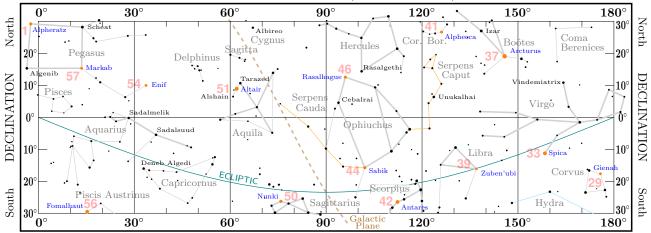
Generated using Skyfield

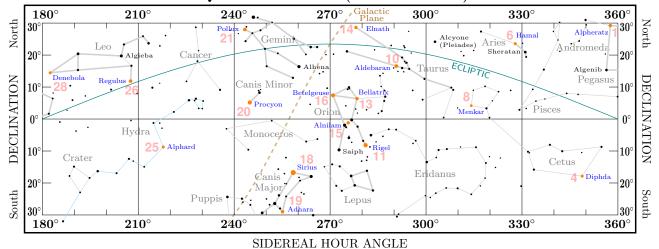
http://rhodesmill.org/skyfield/

EQUATORIAL STARS (SHA 0° to 180°)



SIDEREAL HOUR ANGLE

EQUATORIAL STARS (SHA 180° to 360°)



LUNAR DISTANCE

2027

Author: Andrew Bauer

April 4, 2025

Disclaimer: These are computer generated tables - use them at your own risk. They replicate Lunar Distance algorithms with no guarantee of accuracy. They are intended to encourage the use of sextants, be it as a hobby or as a backup when electronics fail. The author claims no liability for any consequences arising from use of these tables and accompanying charts.

Lunar Distance

The Lunar Distance method (or the old method of "lunars") is an 18th century technique to find the time, typically to reset ship's clocks or as an emergency procedure. The method uses the Moon's apparent motion relative to the Sun, planets or stars like a clock to find a reference time (e.g. GMT). "Until 1906, the Nautical Almanac included lunar distance tables showing predicted geocentric angular distances between the Moon and selected bodies in 3-hour intervals. After the tables were dropped, lunar distances fell more or less into oblivion." ¹

"The methods are a good deal more laborious than the more commonplace procedures of celestial navigation. It is perhaps the most difficult possible operation within the discipline of celestial navigation. However, one argument for maintaining celestial skills is the utility of celestial navigation as an emergency substitute for electronic navigation." "Nothing else comes close to the lunar for developing skill with a sextant - and the observation is demanding enough to hold one's interest for a lifetime." Thus it is still a valuable process to learn and indeed worthwhile mastering. (A practised user can routinely find the correct time to within ± 30 seconds.)

"Because the Moon moves much slower across the sky than the stars, its changing position can be used in sort of a reverse process of sight reduction to find the time." 4 "The basic idea of the lunar distance method is easy to comprehend. Since the Moon moves across the celestial sphere at a rate of about 0.5° per hour, the angular distance between the Moon and a celestial body in her path varies at a similar rate and rapidly enough to be used to measure the time. The time corresponding with an observed lunar distance can be found by comparison with tabulated values." 5 (The continuous motion of the Moon through the sky day-by-day implies that different celestial bodies will be selected for LD measurements on different days.)

The following Lunar Distance tables can contain up to 8 celestial bodies per day (due to the page width limitation). Generally, an attempt is made to include an even number of objects to the east and west of the Moon. The maximum LD angle chosen for inclusion in the tables is 120°, which is about the maximum angle a sextant can measure.

The celestial bodies available for LD measurement include the Sun, four planets (Venus, Mars, Jupiter, Saturn), 21 navigational stars (with magnitude ≤ 1.5) and Polaris.

Three different strategies are available to select suitable celestial bodies for inclusion in a daily LD table:

- pick celestial bodies closest to the Moon
- pick celestial bodies with the highest hourly LD delta (for best accuracy in time determination)
- pick the brightest celestial bodies (possibly easier to locate in the sky)

The celestial body LD angle at a particular hour of day still needs to fulfill several requirements:

- the LD of the Sun is >10° as the Moon is hardly visible during New Moon. (This applies to all celestial bodies)
- the LD of the Sun is >40° (otherwise the Moon is not visible)
- only LD angles $<120^{\circ}$ are tabulated
- the angle between the celestial body and the Sun ("Solar Distance") is $>10^{\circ}$ (otherwise the celestial body might not be visible)
- the Sun is not between the celestial body and the Moon (based on the Right Ascenscion of all three)
- the hourly LD delta is >15' of arc (to avoid measurement errors). "The rate of change of LD becomes zero when LD passes through a minimum or maximum, making an observation useless." 6
- the rate of change of the hourly LD delta does not exceed 0.016° (= 0.96′). This empirical figure removes LD values where linear interpolation (between hours) becomes unreliable.

Suggested further reading: "Stark Tables: For Clearing the Lunar Distance and Finding Universal Time by Sextant Observation" by Bruce Stark, ISBN 978-0-914025-21-4

¹Henning Umland, Chapter 7 - Finding Time and Longitude by Lunar Distances

²Eric Romelczyk, The Journal of Navigation, Volume 72, Issue 6

³Bruce Stark, page vi, Tables For Clearing the Lunar Distance and Finding Universal Time by Sextant Observation

⁴Bruce Stark, https://www.celestaire.com/product/tables-for-clearing-the-lunar-distance/

 $^{^5 \}mathrm{Henning}$ Umland, Chapter 7 - Finding Time and Longitude by Lunar Distances

 $^{^6\}mathrm{Henning}$ Umland, Chapter 7 - Finding Time and Longitude by Lunar Distances

h Moon (1st Jan)

Lunar Distance (objects with largest hourly LD delta)

Lunar Distance (objects with largest hourly LD delta)

Rigil Kent. | -Antares | -Venus | +Mars | +Regulus | +Jupiter | +Pollux

Fri	GHA	ν	Dec	d	HP	-Sun	-Rigil Kent.	-Antares	-Venus	+Mars	+Regulus	+Jupiter	+Pollux
0	259°22.1	13.8'	S 13°49.5	-12.9'	55.9'	75°45.2	49°09.5	45°22.1	29°56.3	45°23.7	54°35.0	58°22.8	91°32.6
1	273°54.9	13.8'	14°02.4	-12.8'	55.9'	75°16.3	48° 50.8	44°50.6	29°28.7	45°54.7	55°06.5	58°54.5	92°04.1
2	288°27.6	13.8'	$14^{\circ}15.2$	-12.7'	55.9'	74°47.4	48°32.4	44°19.1	29°01.1	46°25.8	55°38.0	59°26.1	92°35.5
3	303°00.4	13.7'	14°28.0	-12.7'	55.9'	74°18.5	48°14.1	43°47.6	28°33.5	46°56.8	56°09.5	59°57.7	93°06.9
4	317°33.1	13.7'	14°40.6	-12.6'	55.8'	73°49.6	47°56.0	43°16.2	28°06.1	47°27.7	56°40.9	60°29.3	93°38.2
5	332°05.8	13.7'	14°53.2	-12.5'	55.8'	73°20.8	47°38.1	42°44.7	27°38.7	47°58.7	57°12.3	61°00.9	94°09.6
6	346°38.5	13.6'	S 15°05.8	-12.4'	55.8'	72°52.0	47°20.4	42°13.4	27°11.4	48° 29.6	57°43.7	61°32.4	94°40.9
7	1°11.1	13.6'	15°18.2	-12.4'	55.7'	72°23.3	47°02.9	41°42.0	26°44.1	49°00.5	58°15.0	62°03.9	95°12.1
8	15°43.8	13.6'	15°30.6	-12.3'	55.7'	71°54.6	46° 45.5	41°10.7	26°17.0	49°31.3	58°46.3	62°35.4	95°43.4
9	30°16.3	13.5'	15°42.9	-12.2'	55.7'	71°25.9	46°28.4	40°39.4	25°49.9	50°02.2	59°17.6	63°06.8	96°14.6
10	44°48.9	13.5'	$15^{\circ}55.1$	-12.1'	55.7'	70°57.2	46°11.5	40°08.1	25°22.9	50°33.0	59°48.9	63°38.2	96°45.8
11	59°21.4	13.5'	$16^{\circ}07.2$	-12.0'	55.6'	70°28.6	45°54.8	39°36.9	24°56.0	51°03.8	60°20.1	64°09.6	97°16.9
12	73°53.9	13.4'	S 16°19.3	-12.0'	55.6'	69°59.9	45°38.4	39°05.7	24°29.2	51°34.5	60°51.3	64°40.9	97°48.0
13	88°26.3	13.4'	$16^{\circ}31.2$	-11.9'	55.6'	69°31.4	45°22.1	38°34.5	24°02.5	52°05.3	61°22.5	65°12.3	98°19.1
14	102°58.7	13.4'	$16^{\circ}43.1$	-11.8'	55.5'	69°02.8	45°06.1	38°03.4	23°35.9	52°36.0	61°53.6	65°43.6	98°50.2
15	117°31.1	13.3'	$16^{\circ}54.9$	-11.7'	55.5'	68°34.3	44°50.2	37°32.2	23°09.4	53°06.7	62°24.7	66°14.8	99°21.2
16	132°03.5	13.3'	$17^{\circ}06.6$	-11.6'	55.5'	68°05.8	44°34.6	37°01.2	22°43.0	53°37.3	62°55.8	66°46.1	99°52.2
17	146°35.8	13.3'	17°18.3	-11.5'	55.5'	67°37.3	44°19.3	36°30.1	22°16.7	54°08.0	63°26.9	67°17.3	100°23.2
18	161°08.0	13.2'	S 17°29.8	-11.5'	55.4'	67°08.9	44°04.1	35°59.0	21°50.5	54°38.6	63°57.9	67°48.5	100°54.2
19	175°40.3	13.2'	$17^{\circ}41.3$	-11.4'	55.4'	66°40.5		35°28.0	21°24.5	55°09.2	64°28.9	68°19.6	101°25.1
20	190°12.5	13.2'	17°52.6	-11.3'	55.4'	66°12.1		34°57.1	20°58.6	55°39.8	64°59.9	68°50.8	101°56.0
21	204°44.6	13.1'	18°03.9	-11.2'	55.4'	65°43.7		34°26.1	20°32.8	56° 10.3	65°30.8	69°21.9	102°26.8
22	219°16.7	13.1'	18°15.1	-11.1'	55.3'	65°15.4		33°55.2	20°07.1	56°40.8	66°01.8	69°53.0	102°57.7
23	233°48.8	13.0'	18°26.2	-11.0'	55.3'	64°47.1		33°24.3	19°41.6	57°11.3	66°32.7	70°24.0	103°28.5
1 st	SD = 15.3' Mer. pass. 06:55					$Sun\;SD=16.3'$							

Moon (2nd Jan) Lunar Distance (objects with largest hourly LD delta)

n		IVIOO	n (2 ^a Ja	n <i>)</i>		Lunar Distance (objects with largest nourly LD delta							<u>) </u>
Sat	GHA	ν	Dec	d	HP	-Sun	-Antares	-Venus	+Spica	+Mars	+Regulus	+Jupiter	+Pollux
0	248°20.9	13.0'	S 18°37.2	-10.9'	55.3'	64°18.8	32°53.4	19°16.2	13°13.2	57°41.8	67°03.5	70°55.0	103°59.3
1	262°52.8	13.0'	18°48.2	-10.8'	55.3'	63°50.5	32°22.5	18°51.0	13°43.5	58°12.3	67°34.4	71°26.1	104°30.1
2	277°24.8	12.9'	18°59.0	-10.7'	55.2'	63°22.3	31°51.7	18°25.9	14°13.8	58°42.7	68°05.2	71°57.0	105°00.8
3	291°56.7	12.9'	19°09.8	-10.7'	55.2'	62°54.1	31°20.9	18°01.1	14°44.1	59°13.1	68°36.0	72°28.0	105°31.5
4	306°28.6	12.8'	19°20.4	-10.6'	55.2'	62°25.9	30°50.1	17°36.4	15° 14.5	59°43.5	69°06.8	72°58.9	106°02.2
5	321°00.4	12.8'	19°31.0	-10.5'	55.2'	61°57.8	30°19.3	17°11.9	15°44.8	60°13.9	69°37.5	73°29.8	106°32.9
6	335°32.2	12.7'	S 19°41.4	-10.4'	55.2'	61°29.6	29°48.6	16°47.6	16°15.1	60°44.2	70°08.3	74°00.7	107°03.5
7	350°03.9	12.7'	19°51.8	-10.3'	55.1'	61°01.5	29°17.9	16°23.5	16°45.5	61°14.6	70°39.0	74°31.6	107°34.2
8	4°35.6	12.7'	$20^{\circ}02.1$	-10.2'	55.1'	60°33.4	28°47.2	15°59.7	17° 15.8	61°44.9	71°09.7	75°02.5	108°04.8
9	19°07.3	12.6'	20°12.3	-10.1'	55.1'	60°05.3	28°16.5	15°36.1	17°46.1	62°15.2	71°40.3	75°33.3	108°35.3
10	33°38.9	12.6'	20°22.3	-10.0'	55.1'	59°37.3	27°45.9	15°12.9	18° 16.5	62°45.4	72°11.0	76°04.1	109°05.9
11	48°10.4	12.5'	20°32.3	-9.9'	55.0'	59°09.3	27°15.3	14°49.8	18°46.8	63°15.7	72°41.6	76°34.9	109°36.4
12	62°42.0	12.5'	S 20°42.2	-9.8'	55.0'	58°41.3	26°44.7	14°27.1	19°17.1	63°45.9	73°12.2	77°05.6	110°06.9
13	77°13.4	12.4'	20°52.0	-9.7'	55.0'	58°13.3	26°14.1	14°04.8	19°47.4	64°16.1	73°42.7	77°36.3	110°37.4
14	91°44.9	12.4'	21°01.7	-9.6'	55.0'	57°45.3	25°43.5	13°42.8	20°17.7	64°46.3	74°13.3	78°07.1	111°07.9
15	106°16.2	12.3'	21°11.3	-9.5'	55.0'	57°17.4	25°13.0	13°21.1	20°48.0	65°16.5	74°43.8	78°37.8	111°38.3
16	120°47.6	12.3'	21°20.7	-9.4'	54.9'	56°49.5	24°42.5	12°59.9	21°18.3	65°46.6	75°14.3	79°08.4	112°08.7
17	135°18.9	12.2'	21°30.1	-9.3'	54.9'	56°21.6	24°12.0	12°39.2	21°48.6	66°16.8	75°44.8	79°39.1	112°39.1
18	149°50.1	12.2'	S 21°39.4	-9.2'	54.9'	55°53.7	23°41.5	12°18.9	22°18.9	66°46.9	76° 15.3	80°09.7	113°09.5
19	164°21.3	12.2'	21°48.6	-9.1'	54.9'	55°25.9	23°11.0	11°59.1	22°49.1	67°17.0	76°45.8	80°40.3	113°39.9
20	178°52.5	12.1'	21°57.6	-9.0'	54.9'	54°58.0	22°40.6	11°39.9	23°19.4	67°47.1	77° 16.2	81°10.9	114°10.2
21	193°23.6	12.1'	22°06.6	-8.9'	54.8'	54°30.2	22°10.2	11°21.3	23°49.6	68°17.1	77°46.6	81°41.5	114°40.5
22	207°54.6	12.0'	22°15.5	-8.8'	54.8'	54°02.4	21°39.8	11°03.3	24°19.8	68°47.2	78° 17.0	82°12.1	115°10.8
23	222°25.6	12.0'	22°24.2	-8.6'	54.8'	53°34.7	21°09.4	10°46.1	24°50.0	69°17.2	78°47.4	82°42.6	115°41.1
2 nd	SD	= 15.1'	Mer. pas	s. 07:41					Sun S	D = 16.3'			

	_	
h	Moon (3 rd Jan)	Lunar Distance (objects with largest hourly ID delta)

Sun	GHA	ν	Dec	d	HP	-Sun	-Antares	+Spica	+Mars	+Regulus	+Jupiter	+Procyon	+Pollux
0	236°56.6	11.9'	S 22°32.9	-8.5'	54.8'	53°06.9	$20^{\circ}39.1$	25°20.2	69°47.2	79°17.7	83°13.1	110°40.5	116°11.4
1	251°27.5	11.9'	22°41.4	-8.4'	54.8'	52°39.2	20°08.7	25°50.4	70° 17.2	79°48.1	83°43.6	111°09.1	116°41.6
2	265°58.4	11.8'	22°49.8	-8.3'	54.7'	52°11.5	19°38.4	26°20.6	70°47.2	80°18.4	84°14.1	111°37.6	117°11.8
3	280°29.2	11.8'	$22^{\circ}58.1$	-8.2'	54.7'	51°43.8	$19^{\circ}08.1$	26°50.7	71°17.2	80°48.7	84°44.6	112°06.2	117°42.0
4	295°00.0	11.7'	23°06.3	-8.1'	54.7'	51°16.1	18°37.8	27°20.9	71°47.1	81°19.0	85°15.0	112°34.7	118°12.2
5	309°30.7	11.7'	23°14.4	-8.0'	54.7'	50°48.4	18°07.5	27°51.0	72°17.1	81°49.2	85°45.5	113°03.2	118°42.4
6	324°01.4	11.6'	S 23°22.4	-7.9'	54.7'	50°20.8	17°37.3	28°21.1	72°47.0	82°19.5	86°15.9	113°31.7	119°12.5
7	338°32.1	11.6'	23°30.3	-7.8'	54.6'	49°53.1	$17^{\circ}07.0$	28°51.2	73°16.9	82°49.7	86°46.3	114°00.1	119°42.7
8	353°02.7	11.5'	23°38.1	-7.7'	54.6'	49°25.5	16°36.8	29°21.3	73°46.8	83°19.9	87°16.7	114°28.5	
9	7°33.2	11.5'	23°45.7	-7.5'	54.6'	48°57.9	$16^{\circ}06.6$	29°51.4	74° 16.7	83°50.1	87°47.0	114°56.9	
10	22°03.7	11.5'	23°53.3	-7.4'	54.6'	48°30.4	15°36.4	30°21.5	74°46.5	84°20.3	88°17.4	115°25.2	
11	36°34.2	11.4'	24°00.7	-7.3'	54.6'	48°02.8	$15^{\circ}06.3$	30°51.6	75°16.4	84°50.5	88°47.7	115°53.5	
12	51°04.6	11.4'	S 24°08.0	-7.2'	54.6'	47°35.2	14°36.1	31°21.6	75°46.2	85°20.6	89°18.1	116°21.8	
13	65°35.0	11.3'	24°15.2	-7.1'	54.5'	47°07.7	$14^{\circ}06.0$	31°51.6	76°16.0	85°50.8	89°48.4	116°50.1	
14	80°05.3	11.3'	24°22.3	-7.0'	54.5'	46°40.2	13°35.8	32°21.7	76°45.8	86°20.9	90°18.7	117° 18.3	
15	94°35.6	11.2'	24°29.2	-6.8'	54.5'	46°12.7	13°05.7	32°51.7	77° 15.6	86°51.0	90°48.9	117°46.5	
16	109°05.8	11.2'	$24^{\circ}36.1$	-6.7'	54.5'	45°45.2	12°35.6	33°21.7	77°45.4	87°21.1	91°19.2	118° 14.7	
17	123°36.0	11.2'	24°42.8	-6.6'	54.5'	45°17.8	$12^{\circ}05.6$	33°51.7	78° 15.2	87°51.2	91°49.4	118°42.8	
18	138°06.1	11.1'	S 24°49.4	-6.5'	54.5'	44°50.3	11°35.5	34°21.7	78°44.9	88°21.2	92°19.7	119° 10.9	
19	152°36.3	11.1'	24°55.9	-6.4'	54.5'	44°22.9	$11^{\circ}05.5$	34°51.6	79° 14.7	88°51.3	92°49.9	119°39.0	
20	167°06.3	11.0'	25°02.3	-6.2'	54.4'	43°55.4	10°35.4	35°21.6	79°44.4	89°21.3	93°20.1		
21	181°36.4	11.0'	25°08.5	-6.1'	54.4'	43°28.0	10°05.4	35°51.5	80°14.1	89°51.4	93°50.3		
22	196°06.3	10.9'	$25^{\circ}14.6$	-6.0'	54.4'	43°00.6	9°35.4	36°21.5	80°43.8	90°21.4	94°20.5		
23	210°36.3	10.9'	25°20.6	-5.9'	54.4'	42°33.3	9°05.4	36°51.4	81° 13.5	90°51.4	94°50.7		
3 rd	SD	= 14.9'	Mer. pass	. 08:29					Sun S	SD = 16.3'			

Moon (4th Jan) Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Sun	±Antares	+Venus	+Spica	+Arcturus	+Mars	+Regulus	+Jupiter
0	225°06.2	10.9'	S 25°26.5	-5.8'	54.4'	42°05.9	8°35.4		37°21.3	50°15.4	81°43.2	91°21.4	95°20.8
1	239°36.1	10.8'	25°32.3	-5.6'	54.4'	41°38.5	8°05.5		37°51.2	50° 35.2	82°12.9	91°51.3	95°51.0
2	254°05.9	10.8'	25°37.9	-5.5'	54.4'	41°11.2	7°35.5		38°21.1	50°55.1	82°42.5	92°21.3	96°21.1
3	268°35.7	10.8'	25°43.4	-5.4'	54.3'	40°43.9	7°05.6	10°35.0	38°51.0	51°15.2	83°12.2	92°51.2	96°51.2
4	283°05.4	10.7'	25°48.8	-5.3'	54.3'	40°16.6	6°35.7	10°51.5	39°20.8	51°35.4	83°41.8	93°21.2	97°21.3
5	297°35.2	10.7'	25°54.1	-5.1'	54.3'		6°05.8	11°08.7	39°50.7	51°55.6	84°11.5	93°51.1	97°51.5
6	312°04.8	10.6'	S 25°59.2	-5.0'	54.3'		5°35.9	11°26.5	40°20.5	52°16.0	84°41.1	94°21.0	98°21.5
7	326°34.5	10.6'	26°04.3	-4.9'	54.3'		5°06.1	11°44.9	40°50.4	52° 36.5	85°10.7	94°50.9	98°51.6
8	341°04.1	10.6'	$26^{\circ}09.1$	-4.8'	54.3'		4°36.2	12°03.9	41°20.2	52° 57.0	85°40.3	95°20.8	99°21.7
9	355°33.7	10.5'	26°13.9	-4.6'	54.3'		4°06.4	12°23.4	41°50.0	53° 17.7	86°09.9	95°50.7	99°51.7
10	10°03.2	10.5'	$26^{\circ}18.5$	-4.5'	54.3'		3°36.6	12°43.3	42°19.9	53°38.5	86°39.5	96°20.6	100°21.8
11	24°32.7	10.5'	26°23.1	-4.4'	54.2'		3°06.9	13°03.7	42°49.7	53°59.3	87°09.0	96°50.4	100°51.8
12	39°02.2	10.5'	S 26°27.4	-4.3'	54.2'		2°37.2	13°24.4	43° 19.5	54°20.3	87°38.6	97°20.3	101°21.9
13	53°31.7	10.4'	26°31.7	-4.1'	54.2'		2°07.6	13°45.5	43°49.2	54°41.3	88°08.2	97°50.1	101°51.9
14	68°01.1	10.4'	26°35.8	-4.0'	54.2'		1°38.2	14°07.0	44° 19.0	55°02.4	88°37.7	98° 20.0	102°21.9
15	82°30.5	10.4'	26°39.8	-3.9'	54.2'		1°09.2	14°28.8	44°48.8	55°23.6	89°07.3	98°49.8	102°51.9
16	96°59.9	10.3'	26°43.7	-3.7'	54.2'			14°50.8	45° 18.5	55°44.9	89°36.8	99°19.6	103°21.9
17	111°29.2	10.3'	26°47.4	-3.6'	54.2'			15°13.1	45°48.3	56°06.2	90°06.3	99°49.4	103°51.9
18	125°58.5	10.3'	S 26°51.0	-3.5'	54.2'			15°35.7	46° 18.0	56°27.6	90°35.8	100°19.2	104°21.8
19	140°27.8	10.3'	26°54.5	-3.3'	54.2'			15°58.5	46°47.8	56° 49.2	91°05.3	100°49.0	104°51.8
20	154°57.1	10.2'	26°57.9	-3.2'	54.1'			16°21.5	47° 17.5	57° 10.7	91°34.8	101°18.8	105°21.8
21	169°26.3	10.2'	$27^{\circ}01.1$	-3.1'	54.1'		1°53.8	16°44.7	47°47.2	57°32.4	92°04.3	101°48.5	105°51.7
22	183°55.5	10.2'	27°04.2	-3.0'	54.1'		2°23.3	17°08.1	48° 17.0	57°54.1	92°33.8	102°18.3	106°21.6
23	198°24.7	10.2'	27°07.1	-2.8'	54.1'		2°52.8	17°31.6	48°46.7	58° 15.9	93°03.3	102°48.0	106°51.6
4 th	SD = 14.8' Mer. pass. 09:18								Sun S	D = 16.3'			

Moon (5th Jan)

lunar	Distance	(ohiects	with	largest	hourly	ΙD	delta)	١
Lullai	Distance	loblects	WILII	iaigest	HOULIV	ᆫ	ueita	

Tue	GHA	ν	Dec	d	HP	+Antares	+Venus	+Hadar	+Spica	+Arcturus	+Mars	+Regulus	+Jupiter
0	212°53.9	10.2'	S 27°09.9	-2.7'	54.1'	3°22.4	17°55.3		49°16.4	58°37.8	93°32.8	103°17.8	107°21.5
1	227°23.1	10.1'	$27^{\circ}12.6$	-2.6'	54.1'	3°52.0	18°19.2		49°46.1	58°59.7	94°02.2	103°47.5	107°51.4
2	241°52.2	10.1'	$27^{\circ}15.2$	-2.4'	54.1'	4°21.7	18°43.2		50°15.7	59°21.7	94°31.7	104°17.3	108°21.3
3	256°21.3	10.1'	$27^{\circ}17.6$	-2.3'	54.1'	4°51.4	19°07.3		50°45.4	59°43.7	95°01.1	104°47.0	108°51.2
4	270°50.5	10.1'	$27^{\circ}19.9$	-2.2'	54.1'	5°21.0	19°31.6		51°15.1	60°05.9	95°30.6	105°16.7	109°21.1
5	285°19.5	10.1'	$27^{\circ}22.1$	-2.0'	54.1'	5°50.7	19°55.9		51°44.8	60°28.0	96°00.0	105°46.4	109°51.0
6	299°48.6	10.1'	S 27°24.1	-1.9'	54.1'	6°20.4	20°20.4		52°14.4	60°50.3	96°29.5	106°16.1	110°20.9
7	314°17.7	10.1'	$27^{\circ}26.0$	-1.8'	54.1'	6°50.0	20°44.9		52°44.1	61°12.6	96°58.9	106°45.8	110°50.8
8	328°46.8	10.0'	27°27.8	-1.6'	54.0'	7° 19.7	21°09.6		53°13.7	61°34.9	97°28.3	107°15.5	111°20.7
9	343°15.8	10.0'	27°29.4	-1.5'	54.0'	7°49.4	21°34.3		53°43.4	61°57.3	97°57.7	107°45.2	111°50.5
10	357°44.8	10.0'	27°30.9	-1.4'	54.0'	8° 19.0	21°59.1		54°13.0	62°19.8	98°27.2	108°14.9	112°20.4
11	12°13.9	10.0'	27°32.2	-1.2'	54.0'	8°48.7	22°24.0		54°42.7	62°42.3	98°56.6	108°44.5	112°50.2
12	26°42.9	10.0'	S 27°33.5	-1.1'	54.0'	9°18.3	22°49.0		55°12.3	63°04.9	99°26.0	109°14.2	113°20.1
13	41°11.9	10.0'	27°34.6	-1.0'	54.0'	9°48.0	23°14.0		55°41.9	63°27.5	99°55.4	109°43.9	113°49.9
14	55°40.9	10.0'	27°35.5	-0.8'	54.0'	10° 17.6	23°39.1		56°11.5	63°50.1	100°24.8	110°13.5	114°19.8
15	70°09.9	10.0'	27°36.3	-0.7'	54.0'	10°47.3	24°04.3		56°41.2	64°12.9	100°54.1	110°43.2	114°49.6
16	84°38.9	10.0'	27°37.0	-0.6'	54.0'	11°16.9	24°29.5		57°10.8	64°35.6	101°23.5	111°12.8	115° 19.4
17	99°08.0	10.0'	27°37.6	-0.4'	54.0'	11°46.6	24°54.8		57°40.4	64°58.4	101°52.9	111°42.4	115°49.3
18	113°37.0	10.0'	S 27°38.0	-0.3'	54.0'	12° 16.2	25°20.1		58°10.0	65°21.3	102°22.3	112°12.1	116° 19.1
19	128°06.0	10.0'	27°38.3	-0.2'	54.0'	12°45.8	25°45.5	47°06.7	58°39.6	65°44.2	102°51.7	112°41.7	116°48.9
20	142°35.0	10.0'	27°38.5	-0.0'	54.0'	13° 15.5	26°10.9	47°22.0	59°09.2	66°07.1	103°21.0	113°11.3	117° 18.7
21	157°04.0	10.0'	27°38.5	0.1'	54.0'	13°45.1	26°36.4	47°37.4	59°38.8	66°30.1	103°50.4	113°41.0	117°48.5
22	171°33.0	10.0'	27°38.4	0.2'	54.0'	14° 14.7	27°01.9	47°53.1	60°08.3	66°53.1	104°19.8	114°10.6	118°18.3
23	186°02.0	10.0'	27°38.1	0.4'	53.9'	14°44.3	27°27.5	48°08.9	60°37.9	67°16.2	104°49.1	114°40.2	118°48.1
5 th	SD	= 14.8'	Mer. pass	10:09									

Moon (6th Jan)

Lunar Distance (objects with	largest hourly	LD delta)

Wed	GHA	ν	Dec	d	HP	+Antares	+Venus	+Rigil Kent.	+Hadar	+Spica	+Arcturus	+Mars	+Regulus
0	200°31.1	10.0'	S 27°37.7	0.5'	53.9'	15°13.9	27°53.1		48°24.8	61°07.5	67°39.2	105°18.5	115°09.8
1	215°00.1	10.1'	27°37.2	0.6'	53.9'	15°43.5	28° 18.7		48°40.9	61°37.1	68°02.4	105°47.8	115°39.4
2	229°29.2	10.1'	27°36.6	0.8'	53.9'	16°13.1	28°44.3	45°03.9	48°57.2	62°06.7	68°25.6	106°17.2	116°09.0
3	243°58.2	10.1'	27°35.8	0.9'	53.9'	16°42.7	29°10.0	45°19.1	49°13.6	62°36.2	68°48.8	106°46.5	116°38.6
4	258°27.3	10.1'	27°34.9	1.0'	53.9'	17°12.3	29°35.8	45°34.5	49°30.2	63°05.8	69°12.0	107°15.9	117°08.2
5	272°56.4	10.1'	27°33.8	1.2'	53.9'	17°41.9	30°01.5	45°50.1	49°46.9	63°35.4	69°35.3	107°45.2	117°37.8
6	287°25.5	10.1'	S 27°32.6	1.3'	53.9'	18°11.5	30°27.3	46°05.9	50°03.8	64°04.9	69°58.6	108°14.5	118°07.4
7	301°54.6	10.1'	27°31.3	1.4'	53.9'	18°41.1	30°53.1	46°21.8	50°20.8	64°34.5	70°21.9	108°43.9	118°37.0
8	316°23.8	10.2'	27°29.9	1.6'	53.9'	19°10.7	31° 18.9	46°37.9	50°37.9	65°04.0	70°45.3	109°13.2	119°06.6
9	330°52.9	10.2'	27°28.3	1.7'	53.9'	19°40.3	31°44.8	46°54.2	50°55.2	65°33.6	71°08.7	109°42.5	119°36.1
10	345°22.1	10.2'	27°26.6	1.8'	53.9'	20°09.9	32°10.7	47°10.7	51°12.6	66°03.1	71°32.2	110°11.9	
11	359°51.3	10.2'	27°24.8	2.0'	53.9'	20°39.5	32°36.6	47°27.3	51°30.2	66°32.7	71°55.6	110°41.2	
12	14°20.5	10.2'	S 27°22.8	2.1'	53.9'	21°09.0	33°02.5	47°44.0	51°47.8	67°02.2	72°19.1	111°10.5	
13	28°49.8	10.3'	27°20.7	2.2'	53.9'	21°38.6	33°28.5	48°00.9	52°05.6	67°31.8	72°42.7	111°39.9	
14	43°19.0	10.3'	27°18.4	2.4'	53.9'	22°08.2	33°54.5	48°18.0	52°23.6	68°01.3	73°06.2	112°09.2	
15	57°48.3	10.3'	$27^{\circ}16.1$	2.5'	53.9'	22°37.8	34°20.5	48°35.2	52°41.6	68°30.9	73°29.8	112°38.5	
16	72°17.6	10.3'	27°13.6	2.6'	53.9'	23°07.4	34° 46.5	48°52.6	52°59.8	69°00.4	73°53.4	113°07.8	
17	86°47.0	10.4'	$27^{\circ}10.9$	2.8'	53.9'	23°36.9	35° 12.5	49°10.1	53°18.1	69°30.0	74°17.0	113°37.1	
18	101°16.3	10.4'	S 27°08.2	2.9'	53.9'	24°06.5	35°38.6	49°27.7	53°36.5	69°59.5	74°40.7	114°06.4	
19	115°45.7	10.4'	27°05.3	3.0'	53.9'	24°36.1	36°04.6	49°45.5	53°55.0	70°29.1	75°04.4	114°35.8	
20	130°15.2	10.5'	27°02.3	3.1'	53.9'	25°05.6	36°30.7	50°03.5	54°13.6	70°58.6	75°28.1	115°05.1	
21	144°44.6	10.5'	26°59.1	3.3'	53.9'	25°35.2	36° 56.8	50°21.5	54°32.4	71°28.1	75°51.8	115°34.4	
22	159°14.1	10.5'	26°55.9	3.4'	53.9'	26°04.8	37°23.0	50°39.7	54°51.2	71°57.7	76°15.5	116°03.7	
23	173°43.6	10.6'	26°52.4	3.5'	53.9'	26°34.3	37°49.1	50°58.0	55°10.2	72°27.2	76°39.3	116°33.0	
6 th	SD	= 14.7'	Mer. pass	11:01									

ть	СПУ		Das	
h		Moon	(7 th Jan)

Thu	GHA	ν	Dec	d	HP	
0	188°13.2	10.6'	S 26°48.9	3.7'	53.9'	New Moon
1	202°42.8	10.6'	26°45.3	3.8'	53.9'	New Moon
2	217°12.4	10.7'	26°41.5	3.9'	53.9'	New Moon
3	231°42.1	10.7'	26°37.6	4.0'	53.9'	New Moon
4	246°11.8	10.7'	26°33.5	4.2'	53.9'	New Moon
5	260°41.5	10.8'	26°29.4	4.3'	53.9'	New Moon
6	275°11.3	10.8'	S 26°25.1	4.4'	53.9'	New Moon
7	289°41.1	10.9'	26°20.7	4.5'	53.9'	New Moon
8	304°11.0	10.9'	26°16.2	4.7'	53.9'	New Moon
9	318°40.9	11.0'	$26^{\circ}11.5$	4.8'	53.9'	New Moon
10	333°10.9	11.0'	26°06.7	4.9'	53.9'	New Moon
11	347°40.9	11.0'	$26^{\circ}01.8$	5.0'	53.9'	New Moon
12	2°10.9	11.1'	S 25°56.8	5.1'	53.9'	New Moon
13	16°41.0	11.1'	25°51.7	5.3'	53.9'	New Moon
14	31°11.1	11.2'	25°46.4	5.4'	53.9'	New Moon
15	45°41.3	11.2'	25°41.0	5.5'	53.9'	New Moon
16	60°11.5	11.3'	25°35.5	5.6'	53.9'	New Moon
17	74°41.8	11.3'	25°29.9	5.7'	53.9'	New Moon
18	89°12.2	11.4'	S 25°24.2	5.8'	53.9'	New Moon
19	103°42.5	11.4'	25°18.3	6.0'	53.9'	New Moon
20	118°13.0	11.5'	$25^{\circ}12.4$	6.1'	53.9'	New Moon
21	132°43.4	11.5'	25°06.3	6.2'	53.9'	New Moon
22	147°14.0	11.6'	25°00.1	6.3'	53.9'	New Moon
23	161°44.5	11.6'	24°53.8	6.4'	53.9'	New Moon
7 th	SD	= 14.7'	Mer. pass.	11:51		

h		Moor		Lunar	Distance		
Fri	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut
0	176° 15.2	11.7'	S 24°47.4	6.5'	53.9'	Nev	v Moon
1	190°45.9	11.7'	24°40.8	6.6'	53.9'	Nev	v Moon
2	205°16.6		24°34.2	6.8'	53.9'	Nev	v Moon
	0400474						

219°47.4 24°27.4 New Moon 11.8 53.9 234°18.2 11.9' 24°20.5 7.0' 53.9 New Moon 248°49.1 5 12.0' $24^{\circ}13.6$ 7.1' 53.9 New Moon 263°20.1 7.2' **S**24°06.5 6 12.0' 53.9 New Moon 277°51.1 23°59.3 7.3' 12.1 53.9 New Moon 8 292°22.2 12.1 23°52.0 7.4 New Moon 53.9 306°53.3 321°24.5 12.2' $23^{\circ}44.6$ 7.5' 53.9 New Moon 10 12.2' $23^{\circ}37.0$ New Moon 335°55.7 23°29.4 12.3' 7.7' 53.9' New Moon 350°27.0 **S**23°21.7 New Moon 12 12.3' 7.8 53.9 13 $4^{\circ}58.3$ 12.4' $23^{\circ}13.8$ 7.9' 53.9 New Moon 19°29.7 34°01.2 48°32.7 14 12.5' $23^{\circ}05.9$ 8.0' 53.9 New Moon 22°57.9 22°49.7 22°41.5 15 12.5' 8.1' 53.9' New Moon 16 12.6' 8.2 53.9 New Moon 63°04.3 8.3' 17 12.6' 53.9 New Moon 77°35.9 92°07.6 18 12.7' **S**22°33.1 8.4 53.9 New Moon 22°24.7 22°16.2 22°07.5 21°58.8 39°47.3 19 12.8' 8.5' 53.9' 70°11.3 69°42.0 69°12.6 39°23.5 38°59.7 38°36.1 106°39.4 121°11.2 135°43.1 20 12.8' 8.6 54.0' 21 22 12.9' 12.9' 8.7' 54.0' 8.8 68°43.3 54.0 23 150° 15.0 21°50.0 68°14.0 13.0' 8.9' 54.0' 38°12.6

8 th	SD = 14.7' Mer. pass. 12:39	·	
h	Moon (9 th Jan)	Lunar	Distance

Sat	GHA	ν	Dec	d	HP	-Rigel	-Aldebaran	-Saturn	-Fomalhaut
0	164°47.0	13.0'	S 21°41.0	9.0'	54.0'			67°44.6	37°49.2
1	179°19.0	13.1'	21°32.0	9.1'	54.0'			67°15.3	37°25.9
2	193°51.1	13.2'	21°22.9	9.2'	54.0'			66°45.9	37°02.8
3	208°23.3	13.2'	21°13.7	9.3'	54.0'			66°16.6	36°39.8
4	222°55.5	13.3'	21°04.4	9.4'	54.0'			65°47.2	36°16.9
5	237°27.8	13.3'	20°55.0	9.5'	54.0'			65°17.8	35°54.1
6	252°00.1	13.4'	S 20°45.5	9.6'	54.0'			64°48.5	35°31.5
7	266°32.5	13.4'	20°35.9	9.7'	54.0'			64°19.1	35°09.1
8	281°04.9	13.5'	20°26.3	9.7'	54.0'			63°49.7	34°46.8
9	295°37.4	13.6'	$20^{\circ}16.5$	9.8'	54.0'			63°20.3	34°24.6
10	310°10.0	13.6'	20°06.7	9.9'	54.0'			62°50.9	34°02.7
11	324°42.6	13.7'	$19^{\circ}56.8$	10.0'	54.0'			62°21.6	33°40.9
12	339°15.3	13.7'	S 19°46.8	10.1'	54.1'			61°52.2	33° 19.2
13	353°48.0	13.8'	19°36.7	10.2'	54.1'			61°22.8	32°57.8
14	8°20.8	13.8'	$19^{\circ}26.5$	10.3'	54.1'			60°53.4	32°36.5
15	22°53.6	13.9'	$19^{\circ}16.3$	10.3'	54.1'			60°23.9	32° 15.5
16	37°26.5	13.9'	$19^{\circ}05.9$	10.4'	54.1'			59°54.5	31°54.6
17	51°59.5	14.0'	18°55.5	10.5'	54.1'			59°25.1	31°33.9
18	66°32.5	14.1'	S 18°45.0	10.6'	54.1'			58°55.7	31° 13.5
19	81°05.5	14.1'	18°34.4	10.7'	54.1'		119°38.1	58°26.3	30°53.3
20	95°38.6	14.2'	18°23.8	10.7'	54.1'		119°08.9	57°56.8	30°33.3
21	110°11.8	14.2'	18°13.0	10.8'	54.1'	119°39.2	118°39.8	57°27.4	30° 13.5
22	124°45.0	14.3'	18°02.2	10.9'	54.1'	$119^{\circ}17.1$	118°10.6	56°58.0	29°54.0
23	139°18.3	14.3'	17°51.3	11.0'	54.1'	118°54.9	117°41.4	56°28.5	29°34.8
9 th	SD	= 14.7'	Mer. pass	s. 13:26					

h Moon (10 th Jan) Lunar Distance (objects with largest hourly	LD delta)
---	-----------

Sun	GHA	ν	Dec	d	HP	-Capella	-Rigel	-Aldebaran	-Saturn	-Fomalhaut
0	153°51.6	14.4'	S 17°40.4	11.0'	54.2'		118°32.6	117°12.1	55°59.1	29°15.8
1	168°25.0	14.4'	$17^{\circ}29.3$	11.1'	54.2'		118°10.3	116°42.9	55°29.6	28°57.1
2	182°58.4	14.5'	$17^{\circ}18.2$	11.2'	54.2'		117°47.9	116°13.7	55°00.1	28°38.7
3	197°31.8	14.5'	$17^{\circ}07.0$	11.3'	54.2'		117°25.5	115°44.4	54°30.7	28°20.5
4	212°05.4	14.6'	$16^{\circ}55.8$	11.3'	54.2'		117°02.9	115°15.1	54°01.2	28°02.7
5	226°38.9	14.6'	16°44.4	11.4'	54.2'		116°40.4	114°45.8	53°31.7	27°45.2
6	241°12.6	14.7'	S 16°33.0	11.5'	54.2'		116°17.7	114°16.5	53°02.2	27°28.0
7	255°46.2	14.7'	$16^{\circ}21.6$	11.5'	54.2'		115°55.0	113°47.2	52°32.8	27°11.1
8	270°19.9	14.8'	$16^{\circ}10.0$	11.6'	54.2'		115°32.2	113°17.9	52°03.3	26°54.6
9	284°53.7	14.8'	15°58.4	11.7'	54.2'		115°09.4	112°48.5	51°33.8	26°38.4
10	299°27.5	14.9'	15°46.7	11.7'	54.3'		114°46.5	112°19.2	51°04.3	26°22.6
11	314°01.3	14.9'	15°35.0	11.8'	54.3'		114°23.6	111°49.8	50°34.8	26°07.2
12	328°35.2	14.9'	S 15°23.2	11.9'	54.3'		114°00.6	111°20.4	50°05.2	25°52.2
13	343°09.2	15.0'	$15^{\circ}11.3$	11.9'	54.3'		113°37.5	110°51.0	49°35.7	
14	357°43.2	15.0'	$14^{\circ}59.4$	12.0'	54.3'	119°44.8	113°14.4	110°21.6	49°06.2	
15	12°17.2	15.1'	14°47.4	12.1'	54.3'	119°16.9	112°51.3	109°52.2	48°36.7	
16	26°51.3	15.1'	14°35.3	12.1'	54.3'	118°48.9	112°28.1	109°22.7	48°07.1	
17	41°25.4	15.2'	14°23.2	12.2'	54.3'	118°20.9	112°04.8	108°53.3	47°37.6	
18	55°59.5	15.2'	S 14°11.0	12.2'	54.4'	117°52.8	111°41.5	108°23.8	47°08.0	
19	70°33.7	15.2'	13°58.7	12.3'	54.4'	117°24.8	111°18.1	107°54.3	46°38.5	
20	85°08.0	15.3'	13°46.4	12.4'	54.4'	116°56.7	110°54.7	107°24.8	46°08.9	
21	99°42.2	15.3'	$13^{\circ}34.1$	12.4'	54.4'	116°28.6	110°31.2	106°55.3	45°39.3	
22	114°16.6	15.3'	$13^{\circ}21.7$	12.5'	54.4'	116°00.4	110°07.7	106°25.8	45°09.8	
23	128°50.9	15.4'	13°09.2	12.5'	54.4'	115°32.3	109°44.2	105°56.2	44°40.2	
10 th	SD	= 14.8'	Mer. pass	s. 14:09						

h Moon (11th Jan) Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Rigel	-Aldebaran	-Saturn	+Altair	+Sun
0	143°25.3	15.4'	S 12°56.6	12.6'	54.4'		115°04.1	109°20.6	105°26.7	44°10.6		
1	157°59.7	15.5'	$12^{\circ}44.1$	12.6'	54.4'		114°35.8	108°56.9	104°57.1	43°41.0		
2	172°34.2	15.5'	12°31.4	12.7'	54.5'		114°07.6	108°33.2	104° 27.5	43°11.4	$36^{\circ}32.8$	
3	187°08.6	15.5'	12°18.7	12.8'	54.5'		113°39.3	108°09.5	103°57.9	42°41.8	36°48.3	
4	201°43.2	15.6'	$12^{\circ}06.0$	12.8'	54.5'		113°11.0	107°45.7	103°28.3	42°12.2	37°04.0	
5	216°17.7	15.6'	11°53.2	12.9'	54.5'		112°42.7	107°21.9	102°58.7	41°42.6	37°20.0	
6	230°52.3	15.6'	S 11°40.3	12.9'	54.5'		112°14.3	106°58.0	102°29.0	41°13.0	37°36.2	
7	245°26.9	15.6'	11°27.4	13.0'	54.5'	119°50.1	111°45.9	106°34.1	101°59.4	40°43.4	37°52.7	
8	260°01.6	15.7'	$11^{\circ}14.4$	13.0'	54.5'	119°22.4	111° 17.5	106°10.2	101°29.7	40°13.8	38°09.5	
9	274°36.3	15.7'	$11^{\circ}01.4$	13.1'	54.6'	118°54.6	110°49.1	105°46.2	101°00.0	39°44.1	38°26.4	
10	289°11.0	15.7'	10°48.4	13.1'	54.6'	118°26.8	110°20.6	105°22.2	100°30.3	39°14.5	38°43.7	
11	303°45.7	15.8'	10°35.3	13.1'	54.6'	117°58.9	109°52.2	104°58.1	100°00.6	38°44.9	39°01.1	
12	318°20.4	15.8'	S 10°22.1	13.2'	54.6'	117°31.1	109°23.7	104°34.0	99°30.8	38° 15.2	39°18.8	i i
13	332°55.2	15.8'	$10^{\circ}08.9$	13.2'	54.6'	117°03.1	108°55.1	104°09.9	99°01.1	37°45.6	39°36.6	
14	347°30.0	15.8'	09°55.7	13.3'	54.6'	116°35.2	108° 26.6	103°45.7	98°31.3	37°16.0	39°54.7	
15	2°04.9	15.9'	09°42.4	13.3'	54.7'	116°07.2	107°58.0	103°21.5	98°01.5	36°46.3	40°13.1	41°04.3
16	16°39.7	15.9'	09°29.1	13.4'	54.7'	115°39.2	107°29.4	102°57.3	97°31.7	36°16.7	40°31.6	41°32.0
17	31°14.6	15.9'	09°15.7	13.4'	54.7'	115°11.2	107°00.8	102°33.0	97°01.9	35°47.0	40°50.3	41°59.7
18	45°49.5	15.9'	S 09°02.3	13.5'	54.7'	114°43.1	106°32.1	102°08.7	96°32.0	35° 17.3	41°09.2	42°27.4
19	60°24.4	15.9'	08°48.9	13.5'	54.7'	114°15.0	106°03.4	101°44.3	96°02.2	34°47.7	41°28.4	42°55.2
20	74°59.4	16.0'	08°35.4	13.5'	54.7'	113°46.8	105°34.8	101°20.0	95°32.3	34°18.0	41°47.7	43°22.9
21	89°34.3	16.0'	08°21.8	13.6'	54.8'	113°18.7	105°06.0	100°55.6	95°02.4	33°48.4	42°07.2	43°50.7
22	104°09.3	16.0'	08°08.3	13.6'	54.8'	112°50.5	104°37.3	100°31.1	94°32.5	33° 18.7	42°26.9	44°18.5
23	118°44.3	16.0'	07°54.7	13.6'	54.8'	112°22.2	104°08.5	100°06.6	94°02.6	32°49.0	42°46.7	44°46.3
11 th	SD	= 14.8'	Mer. pass	s. 14:51				Sun	SD = 16.3'			

h Moon (12 th Jan)	Lunar Distance (d	objects with larg	gest hourly LD delt	:a)
----------	-----------------------	-------------------	-------------------	---------------------	-----

Tue	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Rigel	-Aldebaran	-Saturn	+Fomalhaut	+Altair	+Sun
0	133°19.3	16.0'	S 07°41.0	13.7'	54.8'	111°53.9	103°39.7	99°42.1	93°32.7	32°19.4		43°06.8	45°14.1
1 1	147°54.3	16.0'	07°27.3	13.7'	54.8'	111°25.7	103°10.9	99°17.6	93°02.7	31°49.7		43°27.0	45°42.0
2	162°29.3	16.0'	$07^{\circ}13.6$	13.8'	54.8'	110° 57.3	102°42.1	98°53.1	92°32.8	31°20.1		43°47.4	46°09.9
3	177°04.4	16.1'	06°59.8	13.8'	54.9'	110°29.0	102°13.2	98°28.5	92°02.8	30°50.4		44°08.0	46°37.7
4	191°39.4	16.1'	06°46.0	13.8'	54.9'	110°00.6	101°44.3	98°03.9	91°32.8	30°20.8		44°28.7	47°05.6
5	206°14.5	16.1'	06°32.2	13.9'	54.9'	109°32.2	101°15.4	97°39.2	91°02.7	29°51.1		44°49.5	47°33.6
6	220°49.5	16.1'	S 06°18.4	13.9'	54.9'	109°03.7	100°46.5	97°14.5	90°32.7	29°21.5		45°10.6	48°01.5
7	235°24.6	16.1'	06°04.5	13.9'	54.9'	108° 35.2	100°17.6	96°49.8	90°02.6	28°51.8		45°31.8	48° 29.5
8	249°59.7	16.1'	05°50.5	14.0'	55.0'	108°06.7	99°48.6	96°25.1	89°32.6	28°22.2		45°53.1	48°57.5
9	264°34.8	16.1'	05°36.6	14.0'	55.0'	107°38.2	99°19.6	96°00.4	89°02.5	27°52.6		46°14.6	49°25.5
10	279°09.9	16.1'	05°22.6	14.0'	55.0'	107°09.6	98°50.6	95°35.6	88°32.3	27°23.0		46°36.2	49°53.5
11	293°45.0	16.1'	$05^{\circ}08.6$	14.0'	55.0'	106°41.0	98°21.5	95° 10.8	88°02.2	26°53.4		46°58.0	50°21.5
12	308°20.1	16.1'	S 04°54.6	14.1'	55.0'	106° 12.4	97°52.5	94°46.0	87°32.0	26°23.8		47°19.9	50°49.6
13	322°55.2	16.1'	04°40.5	14.1'	55.1'	105°43.8	97°23.4	94°21.1	87°01.9	25°54.2		47°42.0	51°17.7
14	337°30.3	16.1'	04°26.4	14.1'	55.1'	105° 15.1	96°54.3	93°56.3	86°31.7	25°24.7		48°04.1	51°45.8
15	352°05.4	16.1'	04° 12.3	14.1'	55.1'	104°46.4	96°25.2	93°31.4	86°01.5	24°55.1		48°26.5	52°13.9
16	6°40.5	16.1'	$03^{\circ}58.1$	14.2'	55.1'	104° 17.6	95°56.0	93°06.4	85°31.2	24°25.6		48°48.9	52°42.1
17	$21^{\circ}15.6$	16.1'	03°43.9	14.2'	55.1'	103°48.9	95°26.8	92°41.5	85°01.0	23°56.1		49°11.5	53°10.2
18	35°50.7	16.1'	S 03°29.8	14.2'	55.2'	103°20.1	94°57.6	92°16.5	84°30.7	23°26.7	26°01.1	49°34.2	53°38.4
19	50°25.8	16.1'	03° 15.5	14.2'	55.2'	102°51.2	94°28.4	91°51.6	84°00.4	22°57.2	26°16.8	49°57.0	54°06.6
20	65°00.9	16.1'	$03^{\circ}01.3$	14.3'	55.2'	102°22.4	93°59.2	91°26.6	83°30.1	22°27.8	26°32.9	50°19.9	54°34.9
21	79°36.0	16.1'	02°47.0	14.3'	55.2'	101°53.5	93°29.9	91°01.5	82°59.8	21°58.4	26°49.4	50°43.0	55°03.1
22	$94^{\circ}11.1$	16.1'	$02^{\circ}32.7$	14.3'	55.2'	101°24.6	93°00.6	90°36.5	82°29.4	21°29.1	27°06.4	51°06.2	55°31.4
23	108°46.1	16.1'	02°18.4	14.3'	55.3'	100°55.7	92°31.3	90°11.4	81°59.1	20°59.8	27°23.7	51°29.4	55°59.7
12 th	SD	= 14.9'	Mer. pass	. 15:33					Sun SD =	16.3'			

h Moon (13th Jan)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Pollux	-Procyon	-Betelgeuse	-Capella	-Aldebaran	+Fomalhaut	+Altair	+Sun
0	123°21.2	16.0'	S 02°04.1	14.3'	55.3'			100°26.7	92°02.0	81°28.7	27°41.4	51°52.8	56°28.0
1	137°56.2	16.0'	01°49.8	14.4'	55.3'			99°57.7	91°32.6	80°58.3	27°59.5	52°16.4	56°56.4
2	152°31.2	16.0'	01°35.4	14.4'	55.3'			99°28.7	91°03.2	80°27.8	28°17.9	52°40.0	57°24.8
3	167°06.3	16.0'	$01^{\circ}21.0$	14.4'	55.4'			98° 59.7	90°33.8	79°57.4	28°36.7	53°03.7	57°53.2
4	181°41.3	16.0'	$01^{\circ}06.6$	14.4'	55.4'			98°30.6	90°04.4	79°26.9	28°55.8	53°27.5	58°21.6
5	196°16.2	16.0'	00°52.2	14.4'	55.4'			98°01.5	89°34.9	78°56.4	29°15.2	53°51.4	58°50.0
6	210°51.2	15.9'	S 00°37.8	14.4'	55.4'			97°32.4	89°05.5	78°25.9	29°34.9	54°15.5	59° 18.5
7	225°26.1	15.9'	00°23.4	14.5'	55.5'			97°03.2	88°36.0	77°55.3	29°55.0	54°39.6	59°47.0
8	240°01.1	15.9'	S 00°08.9	14.5'	55.5'	119°50.3		96°34.1	88°06.5	77°24.8	30°15.4	55°03.8	60°15.5
9	254°36.0	15.9'	N 00°05.5	14.5'	55.5'	119°19.2		96°04.9	87°36.9	76°54.2	30°36.0	55°28.2	60°44.1
10	269°10.8	15.9'	00°20.0	14.5'	55.5'	118°48.2		95°35.6	87°07.4	76°23.6	30°56.9	55°52.6	61°12.6
11	283°45.7	15.8'	00°34.5	14.5'	55.6'	118°17.1		95°06.4	86° 37.8	75°52.9	31°18.1	56°17.1	61°41.2
12	298°20.5	15.8'	N 00°49.0	14.5'	55.6'	117°46.1		94°37.1	86°08.2	75°22.3	31°39.6	56°41.7	62°09.9
13	312°55.3	15.8'	$01^{\circ}03.5$	14.5'	55.6'	117°14.9		94°07.8	85°38.5	74°51.6	32°01.3	57°06.4	62°38.5
14	327°30.1	15.7'	$01^{\circ}18.0$	14.5'	55.6'	116°43.8	119°35.2	93°38.4	85°08.9	74°20.9	32°23.3	57°31.2	63°07.2
15	342°04.9	15.7'	$01^{\circ}32.5$	14.5'	55.7'	116°12.6	119°05.9	93°09.1	84°39.2	73°50.2	32°45.5	57°56.0	63°35.9
16	356°39.6	15.7'	$01^{\circ}47.1$	14.5'	55.7'	115°41.4	118°36.7	92°39.7	84°09.5	73°19.4	33°07.9	58°21.0	64°04.6
17	11°14.3	15.7'	$02^{\circ}01.6$	14.5'	55.7'	115°10.2	118°07.4	92°10.2	83°39.8	72°48.6	33°30.6	58°46.0	64°33.4
18	25°48.9	15.6'	$N02^{\circ}16.1$	14.5'	55.7'	114°38.9	117°38.0	91°40.8	83°10.1	72°17.9	33°53.5	59°11.2	65°02.2
19	40°23.5	15.6'	02°30.7	14.5'	55.8'	114°07.7	117°08.6	91°11.3	82°40.3	71°47.0	34°16.6	59°36.4	65°31.0
20	54°58.1	15.6'	02°45.2	14.5'	55.8'	113°36.3	116°39.2	90°41.8	82° 10.5	71°16.2	34°40.0	60°01.7	65°59.8
21	69°32.7	15.5'	$02^{\circ}59.8$	14.5'	55.8'	113°05.0	116°09.7	90°12.3	81°40.7	70°45.3	35°03.5	60°27.0	66°28.7
22	84°07.2	15.5'	03°14.3	14.5'	55.8'	112°33.6	115°40.2	89°42.7	81° 10.9	70°14.4	35°27.2	60°52.5	66°57.6
23	98°41.7	15.4'	03°28.8	14.5'	55.9'	112°02.2	115°10.6	89°13.1	80°41.0	69°43.5	35°51.2	61°18.0	67°26.5
13 th	SD	=15.1'	Mer. pass	. 16:14					Sun SD	= 16.3'			

h Moon (14th Jan)

Lunar Distance (objects with largest hourly LD delta)

		IVIOUI	1 (14 Ja	'' <i>)</i>			Luliai	Distance (0	bjects w	itii laigest	Hourry LD u	citaj	
Thu	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran	+Fomalhaut	+Altair	+Sun
0	113°16.1	15.4'	N03°43.4	14.5'	55.9'	114°41.0	111°30.8	88°43.5	80°11.1	69°12.6	36°15.3	61°43.6	67°55.5
1 1	127°50.5	15.4'	03°57.9	14.5'	55.9'	114°11.3	110°59.3	88°13.9	79°41.2	68°41.6	36°39.6	62°09.3	68°24.5
2	142°24.8	15.3'	04°12.5	14.5'	55.9'	113°41.6	110°27.9	87°44.2	79°11.3	68°10.6	37°04.1	62°35.1	68°53.5
3	156°59.1	15.3'	04°27.0	14.5'	56.0'	113°11.9	109°56.3	87°14.6	78°41.4	67°39.6	37°28.7	63°00.9	69°22.5
4	171°33.4	15.2'	04°41.6	14.5'	56.0'	112°42.1	109°24.8	86°44.8	78°11.4	67°08.6	37°53.6	63°26.8	69°51.6
5	186°07.6	15.2'	$04^{\circ}56.1$	14.5'	56.0'	112°12.3	108°53.2	86°15.1	77°41.4	66°37.5	38°18.6	63°52.8	70°20.7
6	200°41.8	15.1'	N 05°10.6	14.5'	56.1'	111°42.4	108°21.6	85°45.3	77°11.4	66°06.4	38°43.7	64°18.8	70°49.8
7	215°15.9	15.1'	$05^{\circ}25.1$	14.5'	56.1'	111°12.5	107°50.0	85°15.5	76°41.4	65°35.3	39°09.0	64°45.0	71°19.0
8	229°50.0	15.0'	05°39.6	14.5'	56.1'	110°42.6	107° 18.3	84°45.7	76°11.3	65°04.2	39°34.5	65°11.2	71°48.2
9	244°24.0	15.0'	05°54.1	14.5'	56.1'	110°12.6	106°46.6	84°15.9	75°41.2	64°33.0	40°00.1	65°37.4	72°17.4
10	258°58.0	14.9'	06°08.6	14.5'	56.2'	109°42.5	106° 14.8	83°46.0	75°11.1	64°01.9	40°25.9	66°03.7	72°46.7
11	273°31.9	14.9'	$06^{\circ}23.1$	14.5'	56.2'	109°12.5	105°43.1	83°16.1	74°41.0	63°30.6	40°51.8	66°30.1	73°16.0
12	288°05.7	14.8'	N 06°37.6	14.5'	56.2'	108°42.4	105°11.3	82°46.2	74°10.9	62°59.4	41°17.9	66°56.6	73°45.3
13	302°39.5	14.7'	06°52.0	14.4'	56.3'	108°12.2	104°39.4	82°16.2	73°40.7	62°28.1	41°44.1	67°23.1	74°14.7
14	317°13.2	14.7'	$07^{\circ}06.5$	14.4'	56.3'	107°42.0	104°07.6	81°46.3	73°10.5	61°56.9	42°10.4	67°49.7	74°44.1
15	331°46.9	14.6'	07°20.9	14.4'	56.3'	107°11.8	103°35.7	81°16.3	72°40.3	61°25.5	42°36.9	68° 16.4	75°13.5
16	346°20.5	14.6'	07°35.3	14.4'	56.4'	106°41.5	103°03.7	80°46.2	72°10.1	60°54.2	43°03.5	68°43.1	75°43.0
17	0°54.1	14.5'	07°49.7	14.4'	56.4	106°11.2	102°31.8	80°16.2	71°39.8	60°22.8	43°30.2	69°09.9	76°12.4
18	15°27.6	14.4'	N 08°04.1	14.4'	56.4'	105°40.8	101°59.8	79°46.1	71°09.6	59°51.4	43°57.0	69°36.7	76°42.0
19	30°01.0	14.4'	$08^{\circ}18.5$	14.3'	56.4'	105°10.4	101°27.7	79°16.0	70°39.3	59°20.0	44°24.0	70°03.7	77°11.5
20	44°34.4	14.3'	08°32.8	14.3'	56.5'	104°39.9	100°55.7	78°45.9	70°09.0	58°48.6	44°51.1	70°30.6	77°41.1
21	59°07.7	14.2'	08°47.1	14.3'	56.5'	104°09.4	100°23.5	78°15.7	69°38.6	58°17.1	45°18.3	70°57.7	78° 10.8
22	73°40.9	14.2'	09°01.4	14.3'	56.5'	103°38.9	99°51.4	77°45.6	69°08.3	57°45.6	45°45.6	71°24.7	78°40.4
23	88°14.0	14.1'	09°15.7	14.2'	56.6'	103°08.4	99° 19.2	77°15.4	68°37.9	57°14.1	46°13.0	71°51.9	79°10.1
14 th	SD	= 15.2'	Mer. pass	. 16:56					Sun SD	= 16.3'	-		

h Moon (15th Jan)

Fri	GHA	ν	Dec	d	HP	-Jupiter	-Procyon	-Pollux	-Aldebaran	+Saturn	+Fomalhaut	+Altair	+Sun
0	102°47.1	14.0'	N09°29.9	14.2'	56.6'		102°37.7	98°47.0	56°42.6		46°40.5	72° 19.1	79°39.9
1	117°20.1	13.9'	09°44.2	14.2'	56.6'		102°07.1	98° 14.8	56°11.0		47°08.2	72°46.4	80°09.6
2	131°53.1	13.9'	09°58.4	14.2'	56.7'		101°36.4	97°42.5	55°39.4		47°35.9	73° 13.7	80°39.4
3	146°25.9	13.8'	$10^{\circ}12.5$	14.1'	56.7'		101°05.7	97° 10.2	55°07.8	9°33.5	48°03.8	73°41.1	81°09.3
4	160°58.7	13.7'	10°26.7	14.1'	56.7'		100°34.9	96°37.8	54°36.1	9°58.1	48°31.7	74°08.5	81°39.2
5	175°31.4	13.6'	10°40.8	14.1'	56.8'		100°04.1	96°05.4	54°04.5	10°23.4	48°59.8	74°36.0	82°09.1
6	190°04.0	13.5'	N 10°54.9	14.0'	56.8'		99°33.2	95°33.0	53°32.8	10°49.3	49°27.9	75°03.6	82°39.0
7	204°36.6	13.5'	11°08.9	14.0'	56.8'		99°02.3	95°00.5	53°01.1	11°15.9	49°56.2	75°31.2	83°09.0
8	219°09.0	13.4'	11°22.9	14.0'	56.9'		98°31.4	94°28.0	52°29.3	11°42.9	50°24.5	75°58.8	83°39.1
9	233°41.4	13.3'	11°36.9	13.9'	56.9'		98°00.4	93°55.5	51°57.5	12°10.5	50°53.0	76°26.5	84°09.1
10	248°13.7	13.2'	11°50.8	13.9'	56.9'		97°29.4	93°22.9	51°25.8	12°38.4	51°21.5	76°54.3	84°39.2
11	262°45.9	13.1'	12°04.8	13.9'	57.0'		96°58.4	92°50.3	50°53.9	13°06.7	51°50.1	77°22.1	85°09.4
12	277°18.0	13.0'	N12°18.6	13.8'	57.0'		96°27.3	92°17.6	50°22.1	13°35.4	52°18.9	77°50.0	85°39.6
13	291°50.0	12.9'	12°32.5	13.8'	57.0'		95°56.1	91°44.9	49°50.2	14°04.3	52°47.7	78° 17.9	86°09.8
14	306°22.0	12.8'	12°46.2	13.7'	57.1'		95°25.0	91°12.2	49°18.4	14°33.6	53°16.6	78° 45.9	86°40.0
15	320°53.8	12.7'	13°00.0	13.7'	57.1'		94°53.8	90°39.4	48°46.4	15°03.1	53°45.6	79° 13.9	87°10.3
16	335°25.6	12.7'	13°13.7	13.7'	57.1'		94°22.5	90°06.6	48°14.5	15°32.9	54°14.6	79°42.0	87°40.7
17	349°57.2	12.6'	13°27.3	13.6'	57.2'		93°51.2	89°33.8	47°42.6	16°02.9	54°43.8	80°10.1	88°11.1
18	4°28.8	12.5'	N 13°41.0	13.6'	57.2'		93° 19.9	89°00.9	47°10.6	16°33.1	55°13.0	80°38.3	88°41.5
19	19°00.2	12.4'	13°54.5	13.5'	57.2'		92°48.5	88° 27.9	46°38.6	17°03.5	55°42.3	81°06.5	89°11.9
20	33°31.6	12.3'	14°08.0	13.5'	57.3'	119°52.3	92° 17.1	87°55.0	46°06.6	17°34.1	56°11.7	81°34.7	89°42.4
21	48°02.9	12.2'	$14^{\circ}21.5$	13.4'	57.3'	119°18.9	91°45.6	87°22.0	45°34.5	18°04.8	56°41.2	82°03.1	90°13.0
22	62°34.0	12.1'	14°34.9	13.4'	57.3'	118° 45.5	91°14.1	86°48.9	45°02.5	18°35.7	57°10.8	82°31.4	90°43.6
23	77°05.1	12.0'	14°48.3	13.3'	57.4'	118°12.1	90°42.6	86° 15.8	44°30.4	19°06.8	57°40.4	82°59.8	91°14.2
15 th	SD	= 15.4'	Mer. pass	. 17:41					Sun SD	= 16.3'			

Moon (16th Jan) Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Regulus	-Jupiter	-Procyon	-Pollux	+Saturn	+Fomalhaut	+Altair	+Sun
0	91°36.0	11.9'	N 15°01.6	13.2'	57.4'		117°38.7	90°11.0	85°42.7	19°38.0	58°10.1	83°28.3	91°44.8
1	106°06.9	11.7'	15°14.8	13.2'	57.5'		117°05.2	89°39.4	85°09.5	20°09.3	58°39.9	83°56.8	92°15.5
2	120°37.6	11.6'	15°28.0	13.1'	57.5'		116°31.6	89°07.8	84°36.3	20°40.8	59°09.8	84°25.3	92°46.3
3	135°08.3	11.5'	15°41.2	13.1'	57.5'		115°58.0	88°36.1	84°03.0	21°12.4	59°39.7	84°53.9	93°17.1
4	149°38.8	11.4'	15°54.2	13.0'	57.6'		115°24.4	88°04.4	83°29.7	21°44.1	60°09.8	85°22.5	93°47.9
5	164°09.2	11.3'	16°07.2	12.9'	57.6'	119°53.6	114°50.7	87°32.6	82°56.4	22°15.9	60°39.9	85°51.2	94°18.8
6	178°39.5	11.2'	$N16^{\circ}20.2$	12.9'	57.6'	119°20.1	114°17.0	87°00.8	82°23.0	22°47.8	61°10.0	$86^{\circ}19.9$	94°49.7
7	193°09.7	11.1'	16°33.1	12.8'	57.7'	118°46.6	113°43.2	86°28.9	81°49.6	23°19.8	61°40.3	86°48.7	95°20.7
8	207°39.8	11.0'	16°45.9	12.7'	57.7'	118° 13.1	113°09.4	85°57.0	81°16.1	23°52.0	62°10.6	$87^{\circ}17.5$	95°51.7
9	222°09.8	10.9'	$16^{\circ}58.6$	12.7'	57.7'	117°39.5	112°35.6	85°25.1	80°42.6	24°24.2	62°40.9	87°46.3	96°22.7
10	236°39.7	10.7'	$17^{\circ}11.3$	12.6'	57.8'	117°05.8	112°01.7	84°53.2	80°09.1	24°56.5	63°11.4		96°53.8
11	251°09.4	10.6'	17°23.9	12.5'	57.8'	116°32.1	111°27.7	84°21.2	79°35.5	25°28.9	63°41.9		97°24.9
12	265°39.0	10.5'	N17°36.4	12.5'	57.9'	115°58.4	110°53.8	83°49.1	79°01.8	26°01.4	64°12.5		97°56.1
13	280°08.5	10.4'	17°48.9	12.4'	57.9'	115°24.6	110°19.7	83°17.0	78°28.2	26°33.9	64°43.1		98°27.3
14	294°37.9	10.3'	18°01.3	12.3'	57.9'	114°50.8	109°45.7	82°44.9	77°54.4	27°06.6	65°13.9		98°58.6
15	309°07.2	10.1'	$18^{\circ}13.6$	12.2'	58.0'	114°17.0	109°11.6	82°12.8	77°20.7	27°39.3	65°44.7		99°29.9
16	323°36.3	10.0'	18°25.8	12.1'	58.0'	113°43.1	108°37.4	81°40.6	76°46.8	28°12.1	66°15.5		100°01.2
17	338°05.3	9.9'	18°38.0	12.1'	58.0'	113°09.1	108°03.2	81°08.4	76°13.0	28°45.0	66°46.4		100°32.6
18	352°34.2	9.8'	N 18°50.0	12.0'	58.1'	112°35.1	107°29.0	80°36.1	75°39.1	29°18.0	67°17.4		101°04.1
19	7°03.0	9.6'	19°02.0	11.9'	58.1'	112°01.1	106°54.7	80°03.8	75°05.1	29°51.0	67°48.5		101°35.5
20	21°31.6	9.5'	19°13.9	11.8'	58.2'	111°27.0	106°20.3	79°31.5	74°31.2	30°24.1	68°19.6		102°07.1
21	36°00.2	9.4'	19°25.7	11.7'	58.2'	110°52.9	105°45.9	78°59.1	73°57.1	30°57.3	68°50.8		102°38.6
22	50°28.6	9.3'	19°37.4	11.6'	58.2'	110° 18.7	105°11.5	78°26.7	73°23.1	31°30.5	69°22.0		103°10.3
23	64°56.8	9.1'	19°49.0	11.5'	58.3'	109°44.5	104°37.1	77°54.2	72°48.9	32°03.8	69°53.3		103°41.9
16 th	SD	= 15.7'	Mer. pass	. 18:31					Sun SI	0 = 16.3'			

Moon (17th Jan)

h

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Mars	-Regulus	-Jupiter	-Pollux	+Saturn	+Fomalhaut	+Deneb	+Sun
0	79°25.0	9.0'	N20°00.5	11.4'	58.3'	118°38.9	109°10.3	104°02.5	72°14.8	32°37.2	70°24.7	73°18.2	104°13.6
1	93°53.0	8.9'	20°12.0	11.3'	58.3'	118°04.6	108°36.0	103°28.0	71°40.6	33° 10.7	70°56.1	73°34.1	104°45.4
2	108°20.9	8.7'	20°23.3	11.2'	58.4'	117°30.2	108°01.6	102°53.4	71°06.3	33°44.2	71°27.6	73°50.0	105°17.2
3	122°48.6	8.6'	20°34.5	11.1'	58.4'	116°55.8	107°27.2	102°18.7	70°32.0	34° 17.8	71°59.1	74°06.1	105°49.0
4	137°16.2	8.5'	20°45.6	11.0'	58.4'	116°21.3	106°52.8	101°44.0	69°57.7	34°51.4	72°30.7	74°22.3	106°20.9
5	151°43.7	8.4'	20°56.7	10.9'	58.5'	115°46.8	106°18.3	101°09.3	69°23.3	35°25.1	73°02.4	74°38.6	106°52.9
6	166°11.1	8.2'	N 21°07.6	10.8'	58.5'	115°12.2	105°43.8	100°34.5	68°48.8	35°58.9	73°34.1	74°54.9	107°24.8
7	180°38.3	8.1'	21°18.4	10.7'	58.6'	114°37.6	105°09.2	99°59.6	68° 14.4	36°32.7	74°05.9	75°11.4	107°56.9
8	195°05.4	8.0'	21°29.1	10.6'	58.6'	114°02.9	104°34.6	99°24.8	67°39.8	37°06.6	74°37.7	75°27.9	108°29.0
9	209°32.3	7.8'	21°39.7	10.5'	58.6'	113°28.2	103°59.9	98°49.8	67°05.3	37°40.5	75°09.6	75°44.6	109°01.1
10	223°59.2	7.7'	21°50.2	10.4'	58.7'	112°53.4	103°25.2	98°14.8	66°30.7	38° 14.5	75°41.6	76°01.3	109°33.2
11	238°25.8	7.6'	22°00.6	10.3'	58.7'	112°18.6	102°50.4	97°39.8	65°56.0	38°48.6	76°13.6	76°18.1	110°05.4
12	252°52.4	7.4'	$N22^{\circ}10.8$	10.1'	58.7'	111°43.8	102°15.6	97°04.8	65°21.3	39°22.7	76°45.7	76°35.0	110°37.7
13	267°18.8	7.3'	22°21.0	10.0'	58.8'	111°08.9	101°40.8	96°29.6	64°46.6	39° 56.9	77° 17.8	76°52.0	111°10.0
14	281°45.1	7.1'	22°31.0	9.9'	58.8'	110°33.9	101°05.9	95°54.5	64°11.8	40°31.2	77° 49.9	77°09.1	111°42.4
15	296°11.2	7.0'	22°40.9	9.8'	58.9'	109°58.9	100°30.9	95°19.3	63°36.9	41°05.4	78°22.2	77°26.3	112°14.8
16	310°37.3	6.9'	22°50.7	9.6'	58.9'	109°23.8	99°55.9	94°44.0	63°02.1	41°39.8	78° 54.5	77°43.5	112°47.2
17	325°03.1	6.7'	23°00.3	9.5'	58.9'	108°48.7	99°20.9	94°08.7	62°27.1	42°14.2	79°26.8	78°00.9	113°19.7
18	339°28.9	6.6'	N 23°09.8	9.4'	59.0'	108°13.6	98°45.8	93°33.4	61°52.2	42°48.7	79°59.2	78°18.3	113°52.2
19	353°54.5	6.5'	23°19.2	9.3'	59.0'	107°38.4	98°10.7	92°58.0	61°17.1	43°23.2	80°31.6	78°35.8	114°24.8
20	8°20.0	6.3'	23°28.5	9.1'	59.0'	107°03.1	97°35.5	92°22.5	60°42.1	43°57.8	81°04.1	78°53.3	114°57.4
21	22°45.3	6.2'	23°37.6	9.0'	59.1'	106°27.8	97°00.3	91°47.0	60°07.0	44°32.4	81°36.6	79°11.0	115°30.1
22	37°10.5	6.1'	23°46.6	8.8'	59.1'	105°52.5	96°25.0	91°11.5	59°31.8	45°07.1	82°09.2	79°28.7	116°02.8
23	51°35.6	5.9'	23°55.4	8.7'	59.2'	105°17.1	95°49.7	90°35.9	58°56.6	45°41.8	82°41.9	79°46.5	116°35.6
17 th	SD	= 15.9'	Mer. pass	s. 19:25					Sun S	D = 16.3'			

Moon (18th Jan) h

Mon	GHA	ν	Dec	d	HP	-Mars	-Regulus	-Jupiter	-Pollux	+Saturn	+Deneb	+Fomalhaut	+Sun
0	66°00.5	5.8'	N 24°04.1	8.6'	59.2'	104°41.6	95°14.3	90°00.3	58°21.4	46°16.6	80°04.4	83°14.6	117°08.4
1	80°25.3	5.7'	$24^{\circ}12.7$	8.4'	59.2'	104°06.2	94°38.9	89°24.6	57°46.1	46°51.5	80°22.3	83°47.3	117°41.3
2	94°50.0	5.5'	24°21.1	8.3'	59.3'	103°30.6	94°03.4	88°48.9	57° 10.8	47° 26.4	80°40.3	84°20.1	118° 14.2
3	109°14.5	5.4'	24°29.4	8.1'	59.3'	102°55.0	93°27.9	88°13.2	56°35.4	48°01.3	80°58.4	84°52.9	118°47.1
4	123°38.9	5.3'	24°37.5	8.0'	59.3'	102°19.4	92°52.4	87°37.4	56°00.0	48°36.3	81°16.5	85°25.8	119°20.1
5	138°03.2	5.1'	24°45.5	7.8'	59.4'	101°43.7	92°16.8	87°01.5	55°24.6	49°11.4	81°34.7	85°58.7	119°53.1
6	152°27.4	5.0'	N24°53.3	7.7'	59.4'	101°08.0	91°41.2	86°25.6	54°49.1	49°46.5	81°53.0	86°31.7	
7	166°51.4	4.9'	25°01.0	7.5'	59.4'	100°32.2	91°05.5	85°49.6	54° 13.5	50°21.7	82°11.3	87°04.7	
8	181°15.3	4.8'	25°08.5	7.4'	59.5'	99°56.4	90°29.8	85°13.7	53°37.9	50° 56.9	82°29.7	87°37.8	
9	195°39.0	4.6'	25°15.8	7.2'	59.5'	99°20.5	89°54.0	84°37.6	53°02.3	51°32.1	82°48.2	88°10.9	
10	210°02.7	4.5'	25°23.0	7.0'	59.6'	98°44.6	89°18.2	84°01.5	52°26.6	52°07.4	83°06.7	88°44.1	
11	224°26.2	4.4'	25°30.1	6.9'	59.6'	98°08.7	88°42.3	83°25.4	51°50.9	52°42.8	83°25.3	89°17.3	
12	238°49.6	4.3'	N25°37.0	6.7'	59.6'	97°32.6	88°06.4	82°49.2	51°15.2	53° 18.2	83°43.9	89°50.5	
13	253°12.8	4.1'	25°43.7	6.5'	59.7'	96°56.6	87°30.5	82°13.0	50°39.4	53°53.7	84°02.5	90°23.8	
14	267°36.0	4.0'	25°50.2	6.4'	59.7'	96°20.5	86°54.5	81°36.8	50°03.5	54° 29.2	84°21.3	90°57.1	
15	281°59.0	3.9'	25°56.6	6.2'	59.7'	95°44.3	86°18.4	81°00.5	49°27.7	55°04.7	84°40.1	91°30.4	
16	296°21.9	3.8'	26°02.8	6.0'	59.8'	95°08.2	85°42.3	80°24.1	48°51.7	55°40.3	84°58.9	92°03.8	
17	310°44.7	3.7'	26°08.8	5.9'	59.8'	94°31.9	85°06.2	79°47.7	48° 15.8	56° 16.0	85°17.7	92°37.3	
18	325°07.4	3.6'	$N26^{\circ}14.7$	5.7'	59.8'	93°55.6	84°30.0	79°11.3	47°39.8	56°51.7	85°36.7	93°10.7	
19	339°29.9	3.4'	26°20.3	5.5'	59.9'	93°19.3	83°53.8	78°34.8	47°03.7	57° 27.4	85°55.6	93°44.3	
20	353°52.4	3.3'	26°25.8	5.3'	59.9'	92°42.9	83°17.6	77°58.3	46°27.7	58°03.2	86°14.6	94°17.8	
21	8°14.7	3.2'	$26^{\circ}31.1$	5.1'	59.9'	92°06.5	82°41.3	77°21.7	45°51.6	58°39.1	86°33.7	94°51.4	
22	22°36.9	3.1'	26°36.3	5.0'	60.0'	91°30.1	82°04.9	76°45.1	45° 15.4	59° 14.9	86°52.8	95°25.0	
23	36°59.1	3.0'	26°41.2	4.8'	60.0'	90°53.6	81°28.5	76°08.4	44°39.2	59°50.9	87°11.9	95°58.7	
18 th	SD =	= 16.1'	Mer. pass	. 20:26	5				Sun S	5D = 16.3'			

h Moon (19th Jan)

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Mars	-Regulus	-Jupiter	-Pollux	+Aldebaran	+Saturn	+Deneb	+Fomalhaut
0	51°21.1	2.9'	N 26°46.0	4.6'	60.0'	90°17.0	80°52.1	75°31.7	44°03.0		60°26.9	87°31.0	96°32.3
1	65°43.0	2.8'	26°50.6	4.4'	60.1'	89°40.4	80° 15.6	74°55.0	43°26.7		61°02.9	87°50.2	97°06.1
2	80°04.8	2.7'	26°55.0	4.2'	60.1'	89°03.8	79°39.1	74°18.2	42°50.4		61°38.9	88°09.5	97°39.8
3	94°26.5	2.6'	26°59.2	4.0'	60.1'	88°27.1	79°02.6	73°41.4	42°14.1		62°15.1	88°28.7	98°13.6
4	108°48.1	2.5'	27°03.2	3.8'	60.2'	87°50.4	78°26.0	73°04.5	41°37.7		62°51.2	88°48.0	98°47.4
5	123°09.7	2.4'	27°07.0	3.6'	60.2'	87°13.7	77°49.3	72°27.6	41°01.3		63°27.4	89°07.3	99°21.2
6	137°31.1	2.4'	N 27°10.6	3.4'	60.2'	86°36.9	77° 12.7	71°50.7	40°24.8		64°03.6	89°26.7	99°55.1
7	151°52.5	2.3'	$27^{\circ}14.1$	3.2'	60.2'	86°00.0	76°36.0	71°13.7	39°48.4		64°39.9	89°46.0	100°29.0
8	166°13.7	2.2'	27°17.3	3.0'	60.3'	85°23.1	75°59.2	70°36.7	39°11.8		65°16.3	90°05.4	101°02.9
9	180°34.9	2.1'	27°20.3	2.8'	60.3'	84°46.2	75°22.4	69°59.6	38°35.3		65°52.6	90°24.8	101°36.8
10	194°56.0	2.0'	27°23.2	2.6'	60.3'	84°09.3	74°45.6	69°22.5	37°58.7		66°29.0	90°44.2	102°10.8
11	209°17.0	2.0'	27°25.8	2.4'	60.4'	83°32.3	74°08.7	68°45.4	37°22.1		67°05.5	91°03.7	102°44.8
12	223°38.0	1.9'	N27°28.2	2.2'	60.4'	82°55.2	73°31.8	68°08.2	36°45.5		67°42.0	91°23.1	103°18.8
13	237°58.9	1.8'	27°30.5	2.0'	60.4'	82°18.2	72°54.9	67°31.0	36°08.8		68° 18.5	91°42.6	103°52.8
14	252°19.7	1.7'	27°32.5	1.8'	60.4'	81°41.1	72° 17.9	66°53.7	35°32.1		68°55.0	92°02.1	104°26.9
15	266°40.4	1.7'	27°34.3	1.6'	60.5'	81°03.9	71°40.9	66°16.4	34°55.4		69°31.7	92°21.6	105°00.9
16	281°01.1	1.6'	27°35.9	1.4'	60.5'	80°26.7	71°03.8	65°39.1	34°18.7		70°08.3	92°41.1	105°35.0
17	295°21.7	1.6'	27°37.3	1.2'	60.5'	79°49.5	70°26.7	65°01.7	33°41.9		70°45.0	93°00.6	106°09.1
18	309°42.3	1.5'	N27°38.5	1.0'	60.6'	79°12.2	69°49.6	64°24.3	33°05.1	14°19.4	71°21.7	93°20.1	106°43.2
19	324°02.8	1.5'	27°39.5	0.8'	60.6'	78°34.9	69°12.4	63°46.9	32°28.3	14°45.2	71°58.4	93°39.6	107°17.4
20	338°23.3	1.4'	27°40.3	0.6'	60.6'	77°57.6	68° 35.2	63°09.4	31°51.4	15°11.8	72°35.2	93°59.1	107°51.5
21	352°43.7	1.4'	27°40.9	0.4'	60.6'	77°20.2	67°58.0	62°31.9	31°14.6	15°39.1	73°12.1	94°18.6	108°25.6
22	7°04.1	1.3'	$27^{\circ}41.2$	0.1'	60.7'	76°42.9	67°20.7	61°54.4	30°37.7	16°07.1	73°48.9	94°38.1	108°59.8
23	21°24.4	1.3'	27°41.3	-0.1'	60.7'	76°05.4	66°43.4	61°16.8	30°00.8	16°35.7	74°25.8	94°57.6	109°34.0
19 th	SD	= 16.4	Mer. pass	s. 21:30									

h Moon (20th Jan) Lunar Distance (objects with largest hourly LD delta)

									(objects men languar meanly 22 denta				
Wed	GHA	ν	Dec	d	HP	-Spica	-Mars	-Regulus	-Jupiter	+Aldebaran	+Capella	+Saturn	+Fomalhaut
0	35°44.7	1.3'	N 27°41.3	-0.3'	60.7'		75°28.0	66°06.1	60°39.2	17°04.9		75°02.7	110°08.1
1	50°04.9	1.2'	27°41.0	-0.5'	60.7'	119°30.9	74°50.5	65°28.7	60°01.6	17°34.6		75°39.7	110°42.3
2	64°25.2	1.2'	27°40.5	-0.7'	60.8'	118°53.6	74°12.9	64°51.3	59°23.9	18°04.8		76°16.7	111°16.5
3	78°45.4	1.2'	27°39.8	-0.9'	60.8'	118°16.2	73°35.4	64°13.9	58°46.2	18°35.4		76°53.7	111°50.7
4	93°05.5	1.2'	27°38.9	-1.1'	60.8'	117°38.8	72°57.8	63°36.5	58°08.5	19°06.5		77°30.8	112°24.9
5	107°25.7	1.1'	27°37.7	-1.4'	60.8'	117°01.3	72°20.2	62°59.0	57°30.7	19°37.9		78°07.9	112°59.1
6	121°45.8	1.1'	N 27°36.4	-1.6'	60.8'	116°23.9	71°42.5	62°21.5	56°53.0	20°09.7		78°45.0	113°33.2
7	136°06.0	1.1'	27°34.8	-1.8'	60.9'	115°46.3	71°04.8	61°43.9	56°15.1	20°41.9		79°22.1	114°07.4
8	150°26.1	1.1'	27°33.0	-2.0'	60.9'	115°08.8	70°27.1	61°06.3	55°37.3	21°14.3		79°59.3	114°41.6
9	164°46.2	1.1'	27°31.0	-2.2'	60.9'	114°31.2	69°49.4	60°28.7	54°59.4	21°47.0		80°36.5	115°15.8
10	179°06.3	1.1'	27°28.8	-2.4'	60.9'	113°53.7	69°11.7	59°51.1	54°21.5	22°20.0	20°24.8	81°13.7	115°49.9
11	193°26.4	1.1'	27°26.3	-2.6'	60.9'	113°16.0	68°33.9	59°13.5	53°43.6	22°53.3	20°41.4	81°51.0	116°24.1
12	207°46.5	1.1'	N 27°23.7	-2.9'	61.0'	112°38.4	67°56.1	58°35.8	53°05.6	23°26.7	20°58.8	82°28.3	116°58.2
13	222°06.6	1.1'	27°20.8	-3.1'	61.0'	112°00.7	67°18.2	57°58.1	52°27.7	24°00.4	21°17.2	83°05.6	117°32.3
14	236°26.7	1.1'	$27^{\circ}17.8$	-3.3'	61.0'	111°23.0	66°40.4	57°20.3	51°49.7	24°34.3	21°36.3	83°42.9	118°06.4
15	250°46.9	1.2'	$27^{\circ}14.5$	-3.5'	61.0'	110°45.3	66°02.5	56°42.6	51°11.6	25°08.4	21°56.2	84°20.3	118°40.5
16	265°07.0	1.2'	$27^{\circ}11.0$	-3.7'	61.0'	110°07.6	65°24.6	56°04.8	50°33.6	25°42.7	22°16.9	84°57.7	119°14.5
17	279°27.2	1.2'	27°07.2	-3.9'	61.1'	109°29.8	64°46.7	55°27.0	49°55.5	26°17.2	22°38.3	85°35.1	119°48.6
18	293°47.4	1.2'	N 27°03.3	-4.1'	61.1'	108°52.0	64°08.7	54°49.2	49°17.4	26°51.8	23°00.3	86°12.5	
19	308°07.6	1.3'	$26^{\circ}59.1$	-4.4'	61.1'	108°14.2	63°30.8	54°11.4	48°39.3	27°26.5	23°23.0	86°50.0	
20	322°27.9	1.3'	26°54.8	-4.6'	61.1'	107°36.4	62°52.8	53°33.5	48°01.2	28°01.4	23°46.4	87°27.5	
21	336°48.2	1.3'	26°50.2	-4.8'	61.1'	106°58.5	62°14.8	52°55.6	47°23.0	28°36.5	24°10.3	88°04.9	
22	351°08.5	1.4'	26°45.4	-5.0'	61.1'	106°20.6	61°36.7	52°17.7	46°44.8	29°11.6	24°34.8	88°42.5	
23	5°28.8	1.4'	26°40.4	-5.2'	61.1'	105°42.7	60°58.7	51°39.8	46°06.6	29°46.9	24°59.8	89°20.0	
20 th	SD :	= 16.6	Mer. pas	s. 22:37									

h		Моо	n (21 st Ja	n)			Lunar	Distance	object	s with larges	t hourly L	D delta)	
Thu	GHA	ν	Dec	d	HP	-Spica	-Mars	-Regulus	-Jupiter	+Betelgeuse	+Capella	+Aldebaran	+Saturn
0	19°49.2	1.5'	$N26^{\circ}35.2$	-5.4'	61.2'	105°04.8	60°20.7	51°01.9	45°28.4		25°25.4	30°22.3	89°57.5
1	34°09.7	1.5'	26°29.8	-5.6'	61.2'	104°26.9	59°42.6	50°23.9	44°50.2	22°09.8	25°51.4	30°57.8	90°35.1
2	48°30.2	1.6'	26°24.2	-5.8'	61.2'	103°49.0	59°04.5	49°45.9	44°12.0	22°25.8	26° 17.9	31°33.4	91°12.7
3	62°50.8	1.6'	26°18.4	-6.0'	61.2'	103°11.0	58°26.4	49°08.0	43°33.7	22°42.7	26°44.8	32°09.1	91°50.3
4	77°11.4	1.7'	26°12.4	-6.2'	61.2'	102°33.0	57°48.3	48°29.9	42°55.4	23°00.4	27°12.1	32°44.9	92°27.9
5	91°32.0	1.7'	26°06.1	-6.4'	61.2'	101°55.0	57°10.2	47°51.9	42°17.1	23°18.9	27°39.9	33°20.8	93°05.5
6	105°52.8	1.8'	N 25°59.7	-6.6'	61.2'	101°17.0	56°32.0	47° 13.9	41°38.8	23°38.1	28°08.0	33°56.8	93°43.2
7	120°13.5	1.9'	25°53.0	-6.8'	61.2'	100°39.0	55°53.9	46°35.9	41°00.5	23°58.1	28° 36.5	34° 32.8	94°20.8
8	134°34.4	1.9'	25°46.2	-7.0'	61.2'	100°01.0	55° 15.7	45° 57.8	40°22.2	24°18.7	29°05.3	35°08.9	94°58.5
9	148°55.3	2.0'	25°39.2	-7.2'	61.2'	99°22.9	54°37.6	45° 19.7	39°43.8	24°40.0	29°34.5	35°45.1	95°36.1
10	163°16.3	2.1'	25°31.9	-7.4'	61.3'	98°44.9	53°59.4	44°41.7	39°05.5	25°01.9	30°04.0	36°21.4	96°13.8
11	177°37.4	2.1'	25°24.5	-7.6'	61.3'	98°06.8	53°21.2	44°03.6	38°27.1	25°24.4	30°33.8	36° 57.7	96°51.5
12	191°58.5	2.2'	N 25°16.9	-7.8'	61.3'	97°28.8	52°43.1	43°25.5	37°48.8	25°47.5	31°03.8	37°34.1	97°29.2
13	206°19.7	2.3'	25°09.1	-8.0'	61.3'	96° 50.7	52°04.9	42°47.4	37°10.4	26°11.1	31°34.1	38° 10.5	98°06.9
14	220°41.0	2.4'	25°01.0	-8.2'	61.3'	96°12.6	51°26.7	42°09.3	36°32.0	26°35.3	32°04.7	38°47.0	98°44.6
15	235°02.4	2.5'	24°52.8	-8.4'	61.3'	95°34.5	50°48.5	41°31.2	35°53.6	26°59.9	32°35.5	39°23.5	99°22.4
16	249°23.9	2.6'	24°44.5	-8.6'	61.3'	94°56.4	50°10.3	40°53.1	35°15.2	27°25.1	33°06.6	40°00.1	100°00.1
17	263°45.5	2.6'	24°35.9	-8.8'	61.3'	94°18.3	49°32.1	40°14.9	34°36.8	27°50.7	33° 37.8	40°36.7	100°37.8
18	278°07.1	2.7'	N24°27.1	-8.9'	61.3'	93°40.2	48°53.9	39° 36.8	33°58.4	28°16.7	34°09.3	41°13.4	101°15.6
19	292°28.8	2.8'	24°18.2	-9.1'	61.3'	93°02.0	48° 15.7	38°58.7	33°20.0	28°43.2	34°41.0	41°50.1	101°53.3
20	306°50.7	2.9'	24°09.0	-9.3'	61.3'	92°23.9	47° 37.5	38° 20.5	32°41.6	29°10.1	35°12.9	42°26.9	102°31.0
21	321°12.6	3.0'	23°59.7	-9.5'	61.3'	91°45.8	46°59.4	37°42.4	32°03.2	29°37.3	35°44.9	43°03.6	103°08.8
22	335°34.6	3.1'	23°50.3	-9.7'	61.3'	91°07.7	46°21.2	37°04.3	31°24.8	30°04.9	36° 17.1	43°40.5	103°46.5
23	349°56.8	3.2'	23°40.6	-9.8'	61.3'	90°29.6	45°43.0	36°26.1	30°46.4	30°32.8	36°49.5	44°17.3	104°24.3
21 st	SD	= 16.7'	Mer. pas	s. 23:42	!								

h	Moon (22 nd Jan)

Lunar Distance ((objects with	largest hourly	LD delta)
------------------	---------------	----------------	-----------

Fri	GHA	ν	Dec	d	HP	-Spica	-Mars	-Regulus	-Jupiter	+Pollux	+Capella	+Aldebaran	+Saturn
0	4°19.0	3.3'	N23°30.8	-10.0'	61.3'	89°51.4	45°04.8	35°48.0	30°08.0		37°22.1	44°54.2	105°02.0
1	18°41.3	3.4'	23°20.8	-10.2'	61.3'	89°13.3	44°26.7	35°09.9	29°29.6		37°54.8	45°31.1	105°39.7
2	33°03.7	3.5'	23°10.6	-10.3'	61.3'	88°35.2	43°48.5	34°31.7	28°51.2		38°27.6	46°08.0	106°17.5
3	47°26.3	3.6'	23°00.2	-10.5'	61.3'	87°57.1	43°10.4	33°53.6	28°12.8		39°00.6	46°45.0	106°55.2
4	61°48.9	3.7'	22°49.7	-10.7'	61.3'	87°19.0	42°32.3	33°15.5	27°34.4		39°33.7	47°21.9	107°32.9
5	76°11.7	3.9'	22°39.1	-10.8'	61.3'	86°40.9	41°54.2	32°37.4	26°56.0		40°06.9	47°58.9	108°10.6
6	90°34.5	4.0'	N 22°28.2	-11.0'	61.3'	86°02.8	41°16.1	31°59.3	26°17.6		40°40.2	48°36.0	108°48.3
7	104°57.5	4.1'	22° 17.2	-11.1'	61.3'	85°24.7	40°38.0	31°21.2	25°39.3		41°13.7	49° 13.0	109°26.0
8	119°20.6	4.2'	22°06.1	-11.3'	61.3'	84°46.6	39°59.9	30°43.1	25°00.9		41°47.2	49°50.0	110°03.7
9	133°43.7	4.3'	21°54.8	-11.5'	61.3'	84°08.5	39°21.9	30°05.0	24°22.6		42°20.9	50°27.1	110°41.4
10	148°07.1	4.4'	21°43.3	-11.6'	61.3'	83°30.4	38°43.8	29°26.9	23°44.2	8°41.0	42°54.6	51°04.1	111°19.1
11	162°30.5	4.5'	21°31.7	-11.8'	61.2'	82°52.3	38°05.8	28°48.8	23°05.9	9°14.5	43°28.5	51°41.2	111°56.7
12	176°54.0	4.6'	N 21°20.0	-11.9'	61.2'	82°14.3	37°27.8	28°10.8	22°27.6	9°48.5	44°02.4	52° 18.3	112°34.4
13	191°17.6	4.8'	21°08.1	-12.0'	61.2'	81°36.2	36°49.9	27°32.7	21°49.3	10°22.9	44°36.4	52°55.4	113°12.0
14	205°41.4	4.9'	20°56.0	-12.2'	61.2'	80°58.2	36°12.0	26°54.7	21°11.0	10°57.8	45°10.5	53° 32.5	113°49.7
15	220°05.3	5.0'	20°43.8	-12.3'	61.2'	80°20.2	35°34.0	26°16.7	20°32.7	11°33.0	45°44.6	54°09.6	114°27.3
16	234°29.3	5.1'	20°31.5	-12.5'	61.2'	79°42.1	34°56.2	25°38.7	19°54.5	12°08.4	46°18.8	54°46.7	115°04.9
17	248°53.4	5.2'	20°19.0	-12.6'	61.2'	79°04.1	34°18.3	25°00.7	19°16.2	12°44.1	46°53.1	55°23.8	115°42.4
18	263°17.6	5.3'	N 20°06.4	-12.7'	61.2'	78°26.2	33°40.5	24°22.7	18°38.0	13°20.0	47°27.4	56°00.9	116°20.0
19	277°42.0	5.5'	19°53.7	-12.9'	61.2'	77°48.2	33°02.7	23°44.8	17°59.8	13°56.0	48°01.8	56°38.0	116°57.5
20	292°06.4	5.6'	19°40.8	-13.0'	61.2'	77°10.2	32°25.0	23°06.9	17°21.7	14°32.2	48°36.3	57° 15.1	117°35.1
21	306°31.0	5.7'	$19^{\circ}27.9$	-13.1'	61.1'	76°32.3	31°47.3	22°29.0	16°43.5	15°08.6	49°10.8	57°52.2	118°12.6
22	320°55.7	5.8'	19° 14.8	-13.2'	61.1'	75°54.4	31°09.6	21°51.1	16°05.4	15°45.0	49°45.3	58° 29.3	118°50.0
23	335°20.5	5.9'	19°01.5	-13.4'	61.1'	75°16.5	30°32.0	21°13.2	15°27.3	16°21.5	50°19.9	59°06.4	119°27.5
22 nd	SE	0 = 16	.7' Mer. pa	ass:-									

h Moon (23rd Jan) Lunar Distance (objects with largest hourly LD delta)

											8000		
Sat	GHA	ν	Dec	d	HP	-Antares	-Spica	-Regulus	-Jupiter	+Pollux	+Betelgeuse	+Capella	+Aldebaran
0	349°45.5	6.1'	N 18°48.2	-13.5'	61.1'		74°38.6	20°35.4	14°49.3	16°58.2	43°26.6	50°54.6	59°43.5
1	4°10.5	6.2'	18°34.7	-13.6'	61.1'	119°51.5	74°00.7	19°57.5	14°11.2	17° 34.9	43°59.5	51°29.3	60° 20.5
2	18°35.7	6.3'	$18^{\circ}21.1$	-13.7'	61.1'	119°13.6	73°22.9	19°19.7	13°33.2	18° 11.6	44°32.5	52°04.0	60° 57.6
3	33°01.0	6.4'	18°07.4	-13.8'	61.0'	118°35.8	72°45.1	18°42.0	12°55.3	18°48.4	45°05.5	52°38.7	61°34.6
4	47°26.4	6.5'	17°53.6	-13.9'	61.0'	117°57.9	72°07.3	18°04.2	12°17.4	19°25.3	45°38.6	53°13.5	62° 11.7
5	61°52.0	6.7'	17°39.7	-14.0'	61.0'	117°20.1	71°29.5	17°26.5	11°39.5	20°02.1	46°11.8	53°48.3	62°48.7
6	76°17.6	6.8'	N17°25.7	-14.1'	61.0'	116°42.3	70°51.7	16°48.9	11°01.7	20°39.1	46°45.1	54°23.1	63°25.7
7	90°43.4	6.9'	$17^{\circ}11.5$	-14.2'	61.0'	116°04.5	70°14.0	16°11.2	10°24.0	21°16.0	47°18.5	54°57.9	64°02.7
8	105°09.3	7.0'	16°57.3	-14.3'	61.0'	115°26.8	69°36.3	15°33.6	9°46.3	21°53.0	47°51.9	55°32.8	64°39.7
9	119°35.3	7.1'	16°43.0	-14.4'	60.9'	114°49.1	68°58.6	14°56.0	9°08.7	22°29.9	48°25.3	56°07.7	65° 16.7
10	134°01.4	7.2'	$16^{\circ}28.5$	-14.5'	60.9'	114°11.4	68°21.0	14°18.5	8°31.1	23°06.9	48°58.9	56°42.6	65° 53.6
11	148°27.6	7.4'	$16^{\circ}14.0$	-14.6'	60.9'	113°33.7	67°43.4	13°41.0	7°53.7	23°43.9	49°32.4	57°17.5	66°30.5
12	162°54.0	7.5'	N 15°59.4	-14.7'	60.9'	112°56.0	67°05.8	13°03.5	7°16.4	24°21.0	50°06.0	57°52.4	67° 07.5
13	177°20.4	7.6'	15°44.7	-14.8'	60.9'	112°18.4	66°28.2	12°26.1	6°39.2	24°58.0	50°39.7	58°27.4	67°44.3
14	191°47.0	7.7'	15°29.9	-14.9'	60.8'	111°40.8	65°50.7	11°48.8	6°02.2	25°35.0	51°13.4	59°02.3	68°21.2
15	206°13.7	7.8'	$15^{\circ}15.1$	-15.0'	60.8'	111°03.3	65°13.1	11°11.5	5°25.4	26°12.0	51°47.1	59°37.3	68° 58.0
16	220°40.5	7.9'	$15^{\circ}00.1$	-15.0'	60.8'	110°25.7	64°35.7	10°34.3	4°49.0	26°49.0	52°20.9	60°12.2	69°34.9
17	235°07.4	8.0'	$14^{\circ}45.1$	-15.1'	60.8'	109°48.2	63°58.2	9°57.1	4°12.9	27°26.0	52°54.7	60°47.2	70°11.7
18	249°34.5	8.1'	N 14°30.0	-15.2'	60.7'	109°10.8	63°20.8	9°20.0	3°37.5	28°03.0	53°28.6	61°22.1	70°48.4
19	264°01.6	8.3'	14°14.8	-15.3'	60.7'	108°33.3	62°43.4	8°43.0		28° 39.9	54°02.4	61°57.1	71°25.2
20	278°28.9	8.4'	13°59.5	-15.3'	60.7'	107°55.9	62°06.1	8°06.1		29° 16.9	54°36.3	62°32.1	72°01.9
21	292°56.2	8.5'	13°44.2	-15.4'	60.7'	107°18.6	61°28.7	7°29.3		29°53.8	55°10.2	63°07.0	72°38.6
22	307°23.7	8.6'	13°28.8	-15.5'	60.6'	106°41.2	60°51.5	6°52.6		30°30.8	55°44.1	63°42.0	73° 15.3
23	321°51.3	8.7'	13°13.3	-15.5'	60.6'	106°03.9	60°14.2	$6^{\circ}16.1$		31°07.7	56°18.1	64°16.9	73°51.9
23 rd	SD	= 16.7	" Mer. pas	s. 00:43			•						

h Moon (24 th Jai	n) Lunar Distance	(objects with largest ho	urly LD delta)
------------------------------	-------------------	--------------------------	----------------

Sun	GHA	ν	Dec	d	HP	-Antares	-Spica	-Mars	± Regulus	+Jupiter	+Pollux	+Capella	+Aldebaran
0	336°18.9	8.8'	N 12°57.8	-15.6'	60.6'	105°26.7	59°37.0	15°16.7	5°39.8		31°44.5	64°51.8	74°28.5
1	350°46.7	8.9'	12°42.2	-15.7'	60.6'	104°49.4	58°59.8	14°41.9	5°03.8		32°21.4	65°26.7	75°05.1
2	5°14.6	9.0'	12°26.5	-15.7'	60.5'	104°12.2	58°22.7	14°07.5	4°28.1		32°58.3	66°01.7	75°41.6
3	19°42.6	9.1'	$12^{\circ}10.8$	-15.8'	60.5'	103°35.1	57°45.6	13°33.3	3°52.9		33°35.1	66°36.5	76°18.1
4	34°10.7	9.2'	$11^{\circ}55.0$	-15.8'	60.5'	102°58.0	57°08.5	12°59.5	3°18.5		34°11.9	67°11.4	76°54.6
5	48°38.9	9.3'	11°39.2	-15.9'	60.4'	102°20.9	56°31.5	12°26.1			34°48.6	67°46.3	77°31.0
6	63°07.2	9.4'	N11°23.4	-15.9'	60.4'	101°43.8	55°54.5	11°53.1		4°21.7	35°25.4	68°21.1	78°07.4
7	77°35.6	9.5'	11°07.4	-16.0'	60.4'	101°06.8	55°17.5	11°20.6		4°57.4	36°02.1	68°56.0	78°43.8
8	92°04.1	9.6'	10°51.5	-16.0'	60.4'	100°29.8	54°40.6	10°48.6		5°33.4	36°38.7	69°30.8	79°20.2
9	106°32.7	9.7'	10°35.5	-16.1'	60.3'	99°52.9	54°03.7	10°17.3		6°09.6	37°15.4	70°05.6	79°56.5
10	121°01.4	9.8'	$10^{\circ}19.4$	-16.1'	60.3'	99°16.0	53°26.9	9°46.7		6°45.9	37°52.0	70°40.3	80°32.7
11	135°30.2	9.9'	10°03.3	-16.1'	60.3'	98°39.2	52°50.1	9°17.0		7°22.4	38°28.6	71°15.1	81°08.9
12	149°59.0	10.0'	N09°47.2	-16.2'	60.2'	98°02.4	52°13.4			7°58.9	39°05.1	71°49.8	81°45.1
13	164°28.0	10.1'	09°31.0	-16.2'	60.2'	97°25.6	51°36.7			8°35.4	39°41.7	72°24.5	82°21.3
14	178°57.1	10.1'	09°14.8	-16.2'	60.2'	96°48.9	51°00.0			9°12.0	40°18.1	72°59.2	82°57.4
15	193°26.2	10.2'	08°58.6	-16.3'	60.1'	96°12.2	50°23.4			9°48.6	40°54.6	73°33.8	83°33.5
16	207°55.5	10.3'	08°42.3	-16.3'	60.1'	95°35.5	49°46.8		4°33.3	10°25.2	41°31.0	74°08.5	84°09.5
17	222°24.8	10.4'	08°26.0	-16.3'	60.1'	94°58.9	49°10.3		5°08.5	11°01.8	42°07.4	74°43.0	84°45.5
18	236°54.2	10.5'	N 08°09.7	-16.4'	60.0'	94°22.4	48°33.8		5°43.9	11°38.4	42°43.7	75°17.6	85°21.4
19	251°23.7	10.6'	07°53.3	-16.4'	60.0'	93°45.9	47°57.4		6° 19.5	12° 15.0	43°20.0	75°52.1	85°57.3
20	265°53.3	10.7'	07°36.9	-16.4'	60.0'	93°09.4	47°21.0		6°55.2	12°51.5	43°56.2	76°26.6	86°33.2
21	280°22.9	10.7'	07°20.5	-16.4'	59.9'	92°33.0	46°44.6		7°30.9	13°28.0	44°32.5	77°01.1	87°09.0
22	294°52.7	10.8'	07°04.1	-16.4'	59.9'	91°56.6	46°08.3		8°06.8	14°04.5	45°08.6	77°35.5	87°44.8
23	309°22.5	10.9'	06°47.7	-16.4'	59.9'	91°20.3	45°32.1		8°42.6	14°41.0	45°44.8	78°09.9	88°20.5
24 th	SD	= 16.5'	Mer. pas	s. 01:38									

Moon (25th Jan) Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Venus	-Antares	-Rigil Kent.	-Spica	+Regulus	+Jupiter	+Pollux	+Aldebaran
0	323°52.4	11.0'	N 06°31.2	-16.5'	59.8'	99°54.8	90°44.0	81°54.2	44°55.8	9° 18.5	15° 17.4	46°20.9	88°56.2
1	338°22.4	11.1'	06°14.8	-16.5'	59.8'	99°21.7	90°07.7	81°25.6	44°19.7	9°54.4	15°53.8	46°56.9	89°31.9
2	352°52.4	11.1'	05°58.3	-16.5'	59.7'	98°48.6	89°31.6	80°57.1	43°43.6	10°30.3	16°30.2	47°32.9	90°07.5
3	7°22.5	11.2'	05°41.8	-16.5'	59.7'	98°15.6	88°55.4	80°28.6	43°07.5	11°06.1	17°06.5	48°08.9	90°43.0
4	21°52.7	11.3'	05°25.3	-16.5'	59.7'	97°42.6	88°19.3	80°00.1	42°31.5	11°42.0	17°42.8	48°44.8	91°18.5
5	36°23.0	11.3'	05°08.8	-16.5'	59.6'	97°09.6	87°43.2	79°31.8	41°55.5	12° 17.8	18° 19.0	49°20.7	91°54.0
6	50°53.3	11.4'	N04°52.3	-16.5'	59.6'	96°36.7	87°07.2	79°03.4	41°19.6	12°53.6	18°55.3	49°56.5	92°29.4
7	65°23.7	11.5'	04°35.8	-16.5'	59.6'	96°03.9	86°31.3	78°35.2	40°43.7	13° 29.4	19°31.4	50°32.3	93°04.8
8	79°54.2	11.5'	04°19.3	-16.5'	59.5'	95°31.0	85°55.4	78°07.0	40°07.9	14°05.1	20°07.5	51°08.1	93°40.1
9	94°24.8	11.6'	04°02.8	-16.5'	59.5'	94°58.3	85°19.5	77°38.9	39°32.1	14°40.8	20°43.6	51°43.8	94°15.3
10	108°55.4	11.7'	03°46.3	-16.5'	59.5'	94°25.5	84°43.7	77°10.9	38°56.4	15° 16.5	21°19.7	52°19.4	94°50.6
11	123°26.0	11.7'	03°29.8	-16.5'	59.4'	93°52.9	84°07.9	76°42.9	38°20.8	15°52.1	21°55.6	52°55.0	95°25.7
12	137°56.8	11.8'	N03°13.3	-16.5'	59.4'	93°20.3	83°32.2	76°15.0	37°45.1	16°27.7	22°31.6	53°30.6	96°00.9
13	152°27.6	11.9'	02°56.8	-16.5'	59.3'	92°47.7	82°56.5	75°47.2	37°09.6	17°03.2	23°07.5	54°06.1	96°35.9
14	166°58.4	11.9'	02°40.3	-16.5'	59.3'	92°15.1	82°20.9	75°19.4	36°34.1	17°38.7	23°43.3	54°41.6	97°11.0
15	181°29.3	12.0'	02°23.8	-16.5'	59.3'	91°42.7	81°45.3	74°51.8	35°58.6	18° 14.2	24°19.2	55°17.0	97°45.9
16	196°00.3	12.0'	02°07.3	-16.5'	59.2'	91°10.2	81°09.8	74°24.2	35°23.2	18°49.6	24°54.9	55°52.4	98°20.9
17	210°31.3	12.1'	$01^{\circ}50.9$	-16.4'	59.2'	90°37.8	80°34.3	73°56.7	34°47.8	19°25.0	25°30.6	56°27.7	98°55.7
18	225°02.4	12.1'	N 01°34.4	-16.4'	59.1'	90°05.5	79°58.9	73°29.2	34°12.5	20°00.4	26°06.3	57°03.0	99°30.5
19	239°33.5	12.2'	$01^{\circ}18.0$	-16.4'	59.1'	89°33.2	79°23.6	73°01.9	33°37.3	20°35.6	26°41.9	57°38.2	100°05.3
20	254°04.7	12.2'	$01^{\circ}01.6$	-16.4'	59.1'	89°01.0	78°48.2	72°34.6	33°02.1	21°10.9	27° 17.5	58°13.4	100°40.0
21	268°35.9	12.3'	00°45.2	-16.4'	59.0'	88°28.8	78°13.0	72°07.4	32°27.0	21°46.1	27°53.0	58°48.6	101°14.7
22	283°07.2	12.3'	00°28.8	-16.4'	59.0'	87°56.7	77°37.7	71°40.3	31°51.9	22°21.2	28°28.5	59°23.6	101°49.3
23	297°38.5	12.4'	00°12.5	-16.3'	58.9'	87°24.6	77°02.6	71°13.3	31°16.8	22°56.3	29°03.9	59°58.7	102°23.9
25 th	SD	= 16.3'	Mer. pass	s. 02:29									

Tue	GHA	ν	Dec	d	HP	-Altair	-Venus	-Antares	-Spica	+Regulus	+Jupiter	+Pollux	+Aldebaran
						,un							
0	312°09.9	12.4'	S 00°03.9	-16.3'	58.9'		86°52.6	76°27.5	30°41.9	23°31.4	29°39.3	60°33.7	102°58.4
1	326°41.3	12.5'	00°20.2	-16.3'	58.9'		86°20.6	75°52.4	30°06.9	24°06.4	30°14.6	61°08.6	103°32.8
2	341°12.8	12.5'	00°36.5	-16.3'	58.8'		85°48.6	75°17.4	29°32.1	24°41.4	30°49.9	61°43.5	104°07.2
3	355°44.3	12.5'	00°52.7	-16.2'	58.8'		85°16.7	74°42.4	28°57.3	25° 16.3	31°25.2	62°18.3	104°41.6
4	10°15.8	12.6'	01°08.9	-16.2'	58.7'		84°44.9	74°07.5	28°22.5	25°51.2	32°00.3	62°53.1	105°15.9
5	24°47.4	12.6'	$01^{\circ}25.1$	-16.2'	58.7'		84°13.1	73°32.6	27°47.8	26°26.0	32° 35.5	63°27.9	105°50.1
6	39°19.0	12.7'	S 01°41.3	-16.1'	58.7'		83°41.4	72°57.8	27°13.2	27°00.7	33° 10.5	64°02.6	106°24.3
7	53°50.7	12.7'	01°57.4	-16.1'	58.6'		83°09.7	72°23.0	26°38.6	27°35.5	33°45.6	64°37.2	106°58.5
8	68°22.4	12.7'	$02^{\circ}13.5$	-16.1'	58.6'		82°38.1	71°48.3	26°04.1	28° 10.1	34°20.6	65°11.8	107°32.6
9	82°54.1	12.8'	02°29.6	-16.0'	58.5'		82°06.5	71°13.7	25°29.6	28°44.7	34°55.5	65°46.4	108°06.6
10	97°25.8	12.8'	02°45.6	-16.0'	58.5'		81°35.0	70°39.1	24°55.2	29° 19.3	35°30.4	66°20.9	108°40.6
11	111°57.6	12.8'	$03^{\circ}01.6$	-16.0'	58.5'	119°34.1	81°03.5	70°04.5	24°20.9	29°53.8	36°05.2	66°55.3	109°14.5
12	126°29.4	12.8'	S 03°17.6	-15.9'	58.4'	119°06.1	80°32.1	69°30.0	23°46.6	30°28.3	36°40.0	67°29.7	109°48.3
13	141°01.3	12.9'	03°33.5	-15.9'	58.4'	118°38.2	80°00.7	68°55.5	23°12.4	31°02.7	37° 14.7	68°04.1	110°22.1
14	155°33.2	12.9'	03°49.4	-15.8'	58.3'	118°10.3	79°29.4	68°21.1	22°38.2	31°37.1	37°49.4	68°38.3	110°55.9
15	170°05.1	12.9'	$04^{\circ}05.2$	-15.8'	58.3'	117°42.3	78°58.1	67°46.8	22°04.1	32°11.4	38°24.0	69°12.6	111°29.6
16	184°37.0	13.0'	$04^{\circ}21.0$	-15.7'	58.3'	117°14.3	78°26.9	67°12.5	21°30.1	32° 45.7	38° 58.6	69°46.8	112°03.3
17	199°09.0	13.0'	04°36.8	-15.7'	58.2'	116°46.3	77°55.7	66°38.2	20°56.1	33° 19.9	39°33.2	70°20.9	112°36.8
18	213°40.9	13.0'	S 04°52.5	-15.7'	58.2'	116°18.2	77°24.6	66°04.0	20°22.2	33°54.1	40°07.6	70°55.0	113°10.4
19	228°12.9	13.0'	05°08.1	-15.6'	58.1'	115°50.2	76°53.5	65°29.9	19°48.4	34° 28.2	40°42.1	71°29.1	113°43.9
20	242°44.9	13.0'	05°23.7	-15.6'	58.1'	115°22.1	76°22.5	64°55.8	19°14.6	35°02.3	41°16.5	72°03.1	114°17.3
21	257°17.0	13.1'	05°39.3	-15.5'	58.0'	114°54.1	75°51.5	64°21.7	18°40.9	35° 36.3	41°50.8	72°37.0	114°50.7
22	271°49.0	13.1'	05°54.8	-15.5'	58.0'	114°26.0	75°20.6	63°47.7	18°07.3	36° 10.3	42°25.1	73°10.9	115°24.0
23	286°21.1	13.1'	$06^{\circ}10.3$	-15.4'	58.0'	113°57.9	74°49.7	63°13.8	17°33.7	36°44.2	42°59.3	73°44.8	115°57.2
26 th	SD	= 16.1'	Mer. pas	s. 03:18					•				

h Moon (27 th Jan) Lunar Distance (c	objects with largest hourly LD delta)
---	---------------------------------------

