.1	N 01 29.5	-14.2	20							
21	136	12.5	+00.2	N 02 52.3	-00.9	173	56.3	+01.4	N 11 22.1	+00.1	127	14.5	-24.1	N 01 15.3	-14.2	21							
22	151	12.7	+00.2	N 02 51.4	-01.0	188	57.7	+01.3	N 11 22.2	+00.1	141	50.4	-24.1	N 01 01.1	-14.3	22							
23	166	12.9	+00.3	N 02 50.4	-01.0	203	59.0	+01.4	N 11 22.3	+00.1	156	26.3	-24.1	N 00 46.8	-14.3	23							
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°3	00°3	00°3	00°3	00°3	00°3	SD	14°8	14°8	14°8	14°8	14°8	14°8			
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°4	00°4	00°4	00°4	00°4	00°4	HP	54°2	54°3	54°3	54°3	54°4	54°4			
SHA	187°	187°	187°	187°	187°	187°	SHA	225°	225°	225°	225°	224°	224°	SHA	186°	186°	186°	186°	186°	186°			
Greenwich Culmination Time: 11:55				Greenwich Culmination Time: 09:25				Greenwich Culmination Time: 12:17				Greenwich Culmination Time: 11:54				Greenwich Culmination Time: 09:23				Greenwich Culmination Time: 12:56			

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	181	13.2	+00.2	N 02 49.4	-00.9	219	00.4	+01.3	N 11 22.4	+00.0	171	02.2	-24.1	N 00 32.5	-14.2	00				
01	196	13.4	+00.2	N 02 48.5	-01.0	234	01.7	+01.4	N 11 22.4	+00.1	185	38.1	-24.1	N 00 18.3	-14.3	01				
02	211	13.6	+00.2	N 02 47.5	-00.9	249	03.1	+01.3	N 11 22.5	+00.1	200	14.0	-24.2	N 00 04.0	-14.3	02				
03	226	13.8	+00.3	N 02 46.6	-01.0	264	04.4	+01.4	N 11 22.6	+00.1	214	49.8	-24.1	S 00 10.3	+14.3	03				
04	241	14.1	+00.2	N 02 45.6	-01.0	279	05.8	+01.3	N 11 22.7	+00.1	229	25.7	-24.2	S 00 24.6	+14.3	04				
05	256	14.3	+00.2	N 02 44.6	-00.9	294	07.1	+01.4	N 11 22.8	+00.0	244	01.5	-24.2	S 00 38.9	+14.3	05				
06	271	14.5	+00.2	N 02 43.7	-01.0	309	08.5	+01.3	N 11 22.8	+00.1	258	37.3	-24.2	S 00 53.2	+14.3	06				
07	286	14.7	+00.2	N 02 42.7	-01.0	324	09.8	+01.3	N 11 22.9	+00.1	273	13.1	-24.2	S 01 07.5	+14.3	07				
08	301	14.9	+00.3	N 02 41.7	-00.9	339	11.1	+01.4	N 11 23.0	+00.1	287	48.9	-24.2	S 01 21.8	+14.3	08				
09	316	15.2	+00.2	N 02 40.8	-01.0	354	12.5	+01.3	N 11 23.1	+00.0	302	24.7	-24.3	S 01 36.1	+14.3	09				
10	331	15.4	+00.2	N 02 39.8	-01.0	9	13.8	+01.3	N 11 23.1	+00.1	317	00.4	-24.2	S 01 50.4	+14.3	10				
11	346	15.6	+00.2	N 02 38.8	-00.9	24	15.1	+01.4	N 11 23.2	+00.1	331	36.2	-24.3	S 02 04.7	+14.3	11				
12	1	15.8	+00.3	N 02 37.9	-01.0	39	16.5	+01.3	N 11 23.3	+00.1	346	11.9	-24.3	S 02 19.0	+14.3	12				
13	16	16.1	+00.2	N 02 36.9	-01.0	54	17.8	+01.3	N 11 23.4	+00.0	5	47.6	-24.3	S 02 33.3	+14.3	13				
14	31	16.3	+00.2	N 02 35.9	-00.9	69	19.1	+01.3	N 11 23.4	+00.1	15	23.3	-24.4	S 02 47.6	+14.3	14				
15	46	16.5	+00.2	N 02 35.0	-01.0	84	20.4	+01.3	N 11 23.5	+00.1	29	58.9	-24.4	S 03 01.9	+14.3	15				
16	61	16.7	+00.2	N 02 34.0	-00.9	99	21.7	+01.3	N 11 23.6	+00.0	44	34.5	-24.4	S 03 16.2	+14.3	16				
17	76	16.9	+00.3	N 02 33.1	-01.0	114	23.0	+01.3	N 11 23.6	+00.1	59	10.1	-24.4	S 03 30.5	+14.3	17				
18	91	17.2	+00.2	N 02 32.1	-01.0	129	24.3	+01.3	N 11 23.7	+00.1	73	45.7	-24.4	S 03 44.8	+14.3	18				
19	106	17.4	+00.2	N 02 31.1	-00.9	144	25.6	+01.3	N 11 23.8	+00.0	88	21.3	-24.5	S 03 59.1	+14.2	19				
20	121	17.6	+00.2	N 02 30.2	-01.0	159	26.9	+01.3	N 11 23.8	+00.1	102	56.8	-24.5	S 04 13.3	+14.3	20				
21	136	17.8	+00.3	N 02 29.2	-01.0	174	28.2	+01.3	N 11 23.9	+00.1	117	32.3	-24.6	S 04 27.6	+14.2	21				
22	151	18.1	+00.2	N 02 28.2	-00.9	189	29.5	+01.3	N 11 24.0	+00.0	132	07.7	-24.6	S 04 41.8	+14.3	22				
23	166	18.3	+00.2	N 02 27.3	-01.0	204	30.8	+01.3	N 11 24.0	+00.1	146	43.1	-24.6	S 04 56.1	+14.2	23				
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°3	00°3	00°3	00°3	00°3	00°3	SD	14°8	14°9	14°9	14°9	14°9	14°9
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°3	00°3	00°3	00°3	00°3	00°3	HP	54°5	54°5	54°6	54°6	54°7	54°8
SHA	186°	186°	186°	186°	186°	186°	SHA	224°	224°	224°	224°	224°	224°	SHA	175°	174°	172°	170°	168°	167°
Greenwich Culmination Time: 11:54				Greenwich Culmination Time: 09:23				Greenwich Culmination Time: 12:56				Greenwich Culmination Time: 12:56								

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	162	31.4	+00.9	S 04 15.1	+00.7	310	21.4	+02.5	N 15 09.1	+00.0	18	36.4	+02.6	S 12 16.1	+00.0	00
01	177	32.3	+01.0	S 04 15.8	+00.6	325	23.9	+02.6	N 15 09.1	-00.1	33	39.0	+02.7	S 12 16.1	+00.1	01
02	192	33.3	+01.0	S 04 16.4	+00.7	340	26.5	+02.5	N 15 09.0	+00.0	48	41.7	+02.6	S 12 16.2	+00.1	02
03	207	34.3	+00.9	S 04 17.1	+00.6	355	29.0	+02.5	N 15 09.0	+00.0	63	44.3	+02.6	S 12 16.3	+00.0	03
04	222	35.2	+01.0	S 04 17.7	+00.7	10	31.5	+02.6	N 15 09.0	-00.1	78	46.9	+02.6	S 12 16.3	+00.1	04
05	237	36.2	+01.0	S 04 18.4	+00.7	25	34.1	+02.5	N 15 08.9	+00.0	93	49.5	+02.7	S 12 16.4	+00.0	05
06	252	37.2	+00.9	S 04 19.1	+00.6	40	36.6	+02.6	N 15 08.9	+00.0	108	52.2	+02.6	S 12 16.4	+00.1	06
07	267	38.1	+01.0	S 04 19.7	+00.7	55	39.2	+02.6	N 15 08.9	-00.1	123	54.8	+02.6	S 12 16.5	+00.1	07
08	282	39.1	+00.9	S 04 20.4	+00.6	70	41.8	+02.5	N 15 08.8	+00.0	138	57.4	+02.7	S 12 16.6	+00.0	08
09	297	40.0	+01.0	S 04 21.0	+00.7	85	44.3	+02.6	N 15 08.8	+00.0	154	00.1	+02.6	S 12 16.6	+00.1	09
10	312	41.0	+01.0	S 04 21.7	+00.7	100	46.9	+02.5	N 15 08.8	-00.1	169	02.7	+02.6	S 12 16.7	+00.1	10
11	327	42.0	+00.9	S 04 22.4	+00.6	115	49.4	+02.6	N 15 08.7	+00.0	184	05.3	+02.6	S 12 16.8	+00.0	11
12	342	42.9	+01.0	S 04 23.0	+00.7	130	52.0	+02.5	N 15 08.7	+00.0	199	07.9	+02.7	S 12 16.8	+00.1	12
13	357	43.9	+00.9	S 04 23.7	+00.6	145	54.5	+02.6	N 15 08.7	-00.1	214					

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

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

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

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

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	181	29.2	+00.2	N 01 39.9	-01.0	220	30.9	+01.1	N 11 25.9	+00.0	140	38.4	-27.4	S 16 02.1	+12.6	00				
01	196	29.4	+00.2	N 01 38.9	-01.0	235	32.0	+01.2	N 11 25.9	+00.1	155	11.0	-27.6	S 16 14.7	+12.4	01				
02	211	29.6	+00.3	N 01 37.9	-00.9	250	33.2	+01.1	N 11 26.0	+00.0	169	43.4	-27.7	S 16 27.1	+12.4	02				
03	226	29.9	+00.2	N 01 37.0	-01.0	265	34.3	+01.2	N 11 26.0	+00.0	184	15.7	-27.7	S 16 39.5	+12.3	03				
04	241	30.1	+00.2	N 01 36.0	-01.0	280	35.5	+01.1	N 11 26.0	+00.0	198	48.0	-27.9	S 16 51.8	+12.3	04				
05	256	30.3	+00.2	N 01 35.0	-00.9	295	36.6	+01.2	N 11 26.0	+00.0	213	20.1	-27.9	S 17 04.1	+12.2	05				
06	271	30.5	+00.3	N 01 34.1	-01.0	310	37.8	+01.1	N 11 26.0	+00.0	227	52.2	-28.0	S 17 16.3	+12.1	06				
07	286	30.8	+00.2	N 01 33.1	-01.0	325	38.9	+01.2	N 11 26.0	+00.0	242	24.2	-28.1	S 17 28.4	+12.1	07				
08	301	31.0	+00.2	N 01 32.1	-00.9	340	40.1	+01.1	N 11 26.0	+00.0	256	56.1	-28.2	S 17 40.5	+12.0	08				
09	316	31.2	+00.2	N 01 31.2	-01.0	355	41.2	+01.1	N 11 26.0	+00.0	271	27.9	-28.3	S 17 52.5	+11.9	09				
10	331	31.4	+00.2	N 01 30.2	-01.0	10	42.3	+01.2	N 11 26.0	+00.1	285	59.6	-28.3	S 18 04.4	+11.9	10				
11	346	31.6	+00.3	N 01 29.2	-01.0	25	43.5	+01.1	N 11 26.1	+00.0	300	31.3	-28.5	S 18 16.3	+11.7	11				
12	1	31.9	+00.2	N 01 28.2	-00.9	40	44.6	+01.1	N 11 26.1	+00.0	315	02.8	-28.5	S 18 28.0	+11.7	12				
13	16	32.1	+00.2	N 01 27.3	-01.0	55	45.7	+01.2	N 11 26.1	+00.0	329	34.3	-28.7	S 18 39.7	+11.7	13				
14	31	32.3	+00.2	N 01 26.3	-01.0	70	46.9	+01.1	N 11 26.1	+00.0	344	05.6	-28.7	S 18 51.4	+11.5	14				
15	46	32.5	+00.3	N 01 25.3	-00.9	85	48.0	+01.1	N 11 26.1	+00.0	358	36.9	-28.9	S 19 02.9	+11.5	15				
16	61	32.8	+00.2	N 01 24.4	-01.0	100	49.1	+01.1	N 11 26.1	+00.0	13	08.0	-28.9	S 19 14.4	+11.4	16				
17	76	33.0	+00.2	N 01 23.4	-01.0	115	50.2	+01.1	N 11 26.1	+00.0	27	39.1	-29.1	S 19 25.8	+11.3	17				
18	91	33.2	+00.2	N 01 22.4	-00.9	130	51.3	+01.2	N 11 26.1	+00.0	42	10.0	-29.1	S 19 37.1	+11.2	18				
19	106	33.4	+00.3	N 01 21.5	-01.0	145	52.5	+01.1	N 11 26.1	+00.0	56	40.9	-29.2	S 19 48.3	+11.1	19				
20	121	33.7	+00.2	N 01 20.5	-01.0	160	53.6	+01.1	N 11 26.1	+00.0	71	11.7	-29.4	S 19 59.4	+11.1	20				
21	136	33.9	+00.2	N 01 19.5	-01.0	175	54.7	+01.1	N 11 26.1	+00.0	85	42.3	-29.4	S 20 10.5	+11.0	21				
22	151	34.1	+00.2	N 01 18.5	-00.9	190	55.8	+01.1	N 11 26.1	+00.0	100	12.9	-29.5	S 20 21.5	+10.8	22				
23	166	34.3	+00.2	N 01 17.6	-01.0	205	56.9	+01.1	N 11 26.1	-00.1	114	43.4	-29.7	S 20 32.3	+10.8	23				
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°3	00°3	00°3	00°3	00°3	00°3	SD	15°2	15°2	15°2	15°3	15°3	15°3
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°3	00°3	00°3	00°3	00°3	00°3	HP	55°7	55°8	55°9	56°0	56°1	56°2
SHA	184°	184°	183°	183°	183°	183°	SHA	223°	223°	223°	223°	222°	222°	SHA	142°	140°	138°	136°	134°	132°
Greenwich Culmination Time: 11:53				Greenwich Culmination Time: 09:17				Greenwich Culmination Time: 15:05												

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	181	34.5	+00.3	N 01 16.6	-01.0	220	58.0	+01.1	N 11 26.0	+00.0	129	13.7	-29.7	S 20 43.1	+10.7	00				
01	196	34.8	+00.2	N 01 15.6	-00.9	235	59.1	+01.1	N 11 26.0	+00.0	143	44.0	-29.9	S 20 53.8	+10.6	01				
02	211	35.0	+00.2	N 01 14.7	-01.0	251	00.2	+01.1	N 11 26.0	+00.0	158	14.1	-29.9	S 21 04.4	+10.6	02				
03	226	35.2	+00.2	N 01 13.7	-01.0	266	01.3	+01.1	N 11 26.0	+00.0	172	44.2	-30.0	S 21 15.0	+10.4	03				
04	241	35.4	+00.3	N 01 12.7	-00.9	281	02.4	+01.1	N 11 26.0	+00.0	187	14.2	-30.2	S 21 25.4	+10.3	04				
05	256	35.7	+00.2	N 01 11.8	-01.0	296	03.5	+01.0	N 11 26.0	+00.0	201	44.0	-30.2	S 21 35.7	+10.2	05				
06	271	35.9	+00.2	N 01 10.8	-01.0	311	04.5	+01.1	N 11 26.0	+00.0	216	13.8	-30.4	S 21 45.9	+10.2	06				
07	286	36.1	+00.2	N 01 09.8	-01.0	326	05.6	+01.1	N 11 26.0	+00.0	230	43.4	-30.5	S 21 56.1	+10.0	07				
08	301	36.3	+00.2	N 01 08.8	-00.9	341	06.7	+01.1	N 11 26.0	-00.1	245	12.9	-30.5	S 22 06.1	+09.9	08				
09	316	36.5	+00.3	N 01 07.9	-01.0	356	07.8	+01.1	N 11 25.9	+00.0	259	42.4	-30.7	S 22 16.0	+09.8	09				
10	331	36.8	+00.2	N 01 06.9	-01.0	11	08.9	+01.0	N 11 25.9	+00.0	274	11.7	-30.8	S 22 25.8	+09.7	10				
11	346	37.0	+00.2	N 01 05.9	-00.9	26	09.9	+01.1	N 11 25.9	+00.0	288	40.9	-30.9	S 22 35.5	+09.6	11				
12	1	37.2	+00.2	N 01 05.0	-01.0	41	11.0	+01.1	N 11 25.9	+00.0	303	10.0	-31.0	S 22 45.1	+09.5	12				
13	16	37.4	+00.3	N 01 04.0	-01.0	56	12.1	+01.0	N 11 25.9	+00.0	317	39.0	-31.1	S 22 54.6	+09.4	13				
14	31	37.7	+00.2	N 01 03.0	-01.0	71	13.1	+01.1	N 11 25.9	-00.1	332	07.9	-31.2	S 23 04.0	+09.3	14				
15	46	37.9	+00.2	N 01 02.0	-00.9	86	14.2	+01.1	N 11 25.8	+00.0	346	36.7	-31.3	S 23 13.3	+09.2	15				
16	61	38.1	+00.2	N 01 01.1	-01.0	101	15.3	+01.0	N 11 25.8	+00.0	1	05.4	-31.4	S 23 22.5	+09.1	16				
17	76	38.3	+00.2	N 01 00.1	-01.0	116	16.3	+01.1	N 11 25.8	+00.0	15	34.0	-31.5	S 23 31.6	+08.9	17				
18	91	38.5	+00.3	N 00 59.1	-00.9	131	17.4	+01.0	N 11 25.8	-00.1	30	02.5	-31.7	S 23 40.5	+08.8	18				
19	106	38.8	+00.2	N 00 58.2	-01.0	146	18.4	+01.1	N 11 25.7	+00.0	44	30.8	-31.7	S 23 49.3	+08.7	19				
20	121	39.0	+00.2	N 00 57.2	-01.0	161	19.5	+01.0	N 11 25.7	+00.0	58	59.1	-31.9	S 23 58.0	+08.6	20				
21	136	39.2	+00.2	N 00 56.2	-00.9	176	20.5	+01.1	N 11 25.7	+00.0	73	27.2	-31.9	S 24 06.6	+08.5	21				
22	151	39.4	+00.3	N 00 55.3	-01.0	191	21.6	+01.0	N 11 25.7	-00.1	87	55.3	-32.1	S 24 15.1	+08.4	22				
23	166	39.7	+00.2	N 00 54.3	-01.0	206	22.6	+01.1	N 11 25.6	+00.0	102	23.2	-32.2	S 24 23.5	+08.2	23				
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°3	00°3	00°3	00°3	00°3	00°3	SD	15°3	15°4	15°4	15°4	15°4	15°5
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°3	00°3	00°3	00°3	00°3	00°3	HP	56°3	56°4	56°5	56°6	56°7	56°8
SHA	183°	183°	183°	182°	182°	182°	SHA	222°	222°	222°	222°	222°	222°	SHA	130°	127°	125°	123°	121°	118°
Greenwich Culmination Time: 11:53				Greenwich Culmination Time: 09:15				Greenwich Culmination Time: 15:55												

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	164	03.3	+00.9	S 05 18.3	+00.7	314	27.6	+02.6	N 15 05.6	-00.1	22	48.4	+02.6	S 12 21.9	+00.0	00
01	179	04.2	+01.0	S 05 19.0	+00.6	329	30.2	+02.5	N 15 05.5	+00.0	37	51.0	+02.7	S 12 21.9	+00.1	01
02	194	05.2	+00.9	S 05 19.6	+00.7	344	32.7	+02.6	N 15 05.5	-00.1	52	53.7	+02.6	S 12 22.0	+00.1	02
03	209	06.1	+01.0	S 05 20.3	+00.7	359	35.3	+02.6	N 15 05.4	+00.0	67	56.3	+02.6	S 12 22.1	+00.0	03
04	224	07.1	+00.9	S 05 21.0	+00.6	14	37.9	+02.6	N 15 05.4	+00.0	82	58.9	+02.6	S 12 22.1	+00.1	04
05	239	08.0	+01.0	S 05 21.6	+00.7	29	40.5	+02.6	N 15 05.4	-00.1	98	01.5	+02.6	S 12 22.2	+00.0	05
06	254	09.0	+00.9	S 05 22.3	+00.6	44	43.1	+02.6	N 15 05.3	+00.0	113	04.1	+02.7	S 12 22.2	+00.1	06
07	269	09.9	+01.0	S 05 22.9	+00.7	59	45.7	+02.5	N 15 05.3	-00.1	128	06.8	+02.6	S 12 22.3	+00.1	07
08	284	10.9	+00.9	S 05 23.6	+00.6	74	48.2	+02.6	N 15 05.2	+00.0	143	09.4	+02.6	S 12 22.4	+00.0	08
09	299	11.8	+01.0	S 05 24.2	+00.7	89	50.8	+02.6	N 15 05.2	-00.1	158	12.0	+02.6	S 12 22.4	+00.1	09
10	314	12.8	+00.9	S 05 24.9	+00.7	104	53.4	+02.6	N 15 05.1	+00.0	173	14.6	+02.7	S 12 22.5	+00.0	10
11	329	13.7	+01.0	S 05 25.6	+00.6	119	56.0	+02.6	N 15 05.1	+00.0	188	17.3	+02.6	S 12 22.5	+00.1	11
12	344	14.7	+00.9	S 05 26.2	+00.7	134	58.6	+02.6	N 15 05.1	-00.1	203	19.9	+02.6	S 12 22.6	+00.0	12
13	359	15.6	+01.0	S 05 26.9	+00.6	150	01.2	+02.5	N 15 05.0	+00.0	218	22.5	+02.6	S 12 22.6	+00.1	13
14	14	16.6	+0													

UT	Sun				Venus				Moon				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	182	01.0	+00.2	S 00 40.1	+00.9	222	53.3	+00.8	N 11 18.4	-00.1	59	49.6	-36.3	S 25 10.7	-08.4	00	
01	197	01.2	+00.2	S 00 41.0	+01.0	237	54.1	+00.8	N 11 18.3	-00.2	74	13.3	-36.2	S 25 02.3	-08.5	01	
02	212	01.4	+00.3	S 00 42.0	+01.0	252	54.9	+00.9	N 11 18.1	-00.1	88	37.1	-36.1	S 24 53.8	-08.7	02	
03	227	01.7	+00.2	S 00 43.0	+01.0	267	55.8	+00.8	N 11 18.0	-00.1	103	01.0	-36.1	S 24 45.1	-08.9	03	
04	242	01.9	+00.2	S 00 44.0	+00.9	282	56.6	+00.8	N 11 17.9	-00.1	117	24.9	-36.1	S 24 36.2	-09.1	04	
05	257	02.1	+00.2	S 00 44.9	+01.0	297	57.4	+00.8	N 11 17.8	-00.2	131	48.8	-36.0	S 24 27.1	-09.2	05	
06	272	02.3	+00.2	S 00 45.9	+01.0	312	58.2	+00.9	N 11 17.6	-00.1	146	12.8	-35.9	S 24 17.9	-09.4	06	
07	287	02.5	+00.3	S 00 46.9	+01.0	327	59.1	+00.8	N 11 17.5	-00.1	160	36.9	-35.9	S 24 08.5	-09.6	07	
08	302	02.8	+00.2	S 00 47.9	+00.9	342	59.9	+00.8	N 11 17.4	-00.1	175	01.0	-35.8	S 23 58.9	-09.8	08	
09	317	03.0	+00.2	S 00 48.8	+01.0	358	00.7	+00.8	N 11 17.3	-00.2	189	25.2	-35.7	S 23 49.1	-09.9	09	
10	332	03.2	+00.2	S 00 49.8	+01.0	13	01.5	+00.8	N 11 17.1	-00.1	203	49.5	-35.7	S 23 39.2	-10.0	10	
11	347	03.4	+00.2	S 00 50.8	+00.9	28	02.3	+00.8	N 11 17.0	-00.1	218	13.8	-35.6	S 23 29.2	-10.3	11	
12	2	03.6	+00.2	S 00 51.7	+01.0	43	03.1	+00.8	N 11 16.9	-00.2	232	38.2	-35.6	S 23 18.9	-10.4	12	
13	17	03.8	+00.3	S 00 52.7	+01.0	58	03.9	+00.8	N 11 16.7	-00.1	247	02.6	-35.5	S 23 08.5	-10.5	13	
14	32	04.1	+00.2	S 00 53.7	+01.0	73	04.7	+00.8	N 11 16.6	-00.1	261	27.1	-35.4	S 22 58.0	-10.8	14	
15	47	04.3	+00.2	S 00 54.7	+00.9	88	05.5	+00.8	N 11 16.5	-00.2	275	51.7	-35.3	S 22 47.2	-10.8	15	
16	62	04.5	+00.2	S 00 55.6	+01.0	103	06.3	+00.8	N 11 16.3	-00.1	290	16.4	-35.3	S 22 36.4	-11.1	16	
17	77	04.7	+00.2	S 00 56.6	+01.0	118	07.1	+00.8	N 11 16.2	-00.1	304	41.1	-35.3	S 22 25.3	-11.2	17	
18	92	04.9	+00.2	S 00 57.6	+01.0	133	07.9	+00.8	N 11 16.1	-00.2	319	05.8	-35.1	S 22 14.1	-11.3	18	
19	107	05.1	+00.3	S 00 58.6	+00.9	148	08.7	+00.8	N 11 15.9	-00.1	333	30.7	-35.1	S 22 02.8	-11.5	19	
20	122	05.4	+00.2	S 00 59.5	+01.0	163	09.5	+00.8	N 11 15.8	-00.2	347	55.6	-35.0	S 21 51.3	-11.7	20	
21	137	05.6	+00.2	S 01 00.5	+01.0	178	10.3	+00.8	N 11 15.6	-00.1	2	2.0	6	-34.9	S 21 39.6	-11.8	21
22	152	05.8	+00.2	S 01 01.5	+01.0	193	11.1	+00.8	N 11 15.5	-00.1	16	45.7	-34.9	S 21 27.8	-11.9	22	
23	167	06.0	+00.2	S 01 02.5	+00.9	208	11.9	+00.8	N 11 15.4	-00.2	31	10.8	-34.8	S 21 15.9	-12.1	23	

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	178°	178°	178°	178°	178°	178°
Greenwich Culmination Time: 11:51						