Wed	GHA	ν	Dec	d	HP	-Sun	-Venus	-Antares	-Spica	+Mars	+Regulus	+Jupiter	+Pollux
0	300°53.2	13.1'	S 06°25.7	-15.4'	57.9'	119°26.2	74°18.9	62°39.9	17°00.3	29°42.5	37° 18.1	43°33.5	74°18.6
1	315°25.3	13.1'	$06^{\circ}41.1$	-15.3'	57.9'	118°54.9	73°48.2	62°06.0	16°26.9	30°16.2	37°51.9	44°07.6	74°52.3
2	329°57.4	13.1'	06°56.4	-15.3'	57.8'	118°23.6	73°17.5	61°32.2	15°53.6	30°49.8	38° 25.7	44°41.7	75°26.0
3	344°29.5	13.1'	$07^{\circ}11.6$	-15.2'	57.8'	117°52.4	72°46.8	60°58.5	15°20.3	31°23.5	38° 59.4	45° 15.8	75°59.7
4	$359^{\circ}01.7$	13.1'	07°26.8	-15.1'	57.8'	117°21.3	72°16.2	60°24.8	14°47.2	31°57.1	39°33.1	45°49.7	76°33.3
5	13°33.8	13.2'	$07^{\circ}41.9$	-15.1'	57.7'	116°50.2	71°45.6	59°51.1	$14^{\circ}14.1$	32°30.7	40°06.7	46°23.7	77°06.8
6	28°06.0	13.2'	S 07°57.0	-15.0'	57.7'	116°19.1	71°15.1	59° 17.5	13°41.1	33°04.3	40°40.3	46°57.6	77°40.3
7	42°38.1	13.2'	$08^{\circ}12.1$	-15.0'	57.6'	115°48.1	70°44.6	58°44.0	13°08.3	33°37.8	41° 13.8	47°31.4	78°13.8
8	57°10.3	13.2'	08°27.0	-14.9'	57.6'	115°17.1	70°14.2	58° 10.5	12°35.5	34°11.3	41°47.3	48°05.2	78°47.2
9	71°42.5	13.2'	08°41.9	-14.8'	57.6'	114°46.2	69°43.9	57°37.0	12°02.9	34°44.8	42°20.7	48° 38.9	79°20.5
10	86°14.7	13.2'	08°56.8	-14.8'	57.5'	114°15.4	69°13.6	57°03.6	11°30.4	35°18.2	42°54.1	49°12.6	79°53.9
11	100°46.8	13.2'	$09^{\circ}11.5$	-14.7'	57.5'	113°44.6	68°43.3	56°30.3	10°58.0	35°51.6	43°27.5	49°46.3	80°27.1
12	$115^{\circ}19.0$	13.2'	S 09°26.2	-14.7'	57.4'	113°13.8	68°13.1	55°57.0	10°25.7	36°25.0	44°00.7	50° 19.9	81°00.3
13	129°51.2	13.2'	09°40.9	-14.6'	57.4'	112°43.1	67°42.9	55°23.7	9°53.7	36°58.3	44°34.0	50°53.4	81°33.5
14	144°23.4	13.2'	09°55.5	-14.5'	57.4'	112°12.4	67°12.8	54°50.5	9°21.8	37°31.6	45°07.2	51°26.9	82°06.6
15	158°55.6	13.2'	$10^{\circ}10.0$	-14.5'	57.3'	111°41.8	66°42.8	54°17.3	8°50.1	38°04.9	45°40.3	52°00.4	82°39.7
16	173°27.8	13.2'	10°24.5	-14.4'	57.3'	111°11.2	66°12.7	53°44.2	8°18.6	38°38.2	46°13.4	52°33.8	83°12.7
17	187°59.9	13.2'	10°38.8	-14.3'	57.2'	110°40.7	65°42.8	53°11.1	7°47.5	39°11.4	46°46.5	53°07.1	83°45.7
18	202°32.1	13.2'	S 10°53.2	-14.2'	57.2'	110°10.2	65°12.9	52°38.1	$7^{\circ}16.6$	39°44.5	47° 19.5	53°40.5	84°18.6
19	217°04.3	13.2'	$11^{\circ}07.4$	-14.2'	57.2'	109°39.8	64°43.0	52°05.2	6°46.2	40°17.7	47°52.4	54°13.7	84°51.5
20	231°36.4	13.2'	$11^{\circ}21.6$	-14.1'	57.1'	109°09.4	64°13.2	51°32.2	$6^{\circ}16.2$	40°50.8	48°25.3	54°46.9	85°24.3
21	246°08.6	13.1'	11°35.7	-14.0'	57.1'	108°39.0	63°43.4	50°59.4	5°46.7	41°23.8	48°58.2	55°20.1	85°57.1
22	260°40.7	13.1'	11°49.7	-14.0'	57.0'	108°08.7	63°13.7	50°26.5	5°18.0	41°56.9	49°31.0	55°53.2	86°29.9
23	275°12.9	13.1'	12°03.7	-13.9'	57.0'	107°38.5	62°44.0	49°53.7	4°50.2	42°29.8	50°03.8	56°26.3	87°02.5
27 th	SD	= 15.8'	Mer. pas	s. 04:04					Sun SD	= 16.2'			

T.	Maria (Ooth I)	
h	Moon (28 th Jan)	

Moon (28th Jan) Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Sun	-Altair	-Venus	-Antares	+Mars	+Regulus	+Jupiter	+Pollux
0	289°45.0	13.1'	S 12°17.5	-13.8'	57.0'	107°08.3	102° 17.5	62°14.4	49°21.0	43°02.8	50°36.5	56°59.4	87°35.2
1	304°17.1	13.1'	12°31.3	-13.7'	56.9'	106°38.1	101°49.6	61°44.8	48°48.3	43°35.7	51°09.2	57°32.4	88°07.8
2	318°49.2	13.1'	$12^{\circ}45.1$	-13.7'	56.9'	106°08.0	101°21.8	61°15.2	48°15.7	44°08.6	51°41.8	58°05.3	88°40.4
3	333°21.3	13.1'	$12^{\circ}58.7$	-13.6'	56.9'	105°37.9	100°54.0	60°45.8	47°43.1	44°41.4	52°14.4	58°38.2	89°12.9
4	347°53.4	13.1'	13° 12.3	-13.5'	56.8'	105°07.9	100°26.2	60°16.3	47°10.5	45°14.2	52°47.0	59°11.1	89°45.4
5	2°25.5	13.0'	13°25.8	-13.4'	56.8'	104°37.9	99°58.5	59°46.9	46°38.0	45°47.0	53°19.5	59°43.9	90°17.8
6	16°57.5	13.0'	S 13°39.2	-13.3'	56.7'	104°08.0	99°30.7	59°17.6	46°05.5	46° 19.7	53°51.9	60°16.6	90°50.2
7	31°29.6	13.0'	13°52.6	-13.3'	56.7'	103°38.1	99°03.0	58°48.3	45°33.1	46°52.4	54°24.4	60°49.4	91°22.5
8	46°01.6	13.0'	$14^{\circ}05.8$	-13.2'	56.7'	103°08.3	98°35.3	58°19.0	45°00.7	47°25.1	54°56.7	61°22.0	91°54.8
9	60°33.6	13.0'	$14^{\circ}19.0$	-13.1'	56.6'	102°38.5	98°07.7	57°49.8	44°28.4	47°57.7	55°29.0	61°54.7	92°27.0
10	75°05.5	13.0'	14°32.1	-13.0'	56.6'	102°08.7	97°40.1	57°20.7	43°56.1	48°30.3	56°01.3	62°27.3	92°59.2
11	89°37.5	12.9'	$14^{\circ}45.1$	-12.9'	56.6'	101°39.0	97° 12.4	56°51.5	43°23.8	49°02.9	56°33.6	62°59.8	93°31.4
12	104°09.4	12.9'	S 14°58.0	-12.8'	56.5'	101°09.3	96°44.9	56°22.5	42°51.6	49°35.4	57°05.8	63°32.3	94°03.5
13	118°41.4	12.9'	$15^{\circ}10.9$	-12.8'	56.5'	100°39.7	96° 17.3	55°53.4	42°19.4	50°07.9	57°37.9	64°04.8	94°35.6
14	133°13.3	12.9'	$15^{\circ}23.6$	-12.7'	56.4'	100°10.1	95°49.8	55°24.5	41°47.3	50°40.3	58°10.0	64°37.2	95°07.7
15	147°45.1	12.9'	15°36.3	-12.6'	56.4'	99°40.5	95°22.3	54°55.5	41°15.2	51°12.7	58°42.1	65°09.6	95°39.6
16	162°17.0	12.8'	$15^{\circ}48.9$	-12.5'	56.4'	99°11.0	94°54.8	54°26.6	40°43.2	51°45.1	59°14.2	65°42.0	96°11.6
17	176°48.8	12.8'	$16^{\circ}01.4$	-12.4'	56.3'	98°41.6	94°27.4	53°57.8	40°11.2	52°17.4	59°46.1	66°14.3	96°43.5
18	191°20.6	12.8'	S 16°13.8	-12.3'	56.3'	98°12.1	94°00.0	53°29.0	39°39.2	52°49.7	60°18.1	66°46.5	97°15.4
19	205°52.4	12.8'	$16^{\circ}26.1$	-12.2'	56.3'	97°42.8	93°32.6	53°00.2	39°07.3	53°22.0	60°50.0	67°18.7	97°47.2
20	220°24.2	12.7'	16°38.4	-12.1'	56.2'	97°13.4	93°05.2	52°31.5	38°35.4	53°54.2	61°21.9	67°50.9	98° 19.0
21	234°55.9	12.7'	$16^{\circ}50.5$	-12.0'	56.2'	96°44.1	92°37.9	52°02.8	38°03.6	54°26.4	61°53.7	68°23.1	98°50.8
22	249°27.6	12.7'	17°02.6	-12.0'	56.2'	96°14.8	92°10.6	51°34.2	37°31.8	54°58.6	62°25.5	68°55.2	99°22.5
23	263°59.2	12.6'	17° 14.5	-11.9'	56.1'	95°45.6	91°43.3	51°05.6	37°00.0	55°30.7	62°57.2	69°27.2	99°54.1
28 th	SD	$=15.5^{\prime}$	Mer. pas	s. 04:50					Sun SD	= 16.2'			

h		Moor	n (29 th Ja	n)	Lunar Distance (objects with largest hourly LD delta))
Fri	GHA	ν	Dec	d	HP	-Sun	-Altair	-Venus	-Antares	+Mars	+Regulus	+Jupiter	+Pollux
0	278°30.9	12.6'	S 17°26.4	-11.8'	56.1'	95°16.4	91°16.1	50°37.0	36°28.3	56°02.8	63°29.0	69°59.3	100°25.8
1	293°02.5	12.6'	$17^{\circ}38.1$	-11.7'	56.1'	94°47.3	90°48.9	50°08.5	35°56.6	56°34.8	64°00.6	70°31.2	100°57.4
2	307°34.1	12.6'	$17^{\circ}49.8$	-11.6'	56.0'	94°18.2	90°21.7	49°40.1	35°25.0	57°06.9	64°32.3	71°03.2	101°28.9
3	322°05.6	12.5'	$18^{\circ}01.4$	-11.5'	56.0'	93°49.1	89°54.6	49°11.7	34°53.4	57°38.9	65°03.9	71°35.1	102°00.4
4	336°37.2	12.5'	$18^{\circ}12.9$	-11.4'	56.0'	93°20.1	89°27.5	48°43.3	34°21.8	58°10.8	65°35.4	72°07.0	102°31.9
5	351°08.6	12.5'	18°24.3	-11.3'	55.9'	92°51.1	89°00.4	48°14.9	33°50.3	58°42.7	66°06.9	72°38.8	103°03.4
6	5°40.1	12.4'	S 18°35.6	-11.2'	55.9'	92°22.1	88°33.4	47°46.6	33° 18.8	59°14.6	66° 38.4	73°10.6	103°34.8
7	20°11.5	12.4'	18°46.8	-11.1'	55.9'	91°53.2	88°06.4	47°18.4	32°47.3	59°46.5	67°09.9	73°42.4	104°06.1
8	34°42.9	12.4'	$18^{\circ}57.9$	-11.0'	55.8'	91°24.3	87°39.4	46°50.2	32° 15.9	60°18.3	67°41.3	74°14.1	104°37.5
9	49°14.3	12.3'	$19^{\circ}08.9$	-10.9'	55.8'	90°55.4	87°12.5	46°22.0	31°44.5	60°50.1	68°12.7	74°45.8	105°08.8
10	63°45.6	12.3'	$19^{\circ}19.8$	-10.8'	55.8'	90°26.6	86°45.6	45°53.9	31°13.2	61°21.9	68°44.0	75° 17.4	105°40.0
11	78°16.9	12.3'	19°30.6	-10.7'	55.7'	89° 57.8	86°18.7	45°25.8	30°41.8	61°53.6	69°15.3	75°49.1	106°11.3
12	92°48.2	12.2'	S 19°41.3	-10.6'	55.7'	89°29.1	85°51.9	44°57.7	30° 10.6	62°25.3	69°46.6	76°20.6	106°42.4
13	107°19.4	12.2'	$19^{\circ}51.9$	-10.5'	55.7'	89°00.4	85°25.1	44°29.7	29°39.3	62°57.0	70°17.8	76°52.2	107°13.6
14	121°50.6	12.2'	$20^{\circ}02.3$	-10.4'	55.7'	88°31.7	84°58.3	44°01.8	29°08.1	63°28.6	70°49.0	77°23.7	107°44.7
15	136°21.7	12.1'	20° 12.7	-10.3'	55.6'	88°03.0	84°31.6	43°33.8	28°36.9	64°00.2	71°20.2	77°55.2	108°15.8
16	150°52.8	12.1'	20°23.0	-10.2'	55.6'	87°34.4	84°04.9	43°05.9	28°05.8	64°31.8	71°51.4	78°26.7	108°46.9
17	165°23.9	12.0'	20°33.2	-10.1'	55.6'	87°05.8	83°38.2	42°38.1	27°34.7	65°03.3	72°22.5	78°58.1	109°17.9
18	179°55.0	12.0'	S 20°43.3	-10.0'	55.5'	86° 37.3	83°11.6	42°10.3	27°03.6	65°34.9	72°53.5	79°29.5	109°48.9
19	194°26.0	12.0'	20°53.3	-9.9'	55.5'	86°08.8	82°45.0	41°42.5	26°32.6	66°06.3	73°24.6	80°00.8	110°19.8
20	208°57.0	11.9'	$21^{\circ}03.1$	-9.8'	55.5'	85°40.3	82°18.5	41°14.8	26°01.5	66°37.8	73°55.6	80°32.1	110°50.7
21	223°27.9	11.9'	$21^{\circ}12.9$	-9.7'	55.4'	85°11.8	81°52.0	40°47.1	25°30.6	67°09.2	74°26.6	81°03.4	111°21.6
22	237°58.8	11.9'	21°22.5	-9.5'	55.4'	84°43.4	81°25.5	40°19.4	24°59.6	67°40.6	74° 57.5	81°34.7	111°52.5
23	252°29.7	11.8'	21°32.1	-9.4'	55.4'	84°15.0	80°59.1	39°51.8	24°28.7	68°12.0	75°28.4	82°05.9	112°23.3
29 th	SD	= 15.3'	Mer. pas	s. 05:37					Sun S	D = 16.2'			

1.	Moon (30 th Ian)	Lunar Distance (objects with largest hourly LD delta)
n	MOOD (30° Ian)	I linar i listance i oniects with largest nollriv i i li delta i

Sat	GHA	ν	Dec	d	HP	-Sun	-Altair	-Venus	-Antares	+Mars	+Regulus	+Jupiter	+Pollux
0	267°00.5	11.8'	S 21°41.5	-9.3'	55.4'	83°46.7	80°32.7	39°24.2	23°57.8	68°43.4	75°59.3	82°37.1	112°54.1
1	281°31.3	11.7'	21°50.8	-9.2'	55.3'	83°18.4	80°06.3	38°56.7	23°27.0	69°14.7	76°30.1	83°08.3	113°24.8
2	296°02.0	11.7'	22°00.0	-9.1'	55.3'	82°50.1	79°40.0	38°29.2	22°56.1	69°46.0	77°01.0	83°39.4	113°55.6
3	310°32.7	11.7'	$22^{\circ}09.1$	-9.0'	55.3'	82°21.8	79°13.7	38°01.7	22°25.3	70°17.2	77°31.8	84°10.5	114°26.3
4	325°03.4	11.6'	22°18.1	-8.9'	55.3'	81°53.5	78°47.5	37°34.3	21°54.6	70°48.5	78°02.5	84°41.6	114°56.9
5	339°34.0	11.6'	22°27.0	-8.8'	55.2'	81°25.3	78°21.3	37°06.9	21°23.8	71°19.7	78°33.3	85°12.6	115°27.6
6	354°04.6	11.6'	S 22°35.8	-8.7'	55.2'	80°57.2	$77^{\circ}55.1$	36°39.6	20°53.1	71°50.9	79°04.0	85°43.7	115°58.2
7	8°35.2	11.5'	22°44.4	-8.5'	55.2'	80°29.0	77°29.0	36°12.3	20°22.4	72°22.0	79°34.6	86°14.7	116°28.8
8	23°05.7	11.5'	22°53.0	-8.4'	55.1'	80°00.9	77°02.9	35°45.0	19°51.8	72°53.1	80°05.3	86°45.6	116°59.3
9	37°36.2	11.4'	23°01.4	-8.3'	55.1'	79°32.8	76°36.9	35°17.8	19°21.2	73°24.3	80°35.9	87°16.6	117°29.8
10	52°06.6	11.4'	23°09.7	-8.2'	55.1'	79°04.7	76° 10.9	34°50.6	18°50.6	73°55.3	81°06.5	87°47.5	118°00.3
11	66°37.0	11.4'	23°17.9	-8.1'	55.1'	78°36.7	75°44.9	34°23.5	18°20.0	74°26.4	81°37.1	88°18.4	118°30.8
12	81°07.4	11.3'	S 23°26.0	-8.0'	55.0'	78°08.6	75° 19.0	33°56.3	17°49.5	74°57.4	82°07.6	88°49.2	119°01.3
13	95°37.7	11.3'	23°34.0	-7.8'	55.0'	77°40.6	74°53.1	33°29.3	17°18.9	75°28.4	82°38.1	89°20.0	119°31.7
14	110°08.0	11.3'	23°41.8	-7.7'	55.0'	77°12.7	74°27.3	33°02.2	16°48.4	75°59.4	83°08.6	89°50.9	
15	124°38.3	11.2'	23°49.6	-7.6'	55.0'	76°44.7	74°01.5	32°35.2	16°18.0	76°30.4	83°39.1	90°21.6	
16	139°08.5	11.2'	23°57.2	-7.5'	55.0'	76°16.8	73°35.7	32°08.3	15°47.5	77°01.3	84°09.5	90°52.4	
17	153°38.7	11.1'	24°04.7	-7.4'	54.9'	75°48.9	73° 10.0	31°41.4	15°17.1	77°32.3	84°40.0	91°23.1	
18	168°08.8	11.1'	S 24°12.0	-7.3'	54.9'	75°21.1	72°44.4	31°14.5	14°46.7	78°03.1	85°10.3	91°53.8	
19	182°38.9	11.1'	24° 19.3	-7.1'	54.9'	74°53.2	72°18.8	30°47.7	14°16.4	78°34.0	85°40.7	92°24.5	
20	197°09.0	11.0'	24°26.4	-7.0'	54.9'	74°25.4	71°53.2	30°20.9	13°46.0	79°04.9	86°11.1	92°55.2	
21	211°39.0	11.0'	24°33.4	-6.9'	54.8'	73°57.6	71°27.7	29°54.1	13°15.7	79°35.7	86°41.4	93°25.8	
22	226°09.1	11.0'	24°40.3	-6.8'	54.8'	73°29.8	71°02.2	29°27.4	12°45.4	80°06.5	87°11.7	93°56.4	
23	240°39.0	10.9'	24°47.1	-6.7'	54.8'	73°02.1	70°36.8	29°00.8	12°15.2	80°37.3	87°42.0	94°27.0	
30 th	SD	= 15.1'	Mer. pass	. 06:24					Sun S	D = 16.2'			

h Moon (31st Jan) Lunar Distance (objects with largest hourly LD delta)

Sun GHA ν Dec d HP -Sun -Altair -Venus -Antares +Spica +Mars +Regulus +Jupiter

Sun	GHA	ν	Dec	d	HP	-Sun	-Altair	-Venus	-Antares	+Spica	+Mars	+Regulus	+Jupiter
0	255°08.9	10.9'	S 24°53.8	-6.5'	54.8'	72°34.3	70°11.4	28°34.2	11°44.9	34°12.9	81°08.1	88°12.2	94°57.6
1	269°38.8	10.9'	25°00.3	-6.4'	54.8'	72°06.6	69°46.0	28°07.6	11°14.7	34°43.1	81°38.8	88°42.4	95°28.1
2	284°08.7	10.8'	25°06.7	-6.3'	54.7'	71°38.9	69°20.7	27°41.1	10°44.5	35°13.2	82°09.6	89°12.7	95°58.7
3	298°38.5	10.8'	25°13.0	-6.2'	54.7'	71°11.3	68°55.5	27°14.6	10°14.3	35°43.3	82°40.3	89°42.8	96°29.2
4	313°08.3	10.8'	$25^{\circ}19.1$	-6.0'	54.7'	70°43.6	68°30.3	26°48.1	9°44.2	36°13.4	83°11.0	90°13.0	96°59.7
5	327°38.1	10.7'	25°25.2	-5.9'	54.7'	70°16.0	68°05.1	26°21.7	9°14.0	36°43.5	83°41.6	90°43.2	97°30.1
6	342°07.8	10.7'	S 25°31.1	-5.8'	54.7'	69°48.4	67°40.0	25°55.4	8°43.9	37°13.5	84°12.3	91°13.3	98°00.6
7	356° 37.5	10.7'	25°36.9	-5.7'	54.6'	69°20.8	67°15.0	25°29.1	8°13.9	37°43.5	84°42.9	91°43.4	98°31.0
8	11°07.2	10.6'	25°42.5	-5.5'	54.6'	68°53.2	66°50.0	25°02.9	7°43.8	38°13.5	85°13.5	92°13.5	99°01.4
9	25°36.8	10.6'	25°48.1	-5.4'	54.6'	68°25.7	66°25.0	24°36.7	7°13.8	38°43.5	85°44.1	92°43.6	99°31.8
10	40°06.4	10.6'	25°53.5	-5.3'	54.6'	67°58.1	66°00.1	24°10.5	6°43.7	39°13.5	86°14.7	93°13.6	100°02.2
11	54°36.0	10.5'	25°58.8	-5.2'	54.6'	67°30.6	65°35.3	23°44.4	6°13.8	39°43.5	86°45.3	93°43.7	100°32.5
12	69°05.6	10.5'	S 26°03.9	-5.0'	54.5'	67°03.1	65°10.5	23°18.4	5°43.8	40°13.4	87°15.8	94°13.7	101°02.9
13	83°35.1	10.5'	26°08.9	-4.9'	54.5'	66°35.7	64°45.8	22°52.4	5°13.9	40°43.3	87°46.4	94°43.7	101°33.2
14	98°04.6	10.5'	26°13.8	-4.8'	54.5'	66°08.2	64°21.1	22°26.5	4°44.0	41°13.3	88°16.9	95°13.6	102°03.5
15	112°34.0	10.4'	$26^{\circ}18.6$	-4.6'	54.5'	65°40.8	63°56.4	22°00.7	4°14.2	41°43.2	88°47.4	95°43.6	102°33.8
16	127°03.5	10.4'	26°23.2	-4.5'	54.5'	65°13.3	63°31.9	21°34.9	3°44.4	42°13.0	89°17.9	96°13.6	103°04.0
17	141°32.9	10.4'	26°27.8	-4.4'	54.5'	64°45.9	63°07.4	21°09.2	3°14.6	42°42.9	89°48.4	96°43.5	103°34.3
18	156°02.3	10.4'	S 26°32.1	-4.3'	54.4'	64°18.5	62°42.9	20°43.6	2°45.0	43°12.8	90°18.8	97°13.4	104°04.5
19	170°31.6	10.3'	26°36.4	-4.1'	54.4'	63°51.2	62°18.5	20°18.0	2°15.5	43°42.6	90°49.3	97°43.3	104°34.7
20	185°01.0	10.3'	26°40.5	-4.0'	54.4'	63°23.8	61°54.1	19°52.5	1°46.2	44°12.4	91°19.7	98°13.2	105°04.9
21	199°30.3	10.3'	26°44.5	-3.9'	54.4'	62°56.4	61°29.8	19°27.1	1°17.4	44°42.2	91°50.1	98°43.1	105°35.1
22	213°59.6	10.3'	26°48.4	-3.7'	54.4'	62°29.1	61°05.6	19°01.8		45°12.0	92°20.5	99°12.9	106°05.3
23	228°28.9	10.3'	26°52.1	-3.6'	54.4'	62°01.8	60°41.4	18°36.5		45°41.8	92°50.9	99°42.8	106°35.5
31 st	SD	= 14.9'	Mer. pass	s. 07:14					Sun SI	0 = 16.2'			

h Moon (1st Feb) Lunar Distance (objects with largest hourly LD delta)

- 11		IVIOO	u (ı Ler)			Lunar D	istance (objects v	with larg	est noung	/ LD delta	')
Mon	GHA	ν	Dec	d	HP	-Deneb	-Sun	-Altair	-Venus	+Spica	+Mars	+Regulus	+Jupiter
0	242°58.1	10.2'	S 26°55.7	-3.5'	54.3'	91°56.3	61°34.5	60°17.3	18°11.4	46°11.6	93°21.3	100°12.6	107°05.6
1	257°27.4	10.2'	$26^{\circ}59.2$	-3.3'	54.3'	91°40.6	61°07.2	59°53.3	17°46.3	46°41.3	93°51.6	100°42.4	107°35.7
2	271°56.6	10.2'	27°02.5	-3.2'	54.3'	91°24.9	60°39.9	59°29.3	17°21.4	47°11.1	94°22.0	101°12.2	108°05.9
3	286°25.8	10.2'	$27^{\circ}05.7$	-3.1'	54.3'	91°09.2	60°12.7	59°05.4	16°56.5	47°40.8	94°52.3	101°42.0	108°36.0
4	300°55.0	10.2'	27°08.8	-2.9'	54.3'	90°53.5	59°45.4	58°41.5	16°31.8	48° 10.6	95°22.7	102°11.8	109°06.1
5	315°24.1	10.2'	$27^{\circ}11.7$	-2.8'	54.3'	90°37.8	59°18.2	58°17.8	16°07.2	48°40.3	95°53.0	102°41.5	109°36.1
6	329°53.3	10.1'	S 27°14.5	-2.7'	54.3'	90°22.1	58°50.9	57°54.0	15°42.8	49°10.0	96°23.3	103°11.3	110°06.2
7	344°22.4	10.1'	$27^{\circ}17.2$	-2.5'	54.3'	90°06.4	58°23.7	57°30.4	15°18.5	49°39.7	96°53.6	103°41.0	110°36.3
8	358°51.5	10.1'	$27^{\circ}19.8$	-2.4'	54.2'	89°50.7	57°56.5	57°06.8	14°54.3	50°09.3	97°23.9	104°10.7	111°06.3
9	13°20.6	10.1'	27°22.2	-2.3'	54.2'	89°35.0	57°29.3	56°43.3	14°30.3	50°39.0	97°54.1	104°40.4	111°36.3
10	27°49.7	10.1'	27°24.5	-2.1'	54.2'	89°19.3	57°02.1	56°19.9	14°06.5	51°08.7	98°24.4	105°10.1	112°06.4
11	42°18.8	10.1'	27°26.6	-2.0'	54.2'	89°03.7	56°35.0	55°56.5	13°42.9	51°38.3	98°54.7	105°39.8	112°36.4
12	56°47.9	10.1'	S 27°28.6	-1.9'	54.2'	88°48.0	56°07.8	55°33.2	13°19.5	52°07.9	99°24.9	106°09.5	113°06.4
13	71°17.0	10.1'	27°30.5	-1.7'	54.2'	88°32.4	55°40.6	55°10.0	12°56.3	52°37.6	99°55.1	106°39.2	113°36.4
14	85°46.0	10.1'	27°32.2	-1.6'	54.2'	88°16.7	55°13.5	54°46.9	12°33.4	53°07.2	100°25.4	107°08.9	114°06.4
15	100°15.1	10.1'	27°33.9	-1.5'	54.2'	88°01.1	54°46.4	54°23.8	12°10.7	53°36.8	100°55.6	107°38.5	114°36.3
16	114°44.1	10.0'	27°35.3	-1.3'	54.1'	87°45.5	54°19.2	54°00.8	11°48.3	54°06.4	101°25.8	108°08.2	115°06.3
17	129°13.2	10.0'	27°36.7	-1.2'	54.1'	87°29.9	53°52.1	53°37.9	11°26.2	54°36.0	101°56.0	108° 37.8	115°36.3
18	143°42.2	10.0'	S 27°37.9	-1.1'	54.1'	87°14.3	53°25.0	53°15.1	11°04.5	55°05.6	102°26.2	109°07.4	116°06.2
19	158°11.3	10.0'	27°39.0	-0.9'	54.1'	86°58.7	52°57.9	52°52.4	10°43.2	55°35.2	102°56.4	109°37.0	116°36.1
20	172°40.3	10.0'	27°39.9	-0.8'	54.1'	86°43.1	52°30.8	52°29.8	10°22.3	56°04.8	103°26.6	110°06.6	117°06.1
21	187°09.4	10.0'	27°40.7	-0.7'	54.1'	86°27.6	52°03.7	52°07.2	10°01.8	56°34.3	103°56.7	110°36.3	117°36.0
22	201°38.4	10.0'	27°41.4	-0.5'	54.1'	86°12.0	51°36.7	51°44.7	9°41.9	57°03.9	104°26.9	111°05.8	118°05.9
23	216°07.4	10.0'	27°41.9	-0.4'	54.1'	85°56.5	51°09.6	51°22.4	9°22.5	57°33.4	104°57.0	111°35.4	118°35.8
1 st	SD	= 14.8'	Mer. pass	. 08:05					Sun S	D = 16.2'			

h	Moon (2 ^{na} Febj	Lunar Distance	(objects	with	largest	hourly	LD	delta)
---	--------	----------------------	----------------	----------	------	---------	--------	----	-------	---

Tue	GHA	ν	Dec	d	HP	-Deneb	-Altair	-Sun	-Venus	+Antares	+Spica	+Mars	+Regulus
0	230°36.5	10.0'	S 27°42.3	-0.3'	54.1'	85°41.0	51°00.1	50°42.5	9°03.8	12°09.1	58°03.0	105°27.2	112°05.0
1	245°05.5	10.1'	27°42.6	-0.1'	54.1'	85° 25.5	50°37.9	50°15.5	8°45.7	12°38.7	58°32.5	105°57.3	112°34.6
2	259°34.6	10.1'	27°42.7	-0.0'	54.1'	85° 10.1	50°15.8	49°48.4	8°28.4	13°08.3	59°02.0	106°27.5	113°04.2
3	274°03.6	10.1'	27°42.8	0.1'	54.0'	84°54.6	49°53.8	49°21.4	8°12.0	13°37.8	59°31.6	106°57.6	113°33.7
4	288°32.7	10.1'	27°42.6	0.3'	54.0'	84°39.2	49°31.9	48°54.3	7°56.4	14°07.4	60°01.1	107°27.7	114°03.3
5	303°01.8	10.1'	27°42.4	0.4'	54.0'	84°23.8	49°10.1	48°27.3		14°36.9	60°30.6	107°57.9	114°32.8
6	317°30.9	10.1'	S 27°42.0	0.5'	54.0'	84°08.4	48°48.4	48°00.3		15°06.5	61°00.1	108°28.0	115°02.4
7	332°00.0	10.1'	27°41.4	0.7'	54.0'	83°53.0	48°26.8	47°33.3		15°36.0	61°29.6	108°58.1	115°31.9
8	346°29.1	10.1'	27°40.8	0.8'	54.0'	83°37.7	48°05.4	47°06.2		16°05.5	61°59.2	109°28.2	116°01.5
9	0°58.2	10.1'	27°40.0	0.9'	54.0'	83°22.3	47°44.0	46°39.2		16°35.1	62°28.7	109°58.3	116°31.0
10	15°27.3	10.1'	$27^{\circ}39.1$	1.1'	54.0'	83°07.0	47°22.8	46°12.2		17°04.6	62°58.2	110°28.4	117°00.5
11	29°56.4	10.2'	27°38.0	1.2'	54.0'	82°51.8	47°01.6	45°45.2		17°34.1	63°27.6	110°58.5	117°30.1
12	44°25.6	10.2'	S 27°36.8	1.3'	54.0'	82°36.5	46°40.6	45°18.2		18°03.7	63°57.1	111°28.6	117°59.6
13	58°54.8	10.2'	27°35.5	1.5'	54.0'	82°21.3	46°19.7	44°51.2		18°33.2	64°26.6	111°58.7	118°29.1
14	73°24.0	10.2'	27°34.0	1.6'	54.0'	82°06.1	45°59.0	44°24.2		19°02.7	64°56.1	112°28.8	118°58.6
15	87°53.2	10.2'	27°32.4	1.7'	54.0'	81°50.9	45°38.3	43°57.2		19°32.2	65°25.6	112°58.9	119°28.1
16	102°22.4	10.3'	27°30.7	1.9'	54.0'	81°35.8	45°17.8	43°30.2		20°01.7	65°55.1	113°29.0	119°57.6
17	116°51.7	10.3'	27°28.9	2.0'	54.0'	81°20.7	44°57.5	43°03.2		20°31.2	66°24.6	113°59.0	
18	131°20.9	10.3'	S 27°26.9	2.1'	54.0'	81°05.6	44°37.2	42°36.2		21°00.8	66°54.0	114°29.1	
19	145°50.2	10.3'	27°24.8	2.2'	54.0'	80°50.5	44°17.1	42°09.2		21°30.3	67°23.5	114°59.2	
20	160°19.6	10.3'	$27^{\circ}22.5$	2.4'	54.0'	80°35.5	43°57.1	41°42.3		21°59.8	67°53.0	115°29.3	
21	174°48.9	10.4'	$27^{\circ}20.1$	2.5'	53.9'		43°37.3	41°15.3		22°29.3	68°22.5	115°59.4	
22	189°18.3	10.4'	$27^{\circ}17.6$	2.6'	53.9'		43°17.6	40°48.3		22°58.8	68°51.9	116°29.4	
23	203°47.7	10.4'	27°15.0	2.8'	53.9'		42°58.1	40°21.3		23°28.3	69°21.4	116°59.5	
2 nd	SD	= 14.7'	Mer. pass	. 08:56					Sun S	5D = 16.2'			

h Moon (3rd Feb)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Altair	+Venus	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus	+Mars
0	218°17.1	10.5'	S 27°12.2	2.9'	53.9'	42°38.8		23°57.8	49°19.8	53°28.4	69°50.9	74°35.6	117°29.6
1	232°46.5	10.5'	27°09.3	3.0'	53.9'	42°19.5		24°27.3	49°37.6	53°46.9	70°20.4	74°59.2	117°59.6
2	247°16.0	10.5'	27°06.3	3.2'	53.9'	42°00.5	8°24.8	24°56.8	49°55.5	54°05.5	70°49.8	75°22.8	118°29.7
3	261°45.5	10.5'	27°03.2	3.3'	53.9'	41°41.6	8°41.8	25°26.3	50°13.5	54°24.2	71°19.3	75°46.4	118°59.8
4	276°15.1	10.6'	26°59.9	3.4'	53.9'	41°22.9	8°59.7	25° 55.8	50°31.7	54°43.1	71°48.8	76°10.1	119°29.8
5	290°44.7	10.6'	26°56.5	3.5'	53.9'	41°04.4	9°18.2	26°25.3	50°50.0	55°02.0	72°18.2	76°33.7	119°59.9
6	305°14.3	10.6'	S 26°52.9	3.7'	53.9'	40°46.0	9°37.4	26°54.8	51°08.4	55°21.0	72°47.7	76°57.5	
7	319°43.9	10.7'	26°49.3	3.8'	53.9'	40°27.8	9°57.1	27°24.3	51°26.9	55°40.2	73° 17.2	77°21.2	
8	334°13.6	10.7'	26°45.5	3.9'	53.9'	40°09.8	10° 17.4	27°53.8	51°45.6	55°59.4	73°46.7	77°44.9	
9	348°43.3	10.7'	26°41.6	4.0'	53.9'	39°52.0	10°38.1	28°23.4	52°04.4	56°18.7	74°16.2	78°08.7	
10	3°13.0	10.8'	26°37.6	4.2'	53.9'	39°34.4	10°59.3	28° 52.9	52°23.3	56°38.2	74°45.6	78°32.5	
11	17°42.8	10.8'	26°33.4	4.3'	53.9'	39°17.0	11°20.8	29°22.4	52°42.3	56°57.7	75°15.1	78°56.3	
12	32°12.6	10.9'	S 26°29.1	4.4'	53.9'	38°59.7	11°42.7	29°51.9	53°01.4	57°17.3	75°44.6	79°20.1	
13	46°42.5	10.9'	26°24.7	4.5'	53.9'	38°42.7	12°04.9	30°21.4	53°20.7	57°37.0	76°14.1	79°44.0	
14	61°12.4	10.9'	26°20.2	4.7'	53.9'	38°25.9	12°27.4	30°50.9	53°40.0	57°56.8	76°43.6	80°07.8	
15	75°42.3	11.0'	$26^{\circ}15.5$	4.8'	53.9'	38°09.3	12°50.1	31°20.5	53°59.5	58°16.7	77°13.1	80°31.7	
16	90°12.3	11.0'	$26^{\circ}10.7$	4.9'	53.9'	37°53.0	13°13.1	31°50.0	54°19.1	58°36.7	77°42.6	80°55.6	
17	104°42.3	11.1'	26°05.8	5.0'	53.9'	37°36.8	13°36.3	32°19.5	54°38.7	58°56.8	78°12.1	81°19.5	
18	119°12.4	11.1'	S 26°00.8	5.1'	53.9'	37°20.9	13°59.7	32°49.1	54°58.5	59°16.9	78°41.6	81°43.4	
19	133°42.5	11.2'	25°55.7	5.3'	53.9'	37°05.2	14°23.4	33° 18.6	55°18.4	59°37.2	79°11.1	82°07.4	
20	148°12.7	11.2'	25°50.4	5.4'	53.9'	36°49.8	14°47.1	33°48.1	55°38.4	59°57.5	79°40.6	82°31.3	
21	162°42.9	11.2'	25°45.0	5.5'	53.9'	36°34.6	15°11.1	34° 17.7	55°58.4	60°17.9	80°10.1	82°55.3	
22	177°13.1	11.3'	25°39.5	5.6'	53.9'		15°35.2	34°47.2	56°18.6	60°38.4	80°39.6	83°19.3	
23	191°43.4	11.3'	25°33.9	5.7'	53.9'		15°59.4	35°16.8	56°38.9	60°58.9	81°09.1	83°43.3	
3 rd	SD	= 14.7'	Mer. pass	. 09:47									

Moon (4th Feb)

h

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	+Venus	+Antares	+Rigil Kent.	+Hadar	+Acrux	+Spica	+Arcturus
0	206°13.7	11.4'	S 25°28.1	5.9'	53.9'	16°23.8	35°46.3	56°59.2	61°19.5	72°01.0	81°38.7	84°07.3
1	220°44.1	11.4'	25°22.3	6.0'	53.9'	16°48.2	36°15.9	57°19.6	61°40.2	72°19.6	82°08.2	84°31.3
2	235°14.5	11.5'	$25^{\circ}16.3$	6.1'	53.9'	17°12.8	36°45.5	57°40.2	62°01.0	72°38.3	82°37.7	84°55.4
3	249°45.0	11.5'	$25^{\circ}10.2$	6.2'	53.9'	17°37.5	37°15.0	58°00.8	62°21.9	72°57.1	83°07.3	85°19.4
4	264°15.5	11.6'	25°04.0	6.3'	53.9'	18°02.3	37°44.6	58°21.5	62°42.8	73°15.9	83°36.8	85°43.5
5	278°46.1	11.6'	24°57.7	6.4'	53.9'	18°27.2	38°14.2	58°42.3	63°03.8	73°34.7	84°06.4	86°07.6
6	293°16.7	11.7'	S 24°51.3	6.5'	53.9'	18°52.2	38°43.8	59°03.1	63°24.8	73°53.6	84°35.9	86°31.6
7	307°47.4	11.7'	24°44.7	6.7'	53.9'	19°17.2	39°13.4	59°24.1	63°45.9	74°12.5	85°05.5	86°55.7
8	322°18.1	11.8'	24°38.1	6.8'	54.0'	19°42.3	39°43.0	59°45.1	64°07.1	74°31.5	85°35.1	87°19.8
9	336°48.9	11.8'	24°31.3	6.9'	54.0'	20°07.5	40°12.6	60°06.2	64°28.4	74°50.5	86°04.6	87°43.9
10	351°19.7	11.9'	24°24.4	7.0'	54.0'	20°32.8	40°42.2	60°27.4	64°49.7	75°09.6	86°34.2	88°08.1
11	5°50.6	11.9'	24°17.4	7.1'	54.0'	20°58.1	41°11.8	60°48.6	65°11.1	75°28.7	87°03.8	88°32.2
12	20°21.5	12.0'	S 24°10.3	7.2'	54.0'	21°23.5	41°41.4	61°09.9	65° 32.5	75°47.9	87°33.4	88°56.3
13	34°52.5	12.0'	$24^{\circ}03.1$	7.3'	54.0'	21°49.0	42°11.1	61°31.3	65°54.0	76°07.1	88°03.0	89°20.5
14	49°23.5	12.1'	23°55.8	7.4'	54.0'	22°14.5	42°40.7	61°52.8	66° 15.6	76°26.3	88°32.6	89°44.6
15	63°54.6	12.1'	23°48.3	7.5'	54.0'	22°40.0	43°10.4	62°14.3	66°37.2	76°45.6	89°02.2	90°08.8
16	78°25.7	12.2'	23°40.8	7.6'	54.0'	23°05.6	43°40.0	62°36.0	66°58.9	77°04.9	89°31.8	90°32.9
17	92°56.9	12.2'	23°33.1	7.8'	54.0'	23°31.3	44°09.7	62°57.6	67°20.6	77°24.3	90°01.5	90°57.1
18	107°28.1	12.3'	S 23°25.4	7.9'	54.0'	23°57.0	44°39.3	63°19.4	67°42.4	77°43.7	90°31.1	91°21.3
19	121°59.4	12.3'	23°17.5	8.0'	54.0'	24°22.8	45°09.0	63°41.2	68°04.2	78°03.1	91°00.8	91°45.4
20	136°30.8	12.4'	23°09.6	8.1'	54.0'	24°48.5	45°38.7	64°03.0	68°26.1	78°22.6	91°30.4	92°09.6
21	151°02.2	12.5'	$23^{\circ}01.5$	8.2'	54.0'	25°14.4	46°08.4	64°25.0	68°48.0	78°42.1	92°00.1	92°33.8
22	165°33.6	12.5'	22°53.3	8.3'	54.0'	25°40.3	46°38.1	64°47.0	69°10.0	79°01.6	92°29.7	92°58.0
23	180°05.1	12.6'	22°45.1	8.4'	54.0'	26°06.2	47°07.8	65°09.0	69°32.1	79°21.2	92°59.4	93°22.2
4 th	SD	= 14.7'	Mer. pass	. 10:36								

1	Moon	/⊏th	- 11
h	Moon	(5 th	Feb)

Fri	GHA	ν	Dec	d	HP	+Venus	+Antares	+Rigil Kent.	+Hadar	+Acrux	+Spica	+Arcturus
0	194°36.7	12.6'	S 22°36.7	8.5'	54.0'	26°32.1	47°37.5	65°31.1	69°54.1	79°40.8	93°29.1	93°46.3
1	209°08.3	12.7'	22°28.2	8.6'	54.0'	26°58.1	48°07.2	65°53.3	70° 16.3	80°00.5	93°58.8	94°10.5
2	223°40.0	12.7'	$22^{\circ}19.6$	8.7'	54.0'	27°24.1	48°36.9	66°15.5	70°38.5	80°20.1	94°28.5	94°34.7
3	238°11.7	12.8'	$22^{\circ}11.0$	8.8'	54.0'	27°50.2	49°06.7	66°37.8	71°00.7	80°39.8	94°58.2	94°58.9
4	252°43.5	12.8'	22°02.2	8.9'	54.1'	28° 16.2	49°36.4	67°00.2	71°23.0	80°59.6	95°27.9	95°23.1
5	267°15.3	12.9'	$21^{\circ}53.3$	9.0'	54.1'	28°42.4	50°06.2	67°22.6	71°45.3	81°19.3	95°57.6	95°47.3
6	281°47.2	12.9'	S 21°44.4	9.1'	54.1'	29°08.5	50°36.0	67°45.0	72°07.7	81°39.1	96°27.4	96°11.4
7	296°19.2	13.0'	21°35.3	9.2'	54.1'	29°34.7	51°05.7	68°07.5	72°30.1	81°58.9	96°57.1	96°35.6
8	310°51.2	13.1'	$21^{\circ}26.1$	9.3'	54.1'	30°00.9	51°35.5	68°30.0	72°52.5	82°18.8	97°26.9	96°59.8
9	325°23.2	13.1'	$21^{\circ}16.9$	9.3'	54.1'	30°27.1	52°05.3	68°52.7	73° 15.0	82°38.6	97°56.6	97°24.0
10	339°55.3	13.2'	$21^{\circ}07.5$	9.4'	54.1'	30°53.4	52°35.1	69°15.3	73°37.6	82°58.5	98°26.4	97°48.2
11	354° 27.5	13.2'	$20^{\circ}58.1$	9.5'	54.1'	31° 19.7	53°04.9	69°38.0	74°00.1	83° 18.4	98°56.2	98°12.3
12	8°59.7	13.3'	S 20°48.6	9.6'	54.1'	31°46.0	53°34.8	70°00.8	74°22.7	83°38.4	99°26.0	98°36.5
13	23°32.0	13.3'	20°38.9	9.7'	54.1'	32°12.3	54°04.6	70°23.5	74°45.4	83°58.3	99°55.8	99°00.6
14	38°04.3	13.4'	20°29.2	9.8'	54.1'	32°38.7	54°34.4	70°46.4	75°08.1	84° 18.3	100°25.6	99°24.8
15	52°36.7	13.4'	20°19.4	9.9'	54.1'	33°05.1	55°04.3	71°09.3	75°30.8	84°38.3	100°55.4	99°48.9
16	67°09.1	13.5'	20°09.5	10.0'	54.1'	33°31.5	55°34.1	71°32.2	75°53.6	84°58.3	101°25.2	100°13.1
17	81°41.6	13.5'	$19^{\circ}59.6$	10.1'	54.2'	33°57.9	56°04.0	71°55.2	76°16.4	85° 18.4	101°55.1	100°37.2
18	96°14.1	13.6'	S 19°49.5	10.2'	54.2'	34°24.4	56°33.9	72°18.2	76°39.2	85°38.4	102°24.9	101°01.3
19	110°46.7	13.6'	19°39.3	10.2'	54.2'			N	lew Moon -		·	
20	125°19.3	13.7'	$19^{\circ}29.1$	10.3'	54.2'				lew Moon -			
21	139°52.0	13.7'	$19^{\circ}18.8$	10.4'	54.2'				lew Moon -			
22	154° 24.8	13.8'	19°08.4	10.5'	54.2'				lew Moon -			
23	168°57.6	13.8'	18°57.9	10.6'	54.2'			N	lew Moon -			
5 th	SD	= 14.7'	Mer. pass	s. 11:23								

h	Moon	(6 th	Feb`)

Sat	GHA	ν	Dec	d	HP	
0	183°30.4	13.9'	S 18°47.3	10.7'	54.2'	New Moon
1	198°03.3	14.0'	18°36.6	10.7'	54.2'	New Moon
2	212°36.3	14.0'	18°25.9	10.8'	54.2'	New Moon
3	227°09.3	14.1'	$18^{\circ}15.1$	10.9'	54.2'	New Moon
4	241°42.3	14.1'	18°04.2	11.0'	54.3'	New Moon
5	256°15.4	14.2'	17°53.2	11.1'	54.3'	New Moon
6	270°48.6	14.2'	S 17°42.1	11.1'	54.3'	New Moon
7	285°21.8	14.2'	17°31.0	11.2'	54.3'	New Moon
8	299°55.0	14.3'	$17^{\circ}19.8$	11.3'	54.3'	New Moon
9	314°28.3	14.3'	$17^{\circ}08.5$	11.4'	54.3'	New Moon
10	329°01.7	14.4'	16°57.2	11.4'	54.3'	New Moon
11	343°35.1	14.4'	$16^{\circ}45.7$	11.5'	54.3'	New Moon
12	358°08.5	14.5'	S 16°34.2	11.6'	54.3'	New Moon
13	12°42.0	14.5'	16°22.7	11.6'	54.3'	New Moon
14	27°15.5	14.6'	$16^{\circ}11.0$	11.7'	54.4'	New Moon
15	41°49.1	14.6'	15°59.3	11.8'	54.4'	New Moon
16	56°22.7	14.7'	15°47.5	11.9'	54.4'	New Moon
17	70°56.4	14.7'	15°35.7	11.9'	54.4'	New Moon
18	85°30.1	14.7'	S 15°23.8	12.0'	54.4'	New Moon
19	100°03.8	14.8'	$15^{\circ}11.8$	12.1'	54.4'	New Moon
20	114°37.6	14.8'	14°59.7	12.1'	54.4'	New Moon
21	129°11.4	14.9'	14°47.6	12.2'	54.4'	New Moon
22	143°45.3	14.9'	14°35.4	12.2'	54.5'	New Moon
23	158°19.2	15.0'	14°23.2	12.3'	54.5'	New Moon
6 th	SD	$=14.8^{\prime}$	Mer. pass	. 12:08		

h Moon (7th Feb) Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella		-Aldebaran	-Saturn
0	172°53.2	15.0'	S 14° 10.9	12.4'	54.5'			— New M	oon	
1	187°27.2	15.0'	13°58.5	12.4'	54.5'			New M	oon ———	
2	202°01.2	15.1'	13°46.1	12.5'	54.5'			New M	oon ———	
3	216°35.3	15.1'	13°33.6	12.5'	54.5'			— New Me	oon ————	
4	231°09.4	15.1'	$13^{\circ}21.1$	12.6'	54.5'			— New Me	oon ———	
5	245°43.5	15.2'	13°08.4	12.7'	54.5'			— New Me	oon ———	
6	260°17.7	15.2'	S 12°55.8	12.7'	54.6'			New M	oon ———	
7	274°51.9	15.2'	12°43.1	12.8'	54.6'			New M	oon ———	
8	289°26.1	15.3'	12°30.3	12.8'	54.6'			New M	oon ———	
9	304°00.4	15.3'	$12^{\circ}17.5$	12.9'	54.6'			New M	oon ———	
10	318°34.7	15.3'	12°04.6	12.9'	54.6'			— New Me	oon ———	
11	333°09.1	15.4'	$11^{\circ}51.6$	13.0'	54.6'			— New M	oon ———	
12	347°43.5	15.4'	S 11°38.7	13.0'	54.6'			New M	oon ———	
13	2°17.9	15.4'	11°25.6	13.1'	54.6'				oon ————	
14	16°52.3	15.5'	$11^{\circ}12.5$	13.1'	54.7'	119°21.5	111°15.5	106°09.7		42°14.4
15	31°26.8	15.5'	$10^{\circ}59.4$	13.2'	54.7'	118°53.5	110°46.9	105°45.6		41°44.6
16	46°01.3	15.5'	10°46.2	13.2'	54.7'	118°25.4	110°18.2	105°21.3	100°28.5	41°14.8
17	60°35.8	15.5'	10°32.9	13.3'	54.7'	117°57.4	109°49.4	104°57.1	99°58.5	40°45.0
18	75°10.3	15.6'	S 10°19.7	13.3'	54.7'	117°29.3	109°20.7	104°32.8	99°28.5	40°15.1
19	89°44.9	15.6'	$10^{\circ}06.3$	13.4'	54.7'	117°01.1	108°51.9	104°08.5	98°58.5	39°45.3
20	104°19.5	15.6'	09°53.0	13.4'	54.7'	116°33.0	108°23.1	103°44.1	98°28.5	39°15.5
21	118°54.1	15.6'	09°39.5	13.5'	54.8'	116°04.7	107°54.3	103°19.8	97°58.5	38°45.6
22	133°28.8	15.7'	$09^{\circ}26.1$	13.5'	54.8'	115°36.5	107°25.4	102°55.3	97°28.4	38°15.8
23	148°03.4	15.7'	09°12.6	13.6'	54.8'	115°08.2	106°56.6	102°30.9	96°58.4	37°46.0
7 th	SD	$= 14.9^{\prime}$	Mer. pass	s. 12:51					·	

h Moon (8th Feb) Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Sirius	-Betelgeuse	-Capella	-Rigel	-Aldebaran	-Saturn
0	162°38.1	15.7'	S 08°59.0	13.6'	54.8'		114°39.9	106°27.7	102°06.4	96°28.3	37°16.1
1	177°12.8	15.7'	08°45.4	13.6'	54.8'		114° 11.6	105°58.8	101°41.8	95°58.2	36°46.3
2	191°47.5	15.7'	08°31.8	13.7'	54.8'		113°43.2	105°29.8	101°17.3	95°28.1	36°16.4
3	206°22.3	15.8'	$08^{\circ}18.1$	13.7'	54.9'		113° 14.8	105°00.8	100°52.7	94°58.0	35°46.6
4	220°57.1	15.8'	08°04.4	13.8'	54.9'	119°46.1	112°46.4	104°31.9	100°28.0	94°27.8	35°16.7
5	235°31.8	15.8'	07°50.6	13.8'	54.9'	119°26.8	112° 17.9	104°02.8	100°03.4	93°57.7	34°46.9
6	250°06.6	15.8'	S 07°36.9	13.8'	54.9'	119°07.5	111°49.4	103°33.8	99°38.7	93°27.5	34°17.0
7	264°41.4	15.8'	07°23.0	13.9'	54.9'	118°48.0	111°20.9	103°04.8	99°14.0	92°57.3	33°47.1
8	279°16.3	15.8'	07°09.2	13.9'	54.9'	118°28.4	110°52.4	102°35.7	98°49.2	92°27.1	33°17.3
9	293°51.1	15.9'	06°55.3	13.9'	54.9'	118°08.8	110°23.8	102°06.6	98° 24.5	91°56.9	32°47.4
10	308°26.0	15.9'	06°41.3	14.0'	55.0'	117°49.0	109°55.2	101°37.5	97°59.7	91°26.6	32°17.6
11	323°00.8	15.9'	06°27.4	14.0'	55.0'	117°29.2	109° 26.5	101°08.3	97°34.8	90°56.4	31°47.7
12	337°35.7	15.9'	S 06°13.4	14.0'	55.0'	117°09.2	108°57.9	100°39.2	97° 10.0	90°26.1	31°17.9
13	352°10.6	15.9'	05°59.4	14.1'	55.0'	116°49.2	108° 29.2	100°10.0	96°45.1	89°55.8	30°48.0
14	6°45.5	15.9'	05°45.3	14.1'	55.0'	116°29.1	108°00.5	99°40.8	96°20.2	89°25.5	30°18.2
15	21°20.4	15.9'	05°31.2	14.1'	55.0'	116°08.9	107°31.7	99°11.6	95°55.3	88°55.2	29°48.4
16	35°55.3	15.9'	$05^{\circ}17.1$	14.1'	55.1'	115°48.5	107°02.9	98°42.3	95°30.3	88°24.8	29°18.5
17	50°30.2	15.9'	05°03.0	14.2'	55.1'	115°28.2	106°34.1	98°13.1	95°05.4	87°54.5	28°48.7
18	65°05.2	15.9'	S 04°48.8	14.2'	55.1'	115°07.7	106°05.3	97°43.8	94°40.4	87°24.1	28°18.9
19	79°40.1	15.9'	04°34.6	14.2'	55.1'	114°47.1	105°36.4	97°14.5	94° 15.4	86°53.7	27°49.1
20	94°15.0	15.9'	04°20.4	14.2'	55.1'	114°26.5	105°07.6	96°45.2	93°50.3	86°23.3	27°19.4
21	108°49.9	15.9'	$04^{\circ}06.1$	14.3'	55.1'	114°05.7	104°38.7	96°15.8	93°25.3	85°52.9	26°49.6
22	123°24.9	15.9'	03°51.9	14.3'	55.2'	113°44.9	104°09.7	95°46.5	93°00.2	85°22.5	26°19.9
23	137°59.8	15.9'	03°37.6	14.3'	55.2'	113°24.0	103°40.8	95°17.1	92°35.1	84°52.0	25°50.1
8 th	SD	= 14.9'	Mer. pass	s. 13:32							

h Moon (9th Feb)

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Capella	-Rigel	-Aldebaran	-Saturn	+Fomalhaut
0	152°34.7	15.9'	S 03°23.3	14.3'	55.2'			103°11.8	94°47.7	92°10.0	84°21.5	25°20.4	26°07.9
1	167°09.7	15.9'	03°08.9	14.4'	55.2'			102°42.8	94°18.2	91°44.8	83°51.1	24°50.7	26°23.8
2	181°44.6	15.9'	02°54.6	14.4'	55.2'			102°13.8	93°48.8	91°19.7	83°20.6	24°21.1	26°40.2
3	196°19.5	15.9'	02°40.2	14.4'	55.2'			101°44.7	93°19.4	90°54.5	82°50.0	23°51.4	26°56.9
4	210°54.4	15.9'	02°25.8	14.4'	55.3'			101°15.6	92°49.9	90°29.3	82° 19.5	23°21.8	27°14.1
5	225°29.3	15.9'	$02^{\circ}11.4$	14.4'	55.3'			100°46.5	92°20.4	90°04.1	81°49.0	22°52.3	27°31.7
6	240°04.2	15.9'	S 01°57.0	14.4'	55.3'			100°17.4	91°50.9	89°38.9	81°18.4	22°22.7	27°49.6
7	254°39.1	15.9'	$01^{\circ}42.5$	14.5'	55.3'			99°48.2	91°21.3	89°13.7	80°47.8	21°53.2	28°07.9
8	269°14.0	15.9'	01°28.1	14.5'	55.3'			99°19.1	90°51.8	88°48.5	80° 17.2	21°23.8	28°26.5
9	283°48.9	15.9'	$01^{\circ}13.6$	14.5'	55.4'			98°49.9	90°22.2	88°23.2	79°46.6	20°54.4	28°45.5
10	298°23.8	15.9'	$00^{\circ}59.1$	14.5'	55.4'			98°20.7	89°52.6	87°57.9	79°16.0	20°25.1	29°04.8
11	312°58.6	15.8'	00°44.6	14.5'	55.4'			97°51.4	89°23.0	87°32.7	78°45.3	19°55.8	29°24.5
12	327°33.4	15.8'	S 00°30.1	14.5'	55.4'			97°22.2	88°53.4	87°07.4	78° 14.7	19°26.5	29°44.4
13	342°08.3	15.8'	$00^{\circ}15.6$	14.5'	55.4'			96°52.9	88°23.8	86°42.1	77°44.0	18°57.4	30°04.7
14	356°43.1	15.8'	S 00°01.0	14.5'	55.5'		119°38.0	96°23.6	87°54.1	86°16.8	77° 13.3	18°28.3	30°25.2
15	11°17.9	15.8'	N 00°13.5	14.5'	55.5'		119°06.9	95°54.2	87°24.5	85°51.5	76°42.6	17°59.3	30°46.0
16	25°52.6	15.8'	$00^{\circ}28.0$	14.6'	55.5'		118°35.7	95°24.9	86°54.8	85°26.1	76°11.8	17°30.4	31°07.1
17	40°27.4	15.7'	00°42.6	14.6'	55.5'		118°04.5	94°55.5	86°25.1	85°00.8	75°41.1	17°01.7	31°28.5
18	55°02.1	15.7'	N00°57.2	14.6'	55.5'		117°33.3	94°26.1	85°55.4	84°35.5	75° 10.3	16°33.0	31°50.1
19	69°36.9	15.7'	$01^{\circ}11.7$	14.6'	55.5'	119°53.5	117°02.1	93°56.7	85°25.6	84°10.1	74°39.6	16°04.4	32°12.0
20	84°11.5	15.7'	$01^{\circ}26.3$	14.6'	55.6'	119°24.2	116°30.9	93°27.3	84°55.9	83°44.8	74°08.8	15°36.0	32°34.1
21	98°46.2	15.6'	01°40.9	14.6'	55.6'	118°54.9	115°59.6	92°57.8	84°26.1	83°19.4	73°38.0	15°07.8	32°56.5
22	113°20.9	15.6'	$01^{\circ}55.4$	14.6'	55.6'	118°25.5	115°28.3	92°28.4	83°56.3	82°54.1	73°07.1	14°39.7	33°19.1
23	127°55.5	15.6'	$02^{\circ}10.0$	14.6'	55.6'	117°56.1	114°57.0	91°58.9	83°26.5	82°28.7	72°36.3	14°11.8	33°41.9
9 th	SD	= 15.1'	Mer. pass	. 14:14									

h Moon (10th Feb)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Fomalhaut	+Sun
0	142°30.1	15.6'	N02°24.6	14.6'	55.6'	117°26.7	114°25.7	91°29.4	82°56.7	72°05.4	13°44.2	34°04.9	
1	157°04.6	15.5'	02°39.2	14.6'	55.7'	116°57.3	113°54.3	90°59.8	82°26.9	71°34.5	13°16.7	34°28.2	
2	171°39.2	15.5'	02°53.7	14.6'	55.7'	116°27.8	113°23.0	90°30.3	81°57.0	71°03.7	12°49.6	34°51.6	
3	186°13.7	15.5'	03°08.3	14.6'	55.7'	115°58.2	112°51.6	90°00.7	81°27.2	70°32.7	12°22.7	35°15.3	
4	200°48.2	15.4'	03°22.9	14.6'	55.7'	115°28.6	112°20.1	89°31.1	80°57.3	70°01.8	11°56.2	35°39.1	
5	215°22.6	15.4'	03°37.5	14.6'	55.7'	114°59.0	111°48.7	89°01.5	80°27.4	69°30.9	11°30.0	36°03.1	
6	229°57.0	15.4'	N03°52.0	14.6'	55.8'	114°29.4	111°17.3	88°31.9	79°57.5	68°59.9	11°04.3	36°27.3	
7	244°31.4	15.3'	04°06.6	14.6'	55.8'	113°59.7	110°45.8	88°02.2	79°27.6	68°28.9	10°39.0	36°51.7	41°01.4
8	259°05.7	15.3'	04°21.1	14.5'	55.8'	113°30.0	110°14.3	87° 32.6	78° 57.7	67°58.0	10°14.3	37°16.2	41°30.5
9	273°40.0	15.3'	04°35.7	14.5'	55.8'	113°00.3	109°42.8	87°02.9	78° 27.7	67°27.0	9°50.1	37°41.0	41°59.6
10	288°14.3	15.2'	04°50.2	14.5'	55.9'	112°30.5	109°11.2	86°33.2	77°57.7	66°55.9	9°26.7	38°05.8	42°28.7
11	302°48.5	15.2'	05°04.7	14.5'	55.9'	112°00.7	108°39.7	86°03.5	77° 27.8	66°24.9	9°04.1	38°30.9	42°57.9
12	317°22.7	15.1'	N05°19.2	14.5'	55.9'	111°30.8	108°08.1	85°33.7	76° 57.8	65°53.8	8°42.3	38°56.1	43°27.0
13	331°56.8	15.1'	05°33.7	14.5'	55.9'	111°00.9	107°36.5	85°04.0	76°27.8	65°22.8		39°21.4	43°56.2
14	346°30.9	15.1'	05°48.2	14.5'	55.9'	110°31.0	107°04.8	84° 34.2	75°57.8	64°51.7		39°46.9	44°25.4
15	1°05.0	15.0'	06°02.7	14.5'	56.0'	110°01.1	106°33.2	84°04.4	75° 27.7	64°20.6		40°12.5	44°54.6
16	15°39.0	15.0'	$06^{\circ}17.2$	14.4'	56.0'	109°31.1	106°01.5	83°34.6	74°57.7	63°49.5		40°38.3	45°23.9
17	30°13.0	14.9'	06°31.6	14.4'	56.0'	109°01.1	105°29.8	83°04.8	74°27.6	63°18.3		41°04.1	45°53.2
18	44°46.9	14.9'	N06°46.0	14.4'	56.0'	108°31.0	104°58.1	82°35.0	73°57.6	62°47.2		41°30.2	46°22.4
19	59°20.8	14.8'	07°00.5	14.4'	56.0'	108°01.0	104°26.4	82°05.1	73°27.5	62°16.0		41°56.3	46°51.8
20	73°54.6	14.8'	07°14.8	14.4'	56.1'	107°30.9	103°54.6	81°35.2	72°57.4	61°44.8		42°22.6	47°21.1
21	88°28.4	14.7'	07°29.2	14.4'	56.1'	107°00.7	103°22.8	81°05.4	72°27.3	61°13.7		42°49.0	47°50.5
22	103°02.1	14.7'	07°43.6	14.3'	56.1'	106°30.6	102°51.0	80°35.4	71°57.2	60°42.4		43°15.5	48°19.8
23	117°35.7	14.6'	07°57.9	14.3'	56.1'	106°00.4	102°19.2	80°05.5	71°27.1	60°11.2		43°42.1	48°49.3
10 th	SD	= 15.2'	Mer. pass	. 14:56					Sun SD	= 16.2'			

h Moon (11th Feb)

Thu	GHA	ν	Dec	d	HP	-Jupiter	-Procyon	-Pollux	-Capella	-Aldebaran	+Saturn	+Fomalhaut	+Sun
0	132°09.3	14.6'	N 08°12.2	14.3'	56.2'		105°30.1	101°47.3	70°56.9	59°40.0		44°08.9	49°18.7
1	146°42.9	14.5'	08°26.5	14.3'	56.2'		104°59.9	101°15.4	70°26.8	59°08.7		44°35.7	49°48.1
2	161°16.4	14.4'	08°40.7	14.2'	56.2'		104°29.6	100°43.5	69°56.6	58° 37.4		45°02.7	50°17.6
3	175°49.8	14.4'	08°55.0	14.2'	56.2'		103°59.3	100°11.6	69°26.5	58°06.2		45° 29.8	50°47.1
4	190°23.2	14.3'	09°09.2	14.2'	56.3'		103°28.9	99°39.6	68°56.3	57°34.9		45°56.9	51°16.6
5	204°56.5	14.3'	09°23.4	14.1'	56.3'		102°58.5	99°07.7	68°26.1	57°03.6		46°24.2	51°46.2
6	219°29.8	14.2'	N09°37.5	14.1'	56.3'		102°28.1	98°35.7	67°55.9	56°32.2		46°51.6	52°15.8
7	234°03.0	14.1'	09°51.6	14.1'	56.3'		101°57.7	98°03.7	67°25.7	56°00.9		47° 19.1	52°45.3
8	248°36.1	14.1'	10°05.7	14.1'	56.3'		101°27.2	97°31.6	66°55.5	55° 29.5		47°46.6	53°15.0
9	263°09.2	14.0'	$10^{\circ}19.8$	14.0'	56.4'		100°56.7	96°59.5	66°25.3	54° 58.2		48°14.3	53°44.6
10	277°42.2	13.9'	10°33.8	14.0'	56.4'		100°26.2	96°27.4	65°55.1	54°26.8		48° 42.0	54°14.3
11	292°15.1	13.9'	10°47.8	13.9'	56.4'		99°55.6	95°55.3	65°24.9	53°55.4		49°09.8	54°44.0
12	306°48.0	13.8'	$N11^{\circ}01.7$	13.9'	56.4'		99°25.0	95°23.2	64°54.6	53°24.0		49°37.8	55°13.7
13	321°20.8	13.7'	$11^{\circ}15.6$	13.9'	56.5'		98°54.4	94°51.0	64°24.4	52°52.6	9°42.0	50°05.8	55°43.4
14	335°53.5	13.7'	11°29.5	13.8'	56.5'		98°23.8	94°18.8	63°54.1	52°21.1	10°06.4	50° 33.9	56°13.2
15	350°26.2	13.6'	11°43.3	13.8'	56.5'		97°53.1	93°46.6	63°23.9	51°49.7	10°31.5	51°02.0	56°43.0
16	4°58.8	13.5'	$11^{\circ}57.1$	13.7'	56.5'		97°22.4	93°14.3	62°53.6	51°18.2	10°57.2	51°30.3	57°12.8
17	19°31.3	13.4'	$12^{\circ}10.9$	13.7'	56.6'		96°51.7	92°42.1	62°23.4	50°46.7	11°23.5	51°58.6	57°42.6
18	34°03.7	13.4'	$N12^{\circ}24.6$	13.7'	56.6'		96°20.9	92°09.8	61°53.1	50° 15.3	11°50.2	52°27.0	58°12.5
19	48°36.1	13.3'	12°38.2	13.6'	56.6'		95°50.2	91°37.4	61°22.8	49°43.8	12° 17.5	52°55.5	58°42.4
20	63°08.3	13.2'	12°51.8	13.6'	56.6'	119°45.8	95°19.4	91°05.1	60°52.5	49° 12.3	12°45.1	53°24.1	59°12.3
21	77°40.5	13.1'	13°05.4	13.5'	56.7'	119°13.0	94°48.5	90°32.7	60°22.3	48°40.8	13° 13.0	53°52.7	59°42.3
22	92°12.6	13.0'	$13^{\circ}18.9$	13.5'	56.7'	118°40.2	94°17.6	90°00.3	59°52.0	48°09.2	13°41.4	54°21.4	60°12.3
23	106°44.7	13.0'	13°32.4	13.4'	56.7'	118°07.4	93°46.8	89°27.9	59°21.7	47° 37.7	14° 10.0	54°50.2	60°42.3
11 th	SD	= 15.3'	Mer. pass	. 15:39					Sun S	D = 16.2'			

Moon (12th Feb)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Mars	-Regulus	-Jupiter	-Pollux	-Aldebaran	+Saturn	+Fomalhaut	+Sun
0	121°16.6	12.9'	N 13°45.8	13.4'	56.7'			117°34.5	88°55.4	47°06.2	14°38.8	55°19.0	61°12.3
1	135°48.5	12.8'	13°59.2	13.3'	56.8'			117°01.6	88°23.0	46°34.6	15°08.0	55° 47.9	61°42.3
2	150°20.3	12.7'	14°12.5	13.3'	56.8'			116°28.7	87°50.5	46°03.1	15°37.3	56° 16.9	62°12.4
3	164°52.0	12.6'	14°25.8	13.2'	56.8'			115°55.7	87°17.9	45°31.5	16°06.9	56°46.0	62°42.5
4	179°23.6	12.5'	14°39.0	13.2'	56.8'			115°22.8	86°45.4	44°59.9	16°36.7	57° 15.1	63°12.6
5	193°55.1	12.4'	$14^{\circ}52.1$	13.1'	56.9'			114°49.8	86°12.8	44°28.3	17°06.6	57°44.3	63°42.8
6	208°26.6	12.3'	N 15°05.2	13.0'	56.9'			114°16.7	85°40.2	43°56.8	17° 36.7	58° 13.5	64°13.0
7	222°57.9	12.3'	15°18.3	13.0'	56.9'			113°43.7	85°07.5	43°25.2	18°07.0	58° 42.8	64°43.2
8	237°29.2	12.2'	15°31.2	12.9'	56.9'			113°10.6	84°34.8	42°53.6	18° 37.4	59°12.2	65°13.5
9	252°00.3	12.1'	15°44.1	12.8'	57.0'			112°37.5	84°02.1	42°22.0	19°07.9	59°41.7	65°43.7
10	266°31.4	12.0'	15°57.0	12.8'	57.0'			112°04.3	83°29.4	41°50.4	19°38.6	60°11.1	66°14.0
11	281°02.4	11.9'	$16^{\circ}09.8$	12.7'	57.0'		119°54.1	111°31.2	82°56.7	41°18.8	20°09.4	60°40.7	66°44.4
12	295°33.3	11.8'	$N16^{\circ}22.5$	12.6'	57.0'		119°21.2	110°58.0	82°23.9	40°47.2	20°40.3	61°10.3	67°14.7
13	310°04.1	11.7'	$16^{\circ}35.1$	12.6'	57.1'		118°48.3	110°24.7	81°51.1	40°15.6	21°11.4	61°40.0	67°45.1
14	324°34.8	11.6'	16°47.7	12.5'	57.1'		118°15.4	109°51.5	81°18.2	39°44.0	21°42.5	62°09.7	68° 15.5
15	339°05.3	11.5'	17°00.2	12.4'	57.1'		117°42.5	109°18.2	80°45.4	39°12.4	22°13.7	62°39.5	68°46.0
16	353°35.8	11.4'	$17^{\circ}12.6$	12.4'	57.2'	119°55.6	117°09.5	108°44.9	80°12.5	38°40.8	22°45.1	63°09.3	69°16.4
17	8°06.2	11.3'	$17^{\circ}25.0$	12.3'	57.2'	119°21.9	116°36.5	108°11.6	79°39.5	38°09.3	23°16.5	63°39.2	69°46.9
18	22°36.5	11.2'	N17°37.3	12.2'	57.2'	118°48.1	116°03.4	107°38.2	79°06.6	37°37.7	23°48.0	64°09.2	70°17.5
19	37°06.7	11.1'	17°49.5	12.1'	57.2'	118°14.3	115°30.4	107°04.8	78°33.6	37°06.1	24° 19.5	64°39.2	70°48.0
20	51°36.8	11.0'	18°01.6	12.1'	57.3'	117°40.5	114°57.3	106°31.4	78°00.6	36°34.6	24°51.2	65°09.3	71°18.6
21	66°06.8	10.9'	18°13.7	12.0'	57.3'	117°06.6	114°24.1	105°57.9	77°27.6	36°03.0	25°22.9	65°39.4	71°49.2
22	80°36.7	10.8'	$18^{\circ}25.7$	11.9'	57.3'	116°32.7	113°51.0	105°24.4	76°54.5	35°31.5	25°54.8	66°09.5	72°19.9
23	95°06.4	10.7'	18°37.6	11.8'	57.3'	115°58.7	113°17.8	104°50.9	76°21.4	35°00.0	26°26.6	66°39.8	72°50.6
12 th	SD	$=15.5^{\prime}$	Mer. pass	. 16:26					Sun S	5D = 16.2'			

Moon (13th Feb) h

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Mars	-Regulus	-Jupiter	-Pollux	+Saturn	+Fomalhaut	+Sun	+Achernar
0	109°36.1	10.6'	N 18°49.4	11.7'	57.4'	115°24.8	112°44.6	104°17.3	75°48.2	26°58.6	67°10.0	73°21.3	
1	124°05.7	10.5'	19°01.1	11.6'	57.4'	114°50.8	112°11.3	103°43.8	75°15.1	27°30.6	67°40.3	73°52.0	
2	138°35.1	10.3'	$19^{\circ}12.7$	11.5'	57.4'	114°16.7	111°38.1	103°10.1	74°41.9	28°02.7	68°10.7	74°22.8	
3	153°04.5	10.2'	19°24.3	11.5'	57.5'	113°42.6	111°04.8	102°36.5	74°08.7	28°34.8	68°41.1	74°53.6	
4	167°33.7	10.1'	19°35.7	11.4'	57.5'	113°08.5	110°31.4	102°02.8	73°35.4	29°07.0	69°11.6	75°24.4	
5	182°02.8	10.0'	$19^{\circ}47.1$	11.3'	57.5'	112°34.4	109°58.0	101°29.1	73°02.2	29°39.3	69°42.1	75°55.3	
6	196°31.9	9.9'	N19°58.4	11.2'	57.5'	112°00.2	109°24.6	100°55.4	72°28.8	30°11.6	70°12.7	76°26.2	
7	211°00.8	9.8'	20°09.6	11.1'	57.6'	111°26.0	108°51.2	100°21.6	71°55.5	30°44.0	70°43.3	76°57.1	
8	225°29.6	9.7'	20°20.6	11.0'	57.6'	110°51.8	108°17.7	99°47.8	71°22.1	31°16.4	71°14.0	77°28.1	
9	239°58.2	9.6'	20°31.6	10.9'	57.6'	110° 17.5	107°44.2	99°14.0	70°48.7	31°48.9	71°44.7	77°59.0	
10	254°26.8	9.5'	20°42.5	10.8'	57.6'	109°43.2	107°10.7	98°40.1	70°15.3	32°21.5	72°15.4	78°30.1	
11	268°55.3	9.3'	20°53.3	10.7'	57.7'	109°08.9	106°37.2	98°06.2	69°41.8	32°54.1	72°46.2	79°01.1	78°57.4
12	283°23.6	9.2'	N 21°04.0	10.6'	57.7'	108°34.5	106°03.6	97°32.3	69°08.3	33°26.7	73°17.1	79°32.2	79°12.5
13	297°51.9	9.1'	$21^{\circ}14.6$	10.5'	57.7'	108°00.1	105°29.9	96°58.4	68°34.8	33°59.4	73°47.9	80°03.3	79°27.7
14	312°20.0	9.0'	21°25.0	10.4'	57.8'	107°25.6	104°56.3	96°24.4	68°01.2	34°32.2	74°18.9	80°34.5	79°43.0
15	326°48.0	8.9'	21°35.4	10.3'	57.8'	106°51.2	104°22.6	95°50.4	67°27.7	35°05.0	74°49.9	81°05.7	79°58.3
16	341°15.9	8.8'	21°45.7	10.1'	57.8'	106° 16.7	103°48.9	95°16.3	66°54.0	35°37.9	75°20.9	81°36.9	80° 13.6
17	355°43.6	8.7'	21°55.8	10.0'	57.8'	105°42.1	103°15.1	94°42.2	66°20.4	36°10.8	75°51.9	82°08.1	80°29.1
18	10°11.3	8.5'	N22°05.9	9.9'	57.9'	105°07.5	102°41.3	94°08.1	65°46.7	36°43.7	76°23.0	82°39.4	80°44.6
19	24°38.8	8.4'	22°15.8	9.8'	57.9'	104°32.9	102°07.5	93°33.9	65°13.0	37°16.7	76°54.2	83°10.7	81°00.1
20	39°06.2	8.3'	22°25.6	9.7'	57.9'	103°58.3	101°33.7	92°59.8	64°39.2	37°49.8	77°25.4	83°42.0	81°15.7
21	53°33.6	8.2'	22°35.3	9.6'	58.0'	103°23.6	100°59.8	92°25.5	64°05.5	38°22.9	77°56.6	84°13.4	81°31.4
22	68°00.7	8.1'	22°44.8	9.5'	58.0'	102°48.9	100°25.9	91°51.3	63°31.6	38°56.0	78°27.9	84°44.8	81°47.1
23	82°27.8	8.0'	22°54.3	9.3'	58.0'	102°14.1	99°51.9	91°17.0	62°57.8	39°29.2	78°59.2	85°16.3	82°02.8
13 th	SD	$=15.6^{\prime}$	Mer. pass	. 17:18					Sun S	5D = 16.2'			

h	Moon	/1/1th	Eab)

Moon (14th Feb) Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Mars	-Regulus	-Jupiter	-Pollux	+Saturn	+Fomalhaut	+Achernar	+Sun
0	96°54.8	7.8'	N 23°03.6	9.2'	58.0'	101°39.3	99°17.9	90°42.7	62°23.9	40°02.4	79°30.6	82° 18.7	85°47.8
1	111°21.6	7.7'	23°12.8	9.1'	58.1'	101°04.5	98°43.9	90°08.3	61°50.0	40°35.7	80°02.0	82°34.5	86°19.3
2	125°48.3	7.6'	23°21.9	9.0'	58.1'	100°29.7	98°09.9	89°34.0	61°16.1	41°09.0	80°33.4	82°50.5	86°50.8
3	140°14.9	7.5'	23°30.9	8.8'	58.1'	99°54.8	97°35.8	88°59.5	60°42.1	41°42.4	81°04.9	83°06.4	87°22.4
4	154°41.4	7.4'	23°39.7	8.7'	58.2'	99°19.9	97°01.6	88°25.1	60°08.1	42°15.8	81°36.4	83°22.4	87°54.0
5	169°07.8	7.3'	23°48.4	8.6'	58.2'	98°44.9	96°27.5	87°50.6	59°34.1	42°49.2	82°07.9	83°38.5	88°25.7
6	183°34.1	7.1'	N23°57.0	8.4'	58.2'	98°09.9	95°53.3	87°16.1	59°00.0	43°22.7	82°39.5	83°54.6	88°57.3
7	198°00.2	7.0'	24°05.4	8.3'	58.3'	97°34.9	95°19.1	86°41.5	58°25.9	43°56.2	83°11.2	84°10.8	89°29.0
8	212°26.2	6.9'	24°13.7	8.2'	58.3'	96°59.8	94°44.8	86°06.9	57°51.8	44°29.8	83°42.8	84°27.0	90°00.8
9	226°52.1	6.8'	24°21.9	8.0'	58.3'	96°24.7	94°10.5	85°32.3	57°17.6	45°03.4	84°14.5	84°43.2	90°32.6
10	241°17.9	6.7'	24°29.9	7.9'	58.3'	95°49.6	93°36.2	84°57.7	56°43.4	45°37.1	84°46.3	84°59.5	91°04.4
11	255°43.6	6.6'	24°37.8	7.7'	58.4'	95°14.4	93°01.9	84°23.0	56°09.2	46°10.8	85°18.0	85° 15.8	91°36.2
12	270°09.2	6.5'	N 24°45.5	7.6'	58.4'	94°39.2	92°27.5	83°48.2	55°34.9	46°44.5	85°49.9	85°32.2	92°08.1
13	284°34.6	6.3'	24°53.1	7.5'	58.4'	94°04.0	91°53.0	83°13.5	55°00.6	47°18.3	86°21.7	85°48.6	92°40.1
14	299°00.0	6.2'	25°00.5	7.3'	58.5'	93°28.7	91°18.6	82°38.7	54°26.3	47°52.1	86°53.6	86°05.0	93°12.0
15	313°25.2	6.1'	25°07.9	7.2'	58.5'	92°53.4	90°44.1	82°03.9	53°51.9	48°26.0	87°25.5	86°21.5	93°44.0
16	327°50.3	6.0'	25°15.0	7.0'	58.5'	92°18.1	90°09.5	81°29.0	53°17.5	48°59.9	87°57.5	86°38.0	94°16.0
17	342°15.3	5.9'	25°22.0	6.9'	58.5'	91°42.7	89°35.0	80°54.1	52°43.1	49°33.9	88°29.5	86°54.5	94°48.1
18	356°40.3	5.8'	N 25°28.9	6.7'	58.6'	91°07.3	89°00.4	80°19.2	52°08.6	50°07.9	89°01.5	87°11.1	95°20.2
19	11°05.0	5.7'	25°35.6	6.5'	58.6'	90°31.8	88°25.7	79°44.2	51°34.1	50°41.9	89°33.5	87°27.6	95°52.3
20	25°29.7	5.6'	25°42.1	6.4'	58.6'	89°56.3	87°51.1	79°09.2	50°59.6	51°16.0	90°05.6	87°44.3	96°24.5
21	39°54.3	5.5'	25°48.5	6.2'	58.7'	89°20.8	87°16.4	78°34.2	50°25.1	51°50.1	90°37.7	88°00.9	96°56.7
22	54°18.8	5.4'	25°54.7	6.1'	58.7'	88°45.3	86°41.6	77°59.1	49°50.5	52°24.2	91°09.9	88° 17.6	97°28.9
23	68°43.1	5.3'	26°00.8	5.9'	58.7'	88°09.7	86°06.8	77°24.0	49°15.9	52°58.4	91°42.1	88°34.3	98°01.2
14 th	SD :	= 15.8'	Mer. pass	s. 18:14	4				Sun	SD = 16.2'	-		

Moon (15th Feb)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Mars	-Regulus	-Jupiter	-Pollux	+Saturn	+Achernar	+Fomalhaut	+Sun
0	83°07.4	5.2'	N 26°06.7	5.8'	58.7'	87°34.1	85°32.0	76°48.8	48°41.2	53°32.7	88°51.0	92°14.3	98°33.5
1	97°31.6	5.1'	$26^{\circ}12.5$	5.6'	58.8'	86°58.4	84°57.2	76°13.7	48°06.5	54°06.9	89°07.8	92°46.5	99°05.8
2	111°55.6	5.0'	$26^{\circ}18.1$	5.4'	58.8'	86°22.7	84°22.3	75°38.4	47°31.8	54°41.2	89°24.5	93° 18.8	99°38.2
3	126°19.6	4.9'	26°23.5	5.3'	58.8'	85°47.0	83°47.4	75°03.2	46°57.1	55°15.6	89°41.3	93°51.1	100°10.6
4	140°43.5	4.8'	26°28.8	5.1'	58.9'	85°11.2	83°12.4	74°27.9	46°22.3	55°50.0	89°58.1	94°23.4	100°43.0
5	155°07.2	4.7'	26°33.8	4.9'	58.9'	84°35.4	82°37.5	73°52.6	45°47.5	56°24.4	90°14.9	94°55.8	101°15.5
6	169°30.9	4.6'	N26°38.8	4.7'	58.9'	83°59.6	82°02.4	73°17.2	45°12.6	56°58.9	90°31.8	95°28.2	101°48.0
7	183°54.5	4.5'	26°43.5	4.6'	58.9'	83°23.7	81°27.4	72°41.9	44°37.8	57°33.4	90°48.6	96°00.6	102°20.6
8	198°18.0	4.4'	26°48.1	4.4'	59.0'	82°47.8	80°52.3	72°06.4	44°02.9	58°07.9	91°05.5	96°33.0	102°53.2
9	212°41.4	4.3'	26°52.5	4.2'	59.0'	82°11.8	80°17.2	71°31.0	43°27.9	58°42.5	91°22.4	97°05.5	103°25.8
10	227°04.7	4.2'	26°56.7	4.0'	59.0'	81°35.9	79°42.0	70°55.5	42°53.0	59°17.1	91°39.3	97°38.0	103°58.4
11	241°27.9	4.1'	27°00.8	3.9'	59.1'	80°59.9	79°06.8	70°20.0	42°18.0	59°51.8	91°56.2	98°10.5	104°31.1
12	255°51.0	4.1'	N27°04.6	3.7'	59.1'	80°23.8	78°31.6	69°44.4	41°43.0	60°26.5	92°13.1	98°43.1	105°03.9
13	270°14.1	4.0'	27°08.3	3.5'	59.1'	79°47.7	77°56.3	69°08.8	41°07.9	61°01.2	92°30.0	99° 15.6	105°36.6
14	284°37.1	3.9'	27°11.8	3.3'	59.1'	79°11.6	77°21.0	68°33.2	40°32.8	61°36.0	92°46.9	99°48.2	106°09.4
15	298°59.9	3.8'	$27^{\circ}15.2$	3.1'	59.2'	78°35.5	76°45.7	67°57.5	39°57.7	62°10.8	93°03.8	100°20.8	106°42.2
16	313°22.8	3.7'	$27^{\circ}18.3$	3.0'	59.2'	77°59.3	76°10.3	67°21.8	39°22.6	62°45.6	93°20.7	100°53.5	107°15.1
17	327°45.5	3.7'	27°21.3	2.8'	59.2'	77°23.1	75°34.9	66°46.1	38°47.4	63°20.5	93°37.6	101°26.1	107°48.0
18	342°08.2	3.6'	N27°24.0	2.6'	59.3'	76°46.8	74°59.5	66°10.3	38°12.2	63°55.4	93°54.6	101°58.8	108°20.9
19	356°30.8	3.5'	27°26.6	2.4'	59.3'	76°10.5	74°24.0	65°34.5	37°37.0	64°30.4	94°11.5	102°31.5	108°53.9
20	10°53.3	3.5'	27°29.0	2.2'	59.3'	75°34.2	73°48.5	64°58.7	37°01.8	65°05.4	94°28.4	103°04.2	109°26.9
21	25°15.7	3.4'	27°31.3	2.0'	59.3'	74°57.9	73°12.9	64°22.8	36°26.5	65°40.4	94°45.3	103°36.9	109°59.9
22	39°38.1	3.3'	27°33.3	1.8'	59.4'	74°21.5	72°37.4	63°46.9	35°51.2	66°15.5	95°02.2	104°09.7	110°33.0
23	54°00.5	3.3'	27°35.1	1.6'	59.4'	73°45.1	72°01.8	63°11.0	35°15.9	66°50.6	95° 19.1	104°42.5	111°06.1
15 th	SD =	= 16.0′	Mer. pass	. 19:15	5				Sun	SD = 16.2	′		

h		Моо	n (16 th Fe	eb)			Lunar	Distance	(objects	with larges	t hourly	LD delta)	
Tue	GHA	ν	Dec	d	HP	-Spica	-Mars	-Regulus	-Jupiter	+Aldebaran	+Saturn	+Fomalhaut	+Sun
0	68°22.8	3.2'	N 27°36.8	1.5'	59.4'		73°08.6	71°26.1	62°35.0		67°25.7	105°15.3	111°39.2
1	82°45.0	3.2'	27°38.2	1.3'	59.4'		72°32.1	70°50.4	61°59.0		68°00.9	105°48.1	112°12.4
2	97°07.1	3.1'	27°39.5	1.1'	59.5'		71°55.6	70°14.7	61°22.9	14°03.9	$68^{\circ}36.1$	106°20.9	112°45.6
3	111°29.2	3.1'	27°40.6	0.9'	59.5'		71°19.1	69°39.0	60°46.9	14°28.1	69°11.3	106°53.7	113°18.9
4	125°51.3	3.0'	27°41.4	0.7'	59.5'		70°42.5	69°03.2	60°10.8	14°53.1	69°46.6	107°26.6	113°52.1
5	140°13.3	3.0'	$27^{\circ}42.1$	0.5'	59.5'		70°05.9	68°27.4	59°34.6	15° 18.8	70°21.9	107°59.4	114°25.4
6	154°35.3	2.9'	N27°42.6	0.3'	59.6'		69°29.2	67°51.6	58°58.4	15° 45.2	70°57.3	108°32.3	114°58.8
7	168°57.2	2.9'	27°42.9	0.1'	59.6'		68°52.5	67°15.7	58°22.2	16° 12.2	$71^{\circ}32.7$	109°05.2	115°32.1
8	183°19.1	2.9'	27°43.0	-0.1'	59.6'		68°15.8	66°39.8	57°46.0	16°39.7	$72^{\circ}08.1$	109°38.0	116°05.5
9	197°41.0	2.8'	27°42.9	-0.3'	59.6'		67°39.1	66°03.8	57°09.7	17° 07.8	72°43.5	110°10.9	116°39.0
10	212°02.8	2.8'	27°42.6	-0.5'	59.7'	119°30.1	67°02.3	65°27.9	56°33.4	17°36.4	73°19.0	110°43.8	117°12.4
11	226°24.6	2.8'	$27^{\circ}42.1$	-0.7'	59.7'	118°54.2	66°25.5	64°51.8	55°57.1	18°05.4	73°54.5	111°16.8	117°45.9
12	240°46.3	2.7'	N27°41.4	-0.9'	59.7'	118°18.2	65°48.7	64°15.8	55°20.7	18°34.9	74°30.1	111°49.7	118°19.5
13	255°08.0	2.7'	27°40.5	-1.1'	59.7'	117°42.1	65°11.8	63°39.7	54°44.3	19°04.7	75°05.7	112°22.6	118°53.0
14	269°29.8	2.7'	27°39.4	-1.3'	59.8'	117°06.1	64°34.9	63°03.6	54°07.9	19°35.0	75°41.3	112°55.5	119°26.6
15	283°51.4	2.7'	27°38.1	-1.5'	59.8'	116°30.0	63°58.0	62°27.5	53°31.4	20°05.5	$76^{\circ}16.9$	113°28.4	
16	298°13.1	2.7'	27°36.6	-1.7'	59.8'	115°53.8	63°21.1	61°51.3	52°54.9	20°36.4	76°52.6	114°01.3	
17	312°34.8	2.6'	27°34.9	-1.9'	59.8'	115°17.7	62°44.1	61°15.2	52°18.4	21°07.5	77°28.3	114°34.3	
18	326°56.4	2.6'	N27°33.0	-2.1'	59.9'	114°41.5	62°07.1	60°38.9	51°41.9	21°39.0	78°04.1	115°07.2	
19	341°18.0	2.6'	27°30.9	-2.3'	59.9'	114°05.3	61°30.0	60°02.7	51°05.3	22° 10.7	78°39.9	115°40.1	
20	355°39.7	2.6'	27°28.6	-2.5'	59.9'	113°29.0	60°53.0	59°26.4	50°28.7	22°42.6	79°15.7	116°13.0	
21	10°01.3	2.6'	$27^{\circ}26.1$	-2.7'	59.9'	112°52.7	60°15.9	58°50.1	49°52.0	23° 14.8	79°51.5	116°45.9	
22	24°22.9	2.6'	27°23.4	-2.9'	60.0'	112°16.4	59°38.8	58°13.7	49° 15.4	23°47.2	80°27.4	117°18.8	
23	38°44.5	2.6'	27°20.5	-3.1'	60.0'	111°40.1	59°01.6	57°37.4	48° 38.7	24°19.8	81°03.3	117°51.7	
16 th	SD	= 16.2	Mer. pas	s. 20:18	3				Sun	SD = 16.2'			

h Moon (17th Feb)

Wed	GHA	ν	Dec	d	HP	-Spica	-Mars	-Regulus	-Jupiter	+Capella	+Aldebaran	+Saturn	+Fomalhaut
0	53°06.2	2.6'	N 27°17.4	-3.3'	60.0'	111°03.7	58°24.4	57°01.0	48°01.9	21°45.4	24°52.6	81°39.2	118°24.5
1	67°27.8	2.6'	$27^{\circ}14.1$	-3.5'	60.0'	110°27.3	57°47.2	56°24.5	47°25.2	22°05.0	25°25.5	82°15.2	118°57.4
2	81°49.4	2.7'	$27^{\circ}10.6$	-3.7'	60.0'	109°50.9	57°10.0	55°48.1	46°48.4	22°25.3	25°58.6	82°51.1	119°30.2
3	96°11.1	2.7'	27°06.9	-3.9'	60.1'	109°14.4	56°32.8	55°11.6	46°11.6	22°46.3	26°31.9	83°27.2	
4	110°32.8	2.7'	27°03.0	-4.1'	60.1'	108°38.0	55°55.5	54°35.1	45°34.7	23°07.9	27°05.4	84°03.2	
5	124°54.4	2.7'	26°58.9	-4.3'	60.1'	108°01.4	55°18.2	53°58.5	44°57.9	23°30.0	27°39.0	84°39.3	
6	139°16.1	2.7'	N26°54.6	-4.5'	60.1'	107°24.9	54°40.9	53°21.9	44°21.0	23°52.8	28°12.7	85°15.4	
7	153°37.9	2.8'	$26^{\circ}50.1$	-4.7'	60.1'	106°48.3	54°03.5	52°45.4	43°44.0	24°16.1	28°46.6	85°51.5	
8	167°59.6	2.8'	26°45.4	-4.9'	60.2'	106°11.7	53°26.2	52°08.7	43°07.1	24°39.9	29°20.6	86°27.6	
9	182°21.4	2.8'	26°40.5	-5.1'	60.2'	105°35.1	52°48.8	51°32.1	42°30.1	25°04.2	29°54.7	87°03.8	
10	196°43.2	2.8'	26°35.4	-5.3'	60.2'	104°58.5	52°11.4	50°55.4	41°53.1	25°29.0	30°28.9	87°40.0	
11	211°05.1	2.9'	26°30.2	-5.5'	60.2'	104°21.8	51°33.9	50°18.7	41°16.1	25°54.3	31°03.2	88°16.2	
12	225°27.0	2.9'	N 26°24.7	-5.7'	60.2'	103°45.1	50°56.5	49°42.0	40°39.0	26°20.0	31°37.7	88°52.5	
13	239°48.9	3.0'	$26^{\circ}19.0$	-5.9'	60.3'	103°08.4	50°19.0	49°05.2	40°02.0	26°46.1	32°12.2	89°28.8	
14	254°10.8	3.0'	26°13.1	-6.1'	60.3'	102°31.6	49°41.5	48°28.5	39°24.9	27°12.6	32°46.8	90°05.1	
15	268°32.9	3.0'	$26^{\circ}07.1$	-6.3'	60.3'	101°54.9	49°04.0	47°51.7	38°47.7	27°39.5	33°21.6	90°41.4	
16	282°54.9	3.1'	26°00.8	-6.4'	60.3'	101°18.1	48°26.5	47°14.9	38°10.6	28°06.8	33°56.4	91°17.8	
17	297°17.0	3.1'	25°54.4	-6.6'	60.3'	100°41.2	47°48.9	46°38.0	37°33.4	28°34.4	34°31.3	91°54.1	
18	311°39.1	3.2'	N25°47.8	-6.8'	60.3'	100°04.4	47°11.4	46°01.1	36°56.2	29°02.3	35°06.2	92°30.5	
19	326°01.3	3.3'	25°40.9	-7.0'	60.4'	99°27.5	46°33.8	45°24.3	36°19.0	29°30.6	35°41.3	93°06.9	
20	340°23.6	3.3'	25°33.9	-7.2'	60.4'	98°50.7	45°56.2	44°47.4	35°41.8	29°59.1	36°16.4	93°43.4	
21	354°45.9	3.4'	25°26.7	-7.4'	60.4'	98°13.7	45°18.6	44°10.4	35°04.5	30°28.0	36°51.6	94°19.8	
22	9°08.3	3.4'	$25^{\circ}19.4$	-7.6'	60.4'	97°36.8	44°41.0	43°33.5	34°27.3	30°57.1	37°26.9	94°56.3	
23	23°30.7	3.5'	$25^{\circ}11.8$	-7.7'	60.4'	96°59.9	44°03.3	42°56.5	33°50.0	31°26.5	38°02.2	95°32.8	
17 th	SD = 16.4' Mer. pass. 21:22												

h Moon (18th Feb)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Spica	-Mars	-Regulus	-Jupiter	+Pollux	+Capella	+Aldebaran	+Saturn
0	37°53.2	3.6'	N 25°04.0	-7.9'	60.4'	96°22.9	43°25.7	42°19.5	33° 12.7		31°56.1	38°37.6	96°09.3
1	52°15.7	3.6'	24°56.1	-8.1'	60.4'	95°45.9	42°48.0	41°42.5	32°35.3		32°26.0	39°13.1	96°45.9
2	66°38.4	3.7'	24°48.0	-8.3'	60.5'	95°08.9	42°10.3	41°05.5	31°58.0		32°56.1	39°48.6	97°22.4
3	81°01.1	3.8'	24°39.7	-8.5'	60.5'	94°31.9	41°32.7	40°28.4	31°20.6		33°26.4	40°24.1	97°59.0
4	95°23.8	3.8'	24°31.2	-8.6'	60.5	93°54.8	40°55.0	39°51.4	30°43.2		33°57.0	40°59.8	98°35.6
5	109°46.6	3.9'	24°22.6	-8.8'	60.5'	93°17.8	40°17.3	39°14.3	30°05.8		34°27.7	41°35.4	99°12.2
6	124°09.5	4.0'	N 24°13.8	-9.0'	60.5'	92°40.7	39°39.6	38°37.2	29°28.4		34°58.7	42°11.2	99°48.8
7	138°32.5	4.1'	24°04.8	-9.2'	60.5'	92°03.6	39°01.9	38°00.1	28°51.0		35° 29.8	42°46.9	100°25.4
8	152°55.6	4.1'	23°55.6	-9.3'	60.5'	91°26.5	38°24.1	37°23.0	28° 13.5		36°01.1	43°22.8	101°02.1
9	167°18.7	4.2'	23°46.3	-9.5'	60.5'	90°49.4	37°46.4	36°45.8	27°36.1		36°32.6	43°58.6	101°38.8
10	181°41.9	4.3'	23°36.8	-9.7'	60.6'	90°12.2	37°08.7	36°08.7	26°58.6		37°04.2	44°34.5	102°15.4
11	196°05.2	4.4'	23°27.1	-9.8'	60.6'	89°35.1	36°31.0	35°31.5	26°21.1		37°36.0	45°10.5	102°52.1
12	210°28.6	4.5'	N23°17.2	-10.0'	60.6'	88°57.9	35°53.2	34°54.3	25°43.6		38°08.0	45°46.5	103°28.9
13	224°52.0	4.5'	23°07.2	-10.2'	60.6'	88°20.7	35°15.5	34°17.1	25°06.1		38°40.1	46°22.5	104°05.6
14	239°15.5	4.6'	22°57.1	-10.3'	60.6'	87°43.5	34°37.8	33°39.9	24°28.6		39° 12.3	46°58.6	104°42.3
15	253°39.2	4.7'	22°46.7	-10.5'	60.6'	87°06.3	34°00.1	33°02.7	23°51.0		39°44.7	47°34.7	105°19.0
16	268°02.9	4.8'	22°36.2	-10.6'	60.6'	86°29.1	33°22.4	32°25.5	23°13.5		40° 17.2	48°10.8	105°55.8
17	282°26.7	4.9'	22°25.6	-10.8'	60.6'	85°51.8	32°44.7	31°48.2	22°35.9		40°49.8	48°47.0	106°32.6
18	296°50.6	5.0'	N22°14.8	-11.0'	60.6'	85°14.6	32°07.0	31°11.0	21°58.4		41°22.5	49°23.2	107°09.3
19	311°14.5	5.1'	22°03.8	-11.1'	60.6'	84°37.3	31°29.3	30°33.7	21°20.8		41°55.4	49°59.4	107°46.1
20	325°38.6	5.2'	21°52.7	-11.3'	60.6'	84°00.1	30°51.6	29°56.5	20°43.2	8°15.3	42°28.3	50°35.6	108°22.9
21	340°02.7	5.2'	21°41.4	-11.4'	60.6'	83°22.8	30°14.0	29°19.2	20°05.6	8°47.6	43°01.4	51°11.9	108°59.7
22	354°27.0	5.3'	21°30.0	-11.6'	60.6'	82°45.5	29°36.3	28°41.9	19°28.1	9°20.5	43°34.6	51°48.2	109°36.5
23	8°51.3	5.4'	21°18.5	-11.7'	60.6'	82°08.2	28°58.7	28°04.6	18°50.5	9°53.9	44°07.8	52°24.6	110°13.3
18 th	SD	= 16.5	Mer. pas	s. 22:23									

h Moon (19th Feb) Lunar Distance (objects with largest hourly LD delta)

		IVIOU	ш (та. т.	eb)			Lunar L	ristance	Objects	with larg	est noung	/ LD delta)	
Fri	GHA	ν	Dec	d	HP	-Antares	-Spica	-Mars	-Jupiter	+Pollux	+Capella	+Aldebaran	+Saturn
0	23°15.8	5.5'	N 21°06.8	-11.8'	60.6'		81°30.9	28°21.1	18°12.9	10°27.8	44°41.2	53°00.9	110°50.1
1	37°40.3	5.6'	20°54.9	-12.0'	60.6'		80°53.6	27°43.6	17°35.3	11°02.0	45°14.6	53° 37.3	111°26.9
2	52°04.9	5.7'	20°42.9	-12.1'	60.7'		80°16.3	27°06.0	16°57.7	11°36.6	45°48.1	54° 13.7	112°03.7
3	66°29.6	5.8'	20°30.8	-12.3'	60.7'		79°39.0	26°28.5	16°20.1	12°11.4	46°21.7	54°50.1	112°40.5
4	80°54.4	5.9'	$20^{\circ}18.5$	-12.4'	60.7'		79°01.7	25°51.0	15°42.5	12°46.5	46°55.4	55°26.6	113°17.4
5	95°19.3	6.0'	20°06.1	-12.5'	60.7'		78°24.4	25°13.5	15°04.9	13°21.7	47°29.2	56°03.0	113°54.2
6	109°44.3	6.1'	N 19°53.6	-12.7'	60.7'		77°47.0	24°36.1	14°27.3	13°57.2	48°03.0	56° 39.5	114°31.0
7	124°09.4	6.2'	19°40.9	-12.8'	60.7'		77°09.7	23°58.8	13°49.7	14°32.8	48°36.9	57° 16.0	115°07.8
8	138°34.6	6.3'	$19^{\circ}28.1$	-12.9'	60.7'		76°32.4	23°21.4	13°12.2	15°08.6	49°10.8	57°52.5	115°44.7
9	152°59.9	6.4'	19°15.2	-13.0'	60.7'		75°55.1	22°44.2	12°34.6	15°44.5	49°44.9	58°29.0	116°21.5
10	167°25.3	6.5'	19°02.2	-13.2'	60.7'		75°17.7	22°07.0	11°57.1	16°20.5	50°18.9	59°05.5	116°58.3
11	181°50.8	6.6'	18°49.0	-13.3'	60.7'		74°40.4	21°29.8	11°19.5	16°56.5	50°53.1	59°42.0	117°35.1
12	196°16.4	6.7'	N18°35.7	-13.4'	60.7'	119°53.8	74°03.1	20°52.8	10°42.0	17° 32.7	51°27.3	60° 18.6	118°11.9
13	210°42.1	6.8'	18°22.3	-13.5'	60.7'	119° 16.5	73°25.7	20°15.8	10°04.5	18°09.0	52°01.5	60°55.2	118°48.7
14	225°07.8	6.9'	18°08.8	-13.6'	60.6'	118°39.1	72°48.4	19°38.8	9°27.1	18°45.3	52°35.8	61°31.7	119°25.6
15	239°33.7	7.0'	$17^{\circ}55.1$	-13.8'	60.6'	118°01.7	72°11.1	19°02.0	8°49.7	19°21.7	53°10.1	62°08.3	
16	253°59.7	7.1'	$17^{\circ}41.4$	-13.9'	60.6'	117°24.4	71°33.8	18°25.3	8°12.3	19°58.1	53°44.5	62°44.9	
17	268°25.7	7.2'	17°27.5	-14.0'	60.6'	116°47.0	70°56.4	17°48.7	7°34.9	20°34.6	54°18.9	63°21.5	
18	282°51.9	7.3'	$N17^{\circ}13.6$	-14.1'	60.6'	116°09.6	70°19.1	17°12.2	6°57.7	21°11.2	54°53.4	63°58.0	
19	297°18.2	7.4'	$16^{\circ}59.5$	-14.2'	60.6'	115°32.3	69°41.8	16°35.9	6°20.5	21°47.7	55°27.9	64°34.6	
20	311°44.5	7.5'	16°45.3	-14.3'	60.6'	114°54.9	69°04.5	15°59.7	5°43.5	22°24.4	56°02.5	65°11.2	
21	326°11.0	7.5'	16°31.0	-14.4'	60.6'	114° 17.6	68°27.2	15°23.7	5°06.6	23°01.0	56°37.0	65°47.8	
22	340°37.5	7.6'	$16^{\circ}16.6$	-14.5'	60.6'	113°40.2	67°49.9	14°47.9	4°29.9	23°37.7	57°11.6	66°24.4	
23	355°04.2	7.7'	16°02.2	-14.6'	60.6'	113°02.9	67°12.6	14°12.3	3°53.5	24°14.4	57°46.3	67°01.0	
19 th	SD	= 16.5	Mer. pas	ss. 23:20					-			-	

h Moon (20th Feb) Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Antares	-Spica	-Regulus	± Jupiter	+Pollux	+Betelgeuse	+Capella	+Aldebaran
0	9°30.9	7.8'	N 15°47.6	-14.7'	60.6'	112°25.6	66°35.4	12°33.2	3°17.7	24°51.1	50°33.6	58° 20.9	67°37.6
1	23°57.7	7.9'	15°32.9	-14.8'	60.6'	111°48.3	65°58.1	11°56.1	2°42.6	25°27.8	51°07.0	58° 55.6	68°14.2
2	38°24.6	8.0'	$15^{\circ}18.1$	-14.9'	60.6'	111°11.0	65°20.8	11° 19.0		26°04.6	51°40.5	59°30.3	68°50.8
3	52°51.7	8.1'	15°03.3	-14.9'	60.6'	110°33.7	64°43.6	10°42.0		26°41.4	52°14.1	60°05.1	69°27.4
4	67°18.8	8.2'	14°48.4	-15.0'	60.6'	109°56.4	64°06.4	10°05.0		$27^{\circ}18.1$	52°47.7	60°39.8	70°04.0
5	81°46.0	8.3'	14°33.3	-15.1'	60.5'	109°19.1	63°29.1	9°28.1		27°54.9	53°21.3	61°14.6	70°40.6
6	96°13.3	8.4'	$N14^{\circ}18.2$	-15.2'	60.5'	108°41.9	62°51.9	8°51.3		28°31.7	53°55.0	61°49.4	71°17.1
7	110°40.6	8.5'	14°03.0	-15.3'	60.5'	108°04.6	62°14.7	8° 14.5		29°08.5	54°28.7	62°24.2	71°53.7
8	125°08.1	8.6'	13°47.8	-15.3'	60.5'	107°27.4	61°37.5	7°37.8		29°45.3	55°02.5	62°59.0	72°30.3
9	139°35.7	8.7'	13°32.4	-15.4'	60.5'	106°50.2	61°00.4	7°01.2		30°22.1	55°36.3	63°33.9	73°06.8
10	154°03.3	8.7'	13°17.0	-15.5'	60.5'	106°13.0	60°23.2	6°24.8		30°58.9	56°10.2	64°08.7	73°43.3
11	168°31.1	8.8'	$13^{\circ}01.5$	-15.6'	60.5'	105°35.8	59°46.1	5°48.5	3°55.9	31°35.8	56°44.0	64°43.6	74°19.9
12	182°58.9	8.9'	$N12^{\circ}46.0$	-15.6'	60.5'	104°58.6	59°09.0	5° 12.5	4°32.1	32°12.6	57°17.9	65°18.4	74°56.4
13	197°26.8	9.0'	12°30.3	-15.7'	60.5'	104°21.4	58°31.8	4°36.8	5°08.7	32°49.4	57°51.9	65°53.3	75°32.9
14	211°54.8	9.1'	12°14.6	-15.8'	60.4'	103°44.3	57°54.8	4°01.5	5°45.4	33°26.2	58°25.8	66°28.2	76°09.4
15	226°22.9	9.2'	11°58.9	-15.8'	60.4'	103°07.2	57° 17.7	3°26.9	6°22.2	34°03.0	58°59.8	67°03.1	76°45.8
16	240°51.0	9.2'	11°43.1	-15.9'	60.4'	102°30.1	56°40.6		6°59.1	34°39.7	59°33.8	67°37.9	77°22.3
17	255°19.3	9.3'	11°27.2	-15.9'	60.4'	101°53.0	56°03.6		7°36.1	35°16.5	60°07.9	68°12.8	77°58.8
18	269°47.6	9.4'	$N11^{\circ}11.3$	-16.0'	60.4'	101°15.9	55°26.6		8°13.2	35°53.3	60°41.9	68°47.7	78°35.2
19	284°16.0	9.5'	10°55.3	-16.0'	60.4'	100°38.8	54°49.6		8°50.2	36°30.0	61°16.0	69°22.6	79°11.6
20	298°44.5	9.6'	10°39.2	-16.1'	60.3'	100°01.8	54°12.6		9°27.3	37°06.8	61°50.0	69°57.5	79°48.0
21	313°13.1	9.6'	10°23.1	-16.1'	60.3'	99°24.8	53°35.7		10°04.4	37°43.5	62°24.1	70°32.4	80°24.4
22	327°41.7	9.7'	$10^{\circ}07.0$	-16.2'	60.3'	98°47.8	52°58.8		10°41.5	38°20.2	62°58.2	71°07.2	81°00.7
23	342°10.5	9.8'	09°50.8	-16.2'	60.3'	98°10.9	52°21.9		11°18.6	38°56.9	63°32.3	71°42.1	81°37.1
20 th	SE) = 16	.5′ Mer. pa	ass:-									

Moon (21st Feb)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Spica	+Regulus	+Jupiter	+Pollux	+Aldebaran
0	356° 39.3	9.9'	N 09°34.5	-16.3'	60.3'	97°33.9	87°19.0	83°17.7	51°45.0		11°55.7	39°33.6	82°13.4
1	11°08.1	10.0'	09°18.3	-16.3'	60.2'	96°57.0	86°49.7	82°49.1	51°08.1		12°32.8	40°10.3	82°49.7
2	25°37.1	10.0'	$09^{\circ}01.9$	-16.4'	60.2'	96°20.1	86°20.4	82°20.6	50°31.3		13°09.8	40°46.9	83°26.0
3	40°06.1	10.1'	08°45.6	-16.4'	60.2'	95°43.2	85°51.2	81°52.0	49°54.5	4°26.1	13°46.9	41°23.6	84°02.2
4	54°35.2	10.2'	08°29.2	-16.4'	60.2'	95°06.4	85°22.0	81°23.5	49°17.7	5°01.4	14°24.0	42°00.2	84°38.4
5	69°04.4	10.2'	$08^{\circ}12.7$	-16.5'	60.2'	94°29.6	84°52.8	80°55.1	48°41.0	5°37.0	15°01.0	42°36.8	85°14.7
6	83°33.6	10.3'	N 07°56.2	-16.5'	60.1'	93°52.8	84°23.6	80°26.7	48°04.3	6°12.8	15°38.0	43°13.3	85°50.8
7	98°02.9	10.4'	07°39.7	-16.5'	60.1'	93°16.0	83°54.5	79°58.4	47°27.6	6°48.8	16°15.0	43°49.9	86°27.0
8	112° 32.3	10.4'	07°23.2	-16.6'	60.1'	92°39.3	83°25.4	79°30.1	46°50.9	7°24.9	16°52.0	44°26.4	87°03.1
9	127°01.7	10.5'	07°06.7	-16.6'	60.1'	92°02.6	82°56.3	79°01.8	46°14.3	8°01.0	17°28.9	45°02.9	87°39.2
10	141°31.2	10.6'	$06^{\circ}50.1$	-16.6'	60.1'	91°25.9	82°27.3	78°33.6	45°37.7	8°37.2	18°05.8	45°39.4	88° 15.3
11	156°00.8	10.6'	06°33.5	-16.6'	60.0'	90°49.3	81°58.4	78°05.5	45°01.1	9°13.4	18°42.7	46°15.9	88°51.3
12	170°30.4	10.7'	$N06^{\circ}16.8$	-16.7'	60.0'	90°12.6	81°29.5	77°37.4	44°24.6	9°49.7	19°19.6	46°52.3	89°27.3
13	185°00.1	10.8'	06°00.2	-16.7'	60.0'	89°36.0	81°00.6	77°09.4	43°48.1	10°25.9	19°56.5	47°28.7	90°03.3
14	199°29.9	10.8'	05°43.5	-16.7'	60.0'	88°59.5	80°31.8	76°41.4	43°11.6	11°02.2	20°33.3	48°05.1	90°39.3
15	213°59.7	10.9'	05°26.8	-16.7'	59.9'	88°23.0	80°03.0	76°13.5	42°35.1	11°38.5	21°10.1	48°41.4	91°15.2
16	228°29.6	10.9'	$05^{\circ}10.1$	-16.7'	59.9'	87°46.5	79°34.3	75°45.7	41°58.7	12°14.7	21°46.9	49° 17.7	91°51.1
17	242°59.5	11.0'	04°53.4	-16.7'	59.9'	87°10.0	79°05.6	75°17.9	41°22.3	12°51.0	22°23.6	49°54.0	92°27.0
18	257°29.5	11.0'	N 04°36.7	-16.7'	59.9'	86°33.6	78°37.0	74°50.2	40°46.0	13°27.2	23°00.3	50°30.3	93°02.8
19	271°59.5	11.1'	04°19.9	-16.7'	59.8'	85°57.2	78°08.4	74°22.6	40°09.7	14°03.4	23°37.0	51°06.5	93°38.6
20	286°29.6	11.1'	04°03.2	-16.7'	59.8'	85°20.8	77°39.9	73°55.0	39°33.4	14°39.6	24°13.6	51°42.7	94°14.4
21	300°59.8	11.2'	03°46.4	-16.8'	59.8'	84°44.5	77°11.5	73°27.5	38°57.2	15°15.8	24°50.2	52°18.9	94°50.1
22	315°30.0	11.2'	03°29.7	-16.8'	59.7'	84°08.2	76°43.1	73°00.1	38°21.0	15°52.0	25°26.8	52°55.0	95°25.8
23	330°00.2	11.3'	03°12.9	-16.8'	59.7'	83°31.9	76°14.7	72°32.8	37°44.8	16°28.1	26°03.3	53°31.1	96°01.4
21 st	SD	= 16.4	Mer. pas	s. 00:14									

Moon (22nd Feb)

h

Mon	GHA	ν	Dec	d	HP	-Venus	-Altair	-Antares	-Spica	+Regulus	+Mars	+Jupiter	+Pollux
0	344°30.5	11.3'	N02°56.2	-16.8'	59.7'			82°55.7	37°08.7	17°04.2	18°30.0	26°39.9	54°07.2
1	359°00.8	11.4'	02°39.4	-16.8'	59.7'			82°19.5	36°32.6	17°40.3	19°05.6	27°16.3	54°43.2
2	13°31.2	11.4'	02°22.7	-16.7'	59.6'			81°43.3	35°56.6	18°16.3	19°41.3	27°52.8	55°19.2
3	28°01.7	11.5'	$02^{\circ}05.9$	-16.7'	59.6'			81°07.2	35°20.6	18°52.4	20°17.0	28°29.2	55°55.2
4	42°32.2	11.5'	01°49.2	-16.7'	59.6'			80°31.1	34°44.6	19°28.4	20°52.7	29°05.5	56°31.2
5	57°02.7	11.6'	01°32.5	-16.7'	59.5'			79°55.1	34°08.7	20°04.3	21°28.5	29°41.9	57°07.1
6	71°33.3	11.6'	N 01°15.7	-16.7'	59.5'			79°19.1	33°32.8	20°40.2	22°04.3	30°18.2	57°42.9
7	86°03.9	11.6'	00°59.0	-16.7'	59.5'			78°43.1	32°57.0	21°16.1	22°40.2	30°54.4	58°18.7
8	100°34.5	11.7'	00°42.3	-16.7'	59.5'	119°57.8		78°07.2	32°21.2	21°52.0	23°16.0	31°30.6	58°54.5
9	115°05.2	11.7'	00°25.7	-16.7'	59.4'	119°24.9		77°31.3	31°45.5	22°27.8	23°51.9	32°06.8	59°30.3
10	129°35.9	11.8'	N 00°09.0	-16.6'	59.4'	118°52.1		76°55.5	31°09.8	23°03.6	24°27.8	32°43.0	60°06.0
11	144°06.7	11.8'	S 00°07.7	-16.6'	59.4'	118°19.3		76°19.6	30°34.1	23°39.3	25°03.6	33°19.1	60°41.7
12	158°37.5	11.8'	S 00°24.3	-16.6'	59.3'	117°46.6		75°43.9	29°58.5	24°15.0	25°39.5	33°55.1	61°17.3
13	173°08.3	11.9'	00°40.9	-16.6'	59.3'	117°13.9		75°08.2	29°22.9	24°50.7	26°15.4	34°31.2	61°52.9
14	187°39.2	11.9'	00°57.5	-16.6'	59.3'	116°41.2		74°32.5	28°47.4	25°26.3	26°51.3	35°07.1	62°28.5
15	202°10.0	11.9'	01°14.0	-16.5'	59.2'	116°08.6		73°56.8	28°11.9	26°01.9	27°27.1	35°43.1	63°04.0
16	216°41.0	12.0'	01°30.6	-16.5'	59.2'	115°36.0		73°21.2	27°36.5	26°37.5	28°03.0	36°19.0	63°39.5
17	231°11.9	12.0'	01°47.1	-16.5'	59.2'	115°03.5		72°45.6	27°01.1	27°13.0	28°38.8	36°54.8	64°14.9
18	245°42.9	12.0'	S 02°03.6	-16.4'	59.1'	114°31.0		72°10.1	26°25.8	27°48.5	29°14.7	37°30.7	64°50.3
19	260°13.9	12.0'	02°20.0	-16.4'	59.1'	113°58.5		71°34.6	25°50.5	28°23.9	29°50.5	38°06.4	65°25.7
20	274°44.9	12.1'	02°36.4	-16.4'	59.1'	113°26.1		70°59.2	25°15.3	28°59.3	30°26.3	38°42.2	66°01.0
21	289°16.0	12.1'	02°52.8	-16.4'	59.0'	112°53.7	119°49.6	70°23.8	24°40.1	29°34.7	31°02.0	39°17.9	66°36.3
22	303°47.1	12.1'	03°09.2	-16.3'	59.0'	112°21.4	119°21.1	69°48.5	24°05.0	30°10.0	31°37.8	39°53.5	67°11.5
23	318°18.2	12.1'	03°25.5	-16.3'	59.0'	111°49.1	118°52.5	69°13.2	23°29.9	30°45.3	32°13.5	40°29.1	67°46.7
22 nd	SD	= 16.3	′ Mer. pas	s. 01:04									

	_	
h	Moon (23 rd Feb)	Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Altair	-Venus	-Antares	-Spica	+Regulus	+Mars	+Jupiter	+Pollux
0	332°49.3	12.1'	S 03°41.8	-16.2'	58.9'	118°23.8	111°16.9	68°37.9	22°54.9	31°20.5	32°49.2	41°04.7	68°21.9
1	347°20.4	12.2'	03°58.0	-16.2'	58.9'	117°55.2	110°44.6	68°02.7	22°19.9	31°55.7	33°24.9	41°40.2	68°57.0
2	1°51.6	12.2'	$04^{\circ}14.2$	-16.2'	58.9'	117°26.5	110°12.5	67°27.5	21°45.0	32°30.8	34°00.5	42° 15.7	69°32.0
3	16°22.8	12.2'	04°30.4	-16.1'	58.8'	116°57.8	109°40.4	66°52.4	21°10.2	33°05.9	34°36.1	42°51.1	70°07.1
4	30°54.0	12.2'	04°46.5	-16.1'	58.8'	116°29.1	109°08.3	66°17.3	20°35.4	33°41.0	35°11.7	43°26.5	70°42.0
5	45°25.2	12.2'	$05^{\circ}02.5$	-16.0'	58.7'	116°00.3	108°36.3	65°42.3	20°00.7	34°16.0	35°47.3	44°01.8	71°17.0
6	59°56.4	12.2'	S 05°18.6	-16.0'	58.7'	115°31.5	108°04.3	65°07.3	19°26.0	34°50.9	36°22.8	44°37.1	71°51.9
7	74°27.6	12.2'	05°34.5	-15.9'	58.7'	115°02.7	107°32.3	64°32.3	18°51.4	35°25.9	36°58.3	45° 12.4	72°26.7
8	88°58.9	12.3'	05°50.5	-15.9'	58.6'	114°33.9	107°00.4	63°57.4	18° 16.9	36°00.7	37°33.8	45°47.6	73°01.5
9	103°30.1	12.3'	06°06.4	-15.8'	58.6'	114°05.1	106°28.6	63°22.5	17°42.4	36°35.6	38°09.2	46°22.7	73°36.3
10	118°01.4	12.3'	06°22.2	-15.8'	58.6'	113°36.3	105°56.8	62°47.7	17°08.0	37°10.4	38° 44.6	46° 57.9	74°11.0
11	132°32.7	12.3'	06°38.0	-15.7'	58.5'	113°07.4	105°25.0	$62^{\circ}13.0$	16°33.7	37°45.1	39°20.0	47°32.9	74°45.6
12	147°04.0	12.3'	S 06°53.7	-15.7'	58.5'	112°38.6	104°53.3	61°38.2	15°59.5	38°19.8	39°55.3	48°08.0	75°20.3
13	161°35.3	12.3'	07°09.4	-15.6'	58.5'	112°09.7	104°21.6	$61^{\circ}03.6$	15°25.3	38°54.5	40°30.6	48°42.9	75°54.8
14	176°06.6	12.3'	$07^{\circ}25.0$	-15.6'	58.4'	111°40.8	103°50.0	60°28.9	14°51.2	39°29.1	41°05.8	49° 17.9	76°29.4
15	190°37.9	12.3'	07°40.5	-15.5'	58.4'	111°12.0	103°18.4	59°54.3	14° 17.2	40°03.6	41°41.0	49°52.7	77°03.8
16	205°09.2	12.3'	$07^{\circ}56.0$	-15.4'	58.3'	110°43.1	102°46.8	$59^{\circ}19.8$	13°43.3	40°38.1	42° 16.2	50°27.6	77°38.3
17	219°40.5	12.3'	$08^{\circ}11.5$	-15.4'	58.3'	110°14.2	102°15.3	58°45.3	13°09.6	41°12.6	42°51.3	51°02.4	78°12.7
18	234°11.8	12.3'	S 08°26.8	-15.3'	58.3'	109°45.4	101°43.9	$58^{\circ}10.9$	12°35.9	41°47.0	43°26.4	51°37.1	78°47.0
19	248°43.1	12.3'	08°42.2	-15.3'	58.2'	109°16.5	101°12.5	57° 36.5	12°02.3	42°21.4	44°01.5	52°11.8	79°21.3
20	263°14.4	12.3'	08°57.4	-15.2'	58.2'	108°47.6	100°41.1	$57^{\circ}02.1$	11°28.9	42°55.7	44°36.5	52°46.5	79°55.6
21	277°45.8	12.3'	$09^{\circ}12.6$	-15.1'	58.2'	108°18.8	100°09.8	56°27.8	10°55.6	43°30.0	45° 11.5	53°21.1	80°29.8
22	292°17.1	12.3'	09°27.7	-15.1'	58.1'	107°49.9	99°38.6	55°53.6	10°22.4	44°04.3	45°46.4	53°55.6	81°03.9
23	306°48.4	12.3'	09°42.8	-15.0'	58.1'	107°21.1	99°07.4	55° 19.4	9°49.4	44°38.5	46°21.3	54°30.2	81°38.0
23 rd	SD	= 16.1'	Mer. pas	s. 01:52									

h		Моог	n (24 th Fe	eb)		L	unar Dis	tance (ol	bjects w	ith larges	t hourly	LD delta))
Wed	GHA	ν	Dec	d	HP	-Altair	-Venus	-Antares	-Spica	+Regulus	+Mars	+Jupiter	+Pollux
0	321°19.7	12.3'	S 09°57.8	-14.9'	58.0'	106°52.2	98°36.2	54°45.2	9°16.7	45°12.6	46°56.2	55°04.6	82°12.1
1	335°51.0	12.3'	$10^{\circ}12.7$	-14.8'	58.0'	106°23.4	98°05.1	54°11.1	8°44.1	45°46.7	47°31.0	55°39.0	82°46.1
2	350°22.3	12.3'	10°27.5	-14.8'	58.0'	105°54.6	97°34.0	53°37.0	8°11.8	46°20.7	48°05.8	56°13.4	83°20.1
3	4°53.6	12.3'	10°42.3	-14.7'	57.9'	105°25.8	97°03.0	53°03.0	7°39.8	46°54.8	48°40.5	56°47.7	83°54.0
4	19°24.8	12.3'	10°57.0	-14.6'	57.9'	104°57.0	96°32.0	52°29.0	7°08.1	47°28.7	49°15.2	57°22.0	84°27.9
5	33°56.1	12.3'	$11^{\circ}11.7$	-14.6'	57.9'	104°28.2	96°01.0	51°55.1	6°36.8	48°02.6	49°49.8	57°56.2	85°01.8
6	48°27.4	12.3'	S 11°26.2	-14.5'	57.8'	103°59.5	95°30.2	51°21.2	6°06.1	48°36.5	50°24.4	58°30.4	85°35.5
7	62°58.6	12.2'	11°40.7	-14.4'	57.8'	103°30.7	94°59.3	50°47.4	5°36.0	49°10.3	50°59.0	59°04.6	86°09.3
8	77°29.9	12.2'	$11^{\circ}55.1$	-14.3'	57.7'	103°02.0	94°28.5	50°13.6	5°06.8	49°44.1	51°33.5	59°38.6	86°43.0
9	92°01.1	12.2'	12°09.4	-14.3'	57.7'	102°33.3	93°57.8	49°39.8		50°17.8	52°08.0	60°12.7	87°16.6
10	106°32.3	12.2'	12°23.7	-14.2'	57.7'	102°04.6	93°27.1	49°06.2		50°51.5	52°42.4	60°46.7	87°50.2
11	121°03.5	12.2'	12°37.9	-14.1'	57.6'	101°36.0	92°56.4	48°32.5		51°25.1	53°16.8	61°20.6	88°23.8
12	135°34.7	12.2'	S 12°51.9	-14.0'	57.6'	101°07.3	92°25.8	47°58.9		51°58.7	53°51.1	61°54.5	88°57.3
13	150°05.9	12.2'	13°06.0	-13.9'	57.6'	100°38.7	91°55.2	47°25.4		52°32.2	54°25.4	62°28.4	89°30.7
14	164°37.1	12.1'	13°19.9	-13.8'	57.5'	100°10.1	91°24.7	46°51.9		53°05.7	54°59.7	63°02.2	90°04.1
15	179°08.2	12.1'	13°33.7	-13.8'	57.5'	99°41.5	90°54.2	46°18.4		53°39.2	55°33.9	63°36.0	90°37.5
16	193°39.3	12.1'	13°47.5	-13.7'	57.4'	99°13.0	90°23.8	45°45.0		54°12.6	56°08.1	64°09.7	91°10.8
17	208°10.4	12.1'	14°01.2	-13.6'	57.4'	98°44.4	89°53.4	45°11.6		54°45.9	56°42.2	64°43.3	91°44.1
18	222°41.5	12.1'	S 14°14.7	-13.5'	57.4'	98°15.9	89°23.1	44°38.3		55°19.2	57°16.3	65°16.9	92°17.3
19	237°12.6	12.1'	14°28.2	-13.4'	57.3'	97°47.5	88°52.8	44°05.0		55°52.5	57°50.3	65°50.5	92°50.5
20	251°43.7	12.0'	14°41.7	-13.3'	57.3'	97°19.0	88°22.6	43°31.8		56°25.7	58°24.3	66°24.0	93°23.6
21	266°14.7	12.0'	14°55.0	-13.2'	57.3'	96°50.6	87°52.4	42°58.6		56°58.9	58°58.2	66°57.5	93°56.7
22	280°45.7	12.0'	15°08.2	-13.1'	57.2'	96°22.2	87°22.2	42°25.5		57°32.0	59°32.2	67°31.0	94°29.8
23	295°16.7	12.0'	$15^{\circ}21.4$	-13.1'	57.2'	95°53.9	86°52.1	41°52.4		58°05.1	60°06.0	68°04.4	95°02.8
24 th	SD	= 15.8'	Mer. pas	s. 02:40			,		•	•			

h		Мооі	n (25 th Fe	eb)			Lunar Di	stance (objects w	ith largest	thourly	LD delta))
Thu	GHA	ν	Dec	d	HP	-Sun	-Altair	-Venus	-Antares	+Regulus	+Mars	+Jupiter	+Pollux
0	309°47.7	11.9'	S 15°34.4	-13.0'	57.1'		95°25.6	86°22.1	41°19.4	58°38.1	60°39.8	68°37.7	95°35.7
1	324°18.6	11.9'	$15^{\circ}47.4$	-12.9'	57.1'		94°57.3	85°52.0	40°46.4	59° 11.1	61°13.6	69°11.0	96°08.6
2	338°49.5	11.9'	$16^{\circ}00.2$	-12.8'	57.1'		94°29.0	85°22.1	40°13.4	59°44.0	61°47.3	69°44.2	96°41.5
3	353°20.4	11.9'	16°13.0	-12.7'	57.0'		94°00.8	84°52.2	39°40.5	60° 16.9	62°21.0	70°17.5	97°14.3
4	7°51.3	11.8'	$16^{\circ}25.7$	-12.6'	57.0'		93°32.6	84°22.3	39°07.7	60°49.8	62°54.7	70°50.6	97°47.1
5	22°22.1	11.8'	16°38.3	-12.5'	57.0'		93°04.4	83°52.4	38°34.9	61°22.6	63°28.3	71°23.7	98°19.8
6	36°53.0	11.8'	S 16°50.7	-12.4'	56.9'		92°36.3	83°22.7	38°02.1	61°55.3	64°01.8	71°56.8	98°52.5
7	51°23.8	11.8'	17°03.1	-12.3'	56.9'		92°08.2	82°52.9	37°29.4	62°28.0	64°35.3	72°29.8	99°25.1
8	65°54.5	11.7'	$17^{\circ}15.4$	-12.2'	56.8'		91°40.1	82°23.2	36°56.7	63°00.7	65°08.8	73°02.8	99°57.7
9	80°25.3	11.7'	17°27.6	-12.1'	56.8'		91°12.1	81°53.6	36°24.0	63°33.3	65°42.2	73°35.7	100°30.2
10	94°56.0	11.7'	$17^{\circ}39.7$	-12.0'	56.8'		90°44.1	81°23.9	35°51.5	64°05.9	66°15.6	74°08.6	101°02.7
11	109°26.7	11.7'	$17^{\circ}51.7$	-11.9'	56.7'		90°16.2	80°54.4	35°18.9	64°38.4	66°49.0	74°41.5	101°35.2
12	123°57.3	11.6'	S 18°03.5	-11.8'	56.7'		89°48.3	80°24.8	34°46.4	65° 10.9	67°22.3	75°14.3	102°07.6
13	138°28.0	11.6'	18° 15.3	-11.7'	56.7'		89°20.4	79°55.4	34°14.0	65°43.4	67°55.5	75°47.0	102°39.9
14	152°58.6	11.6'	18°27.0	-11.6'	56.6'		88°52.6	79°25.9	33°41.5	66° 15.8	68°28.8	76°19.8	103°12.3
15	167°29.1	11.5'	18° 38.6	-11.5'	56.6'	119°46.1	88°24.8	78°56.5	33°09.2	66° 48.2	69°01.9	76°52.4	103°44.5
16	181°59.7	11.5'	18°50.0	-11.4'	56.6'	119°16.3	87°57.0	78°27.2	32°36.8	67°20.5	69°35.1	77°25.1	104°16.8
17	196°30.2	11.5'	$19^{\circ}01.4$	-11.3'	56.5'	118°46.5	87°29.3	77°57.9	32°04.5	67°52.8	70°08.2	77°57.7	104°49.0
18	211°00.7	11.5'	S 19°12.6	-11.1'	56.5'	118°16.8	87°01.6	77°28.6	31°32.3	68°25.0	70°41.2	78°30.2	105°21.1
19	225°31.1	11.4'	19°23.8	-11.0'	56.5'	117°47.1	86°34.0	76°59.4	31°00.1	68° 57.2	71°14.2	79°02.7	105°53.2
20	240°01.5	11.4'	19°34.8	-10.9'	56.4'	117°17.5	86°06.4	76°30.2	30°27.9	69°29.3	71°47.2	79°35.2	106°25.3
21	254°31.9	11.4'	19°45.7	-10.8'	56.4'	116°47.8	85°38.8	76°01.0	29°55.8	70°01.5	72°20.1	80°07.6	106°57.3
22	269°02.3	11.3'	$19^{\circ}56.6$	-10.7'	56.4'	116°18.3	85°11.3	75°31.9	29°23.8	70°33.5	72°53.0	80°40.0	107°29.3
23	283°32.6	11.3'	20°07.3	-10.6'	56.3'	115°48.8	84°43.8	75°02.9	28°51.7	71°05.5	73°25.8	81°12.3	108°01.2
25 th	SD	= 15.6'	Mer. pas	s. 03:28					Sun SE	0 = 16.1'			

h		Moor	า (26 th Fe	eb)			Lunar Di	stance (objects w	ith largest	: hourly	LD delta)	
Fri	GHA	ν	Dec	d	HP	-Sun	-Altair	-Venus	-Antares	+Regulus	+Mars	+Jupiter	+Pollux
0	298°02.9	11.3'	S 20°17.9	-10.5'	56.3'	115°19.3	84°16.4	74°33.9	28°19.7	71°37.5	73°58.6	81°44.6	108°33.1
1	312°33.2	11.2'	20°28.4	-10.4'	56.3'	114°49.8	83°49.0	74°04.9	27°47.8	72°09.5	74°31.4	82°16.8	109°05.0
2	327°03.4	11.2'	20°38.7	-10.3'	56.2'	114°20.4	83°21.7	73°36.0	27°15.9	72°41.4	75°04.1	82°49.1	109°36.8
3	341°33.6	11.2'	$20^{\circ}49.0$	-10.1'	56.2'	113°51.1	82°54.4	73°07.1	26°44.0	73° 13.2	75°36.8	83°21.2	110°08.6
4	356°03.8	11.1'	$20^{\circ}59.1$	-10.0'	56.1'	113°21.8	82°27.1	72°38.2	26°12.2	73°45.1	76°09.5	83°53.4	110°40.3
5	10°33.9	11.1'	$21^{\circ}09.2$	-9.9'	56.1'	112°52.5	81°59.9	72°09.4	25°40.4	74° 16.9	76°42.1	84°25.5	111°12.0
6	25°04.0	11.1'	S 21°19.1	-9.8'	56.1'	112°23.2	81°32.7	71°40.6	25°08.6	74°48.6	77°14.6	84°57.5	111°43.7
7	39°34.1	11.0'	21°28.9	-9.7'	56.1'	111°54.0	81°05.6	71°11.9	24°36.9	75°20.3	77°47.2	85°29.5	112°15.3
8	54°04.1	11.0'	21°38.6	-9.6'	56.0'	111°24.9	80°38.5	70°43.2	24°05.2	75° 52.0	78°19.7	86°01.5	112°46.8
9	68°34.1	11.0'	21°48.2	-9.5'	56.0'	110°55.7	80°11.5	70°14.5	23°33.6	76°23.6	78°52.1	86°33.4	113°18.4
10	83°04.1	10.9'	21°57.6	-9.3'	56.0'	110°26.7	79°44.5	69°45.9	23°02.0	76°55.2	79°24.5	87°05.3	113°49.9
11	97°34.0	10.9'	$22^{\circ}06.9$	-9.2'	55.9'	109°57.6	79°17.6	69°17.3	22°30.4	77°26.8	79°56.9	87°37.2	114°21.3
12	112°03.9	10.9'	S 22°16.2	-9.1'	55.9'	109°28.6	78°50.7	68°48.7	21°58.9	77°58.3	80°29.2	88°09.0	114°52.8
13	126°33.8	10.8'	22°25.3	-9.0'	55.9'	108°59.6	78°23.8	68°20.2	21°27.4	78° 29.7	81°01.5	88°40.8	115°24.1
14	141°03.6	10.8'	22°34.2	-8.9'	55.8'	108°30.7	77°57.0	67°51.8	20°56.0	79°01.2	81°33.8	89°12.5	115°55.5
15	155°33.4	10.8'	22°43.1	-8.7'	55.8'	108°01.8	77°30.3	67°23.3	20°24.6	79°32.6	82°06.0	89°44.2	116°26.8
16	170°03.2	10.7'	22°51.8	-8.6'	55.8'	107°32.9	77°03.6	66°54.9	19°53.2	80°04.0	82°38.2	90°15.9	116°58.0
17	184°32.9	10.7'	23°00.5	-8.5'	55.7'	107°04.1	76°36.9	66°26.6	19°21.9	80°35.3	83°10.4	90°47.6	117°29.3
18	199°02.7	10.7'	S 23°08.9	-8.4'	55.7'	106°35.3	76°10.3	65°58.2	18°50.6	81°06.6	83°42.5	91°19.2	118°00.5
19	213°32.3	10.6'	23°17.3	-8.2'	55.7'	106°06.6	75°43.8	65°29.9	18°19.3	81°37.8	84°14.6	91°50.7	118°31.6
20	228°02.0	10.6'	23°25.6	-8.1'	55.6'	105°37.8	75°17.3	65°01.7	17°48.1	82°09.1	84°46.6	92°22.2	119°02.7
21	242°31.6	10.6'	23°33.7	-8.0'	55.6'	105°09.2	74°50.8	64°33.5	17°16.9	82°40.3	85°18.7	92°53.7	119°33.8
22	257°01.2	10.6'	23°41.7	-7.9'	55.6'	104°40.5	74°24.4	64°05.3	16°45.8	83°11.4	85°50.6	93°25.2	
23	271°30.7	10.5'	23°49.6	-7.8'	55.6'	104°11.9	73°58.1	63°37.1	16°14.6	83°42.5	86°22.6	93°56.6	
26 th	SD	= 15.4'	Mer. pas	s. 04:16					Sun SE	0 = 16.1'			

 $106^{\circ}21.4$

Moon (27th Feb)

 $26^{\circ}20.1$

Mer. pass. 05:06

 $259^{\circ}12.0$

 $\mathsf{SD} = \mathsf{15.1'}$

9.9'

23

27th

Sat	GHA	ν	Dec	d	HP	-Sun	-Altair	-Venus	-Antares	+Spica	+Regulus	+Mars	+Jupiter
0	286°00.3	10.5'	S 23°57.3	-7.6'	55.5'	103°43.3	73°31.8	63°09.0	15°43.6	30°15.0	84°13.6	86°54.5	94°28.0
1	300°29.8	10.5'	24°04.9	-7.5'	55.5'	103°14.8	73°05.6	62°40.9	15° 12.5	30°46.0	84° 44.7	87°26.4	94°59.4
2	314°59.2	10.4'	24° 12.4	-7.4'	55.5'	102°46.2	72°39.4	62°12.9	14°41.5	31°16.9	85° 15.7	87°58.2	95°30.7
3	329°28.7	10.4'	24° 19.8	-7.2'	55.4'	102° 17.8	72°13.2	61°44.8	14° 10.5	31°47.7	85°46.7	88°30.0	96°02.0
4	343°58.1	10.4'	24°27.1	-7.1'	55.4'	101°49.3	71°47.1	61°16.8	13°39.5	32°18.6	86°17.6	89°01.8	96°33.3
5	358°27.5	10.4'	24°34.2	-7.0'	55.4'	101°20.9	71°21.1	60°48.9	13°08.6	32°49.4	86°48.6	89°33.6	97°04.5
6	12°56.8	10.3'	S 24°41.2	-6.9'	55.4'	100°52.5	70°55.1	60°21.0	12°37.7	33°20.2	87° 19.5	90°05.3	97°35.7
7	27°26.1	10.3'	24°48.0	-6.7'	55.3'	100°24.2	70°29.2	59°53.1	12°06.9	33°50.9	87°50.3	90°36.9	98°06.8
8	41°55.4	10.3'	24° 54.8	-6.6'	55.3'	99°55.8	70°03.3	59°25.2	11°36.1	34°21.7	88°21.1	91°08.6	98°38.0
9	56°24.7	10.2'	25°01.4	-6.5'	55.3'	99°27.5	69°37.5	58°57.4	11°05.3	34°52.4	88°51.9	91°40.2	99°09.1
10	70°54.0	10.2'	25°07.8	-6.3'	55.3'	98°59.3	69°11.8	58°29.6	10°34.5	35°23.1	89°22.7	92°11.8	99°40.1
11	85°23.2	10.2'	$25^{\circ}14.2$	-6.2'	55.2'	98°31.0	68°46.1	58°01.8	10°03.8	35°53.7	89°53.5	92°43.4	100°11.2
12	99°52.4	10.2'	S 25°20.4	-6.1'	55.2'	98°02.8	68°20.4	57°34.1	9°33.1	36°24.3	90°24.2	93°14.9	100°42.2
13	114°21.5	10.1'	25°26.5	-6.0'	55.2'	97°34.7	67°54.8	57°06.4	9°02.4	36°54.9	90°54.8	93°46.4	101°13.2
14	128°50.7	10.1'	25°32.4	-5.8'	55.1'	97°06.5	67°29.3	56°38.7	8°31.8	37°25.5	91°25.5	94°17.9	101°44.1
15	143°19.8	10.1'	25°38.3	-5.7'	55.1'	96°38.4	67°03.8	56°11.0	8°01.2	37°56.0	91°56.1	94°49.3	102°15.0
16	157°48.9	10.1'	25°43.9	-5.6'	55.1'	96°10.3	66°38.4	55°43.4	7°30.7	38°26.5	92°26.7	95°20.7	102°45.9
17	172°18.0	10.1'	25°49.5	-5.4'	55.1'	95°42.3	66°13.1	55°15.8	7°00.1	38°57.0	92°57.3	95°52.1	103°16.8
18	186°47.0	10.0'	S 25°54.9	-5.3'	55.0'	95°14.2	65°47.8	54°48.2	6°29.6	39°27.5	93°27.8	96°23.5	103°47.6
19	201°16.1	10.0'	26°00.2	-5.2'	55.0'	94°46.2	65°22.6	54°20.7	5°59.2	39°57.9	93°58.3	96°54.8	104°18.4
20	215°45.1	10.0'	26°05.4	-5.0'	55.0'	94°18.3	64°57.4	53°53.2	5°28.8	40°28.3	94°28.8	97°26.1	104°49.2
21	230°14.1	10.0'	$26^{\circ}10.4$	-4.9'	55.0'	93°50.3	64°32.3	53°25.7	4°58.4	40°58.7	94°59.2	97°57.4	105°20.0
22	244°43.1	10.0'	$26^{\circ}15.3$	-4.8'	55.0'	93°22.4	64°07.3	52°58.2	4°28.0	41°29.1	95°29.7	98°28.6	105°50.7
1 22	2500120	0.01	260201	1 61	E 4 O 2	000 54 5	620 42 2	F20200	20 5 7 0	410504	060001	000 50 0	1060014

 $63^{\circ}42.3$

92°54.5

54.9'

-4.6'

Lunar Distance (objects with largest hourly LD delta)

3°57.8

Sun SD = 16.1'

 $41^{\circ}59.4$

 $52^{\circ}30.8$

96°00.1

 $98^{\circ}59.8$

h		Моог	n (28 th Fe	eb)			Lunar D	istance	(objects w	ith large	st hourly	LD delta))
Sun	GHA	ν	Dec	d	HP	-Sun	-Altair	-Venus	± Antares	+Spica	+Regulus	+Mars	+Jupiter
0	273°41.0	9.9'	S 26°24.7	-4.5'	54.9'	92°26.6	63°17.4	52°03.4	3°27.5	42°29.7	96°30.5	99°31.0	106°52.1
1	288°09.9	9.9'	26°29.2	-4.4'	54.9'	91°58.8	62°52.5	51°36.0	2°57.4	43°00.0	97°00.8	100°02.2	107°22.7
2	302°38.8	9.9'	26°33.5	-4.2'	54.9'	91°31.0	62°27.7	51°08.7	2°27.4	43°30.3	97°31.1	100°33.3	107°53.4
3	317°07.7	9.9'	26°37.8	-4.1'	54.8'	91°03.2	62°03.0	50°41.3	1°57.6	44°00.5	98°01.4	101°04.4	108°24.0
4	331°36.6	9.9'	26°41.9	-4.0'	54.8'	90°35.4	61°38.4	50°14.0	1°28.1	44°30.7	98°31.7	101°35.5	108°54.6
5	346°05.5	9.9'	26°45.8	-3.8'	54.8'	90°07.6	61°13.8	49°46.7	0°59.4	45°00.9	99°02.0	102°06.6	109°25.1
6	0°34.3	9.8'	S 26°49.6	-3.7'	54.8'	89°39.9	60°49.3	49° 19.5		45°31.1	99°32.2	102°37.6	109°55.6
7	15°03.2	9.8'	26°53.3	-3.5'	54.8'	89°12.2	60°24.8	48°52.2		46°01.3	100°02.4	103°08.7	110°26.1
8	29°32.0	9.8'	26°56.9	-3.4'	54.7'	88°44.5	60°00.5	48° 25.0		46°31.4	100°32.6	103°39.7	110°56.6
9	44°00.8	9.8'	27°00.3	-3.3'	54.7'	88°16.9	59°36.2	47°57.8		47°01.5	101°02.8	104°10.6	111°27.1
10	58°29.6	9.8'	27°03.6	-3.1'	54.7'	87°49.2	59°11.9	47°30.6		47°31.6	101°32.9	104°41.6	111°57.5
11	72°58.4	9.8'	27°06.7	-3.0'	54.7'	87°21.6	58°47.8	47°03.5	2°08.6	48°01.7	102°03.0	105°12.5	112°28.0
12	87°27.2	9.8'	S 27°09.7	-2.9'	54.7'	86°54.0	58°23.7	46°36.4	2°38.3	48°31.7	102°33.1	105°43.4	112°58.4
13	101°56.0	9.8'	$27^{\circ}12.6$	-2.7'	54.6'	86°26.4	57°59.7	46°09.3	3°08.1	49°01.8	103°03.2	106°14.3	113°28.7
14	116°24.8	9.8'	27°15.3	-2.6'	54.6'	85°58.9	57°35.8	45°42.2	3°38.0	49°31.8	103°33.3	106°45.2	113°59.1
15	130°53.6	9.8'	$27^{\circ}17.9$	-2.5'	54.6'	85°31.3	57°11.9	45° 15.1	4°07.9	50°01.8	104°03.3	107°16.0	114°29.4
16	145°22.4	9.8'	27°20.4	-2.3'	54.6'	85°03.8	56°48.1	44°48.1	4°37.8	50°31.8	104°33.4	107°46.8	114°59.8
17	159°51.1	9.8'	27°22.7	-2.2'	54.6'	84°36.3	56°24.4	44°21.0	5°07.7	51°01.7	105°03.4	108°17.7	115°30.1
18	174°19.9	9.8'	S 27°24.9	-2.1'	54.6'	84°08.9	56°00.8	43°54.0	5°37.6	51°31.7	105°33.3	108°48.4	116°00.3
19	188°48.7	9.8'	27°27.0	-1.9'	54.5'	83°41.4	55°37.3	43°27.0	6°07.5	52°01.6	106°03.3	109°19.2	116°30.6
20	203°17.4	9.8'	27°28.9	-1.8'	54.5'	83°14.0	55°13.8	43°00.1	6° 37.4	52°31.5	106°33.3	109°49.9	117°00.8
21	217°46.2	9.8'	27°30.6	-1.6'	54.5'	82°46.5	54°50.5	42°33.1	7°07.3	53°01.4	107°03.2	110°20.7	117°31.1
22	232°15.0	9.8'	27°32.3	-1.5'	54.5'	82°19.1	54°27.2	42°06.2	7°37.2	53°31.2	107°33.1	110°51.4	118°01.3
23	246°43.8	9.8'	27°33.8	-1.4'	54.5'	81°51.7	54°04.0	41°39.3	8°07.1	54°01.1	108°03.0	111°22.1	118°31.5
28 th	SD :	= 15.0'	Mer. pas	s. 05:58	3				Sun SI	0 = 16.1'			

h		Мооі	n (1 st Ma	r)			Lunar D	istance (objects	with large	st hourly	LD delta)
Mon	GHA	ν	Dec	d	HP	-Deneb	-Sun	-Altair	-Venus	+Antares	+Spica	+Regulus	+Mars
0	261°12.5	9.8'	S 27°35.2	-1.2'	54.5'	87°31.3	81°24.4	53°40.9	41°12.4	8°36.9	54°30.9	108°32.9	111°52.7
1	275°41.3	9.8'	27°36.4	-1.1'	54.4'	87° 15.6	80°57.0	53°17.9	40°45.5	9°06.8	55°00.8	109°02.7	112°23.4
2	290°10.1	9.8'	27°37.5	-1.0'	54.4'	86° 59.8	80°29.7	52°55.0	40°18.6	9°36.6	55°30.6	109°32.6	112°54.0
3	304°38.9	9.8'	27°38.5	-0.8'	54.4'	86°44.2	80°02.3	52°32.1	39°51.7	10°06.4	56°00.4	110°02.4	113°24.7
4	319°07.7	9.8'	27°39.3	-0.7'	54.4'	86° 28.5	79°35.0	52°09.4	39°24.9	10°36.2	56°30.1	110°32.2	113°55.3
5	333°36.5	9.8'	27°40.0	-0.6'	54.4'	86°12.8	79°07.7	51°46.7	38°58.1	11°06.0	56°59.9	111°02.0	114°25.8
6	348°05.4	9.8'	S 27°40.6	-0.4'	54.4'	85°57.2	78°40.5	51°24.2	38°31.3	11°35.8	57°29.7	111°31.8	114°56.4
7	2°34.2	9.8'	27°41.0	-0.3'	54.4'	85°41.6	78°13.2	51°01.8	38°04.5	12°05.5	57°59.4	112°01.6	115°27.0
8	17°03.0	9.9'	27°41.3	-0.2'	54.3'	85°26.0	77°45.9	50°39.4	37°37.7	12°35.3	58°29.1	112°31.4	115°57.5
9	31°31.9	9.9'	27°41.4	-0.0'	54.3'	85° 10.4	77°18.7	50°17.2	37°10.9	13°05.0	58°58.8	113°01.1	116°28.0
10	46°00.8	9.9'	27°41.4	0.1'	54.3'	84°54.9	76°51.5	49°55.0	36°44.2	13°34.8	59°28.5	113°30.8	116°58.6
11	60°29.7	9.9'	27°41.3	0.3'	54.3'	84°39.4	76°24.3	49°33.0	36°17.5	14°04.5	59°58.2	114°00.6	117°29.1
12	74°58.6	9.9'	S 27°41.1	0.4'	54.3'	84°23.9	75°57.1	49°11.1	35°50.7	14°34.2	60°27.9	114°30.3	117°59.5
13	89°27.5	9.9'	27°40.7	0.5'	54.3'	84°08.4	75°29.9	48°49.3	35°24.0	15°03.9	60°57.6	115°00.0	118°30.0
14	103°56.4	10.0'	27°40.1	0.7'	54.3'	83°53.0	75°02.7	48°27.6	34°57.3	15°33.6	61°27.2	115°29.7	119°00.5
15	118°25.4	10.0'	27°39.5	0.8'	54.3'	83°37.5	74°35.5	48°06.0	34°30.6	16°03.3	61°56.9	115°59.3	119°30.9
16	132°54.3	10.0'	27°38.7	0.9'	54.2'	83°22.1	74°08.4	47°44.5	34°04.0	16°32.9	62°26.5	116°29.0	
17	147°23.3	10.0'	27°37.8	1.1'	54.2'	83°06.8	73°41.2	47°23.2	33°37.3	17°02.6	62°56.1	116°58.7	
18	161°52.4	10.0'	S 27°36.7	1.2'	54.2'	82°51.4	73°14.1	47°01.9	33°10.6	17°32.2	63°25.7	117°28.3	
19	176°21.4	10.1'	27°35.5	1.3'	54.2'	82°36.1	72°47.0	46°40.8	32°44.0	18°01.9	63°55.3	117°57.9	
20	190°50.5	10.1'	27°34.2	1.5'	54.2'	82°20.8	72°19.8	46°19.8	32°17.4	18°31.5	64°24.9	118°27.6	
21	205°19.5	10.1'	27°32.7	1.6'	54.2'	82°05.6	71°52.7	45°59.0	31°50.7	19°01.1	64°54.5	118°57.2	
22	219°48.6	10.1'	$27^{\circ}31.2$	1.7'	54.2'	81°50.3	71°25.6	45°38.3	31°24.1	19°30.7	65°24.1	119°26.8	
23	234°17.8	10.2'	27°29.4	1.9'	54.2'	81°35.2	70°58.5	45°17.7	30°57.5	20°00.4	65°53.7	119°56.4	
1 st	SD	= 14.9'	Mer. pass	. 06:49					Sun S	SD = 16.1'			

h	Moon	(2 nd Mar)	Lunar D	istance (objects	with larges	t hourly	LD delt
				_					_

Tue	GHA	ν	Dec	d	HP	-Deneb	-Sun	-Altair	-Venus	+Antares	+Hadar	+Spica	+Arcturus
0	248°46.9	10.2'	S 27°27.6	2.0'	54.2'	81°20.0	70°31.5	44°57.2	30°30.9	20°29.9	51°22.6	66°23.2	71°49.4
1	263°16.1	10.2'	27°25.6	2.1'	54.2'	81°04.9	70°04.4	44°36.9	30°04.4	20°59.5	51°40.3	66°52.8	72°12.8
2	277°45.4	10.2'	27°23.5	2.2'	54.2'	80°49.8	69°37.3	44°16.8	29°37.8	21°29.1	51°58.1	67°22.4	72°36.3
3	292°14.6	10.3'	$27^{\circ}21.2$	2.4'	54.1'	80°34.7	69°10.2	43°56.7	29°11.2	21°58.7	52°16.0	67°51.9	72°59.8
4	306°43.9	10.3'	$27^{\circ}18.9$	2.5'	54.1'	80°19.7	68°43.2	43°36.9	28°44.7	22°28.3	52°34.1	68°21.4	73°23.4
5	321°13.2	10.3'	$27^{\circ}16.4$	2.6'	54.1'		$68^{\circ}16.1$	43°17.1	28°18.1	22°57.8	52°52.2	68°51.0	73°46.9
6	335°42.5	10.4'	S 27°13.7	2.8'	54.1'		67°49.1	42°57.6	27°51.6	23°27.4	53°10.5	69°20.5	74°10.5
7	350°11.9	10.4'	$27^{\circ}11.0$	2.9'	54.1'		67°22.1	42°38.2	27°25.0	23°57.0	53°28.9	69°50.0	74°34.1
8	4°41.3	10.4'	$27^{\circ}08.1$	3.0'	54.1'		66°55.0	42°18.9	26°58.5	24°26.5	53°47.4	70°19.5	74°57.7
9	19°10.7	10.5'	27°05.0	3.1'	54.1'		66°28.0	41°59.8	26°32.0	24°56.1	54°06.1	70°49.1	75°21.4
10	33°40.2	10.5'	$27^{\circ}01.9$	3.3'	54.1'		66°01.0	41°40.9	26°05.4	25°25.6	54°24.8	71°18.6	75°45.1
11	48°09.7	10.5'	26°58.6	3.4'	54.1'		65°33.9	41°22.2	25°38.9	25°55.1	54°43.6	71°48.1	76°08.8
12	62°39.3	10.6'	S 26°55.2	3.5'	54.1'		65°06.9	41°03.6	25°12.4	26°24.7	55°02.6	72°17.6	76°32.5
13	77°08.9	10.6'	26°51.7	3.7'	54.1'		64°39.9	40°45.2	24°45.9	26°54.2	55°21.6	72°47.1	76°56.2
14	91°38.5	10.7'	26°48.0	3.8'	54.1'		64°12.9	40°27.0	24°19.4	27°23.7	55°40.8	73°16.6	77°19.9
15	106°08.1	10.7'	26°44.2	3.9'	54.1'		63°45.9	40°09.0	23°53.0	27°53.3	56°00.0	73°46.1	77°43.7
16	120°37.8	10.7'	26°40.3	4.0'	54.1'		63°18.9	39°51.2	23°26.5	28°22.8	56° 19.4	74°15.6	78°07.5
17	135°07.6	10.8'	26°36.3	4.2'	54.1'		62°51.9	39°33.5	23°00.0	28°52.3	56°38.8	74°45.1	78°31.3
18	149°37.4	10.8'	S 26°32.1	4.3'	54.1'		62°24.9	39°16.1	22°33.5	29°21.8	56°58.3	75°14.6	78°55.1
19	164°07.2	10.9'	26°27.9	4.4'	54.1'		61°57.9	38°58.9	22°07.1	29°51.4	57° 17.9	75°44.0	79°18.9
20	178°37.0	10.9'	$26^{\circ}23.5$	4.5'	54.1'		61°30.9	38°41.8	21°40.6	30°20.9	57°37.6	76°13.5	79°42.8
21	193°07.0	11.0'	$26^{\circ}18.9$	4.6'	54.1'		61°03.9	38°25.0	21°14.2	30°50.4	57°57.4	76°43.0	80°06.6
22	207°36.9	11.0'	26°14.3	4.8'	54.1'		60°36.9	38°08.4	20°47.7	31°19.9	58° 17.3	77°12.5	80°30.5
23	222°06.9	11.0'	26°09.5	4.9'	54.1'		60°09.9	37°52.1	20°21.3	31°49.4	58°37.3	77°42.0	80°54.4
2 nd	SD :	= 14.8'	Mer. pass	. 07:41					Sun S	D = 16.1'			

Moon (3rd Mar)

Lunar Distance (objects with largest hourly LD delta)

n		IVIOOR	ı (3. " ıvıa	r)			Lunar	Distance	(objects	with largest	nourly L	.D deita	
Wed	GHA	ν	Dec	d	HP	-Sun	-Altair	-Venus	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus
0	236°36.9	11.1'	S 26°04.6	5.0'	54.1'	59°42.9	37°35.9	19°54.8	32° 19.0	54°39.3	58°57.3	78°11.5	81°18.3
1	251°07.0	11.1'	25°59.6	5.1'	54.1'	59°15.9	37°20.0	19°28.4	32°48.5	54°59.1	59°17.5	78°41.0	81°42.2
2	265°37.2	11.2'	25°54.5	5.3'	54.1'	58°48.9	37°04.4	19°02.0	33° 18.0	55°18.9	59°37.7	79°10.5	82°06.2
3	280°07.3	11.2'	25°49.2	5.4'	54.1'	58°21.9	36°48.9	18°35.5	33°47.5	55°38.9	59°58.0	79°40.0	82°30.1
4	294°37.5	11.3'	25°43.8	5.5'	54.1'	57°54.9	36°33.7	18°09.1	34° 17.0	55°58.9	60°18.4	80°09.5	82°54.1
5	309°07.8	11.3'	25°38.4	5.6'	54.0'	57°27.9		17°42.7	34° 46.6	56°19.1	60°38.8	80°39.0	83°18.0
6	323°38.1	11.4'	S 25°32.7	5.7'	54.0'	57°00.9		17°16.3	35° 16.1	56°39.3	60°59.3	81°08.5	83°42.0
7	338°08.5	11.4'	25°27.0	5.8'	54.1'	56°33.9		16°49.9	35° 45.6	56°59.6	61°19.9	81°38.0	84°06.0
8	352°38.9	11.5'	$25^{\circ}21.2$	6.0'	54.1'	56°06.9		16°23.5	36° 15.2	57°20.0	61°40.6	82°07.5	84°30.0
9	7°09.4	11.5'	25°15.2	6.1'	54.1'	55°39.9		15°57.1	36° 44.7	57°40.5	62°01.3	82°37.0	84°54.1
10	21°39.9	11.6'	25°09.2	6.2'	54.1'	55°12.9		15°30.8	37° 14.3	58°01.1	62°22.2	83°06.5	85°18.1
11	36°10.4	11.6'	25°03.0	6.3'	54.1'	54°45.8		15°04.4	37°43.8	58°21.8	62°43.0	83°36.0	85°42.1
12	50°41.0	11.7'	S 24°56.7	6.4'	54.1'	54°18.8		14°38.0	38° 13.3	58°42.5	63°04.0	84°05.5	86°06.2
13	65°11.7	11.7'	24°50.2	6.5'	54.1'	53°51.8		14°11.7	38° 42.9	59°03.3	63°25.0	84°35.0	86°30.2
14	79°42.4	11.8'	24°43.7	6.6'	54.1'	53°24.8		13°45.3	39° 12.5	59°24.2	63°46.1	85°04.6	86°54.3
15	94°13.2	11.8'	24°37.1	6.8'	54.1'	52°57.7		13°19.0	39°42.0	59°45.2	64°07.3	85°34.1	87°18.4
16	108°44.0	11.9'	24°30.3	6.9'	54.1'	52°30.7		12°52.7	40°11.6	60°06.3	64°28.5	86°03.6	87°42.5
17	123°14.8	11.9'	24°23.5	7.0'	54.1'	52°03.6		12°26.4	40°41.2	60°27.4	64°49.7	86°33.2	88°06.6
18	137°45.7	12.0'	S 24°16.5	7.1'	54.1'	51°36.6		12°00.2	41°10.8	60°48.6	65°11.1	87°02.7	88°30.7
19	152°16.7	12.0'	24°09.4	7.2'	54.1'	51°09.5		11°33.9	41°40.3	61°09.9	65°32.5	87°32.3	88°54.8
20	166°47.7	12.1'	24°02.2	7.3'	54.1'	50°42.5		11°07.7	42°09.9	61°31.3	65°53.9	88°01.9	89°18.9
21	181°18.8	12.1'	23°54.9	7.4'	54.1'	50°15.4		10°41.5	42°39.5	61°52.7	66°15.5	88°31.4	89°43.0
22	195°49.9	12.2'	23°47.5	7.5'	54.1'	49°48.3		10°15.3	43°09.1	62°14.2	66°37.0	89°01.0	90°07.1
23	210°21.1	12.2'	23°40.0	7.6'	54.1'	49°21.3		9°49.2	43°38.8	62°35.8	66°58.7	89°30.6	90°31.3
3 rd	SD	= 14.7'	Mer. pass	. 08:30)				Sun S	SD = 16.1'			

h	Moon (4 th Mar	Lunar Distance	(objects with	largest hourly	LD delta	a)
---	---------------------------	----------------	---------------	----------------	----------	----

Thu	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus
0	224°52.3	12.3'	S 23°32.4	7.7'	54.1'	48°54.2		9°23.1	44°08.4	62°57.4	67°20.3	90°00.2	90°55.4
1	239°23.6	12.3'	23°24.6	7.8'	54.1'	48°27.1		8°57.0	44°38.0	63°19.1	67°42.1	90°29.8	91°19.5
2	253°54.9	12.4'	23°16.8	7.9'	54.1'	48°00.0		8°31.1	45°07.6	63°40.9	68°03.9	90°59.4	91°43.7
3	268°26.3	12.4'	23°08.9	8.0'	54.1'	47°32.9		8°05.1	45°37.3	64°02.7	68°25.7	91°29.0	92°07.8
4	282°57.7	12.5'	23°00.8	8.1'	54.1'	47°05.8		7°39.3	46°06.9	64°24.6	68°47.6	91°58.6	92°32.0
5	297°29.2	12.5'	22°52.7	8.2'	54.1'	46°38.6		7°13.6	46°36.6	64°46.5	69°09.6	92°28.2	92°56.2
6	312°00.8	12.6'	S 22°44.5	8.3'	54.1'	46°11.5		6°48.0	47°06.3	65°08.6	69°31.6	92°57.9	93°20.3
7	326°32.4	12.6'	22°36.1	8.4'	54.1'	45°44.4		6°22.5	47°35.9	65°30.6	69°53.6	93°27.5	93°44.5
8	341°04.0	12.7'	22°27.7	8.5'	54.1'	45°17.2	39°55.8	5°57.2	48°05.6	65°52.8	70°15.7	93°57.2	94°08.7
9	355°35.7	12.8'	$22^{\circ}19.1$	8.6'	54.1'	44°50.0	39°31.9	5°32.1	48°35.3	66° 15.0	70°37.9	94°26.9	94°32.8
10	10°07.5	12.8'	$22^{\circ}10.5$	8.7'	54.1'	44°22.9	39°08.1	5°07.3	49°05.1	66°37.2	71°00.1	94°56.5	94°57.0
11	24°39.3	12.9'	$22^{\circ}01.7$	8.8'	54.2'	43°55.7	38°44.4	4°42.8	49°34.8	66° 59.5	71°22.3	95°26.2	95°21.2
12	39°11.1	12.9'	S 21°52.9	8.9'	54.2'	43°28.5	38°20.8	4°18.8	50°04.5	67°21.9	71°44.6	95°55.9	95°45.3
13	53°43.0	13.0'	21°43.9	9.0'	54.2'	43°01.3	37°57.3	3°55.3	50°34.2	67°44.3	72°07.0	96°25.6	96°09.5
14	68°15.0	13.0'	21°34.9	9.1'	54.2'	42°34.1	37°34.0	3°32.7	51°04.0	68°06.8	72°29.3	96°55.4	96°33.7
15	82°47.0	13.1'	21°25.8	9.2'	54.2'	42°06.9	37°10.7		51°33.8	68° 29.3	72°51.8	97°25.1	96°57.9
16	97°19.1	13.1'	$21^{\circ}16.5$	9.3'	54.2'	41°39.7	36°47.6		52°03.5	68°51.9	73°14.2	97°54.8	97°22.0
17	111°51.2	13.2'	$21^{\circ}07.2$	9.4'	54.2'	41°12.4	36°24.6		52°33.3	69°14.5	73°36.7	98°24.6	97°46.2
18	126°23.4	13.2'	S 20°57.8	9.5'	54.2'	40°45.2	36°01.8		53°03.1	69°37.2	73°59.3	98°54.4	98°10.4
19	140°55.6	13.3'	20°48.3	9.6'	54.2'	40°17.9	35°39.1		53°32.9	69°59.9	74°21.9	99°24.1	98°34.5
20	155°27.9	13.3'	20°38.7	9.7'	54.2'		35°16.5		54°02.8	70°22.7	74°44.5	99°53.9	98°58.7
21	170°00.2	13.4'	$20^{\circ}29.0$	9.8'	54.2'		34°54.1		54°32.6	70°45.5	75°07.2	100°23.7	99°22.8
22	184°32.6	13.4'	20°19.2	9.9'	54.2'		34°31.9		55°02.4	71°08.3	75°29.9	100°53.6	99°47.0
23	199°05.0	13.5'	20°09.4	10.0'	54.3'		34°09.8		55°32.3	71°31.3	75°52.6	101°23.4	100°11.1
4 th	SD	= 14.8'	Mer. pass	s. 09:18					Sun S	D = 16.1'			

Moon (5th Mar)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Fomalhaut	+Venus	+Antares	+Rigil Kent.	+Hadar	+Acrux	+Arcturus	+Spica
0	213°37.5	13.5'	S 19°59.4	10.0'	54.3'	33°47.8		56°02.2	71°54.2	76° 15.4	85°17.7	100°35.3	101°53.2
1	228°10.0	13.6'	19°49.3	10.1'	54.3'	33°26.1		56°32.1	72°17.2	76°38.2	85°37.7	100°59.4	102°23.1
2	242°42.6	13.6'	19°39.2	10.2'	54.3'	33°04.5		57°02.0	72°40.3	77°01.1	85°57.8	101°23.5	102°52.9
3	257° 15.2	13.7'	19°29.0	10.3'	54.3'	32°43.1		57°31.9	73°03.4	77°24.0	86°17.9	101°47.7	103°22.8
4	271°47.9	13.7'	$19^{\circ}18.7$	10.4'	54.3'	32°21.8		58°01.8	73°26.5	77°46.9	86°38.0	102°11.8	103°52.7
5	286° 20.6	13.8'	19°08.3	10.5'	54.3'	32°00.8	4°16.9	58°31.8	73°49.7	78°09.9	86°58.1	102°35.9	104°22.6
6	300°53.3	13.8'	S 18°57.8	10.6'	54.3'	31°40.0	4°41.1	59°01.7	74°12.9	78°32.9	87°18.2	103°00.0	104°52.6
7	315°26.2	13.9'	18°47.2	10.6'	54.3'	31°19.4	5°05.8	59°31.7	74°36.1	78°55.9	87°38.4	103°24.1	105°22.5
8	329°59.0	13.9'	18°36.6	10.7'	54.3'	30°59.0	5°30.9	60°01.7	74°59.4	79° 18.9	87°58.6	103°48.1	105°52.5
9	344°31.9	14.0'	18°25.9	10.8'	54.4'	30°38.9	5°56.2	60°31.7	75°22.8	79°42.0	88°18.8	104°12.2	106°22.4
10	359°04.9	14.0'	$18^{\circ}15.1$	10.9'	54.4'	30°18.9	6°21.8	61°01.7	75°46.2	80°05.2	88°39.0	104°36.3	106°52.4
11	13°37.9	14.1'	18°04.2	11.0'	54.4'	29°59.2	6°47.6	61°31.7	76°09.6	80°28.3	88°59.2	105°00.3	107°22.4
12	28°11.0	14.1'	S 17°53.2	11.0'	54.4'	29°39.8	7°13.6	62°01.8	76°33.0	80°51.5	89°19.4	105°24.3	107°52.4
13	42°44.1	14.1'	17°42.2	11.1'	54.4'	29°20.6	7°39.8	62°31.8	76°56.5	81°14.7	89°39.7	105°48.3	108°22.5
14	57° 17.2	14.2'	17°31.0	11.2'	54.4'	29°01.8	8°06.0	63°01.9	77°20.0	81°37.9	89°59.9	106°12.3	108°52.5
15	71°50.4	14.2'	$17^{\circ}19.8$	11.3'	54.4'	28°43.1	8°32.4	63°32.0	77°43.6	82°01.2	90°20.2	106°36.3	109°22.6
16	86°23.6	14.3'	$17^{\circ}08.6$	11.4'	54.4'	28°24.8	8°58.8	64°02.1	78°07.2	82°24.5	90°40.5	107°00.3	109°52.6
17	100°56.9	14.3'	16°57.2	11.4'	54.5'	28°06.8	9°25.3	64°32.3	78°30.8	82°47.8	91°00.8	107°24.3	110°22.7
18	115°30.2	14.4'	S 16°45.8	11.5'	54.5'	27°49.1	9°51.9	65°02.4	78°54.5	83°11.2	91°21.0	107°48.2	110°52.8
19	130°03.6	14.4'	16°34.3	11.6'	54.5'	27°31.7	10°18.6	65°32.6	79°18.2	83°34.5	91°41.3	108°12.1	111°23.0
20	144°37.0	14.4'	16°22.7	11.7'	54.5'	27°14.6	10°45.4	66°02.8	79°41.9	83°57.9	92°01.7	108°36.0	111°53.1
21	159° 10.4	14.5'	$16^{\circ}11.0$	11.7'	54.5'	26°57.9	11°12.2	66°33.0	80°05.7	84°21.4	92°22.0	108°59.9	112°23.3
22	173°43.9	14.5'	15°59.3	11.8'	54.5'	26°41.5	11°39.0	67°03.2	80°29.5	84°44.8	92°42.3	109°23.8	112°53.5
23	188° 17.4	14.6'	15°47.5	11.9'	54.5'	26°25.5	12°05.9	67°33.4	80°53.3	85°08.3	93°02.6	109°47.6	113°23.6
5 th	SD = 14.8' Mer. pass. 10:04						-			-	-		

h		Moor	n (6 th Ma	r)		Lunar Distance (objects with largest hourly LD delta)								
Sat	GHA	ν	Dec	d	HP	+Venus	+Altair	+Antares	+Rigil Kent.	+Hadar	+Acrux	+Arcturus	+Spica	
0	202°51.0	14.6'	S 15°35.7	11.9'	54.6'	12°32.8		68°03.6	81°17.1	85°31.8	93°22.9	110°11.4	113°53.9	
1	217°24.6	14.6'	15°23.7	12.0'	54.6'	12°59.8		68°33.9	81°41.0	85°55.3	93°43.3	110°35.2	114°24.1	
2	231°58.2	14.7'	$15^{\circ}11.7$	12.1'	54.6'	13°26.8		69°04.2	82°04.9	86°18.8	94°03.6	110°59.0	114°54.3	
3	246°31.9	14.7'	14°59.6	12.1'	54.6'	13°53.9		69°34.5	82°28.9	86°42.4	94°23.9	111°22.7	115°24.6	
4	261°05.6	14.7'	14°47.5	12.2'	54.6'	14°21.0		70°04.8	82°52.8	87°05.9	94°44.3	111°46.4	115°54.9	
5	275°39.3	14.8'	14°35.3	12.3'	54.6'	14°48.1		70°35.2	83°16.8	87°29.5	95°04.6	112° 10.1	116°25.2	
6	290°13.1	14.8'	S 14°23.0	12.3'	54.6'	15°15.3		71°05.5	83°40.8	87°53.1	95°24.9	112°33.8	116°55.5	
7	304°46.9	14.9'	14°10.7	12.4'	54.7'	15°42.5		71°35.9	84°04.9	88°16.8	95°45.3	112°57.4	117°25.8	
8	319°20.8	14.9'	13°58.3	12.5'	54.7'	16°09.7		72°06.3	84°28.9	88°40.4	96°05.6	113°21.0	117°56.2	
9	333°54.7	14.9'	13°45.8	12.5'	54.7'	16°36.9		72°36.7	84°53.0	89°04.1	96°25.9	113°44.6	118°26.5	
10	348°28.6	15.0'	13°33.3	12.6'	54.7'	17°04.2		73°07.1	85° 17.2	89°27.8	96°46.3	114°08.1	118°56.9	
11	3°02.6	15.0'	13°20.7	12.6'	54.7'	17°31.5		73°37.6	85°41.3	89°51.5	97°06.6	114°31.6	119°27.3	
12	17°36.6	15.0'	S 13°08.1	12.7'	54.7'	17°58.9		74°08.0	86°05.5	90°15.2	97°26.9	114°55.1	119°57.8	
13	32°10.6	15.0'	12°55.4	12.8'	54.7'	18°26.3		74°38.5	86°29.6	90°38.9	97°47.2	115° 18.5		
14	46°44.6	15.1'	12°42.6	12.8'	54.8'	18°53.7	36°17.1	75°09.0	86°53.8	91°02.6	98°07.5	115°41.9		
15	61°18.7	15.1'	12°29.8	12.9'	54.8'	19°21.1	36°32.5	75°39.6	87° 18.1	91°26.4	98°27.8	116°05.3		
16	75°52.8	15.1'	$12^{\circ}16.9$	12.9'	54.8'	19°48.5	36°48.2	76°10.1	87°42.3	91°50.2	98°48.0	116°28.6		
17	90°26.9	15.2'	$12^{\circ}03.9$	13.0'	54.8'	20°16.0	37°04.1	76°40.7	88°06.6	92°13.9	99°08.3	116°51.9		
18	105°01.1	15.2'	S 11°51.0	13.0'	54.8'	20°43.5	37°20.4	77°11.3	88° 30.9	92°37.7	99°28.6	117° 15.1		
19	119°35.3	15.2'	11°37.9	13.1'	54.8'	21°11.0	37°36.9	77°41.9	88°55.2	93°01.5	99°48.8	117°38.3		
20	134°09.5	15.2'	11°24.8	13.2'	54.9'	21°38.6	37°53.6	78°12.5	89° 19.5	93°25.3	100°09.0	118°01.4		
21	148°43.7	15.3'	$11^{\circ}11.6$	13.2'	54.9'	22°06.2	38°10.6	78°43.1	89°43.8	93°49.1	100°29.2	118°24.5		
22	163°18.0	15.3'	$10^{\circ}58.4$	13.3'	54.9'	22°33.8	38°27.9	79°13.8	90°08.2	94°13.0	100°49.4	118° 47.6		
23	177°52.3	15.3'	10°45.2	13.3'	54.9'	23°01.4	38°45.4	79°44.5	90°32.6	94°36.8	101°09.6	119° 10.6		
6 th	SD	= 14.9'	Mer. pass	s. 10:47							•			

Sun	GHA	ν	Dec	d	HP	+Venus	+Altair	+Antares	+Rigil Kent.	+Hadar	+Acrux	+Arcturus
0	192°26.6	15.3'	S 10°31.9	13.4'	54.9'	23°29.0	39°03.2	80° 15.2	90°56.9	95°00.6	101°29.8	119°33.5
1	207°00.9	15.4'	10°18.5	13.4'	54.9'	23°56.7	39°21.2	80°45.9	91°21.3	95°24.5	101°49.9	119°56.4
2	221°35.3	15.4'	$10^{\circ}05.1$	13.5'	55.0'	24°24.4	39°39.4	81°16.7	91°45.7	95°48.3	102°10.1	
3	236°09.6	15.4'	09°51.6	13.5'	55.0'	24°52.1	39°57.8	81°47.4	92°10.2	96°12.2	102°30.2	
4	250°44.0	15.4'	09°38.1	13.6'	55.0'	25°19.9	40°16.5	82°18.2	92°34.6	96°36.0	102°50.2	
5	265°18.4	15.4'	09°24.6	13.6'	55.0'	25°47.7	40°35.4	82°49.0	92°59.1	96°59.9	103°10.3	
6	279°52.9	15.4'	S 09°11.0	13.6'	55.0'	26°15.5	40°54.5	83°19.9	93°23.5	97°23.8	103°30.3	
7	294°27.3	15.5'	08°57.3	13.7'	55.0'	26°43.3	41°13.8	83°50.7	93°48.0	97°47.6	103°50.4	
8	309°01.8	15.5'	08°43.6	13.7'	55.1'	27°11.1	41°33.3	84°21.6	94°12.5	98°11.5	104°10.3	
9	323°36.2	15.5'	08°29.9	13.8'	55.1'	27°39.0	41°53.0	84°52.5	94°37.0	98°35.4	104°30.3	
10	338°10.7	15.5'	$08^{\circ}16.1$	13.8'	55.1'	28°06.9	42°12.9	85°23.4	95°01.5	98°59.2	104°50.2	
11	352°45.2	15.5'	$08^{\circ}02.3$	13.9'	55.1'	28°34.8	42°33.0	85°54.3	95°26.0	99°23.1	105°10.1	
12	7°19.8	15.5'	S 07°48.4	13.9'	55.1'	29°02.7	42°53.3	86°25.3	95°50.5	99°47.0	105°30.0	
13	21°54.3	15.5'	07°34.5	13.9'	55.2'				—- New Moon -		<u> </u>	·
14	36°28.8	15.5'	07°20.6	14.0'	55.2'							
15	51°03.4	15.6'	$07^{\circ}06.6$	14.0'	55.2'				—- New Moon -			
16	65°37.9	15.6'	06°52.6	14.0'	55.2'				—- New Moon -			
17	80°12.5	15.6'	06°38.6	14.1'	55.2'				—- New Moon -			
18	94°47.1	15.6'	S 06°24.5	14.1'	55.2'				New Moon -			
19	109°21.6	15.6'	$06^{\circ}10.4$	14.2'	55.3'				—- New Moon -			
20	123°56.2	15.6'	05°56.2	14.2'	55.3'				New Moon -			
21	138°30.8	15.6'	05°42.0	14.2'	55.3'				New Moon -			
22	153°05.4	15.6'	05°27.8	14.2'	55.3'				—- New Moon -			
23	167°40.0	15.6'	05°13.6	14.3'	55.3'				—- New Moon -			
7 th	SD	= 15.0'	Mer. pass	s. 11:30								

h	Moon	(8 th	Mar))
11	IVIOOII	10	iviai	,

Mon	GHA	ν	Dec	d	HP	
0	182°14.6	15.6'	S 04°59.3	14.3'	55.4'	New Moon
1	196°49.2	15.6'	04°45.0	14.3'	55.4'	New Moon
2	211°23.8	15.6'	04°30.6	14.4'	55.4'	New Moon
3	225°58.4	15.6'	$04^{\circ}16.3$	14.4'	55.4'	New Moon
4	240°33.0	15.6'	$04^{\circ}01.9$	14.4'	55.4'	New Moon
5	255°07.6	15.6'	03°47.5	14.4'	55.4'	New Moon
6	269°42.2	15.6'	S 03°33.0	14.5'	55.5'	New Moon
7	284°16.7	15.6'	$03^{\circ}18.6$	14.5'	55.5'	New Moon
8	298°51.3	15.6'	$03^{\circ}04.1$	14.5'	55.5'	New Moon
9	313°25.9	15.6'	02°49.6	14.5'	55.5'	New Moon
10	328°00.4	15.6'	$02^{\circ}35.0$	14.6'	55.5'	New Moon
11	342°35.0	15.5'	02°20.5	14.6'	55.6'	New Moon
12	357°09.5	15.5'	S 02°05.9	14.6'	55.6'	New Moon
13	11°44.1	15.5'	$01^{\circ}51.3$	14.6'	55.6'	New Moon
14	26°18.6	15.5'	$01^{\circ}36.7$	14.6'	55.6'	New Moon
15	40°53.1	15.5'	$01^{\circ}22.1$	14.6'	55.6'	New Moon
16	55°27.6	15.5'	$01^{\circ}07.5$	14.7'	55.7'	New Moon
17	70°02.1	15.5'	00°52.8	14.7'	55.7'	New Moon
18	84°36.5	15.4'	S 00°38.1	14.7'	55.7'	New Moon
19	99°11.0	15.4'	$00^{\circ}23.5$	14.7'	55.7'	New Moon
20	113°45.4	15.4'	S 00°08.8	14.7'	55.7'	New Moon
21	128°19.8	15.4'	N 00°05.9	14.7'	55.8'	New Moon
22	142°54.2	15.4'	$00^{\circ}20.6$	14.7'	55.8'	New Moon
23	157°28.5	15.3'	00°35.4	14.7'	55.8'	New Moon
8 th	SD	= 15.1'	Mer. pass	12:12		

h Moon (9 th Mar)	Lunar Distance (objects with largest hourly LD delta)
------------------------------	---

Tue	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Sirius	-Betelgeuse	-Capella	-Rigel	-Aldebaran	-Saturn
0	172°02.9	15.3'	N00°50.1	14.7'	55.8'				New M	oon ——			
1	186°37.2	15.3'	$01^{\circ}04.8$	14.7'	55.8'				New M	oon ———			
2	201°11.5	15.3'	$01^{\circ}19.6$	14.7'	55.9'				New M	oon ———			
3	215°45.8	15.2'	01°34.3	14.7'	55.9'				New M	oon ———			
4	230°20.0	15.2'	$01^{\circ}49.1$	14.8'	55.9'				New M	oon ———			
5	244°54.2	15.2'	02°03.8	14.8'	55.9'				New M	oon ———			
6	259°28.4	15.2'	$N02^{\circ}18.6$	14.8'	55.9'	117°34.2	114°34.6	104°24.5	91°36.8	83°05.7	82°09.1	72°13.6	16°34.1
7	274°02.6	15.1'	02°33.3	14.8'	56.0'	117°04.3	114°02.8	104°01.6	91°06.9	82°35.4	81°43.3	71°42.2	16°05.1
8	288°36.7	15.1'	02°48.1	14.8'	56.0'	116°34.4	113°31.0	103°38.7	90°36.9	82°05.2	81°17.5	71°10.9	15°36.3
9	303°10.8	15.1'	03°02.8	14.7'	56.0'	116°04.4	112°59.2	103°15.8	90°06.9	81°34.9	80°51.8	70°39.6	15°07.7
10	317°44.9	15.0'	03° 17.6	14.7'	56.0'	115°34.4	112°27.3	102°52.7	89°36.8	81°04.6	80°26.0	70°08.2	14°39.2
11	332°18.9	15.0'	03°32.3	14.7'	56.0'	115°04.4	111°55.4	102°29.7	89°06.8	80°34.3	80°00.3	69°36.8	14°10.9
12	346°52.9	15.0'	N 03°47.0	14.7'	56.1'	114°34.3	111°23.5	102°06.6	88°36.7	80°04.0	79°34.5	69°05.4	13°42.9
13	1°26.8	14.9'	$04^{\circ}01.8$	14.7'	56.1'	114°04.2	110°51.6	101°43.4	88°06.7	79°33.7	79°08.8	68°34.0	13° 15.1
14	16°00.8	14.9'	$04^{\circ}16.5$	14.7'	56.1'	113°34.0	110° 19.7	101°20.2	87°36.6	79°03.3	78°43.0	68°02.5	12°47.6
15	30°34.7	14.8'	04°31.2	14.7'	56.1'	113°03.9	109°47.7	100°57.0	87°06.4	78°33.0	78°17.3	67°31.1	12°20.4
16	45°08.5	14.8'	04° 45.9	14.7'	56.1'	112°33.7	109° 15.7	100°33.7	86°36.3	78°02.6	77°51.5	66°59.6	11°53.5
17	59°42.3	14.8'	05°00.6	14.7'	56.2'	112°03.4	108°43.7	100°10.4	86°06.1	77°32.2	77°25.8	66°28.1	11°27.1
18	74°16.1	14.7'	$N05^{\circ}15.3$	14.7'	56.2'	111°33.1	108°11.6	99°47.0	85°36.0	77°01.8	77°00.0	65°56.6	11°01.1
19	88°49.8	14.7'	05°30.0	14.7'	56.2'	111°02.8	107°39.6	99°23.6	85°05.8	76°31.4	76°34.3	65°25.0	10°35.6
20	103°23.5	14.6'	05°44.7	14.7'	56.2'	110°32.4	107°07.5	99°00.1	84°35.5	76°00.9	76°08.6	64°53.5	10°10.7
21	117°57.1	14.6'	05°59.3	14.6'	56.2'	110°02.1	106°35.4	98°36.6	84°05.3	75°30.5	75°42.9	64°21.9	9°46.4
22	132°30.7	14.5'	$06^{\circ}14.0$	14.6'	56.3'	109°31.6	106°03.3	98°13.1	83°35.1	75°00.0	75°17.2	63°50.4	9°22.9
23	147°04.2	14.5'	06°28.6	14.6'	56.3'	109°01.2	105°31.1	97°49.6	83°04.8	74°29.5	74°51.5	63°18.8	9°00.2
9 th	SD	$= 15.2^{\prime}$	Mer. pass	. 12:54									

h Moon (10 th Mar)	Lunar Distance (objects with largest hourly LD delta)
-------------------------------	---

Wed	GHA	ν	Dec	d	HP	-Jupiter	-Procyon	-Pollux	-Sirius	-Betelgeuse	-Rigel	-Capella	-Aldebaran
0	161°37.7	14.4'	N 06°43.2	14.6'	56.3'		108°30.7	104°59.0	97°26.0	82°34.5	74°25.8	73°59.1	62°47.2
1	$176^{\circ}11.2$	14.4'	06°57.8	14.6'	56.3'		108°00.2	104°26.8	97°02.3	82°04.2	74°00.2	73°28.6	62°15.6
2	190°44.6	14.3'	$07^{\circ}12.3$	14.5'	56.3'		107°29.6	103°54.5	96°38.7	81°33.9	73°34.5	72°58.1	61°43.9
3	205°17.9	14.3'	07°26.9	14.5'	56.4'		106°59.1	103°22.3	96°15.0	81°03.6	73°08.9	72°27.6	61°12.3
4	219°51.2	14.2'	$07^{\circ}41.4$	14.5'	56.4'		106°28.5	102°50.1	95°51.2	80°33.3	72°43.3	71°57.0	60°40.6
5	234°24.5	14.2'	07°55.9	14.5'	56.4'		105°57.8	102°17.8	95°27.5	80°02.9	72°17.7	71°26.5	60°08.9
6	248°57.7	14.1'	N08°10.4	14.4'	56.4'		105°27.2	101°45.5	95°03.7	79°32.5	71°52.1	70°56.0	59°37.2
7	263°30.8	14.1'	08°24.8	14.4'	56.4'		104°56.5	101°13.1	94°39.9	79°02.1	71°26.5	70°25.4	59°05.5
8	278°03.9	14.0'	08°39.2	14.4'	56.5'		104°25.8	100°40.8	94°16.0	78°31.8	71°01.0	69°54.9	58°33.8
9	292°36.9	14.0'	08°53.6	14.4'	56.5'		103°55.0	100°08.4	93°52.1	78°01.3	70°35.5	69°24.3	58°02.1
10	307°09.8	13.9'	09°08.0	14.3'	56.5'		103°24.2	99°36.0	93°28.2	77°30.9	70°10.0	68°53.7	57°30.4
11	321°42.7	13.8'	09°22.3	14.3'	56.5'		102°53.4	99°03.6	93°04.3	77°00.5	69°44.5	68°23.1	56°58.6
12	$336^{\circ}15.6$	13.8'	N09°36.6	14.3'	56.6'		102°22.6	98°31.2	92°40.4	76°30.1	69° 19.1	67°52.6	56°26.8
13	350°48.4	13.7'	09°50.9	14.2'	56.6'		101°51.7	97°58.7	92°16.4	75°59.6	68°53.7	67°22.0	55°55.1
14	$5^{\circ}21.1$	13.7'	$10^{\circ}05.1$	14.2'	56.6'		101°20.8	97°26.3	91°52.4	75°29.1	68°28.3	66°51.4	55°23.3
15	19°53.7	13.6'	$10^{\circ}19.3$	14.2'	56.6'		100°49.9	96°53.8	91°28.4	74°58.7	68°03.0	66°20.8	54°51.5
16	34°26.3	13.5'	10°33.5	14.1'	56.6'		100°19.0	96°21.3	91°04.4	74°28.2	67°37.7	65°50.2	54°19.7
17	48°58.9	13.5'	10°47.6	14.1'	56.7'		99°48.0	95°48.7	90°40.3	73°57.7	67°12.4	65° 19.6	53°47.8
18	63°31.3	13.4'	$N11^{\circ}01.7$	14.0'	56.7'		99°17.0	95°16.1	90°16.3	73°27.2	66°47.2	64°49.0	53°16.0
19	78°03.7	13.3'	$11^{\circ}15.7$	14.0'	56.7'		98°46.0	94°43.6	89°52.2	72°56.7	66°22.0	64°18.3	52°44.2
20	92°36.0	13.3'	$11^{\circ}29.7$	14.0'	56.7'	119°38.3	98°14.9	94°11.0	89°28.1	72°26.2	65°56.8	63°47.7	52°12.3
21	107°08.3	13.2'	11°43.7	13.9'	56.7'	119°05.4	97°43.9	93°38.3	89°04.0	71°55.6	65°31.7	63° 17.1	51°40.5
22	121°40.5	13.1'	11°57.6	13.9'	56.8'	118°32.4	97°12.8	93°05.7	88°39.8	71°25.1	65°06.6	62°46.5	51°08.6
23	136°12.6	13.0'	12°11.4	13.8'	56.8'	117°59.4	96°41.7	92°33.0	88°15.7	70°54.6	64°41.6	62°15.9	50°36.7
10 th	SD	= 15.4'	Mer. pass	. 13:38									

Moon (11th Mar) Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Jupiter	-Procyon	-Pollux	-Aldebaran	+Saturn	+Sun
0	150°44.6	13.0'	$N12^{\circ}25.3$	13.8'	56.8'			117°26.4	96° 10.5	92°00.3	50°04.9	9°36.8	
1	165°16.6	12.9'	12°39.0	13.7'	56.8'			116°53.3	95°39.4	91°27.6	49°33.0	10°01.3	
2	179°48.5	12.8'	12°52.8	13.7'	56.8'			116°20.3	95°08.2	90°54.9	49°01.1	10°26.4	
3	194°20.3	12.7'	13°06.4	13.6'	56.9'			115° 47.2	94°37.0	90°22.1	48°29.2	10°52.3	
4	208°52.0	12.7'	13°20.1	13.6'	56.9'			115°14.1	94°05.7	89°49.4	47°57.3	11°18.7	
5	223°23.7	12.6'	13°33.6	13.5'	56.9'		119°29.4	114°41.0	93°34.5	89°16.6	47°25.4	11°45.6	
6	237°55.3	12.5'	N13°47.1	13.5'	56.9'		118°55.9	114°07.8	93°03.2	88°43.7	46°53.5	12°13.1	
7	252°26.8	12.4'	14°00.6	13.4'	56.9'		118°22.4	113°34.7	92°31.9	88°10.9	46°21.6	12°40.9	
8	266°58.2	12.3'	$14^{\circ}14.0$	13.3'	57.0'		117°49.0	113°01.5	92°00.6	87°38.1	45°49.7	13°09.1	
9	281°29.5	12.3'	14°27.3	13.3'	57.0'		117°15.5	112°28.3	91°29.2	87°05.2	45°17.8	13°37.7	
10	296°00.8	12.2'	14°40.6	13.2'	57.0'		116°41.9	111°55.0	90°57.9	86°32.3	44°45.9	14°06.5	
11	310°32.0	12.1'	14°53.8	13.2'	57.0'		116°08.4	111°21.8	90°26.5	85°59.4	44°13.9	14°35.7	
12	325°03.1	12.0'	N 15°07.0	13.1'	57.0'		115°34.8	110°48.5	89°55.1	85°26.4	43°42.0	15°05.1	
13	339°34.1	11.9'	15°20.1	13.0'	57.1'		115°01.2	110°15.2	89°23.7	84°53.5	43°10.1	15°34.8	
14	354°05.0	11.8'	15°33.1	13.0'	57.1'		114°27.6	109°41.9	88°52.2	84°20.5	42°38.2	16°04.6	
15	8°35.8	11.7'	$15^{\circ}46.1$	12.9'	57.1'		113°54.0	109°08.6	88°20.8	83°47.5	42°06.3	16°34.7	
16	23°06.6	11.7'	$15^{\circ}59.0$	12.8'	57.1'		113°20.3	108°35.2	87°49.3	83°14.5	41°34.4	17°04.9	
17	37°37.2	11.6'	$16^{\circ}11.8$	12.8'	57.1'	119°38.7	112°46.6	108°01.9	87° 17.8	82°41.4	41°02.6	17°35.3	
18	52°07.8	11.5'	$N16^{\circ}24.6$	12.7'	57.2'	119°05.5	112°12.9	107°28.5	86°46.3	82°08.4	40°30.7	18°05.9	40° 16.5
19	66°38.3	11.4'	16°37.2	12.6'	57.2'	118°32.4	111°39.2	106°55.1	86° 14.7	81°35.3	39°58.8	18°36.6	40°47.1
20	81°08.7	11.3'	16°49.8	12.5'	57.2'	117°59.2	111°05.5	106°21.6	85°43.2	81°02.2	39°26.9	19°07.4	41°17.7
21	95°39.0	11.2'	17°02.4	12.5'	57.2'	117°26.0	110°31.7	105°48.2	85°11.6	80°29.0	38°55.1	19°38.4	41°48.4
22	110°09.2	11.1'	17°14.8	12.4'	57.2'	116°52.7	109°58.0	105° 14.7	84°40.0	79°55.9	38°23.3	20°09.5	42°19.1
23	124°39.3	11.0'	17°27.2	12.3'	57.3'	116°19.5	109°24.2	104°41.2	84°08.4	79°22.7	37°51.4	20°40.7	42°49.8
11 th	SD = 15.5' Mer. pass. 14:24								Sun SD	= 16.1'			

Moon (12th Mar) Lunar Distance (objects with largest hourly LD delta)

n		IVIOON	(12" IVI	ar)		Lunar Distance (objects with largest nourly LD de)
Fri	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Jupiter	-Procyon	-Pollux	+Saturn	+Sun	+Achernar
0	139°09.3	10.9'	N 17°39.5	12.2'	57.3'	115°46.2	108°50.3	104°07.7	83°36.8	78°49.5	21°12.0	43°20.5	
1	153°39.3	10.8'	$17^{\circ}51.7$	12.1'	57.3'	115°12.9	108°16.5	103°34.2	83°05.2	78°16.3	21°43.4	43°51.3	
2	168°09.1	10.7'	18°03.8	12.0'	57.3'	114°39.6	107°42.6	103°00.6	82°33.5	77°43.1	22°14.9	44°22.1	
3	182°38.8	10.6'	18°15.9	12.0'	57.3'	114°06.3	107°08.8	102°27.0	82°01.8	77°09.9	22°46.5	44°52.8	
4	197°08.5	10.5'	18°27.8	11.9'	57.4'	113°32.9	106°34.9	101°53.4	81°30.2	76°36.6	23°18.2	45°23.7	
5	211°38.0	10.5'	18°39.7	11.8'	57.4'	112°59.6	106°01.0	101°19.8	80° 58.5	76°03.3	23°49.9	45°54.5	
6	226°07.5	10.4'	N 18°51.5	11.7'	57.4'	112°26.2	105°27.0	100°46.2	80°26.8	75°30.0	24°21.7	46°25.4	
7	240°36.8	10.3'	19°03.2	11.6'	57.4'	111°52.7	104°53.1	100°12.5	79°55.0	74°56.7	24°53.6	46°56.2	
8	255°06.1	10.2'	19°14.8	11.5'	57.4'	111°19.3	104°19.1	99°38.9	79°23.3	74°23.4	25°25.6	47°27.1	
9	269°35.3	10.1'	19°26.3	11.4'	57.5'	110°45.8	103°45.1	99°05.2	78°51.5	73°50.0	25°57.6	47°58.1	
10	284°04.3	10.0'	19°37.7	11.3'	57.5'	110°12.4	103°11.1	98°31.4	78° 19.8	73°16.6	26°29.7	48°29.0	
11	298°33.3	9.9'	19°49.0	11.2'	57.5'	109°38.9	102°37.0	97°57.7	77°48.0	72°43.2	27°01.9	49°00.0	
12	313°02.1	9.8'	N 20°00.3	11.1'	57.5'	109°05.4	102°03.0	97°23.9	77°16.2	72°09.8	27°34.1	49°30.9	
13	327°30.9	9.7'	20°11.4	11.0'	57.5'	108°31.8	101°28.9	96°50.2	76°44.4	71°36.3	28°06.4	50°02.0	
14	341°59.6	9.6'	20°22.4	10.9'	57.6'	107°58.3	100°54.8	96°16.4	76°12.6	71°02.9	28°38.7	50°33.0	
15	356°28.1	9.5'	20°33.3	10.8'	57.6'	107°24.7	100°20.7	95° 42.6	75°40.8	70°29.4	29°11.1	51°04.0	
16	10°56.6	9.4'	20°44.1	10.7'	57.6'	106°51.1	99°46.5	95°08.7	75°08.9	69°55.9	29°43.5	51°35.1	78°46.7
17	25°24.9	9.3'	20°54.8	10.6'	57.6'	106°17.5	99°12.4	94°34.9	74°37.1	69°22.4	30°16.0	52°06.2	79°01.8
18	39°53.2	9.2'	N21°05.4	10.5'	57.6'	105°43.8	98°38.2	94°01.0	74°05.2	68°48.8	30°48.5	52°37.3	79°16.9
19	54°21.3	9.0'	21°15.9	10.4'	57.7'	105°10.1	98°04.0	93°27.1	73°33.4	68°15.3	31°21.1	53°08.4	79°32.1
20	68°49.4	8.9'	21°26.3	10.3'	57.7'	104°36.5	97°29.8	92°53.2	73°01.5	67°41.7	31°53.7	53°39.6	79°47.4
21	83°17.3	8.8'	21°36.6	10.2'	57.7'	104°02.8	96°55.6	92°19.2	72°29.6	67°08.1	32°26.3	54°10.8	80°02.7
22	97°45.2	8.7'	21°46.7	10.0'	57.7'	103°29.0	96°21.3	91°45.3	71°57.7	66°34.5	32°59.0	54°42.0	80°18.1
23	112°12.9	8.6'	21°56.8	9.9'	57.7'	102°55.3	95°47.0	91°11.3	71°25.8	66°00.8	33°31.8	55°13.2	80°33.5
12 th	SD	= 15.6'	Mer. pass	s. 15:15			-	-	Sun SD	= 16.1'	-		

	_	
h	Moon (13 th Mar)	Lunar Distance (objects with largest hourly ID delta)

Sat	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Jupiter	-Procyon	-Pollux	+Saturn	+Sun	+Achernar
0	126°40.5	8.5'	N 22°06.7	9.8'	57.8'	102°21.5	95°12.7	90°37.3	70°53.9	65°27.2	34°04.6	55°44.4	80°49.0
1	141°08.1	8.4'	$22^{\circ}16.5$	9.7'	57.8'	101°47.7	94°38.4	90°03.3	70°22.0	64°53.5	34°37.4	56°15.7	81°04.6
2	155°35.5	8.3'	22°26.2	9.6'	57.8'	101°13.9	94°04.1	89°29.2	69°50.1	64°19.8	35°10.2	56°46.9	81°20.1
3	170°02.8	8.2'	22°35.8	9.4'	57.8'	100°40.1	93°29.7	88°55.2	69°18.1	63°46.1	35°43.1	57°18.2	81°35.8
4	184°30.1	8.1'	22°45.2	9.3'	57.8'	100°06.3	92°55.4	88°21.1	68°46.2	63°12.3	36°16.1	57°49.6	81°51.5
5	198°57.2	8.0'	22°54.6	9.2'	57.9'	99°32.4	92°21.0	87°47.0	68°14.3	62°38.6	36°49.0	58°20.9	82°07.2
6	213°24.2	7.9'	N23°03.8	9.1'	57.9'	98°58.5	91°46.6	87°12.9	67°42.3	62°04.8	37°22.0	58°52.3	82°23.0
7	227°51.2	7.8'	23°12.8	8.9'	57.9'	98°24.6	91°12.1	86°38.7	67°10.4	61°31.0	37°55.1	59°23.6	82°38.8
8	242°18.0	7.7'	23°21.8	8.8'	57.9'	97°50.7	90°37.7	86°04.6	66°38.4	60°57.2	38°28.1	59°55.0	82°54.7
9	256°44.7	7.6'	23°30.6	8.7'	57.9'	97°16.7	90°03.2	85°30.4	66°06.5	60°23.4	39°01.3	60°26.5	83°10.6
10	271°11.3	7.5'	23°39.3	8.6'	57.9'	96°42.8	89°28.7	84°56.2	65°34.5	59°49.5	39°34.4	60°57.9	83°26.5
11	285°37.8	7.4'	23°47.8	8.4'	58.0'	96°08.8	88°54.2	84°21.9	65°02.6	59° 15.7	40°07.6	61°29.4	83°42.5
12	300°04.3	7.3'	N23°56.3	8.3'	58.0'	95°34.8	88°19.7	83°47.7	64°30.6	58°41.8	40°40.8	62°00.9	83°58.5
13	314°30.6	7.2'	24°04.5	8.1'	58.0'	95°00.7	87°45.2	83°13.4	63°58.7	58°07.9	41°14.0	62°32.4	84°14.6
14	328°56.8	7.1'	$24^{\circ}12.7$	8.0'	58.0'	94°26.7	87°10.6	82°39.2	63°26.7	57°33.9	41°47.3	63°03.9	84°30.7
15	343°22.9	7.0'	24°20.7	7.9'	58.0'	93°52.6	86°36.0	82°04.9	62°54.7	57°00.0	42°20.6	63°35.4	84°46.8
16	357°48.9	6.9'	24°28.6	7.7'	58.1'	93°18.5	86°01.4	81°30.5	62°22.8	56°26.0	42°53.9	64°07.0	85°03.0
17	12°14.9	6.8'	24°36.3	7.6'	58.1'	92°44.4	85°26.8	80°56.2	61°50.8	55°52.1	43°27.3	64°38.6	85°19.2
18	26°40.7	6.7'	N 24°43.9	7.4'	58.1'	92°10.3	84°52.1	80°21.8	61°18.9	55°18.1	44°00.6	65°10.2	85°35.4
19	41°06.4	6.6'	24°51.3	7.3'	58.1'	91°36.1	84°17.5	79°47.5	60°47.0	54°44.1	44°34.1	65°41.8	85°51.7
20	55°32.1	6.5'	24°58.6	7.1'	58.1'	91°01.9	83°42.8	79°13.1	60°15.0	54°10.0	45°07.5	66°13.5	86°08.0
21	69°57.6	6.5'	25°05.7	7.0'	58.2'	90°27.8	83°08.1	78°38.6	59°43.1	53°36.0	45°41.0	66°45.2	86°24.3
22	84°23.1	6.4'	25°12.7	6.8'	58.2'	89°53.5	82°33.4	78°04.2	59°11.2	53°01.9	46°14.5	67°16.9	86°40.7
23	98°48.4	6.3'	25°19.6	6.7'	58.2'	89°19.3	81°58.7	77°29.7	58°39.2	52°27.8	46°48.0	67°48.6	86°57.0
13 th	SD =	= 15.8′	Mer. pass	. 16:09)				Sun SD	0 = 16.1'			

h	Moon (14 th Mar)	Lunar Distance (objects with largest hourly LD delta)

		1410011	(11 1110	ai <i>)</i>			Lunai D	j sombo	Objects W	itii laige	or mounty	LD dcit	u)
Sun	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Jupiter	-Procyon	-Pollux	+Saturn	+Sun	+Achernar
0	113°13.7	6.2'	N 25°26.3	6.5'	58.2'	88°45.1	81°23.9	76°55.2	58°07.3	51°53.7	47°21.6	68°20.3	87°13.4
1	127°38.9	6.1'	25°32.8	6.4'	58.2'	88°10.8	80°49.1	76°20.7	57°35.4	51°19.6	47°55.2	68°52.1	87°29.8
2	142°04.0	6.0'	25°39.2	6.2'	58.3'	87°36.5	80°14.3	75°46.2	57°03.5	50°45.4	48°28.8	69°23.8	87°46.3
3	156°29.0	5.9'	25°45.4	6.1'	58.3'	87°02.2	79°39.5	75°11.7	56°31.7	50°11.3	49°02.4	69°55.6	88°02.7
4	170°53.9	5.8'	$25^{\circ}51.5$	5.9'	58.3'	86°27.8	79°04.7	74°37.1	55°59.8	49°37.1	49°36.1	70°27.4	88°19.2
5	185°18.7	5.7'	25°57.4	5.8'	58.3'	85°53.5	78° 29.8	74°02.5	55°27.9	49°02.9	50°09.8	70°59.3	88°35.7
6	199°43.5	5.7'	$N26^{\circ}03.2$	5.6'	58.3'	85°19.1	77°55.0	73°27.9	54°56.1	48°28.7	50°43.5	71°31.1	88°52.2
7	214°08.1	5.6'	26°08.8	5.4'	58.3'	84°44.7	77°20.1	72°53.3	54°24.3	47°54.5	51°17.2	72°03.0	89°08.7
8	228°32.7	5.5'	26°14.2	5.3'	58.4'	84°10.3	76°45.2	72°18.6	53°52.5	47°20.2	51°51.0	72°34.9	89°25.3
9	242°57.2	5.4'	$26^{\circ}19.5$	5.1'	58.4'	83°35.8	76°10.3	71°44.0	53°20.7	46°46.0	52°24.8	73°06.8	89°41.8
10	257°21.6	5.3'	26°24.6	4.9'	58.4'	83°01.4	75°35.3	71°09.3	52°48.9	46°11.7	52°58.6	73°38.8	89°58.4
11	271°46.0	5.3'	$26^{\circ}29.6$	4.8'	58.4'	82°26.9	75°00.3	70°34.6	52° 17.2	45°37.4	53°32.5	74°10.7	90°14.9
12	286°10.2	5.2'	N 26°34.3	4.6'	58.4'	81°52.4	74°25.4	69°59.9	51°45.4	45°03.1	54°06.3	74°42.7	90°31.5
13	300°34.4	5.1'	26°39.0	4.4'	58.5'	81°17.9	73°50.4	69°25.1	51° 13.7	44°28.7	54°40.2	75°14.7	90°48.1
14	314°58.5	5.0'	26°43.4	4.3'	58.5'	80°43.3	73°15.3	68°50.4	50°42.1	43°54.4	55°14.1	75°46.7	91°04.7
15	329°22.6	5.0'	26°47.7	4.1'	58.5'	80°08.8	72°40.3	68° 15.6	50° 10.4	43°20.0	55°48.1	76°18.8	91°21.3
16	343°46.6	4.9'	$26^{\circ}51.8$	3.9'	58.5'	79°34.2	72°05.3	67°40.8	49°38.8	42°45.7	56°22.1	76°50.8	91°37.9
17	358°10.5	4.8'	26°55.7	3.8'	58.5'	78°59.6	71°30.2	67°05.9	49°07.2	42°11.3	56°56.0	77°22.9	91°54.5
18	12°34.3	4.8'	N 26°59.5	3.6'	58.5'	78°25.0	70°55.1	66°31.1	48°35.7	41°36.9	57°30.1	77°55.0	92°11.1
19	26°58.1	4.7'	$27^{\circ}03.1$	3.4'	58.6'	77°50.3	70°20.0	65°56.2	48°04.1	41°02.4	58°04.1	78°27.1	92°27.7
20	41°21.8	4.7'	27°06.5	3.2'	58.6'	77°15.7	69°44.8	65°21.4	47°32.6	40°28.0	58°38.2	78°59.3	92°44.3
21	55°45.4	4.6'	27°09.7	3.1'	58.6'	76°41.0	69°09.7	64°46.4	47°01.2	39°53.5	59°12.3	79°31.4	93°00.9
22	70°09.0	4.5'	$27^{\circ}12.8$	2.9'	58.6'	76°06.3	68°34.5	64°11.5	46°29.8	39°19.1	59°46.4	80°03.6	93°17.5
23	84°32.6	4.5'	$27^{\circ}15.6$	2.7'	58.6'	75°31.6	67°59.4	63°36.6	45°58.4	38°44.6	60°20.5	80°35.8	93°34.1
14 th	SD =	= 15.9'	Mer. pass	. 17:08	3		*		Sun SE	0 = 16.1'		*	

The info in the info in the content of the info in the content of	h	Moon (15 th Mar)	Lunar Distance (objects with largest hourly LD deli	ta)
---	---	-----------------------------	---	-----

Mon	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Jupiter	+Aldebaran	+Saturn	+Sun	+Achernar
0	98°56.0	4.4'	N 27°18.3	2.5'	58.7'		74°56.8	67°24.1	63°01.6		60°54.7	81°08.0	93°50.7
1	113°19.5	4.4'	27°20.9	2.3'	58.7'		74°22.1	66°48.9	62°26.6		61°28.8	81°40.3	94°07.2
2	127°42.8	4.3'	27°23.2	2.2'	58.7'		73°47.3	66°13.7	61°51.6		62°03.1	82°12.5	94°23.8
3	142°06.2	4.3'	27°25.4	2.0'	58.7'		73°12.5	65°38.4	61°16.6		62°37.3	82°44.8	94°40.3
4	156°29.4	4.2'	27°27.4	1.8'	58.7'		72°37.7	65°03.2	60°41.6		63°11.5	83°17.1	94°56.9
5	170°52.7	4.2'	27°29.2	1.6'	58.7'		72°02.8	64°27.9	60°06.5		63°45.8	83°49.5	95°13.4
6	185°15.9	4.1'	N27°30.8	1.4'	58.8'		71°28.0	63°52.6	59°31.4		64°20.1	84°21.8	95°29.9
7	199°39.0	4.1'	27°32.2	1.3'	58.8'	İ	70°53.1	63° 17.2	58°56.3	13°34.4	64°54.4	84°54.2	95°46.4
8	214°02.1	4.1'	27°33.5	1.1'	58.8'		70°18.2	62°41.9	58°21.2	13°57.3	65°28.8	85°26.5	96°02.9
9	228°25.2	4.0'	27°34.5	0.9'	58.8'		69°43.3	62°06.5	57°46.0	14°21.0	66°03.1	85°58.9	96°19.3
10	242°48.2	4.0'	27°35.4	0.7'	58.8'		69°08.3	61°31.1	57°10.9	14°45.5	66°37.5	86°31.4	96°35.7
11	257°11.3	4.0'	27°36.1	0.5'	58.8'		68°33.3	60°55.7	56°35.7	15°10.6	67°11.9	87°03.8	96°52.2
12	271°34.2	4.0'	N27°36.6	0.3'	58.9'		67°58.4	60°20.3	56°00.5	15°36.3	67°46.3	87°36.3	97°08.5
13	285°57.2	3.9'	27°36.9	0.1'	58.9'		67°23.4	59°44.9	55°25.3	16°02.7	68°20.8	88°08.8	97°24.9
14	300°20.1	3.9'	27°37.1	-0.0'	58.9'		66°48.3	59°09.4	54°50.0	16°29.6	68°55.3	88°41.3	97°41.2
15	314°43.0	3.9'	27°37.0	-0.2'	58.9'		66°13.3	58°34.0	54°14.8	16°56.9	69°29.8	89°13.8	97°57.5
16	329°05.9	3.9'	27°36.8	-0.4'	58.9'	119°40.8	65°38.2	57°58.5	53°39.5	17°24.8	70°04.3	89°46.3	98° 13.8
17	343°28.8	3.8'	27°36.4	-0.6'	58.9'	119°05.8	65°03.2	57°23.0	53°04.2	17°53.0	70°38.8	90°18.9	98°30.0
18	357°51.6	3.8'	N27°35.8	-0.8'	59.0'	118°30.7	64°28.1	56° 47.5	52°28.9	18°21.7	71°13.4	90°51.5	98°46.2
19	12°14.5	3.8'	27°35.0	-1.0'	59.0'	117°55.6	63°52.9	56°11.9	51°53.5	18°50.7	71°48.0	91°24.1	99°02.4
20	26°37.3	3.8'	27°34.0	-1.2'	59.0'	117°20.5	63°17.8	55°36.4	51°18.2	19°20.1	72°22.6	91°56.7	99°18.6
21	41°00.1	3.8'	27°32.8	-1.4'	59.0'	116°45.4	62°42.7	55°00.8	50°42.8	19°49.8	72°57.2	92°29.3	99°34.7
22	55°22.9	3.8'	27°31.4	-1.6'	59.0'	116°10.2	62°07.5	54°25.2	50°07.4	20°19.8	73°31.8	93°02.0	99°50.7
23	69°45.7	3.8'	27°29.9	-1.7'	59.0'	115°35.1	61°32.3	53°49.6	49°32.0	20°50.0	74°06.5	93°34.7	100°06.7
15 th	SD	= 16.0	Mer. pas	s. 18:09)				Sun	SD = 16.1'			

h	Moon (16 th Mar)	Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Jupiter	+Capella	+Aldebaran	+Saturn	+Sun
0	84°08.5	3.8'	$N27^{\circ}28.1$	-1.9'	59.1'	114°59.9	$60^{\circ}57.1$	53°14.0	48°56.6		21°20.6	74°41.2	94°07.3
1	98°31.3	3.8'	27°26.2	-2.1'	59.1'	114°24.7	60°21.8	52°38.4	48°21.1		21°51.3	75°15.9	94°40.1
2	112°54.1	3.8'	27°24.1	-2.3'	59.1'	113°49.5	59°46.6	52°02.7	47°45.7		22°22.3	75°50.6	95°12.8
3	127°16.9	3.8'	$27^{\circ}21.8$	-2.5'	59.1'	113°14.2	59°11.3	51°27.1	47°10.2	20°46.5	22°53.5	76°25.3	95°45.5
4	141°39.7	3.8'	27°19.3	-2.7'	59.1'	112°39.0	58°36.0	50°51.4	46°34.7	21°02.9	23°24.9	77°00.1	96°18.3
5	156°02.6	3.8'	$27^{\circ}16.6$	-2.9'	59.1'	112°03.7	58°00.7	50°15.7	45°59.1	21°20.0	23°56.5	77°34.9	96°51.1
6	170°25.4	3.9'	N27°13.8	-3.1'	59.2'	111°28.4	57°25.4	49°40.0	45°23.6	21°37.8	24°28.3	78°09.7	97°23.9
7	184°48.3	3.9'	$27^{\circ}10.7$	-3.2'	59.2'	110°53.1	56°50.0	49°04.3	44°48.0	21°56.3	25°00.2	78°44.5	97°56.7
8	199°11.1	3.9'	27°07.5	-3.4'	59.2'	110°17.7	56°14.7	48°28.5	44°12.5	22°15.4	25°32.3	79°19.3	98°29.6
9	213°34.0	3.9'	27°04.0	-3.6'	59.2'	109°42.4	55°39.3	47°52.8	43°36.9	22°35.2	26°04.6	79°54.2	99°02.4
10	227°56.9	3.9'	27°00.4	-3.8'	59.2'	109°07.0	55°03.9	47°17.0	43°01.3	22°55.6	26°37.0	80°29.1	99°35.3
11	242°19.9	4.0'	26°56.6	-4.0'	59.2'	108°31.6	54°28.5	46°41.2	42°25.6	23°16.6	27°09.5	81°04.0	100°08.2
12	256°42.8	4.0'	N 26°52.6	-4.2'	59.2'	107°56.2	53°53.0	46°05.4	41°50.0	23°38.1	27°42.1	81°38.9	100°41.1
13	271°05.8	4.0'	26°48.5	-4.4'	59.3'	107°20.8	53°17.6	45°29.6	41°14.3	24°00.1	28°14.9	82°13.8	101°14.1
14	285°28.8	4.0'	$26^{\circ}44.1$	-4.5'	59.3'	106°45.3	52°42.1	44°53.8	40°38.6	24°22.7	28°47.8	82°48.8	101°47.0
15	299°51.9	4.1'	26°39.6	-4.7'	59.3'	106°09.9	52°06.6	44°18.0	40°02.9	24°45.7	29°20.8	83°23.7	102°20.0
16	314°15.0	4.1'	26°34.8	-4.9'	59.3'	105°34.4	51°31.1	43°42.1	39°27.2	25°09.3	29°53.8	83°58.7	102°53.0
17	328°38.1	4.2'	26°29.9	-5.1'	59.3'	104°58.9	50°55.6	43°06.3	38°51.5	25°33.2	30°27.0	84°33.7	103°26.0
18	343°01.2	4.2'	N 26°24.8	-5.3'	59.3'	104°23.4	50°20.0	42°30.4	38° 15.7	25°57.6	31°00.3	85°08.8	103°59.0
19	357°24.4	4.2'	$26^{\circ}19.6$	-5.4'	59.3'	103°47.8	49°44.5	41°54.5	37°39.9	26°22.4	31°33.7	85°43.8	104°32.0
20	11°47.7	4.3'	$26^{\circ}14.1$	-5.6'	59.3'	103°12.3	49°08.9	41°18.6	37°04.1	26°47.6	32°07.2	86°18.9	105°05.1
21	26°10.9	4.3'	26°08.5	-5.8'	59.4'	102°36.7	48°33.3	40°42.7	36°28.3	27°13.1	32°40.7	86°54.0	105°38.2
22	40°34.3	4.4'	26°02.7	-6.0'	59.4'	102°01.1	47°57.7	40°06.8	35°52.5	27°39.0	33°14.4	87°29.0	106°11.3
23	54°57.6	4.4'	25°56.7	-6.2'	59.4'	101°25.5	47°22.1	39°30.9	35°16.7	28°05.3	33°48.1	88°04.2	106°44.4
16 th	SD	= 16.1'	Mer. pass	s. 19:11					Sun S	5D = 16.1'			

Moon (17th Mar) Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Jupiter	+Capella	+Aldebaran	+Saturn	+Sun
0	69°21.0	4.5'	N 25°50.5	-6.3'	59.4'	100°49.9	46°46.4	38°54.9	34°40.8	28°31.9	34°21.8	88°39.3	107°17.5
1	83°44.5	4.5'	25°44.2	-6.5'	59.4'	100°14.2	46°10.8	38°19.0	34°05.0	28°58.7	34°55.7	89°14.4	107°50.6
2	98°08.0	4.6'	25°37.7	-6.7'	59.4'	99°38.6	45°35.1	37°43.0	33°29.1	29°25.9	35°29.6	89°49.6	108°23.8
3	112°31.6	4.6'	25°31.0	-6.9'	59.4'	99°02.9	44°59.4	37°07.0	32°53.2	29°53.4	36°03.6	90°24.8	108°56.9
4	126°55.3	4.7'	25°24.1	-7.0'	59.4'	98°27.2	44°23.7	36°31.1	32°17.3	30°21.1	36°37.6	91°00.0	109°30.1
5	141°18.9	4.7'	$25^{\circ}17.1$	-7.2'	59.5'	97°51.5	43°48.0	35°55.1	31°41.3	30°49.1	37°11.7	91°35.2	110°03.3
6	155°42.7	4.8'	N 25°09.9	-7.4'	59.5'	97°15.8	43°12.2	35°19.1	31°05.4	31°17.4	37°45.9	92°10.4	110°36.5
7	170°06.5	4.9'	25°02.5	-7.5'	59.5'	96°40.1	42°36.5	34°43.1	30°29.4	31°45.8	38°20.1	92°45.6	111°09.8
8	184°30.4	4.9'	24°54.9	-7.7'	59.5'	96°04.3	42°00.7	34°07.1	29°53.5	32°14.6	38°54.4	93°20.9	111°43.0
9	198°54.3	5.0'	24°47.2	-7.9'	59.5'	95°28.6	41°25.0	33°31.1	29° 17.5	32°43.5	39°28.7	93°56.2	112°16.3
10	213°18.3	5.1'	24°39.3	-8.1'	59.5'	94°52.8	40°49.2	32°55.1	28°41.5	33°12.6	40°03.1	94°31.4	112°49.5
11	227°42.4	5.1'	24°31.3	-8.2'	59.5'	94°17.0	40°13.3	32°19.1	28°05.5	33°42.0	40°37.5	95°06.7	113°22.8
12	242°06.5	5.2'	N24°23.1	-8.4'	59.5'	93°41.2	39°37.5	31°43.1	27° 29.4	34°11.5	41°12.0	95°42.0	113°56.1
13	256°30.7	5.3'	24°14.7	-8.5'	59.5'	93°05.4	39°01.7	31°07.0	26°53.4	34°41.3	41°46.5	96°17.4	114°29.4
14	270°55.0	5.3'	24°06.2	-8.7'	59.6'	92°29.5	38°25.8	30°31.0	26° 17.3	35°11.2	42°21.1	96°52.7	115°02.8
15	285°19.3	5.4'	23°57.5	-8.9'	59.6'	91°53.7	37°50.0	29°55.0	25°41.3	35°41.2	42°55.7	97°28.1	115°36.1
16	299°43.7	5.5'	23°48.6	-9.0'	59.6'	91°17.8	37°14.1	29°19.0	25°05.2	36°11.5	43°30.3	98°03.4	116°09.5
17	314°08.2	5.6'	23°39.6	-9.2'	59.6'	90°41.9	36°38.2	28°42.9	24°29.1	36°41.9	44°05.0	98°38.8	116°42.8
18	328°32.8	5.6'	N23°30.4	-9.3'	59.6'	90°06.0	36°02.3	28°06.9	23°53.0	37°12.4	44°39.8	99°14.2	117°16.2
19	342°57.4	5.7'	$23^{\circ}21.1$	-9.5'	59.6'	89°30.1	35°26.4	27°30.9	23°16.9	37°43.1	45°14.5	99°49.6	117°49.6
20	357°22.1	5.8'	23°11.6	-9.6'	59.6'	88°54.2	34°50.5	26°54.9	22°40.7	38°14.0	45°49.3	100°25.0	118°23.0
21	11°46.9	5.9'	23°01.9	-9.8'	59.6'	88°18.3	34°14.5	26°18.9	22°04.6	38°45.0	46°24.2	101°00.4	118°56.4
22	26°11.8	5.9'	22°52.1	-9.9'	59.6'	87°42.3	33°38.6	25°42.9	21°28.5	39°16.1	46°59.0	101°35.9	119°29.8
23	40°36.7	6.0'	22°42.2	-10.1'	59.6'	87°06.4	33°02.6	25°06.9	20°52.3	39°47.3	47°33.9	102°11.3	
17 th	SD	= 16.2	.' Mer. pas	ss. 20:11					Sun S	SD = 16.1'			

h		Моо	n (18 th M	lar)			Lunar D	Distance (objects	with larg	est hourly	LD delta)	
Thu	GHA	ν	Dec	d	HP	-Antares	-Spica	-Regulus	-Jupiter	+Pollux	+Capella	+Aldebaran	+Saturn
0	55°01.7	6.1'	N22°32.1	-10.2'	59.6'		86°30.4	32°26.7	20°16.1		40°18.7	48°08.9	102°46.8
1	69°26.8	6.2'	22°21.9	-10.4'	59.7'		85°54.4	31°50.7	19°40.0		40°50.1	48°43.8	103°22.2
2	83°52.0	6.3'	22°11.5	-10.5'	59.7'		85°18.4	31° 14.7	19°03.8		41°21.7	49°18.8	103°57.7
3	98°17.3	6.3'	22°00.9	-10.7'	59.7'		84°42.4	30°38.7	18°27.6		41°53.4	49°53.8	104°33.2
4	112°42.6	6.4'	$21^{\circ}50.3$	-10.8'	59.7'		84°06.4	30°02.7	17°51.4	8°12.6	42°25.2	50°28.9	105°08.7
5	127°08.0	6.5'	$21^{\circ}39.5$	-11.0'	59.7'		83°30.4	29°26.7	17°15.2	8°43.5	42°57.1	51°04.0	105°44.2
6	141°33.6	6.6'	N21°28.5	-11.1'	59.7'		82°54.4	28°50.6	16°38.9	9°15.0	43°29.1	51°39.1	106°19.7
7	155°59.1	6.7'	$21^{\circ}17.4$	-11.2'	59.7'		82°18.3	28° 14.6	16°02.7	9°47.1	44°01.2	52°14.2	106°55.2
8	170°24.8	6.8'	$21^{\circ}06.2$	-11.4'	59.7'		81°42.3	27°38.6	15°26.5	10°19.6	44°33.4	52°49.4	107°30.8
9	184°50.6	6.8'	20°54.8	-11.5'	59.7'		81°06.2	27°02.5	14°50.3	10°52.5	45°05.6	53°24.5	108°06.3
10	199°16.4	6.9'	20°43.3	-11.6'	59.7'		80°30.1	26°26.4	14°14.0	11°25.7	45°38.0	53°59.7	108°41.9
11	213°42.3	7.0'	20°31.7	-11.8'	59.7'		79°54.1	25°50.4	13°37.8	11°59.2	46°10.4	54°35.0	109°17.4
12	228°08.4	7.1'	N20°20.0	-11.9'	59.7'		79° 18.0	25° 14.3	13°01.5	12°32.9	46°42.9	55°10.2	109°53.0
13	242°34.5	7.2'	$20^{\circ}08.1$	-12.0'	59.7'		78°41.9	24°38.2	12°25.3	13°06.9	47°15.5	55°45.5	110°28.5
14	257°00.6	7.3'	$19^{\circ}56.1$	-12.1'	59.7'		78°05.8	24°02.2	11°49.1	13°41.0	47°48.1	56°20.8	111°04.1
15	271°26.9	7.3'	19°43.9	-12.3'	59.7'		77°29.7	23°26.1	11°12.8	14°15.4	48°20.8	56°56.1	111°39.7
16	285°53.2	7.4'	19°31.7	-12.4'	59.7'		76°53.5	22°50.0	10°36.6	14°49.8	48°53.6	57°31.4	112°15.3
17	300°19.7	7.5'	$19^{\circ}19.3$	-12.5'	59.7'		76° 17.4	22°13.9	10°00.4	15°24.4	49°26.5	58°06.7	112°50.9
18	314°46.2	7.6'	N19°06.8	-12.6'	59.7'		75°41.3	21°37.8	9°24.1	15°59.2	49°59.4	58°42.1	113°26.4
19	329°12.8	7.7'	18°54.2	-12.7'	59.7'		75°05.1	21°01.7	8°47.9	16°34.0	50°32.4	59°17.5	114°02.0
20	343°39.5	7.8'	18°41.4	-12.8'	59.7'		74°29.0	20°25.6	8°11.8	17°08.9	51°05.4	59°52.9	114°37.6
21	358°06.3	7.9'	18°28.6	-13.0'	59.8'	119°43.5	73°52.9	19°49.5	7°35.6	17°43.9	51°38.5	60°28.3	115°13.2
22	12°33.1	7.9'	$18^{\circ}15.6$	-13.1'	59.8'	119°07.3	73°16.7	19° 13.4	6°59.5	18°19.0	52°11.6	61°03.7	115°48.8
23	27°00.1	8.0'	18°02.6	-13.2'	59.8'	118°31.1	72°40.5	18° 37.3	6°23.4	18°54.2	52°44.8	61°39.1	116°24.4
18 th	SD	= 16.3	B' Mer. pas	ss. 21:08				•	*		•		

h Moon (10 th M	22)

Fri	GHA	ν	Dec	d	HP	-Antares	-Spica	-Regulus	± Jupiter	+Pollux	+Capella	+Aldebaran	+Saturn
0	41°27.1	8.1'	$N17^{\circ}49.4$	-13.3'	59.8'	117°54.9	72°04.4	18°01.2	5°47.4	19°29.4	53°18.1	62°14.6	117°00.1
1	55°54.2	8.2'	$17^{\circ}36.1$	-13.4'	59.8'	117° 18.7	71°28.2	17°25.1	5°11.4	20°04.7	53°51.4	62°50.0	117°35.7
2	70°21.4	8.3'	17°22.7	-13.5'	59.8'	116° 42.5	70°52.0	16°49.0	4°35.6	20°40.0	54°24.7	63°25.5	118°11.3
3	84°48.6	8.4'	$17^{\circ}09.2$	-13.6'	59.8'	116°06.3	70°15.9	16°12.9	4°00.0	21°15.4	54°58.1	64°01.0	118°46.9
4	99°16.0	8.4'	16°55.6	-13.7'	59.8'	115°30.1	69°39.7	15°36.8	3°24.6	21°50.9	55°31.5	64°36.5	119°22.5
5	113°43.4	8.5'	16°41.9	-13.8'	59.8'	114°53.9	69°03.5	15°00.8	2°49.6	22°26.3	56°05.0	65° 12.0	119°58.1
6	128°11.0	8.6'	$N16^{\circ}28.1$	-13.9'	59.8'	114° 17.6	68°27.3	14°24.7	2°15.4	23°01.9	56°38.5	65° 47.5	
7	142°38.5	8.7'	16°14.2	-14.0'	59.8'	113°41.4	67°51.2	13°48.6		23°37.4	57° 12.0	66°23.0	
8	157°06.2	8.8'	16°00.2	-14.1'	59.8'	113°05.2	67° 15.0	13° 12.6		24°13.0	57°45.6	66° 58.6	
9	171°34.0	8.8'	$15^{\circ}46.1$	-14.2'	59.8'	112°29.0	66°38.8	12°36.6		24°48.6	58° 19.2	67°34.1	
10	186°01.8	8.9'	15°31.9	-14.3'	59.8'	111°52.7	66°02.6	12°00.6		25°24.3	58°52.9	68°09.6	
11	200°29.7	9.0'	$15^{\circ}17.7$	-14.4'	59.8'	111°16.5	65°26.4	11°24.6		25°59.9	59°26.6	68°45.2	
12	214°57.7	9.1'	$N15^{\circ}03.3$	-14.4'	59.8'	110°40.3	64°50.2	10°48.7		26°35.6	60°00.3	69°20.7	
13	229°25.8	9.2'	14°48.9	-14.5'	59.7'	110°04.0	64°14.0	10° 12.8		27°11.3	60°34.0	69° 56.3	
14	243°54.0	9.2'	14°34.3	-14.6'	59.7'	109°27.8	63°37.9	9°36.9		27°47.1	61°07.8	70°31.9	
15	258°22.2	9.3'	$14^{\circ}19.7$	-14.7'	59.7'	108°51.6	63°01.7	9°01.0	3°29.3	28°22.8	61°41.6	71°07.4	
16	272°50.5	9.4'	14°05.0	-14.8'	59.7'	108° 15.4	62°25.5	8°25.3	4°04.8	28°58.6	62°15.4	71°43.0	
17	287°18.9	9.5'	13°50.3	-14.8'	59.7'	107°39.1	61°49.3	7°49.6	4°40.4	29°34.4	62°49.2	72°18.6	
18	301°47.3	9.5'	N13°35.4	-14.9'	59.7'	107°02.9	61°13.1	7°14.0	5°16.3	30°10.2	63°23.1	72° 54.2	
19	316°15.8	9.6'	13°20.5	-15.0'	59.7'	106°26.7	60°37.0	6°38.5	5°52.2	30°46.0	63°57.0	73°29.8	
20	330°44.4	9.7'	13°05.5	-15.1'	59.7'	105°50.5	60°00.8	6°03.1	6°28.3	31°21.8	64°30.9	74°05.3	
21	345°13.1	9.7'	12°50.4	-15.1'	59.7'	105° 14.2	59°24.6	5°28.0	7°04.4	31°57.7	65°04.8	74°40.9	
22	359°41.9	9.8'	12°35.3	-15.2'	59.7'	104°38.0	58° 48.5	4°53.1	7°40.5	32°33.5	65°38.8	75° 16.5	
23	14°10.7	9.9'	12°20.1	-15.3'	59.7'	104°01.8	58° 12.3	4°18.5	8°16.7	33°09.4	66°12.7	75°52.1	
19 th	SD	= 16.3	B' Mer. pas	s. 22:01									