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	166	18.8	+01.0	S 06 52.5	+00.7	320	42.7	+02.6	N 14 58.7	-00.1	29	05.0	+02.6	S 12 29.9	+00.1	00
01	181	19.8	+00.9	S 06 53.2	+00.6	335	45.3	+02.6	N 14 58.6	+00.0	44	07.6	+02.6	S 12 30.0	+00.0	01
02	196	20.7	+00.9	S 06 53.8	+00.7	350	47.9	+02.6	N 14 58.6	-00.1	59	10.2	+02.6	S 12 30.0	+00.1	02
03	211	21.6	+01.0	S 06 54.5	+00.6	5	50.5	+02.7	N 14 58.5	-00.1	74	12.8	+02.6	S 12 30.1	+00.0	03
04	226	22.6	+00.9	S 06 55.1	+00.7	20	53.2	+02.6	N 14 58.4	+00.0	89	15.4	+02.6	S 12 30.1	+00.1	04
05	241	23.5	+00.9	S 06 55.8	+00.6	35	55.8	+02.6	N 14 58.4	-00.1	104	18.0	+02.6	S 12 30.2	+00.0	05
06	256	24.4	+01.0	S 06 56.4	+00.7	50	58.4	+02.7	N 14 58.3	+00.0	119	20.6	+02.6	S 12 30.2	+00.1	06
07	271	25.4	+00.9	S 06 57.1	+00.6	66	01.1	+02.6	N 14 58.3	-00.1	134	23.2	+02.6	S 12 30.3	+00.0	07
08	286	26.3	+00.9	S 06 57.7	+00.7	81	03.7	+02.6	N 14 58.2	+00.0	149	25.8	+02.6	S 12 30.3	+00.1	08
09	301	27.2	+01.0	S 06 58.4	+00.6	96	06.3	+02.6	N 14 58.2	-00.1	164	28.4	+02.7	S 12 30.4	+00.0	09
10	316	28.2	+00.9	S 06 59.0	+00.7	111	08.9	+02.7	N 14 58.1	+00.0	179	31.1	+02.6	S 12 30.4	+00.1	10
11	331	29.1	+00.9	S 06 59.7	+00.6	126	11.6	+02.6	N 14 58.1	-00.1	194	33.7	+02.6	S 12 30.5	+00.0	11
12	346	30.0	+00.9	S 07 00.3	+00.7	141	14.2	+02.6	N 14 58.0	+00.0	209	36.3	+02.6	S 12 30.5	+00.1	12
13	1	30.9	+01.0	S 07 01.0	+00.6	156	16.8	+02.7	N 14 58.0	-00.1	224	38.9	+02.6	S 12 30.6	+00.0	13
14	16	31.9	+00.9	S 07 01.6	+00.7	171	19.5	+02.6	N 14 57.9	-00.1	239	41.5	+02.6	S 12 30.6	+00.1	14
15	31	32.8	+00.9	S 07 02.3	+00.6	186	22.1	+02.6	N 14 57.8	+00.0	254	44.1	+02.6	S 12 30.7	+00.0	15
16	46	33.7	+01.0	S 07 02.9	+00.7	201	24.7	+02.7	N 14 57.8	-00.1	269	46.7	+02.6	S 12 30.7	+00.1	16
17	61	34.7	+00.9	S 07 03.6	+00.6	216	27.4	+02.6	N 14 57.7	+00.0	284	49.3	+02.6	S 12 30.8	+00.1	17
18	76	35.6	+00.9	S 07 04.2	+00.7	231	30.0	+02.6	N 14 57.7	-00.1	299	51.9	+02.6	S 12 30.9	+00.0	18
19	91	36.5	+00.9	S 07 04.9	+00.6	246	32.6	+02.7	N 14 57.6	+00.0	314	54.5	+02.6	S 12 30.9	+00.1	19
20	106	37.4	+01.0	S 07 05.5	+00.7	261	35.3	+02.6	N 14 57.6	-00.1	329	57.1	+02.6	S 12 31.0	+00.0	20
21	121	38.4	+00.9	S 07 06.2	+00.6	276	37.9	+02.6	N 14 57.5	+00.0	344	59.7	+02.6	S 12 31.0	+00.1	21
22	136	39.3	+00.9	S 07 06.8	+00.7	291	40.5	+02.7	N 14 57.5	-00.1	0	02.3	+02.6	S 12 31.1	+00.0	22
23	151	40.2	+01.0	S 07 07.5	+00.6	306	43.2	+02.6	N 14 57.4	-00.1	15	04.9	+02.6	S 12 31.1	+00.1	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	163°	163°	163°	162°	162°	162°
Greenwich Culmination Time: 12:53						

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	317°	317°	317°	317°	317°	317°
Greenwich Culmination Time: 02:36						

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	026°	026°	026°	026°	026°	026°
Greenwich Culmination Time: 21:59						

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	181	45.2	+00.2	N 00 30.0	-01.0	221	48.0	+01.0	N 11 24.6	+00.0	103	27.7	-34.7	S 27 08.5	+04.6	00
01	196	45.4	+00.2	N 00 29.0	-01.0	236	49.0	+01.0	N 11 24.6	-00.1	117	53.0	-34.8	S 27 13.1	+04.6	01
02	211	45.6	+00.3	N 00 28.0	-00.9	251	50.0	+00.9	N 11 24.5	+00.0	132	18.2	-34.9	S 27 17.7	+04.3	02
03	226	45.9	+00.2	N 00 27.1	-01.0	266	50.9	+01.0	N 11 24.5	-00.1	146	43.3	-34.9	S 27 22.0	+04.3	03
04	241	46.1	+00.2	N 00 26.1	-01.0	281	51.9	+01.0	N 11 24.4	+00.0	161	08.4	-35.1	S 27 26.3	+04.0	04
05	256	46.3	+00.2	N 00 25.1	-00.9	296	52.9	+01.0	N 11 24.4	-00.1	175	33.3	-35.1	S 27 30.3	+03.9	05
06	271	46.5	+00.2	N 00 24.2	-01.0	311	53.9	+00.9	N 11 24.3	-00.1	189	58.2	-35.2	S 27 34.2	+03.7	06
07	286	46.7	+00.3	N 00 23.2	-01.0	326	54.8	+01.0	N 11 24.2	+00.0	204	23.0	-35.3	S 27 37.9	+03.5	07
08	301	47.0	+00.2	N 00 22.2	-01.0	341	55.8	+01.0	N 11 24.2	-00.1	218	47.7	-35.4	S 27 41.4	+03.4	08
09	316	47.2	+00.2	N 00 21.2	-00.9	356	56.8	+00.9	N 11 24.1	+00.0	233	12.3	-35.5	S 27 44.8	+03.2	09
10	331	47.4	+00.2	N 00 20.3	-01.0	11	57.7	+01.0	N 11 24.1	-00.1	247	36.8	-35.5	S 27 48.0	+03.1	10
11	346	47.6	+00.2	N 00 19.3	-01.0	26	58.7	+01.0	N 11 24.0	-00.1	262	01.3	-35.6	S 27 51.1	+02.9	11
12	1	47.8	+00.3	N 00 18.3	-01.0	41	59.7	+00.9	N 11 23.9	+00.0	276	25.7	-35.7	S 27 54.0	+02.7	12
13	16	48.1	+00.2	N 00 17.3	-00.9	57	00.6	+01.0	N 11 23.9	-00.1	290	50.0	-35.7	S 27 56.7	+02.5	13
14	31	48.3	+00.2	N 00 16.4	-01.0	72	01.6	+00.9	N 11 23.8	-00.1	305	14.3	-35.8	S 2		

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	181	50.5	+00.2	N 00 06.6	-00.9	222	11.0	+00.9	N 11 23.1	-00.1	89	13.3	-36.4	S 28 14.8	+00.5
01	196	50.7	+00.2	N 00 05.7	-01.0	237	11.9	+01.0	N 11 23.0	+00.0	103	36.9	-36.5	S 28 15.3	+00.4
02	211	50.9	+00.3	N 00 04.7	-01.0	252	12.9	+00.9	N 11 23.0	-00.1	118	00.4	-36.5	S 28 15.7	+00.2
03	226	51.2	+00.2	N 00 03.7	-00.9	267	13.8	+00.9	N 11 22.9	-00.1	132	23.9	-36.5	S 28 15.9	+00.1
04	241	51.4	+00.2	N 00 02.8	-01.0	282	14.7	+00.9	N 11 22.8	-00.1	146	47.4	-36.6	S 28 16.0	-00.2
05	256	51.6	+00.2	N 00 01.8	-01.0	297	15.6	+01.0	N 11 22.7	-00.1	161	10.8	-36.7	S 28 15.8	-00.4
06	271	51.8	+00.2	N 00 00.8	-01.0	312	16.6	+00.9	N 11 22.6	+00.0	175	34.1	-36.6	S 28 15.4	-00.5
07	286	52.0	+00.3	S 00 00.2	+00.9	327	17.5	+00.9	N 11 22.6	-00.1	189	57.5	-36.7	S 28 14.9	-00.7
08	301	52.3	+00.2	S 00 01.1	+01.0	342	18.4	+00.9	N 11 22.5	-00.1	204	20.8	-36.8	S 28 14.2	-00.9
09	316	52.5	+00.2	S 00 02.1	+01.0	357	19.3	+00.9	N 11 22.4	-00.1	218	44.0	-36.7	S 28 13.3	-01.1
10	331	52.7	+00.2	S 00 03.1	+01.0	12	20.2	+00.9	N 11 22.3	-00.1	233	07.3	-36.8	S 28 12.2	-01.3
11	346	52.9	+00.2	S 00 04.1	+00.9	27	21.1	+00.9	N 11 22.2	-00.1	247	30.5	-36.8	S 28 10.9	-01.5
12	1	53.1	+00.3	S 00 05.0	+01.0	42	22.0	+00.9	N 11 22.1	-00.1	261	53.7	-36.9	S 28 09.4	-01.7
13	16	53.4	+00.2	S 00 06.0	+01.0	57	22.9	+00.9	N 11 22.0	+00.0	276	16.8	-36.9	S 28 07.7	-01.8
14	31	53.6	+00.2	S 00 07.0	+00.9	72	23.8	+00.9	N 11 22.0	-00.1	290	39.9	-36.8	S 28 05.9	-02.1
15	46	53.8	+00.2	S 00 07.9	+01.0	87	24.7	+00.9	N 11 21.9	-00.1	305	03.1	-36.9	S 28 03.8	-02.2
16	61	54.0	+00.2	S 00 08.9	+01.0	102	25.6	+00.9	N 11 21.8	-00.1	319	26.2	-37.0	S 28 01.6	-02.4
17	76	54.2	+00.2	S 00 09.9	+01.0	117	26.5	+00.9	N 11 21.7	-00.1	333	49.2	-36.9	S 27 59.2	-02.6
18	91	54.4	+00.3	S 00 10.9	+00.9	132	27.4	+00.9	N 11 21.6	-00.1	348	12.3	-36.9	S 27 56.6	-02.8
19	106	54.7	+00.2	S 00 11.8	+01.0	147	28.3	+00.9	N 11 21.5	-00.1	2	35.4	-37.0	S 27 53.8	-03.0
20	121	54.9	+00.2	S 00 12.8	+01.0	162	29.2	+00.9	N 11 21.4	-00.1	16	58.4	-36.9	S 27 50.8	-03.2
21	136	55.1	+00.2	S 00 13.8	+01.0	177	30.1	+00.9	N 11 21.3	-00.1	31	21.5	-37.0	S 27 47.6	-03.4
22	151	55.3	+00.2	S 00 14.8	+00.9	192	31.0	+00.9	N 11 21.2	-00.1	45	44.5	-36.9	S 27 44.2	-03.5
23	166	55.5	+00.3	S 00 15.7	+01.0	207	31.9	+00.8	N 11 21.1	-00.1	60	07.6	-37.0	S 27 40.7	-03.8

UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT
SD	15°9'	15°9'	15°9'	15°9'	15°9'	15°9'	SD	00°3'	00°3'	00°3'	00°3'	00°3'	00°3'	SD
HP	00°1'	00°1'	00°1'	00°1'	00°1'	00°1'	HP	00°3'	00°3'	00°3'	00°3'	00°3'	00°3'	HP
SHA 180° 180° 180° 180° 180° 179°														
Greenwich Culmination Time: 11:52														

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	165	34.0	+00.9	S 06 21.2	+00.7	318	36.9	+02.6	N 15 01.2	-00.1	26	59.7	+02.6	S 12 27.3	+00.1
01	180	34.9	+00.9	S 06 21.9	+00.6	333	39.5	+02.6	N 15 01.1	+00.0	42	02.3	+02.6	S 12 27.4	+00.0
02	195	35.8	+01.0	S 06 22.5	+00.7	348	42.1	+02.6	N 15 01.1	-00.1	57	04.9	+02.6	S 12 27.4	+00.1
03	210	36.8	+00.9	S 06 23.2	+00.6	3	44.7	+02.6	N 15 01.0	+00.0	72	07.5	+02.6	S 12 27.5	+00.1
04	225	37.7	+01.0	S 06 23.8	+00.7	18	47.3	+02.6	N 15 01.0	-00.1	87	10.1	+02.6	S 12 27.6	+00.0
05	240	38.7	+00.9	S 06 24.5	+00.6	33	49.9	+02.7	N 15 00.9	+00.0	102	12.7	+02.7	S 12 27.6	+00.1
06	255	39.6	+00.9	S 06 25.1	+00.7	48	52.6	+02.6	N 15 00.9	-00.1	117	15.4	+02.6	S 12 27.7	+00.0
07	270	40.5	+01.0	S 06 25.8	+00.6	63	55.2	+02.6	N 15 00.8	+00.0	132	18.0	+02.6	S 12 27.7	+00.1
08	285	41.5	+00.9	S 06 26.4	+00.7	78	57.8	+02.6	N 15 00.8	-00.1	147	20.6	+02.6	S 12 27.8	+00.0
09	300	42.4	+00.9	S 06 27.1	+00.7	94	00.4	+02.6	N 15 00.7	+00.0	162	23.2	+02.6	S 12 27.8	+00.1
10	315	43.3	+01.0	S 06 27.8	+00.6	109	03.0	+02.6	N 15 00.7	-00.1	177	25.8	+02.6	S 12 27.9	+00.0
11	330	44.3	+00.9	S 06 28.4	+00.7	124	05.6	+02.7	N 15 00.6	+00.0	192	28.4	+02.6	S 12 27.9	+00.1
12	345	45.2	+01.0	S 06 29.1	+00.6	139	08.3	+02.6	N 15 00.6	-00.1	207	31.0	+02.6	S 12 28.0	+00.0
13	0	46.2	+00.9	S 06 29.7	+00.7	154	10.9	+02.6	N 15 00.5	+00.0	222	33.6	+02.6	S 12 28.0	+00.1
14	15	47.1	+00.9	S 06 30.4	+00.6	169	13.5	+02.6	N 15 00.5	-00.1	237	36.2	+02.7	S 12 28.1	+00.1
15	30	48.0	+01.0	S 06 31.0	+00.7	184	16.1	+02.6	N 15 00.4	+00.0	252	38.9	+02.6	S 12 28.2	+00.0
16	45	49.0	+00.9	S 06 31.7	+00.6	199	18.7	+02.6	N 15 00.4	-00.1	267	41.5	+02.6	S 12 28.2	+00.1
17	60	49.9	+00.9	S 06 32.3	+00.7	214	21.3	+02.7	N 15 00.3	+00.0	282	44.1	+02.6	S 12 28.3	+00.0
18	75	50.8	+01.0	S 06 33.0	+00.6	229	24.0	+02.6	N 15 00.3	-00.1	297	46.7	+02.6	S 12 28.3	+00.1
19	90	51.8	+00.9	S 06 33.6	+00.7	244	26.6	+02.6	N 15 00.2	+00.0	312	49.3	+02.6	S 12 28.4	+00.0
20	105	52.7	+00.9	S 06 34.3	+00.6	259	29.2	+02.6	N 15 00.2	-00.1	327	51.9	+02.6	S 12 28.4	+00.1
21	120	53.6	+01.0	S 06 34.9	+00.7	274	31.8	+02.6	N 15 00.1	+00.0	342	54.5	+02.6	S 12 28.5	+00.0
22	135	54.6	+00.9	S 06 35.6	+00.6	289	34.4	+02.7	N 15 00.1	-00.1	357	57.1	+02.6	S 12 28.5	+00.1
23	150	55.5	+00.9	S 06 36.2	+00.7	304	37.1	+02.6	N 14 60.0	-00.1	12	59.7	+02.7	S 12 28.6	+00.0

UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT
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'	SD
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
SHA 164° 164° 164° 164° 164° 163°														
Greenwich Culmination Time: 02:45														

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	181	55.8	+00.2	S 00 16.7	+01.0	222	32.7	+00.9	N 11 21.0	-00.1	74	30.6	-36.9	S 27 36.9	-03.9
01	196	56.0	+00.2	S 00 17.7	+01.0	237	33.6	+00.9	N 11 20.9	-00.1	88	53.7	-37.0	S 27 33.0	-04.2
02	211	56.2	+00.2	S 00 18.7	+00.9	252	34.5	+00.9	N 11 20.8	-00.1	103	16.7	-36.9	S 27 28.8	-04.3
03	226	56.4	+00.2	S 00 19.6	+01.0	267	35.4	+00.9	N 11 20.7	-00.1	117	39.8	-37.0	S 27 24.5	-04.5
04	241	56.6	+00.3	S 00 20.6	+01.0	282	36.3	+00.8	N 11 20.6	-00.1	132	02.8	-36.9	S 27 20.0	-04.7
05	256	56.9	+00.2	S 00 21.6	+00.9	297	37.1	+00.9	N 11 20.5	-00.1	146	25.9	-36.9	S 27 15.3	-04.9
06	271	57.1	+00.2	S 00 22.5	+01.0	312	38.0	+00.9	N 11 20.4	-00.1	160	49.0	-36.9	S 27 10.4	-05.1
07	286	57.3	+00.2	S 00 23.5	+01.0	327	38.9	+00.8	N 11 20.3	-00.1	175	12.1	-36.8	S 27 05.3	-05.2
08	301	57.5	+00.2	S 00 24.5	+01.0	342	39.7	+00.9	N 11 20.2	-00.1	189	35.3	-36.9	S 27 00.1	-05.5
09	316	57.7	+00.3	S 00 25.5	+00.9	357	40.6	+00.8	N 11 20.1	-00.1	203	58.4	-36.8	S 26 54.6	-05.6
10	331	58.0	+00.2	S 00 26.4	+01.0	12	41.4	+00.9	N 11 20.0	-00.1	218	21.6	-36.8	S 26 49.0	-05.8
11	346	58.2	+00.2	S 00 27.4	+01.0	27	42.3	+00.9	N 11 19.9	-00.1	232	44.8	-36.8	S 26 43.2	-06.1
12	1	58.4	+00.2	S 00 28.4	+01.0	42	43.2	+00.8	N 11 19.8	-00.1	247	08.0	-36.7	S 26 37.1	-06.2
13	16	58.6	+00.2	S 00 29.4	+00.9	57	44.0	+00.9	N 11 19.7	-00.1	261	31.3	-36.7	S 26 30.9	-06.3
14	31	58.8	+00.2	S 00 30.3	+01.0	72	44.9	+00.8	N 11 19.6	-00.2	275	54.6	-36.7	S 26 24.6	-06.6
15	46	59.0	+00.3	S 00 31.3	+01.0	87	45.7	+00.9	N 11 19.4	-00.1	290	17.9	-36.6	S 26 18.0	-06.8
16	61	59.3	+00.2	S 00 32.3	+01.0	102	46.6	+00.8	N 11 19.3	-00.1	304	41.3	-36.6	S 26 11.2	-06.9
17	76	59.5	+00.2	S 00 33.3	+00.9	117	47.4	+00.9	N 11 19.2	-00.1	319	04.7	-36.6	S 26 04.3	-07.1
18	91	59.7	+00.2	S 00 34.2	+01.0	132	48.3	+00.8	N 11 19.1	-00.1	333	28.1	-36.5	S 25 57.2	-07.3
19	106	59.9	+00.2	S 00 35.2	+01.0	147	49.1	+00.8	N 11 19.0	-00.1	347	51.6	-36.		

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 175° 175° 174° 174° 174° 174°
Greenwich Culmination Time: 11:50

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 160° 160° 160° 160° 160° 160°
Greenwich Culmination Time: 12:48

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 16°0 16°0 16°0 16°0 16°0
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 177° 177° 177° 177° 177° 177°
Greenwich Culmination Time: 11:51

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 162° 162° 162° 162° 162° 162°
Greenwich Culmination Time: 12:52

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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 celestial body.

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

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

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

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

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

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

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

Table with columns for UT, Sun, Venus, Moon (A: 64%), and UT. Rows 00-23 show celestial data for each planet. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table at the bottom with UT, 02, 06, 10, 14, 18, 22.

Table with columns for UT, Sun, Venus, Moon (A: 53%), and UT. Rows 00-23 show celestial data for each planet. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table at the bottom with UT, 02, 06, 10, 14, 18, 22.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial data for each planet. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table at the bottom with UT, 02, 06, 10, 14, 18, 22.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial data for each planet. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table at the bottom with UT, 02, 06, 10, 14, 18, 22.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on October 1, 2023, such as GHA, ddGHA, Dec, dDec, and magnitude (A: 57%).

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on October 2, 2023, such as GHA, ddGHA, Dec, dDec, and magnitude (A: 60%).

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on October 1, 2023, such as GHA, ddGHA, Dec, dDec, and magnitude (A: 57%).

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on October 2, 2023, such as GHA, ddGHA, Dec, dDec, and magnitude (A: 60%).

Table for 2023 October 7 Saturday showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes sub-tables for UT 02-06, 10-14, 18-22 and Greenwich Culmination Time.

Table for 2023 October 4 Wednesday showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes sub-tables for UT 02-06, 10-14, 18-22 and Greenwich Culmination Time.

Table for 2023 October 7 Saturday showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes sub-tables for UT 02-06, 10-14, 18-22 and Greenwich Culmination Time.

Table for 2023 October 4 Wednesday showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes sub-tables for UT 02-06, 10-14, 18-22 and Greenwich Culmination Time.

Table for 2023 October 5 Thursday showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a footer with planetary coordinates and Greenwich Culmination Time.

Table for 2023 October 6 Friday showing astronomical data for Sun, Venus, and Moon. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a footer with planetary coordinates and Greenwich Culmination Time.

Table for 2023 October 5 Thursday showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a footer with planetary coordinates and Greenwich Culmination Time.

Table for 2023 October 6 Friday showing astronomical data for Mars, Jupiter, and Saturn. Columns include UT, GHA, ddGHA, Dec, dDec, and UT. Includes a footer with planetary coordinates and Greenwich Culmination Time.

Table with columns for Sun, Venus, and Moon. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Data points for each planet are listed in columns.

Table with columns for Sun, Venus, and Moon. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Data points for each planet are listed in columns.

Table with columns for Sun, Venus, and Moon. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Data points for each planet are listed in columns.

Table with columns for Sun, Venus, and Moon. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Data points for each planet are listed in columns.

Table with columns for Mars, Jupiter, and Saturn. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Data points for each planet are listed in columns.

Table with columns for Mars, Jupiter, and Saturn. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Data points for each planet are listed in columns.

Table with columns for Mars, Jupiter, and Saturn. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Data points for each planet are listed in columns.

Table with columns for Mars, Jupiter, and Saturn. Rows include UT, GHA, ddGHA, Dec, dDec, and UT. Data points for each planet are listed in columns.

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 08.1	+00.2	S 06 04.8	+00.9	225 58.6	+00.3	N 09 43.7	-00.5	241 09.7	-27.8	N 21 57.9	-09.3	00
01	198 08.3	+00.1	S 06 05.7	+01.0	240 58.9	+00.3	N 09 43.2	-00.4	255 41.9	-27.7	N 21 48.6	-09.4	01
02	213 08.4	+00.2	S 06 06.7	+00.9	255 59.2	+00.3	N 09 42.8	-00.4	270 14.2	-27.7	N 21 39.2	-09.6	02
03	228 08.6	+00.2	S 06 07.6	+01.0	270 59.5	+00.4	N 09 42.4	-00.5	284 46.5	-27.5	N 21 29.6	-09.6	03
04	243 08.8	+00.1	S 06 08.6	+00.9	285 59.9	+00.3	N 09 41.9	-00.4	299 19.0	-27.5	N 21 20.0	-09.7	04
05	258 08.9	+00.2	S 06 09.5	+01.0	301 00.2	+00.3	N 09 41.5	-00.5	313 51.5	-27.4	N 21 10.3	-09.7	05
06	273 09.1	+00.2	S 06 10.5	+00.9	316 00.5	+00.3	N 09 41.0	-00.4	328 24.1	-27.4	N 21 00.6	-09.9	06
07	288 09.3	+00.2	S 06 11.4	+01.0	331 00.8	+00.3	N 09 40.6	-00.4	342 56.7	-27.3	N 20 50.7	-10.0	07
08	303 09.5	+00.1	S 06 12.4	+00.9	346 01.1	+00.3	N 09 40.2	-00.5	357 29.4	-27.2	N 20 40.7	-10.0	08
09	318 09.6	+00.2	S 06 13.3	+01.0	1 01.4	+00.4	N 09 39.7	-00.4	12 02.2	-27.2	N 20 30.7	-10.1	09
10	333 09.8	+00.2	S 06 14.3	+00.9	16 01.8	+00.3	N 09 39.3	-00.5	26 35.0	-27.0	N 20 20.6	-10.2	10
11	348 10.0	+00.1	S 06 15.2	+01.0	31 02.1	+00.3	N 09 38.8	-00.4	41 08.0	-27.1	N 20 10.4	-10.3	11
12	3 10.1	+00.2	S 06 16.2	+00.9	46 02.4	+00.3	N 09 38.4	-00.5	55 40.9	-26.9	N 20 00.1	-10.3	12
13	18 10.3	+00.2	S 06 17.1	+01.0	61 02.7	+00.3	N 09 37.9	-00.4	70 14.0	-26.9	N 19 49.8	-10.5	13
14	33 10.5	+00.2	S 06 18.1	+00.9	76 03.0	+00.3	N 09 37.5	-00.5	84 47.1	-26.8	N 19 39.3	-10.5	14
15	48 10.7	+00.1	S 06 19.0	+01.0	91 03.3	+00.3	N 09 37.0	-00.4	99 20.3	-26.8	N 19 28.8	-10.6	15
16	63 10.8	+00.2	S 06 20.0	+00.9	106 03.6	+00.3	N 09 36.6	-00.5	113 53.5	-26.7	N 19 18.2	-10.7	16
17	78 11.0	+00.2	S 06 20.9	+01.0	121 03.9	+00.4	N 09 36.1	-00.5	128 26.8	-26.6	N 19 07.5	-10.7	17
18	93 11.2	+00.1	S 06 21.9	+00.9	136 04.3	+00.3	N 09 35.6	-00.4	143 00.2	-26.5	N 18 56.8	-10.8	18
19	108 11.3	+00.2	S 06 22.8	+01.0	151 04.6	+00.3	N 09 35.2	-00.5	157 33.7	-26.5	N 18 46.0	-10.9	19
20	123 11.5	+00.2	S 06 23.8	+00.9	166 04.9	+00.3	N 09 34.7	-00.4	172 07.2	-26.5	N 18 35.1	-11.0	20
21	138 11.7	+00.1	S 06 24.7	+01.0	181 05.2	+00.3	N 09 34.3	-00.5	186 40.7	-26.4	N 18 24.1	-11.1	21
22	153 11.8	+00.2	S 06 25.7	+00.9	196 05.5	+00.3	N 09 33.8	-00.4	201 14.3	-26.3	N 18 13.0	-11.1	22
23	168 12.0	+00.2	S 06 26.6	+01.0	211 05.8	+00.3	N 09 33.4	-00.5	215 48.0	-26.2	N 18 01.9	-11.2	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 166° 166° 165° 165° 165° 165°
Greenwich Culmination Time: 11:47

UT 02 06 10 14 18 22
SD 00°2 00°2 00°2 00°2 00°2 00°2
HP 00°3 00°3 00°3 00°2 00°2 00°2
SHA 209° 208° 208° 208° 208° 208°
Greenwich Culmination Time: 08:55

UT 02 06 10 14 18 22
SD 14°8 14°7 14°7 14°7 14°7 14°7
HP 54°1 54°1 54°1 54°1 54°1 54°1
SHA 223° 221° 219° 217° 215° 213°
Greenwich Culmination Time: 08:10

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 12.2	+00.2	S 06 27.6	+00.9	226 06.1	+00.3	N 09 32.9	-00.5	230 21.8	-26.2	N 17 50.7	-11.2	00
01	198 12.4	+00.1	S 06 28.5	+01.0	241 06.4	+00.3	N 09 32.4	-00.4	244 55.6	-26.2	N 17 39.5	-11.4	01
02	213 12.5	+00.2	S 06 29.5	+00.9	256 06.7	+00.3	N 09 32.0	-00.5	259 29.4	-26.1	N 17 28.1	-11.4	02
03	228 12.7	+00.2	S 06 30.4	+01.0	271 07.0	+00.3	N 09 31.5	-00.4	274 03.3	-26.0	N 17 16.7	-11.4	03
04	243 12.9	+00.1	S 06 31.4	+00.9	286 07.3	+00.3	N 09 31.1	-00.5	288 37.3	-26.0	N 17 05.3	-11.6	04
05	258 13.0	+00.2	S 06 32.3	+00.9	301 07.6	+00.3	N 09 30.6	-00.5	303 11.3	-25.9	N 16 53.7	-11.6	05
06	273 13.2	+00.2	S 06 33.2	+01.0	316 07.9	+00.3	N 09 30.1	-00.4	317 45.4	-25.9	N 16 42.1	-11.6	06
07	288 13.4	+00.1	S 06 34.2	+00.9	331 08.2	+00.2	N 09 29.7	-00.5	332 19.5	-25.8	N 16 30.5	-11.8	07
08	303 13.5	+00.2	S 06 35.1	+01.0	346 08.4	+00.3	N 09 29.2	-00.5	346 53.7	-25.7	N 16 18.7	-11.8	08
09	318 13.7	+00.2	S 06 36.1	+00.9	1 08.7	+00.3	N 09 28.7	-00.4	1 28.0	-25.7	N 16 06.9	-11.8	09
10	333 13.9	+00.1	S 06 37.0	+01.0	16 09.0	+00.3	N 09 28.3	-00.5	16 02.3	-25.7	N 15 55.1	-11.9	10
11	348 14.0	+00.2	S 06 38.0	+00.9	31 09.3	+00.3	N 09 27.8	-00.5	30 36.6	-25.6	N 15 43.2	-12.0	11
12	3 14.2	+00.2	S 06 38.9	+01.0	46 09.6	+00.3	N 09 27.3	-00.5	45 11.0	-25.5	N 15 31.2	-12.1	12
13	18 14.4	+00.1	S 06 39.9	+00.9	61 09.9	+00.3	N 09 26.8	-00.4	59 45.5	-25.5	N 15 19.1	-12.1	13
14	33 14.5	+00.2	S 06 40.8	+01.0	76 10.2	+00.3	N 09 26.4	-00.5	74 20.0	-25.5	N 15 07.0	-12.1	14
15	48 14.7	+00.2	S 06 41.8	+00.9	91 10.5	+00.3	N 09 25.9	-00.5	88 54.5	-25.4	N 14 54.9	-12.3	15
16	63 14.9	+00.1	S 06 42.7	+01.0	106 10.8	+00.2	N 09 25.4	-00.4	103 29.1	-25.4	N 14 42.6	-12.2	16
17	78 15.0	+00.2	S 06 43.7	+00.9	121 11.0	+00.3	N 09 25.0	-00.5	118 03.7	-25.3	N 14 30.4	-12.4	17
18	93 15.2	+00.2	S 06 44.6	+01.0	136 11.3	+00.3	N 09 24.5	-00.5	132 38.4	-25.2	N 14 18.0	-12.4	18
19	108 15.4	+00.1	S 06 45.6	+00.9	151 11.6	+00.3	N 09 24.0	-00.5	147 13.2	-25.3	N 14 05.6	-12.4	19
20	123 15.5	+00.2	S 06 46.5	+00.9	166 11.9	+00.3	N 09 23.5	-00.5	161 47.9	-25.2	N 13 53.2	-12.5	20
21	138 15.7	+00.2	S 06 47.4	+01.0	181 12.2	+00.2	N 09 23.0	-00.4	176 22.7	-25.1	N 13 40.7	-12.6	21
22	153 15.9	+00.1	S 06 48.4	+00.9	196 12.4	+00.3	N 09 22.6	-00.5	190 57.6	-25.1	N 13 28.1	-12.6	22
23	168 16.0	+00.2	S 06 49.3	+01.0	211 12.7	+00.3	N 09 22.1	-00.5	205 32.5	-25.1	N 13 15.5	-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 165° 165° 164° 164° 164° 164°
Greenwich Culmination Time: 11:47

UT 02 06 10 14 18 22
SD 00°2 00°2 00°2 00°2 00°2 00°2
HP 00°3 00°3 00°3 00°2 00°2 00°2
SHA 208° 208° 207° 207° 207° 207°
Greenwich Culmination Time: 08:55

UT 02 06 10 14 18 22
SD 14°7 14°7 14°7 14°7 14°7 14°7
HP 54°1 54°1 54°1 54°1 54°1 54°1
SHA 211° 209° 207° 205° 204° 202°
Greenwich Culmination Time: 08:53

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	171 22.8	+00.9	S 10 27.1	+00.6	335 42.2	+02.7	N 14 35.7	-00.1	43 34.8	+02.6	S 12 44.8	+00.0	00
01	186 23.7	+00.8	S 10 27.7	+00.6	350 44.9	+02.7	N 14 35.6	-00.1	58 37.4	+02.5	S 12 44.8	+00.0	01
02	201 24.5	+00.9	S 10 28.3	+00.7	5 47.6	+02.7	N 14 35.5	+00.0	73 39.9	+02.6	S 12 44.8	+00.1	02
03	216 25.4	+00.9	S 10 29.0	+00.6	20 50.3	+02.7	N 14 35.5	+00.0	88 42.5	+02.6	S 12 44.9	+00.0	03
04	231 26.3	+00.9	S 10 29.6	+00.6	35 53.0	+02.8	N 14 35.4	-00.1	103 45.1	+02.5	S 12 44.9	+00.0	04
05	246 27.2	+00.8	S 10 30.2	+00.6	50 55.8	+02.7	N 14 35.3	-00.1	118 47.6	+02.6	S 12 44.9	+00.1	05
06	261 28.0	+00.9	S 10 30.8	+00.7	65 58.5	+02.7	N 14 35.2	-00.1	133 50.2	+02.6	S 12 45.0	+00.0	06
07	276 28.9	+00.9	S 10 31.5	+00.6	81 01.2	+02.7	N 14 35.1	+00.0	148 52.8	+02.5	S 12 45.0	+00.1	07
08	291 29.8	+00.9	S 10 32.1	+00.6	96 03.9	+02.8	N 14 35.1	-00.1	163 55.3	+02.6	S 12 45.1	+00.0	08
09	306 30.7	+00.8	S 10 32.7	+00.6	111 06.7	+02.7	N 14 35.0	-00.1	178 57.9	+02.5	S 12 45.1	+00.0	09
10	321 31.5	+00.9	S 10 33.3	+00.6	126 09.4	+02.7	N 14 34.9	-00.1	194 00.4	+02.6	S 12 45.1	+00.1	10
11	336 32.4	+00.9	S 10 33.9	+00.7	141 12.1	+02.7	N 14 34.8	-00.1	209 03.0	+02.6	S 12 45.2	+00.0	11
12	351 33.3	+00.9	S 10 34.6	+00.6	156 14.8	+02.8	N 14 34.7	-00.1	224 05.6	+02.5	S 12 45.2	+00.0	12
13	6 34.2	+00.8	S 10 35.2	+00.6	171 17.6	+02.7	N 14 34.6	+00.0	239 08.1	+02.6	S 12 45.2	+00.1	13
14	21 35.0	+00.9	S 10 35.8	+00.6	186 20.3	+02.7	N 14 34.6	-00.1	254 10.7	+02.6	S 12 45.3	+00.0	14
15	36 35.9	+00.9	S 10 36.4	+00.6	201 23.0	+02.7	N 14 34.5	-00.1	269 13.3	+02.5	S 12 45.3	+00.0	15
16	51 36.8	+00.8	S 10 37.1	+00.6	216 25.7	+02.8	N 14 34.4	-00.1	284 15.8	+02.6	S 12 45.3	+00.1	16
17	66 37.6	+00.9	S 10 37.7	+00.6	231 28.5	+02.7	N 14 34.3	-00.1	299 18.4	+02.6	S 12 45.4	+00.0	17
18	81 38.5	+00.9	S 10 38.3	+00.6	246 31.2	+02.7	N 14 34.2	+00.0	314 21.0	+02.5	S 12 45.4	+00.0	18
19	96 39.4	+00.9	S 10 38.9	+00.7	261 33.9	+02.7	N 14 34.2	-00.1	329 23.5	+02.6	S 12 45.4	+00.1	19
20	111 40.3	+00.8	S 10 39.6	+00.6	276 36.6	+02.8	N 14 34.1	-00.1	344 26.1	+02.6	S 12 45.5	+00.0	20
21	126 41.1	+00.9	S 10 40.2	+00.6	291 39.4	+02.7	N 14 34.0	-00.1	359 28.7	+02.5	S 12 45.5	+00.0	21
22	141 42.0	+00.9	S 10 40.8	+00.6	306 42.1	+02.7	N 14 33.9	-00.1	14 31.2	+02.6	S 12 45.5	+00.1	22
23	156 42.9	+00.8	S 10 41.4	+00.6	321 44.8	+02.8							

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 160° 160° 160° 160° 160° 159°
Greenwich Culmination Time: 11:45

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 163° 163° 163° 162° 162° 162°
Greenwich Culmination Time: 11:46

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°0 00°0 00°0 00°0 00°0 00°0
SHA 150° 150° 150° 150° 150°
Greenwich Culmination Time: 12:25

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 152° 152° 152° 152° 152°
Greenwich Culmination Time: 12:29

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	183	23.8	+00.1	S 07 35.4	+01.0	226	25.2	+00.3	N 08 57.5	-00.5	200	34.6	-24.2	N 02 07.9	-14.3					
01	198	23.9	+00.2	S 07 36.4	+00.9	241	25.5	+00.2	N 08 57.0	-00.5	215	10.4	-24.2	N 01 53.6	-14.4					
02	213	24.1	+00.2	S 07 37.3	+01.0	256	25.7	+00.2	N 08 56.5	-00.5	229	46.2	-24.2	N 01 39.2	-14.3					
03	228	24.3	+00.1	S 07 38.3	+00.9	271	25.9	+00.3	N 08 56.0	-00.6	244	22.0	-24.3	N 01 24.9	-14.4					
04	243	24.4	+00.2	S 07 39.2	+00.9	286	26.2	+00.2	N 08 55.4	-00.5	258	57.7	-24.2	N 01 10.5	-14.3					
05	258	24.6	+00.1	S 07 40.1	+01.0	301	26.4	+00.2	N 08 54.9	-00.5	273	33.5	-24.3	N 00 56.2	-14.4					
06	273	24.7	+00.2	S 07 41.1	+00.9	316	26.6	+00.3	N 08 54.4	-00.6	288	09.2	-24.2	N 00 41.8	-14.4					
07	288	24.9	+00.1	S 07 42.0	+00.9	331	26.9	+00.2	N 08 53.8	-00.5	302	45.0	-24.3	N 00 27.4	-14.4					
08	303	25.0	+00.2	S 07 42.9	+01.0	346	27.1	+00.2	N 08 53.3	-00.5	317	20.7	-24.3	N 00 13.0	-14.4					
09	318	25.2	+00.1	S 07 43.9	+00.9	1	27.3	+00.2	N 08 52.8	-00.5	331	56.4	-24.3	S 00 01.4	+14.4					
10	333	25.3	+00.2	S 07 44.8	+00.9	16	27.5	+00.3	N 08 52.3	-00.6	346	32.1	-24.3	S 00 15.8	+14.5					
11	348	25.5	+00.1	S 07 45.7	+01.0	31	27.8	+00.2	N 08 51.7	-00.5	1	07.8	-24.3	S 00 30.3	+14.4					
12	3	25.6	+00.2	S 07 46.7	+00.9	46	28.0	+00.2	N 08 51.2	-00.5	15	43.5	-24.4	S 00 44.7	+14.5					
13	18	25.8	+00.1	S 07 47.6	+00.9	61	28.2	+00.2	N 08 50.7	-00.6	30	19.1	-24.4	S 00 59.2	+14.4					
14	33	25.9	+00.2	S 07 48.5	+01.0	76	28.4	+00.2	N 08 50.1	-00.5	44	54.7	-24.4	S 01 13.6	+14.4					
15	48	26.1	+00.1	S 07 49.5	+00.9	91	28.6	+00.3	N 08 49.6	-00.5	59	30.3	-24.4	S 01 28.0	+14.5					
16	63	26.2	+00.2	S 07 50.4	+00.9	106	28.9	+00.2	N 08 49.1	-00.6	74	05.9	-24.4	S 01 42.5	+14.4					
17	78	26.4	+00.1	S 07 51.3	+01.0	121	29.1	+00.2	N 08 48.5	-00.5	88	41.5	-24.5	S 01 56.9	+14.5					
18	93	26.5	+00.2	S 07 52.3	+00.9	136	29.3	+00.2	N 08 48.0	-00.6	103	17.0	-24.5	S 02 11.4	+14.5					
19	108	26.7	+00.1	S 07 53.2	+00.9	151	29.5	+00.2	N 08 47.4	-00.5	117	52.5	-24.5	S 02 25.9	+14.4					
20	123	26.8	+00.2	S 07 54.1	+01.0	166	29.7	+00.3	N 08 46.9	-00.5	132	28.0	-24.5	S 02 40.3	+14.5					
21	138	27.0	+00.1	S 07 55.1	+00.9	181	30.0	+00.2	N 08 46.4	-00.6	147	03.5	-24.6	S 02 54.8	+14.4					
22	153	27.1	+00.2	S 07 56.0	+00.9	196	30.2	+00.2	N 08 45.8	-00.5	161	38.9	-24.6	S 03 09.2	+14.5					
23	168	27.3	+00.1	S 07 56.9	+01.0	211	30.4	+00.2	N 08 45.3	-00.6	176	14.3	-24.6	S 03 23.7	+14.4					
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT	02	06	10	14	18	22
SD	16°0	16°0	16°0	16°0	16°0	16°0	SD	00°2	00°2	00°2	00°2	00°2	00°2	SD	14°9	14°9	14°9	14°9	14°9	14°9
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°2	00°2	00°2	00°2	00°2	00°2	HP	54°6	54°6	54°7	54°7	54°8	54°8
SHA	162°	162°	162°	162°	161°	161°	SHA	205°	205°	205°	204°	204°	204°	SHA	178°	177°	175°	173°	171°	169°
Greenwich Culmination Time: 11:46				Greenwich Culmination Time: 08:54				Greenwich Culmination Time: 10:55												

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	183	27.4	+00.2	S 07 57.9	+00.9	226	30.6	+00.2	N 08 44.7	-00.5	190	49.7	-24.7	S 03 38.1	+14.5					
01	198	27.6	+00.1	S 07 58.8	+00.9	241	30.8	+00.2	N 08 44.2	-00.5	205	25.0	-24.7	S 03 52.6	+14.4					
02	213	27.7	+00.2	S 07 59.7	+01.0	256	31.0	+00.2	N 08 43.7	-00.6	220	00.3	-24.7	S 04 07.0	+14.4					
03	228	27.9	+00.1	S 08 00.7	+00.9	271	31.2	+00.2	N 08 43.1	-00.5	234	35.6	-24.7	S 04 21.4	+14.4					
04	243	28.0	+00.1	S 08 01.6	+00.9	286	31.4	+00.3	N 08 42.6	-00.6	249	10.9	-24.8	S 04 35.8	+14.5					
05	258	28.1	+00.2	S 08 02.5	+01.0	301	31.7	+00.2	N 08 42.0	-00.5	263	46.1	-24.9	S 04 50.3	+14.4					
06	273	28.3	+00.1	S 08 03.5	+00.9	316	31.9	+00.2	N 08 41.5	-00.6	278	21.2	-24.8	S 05 04.7	+14.3					
07	288	28.4	+00.2	S 08 04.4	+00.9	331	32.1	+00.2	N 08 40.9	-00.5	292	56.4	-24.9	S 05 19.0	+14.4					
08	303	28.6	+00.1	S 08 05.3	+01.0	346	32.3	+00.2	N 08 40.4	-00.6	307	31.5	-25.0	S 05 33.4	+14.4					
09	318	28.7	+00.2	S 08 06.3	+00.9	1	32.5	+00.2	N 08 39.8	-00.5	322	06.5	-25.0	S 05 47.8	+14.4					
10	333	28.9	+00.1	S 08 07.2	+00.9	16	32.7	+00.2	N 08 39.3	-00.6	336	41.5	-25.0	S 06 02.2	+14.3					
11	348	29.0	+00.2	S 08 08.1	+00.9	31	32.9	+00.2	N 08 38.7	-00.5	351	16.5	-25.0	S 06 16.5	+14.3					
12	3	29.2	+00.1	S 08 09.0	+01.0	46	33.1	+00.2	N 08 38.2	-00.6	5	51.5	-25.2	S 06 30.8	+14.3					
13	18	29.3	+00.2	S 08 10.0	+00.9	61	33.3	+00.2	N 08 37.6	-00.5	20	26.3	-25.1	S 06 45.1	+14.3					
14	33	29.5	+00.1	S 08 10.9	+00.9	76	33.5	+00.2	N 08 37.1	-00.6	35	01.2	-25.2	S 06 59.4	+14.3					
15	48	29.6	+00.1	S 08 11.8	+01.0	91	33.7	+00.2	N 08 36.5	-00.5	49	36.0	-25.3	S 07 13.7	+14.3					
16	63	29.7	+00.2	S 08 12.8	+00.9	106	33.9	+00.2	N 08 36.0	-00.6	64	10.7	-25.2	S 07 28.0	+14.2					
17	78	29.9	+00.1	S 08 13.7	+00.9	121	34.1	+00.2	N 08 35.4	-00.5	78	45.5	-25.4	S 07 42.2	+14.2					
18	93	30.0	+00.2	S 08 14.6	+00.9	136	34.3	+00.2	N 08 34.9	-00.6	93	20.1	-25.4	S 07 56.4	+14.2					
19	108	30.2	+00.1	S 08 15.5	+01.0	151	34.5	+00.2	N 08 34.3	-00.6	107	54.7	-25.4	S 08 10.6	+14.2					
20	123	30.3	+00.2	S 08 16.5	+00.9	166	34.7	+00.2	N 08 33.7	-00.5	122	29.3	-25.5	S 08 24.8	+14.1					
21	138	30.5	+00.1	S 08 17.4	+00.9	181	34.9	+00.2	N 08 33.2	-00.6	137	03.8	-25.6	S 08 38.9	+14.2					
22	153	30.6	+00.1	S 08 18.3	+01.0	196	35.1	+00.2	N 08 32.6	-00.5	151	38.2	-25.6	S 08 53.1	+14.1					
23	168	30.7	+00.2	S 08 19.3	+00.9	211	35.3	+00.2	N 08 32.1	-00.6	166	12.6	-25.6	S 09 07.2	+14.0					
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT	02	06	10	14	18	22
SD	16°0	16°0	16°0	16°0	16°0	16°0	SD	00°2	00°2	00°2	00°2	00°2	00°2	SD	15°0	15°0	15°0	15°0	15°0	15°1
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°2	00°2	00°2	00°2	00°2	00°2	HP	54°9	55°0	55°1	55°1	55°2	55°3
SHA	161°	161°	161°	161°	160°	160°	SHA	204°	204°	204°	204°	204°	203°	SHA	168°	166°	164°	162°	160°	158°
Greenwich Culmination Time: 11:46				Greenwich Culmination Time: 08:53				Greenwich Culmination Time: 11:35												

UT	Mars				Jupiter				Saturn				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	172	45.9	+00.9	S 11 26.5	+00.6	340	04.6	+02.7	N 14 27.6	-00.1	47	40.6	+02.5	S 12 47.9	+00.0
01	187	46.8	+00.8	S 11 27.1	+00.6	355	07.3	+02.7	N 14 27.5	-00.1	62	43.1	+02.6	S 12 47.9	+00.1
02	202	47.6	+00.9	S 11 27.7	+00.7	10	10.0	+02.8	N 14 27.4	-00.1	77	45.7	+02.5	S 12 48.0	+00.0
03	217	48.5	+00.8	S 11 28.4	+00.6	25	12.8	+02.7	N 14 27.3	+00.0	92	48.2	+02.6	S 12 48.0	+00.0
04	232	49.3	+00.9	S 11 29.0	+00.6	40	15.5	+02.8	N 14 27.3	-00.1	107	50.8	+02.5	S 12 48.0	+00.0
05	247	50.2	+00.8	S 11 29.6	+00.6	55	18.3	+02.7	N 14 27.2	-00.1	122	53.3	+02.6	S 12 48.0	+00.1
06	262	51.0	+00.9	S 11 30.2	+00.6	70	21.0	+02.8	N 14 27.1	-00.1	137	55.9	+02.6	S 12 48.1	+00.0
07	277	51.9	+00.8	S 11 30.8	+00.6	85	23.8	+02.7	N 14 27.0	-00.1	152	58.5	+02.5	S 12 48.1	+00.0
08	292	52.7	+00.9	S 11 31.4	+00.6	100	26.5	+02.8	N 14 26.9	-00.1	168	01.0	+02.6	S 12 48.1	+00.1
09	307	53.6	+00.9	S 11 32.0	+00.6	115	29.3	+02.7	N 14 26.8	-00.1	183	03.6	+02.5	S 12 48.2	+00.0
10	322	54.5	+00.8	S 11 32.6	+00.7	130	32.0	+02.7	N 14 26.7	-00.1	198	06.1	+02.6	S 12 48.2	+00.0
11	337	55.3	+00.9	S 11 33.3	+00.6	145	34.7	+02.8	N 14 26.6	+00.0	213	08.7	+02.5	S 12 48.2	+00.0
12	352	56.2	+00.8	S 11 33.9	+00.6	160	37.5	+02.7	N 14 26.6	-00.1	228	11.2	+02.6	S 12 48.2	+00.1
13	7	57.0	+00.9	S 11 34.5	+00.6	175	40.2	+02.8	N 14 26.5	-00.1	243	13.8	+02.5	S 12 48.3	+00.0
14	22	57.9	+00.8	S 11 35.1	+00.6	190	43.0	+02.7	N 14 26.4	-00.1	258	16.3	+02.6	S 12 48.3	+00.0
15	37	58.7	+00.9	S 11 35.7	+00.6	205	45.7	+02.8	N 14 26.3	-00.1	273	18.9	+02.5	S 12 48.3	+00.1
16	52	59.6	+00.8	S 11 36.3	+00.6	220	48.5	+02.7	N 14 26.2	-00.1	288	21.4	+02.6	S 12 48.4	+00.0
17	68	00.4	+00.9	S											

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

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

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

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

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UT	Sun				Venus				Moon				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	183	37.4	+00.2	S 09 04.5	+00.9	226	43.9	+00.2	N 08 03.6	-00.6	158	52.0	-29.5	S 19 42.9	+11.4	00	
01	198	37.6	+00.1	S 09 05.4	+00.9	241	44.1	+00.1	N 08 03.0	-00.6	173	22.5	-29.6	S 19 54.3	+11.2	01	
02	213	37.7	+00.1	S 09 06.3	+00.9	256	44.2	+00.2	N 08 02.4	-00.6	187	52.9	-29.7	S 20 05.5	+11.2	02	
03	228	37.8	+00.2	S 09 07.2	+00.9	271	44.4	+00.1	N 08 01.8	-00.6	202	23.2	-29.8	S 20 16.7	+11.0	03	
04	243	38.0	+00.1	S 09 08.1	+01.0	286	44.5	+00.2	N 08 01.2	-00.6	216	53.4	-29.8	S 20 27.7	+11.0	04	
05	258	38.1	+00.1	S 09 09.1	+00.9	301	44.7	+00.2	N 08 00.6	-00.6	231	23.6	-30.0	S 20 38.7	+10.9	05	
06	273	38.2	+00.1	S 09 10.0	+00.9	316	44.9	+00.1	N 07 60.0	-00.6	245	53.6	-30.1	S 20 49.6	+10.8	06	
07	288	38.3	+00.2	S 09 10.9	+00.9	331	45.0	+00.2	N 07 59.4	-00.7	260	23.5	-30.2	S 21 00.4	+10.6	07	
08	303	38.5	+00.1	S 09 11.8	+00.9	346	45.2	+00.1	N 07 58.7	-00.6	274	53.3	-30.2	S 21 11.0	+10.6	08	
09	318	38.6	+00.1	S 09 12.7	+00.9	1	45.3	+00.2	N 07 58.1	-00.6	289	23.1	-30.4	S 21 21.6	+10.5	09	
10	333	38.7	+00.2	S 09 13.6	+00.9	16	45.5	+00.1	N 07 57.5	-00.6	303	52.7	-30.5	S 21 32.1	+10.4	10	
11	348	38.9	+00.1	S 09 14.5	+01.0	31	45.6	+00.2	N 07 56.9	-00.6	318	22.2	-30.6	S 21 42.5	+10.3	11	
12	3	39.0	+00.1	S 09 15.5	+00.9	46	45.8	+00.1	N 07 56.3	-00.6	332	51.6	-30.6	S 21 52.8	+10.2	12	
13	18	39.1	+00.1	S 09 16.4	+00.9	61	45.9	+00.2	N 07 55.7	-00.6	347	21.0	-30.8	S 22 03.0	+10.1	13	
14	33	39.2	+00.2	S 09 17.3	+00.9	76	46.1	+00.1	N 07 55.1	-00.6	1	50.2	-30.9	S 22 13.1	+09.9	14	
15	48	39.4	+00.1	S 09 18.2	+00.9	91	46.2	+00.2	N 07 54.5	-00.6	16	19.3	-31.0	S 22 23.0	+09.9	15	
16	63	39.5	+00.1	S 09 19.1	+00.9	106	46.4	+00.1	N 07 53.9	-00.7	30	48.3	-31.1	S 22 32.9	+09.8	16	
17	78	39.6	+00.1	S 09 20.0	+00.9	121	46.5	+00.2	N 07 53.2	-00.6	45	17.2	-31.1	S 22 42.7	+09.6	17	
18	93	39.7	+00.2	S 09 20.9	+01.0	136	46.7	+00.1	N 07 52.6	-00.6	59	46.1	-31.3	S 22 52.3	+09.5	18	
19	108	39.9	+00.1	S 09 21.9	+00.9	151	46.8	+00.1	N 07 52.0	-00.6	74	14.8	-31.4	S 23 01.8	+09.5	19	
20	123	40.0	+00.1	S 09 22.8	+00.9	166	46.9	+00.2	N 07 51.4	-00.6	88	43.4	-31.5	S 23 11.3	+09.3	20	
21	138	40.1	+00.1	S 09 23.7	+00.9	181	47.1	+00.1	N 07 50.8	-00.6	103	11.9	-31.6	S 23 20.6	+09.2	21	
22	153	40.2	+00.2	S 09 24.6	+00.9	196	47.2	+00.2	N 07 50.2	-00.6	117	40.3	-31.7	S 23 29.8	+09.0	22	
23	168	40.4	+00.1	S 09 25.5	+00.9	211	47.4	+00.1	N 07 49.6	-00.7	132	08.6	-31.8	S 23 38.8	+09.0	23	
UT 02	06	10	14	18	22	UT 02	06	10	14	18	22	UT 02	06	10	14	18	22
SD 16°0 16°0 16°0 16°0 16°0 16°0	SD 00°2 00°2 00°2 00°2 00°2 00°2	SD 15°3 15°4 15°4 15°4 15°4 15°4															
HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°2 00°2 00°2 00°2 00°2 00°2	HP 56°3 56°4 56°4 56°5 56°6 56°7															
SHA 158° 158° 158° 158° 158° 158°	SHA 201° 201° 201° 201° 201° 201°	SHA 133° 130° 128° 126° 124° 122°															
Greenwich Culmination Time: 11:45	Greenwich Culmination Time: 08:52	Greenwich Culmination Time: 13:52															