Moon (20th Mar)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Spica	±Regulus	+Mars	+Jupiter	+Pollux	+Aldebaran
0	28°39.5	9.9'	N 12°04.8	-15.3'	59.7'	103°25.6	91°57.2	57°36.2	3°44.5		8°52.9	33°45.2	76°27.7
1	43°08.5	10.0'	11°49.5	-15.4'	59.7'	102°49.4	91°28.5	57°00.0	3°11.3		9°29.1	34°21.1	77°03.2
2	57°37.5	10.1'	11°34.1	-15.5'	59.7'	102°13.2	90°59.8	56°23.9			10°05.3	34°57.0	77°38.8
3	72°06.6	10.1'	$11^{\circ}18.6$	-15.5'	59.7'	101°37.1	90°31.1	55°47.8		7°54.1	10°41.6	35°32.8	78°14.4
4	86°35.7	10.2'	11°03.1	-15.6'	59.7'	101°00.9	90°02.4	55°11.6		8°26.2	11°17.8	36°08.7	78°50.0
5	101°05.0	10.3'	10°47.5	-15.6'	59.7'	100°24.7	89°33.7	54°35.5		8°58.9	11°54.1	36°44.6	79°25.5
6	115°34.2	10.3'	N 10°31.9	-15.7'	59.7'	99°48.5	89°05.0	53°59.4		9°32.1	12°30.3	37°20.5	80°01.1
7	130°03.6	10.4'	10°16.2	-15.7'	59.7'	99°12.4	88°36.3	53°23.3		10°05.6	13°06.6	37°56.3	80°36.6
8	144°33.0	10.5'	$10^{\circ}00.5$	-15.8'	59.6'	98°36.2	88°07.6	52°47.2		10°39.4	13°42.8	38°32.2	81°12.2
9	159°02.4	10.5'	09°44.7	-15.8'	59.6'	98°00.1	87°39.0	52°11.1		11°13.5	14°19.1	39°08.1	81°47.7
10	173°32.0	10.6'	09°28.9	-15.9'	59.6'	97°24.0	87°10.3	51°35.1		11°47.9	14°55.3	39°44.0	82°23.3
11	188°01.6	10.6'	09°13.0	-15.9'	59.6'	96°47.8	86°41.7	50°59.0		12°22.4	15°31.6	40°19.8	82°58.8
12	202°31.2	10.7'	N 08°57.0	-16.0'	59.6'	96°11.7	86°13.1	50°22.9		12°57.1	16°07.8	40°55.7	83°34.3
13	217°00.9	10.8'	$08^{\circ}41.1$	-16.0'	59.6'	95°35.6	85°44.5	49°46.9	4°33.9	13°31.9	16°44.0	41°31.6	84°09.8
14	231°30.7	10.8'	$08^{\circ}25.1$	-16.1'	59.6'	94°59.5	85°15.9	49°10.9	5°08.5	14°06.9	17°20.3	42°07.4	84°45.3
15	246°00.5	10.9'	$08^{\circ}09.0$	-16.1'	59.6'	94°23.4	84°47.3	48°34.9	5°43.4	14°42.0	17°56.5	42°43.3	85°20.8
16	260°30.3	10.9'	07°52.9	-16.1'	59.6'	93°47.4	84°18.8	47°58.9	6°18.5	15°17.1	18°32.7	43°19.1	85°56.3
17	275°00.2	11.0'	07°36.8	-16.2'	59.5'	93°11.3	83°50.3	47°22.9	6°53.8	15°52.4	19°08.9	43°55.0	86°31.8
18	289°30.2	11.0'	N 07°20.6	-16.2'	59.5'	92°35.3	83°21.8	46°46.9	7°29.2	16°27.7	19°45.1	44°30.8	87°07.2
19	304°00.2	11.1'	07°04.4	-16.2'	59.5'	91°59.2	82°53.3	46°10.9	8°04.6	17°03.1	20°21.2	45°06.6	87°42.7
20	318°30.3	11.1'	06°48.2	-16.3'	59.5'	91°23.2	82°24.9	45°35.0	8°40.1	17°38.5	20°57.4	45°42.4	88°18.1
21	333°00.4	11.2'	06°31.9	-16.3'	59.5'	90°47.2	81°56.4	44°59.0	9°15.7	18°14.0	21°33.6	46°18.2	88°53.5
22	347°30.6	11.2'	$06^{\circ}15.7$	-16.3'	59.5'	90°11.2	81°28.1	44°23.1	9°51.3	18°49.5	22°09.7	46°54.0	89°29.0
23	2°00.8	11.3'	05°59.3	-16.3'	59.5'	89°35.2	80°59.7	43°47.2	10°27.0	19°25.1	22°45.8	47°29.8	90°04.4
20 th	SD	= 16.3'	Mer. pas	s. 22:52									

h	Moon (21 st Mar)	Lunar Distance (objects with largest hourly LD delta)
---	-----------------------------	---

Sun	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Spica	+Regulus	+Mars	+Jupiter	+Pollux
0	16°31.1	11.3'	N05°43.0	-16.4'	59.5'	88°59.3	80°31.4	76°41.1	43°11.4	11°02.6	20°00.6	23°21.9	48°05.6
1	31°01.4	11.3'	05°26.7	-16.4'	59.4'	88°23.3	80°03.2	76°13.7	42°35.5	11°38.3	20°36.2	23°58.0	48°41.3
2	45°31.7	11.4'	$05^{\circ}10.3$	-16.4'	59.4'	87°47.4	79°34.9	75°46.3	41°59.6	12°14.0	21°11.9	24°34.1	49°17.1
3	60°02.1	11.4'	04°53.9	-16.4'	59.4'	87°11.5	79°06.7	75°19.0	41°23.8	12°49.7	21°47.5	25°10.2	49°52.8
4	74°32.5	11.5'	04°37.5	-16.4'	59.4'	86°35.6	78°38.6	74°51.7	40°48.0	13°25.4	22°23.2	25°46.2	50°28.5
5	89°03.0	11.5'	04°21.0	-16.4'	59.4'	85°59.7	78°10.5	74°24.6	40°12.2	14°01.1	22°58.8	26°22.3	51°04.3
6	103°33.5	11.5'	N 04°04.6	-16.5'	59.4'	85°23.9	77°42.4	73°57.4	39°36.4	14°36.8	23°34.5	26°58.3	51°39.9
7	118°04.0	11.6'	03°48.1	-16.5'	59.4'	84°48.0	77°14.4	73°30.3	39°00.7	15°12.5	24°10.2	27°34.3	52°15.6
8	132°34.6	11.6'	03°31.7	-16.5'	59.3'	84°12.2	76°46.4	73°03.3	38°24.9	15°48.2	24°45.9	28°10.3	52°51.3
9	147°05.2	11.7'	03°15.2	-16.5'	59.3'	83°36.4	76°18.5	72°36.4	37°49.2	16°23.8	25°21.6	28°46.2	53°26.9
10	161°35.9	11.7'	02°58.7	-16.5'	59.3'	83°00.6	75°50.6	72°09.5	37°13.5	16°59.5	25°57.3	29°22.2	54°02.6
11	176°06.6	11.7'	02°42.2	-16.5'	59.3'	82°24.8	75°22.8	71°42.7	36°37.9	17°35.1	26°33.0	29°58.1	54°38.2
12	190°37.3	11.7'	N02°25.7	-16.5'	59.3'	81°49.1	74°55.0	71°15.9	36°02.2	18°10.8	27°08.7	30°34.0	55° 13.8
13	205°08.0	11.8'	$02^{\circ}09.2$	-16.5'	59.2'	81°13.3	74°27.3	70°49.2	35°26.6	18°46.4	27°44.3	31°09.9	55°49.3
14	219°38.8	11.8'	01°52.7	-16.5'	59.2'	80°37.6	73°59.6	70°22.6	34°51.0	19°22.0	28°20.0	31°45.8	56°24.9
15	234°09.6	11.8'	01°36.2	-16.5'	59.2'	80°02.0	73°32.0	69°56.1	34°15.4	19°57.6	28°55.7	32°21.6	57°00.4
16	248°40.4	11.9'	$01^{\circ}19.7$	-16.5'	59.2'	79°26.3	73°04.5	69°29.6	33°39.9	20°33.2	29°31.3	32°57.4	57°36.0
17	263°11.3	11.9'	01°03.2	-16.5'	59.2'	78°50.6	72°37.0	69°03.3	33°04.4	21°08.8	30°07.0	33°33.2	58°11.5
18	277°42.2	11.9'	N00°46.7	-16.5'	59.2'	78°15.0	72°09.6	68°37.0	32°28.9	21°44.3	30°42.6	34°09.0	58°46.9
19	292°13.1	11.9'	00°30.3	-16.5'	59.1'	77°39.4	71°42.3	68°10.8	31°53.4	22°19.8	31°18.2	34°44.8	59°22.4
20	306°44.0	12.0'	N 00°13.8	-16.5'	59.1'	77°03.9	71°15.0	67°44.6	31°18.0	22°55.3	31°53.8	35°20.5	59°57.8
21	321°15.0	12.0'	S 00°02.7	-16.4'	59.1'	76°28.3	70°47.8	67°18.6	30°42.5	23°30.8	32°29.4	35°56.2	60°33.2
22	335°46.0	12.0'	$00^{\circ}19.1$	-16.4'	59.1'	75°52.8	70°20.7	66°52.6	30°07.2	24°06.3	33°05.0	36°31.9	61°08.6
23	350°17.0	12.0'	00°35.5	-16.4'	59.1'	75°17.3	69°53.6	66°26.8	29°31.8	24°41.7	33°40.6	37°07.5	61°44.0
21 st	SD	= 16.2	Mer. pas	s. 23:40									

L	Moon (22 nd Mar)	Lunar Distance (objects with largest hourly LD delta)	
- 1	1 IVIOON LZZ IVIALI	Tillnar Distance Coblects with largest hourty LD deltail	

Mon	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Mars	+Jupiter	+Pollux
0	4°48.0	12.0'	S 00°52.0	-16.4'	59.0'		74°41.8	69°26.7	28°56.5	25°17.1	34°16.1	37°43.2	62°19.3
1	19°19.0	12.0'	01°08.4	-16.4'	59.0'		74°06.4	68°59.8	28°21.2	25°52.5	34°51.6	38° 18.8	62°54.7
2	33°50.0	12.1'	01°24.8	-16.4'	59.0'		73°30.9	68° 32.9	27°45.9	26°27.9	35°27.1	38°54.4	63°30.0
3	48°21.1	12.1'	$01^{\circ}41.1$	-16.3'	59.0'		72°55.5	68°06.2	$27^{\circ}10.7$	27°03.3	36°02.6	39°29.9	64°05.2
4	62°52.2	12.1'	01°57.5	-16.3'	58.9'		72°20.2	67°39.5	26°35.5	27°38.6	36°38.1	40°05.5	64°40.5
5	77°23.3	12.1'	02°13.8	-16.3'	58.9'		71°44.8	67°13.0	26°00.3	28°13.9	37° 13.5	40°41.0	65°15.7
6	91°54.4	12.1'	S 02°30.1	-16.3'	58.9'		71°09.5	66°46.5	25°25.2	28°49.2	37°49.0	41°16.4	65°50.9
7	106°25.5	12.1'	02°46.4	-16.2'	58.9'	119°56.8	70°34.2	66°20.1	24°50.1	29°24.4	38°24.3	41°51.9	66°26.1
8	120°56.6	12.1'	03°02.6	-16.2'	58.9'	119°28.3	69°58.9	65°53.8	24° 15.1	29°59.6	38° 59.7	42°27.3	67°01.2
9	135°27.8	12.1'	03°18.8	-16.2'	58.8'	118°59.8	69°23.7	65°27.6	23°40.1	30°34.8	39°35.1	43°02.7	67°36.3
10	149°58.9	12.1'	03°35.0	-16.2'	58.8'	118°31.2	68°48.5	65°01.4	23°05.1	31°10.0	40° 10.4	43°38.1	68°11.4
11	164°30.1	12.2'	$03^{\circ}51.2$	-16.1'	58.8'	118°02.5	68°13.3	64°35.4	22°30.1	31°45.1	40°45.7	44°13.4	68°46.5
12	179°01.2	12.2'	S 04°07.3	-16.1'	58.8'	117°33.9	67°38.2	64°09.5	21°55.2	32°20.2	41°21.0	44°48.7	69°21.5
13	193°32.4	12.2'	04°23.4	-16.1'	58.7'	117°05.1	67°03.0	63°43.7	21°20.4	32°55.3	41°56.2	45°24.0	69°56.5
14	208°03.5	12.2'	04°39.5	-16.0'	58.7'	116°36.4	66°28.0	63°18.0	20°45.6	33°30.4	42°31.4	45°59.2	70°31.5
15	222°34.7	12.2'	04°55.5	-16.0'	58.7'	116°07.6	65°52.9	62°52.3	20° 10.8	34°05.4	43°06.6	46°34.5	71°06.4
16	237°05.9	12.2'	$05^{\circ}11.5$	-15.9'	58.7'	115°38.8	65°17.9	62°26.8	19°36.1	34°40.4	43°41.8	47°09.6	71°41.3
17	251°37.0	12.2'	05°27.4	-15.9'	58.6'	115°09.9	64°42.9	62°01.5	19°01.4	35°15.4	44°16.9	47°44.8	72°16.2
18	266°08.2	12.2'	S 05°43.3	-15.9'	58.6'	114°41.0	64°07.9	61°36.2	18° 26.8	35°50.3	44°52.1	48° 19.9	72°51.1
19	280°39.4	12.2'	05°59.2	-15.8'	58.6'	114°12.1	63°33.0	61°11.0	17°52.2	36°25.2	45°27.1	48°55.0	73°25.9
20	295°10.5	12.2'	$06^{\circ}15.0$	-15.8'	58.6'	113°43.2	62°58.1	60°46.0	17° 17.7	37°00.1	46°02.2	49°30.1	74°00.7
21	309°41.7	12.2'	06°30.7	-15.7'	58.5'	113°14.3	62°23.2	60°21.0	16°43.3	37°34.9	46°37.2	50°05.1	74°35.5
22	324°12.9	12.2'	06°46.5	-15.7'	58.5'	112°45.3	61°48.3	59° 56.2	16°08.9	38°09.8	47° 12.2	50°40.1	75°10.2
23	338°44.0	12.2'	07°02.1	-15.6'	58.5'	112°16.3	61°13.5	59°31.5	15°34.5	38°44.5	47°47.2	51°15.1	75°44.9
22 nd	SI	0 = 16.1	1' Mer. pa	iss:-									

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Mars	+Jupiter	+Pollux
0	353°15.2	12.1'	S 07°17.8	-15.6'	58.4'	111°47.3	60°38.8	59°07.0	15°00.3	39°19.3	48°22.1	51°50.0	76°19.6
1	7°46.3	12.1'	07°33.3	-15.5'	58.4'	111°18.3	60°04.0	58°42.6	14°26.1	39°54.0	48°57.0	52°24.9	76°54.2
2	22°17.5	12.1'	07°48.8	-15.5'	58.4'	110°49.2	59°29.3	58° 18.3	13°52.0	40°28.7	49°31.9	52° 59.8	77°28.8
3	36°48.6	12.1'	08°04.3	-15.4'	58.4'	110°20.2	58°54.6	57°54.1	13° 18.0	41°03.4	50°06.7	53°34.6	78°03.4
4	51°19.7	12.1'	$08^{\circ}19.7$	-15.4'	58.3'	109°51.1	58°20.0	57°30.1	12°44.0	41°38.0	50°41.5	54°09.4	78°37.9
5	65°50.8	12.1'	$08^{\circ}35.1$	-15.3'	58.3'	109°22.1	57°45.4	57°06.2	12°10.2	42°12.6	51°16.3	54°44.1	79°12.4
6	80°21.9	12.1'	S 08°50.4	-15.2'	58.3'	108°53.0	57°10.8	56° 42.5	11°36.5	42°47.1	51°51.0	55° 18.9	79°46.9
7	94°53.0	12.1'	09°05.6	-15.2'	58.3'	108°23.9	56°36.3	56° 18.9	11°02.8	43°21.6	52°25.7	55° 53.6	80°21.3
8	109°24.1	12.1'	09°20.8	-15.1'	58.2'	107°54.8	56°01.8	55° 55.4	10°29.4	43°56.1	53°00.4	56°28.2	80°55.7
9	123°55.1	12.0'	09°35.9	-15.1'	58.2'	107°25.7	55°27.3	55°32.1	9°56.0	44°30.6	53°35.0	57°02.8	81°30.1
10	138°26.2	12.0'	09°50.9	-15.0'	58.2'	106°56.6	54°52.9	55°09.0	9°22.9	45°05.0	54°09.6	57° 37.4	82°04.4
11	152°57.2	12.0'	$10^{\circ}05.9$	-14.9'	58.1'	106°27.6	54°18.5	54°46.0	8°49.9	45°39.3	54°44.1	58°12.0	82°38.7
12	167°28.2	12.0'	S 10°20.9	-14.9'	58.1'	105°58.5	53°44.1	54°23.2	8° 17.2	46°13.7	55° 18.7	58°46.5	83°13.0
13	181°59.2	12.0'	10°35.7	-14.8'	58.1'	105°29.4	53°09.8	54°00.5	7°44.7	46°48.0	55°53.2	59°21.0	83°47.2
14	196°30.2	12.0'	$10^{\circ}50.5$	-14.7'	58.0'	105°00.3	52°35.5	53°38.0	7° 12.6	47°22.3	56°27.6	59°55.4	84°21.4
15	211°01.1	11.9'	$11^{\circ}05.2$	-14.6'	58.0'	104°31.2	52°01.3	53° 15.7	6°40.8	47°56.5	57°02.0	60°29.8	84°55.5
16	225°32.1	11.9'	$11^{\circ}19.9$	-14.6'	58.0'	104°02.2	51°27.0	52°53.5	6°09.5	48°30.7	57°36.4	61°04.2	85°29.6
17	240°03.0	11.9'	11°34.4	-14.5'	58.0'	103°33.1	50°52.9	52°31.5	5°38.8	49°04.9	58° 10.8	61°38.5	86°03.7
18	254°33.9	11.9'	S 11°48.9	-14.4'	57.9'	103°04.0	50°18.7	52°09.7	5°08.9	49°39.0	58°45.1	62° 12.8	86°37.8
19	269°04.8	11.9'	12°03.4	-14.4'	57.9'	102°35.0	49°44.6	51°48.1		50°13.1	59° 19.4	62°47.1	87°11.8
20	283°35.6	11.8'	$12^{\circ}17.7$	-14.3'	57.9'	102°06.0	49°10.5	51°26.7		50°47.1	59°53.6	63°21.3	87°45.7
21	298°06.5	11.8'	12°32.0	-14.2'	57.8'	101°36.9	48°36.5	51°05.4		51°21.1	60°27.8	63°55.5	88°19.7
22	312°37.3	11.8'	12°46.2	-14.1'	57.8'	101°07.9	48°02.5	50°44.3		51°55.1	61°01.9	64°29.6	88°53.6
23	327°08.0	11.8'	13°00.3	-14.0'	57.8'	100°38.9	47°28.6	50°23.5		52°29.1	61°36.1	65°03.7	89°27.4
23 rd	SD	= 15.9'	Mer. pas	s. 00:28									

Moon (24th Mar)

h

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Venus	-Fomalhaut	-Altair	-Antares	+Regulus	+Mars	+Jupiter	+Pollux
0	341°38.8	11.7'	S 13°14.4	-14.0'	57.7'			100° 10.0	46°54.7	53°03.0	62°10.2	65°37.8	90°01.3
1	356°09.5	11.7'	13°28.3	-13.9'	57.7'			99°41.0	46°20.8	53°36.8	62°44.2	66°11.8	90°35.0
2	10°40.3	11.7'	13°42.2	-13.8'	57.7'			99°12.0	45°46.9	54°10.7	63°18.2	66°45.8	91°08.8
3	25°10.9	11.7'	13°56.0	-13.7'	57.7'			98°43.1	45°13.1	54°44.4	63°52.2	67°19.8	91°42.5
4	39°41.6	11.6'	$14^{\circ}09.7$	-13.6'	57.6'			98°14.2	44°39.4	55°18.2	64°26.1	67°53.7	92°16.1
5	54°12.2	11.6'	14°23.3	-13.5'	57.6'			97°45.3	44°05.6	55°51.9	65°00.0	68°27.6	92°49.8
6	68°42.8	11.6'	S 14°36.8	-13.4'	57.6'			97°16.4	43°31.9	56°25.6	65°33.9	69°01.4	93°23.4
7	83°13.4	11.5'	14°50.3	-13.4'	57.5'			96°47.6	42°58.3	56°59.2	66°07.7	69°35.2	93°56.9
8	97°43.9	11.5'	15°03.7	-13.3'	57.5'	119°49.1		96° 18.8	42°24.7	57°32.8	66°41.5	70°09.0	94°30.4
9	112°14.4	11.5'	$15^{\circ}16.9$	-13.2'	57.5'	119°18.5		95°50.0	41°51.1	58°06.4	67°15.2	70°42.7	95°03.9
10	126°44.9	11.4'	$15^{\circ}30.1$	-13.1'	57.4'	118°47.9		95°21.2	41°17.6	58°39.9	67°48.9	71°16.4	95°37.3
11	141°15.4	11.4'	15°43.2	-13.0'	57.4'	118°17.4		94°52.4	40°44.1	59°13.4	68°22.6	71°50.0	96°10.7
12	155°45.8	11.4'	S 15°56.2	-12.9'	57.4'	117°47.0	119°39.4	94°23.7	40°10.6	59°46.8	68°56.2	72°23.6	96°44.1
13	170°16.2	11.4'	$16^{\circ}09.1$	-12.8'	57.3'	117°16.5	119°09.3	93°55.0	39°37.2	60°20.2	69°29.8	72°57.2	97°17.4
14	184°46.5	11.3'	$16^{\circ}21.9$	-12.7'	57.3'	116°46.1	118°39.3	93°26.4	39°03.8	60°53.6	70°03.3	73°30.7	97°50.7
15	199°16.8	11.3'	16°34.6	-12.6'	57.3'	116°15.8	118°09.2	92°57.7	38°30.5	61°26.9	70°36.8	74°04.2	98°23.9
16	213°47.1	11.3'	16°47.2	-12.5'	57.2'	115°45.5	117°39.1	92°29.1	37°57.2	62°00.2	71°10.3	74°37.6	98°57.1
17	228°17.4	11.2'	$16^{\circ}59.7$	-12.4'	57.2'	115°15.2	117°09.1	92°00.5	37°23.9	62°33.5	71°43.7	75°11.0	99°30.3
18	242°47.6	11.2'	S 17°12.1	-12.3'	57.2'	114°45.0	116°39.0	91°32.0	36°50.7	63°06.7	72°17.1	75°44.4	100°03.4
19	257°17.8	11.2'	17°24.4	-12.2'	57.1'	114°14.8	116°09.0	91°03.4	36°17.5	63°39.8	72°50.4	76°17.7	100°36.5
20	271°47.9	11.1'	17°36.6	-12.1'	57.1'	113°44.6	115°38.9	90°34.9	35°44.4	64°13.0	73°23.7	76°51.0	101°09.5
21	286°18.1	11.1'	17°48.7	-12.0'	57.1'	113°14.5	115°08.9	90°06.5	35°11.3	64°46.1	73°57.0	77°24.3	101°42.5
22	300°48.1	11.0'	18°00.7	-11.9'	57.1'	112°44.5	114°38.9	89°38.1	34°38.2	65°19.1	74°30.2	77°57.5	102°15.5
23	315°18.2	11.0'	18°12.6	-11.8'	57.0'	112°14.4	114°08.9	89°09.7	34°05.2	65°52.1	75°03.4	78°30.7	102°48.4
24 th	SD	= 15.7'	Mer. pas	s. 01:16									

h Moon (25th Mar)

Thu	GHA	ν	Dec	d	HP	-Fomalhaut	-Venus	-Altair	-Antares	+Regulus	+Mars	+Jupiter	+Pollux
0	329°48.2	11.0'	S 18°24.4	-11.7'	57.0'	113°38.9	111°44.4	88°41.3	33°32.2	66°25.1	75°36.5	79°03.8	103°21.3
1	344°18.2	10.9'	$18^{\circ}36.1$	-11.6'	57.0'	113°08.9	111°14.5	88°13.0	32°59.3	66°58.0	76°09.6	79°36.9	103°54.2
2	358°48.1	10.9'	18°47.7	-11.5'	56.9'	112°38.9	110°44.6	87°44.7	32°26.4	67°30.9	76°42.7	80°09.9	104°27.0
3	13°18.0	10.9'	$18^{\circ}59.2$	-11.4'	56.9'	112°09.0	110°14.7	87° 16.5	31°53.5	68°03.8	77°15.7	80°42.9	104°59.7
4	27°47.9	10.8'	$19^{\circ}10.5$	-11.3'	56.9'	111°39.0	109°44.9	86°48.3	31°20.7	68°36.6	77°48.7	81°15.9	105°32.5
5	42°17.8	10.8'	$19^{\circ}21.8$	-11.1'	56.8'	111°09.1	109°15.1	86°20.1	30°47.9	69°09.4	78°21.7	81°48.9	106°05.1
6	56°47.6	10.8'	S 19°32.9	-11.0'	56.8'	110°39.2	108°45.3	85°52.0	30°15.1	69°42.1	78°54.6	82°21.7	106°37.8
7	71°17.3	10.7'	19°44.0	-10.9'	56.8'	110°09.3	108°15.6	85°23.9	29°42.4	70°14.8	79°27.4	82°54.6	107°10.4
8	85°47.0	10.7'	$19^{\circ}54.9$	-10.8'	56.7'	109°39.4	107°45.9	84°55.8	29°09.7	70°47.5	80°00.2	83°27.4	107°43.0
9	100°16.7	10.7'	20°05.7	-10.7'	56.7'	109°09.5	107°16.3	84°27.8	28°37.1	71°20.1	80°33.0	84°00.2	108° 15.5
10	114°46.4	10.6'	$20^{\circ}16.4$	-10.6'	56.7'	108°39.7	106°46.7	83°59.8	28°04.5	71°52.7	81°05.8	84°32.9	108°48.0
11	129°16.0	10.6'	$20^{\circ}27.0$	-10.5'	56.6'	108°09.8	106°17.1	83°31.9	27°31.9	72°25.3	81°38.5	85°05.6	109°20.4
12	143°45.6	10.5'	S 20°37.4	-10.3'	56.6'	107°40.0	105°47.6	83°04.0	26°59.4	72°57.8	82°11.1	85°38.3	109°52.8
13	158°15.2	10.5'	20°47.8	-10.2'	56.6'	107°10.3	105°18.1	82°36.2	26°26.9	73°30.2	82°43.8	86°10.9	110°25.2
14	172°44.7	10.5'	20°58.0	-10.1'	56.5'	106°40.5	104°48.6	82°08.4	25°54.5	74°02.7	83°16.4	86°43.5	110°57.5
15	187°14.1	10.4'	$21^{\circ}08.1$	-10.0'	56.5'	106°10.7	104°19.2	81°40.6	25°22.1	74°35.1	83°48.9	87°16.0	111°29.8
16	201°43.6	10.4'	$21^{\circ}18.1$	-9.9'	56.5'	105°41.0	103°49.9	81°12.9	24°49.7	75°07.4	84°21.4	87°48.5	112°02.1
17	216°13.0	10.4'	$21^{\circ}28.0$	-9.8'	56.5'	105°11.3	103°20.5	80°45.2	24°17.4	75°39.7	84°53.9	88°21.0	112°34.3
18	230°42.4	10.3'	S 21°37.7	-9.6'	56.4'	104°41.6	102°51.2	80°17.6	23°45.1	76°12.0	85°26.3	88°53.4	113°06.5
19	245°11.7	10.3'	21°47.4	-9.5'	56.4'	104°12.0	102°22.0	79°50.0	23°12.9	76°44.3	85°58.7	89°25.8	113°38.6
20	259°41.0	10.3'	$21^{\circ}56.9$	-9.4'	56.4'	103°42.3	101°52.8	79°22.5	22°40.7	77°16.5	86°31.0	89°58.2	114°10.7
21	274°10.3	10.2'	22°06.3	-9.3'	56.3'	103°12.7	101°23.6	78°55.0	22°08.5	77°48.6	87°03.4	90°30.5	114°42.8
22	288°39.5	10.2'	$22^{\circ}15.5$	-9.1'	56.3'	102°43.1	100°54.5	78°27.6	21°36.4	78°20.7	87°35.6	91°02.8	115°14.8
23	303°08.7	10.2'	22°24.7	-9.0'	56.3'	102°13.6	100°25.4	78°00.2	21°04.3	78°52.8	88°07.9	91°35.0	115°46.8
25 th	SD	= 15.5'	Mer. pas	s. 02:05									

h Moon (26th Mar)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Fomalhaut	-Venus	-Altair	-Antares	+Regulus	+Mars	+Jupiter	+Pollux
0	317°37.9	10.1'	S 22°33.7	-8.9'	56.2'	101°44.0	99°56.3	77°32.9	20°32.2	79°24.9	88°40.1	92°07.2	116°18.7
1	332°07.0	10.1'	$22^{\circ}42.6$	-8.8'	56.2'	101°14.5	99°27.3	77°05.6	20°00.2	79°56.9	89°12.2	92°39.4	116°50.6
2	346°36.1	10.1'	22°51.4	-8.6'	56.2'	100°45.0	98°58.3	76°38.3	19°28.2	80°28.9	89°44.3	93°11.5	117°22.5
3	1°05.1	10.0'	23°00.0	-8.5'	56.1'	100° 15.6	98°29.3	76°11.2	18° 56.3	81°00.8	90°16.4	93°43.6	117°54.3
4	15°34.2	10.0'	23°08.5	-8.4'	56.1'	99°46.1	98°00.4	75°44.0	18°24.3	81°32.7	90°48.5	94°15.6	118°26.1
5	30°03.2	10.0'	$23^{\circ}16.9$	-8.3'	56.1'	99°16.7	97°31.5	75°16.9	17°52.5	82°04.6	91°20.5	94°47.6	118°57.9
6	44°32.1	9.9'	S 23°25.2	-8.1'	56.1'	98°47.3	97°02.7	74°49.9	17°20.6	82°36.4	91°52.4	95°19.6	119°29.6
7	59°01.1	9.9'	23°33.3	-8.0'	56.0'	98° 18.0	96°33.9	74°22.9	16°48.8	83°08.2	92°24.4	95°51.5	
8	73°30.0	9.9'	23°41.3	-7.9'	56.0'	97°48.6	96°05.1	73°56.0	16° 17.1	83°40.0	92°56.3	96°23.4	
9	87°58.9	9.8'	23°49.1	-7.7'	56.0'	97°19.3	95°36.4	73°29.1	15°45.3	84°11.7	93°28.1	96°55.3	
10	102°27.7	9.8'	23°56.9	-7.6'	55.9'	96°50.1	95°07.7	73°02.3	15° 13.6	84°43.4	93°59.9	97°27.1	
11	116°56.5	9.8'	24°04.5	-7.5'	55.9'	96° 20.8	94°39.0	72°35.6	14°42.0	85°15.1	94°31.7	97°58.9	
12	131°25.3	9.8'	S 24°12.0	-7.3'	55.9'	95°51.6	94°10.4	72°08.9	14° 10.4	85°46.7	95°03.5	98°30.7	
13	145°54.1	9.7'	24° 19.3	-7.2'	55.9'	95°22.4	93°41.8	71°42.2	13°38.8	86°18.3	95°35.2	99°02.4	
14	160°22.8	9.7'	24° 26.5	-7.1'	55.8'	94°53.2	93°13.2	71°15.6	13°07.2	86°49.8	96°06.9	99°34.1	
15	174°51.5	9.7'	24°33.6	-6.9'	55.8'	94°24.1	92°44.7	70°49.1	12°35.7	87°21.3	96°38.5	100°05.8	
16	189°20.2	9.7'	24°40.6	-6.8'	55.8'	93°55.0	92°16.2	70°22.6	12°04.2	87°52.8	97°10.1	100°37.4	
17	203°48.9	9.6'	24° 47.4	-6.7'	55.7'	93°25.9	91°47.8	69°56.2	11°32.8	88°24.2	97°41.7	101°09.0	
18	218°17.5	9.6'	S 24°54.0	-6.5'	55.7'	92°56.9	91°19.4	69°29.9	11°01.4	88°55.6	98°13.2	101°40.5	
19	232°46.1	9.6'	25°00.6	-6.4'	55.7'	92°27.9	90°51.0	69°03.6	10°30.0	89°27.0	98°44.7	102°12.0	
20	247°14.7	9.6'	25°07.0	-6.3'	55.7'	91°58.9	90°22.6	68°37.3	9°58.6	89°58.4	99°16.2	102°43.5	
21	261°43.2	9.5'	25° 13.3	-6.1'	55.6'	91°29.9	89°54.3	68°11.2	9°27.3	90°29.7	99°47.6	103°15.0	
22	276°11.8	9.5'	$25^{\circ}19.4$	-6.0'	55.6'	91°01.0	89°26.0	67°45.0	8°56.1	91°00.9	100°19.0	103°46.4	
23	290°40.3	9.5'	25°25.4	-5.9'	55.6'	90°32.1	88° 57.8	67°19.0	8°24.8	91°32.2	100°50.3	104°17.8	
26 th	SD	= 15.3'	Mer. pass	. 02:56									

Moon (27th Mar)

h

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	±Antares	+Spica	+Regulus	+Mars	+Jupiter
0	305°08.8	9.5'	S 25°31.3	-5.7'	55.6'		90°03.2	88°29.6	7°53.6	38°02.7	92°03.4	101°21.7	104°49.1
1	319°37.3	9.5'	25°37.0	-5.6'	55.5'		89°34.4	88°01.4	7°22.4	38°33.8	92°34.6	101°53.0	105°20.4
2	334°05.7	9.4'	25°42.6	-5.5'	55.5'		89°05.6	87°33.2	6°51.3	39°04.9	93°05.7	102°24.2	105°51.7
3	348°34.2	9.4'	25°48.1	-5.3'	55.5'		88°36.8	87°05.1	6°20.2	39°35.9	93°36.8	102°55.4	106°23.0
4	3°02.6	9.4'	25°53.4	-5.2'	55.4'		88°08.0	86°37.0	5°49.1	40°07.0	94°07.9	103°26.6	106°54.2
5	17°31.0	9.4'	25°58.5	-5.0'	55.4'		87°39.3	86°09.0	5°18.1	40°37.9	94°39.0	103°57.8	107°25.4
6	31°59.4	9.4'	S 26°03.6	-4.9'	55.4'		87° 10.6	85°40.9	4°47.1	41°08.9	95°10.0	104°28.9	107°56.5
7	46°27.8	9.4'	26°08.5	-4.8'	55.4'		86°42.0	85°12.9	4°16.1	41°39.8	95°41.0	105°00.0	108°27.7
8	60°56.2	9.4'	$26^{\circ}13.3$	-4.6'	55.3'	119°54.5	86° 13.3	84°45.0	3°45.2	42°10.7	96°11.9	105°31.1	108°58.8
9	75°24.5	9.3'	$26^{\circ}17.9$	-4.5'	55.3'	119°26.1	85°44.7	84°17.1	3°14.4	42°41.6	96°42.9	106°02.1	109°29.8
10	89°52.8	9.3'	26°22.4	-4.3'	55.3'	118°57.8	85° 16.2	83°49.1	2°43.6	43°12.4	97°13.8	106°33.1	110°00.8
11	104°21.2	9.3'	26°26.7	-4.2'	55.3'	118°29.4	84°47.6	83°21.3	2°12.8	43°43.2	97°44.6	107°04.1	110°31.9
12	118°49.5	9.3'	S 26°30.9	-4.1'	55.2'	118°01.1	84° 19.1	82°53.4	1°42.2	44°14.0	98°15.5	107°35.0	111°02.8
13	133°17.8	9.3'	26°35.0	-3.9'	55.2'	117°32.9	83°50.7	82°25.6	1°11.8	44°44.8	98°46.3	108°05.9	111°33.8
14	147°46.1	9.3'	26°38.9	-3.8'	55.2'	117°04.6	83°22.2	81°57.8	0°42.1	45°15.5	99°17.1	108°36.8	112°04.7
15	162°14.4	9.3'	26°42.7	-3.6'	55.2'	116°36.4	82°53.8	81°30.1		45°46.2	99°47.8	109°07.6	112°35.6
16	176°42.7	9.3'	26°46.3	-3.5'	55.2'	116°08.2	82°25.4	81°02.4		46°16.9	100°18.5	109°38.4	113°06.4
17	191°11.0	9.3'	26°49.9	-3.4'	55.1'	115°40.1	81°57.1	80°34.7		46°47.5	100°49.2	110°09.2	113°37.3
18	205°39.3	9.3'	S 26°53.2	-3.2'	55.1'	115°11.9	81°28.8	80°07.0		47°18.1	101°19.9	110°40.0	114°08.1
19	220°07.6	9.3'	26°56.5	-3.1'	55.1'	114°43.8	81°00.5	79°39.4	1°54.8	47°48.7	101°50.5	111°10.7	114°38.8
20	234°35.8	9.3'	$26^{\circ}59.5$	-2.9'	55.1'	114°15.7	80°32.2	79°11.7	2°25.3	48°19.3	102°21.2	111°41.4	115°09.6
21	249°04.1	9.3'	$27^{\circ}02.5$	-2.8'	55.0'	113°47.7	80°04.0	78°44.2	2°55.7	48°49.8	102°51.7	112°12.1	115°40.3
22	263°32.4	9.3'	27°05.3	-2.7'	55.0'	113°19.7	79°35.8	78°16.6	3°26.2	49°20.3	103°22.3	112°42.7	116°11.0
23	278°00.7	9.3'	27°08.0	-2.5'	55.0'	112°51.7	79°07.6	77°49.1	3°56.7	49°50.8	103°52.8	113°13.3	116°41.7
27 th	SD :	= 15.2'	Mer. pas	s. 03:47	7				Sun SD =	= 16.0'			

h Moon (28th Mar)

Sun	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	-Altair	+Antares	+Regulus	+Mars	+Jupiter
0	292°29.0	9.3'	S 27°10.5	-2.4'	55.0'	112°23.7	78°39.5	77°21.5	56°50.4	4°27.2	104°23.4	113°43.9	117°12.3
1	306°57.3	9.3'	$27^{\circ}12.9$	-2.2'	55.0'	111°55.7	78°11.4	76°54.1	56°26.3	4°57.6	104°53.8	114° 14.5	117°42.9
2	321°25.5	9.3'	$27^{\circ}15.1$	-2.1'	54.9'	111°27.8	77°43.4	76°26.6	56°02.2	5°28.1	105°24.3	114°45.0	118°13.5
3	335°53.8	9.3'	$27^{\circ}17.2$	-2.0'	54.9'	110°59.9	77° 15.3	75°59.2	55°38.3	5°58.5	105°54.7	115° 15.5	118°44.1
4	350°22.1	9.3'	$27^{\circ}19.2$	-1.8'	54.9'	110°32.0	76° 47.3	75°31.8	55°14.4	6°28.9	106°25.1	115°46.0	119°14.6
5	4°50.5	9.3'	$27^{\circ}21.0$	-1.7'	54.9'	110°04.2	$76^{\circ}19.3$	75°04.4	54°50.6	6°59.2	106°55.5	116° 16.4	119°45.1
6	19°18.8	9.3'	S 27°22.7	-1.5'	54.9'	109°36.4	75°51.4	74°37.0	54°27.0	7°29.6	107°25.9	116°46.9	
7	33°47.1	9.3'	27°24.2	-1.4'	54.8'	109°08.6	75°23.5	74°09.7	54°03.4	7°59.9	107°56.2	117° 17.3	
8	48°15.4	9.4'	27°25.6	-1.3'	54.8'	108°40.8	74°55.6	73°42.4	53°39.9	8°30.2	108°26.5	117°47.6	
9	62°43.8	9.4'	$27^{\circ}26.9$	-1.1'	54.8'	108°13.0	74°27.8	73°15.1	53°16.5	9°00.5	108°56.8	118° 18.0	
10	77°12.2	9.4'	27°28.0	-1.0'	54.8'	107°45.3	74°00.0	72°47.8	52°53.2	9°30.8	109°27.1	118°48.3	
11	91°40.5	9.4'	$27^{\circ}29.0$	-0.8'	54.8'	107°17.6	73°32.2	72°20.6	52°30.0	10°01.0	109°57.3	$119^{\circ}18.6$	
12	106°08.9	9.4'	S 27°29.9	-0.7'	54.7'	106°49.9	73°04.5	71°53.4	52°06.9	10°31.3	110°27.5	119°48.9	
13	120°37.4	9.4'	27°30.6	-0.6'	54.7'	106°22.2	72°36.8	71°26.2	51°43.9	11°01.5	110°57.7		
14	135°05.8	9.4'	27°31.2	-0.4'	54.7'	105°54.5	72°09.1	70°59.0	51°21.0	11°31.7	111°27.9		
15	149°34.2	9.5'	27°31.6	-0.3'	54.7'	105°26.9	71°41.4	70°31.9	50°58.2	12°01.8	111°58.1		
16	164°02.7	9.5'	27°31.9	-0.2'	54.7'	104°59.3	71° 13.8	70°04.7	50°35.5	12°32.0	112°28.2		
17	178°31.2	9.5'	27°32.0	-0.0'	54.7'	104°31.7	70°46.2	69°37.6	50°12.9	13°02.1	112°58.3		
18	192°59.7	9.5'	S 27°32.1	0.1'	54.6'	104°04.1	70°18.7	69°10.5	49°50.5	13°32.2	113°28.4		
19	207°28.2	9.6'	27°31.9	0.3'	54.6'	103°36.6	69°51.2	68°43.5	49°28.1	14°02.3	113°58.5		
20	221°56.8	9.6'	$27^{\circ}31.7$	0.4'	54.6'	103°09.1	69°23.7	68°16.4	49°05.9	14°32.3	114°28.6		
21	236°25.4	9.6'	27°31.3	0.5'	54.6'	102°41.5	68° 56.3	67°49.4	48°43.8	15°02.4	114°58.6		
22	250°54.0	9.6'	27°30.8	0.7'	54.6'	102°14.0	68°28.9	67°22.4	48°21.8	15°32.4	115°28.6		
23	265°22.6	9.7'	27°30.1	0.8'	54.6'	101°46.6	68°01.5	66°55.4	47°59.9	16°02.4	115°58.6		
28 th	SD =	= 15.0'	Mer. pas	s. 04:40)		-		Sun SD	= 16.0'			

Moon (29th Mar) Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	-Altair	+Antares	+Spica	+Arcturus	+Regulus
0	279°51.3	9.7'	S 27°29.3	0.9'	54.5'	101°19.1	67°34.1	66°28.4	47°38.2	16°32.4	62°25.7	68°36.6	116°28.6
1	294°19.9	9.7'	27°28.4	1.1'	54.5'	100°51.7	67°06.8	66°01.4	47°16.6	17°02.4	62°55.7	69°00.1	116°58.6
2	308°48.7	9.7'	27°27.3	1.2'	54.5'	100°24.2	66°39.6	65°34.5	46°55.1	17° 32.4	63°25.6	69°23.6	117°28.6
3	323°17.4	9.8'	$27^{\circ}26.1$	1.3'	54.5'	99°56.8	66°12.3	65°07.6	46°33.7	18°02.3	63°55.5	69°47.1	117°58.5
4	337°46.2	9.8'	27°24.7	1.5'	54.5'	99°29.4	65°45.1	64°40.6	46°12.5	18°32.2	64°25.4	70°10.7	118°28.4
5	352°15.0	9.8'	27°23.3	1.6'	54.5'	99°02.1	65°17.9	64°13.8	45°51.4	19°02.1	64°55.3	70°34.3	118°58.3
6	6°43.8	9.9'	S 27°21.7	1.7'	54.5'	98°34.7	64°50.8	63°46.9	45°30.5	19°32.0	65°25.1	70°57.9	119°28.2
7	21°12.7	9.9'	$27^{\circ}19.9$	1.9'	54.4'	98°07.3	64°23.7	63°20.0	45°09.7	20°01.9	65°55.0	71°21.6	119°58.1
8	35°41.6	9.9'	$27^{\circ}18.0$	2.0'	54.4'	97°40.0	63°56.6	62°53.2	44°49.0	20°31.8	66°24.8	71°45.3	
9	50°10.6	10.0'	$27^{\circ}16.0$	2.1'	54.4'	97° 12.7	63°29.6	62°26.3	44°28.5	21°01.6	66°54.6	72°08.9	
10	64°39.6	10.0'	$27^{\circ}13.9$	2.3'	54.4'	96°45.4	63°02.6	61°59.5	44°08.1	21°31.5	67°24.4	72°32.6	
11	79°08.6	10.1'	$27^{\circ}11.6$	2.4'	54.4'	96°18.1	62°35.7	61°32.7	43°47.9	22°01.3	67°54.2	72°56.4	
12	93°37.6	10.1'	S 27°09.2	2.5'	54.4'	95°50.8	62°08.7	61°05.9	43°27.8	22°31.1	68°24.0	73°20.1	
13	108°06.7	10.1'	27°06.7	2.7'	54.4'	95°23.6	61°41.9	60°39.2	43°07.9	23°00.9	68°53.8	73°43.9	
14	122°35.9	10.2'	27°04.0	2.8'	54.4'	94°56.3	61°15.0	60°12.4	42°48.2	23°30.7	69°23.5	74°07.6	
15	137°05.1	10.2'	$27^{\circ}01.2$	2.9'	54.3'	94°29.1	60°48.2	59°45.7	42°28.6	24°00.5	69°53.3	74°31.4	
16	151°34.3	10.3'	26°58.3	3.1'	54.3'	94°01.8	60°21.4	59°18.9	42°09.2	24°30.2	70°23.0	74°55.2	
17	166°03.5	10.3'	26°55.3	3.2'	54.3'	93°34.6	59°54.7	58°52.2	41°50.0	25°00.0	70°52.7	75°19.1	
18	180°32.9	10.4'	S 26°52.1	3.3'	54.3'	93°07.4	59°28.0	58°25.5	41°30.9	25°29.7	71°22.4	75°42.9	
19	195°02.2	10.4'	26°48.8	3.4'	54.3'	92°40.2	59°01.4	57°58.8	41°12.0	25° 59.5	71°52.1	76°06.8	
20	209°31.6	10.4'	26°45.3	3.6'	54.3'	92°13.0	58°34.7	57°32.1	40°53.3	26°29.2	72°21.8	76°30.6	
21	224°01.0	10.5'	$26^{\circ}41.8$	3.7'	54.3'	91°45.9	58°08.2	57°05.4	40°34.8	26°58.9	72°51.5	76°54.5	
22	238°30.5	10.5'	26°38.1	3.8'	54.3'	91°18.7	57°41.6	56°38.7	40°16.5	27°28.6	73°21.2	77°18.4	
23	253°00.1	10.6'	26°34.3	3.9'	54.3'	90°51.5	57°15.1	56°12.1	39°58.4	27°58.3	73°50.8	77°42.3	
29 th	SD :	= 14.9'	Mer. pass	. 05:32	!				Sun SE	0 = 16.0'			

Moon (30th Mar)

h

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	-Altair	+Antares	+Hadar	+Spica	+Arcturus
0	267°29.6	10.6'	S 26°30.3	4.1'	54.3'	90°24.4	56°48.7	55° 45.4	39°40.5	28°27.9	56°29.9	74°20.5	78°06.2
1	281°59.3	10.7'	26°26.3	4.2'	54.3'	89°57.3	56°22.3	55° 18.8	39°22.8	28°57.6	56°49.4	74°50.1	78°30.2
2	296°28.9	10.7'	$26^{\circ}22.1$	4.3'	54.3'	89°30.1	55°55.9	54°52.2	39°05.2	29°27.3	57°09.0	75°19.7	78°54.1
3	310°58.7	10.8'	$26^{\circ}17.8$	4.4'	54.2'	89°03.0	55°29.6	54°25.5	38°47.9	29°56.9	57°28.7	75°49.4	79° 18.1
4	325°28.4	10.8'	26° 13.4	4.6'	54.2'	88°35.9	55°03.3	53° 58.9	38°30.8	30°26.6	57°48.5	76° 19.0	79°42.1
5	339°58.3	10.9'	26°08.8	4.7'	54.2'	88°08.8	54°37.1	53°32.3	38°14.0	30°56.2	58°08.3	76°48.6	80°06.0
6	354°28.1	10.9'	S 26°04.1	4.8'	54.2'	87°41.7	54°10.9	53°05.7	37°57.3	31°25.9	58°28.3	77° 18.2	80°30.0
7	8°58.1	11.0'	25°59.3	4.9'	54.2'	87°14.6	53°44.8	52°39.1	37°40.9	31°55.5	58° 48.3	77°47.8	80°54.0
8	23°28.0	11.0'	25°54.4	5.0'	54.2'	86°47.5	53°18.7	52° 12.6	37°24.7	32°25.1	59°08.4	78°17.4	81° 18.0
9	37°58.1	11.1'	25°49.4	5.2'	54.2'	86°20.4	52°52.6	51°46.0	37°08.8	32°54.7	59°28.6	78°47.0	81°42.0
10	52°28.1	11.1'	25°44.2	5.3'	54.2'	85°53.4	52°26.6	51° 19.4	36°53.1	33°24.4	59°48.8	79°16.6	82°06.1
11	66°58.3	11.2'	$25^{\circ}39.0$	5.4'	54.2'	85°26.3	52°00.7	50°52.8	36°37.6	33°54.0	60°09.2	79°46.1	82°30.1
12	81°28.4	11.2'	S 25°33.6	5.5'	54.2'	84°59.2	51°34.8	50°26.3	36°22.4	34°23.6	60°29.6	80° 15.7	82°54.1
13	95°58.7	11.3'	25°28.1	5.6'	54.2'	84°32.2	51°08.9	49°59.7		34°53.2	60°50.0	80°45.3	83° 18.2
14	110°29.0	11.3'	25°22.4	5.7'	54.2'	84°05.1	50°43.2	49°33.2		35°22.8	61°10.6	81°14.8	83°42.2
15	124°59.3	11.4'	$25^{\circ}16.7$	5.9'	54.2'	83°38.0	50°17.4	49°06.6		35°52.4	61°31.2	81°44.4	84°06.3
16	139°29.7	11.5'	25° 10.9	6.0'	54.2'	83°11.0	49°51.7	48°40.1		36°21.9	61°51.9	82°14.0	84°30.4
17	154°00.2	11.5'	25°04.9	6.1'	54.2'	82°43.9	49°26.1	48° 13.5		36°51.5	62° 12.7	82°43.5	84°54.4
18	168°30.7	11.6'	S 24°58.8	6.2'	54.2'	82°16.9	49°00.5	47°47.0		37°21.1	62°33.5	83°13.1	85° 18.5
19	183°01.2	11.6'	24°52.6	6.3'	54.2'	81°49.8	48°35.0	47°20.5		37°50.7	62°54.4	83°42.6	85° 42.6
20	197°31.9	11.7'	24°46.3	6.4'	54.2'	81°22.8	48°09.5	46°53.9		38°20.3	63°15.3	84°12.2	86°06.7
21	212°02.5	11.7'	24°39.9	6.5'	54.2'	80°55.8	47°44.2	46°27.4		38°49.9	63°36.4	84°41.7	86°30.8
22	226°33.3	11.8'	24° 33.4	6.6'	54.2'	80°28.7	47°18.8	46°00.9		39°19.5	63°57.4	85°11.3	86° 54.9
23	241°04.0	11.8'	24°26.7	6.7'	54.2'	80°01.7	46°53.5	45°34.3		39°49.0	64°18.6	85°40.8	87° 19.0
30 th	SD :	= 14.8′	Mer. pass	. 06:23					Sun SD	= 16.0'			

Moon (31st Mar) h

Wed	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus
0	255°34.9	11.9'	S 24°20.0	6.9'	54.2'	79°34.6	46°28.3	45°07.8	40° 18.6	60°17.6	64°39.8	86°10.4	87°43.1
1	270°05.8	12.0'	24°13.1	7.0'	54.2'	79°07.6	46°03.2	44°41.3	40°48.2	60°38.7	65°01.0	86°39.9	88°07.2
2	284°36.7	12.0'	24°06.1	7.1'	54.2'	78°40.6	45°38.1	44°14.8	41°17.8	60°59.9	65°22.3	87°09.5	88°31.4
3	299°07.7	12.1'	23°59.1	7.2'	54.2'	78°13.5	45°13.1	43°48.2	41°47.4	61°21.2	65°43.7	87°39.0	88° 55.5
4	313°38.8	12.1'	23°51.9	7.3'	54.2'	77°46.5	44°48.2	43°21.7	42°16.9	61°42.5	66°05.2	88°08.6	89° 19.6
5	328°09.9	12.2'	23°44.6	7.4'	54.2'	77°19.4	44°23.3	42°55.2	42°46.5	62°03.9	66°26.6	88°38.2	89°43.7
6	342°41.1	12.2'	S 23°37.2	7.5'	54.2'	76°52.4	43°58.5	42°28.7	43°16.1	62°25.4	66°48.2	89°07.7	90°07.9
7	357°12.3	12.3'	23°29.7	7.6'	54.2'	76°25.3	43°33.8	42°02.1	43°45.7	62°46.9	67°09.8	89°37.3	90°32.0
8	11°43.6	12.3'	23°22.1	7.7'	54.2'	75°58.3	43°09.2	41°35.6	44°15.3	63°08.5	67°31.4	90°06.8	90°56.1
9	26°15.0	12.4'	23°14.4	7.8'	54.2'	75°31.2	42°44.7	41°09.1	44°44.9	63°30.1	67°53.1	90°36.4	91°20.3
10	40°46.4	12.5'	23°06.6	7.9'	54.2'	75°04.2	42°20.2	40°42.6	45°14.5	63°51.8	68°14.8	91°06.0	91°44.4
11	55°17.8	12.5'	22°58.7	8.0'	54.2'	74°37.1	41°55.8	40°16.0	45°44.1	64°13.6	68°36.6	91°35.6	92°08.5
12	69°49.4	12.6'	S 22°50.7	8.1'	54.2'	74°10.1	41°31.5	39°49.5	46° 13.7	64°35.4	68°58.5	92°05.1	92°32.7
13	84°20.9	12.6'	22°42.5	8.2'	54.2'	73°43.0	41°07.3	39°22.9	46°43.3	64°57.3	69°20.4	92°34.7	92°56.8
14	98°52.6	12.7'	22°34.3	8.3'	54.2'	73°15.9	40°43.2	38°56.4	47°13.0	65°19.3	69°42.3	93°04.3	93°20.9
15	113°24.3	12.7'	22°26.0	8.4'	54.2'	72°48.8	40°19.2	38°29.9	47°42.6	65°41.3	70°04.3	93°33.9	93°45.1
16	127°56.0	12.8'	22°17.6	8.5'	54.2'	72°21.7	39°55.3	38°03.3	48° 12.2	66°03.3	70°26.3	94°03.5	94°09.2
17	142°27.8	12.9'	22°09.1	8.6'	54.2'	71°54.7	39°31.5	37°36.7	48°41.8	66°25.5	70°48.4	94°33.1	94°33.3
18	156°59.6	12.9'	S 22°00.5	8.7'	54.2'	71°27.6	39°07.8	37°10.2	49° 11.5	66°47.6	71°10.5	95°02.7	94°57.5
19	171°31.5	13.0'	21°51.8	8.8'	54.2'	71°00.5	38°44.2	36°43.6	49°41.1	67°09.9	71°32.7	95°32.3	95°21.6
20	186°03.5	13.0'	21°43.0	8.9'	54.2'	70°33.3	38°20.8	36°17.1	50° 10.8	67°32.1	71°54.9	96°02.0	95°45.7
21	200°35.5	13.1'	$21^{\circ}34.1$	9.0'	54.2'	70°06.2	37°57.4	35°50.5	50°40.5	67°54.5	72°17.1	96°31.6	96°09.9
22	215°07.6	13.1'	21°25.1	9.1'	54.2'	69°39.1	37°34.2	35°23.9	51° 10.1	68°16.8	72°39.4	97°01.3	96°34.0
23	229°39.7	13.2'	21°16.0	9.2'	54.2'	69°12.0	37°11.0	34°57.3	51°39.8	68°39.3	73°01.8	97°30.9	96°58.1
31 st	SD	= 14.8'	Mer. pass	. 07:12					Sun St	0 = 16.0'			

h Moon (1st Apr)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	+Antares	+Rigil Kent.	+Hadar	+Arcturus	+Spica
0	244°11.9	13.2'	S 21°06.9	9.3'	54.2'	68°44.8	36°48.0	34°30.7	52°09.5	69°01.7	73°24.1	97°22.2	98°00.6
1	258°44.1	13.3'	20°57.6	9.4'	54.2'	68°17.7	36°25.2	34°04.1	52°39.2	69°24.3	73°46.5	97°46.3	98°30.2
2	273°16.4	13.3'	20°48.2	9.4'	54.3'	67°50.5	36°02.5	33°37.5	53°08.9	69°46.8	74°09.0	98°10.4	98°59.9
3	287°48.7	13.4'	20°38.8	9.5'	54.3'	67°23.4	35°39.9	33°10.9	53°38.6	70°09.5	74°31.5	98°34.5	99°29.6
4	302°21.1	13.4'	$20^{\circ}29.2$	9.6'	54.3'	66°56.2	35°17.4	32°44.3	54°08.4	70°32.1	74°54.0	98°58.6	99°59.3
5	316°53.6	13.5'	$20^{\circ}19.6$	9.7'	54.3'	66°29.0	34°55.1	32°17.7	54°38.1	70°54.8	75°16.6	99°22.7	100°29.0
6	331°26.1	13.5'	S 20°09.9	9.8'	54.3'	66°01.8	34°33.0	31°51.0	55°07.8	71°17.6	75°39.2	99°46.8	100°58.7
7	345°58.6	13.6'	20°00.1	9.9'	54.3'	65°34.6	34°11.0	31°24.4	55° 37.6	71°40.4	76°01.8	100°10.9	101°28.4
8	0°31.2	13.6'	19°50.2	10.0'	54.3'	65°07.4	33°49.2	30°57.7	56°07.4	72°03.3	76°24.5	100°35.0	101°58.2
9	15°03.9	13.7'	19°40.2	10.1'	54.3'	64°40.2	33°27.6	30°31.1	56° 37.2	72°26.1	76°47.2	100°59.0	102°27.9
10	29°36.6	13.7'	19°30.2	10.1'	54.3'	64°12.9	33°06.1	30°04.4	57°07.0	72°49.1	77°09.9	101°23.1	102°57.7
11	44°09.3	13.8'	$19^{\circ}20.0$	10.2'	54.3'	63°45.7	32°44.9	29°37.8	57°36.8	73°12.0	77°32.7	101°47.1	103°27.5
12	58°42.1	13.8'	S 19°09.8	10.3'	54.3'	63°18.4	32°23.8	29°11.1	58°06.6	73°35.1	77°55.5	102°11.2	103°57.3
13	73°14.9	13.9'	$18^{\circ}59.5$	10.4'	54.4'	62°51.2	32°02.9	28°44.4	58° 36.4	73°58.1	78°18.3	102°35.2	104°27.1
14	87°47.8	13.9'	$18^{\circ}49.1$	10.5'	54.4'	62°23.9	31°42.2	28°17.7	59°06.3	74°21.2	78°41.2	102°59.2	104°56.9
15	102°20.8	14.0'	18°38.6	10.6'	54.4'	61°56.6	31°21.7	27°51.0	59°36.1	74°44.4	79°04.1	103°23.2	105°26.7
16	116°53.8	14.0'	$18^{\circ}28.0$	10.6'	54.4'	61°29.3	31°01.5	27°24.3	60°06.0	75°07.5	79°27.1	103°47.2	105°56.5
17	131°26.8	14.1'	18°17.4	10.7'	54.4'	61°02.0	30°41.4	26°57.5	60°35.9	75°30.7	79°50.0	104°11.2	106°26.4
18	145°59.9	14.1'	S 18°06.7	10.8'	54.4'	60°34.6	30°21.6	26°30.8	61°05.8	75°54.0	80°13.0	104°35.2	106°56.3
19	160°33.0	14.2'	17°55.9	10.9'	54.4'	60°07.3	30°02.1	26°04.1	61°35.7	76°17.3	80°36.0	104°59.2	107°26.2
20	175°06.2	14.2'	17°45.0	11.0'	54.4'	59°39.9	29°42.8	25°37.3	62°05.6	76°40.6	80°59.1	105°23.1	107°56.0
21	189°39.4	14.3'	17°34.0	11.0'	54.4'	59°12.5	29°23.7	25°10.5	62°35.6	77°04.0	81°22.2	105°47.1	108°26.0
22	204°12.7	14.3'	17°23.0	11.1'	54.5'	58°45.1	29°05.0	24°43.8	63°05.5	77°27.4	81°45.3	106°11.0	108°55.9
23	218°46.0	14.3'	$17^{\circ}11.9$	11.2'	54.5'	58°17.7	28°46.5	24°17.0	63°35.5	77°50.8	82°08.4	106°34.9	109°25.8
1 st	SD	= 14.8'	Mer. pass	s. 07:58					Sun S	D = 16.0'			

Moon (2nd Apr)

h

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	+Antares	+Rigil Kent.	+Hadar	+Arcturus	+Spica
0	233°19.3	14.4'	S 17°00.7	11.3'	54.5'	57°50.3	28°28.3	23°50.2	64°05.5	78°14.2	82°31.6	106°58.8	109°55.8
1	247°52.7	14.4'	16°49.4	11.3'	54.5'	57°22.9	28°10.4	23°23.4	64°35.5	78°37.7	82°54.8	107°22.7	110°25.8
2	262°26.1	14.5'	16°38.1	11.4'	54.5'	56°55.4	27°52.8	22°56.6	65°05.6	79°01.3	83°18.0	107°46.6	110°55.8
3	276°59.6	14.5'	$16^{\circ}26.7$	11.5'	54.5'	56°28.0	27°35.5	22°29.8	65°35.6	79°24.8	83°41.2	108°10.4	111°25.8
4	291°33.1	14.5'	$16^{\circ}15.2$	11.6'	54.5'	56°00.5	27°18.5	22°03.0	66°05.7	79°48.4	84°04.5	108°34.2	111°55.8
5	306°06.6	14.6'	$16^{\circ}03.6$	11.6'	54.5'	55°33.0	27°01.9	21°36.1	66°35.7	80°12.1	84°27.8	108°58.0	112°25.8
6	320°40.2	14.6'	S 15°52.0	11.7'	54.6'	55°05.4	26°45.6	21°09.3	67°05.8	80°35.7	84°51.1	109°21.8	112°55.9
7	335°13.9	14.7'	15°40.3	11.8'	54.6'	54°37.9	26°29.7	20°42.5	67°36.0	80°59.4	85°14.5	109°45.6	113°26.0
8	349°47.5	14.7'	$15^{\circ}28.5$	11.8'	54.6'	54°10.4	26°14.2	20°15.6	68°06.1	81°23.1	85°37.8	110°09.3	113°56.1
9	4°21.2	14.7'	$15^{\circ}16.7$	11.9'	54.6'	53°42.8	25°59.1	19°48.8	68°36.2	81°46.9	86°01.2	110°33.1	114°26.2
10	18°55.0	14.8'	15°04.8	12.0'	54.6'	53°15.2		19°21.9	69°06.4	82°10.7	86°24.6	110°56.8	114°56.3
11	33°28.7	14.8'	14°52.8	12.0'	54.6'	52°47.6		18°55.0	69°36.6	82°34.5	86°48.0	111°20.5	115°26.5
12	48°02.5	14.8'	S 14°40.8	12.1'	54.6'	52°20.0		18°28.2	70°06.8	82°58.3	87°11.5	$111^{\circ}44.1$	115°56.7
13	62°36.4	14.9'	$14^{\circ}28.7$	12.2'	54.7'	51°52.3		18°01.3	70°37.1	83°22.2	87°35.0	$112^{\circ}07.7$	116°26.9
14	77°10.2	14.9'	$14^{\circ}16.5$	12.2'	54.7'	51°24.7		17°34.4	71°07.3	83°46.1	87°58.5	112°31.4	116°57.1
15	91°44.1	14.9'	14°04.3	12.3'	54.7'	50°57.0		17°07.6	71°37.6	84°10.0	88°22.0	112°54.9	117°27.3
16	106° 18.1	15.0'	13°52.0	12.4'	54.7'	50°29.3		16°40.7	72°07.9	84°34.0	88°45.5	113°18.5	117°57.6
17	120°52.1	15.0'	13°39.6	12.4'	54.7'	50°01.6		16°13.8	72°38.2	84°57.9	89°09.0	113°42.0	118°27.8
18	135°26.0	15.0'	S 13°27.2	12.5'	54.7'	49°33.9		15°47.0	73°08.5	85°21.9	89°32.6	114°05.5	118°58.1
19	150°00.1	15.1'	13°14.7	12.5'	54.8'	49°06.1		15°20.1	73°38.9	85°46.0	89°56.2	114°28.9	119°28.5
20	164°34.1	15.1'	13°02.2	12.6'	54.8'	48°38.3		14°53.2	74°09.3	86°10.0	90°19.8	114°52.4	119°58.8
21	179°08.2	15.1'	12°49.6	12.7'	54.8'	48°10.5		14°26.4	74°39.7	86°34.1	90°43.4	115°15.8	
22	193°42.3	15.1'	12°36.9	12.7'	54.8'	47°42.7		13°59.6	75°10.1	86°58.2	91°07.0	115°39.1	
23	208°16.5	15.2'	12°24.2	12.8'	54.8'	47°14.9		13°32.8	75°40.5	87°22.3	91°30.7	116°02.4	
2 nd	SD	= 14.9'	Mer. pass	s. 08:42		$Sun\;SD=16.0'$							

h Moon (3rd Apr)

Sat	GHA	ν	Dec	d	HP	-Sun	-Venus	+Altair	+Antares	+Rigil Kent.	+Hadar	+Acrux	+Arcturus
0	222°50.6	15.2'	S 12°11.4	12.8'	54.9'	46°47.0	13°06.0	36°43.8	76°11.0	87°46.4	91°54.3	98°52.8	116°25.7
1	237°24.8	15.2'	$11^{\circ}58.5$	12.9'	54.9'	46°19.2	12°39.2	36°59.9	76°41.5	88°10.6	92°18.0	99°13.0	116°49.0
2	251°59.0	15.2'	11°45.6	13.0'	54.9'	45°51.3	12° 12.5	37°16.1	77°12.0	88°34.8	92°41.7	99°33.1	117° 12.2
3	266°33.2	15.3'	11°32.7	13.0'	54.9'	45°23.3	11°45.8	37°32.7	77°42.5	88°59.0	93°05.4	99°53.3	117°35.3
4	281°07.5	15.3'	$11^{\circ}19.7$	13.1'	54.9'	44°55.4	11°19.1	37°49.5	78°13.1	89°23.2	93°29.1	100°13.4	117°58.5
5	295°41.8	15.3'	$11^{\circ}06.6$	13.1'	54.9'	44°27.5	10°52.5	38°06.6	78°43.7	89°47.4	93°52.9	100°33.5	118°21.5
6	310°16.0	15.3'	S 10°53.5	13.2'	55.0'	43°59.5	10°26.0	38°23.9	79°14.3	90°11.7	94°16.6	100°53.6	118°44.6
7	324°50.4	15.3'	10°40.3	13.2'	55.0'	43°31.5	9°59.5	38°41.5	79°44.9	90°36.0	94°40.3	101°13.7	119°07.5
8	339°24.7	15.3'	10°27.1	13.3'	55.0'	43°03.5	9°33.2	38°59.3	80°15.6	91°00.3	95°04.1	101°33.8	119°30.5
9	353°59.0	15.4'	10°13.8	13.3'	55.0'	42°35.4	9°06.9	39°17.4	80°46.3	91°24.6	95°27.9	101°53.9	119°53.4
10	8°33.4	15.4'	$10^{\circ}00.5$	13.4'	55.0'	42°07.3	8°40.7	39°35.6	81°17.0	91°48.9	95°51.6	102°13.9	
11	23°07.8	15.4'	$09^{\circ}47.1$	13.4'	55.1'	41°39.3	8° 14.7	39°54.2	81°47.7	92°13.3	96°15.4	102°33.9	
12	37°42.2	15.4'	S 09°33.7	13.5'	55.1'	41°11.2	7°48.9	40°12.9	82°18.4	92°37.7	96°39.2	102°54.0	
13	52°16.6	15.4'	09°20.2	13.5'	55.1'	40°43.0	7°23.2	40°31.8	82°49.2	93°02.0	97°03.0	103°13.9	
14	66°51.0	15.4'	09°06.7	13.6'	55.1'	40°14.9	6°57.9	40°51.0	83°20.0	93°26.4	97°26.8	103°33.9	
15	81°25.4	15.4'	08°53.1	13.6'	55.1'		6°32.8	41°10.4	83°50.9	93°50.8	97°50.6	103°53.9	
16	95°59.9	15.5'	08°39.5	13.7'	55.2'		6°08.1	41°30.0	84°21.7	94°15.3	98°14.4	104°13.8	
17	110°34.3	15.5'	08°25.9	13.7'	55.2'		5°43.8	41°49.8	84°52.6	94°39.7	98°38.2	104°33.7	
18	125°08.8	15.5'	S 08°12.1	13.7'	55.2'		5°20.1	42°09.8	85°23.5	95°04.2	99°02.0	104°53.6	
19	139°43.3	15.5'	07°58.4	13.8'	55.2'		4°57.2	42°29.9	85°54.5	95°28.6	99°25.9	105°13.4	
20	154°17.7	15.5'	07°44.6	13.8'	55.2'		4°35.1	42°50.3	86°25.4	95°53.1	99°49.7	105°33.2	
21	168°52.2	15.5'	07°30.8	13.9'	55.3'			43°10.9	86°56.4	96°17.6	100°13.5	105°53.0	
22	183°26.7	15.5'	$07^{\circ}16.9$	13.9'	55.3'			43°31.6	87°27.4	96°42.1	100°37.3	106° 12.8	
23	198°01.2	15.5'	07°03.0	14.0'	55.3'			43°52.6	87°58.5	97°06.6	101°01.2	106°32.5	
3 rd	SD	$= 15.0^{\prime}$	Mer. pass	s. 09:25					Sun	SD = 16.0'			

h Moon (4th Apr) Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	+Venus	+Fomalhaut	+Altair	+Antares	+Rigil Kent.	+Hadar	+Acrux
0	212°35.7	15.5'	S 06°49.0	14.0'	55.3'			44°13.6	88° 29.5	97°31.1	101°25.0	106°52.2
1	227°10.2	15.5'	$06^{\circ}35.1$	14.0'	55.4'			44°34.9	89°00.6	97°55.6	101°48.8	107°11.8
2	241°44.7	15.5'	$06^{\circ}21.0$	14.1'	55.4'			44°56.4	89°31.8	98°20.1	102°12.6	107°31.5
3	256°19.2	15.5'	06°07.0	14.1'	55.4'			45°18.0	90°02.9	98° 44.6	102°36.4	107°51.1
4	270°53.7	15.5'	05°52.9	14.1'	55.4'			45°39.8	90°34.1	99°09.2	103°00.2	108°10.6
5	285°28.2	15.5'	05°38.7	14.2'	55.4'			46°01.7	91°05.3	99°33.7	103°24.0	108°30.1
6	300°02.7	15.5'	S 05°24.5	14.2'	55.5'			46°23.8	91°36.5	99° 58.2	103°47.8	108°49.6
7	314°37.2	15.5'	05°10.3	14.2'	55.5'			46°46.0	92°07.8	100°22.8	104°11.6	109°09.0
8	329°11.7	15.5'	$04^{\circ}56.1$	14.3'	55.5'			47°08.4	92°39.1	100°47.3	104°35.3	109°28.4
9	343°46.2	15.5'	04°41.8	14.3'	55.5'			47°31.0	93° 10.4	101°11.9	104°59.1	109°47.7
10	358°20.6	15.5'	04°27.5	14.3'	55.6'			47°53.7	93°41.8	101°36.4	105°22.9	110°07.0
11	12°55.1	15.5'	04°13.2	14.4'	55.6'			48°16.5	94°13.2	102°01.0	105°46.6	110°26.3
12	27°29.6	15.5'	S 03°58.8	14.4'	55.6'			48°39.5	94°44.6	102°25.5	106°10.3	110°45.5
13	42°04.0	15.4'	03°44.4	14.4'	55.6'			49°02.6	95°16.0	102°50.0	106°34.0	111°04.6
14	56°38.5	15.4'	03°30.0	14.4'	55.7'	5°43.7	26°00.2	49°25.9	95° 47.5	103° 14.6	106°57.7	111°23.7
15	71°12.9	15.4'	03°15.6	14.5'	55.7'	6°08.5	26°16.1	49°49.3	96° 19.0	103°39.1	107°21.4	111°42.8
16	85°47.3	15.4'	$03^{\circ}01.1$	14.5'	55.7'	6°33.8	26°32.4	50°12.8	96° 50.5	104°03.6	107°45.1	112°01.7
17	100°21.7	15.4'	02°46.6	14.5'	55.7'	6°59.5	26°49.1	50°36.4	97°22.0	104°28.2	108°08.7	112°20.7
18	114°56.1	15.4'	S 02°32.1	14.5'	55.8'	7°25.6	27°06.2	51°00.2	97°53.6	104°52.7	108°32.3	112°39.5
19	129°30.5	15.4'	$02^{\circ}17.5$	14.6'	55.8'	7°52.0	27°23.8	51°24.1	98°25.2	105° 17.2	108°55.9	112°58.3
20	144°04.8	15.3'	$02^{\circ}02.9$	14.6'	55.8'	8°18.7	27°41.8	51°48.1	98° 56.9	105°41.7	109°19.5	113°17.1
21	158°39.2	15.3'	01°48.4	14.6'	55.8'	8°45.7	28°00.1	52°12.3	99°28.5	106°06.2	109°43.1	113°35.8
22	173°13.5	15.3'	$01^{\circ}33.7$	14.6'	55.8'	9°12.8	28°18.9	52°36.5	100°00.2	106°30.7	110°06.6	113°54.4
23	187°47.8	15.3'	$01^{\circ}19.1$	14.6'	55.9'	9°40.1	28°38.0	53°00.9	100°32.0	106°55.1	110°30.1	114°12.9
4 th	SD	= 15.1'	Mer. pass	s. 10:07			-					

h	Moon (5 th Apr)	Lunar Distance (objects with largest hourly LD delta)
---	----------------------------	---

			(zana. Zistanes (espects titti largest nearly zz denta)							
Mon	GHA	ν	Dec	d	HP	+Venus	+Fomalhaut	+Altair	+Antares	+Rigil Kent.	+Hadar	+Acrux
0	202°22.1	15.3'	S 01°04.5	14.7'	55.9'	10°07.5	28°57.4	53°25.4	101°03.7	107°19.6	110°53.6	114°31.4
1	216°56.3	15.2'	00°49.8	14.7'	55.9'	10°35.1	29°17.2	53°50.0	101°35.5	107°44.0	111°17.0	114°49.8
2	231°30.6	15.2'	00°35.1	14.7'	55.9'	11°02.9	29°37.4	54°14.7	102°07.3	108°08.4	111°40.4	115°08.1
3	246°04.8	15.2'	00°20.4	14.7'	56.0'	11°30.7	29°57.8	54°39.5	102°39.2	108° 32.8	112°03.8	115°26.4
4	260°39.0	15.2'	S 00°05.7	14.7'	56.0'	11°58.7	30°18.6	55°04.4	103°11.1	108° 57.2	112°27.2	115°44.5
5	275°13.1	15.1'	N 00°09.0	14.7'	56.0'	12°26.7	30°39.7	55°29.4	103°43.0	109°21.6	112°50.5	116°02.6
6	289°47.2	15.1'	N00°23.8	14.8'	56.0'	12°54.8	31°01.1	55°54.5	104°14.9	109°45.9	113°13.7	116°20.6
7	304°21.3	15.1'	00°38.5	14.8'	56.1'	13°23.1	31°22.8	56°19.7	104°46.9	110°10.2	113°37.0	116°38.6
8	318°55.4	15.0'	00°53.3	14.8'	56.1'	13°51.4	31°44.7	56°45.1	105°18.9	110°34.5	114°00.2	116°56.4
9	333°29.5	15.0'	$01^{\circ}08.1$	14.8'	56.1'	14°19.7	32°07.0	57°10.5	105°50.9	110°58.8	114°23.3	117°14.2
10	348°03.5	15.0'	01°22.8	14.8'	56.1'	14°48.2	32°29.5	57°36.0	106°23.0	111°23.1	114°46.5	117°31.8
11	2°37.4	14.9'	$01^{\circ}37.6$	14.8'	56.2'	15°16.7	32°52.2	58°01.6	106°55.1	111°47.3	115°09.5	117°49.4
12	17°11.4	14.9'	N 01°52.4	14.8'	56.2'	15°45.3	33°15.2	58°27.3	107°27.2	112°11.5	115°32.5	118°06.9
13	31°45.3	14.9'	02°07.2	14.8'	56.2'	16°13.9	33°38.5	58°53.1	107°59.3	112°35.6	115°55.5	118°24.3
14	46°19.2	14.8'	02°22.0	14.8'	56.2'	16°42.6	34°02.0	59°19.0	108°31.5	112°59.8	116°18.4	118°41.5
15	60°53.0	14.8'	02°36.8	14.8'	56.3'	17°11.4	34°25.7	59°44.9	109°03.7	113°23.8	116°41.3	118°58.7
16	75°26.8	14.8'	02°51.7	14.8'	56.3'	17°40.2	34°49.6	60°11.0	109°36.0	113°47.9	117°04.1	119°15.8
17	90°00.5	14.7'	03°06.5	14.8'	56.3'	18°09.0	35°13.7	60°37.1	110°08.2	114°11.9	117°26.9	119°32.8
18	104°34.3	14.7'	N03°21.3	14.8'	56.3'	18°37.9	35°38.1	61°03.3	110°40.5	114°35.9	117°49.6	119°49.6
19	119°07.9	14.6'	03°36.1	14.8'	56.4'	19°06.9	36°02.7	61°29.6	111°12.9	114°59.9	118°12.2	
20	133°41.6	14.6'	03°50.9	14.8'	56.4'	19°35.9	36°27.4	61°56.0	111°45.2	115°23.7	118°34.8	
21	148°15.2	14.5'	04°05.7	14.8'	56.4'	20°04.9	36°52.4	62°22.5	112°17.6	115°47.6	118°57.3	
22	162°48.7	14.5'	$04^{\circ}20.5$	14.8'	56.4'	20°34.0	37°17.5	62°49.0	112°50.0	116°11.4	119°19.8	
23	177°22.2	14.5'	04°35.3	14.8'	56.5'	21°03.1	37°42.8	63°15.6	113°22.5	116°35.2	119°42.1	
5 th	SD	= 15.2'	Mer. pass	. 10:49			-					

h Moon (6 th Apr) Lunar Distance (objects with largest	hourly LD delta)
---	------------------

Tue	GHA	ν	Dec	d	HP	+Venus	+Fomalhaut	+Altair	+Antares	+Rigil Kent.					
0	191°55.7	14.4'	N 04°50.1	14.8'	56.5'	21°32.3	38°08.3	63°42.3	113°54.9	116°58.9					
1	206°29.1	14.4'	05°04.9	14.8'	56.5'	22°01.5	38°34.0	64°09.1	114°27.5	117°22.5					
2	221°02.4	14.3'	$05^{\circ}19.7$	14.8'	56.5'	22°30.8	38°59.8	64°35.9	115°00.0	117°46.1					
3	235°35.7	14.3'	05°34.5	14.8'	56.6'	23°00.1	39°25.8	65°02.8	115°32.6	118°09.7					
4	250°09.0	14.2'	05°49.2	14.7'	56.6'	23°29.4	39°52.0	65°29.8	116°05.2	118°33.2					
5	264°42.2	14.1'	$06^{\circ}04.0$	14.7'	56.6'	23°58.8	40°18.3	65°56.8	116°37.8	118°56.6					
6	279°15.3	14.1'	N 06°18.7	14.7'	56.6'		·	New N	100n ———						
7	293°48.4	14.0'	06°33.4	14.7'	56.7'			New N	100n						
8	308°21.4	14.0'	06°48.1	14.7'	56.7'			New N	100n						
9	322°54.4	13.9'	07°02.8	14.7'	56.7'										
10	337°27.3	13.9'	$07^{\circ}17.5$	14.7'	56.7'										
11	352°00.2	13.8'	07°32.2	14.6'	56.8'										
12	6°33.0	13.7'	N 07°46.8	14.6'	56.8'			New N	100n ———						
13	21°05.7	13.7'	08°01.4	14.6'	56.8'				100n						
14	35°38.4	13.6'	$08^{\circ}16.0$	14.6'	56.8'			New N	100n						
15	$50^{\circ}11.0$	13.6'	08°30.5	14.5'	56.9'			New N	100n						
16	64°43.6	13.5'	08°45.1	14.5'	56.9'				100n						
17	79°16.1	13.4'	08°59.6	14.5'	56.9'			—— New N	100n ———						
18	93°48.5	13.4'	N 09°14.1	14.5'	56.9'			New N	100n						
19	108°20.8	13.3'	09°28.5	14.4'	57.0'			New N	100n						
20	122°53.1	13.2'	09°42.9	14.4'	57.0'	.0' New Moon ———									
21	137°25.3	13.1'	09°57.3	14.4'	57.0'				100n						
22	151°57.5	13.1'	$10^{\circ}11.7$	14.3'	57.0'				100n						
23	166°29.5	13.0'	10°26.0	14.3'	57.1'			—— New N	100n ———						
6 th	SD	= 15.4'	Mer. pass	i. 11:33											

Moon (7th Apr) Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Mars	-Jupiter	-Procyon	-Pollux	-Betelgeuse	-Rigel	-Capella	-Aldebaran		
0	181°01.5	12.9'	N 10°40.3	14.2'	57.1'				Nev	w Moon ——					
1	195°33.5	12.9'	10°54.5	14.2'	57.1'					w Moon ——					
2	210°05.3	12.8'	11°08.7	14.2'	57.1'					w Moon ——					
3	224°37.1	12.7'	11°22.9	14.1'	57.2'					w Moon ———					
4	239°08.8	12.6'	11°37.0	14.1'	57.2'					w Moon ———					
5	253°40.4	12.5'	$11^{\circ}51.1$	14.0'	57.2'				Nev	w Moon ———					
6	268°12.0	12.5'	$N12^{\circ}05.1$	14.0'	57.2'				Nev	w Moon ——					
7	282°43.4	12.4'	$12^{\circ}19.1$	13.9'	57.3'					w Moon ——					
8	297°14.8	12.3'	12°33.1	13.9'	57.3'				Nev	w Moon ——					
9	311°46.1	12.2'	12°47.0	13.8'	57.3'				Nev	w Moon ——					
10	326°17.3	12.1'	13°00.8	13.8'	57.3'				Nev	w Moon ———					
11	340°48.5	12.1'	13°14.6	13.7'	57.3'										
12	355°19.5	12.0'	N13°28.4	13.7'	57.4'					w Moon ——					
13	9°50.5	11.9'	13°42.0	13.6'	57.4'				Nev	w Moon ———					
14	24°21.4	11.8'	13°55.7	13.6'	57.4'				Nev	w Moon ———					
15	38°52.1	11.7'	14°09.2	13.5'	57.4'					w Moon ———					
16	53°22.9	11.6'	14°22.8	13.5'	57.5'				Nev	w Moon ———					
17	67°53.5	11.5'	14°36.2	13.4'	57.5'	114°14.1	110°20.9	90°56.9	86°33.1	65°17.2	60°06.8	56°41.6	44°45.2		
18	82°24.0	11.4'	N 14°49.6	13.3'	57.5'	113°40.7	109°47.2	90°24.9	85°59.6	64°46.0	59°41.9	56° 10.5	44°12.6		
19	96°54.4	11.3'	15°02.9	13.3'	57.5'	113°07.3	109°13.5	89°52.9	85°26.0	64°14.7	59°17.0	55°39.4	43°40.0		
20	111°24.8	11.3'	15°16.2	13.2'	57.6'	112°33.8	108°39.7	89°20.8	84°52.4	63°43.5	58°52.2	55°08.3	43°07.5		
21	125°55.0	11.2'	15°29.4	13.1'	57.6'	112°00.3	108°06.0	88°48.7	84°18.7	63°12.3	58° 27.5	54°37.2	42°34.9		
22	140°25.2	11.1'	15°42.5	13.1'	57.6'	111°26.8	107°32.2	88°16.5	83°45.1	62°41.1	58°02.9	54°06.2	42°02.3		
23	154°55.3	11.0'	15°55.5	13.0'	57.6'	110°53.3	106°58.3	87°44.4	83°11.4	62°09.9	57°38.3	53°35.1	41°29.7		
7 th	SD	= 15.6'	Mer. pass	. 12:19							-				

h		Моо	n (8 th Ap	r)			Lunar	Distance	(objects	with larg	est hourly I	LD delta)	
Thu	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Jupiter	-Procyon	-Pollux	-Betelgeuse	-Aldebaran	+Achernar
0	169°25.2	10.9'	$N16^{\circ}08.5$	12.9'	57.6'	119°34.7	110° 19.7	106°24.5	87°12.2	82°37.7	61°38.7	40°57.1	
1	183°55.1	10.8'	16°21.4	12.8'	57.7'	119°00.9	109°46.1	105°50.6	86°40.0	82°03.9	61°07.5	40°24.6	
2	198°24.9	10.7'	16°34.3	12.8'	57.7'	118°27.1	109°12.5	105°16.7	86°07.8	81°30.2	60°36.3	39°52.0	
3	212°54.6	10.6'	16°47.0	12.7'	57.7'	117°53.2	108°38.9	104°42.8	85°35.6	80°56.4	60°05.1	39°19.4	
4	227°24.2	10.5'	$16^{\circ}59.7$	12.6'	57.7'	117°19.3	108°05.2	104°08.8	85°03.3	80°22.6	59°33.9	38°46.9	
5	241°53.7	10.4'	$17^{\circ}12.3$	12.5'	57.7'	116°45.4	107°31.6	103°34.9	84°31.0	79°48.8	59°02.7	38°14.4	
6	256°23.1	10.3'	N 17°24.8	12.4'	57.8'	116°11.4	106°57.9	103°00.9	83°58.7	79°14.9	58°31.6	37°41.8	
7	270°52.4	10.2'	17°37.3	12.4'	57.8'	115°37.5	106°24.1	102°26.9	83°26.4	78°41.1	58°00.4	37°09.3	
8	285°21.6	10.1'	17°49.6	12.3'	57.8'	115°03.5	105°50.4	101°52.8	82°54.1	78°07.2	57°29.3	36°36.8	
9	299°50.7	10.0'	18°01.9	12.2'	57.8'	114°29.5	105°16.6	101°18.8	82°21.7	77°33.2	56° 58.1	36°04.3	
10	314°19.7	9.9'	$18^{\circ}14.1$	12.1'	57.8'	113°55.4	104°42.8	100°44.7	81°49.4	76°59.3	56°27.0	35°31.9	
11	328°48.6	9.8'	$18^{\circ}26.1$	12.0'	57.9'	113°21.4	104°09.0	100°10.6	81°17.0	76°25.3	55° 55.9	34°59.4	
12	343°17.4	9.7'	N 18°38.1	11.9'	57.9'	112°47.3	103°35.2	99°36.4	80°44.6	75°51.4	55°24.8	34°27.0	
13	357°46.1	9.6'	18°50.0	11.8'	57.9'	112°13.2	103°01.4	99°02.3	80°12.2	75°17.3	54°53.8	33°54.6	
14	12°14.7	9.5'	19°01.9	11.7'	57.9'	111°39.0	102°27.5	98°28.1	79°39.7	74°43.3	54°22.7	33°22.3	
15	26°43.2	9.4'	19° 13.6	11.6'	58.0'	111°04.9	101°53.6	97°53.9	79°07.3	74°09.3	53°51.7	32°50.0	
16	41°11.6	9.3'	19°25.2	11.5'	58.0'	110°30.7	101°19.7	97°19.7	78°34.8	73°35.2	53°20.7	32°17.7	
17	55°39.9	9.2'	19°36.7	11.4'	58.0'	109°56.5	100°45.7	96°45.5	78°02.4	73°01.1	52°49.8	31°45.4	
18	70°08.1	9.1'	N 19°48.1	11.3'	58.0'	109°22.3	100°11.8	96°11.2	77°29.9	72°27.0	52° 18.8	31°13.2	
19	84°36.2	9.0'	19°59.4	11.2'	58.0'	108°48.1	99°37.8	95°36.9	76°57.4	71°52.9	51°47.9	30°41.1	77°48.2
20	99°04.2	8.9'	$20^{\circ}10.6$	11.1'	58.0'	108°13.8	99°03.8	95°02.6	76°24.9	71°18.7	51°17.0	30°08.9	78°03.3
21	113°32.0	8.8'	$20^{\circ}21.7$	11.0'	58.1'	107°39.5	98° 29.8	94°28.3	75°52.3	70°44.6	50°46.2	29°36.9	78°18.5
22	127°59.8	8.7'	20°32.7	10.9'	58.1'	107°05.3	97°55.8	93°54.0	75°19.8	70°10.4	50° 15.4	29°04.9	78°33.7
23	142°27.5	8.6'	20°43.6	10.8'	58.1'	106°30.9	97°21.7	93°19.6	74°47.3	69°36.2	49°44.6	28°32.9	78°49.1
Ωth	SD	- 15 7 [']	Mor page	13.00									

Fri	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Jupiter	-Procyon	-Pollux	-Betelgeuse	-Aldebaran	+Achernar
0	156°55.1	8.5'	N 20°54.4	10.7'	58.1'	105°56.6	96°47.6	92°45.3	74°14.7	69°01.9	49°13.9	28°01.1	79°04.4
1	171°22.5	8.4'	21°05.1	10.5'	58.1'	105°22.2	96°13.6	92°10.9	73°42.1	68°27.7	48°43.2	27°29.3	79°19.9
2	185°49.9	8.3'	21° 15.6	10.4'	58.2'	104°47.9	95°39.4	91°36.4	73°09.6	67°53.4	48°12.5	26°57.5	79°35.4
3	200°17.2	8.2'	21°26.0	10.3'	58.2'	104°13.5	95°05.3	91°02.0	72°37.0	67° 19.1	47°41.9	26°25.9	79°50.9
4	214°44.3	8.1'	21°36.3	10.2'	58.2'	103°39.1	94°31.2	90°27.6	72°04.4	66°44.8	47°11.4	25°54.4	80°06.5
5	229°11.4	8.0'	21°46.5	10.1'	58.2'	103°04.6	93°57.0	89°53.1	71°31.8	66° 10.5	46°40.9	25°22.9	80°22.2
6	243°38.3	7.9'	N 21°56.6	10.0'	58.2'	102°30.2	93°22.8	89°18.6	70°59.2	65°36.2	46°10.4	24°51.6	80°37.9
7	258°05.2	7.7'	22°06.6	9.8'	58.2'	101°55.7	92°48.6	88°44.1	70°26.6	65°01.8	45°40.1	24°20.4	80°53.7
8	272°31.9	7.6'	22°16.4	9.7'	58.3'	101°21.2	92°14.4	88°09.6	69°54.0	64°27.5	45°09.7	23°49.3	81°09.5
9	286°58.6	7.5'	22°26.1	9.6'	58.3'	100°46.7	91°40.2	87°35.0	69°21.4	63°53.1	44°39.5	23°18.3	81°25.4
10	301°25.1	7.4'	22°35.7	9.4'	58.3'	100°12.2	91°05.9	87°00.5	68°48.8	63°18.7	44°09.3	22°47.5	81°41.3
11	315°51.6	7.3'	$22^{\circ}45.1$	9.3'	58.3'	99°37.6	90°31.7	86°25.9	68°16.2	62°44.3	43°39.1	22°16.8	81°57.3
12	330°17.9	7.2'	N22°54.4	9.2'	58.3'	99°03.1	89°57.4	85°51.3	67°43.6	62°09.8	43°09.1	21°46.3	82°13.3
13	344°44.1	7.1'	23°03.6	9.0'	58.3'	98°28.5	89°23.1	85°16.7	67°10.9	61°35.4	42°39.1	21°16.0	82°29.4
14	359°10.3	7.0'	23° 12.7	8.9'	58.4'	97°53.9	88°48.8	84°42.1	66°38.3	61°00.9	42°09.2	20°45.9	82°45.5
15	13°36.3	6.9'	23°21.6	8.8'	58.4'	97°19.3	88°14.5	84°07.4	66°05.7	60°26.4	41°39.4	20°16.0	83°01.6
16	28°02.3	6.8'	23°30.4	8.6'	58.4'	96°44.7	87°40.1	83°32.8	65°33.1	59°52.0	41°09.6	19°46.3	83° 17.8
17	42°28.1	6.7'	23°39.0	8.5'	58.4'	96°10.0	87°05.8	82°58.1	65°00.5	59°17.4	40°40.0	19°16.9	83°34.1
18	56°53.9	6.7'	N 23°47.5	8.4'	58.4'	95°35.4	86°31.4	82°23.4	64°27.9	58°42.9	40°10.5	18°47.7	83°50.3
19	71°19.5	6.6'	23°55.8	8.2'	58.4'	95°00.7	85°57.0	81°48.7	63°55.3	58°08.4	39°41.0	18°18.9	84°06.6
20	85°45.1	6.5'	24°04.1	8.1'	58.5'	94°26.0	85°22.6	81°14.0	63°22.7	57°33.8	39°11.7	17°50.4	84°23.0
21	100°10.5	6.4'	$24^{\circ}12.1$	7.9'	58.5'	93°51.3	84°48.2	80°39.2	62°50.1	56°59.3	38°42.5	17°22.2	84°39.4
22	114°35.9	6.3'	$24^{\circ}20.1$	7.8'	58.5'	93°16.6	84°13.7	80°04.5	62°17.5	56°24.7	38°13.4	16°54.4	84°55.8
23	129°01.2	6.2'	24°27.8	7.6'	58.5'	92°41.9	83°39.3	79°29.7	61°44.9	55°50.1	37°44.4	16°27.0	85°12.2
9 th	SD	= 15.9	′ Mer. pas	s. 14:03									

h	Moon	(10 th	Apr)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Jupiter	-Procyon	-Pollux	-Betelgeuse	+Sun	+Achernar
0	143°26.4	6.1'	N 24°35.5	7.5'	58.5'	92°07.1	83°04.8	78°54.9	61°12.3	55°15.5	37°15.5		85°28.7
1	157°51.5	6.0'	24°42.9	7.3'	58.5'	91°32.3	82°30.4	78°20.1	60°39.8	54°40.9	36°46.8		85°45.2
2	172°16.5	5.9'	24°50.3	7.2'	58.5'	90°57.6	81°55.9	77°45.3	60°07.2	54°06.3	36°18.2		86°01.7
3	186°41.4	5.8'	24°57.4	7.0'	58.6'	90°22.8	81°21.4	77° 10.5	59°34.7	53°31.6	35°49.8		86° 18.2
4	201°06.2	5.7'	25°04.4	6.9'	58.6'	89°48.0	80°46.9	76°35.6	59°02.2	52°57.0	35°21.5		86°34.8
5	215°30.9	5.7'	$25^{\circ}11.3$	6.7'	58.6'	89°13.1	80°12.3	76°00.8	58° 29.7	52°22.3	34°53.3	41°05.5	86°51.4
6	229°55.6	5.6'	$N25^{\circ}18.0$	6.5'	58.6'	88°38.3	79°37.8	75°25.9	57° 57.2	51°47.6	34°25.4	41°37.7	87°08.0
7	244°20.2	5.5'	25°24.5	6.4'	58.6'	88°03.4	79°03.3	74°51.0	57°24.7	51°13.0	33°57.6	42°09.9	87°24.7
8	258°44.7	5.4'	25°30.9	6.2'	58.6'	87°28.6	78°28.7	74°16.2	56°52.3	50°38.3	33°30.0	42°42.1	87°41.3
9	273°09.1	5.3'	25°37.1	6.1'	58.6'	86°53.7	77°54.1	73°41.2	56° 19.8	50°03.6	33°02.6	43°14.3	87°58.0
10	287°33.4	5.3'	25°43.2	5.9'	58.7'	86°18.8	77° 19.5	73°06.3	55° 47.4	49°28.8	32°35.4	43°46.5	88°14.7
11	301°57.7	5.2'	$25^{\circ}49.1$	5.7'	58.7'	85°43.9	76°44.9	72°31.4	55° 15.0	48°54.1	32°08.4	44°18.8	88°31.4
12	316°21.8	5.1'	N 25°54.8	5.6'	58.7'	85°09.0	76° 10.3	71°56.5	54° 42.6	48°19.4	31°41.6	44°51.1	88°48.1
13	330°45.9	5.0'	26°00.4	5.4'	58.7'	84°34.1	75°35.7	71°21.5	54° 10.3	47°44.7	31°15.0	45°23.4	89°04.8
14	345°10.0	5.0'	26°05.8	5.2'	58.7'	83°59.1	75°01.1	70°46.5	53° 37.9	47°09.9	30°48.7	45°55.7	89°21.5
15	359°33.9	4.9'	$26^{\circ}11.0$	5.1'	58.7'	83°24.2	74°26.4	70°11.6	53°05.6	46°35.2	30°22.7	46°28.0	89°38.3
16	13°57.8	4.8'	$26^{\circ}16.1$	4.9'	58.7'	82°49.2	73°51.8	69°36.6	52°33.4	46°00.4	29°56.9	47°00.3	89°55.0
17	28°21.6	4.8'	$26^{\circ}21.0$	4.7'	58.7'	82°14.3	73°17.1	69°01.6	52°01.1	45°25.6	29°31.4	47°32.7	90°11.8
18	42°45.4	4.7'	$N26^{\circ}25.7$	4.5'	58.7'	81°39.3	72°42.5	68° 26.6	51°28.9	44°50.8	29°06.1	48°05.0	90°28.6
19	57°09.1	4.6'	26°30.2	4.4'	58.8'	81°04.3	72°07.8	67°51.6	50°56.7	44°16.1	28°41.2	48°37.4	90°45.3
20	71°32.7	4.6'	26°34.6	4.2'	58.8'	80°29.3	71°33.1	67°16.5	50°24.6	43°41.3	28°16.6	49°09.8	91°02.1
21	85°56.3	4.5'	26°38.8	4.0'	58.8'	79°54.3	70°58.4	66°41.5	49°52.5	43°06.5	27°52.3	49°42.2	91°18.9
22	100°19.8	4.5'	26°42.8	3.8'	58.8'	79°19.2	70°23.7	66°06.4	49°20.4	42°31.7	27°28.4	50°14.6	91°35.6
23	114°43.2	4.4'	26°46.6	3.7'	58.8'	78°44.2	69°49.0	65°31.4	48° 48.4	41°56.9	27°04.9	50°47.0	91°52.4
10 th	SD =	= 16.0′	Mer. pass	. 15:02	2				Sun S	SD = 16.0'			

N 4	1-	4 + h	Α \
Moon	(1	. 1 "	Aprl

Lunar Distance	(ohiects	with	largest	hourly	ΙD	delta)	
Lunai Distance	LODIECES	VVILII	iaigest	HOULTV	ᆫ	uertar	

h		Моог	ո (11 th Aյ	or)			Lunar Distance (objects with largest hourly LD delta)						
Sun	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Jupiter	-Pollux	+Aldebaran	+Sun	+Achernar
0	129°06.6	4.3'	N 26°50.3	3.5'	58.8'		78°09.1	69°14.3	64°56.3	41°22.1		51°19.5	92°09.1
1	143°30.0	4.3'	26°53.8	3.3'	58.8'		77°34.1	68°39.5	64°21.2	40°47.2		51°51.9	92°25.9
2	157°53.3	4.2'	26°57.1	3.1'	58.8'		76°59.0	68°04.8	63°46.1	40°12.4		52°24.4	92°42.6
3	172°16.5	4.2'	27°00.2	2.9'	58.8'		76°23.9	67°30.0	63°11.0	39°37.6		52°56.9	92°59.4
4	186°39.7	4.2'	27°03.2	2.8'	58.9'		75°48.9	66°55.3	62°35.9	39°02.8		53°29.3	93°16.1
5	201°02.9	4.1'	27°05.9	2.6'	58.9'		75°13.8	66°20.5	62°00.8	38°28.0		54°01.8	93°32.8
6	215°26.0	4.1'	N27°08.5	2.4'	58.9'		74°38.7	65°45.7	61°25.7	37°53.1		54°34.3	93°49.5
7	229°49.1	4.0'	27°10.9	2.2'	58.9'		74°03.6	65°11.0	60°50.5	37° 18.3		55°06.9	94°06.2
8	244°12.1	4.0'	27°13.1	2.0'	58.9'		73°28.4	64°36.2	60°15.4	36°43.5		55°39.4	94°22.9
9	258°35.1	4.0'	27°15.2	1.8'	58.9'		72°53.3	64°01.4	59°40.3	36°08.6		56°11.9	94°39.5
10	272°58.1	3.9'	$27^{\circ}17.0$	1.7'	58.9'		72°18.2	63°26.6	59°05.1	35°33.8		56°44.5	94°56.1
11	287°21.0	3.9'	$27^{\circ}18.7$	1.5'	58.9'		71°43.0	62°51.8	58°29.9	34°59.0		57°17.0	95°12.8
12	301°43.9	3.9'	N27°20.2	1.3'	58.9'		71°07.9	62°17.0	57°54.8	34°24.2		57°49.6	95°29.3
13	316°06.8	3.9'	27°21.5	1.1'	58.9'		70°32.7	61°42.1	57° 19.6	33°49.3	13°39.3	58°22.2	95°45.9
14	330°29.7	3.8'	27°22.6	0.9'	58.9'		69°57.5	61°07.3	56°44.4	33°14.5	14°03.1	58°54.8	96°02.5
15	344°52.5	3.8'	27°23.5	0.7'	59.0'		69°22.3	60°32.5	56°09.2	32°39.7	14°27.6	59°27.4	96°19.0
16	359°15.4	3.8'	27°24.2	0.5'	59.0'		68°47.2	59°57.6	55°34.0	32°04.9	14°52.8	60°00.0	96°35.5
17	13°38.2	3.8'	27°24.8	0.4'	59.0'		68°12.0	59°22.8	54°58.8	31°30.1	15°18.7	60°32.6	96°51.9
18	28°01.0	3.8'	$N27^{\circ}25.1$	0.2'	59.0'		67°36.8	58°48.0	54°23.6	30°55.3	15°45.2	61°05.2	97°08.3
19	42°23.8	3.8'	27°25.3	-0.0'	59.0'		67°01.6	58°13.1	53°48.3	30°20.5	16°12.2	61°37.9	97°24.7
20	56°46.5	3.8'	27°25.3	-0.2'	59.0'		66°26.4	57°38.2	53°13.1	29°45.7	16°39.7	62°10.5	97°41.1
21	71°09.3	3.8'	$27^{\circ}25.1$	-0.4'	59.0'	119°54.1	65°51.1	57°03.4	52°37.9	29°10.9	17°07.7	62°43.1	97°57.4
22	85°32.1	3.8'	27°24.7	-0.6'	59.0'	119°18.9	65°15.9	56°28.5	52°02.6	28°36.2	17°36.1	63°15.8	98°13.7
23	99°54.8	3.8'	27°24.1	-0.8'	59.0'	118°43.7	64°40.7	55°53.6	51°27.4	28°01.4	18°04.9	63°48.5	98°30.0
11 th	SD :	= 16.0'	Mer. pas	s. 16:03					Sun S	5D = 16.0'			

	Moon	(10th	۸ ۱	
h	Moon	(12m	∆nr1	

Moon (12th Apr) Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Jupiter	+Aldebaran	+Capella	+Sun	+Achernar
0	114°17.6	3.8'	N27°23.4	-1.0'	59.0'	118°08.5	64°05.4	55°18.8	50°52.1	18°34.1		64°21.1	98°46.2
1	128°40.4	3.8'	27°22.4	-1.1'	59.0'	117°33.3	63°30.2	54°43.9	50°16.9	19°03.6		64°53.8	99°02.3
2	143°03.1	3.8'	27°21.3	-1.3'	59.0'	116°58.1	62°54.9	54°09.0	49°41.6	19°33.4		65°26.5	99°18.5
3	157°25.9	3.8'	27°20.0	-1.5'	59.0'	116°22.9	62°19.7	53°34.1	49°06.3	20°03.5		65°59.2	99°34.6
4	171°48.7	3.8'	27°18.4	-1.7'	59.0'	115°47.6	61°44.4	52°59.2	48°31.0	20°33.8		66°31.9	99°50.6
5	186°11.5	3.8'	27°16.7	-1.9'	59.1'	115°12.4	61°09.2	52°24.3	47°55.8	21°04.5		67°04.6	100°06.6
6	200°34.4	3.8'	$N27^{\circ}14.9$	-2.1'	59.1'	114°37.1	60°33.9	51°49.4	47° 20.5	21°35.3		67°37.3	100°22.5
7	214°57.2	3.9'	27°12.8	-2.3'	59.1'	114°01.9	59°58.6	51°14.5	46°45.2	22°06.4		68°10.0	100°38.4
8	229°20.1	3.9'	$27^{\circ}10.5$	-2.4'	59.1'	113°26.6	59°23.3	50°39.6	46°09.9	22°37.6	20°52.1	68°42.7	100°54.3
9	243°42.9	3.9'	$27^{\circ}08.1$	-2.6'	59.1'	112°51.4	58°48.0	50°04.7	45°34.6	23°09.1	21°08.1	69°15.5	101°10.0
10	258°05.9	3.9'	27°05.4	-2.8'	59.1'	112°16.1	58°12.8	49°29.8	44°59.3	23°40.7	21°24.8	69°48.2	101°25.8
11	272°28.8	4.0'	27°02.6	-3.0'	59.1'	111°40.8	57°37.5	48°54.9	44°24.0	24°12.5	21°42.3	70°20.9	101°41.4
12	286°51.8	4.0'	N 26°59.6	-3.2'	59.1'	111°05.6	57°02.2	48°20.0	43°48.7	24°44.5	22°00.4	70°53.7	101°57.1
13	301°14.8	4.0'	26°56.4	-3.4'	59.1'	110°30.3	56°26.9	47°45.1	43°13.4	25°16.5	22° 19.2	71°26.4	102°12.6
14	315°37.8	4.1'	26°53.1	-3.6'	59.1'	109°55.0	55°51.6	47° 10.2	42°38.0	25°48.8	22°38.6	71°59.2	102°28.1
15	330°00.8	4.1'	26°49.5	-3.7'	59.1'	109°19.7	55°16.2	46°35.2	42°02.7	26°21.1	22°58.6	72°31.9	102°43.5
16	344°23.9	4.1'	26°45.8	-3.9'	59.1'	108°44.4	54°40.9	46°00.3	41°27.4	26°53.6	23° 19.2	73°04.7	102°58.9
17	358°47.1	4.2'	26°41.9	-4.1'	59.1'	108°09.1	54°05.6	45°25.4	40°52.1	27°26.2	23°40.3	73°37.5	103°14.2
18	13°10.3	4.2'	N 26°37.8	-4.3'	59.1'	107°33.8	53°30.3	44°50.5	40°16.7	27°58.9	24°02.0	74°10.2	103°29.4
19	27°33.5	4.3'	26°33.5	-4.5'	59.1'	106°58.5	52°55.0	44°15.6	39°41.4	28°31.7	24°24.2	74°43.0	103°44.6
20	41°56.8	4.3'	26°29.0	-4.6'	59.1'	106°23.2	52°19.6	43°40.6	39°06.1	29°04.6	24°46.8	75°15.8	103°59.7
21	56°20.1	4.4'	26°24.4	-4.8'	59.1'	105°47.9	51°44.3	43°05.7	38°30.7	29°37.5	25°09.9	75°48.6	104°14.7
22	70°43.5	4.4'	26°19.6	-5.0'	59.1'	105°12.6	51°09.0	42°30.8	37°55.4	30°10.6	25°33.5	76°21.4	
23	85°06.9	4.5'	26°14.6	-5.2'	59.1'	104°37.3	50°33.6	41°55.9	37°20.0	30°43.7	25°57.5	76°54.2	
12 th	SD	= 16.1	Mer. pas	s. 17:05				Sur	1.5D = 16.0	0' at 0h; 15.9' a	at 23h		

h	Moon	(13 th	Apr)	

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Jupiter	+Betelgeuse	+Capella	+Aldebaran	+Sun
0	99°30.4	4.5'	N 26°09.5	-5.3'	59.1'	104°01.9	49°58.3	41°21.0	36°44.7		26°21.8	31°17.0	77°26.9
1	113°53.9	4.6'	26°04.1	-5.5'	59.1'	103°26.6	49°22.9	40°46.0	36°09.3	22°21.5	26°46.6	31°50.2	77°59.7
2	128°17.5	4.6'	25°58.6	-5.7'	59.1'	102°51.3	48°47.6	40°11.1	35°34.0	22°37.9	27°11.7	32°23.6	78°32.5
3	142°41.1	4.7'	25°52.9	-5.9'	59.2'	102°16.0	48°12.3	39°36.2	34°58.6	22°54.9	27°37.2	32°57.0	79°05.3
4	157°04.8	4.8'	25°47.0	-6.0'	59.2'	101°40.6	47°36.9	39°01.3	34°23.3	23°12.6	28°03.0	33°30.5	79°38.2
5	171°28.6	4.8'	25°41.0	-6.2'	59.2'	101°05.3	47°01.6	38°26.4	33°47.9	23°30.9	28°29.1	34°04.0	80°11.0
6	185°52.4	4.9'	N 25°34.8	-6.4'	59.2'	100°29.9	46°26.2	37°51.5	33° 12.5	23°49.8	28°55.5	34°37.6	80°43.8
7	200°16.3	5.0'	25°28.4	-6.5'	59.2'	99°54.6	45°50.8	37°16.5	32°37.2	24°09.3	29°22.2	35°11.3	81°16.6
8	214°40.3	5.0'	25°21.9	-6.7'	59.2'	99°19.3	45°15.5	36°41.6	32°01.8	24°29.3	29°49.2	35°45.0	81°49.4
9	229°04.3	5.1'	25°15.2	-6.9'	59.2'	98°43.9	44°40.1	36°06.7	31°26.4	24°49.9	30°16.4	36°18.8	82°22.2
10	243°28.4	5.2'	25°08.3	-7.0'	59.2'	98°08.6	44°04.8	35°31.8	30°51.1	25°11.0	30°43.9	36°52.5	82°55.0
11	257°52.6	5.2'	$25^{\circ}01.3$	-7.2'	59.2'	97°33.2	43°29.4	34°56.9	30° 15.7	25°32.6	31°11.7	37°26.4	83°27.9
12	272°16.9	5.3'	N 24°54.1	-7.4'	59.2'	96°57.9	42°54.0	34°22.0	29°40.3	25°54.7	31°39.6	38°00.3	84°00.7
13	286°41.2	5.4'	24°46.7	-7.5'	59.2'	96°22.5	42°18.7	33°47.1	29°05.0	26° 17.2	32°07.8	38°34.2	84°33.5
14	301°05.6	5.5'	24°39.2	-7.7'	59.2'	95°47.2	41°43.3	33°12.3	28° 29.6	26°40.2	32°36.2	39°08.1	85°06.3
15	315°30.1	5.5'	24°31.5	-7.8'	59.2'	95°11.8	41°08.0	32°37.4	27°54.2	27°03.6	33°04.8	39°42.1	85°39.2
16	329°54.6	5.6'	24°23.7	-8.0'	59.2'	94°36.4	40°32.6	32°02.5	27° 18.9	27°27.3	33°33.6	40°16.2	86°12.0
17	344°19.2	5.7'	24°15.7	-8.2'	59.2'	94°01.1	39°57.2	31°27.6	26°43.5	27°51.5	34°02.6	40°50.2	86°44.8
18	358°43.9	5.8'	N 24°07.5	-8.3'	59.2'	93°25.7	39°21.9	30°52.8	26°08.1	28° 16.0	34°31.8	41°24.3	87° 17.7
19	13°08.7	5.9'	23°59.2	-8.5'	59.2'	92°50.4	38°46.5	30°17.9	25°32.8	28°40.9	35°01.1	41°58.5	87°50.5
20	27°33.6	5.9'	23°50.8	-8.6'	59.2'	92°15.0	38°11.1	29°43.0	24° 57.4	29°06.1	35°30.6	42°32.6	88°23.3
21	41°58.5	6.0'	23°42.1	-8.8'	59.2'	91°39.6	37°35.8	29°08.2	24°22.0	29°31.6	36°00.2	43°06.8	88°56.2
22	56°23.6	6.1'	23°33.4	-8.9'	59.2'	91°04.3	37°00.4	28°33.4	23°46.7	29°57.4	36°30.0	43°41.0	89°29.0
23	70°48.7	6.2'	23°24.5	-9.1'	59.2'	90°28.9	36°25.0	27°58.5	23°11.3	30°23.5	36°59.9	44°15.2	90°01.8
13 th	SD	= 16.1	Mer. pass	s. 18:05					Sun	SD = 15.9'			

Moon (14th Apr)

h

Wed	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Jupiter	+Pollux	+Capella	+Aldebaran	+Sun
0	85°13.9	6.3'	N23° 15.4	-9.2'	59.2'	89°53.6	35°49.7	27°23.7	22°36.0		37°30.0	44°49.5	90°34.7
1	99°39.1	6.4'	23°06.2	-9.4'	59.2'	89°18.2	35°14.3	26°48.9	22°00.6		38°00.2	45°23.8	91°07.5
2	114°04.5	6.5'	22°56.8	-9.5'	59.2'	88°42.8	34°39.0	26°14.1	21°25.2		38°30.5	45°58.1	91°40.3
3	128°30.0	6.5'	22°47.3	-9.6'	59.2'	88°07.5	34°03.6	25°39.3	20°49.9		39°01.0	46°32.4	92°13.2
4	142°55.5	6.6'	22°37.7	-9.8'	59.2'	87°32.1	33°28.2	25°04.5	20°14.5		39°31.5	47°06.7	92°46.0
5	157°21.1	6.7'	22°27.9	-9.9'	59.2'	86°56.8	32°52.9	24°29.8	19°39.2		40°02.2	47°41.1	93°18.8
6	171°46.9	6.8'	$N22^{\circ}18.0$	-10.1'	59.2'	86°21.4	32°17.5	23°55.0	19°03.8		40°33.0	48° 15.5	93°51.7
7	186°12.7	6.9'	22°08.0	-10.2'	59.2'	85°46.0	31°42.2	23°20.3	18°28.5		41°03.8	48°49.9	94°24.5
8	200°38.6	7.0'	21°57.8	-10.3'	59.2'	85°10.7	31°06.8	22°45.6	17°53.1		41°34.8	49°24.3	94°57.3
9	215°04.5	7.1'	21°47.4	-10.5'	59.2'	84°35.3	30°31.5	22°10.9	17°17.8		42°05.9	49°58.7	95°30.2
10	229°30.6	7.2'	21°37.0	-10.6'	59.2'	83°59.9	29°56.1	21°36.2	16°42.5	8°25.0	42°37.1	50°33.2	96°03.0
11	243°56.8	7.2'	21°26.4	-10.7'	59.2'	83°24.6	29°20.8	21°01.5	16°07.2	8°55.0	43°08.3	51°07.7	96°35.8
12	258°23.0	7.3'	$N21^{\circ}15.7$	-10.8'	59.2'	82°49.2	28°45.4	20°26.9	15°31.8	9°25.7	43°39.6	51°42.1	97°08.6
13	272°49.3	7.4'	21°04.8	-11.0'	59.2'	82°13.9	28°10.1	19°52.2	14°56.5	9°56.9	44°11.1	52° 16.6	97°41.5
14	287°15.8	7.5'	20°53.9	-11.1'	59.2'	81°38.5	27°34.8	19°17.6	14°21.2	10°28.6	44°42.6	52°51.1	98°14.3
15	301°42.3	7.6'	20°42.8	-11.2'	59.2'	81°03.2	26°59.4	18°43.1	13°45.9	11°00.6	45°14.1	53°25.6	98°47.1
16	316°08.9	7.7'	20°31.5	-11.3'	59.2'	80°27.8	26°24.1	18°08.5	13°10.6	11°33.0	45°45.8	54°00.2	99°19.9
17	330°35.6	7.8'	20°20.2	-11.5'	59.2'	79°52.5	25°48.8	17°34.0	12°35.3	12°05.6	46°17.5	54°34.7	99°52.7
18	345°02.4	7.9'	N 20°08.7	-11.6'	59.2'	79°17.1	25°13.5	16°59.6	12°00.1	12°38.4	46°49.2	55°09.3	100°25.6
19	359°29.2	8.0'	$19^{\circ}57.1$	-11.7'	59.2'	78°41.8	24°38.2	16°25.1	11°24.8	13°11.5	47°21.1	55°43.8	100°58.4
20	13°56.2	8.1'	19°45.4	-11.8'	59.2'	78°06.4	24°02.9	15°50.8	10°49.6	13°44.8	47°53.0	56° 18.4	101°31.2
21	28°23.3	8.1'	19°33.6	-11.9'	59.2'	77°31.1	23°27.6	15°16.4	10°14.3	14°18.2	48°24.9	56°53.0	102°04.0
22	42°50.4	8.2'	19°21.7	-12.0'	59.2'	76°55.8	22°52.3	14°42.1	9°39.1	14°51.8	48°57.0	57°27.5	102°36.8
23	57°17.6	8.3'	19°09.7	-12.2'	59.1'	76°20.4	22°17.0	14°07.9	9°03.9	15°25.5	49°29.0	58°02.1	103°09.6
14 th	SD	= 16.1	.' Mer. pas	ss. 19:02					Sun	SD = 15.9'			