UT	Sun				Venus				Moon				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	183	40.5	+00.1	S 09 26.4	+00.9	226	47.5	+00.2	N 07 48.9	-00.6	146	36.8	-31.8	S 23 47.8	+08.8	00	
01	198	40.6	+00.1	S 09 27.3	+00.9	241	47.7	+00.1	N 07 48.3	-00.6	161	05.0	-32.0	S 23 56.6	+08.7	01	
02	213	40.7	+00.1	S 09 28.2	+00.9	256	47.8	+00.1	N 07 47.7	-00.6	175	33.0	-32.1	S 24 05.3	+08.6	02	
03	228	40.9	+00.1	S 09 29.1	+01.0	271	47.9	+00.2	N 07 47.1	-00.6	190	00.9	-32.2	S 24 13.9	+08.5	03	
04	243	41.0	+00.1	S 09 30.1	+00.9	286	48.1	+00.1	N 07 46.4	-00.6	204	28.7	-32.3	S 24 22.4	+08.3	04	
05	258	41.1	+00.1	S 09 31.0	+00.9	301	48.2	+00.2	N 07 45.8	-00.6	218	56.4	-32.4	S 24 30.7	+08.2	05	
06	273	41.2	+00.2	S 09 31.9	+00.9	316	48.4	+00.1	N 07 45.2	-00.6	233	24.0	-32.5	S 24 38.9	+08.1	06	
07	288	41.4	+00.1	S 09 32.8	+00.9	331	48.5	+00.1	N 07 44.6	-00.6	247	51.5	-32.6	S 24 47.0	+07.9	07	
08	303	41.5	+00.1	S 09 33.7	+00.9	346	48.6	+00.2	N 07 44.0	-00.6	262	18.9	-32.7	S 24 54.9	+07.9	08	
09	318	41.6	+00.1	S 09 34.6	+00.9	1	48.8	+00.1	N 07 43.3	-00.7	276	46.2	-32.7	S 25 02.8	+07.6	09	
10	333	41.7	+00.1	S 09 35.5	+00.9	16	48.9	+00.1	N 07 42.7	-00.6	291	13.5	-32.9	S 25 10.4	+07.6	10	
11	348	41.8	+00.2	S 09 36.4	+00.9	31	49.0	+00.2	N 07 42.1	-00.7	305	40.6	-33.0	S 25 18.0	+07.4	11	
12	3	42.0	+00.1	S 09 37.3	+00.9	46	49.2	+00.1	N 07 41.4	-00.6	320	07.6	-33.1	S 25 25.4	+07.3	12	
13	18	42.1	+00.1	S 09 38.2	+01.0	61	49.3	+00.1	N 07 40.8	-00.6	334	34.5	-33.1	S 25 32.7	+07.1	13	
14	33	42.2	+00.1	S 09 39.2	+00.9	76	49.4	+00.2	N 07 40.2	-00.6	349	01.4	-33.3	S 25 39.8	+07.0	14	
15	48	42.3	+00.2	S 09 40.1	+00.9	91	49.6	+00.1	N 07 39.6	-00.7	3	28.1	-33.3	S 25 46.8	+06.9	15	
16	63	42.5	+00.1	S 09 41.0	+00.9	106	49.7	+00.1	N 07 38.9	-00.6	17	54.8	-33.5	S 25 53.7	+06.7	16	
17	78	42.6	+00.1	S 09 41.9	+00.9	121	49.8	+00.2	N 07 38.3	-00.6	32	21.3	-33.5	S 26 00.4	+06.6	17	
18	93	42.7	+00.1	S 09 42.8	+00.9	136	50.0	+00.1	N 07 37.7	-00.6	46	47.8	-33.6	S 26 07.0	+06.4	18	
19	108	42.8	+00.1	S 09 43.7	+00.9	151	50.1	+00.1	N 07 37.0	-00.6	61	14.2	-33.8	S 26 13.4	+06.3	19	
20	123	42.9	+00.2	S 09 44.6	+00.9	166	50.2	+00.1	N 07 36.4	-00.6	75	40.4	-33.8	S 26 19.7	+06.1	20	
21	138	43.1	+00.1	S 09 45.5	+00.9	181	50.3	+00.2	N 07 35.8	-00.7	90	06.6	-33.9	S 26 25.8	+06.0	21	
22	153	43.2	+00.1	S 09 46.4	+00.9	196	50.5	+00.1	N 07 35.1	-00.6	104	32.7	-33.9	S 26 31.8	+05.8	22	
23	168	43.3	+00.1	S 09 47.3	+00.9	211	50.6	+00.1	N 07 34.5	-00.7	118	58.8	-34.1	S 26 37.6	+05.7	23	
UT 02	06	10	14	18	22	UT 02	06	10	14	18	22	UT 02	06	10	14	18	22
SD 16°0 16°1 16°1 16°1 16°1 16°1	SD 00°2 00°2 00°2 00°2 00°2 00°2	SD 15°5 15°5 15°5 15°5 15°6 15°6															
HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 00°2 00°2 00°2 00°2 00°2 00°2	HP 56°8 56°9 56°9 57°0 57°1 57°2															
SHA 157° 157° 157° 157° 157° 157°	SHA 200° 200° 200° 200° 200° 200°	SHA 119° 117° 115° 112° 110° 107°															
Greenwich Culmination Time: 11:45	Greenwich Culmination Time: 08:52	Greenwich Culmination Time: 14:45															

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	174	07.2	+00.8	S 12 24.8	+00.7	344	28.9	+02.7	N 14 18.9	+00.0	51	45.0	+02.5	S 12 50.5	+00.0	00
01	189	08.0	+00.8	S 12 25.5	+00.6	359	31.6	+02.8	N 14 18.9	-00.1	66	47.5	+02.6	S 12 50.5	+00.0	01
02	204	08.8	+00.9	S 12 26.1	+00.6	14	34.4	+02.8	N 14 18.8	-00.1	81	50.1	+02.5	S 12 50.5	+00.0	02
03	219	09.7	+00.8	S 12 26.7	+00.6	29	37.2	+02.7	N 14 18.7	-00.1	96	52.6	+02.6	S 12 50.5	+00.1	03
04	234	10.5	+00.9	S 12 27.3	+00.6	44	39.9	+02.8	N 14 18.6	-00.1	111	55.2	+02.5	S 12 50.6	+00.0	04
05	249	11.4	+00.8	S 12 27.9	+00.6	59	42.7	+02.7	N 14 18.5	-00.1	126	57.7	+02.5	S 12 50.6	+00.0	05
06	264	12.2	+00.8	S 12 28.5	+00.6	74	45.4	+02.8	N 14 18.4	-00.1	142	00.2	+02.6	S 12 50.6	+00.0	06
07	279	13.0	+00.9	S 12 29.1	+00.6	89	48.2	+02.8	N 14 18.3	-00.1	157	02.8	+02.5	S 12 50.6	+00.0	07
08	294	13.9	+00.8	S 12 29.7	+00.6	104	51.0	+02.7	N 14 18.2	-00.1	172	05.3	+02.6	S 12 50.6	+00.1	08
09	309	14.7	+00.8	S 12 30.3	+00.6	119	53.7	+02.8	N 14 18.1	-00.1	187	07.9	+02.5	S 12 50.7	+00.0	09
10	324	15.5	+00.9	S 12 30.9	+00.6	134	56.5	+02.8	N 14 18.0	-00.1	202	10.4	+02.5	S 12 50.7	+00.0	10
11	339	16.4	+00.8	S 12 31.5	+00.6	149	59.3	+02.7	N 14 17.9	-00.1	217	12.9	+02.6	S 12 50.7	+00.0	11
12	354	17.2	+00.8	S 12 32.1	+00.6	165	02.0	+02.8	N 14 17.8	-00.1	232	15.5	+02.5	S 12 50.7	+00.1	12
13	9	18.0	+00.9	S 12 32.7	+00.6	180	04.8	+02.8	N 14 17.7	-00.1	247	18.0	+02.5	S 12 50.8	+00.0	13
14	24	18.9	+00.8	S 12 33.3	+00.6	195	07.6	+02.7	N 14 17.6	+00.0	262	20.5	+02.6	S 12 50.8	+00.0	14
15	39	19.7	+00.8	S 12 33.9	+00.6	210	10.3	+02.8	N 14 17.6	-00.1	277	23.1	+02.5	S 12 50.8	+00.0	15
16	54	20.5	+00.9	S 12 34.5	+00.6	225										

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on 2023 October 23. Includes sub-tables for UT 02-06, 10-14, 18-22 and planetary data for SD, HP, and SHA.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on 2023 October 20. Includes sub-tables for UT 02-06, 10-14, 18-22 and planetary data for SD, HP, and SHA.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on 2023 October 23. Includes sub-tables for UT 02-06, 10-14, 18-22 and planetary data for SD, HP, and SHA.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on 2023 October 20. Includes sub-tables for UT 02-06, 10-14, 18-22 and planetary data for SD, HP, and SHA.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table for UT 02-22. Data rows for UT 00-23.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table for UT 02-22. Data rows for UT 00-23.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table for UT 02-22. Data rows for UT 00-23.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes sub-headers for GHA, ddGHA, Dec, dDec and a small table for UT 02-22. Data rows for UT 00-23.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes sub-headers for GHA, ddGHA, Dec, dDec and a sub-table for SD, HP, SHA, and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes sub-headers for GHA, ddGHA, Dec, dDec and a sub-table for SD, HP, SHA, and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes sub-headers for GHA, ddGHA, Dec, dDec and a sub-table for SD, HP, SHA, and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23. Includes sub-headers for GHA, ddGHA, Dec, dDec and a sub-table for SD, HP, SHA, 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 and Moon. Moon phase is A: 38%.

Summary table for Sun, Venus, Moon. Columns: UT, 02, 06, 10, 14, 18, 22. Rows: SD, HP, SHA. Includes Greenwich Culmination Time.

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

Summary table for Mars, Jupiter, Saturn. Columns: UT, 02, 06, 10, 14, 18, 22. Rows: SD, HP, SHA. Includes Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes GHA, ddGHA, Dec, dDec for each planet and Moon. Moon phase is A: 42%.

Summary table for Sun, Venus, Moon. Columns: UT, 02, 06, 10, 14, 18, 22. Rows: SD, HP, SHA. Includes Greenwich Culmination Time.

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

Summary table for Mars, Jupiter, Saturn. Columns: UT, 02, 06, 10, 14, 18, 22. Rows: SD, HP, SHA. Includes 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 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 145° 145° 145° 144° 144° 144°
Greenwich Culmination Time: 11:43

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 140° 139° 139° 139° 139° 139°
Greenwich Culmination Time: 12:04

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°1 16°1 16°1
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 148° 148° 148° 147° 147° 147°
Greenwich Culmination Time: 11:43

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 142° 141° 141° 141° 141° 141°
Greenwich Culmination Time: 12:08

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	184	03.6	+00.0	S 13 17.3	+00.8	227	04.6	+00.0	N 04 40.4	-00.8	2	31.1	-31.1	N 15 00.8	+14.6	00
01	199	03.6	+00.1	S 13 18.1	+00.9	242	04.6	+00.0	N 04 39.6	-00.8	16	60.0	-31.3	N 15 15.4	+14.5	01
02	214	03.7	+00.0	S 13 19.0	+00.8	257	04.6	+00.0	N 04 38.8	-00.8	31	28.7	-31.2	N 15 29.9	+14.4	02
03	229	03.7	+00.1	S 13 19.8	+00.8	272	04.6	+00.0	N 04 38.0	-00.8	45	57.5	-31.3	N 15 44.3	+14.3	03
04	244	03.8	+00.0	S 13 20.6	+00.9	287	04.6	+00.0	N 04 37.2	-00.8	60	26.2	-31.4	N 15 58.6	+14.2	04
05	259	03.8	+00.1	S 13 21.5	+00.8	302	04.6	+00.1	N 04 36.4	-00.8	74	54.8	-31.4	N 16 12.8	+14.1	05
06	274	03.9	+00.0	S 13 22.3	+00.8	317	04.5	+00.0	N 04 35.6	-00.9	89	23.4	-31.4	N 16 26.9	+14.0	06
07	289	03.9	+00.0	S 13 23.1	+00.9	332	04.5	+00.0	N 04 34.7	-00.8	103	52.0	-31.5	N 16 40.9	+13.8	07
08	304	03.9	+00.1	S 13 24.0	+00.8	347	04.5	+00.0	N 04 33.9	-00.8	118	20.5	-31.6	N 16 54.7	+13.8	08
09	319	04.0	+00.0	S 13 24.8	+00.8	2	04.5	+00.0	N 04 33.1	-00.8	132	48.9	-31.6	N 17 08.5	+13.7	09
10	334	04.0	+00.1	S 13 25.6	+00.8	17	04.5	+00.0	N 04 32.3	-00.8	147	17.3	-31.7	N 17 22.2	+13.6	10
11	349	04.1	+00.0	S 13 26.4	+00.9	32	04.5	+00.0	N 04 31.5	-00.8	161	45.6	-31.7	N 17 35.8	+13.4	11
12	4	04.1	+00.1	S 13 27.3	+00.8	47	04.5	+00.0	N 04 30.7	-00.8	176	13.9	-31.8	N 17 49.2	+13.4	12
13	19	04.2	+00.0	S 13 28.1	+00.8	62	04.5	+00.0	N 04 29.9	-00.8	190	42.1	-31.8	N 18 02.6	+13.2	13
14	34	04.2	+00.0	S 13 28.9	+00.9	77	04.5	+00.0	N 04 29.1	-00.8	205	10.3	-31.9	N 18 15.8	+13.1	14
15	49	04.2	+00.1	S 13 29.8	+00.8	92	04.5	+00.0	N 04 28.3	-00.8	219	38.4	-31.9	N 18 28.9	+13.0	15
16	64	04.3	+00.0	S 13 30.6	+00.8	107	04.5	+00.0	N 04 27.5	-00.8	234	06.5	-32.0	N 18 41.9	+12.9	16
17	79	04.3	+00.1	S 13 31.4	+00.8	122	04.5	+00.0	N 04 26.7	-00.9	248	34.5	-32.0	N 18 54.8	+12.7	17
18	94	04.4	+00.0	S 13 32.2	+00.9	137	04.5	+00.1	N 04 25.8	-00.9	263	02.5	-32.1	N 19 07.5	+12.7	18
19	109	04.4	+00.1	S 13 33.1	+00.8	152	04.4	+00.0	N 04 25.0	-00.8	277	30.4	-32.2	N 19 20.2	+12.5	19
20	124	04.5	+00.0	S 13 33.9	+00.8	167	04.4	+00.0	N 04 24.2	-00.8	291	58.2	-32.2	N 19 32.7	+12.4	20
21	139	04.5	+00.0	S 13 34.7	+00.8	182	04.4	+00.0	N 04 23.4	-00.8	306	26.0	-32.2	N 19 45.1	+12.3	21
22	154	04.5	+00.1	S 13 35.5	+00.9	197	04.4	+00.0	N 04 22.6	-00.8	320	53.8	-32.3	N 19 57.4	+12.1	22
23	169	04.6	+00.0	S 13 36.4	+00.8	212	04.4	+00.0	N 04 21.8	-00.8	335	21.5	-32.4	N 20 09.5	+12.0	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 147° 147° 147° 146° 146° 146°	Greenwich Culmination Time: 11:43	UT 02 06 10 14 18 22	SD 00°2 00°2 00°2 00°2 00°2 00°2	HP 00°2 00°2 00°2 00°2 00°2 00°2	SHA 190° 190° 190° 189° 189° 189°	Greenwich Culmination Time: 08:51	UT 02 06 10 14 18 22	SD 16°1 16°1 16°1 16°0 16°0 16°0	HP 59°1 59°0 58°9 58°8 58°7 58°6	SHA 324° 322° 320° 318° 315° 313°	Greenwich Culmination Time: -1:00		

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	184	04.6	+00.1	S 13 37.2	+00.8	227	04.4	+00.0	N 04 21.0	-00.9	349	49.1	-32.4	N 20 21.5	+11.9	00
01	199	04.7	+00.0	S 13 38.0	+00.8	242	04.4	+00.0	N 04 20.1	-00.8	4	16.7	-32.5	N 20 33.4	+11.8	01
02	214	04.7	+00.0	S 13 38.8	+00.8	257	04.4	+00.1	N 04 19.3	-00.8	18	44.2	-32.5	N 20 45.2	+11.6	02
03	229	04.7	+00.1	S 13 39.6	+00.9	272	04.3	+00.0	N 04 18.5	-00.8	33	11.7	-32.5	N 20 56.8	+11.5	03
04	244	04.8	+00.0	S 13 40.5	+00.8	287	04.3	+00.0	N 04 17.7	-00.8	47	39.2	-32.6	N 21 08.3	+11.4	04
05	259	04.8	+00.0	S 13 41.3	+00.8	302	04.3	+00.0	N 04 16.9	-00.8	62	06.6	-32.7	N 21 19.7	+11.2	05
06	274	04.8	+00.1	S 13 42.1	+00.8	317	04.3	+00.0	N 04 16.1	-00.9	76	33.9	-32.7	N 21 30.9	+11.1	06
07	289	04.9	+00.0	S 13 42.9	+00.9	332	04.3	+00.0	N 04 15.2	-00.8	91	01.2	-32.8	N 21 42.0	+10.9	07
08	304	04.9	+00.1	S 13 43.8	+00.8	347	04.3	+00.0	N 04 14.4	-00.8	105	28.4	-32.8	N 21 52.9	+10.9	08
09	319	05.0	+00.0	S 13 44.6	+00.8	2	04.3	+00.1	N 04 13.6	-00.8	119	55.6	-32.9	N 22 03.8	+10.6	09
10	334	05.0	+00.0	S 13 45.4	+00.8	17	04.2	+00.0	N 04 12.8	-00.8	134	22.7	-32.9	N 22 14.4	+10.6	10
11	349	05.0	+00.1	S 13 46.2	+00.8	32	04.2	+00.0	N 04 12.0	-00.9	148	49.8	-33.0	N 22 25.0	+10.4	11
12	4	05.1	+00.0	S 13 47.0	+00.8	47	04.2	+00.0	N 04 11.1	-00.8	163	16.8	-33.0	N 22 35.4	+10.3	12
13	19	05.1	+00.0	S 13 47.8	+00.9	62	04.2	+00.0	N 04 10.3	-00.8	177	43.8	-33.0	N 22 45.7	+10.1	13
14	34	05.1	+00.1	S 13 48.7	+00.8	77	04.2	+00.1	N 04 09.5	-00.8	192	10.8	-33.1	N 22 55.8	+09.9	14
15	49	05.2	+00.0	S 13 49.5	+00.8	92	04.1	+00.0	N 04 08.7	-00.9	206	37.7	-33.2	N 23 05.7	+09.9	15
16	64	05.2	+00.0	S 13 50.3	+00.8	107	04.1	+00.0	N 04 07.8	-00.8	221	04.5	-33.2	N 23 15.6	+09.7	16
17	79	05.2	+00.1	S 13 51.1	+00.8	122	04.1	+00.0	N 04 07.0	-00.8	235	31.3	-33.2	N 23 25.3	+09.5	17
18	94	05.3	+00.0	S 13 51.9	+00.9	137	04.1	+00.0	N 04 06.2	-00.8	249	58.1	-33.3	N 23 34.8	+09.4	18
19	109	05.3	+00.0	S 13 52.8	+00.8	152	04.1	+00.1	N 04 05.4	-00.9	264	24.8	-33.3	N 23 44.2	+09.2	19
20	124	05.3	+00.1	S 13 53.6	+00.8	167	04.0	+00.0	N 04 04.5	-00.8	278	51.5	-33.4	N 23 53.4	+09.1	20
21	139	05.4	+00.0	S 13 54.4	+00.8	182	04.0	+00.0	N 04 03.7	-00.8	293	18.1	-33.4	N 24 02.5	+09.0	21
22	154	05.4	+00.0	S 13 55.2	+00.8	197	04.0	+00.0	N 04 02.9	-00.8	307	44.7	-33.5	N 24 11.5	+08.8	22
23	169	05.4	+00.1	S 13 56.0	+00.8	212	04.0	+00.0	N 04 02.1	-00.9	322	11.2	-33.4	N 24 20.3	+08.6	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 146° 146° 146° 145° 145° 145°	Greenwich Culmination Time: 11:43	UT 02 06 10 14 18 22	SD 00°2 00°2 00°2 00°2 00°2 00°2	HP 00°2 00°2 00°2 00°2 00°2 00°2	SHA 189° 189° 189° 188° 188° 188°	Greenwich Culmination Time: 08:51	UT 02 06 10 14 18 22	SD 15°9 15°9 15°9 15°8 15°8 15°8	HP 58°5 58°3 58°2 58°1 58°0 57°8	SHA 311° 308° 306° 304° 301° 299°	Greenwich Culmination Time: 00:42		

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Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for days 00-23 and Greenwich Culmination Time: 11:43.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes data for days 00-23 and Greenwich Culmination Time: 11:43.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for days 00-23 and Greenwich Culmination Time: 12:00.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes data for days 00-23 and Greenwich Culmination Time: 12:03.

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

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 these planets.

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 these planets.

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 these planets.

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 (A: 85%), and UT. Rows 00-23 show celestial coordinates (GHA, ddGHA, Dec, dDec) for each body. Includes sub-tables for UT 02-06 and 10-14.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates for Mars, Jupiter, and Saturn. Includes sub-tables for UT 02-06 and 10-14.

Table with columns for UT, Sun, Venus, Moon (A: 77%), and UT. Rows 00-23 show celestial coordinates for each body. Includes sub-tables for UT 02-06 and 10-14.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show celestial coordinates for Mars, Jupiter, and Saturn. Includes sub-tables for UT 02-06 and 10-14.

Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, dDec, and a 24-hour data row.

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° 139° 139° 139° 139° 138°
Greenwich Culmination Time: 11:43

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, dDec, and a 24-hour data row.

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Table with columns for UT, Sun, Venus, Moon, and UT. Each planet section includes GHA, ddGHA, Dec, dDec, and a 24-hour data row.

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° 138° 138° 138° 137° 137°
Greenwich Culmination Time: 11:43

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, dDec, and a 24-hour data row.

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Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on 2023 November 12, such as GHA, ddGHA, Dec, and dDec. Includes a small table for UT 02-22 and Greenwich Culmination Time: 11:44.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on 2023 November 9, such as GHA, ddGHA, Dec, and dDec. Includes a small table for UT 02-22 and Greenwich Culmination Time: 11:43.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on 2023 November 12, such as GHA, ddGHA, Dec, and dDec. Includes a small table for UT 02-22 and Greenwich Culmination Time: 11:51.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on 2023 November 9, such as GHA, ddGHA, Dec, and dDec. Includes a small table for UT 02-22 and Greenwich Culmination Time: 11:54.

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.

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and times 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 129° 129° 129° 128° 128° 128°
Greenwich Culmination Time: 11:44

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and times 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 128° 128° 128° 128° 128° 128°
Greenwich Culmination Time: 11:46

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23 showing celestial coordinates and times 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°2 00°2 00°2 00°2 00°2 00°2
SHA 132° 132° 132° 132° 131° 131°
Greenwich Culmination Time: 11:44

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 showing celestial coordinates and times 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 130° 130° 130° 130° 130° 130°
Greenwich Culmination Time: 11:49

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UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	55.5	-00.1	S 18 05.8	+00.6	226	34.9	-00.2	S 01 04.1	+01.0	177	04.7	-31.8	S 22 42.7	+09.7	00
01	198	55.4	-00.1	S 18 06.4	+00.7	241	34.7	-00.1	S 01 05.1	+00.9	191	32.9	-31.9	S 22 52.4	+09.7	01
02	213	55.3	-00.1	S 18 07.1	+00.6	256	34.6	-00.2	S 01 06.0	+01.0	206	01.0	-32.1	S 23 02.1	+09.5	02
03	228	55.2	-00.1	S 18 07.7	+00.7	271	34.4	-00.1	S 01 07.0	+01.0	220	28.9	-32.1	S 23 11.6	+09.4	03
04	243	55.1	-00.1	S 18 08.4	+00.6	286	34.3	-00.2	S 01 08.0	+01.0	234	56.8	-32.3	S 23 21.0	+09.3	04
05	258	55.0	-00.1	S 18 09.0	+00.7	301	34.1	-00.1	S 01 09.0	+00.9	249	24.5	-32.4	S 23 30.3	+09.2	05
06	273	54.9	-00.1	S 18 09.7	+00.6	316	34.0	-00.2	S 01 09.9	+01.0	263	52.1	-32.5	S 23 39.5	+09.1	06
07	288	54.8	-00.1	S 18 10.3	+00.7	331	33.8	-00.1	S 01 10.9	+01.0	278	19.6	-32.5	S 23 48.6	+08.9	07
08	303	54.7	-00.1	S 18 11.0	+00.7	346	33.7	-00.2	S 01 11.9	+00.9	292	47.1	-32.7	S 23 57.5	+08.8	08
09	318	54.6	-00.1	S 18 11.7	+00.6	1	33.5	-00.1	S 01 12.8	+01.0	307	14.4	-32.8	S 24 06.3	+08.7	09
10	333	54.5	-00.1	S 18 12.3	+00.6	16	33.4	-00.1	S 01 13.8	+01.0	321	41.6	-32.9	S 24 15.0	+08.5	10
11	348	54.4	-00.1	S 18 13.0	+00.6	31	33.3	-00.2	S 01 14.8	+01.0	336	08.7	-33.0	S 24 23.5	+08.4	11
12	3	54.3	-00.1	S 18 13.6	+00.7	46	33.1	-00.1	S 01 15.8	+00.9	350	35.7	-33.1	S 24 31.9	+08.3	12
13	18	54.2	+00.0	S 18 14.3	+00.6	61	33.0	-00.2	S 01 16.7	+01.0	5	02.6	-33.3	S 24 40.2	+08.1	13
14	33	54.2	-00.1	S 18 14.9	+00.7	76	32.8	-00.1	S 01 17.7	+01.0	19	29.3	-33.3	S 24 48.3	+08.0	14
15	48	54.1	-00.1	S 18 15.6	+00.6	91	32.7	-00.2	S 01 18.7	+01.0	33	56.0	-33.4	S 24 56.3	+07.9	15
16	63	54.0	-00.1	S 18 16.2	+00.7	106	32.5	-00.1	S 01 19.7	+00.9	48	22.6	-33.5	S 25 04.2	+07.7	16
17	78	53.9	-00.1	S 18 16.9	+00.6	121	32.4	-00.2	S 01 20.6	+01.0	62	49.1	-33.6	S 25 11.9	+07.6	17
18	93	53.8	-00.1	S 18 17.5	+00.7	136	32.2	-00.2	S 01 21.6	+01.0	77	15.5	-33.7	S 25 19.5	+07.5	18
19	108	53.7	-00.1	S 18 18.2	+00.6	151	32.0	-00.1	S 01 22.6	+01.0	91	41.8	-33.9	S 25 27.0	+07.3	19
20	123	53.6	-00.1	S 18 18.8	+00.6	166	31.9	-00.2	S 01 23.6	+01.0	106	07.9	-33.9	S 25 34.3	+07.1	20
21	138	53.5	-00.1	S 18 19.4	+00.7	181	31.7	-00.1	S 01 24.6	+00.9	120	34.0	-34.0	S 25 41.4	+07.0	21
22	153	53.4	-00.1	S 18 20.1	+00.6	196	31.6	-00.2	S 01 25.5	+01.0	135	00.0	-34.1	S 25 48.4	+06.9	22
23	168	53.3	-00.1	S 18 20.7	+00.7	211	31.4	-00.1	S 01 26.5	+01.0	149	25.9	-34.2	S 25 55.3	+06.7	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 130° 131° 131° 130° 130° 130°
Greenwich Culmination Time: 11:44

UT 02 06 10 14 18 22
SD 00°2' 00°2' 00°2' 00°2' 00°2' 00°2'
HP 00°0' 00°2' 00°2' 00°2' 00°2' 00°2'
SHA 174° 173° 173° 173° 173° 173°
Greenwich Culmination Time: 08:53

UT 02 06 10 14 18 22
SD 15°5' 15°6' 15°6' 15°6' 15°6' 15°7'
HP 57°1' 57°2' 57°2' 57°3' 57°4' 57°5'
SHA 123° 123° 118° 118° 116° 114° 111°
Greenwich Culmination Time: 12:39

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	182	38.3	+00.7	S 18 29.9	+00.4	15	42.6	+02.8	N 13 11.9	-00.1	79	33.6	+02.4	S 12 52.0	-00.1	00
01	197	39.0	+00.6	S 18 30.3	+00.5	30	45.4	+02.8	N 13 11.8	-00.1	94	36.0	+02.5	S 12 51.9	+00.0	01
02	212	39.6	+00.7	S 18 30.8	+00.5	45	48.2	+02.7	N 13 11.7	-00.1	109	38.5	+02.4	S 12 51.9	+00.0	02
03	227	40.3	+00.7	S 18 31.3	+00.4	60	50.9	+02.8	N 13 11.6	-00.1	124	40.9	+02.4	S 12 51.9	+00.0	03
04	242	41.0	+00.7	S 18 31.7	+00.5	75	53.7	+02.8	N 13 11.5	-00.1	139	43.3	+02.4	S 12 51.9	+00.0	04
05	257	41.7	+00.6	S 18 32.2	+00.5	90	56.5	+02.8	N 13 11.4	-00.1	154	45.7	+02.5	S 12 51.9	-00.1	05
06	272	42.3	+00.7	S 18 32.7	+00.5	105	59.3	+02.8	N 13 11.3	-00.1	169	48.2	+02.4	S 12 51.8	+00.0	06
07	287	43.0	+00.7	S 18 33.2	+00.4	121	02.1	+02.8	N 13 11.2	-00.1	184	50.6	+02.4	S 12 51.8	+00.0	07
08	302	43.7	+00.7	S 18 33.6	+00.5	136	04.9	+02.7	N 13 11.1	-00.1	199	53.0	+02.4	S 12 51.8	+00.0	08
09	317	44.4	+00.7	S 18 34.1	+00.5	151	07.6	+02.8	N 13 11.0	-00.1	214	55.4	+02.5	S 12 51.8	+00.0	09
10	332	45.1	+00.6	S 18 34.6	+00.4	166	10.4	+02.8	N 13 10.9	-00.1	229	57.9	+02.4	S 12 51.8	-00.1	10
11	347	45.7	+00.7	S 18 35.0	+00.5	181	13.2	+02.8	N 13 10.8	-00.1	245	00.3	+02.4	S 12 51.7	+00.0	11
12	2	46.4	+00.7	S 18 35.5	+00.5	196	16.0	+02.8	N 13 10.7	-00.1	260	02.7	+02.4	S 12 51.7	+00.0	12
13	17	47.1	+00.7	S 18 36.0	+00.4	211	18.8	+02.7	N 13 10.6	-00.1	275	05.1	+02.4	S 12 51.7	+00.0	13
14	32	47.8	+00.6	S 18 36.4	+00.5	226	21.5	+02.8	N 13 10.5	-00.1	290	07.5	+02.5	S 12 51.7	+00.0	14
15	47	48.4	+00.7	S 18 36.9	+00.5	241	24.3	+02.8	N 13 10.4	-00.1	305	10.0	+02.4	S 12 51.7	-00.1	15
16	62	49.1	+00.7	S 18 37.4	+00.4	256	27.1	+02.8	N 13 10.3	+00.0	320	12.4	+02.4	S 12 51.6	+00.0	16
17	77	49.8	+00.7	S 18 37.8	+00.5	271	29.9	+02.8	N 13 10.3	-00.1	335	14.8	+02.4	S 12 51.6	+00.0	17
18	92	50.5	+00.6	S 18 38.3	+00.5	286	32.7	+02.7	N 13 10.2	-00.1	350	17.2	+02.5	S 12 51.6	+00.0	18
19	107	51.1	+00.7	S 18 38.8	+00.4	301	35.4	+02.8	N 13 10.1	-00.1	5	19.7	+02.4	S 12 51.6	+00.0	19
20	122	51.8	+00.7	S 18 39.2	+00.5	316	38.2	+02.8	N 13 10.0	-00.1	20	22.1	+02.4	S 12 51.6	-00.1	20
21	137	52.5	+00.7	S 18 39.7	+00.5	331	41.0	+02.8	N 13 09.9	-00.1	35	24.5	+02.4	S 12 51.5	+00.0	21
22	152	53.2	+00.6	S 18 40.2	+00.4	346	43.8	+02.8	N 13 09.8	-00.1	50	26.9	+02.4	S 12 51.5	+00.0	22
23	167	53.8	+00.7	S 18 40.6	+00.5	1	46.6	+02.7	N 13 09.7	-00.1	65	29.3	+02.5	S 12 51.5	+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 130° 130° 130° 129° 129° 129°
Greenwich Culmination Time: 11:48

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 323° 323° 323° 323° 323° 323°
Greenwich Culmination Time: 22:52

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 027° 027° 027° 027° 027° 027°
Greenwich Culmination Time: 18:38

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	53.2	-00.1	S 18 21.4	+00.6	226	31.3	-00.2	S 01 27.5	+01.0	163	51.7	-34.3	S 26 02.0	+06.6	00
01	198	53.1	-00.1	S 18 22.0	+00.7	241	31.1	-00.1	S 01 28.5	+00.9	178	17.4	-34.4	S 26 08.6	+06.4	01
02	213	53.0	-00.1	S 18 22.7	+00.6	256	31.0	-00.2	S 01 29.4	+01.0	192	43.0	-34.5	S 26 15.0	+06.3	02
03	228	52.9	-00.1	S 18 23.3	+00.7	271	30.8	-00.1	S 01 30.4	+01.0	207	08.5	-34.5	S 26 21.3	+06.1	03
04	243	52.8	-00.1	S 18 24.0	+00.6	286	30.7	-00.2	S 01 31.4	+01.0	221	34.0	-34.7	S 26 27.4	+05.9	04
05	258	52.7	-00.1	S 18 24.6	+00.6	301	30.5	-00.1	S 01 32.4	+01.0	235	59.3	-34.7	S 26 33.3	+05.8	05
06	273	52.6	-00.2	S 18 25.2	+00.7	316	30.4	-00.2	S 01 33.4	+00.9	250	24.6	-34.8	S 26 39.1	+05.6	06
07	288	52.4	-00.1	S 18 25.9	+00.6	331	30.2	-00.1	S 01 34.3	+01.0	264	49.8	-35.0	S 26 44.7	+05.5	07
08	303	52.3	-00.1	S 18 26.5	+00.7	346	30.1	-00.2	S 01 35.3	+01.0	279	14.8	-34.9	S 26 50.2	+05.3	08
09	318	52.2	-00.1	S 18 27.2	+00.6	1	29.9	-00.2	S 01 36.3	+01.0	293	39.9	-35.1	S 26 55.5	+05.2	09
10	333	52.1	-00.1	S 18 27.8	+00.6	16	29.7	-00.1	S 01 37.3	+01.0	308	04.8	-35.2	S 27 00.7	+05.0	10
11	348	52.0	-00.1	S 18 28.4	+00.7	31	29.6	-00.2	S 01 38.3	+00.9	322	29.6	-35.2	S 27 05.7	+04.8	11
12	3	51.9	-00.1	S 18 29.1	+00.6	46	29.4	-00.1	S 01 39.2	+01.0	336	54.4	-35.3	S 27 10.5	+04.6	12
13	18	51.8	-00.1	S 18 29.7	+00.7	61	29.3	-00.2	S 01 40.2	+01.0	351	19.1	-35.4	S 27 15.1	+04.5	13
14	33	51.7	-00.1	S 18 30.4	+00.6	76	29.1	-00.1	S 01 41.2	+01.0	5	43.7	-35.5	S 27 19.6	+04.4	14
15	48	51.6	-00.1	S 18 31.0	+00.6	91	29.0	-00.2	S 01 42.2	+01.0	20	08.2	-35.5	S 27 24.0	+04.1	15
16	63	51.5	-00.1	S 18 31.6	+00.7	106	28.8	-00.2	S 01 43.2	+00.9	34	32.7	-35.6	S 27 28.1	+04.0	16
17	78	51.4	-00.1	S 18 32.3	+00.6	121	28.6	-00.1	S 01 44.1	+01.0	48	57.1	-35.6			

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on 2023 November 20. Includes sub-tables for UT 02, 06, 10, 14, 18, 22 and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on 2023 November 17. Includes sub-tables for UT 02, 06, 10, 14, 18, 22 and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on 2023 November 20. Includes sub-tables for UT 02, 06, 10, 14, 18, 22 and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on 2023 November 17. Includes sub-tables for UT 02, 06, 10, 14, 18, 22 and Greenwich Culmination Time.

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	45.0	-00.1	S 19 06.3	+00.6	226	19.4	-00.2	S 02 38.5	+01.0	120	38.8	-35.9	S 26 33.1	-06.2	00
01	198	44.9	-00.2	S 19 06.9	+00.6	241	19.2	-00.2	S 02 39.5	+01.0	135	02.9	-35.8	S 26 26.9	-06.3	01
02	213	44.7	-00.1	S 19 07.5	+00.6	256	19.0	-00.1	S 02 40.5	+01.0	149	27.1	-35.7	S 26 20.6	-06.5	02
03	228	44.6	-00.1	S 19 08.1	+00.6	271	18.9	-00.2	S 02 41.5	+00.9	163	51.4	-35.7	S 26 14.1	-06.7	03
04	243	44.5	-00.2	S 19 08.7	+00.6	286	18.7	-00.2	S 02 42.4	+01.0	178	15.7	-35.6	S 26 07.4	-06.8	04
05	258	44.3	-00.1	S 19 09.3	+00.6	301	18.5	-00.2	S 02 43.4	+01.0	192	40.1	-35.6	S 26 00.6	-07.0	05
06	273	44.2	-00.1	S 19 09.9	+00.6	316	18.3	-00.1	S 02 44.4	+01.0	207	04.5	-35.5	S 25 53.6	-07.2	06
07	288	44.1	-00.1	S 19 10.5	+00.6	331	18.2	-00.2	S 02 45.4	+01.0	221	29.0	-35.4	S 25 46.4	-07.3	07
08	303	44.0	-00.2	S 19 11.1	+00.6	346	18.0	-00.2	S 02 46.4	+01.0	235	53.6	-35.3	S 25 39.1	-07.5	08
09	318	43.8	-00.1	S 19 11.7	+00.6	1 17.8	-00.2	S 02 47.4	+01.0	250	18.3	-35.3	S 25 31.6	-07.7	09	
10	333	43.7	-00.1	S 19 12.3	+00.6	16 17.6	-00.2	S 02 48.4	+01.0	264	43.0	-35.3	S 25 23.9	-07.8	10	
11	348	43.6	-00.2	S 19 12.9	+00.6	31 17.4	-00.2	S 02 49.4	+01.0	279	07.7	-35.1	S 25 16.1	-08.0	11	
12	3 43.4	-00.1	S 19 13.5	+00.6	46 17.2	-00.1	S 02 50.4	+01.0	293	32.6	-35.1	S 25 08.1	-08.1	12		
13	18 43.3	-00.1	S 19 14.1	+00.6	61 17.1	-00.2	S 02 51.4	+01.0	307	57.5	-35.0	S 24 60.0	-08.3	13		
14	33 43.2	-00.2	S 19 14.7	+00.6	76 16.9	-00.2	S 02 52.4	+01.0	322	22.5	-34.9	S 24 51.7	-08.5	14		
15	48 43.0	-00.1	S 19 15.3	+00.6	91 16.7	-00.2	S 02 53.4	+01.0	336	47.6	-34.9	S 24 43.2	-08.6	15		
16	63 42.9	-00.1	S 19 15.9	+00.6	106 16.5	-00.2	S 02 54.4	+01.0	351	12.7	-34.7	S 24 34.6	-08.8	16		
17	78 42.8	-00.2	S 19 16.5	+00.6	121 16.3	-00.1	S 02 55.4	+01.0	5 38.0	-34.7	S 24 25.8	-08.9	17			
18	93 42.6	-00.1	S 19 17.1	+00.6	136 16.2	-00.2	S 02 56.4	+01.0	20 03.3	-34.7	S 24 16.9	-09.1	18			
19	108 42.5	-00.1	S 19 17.7	+00.6	151 16.0	-00.2	S 02 57.4	+01.0	34 28.6	-34.5	S 24 07.8	-09.2	19			
20	123 42.4	-00.2	S 19 18.3	+00.6	166 15.8	-00.2	S 02 58.4	+01.0	48 54.1	-34.5	S 23 58.6	-09.4	20			
21	138 42.2	-00.1	S 19 18.9	+00.5	181 15.6	-00.2	S 02 59.4	+01.0	63 19.6	-34.4	S 23 49.2	-09.6	21			
22	153 42.1	-00.1	S 19 19.4	+00.6	196 15.4	-00.2	S 03 00.4	+01.0	77 45.2	-34.3	S 23 39.6	-09.6	22			
23	168 42.0	-00.2	S 19 20.0	+00.6	211 15.2	-00.2	S 03 01.4	+01.0	92 10.9	-34.2	S 23 30.0	-09.9	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 127° 127° 127° 126° 126° 126° Greenwich Culmination Time: 11:45	UT 02 06 10 14 18 22 SD 00°2 00°2 00°2 00°2 00°2 00°2 HP 00°2 00°2 00°2 00°2 00°2 00°2 SHA 169° 169° 169° 169° 169° 169° Greenwich Culmination Time: 08:54	UT 02 06 10 14 18 22 SD 16°0 16°0 16°0 16°0 16°0 16°1 HP 58°7 58°8 58°8 58°8 58°9 58°9 SHA 063° 060° 058° 055° 053° 059° Greenwich Culmination Time: 16:36
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UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	42.3	+00.6	S 19 14.0	+00.4	20	09.1	+02.7	N 13 02.8	-00.1	83	25.7	+02.4	S 12 49.8	+00.0	00
01	198	42.9	+00.7	S 19 14.4	+00.5	35	11.8	+02.8	N 13 02.7	-00.1	98	28.1	+02.4	S 12 49.8	-00.1	01
02	213	43.6	+00.6	S 19 14.9	+00.4	50	14.6	+02.8	N 13 02.6	-00.1	113	30.5	+02.4	S 12 49.7	+00.0	02
03	228	44.2	+00.7	S 19 15.3	+00.4	65	17.4	+02.7	N 13 02.5	+00.0	128	32.9	+02.4	S 12 49.7	+00.0	03
04	243	44.9	+00.7	S 19 15.7	+00.5	80	20.1	+02.8	N 13 02.5	-00.1	143	35.3	+02.4	S 12 49.7	+00.0	04
05	258	45.6	+00.6	S 19 16.2	+00.4	95	22.9	+02.8	N 13 02.4	-00.1	158	37.7	+02.4	S 12 49.7	-00.1	05
06	273	46.2	+00.7	S 19 16.6	+00.5	110	25.7	+02.7	N 13 02.3	-00.1	173	40.1	+02.4	S 12 49.6	+00.0	06
07	288	46.9	+00.6	S 19 17.1	+00.4	125	28.4	+02.8	N 13 02.2	-00.1	188	42.5	+02.4	S 12 49.6	+00.0	07
08	303	47.5	+00.7	S 19 17.5	+00.5	140	31.2	+02.8	N 13 02.1	-00.1	203	44.9	+02.4	S 12 49.6	+00.0	08
09	318	48.2	+00.6	S 19 18.0	+00.5	155	34.0	+02.7	N 13 02.0	-00.1	218	47.3	+02.4	S 12 49.6	-00.1	09
10	333	48.8	+00.7	S 19 18.4	+00.4	170	36.7	+02.8	N 13 01.9	-00.1	233	49.7	+02.4	S 12 49.5	+00.0	10
11	348	49.5	+00.6	S 19 18.8	+00.5	185	39.5	+02.8	N 13 01.8	-00.1	248	52.1	+02.4	S 12 49.5	+00.0	11
12	3 50.1	+00.7	S 19 19.3	+00.4	200	42.3	+02.7	N 13 01.7	-00.1	263	54.5	+02.5	S 12 49.5	-00.1	12	
13	18 50.8	+00.6	S 19 19.7	+00.5	215	45.0	+02.8	N 13 01.6	-00.1	278	57.0	+02.4	S 12 49.4	+00.0	13	
14	33 51.4	+00.7	S 19 20.2	+00.4	230	47.8	+02.8	N 13 01.5	-00.1	293	59.4	+02.4	S 12 49.4	+00.0	14	
15	48 52.1	+00.6	S 19 20.6	+00.4	245	50.6	+02.7	N 13 01.4	+00.0	309	01.8	+02.4	S 12 49.4	+00.0	15	
16	63 52.7	+00.7	S 19 21.0	+00.5	260	53.3	+02.8	N 13 01.4	-00.1	324	04.2	+02.4	S 12 49.4	-00.1	16	
17	78 53.4	+00.6	S 19 21.5	+00.4	275	56.1	+02.8	N 13 01.3	-00.1	339	06.6	+02.4	S 12 49.3	+00.0	17	
18	93 54.0	+00.7	S 19 21.9	+00.5	290	58.9	+02.7	N 13 01.2	-00.1	354	09.0	+02.4	S 12 49.3	+00.0	18	
19	108 54.7	+00.6	S 19 22.4	+00.4	306	01.6	+02.8	N 13 01.1	-00.1	9 11.4	+02.4	S 12 49.3	+00.0	19		
20	123 55.3	+00.7	S 19 22.8	+00.4	321	04.4	+02.8	N 13 01.0	-00.1	24 13.8	+02.4	S 12 49.3	-00.1	20		
21	138 56.0	+00.6	S 19 23.2	+00.5	336	07.2	+02.7	N 13 00.9	-00.1	39 16.2	+02.4	S 12 49.2	+00.0	21		
22	153 56.6	+00.7	S 19 23.7	+00.4	351	09.9	+02.8	N 13 00.8	-00.1	54 18.6	+02.4	S 12 49.2	+00.0	22		
23	168 57.3	+00.6	S 19 24.1	+00.5	6 12.7	+02.8	N 13 00.7	-00.1	69 21.0	+02.4	S 12 49.2	+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 127° 127° 127° 127° 126° 126° Greenwich Culmination Time: 11:44	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 323° 323° 323° 323° 323° 323° Greenwich Culmination Time: 22:35	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 027° 027° 027° 027° 027° 027° Greenwich Culmination Time: 18:23
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UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	41.8	-00.1	S 19 20.6	+00.6	226	15.0	-00.1	S 03 02.4	+01.0	106	36.7	-34.1	S 23 20.1	-10.0	00
01	198	41.7	-00.1	S 19 21.2	+00.6	241	14.9	-00.2	S 03 03.4	+01.0	121	02.6	-34.1	S 23 10.1	-10.1	01
02	213	41.6	-00.2	S 19 21.8	+00.6	256	14.7	-00.2	S 03 04.4	+01.0	135	28.5	-34.0	S 23 00.0	-10.2	02
03	228	41.4	-00.1	S 19 22.4	+00.6	271	14.5	-00.2	S 03 05.4	+01.0	149	54.5	-33.9	S 22 49.8	-10.4	03
04	243	41.3	-00.1	S 19 23.0	+00.6	286	14.3	-00.2	S 03 06.4	+01.0	164	20.6	-33.8	S 22 39.4	-10.6	04
05	258	41.2	-00.2	S 19 23.6	+00.5	301	14.1	-00.2	S 03 07.4	+01.0	178	46.8	-33.7	S 22 28.8	-10.6	05
06	273	41.0	-00.1	S 19 24.1	+00.6	316	13.9	-00.2	S 03 08.4	+00.9	193	13.1	-33.6	S 22 18.2	-10.8	06
07	288	40.9	-00.1	S 19 24.7	+00.6	331	13.7	-00.1	S 03 09.3	+01.0	207	39.5	-33.6	S 22 07.4	-11.0	07
08	303	40.8	-00.2	S 19 25.3	+00.6	346	13.6	-00.2	S 03 10.3	+01.0	222	05.9	-33.5	S 21 56.4	-11.1	08
09	318	40.6	-00.1	S 19 25.9	+00.6	1 13.4	-00.2	S 03 11.3	+01.0	236	32.4	-33.3	S 21 45.3	-11.2	09	
10	333	40.5	-00.2	S 19 26.5	+00.6	16 13.2	-00.2	S 03 12.3	+01.0	250	59.1	-33.3	S 21 34.1	-11.3	10	
11	348	40.3	-00.1	S 19 27.1	+00.5	31 13.0	-00.2	S 03 13.3	+01.0	265	25.8	-33.3	S 21 22.8	-11.5	11	
12	3 40.2	-00.1	S 19 27.6	+00.6	46 12.8	-00.2	S 03 14.3	+01.0	279	52.5	-33.1	S 21 11.3	-11.6	12		
13	18 40.1	-00.2	S 19 28.2	+00.6	61 12.6	-00.2	S 03 15.3	+01.0	294	19.4	-33.0	S 20 59.7	-11.7	13		
14	33 39.9	-00.1	S 19 28.8	+00.6	76 12.4	-00.2	S 03 16.3	+01.0	308	46.4	-33.0	S 20 48.0	-11.9	14		
15	48 39.8	-00.2	S 19 29.4	+00.6	91 12.2	-00.2	S 03 17.3	+01.0	323	13.4	-32.9	S 20 36.1	-11.9	15		
16	63 39.6	-00.1	S 19 30.0	+00.5	106 12.0	-00.2	S 03 18.3	+01.0	337	40.5	-32.8	S 20 24.2	-12.1	16		
17	78 39.5	-00.1	S 19 30.5	+00.6	121 11.8	-00.1	S 03 19.3	+01.0	352	07.7	-32.7	S 20 12.1	-12.2	17		
18	93 39.4	-00.2	S 19 31.1	+00.6	136 11.7	-00.2	S 03 20.3	+01.0	6 35.0	-32.6	S 19 59.9	-12.4	18			
19	108 39.2	-00.1	S 19 31.7													

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°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 121° 120° 120° 120° 120° 120°
Greenwich Culmination Time: 11:46

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°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 124° 124° 123° 123° 123° 123°
Greenwich Culmination Time: 11:45

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°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 324° 324° 324° 324° 324° 324°
Greenwich Culmination Time: 11:38

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 125° 125° 124° 124° 124° 124°
Greenwich Culmination Time: 11:41

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Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes 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 123° 123° 122° 122° 122° 122°
Greenwich Culmination Time: 11:46

Table with columns for UT, Sun, Venus, Moon, and UT. Rows 00-23. Includes 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 122° 121° 121° 121° 121° 121°
Greenwich Culmination Time: 11:46

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

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

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Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon for days 00-23, and a sub-table for UT 02-22.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon for days 00-23, and a sub-table for UT 02-22.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn for days 00-23, and a sub-table for UT 02-22.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn for days 00-23, and a sub-table for UT 02-22.

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

Summary table for Sun, Venus, and Moon with columns for UT, 02, 06, 10, 14, 18, 22 and rows for SD, HP, SHA, and Greenwich Culmination Time.

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

Summary table for Sun, Venus, and Moon with columns for UT, 02, 06, 10, 14, 18, 22 and rows for SD, HP, SHA, and Greenwich Culmination Time.

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

Summary table for Mars, Jupiter, and Saturn with columns for UT, 02, 06, 10, 14, 18, 22 and rows for SD, HP, SHA, and Greenwich Culmination Time.

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

Summary table for Mars, Jupiter, and Saturn with columns for UT, 02, 06, 10, 14, 18, 22 and rows for SD, HP, SHA, and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon (A: 68%), and UT. Rows 00-23 show astronomical data for each planet. Includes sub-tables for UT 02-22 with SD, HP, and SHA coordinates and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon (A: 57%), and UT. Rows 00-23 show astronomical data for each planet. Includes sub-tables for UT 02-22 with SD, HP, and SHA coordinates and Greenwich Culmination Time.

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

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Rows 00-23 show astronomical data for each planet. Includes sub-tables for UT 02-22 with SD, HP, and 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.