I_	Moon (15 th Apr)	Lunar Distance (chiects
n	MOOD LIS ADEL	I linar i listance i oniects

Lunar Distance ((objects with largest hourly LD delta)	

		IVIOOI	$11 (12) \ \Box$	<i>)</i>			Edital Distance (Objects with largest flourly ED de					LD delta)	
Thu	GHA	ν	Dec	d	HP	-Antares	-Spica	-Regulus	±Jupiter	+Pollux	+Capella	+Aldebaran	+Sun
0	71°45.0	8.4'	N 18°57.5	-12.3'	59.1'		75°45.1	21°41.7	8°28.8	15°59.3	50°01.2	58°36.7	103°42.4
1	86°12.4	8.5'	18°45.2	-12.4'	59.1'		75°09.8	21°06.4	7°53.7	16°33.2	50°33.3	59°11.3	104°15.2
2	100°39.9	8.6'	18°32.9	-12.5'	59.1'		74°34.4	20°31.2	7° 18.6	17°07.2	51°05.6	59°46.0	104°48.0
3	115°07.5	8.7'	18°20.4	-12.6'	59.1'	119°49.4	73°59.1	19°55.9	6°43.5	17°41.3	51°37.8	60°20.6	105°20.8
4	129°35.1	8.8'	18°07.8	-12.7'	59.1'	119°14.1	73°23.8	19°20.6	6°08.5	18°15.5	52°10.1	60°55.2	105°53.6
5	144°02.9	8.8'	$17^{\circ}55.1$	-12.8'	59.1'	118°38.7	72°48.5	18°45.4	5°33.6	18°49.7	52°42.5	61°29.8	106°26.3
6	158°30.7	8.9'	N17°42.3	-12.9'	59.1'	118°03.4	72°13.2	18°10.2	4°58.8	19°24.0	53°14.9	62°04.5	106°59.1
7	172°58.7	9.0'	17°29.5	-13.0'	59.1'	117°28.0	71°37.9	17°35.0	4°24.2	19°58.4	53°47.3	62°39.1	107°31.9
8	187°26.7	9.1'	$17^{\circ}16.5$	-13.1'	59.1'	116°52.7	71°02.6	16°59.8	3°49.8	20°32.8	54°19.8	63°13.8	108°04.7
9	201°54.8	9.2'	17°03.4	-13.2'	59.1'	116°17.3	70°27.2	16°24.6	3° 15.6	21°07.2	54°52.3	63°48.4	108°37.4
10	216°22.9	9.3'	$16^{\circ}50.2$	-13.3'	59.1'	115°42.0	69°52.0	15°49.4	2°42.1	21°41.7	55°24.9	64°23.1	109°10.2
11	230°51.2	9.3'	16°37.0	-13.4'	59.1'	115°06.7	69°16.7	15°14.2	2°09.4	22°16.3	55°57.5	64°57.7	109°42.9
12	245°19.6	9.4'	$N16^{\circ}23.6$	-13.4'	59.1'	114°31.3	68°41.4	14°39.1		22°50.8	56°30.1	65°32.4	110°15.7
13	259°48.0	9.5'	$16^{\circ}10.2$	-13.5'	59.1'	113°56.0	68°06.1	14°04.0		23°25.4	57°02.7	66°07.0	110°48.4
14	274°16.5	9.6'	15°56.6	-13.6'	59.1'	113°20.7	67°30.8	13°28.9		24°00.1	57°35.4	66°41.7	111°21.2
15	288°45.1	9.7'	15°43.0	-13.7'	59.1'	112°45.4	66°55.5	12°53.8		24°34.7	58°08.1	67°16.3	111°53.9
16	303°13.8	9.8'	15°29.3	-13.8'	59.1'	112°10.1	66°20.3	12°18.7		25°09.4	58°40.8	67°51.0	112°26.6
17	317°42.5	9.8'	$15^{\circ}15.5$	-13.9'	59.1'	111°34.7	65°45.0	11°43.7		25°44.1	59°13.6	68°25.7	112°59.4
18	332°11.4	9.9'	N15°01.7	-13.9'	59.1'	110°59.4	65°09.7	11°08.7		26°18.8	59°46.4	69°00.3	113°32.1
19	346°40.3	10.0'	14°47.7	-14.0'	59.1'	110°24.1	64°34.5	10°33.8		26°53.5	60°19.2	69°35.0	114°04.8
20	1°09.3	10.1'	14°33.7	-14.1'	59.1'	109°48.9	63°59.2	9°58.9	3°27.9	27°28.3	60°52.0	70°09.7	114°37.5
21	15°38.3	10.1'	14°19.6	-14.2'	59.0'	109°13.6	63°24.0	9°24.0	4°02.1	28°03.1	61°24.9	70°44.3	115°10.2
22	30°07.5	10.2'	14°05.4	-14.3'	59.0'	108°38.3	62°48.7	8°49.2	4°36.5	28°37.9	61°57.8	71°19.0	115°42.9
23	44°36.7	10.3'	13°51.1	-14.3'	59.0'	108°03.0	62°13.5	8°14.5	5°11.2	29°12.7	62°30.7	71°53.6	116°15.6
15 th	SD	= 16.1'	Mer. pass	s. 19:55					Sun S	D = 15.9'			

Moon (16th Apr) Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Spica	±Regulus	+Jupiter	+Mars	+Pollux	+Aldebaran
0	59°06.0	10.4'	N13°36.8	-14.4'	59.0'	107°27.7	95°03.3	61°38.3	7°39.9	5°45.9		29°47.5	72°28.3
1	73°35.3	10.4'	13°22.4	-14.5'	59.0'	106°52.5	94°35.4	61°03.1	7°05.4	6°20.7		30°22.3	73°03.0
2	88°04.7	10.5'	13°08.0	-14.5'	59.0'	106°17.2	94°07.5	60°27.9	6°31.0	6°55.6		30°57.1	73°37.6
3	102°34.2	10.6'	12°53.4	-14.6'	59.0'	105°42.0	93°39.6	59°52.7	5°56.8	7°30.6		31°32.0	74°12.3
4	117°03.8	10.6'	12°38.8	-14.7'	59.0'	105°06.7	93°11.7	59° 17.5	5°22.9	8°05.6		32°06.8	74°46.9
5	131°33.5	10.7'	12°24.2	-14.7'	59.0'	104°31.5	92°43.9	58°42.3	4°49.3	8°40.6		32°41.7	75°21.6
6	146°03.2	10.8'	$N12^{\circ}09.4$	-14.8'	59.0'	103°56.2	92°16.0	58°07.1	4°16.1	9°15.6		33°16.5	75°56.2
7	160°32.9	10.8'	11°54.6	-14.8'	59.0'	103°21.0	91°48.1	57°31.9	3°43.5	9°50.6		33°51.4	76°30.9
8	175°02.8	10.9'	11°39.8	-14.9'	59.0'	102°45.8	91°20.2	56° 56.7	3°11.9	10°25.7		34°26.2	77°05.5
9	189°32.7	11.0'	11°24.9	-15.0'	59.0'	102°10.6	90°52.3	56°21.6		11°00.7	6°39.6	35°01.1	77°40.1
10	204°02.6	11.0'	$11^{\circ}09.9$	-15.0'	59.0'	101°35.4	90°24.4	55°46.4		11°35.8	7°11.0	35°36.0	78°14.7
11	218°32.7	11.1'	10°54.9	-15.1'	58.9'	101°00.2	89°56.6	55°11.3		12°10.8	7°42.8	36°10.8	78°49.4
12	233°02.8	11.2'	N10°39.9	-15.1'	58.9'	100°25.0	89°28.7	54°36.2		12°45.9	8°15.1	36°45.7	79°24.0
13	247°32.9	11.2'	10°24.7	-15.2'	58.9'	99°49.8	89°00.8	54°01.0		13°21.0	8°47.6	37°20.6	79°58.6
14	262°03.1	11.3'	10°09.6	-15.2'	58.9'	99°14.6	88°33.0	53°25.9		13°56.0	9°20.4	37°55.5	80°33.2
15	276°33.4	11.3'	09°54.3	-15.3'	58.9'	98°39.5	88°05.1	52°50.8		14°31.1	9°53.4	38°30.3	81°07.8
16	291°03.7	11.4'	09°39.1	-15.3'	58.9'	98°04.3	87°37.3	52°15.7		15°06.2	10°26.6	39°05.2	81°42.4
17	305°34.1	11.4'	09°23.8	-15.4'	58.9'	97°29.2	87°09.5	51°40.6		15°41.2	11°00.0	39°40.1	82°17.0
18	320°04.6	11.5'	N09°08.4	-15.4'	58.9'	96°54.0	86°41.7	51°05.5		16°16.3	11°33.4	40°14.9	82°51.5
19	334°35.1	11.5'	08°53.0	-15.4'	58.9'	96°18.9	86°13.9	50° 30.5		16°51.3	12°07.0	40°49.8	83°26.1
20	349°05.6	11.6'	08°37.6	-15.5'	58.9'	95°43.8	85°46.1	49°55.4	4°28.9	17°26.3	12°40.7	41°24.7	84°00.7
21	3°36.2	11.6'	08°22.1	-15.5'	58.9'	95°08.7	85°18.4	49° 20.3	5°02.2	18°01.4	13°14.4	41°59.5	84°35.2
22	18°06.8	11.7'	08°06.6	-15.6'	58.8'	94°33.6	84°50.6	48°45.3	5°35.8	18°36.4	13°48.2	42°34.4	85°09.8
23	32°37.5	11.7'	07°51.0	-15.6'	58.8'	93°58.5	84°22.9	48°10.3	6°09.7	19°11.4	14°22.1	43°09.2	85°44.3
16 th	SD	= 16.1	' Mer. pas	s. 20:45									

Moon (17 th Apr)	Lunar Distance (objects with largest hourly LD delta)
IVIOUII (II ADII)	Euliai Distance (Oblects With largest nount ED delta)

h		Мооі	ո (17 th Aր	or)			Lunar Distance (objects with largest hourly LD delta)						
Sat	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Spica	+Regulus	+Jupiter	+Pollux	+Aldebaran
0	47°08.3	11.8'	N 07°35.4	-15.6'	58.8'	93°23.4	83°55.2	79°58.8	47°35.3	6°43.8	19°46.4	43°44.1	86°18.9
1	61°39.1	11.8'	$07^{\circ}19.8$	-15.7'	58.8'	92°48.3	83°27.6	79°31.8	47°00.3	7° 18.1	20°21.4	44°18.9	86°53.4
2	76°09.9	11.9'	07°04.2	-15.7'	58.8'	92°13.3	82°59.9	79°04.9	46°25.3	7°52.4	20°56.4	44°53.8	87°27.9
3	90°40.8	11.9'	06°48.5	-15.7'	58.8'	91°38.2	82°32.3	78°38.1	45°50.3	8°26.8	21°31.4	45°28.6	88°02.4
4	105°11.7	12.0'	06°32.8	-15.7'	58.8'	91°03.2	82°04.7	78°11.3	45°15.3	9°01.3	22°06.4	46°03.4	88°36.9
5	119°42.7	12.0'	$06^{\circ}17.0$	-15.8'	58.8'	90°28.2	81°37.1	77°44.5	44°40.3	9°35.9	22°41.4	46°38.2	89°11.4
6	134°13.7	12.1'	N 06°01.3	-15.8'	58.8'	89°53.1	81°09.6	77° 17.8	44°05.4	10° 10.5	23°16.3	47°13.1	89°45.8
7	148°44.8	12.1'	05°45.5	-15.8'	58.7'	89°18.1	80°42.1	76°51.1	43°30.5	10°45.1	23°51.3	47°47.9	90°20.3
8	163°15.9	12.1'	05°29.6	-15.8'	58.7'	88°43.1	80°14.6	76°24.4	42°55.5	11° 19.8	24°26.2	48°22.7	90°54.7
9	177°47.0	12.2'	$05^{\circ}13.8$	-15.9'	58.7'	88°08.2	79°47.1	75°57.8	42°20.6	11°54.5	25°01.1	48°57.4	91°29.2
10	192°18.2	12.2'	04°58.0	-15.9'	58.7'	87°33.2	79°19.7	75°31.3	41°45.7	12°29.2	25°36.0	49°32.2	92°03.6
11	206°49.4	12.2'	04°42.1	-15.9'	58.7'	86°58.2	78°52.4	75°04.8	41°10.9	13°03.9	26°10.9	50°07.0	92°38.0
12	221°20.6	12.3'	N04°26.2	-15.9'	58.7'	86°23.3	78°25.0	74°38.3	40°36.0	13°38.6	26°45.8	50°41.8	93°12.4
13	235°51.9	12.3'	04°10.3	-15.9'	58.7'	85°48.3	77°57.7	74°11.9	40°01.1	14° 13.3	27°20.7	51°16.5	93°46.8
14	250°23.2	12.3'	03°54.4	-15.9'	58.7'	85°13.4	77°30.5	73°45.6	39°26.3	14°48.0	27°55.6	51°51.2	94°21.2
15	264°54.5	12.4'	03°38.4	-15.9'	58.6'	84°38.5	77°03.2	73° 19.3	38°51.5	15°22.8	28°30.4	52°26.0	94°55.5
16	279°25.9	12.4'	03°22.5	-16.0'	58.6'	84°03.6	76°36.1	72°53.0	38°16.7	15° 57.5	29°05.3	53°00.7	95°29.9
17	293°57.3	12.4'	03°06.5	-16.0'	58.6'	83°28.7	76°08.9	72°26.9	37°41.9	16°32.2	29°40.1	53°35.4	96°04.2
18	308°28.7	12.4'	N02°50.5	-16.0'	58.6'	82°53.8	75°41.8	72°00.7	37°07.1	17°07.0	30°14.9	54°10.1	96°38.5
19	323°00.2	12.5'	02°34.6	-16.0'	58.6'	82°19.0	75°14.8	71°34.7	36°32.3	17°41.7	30°49.7	54°44.8	97°12.8
20	337°31.6	12.5'	$02^{\circ}18.6$	-16.0'	58.6'	81°44.1	74°47.8	71°08.7	35°57.6	18° 16.4	31°24.5	55°19.5	97°47.1
21	352°03.1	12.5'	02°02.6	-16.0'	58.6'	81°09.3	74°20.8	70°42.7	35°22.9	18°51.1	31°59.3	55°54.1	98°21.4
22	6°34.7	12.5'	01°46.6	-16.0'	58.5'	80°34.5	73°54.0	70°16.9	34°48.2	19°25.8	32°34.1	56°28.8	98°55.7
23	21°06.2	12.6'	01°30.6	-16.0'	58.5'	79°59.7	73°27.1	69°51.1	$34^{\circ}13.5$	20°00.5	33°08.8	57°03.4	99°29.9
17 th	SD	= 16.0'	Mer. pas	s. 21:33									

h Moon (18 th Apr)	Lunar Distance (objects with largest hourly LD delta)
-------------------------------	---

Sun	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Jupiter	+Pollux	+Aldebaran
0	35°37.8	12.6'	N 01°14.6	-16.0'	58.5'		79°24.9	73°00.3	33°38.8	20°35.2	33°43.5	57°38.1	100°04.1
1	50°09.3	12.6'	00°58.6	-16.0'	58.5'		78°50.1	72°33.6	33°04.1	21°09.9	34° 18.3	58°12.7	100°38.3
2	64°40.9	12.6'	00°42.7	-16.0'	58.5'		78°15.4	72°06.9	32°29.5	21°44.5	34°53.0	58°47.3	101°12.5
3	79°12.6	12.6'	00°26.7	-16.0'	58.5'		77°40.7	71°40.3	31°54.9	22°19.2	35°27.6	59°21.9	101°46.7
4	93°44.2	12.6'	N 00°10.7	-16.0'	58.5'		77°05.9	71°13.7	31°20.3	22°53.8	36°02.3	59°56.5	102°20.9
5	108°15.8	12.7'	S 00°05.3	-16.0'	58.4'		76°31.2	70°47.2	30°45.7	23°28.4	36°37.0	60°31.0	102°55.0
6	122°47.5	12.7'	S 00°21.2	-16.0'	58.4'		75°56.5	70°20.8	30°11.2	24°03.1	37°11.6	61°05.6	103°29.1
7	137°19.2	12.7'	00°37.2	-15.9'	58.4'		75°21.8	69°54.5	29°36.6	24°37.7	37°46.2	61°40.1	104°03.2
8	151°50.9	12.7'	00°53.1	-15.9'	58.4'		74°47.2	69°28.2	29°02.1	25°12.3	38° 20.8	62°14.6	104°37.3
9	166°22.6	12.7'	$01^{\circ}09.1$	-15.9'	58.4'		74°12.5	69°01.9	28°27.6	25°46.8	38°55.4	62°49.1	105°11.4
10	180°54.3	12.7'	01°25.0	-15.9'	58.4'		73°37.9	68°35.8	27°53.1	26°21.4	39°30.0	63°23.6	105°45.4
11	195°26.0	12.7'	01°40.9	-15.9'	58.3'		73°03.3	68°09.7	27°18.7	26°55.9	40°04.6	63°58.1	106° 19.4
12	209°57.7	12.7'	S 01°56.8	-15.9'	58.3'		72°28.7	67°43.7	26°44.3	27°30.5	40°39.1	64°32.6	106°53.4
13	224°29.4	12.7'	02°12.6	-15.8'	58.3'		71°54.1	67°17.7	26°09.9	28°05.0	41°13.6	65°07.0	107°27.4
14	239°01.1	12.7'	02°28.5	-15.8'	58.3'		71°19.6	66°51.9	25°35.5	28°39.5	41°48.1	65°41.4	108°01.4
15	253°32.9	12.7'	02°44.3	-15.8'	58.3'		70°45.0	66°26.1	25°01.1	29°14.0	42°22.6	66°15.8	108°35.3
16	268°04.6	12.7'	$03^{\circ}00.1$	-15.8'	58.3'	119°39.5	70°10.5	66°00.4	24°26.8	29°48.5	42°57.1	66°50.2	109°09.2
17	282°36.3	12.7'	03°15.9	-15.8'	58.2'	119°11.5	69°36.0	65°34.8	23°52.5	30°22.9	43°31.5	67°24.6	109°43.1
18	297°08.1	12.7'	S 03°31.6	-15.7'	58.2'	118°43.5	69°01.5	65°09.2	23°18.2	30°57.4	44°06.0	67°59.0	110° 17.0
19	311°39.8	12.7'	03°47.4	-15.7'	58.2'	118°15.4	68°27.1	64°43.8	22°44.0	31°31.8	44°40.4	68°33.3	110°50.9
20	326°11.5	12.7'	04°03.1	-15.7'	58.2'	117°47.2	67°52.6	64°18.4	22°09.8	32°06.2	45°14.8	69°07.6	111°24.7
21	340°43.3	12.7'	04°18.8	-15.6'	58.2'	117°19.0	67°18.2	63°53.1	21°35.6	32°40.6	45° 49.2	69°41.9	111°58.5
22	355°15.0	12.7'	04°34.4	-15.6'	58.2'	116°50.7	66°43.8	63°28.0	21°01.5	33°14.9	46°23.5	70°16.2	112°32.3
23	9°46.7	12.7'	04°50.0	-15.6'	58.1'	116°22.5	66°09.4	63°02.9	20°27.3	33°49.3	46°57.8	70°50.5	113°06.0
18 th	SD	= 16.0'	Mer. pas	s. 22:20									

Moon (19th Apr) Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Mars	+Jupiter	+Pollux
0	24°18.4	12.7'	S 05°05.6	-15.6'	58.1'	115°54.1	65°35.0	62°37.9	19°53.3	34°23.6	42°10.1	47°32.2	71°24.7
1	38°50.2	12.7'	$05^{\circ}21.2$	-15.5'	58.1'	115°25.8	65°00.7	62°13.0	19° 19.2	34°57.9	42°43.9	48°06.5	71°58.9
2	53°21.9	12.7'	05°36.7	-15.5'	58.1'	114°57.4	64°26.3	61°48.2	18° 45.2	35°32.2	43° 17.7	48°40.7	72°33.2
3	67°53.5	12.7'	05°52.2	-15.4'	58.1'	114°28.9	63°52.0	61°23.6	18° 11.2	36°06.5	43°51.4	49°15.0	73°07.3
4	82°25.2	12.7'	06°07.6	-15.4'	58.0'	114°00.5	63°17.7	60°59.0	17°37.3	36°40.8	44°25.1	49°49.2	73°41.5
5	96°56.9	12.7'	06°23.0	-15.4'	58.0'	113°32.0	62°43.5	60°34.5	17°03.4	37°15.0	44°58.8	50°23.4	74°15.7
6	111°28.6	12.6'	S 06°38.4	-15.3'	58.0'	113°03.5	62°09.2	60° 10.2	16°29.6	37°49.2	45°32.5	50°57.6	74°49.8
7	126°00.2	12.6'	06°53.7	-15.3'	58.0'	112°34.9	61°35.0	59°45.9	15°55.8	38°23.4	46°06.1	51°31.8	75°23.9
8	140°31.8	12.6'	07°09.0	-15.2'	58.0'	112°06.3	61°00.8	59°21.8	15°22.1	38°57.6	46°39.8	52°05.9	75°58.0
9	155°03.4	12.6'	07°24.2	-15.2'	57.9'	111°37.7	60°26.6	58° 57.8	14°48.4	39°31.7	47° 13.4	52°40.1	76°32.0
10	169°35.0	12.6'	07°39.4	-15.1'	57.9'	111°09.1	59°52.5	58° 33.9	14°14.8	40°05.8	47°47.0	53°14.2	77°06.1
11	184°06.6	12.6'	07°54.5	-15.1'	57.9'	110°40.5	59°18.3	58° 10.1	13°41.2	40°40.0	48° 20.5	53°48.2	77°40.1
12	198°38.2	12.5'	S 08°09.6	-15.0'	57.9'	110°11.8	58°44.2	57°46.5	13°07.8	41°14.0	48°54.1	54°22.3	78°14.1
13	213°09.7	12.5'	08°24.7	-15.0'	57.9'	109°43.2	58°10.1	57°22.9	12°34.4	41°48.1	49°27.6	54°56.3	78°48.1
14	227°41.3	12.5'	08°39.6	-14.9'	57.8'	109°14.5	57°36.1	56° 59.5	12°01.0	42°22.1	50°01.1	55°30.4	79°22.1
15	242°12.8	12.5'	08°54.6	-14.9'	57.8'	108°45.8	57°02.0	56°36.3	11°27.8	42°56.2	50°34.6	56°04.3	79°56.0
16	256°44.3	12.5'	09°09.5	-14.8'	57.8'	108°17.0	56°28.0	56° 13.2	10°54.7	43°30.2	51°08.1	56°38.3	80°29.9
17	271°15.7	12.4'	09°24.3	-14.8'	57.8'	107°48.3	55°54.0	55°50.2	10°21.7	44°04.1	51°41.5	57°12.3	81°03.8
18	285°47.2	12.4'	S 09°39.1	-14.7'	57.8'	107°19.5	55°20.0	55°27.3	9°48.9	44°38.1	52°14.9	57°46.2	81°37.7
19	300°18.6	12.4'	09°53.8	-14.7'	57.7'	106°50.8	54°46.0	55°04.6	9°16.2	45°12.0	52°48.3	58°20.1	82°11.5
20	314°50.0	12.4'	$10^{\circ}08.5$	-14.6'	57.7'	106°22.0	54°12.1	54°42.1	8°43.6	45°45.9	53°21.7	58°53.9	82°45.3
21	329°21.3	12.3'	10°23.1	-14.5'	57.7'	105°53.3	53°38.2	54° 19.7	8°11.3	46°19.8	53°55.0	59°27.8	83°19.1
22	343°52.7	12.3'	10°37.6	-14.5'	57.7'	105°24.5	53°04.3	53° 57.4	7°39.3	46°53.7	54°28.3	60°01.6	83°52.9
23	358°24.0	12.3'	$10^{\circ}52.1$	-14.4'	57.7'	104°55.7	52°30.5	53°35.3	7°07.5	47°27.5	55°01.6	60°35.4	84°26.6
19 th	SD	= 15.9	Mer. pas	s. 23:07									

h		Moo	n (20 th A _l	pr)		L	unar Dist	ance (ob	jects wit	h largest	hourly L	D delta)	
Tue	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Antares	±Spica	+Regulus	+Mars	+Jupiter	+Pollux
0	12°55.3	12.3'	S 11°06.5	-14.4'	57.6'		104°26.9	51°56.6	6°36.1	48°01.3	55°34.9	61°09.2	85°00.4
1	27°26.5	12.2'	11°20.9	-14.3'	57.6'		103°58.1	51°22.8	6°05.2	48°35.1	56°08.1	61°42.9	85°34.1
2	41°57.8	12.2'	11°35.2	-14.2'	57.6'		103°29.3	50°49.0	5°34.8	49°08.9	56°41.3	62°16.7	86°07.7
3	56°29.0	12.2'	11°49.4	-14.2'	57.6'		103°00.5	50°15.3	5°05.2	49°42.6	57°14.5	62°50.4	86°41.4
4	71°00.1	12.1'	12°03.5	-14.1'	57.5'		102°31.7	49°41.6	İ	50°16.3	57°47.7	63°24.0	87°15.0
5	85°31.3	12.1'	$12^{\circ}17.6$	-14.0'	57.5'		102°03.0	49°07.9		50°50.0	58°20.8	63°57.7	87°48.6
6	100°02.4	12.1'	S 12°31.6	-13.9'	57.5'		101°34.2	48°34.2		51°23.7	58°54.0	64°31.3	88°22.2
7	114°33.4	12.0'	12°45.6	-13.9'	57.5'		101°05.4	48°00.5	İ	51°57.3	59°27.1	65°04.9	88°55.7
8	129°04.5	12.0'	12°59.4	-13.8'	57.5'		100°36.6	47°26.9		52°30.9	60°00.1	65°38.5	89°29.2
9	143°35.5	12.0'	13° 13.2	-13.7'	57.4'		100°07.8	46°53.3	İ	53°04.5	60°33.2	66°12.0	90°02.7
10	158°06.4	11.9'	13°26.9	-13.6'	57.4'		99°39.1	46°19.7		53°38.1	61°06.2	66°45.5	90°36.2
11	172°37.4	11.9'	13°40.6	-13.6'	57.4'		99°10.3	45°46.1		54°11.6	61°39.2	67°19.0	91°09.7
12	187°08.3	11.9'	S 13°54.1	-13.5'	57.4'		98°41.6	45°12.6		54°45.1	62°12.1	67°52.5	91°43.1
13	201°39.1	11.8'	14°07.6	-13.4'	57.3'		98°12.8	44°39.1		55° 18.6	62°45.0	68°25.9	92°16.5
14	216°09.9	11.8'	14°21.0	-13.3'	57.3'		97°44.1	44°05.7		55°52.0	63°18.0	68°59.3	92°49.8
15	230°40.7	11.7'	14°34.4	-13.2'	57.3'		97°15.4	43°32.2		56° 25.5	63°50.8	69°32.7	93°23.2
16	245°11.5	11.7'	14°47.6	-13.2'	57.3'		96°46.7	42°58.8		56°58.9	64°23.7	70°06.0	93°56.5
17	259°42.2	11.7'	15°00.8	-13.1'	57.2'		96°18.0	42°25.4		57° 32.2	64°56.5	70°39.4	94°29.8
18	274°12.8	11.6'	S 15° 13.8	-13.0'	57.2'		95°49.3	41°52.0		58° 05.6	65°29.3	71°12.7	95°03.0
19	288°43.5	11.6'	15°26.8	-12.9'	57.2'		95°20.6	41°18.7		58° 38.9	66°02.1	71°45.9	95°36.2
20	303°14.1	11.5'	15°39.7	-12.8'	57.2'		94°52.0	40°45.4	5°41.9	59° 12.2	66°34.8	72°19.2	96°09.4
21	317°44.6	11.5'	$15^{\circ}52.5$	-12.7'	57.2'	119°42.2	94°23.3	40°12.1	6°12.0	59° 45.5	67°07.5	72°52.4	96°42.6
22	332°15.1	11.5'	16°05.3	-12.6'	57.1'	119°12.4	93°54.7	39°38.9	6°42.5	60° 18.7	67°40.2	73°25.6	97°15.7
23	346°45.6	11.4'	16° 17.9	-12.5'	57.1'	118°42.5	93°26.1	39°05.6	7°13.4	60°51.9	68°12.8	73°58.7	97°48.9
20 th	SD	= 15.7	Mer. pas	s. 23:55							-		

h	Moon (21st Apr)	Lunar	Distance	(objects)	₁/i+b	largest	hourly	חו	401+1	٦)
r	I IVIOON 1/1 ²² ADri I	ı iinar	LUSTANCE	LODIECTS	with	largest	nouriv	111	neit?	a ı

Wed	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Antares	+Regulus	+Mars	+Jupiter	+Pollux
0	1°16.0	11.4'	S 16°30.4	-12.4'	57.1'	118° 12.6	92°57.5	45°22.9	38°32.5	61°25.1	68° 45.5	74°31.9	98°21.9
1	15°46.4	11.3'	16°42.9	-12.4'	57.1'	117° 42.7	92°29.0	45°06.0	37°59.3	61°58.2	69° 18.1	75°05.0	98°55.0
2	30°16.7	11.3'	16°55.2	-12.3'	57.0'	117° 12.8	92°00.4	44°49.4	37°26.1	62°31.4	69°50.6	75°38.0	99°28.0
3	44°47.0	11.3'	$17^{\circ}07.5$	-12.2'	57.0'	116°42.9	91°31.9	44°33.0	36°53.0	63°04.5	70°23.2	76°11.1	100°01.0
4	59°17.3	11.2'	$17^{\circ}19.7$	-12.1'	57.0'	116° 13.0	91°03.4	44°16.9	36°20.0	63°37.5	70°55.7	76°44.1	100°34.0
5	73°47.5	11.2'	$17^{\circ}31.7$	-12.0'	57.0'	115°43.1	90°35.0	44°01.1	35°46.9	64°10.6	71°28.2	77° 17.1	101°06.9
6	88°17.7	11.1'	S 17°43.7	-11.9'	56.9'	115°13.2	90°06.5	43°45.5	35°13.9	64°43.6	72°00.6	77°50.0	101°39.9
7	102°47.8	11.1'	17°55.6	-11.8'	56.9'	114°43.3	89°38.1	43°30.2	34°40.9	65° 16.5	72°33.0	78° 23.0	102°12.7
8	117°17.9	11.0'	18°07.3	-11.7'	56.9'	114° 13.3	89°09.7	43°15.2	34°07.9	65°49.5	73°05.4	78°55.9	102°45.6
9	131°47.9	11.0'	$18^{\circ}19.0$	-11.6'	56.9'	113°43.4	88°41.3		33°35.0	66°22.4	73°37.8	79°28.7	103°18.4
10	146°17.9	11.0'	18°30.6	-11.5'	56.8'	113°13.5	88°13.0		33°02.1	66°55.3	74°10.1	80°01.6	103°51.2
11	160°47.9	10.9'	18°42.0	-11.4'	56.8'	112°43.6	87°44.7		32°29.2	67°28.2	74°42.4	80°34.4	104°24.0
12	175°17.8	10.9'	S 18°53.4	-11.3'	56.8'	112°13.7	87°16.4		31°56.3	68°01.0	75° 14.7	81°07.2	104°56.7
13	189°47.6	10.8'	19°04.7	-11.1'	56.8'	111°43.8	86°48.1		31°23.5	68°33.8	75°46.9	81°39.9	105°29.4
14	204°17.4	10.8'	19°15.8	-11.0'	56.7'	111°13.9	86° 19.9		30°50.7	69°06.6	76° 19.2	82° 12.6	106°02.1
15	218°47.2	10.7'	19°26.9	-10.9'	56.7'	110°44.0	85°51.7		30°18.0	69°39.3	76°51.3	82°45.3	106°34.7
16	233°16.9	10.7'	19°37.8	-10.8'	56.7'	110°14.2	85°23.5		29°45.2	70°12.1	77°23.5	83°18.0	107°07.4
17	247°46.6	10.6'	19°48.6	-10.7'	56.7'	109°44.3	84°55.4		29°12.5	70°44.7	77°55.6	83°50.6	107°39.9
18	262°16.3	10.6'	S 19°59.3	-10.6'	56.6'	109°14.4	84°27.3		28°39.9	71° 17.4	78° 27.7	84°23.2	108°12.5
19	276°45.9	10.6'	20°09.9	-10.5'	56.6'	108°44.6	83°59.2		28°07.2	71°50.0	78° 59.8	84°55.8	108°45.0
20	291°15.4	10.5'	20°20.4	-10.4'	56.6'	108°14.8	83°31.2		27°34.6	72°22.6	79°31.8	85°28.3	109°17.5
21	305°44.9	10.5'	20°30.8	-10.3'	56.6'	107°44.9	83°03.2		27°02.0	72°55.2	80°03.8	86°00.8	109°50.0
22	320°14.4	10.4'	$20^{\circ}41.1$	-10.2'	56.5'	107° 15.1	82°35.2		26°29.5	73°27.7	80°35.8	86°33.3	110°22.4
23	334°43.8	10.4'	20°51.2	-10.0'	56.5'	106°45.3	82°07.3		25°57.0	74°00.2	81°07.7	87°05.8	110°54.8
21 st	SI	0 = 15.6	6' Mer. pa	ss:-									

Moon (22nd Apr) Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Fomalhaut	-Deneb	-Altair	-Antares	+Spica	+Regulus	+Jupiter	+Pollux
0	349°13.2	10.3'	S 21°01.3	-9.9'	56.5'	106°15.5	104°46.6	81°39.4	25°24.5	20°35.8	74°32.7	87°38.2	111°27.2
1	3°42.5	10.3'	21°11.2	-9.8'	56.5'	105°45.7	104°31.0	81°11.5	24°52.0	21°08.0	75°05.2	88°10.6	111°59.5
2	18°11.8	10.2'	21°21.0	-9.7'	56.4'	105°16.0	104°15.3	80°43.7	24° 19.6	21°40.2	75°37.6	88°42.9	112°31.8
3	32°41.0	10.2'	21°30.7	-9.6'	56.4'	104°46.2	103°59.6	80°15.9	23°47.2	22°12.4	76°10.0	89°15.3	113°04.1
4	47°10.3	10.2'	21°40.2	-9.4'	56.4'	104°16.5	103°43.8	79°48.2	23°14.8	22°44.5	76°42.3	89°47.6	113°36.3
5	61°39.4	10.1'	21°49.7	-9.3'	56.4'	103°46.8	103°28.0	79°20.5	22°42.5	23°16.7	77°14.7	$90^{\circ}19.8$	114°08.6
6	76°08.5	10.1'	S 21°59.0	-9.2'	56.3'	103°17.1	103°12.2	78°52.8	22°10.2	23°48.8	77°47.0	90°52.1	114°40.7
7	90°37.6	10.0'	22°08.2	-9.1'	56.3'	102°47.4	102°56.3	78°25.2	21°37.9	24°20.9	78°19.2	91°24.3	115°12.9
8	105°06.7	10.0'	22°17.3	-9.0'	56.3'	102°17.7	102°40.4	77°57.6	21°05.6	24°52.9	78°51.5	91°56.4	115°45.0
9	119°35.6	10.0'	22°26.2	-8.8'	56.3'	101°48.1	102°24.4	77°30.1	20°33.4	25°25.0	79°23.7	92°28.6	116°17.1
10	134°04.6	9.9'	22°35.1	-8.7'	56.2'	101°18.5	102°08.4	77°02.6	20°01.2	25°57.0	79°55.9	93°00.7	116°49.2
11	148°33.5	9.9'	22°43.8	-8.6'	56.2'	100°48.8	101°52.4	76°35.2	19°29.1	26° 29.0	80°28.0	93°32.8	117°21.2
12	163°02.4	9.8'	S 22°52.4	-8.5'	56.2'	100°19.3	101°36.4	76°07.8	18°56.9	27°01.0	81°00.1	94°04.8	117°53.2
13	177°31.2	9.8'	23°00.8	-8.3'	56.2'	99°49.7	101°20.3	75°40.4	18° 24.8	27° 32.9	81°32.2	94°36.9	118°25.2
14	192°00.0	9.8'	23°09.2	-8.2'	56.1'	99°20.1	101°04.1	75°13.1	17°52.8	28°04.8	82°04.3	95°08.8	118°57.1
15	206°28.8	9.7'	23°17.4	-8.1'	56.1'	98°50.6	100°48.0	74°45.8	17°20.7	28°36.7	82°36.3	95°40.8	119°29.0
16	220°57.5	9.7'	23°25.4	-7.9'	56.1'	98°21.1	100°31.8	74°18.6	16°48.7	29°08.6	83°08.3	$96^{\circ}12.7$	
17	235°26.2	9.7'	23°33.4	-7.8'	56.1'	97°51.6	100°15.6	73°51.5	16° 16.7	29°40.5	83°40.3	96°44.6	
18	249°54.9	9.6'	S 23°41.2	-7.7'	56.0'	97°22.1	99°59.4	73°24.4	15°44.8	30°12.3	84°12.2	$97^{\circ}16.5$	
19	264°23.5	9.6'	23°48.9	-7.6'	56.0'	96°52.7	99°43.1	72°57.3	15° 12.9	30°44.1	84°44.1	97°48.3	
20	278°52.1	9.5'	23°56.4	-7.4'	56.0'	96°23.3	99°26.9	72°30.3	14°41.0	31° 15.8	85°16.0	98°20.2	
21	293°20.6	9.5'	24°03.9	-7.3'	56.0'	95°53.9	99°10.6	72°03.3	14°09.1	31°47.6	85°47.8	98°51.9	
22	307°49.1	9.5'	24°11.2	-7.2'	55.9'	95°24.5	98°54.3	71°36.4	13°37.3	32° 19.3	86°19.7	99°23.7	
23	322°17.6	9.5'	24°18.3	-7.0'	55.9'	94°55.1	98°37.9	71°09.5	13°05.5	32°51.0	86°51.4	99°55.4	
22 nd	SD	= 15.4'	Mer. pass	. 00:45									

II INDOIL (23 Apri) Luliai Distance (objects with largest nounly LD delta	h	Moon (23 rd Apr)	Lunar Distance (objects with largest hourly LD delta
---	---	-----------------------------	--

			. (== / 1	' /				()	9,0000	- 6	a j =		
Fri	GHA	ν	Dec	d	HP	-Venus	-Fomalhaut	-Altair	-Antares	+Spica	+Regulus	+Mars	+Jupiter
0	336°46.1	9.4'	S 24°25.4	-6.9'	55.9'		94°25.8	70°42.7	12°33.7	33°22.6	87°23.2	94°16.1	100°27.1
1	351°14.5	9.4'	24°32.2	-6.8'	55.9'		93°56.5	70°16.0	12°02.0	33°54.3	87°54.9	94°47.2	100°58.8
2	5°42.9	9.4'	24°39.0	-6.6'	55.8'		93°27.2	69°49.3	11°30.3	34°25.9	88° 26.6	95°18.3	101°30.4
3	20°11.2	9.3'	24°45.6	-6.5'	55.8'		92°58.0	69°22.7	10°58.6	34°57.5	88° 58.3	95°49.4	102°02.0
4	34°39.6	9.3'	$24^{\circ}52.1$	-6.4'	55.8'		92°28.7	68°56.1	10°26.9	35°29.0	89°29.9	96°20.5	102°33.6
5	49°07.9	9.3'	$24^{\circ}58.5$	-6.2'	55.8'		91°59.5	68°29.6	9°55.3	36°00.6	90°01.5	96°51.5	103°05.1
6	63°36.2	9.3'	S 25°04.7	-6.1'	55.7'		91°30.3	68°03.1	9°23.7	36°32.1	90°33.1	97°22.5	103°36.6
7	78°04.4	9.2'	25°10.8	-5.9'	55.7'		91°01.2	67°36.7	8°52.2	37°03.5	91°04.7	97°53.4	104°08.1
8	92°32.6	9.2'	$25^{\circ}16.7$	-5.8'	55.7'		90°32.0	67°10.3	8°20.6	37°35.0	91°36.2	98°24.3	104°39.5
9	107°00.8	9.2'	25°22.5	-5.7'	55.7'		90°02.9	66°44.1	7°49.1	38°06.4	92°07.7	98°55.2	105°11.0
10	121°29.0	9.2'	25°28.2	-5.5'	55.6'		89°33.9	66°17.8	7° 17.6	38°37.8	92°39.2	99°26.1	105°42.3
11	135°57.2	9.1'	25°33.7	-5.4'	55.6'		89°04.8	65°51.7	6°46.2	39°09.2	93°10.6	99°56.9	106°13.7
12	150°25.3	9.1'	S 25°39.1	-5.3'	55.6'	119°52.3	88°35.8	65°25.6	6°14.8	39°40.5	93°42.0	100°27.7	106°45.0
13	164°53.4	9.1'	25°44.4	-5.1'	55.6'	119°24.1	88°06.8	64°59.6	5°43.4	40°11.8	94° 13.4	100°58.5	107°16.3
14	179°21.5	9.1'	25°49.5	-5.0'	55.6'	118°55.9	87°37.8	64°33.6	5°12.0	40°43.1	94° 44.7	101°29.3	107°47.6
15	193°49.6	9.1'	25°54.4	-4.8'	55.5'	118°27.7	87°08.9	64°07.7	4°40.7	$41^{\circ}14.4$	95° 16.1	102°00.0	108° 18.9
16	208°17.7	9.1'	25°59.3	-4.7'	55.5'	$117^{\circ}59.6$	86°40.0	63°41.9	4°09.4	41°45.6	95°47.3	102°30.7	108°50.1
17	222°45.7	9.0'	26°04.0	-4.6'	55.5'	117°31.5	86°11.1	63°16.1	3°38.1	42°16.8	96° 18.6	103°01.3	109°21.3
18	237°13.8	9.0'	S 26°08.5	-4.4'	55.5'	117°03.4	85°42.3	62°50.4	3°06.9	42°48.0	96°49.8	103°32.0	109°52.4
19	251°41.8	9.0'	$26^{\circ}12.9$	-4.3'	55.4'	116°35.4	85°13.5	62°24.8	2°35.7	43°19.1	97°21.1	104°02.6	110°23.6
20	266°09.8	9.0'	$26^{\circ}17.2$	-4.1'	55.4'	116°07.4	84°44.7	61°59.2	2°04.5	43°50.3	97° 52.2	104°33.1	110°54.7
21	280°37.8	9.0'	$26^{\circ}21.3$	-4.0'	55.4'	115°39.4	84°15.9	61°33.7	1°33.3	44°21.4	98° 23.4	105°03.7	111°25.8
22	295°05.8	9.0'	26°25.3	-3.8'	55.4'	115° 11.4	83°47.2	61°08.3	1°02.2	44°52.5	98° 54.5	105°34.2	111°56.8
23	309°33.8	9.0'	26°29.2	-3.7'	55.4'	114°43.5	83°18.5	60°43.0	0°31.2	45°23.5	99°25.6	106°04.7	112°27.8
23 rd	SD =	= 15.2'	Mer. pas	s. 01:36	5								

h Moon ((24 th Apr)	Lunar Distance	(objects wit	h largest hourl	y LD delta)	ļ

Sat	GHA	ν	Dec	d	HP	-Saturn	-Venus	-Fomalhaut	-Altair	+Antares	+Spica	+Regulus	+Jupiter
0	324°01.8	9.0'	S 26°32.9	-3.6'	55.3'		114°15.6	82°49.8	60°17.7		45°54.5	99°56.7	112°58.8
1	338°29.7	9.0'	26°36.4	-3.4'	55.3'		113°47.7	82°21.2	59°52.5	0°31.3	46°25.5	100°27.7	113°29.8
2	352°57.7	9.0'	26°39.9	-3.3'	55.3'		113°19.8	81°52.5	59°27.4		46°56.5	100°58.8	114°00.7
3	7°25.7	9.0'	26°43.1	-3.1'	55.3'		112°52.0	81°24.0	59°02.4	1°33.2	47°27.4	101°29.7	114°31.6
4	21°53.6	9.0'	26°46.3	-3.0'	55.2'		112°24.2	80°55.4	58°37.5	2°04.2	47°58.4	102°00.7	115°02.5
5	36°21.6	9.0'	26°49.3	-2.9'	55.2'		111°56.4	80°26.9	58°12.6	2°35.1	48°29.2	102°31.6	115°33.4
6	50°49.5	9.0'	S 26°52.1	-2.7'	55.2'		111°28.6	79°58.4	57°47.8	3°06.0	49°00.1	103°02.6	116°04.2
7	65°17.5	9.0'	26°54.8	-2.6'	55.2'		111°00.9	79°29.9	57°23.1	3°36.9	49°31.0	103°33.4	116°35.0
8	79°45.4	9.0'	26°57.4	-2.4'	55.2'		110°33.2	79°01.5	56°58.5	4°07.8	50°01.8	104°04.3	117°05.8
9	94°13.4	9.0'	26°59.8	-2.3'	55.1'		110°05.5	78°33.1	56°34.0	4°38.6	50°32.6	104°35.1	117°36.6
10	108°41.3	9.0'	$27^{\circ}02.1$	-2.1'	55.1'		109°37.9	78°04.8	56°09.5	5°09.5	51°03.3	105°05.9	118°07.3
11	123°09.3	9.0'	27°04.2	-2.0'	55.1'		109°10.2	77°36.4	55°45.2	5°40.3	51°34.1	105°36.7	118°38.0
12	137°37.3	9.0'	S 27°06.2	-1.9'	55.1'		108°42.6	77°08.1	55°20.9	6°11.0	52°04.8	106°07.5	119°08.7
13	152°05.3	9.0'	$27^{\circ}08.1$	-1.7'	55.1'		108°15.1	76°39.9	54°56.7	6°41.8	52°35.5	106°38.2	119°39.3
14	166°33.3	9.0'	27°09.8	-1.6'	55.0'		107°47.5	$76^{\circ}11.7$	54°32.7	7° 12.5	53°06.2	107°08.9	
15	181°01.3	9.0'	$27^{\circ}11.4$	-1.4'	55.0'		107°20.0	75°43.5	54°08.7	7°43.2	53°36.8	107°39.6	
16	195°29.3	9.0'	$27^{\circ}12.8$	-1.3'	55.0'		106°52.5	75°15.3	53°44.8	8° 13.8	54°07.4	108° 10.2	
17	209°57.3	9.0'	$27^{\circ}14.1$	-1.1'	55.0'		106°25.0	74°47.2	53°21.0	8°44.5	54°38.0	108°40.9	
18	224°25.4	9.1'	S 27°15.2	-1.0'	55.0'		105°57.5	74°19.1	52°57.3	9° 15.1	55°08.6	109° 11.5	
19	238°53.4	9.1'	$27^{\circ}16.2$	-0.9'	54.9'	119°34.0	105°30.1	73°51.0	52°33.7	9°45.7	55°39.2	109°42.1	
20	253°21.5	9.1'	$27^{\circ}17.1$	-0.7'	54.9'	119°04.0	105°02.7	73°23.0	52°10.2	10°16.3	56°09.7	110° 12.6	
21	267°49.6	9.1'	$27^{\circ}17.8$	-0.6'	54.9'	118°34.0	104°35.3	72°55.0	51°46.8	10°46.8	56°40.2	110°43.2	
22	282°17.7	9.1'	27°18.4	-0.4'	54.9'	118°04.1	104°07.9	72°27.0	51°23.6	11° 17.4	57°10.7	111° 13.7	
23	296°45.8	9.2'	27°18.9	-0.3'	54.9'	117°34.2	103°40.6	71°59.1	51°00.4	11°47.9	57°41.1	111° 44.2	
24 th	SD =	= 15.1'	Mer. pas	s. 02:29									

h Moon (25th Apr)

h

Sun	GHA	ν	Dec	d	HP	-Saturn	-Venus	-Fomalhaut	-Altair	+Antares	+Spica	+Regulus	+Mars
0	311°14.0	9.2'	S 27°19.2	-0.2'	54.8'	117°04.2	103°13.2	71°31.2	50°37.4	12°18.4	58°11.6	112°14.7	118°38.1
1	325°42.2	9.2'	$27^{\circ}19.3$	-0.0'	54.8'	116°34.4	102°45.9	71°03.4	50°14.4	12°48.8	58°42.0	112°45.1	119°07.9
2	340°10.4	9.2'	$27^{\circ}19.3$	0.1'	54.8'	116°04.5	102°18.7	70°35.6	49°51.6	13°19.3	59°12.4	113°15.5	119°37.6
3	354°38.6	9.3'	$27^{\circ}19.2$	0.3'	54.8'	115°34.6	101°51.4	70°07.8	49°28.9	13°49.7	59°42.8	113°45.9	
4	9°06.9	9.3'	$27^{\circ}19.0$	0.4'	54.8'	115°04.8	101°24.2	69°40.0	49°06.3	14°20.1	60°13.1	114°16.3	
5	23°35.2	9.3'	$27^{\circ}18.6$	0.5'	54.8'	114°35.0	100°57.0	69°12.3	48°43.8	14°50.4	60°43.5	114°46.7	
6	38°03.5	9.3'	S 27° 18.0	0.7'	54.7'	114°05.2	100°29.8	68°44.7	48°21.4	15°20.8	61°13.8	115°17.0	
7	52°31.8	9.4'	$27^{\circ}17.4$	0.8'	54.7'	113°35.4	100°02.6	68° 17.0	47°59.2	15°51.1	61°44.1	115°47.3	
8	67°00.2	9.4'	$27^{\circ}16.6$	0.9'	54.7'	113°05.7	99°35.4	67°49.4	47°37.1	16°21.4	62°14.3	116°17.6	
9	81°28.6	9.4'	$27^{\circ}15.6$	1.1'	54.7'	112°35.9	99°08.3	67°21.9	47°15.1	16°51.7	62°44.6	116°47.9	
10	95°57.0	9.5'	$27^{\circ}14.5$	1.2'	54.7'	112°06.2	98°41.2	66°54.4	46°53.3	17°22.0	63°14.8	117°18.1	
11	110°25.5	9.5'	$27^{\circ}13.3$	1.4'	54.7'	111°36.5	98°14.1	66°26.9	46°31.6	17°52.2	63°45.0	117°48.4	
12	124°54.0	9.5'	S 27°11.9	1.5'	54.6'	111°06.8	97°47.0	65°59.4	46°10.0	18°22.5	64°15.2	118°18.6	
13	139°22.5	9.6'	$27^{\circ}10.5$	1.6'	54.6'	110°37.2	97°20.0	65°32.0	45°48.6	18°52.7	64°45.4	118°48.8	
14	153°51.1	9.6'	27°08.8	1.8'	54.6'	110°07.5	96°53.0	65°04.6	45°27.3	19°22.9	65°15.5	119°19.0	
15	168°19.7	9.7'	$27^{\circ}07.1$	1.9'	54.6'	109°37.9	96°25.9	64°37.3	45°06.2	19°53.0	65°45.7	119°49.1	
16	182°48.4	9.7'	$27^{\circ}05.2$	2.0'	54.6'	109°08.3	95°59.0	64°10.0	44°45.2	20°23.2	66°15.8		
17	197°17.1	9.7'	$27^{\circ}03.1$	2.2'	54.6'	108°38.7	95°32.0	63°42.8	44°24.3	20°53.3	66°45.9		
18	211°45.8	9.8'	S 27°01.0	2.3'	54.6'	108°09.1	95°05.0	63° 15.6	44°03.7	21°23.4	67°16.0		
19	226°14.6	9.8'	26°58.7	2.4'	54.5'	107°39.5	94°38.1	62°48.4	43°43.1	21°53.5	67°46.0		
20	240°43.4	9.9'	26° 56.2	2.6'	54.5'	107°10.0	94°11.2	62°21.3	43°22.8	22°23.6	68°16.1		
21	255°12.3	9.9'	26°53.7	2.7'	54.5'	106°40.4	93°44.3	61°54.2	43°02.5	22°53.7	68°46.1		
22	269°41.2	10.0'	$26^{\circ}51.0$	2.8'	54.5'	106°10.9	93°17.4	61°27.1	42°42.5	23°23.7	69°16.1		
23	284°10.2	10.0'	26°48.2	3.0'	54.5'	105°41.4	92°50.5	61°00.1	42°22.6	23°53.8	69°46.1		
25 th	SD	= 15.0'	Mer. pass	. 03:22									

n Moon (26 th Apr)	Lunar Distance (objects with largest hourly LD delta)
-------------------------------	---

Mon	GHA	ν	Dec	d	HP	-Sun	-Saturn	-Venus	-Fomalhaut	+Antares	+Hadar	+Spica	+Arcturus
0	298°39.2	10.1'	S 26°45.2	3.1'	54.5'		105°11.9	92°23.6	60°33.2	24°23.8	54°04.0	70°16.1	74°42.0
1	313°08.2	10.1'	$26^{\circ}42.1$	3.2'	54.5'		104°42.5	91°56.8	60°06.3	24°53.8	54°22.8	70°46.1	75°06.0
2	327°37.3	10.2'	26°38.9	3.3'	54.5'	119°59.9	104°13.0	91°30.0	59°39.4	25°23.8	54°41.8	71°16.0	75°30.0
3	342°06.5	10.2'	26°35.6	3.5'	54.4'	119°32.5	103°43.6	91°03.2	59°12.6	25°53.7	55°00.9	71°46.0	75°54.1
4	356°35.7	10.3'	26°32.1	3.6'	54.4'	119°05.2	103°14.1	90°36.4	58°45.8	26°23.7	55°20.0	72°15.9	76°18.1
5	11°04.9	10.3'	26°28.5	3.7'	54.4'	118°37.8	102°44.7	90°09.6	58°19.1	26°53.6	55°39.3	72°45.8	76°42.2
6	25°34.2	10.4'	S 26°24.8	3.8'	54.4'	118°10.4	102°15.3	89°42.9	57°52.4	27°23.5	55°58.6	73° 15.7	77°06.3
7	40°03.6	10.4'	26°21.0	4.0'	54.4'	117°43.1	101°45.9	89°16.1	57°25.7	27°53.5	56° 18.0	73°45.5	77°30.3
8	54°33.0	10.5'	26°17.0	4.1'	54.4'	117°15.8	101°16.6	88°49.4	56°59.1	28°23.4	56° 37.6	74° 15.4	77°54.4
9	69°02.5	10.5'	$26^{\circ}12.9$	4.2'	54.4'	116°48.5	100°47.2	88°22.7	56°32.6	28°53.2	56°57.2	74°45.2	78° 18.5
10	83°32.0	10.6'	26°08.7	4.3'	54.4'	116°21.2	100°17.9	87°56.0	56°06.1	29°23.1	57°16.9	75°15.1	78°42.6
11	98°01.6	10.6'	26°04.4	4.5'	54.4'	115°53.9	99°48.5	87°29.3	55°39.6	29°53.0	57°36.7	75°44.9	79°06.7
12	112°31.2	10.7'	S 25°59.9	4.6'	54.4'	115°26.6	99°19.2	87°02.6	55°13.2	30°22.8	57°56.5	76°14.7	79°30.8
13	127°00.9	10.7'	25°55.3	4.7'	54.3'	114°59.3	98°49.9	86°35.9	54°46.9	30°52.6	58° 16.5	76°44.5	79°54.9
14	141°30.6	10.8'	25°50.6	4.8'	54.3'	114°32.1	98°20.6	86°09.3	54°20.6	31°22.4	58° 36.5	77°14.3	80° 19.1
15	156°00.4	10.9'	25°45.8	4.9'	54.3'	114°04.8	97°51.3	85°42.6	53°54.3	31°52.3	58°56.7	77°44.1	80°43.2
16	170°30.2	10.9'	25°40.9	5.1'	54.3'	113°37.6	97°22.0	85°16.0	53°28.1	32°22.0	59°16.8	78°13.8	81°07.3
17	185°00.1	11.0'	25°35.8	5.2'	54.3'	113°10.4	96°52.8	84°49.4	53°02.0	32°51.8	59°37.1	78°43.6	81°31.5
18	199°30.1	11.0'	S 25°30.6	5.3'	54.3'	112°43.2	96°23.5	84°22.8	52°35.9	33°21.6	59°57.4	79°13.3	81°55.6
19	214°00.1	11.1'	25°25.3	5.4'	54.3'	112°16.0	95°54.3	83°56.2	52°09.8	33°51.4	60°17.9	79°43.1	82° 19.8
20	228°30.2	11.1'	$25^{\circ}19.9$	5.5'	54.3'	111°48.8	95°25.0	83°29.6	51°43.9	34°21.1	60°38.3	80°12.8	82°43.9
21	243°00.4	11.2'	25°14.4	5.6'	54.3'	111°21.6	94°55.8	83°03.0	51°17.9	34°50.9	60°58.9	80°42.5	83°08.1
22	257°30.6	11.3'	25°08.7	5.8'	54.3'	110°54.4	94°26.6	82°36.5	50°52.1	35°20.6	61° 19.5	81°12.2	83°32.3
23	272°00.8	11.3'	25°03.0	5.9'	54.3'	110°27.3	93°57.4	82°09.9	50°26.3	35°50.3	61°40.2	81°41.9	83°56.4
26 th	SD	= 14.9'	Mer. pass	. 04:14					Sun SD	= 15.9			

h Moon (27 th Apr) Lunar Distance (objects with largest hourly LD delta	h	Moon (27 th Apr)	Lunar Distance (objects with larg	gest hourly LD delta
--	---	-----------------------------	------------------	-------------------	----------------------

Tue	GHA	ν	Dec	d	HP	-Sun	-Saturn	-Venus	-Fomalhaut	+Antares	+Rigil Kent.	+Spica	+Arcturus
0	286°31.2	11.4'	S 24°57.1	6.0'	54.3'	110°00.1	93°28.2	81°43.4	50°00.5	$36^{\circ}20.0$	57° 40.5	82°11.6	84°20.6
1	301°01.5	11.4'	24°51.1	6.1'	54.3'	109°33.0	92°59.0	81°16.8	49°34.8	36°49.7	58°01.1	82°41.2	84°44.8
2	315°32.0	11.5'	24°45.0	6.2'	54.2'	109°05.8	92°29.8	80°50.3	49°09.2	$37^{\circ}19.4$	58°21.7	83°10.9	85°08.9
3	330°02.5	11.6'	24°38.8	6.3'	54.2'	108°38.7	92°00.6	80°23.8	48°43.7	$37^{\circ}49.1$	58° 42.4	83°40.6	85°33.1
4	344°33.1	11.6'	24°32.4	6.4'	54.2'	108°11.5	91°31.4	79°57.3	48°18.2	$38^{\circ}18.8$	59°03.2	84°10.2	85°57.3
5	359°03.7	11.7'	24°26.0	6.5'	54.2'	107°44.4	91°02.3	79°30.8	47°52.8	38°48.5	59°24.1	84°39.9	86°21.4
6	13°34.4	11.8'	S 24°19.5	6.7'	54.2'	107°17.3	90°33.1	79°04.3	47°27.4	39°18.2	59°45.0	85°09.5	86°45.6
7	28°05.1	11.8'	24° 12.8	6.8'	54.2'	106°50.2	90°04.0	78°37.8	47°02.1	39°47.8	60°06.0	85°39.1	87°09.8
8	42°36.0	11.9'	$24^{\circ}06.1$	6.9'	54.2'	106°23.1	89°34.8	78°11.3	46°36.9	40° 17.5	60°27.1	86°08.8	87°33.9
9	57°06.8	11.9'	23°59.2	7.0'	54.2'	105°56.0	89°05.7	77°44.8	46°11.8	40°47.1	60°48.2	86°38.4	87°58.1
10	71°37.8	12.0'	23°52.2	7.1'	54.2'	105°28.9	88°36.5	77°18.4	45°46.7	$41^{\circ}16.8$	61°09.4	87°08.0	88°22.3
11	86°08.8	12.1'	23°45.1	7.2'	54.2'	105°01.8	88°07.4	76°51.9	45°21.7	41°46.4	61°30.7	87°37.6	88°46.4
12	100°39.8	12.1'	S 23°38.0	7.3'	54.2'	104°34.7	87°38.3	76°25.5	44°56.8	42°16.0	61°52.0	88°07.2	89°10.6
13	$115^{\circ}11.0$	12.2'	23°30.7	7.4'	54.2'	104°07.6	87°09.2	75°59.0	44°31.9	42°45.7	62°13.4	88°36.8	89°34.8
14	129°42.2	12.3'	23°23.3	7.5'	54.2'	103°40.6	86°40.1	75°32.6	44°07.2	43° 15.3	62°34.9	89°06.4	89°58.9
15	144°13.4	12.3'	23° 15.8	7.6'	54.2'	103° 13.5	86° 10.9	75°06.1	43°42.5	43°44.9	62°56.4	89°36.0	90°23.1
16	158°44.7	12.4'	23°08.2	7.7'	54.2'	102°46.4	85°41.8	74°39.7	43°17.9	44°14.6	63°18.0	90°05.6	90°47.2
17	173°16.1	12.4'	23°00.5	7.8'	54.2'	102°19.3	85°12.7	74°13.2	42°53.4	44°44.2	63°39.6	90°35.2	91°11.4
18	187°47.5	12.5'	S 22°52.7	7.9'	54.2'	101°52.3	84°43.6	73°46.8	42°29.0	45°13.8	64°01.3	91°04.8	91°35.5
19	202°19.0	12.6'	22°44.8	8.0'	54.2'	101°25.2	84° 14.5	73°20.4	42°04.7	45°43.4	64°23.0	91°34.4	91°59.7
20	216°50.6	12.6'	22°36.8	8.1'	54.2'	100°58.1	83°45.4	72°54.0	41°40.5	$46^{\circ}13.0$	64°44.8	92°03.9	92°23.8
21	231°22.2	12.7'	22°28.7	8.2'	54.2'	100°31.1	83°16.3	72°27.5	41°16.3	46° 42.6	65°06.7	92°33.5	92°47.9
22	245°53.9	12.7'	22°20.5	8.3'	54.2'	100°04.0	82°47.2	72°01.1	40°52.3	47° 12.2	65°28.6	93°03.1	93°12.1
23	260°25.7	12.8'	22°12.2	8.4'	54.2'	99°36.9	82°18.1	71°34.7	40°28.4	47°41.8	65°50.5	93°32.7	93°36.2
27 th	SD :	= 14.8'	Mer. pass	. 05:04		SunSD = 15.9'							

h Moon (28th Apr)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Sun	-Saturn	-Venus	-Fomalhaut	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	274°57.5	12.9'	S 22°03.8	8.5'	54.2'	99°09.9	81°49.1	71°08.3	40°04.5	48°11.5	66°12.6	94°00.3	94°02.3
1	289°29.3	12.9'	21°55.3	8.6'	54.2'	98°42.8	81°20.0	70°41.9	39°40.8	48°41.1	66°34.6	94°24.4	94°31.8
2	304°01.3	13.0'	21°46.8	8.7'	54.2'	98°15.8	80°50.9	$70^{\circ}15.5$	39°17.2	49°10.7	66° 56.7	94°48.5	95°01.4
3	318°33.3	13.1'	21°38.1	8.8'	54.2'	97°48.7	80°21.8	69°49.0	38°53.7	49°40.3	67°18.9	95°12.6	95°31.0
4	333°05.3	13.1'	21°29.3	8.9'	54.2'	97°21.6	79°52.7	69°22.6	38°30.4	50°09.9	67°41.1	95°36.7	96°00.6
5	347°37.4	13.2'	21°20.5	8.9'	54.2'	96°54.6	79°23.6	68°56.2	38°07.1	50°39.5	68°03.4	96°00.8	96°30.1
6	2°09.6	13.2'	S 21°11.5	9.0'	54.2'	96°27.5	78°54.5	68°29.8	37°44.0	51°09.1	68°25.7	96°24.8	96°59.7
7	16°41.8	13.3'	21°02.5	9.1'	54.2'	96°00.4	78°25.4	68°03.4	37°21.0	51°38.7	68°48.0	96°48.9	97°29.3
8	31°14.1	13.3'	20°53.4	9.2'	54.2'	95°33.3	77°56.3	67°37.0	36°58.1	52°08.4	69°10.4	97°13.0	97°58.9
9	45°46.5	13.4'	20°44.2	9.3'	54.2'	95°06.3	77°27.2	$67^{\circ}10.5$	36°35.4	52°38.0	69°32.8	97°37.0	98°28.5
10	60°18.9	13.5'	20°34.9	9.4'	54.2'	94°39.2	76°58.1	66°44.1	36°12.8	53°07.6	69°55.3	98°01.0	98°58.1
11	74°51.3	13.5'	20°25.5	9.5'	54.2'	94°12.1	76°29.0	66° 17.7	35°50.3	53°37.2	70°17.8	98°25.1	99°27.7
12	89°23.8	13.6'	S 20°16.0	9.6'	54.2'	93°45.0	75°59.9	65°51.3	35°28.0	54°06.9	70°40.4	98°49.1	99°57.3
13	103°56.4	13.6'	20°06.5	9.6'	54.2'	93°17.9	75°30.8	65°24.8	35°05.9	54°36.5	71°03.0	99°13.1	100°26.9
14	118°29.0	13.7'	19°56.8	9.7'	54.2'	92°50.8	75°01.7	64°58.4	34°43.9	55°06.1	71°25.6	99°37.1	100°56.5
15	133°01.7	13.7'	$19^{\circ}47.1$	9.8'	54.2'	92°23.7	74°32.5	64°32.0	34°22.1	55°35.8	71°48.3	100°01.1	101°26.1
16	147°34.5	13.8'	19°37.3	9.9'	54.2'	91°56.6	74°03.4	64°05.5	34°00.4	56°05.4	72°11.0	100°25.1	101°55.7
17	162°07.3	13.9'	19°27.4	10.0'	54.2'	91°29.5	73°34.3	63°39.1	33°39.0	56°35.1	72°33.8	100°49.0	102°25.4
18	176°40.1	13.9'	S 19°17.4	10.1'	54.3'	91°02.4	73°05.1	63°12.6	33°17.7	57°04.8	72°56.6	101°13.0	102°55.0
19	191°13.0	14.0'	19°07.3	10.1'	54.3'	90°35.2	72°36.0	62°46.2	32°56.5	57°34.4	73°19.4	101°36.9	103°24.6
20	205°46.0	14.0'	18°57.2	10.2'	54.3'	90°08.1	72°06.9	$62^{\circ}19.7$	32°35.6	58°04.1	73°42.3	102°00.9	103°54.3
21	220°19.0	14.1'	18°46.9	10.3'	54.3'	89°40.9	71°37.7	61°53.2	32°14.9	58°33.8	74°05.2	102°24.8	104°23.9
22	234°52.1	14.1'	18°36.6	10.4'	54.3'	89°13.8	71°08.5	61°26.8	31°54.4	59°03.5	74°28.1	102°48.7	104°53.6
23	249°25.2	14.2'	18°26.3	10.5'	54.3'	88°46.6	70°39.4	61°00.3	31°34.1	59°33.2	74°51.1	103°12.6	105°23.3
28 th	SD	= 14.8'	Mer. pass	s. 05:51		Sun SD = 15.9'							

h Moon (29th Apr) Lunar Distance (objects wi

h	GHA ν Dec d 263°58.3 14.2' \$18°15.8 10.5' 278°31.5 14.3' 18°05.3 10.6' 293°04.8 14.4' 17°54.7 10.7' 307°38.1 14.4' 17°44.0 10.8' 322°11.5 14.4' 17°33.2 10.8' 336°44.9 14.5' \$17°22.4 10.9' 351°18.4 14.5' \$17°11.4 11.0' 5°51.9 14.5' \$17°00.5 11.1' 20°25.4 14.6' 16°49.4 11.3' 49°32.6 14.7' 16°27.1 11.3' 64°06.3 14.7' 16°15.8 11.3' 78°40.0 14.8' \$16°04.5 11.4' 93°13.8 14.8' 15°53.0 11.5' 107°47.6 14.9' 15°30.0 11.6' 122°21.5 14.9' 15°30.0 11.6' 136°55.4 14.9' 15°18.4 11.7' 151°29.3 15.0' \$14°43.2				Lunar Distance (objects with largest hourly LD delta)								
Thu	GHA	ν	Dec	d	HP	-Sun	-Saturn	-Venus	-Fomalhaut	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	263°58.3	14.2'	S 18° 15.8	10.5'	54.3'	88° 19.5	70°10.2	60°33.8	31°14.0	60°02.9	75° 14.1	103°36.5	105°53.0
1	278°31.5	14.3'	18°05.3	10.6'	54.3'	87°52.3	69°41.0	60°07.3	30°54.1	60°32.6	75°37.2	104°00.3	106°22.6
2	293°04.8	14.3'	17°54.7	10.7'	54.3'	87°25.1	69°11.8	59°40.8	30°34.5	61°02.4	76°00.3	104°24.2	106°52.3
3		14.4'		10.8'	54.3'	86°57.9	68°42.6	59°14.3	30°15.1	61°32.1	76°23.4	104°48.0	107°22.0
4	322°11.5	14.4'		10.8'	54.3'	86°30.7	68°13.4	58°47.8	29°56.0	62°01.8	76°46.5	$105^{\circ}11.8$	107°51.8
5	336°44.9	14.5'	17°22.4	10.9'	54.3'	86°03.5	67°44.2	58°21.3	29°37.1	62°31.6	77°09.7	105°35.6	108°21.5
6		14.5'	$$17^{\circ}11.4$	11.0'	54.4'	85°36.3	67° 15.0	57°54.8	29°18.5	63°01.4	77° 32.9	105°59.4	108°51.2
7		14.5'			54.4'	85°09.0	66°45.8	57°28.2	29°00.2	63°31.2	77°56.1	$106^{\circ}23.1$	109°21.0
8		14.6'		11.1'	54.4'	84°41.8	66° 16.5	57°01.7	28°42.1	64°01.0	78° 19.4	106°46.9	109°50.7
9					54.4'	84° 14.5	65°47.3	56°35.1	28°24.3	64°30.8	78°42.7	$107^{\circ}10.6$	110°20.5
10		14.7'		11.3'	54.4'	83°47.2	65°18.0	56°08.5	28°06.9	65°00.6	79°06.0	107°34.3	110°50.3
11	64°06.3	14.7'	16° 15.8	11.3'	54.4'	83°20.0	64°48.8	55°42.0	27°49.8	65°30.4	79°29.4	107°58.0	111°20.1
12	78°40.0	14.8'	S 16°04.5	11.4'	54.4'	82°52.7	64° 19.5	55°15.4	27°32.9	66°00.2	79°52.8	108°21.6	111°49.9
13	93°13.8	14.8'	15°53.0	11.5'	54.4'	82°25.4	63°50.2	54°48.8	27°16.5	66°30.1	80° 16.2	108°45.3	112°19.7
14		14.8'		11.5'	54.4'	81°58.0	63°20.9	54°22.2	27°00.3	67°00.0	80°39.6	109°08.9	112°49.5
15					54.4'	81°30.7	62°51.6	53°55.6	26°44.6	67°29.8	81°03.1	109°32.5	113°19.4
16					54.5'	81°03.3	62°22.2	53°28.9	26°29.1	67°59.7	81°26.6	109°56.1	113°49.2
17	151°29.3	15.0'	15°06.7	11.7'	54.5'	80°36.0	61°52.9	53°02.3	26°14.1	68°29.7	81°50.1	$110^{\circ}19.6$	114°19.1
18	166°03.2	15.0'	S 14°55.0	11.8'	54.5'	80°08.6	61°23.5	52°35.6		68° 59.6	82°13.7	110°43.1	114°49.0
19		15.0'	14°43.2	11.9'	54.5'	79°41.2	60°54.2	52°09.0		69°29.5	82°37.3	$111^{\circ}06.6$	115°18.9
20					54.5'	79°13.8	60°24.8	51°42.3		69°59.5	83°00.9	$111^{\circ}30.1$	115°48.8
21					54.5'	78°46.4	59°55.4	51°15.6		70°29.5	83°24.5	111°53.5	116°18.8
22					54.5'	78° 18.9	59°26.0	50°48.9		70°59.5	83°48.1	112°17.0	116°48.7
23	238°53.6	15.2'	13°55.3	12.1'	54.6'	77°51.5	58°56.6	50°22.2		71°29.5	84°11.8	112°40.3	117°18.7
29 th	SD	$= 14.8^{\prime}$	Mer. pass	. 06:36					Sun	SD = 15.9'			

h		Moon	(30 th Ap	or)			Lunar	Distance	e (objects	with largest	hourly I	_D delta)	
Fri	GHA	ν	Dec	d	HP	-Sun	-Saturn	-Venus	+Antares	+Rigil Kent.	+Hadar	+Arcturus	+Spica
0	253°27.8	15.2'	S 13°43.2	12.2'	54.6'	77°24.0	58°27.1	49°55.4	71°59.5	84°35.5	88°47.4	113°03.7	117°48.7
1	268°02.0	15.2'	13°31.0	12.2'	54.6'	76°56.5	57° 57.7	49°28.7	72°29.5	84°59.2	89°10.7	113°27.0	118°18.7
2	282°36.2	15.3'	$13^{\circ}18.8$	12.3'	54.6'	76°29.0	57°28.2	49°01.9	72°59.6	85°23.0	89°34.0	113°50.3	118°48.7
3	297°10.5	15.3'	13°06.5	12.4'	54.6'	76°01.5	56° 58.8	48°35.1	73°29.7	85° 46.7	89°57.3	114°13.6	119°18.7
4	311°44.8	15.3'	12°54.1	12.4'	54.6'	75°33.9	56°29.3	48°08.4	73°59.8	86° 10.5	90°20.7	114°36.8	119°48.8
5	326°19.1	15.4'	12°41.7	12.5'	54.7'	75°06.4	55°59.8	47°41.6	74°29.9	86°34.3	90°44.1	115°00.0	
6	340°53.5	15.4'	S 12°29.2	12.5'	54.7'	74°38.8	55° 30.2	47°14.7	75°00.0	86° 58.2	91°07.4	115°23.2	
7	355°27.9	15.4'	$12^{\circ}16.7$	12.6'	54.7'	74°11.2	55°00.7	46°47.9	75°30.2	87°22.0	91°30.8	115°46.3	
8	10°02.3	15.4'	$12^{\circ}04.1$	12.6'	54.7'	73°43.5	54°31.1	46°21.0	76°00.3	87° 45.9	91°54.2	116°09.4	
9	24°36.7	15.5'	11°51.5	12.7'	54.7'	73° 15.9	54°01.6	45°54.2	76°30.5	88°09.8	92°17.6	116°32.4	
10	39°11.2	15.5'	11°38.8	12.8'	54.7'	72°48.2	53°32.0	45°27.3	77°00.8	88°33.7	92°41.1	116°55.4	
11	53°45.6	15.5'	$11^{\circ}26.0$	12.8'	54.8'	72°20.6	53°02.4	45°00.4	77°31.0	88° 57.6	93°04.5	117°18.4	
12	68°20.2	15.5'	S 11°13.2	12.9'	54.8'	71°52.9	52° 32.8	44°33.5	78°01.3	89°21.6	93°27.9	117°41.3	
13	82°54.7	15.5'	$11^{\circ}00.3$	12.9'	54.8'	71°25.1	52°03.1	44°06.6	78°31.5	89° 45.5	93°51.4	118°04.2	
14	97°29.2	15.6'	10°47.4	13.0'	54.8'	70°57.4	51°33.5	43°39.6	79°01.8	90°09.5	94°14.9	118°27.1	
15	112°03.8	15.6'	10°34.5	13.0'	54.8'	70°29.6	51°03.8	43°12.6	79°32.2	90°33.5	94°38.3	118°49.8	
16	126°38.4	15.6'	10°21.5	13.1'	54.8'	70°01.8	50°34.1	42°45.7	80°02.5	90°57.5	95°01.8	119°12.6	
17	141°13.0	15.6'	$10^{\circ}08.4$	13.1'	54.9'	69°34.0	50°04.4	42°18.7	80°32.9	91°21.6	95°25.3	119°35.3	
18	155°47.6	15.6'	S 09°55.3	13.2'	54.9'	69°06.2	49°34.7	41°51.7	81°03.3	91°45.6	95°48.8	119°57.9	
19	170°22.2	15.6'	$09^{\circ}42.1$	13.2'	54.9'	68°38.3	49°04.9	41°24.6	81°33.7	92°09.7	96°12.3		
20	184°56.9	15.7'	09°28.9	13.3'	54.9'	68° 10.5	48°35.2	40°57.6	82°04.1	92°33.8	96°35.8		
21	199°31.5	15.7'	$09^{\circ}15.7$	13.3'	54.9'	67°42.6	48°05.4	40°30.5	82°34.6	92°57.9	96°59.4		
22	214°06.2	15.7'	09°02.4	13.3'	55.0'	67°14.6	47°35.6	40°03.4	83°05.1	93°22.0	97°22.9		
23	228°40.9	15.7'	08°49.1	13.4'	55.0'	66°46.7	47°05.8	39°36.3	83°35.6	93°46.1	97°46.4		
30 th	SD	$=14.9^{\prime}$	Mer. pass	s. 07:19					Sun	SD = 15.9'			

Moon (1st May)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Sun	-Saturn	-Venus	+Altair	+Antares	+Rigil Kent.	+Hadar	+Acrux
0	243°15.6	15.7'	S 08°35.7	13.4'	55.0'	66°18.7	46°35.9	39°09.2	41°10.9	84°06.1	94°10.2	98°10.0	104°12.8
1	257°50.3	15.7'	08°22.2	13.5'	55.0'	65°50.7	46°06.1	38°42.1	41°30.5	84°36.7	94°34.4	98°33.5	104°32.5
2	272°25.0	15.7'	08°08.8	13.5'	55.1'	65°22.7	45°36.2	38°14.9	41°50.3	85°07.3	94°58.5	98°57.0	104°52.1
3	286°59.7	15.7'	07°55.2	13.6'	55.1'	64°54.6	45°06.3	37°47.7	42°10.3	85°37.9	95°22.7	99°20.6	105°11.7
4	301°34.4	15.7'	$07^{\circ}41.7$	13.6'	55.1'	64°26.6	44°36.4	37°20.6	42°30.5	86°08.6	95°46.9	99°44.1	105°31.3
5	316°09.2	15.7'	$07^{\circ}28.1$	13.6'	55.1'	63°58.5	44°06.5	36°53.4	42°50.8	86°39.2	96°11.1	100°07.7	105°50.9
6	330°43.9	15.7'	S 07°14.4	13.7'	55.1'	63°30.3	43°36.5	36°26.1	43°11.4	87°09.9	96°35.3	100°31.2	106°10.4
7	345°18.6	15.7'	07°00.7	13.7'	55.2'	63°02.2	43°06.5	35°58.9	43°32.1	87°40.7	96° 59.5	100°54.8	106°30.0
8	359°53.4	15.7'	06°47.0	13.8'	55.2'	62°34.0	42°36.6	35°31.6	43°53.0	88°11.4	97°23.7	101°18.3	106°49.4
9	14°28.1	15.7'	06°33.3	13.8'	55.2'	62°05.8	42°06.6	35°04.4	44°14.1	88°42.2	97°48.0	101°41.9	107°08.9
10	29°02.9	15.7'	$06^{\circ}19.5$	13.8'	55.2'	61°37.6	41°36.5	34°37.1	44°35.3	89°13.0	98°12.2	102°05.4	107°28.3
11	43°37.6	15.7'	06°05.6	13.9'	55.3'	61°09.3	41°06.5	34°09.8	44°56.8	89°43.8	98°36.4	102°29.0	107° 47.7
12	58°12.3	15.7'	S 05°51.8	13.9'	55.3'	60°41.0	40°36.4	33°42.4	45°18.3	90°14.7	99°00.7	102°52.5	108°07.0
13	72°47.1	15.7'	05°37.9	13.9'	55.3'	60°12.7	40°06.3	33°15.1	45°40.1	90°45.6	99°25.0	103°16.0	108°26.3
14	87°21.8	15.7'	05°23.9	14.0'	55.3'	59°44.4	39°36.3	32°47.7	46°02.0	91°16.5	99°49.2	103°39.6	108°45.6
15	101°56.5	15.7'	05°09.9	14.0'	55.4'	59°16.0	39°06.1	32°20.4	46°24.0	91°47.5	100°13.5	104°03.1	109°04.8
16	116°31.2	15.7'	04°55.9	14.0'	55.4'	58°47.6	38°36.0	31°53.0	46°46.2	92°18.5	100°37.8	104°26.6	109°24.0
17	131°06.0	15.7'	04°41.9	14.1'	55.4'	58°19.2	38°05.9	31°25.6	47°08.6	92°49.5	101°02.0	104°50.1	109°43.1
18	145°40.7	15.7'	S 04°27.8	14.1'	55.4'	57°50.7	37°35.7	30°58.1	47°31.1	93°20.5	101°26.3	105°13.6	110°02.2
19	160°15.3	15.7'	04°13.7	14.1'	55.5'	57°22.2	37°05.5	30°30.7	47°53.7	93°51.6	101°50.6	105°37.1	110°21.3
20	174°50.0	15.7'	03°59.6	14.2'	55.5'	56°53.7	36°35.3	30°03.3	48°16.5	94°22.7	102°14.9	106°00.6	110°40.3
21	189°24.7	15.7'	03°45.4	14.2'	55.5'	56°25.2	36°05.1	29°35.8	48°39.4	94°53.9	102°39.2	106°24.0	110°59.2
22	203°59.4	15.6'	03°31.2	14.2'	55.5'	55°56.6	35°34.9	29°08.3	49°02.5	95°25.0	103°03.4	106°47.5	111°18.1
23	218°34.0	15.6'	03°17.0	14.2'	55.6'	6' 55°28.0 35°04.6 28°40.8 49°25.6 95°56.2 103°27.7 107°10.9 111°37.0							111°37.0
1 st	SD	=15.0'	Mer. pass	. 08:00		$Sun\;SD=15.9'$							

Moon (2nd May)

Lunar Distance (objects with largest hourly LD delta)

in the control of the													
Sun	GHA	ν	Dec	d	HP	-Sun	-Saturn	-Venus	+Fomalhaut	+Altair	+Antares	+Rigil Kent.	+Hadar
0	233°08.6	15.6'	S 03°02.7	14.3'	55.6'	54°59.3	34°34.4	28°13.4	26°28.9	49°49.0	96°27.5	103°52.0	107°34.4
1	247°43.2	15.6'	02°48.5	14.3'	55.6'	54°30.7	34°04.1	27°45.9	26°45.0	50°12.4	96°58.7	104° 16.3	107°57.8
2	262°17.8	15.6'	02°34.2	14.3'	55.6'	54°02.0	33°33.8	27°18.3	27°01.6	50°36.0	97°30.0	104°40.5	108°21.2
3	276°52.4	15.6'	$02^{\circ}19.8$	14.4'	55.7'	53°33.3	33°03.5	26°50.8	27°18.6	50°59.7	98°01.4	105°04.8	108°44.5
4	291°27.0	15.5'	02°05.5	14.4'	55.7'	53°04.5	32°33.2	26°23.3	27°35.9	51°23.5	98°32.7	105°29.1	109°07.9
5	306°01.5	15.5'	$01^{\circ}51.1$	14.4'	55.7'	52°35.7	32°02.9	25°55.8	27°53.7	51°47.5	99°04.1	105°53.3	109°31.2
6	320°36.0	15.5'	S 01°36.7	14.4'	55.7'	52°06.9	31°32.5	25°28.2	28°11.8	52°11.5	99°35.6	106° 17.6	109°54.6
7	335°10.5	15.5'	01°22.3	14.4'	55.8'	51°38.1	31°02.2	25°00.7	28°30.3	52°35.7	100°07.0	106°41.8	110°17.9
8	349°44.9	15.4'	$01^{\circ}07.9$	14.5'	55.8'	51°09.2	30°31.8	24°33.1	28°49.2	53°00.0	100°38.5	107°06.0	110°41.1
9	4°19.4	15.4'	00°53.4	14.5'	55.8'	50°40.3	30°01.5	24°05.6	29°08.5	53°24.5	101°10.1	107° 30.3	111°04.4
10	18°53.8	15.4'	00°38.9	14.5'	55.9'	50°11.3	29°31.1	23°38.1	29°28.0	53°49.0	101°41.6	107°54.5	111°27.6
11	33°28.2	15.4'	00°24.4	14.5'	55.9'	49°42.4	29°00.7	23°10.5	29°48.0	54°13.6	102°13.2	108° 18.7	111°50.8
12	48°02.5	15.3'	S 00°09.9	14.5'	55.9'	49°13.4	28°30.4	22°43.0	30°08.2	54°38.4	102°44.9	108° 42.8	112°13.9
13	62°36.9	15.3'	N 00°04.6	14.5'	55.9'	48°44.3	28°00.0	22°15.5	30°28.7	55°03.2	103°16.5	109°07.0	112°37.1
14	77°11.1	15.3'	$00^{\circ}19.1$	14.6'	56.0'	48°15.3	27°29.6	21°48.0	30°49.6	55°28.2	103°48.2	109°31.2	113°00.2
15	91°45.4	15.2'	00°33.7	14.6'	56.0'	47°46.2	26°59.2	21°20.5	31°10.8	55°53.3	104°20.0	109°55.3	113°23.3
16	106°19.6	15.2'	00°48.3	14.6'	56.0'	47°17.0	26°28.9	20°53.0	31°32.2	56°18.4	104°51.8	110° 19.4	113°46.3
17	120°53.8	15.2'	$01^{\circ}02.9$	14.6'	56.1'	46°47.9	25°58.5	20°25.5	31°53.9	56°43.7	105°23.6	110°43.5	114°09.3
18	135°28.0	15.1'	$N01^{\circ}17.5$	14.6'	56.1'	46°18.7	25°28.2	19°58.1	32°16.0	57°09.1	105°55.4	111°07.6	114°32.2
19	150°02.1	15.1'	$01^{\circ}32.1$	14.6'	56.1'	45°49.4	24°57.8	19°30.7	32°38.2	57°34.5	106°27.3	111°31.6	114°55.2
20	164°36.2	15.0'	01°46.7	14.6'	56.1'	45°20.2	24° 27.5	19°03.3	33°00.8	58°00.1	106°59.2	111°55.6	115°18.0
21	179°10.2	15.0'	$02^{\circ}01.3$	14.6'	56.2'	44°50.9	23°57.2	18°36.0	33°23.5	58°25.8	107°31.2	112° 19.7	115°40.9
22	193°44.2	15.0'	$02^{\circ}15.9$	14.6'	56.2'	44°21.6	23°26.9	18°08.7	33°46.6	58°51.5	108°03.2	112°43.6	116°03.7
23	208°18.1	14.9'	02°30.6	14.6'	56.2'	43°52.2	22°56.6	17°41.5	34°09.8	59°17.4	108°35.2	113°07.6	116°26.4
2 nd	SD	= 15.2'	Mer. pass	. 08:42					Sun SI	D = 15.9'			

Mon	GHA	ν	Dec	d	HP	-Sun	-Saturn	-Venus	+Fomalhaut	+Altair	+Antares	+Rigil Kent.	+Hadar
0	222°52.1	14.9'	N 02°45.2	14.7'	56.3'	43°22.8	22°26.4	17°14.3	34°33.3	59°43.3	109°07.2	113°31.5	116°49.1
1	237°25.9	14.8'	02°59.9	14.7'	56.3'	42°53.4	21°56.2	16°47.2	34°57.1	60°09.3	109°39.4	113° 55.4	117°11.8
2	251°59.7	14.8'	03°14.5	14.7'	56.3'	42°23.9	21°26.0	16°20.2	35°21.0	60°35.4	110°11.5	114° 19.2	117°34.4
3	266°33.5	14.7'	03°29.2	14.7'	56.4'	41°54.4	20°55.9	15°53.2	35°45.2	61°01.6	110°43.7	114°43.1	117°56.9
4	281°07.2	14.7'	03°43.9	14.7'	56.4'	41°24.9	20°25.8	15°26.3	36°09.5	61°27.9	111°15.9	115°06.9	118°19.4
5	295°40.9	14.6'	03°58.5	14.7'	56.4'	40°55.4	19°55.8	14°59.6	36°34.1	61°54.3	111°48.1	115°30.6	118°41.8
6	310°14.5	14.6'	N04°13.2	14.7'	56.4'	40°25.8	19°25.9	14°33.0	36°58.9	62°20.8	112°20.4	115°54.3	119°04.2
7	324°48.1	14.5'	04°27.9	14.7'	56.5'		18°56.0	14°06.5	37°23.8	62°47.3	112°52.7	116° 18.0	119°26.5
8	339°21.6	14.5'	04°42.5	14.7'	56.5'		18°26.2	13°40.1	37°49.0	63°13.9	113°25.1	116°41.6	119°48.7
9	353°55.1	14.4'	04°57.2	14.7'	56.5'		17° 56.5	13°13.9	38°14.3	63°40.6	113° 57.5	117°05.2	
10	8°28.5	14.4'	$05^{\circ}11.8$	14.6'	56.6'		17°26.9	12°47.9	38°39.8	64°07.4	114°29.9	117°28.7	
11	23°01.9	14.3'	05°26.5	14.6'	56.6'		16° 57.4	12°22.2	39°05.5	64°34.3	115°02.4	117°52.2	
12	37°35.2	14.2'	N 05°41.1	14.6'	56.6'		16°28.0	11°56.6	39°31.4	65°01.2	115°34.9	118° 15.7	
13	52°08.4	14.2'	05°55.7	14.6'	56.7'		15°58.8	11°31.4	39°57.4	65°28.3	116°07.5	118°39.0	
14	66°41.6	14.1'	$06^{\circ}10.4$	14.6'	56.7'		15°29.7	11°06.4	40°23.6	65°55.4	116°40.1	119°02.4	
15	81°14.7	14.1'	06°25.0	14.6'	56.7'		15°00.8	10°41.9	40°49.9	66°22.5	117° 12.7	119°25.6	
16	95°47.7	14.0'	06°39.6	14.6'	56.8'		14°32.1	10°17.7	41°16.4	66°49.8	117°45.4	119°48.9	
17	110°20.7	13.9'	06°54.2	14.6'	56.8'		14°03.7	9°53.9	41°43.1	67°17.1	118° 18.1		
18	124°53.6	13.9'	N 07°08.8	14.6'	56.8'		13°35.5	9°30.7	42°09.9	67°44.5	118°50.8		
19	139°26.5	13.8'	07°23.3	14.5'	56.9'		13°07.6	9°08.1	42°36.8	68°11.9	119°23.6		
20	153°59.3	13.7'	07°37.9	14.5'	56.9'		12°40.0	8°46.2	43°03.9	68°39.5	119°56.4		
21	168°32.0	13.7'	07°52.4	14.5'	56.9'		12° 12.7	8°25.0	43°31.1	69°07.0			
22	183°04.7	13.6'	08°06.9	14.5'	56.9'		11°45.9	8°04.7	43°58.5	69°34.7			
23	197°37.2	13.5'	08°21.4	14.5'	57.0'		$11^{\circ}19.6$		44°26.0	70°02.4			
3 rd	SD	= 15.3'	Mer. pass	. 09:25					Sun SI	D = 15.9'		·	

h		Moor	ı (4 th May	_′)		L	unar Distand	ce
Tue	GHA	ν	Dec	d	HP	-Saturn	+Fomalhaut	+Altair
0	212°09.8	13.4'	N 08°35.9	14.4'	57.0'	10°53.8	44°53.6	70°30.2
1	226°42.2	13.4'	08°50.3	14.4'	57.0'	10°28.6	45°21.3	70°58.1
2	241°14.5	13.3'	09°04.7	14.4'	57.1'	10°04.0	45°49.2	71°26.0
3	255°46.8	13.2'	$09^{\circ}19.1$	14.4'	57.1'	9°40.3	46° 17.2	71°54.0
4	270°19.0	13.1'	09°33.5	14.3'	57.1'	9°17.4	46°45.3	72°22.1
5	284°51.2	13.0'	09°47.9	14.3'	57.2'		47° 13.5	72°50.2
6	299°23.2	13.0'	N 10°02.2	14.3'	57.2'		47°41.9	73°18.3
7	313°55.2	12.9'	$10^{\circ}16.5$	14.3'	57.2'		48° 10.3	73°46.6
8	328°27.1	12.8'	10°30.7	14.2'	57.3'		48°38.9	74°14.9
9	342°58.9	12.7'	$10^{\circ}45.0$	14.2'	57.3'		49°07.5	74°43.2
10	357°30.6	12.6'	$10^{\circ}59.1$	14.2'	57.3'		49° 36.3	75°11.6
11	12°02.2	12.6'	11°13.3	14.1'	57.4'		50°05.2	75°40.1
12	26°33.8	12.5'	$N11^{\circ}27.4$	14.1'	57.4'		50°34.1	76°08.6
13	41°05.3	12.4'	$11^{\circ}41.5$	14.0'	57.4'		51°03.2	76°37.2
14	55°36.6	12.3'	$11^{\circ}55.5$	14.0'	57.4'		51°32.4	77°05.8
15	70°07.9	12.2'	$12^{\circ}09.5$	14.0'	57.5'		52°01.6	77°34.5
16	84°39.1	12.1'	12°23.5	13.9'	57.5'		52°31.0	78°03.2
17	99°10.2	12.0'	12°37.4	13.9'	57.5'		53°00.5	78°32.0
18	113°41.2	11.9'	N12°51.3	13.8'	57.6'		53° 30.0	79°00.8
19	128°12.1	11.8'	$13^{\circ}05.1$	13.8'	57.6'		53°59.6	79°29.7
20	142°43.0	11.7'	13°18.8	13.7'	57.6'		54°29.3	79°58.7
21	157°13.7	11.6'	13°32.6	13.7'	57.7'		54°59.1	80°27.6
22	171°44.3	11.5'	13°46.2	13.6'	57.7'		55°29.0	80°56.7
23	186°14.9	11.4'	13°59.8	13.6'	57.7'		55° 59.0	81°25.8
4 th	SD	$= 15.5^{\prime}$	Mer. pass	10:10				

_	30	_ 15.5	ivici. pubb.	10.10							
h		Moor	n (5 th May	y)		Lunar [Distance	(objects witl	n largest	hourly LD delta)	
Wed	GHA	ν	Dec	d	HP	+Venus	+Saturn	+Fomalhaut	+Deneb	+Altair	
0	200°45.3	11.3'	N14°13.4	13.5'	57.7'	9°49.8		56°29.0		81°54.9	
1	215°15.6	11.2'	14°26.9	13.4'	57.8'	10°14.4		56° 59.2		82°24.0	
2	229°45.9	11.1'	14°40.3	13.4'	57.8'	10°39.6		57°29.4		82° 53.2	
3	244°16.0	11.0'	14°53.7	13.3'	57.8'	11°05.3		57° 59.7		83°22.5	
4	258°46.1	10.9'	15°07.0	13.3'	57.9'	11°31.5		58° 30.0		83°51.8	
5	273°16.0	10.8'	$15^{\circ}20.3$	13.2'	57.9'	11°58.0		59°00.5		84°21.1	
6	287°45.8	10.7'	$N15^{\circ}33.5$	13.1'	57.9'	12°24.9	10°32.1	59°31.0		84°50.5	
7	302°15.5	10.6'	15°46.6	13.1'	58.0'	12°52.2	10°58.3	60°01.6		85° 19.9	
8	316°45.2	10.5'	$15^{\circ}59.7$	13.0'	58.0'	13°19.8	11°25.2	60°32.2		85°49.4	
9	331°14.7	10.4'	$16^{\circ}12.6$	12.9'	58.0'	13°47.6	11°52.7	61°02.9		86° 18.8	
10	345°44.1	10.3'	$16^{\circ}25.6$	12.8'	58.0'	14°15.7	12°20.8	61°33.7		86°48.4	
11	0°13.4	10.2'	16°38.4	12.8'	58.1'	14°44.1	12°49.3	62°04.6		87°17.9	
12	14°42.6	10.1'	$N16^{\circ}51.2$	12.7'	58.1'	15°12.7	13° 18.4	62°35.5		87° 47.5	
13	29°11.6	10.0'	17°03.8	12.6'	58.1'	15°41.4	13°47.8	63°06.5		88° 17.2	
14	43°40.6	9.9'	$17^{\circ}16.5$	12.5'	58.2'	16°10.4	14° 17.6	63°37.6		88°46.8	
15	58°09.5	9.7'	$17^{\circ}29.0$	12.4'	58.2'	16°39.5	14°47.7	64°08.7		89°16.5	
16	72°38.2	9.6'	$17^{\circ}41.4$	12.4'	58.2'	17°08.8	15° 18.1	64°39.8	70°37.9	89°46.2	
17	87°06.9	9.5'	17°53.8	12.3'	58.2'	17°38.2	15°48.8	65°11.1	70°53.1	90°16.0	
18	101°35.4	9.4'	$N18^{\circ}06.1$	12.2'	58.3'	18°07.8	16° 19.8	65° 42.4	71°08.4	90°45.8	
19	116°03.8	9.3'	$18^{\circ}18.2$	12.1'	58.3'	İ	' <u> </u>	New M	oon ———	<u></u>	
20	130°32.1	9.2'	$18^{\circ}30.3$	12.0'	58.3'			New M			
21	145°00.3	9.1'	18°42.4	11.9'	58.4'						
22	159°28.4	9.0'	18°54.3	11.8'	58.4'						
23	173°56.3	8.8'	19°06.1	11.7'	58.4'			New M	oon ———		
5 th	SD	= 15.7'	Mer. pass	. 10:59							

h		Моо	n (6 th Ma	ay)		
Thu	GHA	ν	Dec	d	HP	
0	188°24.2	8.7'	N 19°17.8	11.6'	58.4'	New Moon
1	202°51.9	8.6'	19°29.4	11.5'	58.5'	New Moon
2	217°19.5	8.5'	19°41.0	11.4'	58.5'	New Moon
3	231°47.0	8.4'	19°52.4	11.3'	58.5'	New Moon
4	246°14.4	8.3'	20°03.7	11.2'	58.5'	New Moon
5	260°41.7	8.2'	20°14.9	11.1'	58.6'	New Moon
6	275°08.8	8.0'	N 20°26.0	11.0'	58.6'	New Moon
7	289°35.9	7.9'	20°37.0	10.9'	58.6'	New Moon
8	304°02.8	7.8'	20°47.9	10.8'	58.6'	New Moon
9	318°29.6	7.7'	20°58.6	10.7'	58.7'	New Moon
10	332°56.3	7.6'	21°09.3	10.5'	58.7'	New Moon
11	347°22.8	7.5'	21°19.8	10.4'	58.7'	New Moon
12	1°49.3	7.3'	N21°30.2	10.3'	58.7'	New Moon
13	16°15.6	7.2'	21°40.5	10.2'	58.8'	New Moon
14	30°41.9	7.1'	21°50.7	10.0'	58.8'	New Moon
15	45°08.0	7.0'	22°00.8	9.9'	58.8'	New Moon
16	59°34.0	6.9'	22°10.7	9.8'	58.8'	New Moon
17	73°59.9	6.8'	22°20.5	9.7'	58.9'	New Moon
18	88°25.6	6.7'	N22°30.1	9.5'	58.9'	New Moon
19	102°51.3	6.5'	22°39.7	9.4'	58.9'	New Moon
20	117°16.9	6.4'	22°49.1	9.3'	58.9'	New Moon
21	131°42.3	6.3'	22°58.3	9.1'	58.9'	New Moon
22	146°07.6	6.2'	23°07.4	9.0'	59.0'	New Moon
23	160°32.8	6.1'	23°16.4	8.8'	59.0'	New Moon
6 th	SD	= 15.9	['] Mer. pas	s. 11:52		

h Moon (7th May) Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Jupiter	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran
0	174°57.9	6.0'	N23°25.3	8.7'	59.0'				Ne	w Moon —			
1	189°22.9	5.9'	23°34.0	8.6'	59.0'				Ne	w Moon —			
2	203°47.8	5.8'	23°42.5	8.4'	59.1'				Ne	w Moon —			
3	218° 12.6	5.7'	23°50.9	8.3'	59.1'	94°58.9	92°02.2	82°38.4	63°51.6	58°07.0	39°36.5	31°41.2	18°14.2
4	232°37.3	5.6'	23°59.2	8.1'	59.1'	94°23.4	91°27.6	82°03.1	63°18.2	57°31.6	39°06.4	31°13.3	17°44.9
5	247°01.8	5.5'	24°07.3	8.0'	59.1'	93°47.9	90°52.9	81°27.8	62°44.7	56° 56.3	38°36.3	30°45.6	17°15.9
6	261°26.3	5.4'	N24°15.2	7.8'	59.1'	93°12.4	90°18.2	80°52.4	62°11.3	56°20.9	38°06.4	30°18.1	16°47.3
7	275°50.7	5.3'	24°23.1	7.7'	59.2'	92°36.8	89°43.5	80°17.0	61°37.9	55°45.5	37°36.7	29°50.9	16°19.2
8	290°14.9	5.2'	24°30.7	7.5'	59.2'	92°01.2	89°08.7	79°41.6	61°04.5	55°10.1	37°07.0	29°23.9	15°51.5
9	304°39.1	5.1'	24°38.2	7.3'	59.2'	91°25.6	88°34.0	79°06.1	60°31.1	54°34.6	36°37.5	28°57.1	15°24.3
10	319°03.2	5.0'	24°45.5	7.2'	59.2'	90°50.0	87°59.2	78°30.6	59°57.7	53°59.1	36°08.1	28°30.7	14°57.6
11	333°27.1	4.9'	24°52.7	7.0'	59.2'	90°14.3	87°24.4	77°55.2	59°24.3	53°23.7	35°38.9	28°04.5	14°31.6
12	347°51.0	4.8'	N 24°59.7	6.9'	59.2'	89°38.6	86°49.6	77°19.7	58°50.9	52°48.2	35°09.8	27°38.7	14°06.3
13	2°14.8	4.7'	25°06.6	6.7'	59.3'	89°02.9	86°14.7	76°44.1	58°17.5	52° 12.6	34°40.9	27°13.2	13°41.7
14	16°38.5	4.6'	25° 13.3	6.5'	59.3'	88°27.2	85°39.9	76°08.6	57°44.1	51°37.1	34°12.2	26°48.0	13°17.9
15	31°02.0	4.5'	25° 19.8	6.4'	59.3'	87°51.5	85°05.0	75°33.0	57°10.8	51°01.6	33°43.6	26°23.2	12°55.0
16	45°25.5	4.4'	$25^{\circ}26.1$	6.2'	59.3'	87°15.7	84°30.1	74°57.4	56°37.4	50°26.0	33°15.2	25°58.8	
17	59°49.0	4.3'	25°32.3	6.0'	59.3'	86°40.0	83°55.2	74°21.9	56°04.1	49°50.4	32°47.1	25°34.8	
18	74°12.3	4.2'	N25°38.3	5.8'	59.3'	86°04.2	83°20.2	73°46.2	55°30.8	49°14.8	32°19.1	25°11.2	
19	88° 35.5	4.2'	25°44.2	5.7'	59.4'	85°28.4	82°45.3	73°10.6	54°57.5	48°39.2	31°51.4	24°48.0	
20	102°58.7	4.1'	25°49.8	5.5'	59.4'	84°52.5	82°10.3	72°35.0	54°24.2	48°03.6	31°23.9	24°25.3	
21	117°21.8	4.0'	25°55.3	5.3'	59.4'	84°16.7	81°35.4	71°59.3	53°51.0	47°28.0	30°56.6	24°03.1	
22	131°44.8	3.9'	26°00.7	5.1'	59.4'	83°40.8	81°00.4	71°23.6	53°17.7	46°52.4	30°29.6	23°41.5	
23	146°07.7	3.9'	26°05.8	5.0'	59.4'	83°05.0	80°25.4	70°47.9	52°44.5	46° 16.7	30°02.8	23°20.3	
7 th	SD =	= 16.1'	Mer. pass	12:51	1								

h	Moon (8 th May)	Lunar Distance (objects with largest hourly LD delta)

- 11		IVIOUI	ii (O ivia	y <i>)</i>			Luliai L	Paradas Marie Objects With largest flourly ED derta)					,
Sat	GHA	ν	Dec	d	HP	-Arcturus	-Regulus	-Mars	-Jupiter	-Procyon	-Pollux	-Betelgeuse	+Aldebaran
0	160°30.6	3.8'	N 26°10.8	4.8'	59.4'		82°29.1	79°50.3	70°12.2	52°11.4	45°41.0	29°36.3	
1	174°53.3	3.7'	$26^{\circ}15.6$	4.6'	59.4'		81°53.2	79° 15.3	69°36.5	51°38.2	45°05.4	29°10.2	
2	189°16.1	3.6'	26°20.2	4.4'	59.5'		81° 17.3	78°40.2	69°00.7	51°05.1	44°29.7	28°44.3	
3	203°38.7	3.6'	26°24.6	4.2'	59.5'		80°41.3	78°05.2	68°25.0	50°32.0	43°54.0	28°18.7	
4	218°01.3	3.5'	26°28.8	4.1'	59.5'		80°05.4	77°30.1	67°49.2	49°59.0	43°18.3	27°53.5	
5	232°23.8	3.5'	26°32.9	3.9'	59.5'		79°29.4	76°55.0	67°13.4	49°26.0	42°42.6	27°28.7	
6	246°46.3	3.4'	N 26°36.8	3.7'	59.5'		78°53.4	76° 19.9	66°37.6	48°53.0	42°06.9	27°04.2	
7	261°08.7	3.3'	26°40.4	3.5'	59.5'		78° 17.5	75°44.8	66°01.8	48°20.0	41°31.2	26°40.1	
8	275°31.0	3.3'	26°43.9	3.3'	59.5'		77°41.5	75°09.7	65°26.0	47°47.2	40°55.4	26°16.5	
9	289°53.3	3.2'	26°47.2	3.1'	59.5'		77°05.5	74°34.5	64°50.2	47°14.3	40°19.7	25°53.2	
10	304°15.5	3.2'	26°50.4	2.9'	59.6'		76°29.4	73°59.4	64°14.3	46°41.5	39°44.0	25°30.5	
11	318°37.7	3.1'	26°53.3	2.7'	59.6'		75°53.4	73°24.2	63°38.5	46°08.8	39°08.2	25°08.1	
12	332°59.9	3.1'	N 26°56.0	2.6'	59.6'		75° 17.4	72°49.1	63°02.6	45°36.1	38°32.5	24°46.3	
13	347°22.0	3.1'	26°58.6	2.4'	59.6'		74°41.3	72°13.9	62°26.8	45°03.5	37°56.8	24°25.1	
14	1°44.0	3.0'	27°01.0	2.2'	59.6'	119°40.1	74°05.3	71°38.7	61°50.9	44°30.9	37°21.0	24°04.3	
15	16°06.1	3.0'	$27^{\circ}03.1$	2.0'	59.6'	119°13.2	73°29.2	71°03.5	61°15.0	43°58.4	36°45.3	23°44.1	
16	30°28.0	3.0'	$27^{\circ}05.1$	1.8'	59.6'	118°46.1	72°53.1	70°28.3	60°39.1	43°26.0	36°09.5	23°24.6	
17	44°50.0	2.9'	27°06.9	1.6'	59.6'	118° 19.0	72°17.0	69°53.1	60°03.2	42°53.6	35°33.8	23°05.6	
18	59°11.9	2.9'	$N27^{\circ}08.5$	1.4'	59.6'	117°51.7	71°40.9	69° 17.9	59°27.3	42°21.3	34°58.1	22°47.3	
19	73°33.8	2.9'	27°09.9	1.2'	59.6'	117°24.4	71°04.8	68°42.7	58°51.4	41°49.1	34°22.4	22°29.7	
20	87°55.7	2.9'	$27^{\circ}11.1$	1.0'	59.6'	116°57.0	70°28.7	68° 07.5	58°15.4	41°16.9	33°46.6	22°12.7	13°34.3
21	102°17.6	2.8'	27°12.1	0.8'	59.6'	116°29.5	69°52.6	67°32.2	57°39.5	40°44.9	33°10.9	21°56.5	13°58.9
22	116°39.4	2.8'	27°12.9	0.6'	59.7'	116°01.9	69° 16.5	66°57.0	57°03.6	40°12.9	32°35.2	21°41.1	14°24.4
23	131°01.2	2.8'	27°13.5	0.4'	59.7'	115°34.2	68°40.4	66°21.8	56°27.6	39°41.1	31°59.5		14°50.6
8 th	SD -	- 16 2 [']	Mer nass	13.5	3								

1.	Moon (9th May)	Lunar Distance (objects with largest hourly LD delta)
n	IVIOON (U" IVIAV)	I linar i listance i oniects with largest nollriv i i li delta i