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 114° 114° 114° 114° 113° 113°
Greenwich Culmination Time: 11:48

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 118° 118° 118° 118° 117°
Greenwich Culmination Time: 11:32

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°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 113° 113° 113° 113° 112° 112°
Greenwich Culmination Time: 11:48

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 117° 117° 117° 117° 117° 117°
Greenwich Culmination Time: 11:31

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UT	Sun				Venus				Moon A: 79%				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 19.8	-00.3	S 22 25.7	+00.4	224 27.6	-00.3	S 09 52.7	+01.0	260 59.7	-23.9	N 05 45.5	-13.8	00
01	197 19.5	-00.2	S 22 26.1	+00.3	239 27.3	-00.4	S 09 53.7	+01.0	275 35.8	-24.0	N 05 31.7	-13.8	01
02	212 19.3	-00.3	S 22 26.4	+00.3	254 26.9	-00.3	S 09 54.7	+01.0	290 11.8	-24.0	N 05 17.9	-13.9	02
03	227 19.0	-00.3	S 22 26.7	+00.3	269 26.6	-00.4	S 09 55.7	+00.9	304 47.8	-23.9	N 05 04.0	-13.9	03
04	242 18.7	-00.2	S 22 27.0	+00.3	284 26.2	-00.3	S 09 56.6	+01.0	319 23.9	-24.0	N 04 50.1	-13.9	04
05	257 18.5	-00.3	S 22 27.3	+00.3	299 25.9	-00.4	S 09 57.6	+01.0	333 59.9	-23.9	N 04 36.2	-13.9	05
06	272 18.2	-00.2	S 22 27.6	+00.3	314 25.5	-00.3	S 09 58.6	+01.0	348 36.0	-23.9	N 04 22.3	-14.0	06
07	287 18.0	-00.3	S 22 27.9	+00.3	329 25.2	-00.4	S 09 59.6	+01.0	3 12.1	-23.9	N 04 08.3	-13.9	07
08	302 17.7	-00.3	S 22 28.2	+00.3	344 24.8	-00.3	S 10 00.6	+01.0	17 48.2	-24.0	N 03 54.4	-14.0	08
09	317 17.4	-00.2	S 22 28.5	+00.3	359 24.5	-00.4	S 10 01.6	+01.0	32 24.2	-23.9	N 03 40.4	-14.0	09
10	332 17.2	-00.3	S 22 28.8	+00.3	14 24.1	-00.4	S 10 02.6	+00.9	47 00.3	-23.9	N 03 26.4	-14.1	10
11	347 16.9	-00.3	S 22 29.1	+00.3	29 23.7	-00.3	S 10 03.5	+01.0	61 36.4	-23.9	N 03 12.3	-14.0	11
12	2 16.6	-00.2	S 22 29.4	+00.3	44 23.4	-00.4	S 10 04.5	+01.0	76 12.5	-24.0	N 02 58.3	-14.1	12
13	17 16.4	-00.3	S 22 29.7	+00.3	59 23.0	-00.3	S 10 05.5	+01.0	90 48.5	-23.9	N 02 44.2	-14.0	13
14	32 16.1	-00.2	S 22 30.0	+00.3	74 22.7	-00.4	S 10 06.5	+01.0	105 24.6	-23.9	N 02 30.2	-14.1	14
15	47 15.9	-00.3	S 22 30.3	+00.3	89 22.3	-00.3	S 10 07.5	+01.0	120 00.7	-24.0	N 02 16.1	-14.2	15
16	62 15.6	-00.3	S 22 30.6	+00.3	104 22.0	-00.4	S 10 08.5	+01.0	134 36.7	-23.9	N 02 01.9	-14.1	16
17	77 15.3	-00.2	S 22 30.9	+00.3	119 21.6	-00.3	S 10 09.5	+00.9	149 12.8	-24.0	N 01 47.8	-14.1	17
18	92 15.1	-00.3	S 22 31.2	+00.3	134 21.3	-00.4	S 10 10.4	+01.0	163 48.8	-23.9	N 01 33.7	-14.2	18
19	107 14.8	-00.3	S 22 31.5	+00.3	149 20.9	-00.4	S 10 11.4	+01.0	178 24.9	-24.0	N 01 19.5	-14.2	19
20	122 14.5	-00.2	S 22 31.8	+00.3	164 20.5	-00.3	S 10 12.4	+01.0	193 00.9	-24.0	N 01 05.3	-14.1	20
21	137 14.3	-00.3	S 22 32.1	+00.3	179 20.2	-00.4	S 10 13.4	+01.0	207 36.9	-24.0	N 00 51.2	-14.2	21
22	152 14.0	-00.3	S 22 32.4	+00.2	194 19.8	-00.3	S 10 14.4	+01.0	222 12.9	-24.0	N 00 37.0	-14.2	22
23	167 13.7	-00.2	S 22 32.6	+00.3	209 19.5	-00.4	S 10 15.4	+00.9	236 48.9	-24.0	N 00 22.8	-14.2	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	UT 02 06 10 14 18 22	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 100°1 00°1 100°1 00°1 100°1 00°1	HP 54°4 54°4 54°4 54°4 54°4 54°4	HP 00°0 00°0 00°0 00°0 00°0 00°0	HP 100°1 00°1 100°1 00°1 100°1 00°1	HP 54°4 54°4 54°4 54°4 54°4 54°4	HP 00°0 00°0 00°0 00°0 00°0 00°0								
SHA 108° 108° 107° 107° 107° 107°	SHA 150° 150° 149° 149° 149° 149°	SHA 108° 108° 107° 107° 107° 107°	SHA 150° 150° 149° 149° 149° 149°	SHA 186° 186° 182° 180° 179° 177°	SHA 111° 111° 111° 110° 110° 110°								
Greenwich Culmination Time: 11:50	Greenwich Culmination Time: 09:02	Greenwich Culmination Time: 11:50	Greenwich Culmination Time: 06:46	Greenwich Culmination Time: 11:49	Greenwich Culmination Time: 09:00								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	188 02.0	+00.5	S 21 58.6	+00.3	39 45.6	+02.6	N 12 29.8	-00.1	100 30.8	+02.3	S 12 32.9	+00.0	00
01	203 02.5	+00.6	S 21 58.9	+00.3	54 48.2	+02.7	N 12 29.7	+00.0	115 33.1	+02.4	S 12 32.9	-00.1	01
02	218 03.1	+00.5	S 21 59.2	+00.3	69 50.9	+02.7	N 12 29.7	-00.1	130 35.5	+02.3	S 12 32.8	+00.0	02
03	233 03.6	+00.6	S 21 59.5	+00.4	84 53.6	+02.7	N 12 29.6	+00.0	145 37.8	+02.3	S 12 32.8	-00.1	03
04	248 04.2	+00.5	S 21 59.9	+00.3	99 56.3	+02.6	N 12 29.6	-00.1	160 40.1	+02.4	S 12 32.7	+00.0	04
05	263 04.7	+00.6	S 22 00.2	+00.3	114 58.9	+02.7	N 12 29.5	+00.0	175 42.5	+02.3	S 12 32.7	-00.1	05
06	278 05.3	+00.5	S 22 00.5	+00.3	130 01.6	+02.7	N 12 29.5	-00.1	190 44.8	+02.3	S 12 32.6	+00.0	06
07	293 05.8	+00.6	S 22 00.8	+00.3	145 04.3	+02.6	N 12 29.4	-00.1	205 47.1	+02.4	S 12 32.6	-00.1	07
08	308 06.4	+00.5	S 22 01.1	+00.3	160 06.9	+02.7	N 12 29.3	+00.0	220 49.5	+02.3	S 12 32.5	+00.0	08
09	323 06.9	+00.6	S 22 01.4	+00.3	175 09.6	+02.7	N 12 29.3	-00.1	235 51.8	+02.3	S 12 32.5	-00.1	09
10	338 07.5	+00.5	S 22 01.7	+00.3	190 12.3	+02.6	N 12 29.2	+00.0	250 54.1	+02.4	S 12 32.4	+00.0	10
11	353 08.0	+00.6	S 22 02.0	+00.3	205 14.9	+02.7	N 12 29.2	-00.1	265 56.5	+02.3	S 12 32.4	-00.1	11
12	8 08.6	+00.5	S 22 02.3	+00.3	220 17.6	+02.7	N 12 29.1	+00.0	280 58.8	+02.4	S 12 32.3	+00.0	12
13	23 09.1	+00.6	S 22 02.6	+00.3	235 20.3	+02.6	N 12 29.1	-00.1	296 01.2	+02.3	S 12 32.3	-00.1	13
14	38 09.7	+00.5	S 22 02.9	+00.3	250 22.9	+02.7	N 12 29.0	-00.1	311 03.5	+02.3	S 12 32.2	-00.1	14
15	53 10.2	+00.5	S 22 03.2	+00.3	265 25.6	+02.6	N 12 28.9	+00.0	326 05.8	+02.4	S 12 32.1	+00.0	15
16	68 10.7	+00.6	S 22 03.5	+00.4	280 28.2	+02.7	N 12 28.9	-00.1	341 08.2	+02.3	S 12 32.1	-00.1	16
17	83 11.3	+00.5	S 22 03.9	+00.3	295 30.9	+02.7	N 12 28.8	+00.0	356 10.5	+02.3	S 12 32.0	+00.0	17
18	98 11.8	+00.6	S 22 04.2	+00.3	310 33.6	+02.6	N 12 28.8	-00.1	11 12.8	+02.4	S 12 32.0	-00.1	18
19	113 12.4	+00.5	S 22 04.5	+00.3	325 36.2	+02.7	N 12 28.7	+00.0	26 15.2	+02.3	S 12 31.9	+00.0	19
20	128 12.9	+00.6	S 22 04.8	+00.3	340 38.9	+02.7	N 12 28.7	-00.1	41 17.5	+02.3	S 12 31.9	-00.1	20
21	143 13.5	+00.5	S 22 05.1	+00.3	355 41.6	+02.6	N 12 28.6	+00.0	56 19.8	+02.4	S 12 31.8	+00.0	21
22	158 14.0	+00.6	S 22 05.4	+00.3	10 44.2	+02.7	N 12 28.6	-00.1	71 22.2	+02.3	S 12 31.8	-00.1	22
23	173 14.6	+00.5	S 22 05.7	+00.3	25 46.9	+02.7	N 12 28.5	-00.1	86 24.5	+02.4	S 12 31.7	+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°4 00°4 00°4 00°4 00°4 00°4	UT 02 06 10 14 18 22	SD 00°0 00°0 00°0 00°0 00°0 00°0	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°0 00°0 00°0 00°0 00°0 00°0	HP 00°4 00°4 00°4 00°4 00°4 00°4	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 02°6 02°6 02°6 02°6 02°6 02°6								
SHA 113° 113° 113° 113° 113° 113°	SHA 325° 325° 325° 325° 325° 325°	SHA 113° 113° 113° 113° 113° 113°	SHA 325° 325° 325° 325° 325° 325°	SHA 026° 026° 026° 026° 026° 026°	SHA 116° 116° 115° 115° 115° 115°								
Greenwich Culmination Time: 11:27	Greenwich Culmination Time: 21:17	Greenwich Culmination Time: 11:27	Greenwich Culmination Time: 17:15	Greenwich Culmination Time: 11:30	Greenwich Culmination Time: 21:29								

UT	Sun				Venus				Moon A: 71%				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 37.9	-00.3	S 22 01.6	+00.3	224 51.6	-00.3	S 08 41.1	+01.0	291 25.5	-27.6	N 20 31.1	-10.2	00
01	197 37.6	-00.2	S 22 01.9	+00.4	239 51.3	-00.3	S 08 42.1	+01.0	305 57.9	-27.5	N 20 20.9	-10.2	01
02	212 37.4	-00.2	S 22 02.3	+00.4	254 51.0	-00.3	S 08 43.1	+01.0	320 30.4	-27.3	N 20 10.7	-10.4	02
03	227 37.2	-00.3	S 22 02.7	+00.3	269 50.7	-00.4	S 08 44.1	+01.0	335 03.1	-27.4	N 20 00.3	-10.4	03
04	242 36.9	-00.2	S 22 03.0	+00.4	284 50.3	-00.3	S 08 45.1	+01.0	349 35.7	-27.2	N 19 49.9	-10.5	04
05	257 36.7	-00.3	S 22 03.4	+00.3	299 50.0	-00.3	S 08 46.1	+01.0	4 08.5	-27.1	N 19 39.4	-10.5	05
06	272 36.4	-00.2	S 22 03.7	+00.4	314 49.7	-00.3	S 08 47.1	+01.0	18 41.4	-27.1	N 19 28.9	-10.7	06
07	287 36.2	-00.3	S 22 04.1	+00.4	329 49.4	-00.3	S 08 48.1	+01.0	33 14.3	-27.0	N 19 18.2	-10.7	07
08	302 35.9	-00.2	S 22 04.5	+00.3	344 49.1	-00.4	S 08 49.1	+01.0	47 47.3	-26.9	N 19 07.5	-10.8	08
09	317 35.7	-00.2	S 22 04.8	+00.4	359 48.7	-00.3	S 08 50.1	+01.0	62 20.4	-26.9	N 18 56.7	-10.9	09
10	332 35.5	-00.3	S 22 05.2	+00.3	14 48.4	-00.3	S 08 51.1	+01.0	76 53.5	-26.7	N 18 45.8	-10.9	10
11	347 35.2	-00.2	S 22 05.5	+00.4	29 48.1	-00.3	S 08 52.1	+01.0	91 26.8	-26.7	N 18 34.9	-11.0	11
12	2 35.0	-00.3	S 22 05.9	+00.3	44 47.8	-00.4	S 08 53.1	+01.0	106 00.1	-26.6	N 18 23.9	-11.1	12
13	17 34.7	-00.2	S 22 06.2	+00.4	59 47.4	-00.3	S 08 54.1	+01.0	120 33.5	-26.6	N 18 12.8	-11.1	13
14	32 34.5	-00.3	S 22 06.6	+00.3	74 47.1	-00.3	S 08 55.1	+01.0	135 06.9	-26.4	N 18 01.7	-11.2	14
15	47 34.2	-00.2	S 22 06.9	+00.4	89 46.8	-00.3	S 08 56.1	+01.0	149 40.5	-26.4	N 17 50.5	-11.3	15
16	62 34.0	-00.3	S 22 07.3	+00.3	104 46.5	-00.3	S 08 57.1	+01.0	164 14.1	-26.4	N 17 39.2	-11.3	16
17	77 33.7	-00.2	S 22 07.6	+00.4	119 46.2	-00.4	S 08 58.1	+01.0	178 47.7	-26.2	N 17 27.9	-11.5	17
18	92 33.5	-00.3	S 22 08.0	+00.3	134 45.8	-00.3	S 08 59.1	+01.0	193 21.5	-26.2	N 17 16.4	-11.4	18
19	107 33.2	-00.2											

Table with columns for Sun, Venus, and Moon. Each planet section includes UT, GHA, ddGHA, Dec, dDec, and a 22-day forecast. Includes a footer with SD, HP, and SHA coordinates and Greenwich Culmination Time.

Table with columns for Sun, Venus, and Moon. Each planet section includes UT, GHA, ddGHA, Dec, dDec, and a 22-day forecast. Includes a footer with SD, HP, and SHA coordinates and Greenwich Culmination Time.

Table with columns for Mars, Jupiter, and Saturn. Each planet section includes UT, GHA, ddGHA, Dec, dDec, and a 22-day forecast. Includes a footer with SD, HP, and SHA coordinates and Greenwich Culmination Time.

Table with columns for Mars, Jupiter, and Saturn. Each planet section includes UT, GHA, ddGHA, Dec, dDec, and a 22-day forecast. Includes a footer with SD, HP, and SHA coordinates and Greenwich Culmination Time.

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	181	53.7	-00.2	S 22 51.8	+00.3	223	51.9	-00.4	S 11 26.4	+00.9	220	35.4	-28.5	S 16 29.7	+12.6
01	196	53.5	-00.3	S 22 52.1	+00.2	238	51.5	-00.4	S 11 27.3	+01.0	235	06.9	-28.5	S 16 42.3	+12.6
02	211	53.2	-00.3	S 22 52.3	+00.3	253	51.1	-00.4	S 11 28.3	+01.0	249	38.4	-28.7	S 16 54.9	+12.5
03	226	52.9	-00.3	S 22 52.6	+00.2	268	50.7	-00.4	S 11 29.3	+00.9	264	09.7	-28.7	S 17 07.4	+12.5
04	241	52.6	-00.3	S 22 52.8	+00.2	283	50.3	-00.4	S 11 30.2	+01.0	278	41.0	-28.9	S 17 19.9	+12.4
05	256	52.3	-00.2	S 22 53.0	+00.2	298	49.9	-00.4	S 11 31.2	+00.9	293	12.1	-29.0	S 17 32.3	+12.3
06	271	52.1	-00.3	S 22 53.2	+00.3	313	49.5	-00.4	S 11 32.1	+01.0	307	43.1	-29.0	S 17 44.6	+12.2
07	286	51.8	-00.3	S 22 53.5	+00.2	328	49.1	-00.4	S 11 33.1	+01.0	322	14.1	-29.2	S 17 56.8	+12.2
08	301	51.5	-00.3	S 22 53.7	+00.2	343	48.7	-00.4	S 11 34.1	+00.9	336	44.9	-29.3	S 18 09.0	+12.1
09	316	51.2	-00.3	S 22 53.9	+00.3	358	48.3	-00.4	S 11 35.0	+01.0	351	15.6	-29.4	S 18 21.1	+12.0
10	331	50.9	-00.3	S 22 54.2	+00.2	13	47.9	-00.4	S 11 36.0	+00.9	5	46.2	-29.6	S 18 33.1	+12.0
11	346	50.6	-00.2	S 22 54.4	+00.2	28	47.5	-00.4	S 11 36.9	+01.0	20	16.6	-29.6	S 18 45.1	+11.8
12	1	50.4	-00.3	S 22 54.6	+00.2	43	47.1	-00.4	S 11 37.9	+01.0	34	47.0	-29.7	S 18 56.9	+11.8
13	16	50.1	-00.3	S 22 54.8	+00.3	58	46.7	-00.4	S 11 38.9	+00.9	49	17.3	-29.9	S 19 08.7	+11.7
14	31	49.8	-00.3	S 22 55.1	+00.2	73	46.3	-00.4	S 11 39.8	+01.0	63	47.4	-29.9	S 19 20.4	+11.7
15	46	49.5	-00.3	S 22 55.3	+00.2	88	45.9	-00.4	S 11 40.8	+00.9	78	17.5	-30.1	S 19 32.1	+11.5
16	61	49.2	-00.3	S 22 55.5	+00.2	103	45.5	-00.4	S 11 41.7	+01.0	92	47.4	-30.2	S 19 43.6	+11.5
17	76	48.9	-00.3	S 22 55.7	+00.2	118	45.1	-00.4	S 11 42.7	+00.9	107	17.2	-30.3	S 19 55.1	+11.3
18	91	48.6	-00.2	S 22 55.9	+00.3	133	44.7	-00.4	S 11 43.6	+01.0	121	46.9	-30.5	S 20 06.4	+11.3
19	106	48.4	-00.3	S 22 56.2	+00.2	148	44.3	-00.4	S 11 44.6	+01.0	136	16.4	-30.5	S 20 17.7	+11.2
20	121	48.1	-00.3	S 22 56.4	+00.2	163	43.9	-00.4	S 11 45.6	+00.9	150	45.9	-30.7	S 20 28.9	+11.1
21	136	47.8	-00.3	S 22 56.6	+00.2	178	43.5	-00.4	S 11 46.5	+01.0	165	15.2	-30.8	S 20 40.0	+11.0
22	151	47.5	-00.3	S 22 56.8	+00.2	193	43.1	-00.4	S 11 47.5	+00.9	179	44.4	-30.9	S 20 51.0	+10.9
23	166	47.2	-00.3	S 22 57.0	+00.3	208	42.7	-00.4	S 11 48.4	+01.0	194	13.5	-31.0	S 21 01.9	+10.9
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 103° 103° 103° 103° 103° 102°	Greenwich Culmination Time: 11:52	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 145° 145° 145° 145° 145° 144°	Greenwich Culmination Time: 09:04	UT 02 06 10 14 18 22	SD 15°4 15°4 15°4 15°5 15°5 15°5	HP 56°4 56°5 56°7 56°8 56°9 57°0	SHA 141° 139° 137° 135° 133° 130°	Greenwich Culmination Time: 09:36	

UT	Mars				Jupiter				Saturn				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	188	53.6	+00.6	S 22 26.8	+00.3	44	00.4	+02.7	N 12 24.7	+00.0	104	14.6	+02.3	S 12 27.7	-00.1
01	203	54.2	+00.5	S 22 27.1	+00.3	59	03.1	+02.6	N 12 24.7	-00.1	119	16.9	+02.3	S 12 27.6	+00.0
02	218	54.7	+00.5	S 22 27.4	+00.2	74	05.7	+02.7	N 12 24.6	+00.0	134	19.2	+02.3	S 12 27.6	-00.1
03	233	55.2	+00.5	S 22 27.6	+00.3	89	08.4	+02.6	N 12 24.6	+00.0	149	21.5	+02.3	S 12 27.5	+00.0
04	248	55.7	+00.6	S 22 27.9	+00.3	104	11.0	+02.6	N 12 24.6	-00.1	164	23.8	+02.4	S 12 27.5	-00.1
05	263	56.3	+00.5	S 22 28.2	+00.3	119	13.6	+02.7	N 12 24.5	+00.0	179	26.2	+02.3	S 12 27.4	+00.0
06	278	56.8	+00.5	S 22 28.5	+00.2	134	16.3	+02.6	N 12 24.5	-00.1	194	28.5	+02.3	S 12 27.4	-00.1
07	293	57.3	+00.5	S 22 28.7	+00.3	149	18.9	+02.7	N 12 24.4	+00.0	209	30.8	+02.3	S 12 27.3	-00.1
08	308	57.8	+00.6	S 22 29.0	+00.3	164	21.6	+02.6	N 12 24.4	-00.1	224	33.1	+02.4	S 12 27.2	+00.0
09	323	58.4	+00.5	S 22 29.3	+00.2	179	24.2	+02.6	N 12 24.3	+00.0	239	35.5	+02.3	S 12 27.2	-00.1
10	338	58.9	+00.5	S 22 29.5	+00.3	194	26.8	+02.7	N 12 24.3	-00.1	254	37.8	+02.3	S 12 27.1	+00.0
11	353	59.4	+00.5	S 22 29.8	+00.3	209	29.5	+02.6	N 12 24.2	+00.0	269	40.1	+02.3	S 12 27.1	-00.1
12	8	59.9	+00.6	S 22 30.1	+00.3	224	32.1	+02.6	N 12 24.2	-00.1	284	42.4	+02.3	S 12 27.0	-00.1
13	24	00.5	+00.5	S 22 30.4	+00.2	239	34.7	+02.7	N 12 24.1	+00.0	299	44.7	+02.4	S 12 26.9	+00.0
14	39	01.0	+00.5	S 22 30.6	+00.3	254	37.4	+02.6	N 12 24.1	-00.1	314	47.1	+02.3	S 12 26.9	-00.1
15	54	01.5	+00.5	S 22 30.9	+00.3	269	40.0	+02.6	N 12 24.0	+00.0	329	49.4	+02.3	S 12 26.8	+00.0
16	69	02.0	+00.6	S 22 31.2	+00.2	284	42.6	+02.7	N 12 24.0	-00.1	344	51.7	+02.3	S 12 26.8	-00.1
17	84	02.6	+00.5	S 22 31.4	+00.3	299	45.3	+02.6	N 12 23.9	+00.0	359	54.0	+02.4	S 12 26.7	+00.0
18	99	03.1	+00.5	S 22 31.7	+00.3	314	47.9	+02.6	N 12 23.9	+00.0	14	56.4	+02.3	S 12 26.7	-00.1
19	114	03.6	+00.5	S 22 32.0	+00.3	329	50.5	+02.7	N 12 23.9	-00.1	29	58.7	+02.3	S 12 26.6	-00.1
20	129	04.1	+00.6	S 22 32.3	+00.2	344	53.2	+02.6	N 12 23.8	+00.0	45	01.0	+02.3	S 12 26.5	+00.0
21	144	04.7	+00.5	S 22 32.5	+00.3	359	55.8	+02.6	N 12 23.8	-00.1	60	03.3	+02.3	S 12 26.5	-00.1
22	159	05.2	+00.5	S 22 32.8	+00.3	14	58.4	+02.7	N 12 23.7	+00.0	75	05.6	+02.4	S 12 26.4	+00.0
23	174	05.7	+00.5	S 22 33.1	+00.2	30	01.1	+02.6	N 12 23.7	-00.1	90	08.0	+02.3	S 12 26.4	-00.1
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 110° 110° 110° 110° 110° 110°	Greenwich Culmination Time: 11:24	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 326° 326° 326° 326° 326° 326°	Greenwich Culmination Time: 21:00	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 026° 026° 026° 026° 026° 026°	Greenwich Culmination Time: 17:00	

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	182	13.5	-00.3	S 22 32.9	+00.3	224	19.1	-00.4	S 10 16.3	+01.0	251	24.9	-24.0	N 00 08.6	-14.3
01	197	13.2	-00.3	S 22 33.2	+00.3	239	18.7	-00.3	S 10 17.3	+01.0	266	00.9	-24.1	S 00 05.7	+14.2
02	212	12.9	-00.2	S 22 33.5	+00.3	254	18.4	-00.4	S 10 18.3	+01.0	280	36.8	-24.1	S 00 19.9	+14.2
03	227	12.7	-00.3	S 22 33.8	+00.3	269	18.0	-00.3	S 10 19.3	+01.0	295	12.7	-24.1	S 00 34.1	+14.3
04	242	12.4	-00.3	S 22 34.1	+00.3	284	17.7	-00.4	S 10 20.3	+00.9	309	48.6	-24.1	S 00 48.4	+14.2
05	257	12.1	-00.2	S 22 34.4	+00.3	299	17.3	-00.4	S 10 21.2	+01.0	324	24.5	-24.1	S 01 02.6	+14.3
06	272	11.9	-00.3	S 22 34.7	+00.2	314	16.9	-00.3	S 10 22.2	+01.0	339	00.4	-24.2	S 01 16.9	+14.3
07	287	11.6	-00.3	S 22 34.9	+00.3	329	16.6	-00.4	S 10 23.2	+01.0	353	36.2	-24.2	S 01 31.2	+14.2
08	302	11.3	-00.2	S 22 35.2	+00.3	344	16.2	-00.4	S 10 24.2	+01.0	8	12.0	-24.2	S 01 45.4	+14.3
09	317	11.1	-00.3	S 22 35.5	+00.3	359	15.8	-00.3	S 10 25.2	+00.9	22	47.8	-24.3	S 01 59.7	+14.3
10	332	10.8	-00.3	S 22 35.8	+00.3	14	15.5	-00.4	S 10 26.1	+01.0	37	23.5	-24.2	S 02 14.0	+14.3
11	347	10.5	-00.2	S 22 36.1	+00.3	29	15.1	-00.4	S 10 27.1	+01.0	51	59.3	-24.3	S 02 28.3	+14.2
12	2	10.3	-00.3	S 22 36.4	+00.2	44	14.7	-00.3	S 10 28.1	+01.0	66	35.0	-24.4	S 02 42.5	+14.3
13	17	10.0	-00.3	S 22 36.6	+00.3	59	14.4	-00.4	S 10 29.1	+01.0	81	10.6	-24.3	S 02 56.8	+14.3
14	32	09.7	-00.2	S 22 36.9	+00.3	74	14.0	-00.4	S 10 30.1	+00.9	95	46.3	-24.4	S 03 11.1	+14.3
15	47	09.5	-00.3	S 22 37.2	+00.3	89	13.6	-00.3	S 10 31.0	+01.0	110	21.9	-24.5	S 03 25.4	+14.3
16	62	09.2	-00.3	S 22 37.5	+00.3	104	13.3	-00.4	S 10 32.0	+01.0	124	57.4	-24.5	S 03 39.7	+14.2
17	77	08.9	-00.3	S 22 37.8	+00.2	119	12.9	-00.4	S 10 33.0	+01.0	139	32.9	-24.5	S 03 53.9	+14.3
18	92	08.6	-00.2	S 22 38.0	+00.3	134	12.5	-00.3	S 10 34.0	+01.0	154	08.4	-24.5	S 04 08.2	+14.3
19	107	08.4	-00.3	S 22 38.3	+00.3	149	12.2	-00.4	S 10 35.0	+00.9	168	43.9	-24.6	S 04 22.5	+14.3
20	122	08.1	-00.3	S 22 38.6	+00.3	164	11.8	-00.4	S 10 35.9	+0					