Sun	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Jupiter	-Pollux	+Aldebaran	+Capella	+Sun
0	145°23.0	2.8'	N27°13.9	0.2'	59.7'		68°04.2	65°46.5	55°51.7	31°23.8	15°17.4		
1	159°44.8	2.8'	$27^{\circ}14.1$	0.0'	59.7'		67°28.1	65°11.3	55° 15.7	30°48.1	15°44.9		
2	174°06.6	2.8'	27°14.2	-0.2'	59.7'		66°52.0	64°36.0	54°39.8	30°12.5	16°12.9		
3	188°28.4	2.8'	27°14.0	-0.4'	59.7'		66°15.8	64°00.8	54°03.8	29°36.8	16°41.4		
4	202°50.2	2.8'	27°13.6	-0.6'	59.7'	119°43.0	65°39.7	63°25.5	53°27.8	29°01.2	17°10.4		
5	217°12.0	2.8'	$27^{\circ}13.1$	-0.8'	59.7'	119°06.9	65°03.5	62°50.2	52°51.9	28°25.5	17°39.8		
6	231°33.8	2.8'	$N27^{\circ}12.3$	-1.0'	59.7'	118°30.8	64°27.4	62°15.0	52° 15.9	27°49.9	18°09.6		
7	245°55.6	2.8'	$27^{\circ}11.4$	-1.2'	59.7'	117°54.6	63°51.2	61°39.7	51°39.9	27°14.4	18°39.8		
8	260°17.4	2.8'	$27^{\circ}10.2$	-1.3'	59.7'	117°18.5	63°15.0	61°04.4	51°04.0	26°38.8	19°10.3		
9	274°39.3	2.8'	27°08.9	-1.5'	59.7'	116°42.4	62°38.9	60°29.2	50°28.0	26°03.3	19°41.2		
10	289°01.1	2.9'	27°07.3	-1.7'	59.7'	116°06.2	62°02.7	59°53.9	49°52.0	25°27.8	20°12.3		
11	303°23.0	2.9'	27°05.6	-1.9'	59.7'	115°30.1	61°26.6	59°18.7	49° 16.0	24°52.3	20°43.7		
12	317°44.8	2.9'	N27°03.7	-2.1'	59.7'	114°54.0	60°50.4	58°43.4	48° 40.0	24°16.8	21°15.3		
13	332°06.7	2.9'	27°01.5	-2.3'	59.7'	114°17.8	60°14.2	58°08.1	48°04.1	23°41.4	21°47.1		41°26.4
14	346°28.7	3.0'	26°59.2	-2.5'	59.7'	113°41.7	59°38.1	57°32.9	47°28.1	23°06.0	22°19.2	20°56.8	41°59.9
15	0°50.6	3.0'	26°56.7	-2.7'	59.7'	113°05.5	59°01.9	56°57.6	46°52.1	22°30.7	22°51.5	21°12.9	42°33.4
16	15°12.6	3.0'	26°54.0	-2.9'	59.7'	112°29.4	58°25.8	56°22.3	46° 16.1	21°55.4	23°23.9	21°29.7	43°06.8
17	29°34.7	3.1'	$26^{\circ}51.1$	-3.1'	59.7'	111°53.3	57°49.6	55°47.1	45°40.2	21°20.2	23°56.5	21°47.2	43°40.3
18	43°56.7	3.1'	N26°48.0	-3.3'	59.7'	111°17.1	57°13.4	55°11.8	45°04.2	20°45.0	24°29.3	22°05.5	44°13.8
19	58°18.8	3.1'	26°44.7	-3.5'	59.7'	110°41.0	56°37.3	54°36.6	44°28.2	20°09.9	25°02.2	22°24.5	44°47.3
20	72°41.0	3.2'	26°41.3	-3.7'	59.7'	110°04.9	56°01.1	54°01.3	43°52.3	19°34.8	25°35.2	22°44.1	45°20.8
21	87°03.2	3.2'	26°37.6	-3.8'	59.7'	109°28.7	55°25.0	53°26.1	43°16.3	18°59.8	26°08.4	23°04.4	45°54.3
22	101°25.4	3.3'	26°33.7	-4.0'	59.7'	108°52.6	54°48.8	52°50.9	42°40.3	18°24.9	26°41.7	23°25.2	46°27.8
23	115°47.7	3.3'	26°29.7	-4.2'	59.7'	108°16.5	54°12.7	52°15.6	42°04.4	17°50.0	27°15.1	23°46.7	47°01.3
9 th													

h Moon (10th May)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Jupiter	+Betelgeuse	+Capella	+Aldebaran	+Sun
0	130°10.1	3.4'	N 26°25.5	-4.4'	59.7'	107°40.3	53°36.5	51°40.4	41°28.4		24°08.7	27°48.6	47°34.8
1	144°32.5	3.5'	26°21.1	-4.6'	59.7'	107°04.2	53°00.4	51°05.2	40°52.5		24°31.2	28° 22.2	48°08.3
2	158°54.9	3.5'	$26^{\circ}16.5$	-4.8'	59.7'	106°28.1	52°24.3	50°30.0	40°16.6		24°54.2	28° 55.8	48°41.8
3	173°17.4	3.6'	$26^{\circ}11.7$	-5.0'	59.7'	105°52.0	51°48.1	49°54.8	39°40.6		25° 17.7	29°29.6	49°15.3
4	187°40.0	3.6'	26°06.7	-5.1'	59.7'	105°15.9	51°12.0	49° 19.6	39°04.7		25°41.6	30°03.5	49°48.8
5	202°02.6	3.7'	26°01.6	-5.3'	59.7'	104°39.8	50°35.9	48°44.4	38°28.8		26°06.0	30°37.4	50°22.3
6	216°25.3	3.8'	N 25°56.3	-5.5'	59.7'	104°03.7	49°59.8	48°09.2	37°52.8	21°53.3	26°30.8	31°11.4	50°55.8
7	230°48.1	3.8'	25°50.8	-5.7'	59.7'	103°27.6	49°23.7	47°34.0	37°16.9	22°09.3	26°56.0	31°45.4	51°29.2
8	245°10.9	3.9'	25°45.1	-5.9'	59.7'	102°51.5	48°47.6	46°58.8	36°41.0	22°26.1	27°21.6	32° 19.6	52°02.7
9	259°33.9	4.0'	25°39.2	-6.0'	59.7'	102°15.4	48°11.5	46°23.7	$36^{\circ}05.1$	22°43.6	27°47.5	32°53.8	52°36.2
10	273°56.8	4.1'	25°33.2	-6.2'	59.7'	101°39.4	47°35.4	45°48.5	35°29.2	23°01.7	28°13.7	33°28.0	53°09.7
11	288°19.9	4.1'	25°27.0	-6.4'	59.7'	101°03.3	46°59.4	45°13.4	34°53.4	23°20.6	28°40.3	34°02.3	53°43.2
12	302°43.0	4.2'	N25°20.6	-6.6'	59.7'	100°27.2	46°23.3	44°38.3	34°17.5	23°40.0	29°07.2	34°36.6	54°16.6
13	317°06.3	4.3'	25°14.0	-6.7'	59.7'	99°51.2	45°47.2	44°03.1	33°41.6	24°00.1	29°34.4	35°11.0	54°50.1
14	331°29.5	4.4'	25°07.3	-6.9'	59.7'	99°15.1	45°11.2	43°28.0	33°05.8	24°20.7	30°01.9	35° 45.4	55°23.6
15	345°52.9	4.5'	25°00.4	-7.1'	59.7'	98°39.1	44°35.1	42°52.9	32°29.9	24°41.9	$30^{\circ}29.6$	36° 19.9	55°57.0
16	0°16.4	4.5'	24°53.3	-7.2'	59.7'	98°03.1	43°59.1	42°17.8	31°54.1	25°03.6	30°57.6	36°54.3	56°30.5
17	14°39.9	4.6'	24°46.1	-7.4'	59.7'	97°27.1	43°23.1	41°42.8	31°18.3	25°25.8	31°25.8	37°28.9	57°03.9
18	29°03.6	4.7'	N 24°38.7	-7.6'	59.7'	96°51.1	42°47.1	41°07.7	30°42.5	25°48.5	31°54.2	38°03.4	57°37.4
19	43°27.3	4.8'	24°31.1	-7.7'	59.7'	96°15.1	42°11.1	40°32.6	30°06.7	26°11.7	32°22.9	38°38.0	58°10.8
20	57°51.1	4.9'	24°23.4	-7.9'	59.6'	95°39.1	41°35.1	39°57.6	29°30.9	26°35.2	$32^{\circ}51.8$	39°12.6	58°44.2
21	72°15.0	5.0'	24° 15.5	-8.1'	59.6'	95°03.1	40°59.1	39°22.6	28°55.1	26°59.2	33°20.9	39°47.3	59°17.6
22	86°39.0	5.1'	24°07.4	-8.2'	59.6'	94°27.1	40°23.1	38°47.6	28° 19.3	27°23.7	33°50.1	40°21.9	59°51.0
23	101°03.1	5.2'	23°59.2	-8.4'	59.6'	93°51.2	39°47.2	38°12.6	27°43.6	27°48.4	34°19.6	40°56.6	60°24.4
10 th	SD	= 16.3	Mer. pass	s. 15:59					Sun	SD = 15.8'			

h Moon (11th May) Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Jupiter	+Pollux	+Capella	+Aldebaran	+Sun
0	115°27.2	5.3'	N23°50.8	-8.5'	59.6'	93°15.2	39°11.2	37°37.6	27°07.8		34°49.2	41°31.3	60°57.8
1	129°51.5	5.4'	23°42.3	-8.7'	59.6'	92°39.3	38°35.3	37°02.6	26°32.1		35° 19.0	42°06.1	61°31.2
2	144°15.9	5.5'	23°33.7	-8.8'	59.6'	92°03.4	37°59.4	36°27.7	25°56.4		35°48.9	42°40.8	62°04.6
3	158°40.3	5.6'	23°24.8	-9.0'	59.6'	91°27.4	37°23.5	35°52.7	25°20.7		36° 19.0	43°15.6	62°38.0
4	173°04.9	5.7'	$23^{\circ}15.8$	-9.1'	59.6'	90°51.5	36°47.6	35°17.8	24°45.0		36°49.2	43°50.3	63°11.3
5	187°29.5	5.8'	23°06.7	-9.3'	59.6'	90°15.6	36°11.7	34°42.9	24°09.3		37° 19.6	44°25.1	63°44.6
6	201°54.3	5.9'	N22°57.5	-9.4'	59.6'	89°39.8	35°35.8	34°08.0	23°33.6		37°50.1	44°59.9	64°18.0
7	216°19.2	6.0'	22°48.0	-9.6'	59.6'	89°03.9	35°00.0	33°33.1	22°58.0		38° 20.7	45°34.7	64°51.3
8	230°44.1	6.1'	22°38.5	-9.7'	59.6'	88°28.0	34°24.1	32°58.3	22°22.3		38°51.4	46°09.5	65°24.6
9	245°09.2	6.2'	22°28.8	-9.8'	59.5'	87°52.2	33°48.3	32°23.5	21°46.7		39°22.3	46°44.4	65°57.9
10	259°34.3	6.3'	22°18.9	-10.0'	59.5'	87°16.4	33°12.5	31°48.6	21°11.1		39°53.2	47°19.2	66°31.2
11	273°59.6	6.4'	22°09.0	-10.1'	59.5'	86°40.6	32°36.7	31°13.8	20°35.6		40°24.3	47°54.1	67°04.5
12	288°25.0	6.5'	N21°58.8	-10.3'	59.5'	86°04.8	32°00.9	30°39.1	20°00.0		40°55.4	48°28.9	67°37.7
13	302°50.4	6.6'	21°48.6	-10.4'	59.5'	85°29.0	31°25.1	30°04.3	19°24.4		41°26.7	49°03.8	68°11.0
14	317°16.0	6.7'	21°38.2	-10.5'	59.5'	84°53.2	30°49.4	29°29.6	18°48.9		41°58.0	49°38.6	68°44.2
15	331°41.7	6.8'	$21^{\circ}27.7$	-10.6'	59.5'	84°17.4	30°13.7	28°54.9	18° 13.4		42°29.4	50°13.5	69°17.5
16	346°07.4	6.9'	21°17.0	-10.8'	59.5'	83°41.7	29°37.9	28°20.2	17° 37.9	8°49.1	43°00.9	50°48.3	69°50.7
17	0°33.3	7.0'	21°06.3	-10.9'	59.5'	83°06.0	29°02.2	27°45.5	17°02.4	9°19.4	43°32.5	51°23.2	70°23.9
18	14°59.3	7.1'	N20°55.4	-11.0'	59.5'	82°30.2	28°26.6	27°10.9	16°27.0	9°50.3	44°04.1	51°58.0	70°57.1
19	29°25.4	7.2'	20°44.3	-11.1'	59.4'	81°54.5	27°50.9	26°36.2	15°51.6	10°21.8	44°35.8	52°32.9	71°30.2
20	43°51.6	7.3'	20°33.2	-11.3'	59.4'	81°18.8	27°15.2	26°01.6	15° 16.2	10°53.6	45°07.6	53°07.8	72°03.4
21	58°17.9	7.4'	$20^{\circ}21.9$	-11.4'	59.4'	80°43.2	26°39.6	25°27.1	14°40.8	11°25.8	45°39.4	53°42.6	72°36.5
22	72°44.3	7.5'	$20^{\circ}10.5$	-11.5'	59.4'	80°07.5	26°04.0	24°52.5	14°05.4	11°58.3	46°11.3	54°17.5	73°09.7
23	87°10.8	7.6'	19°59.0	-11.6'	59.4'	79°31.9	25°28.4	24°18.0	13°30.1	12°31.1	46°43.3	54°52.3	73°42.8
11 th	SD	= 16.3	B' Mer. pas	s. 16:58					Sun S	5D = 15.8'			

h Moon (12th May) Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Antares	-Spica	-Regulus	-Jupiter	+Pollux	+Capella	+Aldebaran	+Sun
0	101°37.4	7.7'	N 19°47.4	-11.7'	59.4'		78°56.2	24°52.8	12°54.8	13°04.2	47° 15.3	55°27.2	74°15.9
1	$116^{\circ}04.1$	7.8'	19°35.7	-11.8'	59.4'		78°20.6	24°17.3	12° 19.5	13°37.4	47° 47.4	56°02.0	74°49.0
2	130°30.9	7.9'	19°23.8	-12.0'	59.4'		77°45.0	23°41.7	11°44.3	14°10.8	48° 19.5	56°36.9	75°22.0
3	144°57.8	8.0'	$19^{\circ}11.9$	-12.1'	59.4'		77°09.5	23°06.2	11°09.1	14°44.4	48°51.7	57°11.7	75°55.1
4	159°24.8	8.1'	18° 59.8	-12.2'	59.3'		76°33.9	22°30.7	10°34.0	15°18.1	49°23.9	57°46.6	76°28.1
5	173°52.0	8.2'	18°47.7	-12.3'	59.3'		75°58.4	21°55.3	9°58.8	15°51.9	49°56.1	58°21.4	77°01.2
6	188°19.2	8.3'	N18°35.4	-12.4'	59.3'		75°22.8	21°19.8	9°23.8	16°25.8	50°28.4	58°56.2	77°34.2
7	202°46.5	8.4'	18°23.0	-12.5'	59.3'		74°47.3	20°44.4	8°48.8	16°59.8	51°00.7	59°31.0	78°07.2
8	217°13.9	8.5'	$18^{\circ}10.5$	-12.6'	59.3'		74°11.8	20°09.0	8° 13.8	17°33.9	51°33.1	60°05.8	78°40.2
9	231°41.5	8.6'	17° 57.9	-12.7'	59.3'	119°26.1	73°36.4	19°33.6	7°38.9	18°08.1	52°05.5	60°40.6	79°13.1
10	$246^{\circ}09.1$	8.7'	17°45.3	-12.8'	59.3'	118°50.6	73°00.9	18°58.3	7°04.2	18°42.3	52° 37.9	61°15.4	79°46.1
11	260°36.8	8.8'	$17^{\circ}32.5$	-12.9'	59.2'	118°15.1	72°25.4	18°23.0	6°29.5	19°16.6	53°10.4	61°50.2	80°19.0
12	275°04.6	8.9'	$N17^{\circ}19.6$	-13.0'	59.2'	117°39.6	71°50.0	17°47.7	5°54.9	19°51.0	53°42.9	62°25.0	80°51.9
13	289°32.6	9.0'	17°06.7	-13.1'	59.2'	117°04.2	71°14.6	17°12.4	5°20.6	20°25.4	54° 15.4	62°59.7	81°24.8
14	304°00.6	9.1'	16°53.6	-13.1'	59.2'	116°28.7	70°39.2	16°37.2	4°46.4	20°59.8	54° 47.9	63°34.5	81°57.7
15	318°28.7	9.2'	16°40.5	-13.2'	59.2'	115°53.3	70°03.9	16°02.0	4°12.6	21°34.2	55° 20.5	64°09.2	82°30.5
16	332°56.9	9.3'	16°27.2	-13.3'	59.2'	115°17.9	69°28.5	15°26.8	3°39.2	22°08.7	55°53.1	64°43.9	83°03.4
17	347°25.2	9.4'	$16^{\circ}13.9$	-13.4'	59.2'	114°42.5	68°53.2	14°51.7	3°06.5	22°43.3	56°25.7	65°18.7	83°36.2
18	1°53.6	9.5'	$N16^{\circ}00.5$	-13.5'	59.1'	114°07.2	68°17.8	14°16.6		23°17.8	56°58.3	65°53.4	84°09.0
19	$16^{\circ}22.1$	9.6'	15°47.0	-13.6'	59.1'	113°31.8	67°42.5	13°41.5		23°52.4	57°31.0	66°28.1	84°41.8
20	30°50.7	9.7'	15°33.5	-13.6'	59.1'	112°56.5	67°07.3	13°06.5		24°27.0	58°03.6	67°02.7	85°14.6
21	45°19.4	9.8'	$15^{\circ}19.8$	-13.7'	59.1'	112°21.2	66°32.0	12°31.5		25°01.5	58° 36.3	67°37.4	85°47.3
22	59°48.1	9.9'	$15^{\circ}06.1$	-13.8'	59.1'	111°45.9	65°56.8	11°56.6		25°36.2	59°09.0	68°12.1	86°20.1
23	74°17.0	74°17.0 9.9' 14°52.3 -13.9' 59.1' 111°10.7 65°21.5 11°21.7 26°10.8 59°41.7 68°46.7 86°52.6								86°52.8			
12 th	SD	= 16.2	Mer. pas	s. 17:52					Sun S	D = 15.8'			

h Moon (13th May)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Antares	-Spica	-Regulus	-Mars	+Jupiter	+Pollux	+Capella	+Aldebaran
0	88°45.9	10.0'	N 14°38.5	-13.9'	59.1'	110°35.4	64°46.3	10°46.9	10°10.1		26°45.4	60°14.4	69°21.3
1	103°15.0	10.1'	14°24.5	-14.0'	59.0'	110°00.2	64°11.1	10°12.2	9°37.3		27°20.0	60°47.2	69°56.0
2	117°44.1	10.2'	$14^{\circ}10.5$	-14.1'	59.0'	109°25.0	63°36.0	9°37.5	9°04.8		27°54.7	61°19.9	70°30.6
3	132°13.3	10.3'	13°56.4	-14.1'	59.0'	108°49.8	63°00.8	9°03.0	8°32.6		28°29.3	61°52.6	71°05.2
4	146°42.6	10.4'	13°42.3	-14.2'	59.0'	108°14.6	62°25.7	8°28.5	8°00.6	3°46.8	29°04.0	62°25.4	71°39.7
5	161°12.0	10.5'	13°28.1	-14.3'	59.0'	107°39.4	61°50.6	7°54.2	7°29.0	4°20.1	29°38.6	62°58.2	72°14.3
6	175°41.5	10.5'	$N13^{\circ}13.8$	-14.3'	59.0'	107°04.3	61°15.5	7°20.0	6°57.8	4°53.8	30°13.3	63°30.9	72°48.8
7	190°11.0	10.6'	12°59.4	-14.4'	58.9'	106°29.2	60°40.4	6°46.0	6°27.2	5°27.7	30°47.9	64°03.7	73°23.4
8	204°40.6	10.7'	12°45.0	-14.5'	58.9'	105°54.1	60°05.4	6°12.2	5°57.2	6°01.7	31°22.5	64°36.5	73°57.9
9	219°10.3	10.8'	12°30.6	-14.5'	58.9'	105°19.0	59°30.3	5°38.7	5°28.1	6°35.9	31°57.2	65°09.3	74° 32.4
10	233°40.1	10.9'	$12^{\circ}16.1$	-14.6'	58.9'	104°43.9	58°55.3	5°05.6		7°10.2	32°31.8	65°42.1	75°06.9
11	248°10.0	10.9'	$12^{\circ}01.5$	-14.6'	58.9'	104°08.9	58°20.3	4°32.9		7°44.5	33°06.4	66°14.9	75°41.4
12	262°39.9	11.0'	N 11°46.9	-14.7'	58.9'	103°33.8	57°45.4	4°01.0		8°18.9	33°41.0	66°47.7	76° 15.8
13	277°09.9	11.1'	11°32.2	-14.7'	58.8'	102°58.8	57°10.4			8°53.3	34° 15.7	67°20.5	76°50.3
14	291°40.0	11.2'	$11^{\circ}17.4$	-14.8'	58.8'	102°23.8	56°35.5			9°27.8	34°50.3	67°53.2	77°24.7
15	306°10.2	11.2'	$11^{\circ}02.7$	-14.8'	58.8'	101°48.9	56°00.5			10°02.3	35°24.9	68°26.0	77°59.1
16	320°40.4	11.3'	10°47.8	-14.9'	58.8'	101°13.9	55°25.7			10°36.7	35°59.4	68°58.8	78°33.5
17	335°10.7	11.4'	10°32.9	-14.9'	58.8'	100°39.0	54°50.8			11°11.2	36°34.0	69°31.6	79°07.9
18	349°41.1	11.4'	$N10^{\circ}18.0$	-15.0'	58.8'	100°04.1	54°15.9			11°45.7	37°08.6	70°04.4	79°42.2
19	4°11.6	11.5'	$10^{\circ}03.0$	-15.0'	58.7'	99°29.2	53°41.1			12°20.2	37°43.2	70°37.2	80° 16.5
20	18°42.1	11.6'	09°48.0	-15.1'	58.7'	98°54.3	53°06.3			12°54.7	38° 17.7	71°10.0	80°50.9
21	33°12.7	11.6'	09°33.0	-15.1'	58.7'	98°19.5	52°31.5			13°29.1	38°52.2	71°42.7	81°25.2
22	47°43.3	11.7'	09°17.9	-15.1'	58.7'	97°44.6	51°56.7			14°03.6	39°26.8	72°15.5	81°59.5
23	62°14.0	11.8'	09°02.7	-15.2'	58.7'	97°09.8	51°22.0			14°38.1	40°01.3	72°48.3	82°33.7
13 th	SD	= 16.1	Mer. pas	s. 18:43									

h Moon (14th May) Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Spica	+Regulus	+Jupiter	+Pollux	+Aldebaran
0	76°44.8	11.8'	N 08°47.6	-15.2'	58.7'	96°35.0	86°18.2	82°17.4	50°47.2		15°12.5	40°35.8	83°08.0
1	91°15.6	11.9'	08°32.4	-15.2'	58.6'	96°00.3	85°50.7	81°50.7	50°12.5		15°46.9	41°10.3	83°42.2
2	105°46.5	12.0'	$08^{\circ}17.1$	-15.3'	58.6'	95°25.5	85°23.2	81°23.9	49°37.8	4°51.1	16°21.4	41°44.7	84°16.4
3	120°17.5	12.0'	$08^{\circ}01.9$	-15.3'	58.6'	94°50.8	84°55.8	80°57.2	49°03.2	5°23.7	16°55.8	42°19.2	84°50.6
4	134°48.5	12.1'	07°46.5	-15.3'	58.6'	94°16.1	84°28.4	80°30.5	48°28.5	5°56.7	17°30.2	42°53.7	85°24.8
5	149°19.5	12.1'	07°31.2	-15.4'	58.6'	93°41.4	84°01.1	80°03.9	47°53.9	6°30.0	18°04.6	43°28.1	85°59.0
6	163°50.6	12.2'	N07°15.9	-15.4'	58.6'	93°06.7	83°33.7	79°37.3	47°19.3	7°03.5	18°38.9	44°02.5	86°33.1
7	178°21.8	12.2'	07°00.5	-15.4'	58.5'	92°32.1	83°06.4	79° 10.7	46°44.7	7°37.1	19°13.3	44°36.9	87°07.2
8	192°53.0	12.3'	06°45.1	-15.4'	58.5'	91°57.4	82°39.2	78°44.2	46°10.1	8° 10.9	19°47.6	45°11.3	87°41.3
9	207°24.3	12.3'	06°29.6	-15.5'	58.5'	91°22.8	82°11.9	78° 17.7	45°35.6	8°44.7	20°21.9	45°45.7	88°15.4
10	221°55.6	12.4'	06°14.2	-15.5'	58.5'	90°48.2	81°44.7	77°51.3	45°01.1	9°18.7	20°56.2	46°20.0	88°49.5
11	236°27.0	12.4'	05°58.7	-15.5'	58.5'	90°13.6	81°17.6	77°24.9	44°26.6	9°52.7	21°30.5	46°54.4	89°23.5
12	250°58.4	12.5'	N05°43.2	-15.5'	58.4'	89°39.1	80°50.4	76°58.6	43°52.1	10°26.7	22°04.8	47°28.7	89°57.5
13	265°29.9	12.5'	05°27.7	-15.5'	58.4'	89°04.6	80°23.3	76°32.3	43°17.7	11°00.7	22°39.0	48°03.0	90°31.5
14	280°01.4	12.6'	$05^{\circ}12.1$	-15.6'	58.4'	88°30.1	79°56.3	76°06.1	42°43.2	11°34.8	23°13.3	48°37.3	91°05.5
15	294°33.0	12.6'	04°56.6	-15.6'	58.4'	87°55.6	79°29.3	75°39.9	42°08.8	12°08.9	23°47.5	49°11.6	91°39.5
16	309°04.6	12.6'	04°41.0	-15.6'	58.4'	87°21.1	79°02.3	75° 13.8	41°34.4	12°43.1	24°21.7	49°45.8	92°13.4
17	323°36.2	12.7'	04°25.4	-15.6'	58.4'	86°46.6	78°35.4	74°47.7	41°00.1	13° 17.2	24°55.9	50°20.1	92°47.3
18	338°07.9	12.7'	N 04°09.8	-15.6'	58.3'	86°12.2	78°08.5	74°21.7	40°25.7	13°51.3	25°30.0	50°54.3	93°21.3
19	352°39.6	12.8'	03°54.2	-15.6'	58.3'	85°37.8	77°41.6	73°55.7	39°51.4	14°25.5	26°04.2	51°28.5	93°55.1
20	7°11.4	12.8'	03°38.6	-15.6'	58.3'	85°03.4	77°14.8	73°29.8	39°17.1	14°59.6	26°38.3	52°02.7	94°29.0
21	21°43.2	12.8'	03°23.0	-15.6'	58.3'	84°29.0	76°48.1	73°04.0	38°42.8	15°33.8	27°12.4	52°36.9	95°02.8
22	36°15.0	12.9'	03°07.4	-15.6'	58.3'	83°54.7	76°21.4	72°38.2	38°08.5	16°07.9	27°46.5	53°11.1	95°36.7
23	50°46.8	12.9'	02°51.7	-15.6'	58.2'	83°20.3	75°54.7	72°12.5	37°34.3	16°42.0	28°20.6	53°45.2	96°10.5
14 th	SD	= 16.0	Mer. pas	s. 19:30									

h		Moor	า (15 th M	ay)			Lunar Di	stance (objects v	vith larges	t hourly l	_D delta	
Sat	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Spica	+Regulus	+Jupiter	+Pollux	+Aldebaran

0	65°18.7	12.9'	N02°36.1	-15.6'	58.2'	82°46.0	75°28.1	71°46.8	37°00.1	17° 16.1	28°54.6	54°19.4	96°44.2
1 1	79°50.7	12.9'	02°20.4	-15.6'	58.2'	82°11.7	75°01.5	71°21.2	36°25.9	17°50.3	29°28.6	54°53.5	97°18.0
2	94°22.6	13.0'	02°04.8	-15.6'	58.2'	81°37.5	74°35.0	70°55.7	35°51.7	18°24.4	30°02.6	55°27.6	97°51.7
3	108°54.6	13.0'	01°49.2	-15.6'	58.2'	81°03.2	74°08.6	70°30.2	35°17.6	18°58.5	30°36.6	56°01.6	98°25.4
4	123°26.6	13.0'	01°33.5	-15.6'	58.2'	80°29.0	73°42.2	70°04.9	34°43.5	19°32.5	31°10.6	56°35.7	98°59.1
5	137°58.6	13.1'	$01^{\circ}17.9$	-15.6'	58.1'	79°54.8	73°15.8	69°39.5	34°09.4	20°06.6	31°44.5	57°09.7	99°32.8
6	152°30.7	13.1'	N01°02.2	-15.6'	58.1'	79°20.6	72°49.6	69°14.3	33°35.3	20°40.7	$32^{\circ}18.5$	57°43.7	100°06.5
7	167°02.7	13.1'	00°46.6	-15.6'	58.1'	78°46.4	72°23.3	68°49.1	33°01.3	21°14.7	32°52.4	58°17.7	100°40.1
8	181°34.8	13.1'	00°31.0	-15.6'	58.1'	78°12.3	71°57.2	68°24.0	32°27.2	21°48.7	33°26.3	58°51.7	101°13.7
9	196°07.0	13.1'	N 00°15.4	-15.6'	58.1'	77°38.2	71°31.1	67°59.0	31°53.2	22°22.7	34°00.1	59°25.7	101°47.3
10	210°39.1	13.2'	S 00°00.2	-15.6'	58.0'	77°04.1	71°05.0	67°34.1	31°19.3	22°56.7	34°34.0	59°59.6	102°20.8
11	225°11.3	13.2'	$00^{\circ}15.8$	-15.6'	58.0'	76°30.0	70°39.1	67°09.2	30°45.3	23°30.7	$35^{\circ}07.8$	60°33.6	102°54.4
12	239°43.4	13.2'	S 00°31.4	-15.6'	58.0'	75°55.9	70°13.1	66° 44.4	30°11.4	24°04.7	35°41.6	61°07.5	103°27.9
13	254°15.6	13.2'	00°47.0	-15.6'	58.0'	75°21.9	69°47.3	66° 19.7	29°37.5	24°38.6	$36^{\circ}15.4$	61°41.4	104°01.4
14	268°47.8	13.2'	$01^{\circ}02.6$	-15.6'	58.0'	74°47.8	69°21.5	65°55.1	29°03.6	25°12.6	36°49.2	62°15.2	104°34.9
15	283°20.0	13.2'	$01^{\circ}18.1$	-15.5'	57.9'	74°13.8	68°55.8	65°30.6	28°29.8	25°46.5	37°22.9	62°49.1	105°08.3
16	297°52.3	13.2'	01°33.7	-15.5'	57.9'	73°39.8	68°30.2	65°06.2	27°56.0	26°20.4	37°56.7	63°22.9	105°41.7
17	312°24.5	13.2'	$01^{\circ}49.2$	-15.5'	57.9'	73°05.9	68°04.6	64°41.8	27°22.2	26°54.3	38°30.4	63°56.7	106°15.1
18	326°56.8	13.3'	S 02°04.7	-15.5'	57.9'	72°31.9	67°39.1	64°17.6	26°48.4	27°28.2	39°04.1	64°30.5	106°48.5
19	341°29.0	13.3'	02°20.2	-15.5'	57.9'	71°58.0	67°13.7	63°53.4	26°14.6	28°02.0	39°37.7	65°04.3	107°21.9
20	356°01.3	13.3'	02°35.6	-15.4'	57.8'	71°24.1	66°48.4	63°29.4	25°40.9	28° 35.8	40°11.4	65°38.1	107°55.2
21	10°33.5	13.3'	$02^{\circ}51.1$	-15.4'	57.8'	70°50.2	66°23.2	63°05.4	25°07.2	29°09.6	40°45.0	66°11.8	108°28.5
22	25°05.8	13.3'	03°06.5	-15.4'	57.8'	70°16.4	65°58.0	62°41.5	24°33.6	29°43.4	41°18.6	66°45.5	109°01.8
23	39°38.1	13.3'	$03^{\circ}21.9$	-15.4'	57.8'	69°42.5	65°32.9	62°17.8	24°00.0	30° 17.2	41°52.2	67°19.2	109°35.1
15 th	SD	= 15.9'	Mer. pass	s. 20:16									

h Moon (16th May)

Sun	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Jupiter	+Pollux	+Aldebaran
0	54°10.4	13.3'	S 03°37.2	-15.3'	57.8'	118°55.1	69°08.7	65°07.9	23°26.4	30°51.0	42°25.8	67°52.9	110°08.3
1	68°42.7	13.3'	$03^{\circ}52.6$	-15.3'	57.7'	118°27.5	68°34.9	64°43.0	22°52.8	31°24.7	42°59.3	68°26.6	110°41.5
2	83°14.9	13.3'	04°07.9	-15.3'	57.7'	117°59.8	68°01.1	64°18.1	22°19.3	31°58.4	43°32.9	69°00.2	111° 14.7
3	97°47.2	13.3'	$04^{\circ}23.2$	-15.3'	57.7'	117°32.1	67°27.4	63°53.4	21°45.8	32°32.1	44°06.4	69°33.8	111°47.9
4	112°19.5	13.3'	04°38.4	-15.2'	57.7'	117°04.3	66°53.6	63°28.7	21°12.3	33°05.8	44°39.8	70°07.4	112°21.0
5	126°51.8	13.3'	04°53.6	-15.2'	57.7'	116°36.5	$66^{\circ}19.9$	63°04.2	20°38.8	33°39.5	45°13.3	70°41.0	112°54.1
6	141°24.1	13.3'	S 05°08.8	-15.2'	57.6'	116°08.7	65°46.2	62°39.7	20°05.4	34°13.1	45°46.8	71°14.6	113°27.2
7	155°56.3	13.3'	$05^{\circ}24.0$	-15.1'	57.6'	115°40.8	65° 12.5	62°15.3	19°32.1	34°46.8	46°20.2	71°48.1	114°00.2
8	170°28.6	13.3'	$05^{\circ}39.1$	-15.1'	57.6'	115°12.9	64°38.9	61°51.0	18°58.8	35°20.4	46°53.6	72°21.7	114°33.3
9	185°00.8	13.2'	05°54.2	-15.1'	57.6'	114°44.9	64°05.3	61°26.9	18°25.5	35°54.0	47°27.0	72°55.2	115°06.3
10	199°33.1	13.2'	06°09.3	-15.0'	57.6'	114°17.0	63°31.6	61°02.8	17°52.2	36°27.5	48°00.3	73°28.6	115°39.3
11	214°05.3	13.2'	$06^{\circ}24.3$	-15.0'	57.5'	113°49.0	62°58.0	60°38.8	17°19.0	37°01.1	48°33.7	74°02.1	116°12.2
12	228°37.5	13.2'	S 06°39.2	-14.9'	57.5'	113°21.0	62°24.5	60°15.0	16°45.9	37°34.6	49°07.0	74°35.6	116°45.2
13	243°09.7	13.2'	06°54.2	-14.9'	57.5'	112°52.9	61°50.9	59°51.2	16°12.8	38°08.1	49°40.3	75°09.0	117° 18.1
14	257°41.9	13.2'	$07^{\circ}09.1$	-14.9'	57.5'	112°24.9	61°17.4	59°27.6	15°39.7	38°41.6	50°13.6	75°42.4	117°51.0
15	272°14.1	13.2'	$07^{\circ}23.9$	-14.8'	57.5'	111°56.8	60°43.9	59°04.0	15°06.7	39°15.1	50°46.8	76° 15.8	118°23.8
16	286°46.3	13.1'	07°38.7	-14.8'	57.4'	111°28.6	60°10.4	58°40.6	14°33.8	39°48.5	51°20.1	76°49.1	118°56.6
17	301°18.4	13.1'	$07^{\circ}53.5$	-14.7'	57.4'	111°00.5	59°36.9	58°17.3	14°00.9	40°21.9	51°53.3	77°22.5	119°29.4
18	315°50.6	13.1'	S 08°08.2	-14.7'	57.4'	110°32.4	59°03.5	57°54.1	13°28.1	40°55.4	52°26.5	77°55.8	
19	330°22.7	13.1'	08°22.9	-14.6'	57.4'	110°04.2	58°30.1	57°31.1	12°55.3	41°28.7	52°59.6	78°29.1	
20	344°54.8	13.1'	08° 37.5	-14.6'	57.4'	109°36.0	57° 56.7	57°08.1	12°22.7	42°02.1	53°32.8	79°02.4	
21	359°26.8	13.1'	$08^{\circ}52.1$	-14.5'	57.3'	109°07.8	57°23.3	56°45.3	11°50.1	42°35.5	54°05.9	79°35.6	
22	13°58.9	13.0'	09°06.6	-14.5'	57.3'	108°39.6	56° 49.9	56°22.7	11°17.6	43°08.8	54°39.0	80°08.9	
23	28°30.9	13.0'	$09^{\circ}21.1$	-14.4'	57.3'	108°11.3	56° 16.6	56°00.1	10°45.3	43°42.1	55°12.1	80°42.1	
16 th	SD	= 15.8'	Mer. pas	s. 21:02									

h Moon (17 th May)	Lunar Distance (objects with largest hourly L	D delta)
-------------------------------	---	----------

Mon	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Mars	+Regulus	+Jupiter	+Pollux
0	43°02.9	13.0'	S 09°35.5	-14.4'	57.3'	107°43.1	55°43.2	55°37.7	10°13.0	43°43.7	44° 15.4	55°45.2	81°15.3
1	57°34.9	13.0'	09°49.8	-14.3'	57.3'	107°14.8	55°09.9	55° 15.4	9°40.9	44°16.0	44°48.7	56° 18.2	81°48.5
2	72°06.9	12.9'	10°04.2	-14.3'	57.2'	106°46.6	54°36.7	54°53.3	9°09.0	44°48.2	45°21.9	56°51.3	82°21.6
3	86°38.8	12.9'	10°18.4	-14.2'	57.2'	106°18.3	54°03.4	54°31.2	8°37.2	45°20.4	45°55.1	57°24.3	82°54.8
4	101°10.7	12.9'	$10^{\circ}32.6$	-14.1'	57.2'	105°50.0	53°30.2	54°09.4	8°05.7	45°52.6	46°28.3	57°57.2	83°27.9
5	115°42.6	12.9'	10°46.7	-14.1'	57.2'	105°21.7	52°57.0	53°47.7	7°34.4	46°24.8	47°01.5	58°30.2	84°01.0
6	130°14.4	12.8'	S 11°00.8	-14.0'	57.2'	104°53.4	52°23.8	53°26.1	7°03.5	46°56.9	47° 34.7	59°03.1	84°34.1
7	144°46.3	12.8'	11°14.8	-14.0'	57.1'	104°25.1	51°50.6	53°04.7	6°32.9	47°29.0	48° 07.8	59°36.1	85°07.1
8	159°18.1	12.8'	11°28.8	-13.9'	57.1'	103°56.8	51°17.4	52°43.4	6°02.8	48°01.1	48°41.0	60°09.0	85°40.2
9	173°49.8	12.7'	11°42.7	-13.8'	57.1'	103°28.5	50°44.3	52°22.3	5°33.3	48°33.2	49° 14.1	60°41.8	86°13.2
10	188°21.5	12.7'	11°56.5	-13.8'	57.1'	103°00.2	50°11.2	52°01.4	5°04.6	49°05.3	49°47.2	61°14.7	86°46.2
11	202°53.2	12.7'	12°10.3	-13.7'	57.1'	102°31.9	49°38.1	51°40.6		49°37.3	50°20.2	61°47.5	87°19.1
12	217°24.9	12.6'	S 12°24.0	-13.6'	57.0'	102°03.6	49°05.0	51°20.0		50°09.4	50°53.3	62°20.3	87°52.1
13	231°56.5	12.6'	12°37.6	-13.6'	57.0'	101°35.3	48°32.0	50°59.6		50°41.4	51°26.3	62°53.1	88°25.0
14	246°28.1	12.6'	12°51.2	-13.5'	57.0'	101°06.9	47°59.0	50°39.3		51°13.4	51°59.3	63°25.9	88°57.9
15	260°59.7	12.5'	13°04.7	-13.4'	57.0'	100°38.6	47°26.0	50° 19.2		51°45.3	52°32.3	63°58.7	89°30.8
16	275°31.2	12.5'	13°18.1	-13.4'	57.0'	100°10.3	46°53.0	49°59.3		52°17.3	53°05.2	64°31.4	90°03.7
17	290°02.7	12.4'	13°31.5	-13.3'	56.9'	99°42.0	46°20.0	49°39.6		52°49.2	53°38.1	65°04.1	90°36.5
18	304°34.1	12.4'	S 13°44.7	-13.2'	56.9'	99°13.7	45°47.1	49°20.0		53°21.1	54°11.1	65°36.8	91°09.3
19	319°05.5	12.4'	13°57.9	-13.1'	56.9'	98°45.4	45°14.2	49°00.7		53°53.0	54°44.0	66°09.4	91°42.1
20	333°36.9	12.3'	$14^{\circ}11.1$	-13.1'	56.9'	98°17.1	44°41.3	48°41.5		54°24.8	55° 16.8	66°42.1	92°14.9
21	348°08.2	12.3'	14°24.1	-13.0'	56.9'	97°48.8	44°08.4	48° 22.5		54°56.7	55° 49.7	67° 14.7	92°47.7
22	2°39.5	12.2'	14°37.1	-12.9'	56.8'	97°20.5	43°35.5	48°03.8		55°28.5	56°22.5	67°47.3	93°20.4
23	17°10.8	12.2'	14°50.0	-12.8'	56.8'	96°52.3	43°02.7	47° 45.2		56°00.3	56° 55.3	68°19.9	93°53.1
17 th	SD	= 15.6'	Mer. pas	s. 21:49									

h	Moon (18 th May)	Lunar Distance (objects with largest hourly LD delta)	

Tue	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Antares	+Spica	+Regulus	+Jupiter	+Pollux
0	31°42.0	12.2'	S 15°02.8	-12.7'	56.8'		96°24.0	47° 26.9	42°29.9		57°28.1	68°52.4	94°25.8
1	46°13.2	12.1'	$15^{\circ}15.6$	-12.7'	56.8'		95°55.8	47° 08.7	41°57.1		58°00.9	69°24.9	94°58.5
2	60°44.3	12.1'	15°28.2	-12.6'	56.8'		95°27.5	46° 50.8	41°24.3		58°33.6	69°57.5	95°31.2
3	75°15.4	12.0'	15°40.8	-12.5'	56.7'		94°59.3	46°33.1	40°51.6	5°38.2	59°06.3	70°29.9	96°03.8
4	89°46.4	12.0'	15°53.3	-12.4'	56.7'	119°46.8	94°31.1	46° 15.6	40°18.9	6°07.5	59°39.0	71°02.4	96°36.4
5	104°17.4	11.9'	$16^{\circ}05.7$	-12.3'	56.7'	119°17.5	94°02.9	45°58.3	39°46.2	6°37.2	60°11.7	71°34.8	97°09.0
6	118°48.3	11.9'	S 16°18.0	-12.2'	56.7'	118°48.2	93°34.7	45°41.3	39°13.5	7°07.4	60°44.4	72°07.3	97°41.5
7	133°19.2	11.9'	$16^{\circ}30.3$	-12.2'	56.7'	118°18.8	93°06.5	45°24.5	38°40.8	7°37.9	61°17.0	72°39.7	98°14.1
8	147°50.1	11.8'	$16^{\circ}42.4$	-12.1'	56.6'	117°49.5	92°38.3	45°07.9	38°08.2	8°08.6	61°49.6	73°12.0	98°46.6
9	162°20.9	11.8'	$16^{\circ}54.5$	-12.0'	56.6'	117°20.1	92°10.2	44°51.6	37°35.6	8°39.6	62°22.2	73°44.4	99°19.1
10	176°51.7	11.7'	$17^{\circ}06.5$	-11.9'	56.6'	116°50.8	91°42.0	44°35.5	37°03.0	9°10.7	62°54.8	74°16.7	99°51.6
11	191°22.4	11.7'	$17^{\circ}18.4$	-11.8'	56.6'	116°21.4	91°13.9	44° 19.7	36°30.4	9°42.0	63°27.4	74°49.0	100°24.0
12	205°53.1	11.6'	S 17°30.1	-11.7'	56.6'	115°52.0	90°45.8	44°04.1	35°57.9	10°13.3	63°59.9	75°21.3	100°56.4
13	220°23.7	11.6'	$17^{\circ}41.8$	-11.6'	56.5'	115°22.6	90°17.7	43°48.8	35°25.4	10°44.8	64°32.4	75°53.6	101°28.8
14	234°54.3	11.5'	$17^{\circ}53.4$	-11.5'	56.5'	114°53.2	89°49.7	43°33.8	34°52.8	11°16.4	65°04.9	76°25.8	102°01.2
15	249°24.8	11.5'	$18^{\circ}05.0$	-11.4'	56.5'	114°23.8	89°21.6		34°20.4	11°48.0	65°37.3	76°58.1	102°33.6
16	263°55.3	11.4'	$18^{\circ}16.4$	-11.3'	56.5'	113°54.4	88°53.6		33°47.9	$12^{\circ}19.6$	66°09.8	77°30.3	103°05.9
17	278°25.7	11.4'	$18^{\circ}27.7$	-11.2'	56.4'	113°25.0	88°25.6		33°15.5	12°51.4	66°42.2	78°02.4	103°38.2
18	292°56.1	11.3'	S 18°38.9	-11.1'	56.4'	112°55.6	87°57.6		32°43.0	13°23.1	67°14.6	78°34.6	104° 10.5
19	307°26.4	11.3'	$18^{\circ}50.0$	-11.0'	56.4'	112°26.2	87°29.6		32°10.7	13°54.9	67°47.0	79°06.7	104°42.8
20	321°56.7	11.2'	$19^{\circ}01.0$	-10.9'	56.4'	111°56.7	87°01.7		31°38.3	14°26.7	68°19.3	79°38.8	105°15.0
21	336°26.9	11.2'	$19^{\circ}12.0$	-10.8'	56.4'	111°27.3	86°33.7		31°05.9	14°58.5	68°51.7	80°10.9	105°47.3
22	350°57.1	11.1'	19°22.8	-10.7'	56.3'	110°57.9	86°05.9		30°33.6	15°30.3	69°24.0	80°43.0	106° 19.5
23	5°27.3	11.1'	19°33.5	-10.6'	56.3'	110°28.5	85°38.0		30°01.3	16°02.1	69°56.3	81°15.0	106°51.7
18 th	SD	= 15.5'	Mer. pas	s. 22:37									

Moon (19th May)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Fomalhaut	-Deneb	-Altair	-Antares	+Spica	+Regulus	+Jupiter	+Pollux
0	19°57.3	11.0'	S 19°44.1	-10.5'	56.3'	109°59.1	106°43.1	85°10.1	29°29.0	16°34.0	70°28.5	81°47.1	107°23.8
1	34°27.4	11.0'	19°54.6	-10.4'	56.3'	109°29.6	106°28.0	84°42.3	28°56.8	17°05.8	71°00.8	82°19.1	107°56.0
2	48°57.4	10.9'	20°05.0	-10.3'	56.3'	109°00.2	106°12.8	84°14.5	28°24.5	17°37.7	71°33.0	82°51.0	108°28.1
3	63°27.3	10.9'	$20^{\circ}15.3$	-10.2'	56.2'	108°30.8	105°57.5	83°46.7	27°52.3	18°09.6	72°05.2	83°23.0	109°00.2
4	77°57.2	10.8'	20°25.5	-10.1'	56.2'	108°01.4	105°42.2	83°19.0	27°20.1	18°41.4	72°37.4	83°54.9	109°32.2
5	92°27.1	10.8'	20°35.6	-10.0'	56.2'	107°32.0	105°26.8	82°51.3	26°47.9	19°13.3	73°09.5	84°26.8	110°04.3
6	106°56.8	10.7'	S 20°45.5	-9.9'	56.2'	107°02.6	105°11.4	82°23.6	26°15.8	19°45.1	73°41.7	84°58.7	110°36.3
7	121°26.6	10.7'	20°55.4	-9.7'	56.2'	106°33.2	104°55.9	81°55.9	25°43.7	20°16.9	74°13.8	85°30.6	111°08.3
8	135°56.3	10.6'	21°05.1	-9.6'	56.1'	106°03.8	104°40.4	81°28.3	25°11.5	20°48.8	74°45.9	86°02.4	111°40.3
9	150°25.9	10.6'	21°14.8	-9.5'	56.1'	105°34.4	104°24.8	81°00.7	24°39.5	21°20.6	75° 17.9	86°34.3	112°12.2
10	164°55.5	10.6'	21°24.3	-9.4'	56.1'	105°05.0	104°09.2	80°33.2	24°07.4	21°52.4	75°50.0	87°06.1	112°44.1
11	179°25.1	10.5'	21°33.7	-9.3'	56.1'	104°35.7	103°53.5	80°05.6	23°35.4	22°24.2	76°22.0	87° 37.8	113°16.0
12	193°54.6	10.5'	S 21°43.0	-9.2'	56.1'	104°06.3	103°37.8	79°38.1	23°03.3	22°56.0	76°54.0	88°09.6	113°47.9
13	208°24.0	10.4'	21°52.2	-9.1'	56.0'	103°37.0	103°22.0	79°10.7	22°31.4	23°27.7	77°26.0	88°41.3	114°19.8
14	222°53.5	10.4'	$22^{\circ}01.2$	-8.9'	56.0'	103°07.6	103°06.2	78°43.2	21°59.4	23°59.5	77°57.9	89°13.0	114°51.6
15	237°22.8	10.3'	$22^{\circ}10.2$	-8.8'	56.0'	102°38.3	102°50.4	78°15.8	21°27.4	24°31.3	78°29.9	89°44.7	115°23.4
16	251°52.1	10.3'	$22^{\circ}19.0$	-8.7'	56.0'	102°09.0	102°34.5	77°48.5	20°55.5	25°03.0	79°01.8	90°16.4	115°55.2
17	266°21.4	10.2'	22°27.7	-8.6'	56.0'	101°39.7	102°18.6	77°21.1	20°23.6	25°34.7	79°33.7	90°48.0	116°27.0
18	280°50.6	10.2'	S 22°36.3	-8.5'	55.9'	101°10.4	102°02.6	76°53.9	19°51.7	26°06.4	80°05.5	91°19.6	116°58.7
19	295°19.8	10.1'	22°44.8	-8.3'	55.9'	100°41.1	101°46.6	76°26.6	19°19.9	26°38.1	80°37.4	91°51.2	117°30.4
20	309°48.9	10.1'	$22^{\circ}53.1$	-8.2'	55.9'	100°11.8	101°30.6	75°59.4	18°48.0	27°09.8	81°09.2	92°22.8	118°02.1
21	324°18.0	10.0'	23°01.3	-8.1'	55.9'	99°42.5	101°14.5	75°32.2	18°16.2	27°41.4	81°41.0	92°54.3	118°33.8
22	338°47.1	10.0'	23°09.4	-8.0'	55.9'	99°13.3	100°58.4	75°05.1	17°44.4	28°13.1	82° 12.8	93°25.9	119°05.4
23	353°16.1	10.0'	23°17.4	-7.9'	55.8'	98°44.1	100°42.2	74°38.0	17°12.6	28°44.7	82°44.5	93°57.4	119°37.0
19 th	SD	= 15.4'	Mer. pass	s. 23:28									

Moon (20th May)

h

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	-Antares	+Spica	+Mars	+Regulus	+Jupiter
													_
0	7°45.0	9.9'	S 23°25.3	-7.7'	55.8'	100°26.1	98° 14.8	74°10.9	16°40.9	29°16.3	81°31.3	83° 16.3	94°28.8
1	22°13.9	9.9'	23°33.0	-7.6'	55.8'	100°09.9	97° 45.6	73°43.9	16°09.2	29°47.9	82°02.0	83°48.0	95°00.3
2	36°42.8	9.8'	23°40.6	-7.5'	55.8'	99°53.7	97° 16.4	73°16.9	15°37.5	30° 19.5	82°32.7	84° 19.7	95°31.7
3	51°11.6	9.8'	23°48.1	-7.3'	55.8'	99°37.4	96° 47.3	72°50.0	15°05.8	30°51.0	83°03.3	84°51.3	96°03.1
4	65°40.4	9.8'	23°55.4	-7.2'	55.7'	99°21.2	96° 18.1	72°23.1	14°34.1	31°22.5	83°33.9	85°23.0	96°34.5
5	80°09.2	9.7'	24°02.6	-7.1'	55.7'	99°04.9	95°48.9	71°56.3	14°02.5	31°54.0	84°04.5	85°54.6	97°05.9
6	94°37.9	9.7'	S 24°09.7	-7.0'	55.7'	98°48.5	95° 19.8	71°29.5	13°30.9	32°25.5	84°35.1	86° 26.2	97°37.2
7	109°06.6	9.6'	24°16.7	-6.8'	55.7'	98°32.2	94°50.7	71°02.8	12°59.3	32°57.0	85°05.6	86° 57.8	98°08.6
8	123°35.2	9.6'	24°23.5	-6.7'	55.7'	98°15.8	94°21.6	70°36.0	12°27.7	33°28.5	85°36.2	87°29.3	98°39.9
9	138°03.8	9.6'	24°30.2	-6.6'	55.6'	97°59.4	93°52.5	70°09.4	11°56.2	33°59.9	86°06.7	88°00.8	99°11.1
10	152°32.4	9.5'	24°36.8	-6.4'	55.6'	97°43.0	93°23.5	69°42.8	11°24.6	34°31.3	86°37.1	88° 32.4	99°42.4
11	167°00.9	9.5'	24°43.2	-6.3'	55.6'	97°26.6	92°54.4	69°16.2	$10^{\circ}53.1$	35°02.7	87°07.6	89°03.8	100°13.6
12	181°29.4	9.5'	S 24°49.5	-6.2'	55.6'	97°10.2	92°25.4	68°49.7	10°21.7	35°34.1	87°38.0	89° 35.3	100°44.8
13	195°57.8	9.4'	24°55.7	-6.0'	55.6'	96°53.7	91°56.4	68°23.3	9°50.2	36°05.5	88°08.5	90°06.7	101°16.0
14	210°26.3	9.4'	25°01.7	-5.9'	55.5'	96°37.3	91°27.4	67°56.9	9°18.8	36°36.8	88°38.8	90°38.2	101°47.2
15	224°54.7	9.4'	25°07.6	-5.8'	55.5'	96°20.8	90°58.4	67°30.5	8°47.4	37°08.1	89°09.2	91°09.6	102°18.3
16	239°23.0	9.3'	25°13.4	-5.6'	55.5'	96°04.3	90°29.5	67°04.2	8° 16.0	37°39.4	89°39.5	91°40.9	102°49.4
17	253°51.4	9.3'	$25^{\circ}19.1$	-5.5'	55.5'	95°47.8	90°00.6	66°38.0	7°44.6	38° 10.7	90°09.9	92°12.3	103°20.5
18	268°19.7	9.3'	S 25°24.6	-5.4'	55.5'	95°31.3	89°31.6	66°11.8	7°13.2	38°42.0	90°40.2	92°43.6	103°51.6
19	282°48.0	9.3'	25°29.9	-5.2'	55.4'	95°14.8	89°02.8	65°45.7	6°41.9	39° 13.2	91°10.4	93° 14.9	104°22.7
20	297°16.2	9.2'	25°35.1	-5.1'	55.4'	94°58.3	88° 33.9	65°19.6	6°10.6	39°44.4	91°40.7	93°46.2	104°53.7
21	311°44.5	9.2'	25°40.2	-5.0'	55.4'	94°41.7	88°05.0	64°53.6	5°39.3	40° 15.6	92°10.9	94° 17.5	105°24.7
22	326°12.7	9.2'	25°45.2	-4.8'	55.4'	94°25.2	87°36.2	64°27.6	5°08.1	40°46.8	92°41.1	94° 48.7	105°55.7
23	340°40.9	9.2'	25°50.0	-4.7'	55.4'	94°08.7	87°07.4	64°01.7	4°36.8	41°18.0	93°11.3	95°20.0	106°26.7
20 th	SD	= 15.2	2' Mer. pa	ss:-									

Moon (21st May) Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	±Antares	+Spica	+Mars	+Regulus	+Jupiter
0	355°09.0	9.1'	S 25°54.7	-4.5'	55.3'	93°52.1	86°38.7	63°35.9	4°05.6	41°49.1	93°41.5	95°51.2	106°57.6
1	9°37.2	9.1'	25°59.2	-4.4'	55.3'	93°35.6	86°09.9	63°10.1	3°34.4	42°20.2	94°11.6	96°22.3	107°28.5
2	24°05.3	9.1'	26°03.6	-4.3'	55.3'	93° 19.0	85°41.2	62°44.4	3°03.3	42°51.3	94°41.7	96°53.5	107°59.4
3	38° 33.4	9.1'	26°07.9	-4.1'	55.3'	93°02.5	85°12.5	62°18.8	2°32.1	43°22.4	95°11.8	97° 24.6	108°30.3
4	53°01.5	9.1'	$26^{\circ}12.0$	-4.0'	55.3'	92°45.9	84°43.8	61°53.2	2°01.0	43°53.5	95°41.9	97°55.7	109°01.1
5	67°29.5	9.1'	$26^{\circ}16.0$	-3.8'	55.3'	92°29.4	84°15.1	61°27.7	1°29.9	44°24.5	96°12.0	98°26.8	109°32.0
6	81°57.6	9.0'	S 26°19.8	-3.7'	55.2'	92° 12.8	83°46.5	61°02.2	0°58.8	44°55.5	96°42.0	98° 57.9	110°02.8
7	96°25.6	9.0'	26°23.6	-3.6'	55.2'	91°56.3	83°17.9	60°36.9	0°27.9	45°26.5	97°12.0	99°29.0	110°33.6
8	110°53.7	9.0'	$26^{\circ}27.1$	-3.4'	55.2'	91°39.8	82°49.3	60°11.6		45°57.5	97°42.0	100°00.0	111°04.3
9	125°21.7	9.0'	26°30.5	-3.3'	55.2'	91°23.2	82°20.7	59°46.3		46°28.5	98°12.0	100°31.0	111°35.1
10	139°49.7	9.0'	26°33.8	-3.1'	55.2'	91°06.7	81°52.2	59°21.2	1°05.4	46°59.4	98°41.9	101°02.0	112°05.8
11	154° 17.7	9.0'	26°37.0	-3.0'	55.1'	90°50.2	81°23.7	58°56.1	1°36.4	47°30.3	99°11.8	101°32.9	112°36.5
12	168°45.7	9.0'	S 26°40.0	-2.9'	55.1'	90°33.7	80°55.2	58°31.1	2°07.3	48°01.2	99°41.7	102°03.9	113°07.2
13	183°13.7	9.0'	26°42.8	-2.7'	55.1'	90° 17.2	80°26.7	58°06.1	2°38.3	48°32.1	100°11.6	102°34.8	113°37.8
14	197°41.6	9.0'	26°45.5	-2.6'	55.1'	90°00.7	79°58.3	57°41.3	3°09.2	49°03.0	100°41.5	103°05.7	114°08.5
15	212°09.6	9.0'	$26^{\circ}48.1$	-2.4'	55.1'	89°44.2	79°29.9	57°16.5	3°40.1	49°33.8	101°11.3	103°36.6	114°39.1
16	226°37.6	9.0'	26°50.6	-2.3'	55.1'	89°27.7	79°01.5	56°51.8	4°10.9	50°04.6	101°41.1	104°07.4	115°09.7
17	241°05.6	9.0'	26°52.9	-2.2'	55.0'	89°11.3	78°33.1	56°27.2	4°41.8	50°35.4	102°10.9	104°38.3	115°40.3
18	255°33.5	9.0'	S 26°55.0	-2.0'	55.0'	88°54.8	78°04.8	56°02.6	5°12.6	51°06.2	102°40.7	105°09.1	116°10.8
19	270°01.5	9.0'	26°57.0	-1.9'	55.0'	88°38.4	77°36.5	55°38.2	5°43.4	51°37.0	103°10.4	105°39.9	116°41.4
20	284°29.5	9.0'	26°58.9	-1.7'	55.0'	88°22.0	77°08.3	55°13.8	6°14.2	52°07.7	103°40.2	106° 10.7	117°11.9
21	298°57.5	9.0'	$27^{\circ}00.6$	-1.6'	55.0'	88°05.6	76°40.0	54°49.5	6°45.0	52°38.4	104°09.9	106°41.4	117°42.4
22	313°25.5	9.0'	$27^{\circ}02.2$	-1.4'	55.0'	87°49.2	76°11.8	54°25.3	7°15.8	53°09.1	104°39.5	107° 12.2	118°12.8
23	327°53.5	9.0'	27°03.7	-1.3'	54.9'	87°32.8	75°43.6	54°01.3	7°46.5	53°39.8	105°09.2	107°42.9	118°43.3
21 st	SD =	= 15.1'	Mer. pas	s. 00:20)								

h Moon (22nd May)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Antares	+Spica	+Mars	+Regulus
0	342°21.5	9.0'	S 27°05.0	-1.2'	54.9'		87°16.5	75° 15.5	53°37.3	8°17.2	54°10.5	105°38.9	108°13.6
1	356°49.5	9.0'	$27^{\circ}06.1$	-1.0'	54.9'		87°00.2	74°47.4	53°13.3	8°47.9	54°41.1	106°08.5	108°44.2
2	11°17.5	9.0'	27°07.2	-0.9'	54.9'		86°43.8	74° 19.3	52°49.5	9°18.6	55°11.7	106°38.1	109°14.9
3	25°45.5	9.1'	27°08.0	-0.7'	54.9'		86°27.6	73°51.2	52°25.8	9°49.2	55°42.3	107°07.7	109°45.5
4	40°13.6	9.1'	27°08.8	-0.6'	54.9'		86°11.3	73°23.2	52°02.2	10°19.8	56°12.9	107°37.2	110°16.1
5	54°41.7	9.1'	27°09.4	-0.5'	54.8'		85°55.1	72°55.2	51°38.7	10°50.5	56°43.5	108°06.8	110°46.7
6	69°09.7	9.1'	S 27°09.8	-0.3'	54.8'		85°38.8	72°27.3	51°15.3	11°21.0	57°14.0	108°36.3	111°17.3
7	83°37.8	9.1'	$27^{\circ}10.2$	-0.2'	54.8'		85°22.7	71°59.3	50°52.0	11°51.6	57°44.5	109°05.8	111°47.9
8	98°06.0	9.1'	$27^{\circ}10.3$	-0.0'	54.8'		85°06.5	71°31.4	50°28.8	12°22.2	58°15.0	109°35.3	112° 18.4
9	112°34.1	9.2'	$27^{\circ}10.4$	0.1'	54.8'	119°42.2	84°50.4	71°03.6	50°05.7	12°52.7	58°45.5	110°04.7	112°48.9
10	127°02.3	9.2'	$27^{\circ}10.3$	0.2'	54.8'	119°12.3	84°34.2	70°35.7	49°42.7	13°23.2	59°16.0	110°34.2	113°19.4
11	141°30.5	9.2'	$27^{\circ}10.0$	0.4'	54.7'	118°42.4	84°18.2	70°07.9	49°19.8	13°53.7	59°46.5	111°03.6	113°49.9
12	155°58.7	9.2'	S 27°09.7	0.5'	54.7'	118°12.4	84°02.1	69°40.2	48°57.1	14°24.2	60°16.9	111°33.0	114°20.4
13	170°26.9	9.3'	$27^{\circ}09.1$	0.7'	54.7'	117°42.5	83°46.1	69°12.4	48°34.5	14°54.7	60°47.3	112°02.4	114°50.8
14	184°55.2	9.3'	27°08.5	0.8'	54.7'	117°12.7	83°30.1	68°44.7	48°12.0	15°25.1	61°17.7	112°31.7	115°21.2
15	199°23.5	9.3'	27°07.7	0.9'	54.7'	116°42.8	83°14.1	68°17.1	47°49.6	15°55.5	61°48.1	113°01.1	115°51.6
16	213°51.8	9.4'	27°06.8	1.1'	54.7'	116°12.9	82°58.2	67°49.4	47°27.3	16°25.9	62°18.4	113°30.4	116°22.0
17	228°20.1	9.4'	27°05.7	1.2'	54.7'	115°43.1	82°42.3	67°21.9	47°05.2	16°56.3	62°48.8	113°59.7	116°52.4
18	242°48.5	9.4'	S 27°04.5	1.3'	54.6'	115°13.3	82°26.5	66°54.3	46°43.2	17°26.7	63°19.1	114°29.0	117°22.7
19	257°16.9	9.4'	27°03.2	1.5'	54.6'	114°43.5	82°10.6	66°26.8	46°21.3	17°57.0	63°49.4	114°58.3	117°53.0
20	271°45.4	9.5'	27°01.7	1.6'	54.6'	114°13.7	81°54.8	65°59.3	45°59.6	18°27.4	64°19.7	115°27.5	118°23.4
21	286°13.9	9.5'	$27^{\circ}00.1$	1.7'	54.6'	113°43.9	81°39.1	65°31.9	45°38.0	18°57.7	64°50.0	115°56.7	118°53.6
22	300°42.4	9.6'	26°58.3	1.9'	54.6'	113°14.1	81°23.4	65°04.5	45°16.6	19°28.0	65°20.2	116°26.0	119°23.9
23	315°10.9	9.6'	26°56.4	2.0'	54.6'	112°44.4	81°07.7	64°37.1	44°55.3	19°58.3	65°50.5	116°55.2	119°54.2
22 nd	SD =	= 15.0'	Mer. pas	s. 01:13	3								

Moon (23rd May)

Lunar Distance (objects with largest hourly LD delta)

h		Moon	(23 rd IVIa	y)			Lunar L	Distance (of	ojects wi	th largest	hourly L	.D delta)	
Sun	GHA	ν	Dec	d	HP	-Venus	-Saturn	-Fomalhaut	-Altair	+Antares	+Spica	+Arcturus	+Mars
0	329°39.5	9.6'	S 26°54.4	2.1'	54.6'		112°14.7	64°09.8	44°34.1	20°28.5	66°20.7	71°28.4	117°24.3
1	344°08.2	9.7'	26°52.3	2.3'	54.5'		111°44.9	63°42.5	44°13.1	20°58.8	66°50.9	71°52.4	117°53.5
2	358°36.9	9.7'	26°50.0	2.4'	54.5'		111°15.2	63° 15.2	43°52.2	21°29.0	67°21.1	72°16.3	118°22.6
3	13°05.6	9.8'	26°47.6	2.5'	54.5'		110°45.6	62°48.0	43°31.6	21°59.2	67°51.3	72°40.3	118°51.8
4	27°34.3	9.8'	26°45.0	2.7'	54.5'		110°15.9	62°20.9	43°11.0	22°29.4	68°21.4	73°04.3	119°20.9
5	42°03.1	9.9'	26°42.4	2.8'	54.5'		109°46.2	61°53.7	42°50.6	22°59.6	68°51.6	73°28.3	119°49.9
6	56°32.0	9.9'	S 26°39.5	2.9'	54.5'		109°16.6	61°26.6	42°30.4	23°29.7	69°21.7	73°52.4	
7	71°00.9	9.9'	26°36.6	3.1'	54.5'		108°47.0	60° 59.6	42°10.4	23°59.9	69°51.8	74°16.4	
8	85°29.8	10.0'	26°33.5	3.2'	54.5'		108°17.3	60°32.6	41°50.5	24°30.0	70°21.9	74°40.5	
9	99°58.8	10.0'	26°30.3	3.3'	54.4'		107°47.7	60°05.7	41°30.9	25°00.1	70°52.0	75°04.5	
10	114°27.9	10.1'	26°27.0	3.5'	54.4'		107°18.2	59°38.7	41°11.4	25°30.2	71°22.1	75°28.6	
11	128°57.0	10.1'	26°23.5	3.6'	54.4'		106°48.6	59°11.9	40°52.0	26°00.3	71°52.1	75°52.7	
12	143°26.1	10.2'	S 26°20.0	3.7'	54.4'		106°19.0	58°45.1	40°32.9	26°30.4	72°22.1	76°16.8	
13	157°55.3	10.2'	$26^{\circ}16.3$	3.8'	54.4'		105°49.5	58° 18.3	40°14.0	27°00.4	72°52.2	76°40.9	
14	172°24.5	10.3'	26°12.4	4.0'	54.4'		105°19.9	57°51.6	39°55.3	27°30.5	73°22.2	77°05.1	
15	186°53.8	10.4'	26°08.5	4.1'	54.4'		104°50.4	57°24.9	39°36.7	28°00.5	73°52.2	77°29.2	
16	201°23.2	10.4'	26°04.4	4.2'	54.4'		104°20.9	56° 58.3	39°18.4	28°30.5	74°22.1	77°53.3	
17	215°52.6	10.5'	26°00.2	4.3'	54.4'		103°51.4	56°31.7	39°00.3	29°00.5	74°52.1	78°17.5	
18	230°22.1	10.5'	S 25°55.8	4.5'	54.3'		103°22.0	56°05.1	38°42.4	29°30.5	75°22.0	78°41.7	
19	244°51.6	10.6'	25°51.4	4.6'	54.3'		102°52.5	55° 38.7	38°24.7	30°00.5	75°52.0	79°05.8	
20	259°21.2	10.6'	25°46.8	4.7'	54.3'		102°23.0	55° 12.2	38°07.2	30°30.4	76°21.9	79°30.0	
21	273°50.8	10.7'	25°42.1	4.8'	54.3'	119°38.6	101°53.6	54°45.9	37°50.0	31°00.4	76°51.8	79°54.2	
22	288°20.5	10.8'	25°37.3	4.9'	54.3'	119°11.9	101°24.2	54° 19.5	37°33.0	31°30.3	77°21.7	80°18.4	
23	302°50.2	10.8'	25°32.3	5.1'	54.3'	118°45.3	100°54.7	53°53.3	37°16.2	32°00.2	77°51.6	80°42.6	
23 rd	SD	= 14.9'	Mer. pass	. 02:06	,								

Moon (24th May)

Mon	GHA	ν	Dec	d	HP	-Venus	-Saturn	-Fomalhaut	-Altair	+Antares	+Hadar	+Spica	+Arcturus
0	317°20.1	10.9'	S 25°27.3	5.2'	54.3'	118° 18.7	100°25.3	53° 27.0	36°59.7	32°30.1	59°31.5	78°21.5	81°06.8
1	331°49.9	10.9'	25°22.1	5.3'	54.3'	117°52.1	99°55.9	53°00.9	36°43.5	33°00.0	59°51.9	78°51.3	81°31.0
2	346°19.9	11.0'	25°16.8	5.4'	54.3'	117°25.5	99°26.6	52°34.8	36°27.4	33°29.9	60° 12.3	79°21.2	81°55.2
3	0°49.8	11.1'	$25^{\circ}11.4$	5.5'	54.3'	116°58.9	98°57.2	52°08.7	36°11.7	33°59.8	60°32.9	79°51.0	82° 19.4
4	15°19.9	11.1'	25°05.9	5.6'	54.3'	116°32.3	98°27.8	51°42.8	35°56.2	34°29.6	60°53.5	80°20.8	82°43.6
5	29°50.0	11.2'	25°00.2	5.8'	54.2'	116°05.7	97°58.5	51°16.8	35°41.0	34°59.5	61°14.1	80°50.6	83°07.8
6	44°20.2	11.2'	S 24°54.5	5.9'	54.2'	115°39.2	97°29.1	50°51.0		35°29.3	61°34.8	81°20.4	83°32.0
7	58°50.4	11.3'	24°48.6	6.0'	54.2'	115°12.6	96°59.8	50°25.2		35°59.1	61°55.6	81°50.2	83°56.2
8	73°20.7	11.4'	24°42.6	6.1'	54.2'	114°46.1	96°30.5	49° 59.4		36°28.9	62°16.5	82°20.0	84°20.4
9	87°51.1	11.4'	24°36.5	6.2'	54.2'	114°19.6	96°01.2	49°33.8		36°58.7	62°37.4	82°49.8	84°44.6
10	102°21.5	11.5'	24°30.3	6.3'	54.2'	113°53.0	95°31.9	49°08.2		37°28.5	62°58.4	83° 19.5	85°08.8
11	116°52.0	11.6'	24°24.0	6.4'	54.2'	113°26.5	95°02.6	48° 42.6		37°58.3	63°19.4	83°49.3	85°33.1
12	131°22.6	11.6'	S 24°17.5	6.5'	54.2'	113°00.0	94°33.3	48° 17.1		38°28.1	63°40.5	84° 19.0	85°57.3
13	145°53.2	11.7'	24°11.0	6.6'	54.2'	112°33.5	94°04.1	47°51.7		38°57.8	64°01.7	84°48.7	86°21.5
14	160°23.9	11.8'	24°04.4	6.8'	54.2'	112°07.0	93°34.8	47° 26.4		39°27.6	64°22.9	85°18.4	86°45.7
15	174°54.7	11.8'	23°57.6	6.9'	54.2'	111°40.6	93°05.5	47°01.2		39°57.3	64°44.1	85°48.1	87°09.9
16	189°25.5	11.9'	23°50.7	7.0'	54.2'	111°14.1	92°36.3	46°36.0		40°27.1	65°05.5	86°17.8	87°34.1
17	203°56.4	12.0'	23°43.8	7.1'	54.2'	110°47.6	92°07.1	46°10.9		40°56.8	65°26.8	86°47.5	87°58.3
18	218°27.3	12.0'	S 23°36.7	7.2'	54.2'	110°21.2	91°37.8	45° 45.9		41°26.5	65°48.2	87° 17.2	88° 22.5
19	232°58.3	12.1'	23°29.5	7.3'	54.2'	109°54.7	91°08.6	45°20.9		41°56.2	66°09.7	87°46.9	88°46.7
20	247°29.4	12.1'	23°22.3	7.4'	54.2'	109°28.3	90°39.4	44° 56.1		42°25.9	66°31.2	88° 16.6	89° 10.8
21	262°00.6	12.2'	23°14.9	7.5'	54.1'	109°01.8	90°10.2	44°31.3		42°55.6	66°52.8	88°46.2	89°35.0
22	276°31.8	12.3'	23°07.4	7.6'	54.1'	108°35.4	89°41.0	44°06.6		43°25.3	67°14.4	89°15.9	89°59.2
23	291°03.1	12.3'	22°59.8	7.7'	54.1'	108°09.0	89°11.8	43°42.0		43°55.0	67°36.1	89°45.5	90°23.3
24 th	SD :	= 14.8'	Mer. pass	. 02:57									

h Moon (25th May)

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Sun	-Venus	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Spica	+Arcturus
0	305°34.4	12.4'	S 22°52.1	7.8'	54.1'		107°42.6	88°42.7	43° 17.5	44°24.6	63°34.9	90°15.1	90°47.5
1	320°05.8	12.5'	22°44.3	7.9'	54.1'		107°16.1	88°13.5	42°53.1	44°54.3	63°56.6	90°44.8	91°11.7
2	334°37.3	12.5'	22°36.5	8.0'	54.1'		106°49.7	87°44.3	42°28.7	45°23.9	64°18.3	91°14.4	91°35.8
3	349°08.8	12.6'	$22^{\circ}28.5$	8.1'	54.1'		106°23.3	87°15.1	42°04.5	45°53.6	64°40.1	91°44.0	91°59.9
4	3°40.5	12.7'	22°20.4	8.2'	54.1'		105°56.9	86°46.0	41°40.4	46°23.2	65°01.9	92°13.6	92°24.1
5	18°12.1	12.7'	$22^{\circ}12.2$	8.3'	54.1'		105°30.5	86°16.8	41° 16.4	46°52.9	65°23.8	92°43.2	92°48.2
6	32°43.9	12.8'	$S22^{\circ}04.0$	8.4'	54.1'		105°04.1	85°47.7	40°52.4	47°22.5	65°45.8	93°12.8	93°12.3
7	47°15.7	12.9'	$21^{\circ}55.6$	8.5'	54.1'		104°37.8	85°18.6	40°28.6	47°52.1	66°07.8	93°42.4	93°36.4
8	61°47.6	12.9'	21°47.2	8.5'	54.1'		104°11.4	84°49.4	40°04.9	48°21.8	66°29.8	94°12.0	94°00.5
9	76°19.5	13.0'	21°38.6	8.6'	54.1'		103°45.0	84°20.3	39°41.3	48°51.4	66°51.9	94°41.6	94°24.6
10	90°51.5	13.1'	21°30.0	8.7'	54.1'		103°18.6	83°51.2	39°17.9	49°21.0	67°14.1	95°11.2	94°48.7
11	105°23.6	13.1'	$21^{\circ}21.3$	8.8'	54.1'		102°52.3	83°22.0	38° 54.5	49°50.6	67°36.2	95°40.8	95°12.7
12	119°55.7	13.2'	S 21°12.4	8.9'	54.1'		102°25.9	82°52.9	38°31.3	50°20.2	67°58.5	96°10.3	95°36.8
13	134°27.9	13.3'	21°03.5	9.0'	54.1'		101°59.5	82°23.8	38°08.2	50°49.8	68°20.7	96°39.9	96°00.8
14	149°00.1	13.3'	20°54.5	9.1'	54.1'		101°33.2	81°54.7	37°45.2	51°19.4	68°43.0	97°09.5	96°24.8
15	163°32.5	13.4'	20°45.4	9.2'	54.1'		101°06.8	81°25.6	37°22.4	51°49.0	69°05.4	97°39.0	96°48.9
16	178°04.9	13.4'	20°36.3	9.3'	54.1'		100°40.4	80°56.5	36°59.7	52°18.6	69°27.8	98°08.6	97°12.9
17	192°37.3	13.5'	20°27.0	9.3'	54.1'		100°14.1	80°27.4	36°37.1	52°48.2	69°50.2	98°38.2	97°36.9
18	207°09.8	13.6'	S 20°17.7	9.4'	54.1'		99°47.7	79°58.3	36°14.7	53°17.8	70°12.7	99°07.7	98°00.8
19	221°42.4	13.6'	20°08.3	9.5'	54.1'		99°21.4	79°29.2	35°52.5	53°47.4	70°35.2	99°37.3	98°24.8
20	236°15.0	13.7'	$19^{\circ}58.7$	9.6'	54.1'		98°55.0	79°00.1	35°30.4	54°17.0	70°57.7	100°06.8	98°48.8
21	250°47.7	13.8'	$19^{\circ}49.1$	9.7'	54.1'	119°33.3	98°28.7	78°31.0	35°08.4	54°46.6	71°20.3	100°36.4	99° 12.7
22	265°20.5	13.8'	$19^{\circ}39.5$	9.8'	54.1'	119°06.2	98°02.3	78°01.9	34°46.6	55°16.2	71°42.9	101°06.0	99°36.6
23	279°53.3	13.9'	$19^{\circ}29.7$	9.8'	54.1'	118°39.2	97°36.0	77°32.8	34°25.0	55°45.8	72°05.6	101°35.5	100°00.5
25 th	SD :	= 14.8′	Mer. pass	. 03:45					Sun S	D = 15.8'			

h Moon (26th May) Lunar Distance (objects with largest hourly LD delta)

			•	<u> </u>					, ,				
Wed	GHA	ν	Dec	d	HP	-Sun	-Venus	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	294°26.2	13.9'	S 19°19.9	9.9'	54.1'	118°12.1	97°09.6	77°03.7	34°03.6	56° 15.4	72°28.2	100°24.4	102°05.1
1	308°59.1	14.0'	$19^{\circ}10.0$	10.0'	54.1'	117°45.1	96°43.2	76°34.6	33°42.3	56° 44.9	72°51.0	100°48.3	102°34.6
2	323°32.1	14.1'	$19^{\circ}00.0$	10.1'	54.1'	117°18.0	96°16.9	76°05.6	33°21.3	57° 14.5	73°13.7	101°12.2	103°04.2
3	338°05.1	14.1'	18°49.9	10.2'	54.1'	116°51.0	95°50.5	75°36.5	33°00.4	57°44.1	73°36.5	101°36.0	103°33.7
4	352°38.2	14.2'	18°39.7	10.2'	54.1'	116°23.9	95°24.2	75°07.4	32°39.7	58° 13.7	73°59.3	101°59.8	104°03.3
5	7°11.4	14.2'	$18^{\circ}29.5$	10.3'	54.1'	115°56.8	94°57.8	74°38.3	32°19.3	58°43.3	74°22.1	102°23.6	104°32.8
6	21°44.6	14.3'	S 18°19.2	10.4'	54.1'	115°29.8	94°31.4	74°09.2	31°59.0	59° 12.9	74°45.0	102°47.4	105°02.4
7	36°17.9	14.3'	18°08.8	10.5'	54.1'	115°02.7	94°05.1	73°40.1	31°39.0	59° 42.5	75°07.9	103°11.2	105°32.0
8	50°51.2	14.4'	17°58.4	10.5'	54.1'	114°35.6	93°38.7	73°11.0	31°19.1	60° 12.1	75°30.9	103°34.9	106°01.5
9	65°24.6	14.4'	17°47.9	10.6'	54.1'	114°08.5	93°12.3	72°41.9	30°59.5	60°41.7	75°53.8	103°58.7	106°31.1
10	79°58.1	14.5'	17°37.3	10.7'	54.2'	113°41.4	92°46.0	72°12.8	30°40.2	61°11.3	76°16.8	104°22.4	107°00.7
11	94°31.6	14.5'	17°26.6	10.7'	54.2'	113°14.3	92°19.6	71°43.7	30°21.1	61°40.9	76°39.8	104°46.1	107°30.2
12	109°05.1	14.6'	S 17°15.8	10.8'	54.2'	112°47.2	91°53.2	71°14.6	30°02.2	62° 10.5	77°02.9	105°09.7	107°59.8
13	123°38.7	14.7'	$17^{\circ}05.0$	10.9'	54.2'	112°20.1	91°26.8	70°45.5	29°43.7	62°40.2	77°25.9	105°33.4	108°29.4
14	138°12.4	14.7'	$16^{\circ}54.1$	11.0'	54.2'	111°53.0	91°00.4	70°16.4	29°25.3	63°09.8	77°49.0	105°57.0	108°59.0
15	152°46.1	14.8'	16°43.2	11.0'	54.2'	111°25.9	90°34.0	69°47.3	29°07.3	63°39.4	78°12.2	106°20.6	109°28.6
16	167°19.8	14.8'	16°32.2	11.1'	54.2'	110°58.8	90°07.6	69°18.2	28°49.6	64°09.1	78°35.3	106°44.2	109°58.2
17	181°53.6	14.9'	$16^{\circ}21.1$	11.2'	54.2'	110°31.7	89°41.2	68°49.0	28°32.1	64°38.7	78°58.5	107°07.7	110°27.8
18	196°27.5	14.9'	S 16°09.9	11.2'	54.2'	110°04.6	89°14.8	68°19.9	28°15.0	65°08.3	79°21.7	107°31.3	110°57.4
19	211°01.4	14.9'	15°58.7	11.3'	54.2'	109°37.4	88°48.4	67°50.8	27°58.1	65°38.0	79°44.9	107°54.8	111°27.0
20	225°35.3	15.0'	15°47.4	11.4'	54.2'	109°10.3	88°21.9	67°21.7	27°41.6	66°07.7	80°08.1	108°18.3	111°56.6
21	240°09.3	15.0'	15°36.1	11.4'	54.2'	108°43.1	87°55.5	66°52.5	27°25.5	66° 37.3	80°31.4	108°41.7	112°26.3
22	254°43.4	15.1'	15°24.7	11.5'	54.2'	108° 16.0	87°29.0	66°23.4	27°09.7	67°07.0	80°54.7	109°05.1	112°55.9
23	269°17.5	15.1'	15°13.2	11.5'	54.2'	107°48.8	87°02.6	65°54.2	26°54.2	67°36.7	81°18.0	109°28.5	113°25.5
26 th	SD	= 14.8'	Mer. pass	s. 04:30					Sun S	SD = 15.8'			

h Moon (27 th May)	Lunar Distance (objects with largest hourly LD delta)
-------------------------------	---

Thu	GHA	ν	Dec	d	HP	-Sun	-Venus	-Saturn	+Antares	+Rigil Kent.	+Hadar	+Arcturus	+Spica
0	283°51.6	15.2'	S 15°01.6	11.6'	54.3'	107°21.6	86°36.1	65°25.1	68°06.4	81°41.4	85°56.5	109°51.9	113°55.2
1	298°25.8	15.2'	14°50.0	11.7'	54.3'	106°54.4	86°09.7	64°55.9	68°36.1	82°04.7	86°19.5	110°15.2	114°24.8
2	313°00.0	15.3'	14°38.4	11.7'	54.3'	106°27.2	85°43.2	64°26.7	69°05.8	82°28.1	86°42.5	110°38.6	114°54.5
3	327°34.2	15.3'	14°26.6	11.8'	54.3'	106°00.0	85°16.7	63°57.6	69°35.5	82°51.5	87°05.5	111°01.8	115°24.2
4	342°08.5	15.3'	$14^{\circ}14.9$	11.8'	54.3'	105°32.8	84°50.2	63°28.4	70°05.2	83°14.9	87°28.5	111°25.1	115°53.9
5	356°42.9	15.4'	14°03.0	11.9'	54.3'	105°05.6	84°23.7	62°59.2	70°34.9	83°38.3	87°51.6	111°48.3	116°23.6
6	$11^{\circ}17.2$	15.4'	S 13°51.1	12.0'	54.3'	104°38.3	83°57.2	62°30.0	71°04.7	84°01.8	88°14.7	112°11.5	116°53.3
7	25°51.6	15.4'	13°39.2	12.0'	54.3'	104°11.1	83°30.7	62°00.8	71°34.5	84°25.2	88°37.7	112°34.7	117°23.0
8	40°26.1	15.5'	$13^{\circ}27.1$	12.1'	54.3'	103°43.8	83°04.1	61°31.6	72°04.2	84°48.7	89°00.8	112°57.8	117°52.7
9	55°00.6	15.5'	$13^{\circ}15.1$	12.1'	54.3'	103°16.6	82°37.6	61°02.3	72°34.0	85°12.2	89°23.9	113°20.9	118°22.4
10	69°35.1	15.6'	13°02.9	12.2'	54.4'	102°49.3	82°11.0	60°33.1	73°03.8	85°35.8	89°47.0	113°43.9	118°52.2
11	84°09.7	15.6'	12°50.8	12.2'	54.4'	102°22.0	81°44.5	60°03.9	73°33.6	85°59.3	90°10.1	114°06.9	119°21.9
12	98°44.2	15.6'	S 12°38.5	12.3'	54.4'	101°54.7	81°17.9	59°34.6	74°03.4	86°22.9	90°33.3	114°29.9	119°51.7
13	113°18.9	15.7'	12° 26.2	12.3'	54.4'	101°27.3	80°51.3	59°05.4	74°33.2	86°46.4	90°56.4	114°52.8	
14	127°53.5	15.7'	$12^{\circ}13.9$	12.4'	54.4'	101°00.0	80°24.7	58°36.1	75°03.1	87°10.0	91°19.5	115°15.7	
15	142°28.2	15.7'	$12^{\circ}01.5$	12.4'	54.4'	100°32.7	79°58.1	58°06.8	75°32.9	87°33.6	91°42.7	115°38.6	
16	157°02.9	15.7'	$11^{\circ}49.1$	12.5'	54.4'	100°05.3	79°31.4	57°37.5	76°02.8	87°57.2	92°05.9	116°01.4	
17	171°37.7	15.8'	11°36.6	12.5'	54.4'	99°37.9	79°04.8	57°08.2	76°32.7	88°20.9	92°29.0	116°24.2	
18	186°12.4	15.8'	S 11°24.0	12.6'	54.5'	99°10.5	78°38.1	56°38.9	77°02.6	88°44.5	92°52.2	116°46.9	
19	200°47.2	15.8'	$11^{\circ}11.4$	12.6'	54.5'	98°43.1	78°11.5	56°09.6	77° 32.5	89°08.2	93°15.4	117°09.6	
20	215°22.1	15.9'	$10^{\circ}58.8$	12.7'	54.5'	98°15.7	77°44.8	55°40.3	78°02.4	89°31.9	93°38.6	117°32.2	
21	229°56.9	15.9'	$10^{\circ}46.1$	12.7'	54.5'	97°48.3	77°18.1	55°10.9	78°32.3	89°55.6	94°01.7	117°54.8	
22	244°31.8	15.9'	10°33.3	12.8'	54.5'	97°20.8	76°51.3	54°41.6	79°02.3	90°19.3	94°24.9	118°17.4	
23	259°06.7	15.9'	10°20.6	12.8'	54.5'	96°53.3	76°24.6	54°12.2	79°32.3	90°43.0	94°48.1	118°39.9	
27 th	SD	= 14.8'	Mer. pass	s. 05:14					Sun S	SD = 15.8'			

h	Moon	(20th	May	
n	IVIOON	1/8	IVIAVI	

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Sun	-Venus	-Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar	+Arcturus
0	273°41.6	15.9'	S 10°07.7	12.9'	54.6'	96°25.8	75°57.9	53°42.8	38°29.0	80°02.3	91°06.7	95°11.3	119°02.3
1	288°16.6	16.0'	09°54.8	12.9'	54.6'	95°58.3	75°31.1	53°13.4	38°46.8	80°32.3	91°30.4	95°34.6	119°24.7
2	302°51.5	16.0'	09°41.9	13.0'	54.6'	95°30.8	75°04.3	52°44.0	39°04.8	81°02.3	91°54.2	95°57.8	119°47.1
3	317°26.5	16.0'	09°28.9	13.0'	54.6'	95°03.3	74°37.5	52°14.6	39°23.0	81°32.3	92°17.9	96°21.0	
4	332°01.5	16.0'	09° 15.9	13.1'	54.6'	94°35.7	74°10.7	51°45.2	39°41.4	82°02.4	92°41.7	96°44.2	
5	346°36.5	16.0'	09°02.9	13.1'	54.6'	94°08.1	73°43.9	51°15.7	40°00.0	82°32.5	93°05.5	97°07.4	
6	1°11.6	16.0'	S 08°49.8	13.1'	54.7'	93°40.5	73° 17.0	50°46.3	40°18.8	83°02.6	93°29.3	97°30.6	
7	15°46.6	16.1'	08°36.6	13.2'	54.7'	93°12.9	72°50.1	50°16.8	40°37.8	83°32.7	93°53.1	97°53.9	
8	30°21.7	16.1'	08° 23.5	13.2'	54.7'	92°45.3	72°23.3	49°47.3	40°57.0	84°02.8	94°16.9	98°17.1	
9	44°56.7	16.1'	$08^{\circ}10.2$	13.3'	54.7'	92°17.6	71°56.3	49°17.8	41°16.5	84°33.0	94°40.7	98°40.3	
10	59°31.8	16.1'	07°57.0	13.3'	54.7'	91°50.0	71°29.4	48°48.3	41°36.1	85°03.1	95°04.5	99°03.5	
11	74°06.9	16.1'	07°43.7	13.3'	54.7'	91°22.3	71°02.5	48°18.8	41°55.8	85°33.3	95°28.4	99°26.7	
12	88°42.0	16.1'	S 07°30.4	13.4'	54.8'	90°54.5	70°35.5	47°49.2	42°15.8	86°03.5	95°52.2	99°49.9	
13	103°17.2	16.1'	$07^{\circ}17.0$	13.4'	54.8'	90°26.8	70°08.5	47°19.7	42°36.0	86°33.8	96°16.0	100°13.2	
14	117°52.3	16.1'	07°03.6	13.4'	54.8'	89°59.0	69°41.5	46°50.1	42°56.3	87°04.0	96°39.9	100°36.4	
15	132°27.4	16.1'	$06^{\circ}50.1$	13.5'	54.8'	89°31.3	69°14.5	46°20.5	43°16.8	87°34.3	97°03.8	100°59.6	
16	147°02.5	16.1'	06°36.6	13.5'	54.8'	89°03.5	68°47.4	45°50.9	43°37.4	88°04.6	97°27.6	101°22.8	
17	161°37.7	16.1'	$06^{\circ}23.1$	13.6'	54.9'	88°35.6	68°20.4	45°21.3	43°58.2	88°35.0	97°51.5	101°46.0	
18	176°12.8	16.1'	S 06°09.6	13.6'	54.9'	88°07.8	67°53.3	44°51.7	44°19.2	89°05.3	98° 15.3	102°09.2	
19	190°48.0	16.1'	05°56.0	13.6'	54.9'	87°39.9	67°26.2	44°22.0	44°40.4	89°35.7	98°39.2	102°32.3	
20	205°23.1	16.1'	05°42.4	13.7'	54.9'	87°12.0	66°59.0	43°52.4	45°01.7	90°06.1	99°03.1	102°55.5	
21	219°58.3	16.1'	05°28.7	13.7'	54.9'	86°44.1	66°31.9	43°22.7	45°23.1	90°36.5	99°27.0	103°18.7	
22	234°33.4	16.1'	05° 15.0	13.7'	55.0'	86°16.1	66°04.7	42°53.0	45°44.7	91°06.9	99°50.9	103°41.9	
23	249°08.6	16.1'	05°01.3	13.7'	55.0'	85°48.2	65°37.5	42°23.3	46°06.5	91°37.4	100°14.7	104°05.0	
28 th	SD	$=14.9^{\prime}$	Mer. pass	. 05:55					Su	n SD = 15.8	'		

Moon (29th May)

Lunar Distance (objects with largest hourly LD delta)

			(=3	<i>J</i> /		zana. Zietane (ezjette titti targett nearly zz deita)							
Sat	GHA	ν	Dec	d	HP	-Sun	-Venus	-Saturn	+Fomalhaut	+Altair	+Antares	+Rigil Kent.	+Hadar
0	263°43.7	16.1'	S 04°47.6	13.8'	55.0'	85°20.2	65°10.2	41°53.6		46°28.4	92°07.9	100°38.6	104°28.2
1	278°18.8	16.1'	04°33.8	13.8'	55.0'	84°52.1	64°43.0	41°23.8		46°50.4	92°38.4	101°02.5	104°51.3
2	292°54.0	16.1'	04°20.0	13.8'	55.1'	84°24.1	64° 15.7	40°54.1		47°12.6	93°09.0	101°26.4	105°14.4
3	307°29.1	16.1'	04°06.2	13.9'	55.1'	83°56.0	63°48.4	40°24.3		47°34.9	93°39.6	101°50.3	105°37.5
4	322°04.2	16.1'	03°52.3	13.9'	55.1'	83°27.9	63°21.1	39°54.5		47°57.3	94°10.2	102°14.1	106°00.6
5	336°39.3	16.1'	03°38.4	13.9'	55.1'	82°59.8	62°53.7	39°24.8		48°19.9	94°40.8	102°38.0	106°23.7
6	351°14.4	16.1'	S 03°24.5	13.9'	55.2'	82°31.6	62°26.3	38°54.9		48°42.6	95°11.4	103°01.9	106°46.8
7	5°49.5	16.1'	03°10.6	14.0'	55.2'	82°03.4	61°58.9	38°25.1		49°05.5	95°42.1	103°25.8	107°09.8
8	20°24.6	16.1'	02°56.6	14.0'	55.2'	81°35.2	61°31.5	37°55.3	26° 33.9	49°28.4	96°12.8	103°49.6	107°32.9
9	34°59.6	16.0'	02°42.6	14.0'	55.2'	81°07.0	61°04.0	37°25.4	26° 49.4	49°51.5	96°43.6	104°13.5	107°55.9
10	49°34.7	16.0'	02°28.6	14.0'	55.3'	80°38.7	60°36.6	36°55.6	27°05.3	50°14.7	97°14.3	104°37.4	108°18.9
11	64°09.7	16.0'	02°14.6	14.1'	55.3'	80°10.4	60°09.0	36°25.7	27°21.6	50°38.1	97°45.1	105°01.2	108°41.9
12	78°44.7	16.0'	S 02°00.5	14.1'	55.3'	79°42.1	59°41.5	35°55.8	27°38.3	51°01.5	98°16.0	105°25.1	109°04.8
13	93°19.7	16.0'	01°46.5	14.1'	55.3'	79°13.8	59° 13.9	35°25.9	27° 55.4	51°25.1	98°46.8	105°48.9	109°27.8
14	107°54.7	15.9'	01°32.4	14.1'	55.4'	78°45.4	58° 46.3	34°56.0	28° 12.9	51°48.8	99°17.7	106°12.7	109°50.7
15	122°29.6	15.9'	$01^{\circ}18.3$	14.1'	55.4'	78°17.0	58° 18.7	34°26.0	28° 30.7	52°12.6	99°48.6	106°36.5	110°13.6
16	137°04.5	15.9'	$01^{\circ}04.1$	14.2'	55.4'	77°48.5	$57^{\circ}51.1$	33°56.1	28°48.9	52°36.5	100°19.6	107°00.4	110°36.5
17	151°39.4	15.9'	00°50.0	14.2'	55.4'	77°20.0	57°23.4	33°26.2	29°07.5	53°00.5	100°50.5	107°24.2	110°59.4
18	166°14.3	15.9'	S 00°35.8	14.2'	55.5'	76°51.5	56°55.7	32°56.2	29°26.4	53°24.6	101°21.5	107°47.9	111°22.2
19	180°49.2	15.8'	$00^{\circ}21.6$	14.2'	55.5'	76°23.0	56°27.9	32°26.2	29°45.6	53°48.8	101°52.6	108°11.7	111°45.0
20	195°24.0	15.8'	S 00°07.4	14.2'	55.5'	75°54.4	56°00.2	31°56.2	30°05.1	54°13.2	102°23.7	108°35.5	112°07.8
21	209°58.8	15.8'	N 00°06.8	14.2'	55.5'	75°25.8	55°32.4	31°26.3	30°24.9	54°37.6	102°54.8	108°59.2	112°30.5
22	224°33.6	15.7'	$00^{\circ}21.0$	14.2'	55.6'	74°57.2	55°04.5	30°56.3	30°45.1	55°02.2	103°25.9	109°22.9	112°53.2
23	239°08.3	15.7'	00°35.3	14.3'	55.6'	74°28.5	54°36.7	30°26.3	31°05.5	55°26.8	103°57.1	109°46.7	113°15.9
29 th	SD	= 15.0'	Mer. pass	. 06:36					Sun SI	D = 15.8'		-	

h	Moon	(30th	Max)

Sun	GHA	ν	Dec	d	HP	-Sun	-Venus	-Saturn	+Fomalhaut	+Altair	+Antares	+Rigil Kent.	+Hadar
0	253°43.0	15.7'	N 00°49.5	14.3'	55.6'	73°59.8	54°08.8	29°56.3	31°26.2	55°51.5	104°28.3	110°10.4	113°38.5
1	268°17.7	15.6'	$01^{\circ}03.8$	14.3'	55.7'	73°31.1	53°40.9	29°26.3	31°47.2	56°16.4	104°59.5	110°34.0	114°01.2
2	282°52.3	15.6'	$01^{\circ}18.1$	14.3'	55.7'	73°02.3	53° 12.9	28° 56.3	32°08.5	56°41.3	105°30.8	110°57.7	114°23.7
3	297°26.9	15.6'	01°32.4	14.3'	55.7'	72°33.5	52°45.0	28°26.3	32°30.1	57°06.3	106°02.1	111°21.3	114°46.3
4	312°01.5	15.5'	01°46.7	14.3'	55.8'	72°04.7	52°16.9	27°56.3	32°51.9	57°31.5	106°33.4	111°44.9	115°08.8
5	326°36.0	15.5'	$02^{\circ}01.0$	14.3'	55.8'	71°35.8	51°48.9	27°26.3	33°13.9	57°56.7	107°04.8	112°08.5	115°31.2
6	341°10.5	15.4'	N02°15.3	14.3'	55.8'	71°06.9	51°20.8	26°56.3	33°36.2	58°22.0	107°36.2	112°32.1	115°53.6
7	355°44.9	15.4'	02°29.6	14.3'	55.8'	70°37.9	50°52.7	26°26.3	33°58.7	58°47.4	108°07.7	112°55.6	116°16.0
8	10°19.3	15.4'	02°44.0	14.3'	55.9'	70°09.0	50°24.6	25°56.3	34°21.5	59°12.9	108°39.2	113°19.1	116°38.4
9	24°53.7	15.3'	02°58.3	14.3'	55.9'	69°40.0	49° 56.4	25°26.3	34° 44.5	59°38.5	109°10.7	113°42.6	117°00.6
10	39°28.0	15.3'	03°12.6	14.3'	55.9'	69°10.9	49°28.2	24°56.4	35°07.7	60°04.1	109°42.2	114°06.1	117°22.9
11	54°02.3	15.2'	03°27.0	14.3'	56.0'	68°41.8	49°00.0	24°26.4	35°31.1	60°29.9	110°13.8	114°29.5	117°45.1
12	68°36.5	15.2'	N03°41.3	14.3'	56.0'	68°12.7	48°31.7	23°56.5	35°54.8	60°55.7	110°45.5	114°52.9	118°07.2
13	83°10.7	15.1'	03°55.7	14.4'	56.0'	67°43.6	48°03.4	23°26.6	36° 18.6	61°21.6	111°17.1	115°16.3	118°29.3
14	97°44.8	15.1'	04°10.0	14.4'	56.1'	67°14.4	47°35.1	22°56.8	36° 42.6	61°47.6	111°48.8	115°39.6	118°51.3
15	112°18.9	15.0'	04°24.4	14.3'	56.1'	66°45.1	47°06.7	22°26.9	37°06.9	62°13.7	112°20.6	116°02.9	119°13.3
16	126°52.9	15.0'	04°38.7	14.3'	56.1'	66°15.9	46°38.3	21°57.2	37°31.3	62°39.9	112°52.3	116°26.1	119°35.2
17	141°26.9	14.9'	04°53.1	14.3'	56.2'	65°46.6	46°09.9	21°27.4	37°55.9	63°06.1	113°24.2	116°49.3	119°57.0
18	156°00.8	14.9'	N 05°07.4	14.3'	56.2'	65°17.2	45°41.4	20°57.7	38° 20.7	63°32.5	113°56.0	117°12.5	
19	170°34.6	14.8'	05°21.8	14.3'	56.2'	64°47.8	45° 12.9	20°28.0	38° 45.6	63°58.9	114°27.9	117°35.6	
20	185°08.4	14.7'	$05^{\circ}36.1$	14.3'	56.3'	64°18.4	44°44.4	19°58.5	39° 10.8	64°25.4	114°59.9	117°58.7	
21	199°42.2	14.7'	05°50.4	14.3'	56.3'	63°49.0	44° 15.9	19°28.9	39°36.1	64°51.9	115°31.8	118°21.7	
22	214°15.8	14.6'	06°04.7	14.3'	56.3'	63°19.5	43°47.3	18°59.5	40°01.5	65°18.6	116°03.8	118°44.7	
23	228°49.4	14.6'	06°19.1	14.3'	56.4'	62°49.9	43°18.6	18°30.1	40°27.1	65°45.3	116°35.9	119°07.6	
30 th	SD	$= 15.2^{\prime}$	Mer. pass	. 07:18					Sun SI	D = 15.8'			

h		Moon	(31 st Ma	y)		Lunar [Distance	(objects	with largest	t hourly	LD delta)
Mon	GHA	ν	Dec	d	HP	-Sun	-Venus	-Saturn	+Fomalhaut	+Altair	+Antares
0	243°23.0	14.5'	N 06°33.4	14.3'	56.4'	62°20.4	42°50.0	18°00.9	40°52.9	66°12.1	117°08.0
1	257°56.5	14.4'	06°47.7	14.3'	56.4'	61°50.8	42°21.3	17°31.7	41°18.9	66°38.9	117°40.1
2	272°29.9	14.4'	$07^{\circ}01.9$	14.3'	56.5'	61°21.1	41°52.5	17°02.7	41°44.9	67°05.8	118°12.3
3	287°03.3	14.3'	$07^{\circ}16.2$	14.3'	56.5'	60°51.4	41°23.8	16°33.8	42°11.2	67°32.9	118°44.5
4	301°36.6	14.2'	07°30.5	14.2'	56.5'	60°21.7	40°55.0	16°05.1	42°37.6	67°59.9	119°16.8
5	316°09.8	14.1'	07°44.7	14.2'	56.6'	59°51.9	40°26.2	15°36.5	43°04.1	68°27.1	119°49.1
6	330°42.9	14.1'	N07°59.0	14.2'	56.6'	59°22.1	39°57.3	15°08.1	43°30.8	68°54.3	
7	345°16.0	14.0'	$08^{\circ}13.2$	14.2'	56.6'	58°52.3	39°28.4	14°39.9	43°57.5	69°21.6	
8	359°49.0	13.9'	08°27.4	14.2'	56.7'	58°22.4	38°59.5	14°12.0	44°24.5	69°48.9	
9	14°21.9	13.9'	08°41.6	14.2'	56.7'	57°52.4	38°30.5	13°44.3	44°51.5	70°16.4	
10	28°54.8	13.8'	08°55.7	14.1'	56.7'	57° 22.5	38°01.5	13°16.9	45°18.7	70°43.9	
11	43°27.6	13.7'	$09^{\circ}09.9$	14.1'	56.8'	56°52.4	37°32.5	12°49.9	45°46.1	71°11.4	
12	58°00.3	13.6'	N09°24.0	14.1'	56.8'	56°22.4	37°03.5	12°23.2	46°13.5	71°39.0	
13	72°32.9	13.5'	09°38.1	14.1'	56.8'	55°52.3	36°34.4	11°57.0	46°41.1	72°06.7	
14	87°05.4	13.5'	09°52.1	14.0'	56.9'	55°22.2	36°05.3	11°31.2	47°08.7	72°34.5	
15	101°37.9	13.4'	10°06.2	14.0'	56.9'	54°52.0	35°36.1	11°06.0	47°36.5	73°02.3	
16	116°10.3	13.3'	10°20.2	14.0'	56.9'	54°21.7	35°06.9	10°41.4	48°04.5	73°30.2	
17	130°42.5	13.2'	$10^{\circ}34.2$	14.0'	57.0'	53°51.5	34°37.7	10°17.5	48°32.5	73°58.1	
18	145°14.8	13.1'	N10°48.1	13.9'	57.0'	53°21.2	34°08.5	9°54.3	49°00.6	74°26.1	
19	159°46.9	13.0'	11°02.1	13.9'	57.0'	52°50.8	33°39.2	9°32.1	49°28.9	74°54.2	
20	174°18.9	12.9'	$11^{\circ}16.0$	13.9'	57.1'	52°20.4	33°09.9		49°57.2	75°22.3	
21	188°50.8	12.8'	11°29.8	13.8'	57.1'	51°50.0	32°40.6		50°25.7	75°50.5	
22	203°22.7	12.8'	11°43.6	13.8'	57.2'	51° 19.5	32°11.2		50°54.3	76°18.8	
23	217°54.4	12.7'	11°57.4	13.8'	57.2'	50°49.0	31°41.9		51°22.9	76°47.1	
31 st	SD	= 15.4'	Mer. pass	. 08:01				Sun	SD = 15.8'		

h		Моо	n (1 st Jur	1)		Lunar [Distance	(objects	with largest	hourly LD delta)
Tue	GHA	ν	Dec	d	HP	-Sun	-Venus	+Saturn	+Fomalhaut	+Altair
0	232°26.1	12.6'	$N12^{\circ}11.2$	13.7'	57.2'	50° 18.5	31°12.5		51°51.7	77°15.4
1	246°57.6	12.5'	12°24.9	13.7'	57.3'	49°47.9	30°43.0		52°20.6	77°43.8
2	261°29.1	12.4'	12°38.6	13.6'	57.3'	49°17.2	30°13.6		52°49.5	78°12.3
3	276°00.5	12.3'	12°52.2	13.6'	57.3'	48°46.5	29°44.1		53°18.6	78°40.9
4	290°31.8	12.2'	13°05.8	13.5'	57.4'	48° 15.8	29°14.6		53°47.8	79°09.4
5	305°02.9	12.1'	13° 19.3	13.5'	57.4'	47°45.1	28°45.1		54°17.0	79°38.1
6	319°34.0	12.0'	$N13^{\circ}32.8$	13.5'	57.4'	47°14.2	28° 15.5		54°46.4	80°06.8
7	334°05.0	11.9'	13°46.3	13.4'	57.5'	46°43.4	27°46.0		55°15.8	80°35.5
8	348°35.8	11.8'	13°59.7	13.4'	57.5'	46° 12.5	27°16.4		55°45.3	81°04.3
9	3°06.6	11.7'	14° 13.0	13.3'	57.6'	45°41.6	26°46.8		56°15.0	81°33.2
10	17°37.3	11.6'	14°26.3	13.2'	57.6'	45°10.6	26° 17.2		56°44.7	82°02.1
11	32°07.8	11.4'	14°39.6	13.2'	57.6'	44°39.6	25°47.6		57°14.5	82°31.1
12	46°38.2	11.3'	N 14°52.8	13.1'	57.7'	44°08.5	25°18.0		57°44.3	83°00.1
13	61°08.6	11.2'	15°05.9	13.1'	57.7'	43°37.4	24°48.4		58°14.3	83°29.1
14	75°38.8	11.1'	$15^{\circ}19.0$	13.0'	57.7'	43°06.3	24° 18.7		58°44.3	83°58.3
15	90°08.9	11.0'	15°32.0	13.0'	57.8'	42°35.1	23°49.1		59°14.5	84°27.4
16	104°38.9	10.9'	15°44.9	12.9'	57.8'	42°03.8	23°19.4		59°44.7	84°56.6
17	119°08.8	10.8'	15° 57.8	12.8'	57.8'	41°32.6	22°49.8		60°15.0	85°25.9
18	133°38.6	10.7'	N 16° 10.7	12.8'	57.9'	41°01.3	22°20.2		60°45.3	85°55.2
19	148°08.3	10.5'	16°23.4	12.7'	57.9'	40°29.9	21°50.6		61°15.8	86°24.5
20	162°37.8	10.4'	16°36.1	12.6'	58.0'		21°21.0		61°46.3	86°53.9
21	177°07.2	10.3'	16°48.7	12.5'	58.0'		20°51.4	10°41.3	62°16.9	87°23.3
22	191°36.5	10.2'	17°01.3	12.5'	58.0'		20°21.8	11°07.0	62°47.5	87°52.8
23	206°05.7	10.1'	$17^{\circ}13.7$	12.4'	58.1'		19°52.3	11°33.4	63°18.3	88°22.3
1 st	SD	= 15.6'	Mer. pass	. 08:47				Sun	SD = 15.8'	

h		Moor	n (2 nd Jur	า)		Lunar	Distance	(objects wit	th largest	: hourly LD	delta)
Wed	GHA	ν	Dec	d	HP	-Venus	+Saturn	+Fomalhaut	+Deneb	+Achernar	+Altair
0	220°34.8	10.0'	N17°26.1	12.3'	58.1'	19°22.8	12°00.4	63°49.1			88°51.9
1	235°03.8	9.8'	17°38.5	12.2'	58.1'	18°53.3	12°28.0	64°20.0	70°21.1		89°21.5
2	249°32.6	9.7'	17°50.7	12.2'	58.2'	18°23.9	12°56.2	64°51.0	70°36.3		89°51.1
3	264°01.3	9.6'	18°02.9	12.1'	58.2'	17°54.6	13°24.8	65°22.0	70°51.6		90°20.8
4	278°29.9	9.5'	$18^{\circ}15.0$	12.0'	58.2'	17°25.3	13°53.9	65°53.1	71°07.0		90°50.5
5	292°58.4	9.3'	18°27.0	11.9'	58.3'	16°56.1	14°23.4	66°24.3	71°22.5		91°20.3
6	307°26.7	9.2'	N 18°38.9	11.8'	58.3'	16°26.9	14°53.3	66°55.5	71°38.2		91°50.1
7	321°54.9	9.1'	18°50.7	11.7'	58.4'	15°57.9	15°23.4	67°26.8	71°53.9		92°19.9
8	336°23.0	9.0'	19°02.4	11.6'	58.4'	15°29.0	15°53.9	67°58.2	72°09.8		92°49.8
9	350°51.0	8.8'	$19^{\circ}14.1$	11.5'	58.4'	15°00.2	16°24.7	68°29.6	72°25.8		93°19.7
10	5°18.9	8.7'	$19^{\circ}25.6$	11.5'	58.5'	14°31.6	16°55.8	69°01.1	72°41.9		93°49.6
11	19°46.6	8.6'	$19^{\circ}37.1$	11.4'	58.5'	14°03.1	17°27.1	69°32.6	72°58.0		94°19.6
12	34°14.2	8.5'	N19°48.4	11.3'	58.5'	13°34.8	17°58.6	70°04.3	73°14.3		94°49.6
13	48°41.6	8.3'	19°59.7	11.2'	58.6'	13°06.7	18°30.3	70°36.0	73°30.7	77°47.2	95°19.6
14	63°09.0	8.2'	20°10.8	11.1'	58.6'	12°38.9	19°02.2	71°07.7	73°47.2	78°02.3	95°49.6
15	77°36.2	8.1'	20°21.9	10.9'	58.6'	12°11.3	19°34.4	71°39.5	74°03.8	78°17.5	96°19.7
16	92°03.3	8.0'	20°32.8	10.8'	58.7'	11°44.1	20°06.6	72°11.4	74°20.5	78°32.8	96°49.8
17	106°30.2	7.8'	20°43.7	10.7'	58.7'	11°17.2	20°39.1	72°43.3	74°37.3	78°48.1	97°20.0
18	120°57.0	7.7'	N 20°54.4	10.6'	58.7'	10°50.8	21°11.7	73°15.3	74°54.2	79°03.5	97°50.2
19	135°23.7	7.6'	21°05.0	10.5'	58.8'	10°24.8	21°44.4	73°47.3	75° 11.2	79°19.0	98°20.3
20	149°50.3	7.4'	21°15.5	10.4'	58.8'	9°59.3	22°17.3	74°19.4	75°28.3	79°34.6	98°50.6
21	164°16.7	7.3'	21°25.9	10.3'	58.8'	9°34.5	22°50.4	74°51.6	75° 45.5	79°50.2	99°20.8
22	178°43.0	7.2'	21°36.2	10.2'	58.9'	9°10.3	23°23.5	75°23.8	76°02.7	80°05.9	99°51.0
23	193°09.2	7.1'	21°46.3	10.0'	58.9'	8°47.0	23°56.8	75°56.0	76°20.1	80°21.6	100°21.3
2 nd	SD	= 15.8'	Mer. pass	. 09:38							

h		Моо	n (3 rd Jur	1)		Lunar D	istance (obj	ects with	largest ho	ourly LD delta)
Thu	GHA	ν	Dec	d	HP	+Saturn	+Fomalhaut	+Deneb	+Achernar	+Altair
0	207°35.3	6.9'	N21°56.4	9.9'	58.9'	24°30.1	76°28.3	76°37.5	80°37.5	100°51.6
1	222°01.2	6.8'	22°06.3	9.8'	59.0'	25°03.6	77°00.7	76°55.0	80°53.4	101°21.9
2	236°27.0	6.7'	22°16.1	9.7'	59.0'	25°37.2	77°33.1	77°12.7	81°09.3	101°52.3
3	250°52.7	6.5'	22°25.7	9.5'	59.0'	26°10.9	78°05.6	77°30.3	81°25.4	102°22.6
4	265°18.2	6.4'	22°35.3	9.4'	59.1'	26°44.7	78°38.1	77°48.1	81°41.5	102°53.0
5	279°43.6	6.3'	22°44.7	9.3'	59.1'	27°18.6	79°10.6	78°06.0	81°57.6	103°23.3
6	294°08.9	6.2'	N22°53.9	9.1'	59.1'	27°52.6	79°43.2	78°23.9	82°13.8	103°53.7
7	308°34.1	6.0'	23°03.1	9.0'	59.2'	28°26.6	80°15.9	78°41.9	82°30.1	104°24.1
8	322°59.1	5.9'	23°12.1	8.9'	59.2'	29°00.8	80°48.6	79°00.0	82°46.4	104° 54.5
9	337°24.0	5.8'	23°20.9	8.7'	59.2'	29°35.0	81°21.3	79°18.2	83°02.8	105°24.9
10	351°48.8	5.7'	23°29.7	8.6'	59.3'	30°09.3	81°54.1	79°36.4	83°19.2	105° 55.3
11	6°13.5	5.5'	23°38.2	8.4'	59.3'	30°43.7	82°27.0	79°54.7	83°35.7	106°25.8
12	20°38.0	5.4'	N23°46.7	8.3'	59.3'	31°18.1	82°59.8	80°13.1	83°52.2	106° 56.2
13	35°02.4	5.3'	23°55.0	8.1'	59.4'	31°52.6	83°32.8	80°31.5	84°08.8	107°26.6
14	49°26.7	5.2'	24°03.1	8.0'	59.4'	32°27.2	84°05.7	80°50.0	84°25.4	107°57.0
15	63°50.9	5.1'	$24^{\circ}11.1$	7.8'	59.4'	33°01.9	84°38.7	81°08.5	84°42.1	108° 27.5
16	78°15.0	4.9'	24°18.9	7.7'	59.4'	33°36.6	85°11.8	81°27.2	84°58.8	108° 57.9
17	92°38.9	4.8'	24°26.6	7.5'	59.5'	34°11.4	85°44.8	81°45.9	85°15.6	109°28.3
18	107°02.7	4.7'	N24°34.1	7.4'	59.5'	34°46.2	86°18.0	82°04.6	85°32.4	109°58.7
19	121°26.4	4.6'	24°41.5	7.2'	59.5'	35°21.2	86°51.1	82°23.4	85°49.2	110°29.1
20	135°50.0	4.5'	24°48.7	7.0'	59.6'	35°56.1	87°24.3	82°42.3	86°06.1	110° 59.5
21	150°13.5	4.4'	24°55.8	6.9'	59.6'	36°31.1	87°57.5	83°01.2	86°23.0	111°29.9
22	164°36.9	4.3'	25°02.6	6.7'	59.6'	37°06.2	88°30.8	83°20.1	86°40.0	112°00.2
23	179°00.1	4.2'	25°09.4	6.6'	59.6'	37°41.4	89°04.1	83°39.2	86°57.0	112°30.6
3 rd	SD :	= 16.1'	Mer. pass	. 10:34	1					

h		Моог	n (4 th Jur	1)		Lunar	Distance	(objects	with large	st hourly LD	delta)
Fri	GHA	ν	Dec	d	HP	+Venus	+Saturn	+Deneb	+Achernar	+Fomalhaut	+Altair
0	193°23.3	4.0'	$N25^{\circ}15.9$	6.4'	59.7'	9°34.3	38°16.5	83°58.2	87°14.0	89°37.4	113°00.9
1	207°46.3	3.9'	25°22.3	6.2'	59.7'	10°00.0	38°51.8	84°17.3	87°31.0	90°10.7	113°31.2
2	222°09.3	3.8'	25°28.5	6.0'	59.7'	10°26.4	39°27.1	84°36.5	87°48.1	90°44.1	114°01.5
3	236°32.1	3.7'	25°34.6	5.9'	59.7'	10°53.5	40°02.4	84°55.7	88°05.2	91°17.5	114°31.7
4	250°54.9	3.6'	25°40.4	5.7'	59.8'	11°21.1	40°37.8	85°14.9	88°22.3	91°51.0	115°02.0
5	265° 17.5	3.5'	$25^{\circ}46.1$	5.5'	59.8'		' 	N	ew Moon ——	<u> </u>	·
6	279°40.0	3.4'	$N25^{\circ}51.6$	5.3'	59.8'			N	ew Moon		
7	294°02.5	3.4'	25°57.0	5.2'	59.8'				ew Moon		
8	308°24.9	3.3'	$26^{\circ}02.1$	5.0'	59.9'						
9	322°47.1	3.2'	$26^{\circ}07.1$	4.8'	59.9'				ew Moon ——		
10	337°09.3	3.1'	$26^{\circ}11.9$	4.6'	59.9'						
11	351°31.4	3.0'	$26^{\circ}16.5$	4.4'	59.9'			N	ew Moon ——		
12	5°53.4	2.9'	N 26°20.9	4.2'	60.0'						
13	20°15.3	2.8'	26°25.2	4.1'	60.0'			N	ew Moon		
14	34°37.2	2.8'	26° 29.2	3.9'	60.0'						
15	48°58.9	2.7'	26°33.1	3.7'	60.0'						
16	63°20.6	2.6'	26°36.8	3.5'	60.0'						
17	77°42.2	2.6'	26°40.3	3.3'	60.1'			N	ew Moon ——		
18	92°03.8	2.5'	N26°43.5	3.1'	60.1'			N	ew Moon		
19	106°25.3	2.4'	26°46.6	2.9'	60.1'			N	ew Moon		
20	120°46.7	2.4'	26°49.5	2.7'	60.1'						
21	135°08.1	2.3'	$26^{\circ}52.2$	2.5'	60.1'						
22	149°29.4	2.3'	26°54.7	2.3'	60.2'						
23	163°50.7	2.2'	26°57.0	2.1'	60.2'			N	ew Moon ——		
4 th	SD =	= 16.3'	Mer. pass	. 11:35	5						

h		Mod	on (5 th Jui	า)			Lunar Dis	tance (ol	bjects wi	th largest	t hourly L	.D delta))
Sat	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Mars	-Regulus	-Jupiter	-Procyon	-Pollux	+Capella
0	178°11.9	2.2'	N 26°59.1	1.9'	60.2'				New 1	Moon ——			
1	192°33.0	2.1'	$27^{\circ}01.1$	1.7'	60.2'								İ
2	206°54.1	2.1'	27°02.8	1.5'	60.2'								
3	221°15.2	2.0'	27°04.3	1.3'	60.3'								
4	235°36.2	2.0'	27°05.6	1.1'	60.3'								
5	249°57.2	2.0'	27°06.7	0.9'	60.3'				New I	Moon ——			
6	264°18.2	1.9'	N 27°07.6	0.7'	60.3'								
7	278°39.1	1.9'	27°08.3	0.5'	60.3'								
8	293°00.0	1.9'	27°08.8	0.3'	60.3'								
9	307°20.9	1.9'	$27^{\circ}09.0$	0.1'	60.3'								
10	321°41.7	1.8'	$27^{\circ}09.1$	-0.1'	60.4'				—— New I	Moon ——			
11	336°02.6	1.8'	$27^{\circ}09.0$	-0.3'	60.4'				—— New I	Moon ——			
12	350°23.4	1.8'	N 27°08.7	-0.5'	60.4'		113°43.3	75°08.5	66°12.4	57°00.4	37°28.9	29°34.2	
13	4°44.2	1.8'	27°08.1	-0.7'	60.4'	119°38.8	113°14.6	74°32.6	65°35.3	56°23.7	36° 56.7	28°57.7	
14	19°05.0	1.8'	27°07.4	-0.9'	60.4'	119°01.8	112°45.8	73°56.8	64°58.3	55°47.0	36°24.6	28°21.2	
15	33°25.8	1.8'	27°06.5	-1.1'	60.4'	118°24.8	112°17.0	73°20.9	64°21.2	55° 10.2	35°52.6	27°44.7	
16	47°46.6	1.8'	27°05.3	-1.4'	60.4'	117°47.7	111°48.1	72°45.1	63°44.1	54°33.5	35°20.8	27°08.3	
17	62°07.5	1.8'	27°03.9	-1.6'	60.4'	117°10.7	111°19.1	72°09.2	63°07.0	53°56.8	34°49.2	26°31.9	
18	76°28.3	1.8'	$N27^{\circ}02.4$	-1.8'	60.4'	116°33.6	110°50.1	71°33.3	62°29.9	53°20.0	34° 17.7	25°55.5	
19	90°49.1	1.8'	27°00.6	-2.0'	60.5'	115°56.5	110°21.0	70°57.4	61°52.8	52°43.2	33°46.3	$25^{\circ}19.1$	
20	105°09.9	1.8'	26°58.6	-2.2'	60.5'	115°19.4	109°51.8	70°21.5	61°15.7	52°06.5	33° 15.1	24°42.7	
21	119°30.8	1.9'	26°56.5	-2.4'	60.5'	114°42.3	109°22.5	69°45.6	60°38.6	51°29.7	32°44.1	24°06.4	
22	133°51.6	1.9'	26°54.1	-2.6'	60.5'	114°05.2	108°53.2	69°09.7	60°01.4	50°52.9	32° 13.2	23°30.1	20°52.9
23	148°12.5	1.9'	26°51.5	-2.8'	60.5'	113°28.1	108°23.9	68°33.7	59°24.3	50°16.1	31°42.6	22°53.8	21°08.9
5 th	SD	= 16.4	Mer. pas	s. 12:40)			<u> </u>					

h Moon (6th Jun)