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	182	07.0	-00.3	S 22 39.7	+00.3	224	10.3	-00.4	S 10 39.8	+01.0	241	40.5	-24.8	S 05 33.8	+14.2	00
01	197	06.7	-00.2	S 22 40.0	+00.2	239	09.9	-00.3	S 10 40.8	+01.0	256	15.7	-24.8	S 05 48.0	+14.2	01
02	212	06.5	-00.3	S 22 40.2	+00.3	254	09.6	-00.4	S 10 41.8	+01.0	270	50.9	-24.9	S 06 02.2	+14.2	02
03	227	06.2	-00.3	S 22 40.5	+00.3	269	09.2	-00.4	S 10 42.8	+00.9	285	26.0	-25.0	S 06 16.4	+14.2	03
04	242	05.9	-00.2	S 22 40.8	+00.2	284	08.8	-00.4	S 10 43.7	+01.0	300	01.0	-25.0	S 06 30.6	+14.2	04
05	257	05.7	-00.3	S 22 41.0	+00.3	299	08.4	-00.3	S 10 44.7	+01.0	314	36.0	-25.0	S 06 44.8	+14.2	05
06	272	05.4	-00.3	S 22 41.3	+00.3	314	08.1	-00.4	S 10 45.7	+01.0	329	11.0	-25.1	S 06 59.0	+14.2	06
07	287	05.1	-00.3	S 22 41.6	+00.2	329	07.7	-00.4	S 10 46.7	+00.9	343	45.9	-25.2	S 07 13.2	+14.1	07
08	302	04.8	-00.2	S 22 41.8	+00.3	344	07.3	-00.4	S 10 47.6	+01.0	358	20.7	-25.2	S 07 27.3	+14.2	08
09	317	04.6	-00.3	S 22 42.1	+00.3	359	06.9	-00.3	S 10 48.6	+01.0	12	55.5	-25.3	S 07 41.5	+14.1	09
10	332	04.3	-00.3	S 22 42.4	+00.2	14	06.6	-00.4	S 10 49.6	+01.0	27	30.2	-25.3	S 07 55.6	+14.1	10
11	347	04.0	-00.3	S 22 42.6	+00.3	29	06.2	-00.4	S 10 50.6	+00.9	42	04.9	-25.4	S 08 09.7	+14.1	11
12	2	03.7	-00.2	S 22 42.9	+00.3	44	05.8	-00.4	S 10 51.5	+01.0	56	39.5	-25.5	S 08 23.8	+14.0	12
13	17	03.5	-00.3	S 22 43.2	+00.2	59	05.4	-00.3	S 10 52.5	+01.0	71	14.0	-25.5	S 08 37.8	+14.1	13
14	32	03.2	-00.3	S 22 43.4	+00.3	74	05.1	-00.4	S 10 53.5	+01.0	85	48.5	-25.6	S 08 51.9	+14.0	14
15	47	02.9	-00.3	S 22 43.7	+00.2	89	04.7	-00.4	S 10 54.5	+00.9	100	22.9	-25.6	S 09 05.9	+14.0	15
16	62	02.6	-00.2	S 22 43.9	+00.3	104	04.3	-00.4	S 10 55.4	+01.0	114	57.3	-25.7	S 09 19.9	+14.0	16
17	77	02.4	-00.3	S 22 44.2	+00.3	119	03.9	-00.4	S 10 56.4	+01.0	129	31.6	-25.8	S 09 33.9	+13.9	17
18	92	02.1	-00.3	S 22 44.5	+00.2	134	03.5	-00.3	S 10 57.4	+00.9	144	05.8	-25.8	S 09 47.8	+13.9	18
19	107	01.8	-00.3	S 22 44.7	+00.3	149	03.2	-00.4	S 10 58.3	+01.0	158	40.0	-26.0	S 10 01.7	+13.9	19
20	122	01.5	-00.2	S 22 45.0	+00.2	164	02.8	-00.4	S 10 59.3	+01.0	173	14.0	-25.9	S 10 15.6	+13.9	20
21	137	01.3	-00.3	S 22 45.2	+00.3	179	02.4	-00.4	S 11 00.3	+01.0	187	48.1	-26.1	S 10 29.5	+13.9	21
22	152	01.0	-00.3	S 22 45.5	+00.2	194	02.0	-00.4	S 11 01.3	+00.9	202	22.0	-26.1	S 10 43.4	+13.8	22
23	167	00.7	-00.3	S 22 45.7	+00.3	209	01.6	-00.4	S 11 02.2	+01.0	216	55.9	-26.2	S 10 57.2	+13.8	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	106°	105°	105°	105°	105°	105°
Greenwich Culmination Time: 11:51						
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	148°	147°	147°	147°	147°	147°
Greenwich Culmination Time: 09:03						
UT	02	06	10	14	18	22
SD	15°0	15°0	15°1	15°1	15°1	15°2
HP	55°1	55°2	55°3	55°4	55°5	55°6
SHA	164°	162°	161°	159°	157°	155°
Greenwich Culmination Time: 08:06						

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	182	00.4	-00.2	S 22 46.0	+00.2	224	01.2	-00.3	S 11 03.2	+01.0	231	29.7	-26.3	S 11 11.0	+13.7	00
01	197	00.2	-00.3	S 22 46.2	+00.3	239	00.9	-00.4	S 11 04.2	+00.9	246	03.4	-26.4	S 11 24.7	+13.7	01
02	211	59.9	-00.3	S 22 46.5	+00.2	254	00.5	-00.4	S 11 05.1	+01.0	260	37.0	-26.4	S 11 38.4	+13.7	02
03	226	59.6	-00.3	S 22 46.7	+00.3	269	00.1	-00.4	S 11 06.1	+01.0	275	10.0	-26.5	S 11 52.1	+13.7	03
04	241	59.3	-00.2	S 22 47.0	+00.2	283	59.7	-00.4	S 11 07.1	+00.9	289	44.1	-26.6	S 12 05.8	+13.6	04
05	256	59.1	-00.3	S 22 47.2	+00.3	298	59.3	-00.4	S 11 08.0	+01.0	304	17.5	-26.7	S 12 19.4	+13.6	05
06	271	58.8	-00.3	S 22 47.5	+00.2	313	58.9	-00.3	S 11 09.0	+01.0	318	50.8	-26.8	S 12 33.0	+13.5	06
07	286	58.5	-00.3	S 22 47.7	+00.3	328	58.6	-00.4	S 11 10.0	+00.9	333	24.0	-26.8	S 12 46.5	+13.5	07
08	301	58.2	-00.3	S 22 48.0	+00.2	343	58.2	-00.4	S 11 10.9	+01.0	347	57.2	-26.9	S 13 00.0	+13.5	08
09	316	57.9	-00.2	S 22 48.2	+00.3	358	57.8	-00.4	S 11 11.9	+00.9	2	30.3	-27.0	S 13 13.5	+13.4	09
10	331	57.7	-00.3	S 22 48.5	+00.2	13	57.4	-00.4	S 11 12.9	+00.9	17	03.3	-27.1	S 13 26.9	+13.4	10
11	346	57.4	-00.3	S 22 48.7	+00.3	28	57.0	-00.4	S 11 13.8	+01.0	31	36.2	-27.2	S 13 40.3	+13.3	11
12	1	57.1	-00.3	S 22 49.0	+00.2	43	56.6	-00.4	S 11 14.8	+01.0	46	09.0	-27.3	S 13 53.6	+13.3	12
13	16	56.8	-00.3	S 22 49.2	+00.3	58	56.2	-00.4	S 11 15.8	+00.9	60	41.7	-27.4	S 14 06.9	+13.2	13
14	31	56.5	-00.2	S 22 49.5	+00.2	73	55.8	-00.4	S 11 16.7	+01.0	75	14.3	-27.5	S 14 20.1	+13.2	14
15	46	56.3	-00.3	S 22 49.7	+00.2	88	55.4	-00.3	S 11 17.7	+01.0	89	46.8	-27.5	S 14 33.3	+13.2	15
16	61	56.0	-00.3	S 22 49.9	+00.3	103	55.1	-00.4	S 11 18.7	+00.9	104	19.3	-27.7	S 14 46.5	+13.1	16
17	76	55.7	-00.3	S 22 50.2	+00.2	118	54.7	-00.4	S 11 19.6	+01.0	118	51.6	-27.7	S 14 59.6	+13.0	17
18	91	55.4	-00.2	S 22 50.4	+00.3	133	54.3	-00.4	S 11 20.6	+01.0	133	23.9	-27.9	S 15 12.6	+13.0	18
19	106	55.2	-00.3	S 22 50.7	+00.2	148	53.9	-00.4	S 11 21.6	+00.9	147	56.0	-27.9	S 15 25.6	+12.9	19
20	121	54.9	-00.3	S 22 50.9	+00.2	163	53.5	-00.4	S 11 22.5	+01.0	162	28.1	-28.0	S 15 38.5	+12.9	20
21	136	54.6	-00.3	S 22 51.1	+00.3	178	53.1	-00.4	S 11 23.5	+00.9	177	00.1	-28.2	S 15 51.4	+12.8	21
22	151	54.3	-00.3	S 22 51.4	+00.2	193	52.7	-00.4	S 11 24.4	+01.0	191	31.9	-28.2	S 16 04.2	+12.8	22
23	166	54.0	-00.3	S 22 51.6	+00.2	208	52.3	-00.4	S 11 25.4	+01.0	206	03.7	-28.3	S 16 17.0	+12.7	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	104°	104°	104°	104°	104°	104°
Greenwich Culmination Time: 11:52						
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	146°	146°	146°	146°	146°	145°
Greenwich Culmination Time: 09:04						
UT	02	06	10	14	18	22
SD	15°2	15°2	15°2	15°3	15°3	15°3
HP	55°7	55°8	56°0	56°1	56°2	56°3
SHA	153°	151°	149°	147°	145°	143°
Greenwich Culmination Time: 08:49						

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	188	28.1	+00.5	S 22 13.1	+00.3	41	53.4	+02.6	N 12 27.1	+00.0	102	22.8	+02.4	S 12 30.4	-00.1	00
01	203	28.6	+00.6	S 22 13.4	+00.3	56	56.0	+02.7	N 12 27.1	-00.1	117	25.2	+02.3	S 12 30.3	+00.0	01
02	218	29.2	+00.5	S 22 13.7	+00.3	71	58.7	+02.6	N 12 27.0	+00.0	132	27.5	+02.3	S 12 30.3	-00.1	02
03	233	29.7	+00.5	S 22 14.0	+00.3	87	01.3	+02.7	N 12 27.0	-00.1	147	29.8	+02.4	S 12 30.2	+00.0	03
04	248	30.2	+00.6	S 22 14.3	+00.3	102	04.0	+02.6	N 12 26.9	+00.0	162	32.2	+02.3	S 12 30.2	-00.1	04
05	263	30.8	+00.5	S 22 14.6	+00.3	117	06.6	+02.7	N 12 26.9	-00.1	177	34.5	+02.3	S 12 30.1	+00.0	05
06	278	31.3	+00.5	S 22 14.9	+00.3	132	09.3	+02.6	N 12 26.8	-00.1	192	36.8	+02.4	S 12 30.1	-00.1	06
07	293	31.8	+00.6	S 22 15.2	+00.3	147	11.9	+02.7	N 12 26.8	-00.1	207	39.2	+02.3	S 12 30.0	-00.1	07
08	308	32.4	+00.5	S 22 15.5	+00.3	162	14.6	+02.6	N 12 26.7	+00.0	222	41.5	+02.3	S 12 29.9	+00.0	08
09	323	32.9	+00.5	S 22 15.8	+00.2	177	17.2	+02.7	N 12 26.7	-00.1	237	43.8	+02.3	S 12 29.9	-00.1	09
10	338	33.4	+00.6	S 22 16.0	+00.3	192	19.9	+02.6	N 12 26.6	+00.0	252	46.1	+02.4	S 12 29.8	+00.0	10
11	353	34.0	+00.5	S 22 16.3	+00.3	207	22.5	+02.7	N 12 26.6	-00.1	267	48.5	+02.3			

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Dec 14, 2023, such as GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Dec 11, 2023, such as GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Dec 14, 2023, such as GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Dec 11, 2023, such as GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

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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 on Dec 12, 2023, such as GHA, ddGHA, Dec, dDec, and A: 98%.

Table with columns for UT, Sun, Venus, Moon, and UT. Includes astronomical data for Sun, Venus, and Moon on Dec 13, 2023, such as GHA, ddGHA, Dec, dDec, and A: 02%.

Table with columns for UT, Mars, Jupiter, Saturn, and UT. Includes astronomical data for Mars, Jupiter, and Saturn on Dec 12, 2023, such as 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 13, 2023, such as GHA, ddGHA, Dec, dDec, and Greenwich Culmination Time.

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UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	180	56.9	-00.3	S 23 22.3	+00.0	222	27.0	-00.5	S 14 24.1	+00.9	110	31.9	-31.0	S 14 15.6	-14.9
01	195	56.6	-00.3	S 23 22.3	+00.1	237	26.5	-00.5	S 14 25.0	+00.9	125	00.9	-31.0	S 14 00.7	-15.0
02	210	56.3	-00.3	S 23 22.4	+00.1	252	26.0	-00.5	S 14 25.9	+00.8	139	29.9	-30.8	S 13 45.7	-15.0
03	225	56.0	-00.3	S 23 22.5	+00.1	267	25.5	-00.5	S 14 26.7	+00.9	153	59.1	-30.8	S 13 30.7	-15.1
04	240	55.7	-00.3	S 23 22.6	+00.1	282	25.0	-00.5	S 14 27.6	+00.9	168	28.3	-30.7	S 13 15.6	-15.2
05	255	55.4	-00.3	S 23 22.7	+00.0	297	24.5	-00.5	S 14 28.5	+00.9	182	57.6	-30.6	S 13 00.4	-15.2
06	270	55.1	-00.3	S 23 22.7	+00.1	312	24.0	-00.5	S 14 29.4	+00.9	197	27.0	-30.5	S 12 45.2	-15.3
07	285	54.8	-00.3	S 23 22.8	+00.1	327	23.5	-00.5	S 14 30.3	+00.8	211	56.5	-30.5	S 12 29.9	-15.4
08	300	54.5	-00.4	S 23 22.9	+00.1	342	23.0	-00.5	S 14 31.1	+00.9	226	26.0	-30.4	S 12 14.5	-15.4
09	315	54.1	-00.3	S 23 23.0	+00.0	357	22.5	-00.5	S 14 32.0	+00.9	240	55.6	-30.3	S 11 59.1	-15.5
10	330	53.8	-00.3	S 23 23.0	+00.1	12	22.0	-00.5	S 14 32.9	+00.9	255	25.3	-30.2	S 11 43.6	-15.5
11	345	53.5	-00.3	S 23 23.1	+00.1	27	21.5	-00.5	S 14 33.8	+00.8	269	55.1	-30.2	S 11 28.1	-15.6
12	0	53.2	-00.3	S 23 23.2	+00.1	42	21.0	-00.5	S 14 34.6	+00.9	284	24.9	-30.1	S 11 12.5	-15.7
13	15	52.9	-00.3	S 23 23.3	+00.0	57	20.5	-00.5	S 14 35.5	+00.9	298	54.8	-30.0	S 10 56.8	-15.7
14	30	52.6	-00.3	S 23 23.3	+00.1	72	20.0	-00.5	S 14 36.4	+00.9	313	24.8	-30.0	S 10 41.1	-15.7
15	45	52.3	-00.3	S 23 23.4	+00.1	87	19.5	-00.5	S 14 37.3	+00.8	327	54.8	-29.9	S 10 25.4	-15.8
16	60	52.0	-00.3	S 23 23.5	+00.0	102	19.0	-00.5	S 14 38.1	+00.9	342	24.9	-29.8	S 10 09.6	-15.8
17	75	51.7	-00.3	S 23 23.5	+00.1	117	18.5	-00.5	S 14 39.0	+00.9	356	55.1	-29.8	S 09 53.8	-15.9
18	90	51.4	-00.3	S 23 23.6	+00.1	132	18.0	-00.5	S 14 39.9	+00.9	11	25.3	-29.7	S 09 37.9	-16.0
19	105	51.1	-00.3	S 23 23.7	+00.0	147	17.5	-00.5	S 14 40.8	+00.8	25	55.6	-29.7	S 09 21.9	-16.0
20	120	50.8	-00.3	S 23 23.7	+00.1	162	17.0	-00.5	S 14 41.6	+00.9	40	25.9	-29.6	S 09 05.9	-16.0
21	135	50.5	-00.4	S 23 23.8	+00.1	177	16.5	-00.5	S 14 42.5	+00.9	54	56.3	-29.5	S 08 49.9	-16.0
22	150	50.1	-00.3	S 23 23.9	+00.0	192	16.0	-00.5	S 14 43.4	+00.9	69	26.8	-29.5	S 08 33.9	-16.1
23	165	49.8	-00.3	S 23 23.9	+00.1	207	15.5	-00.5	S 14 44.3	+00.8	83	57.3	-29.4	S 08 17.8	-16.2
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°2 16°2 16°2 16°2 16°2 16°2				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 59°5 59°4 59°4 59°4 59°3 59°3				HP 00°1 00°1 00°1 00°1 00°1 00°1			
SHA 095° 094° 094° 094° 094° 094°				SHA 136° 136° 136° 136° 135° 135°				SHA 023° 021° 019° 016° 014° 014°				SHA 098° 098° 097° 097° 097° 097°			
Greenwich Culmination Time: 11:56				Greenwich Culmination Time: 09:10				Greenwich Culmination Time: 17:12				Greenwich Culmination Time: 11:54			

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	181	18.8	-00.3	S 23 14.3	+00.2	223	01.0	-00.5	S 13 19.3	+00.9	151	44.9	-37.2	S 27 03.4	-05.2
01	196	18.5	-00.3	S 23 14.5	+00.1	238	00.5	-00.4	S 13 20.2	+00.9	166	07.7	-37.2	S 26 58.2	-05.3
02	211	18.2	-00.3	S 23 14.6	+00.1	253	00.1	-00.5	S 13 21.1	+00.9	180	30.5	-37.1	S 26 52.9	-05.6
03	226	17.9	-00.3	S 23 14.7	+00.2	267	59.6	-00.4	S 13 22.0	+00.9	194	53.4	-37.1	S 26 47.3	-05.7
04	241	17.6	-00.3	S 23 14.9	+00.1	282	59.2	-00.5	S 13 22.9	+00.9	209	16.3	-37.0	S 26 41.6	-05.9
05	256	17.3	-00.3	S 23 15.0	+00.1	297	58.7	-00.4	S 13 23.8	+01.0	223	39.3	-36.9	S 26 35.7	-06.0
06	271	17.0	-00.3	S 23 15.1	+00.2	312	58.3	-00.5	S 13 24.8	+00.9	238	02.4	-36.9	S 26 29.7	-06.3
07	286	16.7	-00.3	S 23 15.3	+00.1	327	57.8	-00.5	S 13 25.7	+00.9	252	25.5	-36.9	S 26 23.4	-06.4
08	301	16.4	-00.3	S 23 15.4	+00.1	342	57.3	-00.4	S 13 26.6	+00.9	266	48.6	-36.7	S 26 17.0	-06.7
09	316	16.1	-00.3	S 23 15.5	+00.2	357	56.9	-00.5	S 13 27.5	+00.9	281	11.9	-36.7	S 26 10.3	-06.8
10	331	15.8	-00.3	S 23 15.7	+00.1	12	56.4	-00.4	S 13 28.4	+00.9	295	35.2	-36.7	S 26 03.5	-06.9
11	346	15.5	-00.3	S 23 15.8	+00.1	27	56.0	-00.5	S 13 29.3	+00.9	309	58.5	-36.5	S 25 56.6	-07.2
12	1	15.2	-00.3	S 23 15.9	+00.2	42	55.5	-00.5	S 13 30.2	+00.9	324	22.0	-36.5	S 25 49.4	-07.3
13	16	14.9	-00.3	S 23 16.1	+00.1	57	55.0	-00.4	S 13 31.1	+01.0	338	45.5	-36.4	S 25 42.1	-07.5
14	31	14.6	-00.3	S 23 16.2	+00.1	72	54.6	-00.5	S 13 32.1	+00.9	353	09.1	-36.4	S 25 34.6	-07.7
15	46	14.3	-00.3	S 23 16.3	+00.2	87	54.1	-00.4	S 13 33.0	+00.9	7	32.7	-36.3	S 25 26.9	-07.8
16	61	14.0	-00.4	S 23 16.5	+00.1	102	53.7	-00.5	S 13 33.9	+00.9	21	56.4	-36.1	S 25 19.1	-08.1
17	76	13.6	-00.3	S 23 16.6	+00.1	117	53.2	-00.5	S 13 34.8	+00.9	36	20.3	-36.1	S 25 11.0	-08.1
18	91	13.3	-00.3	S 23 16.7	+00.1	132	52.7	-00.4	S 13 35.7	+00.9	50	44.2	-36.1	S 25 02.9	-08.4
19	106	13.0	-00.3	S 23 16.8	+00.2	147	52.3	-00.5	S 13 36.6	+00.9	65	08.1	-35.9	S 24 54.5	-08.5
20	121	12.7	-00.3	S 23 17.0	+00.1	162	51.8	-00.5	S 13 37.5	+00.9	79	32.2	-35.9	S 24 46.0	-08.7
21	136	12.4	-00.3	S 23 17.1	+00.1	177	51.3	-00.4	S 13 38.4	+00.9	93	56.3	-35.8	S 24 37.3	-08.8
22	151	12.1	-00.3	S 23 17.2	+00.1	192	50.9	-00.5	S 13 39.3	+00.9	108	20.5	-35.7	S 24 28.5	-09.1
23	166	11.8	-00.3	S 23 17.3	+00.1	207	50.4	-00.5	S 13 40.2	+00.9	122	44.8	-35.6	S 24 19.4	-09.1
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°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 16°2 16°2 16°2 16°2 16°2 16°2				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 59°3 59°4 59°4 59°4 59°5 59°5				HP 00°1 00°1 00°1 00°1 00°1 00°1			
SHA 098° 098° 097° 097° 097° 097°				SHA 140° 139° 139° 139° 139° 139°				SHA 067° 064° 062° 059° 057° 054°				SHA 067° 064° 062° 059° 057° 054°			
Greenwich Culmination Time: 11:54				Greenwich Culmination Time: 09:08				Greenwich Culmination Time: 14:28				Greenwich Culmination Time: 14:28			

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

UT 02 06 10 14 18 22
SD 16°2 16°3 16°3 16°3 16°3 16°3
HP 00°1 00°1 00°1 00°1 00°1 00°1
SHA 097° 097° 096° 096° 096° 096°
Greenwich Culmination Time: 11:55

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

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° 095° 095° 095° 095° 095°
Greenwich Culmination Time: 11:55

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

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 106° 106° 105° 105° 105° 105°
Greenwich Culmination Time: 11:19

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

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 105° 105° 105° 104° 104° 104°
Greenwich Culmination Time: 11:18

UT	Sun				Venus				Moon				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	180 27.3	-00.4	S 23 26.3	+00.0	221 37.4	-00.5	S 15 46.4	+00.8	64 06.5	-29.0	N 11 22.7	+15.0	00				
01	195 26.9	-00.3	S 23 26.3	+00.0	236 36.9	-00.6	S 15 47.2	+00.8	78 37.5	-29.1	N 11 37.7	+14.9	01				
02	210 26.6	-00.3	S 23 26.3	+00.0	251 36.3	-00.5	S 15 48.0	+00.8	93 08.4	-29.1	N 11 52.6	+14.8	02				
03	225 26.3	-00.3	S 23 26.3	+00.0	266 35.8	-00.6	S 15 48.8	+00.8	107 39.3	-29.2	N 12 07.4	+14.8	03				
04	240 26.0	-00.3	S 23 26.3	+00.0	281 35.2	-00.5	S 15 49.7	+00.8	122 10.1	-29.2	N 12 22.2	+14.7	04				
05	255 25.7	-00.3	S 23 26.3	+00.0	296 34.7	-00.6	S 15 50.5	+00.8	136 40.9	-29.2	N 12 36.9	+14.7	05				
06	270 25.4	-00.3	S 23 26.3	+00.0	311 34.1	-00.5	S 15 51.3	+00.9	151 11.7	-29.3	N 12 51.6	+14.6	06				
07	285 25.1	-00.3	S 23 26.3	+00.0	326 33.6	-00.5	S 15 52.2	+00.8	165 42.4	-29.3	N 13 06.2	+14.5	07				
08	300 24.8	-00.3	S 23 26.3	+00.0	341 33.1	-00.6	S 15 53.0	+00.8	180 13.1	-29.4	N 13 20.7	+14.4	08				
09	315 24.5	-00.3	S 23 26.3	+00.0	356 32.5	-00.5	S 15 53.8	+00.8	194 43.7	-29.5	N 13 35.1	+14.4	09				
10	330 24.2	-00.4	S 23 26.3	+00.0	11 32.0	-00.6	S 15 54.6	+00.9	209 14.2	-29.5	N 13 49.5	+14.3	10				
11	345 23.8	-00.3	S 23 26.3	+00.0	26 31.4	-00.5	S 15 55.5	+00.8	223 44.7	-29.5	N 14 03.8	+14.2	11				
12	0 23.5	-00.3	S 23 26.3	+00.0	41 30.9	-00.6	S 15 56.3	+00.8	238 15.2	-29.6	N 14 18.0	+14.1	12				
13	15 23.2	-00.3	S 23 26.3	+00.0	56 30.3	-00.5	S 15 57.1	+00.8	252 45.6	-29.6	N 14 32.1	+14.0	13				
14	30 22.9	-00.3	S 23 26.3	-00.1	71 29.8	-00.6	S 15 57.9	+00.8	267 16.0	-29.7	N 14 46.1	+14.0	14				
15	45 22.6	-00.3	S 23 26.2	+00.0	86 29.2	-00.5	S 15 58.7	+00.9	281 46.3	-29.7	N 15 00.1	+13.9	15				
16	60 22.3	-00.3	S 23 26.2	+00.0	101 28.7	-00.6	S 15 59.6	+00.8	296 16.6	-29.8	N 15 14.0	+13.8	16				
17	75 22.0	-00.3	S 23 26.2	+00.0	116 28.1	-00.5	S 16 00.4	+00.8	310 46.8	-29.9	N 15 27.8	+13.7	17				
18	90 21.7	-00.3	S 23 26.2	+00.0	131 27.6	-00.6	S 16 01.2	+00.8	325 16.9	-29.9	N 15 41.5	+13.6	18				
19	105 21.4	-00.3	S 23 26.2	+00.0	146 27.0	-00.5	S 16 02.0	+00.8	339 47.0	-30.0	N 15 55.1	+13.6	19				
20	120 21.1	-00.4	S 23 26.2	+00.0	161 26.5	-00.6	S 16 02.8	+00.9	354 17.0	-30.0	N 16 08.7	+13.4	20				
21	135 20.7	-00.3	S 23 26.2	+00.0	176 25.9	-00.5	S 16 03.7	+00.8	8 47.0	-30.1	N 16 22.1	+13.4	21				
22	150 20.4	-00.3	S 23 26.2	-00.1	191 25.4	-00.6	S 16 04.5	+00.8	23 16.9	-30.1	N 16 35.5	+13.2	22				
23	165 20.1	-00.3	S 23 26.1	+00.0	206 24.8	-00.5	S 16 05.3	+00.8	37 46.8	-30.2	N 16 48.7	+13.2	23				
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	15°9	15°9	15°8	15°8	15°8	15°8		
HP	00°1	00°1	00°1	00°1	00°1	00°1			HP	58°2	58°2	58°1	58°0	58°0	57°9		
SHA	090°	090°	090°	090°	089°	089°			SHA	333°	331°	331°	331°	330°	324°		
Greenwich Culmination Time: 11:58				Greenwich Culmination Time: 09:13				Greenwich Culmination Time: 20:23									

UT	Mars				Jupiter				Saturn				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	191 17.0	+00.5	S 23 30.5	+00.1	56 27.3	+02.5	N 12 15.8	+00.0	115 17.9	+02.2	S 12 09.0	-00.1	00				
01	206 17.5	+00.5	S 23 30.6	+00.2	71 29.8	+02.6	N 12 15.8	+00.0	130 20.1	+02.3	S 12 08.9	+00.0	01				
02	221 18.0	+00.5	S 23 30.8	+00.1	86 32.4	+02.5	N 12 15.8	-00.1	145 22.4	+02.3	S 12 08.9	-00.1	02				
03	236 18.5	+00.4	S 23 30.9	+00.2	101 34.9	+02.5	N 12 15.7	+00.0	160 24.7	+02.3	S 12 08.8	-00.1	03				
04	251 18.9	+00.5	S 23 31.1	+00.2	116 37.4	+02.6	N 12 15.7	+00.0	175 27.0	+02.3	S 12 08.7	-00.1	04				
05	266 19.4	+00.5	S 23 31.3	+00.1	131 40.0	+02.5	N 12 15.7	+00.0	190 29.3	+02.3	S 12 08.6	+00.0	05				
06	281 19.9	+00.4	S 23 31.4	+00.2	146 42.5	+02.6	N 12 15.7	+00.0	205 31.6	+02.2	S 12 08.6	-00.1	06				
07	296 20.3	+00.5	S 23 31.6	+00.1	161 45.1	+02.5	N 12 15.7	+00.0	220 33.8	+02.3	S 12 08.5	-00.1	07				
08	311 20.8	+00.5	S 23 31.7	+00.2	176 47.6	+02.6	N 12 15.7	+00.0	235 36.1	+02.3	S 12 08.4	+00.0	08				
09	326 21.3	+00.5	S 23 31.9	+00.2	191 50.2	+02.5	N 12 15.7	-00.1	250 38.4	+02.3	S 12 08.4	-00.1	09				
10	341 21.8	+00.4	S 23 32.1	+00.1	206 52.7	+02.5	N 12 15.6	+00.0	265 40.7	+02.3	S 12 08.3	-00.1	10				
11	356 22.2	+00.5	S 23 32.2	+00.2	221 55.2	+02.6	N 12 15.6	+00.0	280 43.0	+02.3	S 12 08.2	-00.1	11				
12	11 22.7	+00.5	S 23 32.4	+00.1	236 57.8	+02.5	N 12 15.6	+00.0	295 45.3	+02.2	S 12 08.1	+00.0	12				
13	26 23.2	+00.4	S 23 32.5	+00.0	252 00.3	+02.6	N 12 15.6	+00.0	310 47.5	+02.3	S 12 08.1	-00.1	13				
14	41 23.6	+00.5	S 23 32.7	+00.2	267 02.9	+02.5	N 12 15.6	+00.0	325 49.8	+02.3	S 12 08.0	-00.1	14				
15	56 24.1	+00.5	S 23 32.9	+00.1	282 05.4	+02.5	N 12 15.6	+00.0	340 52.1	+02.3	S 12 07.9	-00.1	15				
16	71 24.6	+00.4	S 23 33.0	+00.2	297 07.9	+02.6	N 12 15.6	+00.0	355 54.4	+02.3	S 12 07.8	+00.0	16				
17	86 25.0	+00.5	S 23 33.2	+00.1	312 10.5	+02.5	N 12 15.6	-00.1	10 56.7	+02.2	S 12 07.8	-00.1	17				
18	101 25.5	+00.5	S 23 33.3	+00.2	327 13.0	+02.5	N 12 15.5	+00.0	25 58.9	+02.3	S 12 07.7	-00.1	18				
19	116 26.0	+00.4	S 23 33.5	+00.1	342 15.5	+02.6	N 12 15.5	+00.0	41 01.2	+02.3	S 12 07.6	+00.0	19				
20	131 26.4	+00.5	S 23 33.6	+00.2	357 18.1	+02.5	N 12 15.5	+00.0	56 03.5	+02.3	S 12 07.6	-00.1	20				
21	146 26.9	+00.5	S 23 33.8	+00.2	12 20.6	+02.6	N 12 15.5	+00.0	71 05.8	+02.3	S 12 07.5	-00.1	21				
22	161 27.4	+00.4	S 23 34.0	+00.1	27 23.2	+02.5	N 12 15.5	+00.0	86 08.1	+02.3	S 12 07.4	-00.1	22				
23	176 27.8	+00.5	S 23 34.1	+00.2	42 25.7	+02.5	N 12 15.5	+00.0	101 10.4	+02.2	S 12 07.3	+00.0	23				
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°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°0	00°0	00°0	00°0	00°0	00°0		
SHA	101°	101°	101°	101°	100°	100°			SHA	025°	025°	025°	025°	025°	025°		
Greenwich Culmination Time: 11:14				Greenwich Culmination Time: 20:10				Greenwich Culmination Time: 16:16									

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 49.5	-00.3	S 23 24.0	+00.0	222 15.0	-00.5	S 14 45.1	+00.9	98 27.9	-29.4	S 08 01.6	-16.1	00
01	195 49.2	-00.3	S 23 24.0	+00.1	237 14.5	-00.5	S 14 46.0	+00.9	112 58.5	-29.3	S 07 45.5	-16.2	01
02	210 48.9	-00.3	S 23 24.1	+00.1	252 14.0	-00.5	S 14 46.7	+00.8	127 29.2	-29.2	S 07 29.3	-16.3	02
03	225 48.6	-00.3	S 23 24.2	+00.0	267 13.5	-00.5	S 14 47.7	+00.9	141 60.0	-29.3	S 07 13.0	-16.2	03
04	240 48.3	-00.3	S 23 24.2	+00.1	282 13.0	-00.5	S 14 48.6	+00.9	156 30.7	-29.1	S 06 56.8	-16.3	04
05	255 48.0	-00.3	S 23 24.3	+00.0	297 12.5	-00.5	S 14 49.5	+00.8	171 01.6	-29.1	S 06 40.5	-16.3	05
06	270 47.7	-00.3	S 23 24.3	+00.1	312 12.0	-00.5	S 14 50.3	+00.8	185 32.5	-29.1	S 06 24.2	-16.4	06
07	285 47.4	-00.3	S 23 24.4	+00.0	327 11.5	-00.5	S 14 51.2	+00.9	200 03.4	-29.0	S 06 07.8	-16.4	07
08	300 47.1	-00.3	S 23 24.4	+00.1	342 11.0	-00.5	S 14 52.1	+00.8	214 34.4	-29.0	S 05 51.4	-16.3	08
09	315 46.8	-00.4	S 23 24.5	+00.1	357 10.5	-00.5	S 14 52.9	+00.8	229 05.4	-29.0	S 05 35.1	-16.5	09
10	330 46.4	-00.3	S 23 24.6	+00.0	12 10.0	-00.5	S 14 53.8	+00.9	243 36.4	-28.9	S 05 18.6	-16.4	10
11	345 46.1	-00.3	S 23 24.6	+00.1	27 09.5	-00.6	S 14 54.7	+00.8	258 07.5	-28.8	S 05 02.2	-16.4	11
12	0 45.8	-00.3	S 23 24.7	+00.0	42 08.9	-00.5	S 14 55.5	+00.9	272 38.7	-28.9	S 04 45.8	-16.5	12
13	15 45.5	-00.3	S 23 24.7	+00.1	57 08.4	-00.5	S 14 56.4	+00.9	287 09.8	-28.7	S 04 29.3	-16.5	13
14	30 45.2	-00.3	S 23 24.8	+00.0	72 07.9	-00.5	S 14 57.3	+00.8	301 41.1	-28.8	S 04 12.8	-16.5	14
15	45 44.9	-00.3	S 23 24.8	+00.1	87 07.4	-00.5	S 14 58.1	+00.8	316 12.3	-28.7	S 03 56.3	-16.5	15
16	60 44.6	-00.3	S 23 24.9	+00.0	102 06.9	-00.5	S 14 59.0	+00.8	330 43.6	-28.7	S 03 39.8	-16.5	16
17	75 44.3	-00.3	S 23 24.9	+00.1	117 06.4	-00.5	S 14 59.8	+00.9	345 14.9	-28.7	S 03 23.3	-16.6	17
18	90 44.0	-00.3	S 23 25.0	+00.0	132 05.9	-00.5	S 15 00.7	+00.9	359 46.2	-28.6	S 03 06.7	-16.5	18
19	105 43.7	-00.3	S 23 25.0	+00.0	147 05.4	-00.6	S 15 01.6	+00.8	14 17.6	-28.6	S 02 50.2	-16.6	19
20	120 43.4	-00.3	S 23 25.0	+00.1	162 04.8	-00.5	S 15 02.4	+00.9	28 49.0	-28.6	S 02 33.6	-16.5	20

Table for Sun, Venus, and Moon on Dec 20, 2023. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each celestial body. Includes Greenwich Culmination Time: 11:57.

Table for Sun, Venus, and Moon on Dec 21, 2023. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each celestial body. Includes Greenwich Culmination Time: 11:57.

Table for Mars, Jupiter, and Saturn on Dec 20, 2023. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each celestial body. Includes Greenwich Culmination Time: 11:16.

Table for Mars, Jupiter, and Saturn on Dec 21, 2023. Columns include UT, GHA, ddGHA, Dec, dDec, and UT for each celestial body. Includes Greenwich Culmination Time: 11:15.

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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 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° 085° 085° 085° 085° 085°
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°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° 098° 097° 097° 097° 097°
Greenwich Culmination Time: 11:11

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°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 089° 089° 089° 088° 088° 088°
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 100° 100° 100° 100° 100° 099°
Greenwich Culmination Time: 11:13

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180	12.4	-00.3	S 23 25.5	221	10.8	-00.6	S 16 25.5	39	53.4	-31.8	N 21 46.9	00
01	195	12.1	-00.3	S 23 25.4	236	10.2	-00.5	S 16 26.3	54	21.6	-31.8	N 21 57.3	01
02	210	11.8	-00.4	S 23 25.4	251	09.7	-00.6	S 16 27.1	68	49.8	-31.9	N 22 07.7	02
03	225	11.4	-00.3	S 23 25.4	266	09.1	-00.6	S 16 27.9	83	17.9	-31.9	N 22 17.8	03
04	240	11.1	-00.3	S 23 25.3	281	08.5	-00.5	S 16 28.7	97	46.0	-32.0	N 22 27.9	04
05	255	10.8	-00.3	S 23 25.3	296	08.0	-00.6	S 16 29.5	112	14.0	-32.1	N 22 37.8	05
06	270	10.5	-00.3	S 23 25.2	311	07.4	-00.6	S 16 30.3	126	41.9	-32.2	N 22 47.7	06
07	285	10.2	-00.3	S 23 25.2	326	06.8	-00.6	S 16 31.1	141	09.7	-32.2	N 22 57.3	07
08	300	09.9	-00.3	S 23 25.2	341	06.2	-00.5	S 16 31.9	155	37.5	-32.2	N 23 06.9	08
09	315	09.6	-00.3	S 23 25.1	356	05.7	-00.6	S 16 32.7	170	05.3	-32.3	N 23 16.3	09
10	330	09.3	-00.3	S 23 25.1	11	05.1	-00.6	S 16 33.5	184	33.0	-32.4	N 23 25.6	10
11	345	09.0	-00.3	S 23 25.0	26	04.5	-00.5	S 16 34.2	199	00.6	-32.5	N 23 34.7	11
12	0	08.7	-00.4	S 23 25.0	41	04.0	-00.6	S 16 35.0	213	28.1	-32.5	N 23 43.7	12
13	15	08.3	-00.3	S 23 24.9	56	03.4	-00.6	S 16 35.8	227	55.6	-32.5	N 23 52.6	13
14	30	08.0	-00.3	S 23 24.9	71	02.8	-00.6	S 16 36.6	242	23.1	-32.6	N 24 01.3	14
15	45	07.7	-00.3	S 23 24.8	86	02.2	-00.5	S 16 37.4	256	50.5	-32.7	N 24 09.9	15
16	60	07.4	-00.3	S 23 24.8	101	01.7	-00.6	S 16 38.2	271	17.8	-32.7	N 24 18.4	16
17	75	07.1	-00.3	S 23 24.7	116	01.1	-00.6	S 16 39.0	285	45.1	-32.8	N 24 26.7	17
18	90	06.8	-00.3	S 23 24.7	131	00.5	-00.6	S 16 39.8	300	12.3	-32.8	N 24 34.9	18
19	105	06.5	-00.3	S 23 24.6	145	59.9	-00.6	S 16 40.6	314	39.5	-32.9	N 24 42.9	19
20	120	06.2	-00.3	S 23 24.6	160	59.3	-00.5	S 16 41.4	329	06.6	-32.9	N 24 50.8	20
21	135	05.9	-00.3	S 23 24.5	175	58.8	-00.6	S 16 42.1	343	33.7	-33.0	N 24 58.5	21
22	150	05.6	-00.4	S 23 24.5	190	58.2	-00.6	S 16 42.9	358	00.7	-33.1	N 25 06.1	22
23	165	05.2	-00.3	S 23 24.4	205	57.6	-00.6	S 16 43.7	12	27.6	-33.1	N 25 13.6	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	UT 02 06 10 14 18 22	SD 15°6 15°6 15°6 15°6 15°6 15°6	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 57°4 57°3 57°2 57°2 57°1 57°0	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 56°9 56°8 56°7 56°7 56°6 56°5									
SHA 088° 088° 087° 087° 087° 087°	SHA 129° 129° 128° 128° 128° 128°	SHA 306° 304° 302° 300° 297° 295°	SHA 087° 087° 086° 086° 086° 086°	SHA 292° 290° 288° 285° 283° 280°									
Greenwich Culmination Time: 11:59	Greenwich Culmination Time: 09:15	Greenwich Culmination Time: 22:08	Greenwich Culmination Time: 11:59	Greenwich Culmination Time: 09:16									

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180	04.9	-00.3	S 23 24.4	220	57.0	-00.6	S 16 44.5	26	54.5	-33.1	N 25 20.9	00
01	195	04.6	-00.3	S 23 24.3	235	56.4	-00.5	S 16 45.3	41	21.4	-33.2	N 25 28.0	01
02	210	04.3	-00.3	S 23 24.3	250	55.9	-00.6	S 16 46.1	55	48.2	-33.2	N 25 35.0	02
03	225	04.0	-00.3	S 23 24.2	265	55.3	-00.6	S 16 46.8	70	15.0	-33.3	N 25 41.9	03
04	240	03.7	-00.3	S 23 24.1	280	54.7	-00.6	S 16 47.6	84	41.7	-33.3	N 25 48.6	04
05	255	03.4	-00.3	S 23 24.1	295	54.1	-00.6	S 16 48.4	99	08.4	-33.4	N 25 55.2	05
06	270	03.1	-00.3	S 23 24.0	310	53.5	-00.5	S 16 49.2	113	35.0	-33.4	N 26 01.6	06
07	285	02.8	-00.3	S 23 24.0	325	53.0	-00.6	S 16 50.0	128	01.6	-33.4	N 26 07.8	07
08	300	02.5	-00.3	S 23 23.9	340	52.4	-00.6	S 16 50.7	142	28.2	-33.5	N 26 14.0	08
09	315	02.2	-00.4	S 23 23.8	355	51.8	-00.6	S 16 51.5	156	54.7	-33.5	N 26 19.9	09
10	330	01.8	-00.3	S 23 23.8	10	51.2	-00.6	S 16 52.3	171	21.2	-33.5	N 26 25.7	10
11	345	01.5	-00.3	S 23 23.7	25	50.6	-00.6	S 16 53.1	185	47.7	-33.6	N 26 31.3	11
12	0	01.2	-00.3	S 23 23.6	40	50.0	-00.6	S 16 53.9	200	14.1	-33.6	N 26 36.8	12
13	15	00.9	-00.3	S 23 23.6	55	49.4	-00.5	S 16 54.6	214	40.5	-33.7	N 26 42.2	13
14	30	00.6	-00.3	S 23 23.5	70	48.9	-00.6	S 16 55.4	229	06.8	-33.7	N 26 47.3	14
15	45	00.3	-00.3	S 23 23.4	85	48.3	-00.6	S 16 56.2	243	33.1	-33.7	N 26 52.4	15
16	59	60.0	-00.3	S 23 23.4	100	47.7	-00.6	S 16 57.0	257	59.4	-33.7	N 26 57.2	16
17	74	59.7	-00.3	S 23 23.3	115	47.1	-00.6	S 16 57.7	272	25.7	-33.7	N 27 01.9	17
18	89	59.4	-00.3	S 23 23.2	130	46.5	-00.6	S 16 58.5	286	52.0	-33.8	N 27 06.5	18
19	104	59.1	-00.3	S 23 23.2	145	45.9	-00.6	S 16 59.3	301	18.2	-33.8	N 27 10.9	19
20	119	58.8	-00.4	S 23 23.1	160	45.3	-00.6	S 17 00.0	315	44.4	-33.8	N 27 15.1	20
21	134	58.4	-00.3	S 23 23.0	175	44.7	-00.6	S 17 00.8	330	10.6	-33.9	N 27 19.2	21
22	149	58.1	-00.3	S 23 22.9	190	44.1	-00.6	S 17 01.6	344	36.7	-33.8	N 27 23.1	22
23	164	57.8	-00.3	S 23 22.9	205	43.5	-00.5	S 17 02.4	359	02.9	-33.9	N 27 26.8	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	UT 02 06 10 14 18 22	SD 15°5 15°5 15°5 15°4 15°4 15°4	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 56°9 56°8 56°7 56°7 56°6 56°5	HP 00°1 00°1 00°1 00°1 00°1 00°1	HP 56°9 56°8 56°7 56°7 56°6 56°5									
SHA 087° 087° 086° 086° 086° 086°	SHA 128° 127° 127° 127° 127° 127°	SHA 292° 290° 288° 285° 283° 280°	SHA 087° 087° 086° 086° 086° 086°	SHA 292° 290° 288° 285° 283° 280°									
Greenwich Culmination Time: 11:59	Greenwich Culmination Time: 09:16	Greenwich Culmination Time: 23:03	Greenwich Culmination Time: 11:59	Greenwich Culmination Time: 19:58									

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°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 081° 081° 081° 081° 080° 080°
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 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° 084° 084° 084° 084° 084°
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°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 094° 094° 094° 094° 094° 094°
Greenwich Culmination Time: 11:08

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 097° 097° 097° 097° 096° 096°
Greenwich Culmination Time: 11:10

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°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 083° 083° 083° 083° 083° 082°
Greenwich Culmination Time: 12:01

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°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 326° 326° 326° 326° 326° 326°
Greenwich Culmination Time: 19:46

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°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 082° 082° 082° 082° 082° 081°
Greenwich Culmination Time: 12:01

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°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 326° 326° 326° 326° 326° 326°
Greenwich Culmination Time: 19:42

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
	°	'	°	'	°	'	°	'	°	'	°	'				
00	179	21.0	-00.3	S 23 07.9	-00.2	219	28.0	-00.7	S 18 30.1	+00.7	311	18.1	-26.5	N 17 28.2	-11.5	00
01	194	20.7	-00.3	S 23 07.7	-00.2	234	27.3	-00.7	S 18 30.8	+00.6	325	51.6	-26.3	N 17 16.7	-11.5	01
02	209	20.4	-00.3	S 23 07.5	-00.1	249	26.6	-00.6	S 18 31.4	+00.7	340	25.3	-26.3	N 17 05.2	-11.6	02
03	224	20.1	-00.3	S 23 07.4	-00.2	264	26.0	-00.7	S 18 32.1	+00.7	354	59.0	-26.2	N 16 53.6	-11.6	03
04	239	19.8	-00.3	S 23 07.2	-00.2	279	25.3	-00.6	S 18 32.8	+00.7	9	32.8	-26.2	N 16 42.0	-11.7	04
05	254	19.5	-00.3	S 23 07.0	-00.2	294	24.7	-00.7	S 18 33.5	+00.7	24	06.6	-26.1	N 16 30.3	-11.8	05
06	269	19.2	-00.3	S 23 06.8	-00.1	309	24.0	-00.7	S 18 34.2	+00.6	38	40.5	-26.0	N 16 18.5	-11.8	06
07	284	18.9	-00.3	S 23 06.7	-00.2	324	23.3	-00.6	S 18 34.8	+00.7	53	14.5	-25.9	N 16 06.7	-11.9	07
08	299	18.6	-00.3	S 23 06.5	-00.2	339	22.7	-00.7	S 18 35.5	+00.7	67	48.6	-25.9	N 15 54.8	-11.9	08
09	314	18.3	-00.3	S 23 06.3	-00.2	354	22.0	-00.6	S 18 36.2	+00.6	82	22.7	-25.8	N 15 42.9	-12.0	09
10	329	18.0	-00.3	S 23 06.1	-00.2	9	21.4	-00.7	S 18 36.8	+00.7	96	56.9	-25.8	N 15 30.9	-12.0	10
11	344	17.7	-00.3	S 23 05.9	-00.1	24	20.7	-00.7	S 18 37.5	+00.7	111	31.1	-25.6	N 15 18.9	-12.1	11
12	359	17.4	-00.3	S 23 05.8	-00.2	39	20.0	-00.6	S 18 38.2	+00.7	126	05.5	-25.7	N 15 06.8	-12.2	12
13	14	17.1	-00.3	S 23 05.6	-00.2	54	19.4	-00.7	S 18 38.9	+00.6	140	39.8	-25.5	N 14 54.6	-12.2	13
14	29	16.8	-00.3	S 23 05.4	-00.2	69	18.7	-00.7	S 18 39.5	+00.7	155	14.3	-25.5	N 14 42.4	-12.2	14
15	44	16.5	-00.3	S 23 05.2	-00.2	84	18.0	-00.6	S 18 40.2	+00.7	169	48.8	-25.4	N 14 30.2	-12.3	15
16	59	16.2	-00.3	S 23 05.0	-00.2	99	17.4	-00.7	S 18 40.9	+00.6	184	23.4	-25.4	N 14 17.9	-12.4	16
17	74	15.9	-00.3	S 23 04.8	-00.2	114	16.7	-00.7	S 18 41.5	+00.7	198	58.0	-25.3	N 14 05.5	-12.4	17
18	89	15.6	-00.3	S 23 04.6	-00.1	129	16.0	-00.6	S 18 42.2	+00.6	213	32.7	-25.3	N 13 53.1	-12.5	18
19	104	15.3	-00.3	S 23 04.5	-00.2	144	15.4	-00.7	S 18 42.8	+00.7	228	07.4	-25.2	N 13 40.6	-12.5	19
20	119	15.0	-00.3	S 23 04.3	-00.2	159	14.7	-00.7	S 18 43.5	+00.7	242	42.2	-25.1	N 13 28.1	-12.5	20
21	134	14.7	-00.3	S 23 04.1	-00.2	174	14.0	-00.6	S 18 44.2	+00.6	257	17.1	-25.1	N 13 15.6	-12.6	21
22	149	14.4	-00.3	S 23 03.9	-00.2	189	13.4	-00.7	S 18 44.8	+00.7	271	52.0	-25.0	N 13 03.0	-12.7	22
23	164	14.1	-00.3	S 23 03.7	-00.2	204	12.7	-00.7	S 18 45.5	+00.7	286	27.0	-25.0	N 12 50.3	-12.6	23
UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22								
SD 16°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 14°8 14'8 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°3 54'3 54°2 54'2 54°2 54'2								
SHA 080° 080° 080° 080° 079° 079°				SHA 120° 120° 120° 120° 119° 119°				SHA 211° 209° 207° 205° 204° 202°								
Greenwich Culmination Time: 12:02				Greenwich Culmination Time: 09:22				Greenwich Culmination Time: 03:20								

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
	°	'	°	'	°	'	°	'	°	'	°	'				
00	192	55.3	+00.4	S 23 56.1	+00.0	65	28.8	+02.4	N 12 15.5	+00.0	123	28.2	+02.3	S 11 52.3	-00.1	00
01	207	55.7	+00.5	S 23 56.1	+00.1	80	31.2	+02.5	N 12 15.5	+00.0	138	30.5	+02.2	S 11 52.2	+00.0	01
02	222	56.2	+00.4	S 23 56.2	+00.1	95	33.7	+02.5	N 12 15.5	+00.1	153	32.7	+02.3	S 11 52.2	-00.1	02
03	237	56.6	+00.4	S 23 56.3	+00.1	110	36.2	+02.5	N 12 15.6	+00.1	168	35.0	+02.3	S 11 52.1	-00.1	03
04	252	57.0	+00.5	S 23 56.4	+00.0	125	38.7	+02.4	N 12 15.6	+00.0	183	37.3	+02.2	S 11 52.0	-00.1	04
05	267	57.5	+00.4	S 23 56.4	+00.1	140	41.1	+02.5	N 12 15.6	+00.0	198	39.5	+02.3	S 11 51.9	-00.1	05
06	282	57.9	+00.5	S 23 56.5	+00.1	155	43.6	+02.5	N 12 15.6	+00.0	213	41.8	+02.2	S 11 51.8	+00.0	06
07	297	58.4	+00.4	S 23 56.6	+00.0	170	46.1	+02.4	N 12 15.6	+00.0	228	44.0	+02.3	S 11 51.8	-00.1	07
08	312	58.8	+00.4	S 23 56.6	+00.1	185	48.5	+02.5	N 12 15.6	+00.0	243	46.3	+02.2	S 11 51.7	-00.1	08
09	327	59.2	+00.5	S 23 56.7	+00.1	200	51.0	+02.5	N 12 15.6	+00.0	258	48.5	+02.3	S 11 51.6	-00.1	09
10	342	59.7	+00.4	S 23 56.8	+00.0	215	53.5	+02.4	N 12 15.6	+00.1	273	50.8	+02.3	S 11 51.5	-00.1	10
11	358	00.1	+00.5	S 23 56.8	+00.1	230	55.9	+02.5	N 12 15.7	+00.0	288	53.1	+02.2	S 11 51.4	-00.1	11
12	13	00.6	+00.4	S 23 56.9	+00.1	245	58.4	+02.5	N 12 15.7	+00.0	303	55.3	+02.3	S 11 51.3	+00.0	12
13	28	01.0	+00.4	S 23 57.0	+00.0	261	00.9	+02.4	N 12 15.7	+00.0	318	57.6	+02.2	S 11 51.3	-00.1	13
14	43	01.4	+00.5	S 23 57.0	+00.1	276	03.3	+02.5	N 12 15.7	+00.0	333	59.8	+02.3	S 11 51.2	-00.1	14
15	58	01.9	+00.4	S 23 57.1	+00.1	291	05.8	+02.4	N 12 15.7	+00.0	349	02.1	+02.2	S 11 51.1	-00.1	15
16	73	02.3	+00.4	S 23 57.2	+00.0	306	08.2	+02.5	N 12 15.7	+00.0	4	04.3	+02.3	S 11 51.0	-00.1	16
17	88	02.7	+00.5	S 23 57.2	+00.1	321	10.7	+02.5	N 12 15.7	+00.1	19	06.6	+02.2	S 11 50.9	-00.1	17
18	103	03.2	+00.4	S 23 57.3	+00.1	336	13.2	+02.4	N 12 15.8	+00.0	34	08.8	+02.3	S 11 50.8	+00.0	18
19	118	03.6	+00.5	S 23 57.4	+00.0	351	15.6	+02.5	N 12 15.8	+00.0	49	11.1	+02.3	S 11 50.8	-00.1	19
20	133	04.1	+00.4	S 23 57.4	+00.1	6	18.1	+02.5	N 12 15.8	+00.0	64	13.4	+02.2	S 11 50.7	-00.1	20
21	148	04.5	+00.4	S 23 57.5	+00.1	21	20.6	+02.4	N 12 15.8	+00.0	79	15.6	+02.3	S 11 50.6	-00.1	21
22	163	04.9	+00.5	S 23 57.6	+00.0	36	23.0	+02.5	N 12 15.8	+00.0	94	17.9	+02.2	S 11 50.5	-00.1	22
23	178	05.4	+00.4	S 23 57.6	+00.1	51	25.5	+02.4	N 12 15.8	+00.0	109	20.1	+02.3	S 11 50.4	-00.1	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°4 00'4 00°4 00'4 00°4 00'4				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°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 094° 094° 093° 093° 093° 093°				SHA 326° 326° 326° 326° 326° 326°				SHA 024° 024° 024° 024° 024° 024°								
Greenwich Culmination Time: 11:07				Greenwich Culmination Time: 19:34				Greenwich Culmination Time: 15:43								