Sun	GHA	ν	Dec	d	HP	-Spica	-Mars	-Regulus	-Jupiter	-Pollux	+Capella	+Betelgeuse	+Rigel
0	162°33.4	1.9'	N 26°48.7	-3.0'	60.5'	112°50.9	67°57.8	58°47.1	49°39.3	22°17.6	21°25.8		
1	176°54.4	2.0'	26°45.7	-3.2'	60.5'	112°13.8	67°21.9	58°10.0	49°02.5	21°41.4	21°43.4		
2	191°15.3	2.0'	26°42.5	-3.4'	60.5'	111°36.6	66°45.9	57°32.8	48° 25.7	21°05.3	22°01.8		
3	205°36.3	2.0'	26°39.1	-3.6'	60.5'	110°59.5	66° 10.0	56°55.6	47°48.8	20°29.2	22°21.0		
4	219°57.4	2.1'	26°35.6	-3.8'	60.5'	110°22.3	65°34.0	56°18.5	47° 12.0	19°53.2	22°40.9		
5	234°18.5	2.1'	26°31.8	-4.0'	60.5'	109°45.2	64°58.0	55°41.3	46°35.2	19°17.3	23°01.4		
6	248°39.6	2.2'	N26°27.8	-4.2'	60.5'	109°08.0	64°22.1	55°04.1	45°58.3	18°41.4	23°22.6		
7	263°00.7	2.2'	26°23.6	-4.4'	60.5'	108°30.8	63°46.1	54°26.9	45°21.5	18°05.6	23°44.5		
8	277°22.0	2.3'	$26^{\circ}19.2$	-4.6'	60.5'	107°53.7	63°10.1	53°49.7	44°44.7	17°29.9	24°06.9		
9	291°43.2	2.3'	26°14.6	-4.8'	60.5'	107°16.5	62°34.2	53°12.5	44°07.8	16°54.3	24°29.9		
10	306°04.5	2.4'	26°09.8	-5.0'	60.5'	106°39.3	61°58.2	52°35.3	43°31.0	16°18.8	24°53.4		
11	320°25.9	2.4'	26°04.8	-5.2'	60.5'	106°02.1	61°22.2	51°58.2	42°54.1	15°43.5	25°17.5		39°29.8
12	334°47.4	2.5'	N25°59.6	-5.4'	60.5'	105°25.0	60°46.3	51°21.0	42°17.3	15°08.3	25°42.0		39°45.6
13	349°08.8	2.6'	25°54.3	-5.6'	60.5'	104°47.8	60°10.3	50°43.8	41°40.5	14°33.3	26°07.0		40°01.8
14	3°30.4	2.6'	25°48.7	-5.8'	60.5'	104°10.6	59°34.3	50°06.6	41°03.6	13°58.4	26°32.5	21°42.6	40°18.3
15	17°52.0	2.7'	25°43.0	-5.9'	60.5'	103°33.4	58° 58.4	49°29.4	40°26.8	13°23.8	26°58.4	21°59.0	40°35.3
16	32°13.7	2.8'	25°37.0	-6.1'	60.5'	102°56.2	58°22.4	48°52.2	39°50.0	12°49.4	27°24.7	22° 16.2	40°52.6
17	46°35.5	2.8'	25°30.9	-6.3'	60.5'	102°19.1	57°46.5	48°15.0	39°13.1	12°15.3	27°51.3	22°34.2	41°10.3
18	60°57.3	2.9'	N25°24.6	-6.5'	60.5'	101°41.9	57° 10.5	47°37.9	38°36.3	11°41.5	28°18.3	22°52.8	41°28.3
19	75°19.3	3.0'	25°18.1	-6.7'	60.5'	101°04.7	56°34.6	47°00.7	37° 59.5	11°08.0	28°45.7	23° 12.2	41°46.7
20	89°41.2	3.1'	25°11.4	-6.9'	60.5'	100°27.6	55°58.7	46°23.5	37°22.7	10°35.0	29°13.4	23°32.3	42°05.4
21	104°03.3	3.2'	25°04.5	-7.0'	60.5'	99°50.4	55°22.7	45°46.4	36° 45.9	10°02.5	29°41.4	23°53.0	42°24.4
22	118°25.5	3.2'	24°57.5	-7.2'	60.5'	99°13.2	54°46.8	45°09.2	36°09.1	9°30.5	30°09.7	24°14.3	42°43.7
23	132°47.7	3.3'	24°50.3	-7.4'	60.5'	98°36.1	54°10.9	44°32.0	35°32.3	8°59.2	30°38.3	24°36.2	43°03.4
6 th	SD :	= 16.5	Mer. pass	s. 13:45			-			-			

			J. (. J.	,					(· · · J	,	
Mon	GHA	ν	Dec	d	HP	-Spica	-Mars	-Regulus	-Jupiter	+Betelgeuse	+Capella	+Sun	+Rigel
0	147°10.1	3.4'	N 24°42.9	-7.6'	60.5'	97°59.0	53°35.0	43°54.9	34°55.5	24°58.7	31°07.2		43°23.4
1	161°32.5	3.5'	24°35.3	-7.8'	60.5'	97°21.8	52°59.1	43° 17.8	34°18.7	25°21.7	31°36.3		43°43.6
2	175°55.0	3.6'	24°27.5	-7.9'	60.5'	96°44.7	52°23.2	42°40.6	33°42.0	25°45.2	32°05.7		44°04.2
3	190°17.6	3.7'	24°19.6	-8.1'	60.5'	96°07.6	51°47.3	42°03.5	33°05.2	26°09.2	32°35.2		44°25.0
4	204°40.3	3.8'	24°11.5	-8.3'	60.5'	95°30.5	51°11.5	41°26.4	32°28.5	26°33.6	33°05.1		44°46.2
5	219°03.1	3.9'	24°03.2	-8.4'	60.5'	94°53.4	50°35.6	40°49.3	31°51.7	26°58.5	33°35.1		45°07.5
6	233°25.9	4.0'	N23°54.8	-8.6'	60.5'	94°16.3	49°59.8	40°12.3	31°15.0	27°23.9	34°05.3		45°29.2
7	247°48.9	4.1'	23°46.2	-8.8'	60.5'	93°39.2	49°23.9	39°35.2	30°38.3	27°49.6	34°35.7		45°51.1
8	262°12.0	4.2'	23°37.4	-8.9'	60.5'	93°02.1	48°48.1	38°58.1	30°01.6	28°15.7	35°06.3		46°13.2
9	276°35.2	4.3'	23°28.5	-9.1'	60.5'	92°25.1	48° 12.3	38°21.1	29°24.9	28°42.2	35°37.1		46°35.6
10	290°58.5	4.4'	23°19.4	-9.3'	60.5'	91°48.0	47°36.5	37°44.0	28°48.3	29°09.0	36°08.0		46°58.2
11	305°21.9	4.5'	$23^{\circ}10.1$	-9.4'	60.5'	91°11.0	47°00.8	37°07.0	28°11.6	29°36.1	36°39.1		47°21.0
12	319°45.3	4.6'	N23°00.7	-9.6'	60.4'	90°34.0	46°25.0	36°30.0	27°35.0	30°03.6	37°10.3		47°44.1
13	334°08.9	4.7'	22°51.1	-9.7'	60.4'	89°57.0	45°49.3	35°53.0	26°58.4	30°31.4	37°41.6		48°07.3
14	348°32.6	4.8'	22°41.4	-9.9'	60.4'	89°20.0	45° 13.6	35°16.1	26°21.8	30°59.4	38° 13.1		48°30.8
15	2°56.5	4.9'	22°31.6	-10.0'	60.4'	88°43.0	44°37.9	34°39.1	25°45.2	31°27.7	38°44.8		48°54.5
16	17°20.4	5.0'	22°21.5	-10.2'	60.4'	88°06.0	44°02.2	34°02.2	25°08.6	31°56.3	39°16.5		49°18.3
17	31°44.4	5.1'	22°11.4	-10.3'	60.4'	87°29.1	43°26.5	33°25.3	24°32.1	32°25.1	39°48.4	40°05.0	49°42.4
18	46°08.5	5.2'	$N22^{\circ}01.1$	-10.5'	60.4'	86°52.1	42°50.9	32°48.4	23°55.6	32°54.1	40°20.3	40°39.3	50°06.6
19	60°32.8	5.4'	21°50.6	-10.6'	60.4'	86°15.2	42° 15.2	32° 11.5	23°19.1	33°23.3	40°52.4	41°13.6	50°31.0
20	74°57.2	5.5'	21°40.0	-10.7'	60.4'	85°38.3	41°39.6	31°34.6	22°42.6	33°52.8	41°24.6	41°48.0	50°55.6
21	89°21.6	5.6'	21°29.3	-10.9'	60.3'	85°01.4	41°04.0	30° 57.8	22°06.1	34°22.5	41°56.8	42°22.3	51°20.4
22	103°46.2	5.7'	21°18.4	-11.0'	60.3'	84°24.6	40°28.5	30°20.9	21°29.7	34°52.3	42°29.2	42° 56.6	51°45.3
23	118°10.9	5.8'	21°07.4	-11.1'	60.3'	83°47.7	39°52.9	29°44.1	20°53.3	35°22.3	43°01.6	43°30.8	52°10.4
7 th	SD	= 16.5	Mer. pas	s. 14:48					Sun S	SD = 15.8'			

h Moon (8 th Jun)	Lunar Distance (objects with largest hourly LD delta)
------------------------------	---

Tue	GHA	ν	Dec	d	HP	-Antares	-Spica	-Regulus	-Jupiter	+Pollux	+Betelgeuse	+Capella	+Sun
0	132°35.7	5.9'	N 20°56.2	-11.3'	60.3'		83°10.9	29°07.4	20°16.9	9°22.0	35°52.5	43°34.1	44°05.1
1	147°00.6	6.0'	20°44.9	-11.4'	60.3'		82°34.1	28°30.6	19°40.6	9°53.5	36°22.9	44°06.7	44°39.4
2	161°25.7	6.2'	20°33.5	-11.5'	60.3'		81°57.3	27°53.9	19°04.2	$10^{\circ}25.5$	36°53.4	44°39.4	45°13.6
3	175°50.8	6.3'	20°22.0	-11.7'	60.3'		81°20.5	$27^{\circ}17.2$	18°27.9	$10^{\circ}58.1$	37°24.1	$45^{\circ}12.1$	45°47.8
4	190°16.1	6.4'	20°10.3	-11.8'	60.3		80°43.8	26°40.5	17°51.7	11°31.0	37°54.9	45°44.9	46°22.0
5	204°41.5	6.5'	19°58.6	-11.9'	60.2'		80°07.1	26°03.8	17°15.4	12°04.3	38°25.8	46°17.7	46°56.2
6	219°07.0	6.6'	N19°46.7	-12.0'	60.2'		79°30.4	25°27.2	16°39.2	12°37.9	38° 56.9	46°50.6	47°30.4
7	233°32.6	6.7'	19°34.6	-12.1'	60.2'		78°53.7	24°50.6	16°03.1	$13^{\circ}11.8$	39°28.0	47°23.6	48°04.6
8	247°58.3	6.8'	19°22.5	-12.3'	60.2'		78°17.0	24°14.0	15°27.0	13° 45.8	39°59.3	47°56.6	48°38.7
9	262°24.1	7.0'	19°10.2	-12.4'	60.2'		77°40.4	23°37.5	14°50.9	14°20.1	40°30.7	48°29.6	49°12.8
10	276°50.1	7.1'	18°57.9	-12.5'	60.2'		77°03.8	23°00.9	14°14.8	14°54.5	41°02.2	49°02.7	49°46.9
11	291°16.2	7.2'	18°45.4	-12.6'	60.1'		76°27.2	22°24.5	13°38.8	$15^{\circ}29.1$	41°33.8	49°35.9	50°21.0
12	305°42.3	7.3'	N18°32.8	-12.7'	60.1'		75°50.6	21°48.0	13°02.9	16°03.8	42°05.5	50°09.0	50°55.0
13	320°08.6	7.4'	18°20.1	-12.8'	60.1'		75°14.1	21°11.6	12°27.0	$16^{\circ}38.6$	42° 37.3	50°42.2	51°29.1
14	334°35.0	7.5'	18°07.3	-12.9'	60.1'		74°37.6	20°35.2	11°51.1	$17^{\circ}13.5$	43°09.1	$51^{\circ}15.5$	52°03.1
15	349°01.6	7.6'	17°54.4	-13.0'	60.1'	119°50.3	74°01.1	19°58.8	11°15.4	$17^{\circ}48.5$	43°41.0	51°48.8	52°37.1
16	3°28.2	7.7'	17°41.4	-13.1'	60.0'	119°13.8	73°24.6	19°22.5	10°39.7	18°23.6	44°13.0	$52^{\circ}22.1$	53°11.0
17	17°54.9	7.9'	17°28.3	-13.2'	60.0'	118°37.3	72°48.2	18°46.2	10°04.0	$18^{\circ}58.7$	44°45.1	52°55.4	53°45.0
18	$32^{\circ}21.8$	8.0'	$N17^{\circ}15.1$	-13.3'	60.0'	118°00.8	72°11.7	18°10.0	9°28.5	19°33.9	45° 17.2	53°28.8	54°18.9
19	46°48.7	8.1'	$17^{\circ}01.8$	-13.4'	60.0'	117°24.4	71°35.3	17°33.8	8°53.1	$20^{\circ}09.1$	45°49.4	54°02.1	54°52.8
20	61°15.8	8.2'	16°48.4	-13.5'	60.0'	116°48.0	70°59.0	16°57.6	8°17.7	20°44.4	46°21.7	54°35.5	55°26.7
21	75°43.0	8.3'	16°34.9	-13.6'	59.9'	$116^{\circ}11.6$	70°22.6	$16^{\circ}21.5$	7°42.5	$21^{\circ}19.7$	46°54.0	55°09.0	56°00.5
22	90°10.3	8.4'	16°21.3	-13.7'	59.9'	115°35.2	69°46.3	15°45.4	7°07.5	21°55.1	47° 26.4	55°42.4	56°34.4
23	104°37.7	8.5'	16°07.7	-13.7'	59.9'	114°58.9	69°10.0	15°09.4	6°32.7	22°30.4	47°58.8	56°15.9	57°08.2
8 th	SD	= 16.4	' Mer. pas	ss. 15:46					Sun S	D = 15.8'			

h Moon (9th Jun)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Antares	-Spica	-Mars	-Regulus	+Pollux	+Betelgeuse	+Capella	+Sun
0	119°05.2	8.6'	N 15°53.9	-13.8'	59.9'	114°22.6	68°33.8	25°13.7	14°33.4	23°05.8	48°31.2	56°49.3	57°41.9
1	133°32.8	8.7'	15°40.1	-13.9'	59.9'	113°46.3	67°57.6	24°38.9	13°57.5	23°41.2	49°03.7	57°22.8	58° 15.7
2	148°00.5	8.8'	15°26.2	-14.0'	59.8'	113°10.0	67°21.4	24°04.3	13°21.6	24°16.6	49°36.3	57°56.3	58°49.4
3	162°28.3	8.9'	15° 12.2	-14.1'	59.8'	112°33.8	66°45.2	23°29.7	12°45.8	24°52.1	50°08.9	58°29.8	59°23.1
4	176°56.2	9.0'	14°58.1	-14.1'	59.8'	111°57.6	66°09.0	22°55.1	12°10.1	25°27.5	50°41.5	59°03.3	59°56.8
5	191°24.3	9.1'	14°44.0	-14.2'	59.8'	111°21.5	65°32.9	22°20.6	11°34.5	26°02.9	51°14.1	59°36.8	60°30.4
6	205°52.4	9.2'	N14°29.8	-14.3'	59.8'	110°45.3	64°56.8	21°46.1	10°58.9	26°38.4	51°46.8	60°10.3	61°04.1
7	220°20.6	9.3'	$14^{\circ}15.5$	-14.4'	59.7'	110°09.2	64°20.8	21°11.7	10°23.4	27°13.8	52° 19.5	60°43.8	61°37.6
8	234°49.0	9.4'	14°01.2	-14.4'	59.7'	109°33.1	63°44.8	20°37.3	9°48.1	27°49.2	52°52.2	61°17.4	62°11.2
9	249°17.4	9.5'	13°46.7	-14.5'	59.7'	108°57.1	63°08.8	20°03.0	9°12.8	28° 24.7	53°25.0	61°50.9	62°44.7
10	263°45.9	9.6'	13°32.2	-14.6'	59.7'	108°21.1	62°32.8	19°28.8	8°37.7	29°00.1	53° 57.7	62°24.4	63° 18.3
11	278°14.5	9.7'	13°17.7	-14.6'	59.6'	107°45.1	61°56.9	18°54.6	8°02.8	29°35.5	54°30.5	62°57.9	63°51.7
12	292°43.3	9.8'	$N13^{\circ}03.1$	-14.7'	59.6'	107°09.1	61°21.0	18°20.5	7°28.0	30°10.9	55°03.4	63°31.4	64°25.2
13	307°12.1	9.9'	12°48.4	-14.7'	59.6'	106°33.2	60°45.1	17°46.5	6°53.5	30°46.3	55° 36.2	64°05.0	64°58.6
14	321°41.0	10.0'	12°33.7	-14.8'	59.6'	105°57.3	60°09.3	17°12.5	6°19.3	31°21.7	56°09.0	64°38.5	65°32.0
15	336°10.0	10.1'	$12^{\circ}18.9$	-14.8'	59.5'	105°21.4	59°33.5	16°38.6	5°45.4	31°57.1	56°41.9	65°12.0	66°05.4
16	350°39.1	10.2'	12°04.0	-14.9'	59.5'	104°45.6	58°57.7	16°04.8	5°12.0	32°32.5	57° 14.7	65°45.5	66°38.7
17	5°08.3	10.3'	$11^{\circ}49.1$	-14.9'	59.5'	104°09.8	58°21.9	15°31.1	4°39.3	33°07.8	57° 47.6	66°19.0	67°12.0
18	19°37.5	10.4'	N11°34.2	-15.0'	59.5'	103°34.0	57°46.2	14°57.5	4°07.4	33°43.1	58° 20.5	66°52.4	67°45.3
19	34°06.9	10.5'	11°19.2	-15.0'	59.5'	102°58.3	57°10.5	14°24.0		34° 18.4	58° 53.4	67°25.9	68° 18.5
20	48°36.4	10.5'	$11^{\circ}04.1$	-15.1'	59.4'	102°22.6	56°34.9	13°50.6		34°53.7	59°26.3	67°59.4	68°51.7
21	63°05.9	10.6'	$10^{\circ}49.1$	-15.1'	59.4'	101°46.9	55°59.3	13°17.3		35°29.0	59° 59.2	68°32.8	69°24.9
22	77°35.5	10.7'	10°33.9	-15.2'	59.4'	101°11.3	55°23.7	12°44.2		36°04.3	60°32.1	69°06.2	69°58.0
23	92°05.2	10.8'	10°18.7	-15.2'	59.4'	100°35.6	54°48.1	12°11.2		36° 39.5	61°05.0	69°39.7	70°31.2
9 th	SD	= 16.3	Mer. pas	s. 16:39					Sun S	D = 15.7'			

h Moon (10th Jun) Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Spica	-Mars	+Regulus	+Jupiter	+Pollux	+Capella
0	106°35.0	10.9'	N10°03.5	-15.3'	59.3'	100°00.1	88°51.6	54°12.6	11°38.3		8°40.6	37°14.7	70°13.1
1	121°04.9	10.9'	09°48.3	-15.3'	59.3'	99°24.5	88°23.5	53°37.1	11°05.7		9°15.2	37°49.9	70°46.5
2	135°34.8	11.0'	09°33.0	-15.3'	59.3'	98°49.0	87°55.4	53°01.7	10°33.3		9°49.8	38°25.1	71° 19.9
3	150°04.9	11.1'	09°17.6	-15.4'	59.2'	98°13.5	87°27.3	52°26.2	$10^{\circ}01.1$		10°24.4	39°00.2	71°53.2
4	164°35.0	11.2'	09°02.2	-15.4'	59.2'	97°38.0	86°59.3	51°50.9	9°29.2		10°59.0	39°35.3	72°26.6
5	179°05.1	11.3'	08°46.8	-15.4'	59.2'	97°02.6	86°31.3	51°15.5	8°57.6		11°33.6	40°10.4	72°59.9
6	193°35.4	11.3'	N08°31.4	-15.5'	59.2'	96°27.2	86°03.3	50°40.2	8°26.3		12°08.3	40°45.5	73°33.2
7	208°05.7	11.4'	$08^{\circ}15.9$	-15.5'	59.1'	95°51.9	85°35.4	50°04.9	7°55.5		12°42.9	41°20.5	74°06.5
8	222°36.1	11.5'	08°00.4	-15.5'	59.1'	95°16.6	85°07.5	49° 29.7	7°25.2	5°04.9	13°17.6	41°55.6	74°39.8
9	237°06.6	11.5'	07°44.9	-15.5'	59.1'	94°41.3	84°39.6	48° 54.4	6°55.5	5°37.6	13°52.2	42°30.6	75° 13.0
10	251°37.1	11.6'	07°29.4	-15.6'	59.1'	94°06.0	84°11.8	48° 19.3	6°26.6	6° 10.8	14°26.8	43°05.5	75°46.3
11	266°07.7	11.7'	$07^{\circ}13.8$	-15.6'	59.0'	93°30.8	83°44.0	47°44.1	5°58.6	6°44.3	15°01.4	43°40.5	76° 19.5
12	280°38.4	11.7'	N 06°58.2	-15.6'	59.0'	92°55.6	83°16.2	47°09.0		7° 18.0	15°36.0	44°15.4	76°52.7
13	295°09.1	11.8'	06°42.6	-15.6'	59.0'	92°20.4	82°48.5	46°33.9		7°52.0	16°10.6	44°50.3	77° 25.8
14	309°39.9	11.9'	06°27.0	-15.6'	59.0'	91°45.3	82°20.9	45°58.9		8° 26.0	16°45.2	45°25.1	77°59.0
15	324°10.8	11.9'	$06^{\circ}11.3$	-15.7'	58.9'	91°10.2	81°53.3	45°23.9		9°00.2	$17^{\circ}19.7$	46°00.0	78°32.1
16	338°41.7	12.0'	05°55.7	-15.7'	58.9'	90°35.2	81°25.7	44°48.9		9°34.4	17°54.2	46°34.8	79°05.2
17	353°12.7	12.0'	05°40.0	-15.7'	58.9'	90°00.1	80°58.2	44°14.0		10°08.7	18°28.7	47°09.5	79°38.3
18	7°43.7	12.1'	N05°24.3	-15.7'	58.8'	89°25.1	80°30.7	43°39.0		10°43.1	19°03.2	47°44.3	80°11.3
19	22°14.8	12.2'	05°08.6	-15.7'	58.8'	88°50.2	80°03.3	43°04.2		11° 17.4	19°37.7	48°19.0	80°44.3
20	36°46.0	12.2'	04°52.9	-15.7'	58.8'	88°15.3	79°35.9	42°29.3		11°51.8	20°12.1	48°53.7	81°17.3
21	51°17.2	12.3'	04°37.1	-15.7'	58.8'	87°40.4	79°08.6	41°54.5		12°26.3	20°46.5	49°28.4	81°50.3
22	65°48.5	12.3'	04°21.4	-15.7'	58.7'	87°05.5	78°41.3	41°19.8		13°00.7	21°20.8	50°03.0	82°23.3
23	80°19.8	12.4'	04°05.7	-15.7'	58.7'	86°30.7	78°14.1	40°45.1		13°35.1	21°55.2	50°37.6	82°56.2
10 th	SD	= 16.2	Mer. pas	s. 17:28									

h		Моо	n (11 th Ju	ın)			Lunar Dis	tance (o	bjects wi	th largest	hourly LI	D delta)	
Fri	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Spica	+Regulus	+Jupiter	+Pollux	+Capella
0	94°51.2	12.4'	N 03°49.9	-15.7'	58.7'	85°55.9	77°47.0	74°00.2	40°10.4	14°09.5	22°29.5	51°12.2	83°29.1
1	109°22.6	12.5'	03°34.2	-15.8'	58.7'	85°21.1	77°19.9	73°34.0	39°35.7	14°44.0	23°03.8	51°46.7	84°02.0
2	123°54.0	12.5'	03°18.4	-15.8'	58.6'	84°46.4	76°52.8	73°07.8	39°01.1	15° 18.4	23°38.0	52°21.2	84°34.8
3	138°25.5	12.6'	03°02.7	-15.8'	58.6'	84°11.7	76°25.8	72°41.8	38°26.5	15°52.8	24°12.3	52°55.7	85°07.6
4	152°57.1	12.6'	02°46.9	-15.7'	58.6'	83°37.1	75°58.9	72°15.8	37°51.9	16°27.2	24°46.4	53°30.2	85°40.4
5	167°28.7	12.6'	02°31.2	-15.7'	58.5'	83°02.4	75°32.0	71°49.8	37°17.4	17°01.5	25°20.6	54°04.6	86°13.2
6	182°00.3	12.7'	N02°15.4	-15.7'	58.5'	82°27.8	75°05.2	71°24.0	36°43.0	17° 35.9	25°54.7	54°39.0	86°45.9
7	196°32.0	12.7'	$01^{\circ}59.7$	-15.7'	58.5'	81°53.3	74°38.5	70°58.2	36°08.5	18° 10.2	26°28.9	55°13.4	87° 18.6
8	211°03.7	12.8'	01°43.9	-15.7'	58.5'	81°18.8	74°11.8	70°32.5	35°34.1	18° 44.5	27°02.9	55°47.7	87°51.2
9	225°35.5	12.8'	01°28.2	-15.7'	58.4'	80°44.3	73°45.2	70°06.9	34°59.7	19° 18.8	27°37.0	56°22.0	88°23.9
10	240°07.3	12.8'	$01^{\circ}12.5$	-15.7'	58.4'	80°09.8	73°18.6	69°41.4	34°25.4	19°53.1	28°11.0	56°56.3	88° 56.5
11	254°39.1	12.9'	00°56.8	-15.7'	58.4'	79°35.4	72°52.1	69°15.9	33°51.1	20°27.4	28°45.0	57°30.5	89°29.1
12	269°11.0	12.9'	N00°41.1	-15.7'	58.3'	79°01.0	72°25.7	68°50.6	33°16.9	21°01.6	29°18.9	58°04.7	90°01.6
13	283°42.8	12.9'	00°25.4	-15.7'	58.3'	78°26.6	71°59.4	68°25.3	32°42.6	21°35.8	29°52.9	58°38.9	90°34.1
14	298°14.8	13.0'	N00°09.7	-15.7'	58.3'	77°52.3	71°33.1	68°00.1	32°08.4	22°10.0	30°26.7	59°13.1	91°06.6
15	312°46.7	13.0'	S 00°06.0	-15.6'	58.3'	77°18.0	71°06.9	67°35.0	31°34.3	22°44.1	31°00.6	59°47.2	91°39.1
16	327°18.7	13.0'	$00^{\circ}21.6$	-15.6'	58.2'	76°43.8	70°40.8	67°10.0	31°00.2	23° 18.3	31°34.4	60°21.3	
17	341°50.7	13.0'	00°37.2	-15.6'	58.2'	76°09.5	70°14.7	66°45.1	30°26.1	23°52.4	32°08.2	60°55.3	
18	356°22.8	13.1'	S 00°52.9	-15.6'	58.2'	75°35.3	69°48.7	66°20.2	29°52.1	24°26.4	32°42.0	61°29.4	
19	10°54.8	13.1'	01°08.4	-15.6'	58.2'	75°01.2	69°22.9	65°55.5	29°18.1	25°00.5	33°15.7	62°03.4	
20	25°26.9	13.1'	$01^{\circ}24.0$	-15.6'	58.1'	74°27.0	68°57.0	65°30.9	28°44.1	25°34.5	33°49.4	62°37.3	
21	39°59.0	13.1'	01°39.6	-15.5'	58.1'	73°52.9	68°31.3	65°06.3	28°10.2	26°08.5	34°23.1	63°11.3	
22	54°31.1	13.1'	$01^{\circ}55.1$	-15.5'	58.1'	73°18.9	68°05.6	64°41.9	27°36.3	26° 42.4	34°56.8	63°45.2	
23	69°03.3	13.2'	$02^{\circ}10.6$	-15.5'	58.0'	72°44.8	67°40.1	64°17.5	27°02.5	27° 16.4	35°30.4	64°19.1	

SD = 16.0'

Mer. pass. 18:15

h Moon (12th Jun)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Jupiter	+Pollux	+Betelgeuse
0	83°35.5	13.2'	S 02°26.1	-15.5'	58.0'		72°10.8	67°14.6	26°28.7	27°50.3	36°04.0	64°52.9	87°41.1
1	98°07.6	13.2'	$02^{\circ}41.6$	-15.4'	58.0'		71°36.9	66°49.2	25°54.9	28°24.2	36°37.5	65°26.7	88° 13.1
2	112°39.8	13.2'	02°57.0	-15.4'	58.0'		71°02.9	66°23.9	25°21.2	28°58.0	37°11.0	66°00.5	88° 45.1
3	127°12.1	13.2'	$03^{\circ}12.4$	-15.4'	57.9'		70°29.0	65°58.6	24°47.5	29°31.8	37°44.5	66°34.3	89° 17.1
4	141°44.3	13.2'	03°27.8	-15.3'	57.9'	119°40.6	69°55.1	65°33.5	24°13.9	30°05.6	38°18.0	67°08.0	89°49.0
5	156°16.5	13.2'	$03^{\circ}43.1$	-15.3'	57.9'	119°13.0	69°21.3	65°08.5	23°40.3	30°39.4	38°51.4	67°41.7	90°20.9
6	170°48.8	13.3'	S 03°58.4	-15.3'	57.8'	118°45.3	68°47.5	64°43.5	23°06.7	31°13.1	39°24.8	68° 15.3	90°52.8
7	185°21.0	13.3'	04° 13.7	-15.2'	57.8'	118°17.6	68° 13.7	64°18.7	22°33.2	31°46.8	39°58.2	68°49.0	91°24.6
8	199°53.3	13.3'	04°28.9	-15.2'	57.8'	117°49.8	67°40.0	63°53.9	21°59.8	32°20.5	40°31.5	69°22.6	91°56.4
9	214°25.6	13.3'	$04^{\circ}44.1$	-15.2'	57.8'	117°22.0	67°06.2	63°29.2	21°26.3	32°54.2	41°04.8	69°56.1	92°28.2
10	228°57.9	13.3'	$04^{\circ}59.3$	-15.1'	57.7'	116°54.2	66°32.6	63°04.7	20°53.0	33°27.8	41°38.1	70°29.7	92°59.9
11	243°30.1	13.3'	$05^{\circ}14.4$	-15.1'	57.7'	116°26.4	65°58.9	62°40.2	20°19.6	34°01.4	42°11.3	71°03.2	93°31.6
12	258°02.4	13.3'	S 05°29.5	-15.1'	57.7'	115°58.5	65°25.3	62°15.9	19°46.4	34°34.9	42°44.5	71°36.7	94°03.3
13	272°34.7	13.3'	05°44.6	-15.0'	57.7'	115°30.6	64°51.7	61°51.6	19°13.1	35°08.5	43°17.7	72°10.1	94°35.0
14	287°07.0	13.3'	05°59.6	-15.0'	57.6'	115°02.7	64° 18.1	61°27.5	18°40.0	35°42.0	43°50.8	72°43.6	95°06.6
15	301°39.3	13.3'	$06^{\circ}14.6$	-14.9'	57.6'	114°34.7	63°44.6	61°03.4	18°06.8	36°15.4	44°24.0	73° 17.0	95°38.2
16	316°11.6	13.3'	06°29.5	-14.9'	57.6'	114°06.8	63°11.1	60°39.5	17°33.8	36°48.9	44°57.1	73°50.3	96°09.7
17	330°43.9	13.3'	06°44.4	-14.8'	57.5'	113°38.8	62°37.6	60°15.7	17°00.7	37°22.3	45°30.1	74°23.7	96°41.2
18	345°16.2	13.3'	S 06°59.3	-14.8'	57.5'	113°10.8	62°04.2	59°52.0	16°27.8	37°55.7	46°03.1	74°57.0	97°12.7
19	359°48.4	13.3'	$07^{\circ}14.1$	-14.8'	57.5'	112°42.8	61°30.8	59°28.4	15°54.9	38°29.0	46°36.1	75°30.2	97°44.2
20	14°20.7	13.3'	07°28.8	-14.7'	57.5'	112°14.8	60°57.4	59°04.9	15°22.1	39°02.4	47°09.1	76°03.5	98° 15.6
21	28°53.0	13.3'	07°43.5	-14.7'	57.4'	111°46.7	60°24.0	58°41.6	14°49.3	39°35.7	47°42.1	76°36.7	98° 47.0
22	43°25.2	13.2'	07°58.2	-14.6'	57.4'	111°18.7	59°50.7	58°18.4	14°16.6	40°08.9	48°15.0	77°09.9	99°18.3
23	57°57.5	13.2'	08°12.8	-14.6'	57.4'	110°50.6	59° 17.4	57°55.2	13°44.0	40°42.2	48°47.9	77°43.0	99°49.6
12 th	SD	= 15.8'	Mer. pas	s. 19:01						-			

Moon (13th Jun)

Sun	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Mars	+Regulus	+Jupiter	+Pollux
0	72°29.7	13.2'	S 08°27.3	-14.5'	57.4'	110°22.5	58° 44.2	57°32.3	13°11.5	28°53.9	41°15.4	49°20.7	78°16.2
1	87°02.0	13.2'	08°41.8	-14.5'	57.3'	109°54.5	58° 10.9	57°09.4	12°39.1	29°25.7	41°48.6	49°53.5	78°49.3
2	101°34.2	13.2'	08°56.3	-14.4'	57.3'	109°26.4	57° 37.7	56°46.7	12°06.7	29°57.4	42°21.7	50°26.3	79°22.4
3	116°06.4	13.2'	$09^{\circ}10.7$	-14.3'	57.3'	108°58.3	57°04.6	56°24.1	11°34.5	30°29.1	42°54.9	50°59.1	79°55.4
4	130°38.6	13.2'	09°25.0	-14.3'	57.2'	108°30.2	56°31.4	56°01.7	11°02.4	31°00.8	43°28.0	51°31.8	80°28.4
5	145°10.7	13.2'	09°39.3	-14.2'	57.2'	108°02.1	55°58.3	55°39.3	10°30.5	31°32.5	44°01.0	52°04.5	81°01.4
6	159°42.9	13.1'	S 09°53.6	-14.2'	57.2'	107°33.9	55°25.2	55°17.2	9°58.6	32°04.1	44°34.1	52°37.2	81°34.4
7	174°15.0	13.1'	10°07.7	-14.1'	57.2'	107°05.8	54°52.2	54°55.1	9°27.0	32°35.7	45°07.1	53°09.9	82°07.3
8	188°47.1	13.1'	10°21.9	-14.1'	57.1'	106°37.7	54° 19.1	54°33.2	8°55.6	33°07.3	45°40.1	53°42.5	82°40.2
9	203°19.2	13.1'	10°35.9	-14.0'	57.1'	106°09.6	53°46.1	54°11.5	8°24.4	33°38.9	46°13.1	54°15.1	83°13.1
10	217°51.3	13.1'	10°49.9	-13.9'	57.1'	105°41.4	53° 13.2	53°49.9	7°53.4	34°10.4	46°46.0	54°47.7	83°45.9
11	232°23.4	13.0'	11°03.8	-13.9'	57.1'	105°13.3	52°40.2	53°28.4	7°22.8	34°41.9	47°18.9	55°20.2	84°18.7
12	246°55.4	13.0'	S 11°17.7	-13.8'	57.0'	104°45.2	52°07.3	53°07.1	6°52.5	35°13.4	47°51.8	55°52.7	84°51.5
13	261°27.4	13.0'	11°31.5	-13.7'	57.0'	104°17.1	51°34.4	52°46.0	6°22.7	35°44.9	48°24.6	56°25.2	85°24.3
14	275°59.4	13.0'	11°45.3	-13.7'	57.0'	103°49.0	51°01.5	52°25.0	5°53.5	36°16.4	48°57.5	56°57.6	85°57.0
15	290°31.4	12.9'	11°59.0	-13.6'	57.0'	103°20.8	50°28.7	52°04.2	5°25.0	36°47.8	49°30.3	57°30.1	86°29.7
16	305°03.3	12.9'	$12^{\circ}12.6$	-13.5'	56.9'	102°52.7	49°55.9	51°43.6	4°57.4	37° 19.2	50°03.0	58°02.5	87°02.4
17	319°35.2	12.9'	12°26.1	-13.5'	56.9'	102°24.6	49°23.1	51°23.1		37°50.6	50°35.8	58°34.9	87°35.1
18	334°07.1	12.9'	S 12°39.6	-13.4'	56.9'	101°56.5	48°50.4	51°02.7		38°22.0	51°08.5	59°07.2	88°07.7
19	348°39.0	12.8'	12°53.0	-13.3'	56.9'	101°28.4	48° 17.6	50°42.6		38°53.3	51°41.2	59°39.5	88°40.3
20	3°10.8	12.8'	13°06.3	-13.3'	56.8'	101°00.3	47° 45.0	50°22.6		39°24.6	52°13.9	60°11.8	89°12.9
21	17°42.6	12.8'	$13^{\circ}19.6$	-13.2'	56.8'	100°32.2	47° 12.3	50°02.8		39°55.9	52°46.5	60°44.1	89°45.4
22	32°14.3	12.7'	13°32.8	-13.1'	56.8'	100°04.1	46°39.6	49°43.2		40°27.2	53°19.1	61°16.3	90°17.9
23	46°46.1	12.7'	13°45.9	-13.0'	56.8'	99°36.1	46°07.0	49°23.8		40°58.4	53°51.7	61°48.5	90°50.4
13 th	SD	= 15.6'	Mer. pas	s. 19:47									

h	Moon	/1/th	1)
h	I\/loon	1 1 /1 (1)	lun l

		111001	11 (11. 30	••••			= 411141 =	istance (ob	,			, acrea)	
Mon	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Antares	+Spica	+Regulus	+Jupiter	+Pollux
0	61°17.8	12.7'	S 13°58.9	-13.0'	56.7'		99°08.0	49°04.6	45°34.4		54°24.3	62°20.7	91°22.9
1	75°49.4	12.6'	14°11.9	-12.9'	56.7'		98°40.0	48°45.5	45°01.9		54°56.8	62°52.9	91°55.4
2	90°21.1	12.6'	14°24.8	-12.8'	56.7'		98°11.9	48°26.7	44°29.3		55°29.3	63°25.0	92°27.8
3	104°52.7	12.6'	14°37.6	-12.7'	56.7'		97°43.9	48°08.0	43°56.8		56°01.8	63°57.1	93°00.2
4	119°24.2	12.5'	14°50.4	-12.7'	56.6'		97°15.9	47°49.6	43°24.3		56°34.3	64°29.2	93°32.5
5	133°55.8	12.5'	15°03.0	-12.6'	56.6'		96°47.9	47°31.3	42°51.9		57°06.7	65°01.3	94°04.9
6	148°27.2	12.5'	S 15°15.6	-12.5'	56.6'		96°19.9	47°13.3	42°19.4		57°39.1	65°33.3	94°37.2
7	162°58.7	12.4'	$15^{\circ}28.1$	-12.4'	56.6'		95°51.9	46°55.4	41°47.0		58°11.5	66°05.3	95°09.5
8	177°30.1	12.4'	15°40.5	-12.3'	56.5'		95°23.9	46°37.8	41°14.6		58°43.8	66°37.3	95°41.7
9	192°01.5	12.3'	15°52.8	-12.2'	56.5'		94°56.0	46°20.4	40°42.3	5°50.9	59°16.2	67°09.2	96°14.0
10	206°32.8	12.3'	$16^{\circ}05.1$	-12.2'	56.5'	119°34.9	94°28.0	46°03.2	40°09.9	6° 19.6	59°48.5	67°41.2	96°46.2
11	221°04.1	12.3'	16°17.3	-12.1'	56.5'	119°06.0	94°00.1	45°46.3	39°37.6	6°48.8	60°20.8	68°13.1	97°18.4
12	235°35.4	12.2'	S 16°29.3	-12.0'	56.4'	118°37.1	93°32.2	45°29.6	39°05.3	7° 18.4	60°53.0	68°45.0	97° 50.5
13	250°06.6	12.2'	16°41.3	-11.9'	56.4'	118°08.2	93°04.3	45°13.1	38°33.1	7°48.3	61°25.3	69°16.8	98°22.7
14	264°37.8	12.1'	16°53.2	-11.8'	56.4'	117°39.2	92°36.4	44°56.8	38°00.8	8° 18.5	61°57.5	69°48.6	98° 54.8
15	279°08.9	12.1'	17°05.0	-11.7'	56.4'	117°10.3	92°08.6	44°40.8	37°28.6	8°49.0	62°29.7	70°20.4	99°26.9
16	293°40.0	12.0'	$17^{\circ}16.8$	-11.6'	56.4'	116°41.3	91°40.7	44°25.0	36°56.4	9°19.6	63°01.8	70°52.2	99°58.9
17	308°11.0	12.0'	17°28.4	-11.5'	56.3'	116°12.4	91°12.9	44°09.5	36°24.3	9°50.3	63°34.0	71°24.0	100°31.0
18	322°42.0	12.0'	S 17°40.0	-11.5'	56.3'	115°43.4	90°45.1	43°54.2	35°52.1	10°21.2	64°06.1	71°55.7	101°03.0
19	337°13.0	11.9'	17°51.4	-11.4'	56.3'	115°14.4	90°17.3	43°39.2	35°20.0	10°52.2	64°38.2	72°27.4	101°35.0
20	351°43.9	11.9'	18°02.8	-11.3'	56.3'	114°45.5	89°49.6		34°47.9	11°23.2	65°10.2	72°59.1	102°06.9
21	6°14.8	11.8'	$18^{\circ}14.0$	-11.2'	56.2'	114°16.5	89°21.8		34°15.9	11°54.3	65°42.3	73°30.8	102°38.9
22	20°45.6	11.8'	$18^{\circ}25.2$	-11.1'	56.2'	113°47.5	88°54.1		33°43.8	12°25.5	66°14.3	74°02.4	103°10.8
23	35°16.4	11.7'	18°36.3	-11.0'	56.2'	113°18.5	88°26.4		33°11.8	12°56.7	66°46.3	74°34.0	103°42.7
14 th	SD	= 15.5'	Mer. pas	s. 20:34									

Moon (15th Jun)

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Fomalhaut	-Deneb	-Altair	-Antares	+Spica	+Regulus	+Jupiter	+Pollux
0	49°47.1	11.7'	S 18°47.3	-10.9'	56.2'	112°49.5		87°58.8	32°39.8	13°28.0	67°18.3	75°05.6	104°14.6
1	64°17.8	11.6'	18°58.1	-10.8'	56.1'	112°20.5		87°31.1	32°07.8	13°59.3	67°50.2	75°37.2	104°46.4
2	78°48.4	11.6'	19°08.9	-10.7'	56.1'	111°51.6		87°03.5	31°35.9	14°30.6	68°22.2	76°08.7	105°18.2
3	93°19.0	11.5'	$19^{\circ}19.6$	-10.6'	56.1'	111°22.6		86°35.9	31°03.9	15°01.9	68°54.1	76°40.3	105°50.0
4	107°49.6	11.5'	19°30.2	-10.5'	56.1'	110°53.6		86°08.3	30°32.0	15°33.3	69°26.0	77°11.8	106°21.8
5	122°20.1	11.5'	19°40.7	-10.4'	56.1'	110°24.6		85°40.7	30°00.1	16°04.6	69°57.8	77°43.3	106°53.6
6	136°50.5	11.4'	S 19°51.1	-10.3'	56.0'	109°55.6		85° 13.2	29°28.3	16°36.0	70°29.7	78°14.7	107°25.3
7	151°20.9	11.4'	20°01.3	-10.2'	56.0'	109°26.6	106°34.1	84°45.7	28°56.4	17°07.4	71°01.5	78°46.1	107°57.0
8	165°51.3	11.3'	$20^{\circ}11.5$	-10.1'	56.0'	108°57.6	106°19.0	84° 18.2	28°24.6	17°38.8	71°33.3	79°17.6	108°28.7
9	180°21.6	11.3'	20°21.6	-10.0'	56.0'	108°28.7	106°03.8	83°50.7	27°52.8	18°10.2	72°05.1	79°48.9	109°00.3
10	194°51.9	11.2'	20°31.5	-9.9'	55.9'	107°59.7	105°48.6	83°23.3	27°21.0	18°41.6	72°36.8	80°20.3	109°32.0
11	209°22.1	11.2'	$20^{\circ}41.4$	-9.8'	55.9'	107°30.7	105°33.4	82°55.9	26°49.3	19°13.0	73°08.5	80°51.7	110°03.6
12	223°52.3	11.1'	S 20°51.2	-9.6'	55.9'	107°01.8	105°18.0	82°28.5	26°17.6	19°44.3	73°40.2	81°23.0	110°35.2
13	238°22.4	11.1'	21°00.8	-9.5'	55.9'	106°32.8	105°02.7	82°01.2	25°45.8	20°15.7	74°11.9	81°54.3	111°06.8
14	252°52.4	11.0'	21°10.3	-9.4'	55.9'	106°03.8	104°47.3	81°33.9	25°14.2	20°47.1	74°43.6	82°25.6	111°38.3
15	267°22.5	11.0'	21° 19.8	-9.3'	55.8'	105°34.9	104°31.8	81°06.6	24°42.5	21°18.5	75°15.2	82°56.8	112°09.8
16	281°52.5	10.9'	21°29.1	-9.2'	55.8'	105°05.9	104°16.3	80°39.3	24°10.9	21°49.8	75°46.9	83°28.0	112°41.3
17	296°22.4	10.9'	21°38.3	-9.1'	55.8'	104°37.0	104°00.7	80°12.1	23°39.2	22°21.2	76°18.5	83°59.3	113°12.8
18	310°52.3	10.8'	S 21°47.4	-9.0'	55.8'	104°08.1	103°45.1	79°44.9	23°07.6	22°52.5	76°50.1	84°30.5	113°44.3
19	325°22.1	10.8'	21°56.3	-8.9'	55.8'	103°39.2	103°29.5	79°17.8	22°36.0	23°23.9	77°21.6	85°01.6	114°15.7
20	339°51.9	10.7'	22°05.2	-8.8'	55.7'	103°10.2	103°13.8	78°50.6	22°04.5	23°55.2	77°53.2	85°32.8	114°47.1
21	354°21.7	10.7'	22°14.0	-8.6'	55.7'	102°41.3	102°58.0	78°23.5	21°32.9	24°26.5	78°24.7	86°03.9	115° 18.5
22	8°51.4	10.7'	22°22.6	-8.5'	55.7'	102°12.4	102°42.3	77°56.5	21°01.4	24°57.8	78°56.2	86°35.0	115°49.9
23	23°21.0	10.6'	22°31.1	-8.4'	55.7'	101°43.5	102°26.4	77°29.4	20°29.9	25°29.1	79°27.6	87°06.1	116°21.3
15 th	SD	= 15.3'	Mer. pas	s. 21:23									

h Moon (16 th Jun)	Lunar Distance (objects with largest hourly LD delta)
-------------------------------	---

Wed	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	-Antares	+Spica	+Regulus	+Jupiter	+Pollux
0	37°50.6	10.6'	S 22°39.5	-8.3'	55.7'	102°10.6	101°14.7	77°02.4	19°58.5	26°00.4	79°59.1	87°37.2	116°52.6
1	52°20.2	10.5'	22°47.8	-8.2'	55.6'	101°54.7	100°45.8	76°35.5	19°27.0	26°31.6	80°30.6	88°08.2	117°23.9
2	66°49.7	10.5'	22°56.0	-8.0'	55.6'	101°38.8	100° 16.9	76°08.5	18°55.6	27°02.9	81°02.0	88°39.3	117°55.2
3	81°19.2	10.4'	23°04.0	-7.9'	55.6'	101°22.8	99°48.1	75°41.6	18°24.1	27°34.1	81°33.4	89°10.3	118°26.4
4	95°48.6	10.4'	23°11.9	-7.8'	55.6'	101°06.8	99° 19.3	75°14.8	17°52.7	28°05.4	82°04.7	89°41.3	118°57.7
5	110°18.0	10.3'	$23^{\circ}19.7$	-7.7'	55.6'	100°50.8	98° 50.4	74°48.0	17°21.4	28°36.6	82°36.1	90°12.2	119°28.9
6	124°47.3	10.3'	S 23°27.4	-7.6'	55.5'	100°34.8	98°21.6	74°21.2	16°50.0	29°07.8	83°07.4	90°43.2	
7	139°16.6	10.3'	23°35.0	-7.4'	55.5'	100°18.7	97°52.8	73°54.5	16° 18.7	29°38.9	83°38.8	91°14.1	
8	153°45.9	10.2'	23°42.4	-7.3'	55.5'	100°02.6	97°24.0	73°27.8	15°47.3	30° 10.1	84°10.1	91°45.0	
9	168°15.1	10.2'	23°49.8	-7.2'	55.5'	99°46.5	96° 55.2	73°01.1	15° 16.0	30°41.3	84°41.3	92°15.9	
10	182°44.3	10.1'	23°57.0	-7.1'	55.5'	99°30.3	96°26.5	72°34.5	14°44.8	31°12.4	85°12.6	92°46.8	
11	197°13.4	10.1'	24°04.0	-6.9'	55.4'	99°14.1	95° 57.7	72°07.9	14° 13.5	31°43.5	85°43.8	93°17.6	
12	211°42.5	10.0'	S 24°11.0	-6.8'	55.4'	98°57.9	95°29.0	71°41.3	13°42.3	32°14.6	86°15.1	93°48.4	
13	226°11.5	10.0'	24°17.8	-6.7'	55.4'	98°41.7	95°00.2	71°14.8	13°11.0	32°45.7	86°46.3	94°19.2	
14	240°40.5	10.0'	24°24.5	-6.6'	55.4'	98°25.4	94°31.5	70°48.4	12°39.8	33° 16.8	87°17.4	94°50.0	
15	255°09.5	9.9'	24°31.1	-6.4'	55.4'	98°09.1	94°02.8	70°22.0	12°08.7	33°47.9	87°48.6	95°20.8	
16	269°38.4	9.9'	24°37.5	-6.3'	55.4'	97°52.8	93°34.1	69°55.6	11°37.5	34°18.9	88°19.8	95°51.6	
17	284°07.3	9.9'	24°43.8	-6.2'	55.3'	97°36.5	93°05.5	69°29.3	11°06.3	34°49.9	88°50.9	96°22.3	
18	298°36.2	9.8'	S 24°50.0	-6.1'	55.3'	97°20.2	92°36.8	69°03.0	10°35.2	35°21.0	89°22.0	96°53.0	
19	313°05.0	9.8'	24°56.0	-5.9'	55.3'	97°03.8	92°08.2	68°36.8	10°04.1	35°52.0	89°53.1	97°23.7	
20	327°33.8	9.8'	25°02.0	-5.8'	55.3'	96°47.5	91°39.5	68°10.6	9°33.0	36° 22.9	90°24.2	97°54.4	
21	342°02.6	9.7'	25°07.8	-5.7'	55.3'	96°31.1	91° 10.9	67°44.5	9°01.9	36°53.9	90°55.2	98°25.0	
22	356°31.3	9.7'	25°13.4	-5.5'	55.2'	96°14.7	90°42.3	67°18.4	8°30.9	37°24.9	91°26.2	98°55.7	
23	11°00.0	9.7'	25°19.0	-5.4'	55.2'	95°58.3	90°13.8	66°52.3	7°59.9	37°55.8	91°57.3	99°26.3	
16 th	SD	= 15.2'	Mer. pass	. 22:14									

h Moon (17 th J	un) Lunar Distance	(objects with largest hourly LD	delta)
----------------------------	--------------------	---------------------------------	--------

Thu	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	± Antares	+Spica	+Mars	+Regulus	+Jupiter
0	25°28.7	9.6'	S 25°24.4	-5.3'	55.2'	95°41.9	89°45.2	66°26.4	7°28.8	38°26.7	77°59.2	92°28.3	99°56.9
1	39°57.3	9.6'	25°29.6	-5.1'	55.2'	95°25.4	89°16.7	66°00.4	6°57.8	38°57.6	78°28.9	92°59.2	100°27.5
2	54°25.9	9.6'	25°34.8	-5.0'	55.2'	95°09.0	88°48.1	65°34.5	6° 26.8	39°28.5	78°58.5	93°30.2	100°58.1
3	68°54.5	9.5'	25°39.8	-4.9'	55.2'	94°52.5	88°19.6	65°08.7	5°55.9	39°59.4	79°28.2	94°01.2	101°28.6
4	83°23.0	9.5'	25°44.6	-4.7'	55.1'	94°36.1	87°51.1	64°42.9	5°24.9	40°30.3	79°57.8	94°32.1	101°59.2
5	97°51.5	9.5'	25°49.4	-4.6'	55.1'	94°19.6	87°22.7	64°17.2	4°54.0	41°01.1	80°27.4	95°03.0	102°29.7
6	112°20.0	9.5'	S 25°54.0	-4.5'	55.1'	94°03.1	86°54.2	63°51.6	4°23.1	41°31.9	80°57.0	95°33.9	103°00.2
7	126°48.5	9.4'	25°58.4	-4.3'	55.1'	93°46.7	86°25.8	63°25.9	3°52.2	42°02.7	81°26.6	96°04.8	103°30.6
8	141°16.9	9.4'	26°02.7	-4.2'	55.1'	93°30.2	85°57.3	63°00.4	3°21.3	42°33.5	81°56.1	96° 35.6	104°01.1
9	155°45.3	9.4'	26°06.9	-4.1'	55.1'	93°13.7	85°28.9	62°34.9	2°50.5	43°04.3	82°25.7	97°06.5	104°31.5
10	170°13.8	9.4'	$26^{\circ}11.0$	-3.9'	55.0'	92°57.2	85°00.6	62°09.5	2°19.6	43°35.1	82°55.2	97°37.3	105°02.0
11	184°42.1	9.4'	26°14.9	-3.8'	55.0'	92°40.7	84°32.2	61°44.1	1°48.8	44°05.8	83°24.7	98°08.1	105°32.4
12	199°10.5	9.3'	S 26°18.7	-3.6'	55.0'	92°24.2	84°03.8	61°18.8	1°18.0	44°36.6	83°54.2	98° 38.9	106°02.8
13	213°38.8	9.3'	26°22.4	-3.5'	55.0'	92°07.8	83°35.5	60°53.5	0°47.2	45°07.3	84°23.7	99°09.7	106°33.2
14	228°07.2	9.3'	26°25.9	-3.4'	55.0'	91°51.3	83°07.2	60°28.4	0° 16.5	45°38.0	84°53.1	99°40.4	107°03.5
15	242°35.5	9.3'	26°29.2	-3.2'	55.0'	91°34.8	82°38.9	60°03.2		46°08.7	85°22.5	100°11.2	107°33.9
16	257°03.8	9.3'	26°32.5	-3.1'	54.9'	91°18.3	82°10.7	59°38.2	_	46°39.3	85°52.0	100°41.9	108°04.2
17	271°32.1	9.3'	26°35.6	-3.0'	54.9'	91°01.8	81°42.4	59°13.2	1° 15.9	47°10.0	86°21.4	101°12.6	108°34.5
18	286°00.3	9.3'	S 26°38.5	-2.8'	54.9'	90°45.4	81°14.2	58°48.3	1°46.6	47°40.6	86°50.8	101°43.3	109°04.8
19	300°28.6	9.3'	26°41.4	-2.7'	54.9'	90°28.9	80°46.0	58°23.5	2° 17.2	48°11.3	87°20.1	102° 14.0	109°35.1
20	314°56.9	9.2'	26°44.0	-2.5'	54.9'	90°12.4	80°17.9	57°58.7	2°47.9	48°41.9	87°49.5	102°44.6	110°05.3
21	329°25.1	9.2'	26°46.6	-2.4'	54.9'	89°56.0	79°49.7	57°34.0	3°18.6	49°12.5	88°18.8	103° 15.3	110°35.6
22	343°53.3	9.2'	26°49.0	-2.3'	54.8'	89°39.6	79°21.6	57°09.4	3°49.2	49°43.1	88°48.1	103°45.9	111°05.8
23	358°21.6	9.2'	26°51.3	-2.1'	54.8'	89°23.1	78°53.5	56°44.8	4° 19.9	50°13.6	89°17.4	104° 16.5	111°36.0
17 th	SD =	= 15.1'	Mer. pas	s. 23:07	•								

h Moon (18th Jun)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Antares	+Spica	+Regulus	+Jupiter
0	12°49.8	9.2'	S 26°53.4	-2.0'	54.8'		89°06.7	78°25.4	56°20.3	4°50.5	50°44.2	104°47.1	112°06.2
1	27°18.0	9.2'	26°55.4	-1.9'	54.8'		88°50.3	77°57.3	55°55.9	5°21.1	51°14.7	105°17.7	112°36.4
2	41°46.2	9.2'	26°57.2	-1.7'	54.8'		88° 33.9	77°29.3	55°31.6	5°51.6	51°45.2	105°48.2	113°06.5
3	56°14.5	9.2'	26°58.9	-1.6'	54.8'		88° 17.5	77°01.3	55°07.4	6°22.2	52° 15.7	106°18.8	113°36.7
4	70°42.7	9.2'	$27^{\circ}00.5$	-1.4'	54.8'		88°01.1	76°33.3	54°43.2	6°52.8	52°46.2	106°49.3	114°06.8
5	85°10.9	9.2'	$27^{\circ}01.9$	-1.3'	54.7'		87°44.8	76°05.3	54°19.2	7°23.3	53°16.7	107°19.8	114°36.9
6	99°39.1	9.2'	S 27°03.2	-1.2'	54.7'		87°28.4	75°37.4	53°55.2	7°53.8	53°47.2	107°50.3	115°07.0
7	114°07.4	9.2'	27°04.4	-1.0'	54.7'		87° 12.1	75°09.5	53°31.3	8°24.3	54° 17.6	108°20.8	115°37.1
8	128°35.6	9.2'	27°05.4	-0.9'	54.7'		86°55.8	74°41.6	53°07.5	8°54.8	54°48.1	108°51.3	116°07.2
9	143°03.8	9.3'	27°06.3	-0.7'	54.7'		86°39.5	74°13.7	52°43.8	9°25.3	55° 18.5	109°21.7	116°37.2
10	157°32.1	9.3'	27°07.0	-0.6'	54.7'		86°23.2	73°45.9	52°20.1	9°55.8	55°48.9	109°52.2	117°07.2
11	172°00.4	9.3'	27°07.6	-0.5'	54.7'		86°07.0	73°18.1	51°56.6	10°26.2	56° 19.3	110°22.6	117°37.3
12	186°28.6	9.3'	S 27°08.1	-0.3'	54.6'		85°50.8	72°50.3	51°33.2	10°56.6	56°49.7	110°53.0	118°07.3
13	200°56.9	9.3'	27°08.4	-0.2'	54.6'		85°34.6	72°22.5	51°09.9	11°27.0	57°20.0	111°23.4	118°37.3
14	215°25.2	9.3'	27°08.6	-0.0'	54.6'		85° 18.4	71°54.8	50°46.6	11°57.4	57°50.4	111°53.8	119°07.2
15	229°53.5	9.3'	27°08.6	0.1'	54.6'		85°02.2	71°27.1	50°23.5	12°27.8	58° 20.7	112°24.1	119°37.2
16	244°21.9	9.4'	27°08.6	0.2'	54.6'		84°46.1	70°59.5	50°00.5	12°58.2	58°51.0	112°54.5	
17	258°50.2	9.4'	27°08.3	0.4'	54.6'		84°30.0	70°31.8	49°37.6	13°28.6	59°21.3	113°24.8	
18	273°18.6	9.4'	S 27°08.0	0.5'	54.6'		84°13.9	70°04.2	49°14.8	13°58.9	59°51.6	113°55.1	
19	287°47.0	9.4'	27°07.5	0.6'	54.6'		83°57.8	69°36.6	48°52.1	14°29.2	60°21.9	114°25.4	
20	302°15.4	9.4'	27°06.8	0.8'	54.5'		83°41.8	69°09.1	48°29.5	14°59.6	60°52.2	114°55.7	
21	316°43.8	9.5'	27°06.0	0.9'	54.5'	119°43.3	83°25.8	68°41.5	48°07.0	15°29.9	61°22.4	115°26.0	
22	331°12.3	9.5'	27°05.1	1.1'	54.5'	119°13.5	83°09.8	68°14.1	47°44.7	16°00.1	61°52.7	115°56.3	
23	345°40.8	9.5'	27°04.1	1.2'	54.5'	118°43.8	82°53.8	67°46.6	47°22.4	16°30.4	62°22.9	116°26.5	
18 th	SD =	= 15.0′	Mer. pas	s. 23:59									

Moon (19th Jun)

Lunar Distance (objects with largest hourly LD delta)

n		ivioon	(19 Ju	n)			Lunar L	distance (oi	ojects wi	tn iargest	nourly L	D deita)	
Sat	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Antares	+Spica	+Mars	+Regulus
0	0°09.3	9.5'	S 27°02.9	1.3'	54.5'	118° 14.0	82°37.9	67°19.2	47°00.3	17°00.7	62°53.1	101°25.0	116°56.8
1	14°37.8	9.6'	27°01.6	1.5'	54.5'	117°44.3	82°22.1	66°51.8	46°38.4	17° 30.9	63°23.3	101°53.9	117°27.0
2	29°06.4	9.6'	$27^{\circ}00.1$	1.6'	54.5'	117°14.6	82°06.2	66°24.4	46°16.5	18°01.2	63°53.5	102°22.8	117°57.2
3	43°35.0	9.6'	26° 58.5	1.7'	54.5'	116°44.9	81°50.4	65°57.1	45°54.8	18°31.4	64°23.7	102°51.7	118°27.4
4	58°03.6	9.7'	26°56.8	1.9'	54.4'	116°15.2	81°34.6	65°29.8	45°33.2	19°01.6	64°53.8	103°20.5	118°57.6
5	72°32.3	9.7'	26°54.9	2.0'	54.4'	115°45.5	81°18.9	65°02.5	45°11.8	19°31.8	65°24.0	103°49.4	119°27.8
6	87°01.0	9.7'	S 26°52.9	2.1'	54.4'	115°15.8	81°03.1	64°35.3	44°50.5	20°02.0	65°54.1	104°18.2	119°57.9
7	101°29.7	9.8'	26°50.8	2.3'	54.4'	114°46.1	80°47.5	64°08.1	44°29.3	20°32.1	66°24.3	104°47.1	
8	115°58.5	9.8'	26°48.6	2.4'	54.4'	114° 16.5	80°31.8	63°41.0	44°08.3	21°02.3	66° 54.4	105°15.9	
9	130°27.3	9.8'	26°46.2	2.5'	54.4'	113°46.8	80°16.2	63°13.9	43°47.4	21°32.4	67°24.5	105°44.7	
10	144°56.1	9.9'	26°43.6	2.7'	54.4'	113°17.2	80°00.7	62°46.8	43°26.7	22°02.6	67°54.6	106°13.5	
11	159°25.0	9.9'	26°41.0	2.8'	54.4'	112°47.5	79°45.1	62°19.7	43°06.2	22°32.7	68°24.6	106°42.2	
12	173°53.9	10.0'	S 26°38.2	2.9'	54.4'	112°17.9	79°29.7	61°52.7	42°45.8	23°02.8	68°54.7	107°11.0	
13	188°22.9	10.0'	26°35.3	3.0'	54.3'	111°48.3	79°14.2	61°25.8	42°25.5	23°32.9	69°24.7	107°39.7	
14	202°51.9	10.0'	26°32.2	3.2'	54.3'	111°18.7	78°58.8	60°58.8	42°05.5	24°03.0	69°54.8	108°08.5	
15	217°20.9	10.1'	$26^{\circ}29.1$	3.3'	54.3'	110°49.1	78°43.5	60°31.9	41°45.6	24°33.0	70°24.8	108°37.2	
16	231°50.0	10.1'	26°25.8	3.4'	54.3'	110° 19.5	78°28.2	60°05.1	41°25.8	25°03.1	70°54.8	109°05.9	
17	246°19.2	10.2'	26°22.3	3.6'	54.3'	109°50.0	78°12.9	59°38.3	41°06.3	25°33.1	71°24.8	109°34.6	
18	260°48.3	10.2'	S 26° 18.8	3.7'	54.3'	109°20.4	77°57.7	59°11.5	40°46.9	26°03.2	71°54.8	110°03.3	
19	275°17.6	10.3'	$26^{\circ}15.1$	3.8'	54.3'	108°50.9	77°42.6	58°44.8	40°27.8	26°33.2	72°24.8	110°32.0	
20	289°46.9	10.3'	$26^{\circ}11.3$	3.9'	54.3'	108°21.3	77°27.4	58°18.1	40°08.8	27°03.2	72°54.8	111°00.6	
21	304°16.2	10.4'	26°07.4	4.1'	54.3'	107°51.8	77° 12.4	57°51.5	39°50.0	27° 33.2	73°24.7	111°29.3	
22	318°45.6	10.4'	26°03.3	4.2'	54.3'	107°22.3	76°57.3	57°24.9	39°31.4	28°03.2	73°54.7	111°57.9	
23	333°15.0	10.5'	$25^{\circ}59.1$	4.3'	54.2'	106°52.7		56°58.4	39°13.0	28° 33.2	74°24.6	112°26.5	
19 th	SD	= 14.9	Mer. pas	s:-									

h Moon (20th lun)

Sun	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	+Antares	+Hadar	+Spica	+Arcturus	+Mars
0	347°44.5	10.5'	S 25°54.8	4.4'	54.2'	106°23.2	56°31.9	38°54.8	29°03.1	57° 16.6	74°54.5	78°16.7	112°55.1
1 1	2°14.0	10.6'	25°50.4	4.6'	54.2'	105°53.8	56°05.4	38°36.9	29°33.1	57° 36.4	75°24.5	78°40.8	113°23.7
2	16°43.6	10.6'	25°45.8	4.7'	54.2'	105°24.3	55°39.0	38°19.1	30°03.0	57°56.4	75°54.4	79°04.9	113°52.3
3	31°13.3	10.7'	25°41.1	4.8'	54.2'	104°54.8	55°12.7	38°01.6	30°33.0	58° 16.4	76°24.2	79°29.0	114°20.9
4	45°43.0	10.8'	25°36.3	4.9'	54.2'	104°25.3	54°46.4	37°44.3	31°02.9	58°36.6	76°54.1	79°53.1	114°49.5
5	60°12.7	10.8'	25°31.4	5.0'	54.2'	103°55.9	54°20.2	37°27.2	31°32.8	58°56.8	77°24.0	80°17.3	115°18.0
6	74°42.5	10.9'	S 25°26.4	5.2'	54.2'	103°26.4	53°54.0	37°10.4	32°02.7	59° 17.0	77°53.9	80°41.4	115°46.6
7	89°12.4	10.9'	25°21.2	5.3'	54.2'	102°57.0	53°27.8	36°53.8	32°32.6	59°37.4	78°23.7	81°05.5	116°15.1
8	103°42.3	11.0'	$25^{\circ}16.0$	5.4'	54.2'	102°27.6	53°01.7	36°37.4	33°02.5	59°57.8	78°53.6	81°29.7	116°43.6
9	118°12.3	11.0'	$25^{\circ}10.6$	5.5'	54.2'	101°58.1	52°35.7	36°21.3	33°32.3	60°18.3	79°23.4	81°53.8	$117^{\circ}12.1$
10	132°42.4	11.1'	$25^{\circ}05.1$	5.6'	54.2'	101°28.7	52°09.7	36°05.5	34°02.2	60°38.9	79°53.2	82°18.0	117°40.6
11	147°12.5	11.2'	24°59.5	5.7'	54.1'	100°59.3	51°43.8	35°49.9	34°32.0	60°59.6	80°23.0	82°42.1	118°09.1
12	161°42.6	11.2'	S 24°53.7	5.8'	54.1'	100°29.9	51°18.0	35°34.6	35°01.9	61°20.3	80°52.8	83°06.3	118°37.6
13	176°12.9	11.3'	24°47.9	6.0'	54.1'	100°00.5	50°52.2	35°19.5	35°31.7	61°41.1	81°22.6	83°30.4	119°06.1
14	190°43.2	11.3'	24°41.9	6.1'	54.1'	99°31.2	50°26.4		36°01.5	62°01.9	81°52.4	83°54.6	119°34.5
15	205°13.5	11.4'	24°35.8	6.2'	54.1'	99°01.8	50°00.8		36°31.4	62°22.8	82°22.2	84°18.8	
16	219°43.9	11.5'	24°29.7	6.3'	54.1'	98°32.4	49°35.1		37°01.2	62°43.8	82°52.0	84°42.9	
17	234°14.4	11.5'	24°23.4	6.4'	54.1'	98°03.1	49°09.6		37°31.0	63°04.8	83°21.7	85°07.1	
18	248°44.9	11.6'	S 24°16.9	6.5'	54.1'	97°33.7	48°44.1		38°00.8	63°25.9	83°51.5	85°31.3	
19	263°15.5	11.7'	24° 10.4	6.6'	54.1'	97°04.4	48°18.7		38°30.5	63°47.1	84°21.2	85°55.5	
20	277°46.2	11.7'	24°03.8	6.7'	54.1'	96°35.1	47°53.4		39°00.3	64°08.3	84°50.9	86°19.6	
21	292°16.9	11.8'	$23^{\circ}57.1$	6.8'	54.1'	96°05.7	47°28.1		39°30.1	64°29.6	85°20.7	86°43.8	
22	306°47.7	11.9'	23°50.2	6.9'	54.1'	95°36.4	47°02.9		39°59.8	64°50.9	85°50.4	87°08.0	
23	321°18.6	11.9'	23°43.3	7.1'	54.1'	95°07.1	46°37.8		40°29.6	65°12.2	86°20.1	87°32.1	
20 th	SD :	= 14.8'	Mer. pass	00:51									

h Moon (21st Jun)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Hadar	+Acrux	+Spica	+Arcturus
0	335°49.5	12.0'	S 23°36.2	7.2'	54.1'	94°37.8	46°12.8	40°59.3	61°11.5	65°33.7	75°55.5	86°49.8	87°56.3
1	350°20.5	12.1'	23°29.1	7.3'	54.1'	94°08.5	45°47.8	41°29.0	61°32.8	65°55.2	76°14.8	87°19.5	88°20.4
2	4°51.5	12.1'	23°21.8	7.4'	54.1'	93°39.3	45°22.9	41°58.8	61°54.2	66° 16.7	76°34.0	87°49.2	88°44.6
3	19°22.6	12.2'	23°14.4	7.5'	54.0'	93°10.0	44°58.1	42°28.5	62°15.7	66°38.3	76°53.4	88°18.9	89°08.7
4	33°53.8	12.2'	23°07.0	7.6'	54.0'	92°40.7	44°33.4	42°58.2	62°37.2	66°59.9	77°12.7	88°48.5	89°32.9
5	48°25.1	12.3'	22°59.4	7.7'	54.0'	92°11.4	44°08.8	43°27.9	62°58.8	67°21.5	77°32.1	89°18.2	89°57.0
6	62°56.4	12.4'	S 22°51.8	7.8'	54.0'	91°42.2	43°44.3	43°57.6	63°20.4	67°43.3	77°51.5	89°47.9	90°21.2
7	77°27.8	12.4'	22°44.0	7.9'	54.0'	91°12.9	43°19.8	44°27.3	63°42.1	68°05.0	78°10.9	90°17.5	90°45.3
8	91°59.2	12.5'	22°36.1	8.0'	54.0'	90°43.7	42°55.5	44°57.0	64°03.9	68°26.8	78°30.3	90°47.2	91°09.4
9	106°30.7	12.6'	22°28.2	8.1'	54.0'	90°14.4	42°31.2	45°26.6	64°25.7	68°48.7	78°49.8	91°16.8	91°33.5
10	121°02.3	12.6'	22°20.1	8.2'	54.0'	89°45.2	42°07.1	45°56.3	64°47.5	69° 10.5	79°09.3	91°46.4	91°57.6
11	135°33.9	12.7'	22°11.9	8.2'	54.0'	89°16.0	41°43.0	46°26.0	65°09.4	69°32.5	79°28.8	92°16.1	92°21.7
12	150°05.7	12.8'	S 22°03.7	8.3'	54.0'	88°46.8	41°19.1	46°55.6	65°31.4	69°54.4	79°48.4	92°45.7	92°45.8
13	164°37.4	12.8'	21°55.4	8.4'	54.0'	88°17.5	40°55.2	47°25.3	65°53.4	70°16.4	80°07.9	93°15.3	93°09.9
14	179°09.3	12.9'	21°46.9	8.5'	54.0'	87°48.3	40°31.5	47°54.9	66°15.4	70°38.5	80°27.5	93°44.9	93°34.0
15	193°41.2	13.0'	21°38.4	8.6'	54.0'	87°19.1	40°07.9	48°24.6	66°37.5	71°00.5	80°47.2	94°14.5	93°58.0
16	208°13.2	13.0'	21°29.8	8.7'	54.0'	86°49.9	39°44.4	48°54.2	66°59.7	71°22.6	81°06.8	94°44.1	94°22.1
17	222°45.2	13.1'	$21^{\circ}21.1$	8.8'	54.0'	86°20.7	39°21.0	49°23.8	67°21.9	71°44.8	81°26.4	95°13.7	94°46.1
18	237°17.3	13.2'	S 21°12.3	8.9'	54.0'	85°51.5	38°57.7	49°53.5	67°44.1	72°07.0	81°46.1	95°43.3	95°10.2
19	251°49.5	13.2'	21°03.4	9.0'	54.0'	85°22.3	38°34.6	50°23.1	68°06.4	72°29.2	82°05.8	96°12.9	95°34.2
20	266°21.7	13.3'	20°54.4	9.1'	54.0'	84°53.2	38°11.6	50°52.7	68°28.7	72°51.4	82°25.5	96°42.5	95°58.2
21	280°54.0	13.4'	20°45.3	9.2'	54.0'	84°24.0	37°48.7	51°22.3	68°51.0	73° 13.7	82°45.2	97°12.0	96°22.2
22	295°26.4	13.4'	20°36.2	9.2'	54.0'	83°54.8	37°25.9	51°51.9	69°13.4	73°36.0	83°05.0	97°41.6	96°46.2
23	309°58.8	13.5'	20°26.9	9.3'	54.0'	83°25.6	37°03.3	52°21.5	69°35.8	73°58.3	83°24.7	98°11.2	97°10.1
21 st	SD :	= 14.7'	Mer. pass	. 01:40									

h Moon (22nd Jun)

Lunar Distance (objects with largest hourly LD delta)

		IVIOOII	i (22 - Ji	111)			Lunar	Distance	e (objects w	itti larges	t nouny LD	ueita)	
Tue	GHA	ν	Dec	d	HP	-Rigel	-Aldebaran	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	324°31.3	13.6'	S 20°17.6	9.4'	54.0'			82°56.5	36° 40.9	52°51.1	69°58.3	97°34.1	98°40.8
1	339°03.9	13.6'	20°08.2	9.5'	54.0'			82°27.3	36° 18.6	53°20.7	70°20.8	97°58.0	99° 10.3
2	353°36.5	13.7'	19°58.7	9.6'	54.0'			81°58.2	35° 56.4	53°50.3	70°43.4	98°22.0	99°39.9
3	8°09.2	13.7'	$19^{\circ}49.1$	9.7'	54.0'			81°29.0	35°34.5	54°19.9	71°05.9	98°45.9	100°09.4
4	22°41.9	13.8'	19°39.5	9.7'	54.0'			80°59.9	35°12.6	54°49.5	71°28.5	99°09.8	100°39.0
5	37°14.7	13.9'	19°29.7	9.8'	54.0'			80°30.7	34°51.0	55°19.1	71°51.2	99°33.6	101°08.5
6	51°47.6	13.9'	S 19°19.9	9.9'	54.0'			80°01.6	34°29.5	55°48.7	72°13.9	99°57.5	101°38.1
7	66°20.5	14.0'	$19^{\circ}10.0$	10.0'	54.0'			79°32.4	34°08.2	56°18.3	72°36.6	100°21.3	102°07.6
8	80°53.5	14.1'	$19^{\circ}00.1$	10.0'	54.0'			79°03.3	33°47.0	56°47.9	72°59.3	100°45.1	102°37.2
9	95°26.6	14.1'	18°50.0	10.1'	54.0'			78°34.2	33°26.1	57°17.4	73°22.1	101°09.0	103°06.7
10	109°59.7	14.2'	18°39.9	10.2'	54.0'			78°05.0	33°05.4	57°47.0	73°44.9	101°32.7	103°36.2
11	124°32.9	14.2'	$18^{\circ}29.7$	10.3'	54.0'			77°35.9	32°44.8	58°16.6	74°07.7	101°56.5	104°05.8
12	139°06.1	14.3'	S 18°19.4	10.4'	54.0'			77°06.8	32°24.5	58°46.2	74°30.6	102°20.2	104°35.3
13	153°39.4	14.4'	$18^{\circ}09.0$	10.4'	54.0'			76°37.6	32°04.4	59°15.8	74°53.5	102°44.0	105°04.9
14	168°12.7	14.4'	17°58.6	10.5'	54.0'			76°08.5	31°44.5	59°45.3	75°16.4	103°07.7	105°34.4
15	182°46.1	14.5'	$17^{\circ}48.1$	10.6'	54.0'		119°41.6	75°39.4	31°24.8	60°14.9	75°39.3	103°31.4	106°03.9
16	197°19.6	14.5'	17°37.6	10.6'	54.0'		119°12.6	75°10.3	31°05.4	60°44.5	76°02.3	103°55.0	106°33.5
17	211°53.1	14.6'	$17^{\circ}26.9$	10.7'	54.0'		118°43.6	74°41.1	30°46.2	61°14.0	76°25.3	104°18.6	107°03.0
18	226°26.7	14.6'	S 17°16.2	10.8'	54.0'	119°44.4	118°14.6	74°12.0	30°27.3	61°43.6	76°48.3	104°42.3	107°32.5
19	241°00.4	14.7'	$17^{\circ}05.4$	10.8'	54.0'	119°22.3	117°45.6	73°42.9	30°08.6	62°13.2	77°11.3	105°05.8	108°02.1
20	255°34.1	14.7'	$16^{\circ}54.6$	10.9'	54.0'	119°00.1	117°16.6	73°13.8	29°50.1	62°42.8	77°34.4	105°29.4	108°31.6
21	270°07.8	14.8'	16°43.7	11.0'	54.0'	118°37.9	116°47.6	72°44.6	29°32.0	63°12.3	77°57.5	105°53.0	109°01.1
22	284°41.6	14.9'	$16^{\circ}32.7$	11.0'	54.0'	118° 15.6	116°18.6	72°15.5	29°14.1	63°41.9	78°20.6	106°16.5	109°30.7
23	299°15.4	14.9'	16°21.7	11.1'	54.0'	117°53.3	115°49.6	71°46.4	28°56.6	64°11.5	78°43.7	106°40.0	110°00.2
22 nd	SD	= 14.7'	Mer. pas	s. 02:26			·					-	

h Moon (23rd lun)

Wed	GHA	ν	Dec	d	HP	-Capella	-Venus	-Aldebaran	-Saturn	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	313°49.4	15.0'	$$16^{\circ}10.5$	11.2'	54.0'			115°20.6	71°17.3	64°41.1	79°06.9	107°03.4	110°29.7
1	328°23.3	15.0'	15°59.4	11.2'	54.0'			114°51.6	70°48.2	65°10.7	79°30.0	107°26.8	110°59.3
2	342°57.3	15.1'	15°48.1	11.3'	54.0'			114° 22.5	70°19.0	65°40.3	79°53.2	107°50.3	111°28.8
3	357°31.4	15.1'	15°36.8	11.4'	54.0'			113°53.5	69°49.9	66°09.8	80°16.4	108°13.6	111°58.4
4	12°05.5	15.2'	15°25.5	11.4'	54.0'			113°24.4	69°20.8	66°39.4	80°39.7	108°37.0	112°27.9
5	26°39.6	15.2'	$15^{\circ}14.1$	11.5'	54.0'			112°55.4	68°51.7	67°09.0	81°02.9	109°00.3	112°57.5
6	41°13.9	15.3'	S 15°02.6	11.5'	54.1'			112°26.3	68°22.6	67°38.6	81°26.2	109°23.6	113°27.0
7	55°48.1	15.3'	14°51.0	11.6'	54.1'		119°51.3	111°57.2	67°53.4	68°08.2	81°49.5	109°46.8	113°56.6
8	70°22.4	15.3'	14°39.4	11.7'	54.1'		119°24.9	111°28.2	67°24.3	68°37.8	82°12.8	110°10.0	114°26.1
9	84°56.8	15.4'	14°27.8	11.7'	54.1'	119°54.4	118°58.5	110°59.1	66°55.2	69°07.4	82°36.1	110°33.2	114°55.7
10	99°31.1	15.4'	$14^{\circ}16.0$	11.8'	54.1'	119°27.0	118°32.1	110°30.0	66°26.0	69°37.0	82°59.4	110°56.4	115°25.2
11	114°05.6	15.5'	14°04.3	11.8'	54.1'	118°59.5	118°05.6	110°00.9	65°56.9	70°06.7	83°22.8	111°19.5	115°54.8
12	128°40.1	15.5'	S 13°52.4	11.9'	54.1'	118°31.9	117°39.2	109°31.8	65°27.8	70°36.3	83°46.1	111°42.6	116°24.4
13	143°14.6	15.6'	13°40.6	11.9'	54.1'	118°04.4	117°12.7	109°02.7	64°58.6	71°05.9	84°09.5	112°05.6	116°54.0
14	157°49.2	15.6'	13°28.6	12.0'	54.1'	117°36.8	116°46.3	108°33.5	64°29.5	71°35.5	84°32.9	112°28.6	117°23.5
15	172°23.8	15.6'	$13^{\circ}16.6$	12.0'	54.1'	117°09.2	116°19.8	108°04.4	64°00.3	72°05.2	84°56.3	112°51.6	117°53.1
16	186°58.4	15.7'	13°04.6	12.1'	54.1'	116°41.6	115°53.3	107°35.3	63°31.2	72°34.8	85°19.7	113°14.5	118°22.7
17	201°33.1	15.7'	12°52.5	12.1'	54.1'	116°13.9	115°26.9	107°06.1	63°02.0	73°04.5	85°43.2	113°37.4	118°52.3
18	216°07.8	15.8'	S 12°40.3	12.2'	54.1'	115°46.2	115°00.4	106°37.0	62°32.9	73°34.1	86°06.6	114°00.3	119°21.9
19	230°42.6	15.8'	12°28.1	12.3'	54.1'	115° 18.6	114°33.9	106°07.8	62°03.7	74°03.8	86°30.1	114°23.1	119°51.5
20	245°17.4	15.8'	$12^{\circ}15.9$	12.3'	54.1'	114°50.8	114°07.4	105°38.6	61°34.5	74°33.4	86°53.5	114°45.9	
21	259°52.2	15.9'	$12^{\circ}03.6$	12.3'	54.2'	114°23.1	113°40.9	105°09.4	61°05.4	75°03.1	87°17.0	115°08.6	
22	274°27.1	15.9'	11°51.2	12.4'	54.2'	113°55.3	113°14.4	104°40.2	60°36.2	75°32.8	87°40.5	115°31.3	
23	289°02.0	15.9'	11°38.8	12.4'	54.2'	113°27.6	112°47.8	104°11.0	60°07.0	76°02.5	88°04.0	115°53.9	
23 rd	SD	= 14.7'	Mer. pass	. 03:10							·		

h Moon (24th Jun)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Antares	+Rigil Kent.	+Hadar	+Arcturus
0	303°37.0	16.0'	S 11°26.4	12.5'	54.2'		112°59.8	103°41.8	59°37.8	76°32.2	88°27.5	92°35.9	116°16.5
1	318°11.9	16.0'	$11^{\circ}13.9$	12.5'	54.2'		112°31.9	103°12.6	59°08.7	77°01.9	88°51.0	92°58.9	116°39.0
2	332°46.9	16.0'	$11^{\circ}01.4$	12.6'	54.2'		112°04.1	102°43.4	58°39.5	77°31.6	89°14.6	93°22.0	117°01.5
3	347°22.0	16.1'	$10^{\circ}48.8$	12.6'	54.2'		111°36.2	102°14.1	58°10.3	78°01.3	89°38.1	93°45.0	117°24.0
4	1°57.0	16.1'	10°36.2	12.7'	54.2'	119°46.5	111°08.4	101°44.8	57°41.1	78°31.1	90°01.6	94°08.1	117°46.4
5	16°32.1	16.1'	$10^{\circ}23.5$	12.7'	54.2'	119°19.1	110°40.5	101°15.6	57°11.9	79°00.8	90°25.2	94°31.2	118°08.7
6	31°07.3	16.2'	S 10°10.8	12.8'	54.2'	118°51.6	110°12.5	100°46.3	56°42.6	79°30.6	90°48.8	94°54.2	118°31.0
7	45°42.4	16.2'	09°58.0	12.8'	54.3'	118°24.1	109°44.6	100°17.0	56°13.4	80°00.3	91°12.3	95°17.3	118°53.2
8	60°17.6	16.2'	09°45.2	12.8'	54.3'	117°56.5	109°16.6	99°47.7	55°44.2	80°30.1	91°35.9	95°40.3	119°15.4
9	74°52.8	16.2'	09°32.4	12.9'	54.3'	117°28.9	108°48.6	99° 18.4	55°15.0	80°59.9	91°59.5	96°03.4	119°37.5
10	89°28.0	16.3'	$09^{\circ}19.5$	12.9'	54.3'	117°01.3	108°20.6	98°49.1	54°45.7	81°29.7	92°23.1	96°26.4	119°59.6
11	104°03.3	16.3'	09°06.6	13.0'	54.3'	116°33.7	107°52.6	98° 19.7	54°16.5	81°59.5	92°46.6	96°49.4	
12	118°38.6	16.3'	S 08°53.6	13.0'	54.3'	116°06.0	107°24.5	97°50.4	53°47.2	82°29.3	93°10.2	97°12.5	
13	133°13.9	16.3'	08°40.7	13.0'	54.3'	115°38.3	106°56.5	97°21.0	53°18.0	82°59.1	93°33.8	97°35.5	
14	147°49.2	16.3'	08°27.6	13.1'	54.3'	115° 10.6	106°28.4	96°51.6	52°48.7	83°29.0	93°57.4	97°58.5	
15	162°24.5	16.4'	$08^{\circ}14.6$	13.1'	54.4'	114°42.9	106°00.3	96°22.3	52°19.4	83°58.8	94°21.0	98°21.6	
16	176°59.9	16.4'	08°01.5	13.1'	54.4'	114° 15.1	105°32.1	95°52.9	51°50.1	84°28.7	94°44.6	98°44.6	
17	191°35.2	16.4'	07°48.3	13.2'	54.4'	113°47.3	105°04.0	95°23.4	51°20.8	84°58.5	95°08.2	99°07.6	
18	206°10.6	16.4'	S 07°35.1	13.2'	54.4'	113° 19.4	104°35.8	94°54.0	50°51.5	85°28.4	95°31.9	99°30.6	
19	220°46.0	16.4'	$07^{\circ}21.9$	13.2'	54.4'	112°51.6	104°07.6	94°24.6	50°22.2	85°58.3	95°55.5	99°53.6	
20	235°21.4	16.4'	$07^{\circ}08.7$	13.3'	54.4'	112°23.7	103°39.4	93°55.1	49°52.9	86°28.3	96°19.1	100°16.6	
21	249°56.9	16.4'	06°55.4	13.3'	54.4'	111°55.8	103°11.2	93°25.6	49°23.6	86°58.2	96°42.7	100°39.6	
22	264°32.3	16.5'	06°42.1	13.3'	54.5'	111°27.8	102°42.9	92°56.1	48°54.3	87°28.1	97°06.3	101°02.6	
23	279°07.8	16.5'	06°28.8	13.4'	54.5'	110°59.8	102°14.6	92°26.6	48°24.9	87°58.1	97°29.9	101°25.5	
24 th	SD	= 14.8'	Mer. pass	s. 03:52									

Moon (25th Jun)

h

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar
0	293°43.2	16.5'	S 06° 15.4	13.4'	54.5'	110°31.8	101°46.3	91°57.1	47°55.6	43°44.7	88°28.1	97° 53.5	101°48.5
1 1	293 43.2 308°18.7	16.5	06°02.0	13.4	54.5'	110 31.6 110°03.8	101 40.3 101°18.0	91°27.6	47°26.2	43 44.7 44°05.5	88°58.1	97 55.5 98° 17.1	101 46.5 102°11.4
2	322°54.2	16.5	05°48.6	13.4	54.5'	110 03.8 109°35.8	101 16.0 100°49.7	91 27.0 90°58.0	47 20.2 46°56.9	44 05.5 44°26.4	89°28.1	98°40.7	102 11.4 102°34.4
3	337°29.7	16.5	05°35.1	13.5'	54.5'	109° 35.8 109° 07.7	100°49.7 100°21.3	90°28.5	46°27.5	44°47.4	89°58.1	99° 04.3	102°57.3
4	352°05.2	16.5'	05°21.7	13.5'	54.6'	108°39.6	99°53.0	89°58.9	45°58.1	45°08.6	90°28.2	99° 28.0	102 37.3 103°20.2
5	6°40.7	16.5'	05°08.1	13.5'	54.6'	108°11.4	99°24.6	89°29.3	45°28.7	45°29.9	90°58.2	99°51.5	103°43.1
6	21°16.2	16.5'	S 04°54.6	13.6'	54.6'	107°43.3	98°56.1	88°59.7	44°59.3	45°51.4	91°28.3	100° 15.1	104°06.0
7	35°51.7	16.5	04°41.0	13.6'	54.6	107 45.3 107°15.1	98° 27.7	88°30.0	44°29.9	46°13.0	91°58.4	100°13.1	104 00.0 104°28.8
8	50°27.2	16.5	04° 41.0	13.6'	54.6	107 15.1 106°46.9	96° 27.7 97° 59.2	88°00.4	44°29.9	46°34.8	91 38.4 92°28.5	100 36.7 101°02.3	104 28.8 104°51.7
9	65°02.7	16.5'	04° 27.3	13.6'	54.6'	106° 18.6	97°30.8	87°30.7	43°31.1	46°56.6	92°58.6	101°25.9	104 51.7 105°14.5
10	79°38.2	16.5'	04°00.2	13.7'	54.7'	105°50.4	97°02.2	87°01.0	43°01.6	47°18.7	93°28.8	101°49.5	105°37.4
11	94°13.7	16.5'	03°46.5	13.7'	54.7'	105°22.1	96°33.7	86°31.3	42°32.2	47°40.8	93°59.0	102°13.0	106°00.2
12	108°49.2	16.5'	S 03°32.9	13.7'	54.7'	104°53.8	96°05.2	86°01.6	42°02.8	48°03.0	94°29.2	102°36.6	106°22.9
13	123°24.7	16.5'	03° 19.2	13.7'	54.7	104° 35.0	95°36.6	85°31.9	41°33.3	48°25.4	94°59.4	102 30.0 103°00.2	106°22.9
14	138°00.2	16.5'	03°05.4	13.7'	54.7'	103°57.0	95°08.0	85°02.1	41°03.8	48°47.9	95°29.6	103°23.7	107°08.5
15	152°35.7	16.5'	02°51.7	13.8'	54.8'	103°28.6	94°39.4	84°32.3	40°34.4	49°10.5	95°59.8	103°47.2	107°31.2
16	167°11.1	16.5'	02°37.9	13.8'	54.8'	103°20.0	94°10.8	84°02.5	40°04.9	49°33.3	96°30.1	104° 10.8	107°53.9
17	181°46.6	16.5'	02°24.1	13.8'	54.8'	102°31.8	93°42.1	83°32.7	39°35.4	49°56.1	97°00.4	104°34.3	108°16.6
18	196°22.1	16.4'	S 02°10.3	13.8'	54.8'	102°03.3	93°13.4	83°02.9	39°05.9	50°19.1	97°30.7	104°57.8	108°39.2
19	210°57.5	16.4'	01°56.5	13.8'	54.8'	101°34.8	92°44.7	82°33.0	38°36.4	50°42.2	98°01.0	105°21.3	100°01.9
20	225°32.9	16.4'	01°42.7	13.9'	54.9'	101°06.2	92°16.0	82°03.1	38°06.9	51°05.4	98°31.4	105°44.7	109°24.5
21	240°08.4	16.4'	01°28.8	13.9'	54.9'	100° 37.7	91°47.3	81°33.2	37°37.3	51°28.6	99°01.8	106°08.2	109°47.1
22	254°43.8	16.4'	01°14.9	13.9'	54.9'	100°09.1	91°18.5	81°03.3	37°07.8	51°52.0	99°32.2	106°31.7	110°09.6
23	269°19.2	16.4'	01°01.0	13.9'	54.9'	99°40.5	90°49.7	80°33.4	36°38.3	52°15.5	100°02.6	106°55.1	110°32.2
25 th	SD	= 14.9'	Mer. pass	s. 04:33							1	1	

h Moon (26th Jun)

Sat	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Fomalhaut	+Altair	+Antares	+Rigil Kent.
0	283°54.5	16.4'	S 00°47.1	13.9'	55.0'	99°11.8	90°20.9	80°03.4	36°08.7	29°06.6	52°39.1	100°33.0	107°18.5
1	298°29.9	16.3'	00°33.2	13.9'	55.0'	98°43.2	89°52.1	79°33.4	35°39.2	29°24.9	53°02.8	101°03.5	107°41.9
2	313°05.2	16.3'	$00^{\circ}19.3$	13.9'	55.0'	98° 14.5	89°23.2	79°03.4	35°09.6	29°43.5	53°26.6	101°34.0	108°05.3
3	327°40.6	16.3'	S 00°05.3	14.0'	55.0'	97°45.7	88°54.3	78°33.4	34°40.1	30°02.4	53°50.5	102°04.5	108°28.7
4	342°15.9	16.3'	N 00°08.6	14.0'	55.0'	97°17.0	88°25.4	78°03.3	34°10.5	30°21.6	54°14.5	102°35.0	108°52.0
5	356°51.1	16.3'	00°22.6	14.0'	55.1'	96°48.2	87°56.5	77°33.3	33°41.0	30°41.1	54°38.6	103°05.6	109°15.4
6	11°26.4	16.2'	N00°36.5	14.0'	55.1'	96°19.4	87°27.5	77°03.2	33°11.4	31°00.9	55°02.8	103°36.2	109°38.7
7	26°01.6	16.2'	00°50.5	14.0'	55.1'	95°50.6	86°58.6	76°33.0	32°41.8	31°21.0	55°27.0	104°06.8	110°02.0
8	40°36.8	16.2'	$01^{\circ}04.5$	14.0'	55.1'	95°21.7	86°29.6	76°02.9	32°12.3	31°41.3	55°51.4	104°37.5	110°25.2
9	55°12.0	16.1'	$01^{\circ}18.5$	14.0'	55.2'	94°52.8	86°00.6	75°32.7	31°42.7	32°01.9	56°15.8	105°08.1	110°48.5
10	69°47.1	16.1'	$01^{\circ}32.5$	14.0'	55.2'	94°23.9	85°31.5	75°02.5	31°13.1	32°22.7	56°40.4	105°38.8	111°11.7
11	84°22.2	16.1'	01°46.5	14.0'	55.2'	93°55.0	85°02.5	74°32.3	30°43.6	32°43.8	57°05.0	106°09.5	111°34.9
12	98°57.3	16.0'	N02°00.6	14.0'	55.2'	93°26.0	84°33.4	74°02.1	30°14.0	33°05.2	57°29.7	106°40.3	111°58.1
13	113°32.4	16.0'	02°14.6	14.0'	55.3'	92°57.0	84°04.3	73°31.8	29°44.4	33°26.8	57°54.5	107°11.1	112°21.2
14	128°07.4	16.0'	02°28.6	14.0'	55.3'	92°27.9	83°35.1	73°01.5	29°14.9	33°48.6	58°19.3	107°41.9	112°44.3
15	142°42.4	15.9'	02°42.7	14.0'	55.3'	91°58.9	83°06.0	72°31.2	28°45.3	34°10.6	58°44.3	108° 12.7	113°07.4
16	157°17.3	15.9'	02°56.7	14.0'	55.3'	91°29.8	82°36.8	72°00.9	28°15.8	34°32.9	59°09.3	108°43.6	113°30.5
17	171°52.2	15.9'	03°10.7	14.0'	55.4'	91°00.7	82°07.6	71°30.5	27°46.3	34°55.3	59°34.5	109° 14.5	113°53.5
18	186°27.1	15.8'	N03°24.8	14.0'	55.4'	90°31.5	81°38.4	71°00.1	27°16.7	35°18.0	59°59.6	109°45.4	114°16.5
19	201°01.9	15.8'	03°38.8	14.0'	55.4'	90°02.4	81°09.1	70°29.7	26°47.2	35°40.9	60°24.9	110° 16.3	114°39.4
20	215°36.7	15.7'	03°52.8	14.0'	55.5'	89°33.2	80°39.8	69°59.3	26°17.7	36°04.0	60°50.3	110°47.3	115°02.3
21	230°11.4	15.7'	04°06.9	14.0'	55.5'	89°04.0	$80^{\circ}10.5$	69°28.8	25°48.3	36°27.2	61°15.7	111° 18.3	115°25.2
22	244°46.1	15.7'	04°20.9	14.0'	55.5'	88°34.7	79°41.2	68°58.3	25°18.8	36°50.7	61°41.2	111°49.4	115°48.1
23	259°20.8	15.6'	04°34.9	14.0'	55.5'	88°05.4	$79^{\circ}11.9$	68°27.8	24°49.4	37°14.3	62°06.8	112°20.4	116°10.9
26 th	SD	= 15.0'	Mer. pass	. 05:13									

h Moon (27th Jun)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Sun	-Betelgeuse	-Capella	-Aldebaran	+Fomalhaut	+Altair	+Antares	+Rigil Kent.
0	273°55.4	15.6'	N 04°49.0	14.0'	55.6'	92°21.2	87°36.1	78°42.5	67°57.2	37°38.1	62°32.4	112°51.6	116°33.6
1	288°30.0	15.5'	05°03.0	14.0'	55.6'	91°52.5	87°06.8	78°13.1	67°26.6	38°02.1	62°58.1	113°22.7	116°56.4
2	303°04.5	15.5'	$05^{\circ}17.0$	14.0'	55.6'	91°23.7	86°37.4	77°43.7	66°56.0	38°26.3	63°23.9	113°53.9	117°19.0
3	317°38.9	15.4'	$05^{\circ}31.0$	14.0'	55.7'	90°54.9	86°08.0	77° 14.2	66°25.4	38°50.6	63°49.8	114°25.1	117°41.7
4	332°13.3	15.4'	05°45.0	14.0'	55.7'	90°26.1	85°38.6	76°44.8	65°54.7	39°15.1	64°15.7	114°56.3	118°04.2
5	346°47.7	15.3'	05°59.0	14.0'	55.7'	89°57.3	85°09.1	76° 15.3	65°24.1	39°39.7	64°41.7	115°27.6	118°26.8
6	1°22.0	15.2'	$N06^{\circ}13.0$	14.0'	55.7'	89°28.4	84°39.6	75°45.8	64°53.3	40°04.5	65°07.8	115°58.9	118°49.3
7	15°56.3	15.2'	06°27.0	14.0'	55.8'	88°59.5	84°10.1	75° 16.2	64°22.6	40°29.5	65°34.0	116°30.2	119°11.7
8	30°30.4	15.1'	$06^{\circ}41.0$	14.0'	55.8'	88°30.6	83°40.6	74°46.7	63°51.8	40°54.6	66°00.2	117°01.6	119°34.1
9	45°04.6	15.1'	06°54.9	13.9'	55.8'	88°01.6	83°11.0	74° 17.1	63°21.0	41°19.8	66°26.5	117°33.0	119°56.4
10	59°38.7	15.0'	07°08.9	13.9'	55.9'	87°32.6	82°41.4	73°47.5	62°50.2	41°45.2	66°52.8	118°04.4	
11	74°12.7	15.0'	07°22.8	13.9'	55.9'	87°03.5	82°11.8	73° 17.8	62°19.3	42°10.7	67°19.2	118°35.9	
12	88°46.6	14.9'	N 07°36.7	13.9'	55.9'	86°34.4	81°42.1	72°48.2	61°48.5	42°36.4	67°45.7	119°07.4	
13	103°20.5	14.8'	07°50.6	13.9'	56.0'	86°05.3	81°12.4	72° 18.5	61°17.5	43°02.2	68°12.2	119°38.9	
14	117°54.3	14.8'	08°04.5	13.9'	56.0'	85°36.2	80°42.7	71°48.8	60°46.6	43°28.1	68°38.8		
15	132°28.1	14.7'	08°18.4	13.8'	56.0'	85°07.0	80°13.0	71°19.1	60°15.6	43°54.2	69°05.5		
16	147°01.8	14.6'	08°32.2	13.8'	56.1'	84°37.7	79°43.2	70°49.3	59°44.6	44°20.4	69°32.2		
17	161°35.4	14.6'	08°46.0	13.8'	56.1'	84°08.5	79°13.4	$70^{\circ}19.5$	59°13.6	44°46.7	69°59.0		
18	176°09.0	14.5'	N 08°59.8	13.8'	56.1'	83°39.2	78°43.6	69°49.7	58°42.5	45°13.1	70°25.9		
19	190°42.4	14.4'	09°13.6	13.8'	56.2'	83°09.8	78° 13.7	69° 19.9	58°11.4	45°39.7	70°52.8		
20	205°15.9	14.3'	09°27.4	13.7'	56.2'	82°40.4	77°43.8	68°50.1	57°40.3	46°06.3	71°19.8		
21	219°49.2	14.3'	$09^{\circ}41.1$	13.7'	56.2'	82°11.0	77° 13.9	68°20.2	57°09.2	46°33.1	71°46.8		
22	234°22.4	14.2'	09°54.9	13.7'	56.3'	81°41.6	76°44.0	67°50.3	56°38.0	47°00.0	72°13.9		
23	248°55.6	14.1'	10°08.5	13.7'	56.3'	81°12.1	76°14.0	67°20.4	56°06.8	47°27.0	72°41.1		
27 th	SD	$=15.2^{\prime}$	Mer. pass	. 05:54		$Sun\;SD=15.7'$							

Moon (28th Jun)

h

Mon	GHA	ν	Dec	d	HP	-Sun	-Betelgeuse	-Venus	-Capella	-Aldebaran	-Saturn	+Fomalhaut	+Altair
0	263°28.7	14.0'	N10°22.2	13.6'	56.3'	80°42.5	75°44.0	68°26.5	66°50.5	55°35.5	12°59.6	47°54.1	73°08.3
1	278°01.8	13.9'	10°35.9	13.6'	56.4'	80°13.0	75°14.0	67°57.6	66°20.6	55°04.3	12°33.8	48°21.4	73°35.6
2	292°34.7	13.9'	10°49.5	13.6'	56.4'	79°43.3	74°43.9	67°28.7	65°50.6	54°33.0	12°08.4	48° 48.7	74°02.9
3	307°07.6	13.8'	11°03.0	13.5'	56.4'	79°13.7	74°13.8	66°59.8	65°20.6	54°01.6	11°43.5	49°16.1	74°30.3
4	321°40.4	13.7'	$11^{\circ}16.6$	13.5'	56.5'	78°44.0	73°43.7	66°30.8	64°50.6	53°30.3	$11^{\circ}19.1$	49°43.7	74°57.7
5	336°13.1	13.6'	11°30.1	13.5'	56.5'	78°14.3	73°13.6	66°01.8	64°20.6	52°58.9	10°55.3	50°11.3	75°25.2
6	350°45.7	13.5'	N11°43.6	13.4'	56.5'	77°44.5	72°43.4	65°32.7	63°50.5	52° 27.5	10°32.3	50°39.1	75°52.8
7	5°18.2	13.4'	11°57.0	13.4'	56.6'	77° 14.7	72°13.2	65°03.6	63°20.4	51°56.1	10° 10.0	51°06.9	76°20.4
8	19°50.6	13.3'	12° 10.4	13.4'	56.6'	76°44.8	71°43.0	64°34.5	62°50.4	51°24.6	9°48.6	51°34.9	76°48.1
9	34°23.0	13.3'	12°23.8	13.3'	56.6'	76°14.9	71°12.7	64°05.3	62°20.2	50°53.1		52°02.9	77°15.8
10	48°55.2	13.2'	$12^{\circ}37.1$	13.3'	56.7'	75°45.0	70°42.5	63°36.1	61°50.1	50°21.6		52°31.0	77°43.6
11	63°27.4	13.1'	12°50.4	13.3'	56.7'	75° 15.0	70°12.2	63°06.8	61°20.0	49°50.0		52°59.2	78°11.4
12	77°59.5	13.0'	N13°03.7	13.2'	56.7'	74°45.0	69°41.9	62°37.5	60°49.8	49° 18.4		53°27.6	78°39.3
13	92°31.5	12.9'	13° 16.9	13.2'	56.8'	74°14.9	69°11.5	62°08.1	60°19.7	48°46.8		53°56.0	79°07.2
14	107°03.4	12.8'	13°30.1	13.1'	56.8'	73°44.8	68°41.1	61°38.7	59°49.5	48° 15.2		54° 24.5	79°35.2
15	121°35.1	12.7'	13°43.2	13.1'	56.8'	73°14.6	68°10.7	61°09.3	59°19.3	47°43.5		54°53.1	80°03.3
16	136°06.8	12.6'	13°56.3	13.0'	56.9'	72°44.4	67°40.3	60°39.8	58°49.0	47° 11.8		55°21.7	80°31.3
17	150°38.4	12.5'	14°09.3	13.0'	56.9'	72°14.2	67°09.9	60°10.3	58°18.8	46°40.1		55°50.5	80°59.5
18	165°09.9	12.4'	N14°22.3	12.9'	57.0'	71°43.9	66°39.4	59°40.7	57°48.6	46°08.3		56° 19.3	81°27.7
19	179°41.3	12.3'	14°35.2	12.9'	57.0'	71°13.6	66°08.9	59°11.1	57°18.3	45°36.6		56°48.3	81°55.9
20	194°12.6	12.2'	14°48.1	12.8'	57.0'	70°43.2	65°38.4	58°41.5	56°48.0	45°04.8		57° 17.3	82°24.2
21	208°43.8	12.1'	$15^{\circ}01.0$	12.8'	57.1'	70°12.8	65°07.8	58°11.8	56°17.8	44°33.0		57°46.4	82°52.6
22	223°14.8	12.0'	15° 13.7	12.7'	57.1'	69°42.3	64°37.3	57°42.0	55°47.5	44°01.1		58° 15.6	83°21.0
23	237°45.8	11.9'	15°26.4	12.7'	57.1'	69°11.8	64°06.7	57°12.2	55°17.2	43°29.3		58°44.8	83°49.4
28 th	SD	$=15.4^{\prime}$	Mer. pass	. 06:38					Sun S	D = 15.7'			

h Moon	(29 th Jun)	Lunar Distance (o	objects with larg	gest hourly LD delta)
--------	------------------------	-------------------	-------------------	----------------------	---

		111001	· (23 34	••,			Earlai B		ce (objects with largest hearly LD delta)				
Tue	GHA	ν	Dec	d	HP	-Sun	-Betelgeuse	-Venus	-Aldebaran	+Saturn	+Fomalhaut	+Deneb	+Altair
0	252°16.7	11.8'	N 15°39.1	12.6'	57.2'	68°41.3	63°36.1	56°42.4	42°57.4		59°14.2		84°17.9
1	266°47.4	11.6'	15°51.7	12.5'	57.2'	68°10.7	63°05.4	56°12.5	42°25.5		59°43.6		84°46.4
2	281°18.0	11.5'	16°04.3	12.5'	57.3'	67°40.0	62°34.8	55°42.6	41°53.5		60°13.1		85°15.0
3	295°48.6	11.4'	$16^{\circ}16.7$	12.4'	57.3'	67°09.4	62°04.1	55°12.6	41°21.6		60°42.7		85°43.6
4	310°19.0	11.3'	$16^{\circ}29.2$	12.4'	57.3'	66°38.6	61°33.5	54°42.6	40°49.6		61°12.3		86°12.3
5	324°49.3	11.2'	$16^{\circ}41.5$	12.3'	57.4'	66°07.8	61°02.8	54°12.6	40°17.6		61°42.1		86°41.0
6	339°19.5	11.1'	N16°53.8	12.2'	57.4'	65°37.0	60°32.0	53°42.5	39°45.6		62°11.9		87°09.8
7	353°49.6	11.0'	$17^{\circ}06.0$	12.2'	57.5'	65°06.1	60°01.3	53°12.3	39°13.6		62°41.8		87°38.6
8	8°19.5	10.8'	17°18.2	12.1'	57.5'	64°35.2	59° 30.6	52°42.1	38°41.6		63°11.7		88°07.5
9	22°49.4	10.7'	17°30.3	12.0'	57.5'	64°04.3	58° 59.8	52°11.9	38°09.5		63°41.7		88°36.4
10	$37^{\circ}19.1$	10.6'	17°42.3	11.9'	57.6'	63°33.3	58°29.0	51°41.6	37°37.4	10°42.1	64°11.8		89°05.3
11	51°48.7	10.5'	17°54.2	11.9'	57.6'	63°02.2	57°58.2	51°11.3	37°05.4	11°06.5	64°42.0		89°34.3
12	66°18.2	10.4'	N 18°06.1	11.8'	57.6'	62°31.1	57°27.4	50°40.9	36°33.3	11°31.6	65°12.3		90°03.3
13	80°47.5	10.2'	18°17.9	11.7'	57.7'	61°59.9	56° 56.6	50°10.5	36°01.2	11°57.4	65°42.6	70°51.8	90°32.4
14	95°16.8	10.1'	18°29.6	11.6'	57.7'	61°28.7	56°25.8	49°40.0	35°29.1	12°23.9	66°13.0	71°07.0	91°01.5
15	109°45.9	10.0'	18°41.2	11.5'	57.8'	60°57.5	55°55.0	49°09.5	34°57.0	12°50.9	66°43.4	71°22.4	91°30.6
16	124°14.9	9.9'	18°52.7	11.5'	57.8'	60°26.2	55°24.1	48°39.0	34°24.9	13° 18.5	67°14.0	71°37.8	91°59.8
17	138°43.8	9.7'	19°04.2	11.4'	57.8'	59°54.8	54°53.3	48°08.3	33°52.8	13°46.5	67°44.6	71°53.3	92°29.0
18	153°12.5	9.6'	N19°15.6	11.3'	57.9'	59°23.5	54°22.4	47°37.7	33°20.7	14°14.9	68° 15.2	72°09.0	92°58.3
19	167°41.1	9.5'	19°26.9	11.2'	57.9'	58°52.0	53°51.6	47°07.0	32°48.6	14°43.8	68°46.0	72°24.7	93°27.6
20	182°09.6	9.4'	$19^{\circ}38.1$	11.1'	58.0'	58°20.5	53°20.7	46°36.2	32°16.5	15°13.0	69° 16.7	72°40.6	93°56.9
21	196°38.0	9.2'	19°49.2	11.0'	58.0'	57°49.0	52°49.9	46°05.5	31°44.5	15°42.6	69°47.6	72°56.5	94°26.3
22	211°06.2	9.1'	20°00.2	10.9'	58.0'	57°17.4	52° 19.0	45°34.6	31°12.4	16° 12.5	70° 18.5	73°12.6	94°55.7
23	225°34.3	9.0'	20°11.1	10.8'	58.1'	56°45.8	51°48.1	45°03.7	30°40.4	16°42.7	70°49.5	73°28.8	95°25.1
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$													

h	Moon	(30 th	Jun')

Lunar Distance (objects with largest hourly LD delta)

Betelgeuse -Venus -Aldebaran +Saturn +Fomalhaut +Denel

Wed	GHA	ν	Dec	d	HP	-Sun	-Betelgeuse	-Venus	-Aldebaran	+Saturn	+Fomalhaut	+Deneb	+Altair
0	240°02.3	8.8'	N 20°21.9	10.7'	58.1'	56°14.1	51°17.3	44°32.8	30°08.3	17°13.1	71°20.6	73°45.0	95°54.6
1	254°30.1	8.7'	20°32.6	10.6'	58.2'	55°42.4	50°46.5	44°01.8	29°36.3	17°43.8	71°51.7	74°01.4	96°24.1
2	268°57.9	8.6'	20°43.3	10.5'	58.2'	55° 10.6	50°15.6	43°30.8	29°04.4	18°14.7	72°22.9	74°17.9	96°53.7
3	283°25.4	8.5'	20°53.8	10.4'	58.2'	54°38.8	49°44.8	42°59.7	28°32.4	18°45.9	72°54.1	74°34.4	97°23.2
4	297°52.9	8.3'	21°04.2	10.3'	58.3'	54°06.9	49°14.0	42°28.6	28°00.5	19°17.2	73°25.5	74°51.1	97°52.9
5	312°20.2	8.2'	$21^{\circ}14.5$	10.2'	58.3'	53°35.0	48°43.2	41°57.4	27°28.7	19°48.7	73°56.8	75°07.8	98°22.5
6	326°47.4	8.1'	N 21°24.7	10.1'	58.4'	53°03.0	48°12.4	41°26.2	26° 56.9	20°20.5	74°28.3	75°24.7	98°52.1
7	341°14.5	7.9'	21°34.8	10.0'	58.4'	52°31.0	47°41.6	40°55.0	26°25.1	20°52.4	74°59.8	75°41.6	99°21.8
8	355°41.4	7.8'	21°44.8	9.9'	58.4'	51°58.9	47°10.9	40°23.7	25°53.5	21°24.4	75°31.3	75°58.6	99°51.6
9	10°08.2	7.7'	$21^{\circ}54.7$	9.8'	58.5'	51°26.8	46°40.1	39°52.3	25°21.8	21°56.6	76°02.9	76°15.8	100°21.3
10	24°34.9	7.5'	22°04.5	9.6'	58.5'	50°54.7	46°09.4	39°20.9	24°50.3	22°29.0	76°34.6	76°33.0	100°51.1
11	39°01.4	7.4'	$22^{\circ}14.1$	9.5'	58.6'	50°22.5	45°38.8	38°49.5	24°18.8	23°01.5	77°06.3	76°50.3	101°20.9
12	53°27.8	7.3'	N22°23.6	9.4'	58.6'	49°50.2	45°08.1	38°18.0	23°47.5	23°34.1	77°38.1	77°07.7	101°50.7
13	67°54.1	7.1'	22°33.0	9.3'	58.6'	49°17.9	44°37.5	37°46.5	23°16.2	24°06.9	78°10.0	77°25.1	102°20.5
14	82°20.2	7.0'	22°42.3	9.2'	58.7'	48° 45.5	44°07.0	37°14.9	22°45.1	24°39.8	78°41.9	77°42.7	102°50.4
15	96°46.2	6.9'	22°51.5	9.0'	58.7'	48°13.1	43°36.4	36°43.3	22°14.1	25°12.8	79°13.8	78°00.3	103°20.3
16	111°12.1	6.7'	23°00.5	8.9'	58.7'	47°40.7	43°06.0	36°11.6	21°43.2	25°45.9	79°45.8	78°18.0	103°50.2
17	125°37.8	6.6'	23°09.4	8.8'	58.8'	47°08.2	42°35.5	35°39.9	21°12.5	26°19.2	80°17.9	78°35.8	104°20.1
18	140°03.4	6.5'	N 23°18.2	8.6'	58.8'	46°35.7	42°05.1	35°08.1	20°41.9	26°52.5	80°50.0	78°53.7	104°50.1
19	154°28.9	6.3'	23°26.8	8.5'	58.9'	46°03.1	41°34.8	34°36.3	20°11.6	27°26.0	81°22.2	79°11.6	105°20.0
20	168°54.2	6.2'	23°35.3	8.4'	58.9'	45°30.4	41°04.6	34°04.5	19°41.4	27°59.5	81°54.4	79°29.6	105°50.0
21	183°19.4	6.1'	23°43.7	8.2'	58.9'	44°57.7	40°34.4	33°32.6	19° 11.5	28°33.2	82°26.7	79°47.7	106°20.0
22	197°44.5	5.9'	23°51.9	8.1'	59.0'	44°25.0	40°04.2	33°00.7	18°41.8	29°06.9	82°59.0	80°05.9	106°50.0
23	212°09.4	5.8'	24°00.0	7.9'	59.0'	43°52.2	39°34.2	32°28.7	18° 12.4	29°40.7	83°31.4	80°24.1	107°20.0
30 th	O^{th} SD = 15.9' Mer. pass. 08:18					$Sun\;SD=15.7'$							

Moon (1st Jul) h

Lunar Distance (objects with largest hourly LD delta)

		14100) (± 3 u	'/			Eunai E	istance (objects with largest nourly LD delta)					
Thu	GHA	ν	Dec	d	HP	-Sun	-Betelgeuse	-Venus	-Aldebaran	+Saturn	+Deneb	+Fomalhaut	+Altair
0	226°34.2	5.7'	N 24°07.9	7.8'	59.1'	43°19.4	39°04.2	31°56.7	17°43.3	30°14.7	80°42.4	84°03.8	107°50.0
1	240°58.9	5.6'	24°15.7	7.7'	59.1'	42°46.5	38°34.3	31°24.7	17°14.6	30°48.7	81°00.8	84°36.3	108°20.0
2	255°23.5	5.4'	24°23.4	7.5'	59.1'	42°13.6	38°04.5	30°52.6	16°46.2	31°22.8	81°19.3	85°08.8	108°50.1
3	269°47.9	5.3'	24°30.9	7.4'	59.2'	41°40.7	37°34.8	30°20.5	16°18.2	31°56.9	81°37.8	85°41.4	109°20.1
4	284°12.2	5.2'	24°38.3	7.2'	59.2'	41°07.7	37°05.2	29°48.3	15°50.7	32°31.2	81°56.3	86° 14.1	109°50.2
5	298°36.4	5.1'	24°45.5	7.1'	59.2'	40°34.6	36°35.7	29°16.1	15°23.6	33°05.5	82°15.0	86° 46.7	110°20.2
6	313°00.5	4.9'	N 24°52.5	6.9'	59.3'	40°01.5	36°06.3	28°43.8	14°57.1	33°39.9	82°33.7	87° 19.4	110°50.3
7	327°24.4	4.8'	24°59.4	6.7'	59.3'		35°37.1	28° 11.5	14°31.2	34°14.4	82°52.4	87°52.2	111°20.3
8	341°48.2	4.7'	25°06.2	6.6'	59.3'		35°08.0	27°39.2	14°05.9	34°49.0	83°11.2	88°25.0	111°50.3
9	356°11.9	4.6'	25°12.8	6.4'	59.4'		34°39.0	27°06.9	13°41.4	35°23.6	83°30.1	88° 57.9	112°20.4
10	10°35.5	4.5'	25°19.2	6.3'	59.4'		34°10.1	26°34.5	13°17.6	35°58.3	83°49.0	89°30.8	112°50.4
11	24°59.0	4.3'	25°25.5	6.1'	59.5'		33°41.5	26°02.0	12°54.8	36°33.1	84°08.0	90°03.7	113°20.5
12	39°22.3	4.2'	N 25°31.5	5.9'	59.5'		33°13.0	25°29.6		37°07.9	84°27.0	90°36.7	113°50.5
13	53°45.5	4.1'	25°37.5	5.8'	59.5'		32°44.6	24°57.1		37°42.9	84°46.1	91°09.7	114°20.5
14	68°08.6	4.0'	25°43.2	5.6'	59.6'		32°16.5	24°24.6		38°17.8	85°05.3	91°42.8	114°50.5
15	82°31.6	3.9'	25°48.8	5.4'	59.6'		31°48.5	23°52.0		38°52.9	85°24.4	92° 15.9	115°20.5
16	96°54.5	3.8'	25°54.3	5.2'	59.6'		31°20.8	23°19.4		39°28.0	85°43.7	92°49.0	115°50.4
17	111°17.3	3.7'	25°59.5	5.1'	59.7'		30°53.3	22°46.8		40°03.1	86°02.9	93°22.2	116°20.4
18	125°40.0	3.6'	N 26°04.6	4.9'	59.7'		30°26.0	22°14.2		40°38.4	86°22.2	93°55.4	116°50.3
19	140°02.6	3.5'	26°09.5	4.7'	59.7'		29°59.0	21°41.5		41°13.6	86°41.6	94°28.7	117°20.2
20	154°25.0	3.4'	$26^{\circ}14.2$	4.5'	59.8'		29°32.2	21°08.9		41°49.0	87°01.0	95°02.0	117°50.0
21	168°47.4	3.3'	$26^{\circ}18.7$	4.4'	59.8'		29°05.7	20°36.2		42°24.4	87°20.4	95° 35.3	118°19.9
22	183°09.7	3.2'	26°23.1	4.2'	59.8'		28°39.5	20°03.5		42°59.9	87°39.9	96°08.7	118°49.7
23	197°31.8	3.1'	26°27.3	4.0'	59.9'		28°13.6	19°30.7		43°35.4	87°59.4	96°42.0	119°19.5
1 st	SD =	= 16.1'	Mer. pass	s. 09:16	5				Sun SD	= 15.7'			

h	Moon	(2nd	Lu1)
11	171()()()	1/	11111

Moon (2nd Jul) Lunar Distance (objects with largest hourly LD delta) ν Dec d HP -Sirius -Betelgeuse -Capella -Venus +Aldebaran +Saturn +Deneb +Fomalhaut

Fri	GHA	ν	Dec	d	HP	-Sirius	-Betelgeuse	-Capella	-Venus	+Aldebaran	+Saturn	+Deneb	+Fomalhaut
0	211°53.9	3.0'	N 26°31.3	3.8'	59.9'		27° 48.0	21°37.9	18°58.0		44°10.9	88° 18.9	97° 15.5
1	226°15.9	2.9'	26°35.1	3.6'	59.9'		27°22.8	21°20.7	18° 25.3		44°46.6	88°38.4	97°48.9
2	240°37.8	2.8'	26°38.7	3.4'	60.0'		26° 58.0	21°04.4	17° 52.5		45°22.3	88°58.0	98°22.4
3	254°59.6	2.7'	26°42.1	3.2'	60.0'		26° 33.5	20°48.8	17° 19.8		45°58.0	89°17.6	98°55.9
4	269°21.3	2.6'	26°45.4	3.0'	60.0'		26°09.4		16°47.0		46°33.8	89°37.3	99°29.4
5	283°43.0	2.6'	26°48.4	2.9'	60.1'		25°45.8		16°14.3		47°09.6	89°57.0	100°03.0
6	298°04.5	2.5'	N26°51.3	2.7'	60.1'		25°22.6		15°41.6		47°45.5	90°16.6	100°36.6
7	312°26.0	2.4'	26°53.9	2.5'	60.1'		24° 59.9		15°08.9		48°21.4	90°36.3	101°10.2
8	326°47.4	2.3'	26°56.4	2.3'	60.2'		24° 37.7		14°36.2		48°57.4	90°56.1	101°43.8
9	341°08.7	2.3'	26°58.7	2.1'	60.2'		24° 16.0		14°03.6		49°33.5	91°15.8	102° 17.5
10	355°30.0	2.2'	27°00.7	1.9'	60.2'		23°54.9		13°31.0		50°09.5	91°35.6	102°51.2
11	9°51.2	2.1'	27°02.6	1.7'	60.2'		23°34.4		12°58.4		50°45.7	91°55.3	103°24.9
12	24°12.4	2.1'	N27°04.3	1.5'	60.3'		23°14.4		12°26.0		51°21.8	92°15.1	103°58.6
13	38°33.4	2.0'	27°05.8	1.3'	60.3'		22°55.1		11°53.6		51°58.1	92°34.9	104°32.3
14	52°54.5	2.0'	27°07.0	1.1'	60.3'		22°36.5		11°21.3		52°34.3	92°54.7	105°06.1
15	67°15.4	1.9'	27°08.1	0.9'	60.4'		22° 18.6		10°49.2		53°10.6	93°14.5	105°39.9
16	81°36.3	1.9'	27°09.0	0.7'	60.4'		22°01.4		10° 17.2		53°47.0	93°34.3	106° 13.6
17	95°57.2	1.8'	27°09.6	0.5'	60.4		21°45.0		9°45.4	14°11.1	54°23.4	93°54.1	106°47.4
18	110°18.0	1.8'	$N27^{\circ}10.1$	0.3'	60.4'		21°29.3		9°13.8	14°37.5	54°59.8	94°13.9	107°21.2
19	124°38.8	1.7'	27°10.4	0.1'	60.5'	48°16.5			8°42.5	15°04.7	55°36.2	94°33.7	107°55.0
20	138°59.5	1.7'	$27^{\circ}10.4$	-0.2'	60.5'	48°00.0			8°11.5	15°32.6	56°12.8	94°53.5	108°28.9
21	153°20.2	1.7'	$27^{\circ}10.3$	-0.4'	60.5'	47°43.8			7°40.9	16°01.1	56°49.3	95°13.3	109°02.7
22	167°40.9	1.6'	27°09.9	-0.6'	60.5	47°27.9			7°10.8	16°30.2	57°25.9	95°33.1	109°36.5
23	182°01.5	1.6'	27°09.3	-0.8'	60.6'	47°12.2			6°41.3	16°59.8	58°02.5	95°52.8	110°10.4
2 nd	SD = $16.3'$ Mer. pass. $10:19$												

h	Moon	(3 rd	Jul	١

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Sirius	-Venus	+Aldebaran	+Capella	+Saturn	+Deneb	+Achernar	+Fomalhaut	
0	196°22.2	1.6'	N27°08.5	-1.0'	60.6'	46°56.8	$6^{\circ}12.6$	17°29.9		58°39.2	96°12.6	98°00.8	110°44.2	
1	210°42.8	1.6'	27°07.6	-1.2'	60.6'	46°41.8		18°00.5		59° 15.9	96°32.3	98°17.6	111°18.0	
2	225°03.3	1.6'	27°06.4	-1.4'	60.6'			18° 31.5		59°52.6	96°52.0	98°34.5	111°51.9	
3	239°23.9	1.5'	27°05.0	-1.6'	60.6'			19°02.8		60°29.4	97°11.7	98°51.3	112°25.7	
4	253°44.4	1.5'	27°03.4	-1.8'	60.7'			19°34.6		61°06.2	97°31.4	99°08.0	112°59.5	
5	268°05.0	1.5'	$27^{\circ}01.5$	-2.0'	60.7'			20°06.7		61°43.0	97°51.1	99°24.7	113°33.4	
6	282°25.5	1.5'	N 26°59.5	-2.2'	60.7'			20°39.1		62°19.8	98°10.7	99°41.4	114°07.2	
7	296°46.0	1.5'	26°57.3	-2.4'	60.7'			21° 11.7		62°56.7	98°30.3	99°58.0	114°41.0	
8	311°06.5	1.5'	26°54.8	-2.7'	60.8'			21°44.7	20°47.9	63°33.7	98°49.9	100°14.6	115°14.8	
9	325°27.1	1.5'	26°52.2	-2.9'	60.8'			22° 17.9	21°03.8	64°10.6	99°09.4	100°31.1	115°48.6	
10	339°47.6	1.5'	26°49.3	-3.1'	60.8'			22°51.3	21°20.7	64°47.6	99°28.9	100°47.6	116°22.3	
11	354°08.1	1.6'	26°46.3	-3.3'	60.8'	New Moon —								
12	8°28.7	1.6'	N26°43.0	-3.5'	60.8'		-		Nev	w Moon —				
13	22°49.3	1.6'	26°39.5	-3.7'	60.8'		-			w Moon —-				
14	37°09.9	1.6'	26°35.8	-3.9'	60.9'		-			w Moon —-				
15	51°30.5	1.6'	26°31.9	-4.1'	60.9'		-			w Moon —-				
16	65°51.1	1.7'	26°27.8	-4.3'	60.9'		-			и Moon —-				
17	80°11.8	1.7'	26°23.5	-4.5'	60.9'		-		Nev	w Moon —				
18	94°32.5	1.7'	N 26°19.0	-4.7'	60.9'		-			w Moon —-				
19	108°53.2	1.8'	26°14.3	-4.9'	60.9'		-			и Moon —-				
20	123°14.0	1.8'	$26^{\circ}09.3$	-5.1'	61.0'		-			w Moon —-				
21	137°34.8	1.9'	26°04.2	-5.3'	61.0'									
22	151°55.6	1.9'	25°58.9	-5.5'	61.0'									
23	166°16.6	2.0'	25°53.4	-5.7'	61.0'	1.0' New Moon ————								
3 rd	SD	= 16.5'	Mer. pas	s. 11:25										

Moon (4th Jul)

h

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Rigil Kent.	-Hadar	-Acrux	-Spica	-Arcturus	-Mars	-Regulus	-Jupiter
0	180°37.5	2.0'	N25°47.6	-5.9'	61.0'				New M	loon ———			
1	194°58.5	2.1'	25°41.7	-6.1'	61.0'					loon ———			
2	209°19.6	2.1'	25°35.6	-6.3'	61.0'					loon ———			
3	223°40.7	2.2'	25°29.3	-6.5'	61.0'					loon			
4	238°01.9	2.2'	25°22.8	-6.7'	61.0'					loon ———			
5	252°23.1	2.3'	$25^{\circ}16.1$	-6.9'	61.1'				- New M	loon			
6	266°44.4	2.4'	N25°09.2	-7.1'	61.1'				— New M	loon			
7	281°05.8	2.4'	25°02.1	-7.3'	61.1'					loon			
8	295°27.2	2.5'	24°54.8	-7.5'	61.1'					loon			
9	309°48.7	2.6'	24°47.3	-7.7'	61.1'								
10	324°10.3	2.7'	24°39.7	-7.8'	61.1'	New Moon							
11	338°32.0	2.7'	24°31.8	-8.0'	61.1'								
12	352°53.7	2.8'	N 24°23.8	-8.2'	61.1'				- New M	loon			
13	7°15.6	2.9'	24°15.6	-8.4'	61.1'				— New M	loon ———			
14	21°37.5	3.0'	24°07.2	-8.6'	61.1'				— New M	loon ———			
15	35°59.5	3.1'	23°58.6	-8.7'	61.1'					loon			
16	50°21.5	3.2'	23°49.9	-8.9'	61.1'					loon			
17	64°43.7	3.3'	23°41.0	-9.1'	61.1'				— New M	loon ———			
18	79°06.0	3.4'	N23°31.9	-9.3'	61.1'				- New M	loon			
19	93°28.3	3.4'	23°22.6	-9.4'	61.1'					loon ———			
20	107°50.8	3.5'	23°13.2	-9.6'	61.1'	117°41.9	113°19.4	103°04.4	91°38.5	90°49.5	61°31.4	37°34.6	33°10.8
21	122°13.3	3.6'	23°03.6	-9.8'	61.1'								
22	136°36.0	3.7'	22°53.8	-9.9'	61.1'								
23	150°58.7	3.8'	22°43.9	-10.1'	61.1'	116° 19.0	111°56.2	101°50.0	89°44.8	89°17.0	59°42.0	35°41.0	31° 18.6
4 th	SD	= 16.6	Mer. pas	s. 12:30					*	•	*		

h Moon (5th Jul)

Mon	GHA	ν	Dec	d	HP	-Rigil Kent.	-Spica	-Arcturus	-Mars	-Regulus	-Jupiter	+Pollux	+Procyon
0	165°21.5	3.9'	N22°33.8	-10.3'	61.1'	115°51.2	89°06.9	88°46.2	59°05.6	35°03.1	30°41.2		
1	179°44.5	4.0'	22°23.5	-10.4'	61.1'	115°23.3	88°29.1	88°15.4	58° 29.2	34°25.3	30°03.9		
2	194°07.5	4.1'	22°13.1	-10.6'	61.1'	114°55.3	87°51.2	87°44.6	57°52.7	33°47.4	29°26.5		
3	208°30.6	4.2'	22°02.5	-10.7'	61.1'	114°27.2	87°13.3	87°13.8	57°16.3	33°09.6	28°49.2		
4	222°53.9	4.4'	21°51.8	-10.9'	61.1'	113°59.0	86°35.4	86°43.1	56°39.9	32°31.7	28°11.8		
5	237°17.2	4.5'	21°40.9	-11.0'	61.1'	113°30.7	85°57.5	86°12.3	56°03.5	31°53.9	27°34.5		
6	251°40.7	4.6'	N 21°29.8	-11.2'	61.1'	113°02.4	85°19.7	85°41.6	55°27.1	31°16.1	26°57.2		
7	266°04.3	4.7'	$21^{\circ}18.7$	-11.3'	61.1'	112°34.0	84°41.8	85°10.8	54°50.7	30°38.3	26° 19.9		
8	280°27.9	4.8'	21°07.3	-11.5'	61.1'	112°05.5	84°04.0	84°40.1	54°14.3	30°00.5	25°42.6		
9	294°51.7	4.9'	20°55.8	-11.6'	61.1'	111°37.0	83°26.1	84°09.4	53°38.0	29°22.7	25°05.3	9°12.1	
10	309°15.6	5.0'	20°44.2	-11.8'	61.1'	111°08.4	82°48.3	83°38.8	53°01.6	28°44.9	24°28.0	9°44.1	
11	323°39.6	5.1'	20°32.5	-11.9'	61.1'	110°39.7	82°10.5	83°08.1	52°25.3	28°07.2	23°50.8	10°16.8	
12	338°03.7	5.2'	N 20°20.6	-12.0'	61.1'	110°11.0	81°32.7	82°37.5	51°49.0	27°29.4	23°13.6	10°50.0	
13	352°27.9	5.3'	20°08.6	-12.2'	61.1'	109°42.2	80°54.9	82°06.9	51°12.7	26°51.7	22°36.4	11°23.7	
14	6°52.3	5.4'	19°56.4	-12.3'	61.0'	109°13.4	80°17.1	81°36.4	50°36.4	26°14.0	21°59.2	11°57.7	
15	21°16.7	5.6'	19°44.1	-12.4'	61.0'	108°44.5	79°39.4	81°05.8	50°00.1	25°36.3	21°22.1	12°32.2	
16	35°41.3	5.7'	19°31.7	-12.6'	61.0'	108° 15.6	79°01.6	80°35.4	49°23.8	24°58.7	20°44.9	13°06.9	
17	50°05.9	5.8'	$19^{\circ}19.1$	-12.7'	61.0'	107°46.6	78°23.9	80°04.9	48°47.6	24°21.0	20°07.8	13°41.9	
18	64°30.7	5.9'	N 19°06.4	-12.8'	61.0'	107° 17.6	77°46.1	79°34.5	48°11.4	23°43.4	19°30.8	14°17.0	
19	78°55.6	6.0'	18°53.6	-12.9'	61.0'	106°48.5	77°08.4	79°04.1	47°35.2	23°05.8	18°53.7	14°52.4	19°40.6
20	93°20.6	6.1'	18°40.7	-13.0'	61.0'	106° 19.4	76°30.7	78°33.8	46°59.0	22°28.3	18° 16.7	15°28.0	19°58.5
21	107°45.7	6.2'	$18^{\circ}27.7$	-13.2'	61.0'	105°50.3	75°53.1	78°03.5	46°22.8	21°50.7	17°39.8	16°03.7	20°17.3
22	122°10.9	6.3'	$18^{\circ}14.5$	-13.3'	61.0'	105°21.1	75°15.4	77°33.2	45°46.7	21°13.2	17°02.8	16°39.5	20°36.9
23	136°36.3	6.5'	18°01.3	-13.4'	60.9'	104°51.9	74°37.8	77°03.0	45°10.6	20°35.7	16°26.0	17°15.4	20°57.4
5 th	SD	= 16.7	" Mer pag	ss 13·31									

h Moon (6 th Jul)	Lunar Distance (objects with largest hourly LD delta)
------------------------------	---

Tue	GHA	ν	Dec	d	HP	-Antares	-Arcturus	-Spica	-Mars	-Regulus	-Jupiter	+Pollux	+Procyon
0	151°01.7	6.6'	N 17°47.9	-13.5'	60.9'	119°49.1	76°32.9	74°00.1	44°34.5	19°58.3	15°49.1	17°51.5	21° 18.5
1	165°27.3	6.7'	17°34.4	-13.6'	60.9'	119°11.5	76°02.8	73°22.5	43°58.4	19°20.8	15° 12.3	18°27.6	21°40.3
2	179°53.0	6.8'	17°20.8	-13.7'	60.9'	118°33.8	75°32.7	72°45.0	43°22.3	18°43.5	14°35.6	19°03.8	22°02.9
3	194°18.8	6.9'	$17^{\circ}07.1$	-13.8'	60.9'	117°56.2	75°02.7	72°07.4	42°46.3	18°06.1	13°58.9	19°40.1	22°26.0
4	208°44.7	7.0'	16°53.3	-13.9'	60.9'	117° 18.6	74°32.8	71°29.9	42°10.3	17°28.8	13°22.3	20°16.4	22°49.7
5	223°10.7	7.1'	16°39.5	-14.0'	60.8'	116°41.1	74°02.9	70°52.4	41°34.4	16°51.5	12°45.7	20°52.8	23°14.0
6	237°36.8	7.2'	N 16°25.5	-14.1'	60.8'	116°03.5	73°33.1	70°14.9	40°58.4	16°14.3	12°09.3	21°29.2	23°38.9
7	252°03.0	7.3'	$16^{\circ}11.4$	-14.2'	60.8'	115°26.0	73°03.4	69°37.4	40°22.5	15°37.1	11°32.9	22°05.6	24°04.2
8	266°29.4	7.5'	15°57.2	-14.3'	60.8'	114°48.5	72°33.7	69°00.0	39°46.6	15°00.0	10°56.6	22°42.1	24°30.0
9	280°55.8	7.6'	15°42.9	-14.4'	60.8'	114°11.0	72°04.1	68°22.6	39°10.8	14°22.9	10°20.4	23°18.6	24°56.3
10	295°22.4	7.7'	15°28.6	-14.4'	60.8'	113°33.6	71°34.5	67°45.2	38°35.0	13°45.9	9°44.4	23°55.2	25°22.9
11	309°49.1	7.8'	$15^{\circ}14.1$	-14.5'	60.7'	112°56.2	71°05.1	67°07.8	37°59.2	13°09.0	9°08.4	24°31.7	25°50.0
12	324°15.8	7.9'	N 14°59.6	-14.6'	60.7'	112°18.8	70°35.7	66°30.5	37°23.4	12°32.1	8°32.7	25°08.3	26°17.5
13	338°42.7	8.0'	14°45.0	-14.7'	60.7'	111°41.4	70°06.4	65°53.2	36°47.7	11°55.3	7° 57.2	25°44.9	26°45.3
14	353°09.7	8.1'	14°30.3	-14.8'	60.7'	111°04.1	69°37.1	65°15.9	36°12.0	11°18.6	7°21.9	26°21.5	27°13.4
15	7°36.8	8.2'	14°15.5	-14.8'	60.7'	110°26.8	69°07.9	64°38.6	35°36.4	10°42.0	6°47.0	26°58.0	27°41.8
16	22°04.0	8.3'	14°00.6	-14.9'	60.6'	109°49.5	68°38.9	64°01.4	35°00.8	10°05.5	6°12.4	27°34.6	28°10.6
17	36°31.3	8.4'	13°45.7	-15.0'	60.6'	109°12.2	68°09.9	63°24.2	34°25.2	9°29.2	5°38.3	28°11.2	28°39.6
18	50°58.7	8.5'	N13°30.7	-15.1'	60.6'	108°35.0	67°40.9	62°47.0	33°49.7	8°53.0	5°04.9	28°47.8	29°08.9
19	65°26.2	8.6'	13°15.7	-15.1'	60.6'	107°57.8	67°12.1	62°09.9	33°14.2	8°17.0	4°32.4	29°24.4	29°38.4
20	79°53.8	8.7'	13°00.5	-15.2'	60.5'	107°20.6	66°43.4	61°32.8	32°38.7	7°41.2		30°01.0	30°08.2
21	94°21.5	8.8'	12°45.4	-15.3'	60.5'	106°43.5	66°14.8	60°55.7	32°03.3	7°05.6		30°37.6	30°38.2
22	108°49.3	8.9'	12°30.1	-15.3'	60.5'	106°06.4	65°46.2	60°18.7	31°27.9	6°30.4		31°14.1	31°08.4
23	123°17.2	9.0'	12°14.8	-15.4'	60.5'	105°29.3	65°17.8	59°41.7	30°52.6	5°55.6		31°50.7	31°38.8
6 th	SD	= 16.6	' Mer. pas	s. 14:28									

h Moon (7 th Jul)	Lunar Distance (objects with largest hourly LD delta)
------------------------------	---

Wed	GHA	ν	Dec	d	HP	-Antares	-Spica	-Mars	±Regulus	+Jupiter	+Procyon	+Pollux	+Sun
0	137°45.2	9.1'	N11°59.4	-15.4'	60.4	104°52.3	59°04.7	30°17.3	5°21.3		32°09.3	32°27.2	40°26.9
1	152°13.3	9.2'	11°44.0	-15.5'	60.4	104° 15.3	58°27.8	29°42.1	4°47.7		32°40.1	33°03.7	41°01.4
2	166°41.5	9.3'	11°28.5	-15.5'	60.4	103°38.3	57°50.9	29°06.9			33°11.0	33°40.2	41°36.0
3	181°09.8	9.4'	11°12.9	-15.6'	60.4'	103°01.3	57°14.0	28°31.7			33°42.0	34° 16.7	42°10.4
4	195°38.1	9.5'	10°57.4	-15.6'	60.3'	102°24.4	56°37.2	27°56.7			34°13.2	34°53.2	42°44.9
5	210°06.6	9.6'	$10^{\circ}41.7$	-15.7'	60.3'	101°47.6	56°00.4	27°21.6			34°44.6	35°29.6	43°19.3
6	224°35.2	9.6'	N 10°26.0	-15.7'	60.3'	101°10.7	55°23.6	26°46.6			35°16.0	36°06.0	43°53.7
7	239°03.8	9.7'	10°10.3	-15.8'	60.3'	100°33.9	54°46.9	26°11.7			35°47.6	36°42.4	44°28.1
8	253°32.5	9.8'	09°54.5	-15.8'	60.2'	99°57.2	54°10.2	25°36.8			36°19.3	37°18.8	45°02.4
9	268°01.4	9.9'	09°38.7	-15.9'	60.2'	99°20.4	53°33.5	25°02.0			36°51.1	37°55.1	45°36.7
10	282°30.3	10.0'	09°22.9	-15.9'	60.2'	98°43.7	52°56.9	24°27.2		5°37.3	37°23.0	38°31.5	46°10.9
11	296°59.3	10.1'	09°07.0	-15.9'	60.2'	98°07.1	52°20.3	23°52.5		6°10.7	37°55.0	39°07.8	46°45.2
12	311°28.3	10.2'	N08°51.1	-16.0'	60.1'	97°30.4	51°43.8	23°17.9		6°44.7	38°27.1	39°44.0	47°19.3
13	325°57.5	10.2'	08°35.1	-16.0'	60.1'	96°53.9	51°07.2	22°43.3		7°18.9	38°59.2	40°20.3	47°53.5
14	340°26.7	10.3'	$08^{\circ}19.1$	-16.0'	60.1'	96°17.3	50°30.8	22°08.8		7°53.4	39°31.5	40°56.5	48°27.6
15	354°56.0	10.4'	08°03.1	-16.0'	60.0'	95° 40.8	49°54.4	21°34.4		8°28.1	40°03.8	41°32.7	49°01.7
16	9°25.4	10.5'	07°47.1	-16.1'	60.0'	95°04.3	49°18.0	21°00.0	5° 19.7	9°02.9	40°36.1	42°08.8	49°35.7
17	23°54.9	10.5'	07°31.0	-16.1'	60.0'	94°27.9	48°41.6	20°25.8	5°53.4	9°37.8	41°08.5	42°45.0	50°09.7
18	38°24.5	10.6'	N 07°14.9	-16.1'	60.0'	93°51.5	48°05.3	19°51.6	6°27.5	10°12.8	41°41.0	43°21.1	50°43.7
19	52°54.1	10.7'	06°58.8	-16.1'	59.9'	93° 15.2	47°29.0	19°17.4	7°02.0	10°47.9	42°13.6	43°57.1	51°17.6
20	67°23.8	10.8'	06°42.6	-16.2'	59.9'	92°38.8	46°52.8	18°43.4	7°36.7	11°23.0	42°46.1	44°33.1	51°51.5
21	81°53.5	10.8'	06°26.5	-16.2'	59.9'	92°02.6	46°16.6	18°09.5	8°11.7	11°58.1	43°18.8	45°09.1	52°25.3
22	96°23.4	10.9'	06°10.3	-16.2'	59.8'	91°26.3	45°40.5	17°35.7	8°46.7	12°33.3	43°51.4	45°45.1	52°59.1
23	110°53.3	11.0'	05°54.1	-16.2'	59.8'	90°50.1	45°04.4	17°01.9	9°21.9	13°08.4	44°24.1	46°21.0	53°32.9
7 th	SD	= 16.5	Mer. pas	s. 15:21		$Sun\;SD=15.7'$							

h Moon	(8 th Jul)	Lunar Distance (d	objects with larg	gest hourly LD del [.]	ta)
--------	-----------------------	-------------------	-------------------	---------------------------------	-----

Thu	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Spica	-Mars	+Regulus	+Jupiter	+Pollux	+Sun
0	125°23.3	11.0'	N 05°37.9	-16.2'	59.8'	90°14.0	81°03.3	44°28.3	16°28.3	9°57.2	13°43.6	46°56.9	54°06.6
1	139°53.3	11.1'	$05^{\circ}21.7$	-16.2'	59.7'	89°37.9	80°34.9	43°52.3	15°54.8	10°32.5	14° 18.8	47°32.8	54°40.3
2	154°23.4	11.2'	05°05.5	-16.2'	59.7'	89°01.8	80°06.6	43°16.3	15°21.4	11°07.8	14°54.0	48°08.6	55°14.0
3	168°53.6	11.2'	04°49.3	-16.2'	59.7'	88°25.7	79°38.3	42°40.4	14°48.2	11°43.2	15°29.2	48°44.4	55°47.6
4	183°23.8	11.3'	04°33.0	-16.2'	59.6'	87°49.8	79° 10.1	42°04.5	14°15.1	12° 18.6	16°04.3	49°20.1	56°21.2
5	197°54.1	11.4'	04°16.8	-16.2'	59.6'	87°13.8	78°41.9	41°28.7	13°42.2	12°54.1	16°39.5	49°55.8	56°54.7
6	212°24.5	11.4'	N 04°00.5	-16.2'	59.6'	86°37.9	78° 13.9	40°52.9	13°09.5	13° 29.5	17° 14.6	50°31.5	57°28.2
7	226°54.9	11.5'	03°44.3	-16.2'	59.5'	86°02.0	77° 45.8	40°17.1	12°36.9	14°04.9	17° 49.7	51°07.1	58°01.6
8	241°25.4	11.5'	03°28.0	-16.2'	59.5'	85°26.2	77° 17.9	39°41.4	12°04.6	14°40.4	18° 24.8	51°42.7	58°35.0
9	255°55.9	11.6'	$03^{\circ}11.8$	-16.2'	59.5'	84°50.4	76°49.9	39°05.7	11°32.5	15° 15.8	18°59.8	52°18.3	59°08.4
10	270°26.5	11.6'	02°55.5	-16.2'	59.4'	84°14.7	76°22.1	38°30.1	11°00.6	15°51.2	19°34.8	52°53.8	59°41.7
11	284°57.1	11.7'	02°39.3	-16.2'	59.4'	83°39.0	75°54.3	37°54.5	10°29.1	16°26.5	20°09.8	53°29.3	60°15.0
12	299°27.8	11.7'	$N02^{\circ}23.1$	-16.2'	59.4'	83°03.3	75°26.6	37°19.0	9°57.9	17°01.9	20°44.8	54°04.8	60°48.2
13	313°58.5	11.8'	02°06.8	-16.2'	59.3'	82°27.7	74°59.0	36°43.5	9°27.1	17° 37.2	21° 19.7		61°21.4
14	328°29.3	11.8'	$01^{\circ}50.6$	-16.2'	59.3'	81°52.1	74°31.5	36°08.1	8°56.8	18° 12.5	21°54.6		61°54.6
15	343°00.2	11.9'	$01^{\circ}34.4$	-16.2'	59.3'	81°16.6	74°04.0	35°32.7	8°26.9	18°47.8	22°29.5		62°27.7
16	357°31.1	11.9'	01°18.2	-16.2'	59.2'	80°41.1	73°36.6	34°57.4	7°57.7	19°23.1	23°04.4		63°00.8
17	12°02.0	12.0'	$01^{\circ}02.0$	-16.2'	59.2'	80°05.7	73°09.3	34°22.1	7°29.2	19°58.3	23°39.2		63°33.8
18	26°33.0	12.0'	N 00°45.8	-16.2'	59.2'	79°30.3	72°42.0	33°46.8	7°01.5	20° 33.5	24° 13.9		64°06.8
19	41°04.0	12.1'	00°29.7	-16.1'	59.1'	78°54.9	72° 14.8	33°11.6		21°08.7	24°48.7		64°39.7
20	55°35.0	12.1'	N 00°13.5	-16.1'	59.1'	78°19.6	71°47.7	32°36.5		21°43.8	25°23.3		65°12.6
21	70°06.1	12.1'	S 00°02.6	-16.1'	59.1'	77°44.3	71°20.7	32°01.4		22° 18.9	25°58.0		65°45.5
22	84°37.2	12.2'	00° 18.7	-16.1'	59.0'	77°09.1	70°53.8	31°26.3		22°54.0	26°32.6		66°18.3
23	99°08.4	12.2'	00°34.7	-16.1'	59.0'	76°33.9	70°27.0	30°51.3		23°29.0	27°07.2		66°51.1
8 th	SD	= 16.3	Mer. pas	s. 16:10		$Sun\;SD=15.7'$							

h	Moon	(9 th	Jul)	

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Jupiter	+Procyon	+Sun
0	113°39.6	12.2'	S 00°50.8	-16.0'	59.0'		75°58.8	70°00.2	30°16.3	24°04.0	27°41.8	58°06.5	67°23.8
1	128°10.9	12.3'	$01^{\circ}06.8$	-16.0'	58.9'		75°23.7	69°33.6	29°41.4	24°38.9	28° 16.3	58°39.4	67°56.5
2	142°42.1	12.3'	01°22.8	-16.0'	58.9'		74°48.7	69°07.0	29°06.6	25° 13.8	28°50.7	59°12.2	68°29.1
3	157°13.4	12.3'	01°38.8	-16.0'	58.9'		74°13.6	68°40.5	28°31.8	25°48.7	29°25.1	59°45.1	69°01.7
4	171°44.8	12.4'	01°54.8	-15.9'	58.8'		73°38.7	68°14.1	27°57.0	26°23.6	29° 59.5	60°17.9	69°34.3
5	186°16.1	12.4'	$02^{\circ}10.7$	-15.9'	58.8'		73°03.8	67°47.8	27°22.3	26°58.4	30°33.9	60°50.7	70°06.8
6	200°47.5	12.4'	S 02°26.6	-15.9'	58.7'		72°28.9	67°21.6	26°47.6	27°33.1	31°08.2	61°23.5	70°39.3
7	215°19.0	12.4'	02°42.4	-15.8'	58.7'		71°54.0	66°55.5	26°13.0	28° 07.8	31°42.5	61°56.2	71°11.7
8	229°50.4	12.5'	02°58.3	-15.8'	58.7'		71°19.3	66°29.5	25°38.5	28° 42.5	32° 16.7	62°29.0	71°44.1
9	244°21.9	12.5'	03°14.1	-15.8'	58.6'		70°44.5	66°03.6	25°04.0	29° 17.2	32°50.9	63°01.7	72°16.4
10	258°53.4	12.5'	03°29.8	-15.7'	58.6'	119°58.3	70°09.8	65°37.8	24°29.6	29°51.8	33°25.0	63°34.4	72°48.7
11	273°24.9	12.5'	03°45.5	-15.7'	58.6'	119°30.0	69°35.1	65°12.1	23°55.2	30°26.3	33°59.1	64°07.1	73°21.0
12	287°56.4	12.6'	S 04°01.2	-15.6'	58.5'	119°01.7	69°00.5	64°46.5	23°20.8	31°00.9	34°33.2	64°39.8	73°53.2
13	302°28.0	12.6'	$04^{\circ}16.9$	-15.6'	58.5'	118°33.3	68°26.0	64°21.0	22°46.6	31°35.3	35°07.2	65°12.4	74°25.4
14	316°59.5	12.6'	04°32.5	-15.6'	58.5'	118°04.9	67°51.4	63°55.6	22°12.4	32°09.8	35°41.2	65°45.0	74°57.5
15	331°31.1	12.6'	04°48.0	-15.5'	58.4'	117°36.5	67°16.9	63°30.4	21°38.2	32°44.2	36° 15.1	66°17.6	75°29.6
16	346°02.7	12.6'	05°03.6	-15.5'	58.4'	117°08.0	66°42.5	63°05.2	21°04.1	33° 18.6	36°49.0	66°50.2	76°01.6
17	0°34.3	12.6'	$05^{\circ}19.0$	-15.4'	58.4'	116°39.6	$66^{\circ}08.1$	62°40.2	20°30.1	33°52.9	37°22.9	67°22.8	76°33.6
18	15°06.0	12.6'	S 05°34.5	-15.4'	58.3'	116°11.1	65°33.7	62°15.2	19°56.1	34°27.2	37°56.7	67°55.3	77°05.6
19	29°37.6	12.7'	05°49.9	-15.3'	58.3'	115°42.6	64°59.4	61°50.4	19°22.2	35°01.4	38°30.4	68°27.8	77°37.5
20	44°09.2	12.7'	$06^{\circ}05.2$	-15.3'	58.3'	115°14.0	64°25.2	61°25.7	18°48.3	35°35.6	39°04.2	69°00.2	78°09.3
21	58°40.9	12.7'	06°20.5	-15.2'	58.2'	114°45.5	63°50.9	61°01.1	18°14.6	36°09.8	39°37.9	69°32.7	78°41.2
22	73°12.6	12.7'	06°35.7	-15.2'	58.2'	114°17.0	63°16.7	60°36.7	17°40.9	36°43.9	40°11.5	70°05.1	79°13.0
23	87°44.2	12.7'	06°50.9	-15.1'	58.1'	1' 113°48.4 62°42.6 60°12.4 17°07.2 37°18.0 40°45.1 70°37.5 79°44.7							
9 th	SD	= 16.1'	Mer. pas	s. 16:58		$Sun\;SD=15.7'$							

h Moon (10th Jul)

Lunar Distance	(nhiacts	with	largest	hourly	ID 4	(د +ام
Lunar Distance	loblects	WILII	iargest	HOULIV	LD U	entai

						Tana Distance (Especie men la gest men) 12 della)							
Sat	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Jupiter	+Procyon	+Sun
0	102°15.9	12.7'	S 07°06.1	-15.1'	58.1'	113°19.8	$62^{\circ}08.5$	59°48.2	16°33.7	37°52.0	41°18.7	71°09.8	80°16.4
1	116°47.6	12.7'	$07^{\circ}21.1$	-15.0'	58.1'	112°51.3	61°34.4	59°24.1	16°00.2	38°26.0	41°52.2	71°42.1	80°48.0
2	131°19.3	12.7'	07°36.2	-15.0'	58.0'	112°22.7	$61^{\circ}00.4$	59°00.1	15°26.8	39°00.0	42°25.7	72° 14.4	81°19.7
3	145°51.0	12.7'	$07^{\circ}51.1$	-14.9'	58.0'	111°54.1	60°26.5	58°36.3	14°53.5	39°33.9	42°59.1	72°46.7	81°51.2
4	160°22.7	12.7'	$08^{\circ}06.1$	-14.9'	58.0'	111°25.5	59°52.5	58°12.7	14°20.3	40°07.7	43°32.5	73° 18.9	82°22.8
5	174°54.4	12.7'	08°20.9	-14.8'	57.9'	110°56.9	59° 18.6	57°49.1	13°47.1	40°41.6	44°05.9	73°51.1	82°54.3
6	189°26.1	12.7'	S 08°35.7	-14.7'	57.9'	110°28.3	58° 44.8	57°25.7	13°14.1	41°15.4	44°39.2	74°23.3	83°25.7
7	203°57.8	12.7'	08°50.5	-14.7'	57.9'	109°59.7	$58^{\circ}11.0$	57°02.4	12°41.2	41°49.1	45°12.5	74°55.5	83°57.1
8	218°29.4	12.7'	09°05.2	-14.6'	57.8'	109°31.1	57° 37.2	56°39.3	12°08.4	42°22.8	45°45.7	75°27.6	84°28.5
9	233°01.1	12.7'	$09^{\circ}19.8$	-14.6'	57.8'	109°02.6	57°03.5	56°16.4	11°35.8	42°56.5	46°18.9	75°59.7	84°59.8
10	247°32.8	12.7'	09°34.4	-14.5'	57.8'	108°34.0	56°29.8	55°53.5	11°03.3	43°30.1	46°52.1	76°31.7	85°31.1
11	262°04.5	12.7'	09°48.9	-14.4'	57.7'	108°05.4	55°56.2	55°30.8	10°31.0	44°03.7	47°25.2	77°03.7	86°02.3
12	276°36.1	12.7'	S 10°03.3	-14.4'	57.7'	107°36.8	55°22.6	55°08.3	9°58.8	44°37.3	47°58.3	77°35.7	86°33.5
13	291°07.8	12.6'	$10^{\circ}17.7$	-14.3'	57.7'	107°08.2	54°49.0	54°45.9	9°26.8	45°10.8	48°31.3	78°07.7	87°04.7
14	305°39.4	12.6'	10°32.0	-14.2'	57.6'	106°39.7	54° 15.5	54°23.7	8°55.1	45°44.3	49°04.3	78°39.6	87°35.8
15	320°11.1	12.6'	10°46.2	-14.2'	57.6'	106°11.1	53°42.0	54°01.7	8°23.7	46°17.7	49°37.3	79° 11.5	88°06.9
16	334°42.7	12.6'	11°00.4	-14.1'	57.5'	105°42.6	53°08.6	53°39.8	7°52.5	46°51.1	50°10.2	79°43.4	88°37.9
17	349°14.3	12.6'	11° 14.5	-14.0'	57.5'	105°14.0	52°35.2	53°18.0	7°21.7	47°24.5	50°43.1	80° 15.2	89°08.9
18	3°45.9	12.6'	S 11°28.6	-14.0'	57.5'	104°45.5	52°01.8	52°56.4	6°51.4	47°57.8	51°15.9	80°47.0	89°39.9
19	18°17.5	12.6'	11°42.5	-13.9'	57.4'	104°17.0	51°28.5	52°35.0	6°21.6	48°31.0	51°48.7	81° 18.7	90°10.8
20	32°49.1	12.6'	$11^{\circ}56.4$	-13.8'	57.4'	103°48.5	50°55.2	52°13.8	5°52.5	49°04.3	52°21.5	81°50.5	90°41.7
21	47°20.6	12.5'	12° 10.2	-13.7'	57.4'	103°20.0	50°22.0	51°52.7	5°24.2	49°37.5	52°54.2	82°22.2	91°12.5
22	61°52.1	12.5'	12°24.0	-13.7'	57.3'	102°51.5	49°48.8	51°31.9		50°10.6	53°26.9	82°53.8	91°43.3
23	76°23.7	12.5'	12°37.6	-13.6'	57.3'	3' 102°23.0 49°15.6 51°11.2 50°43.8 53°59.6 83°25.5 92°14.1							
10 th	SD	= 15.8'	Mer. pas	s. 17:44		$Sun\;SD=15.7'$							

h Moon (11th Jul)

Lunar Distance	(objects with	largest hourly	/ LD delta)
----------------	---------------	----------------	-------------

Sun	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Antares	+Mars	+Regulus	+Jupiter	+Procyon
0	90°55.2	12.5'	S 12°51.2	-13.5'	57.3'		101°54.6	50°50.6	48° 42.5	24° 15.1	51°16.9	54°32.2	83°57.0
1	105°26.6	12.5'	13°04.8	-13.4'	57.2'		101°26.2	50°30.3	48°09.4	24°46.3	51°49.9	55°04.7	84°28.6
2	119°58.1	12.4'	13° 18.2	-13.4'	57.2'		100°57.7	50°10.1	47°36.4	25° 17.4	52°22.9	55°37.3	85°00.1
3	134°29.5	12.4'	13°31.6	-13.3'	57.2'		100°29.3	49°50.2	47°03.4	25°48.6	52°55.9	56°09.8	85°31.6
4	149°00.9	12.4'	13°44.9	-13.2'	57.1'		100°00.9	49°30.4	46°30.4	26° 19.7	53°28.8	56°42.2	86°03.1
5	163°32.3	12.4'	$13^{\circ}58.1$	-13.1'	57.1'		99°32.6	49°10.8	45° 57.4	26° 50.8	54°01.7	57°14.6	86°34.5
6	178°03.7	12.3'	S 14°11.2	-13.0'	57.1'		99°04.2	48°51.5	45°24.6	27°21.8	54°34.6	57°47.0	87°05.9
7	192°35.0	12.3'	14°24.2	-13.0'	57.0'		98°35.9	48°32.3	44°51.7	27°52.9	55°07.4	58°19.4	87°37.3
8	207°06.4	12.3'	14°37.2	-12.9'	57.0'		98°07.6	48°13.3	44°18.9	28°23.9	55°40.2	58°51.7	88°08.6
9	221°37.6	12.3'	$14^{\circ}50.1$	-12.8'	57.0'		97°39.3	47°54.6	43°46.1	28°54.9	56°12.9	59°23.9	88°39.9
10	236°08.9	12.2'	15°02.9	-12.7'	56.9'		97°11.0	47°36.0	43°13.3	29°25.9	56°45.7	59°56.2	89°11.1
11	250°40.1	12.2'	$15^{\circ}15.6$	-12.6'	56.9'		96°42.8	47°17.7	42°40.6	29°56.8	57°18.3	60°28.4	89°42.3
12	265°11.3	12.2'	S 15°28.2	-12.5'	56.9'		96°14.6	46°59.6	42°08.0	30°27.8	57°51.0	61°00.5	90°13.5
13	279°42.5	12.1'	15°40.7	-12.4'	56.9'		95°46.4	46°41.7	41°35.3	30°58.7	58°23.6	61°32.7	90°44.7
14	294°13.7	12.1'	15°53.2	-12.4'	56.8'		95°18.2	46°24.0	41°02.7	31°29.6	58°56.2	62°04.8	91°15.8
15	308°44.8	12.1'	$16^{\circ}05.5$	-12.3'	56.8'	119°49.2	94°50.0	46°06.6	40°30.1	32°00.4	59°28.7	62°36.8	91°46.9
16	323°15.9	12.1'	$16^{\circ}17.8$	-12.2'	56.8'	119°20.2	94°21.9	45°49.4	39°57.6	32°31.2	60°01.2	63°08.8	92°17.9
17	337°46.9	12.0'	16°30.0	-12.1'	56.7'	118°51.1	93°53.8	45°32.4	39°25.1	33°02.0	60°33.7	63°40.8	92°48.9
18	352°18.0	12.0'	S 16°42.1	-12.0'	56.7'	118°22.1	93°25.7	45°15.7	38°52.7	33°32.8	61°06.1	64°12.8	93°19.9
19	6°49.0	12.0'	$16^{\circ}54.1$	-11.9'	56.7'	117°53.0	92°57.6	44°59.2	38°20.2	34°03.5	61°38.5	64°44.7	93°50.9
20	21°19.9	11.9'	$17^{\circ}06.0$	-11.8'	56.6'	117°24.0	92°29.6	44°42.9	37°47.8	34°34.3	62°10.9	65°16.6	94°21.8
21	35°50.8	11.9'	$17^{\circ}17.8$	-11.7'	56.6'	116°54.9	92°01.6	44°26.9	37° 15.5	35°04.9	62°43.2	65°48.4	94°52.6
22	50°21.7	11.9'	17° 29.5	-11.6'	56.6'	116°25.8	91°33.6	44°11.2	36°43.1	35°35.6	63°15.5	66°20.3	95°23.5
23	64°52.6	11.8'	17°41.1	-11.5'	56.5'	115°56.8	91°05.7	43°55.7	36° 10.8	36°06.2	63°47.8	66°52.0	95°54.3
11 th	SD	= 15.6'	Mer. pas	s. 18:32									

Moon (12th Jul) Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Fomalhaut	-Deneb	-Altair	-Antares	+Spica	+Regulus	+Jupiter	+Procyon
0	79°23.4	11.8'	S 17°52.6	-11.4'	56.5'	115°27.8		90°37.7	35°38.6	10°36.6	64°20.0	67°23.8	96°25.1
1	93°54.2	11.7'	18°04.0	-11.3'	56.5'	114°58.7		90°09.8	35°06.4	11°07.6	64°52.2	67°55.5	96°55.8
2	108°24.9	11.7'	18°15.4	-11.2'	56.5'	114°29.7		89°42.0	34°34.2	11°38.7	65°24.4	68°27.2	97°26.5
3	122°55.7	11.7'	18°26.6	-11.1'	56.4'	114°00.6		89°14.1	34°02.0	12°09.8	65°56.5	68°58.8	97°57.2
4	137°26.3	11.6'	18°37.7	-11.0'	56.4'	113°31.6		88°46.3	33°29.9	12°41.0	66°28.6	69°30.5	98°27.8
5	151°57.0	11.6'	18°48.8	-10.9'	56.4'	113°02.6		88°18.5	32°57.8	13°12.2	67°00.7	70°02.1	98°58.4
6	166°27.6	11.6'	S 18°59.7	-10.8'	56.3'	112°33.5		87°50.8	32°25.7	13°43.5	67°32.7	70°33.6	99°29.0
7	180°58.1	11.5'	19°10.5	-10.7'	56.3'	112°04.5		87°23.1	31°53.7	14° 14.8	68°04.7	71°05.1	99°59.5
8	195°28.7	11.5'	19°21.2	-10.6'	56.3'	111°35.5		86°55.4	31°21.7	14°46.1	68°36.7	71°36.6	100°30.0
9	209°59.1	11.4'	19°31.9	-10.5'	56.2'	111°06.5		86°27.7	30°49.7	15° 17.5	69°08.6	72°08.1	101°00.4
10	224°29.6	11.4'	19°42.4	-10.4'	56.2'	110°37.5		86°00.1	30°17.8	15°48.8	69°40.6	72°39.5	101°30.9
11	239°00.0	11.4'	19°52.8	-10.3'	56.2'	110°08.5	107°04.5	85°32.5	29°45.9	16°20.2	70°12.4	73°10.9	102°01.3
12	253°30.4	11.3'	S 20°03.1	-10.2'	56.2'	109°39.5	106°49.4	85°04.9	29°14.0	16°51.5	70°44.3	73°42.3	102°31.6
13	268°00.7	11.3'	20°13.3	-10.1'	56.1'	109°10.6	106°34.3	84°37.4	28°42.1	17°22.9	71°16.1	74°13.6	103°01.9
14	282°31.0	11.2'	20°23.4	-10.0'	56.1'	108°41.6	106° 19.1	84°09.9	28°10.3	17°54.2	71°47.9	74°44.9	103°32.2
15	297°01.2	11.2'	20°33.4	-9.9'	56.1'	108°12.7	106°03.9	83°42.4	27°38.5	18°25.6	72°19.7	75°16.2	104°02.5
16	311°31.4	11.2'	20°43.2	-9.8'	56.1'	107°43.7	105°48.6	83°15.0	27°06.8	18°56.9	72°51.4	75°47.5	104°32.7
17	326°01.6	11.1'	20°53.0	-9.7'	56.0'	107°14.8	105°33.3	82°47.6	26°35.0	19°28.3	73°23.1	76°18.7	105°02.9
18	340°31.7	11.1'	S 21°02.7	-9.5'	56.0'	106°45.9	105°17.9	82°20.2	26°03.3	19°59.6	73°54.8	76°49.9	105°33.0
19	355°01.8	11.0'	21°12.2	-9.4'	56.0'	106°17.0	105°02.4	81°52.9	25°31.7	20°30.9	74°26.4	77°21.1	106°03.1
20	9°31.9	11.0'	21°21.6	-9.3'	55.9'	105°48.1	104°47.0	81°25.6	25°00.0	21°02.2	74°58.1	77°52.2	106°33.2
21	24°01.9	11.0'	21°31.0	-9.2'	55.9'	105°19.2	104°31.4	80°58.3	24°28.4	21°33.5	75°29.6	78°23.3	107°03.2
22	38°31.9	10.9'	21°40.2	-9.1'	55.9'	104°50.3	104°15.9	80°31.1	23°56.8	22°04.8	76°01.2	78°54.4	107°33.2
23	53°01.8	10.9'	21°49.3	-9.0'	55.9'	104°21.5	104°00.3	80°03.9	23°25.3	22°36.1	76°32.7	79°25.4	108°03.2
12 th	SD	= 15.4'	Mer. pas	s. 19:21									

Moon (13th Jul) h Lunar Distance (objects with largest hourly LD delta)

						Tanar Distance (especie with largest hearly 12 desta)							
Tue	GHA	ν	Dec	d	HP	-Fomalhaut	-Deneb	-Altair	-Antares	+Spica	+Mars	+Regulus	+Jupiter
0	67°31.7	10.8'	S 21°58.2	-8.9'	55.8'	103°52.6	103°44.6	79°36.8	22°53.7	23°07.3	48°43.3	77°04.3	79°56.5
1	82°01.5	10.8'	$22^{\circ}07.1$	-8.7'	55.8'	103°23.8	103°28.9	79°09.7	22°22.2	23°38.6	49°13.2	77°35.7	80°27.4
2	96°31.3	10.8'	$22^{\circ}15.9$	-8.6'	55.8'	102°55.0	103°13.2	78°42.6	21°50.8	24°09.8	49°43.1	78°07.2	80°58.4
3	111°01.1	10.7'	22° 24.5	-8.5'	55.8'	102°26.2	102°57.5	78°15.5	21°19.3	24°41.0	50°13.0	78°38.6	81°29.4
4	125°30.8	10.7'	22°33.0	-8.4'	55.7'	101°57.4	102°41.7	77°48.5	20°47.9	25°12.2	50°42.9	79°10.0	82°00.3
5	140°00.5	10.6'	22°41.4	-8.3'	55.7'	101°28.6	102°25.8	77°21.6	20°16.5	25°43.3	51°12.7	79°41.4	82°31.2
6	154°30.2	10.6'	S 22°49.7	-8.2'	55.7'	100°59.9	102°09.9	76°54.7	19°45.1	26°14.5	51°42.5	80°12.8	83°02.0
7	168°59.8	10.6'	22°57.8	-8.0'	55.7'	100°31.1	101°54.0	76°27.8	19°13.8	26°45.6	52°12.3	80°44.1	83°32.9
8	183°29.3	10.5'	23°05.9	-7.9'	55.6'	100°02.4	101°38.1	76°00.9	18°42.4	27°16.8	52°42.1	81°15.4	84°03.7
9	197°58.9	10.5'	23° 13.8	-7.8'	55.6'	99°33.7	101°22.1	75°34.1	18°11.1	27°47.9	53°11.8	81°46.7	84°34.5
10	212°28.4	10.5'	$23^{\circ}21.6$	-7.7'	55.6'	99°05.0	101°06.2	75°07.4	17°39.9	28°18.9	53°41.6	82°17.9	85°05.2
11	226°57.8	10.4'	$23^{\circ}29.3$	-7.6'	55.6'	98°36.3	100°50.1	74°40.7	17°08.6	28°50.0	54°11.3	82°49.1	85°36.0
12	241°27.2	10.4'	S 23°36.8	-7.4'	55.5'	98°07.6	100°34.1	74°14.0	16°37.4	29°21.0	54°40.9	83°20.3	86°06.7
13	255°56.6	10.3'	23°44.3	-7.3'	55.5'	97°39.0	100°18.0	73°47.3	16°06.2	29°52.1	55°10.6	83°51.5	86°37.4
14	270°26.0	10.3'	23°51.6	-7.2'	55.5'	97°10.3	100°01.9	73°20.8	15°35.0	30°23.1	55°40.2	84°22.6	87°08.0
15	284°55.3	10.3'	23°58.8	-7.1'	55.5'	96°41.7	99°45.8	72°54.2	15°03.9	30°54.1	56°09.8	84°53.8	87°38.7
16	299°24.6	10.2'	24°05.8	-6.9'	55.4'	96°13.1	99°29.6	72°27.7	14°32.8	31°25.0	56°39.4	85°24.9	88°09.3
17	313°53.8	10.2'	24° 12.8	-6.8'	55.4'	95°44.5	99°13.5	72°01.2	14°01.7	31°56.0	57°09.0	85°56.0	88°39.9
18	328°23.0	10.2'	S 24°19.6	-6.7'	55.4'	95°16.0	98°57.3	71°34.8	13°30.6	32°26.9	57°38.5	86°27.0	89°10.5
19	342°52.2	10.1'	24° 26.3	-6.6'	55.4'	94°47.4	98°41.0	71°08.5	12°59.5	32°57.8	58°08.0	86°58.0	89°41.0
20	357°21.3	10.1'	$24^{\circ}32.8$	-6.4'	55.4'	94°18.9	98°24.8	70°42.1	12°28.5	33°28.7	58°37.5	87°29.1	90°11.5
21	11°50.4	10.1'	24°39.3	-6.3'	55.3'	93°50.4	98°08.6	70°15.9	11°57.5	33°59.6	59°07.0	88°00.0	90°42.0
22	26°19.5	10.0'	24°45.6	-6.2'	55.3'	93°21.9	97°52.3	69°49.6	11°26.5	34°30.5	59°36.5	88°31.0	91°12.5
23	40°48.5	10.0'	$24^{\circ}51.7$	-6.0'	55.3'	92°53.4	97°36.0	69°23.4	10°55.5	35°01.3	60°05.9	89°02.0	91°43.0
13 th	SD	= 15.2'	Mer. pass	. 20:11									

h		Moor	n (14 th Ju	ıl)			Lunar Dis	tance (o	bjects wit	h largest	hourly l	LD delta)	
Wed	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	± Antares	+Spica	+Mars	+Regulus	+Jupiter
0	55°17.5	10.0'	S 24°57.8	-5.9'	55.3'	97°19.7	92°24.9	68°57.3	10°24.6	35°32.1	60°35.3	89°32.9	92°13.4
1	69°46.5	9.9'	25°03.7	-5.8'	55.3'	97°03.4	91°56.5	68°31.2	9°53.7	36°02.9	61°04.7	90°03.8	92°43.8
2	84°15.4	9.9'	25°09.5	-5.7'	55.2'	96°47.1	91°28.1	68°05.2	9°22.8	36°33.7	61°34.1	90°34.7	93°14.2
3	98°44.3	9.9'	25°15.2	-5.5'	55.2'	96°30.7	90°59.6	67°39.2	8°51.9	37°04.5	62°03.4	91°05.5	93°44.6
4	113°13.2	9.9'	25°20.7	-5.4'	55.2'	96°14.4	90°31.3	67°13.3	8°21.0	37°35.2	62°32.7	91°36.4	94°14.9
5	127°42.1	9.8'	$25^{\circ}26.1$	-5.3'	55.2'	95°58.0	90°02.9	66°47.4	7°50.2	38°06.0	63°02.0	92°07.2	94°45.2
6	142°10.9	9.8'	S 25°31.4	-5.1'	55.1'	95°41.6	89°34.5	66°21.6	7° 19.4	38°36.7	63°31.3	92°38.0	95°15.5
7	156°39.7	9.8'	25°36.5	-5.0'	55.1'	95°25.3	89°06.2	65°55.8	6°48.6	39°07.4	64°00.6	93°08.7	95°45.8
8	171°08.5	9.8'	25°41.5	-4.9'	55.1'	95°08.9	88°37.9	65°30.1	6° 17.8	39°38.0	64°29.9	93°39.5	96°16.1
9	185°37.2	9.7'	25°46.4	-4.7'	55.1'	94°52.5	88°09.6	65°04.4	5°47.0	40°08.7	64°59.1	94°10.2	96°46.3
10	200°06.0	9.7'	25°51.1	-4.6'	55.1'	94°36.1	87°41.3	64°38.8	5° 16.3	40°39.3	65°28.3	94°41.0	97°16.6
11	214°34.7	9.7'	25°55.7	-4.5'	55.0'	94°19.7	87°13.1	64°13.2	4°45.6	41°10.0	65°57.5	95°11.7	97°46.8
12	229°03.3	9.7'	S 26°00.2	-4.3'	55.0'	94°03.2	86°44.8	63°47.7	4° 14.9	41°40.6	66°26.7	95°42.3	98°17.0
13	243°32.0	9.6'	26°04.5	-4.2'	55.0'	93°46.8	86°16.6	63°22.3	3°44.2	42°11.2	66°55.8	96°13.0	98°47.1
14	258°00.6	9.6'	26°08.7	-4.1'	55.0'	93°30.4	85°48.4	62°56.9	3° 13.6	42°41.7	67°25.0	96°43.6	99°17.3
15	272°29.3	9.6'	26°12.8	-3.9'	55.0'	93°14.0	85°20.2	62°31.6	2°42.9	43°12.3	67°54.1	97°14.3	99°47.4
16	286°57.9	9.6'	$26^{\circ}16.7$	-3.8'	55.0'	92°57.6	84°52.1	62°06.3	2° 12.3	43°42.8	68°23.2	97°44.9	100°17.5
17	301°26.4	9.6'	26°20.5	-3.7'	54.9'	92°41.1	84°24.0	61°41.1	1°41.7	44°13.3	68°52.3	98°15.4	100°47.6
18	315°55.0	9.6'	S 26°24.2	-3.5'	54.9'	92°24.7	83°55.8	61°16.0	1°11.1	44°43.9	69°21.3	98°46.0	101°17.7
19	330°23.6	9.5'	26°27.7	-3.4'	54.9'	92°08.3	83°27.7	60°50.9	0°40.6	45°14.3	69°50.4	99°16.6	101°47.8
20	344°52.1	9.5'	$26^{\circ}31.1$	-3.3'	54.9'	91°51.9	82°59.7	60°25.9	0°10.3	45°44.8	70°19.4	99°47.1	102°17.8
21	359°20.6	9.5'	26°34.4	-3.1'	54.9'	91°35.4	82°31.6	60°00.9		46°15.3	70°48.4	100°17.6	102°47.8
22	13°49.1	9.5'	26°37.5	-3.0'	54.8'	91°19.0	82°03.6	59°36.0		46°45.7	71°17.4	100°48.1	103°17.8
23	28°17.6	9.5'	26°40.5	-2.9'	54.8'	91°02.6	81°35.6	59°11.2	1°21.6	$47^{\circ}16.1$	71°46.4	101°18.6	103°47.8
14 th	SD	= 15.1'	Mer. pass	. 21:03									

h Moon (15th Jul)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	+Antares	+Spica	+Mars	+Regulus	+Jupiter
0	42°46.1	9.5'	S 26°43.4	-2.7'	54.8'	90°46.2	81°07.6	58°46.5	1°52.1	47°46.6	72°15.4	101°49.0	104°17.8
1	57°14.6	9.5'	$26^{\circ}46.1$	-2.6'	54.8'	90°29.8	80°39.6	58°21.8	2°22.6	48°16.9	72°44.3	102°19.5	104°47.7
2	71°43.1	9.5'	26°48.7	-2.4'	54.8'	90°13.4	80°11.7	57° 57.2	2°53.0	48°47.3	73°13.3	102°49.9	105°17.7
3	86°11.6	9.5'	$26^{\circ}51.1$	-2.3'	54.8'	89°57.0	79°43.8	57°32.7	3°23.5	49°17.7	73°42.2	103°20.3	105°47.6
4	100°40.0	9.5'	26°53.4	-2.2'	54.7'	89°40.7	79°15.9	57°08.2	3°53.9	49°48.0	74°11.1	103°50.7	106°17.5
5	115°08.5	9.5'	26°55.6	-2.0'	54.7'	89°24.3	78°48.0	56°43.8	4°24.3	50°18.4	74°40.0	104°21.1	106°47.4
6	129°36.9	9.4'	S 26°57.6	-1.9'	54.7'	89°07.9	78°20.2	56° 19.5	4°54.7	50°48.7	75°08.8	104°51.5	107°17.3
7	144°05.4	9.4'	26°59.5	-1.8'	54.7'	88°51.6	77°52.3	55°55.3	5°25.0	51°19.0	75°37.7	105°21.8	107°47.1
8	158°33.8	9.4'	$27^{\circ}01.2$	-1.6'	54.7'	88°35.3	77°24.5	55°31.1	5°55.4	51°49.3	76°06.5	105°52.2	108°17.0
9	173°02.3	9.4'	$27^{\circ}02.9$	-1.5'	54.7'	88°19.0	76°56.7	55°07.0	6°25.7	52°19.6	76°35.3	106°22.5	108°46.8
10	187°30.7	9.5'	27°04.3	-1.3'	54.6'	88°02.6	76°29.0	54°43.0	6°56.1	52°49.8	77°04.2	106°52.8	109°16.6
11	201°59.2	9.5'	27°05.7	-1.2'	54.6'	87°46.4	76°01.2	54° 19.1	7°26.4	53°20.1	77°32.9	107°23.1	109°46.4
12	216°27.6	9.5'	S 27°06.9	-1.1'	54.6'	87°30.1	75°33.5	53°55.3	7°56.7	53°50.3	78°01.7	107°53.4	110°16.2
13	230°56.1	9.5'	27°08.0	-0.9'	54.6'	87°13.8	75°05.8	53°31.5	8°27.0	54°20.5	78°30.5	108°23.6	110°45.9
14	245°24.5	9.5'	27°08.9	-0.8'	54.6'	86°57.6	74°38.2	53°07.9	8°57.2	54°50.8	78°59.2	108°53.9	111°15.7
15	259°53.0	9.5'	27°09.7	-0.7'	54.6'	86°41.3	74°10.5	52°44.3	9°27.5	55°21.0	79°28.0	109°24.1	111°45.4
16	274°21.5	9.5'	$27^{\circ}10.3$	-0.5'	54.6'	86°25.1	73°42.9	52°20.8	9°57.7	55°51.1	79°56.7	109°54.3	112°15.2
17	288°50.0	9.5'	$27^{\circ}10.9$	-0.4'	54.5'	86°09.0	73°15.4	51°57.4	10°28.0	56°21.3	80°25.4	110°24.5	112°44.9
18	303°18.5	9.5'	S 27°11.3	-0.2'	54.5'	85°52.8	72°47.8	51°34.2	10°58.2	56°51.5	80°54.1	110°54.7	113°14.6
19	317°47.0	9.5'	$27^{\circ}11.5$	-0.1'	54.5'	85°36.6	72°20.3	51°11.0	11°28.4	57°21.6	81°22.8	111°24.9	113°44.2
20	332°15.5	9.5'	$27^{\circ}11.6$	0.0'	54.5'	85°20.5	71°52.7	50°47.9	11°58.6	57°51.7	81°51.5	111°55.1	114°13.9
21	346°44.1	9.6'	$27^{\circ}11.6$	0.2'	54.5'	85°04.4	71°25.3	50°24.9	12°28.8	58°21.9	82°20.1	112°25.2	114°43.6
22	1°12.6	9.6'	27°11.4	0.3'	54.5'	84°48.3	70°57.8	50°02.0	12°58.9	58°52.0	82°48.8	112°55.3	115°13.2
23	15°41.2	9.6'	$27^{\circ}11.1$	0.4'	54.5'	84°32.3	70°30.4	49°39.2	13°29.1	59°22.1	83°17.4	113°25.5	115°42.8
15 th	SD :	= 14.9'	Mer. pas	s. 21:55	5								

h Moon (16th Jul) Lunar Distance (objects with largest hourly LD delta)

$\overline{}$. (20 00									,	
Fri	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Antares	+Spica	+Regulus	+Jupiter
0	30°09.8	9.6'	S 27°10.7	0.6'	54.4'		84°16.2	70°03.0	49°16.5	13°59.2	59°52.2	113°55.6	116°12.5
1	44°38.4	9.6'	$27^{\circ}10.1$	0.7'	54.4'		84°00.2	69°35.6	48°53.9	14°29.3	60°22.2	114°25.7	116°42.1
2	59°07.0	9.6'	27°09.4	0.8'	54.4'		83°44.2	69°08.3	48°31.5	14°59.4	60°52.3	114°55.8	117°11.7
3	73°35.6	9.7'	27°08.6	1.0'	54.4'		83°28.3	68°41.0	48°09.1	15° 29.5	61°22.3	115°25.9	117°41.2
4	88°04.3	9.7'	27°07.6	1.1'	54.4'		83°12.4	68°13.7	47°46.9	15°59.6	61°52.4	115°55.9	118°10.8
5	102°33.0	9.7'	$27^{\circ}06.5$	1.2'	54.4'		82°56.5	67°46.4	47°24.7	16°29.7	62°22.4	116°26.0	118°40.4
6	117°01.7	9.7'	S 27°05.3	1.4'	54.4'	119°54.5	82°40.6	67°19.2	47°02.7	16°59.8	62°52.4	116°56.0	119°09.9
7	131°30.5	9.8'	27°03.9	1.5'	54.4'	119°24.9	82°24.8	66°52.0	46°40.9	17° 29.8	63°22.4	117°26.0	119°39.4
8	145°59.2	9.8'	27°02.4	1.6'	54.4'	118°55.3	82°08.9	66°24.8	46°19.1	17°59.9	63°52.4	117°56.1	
9	160°28.0	9.8'	27°00.8	1.8'	54.3'	118°25.7	81°53.2	65°57.7	45°57.5	18° 29.9	64°22.4	118°26.1	
10	174°56.9	9.9'	26°59.0	1.9'	54.3'	117°56.1	81°37.4	65°30.6	45°36.0	18° 59.9	64°52.4	118°56.1	
11	189°25.7	9.9'	$26^{\circ}57.1$	2.0'	54.3'	117°26.5	81°21.7	65°03.5	45°14.6	19°30.0	65°22.3	119°26.0	
12	203°54.6	9.9'	S 26°55.0	2.2'	54.3'	116°57.0	81°06.0	64°36.5	44°53.4	20°00.0	65°52.3	119°56.0	
13	218°23.5	10.0'	26°52.9	2.3'	54.3'	116°27.4	80°50.4	64°09.5	44°32.3	20°30.0	66°22.2		
14	232°52.5	10.0'	26°50.6	2.4'	54.3'	115°57.8	80°34.8	63°42.5	44°11.4	20°59.9	66° 52.2		
15	247°21.5	10.0'	26°48.1	2.6'	54.3'	115°28.3	80°19.2	63°15.5	43°50.6	21°29.9	67°22.1		
16	261°50.5	10.1'	26°45.6	2.7'	54.3'	114°58.8	80°03.7	62°48.6	43°29.9	21°59.9	67°52.0		
17	276°19.6	10.1'	26°42.9	2.8'	54.3'	114°29.2	79°48.2	62°21.8	43°09.4	22°29.8	68°21.9		
18	290°48.7	10.1'	S 26°40.1	3.0'	54.2'	113°59.7	79°32.8	61°54.9	42°49.1	22°59.8	68°51.8		
19	305°17.8	10.2'	26°37.1	3.1'	54.2'	113°30.2	79°17.3	61°28.1	42°28.9	23°29.7	69°21.7		
20	319°47.0	10.2'	26°34.0	3.2'	54.2'	113°00.7	79°02.0	61°01.4	42°08.9	23°59.6	69°51.6		
21	334°16.2	10.3'	26°30.8	3.3'	54.2'	112°31.2	78°46.6	60°34.6	41°49.0	24° 29.5	70°21.5		
22	348°45.5	10.3'	26°27.5	3.5'	54.2'	112°01.7	78°31.4	60°08.0	41°29.4	24°59.4	70°51.3		
23	3°14.8	10.3'	$26^{\circ}24.0$	3.6'	54.2'	111°32.2	78°16.1	59°41.3	41°09.8	25°29.3	71°21.2		
16 th	SD =	= 14.8′	Mer. pass	. 22:47									

h Moon (17 th Jul)	Lunar Distance (objects with largest hourly LD delta)
-------------------------------	---

Sat	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Antares	+Spica	+Arcturus	+Mars
0	17°44.1	10.4'	S 26°20.4	3.7'	54.2'	111°02.7	78°00.9	59°14.7	40°50.5	25°59.2	71°51.0	75°50.1	95°09.6
1	32°13.5	10.4'	$26^{\circ}16.7$	3.8'	54.2'	110°33.2	77°45.8	58°48.1	40°31.4	26°29.1	72°20.9	76° 13.9	95°37.9
2	46°42.9	10.5'	$26^{\circ}12.9$	4.0'	54.2'	110°03.7	77°30.7	58°21.6	40°12.4	26°59.0	72°50.7	76° 37.8	96°06.3
3	61°12.4	10.5'	26°08.9	4.1'	54.2'	109°34.3	77° 15.6	57°55.1	39°53.6	27°28.8	73°20.5	77°01.7	96°34.6
4	75°41.9	10.6'	26°04.8	4.2'	54.1'	109°04.8	77°00.6	57°28.7	39°35.0	27°58.7	73°50.3	77°25.6	97°02.9
5	90°11.5	10.6'	26°00.6	4.3'	54.1'	108°35.3		57°02.3	39°16.6	28°28.5	74°20.1	77° 49.5	97°31.3
6	104°41.1	10.7'	S 25°56.3	4.5'	54.1'	108°05.9		56°35.9	38°58.5	28°58.4	74°49.9	78° 13.5	97°59.6
7	119°10.8	10.7'	25°51.8	4.6'	54.1'	107°36.4		56°09.6	38°40.5	29°28.2	75° 19.7	78° 37.4	98°27.9
8	133°40.5	10.8'	25°47.2	4.7'	54.1'	107°07.0		55°43.3	38°22.7	29°58.0	75°49.5	79°01.4	98°56.2
9	148°10.3	10.8'	25°42.5	4.8'	54.1'	106°37.6		55°17.1	38°05.2	30°27.8	76° 19.2	79°25.3	99°24.5
10	162°40.1	10.9'	25°37.7	4.9'	54.1'	106°08.1		54°50.9	37°47.8	30°57.7	76°49.0	79°49.3	99°52.7
11	177°10.0	10.9'	$25^{\circ}32.8$	5.1'	54.1'	105°38.7		54°24.8	37°30.7	31°27.5	77°18.8	80°13.3	100°21.0
12	191°40.0	11.0'	S 25°27.7	5.2'	54.1'	105°09.3		53°58.7	37°13.9	31°57.2	77°48.5	80°37.3	100°49.3
13	206°09.9	11.0'	25°22.6	5.3'	54.1'	104°39.9		53°32.7	36°57.2	32°27.0	78° 18.3	81°01.3	101°17.5
14	220°40.0	11.1'	25° 17.3	5.4'	54.1'	104° 10.5		53°06.7	36°40.8	32°56.8	78°48.0	81°25.3	101°45.8
15	235°10.1	11.2'	25°11.9	5.5'	54.1'	103°41.1		52°40.8	36°24.7	33°26.6	79° 17.7	81°49.4	102°14.0
16	249°40.2	11.2'	25°06.3	5.6'	54.1'	103°11.7		52°14.9	36°08.8	33°56.4	79°47.5	82°13.4	102°42.3
17	264°10.4	11.3'	25°00.7	5.8'	54.1'	102°42.3		51°49.1	35°53.2	34°26.1	80°17.2	82°37.5	103°10.5
18	278°40.7	11.3'	S 24°54.9	5.9'	54.0'	102°12.9		51°23.3	35°37.8	34°55.9	80°46.9	83°01.5	103°38.7
19	293°11.0	11.4'	24°49.1	6.0'	54.0'	101°43.6		50°57.6	35°22.7	35°25.6	81°16.6	83°25.6	104°06.9
20	307°41.4	11.4'	24°43.1	6.1'	54.0'	101°14.2		50°32.0		35°55.4	81°46.3	83°49.6	104°35.1
21	322°11.8	11.5'	24°37.0	6.2'	54.0'	100°44.8		50°06.4		36°25.1	82°16.0	84°13.7	105°03.3
22	336°42.3	11.6'	24°30.8	6.3'	54.0'	100° 15.5		49°40.9		36°54.8	82°45.7	84°37.8	105°31.5
23	351°12.9	11.6'	24°24.5	6.4'	54.0'	99°46.1		49°15.4		37°24.5	83° 15.4	85°01.8	105°59.7
17 th	SD :	= 14.8′	Mer. pass	. 23:36									

Moon (18th Jul)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus	+Mars
0	5°43.5	11.7'	S 24°18.0	6.5'	54.0'	99°16.7	48°50.0	37°54.3	59°00.6	63°21.6	83°45.1	85°25.9	106°27.9
1	20°14.2	11.7'	$24^{\circ}11.5$	6.6'	54.0'	98°47.4	48°24.7	38°24.0	59°21.5	63°42.8	84°14.7	85°50.0	106°56.1
2	34°44.9	11.8'	24°04.8	6.8'	54.0'	98°18.0	47°59.4	38° 53.7	59°42.5	64°04.0	84°44.4	86° 14.1	107°24.3
3	49°15.7	11.9'	$23^{\circ}58.1$	6.9'	54.0'	97°48.7	47°34.3	39°23.4	60°03.6	64°25.2	85°14.1	86°38.2	107°52.4
4	63°46.6	11.9'	23°51.2	7.0'	54.0'	97°19.4	47°09.1	39°53.1	60°24.7	64°46.5	85°43.7	87°02.2	108°20.6
5	78°17.5	12.0'	23°44.3	7.1'	54.0'	96°50.0	46°44.1	40°22.8	60°45.9	65°07.9	86°13.4	87°26.3	108°48.7
6	92°48.5	12.0'	S 23°37.2	7.2'	54.0'	96°20.7	46°19.1	40°52.5	61°07.2	65°29.3	86°43.0	87°50.4	109°16.9
7	107°19.5	12.1'	23°30.0	7.3'	54.0'	95°51.4	45°54.2	41°22.2	61°28.5	65°50.8	87° 12.7	88° 14.5	109°45.0
8	121°50.6	12.2'	23°22.7	7.4'	54.0'	95°22.1	45°29.4	41°51.8	61°49.9	66°12.3	87°42.3	88°38.6	110°13.2
9	136°21.8	12.2'	23° 15.3	7.5'	54.0'	94°52.7	45°04.6	42°21.5	62°11.3	66°33.9	88°11.9	89°02.7	110°41.3
10	150°53.0	12.3'	23°07.9	7.6'	54.0'	94°23.4	44°40.0	42°51.2	62°32.9	66°55.5	88°41.6	89°26.7	111°09.4
11	165°24.3	12.4'	23°00.3	7.7'	54.0'	93°54.1	44°15.4	43°20.8	62°54.4	67°17.2	89°11.2	89°50.8	111°37.5
12	179°55.7	12.4'	S 22°52.6	7.8'	54.0'	93°24.8	43°50.9	43°50.5	63°16.1	67°38.9	89°40.8	90°14.9	112°05.7
13	194°27.1	12.5'	22°44.8	7.9'	54.0'	92°55.5	43°26.5	44°20.2	63°37.8	68°00.6	90°10.4	90°39.0	112°33.8
14	208°58.6	12.5'	22°36.9	8.0'	53.9'	92°26.2	43°02.2	44°49.8	63°59.5	68°22.4	90°40.0	91°03.0	113°01.9
15	223°30.1	12.6'	22°28.9	8.1'	53.9'	91°56.9	42°38.0	45° 19.5	64°21.3	68°44.3	91°09.7	91°27.1	113°30.0
16	238°01.7	12.7'	22°20.8	8.2'	53.9'	91°27.6	42°13.9	45°49.1	64°43.2	69°06.2	91°39.3	91°51.1	113°58.1
17	252°33.4	12.7'	22° 12.7	8.3'	53.9'	90°58.3	41°49.8	46° 18.8	65°05.1	69°28.1	92°08.9	92°15.2	114°26.2
18	267°05.1	12.8'	S 22°04.4	8.4'	53.9'	90°29.0	41°25.9	46°48.4	65°27.0	69°50.1	92°38.5	92°39.2	114°54.3
19	281°36.9	12.9'	$21^{\circ}56.0$	8.5'	53.9'	89°59.8	41°02.1	47° 18.0	65°49.1	70°12.1	93°08.1	93°03.3	115°22.3
20	296°08.8	12.9'	$21^{\circ}47.5$	8.6'	53.9'	89°30.5	40°38.4	47° 47.7	66°11.1	70°34.1	93°37.7	93°27.3	115°50.4
21	310°40.7	13.0'	21°39.0	8.6'	53.9'	89°01.2	40°14.8	48° 17.3	66°33.2	70°56.2	94°07.3	93°51.3	116°18.5
22	325°12.7	13.1'	21°30.3	8.7'	53.9'	88°31.9	39°51.3	48° 46.9	66°55.4	71°18.4	94°36.8	94° 15.3	116°46.6
23	339°44.7	13.1'	21°21.6	8.8'	53.9'	88°02.6	39°27.9	49°16.6	67°17.6	71°40.5	95°06.4	94°39.3	117°14.6
18 th	SD	= 14.7'	Mer. pas	s:-									

h		Moor	า (19 th Jเ	ıl)			Lunar	Distance (objects w	ith largest h	ourly LD c	lelta)	
Mon	GHA	ν	Dec	d	HP	-Aldebaran	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Arcturus	+Spica	+Mars
0	354°16.9	13.2'	S 21°12.8	8.9'	53.9'		87°33.4	39°04.7	49°46.2	67°39.8	95°03.3	95°36.0	117°42.7
1	8°49.0	13.2'	21°03.8	9.0'	53.9'		87°04.1	38°41.6	50°15.8	68°02.1	95°27.3	96°05.6	118°10.8
2	23°21.3	13.3'	20°54.8	9.1'	53.9'		86°34.8	38° 18.6	50°45.4	68°24.5	95°51.3	96°35.2	118°38.8
3	37°53.6	13.4'	20°45.7	9.2'	53.9'		86°05.6	37°55.7	51°15.1	68°46.8	96°15.3	97°04.8	119°06.9
4	52°26.0	13.4'	20°36.6	9.3'	53.9'		85°36.3	37°33.0	51°44.7	69°09.3	96°39.2	97°34.3	119°34.9
5	66°58.4	13.5'	20°27.3	9.4'	53.9'		85°07.1	37°10.4	52°14.3	69°31.7	97°03.2	98°03.9	
6	81°30.9	13.6'	S 20°17.9	9.4'	53.9'		84°37.8	36° 47.9	52°43.9	69°54.2	97°27.1	98°33.5	
7	96°03.4	13.6'	20°08.5	9.5'	53.9'		84°08.5	36° 25.6	53°13.5	70°16.8	97°51.0	99°03.0	
8	110°36.0	13.7'	$19^{\circ}59.0$	9.6'	53.9'		83°39.3	36°03.5	53°43.1	70°39.3	98°14.9	99°32.6	
9	125°08.7	13.7'	19°49.4	9.7'	53.9'		83°10.0	35°41.5	54°12.7	71°01.9	98°38.8	100°02.2	
10	139°41.5	13.8'	19°39.7	9.8'	53.9'		82°40.8	35° 19.6	54°42.3	71°24.6	99°02.7	100°31.7	
11	154°14.3	13.9'	19°29.9	9.8'	53.9'		82°11.5	34°58.0	55°11.9	71°47.3	99°26.5	101°01.3	
12	168°47.1	13.9'	S 19°20.1	9.9'	53.9'		81°42.3	34° 36.5	55°41.5	72°10.0	99°50.4	101°30.9	
13	183°20.0	14.0'	$19^{\circ}10.1$	10.0'	53.9'		81°13.0	34° 15.2	56°11.1	72°32.7	100°14.2	102°00.4	
14	197°53.0	14.0'	$19^{\circ}00.1$	10.1'	53.9'		80°43.8	33°54.0	56°40.8	72°55.5	100°38.0	102°30.0	
15	212°26.1	14.1'	$18^{\circ}50.0$	10.2'	53.9'		80°14.5	33°33.1	57°10.4	73°18.3	101°01.8	102°59.6	
16	226°59.2	14.2'	18°39.9	10.2'	53.9'		79°45.3	33° 12.3	57°40.0	73°41.1	101°25.6	103°29.1	
17	241°32.3	14.2'	18°29.6	10.3'	53.9'		79°16.1	32°51.8	58°09.6	74°04.0	101°49.4	103°58.7	
18	256°05.6	14.3'	S 18°19.3	10.4'	53.9'		78°46.8	32°31.4	58°39.2	74°26.9	102°13.1	104°28.2	
19	270°38.8	14.3'	18°08.9	10.5'	53.9'		78°17.6	32°11.3	59°08.8	74°49.9	102°36.8	104°57.8	
20	285°12.2	14.4'	17°58.5	10.5'	53.9'		77°48.3	31°51.4	59°38.4	75°12.8	103°00.5	105°27.4	
21	299°45.6	14.4'	17°48.0	10.6'	53.9'	119°49.1	77°19.1	31°31.7	60°08.0	75°35.8	103°24.2	105°56.9	
22	314°19.0	14.5'	17°37.3	10.7'	53.9'	119°20.1	76°49.9	31°12.2	60°37.6	75°58.8	103°47.8	106°26.5	
23	328°52.5	14.6'	17°26.7	10.7'	53.9'	118°51.1	76°20.6	30°53.0	61°07.2	76°21.8	104°11.5	106°56.0	
19 th	SD	= 14.7'	Mer. pass	5 00:24				-					

		(aath	
h	Moon	(2000	Tril)

h Moon (20th Jul) Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Capella	-Rigel	-Aldebaran	-Saturn	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	343°26.1	14.6'	S 17°15.9	10.8'	53.9'		119°51.7	118°22.1	75°51.4	61°36.8	76° 44.9	104°35.1	107°25.6
1	357°59.7	14.7'	$17^{\circ}05.1$	10.9'	53.9'		119°29.6	117°53.1	75°22.1	62°06.4	77° 08.0	104°58.7	107°55.2
2	12°33.4	14.7'	16°54.2	10.9'	53.9'		119°07.4	117°24.1	74°52.9	62°36.0	77°31.1	105°22.2	108°24.7
3	27°07.1	14.8'	16°43.3	11.0'	53.9'		118°45.2	116°55.0	74°23.7	63°05.6	77°54.2	105°45.8	108°54.3
4	41°40.9	14.8'	16°32.3	11.1'	53.9'		118°22.9	116°26.0	73°54.4	63°35.2	78° 17.4	106°09.3	109°23.9
5	56°14.7	14.9'	$16^{\circ}21.2$	11.1'	53.9'		118°00.6	115°57.0	73°25.2	64°04.8	78°40.6	106°32.8	109°53.4
6	70°48.6	14.9'	S 16°10.0	11.2'	53.9'		117°38.2	115°27.9	72°55.9	64°34.4	79°03.8	106° 56.2	110°23.0
7	85°22.5	15.0'	15°58.8	11.3'	53.9'		117°15.7	114°58.9	72°26.7	65°04.1	79°27.0	107° 19.7	110°52.6
8	99°56.5	15.0'	15°47.6	11.3'	53.9'		116°53.2	114°29.8	71°57.5	65°33.7	79°50.2	107°43.1	111°22.1
9	114°30.6	15.1'	15°36.2	11.4'	54.0'		116°30.6	114°00.7	71°28.2	66°03.3	80°13.5	108°06.4	111°51.7
10	129°04.7	15.1'	15°24.8	11.5'	54.0'		116°08.0	113°31.7	70°59.0	66°32.9	80°36.7	108°29.8	112°21.3
11	143°38.8	15.2'	$15^{\circ}13.4$	11.5'	54.0'		115°45.3	113°02.6	70°29.7	67°02.5	81°00.0	108°53.1	112°50.8
12	158°13.0	15.2'	S 15°01.8	11.6'	54.0'		115°22.6	112°33.5	70°00.5	67°32.2	81°23.4	109° 16.4	113°20.4
13	172°47.2	15.3'	14°50.3	11.6'	54.0'		114°59.8	112°04.4	69°31.2	68°01.8	81°46.7	109°39.6	113°50.0
14	187°21.5	15.3'	14°38.6	11.7'	54.0'		114°37.0	111°35.3	69°02.0	68°31.4	82°10.0	110°02.9	114°19.6
15	201°55.9	15.4'	$14^{\circ}26.9$	11.8'	54.0'	119°59.1	114°14.1	111°06.2	68°32.8	69°01.1	82°33.4	110°26.0	114°49.2
16	216°30.2	15.4'	14° 15.2	11.8'	54.0'	119°31.6	113°51.2	110°37.1	68°03.5	69°30.7	82°56.8	110°49.2	115°18.8
17	231°04.7	15.5'	14°03.4	11.9'	54.0'	119°04.1	113°28.2	110°08.0	67°34.3	70°00.3	83°20.2	111°12.3	115°48.4
18	245°39.1	15.5'	S 13°51.5	11.9'	54.0'	118°36.5	113°05.2	109°38.8	67°05.0	70°30.0	83°43.6	111°35.4	116°17.9
19	260°13.6	15.6'	13°39.6	12.0'	54.0'	118°08.9	112°42.1	109°09.7	66°35.8	70°59.6	84°07.0	111°58.4	116°47.5
20	274°48.2	15.6'	13°27.6	12.0'	54.0'	117°41.3	112°19.0	108°40.6	66°06.5	71°29.3	84°30.4	112°21.4	117°17.1
21	289°22.8	15.6'	$13^{\circ}15.6$	12.1'	54.0'	117°13.7	111°55.8	108°11.4	65°37.3	71°58.9	84°53.8	112°44.4	117°46.8
22	303°57.4	15.7'	$13^{\circ}03.5$	12.1'	54.0'	116°46.1	111°32.6	107°42.3	65°08.0	72°28.6	85° 17.3	113°07.3	118°16.4
23	318°32.1	15.7'	12°51.4	12.2'	54.0'	116°18.4	111°09.4	107°13.1	64°38.7	72°58.3	85°40.8	113°30.2	118°46.0
20 th	SD	= 14.7'	Mer. pass	s. 01:08			-				-	-	

h Moon (21st	Jul)	
--------------	------	--

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Antares	+Rigil Kent.	+Hadar	+Arcturus
0	333°06.9	15.8'	S 12°39.2	12.2'	54.0'		115°50.7	106°43.9	64°09.5	73°27.9	86°04.3	90°15.4	113°53.0
1	347°41.6	15.8'	12°27.0	12.3'	54.0'		115°23.0	106°14.8	63°40.2	73°57.6	86°27.7	90°38.5	114° 15.8
2	2°16.4	15.8'	12°14.7	12.3'	54.0'		114°55.3	105°45.6	63° 10.9	74°27.3	86°51.2	91°01.6	114°38.6
3	16°51.3	15.9'	$12^{\circ}02.4$	12.4'	54.0'		114°27.5	105° 16.4	62°41.7	74°57.0	87°14.7	91°24.6	115°01.3
4	31°26.2	15.9'	$11^{\circ}50.0$	12.4'	54.0'		113°59.8	104°47.2	62°12.4	75°26.7	87°38.3	91°47.7	115°24.0
5	46°01.1	16.0'	11°37.6	12.5'	54.1'		113°32.0	104°18.0	61°43.1	75°56.3	88°01.8	92°10.8	115°46.6
6	60°36.0	16.0'	S 11°25.1	12.5'	54.1'		113°04.2	103°48.8	61°13.9	76°26.0	88°25.3	92°33.9	116°09.1
7	75°11.0	16.0'	$11^{\circ}12.6$	12.6'	54.1'		112°36.3	103° 19.6	60°44.6	76°55.7	88°48.9	92°56.9	116°31.7
8	89°46.0	16.1'	$11^{\circ}00.0$	12.6'	54.1'		112°08.5	102°50.3	60° 15.3	77°25.5	89°12.4	93°20.0	116°54.1
9	104°21.1	16.1'	10°47.4	12.6'	54.1'		111°40.6	102°21.1	59°46.0	77°55.2	89°36.0	93°43.1	117° 16.5
10	118°56.2	16.1'	10°34.8	12.7'	54.1'	119°54.0	111°12.8	101°51.9	59° 16.7	78°24.9	89°59.5	94°06.2	117°38.9
11	133°31.3	16.2'	$10^{\circ}22.1$	12.7'	54.1'	119°26.6	110°44.9	101°22.6	58° 47.4	78°54.6	90°23.1	94°29.2	118°01.2
12	148°06.4	16.2'	S 10°09.4	12.8'	54.1'	118°59.1	110°16.9	100°53.4	58° 18.2	79°24.4	90°46.6	94°52.3	118° 23.5
13	162°41.6	16.2'	09°56.6	12.8'	54.1'	118°31.6	109°49.0	100°24.1	57°48.9	79°54.1	91°10.2	95° 15.4	118° 45.7
14	177°16.8	16.2'	09°43.8	12.8'	54.1'	118°04.1	109°21.1	99°54.8	57° 19.6	80°23.9	91°33.8	95°38.4	119°07.8
15	191°52.1	16.3'	09°31.0	12.9'	54.1'	117°36.6	108°53.1	99°25.5	56°50.3	80°53.6	91°57.4	96°01.5	119°29.9
16	206°27.3	16.3'	$09^{\circ}18.1$	12.9'	54.1'	117°09.0	108°25.1	98°56.2	56°21.0	81°23.4	92°20.9	96°24.5	119°51.9
17	221°02.6	16.3'	09°05.2	13.0'	54.2'	116°41.4	107°57.1	98°26.9	55°51.7	81°53.2	92°44.5	96°47.6	
18	235°38.0	16.3'	S 08°52.2	13.0'	54.2'	116°13.8	107°29.1	97°57.6	55°22.3	82°22.9	93°08.1	97° 10.6	
19	250°13.3	16.4'	08°39.2	13.0'	54.2'	115°46.1	107°01.0	97°28.3	54°53.0	82°52.7	93°31.7	97°33.6	İ
20	264°48.7	16.4'	08°26.2	13.1'	54.2'	115° 18.5	106°33.0	96°59.0	54°23.7	83°22.5	93°55.3	97° 56.6	
21	279°24.1	16.4'	$08^{\circ}13.1$	13.1'	54.2'	114°50.8	106°04.9	96°29.6	53°54.4	83°52.3	94°18.9	98° 19.7	
22	293°59.5	16.4'	0.00°	13.1'	54.2'	114°23.0	105°36.8	96°00.3	53°25.1	84°22.1	94°42.5	98°42.7	
23	308°34.9	16.5'	07°46.9	13.2'	54.2'	113°55.3	105°08.7	95°30.9	52°55.7	84°52.0	95°06.0	99°05.7	
21 st	SD	= 14.7'	Mer. pass	s. 01:51									

Moon (22nd Jul)

Lunar Distance (objects with largest hourly LD delta)

h		Moon	ι (22 nd Jι	ıl)			Lunar D	istance (ol	ojects wi	th larges	t hourly L	.D delta)	
Thu	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar
0	323°10.4	16.5'	S 07°33.7	13.2'	54.2'	113°27.5	104°40.6	95°01.6	52°26.4	41°35.5	85°21.8	95°29.6	99°28.7
1	337°45.8	16.5'	07°20.5	13.2'	54.2'	112°59.7	104°12.5	94°32.2	51°57.1	41°55.2	85°51.6	95°53.2	99°51.6
2	352°21.3	16.5'	07°07.3	13.3'	54.2'	112°31.9	103°44.3	94°02.8	51°27.7	42°15.1	86°21.5	96°16.8	100°14.6
3	6°56.8	16.5'	06°54.0	13.3'	54.3'	112°04.1	103°16.2	93°33.4	50°58.4	42°35.1	86°51.3	96°40.4	100°37.5
4	21°32.3	16.5'	06°40.7	13.3'	54.3'	111°36.2	102°48.0	93°04.0	50°29.1	42°55.3	87°21.2	97°03.9	101°00.5
5	36°07.9	16.6'	06°27.4	13.3'	54.3'	111°08.3	102°19.8	92°34.6	49°59.7	43°15.6	87°51.1	97°27.5	101°23.4
6	50°43.4	16.6'	S 06°14.1	13.4'	54.3'	110°40.4	101°51.6	92°05.2	49°30.4	43°36.1	88°21.0	97°51.1	101°46.3
7	65°19.0	16.6'	06°00.7	13.4'	54.3'	110°12.5	101°23.3	91°35.7	49°01.0	43°56.8	88°50.9	98°14.6	102°09.2
8	79°54.6	16.6'	05°47.3	13.4'	54.3'	109°44.5	100°55.1	91°06.3	48°31.6	44°17.6	89°20.8	98°38.2	102°32.1
9	94°30.2	16.6'	05°33.9	13.5'	54.3'	109°16.6	100°26.8	90°36.8	48°02.3	44°38.5	89°50.7	99°01.7	102°55.0
10	109°05.8	16.6'	05°20.4	13.5'	54.3'	108°48.6	99°58.5	90°07.4	47° 32.9	44°59.6	90°20.6	99°25.3	103°17.8
11	123°41.4	16.6'	05°07.0	13.5'	54.3'	108°20.5	99°30.2	89°37.9	47°03.5	45°20.8	90°50.6	99°48.8	103°40.7
12	138°17.0	16.6'	S 04°53.5	13.5'	54.4'	107°52.5	99°01.9	89°08.4	46°34.2	45°42.2	91°20.5	100°12.3	104°03.5
13	152°52.6	16.6'	04°39.9	13.5'	54.4'	107°24.4	98°33.6	88°38.9	46°04.8	46°03.7	91°50.5	100°35.8	104°26.3
14	167°28.3	16.6'	04°26.4	13.6'	54.4'	106°56.4	98°05.3	88°09.4	45°35.4	46°25.3	92°20.5	100°59.3	104°49.1
15	182°03.9	16.6'	04°12.8	13.6'	54.4'	106°28.3	97°36.9	87°39.9	45°06.0	46°47.0	92°50.5	101°22.8	105°11.8
16	196°39.6	16.6'	03°59.3	13.6'	54.4'	106°00.1	97°08.5	87°10.3	44°36.6	47°08.9	93°20.5	101°46.3	105°34.6
17	211°15.2	16.6'	03°45.6	13.6'	54.4'	105°32.0	96°40.1	86°40.8	44°07.2	47°30.9	93°50.5	102°09.8	105°57.3
18	225°50.9	16.7'	S 03°32.0	13.6'	54.4'	105°03.8	96°11.7	86°11.2	43°37.8	47°53.0	94°20.5	102°33.3	106°20.0
19	240°26.5	16.7'	03°18.4	13.7'	54.5'	104°35.6	95°43.3	85°41.6	43°08.4	48°15.3	94°50.6	102°56.7	106°42.7
20	255°02.2	16.7'	03°04.7	13.7'	54.5'	104°07.4	95°14.9	85°12.0	42°39.0	48°37.6	95°20.6	103°20.1	107°05.3
21	269°37.8	16.6'	$02^{\circ}51.0$	13.7'	54.5'	103°39.2	94°46.4	84°42.4	42°09.6	49°00.1	95°50.7	103°43.6	107°27.9
22	284°13.5	16.6'	02°37.3	13.7'	54.5'	103°11.0	94°18.0	84°12.8	41°40.2	49°22.6	96°20.8	104°07.0	107°50.5
23	298°49.1	16.6'	02°23.6	13.7'	54.5'	102°42.7	93°49.5	83°43.2	41°10.8	49°45.3	96°50.9	104°30.4	108°13.1
22 nd	SD	= 14.8'	Mer. pass	s. 02:31									

Moon (23rd Jul)

Fri	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar
0	313°24.7	16.6'	S 02°09.9	13.7'	54.5'	102°14.4	93°21.0	83°13.6	40°41.4	50°08.1	97°21.0	104°53.7	108°35.7
1	328°00.4	16.6'	$01^{\circ}56.1$	13.8'	54.5'	101°46.1	92°52.5	82°43.9	40°12.0	50°31.0	97°51.1	105°17.1	108°58.2
2	342°36.0	16.6'	01°42.4	13.8'	54.6'	101° 17.8	92°24.0	82°14.2	39°42.6	50°54.0	98°21.3	105°40.4	109°20.7
3	357°11.6	16.6'	01°28.6	13.8'	54.6'	100°49.4	91°55.4	81°44.6	39°13.2	51° 17.1	98°51.4	106°03.8	109°43.1
4	11°47.3	16.6'	$01^{\circ}14.8$	13.8'	54.6'	100°21.0	91°26.9	81°14.9	38°43.8	51°40.3	99°21.6	106°27.1	110°05.5
5	26°22.9	16.6'	$01^{\circ}01.0$	13.8'	54.6'	99°52.6	90°58.3	80°45.2	38°14.4	52°03.6	99°51.8	106°50.4	110°27.9
6	40°58.5	16.6'	S 00°47.2	13.8'	54.6'	99°24.2	90°29.7	80°15.4	37°45.0	52°27.0	100°22.0	107°13.6	110°50.3
7	55°34.1	16.6'	00°33.4	13.8'	54.6'	98° 55.8	90°01.1	79°45.7	37°15.5	52°50.4	100°52.2	107°36.9	111°12.6
8	70°09.6	16.6'	$00^{\circ}19.6$	13.8'	54.7'	98°27.4	89°32.5	79°16.0	36°46.1	53°14.0	101°22.4	108°00.1	111°34.9
9	84°45.2	16.5'	S 00°05.7	13.8'	54.7'	97° 58.9	89°03.8	78°46.2	36°16.7	53°37.7	101°52.7	108°23.3	111°57.2
10	99°20.7	16.5'	N00°08.1	13.9'	54.7'	97°30.4	88°35.2	78°16.4	35°47.3	54°01.4	102°23.0	108°46.5	112°19.4
11	113°56.3	16.5'	$00^{\circ}21.9$	13.9'	54.7'	97°01.9	88°06.5	77°46.6	35°17.9	54°25.3	102°53.3	109°09.6	112°41.6
12	128°31.8	16.5'	N00°35.8	13.9'	54.7'	96°33.3	87°37.8	77°16.8	34°48.5	54°49.2	103°23.6	109°32.7	113°03.7
13	143°07.3	16.5'	00°49.7	13.9'	54.8'	96°04.8	87°09.1	76°47.0	34°19.1	55° 13.2	103°53.9	109°55.8	113°25.8
14	157°42.7	16.5'	01°03.5	13.9'	54.8'	95°36.2	86°40.4	76°17.1	33°49.7	55°37.3	104°24.2	110°18.9	113°47.9
15	172°18.2	16.4'	$01^{\circ}17.4$	13.9'	54.8'	95°07.6	86°11.7	75°47.3	33°20.3	56°01.5	104°54.6	110°42.0	114°09.9
16	186°53.6	16.4'	01°31.3	13.9'	54.8'	94°39.0	85°42.9	75°17.4	32°50.9	56°25.7	105°24.9	111°05.0	114°31.9
17	201°29.1	16.4'	01°45.2	13.9'	54.8'	94°10.4	85°14.2	74°47.5	32°21.5	56°50.1	105°55.3	111°28.0	114°53.8
18	216°04.4	16.4'	$N01^{\circ}59.0$	13.9'	54.8'	93°41.7	84°45.4	74°17.6	31°52.2	57° 14.5	106°25.8	111°50.9	115° 15.7
19	230°39.8	16.3'	$02^{\circ}12.9$	13.9'	54.9'	93°13.1	84°16.6	73°47.7	31°22.8	57°39.0	106°56.2	112°13.8	115°37.5
20	245°15.1	16.3'	02°26.8	13.9'	54.9'	92°44.4	83°47.8	73°17.7	30°53.5	58°03.5	107°26.6	112°36.7	115°59.3
21	259°50.5	16.3'	$02^{\circ}40.7$	13.9'	54.9'	92° 15.7	83°19.0	72°47.8	30°24.1	58°28.2	$107^{\circ}57.1$	112°59.6	116°21.1
22	274°25.7	16.3'	$02^{\circ}54.6$	13.9'	54.9'	91°46.9	82°50.2	72°17.8	29°54.8	58° 52.9	108°27.6	113°22.4	116°42.8
23	289°01.0	16.2'	03°08.5	13.9'	54.9'	91°18.2	82°21.3	71°47.8	29°25.5	59° 17.7	108°58.1	113°45.2	117°04.4
23 rd	SD	$=14.9^{\prime}$	Mer. pass	. 03:12		· ·						·	

h Moon (24th Jul)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Aldebaran	-Saturn	+Fomalhaut	+Altair	+Antares	+Rigil Kent.
0	303°36.2	16.2'	N03°22.3	13.9'	55.0'	116°46.8		71°17.8	28°56.2	35°09.5	59°42.5	109°28.7	114°07.9
1	318°11.4	16.2'	03°36.2	13.9'	55.0'	116°18.0		70°47.8	28°26.9	35°32.0	60°07.5	109°59.2	114°30.6
2	332°46.6	16.1'	03°50.1	13.9'	55.0'	115°49.1		70°17.8	27°57.6	35°54.6	60°32.5	110°29.8	114°53.3
3	347°21.7	16.1'	04°04.0	13.9'	55.0'	115°20.3		69°47.7	27°28.4	36°17.5	60°57.5	111°00.4	115°15.9
4	1°56.8	16.1'	04°17.8	13.9'	55.1'	114°51.4	111°25.2	69°17.6	26°59.2	36°40.5	61°22.7	111°31.0	115°38.5
5	16°31.8	16.0'	04°31.7	13.8'	55.1'	114°22.4	110°54.7	68°47.5	26°30.0	37°03.6	61°47.9	112°01.6	116°01.1
6	31°06.9	16.0'	N 04°45.5	13.8'	55.1'	113°53.4	110°24.1	68°17.4	26°00.8	37°27.0	62°13.1	112°32.3	116°23.6
7	45°41.8	15.9'	04°59.4	13.8'	55.1'	113°24.4	109°53.6	67°47.3	25°31.7	37°50.5	62°38.5	113°03.0	116°46.0
8	60°16.8	15.9'	05°13.2	13.8'	55.1'	112°55.4	109°23.0	67°17.1	25°02.6	38°14.2	63°03.8	113°33.7	117°08.4
9	74°51.7	15.9'	05°27.0	13.8'	55.2'	112°26.3	108°52.4	66°47.0	24°33.5	38°38.0	63°29.3	114°04.4	117°30.8
10	89°26.5	15.8'	05°40.8	13.8'	55.2'	111°57.2	108°21.8	66°16.8	24°04.5	39°02.0	63°54.8	114°35.2	117°53.1
11	104°01.3	15.8'	05°54.6	13.8'	55.2'	111°28.0	107°51.1	65°46.6	23°35.5	39°26.2	64°20.4	115°06.0	118°15.3
12	118°36.1	15.7'	N 06°08.4	13.8'	55.2'	110°58.9	107°20.5	65°16.4	23°06.5	39°50.4	64°46.0	115°36.8	118°37.5
13	133°10.8	15.7'	06°22.2	13.8'	55.3'	110°29.6	106°49.8	64°46.1	22°37.6	40°14.9	65°11.7	116°07.6	118°59.6
14	147°45.5	15.6'	06°35.9	13.7'	55.3'	110°00.4	106° 19.1	64°15.8	22°08.8	40°39.4	65°37.5	116°38.4	119°21.7
15	162°20.1	15.6'	06°49.7	13.7'	55.3'	109°31.1	105°48.3	63°45.6	21°40.0	41°04.2	66°03.3	117°09.3	119°43.8
16	176°54.7	15.5'	07°03.4	13.7'	55.3'	109°01.8	105°17.5	63°15.3	21°11.3	41°29.0	66°29.2	117°40.2	
17	191°29.2	15.5'	$07^{\circ}17.1$	13.7'	55.4'	108°32.4	104°46.7	62°44.9	20°42.7	41°54.0	66°55.1	118°11.1	
18	206°03.7	15.4'	N 07°30.8	13.7'	55.4'	108°03.1	104°15.9	62°14.6	20°14.1	42°19.1	67°21.1	118°42.1	
19	220°38.1	15.4'	07°44.5	13.7'	55.4'	107°33.6	103°45.1	61°44.2	19°45.7	42°44.3	67°47.2	119°13.1	
20	235°12.5	15.3'	07°58.2	13.6'	55.4'	107°04.2	103°14.2	61°13.9	19°17.3	43°09.6	68°13.3	119°44.1	
21	249°46.8	15.3'	$08^{\circ}11.8$	13.6'	55.5'	106°34.7	102°43.3	60°43.5	18°49.1	43°35.1	68°39.4		
22	264°21.1	15.2'	08°25.4	13.6'	55.5'	106°05.2	102°12.4	60°13.0	18°20.9	44°00.7	69°05.6		
23	278°55.3	15.1'	08°39.0	13.6'	55.5'	105°35.6	101°41.4	59°42.6	17°52.9	44°26.4	69°31.9		
24 th	SD	$=15.0^{\prime}$	Mer. pass	. 03:52									

h Moon (25th Jul)

Lunar Distance (objects with largest hourly LD delta)

									(00)0000		<i>c c y</i>		
Sun	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran	+Fomalhaut	+Altair
0	293°29.4	15.1'	N08°52.6	13.6'	55.5'	110°02.6	105°06.1	101°10.4	79°12.8	70°15.0	59°12.2	44°52.2	69°58.2
1	308°03.5	15.0'	09°06.2	13.5'	55.6'	109°33.9	104°36.4	100°39.4	78°43.6	69°45.7	58°41.7	45°18.1	70°24.6
2	322°37.5	15.0'	09°19.7	13.5'	55.6'	109°05.1	104°06.8	100°08.4	78° 14.3	69°16.4	58°11.2	45°44.2	70°51.0
3	337°11.5	14.9'	09°33.2	13.5'	55.6'	108°36.3	103°37.1	99°37.3	77°44.9	68°47.2	57°40.7	46°10.3	71°17.5
4	351°45.4	14.8'	09°46.7	13.4'	55.6'	108°07.4	103°07.4	99°06.2	77° 15.6	68°17.9	57°10.1	46°36.5	71°44.0
5	6°19.2	14.8'	$10^{\circ}00.1$	13.4'	55.7'	107°38.6	102°37.6	98°35.0	76°46.3	67°48.6	56°39.6	47°02.9	72°10.6
6	20°52.9	14.7'	$N10^{\circ}13.5$	13.4'	55.7'	107°09.7	102°07.8	98°03.9	76° 16.9	67°19.3	56°09.0	47°29.3	72°37.2
7	35°26.6	14.6'	10°26.9	13.4'	55.7'	106°40.7	101°38.0	97°32.7	75°47.5	66°49.9	55°38.4	47°55.9	73°03.9
8	50°00.3	14.6'	10°40.3	13.3'	55.7'	106°11.8	101°08.2	97°01.5	75° 18.1	66°20.6	55°07.7	48°22.5	73°30.6
9	64°33.8	14.5'	10°53.6	13.3'	55.8'	105°42.8	100°38.3	96°30.2	74°48.7	65°51.2	54°37.1	48°49.3	73°57.4
10	79°07.3	14.4'	$11^{\circ}06.9$	13.3'	55.8'	105°13.8	100°08.4	95°59.0	74° 19.2	65°21.9	54°06.4	49°16.1	74°24.2
11	93°40.7	14.3'	$11^{\circ}20.2$	13.2'	55.8'	104°44.7	99°38.4	95°27.6	73°49.7	64°52.5	53°35.8	49°43.0	74°51.1
12	108°14.0	14.3'	$N11^{\circ}33.4$	13.2'	55.9'	104°15.6	99°08.4	94°56.3	73°20.2	64°23.1	53°05.1	50°10.0	75°18.0
13	122°47.3	14.2'	11°46.6	13.2'	55.9'	103°46.5	98°38.4	94°24.9	72°50.7	63°53.7	52°34.3	50°37.1	75°44.9
14	137°20.5	14.1'	11°59.8	13.1'	55.9'	103°17.4	98°08.3	93°53.5	72°21.2	63°24.3	52°03.6	51°04.3	76°11.9
15	151°53.6	14.0'	12°12.9	13.1'	55.9'	102°48.2	97°38.2	93°22.1	71°51.7	62°54.8	51°32.8	51°31.6	76°39.0
16	166°26.6	14.0'	12°26.0	13.0'	56.0'	102°19.0	97°08.1	92°50.6	71°22.1	62°25.4	51°02.0	51°59.0	77°06.1
17	180°59.6	13.9'	12°39.0	13.0'	56.0'	101°49.7	96°37.9	92°19.1	70°52.5	61°56.0	50°31.2	52°26.4	77°33.2
18	195°32.5	13.8'	$N12^{\circ}52.0$	13.0'	56.0'	101°20.5	96°07.7	91°47.6	70°22.9	61°26.5	50°00.4	52°54.0	78°00.4
19	210°05.2	13.7'	13°05.0	12.9'	56.1'	100°51.2	95°37.5	91°16.0	69°53.3	60°57.0	49°29.6	53°21.6	78°27.7
20	224°37.9	13.6'	$13^{\circ}17.9$	12.9'	56.1'	100°21.8	95°07.2	90°44.4	69°23.7	60°27.6	48°58.7	53°49.3	78°55.0
21	239°10.6	13.5'	13°30.7	12.8'	56.1'	99°52.4	94°36.9	90°12.8	68°54.0	59°58.1	48°27.8	54°17.1	79°22.3
22	253°43.1	13.4'	13°43.6	12.8'	56.2'	99°23.0	94°06.6	89°41.1	68°24.4	59°28.6	47°56.9	54°44.9	79°49.7
23	268°15.6	13.4'	13°56.4	12.7'	56.2'	98°53.6	93°36.2	89°09.4	67°54.7	58°59.1	47°26.0	55°12.9	80°17.1
25 th	SD	$=15.1^{\prime}$	Mer. pass	. 04:34					Sun SD	$=15.7^{\prime}$			

h Moon (26th Jul)

Mon	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Betelgeuse	-Aldebaran	+Saturn	+Fomalhaut	+Altair
0	282°47.9	13.3'	N 14°09.1	12.7'	56.2'	98°24.1	93°05.8	88°37.7	67°25.0	46°55.1		55°40.9	80°44.5
1	297°20.2	13.2'	14°21.8	12.6'	56.3'	97°54.6	92°35.4	88°05.9	66°55.3	46°24.1		56°08.9	81°12.0
2	311°52.4	13.1'	14°34.4	12.6'	56.3'	97°25.1	92°04.9	87°34.1	66°25.5	45°53.2		56° 37.1	81°39.6
3	326°24.5	13.0'	14°47.0	12.5'	56.3'	96°55.5	91°34.4	87°02.3	65°55.8	45°22.2		57°05.4	82°07.1
4	340°56.4	12.9'	14°59.5	12.5'	56.4'	96°25.9	91°03.9	86°30.4	65°26.0	44°51.2		57°33.7	82°34.8
5	355°28.4	12.8'	$15^{\circ}12.0$	12.4'	56.4'	95°56.2	90°33.3	85°58.5	64°56.2	44°20.2		58°02.0	83°02.4
6	10°00.2	12.7'	N15°24.4	12.4'	56.4'	95°26.5	90°02.7	85°26.5	64°26.4	43°49.1		58° 30.5	83°30.1
7	24°31.9	12.6'	15°36.8	12.3'	56.4'	94°56.8	89°32.1	84°54.5	63°56.6	43°18.1		58°59.0	83°57.9
8	39°03.5	12.5'	15°49.1	12.2'	56.5'	94°27.0	89°01.4	84°22.5	63°26.8	42°47.0		59°27.6	84°25.6
9	53°35.0	12.4'	$16^{\circ}01.3$	12.2'	56.5'	93°57.2	88°30.7	83°50.5	62°57.0	42° 15.9		59° 56.3	84°53.5
10	68°06.4	12.3'	$16^{\circ}13.5$	12.1'	56.5'	93°27.4	87°59.9	83° 18.4	62°27.1	41°44.8		60°25.0	85°21.3
11	82°37.7	12.2'	$16^{\circ}25.6$	12.1'	56.6'	92°57.5	87°29.1	82°46.2	61°57.3	41° 13.7		60°53.8	85°49.2
12	97°09.0	12.1'	N16°37.7	12.0'	56.6'	92°27.6	86°58.3	82°14.1	61°27.4	40°42.6		61°22.7	86°17.2
13	111°40.1	12.0'	16°49.7	11.9'	56.6'	91°57.6	86°27.4	81°41.9	60°57.5	40°11.5		61°51.7	86°45.1
14	126°11.1	11.9'	17°01.7	11.9'	56.7'	91°27.7	85°56.6	81°09.6	60°27.6	39°40.4		62°20.7	87°13.2
15	140°42.0	11.8'	$17^{\circ}13.5$	11.8'	56.7'	90°57.6	85°25.6	80°37.3	59°57.7	39°09.2		62°49.7	87°41.2
16	155°12.8	11.7'	17°25.3	11.7'	56.7'	90°27.6	84°54.7	80°05.0	59°27.8	38°38.0		63°18.9	88°09.3
17	169°43.5	11.6'	17°37.1	11.7'	56.8'	89°57.4	84°23.7	79°32.7	58°57.9	38°06.9		63°48.1	88°37.4
18	184°14.1	11.5'	N17°48.7	11.6'	56.8'	89°27.3	83°52.6	79°00.3	58°27.9	37°35.7		64°17.3	89°05.6
19	198°44.5	11.4'	18°00.3	11.5'	56.9'	88°57.1	83°21.6	78° 27.8	57°58.0	37°04.5		64°46.7	89°33.8
20	213°14.9	11.3'	$18^{\circ}11.8$	11.4'	56.9'	88° 26.9	82°50.5	77°55.4	57°28.1	36°33.4	10°46.9	65°16.1	90°02.0
21	227°45.2	11.1'	18°23.3	11.4'	56.9'	87°56.6	82°19.3	77°22.8	56°58.1	36°02.2	11°10.1	65° 45.5	90°30.3
22	242°15.3	11.0'	18°34.6	11.3'	57.0'	87°26.3	81°48.2	76°50.3	56°28.2	35°31.0	11°34.1	66° 15.0	90°58.6
23	256°45.4	10.9'	18°45.9	11.2'	57.0'	86°56.0	81°17.0	76° 17.7	55°58.2	34°59.8	11°58.9	66°44.6	91°26.9
26 th	SD	= 15.3'	Mer. pass	. 05:19					Sun SI	D = 15.7'			

23

27th

28th

 $244^{\circ}10.8$

8.0'

SD = 15.6'

SD = 15.8'

22°49.4

Mer. pass. 06:07

Mer. pass. 07:01

Maan (20th Jul)

8.8'

57.9

74°34.8

Moon (27th Jul) Lunar Distance (objects with largest hourly LD delta) h GHA ΗP -Pollux -Aldeba<u>ran</u> +Fomalhaut Tue Dec d -Sun -Procyon +Saturn +Deneb +Altair 271°15.3 N18°57.1 86°25.6 80°45.7 34°28.6 91°55.3 0 10.8 57.0 75°45.0 12°24.2 67°14.3 71°32.0 11.1 285°45.1 85°55.1 80°14.5 33°57.5 12°50.2 67°44.0 10.7 19°08.2 75°12.4 $71^{\circ}47.1$ 92°23.7 11.0 57.1 1 $300^{\circ}14.8$ $79^{\circ}43.1$ $74^{\circ}39.7$ $13^{\circ}16.6$ $68^{\circ}13.7$ $72^{\circ}02.3$ $92^{\circ}52.1$ 10.6 19°19.3 11.0' 57.1 $85^{\circ}24.7$ $33^{\circ}26.3$ 314°44.4 19°30.2 79°11.8 68°43.6 72°17.6 3 10.5' 10.9' $84^{\circ}54.2$ 74°06.9 $32^{\circ}55.1$ $13^{\circ}43.6$ $93^{\circ}20.6$ 32°24.0 78°40.4 72°33.0 4 329°13.8 10.3 19°41.1 10.8 57.2 84°23.6 73°34.1 14°11.0 69°13.5 93°49.1 69°43.4 343°43.2 19°51.9 78°09.0 31°52.9 14°38.8 72°48.5 5 10.2 10.7 57.2 83°53.0 73°01.3 94°17.6 6 $358^{\circ}12.4$ 10.1' $N20^{\circ}02.6$ 10.6' 57.2 $83^{\circ}22.4$ $77^{\circ}37.6$ $72^{\circ}28.4$ 31°21.7 $15^{\circ}07.0$ $70^{\circ}13.4$ $73^{\circ}04.1$ 94°46.2 82°51.7 77°06.1 76°34.6 $12^{\circ}41.5$ $20^{\circ}13.2$ $71^{\circ}55.5$ 30°50.6 15°35.5 $70^{\circ}43.5$ $73^{\circ}19.8$ $95^{\circ}14.8$ 10.0' 10.5' 57.3' 27°10.5 71°13.6 71°43.8 72°14.0 8 9.9 20°23.7 10.4 57.3 $82^{\circ}21.0$ 71°22.5 $30^{\circ}19.6$ $16^{\circ}04.3$ $73^{\circ}35.6$ $95^{\circ}43.4$ 41°39.4 29°48.5 20°34.2 81°50.2 70°49.5 73°51.5 76°03.0 16°33.4 9 9.8 10.3 57.4 96°12.0 29°17.5 20°44.5 81°19.4 75°31.4 74°07.5 96°40.7 56°08.1 70°16.4 17°02.8 10 9.6 10.2 57.4 70°36.8 20°54.7 80°48.5 74°59.8 69°43.3 28°46.5 72°44.3 74°23.6 97°09.4 17°32.5 11 9.5 10.1 57.4 85°05.3 74°28.2 97°38.1 80°17.6 28°15.5 12 9.4' $\text{N}21^{\circ}04.8$ 10.0' 57.5 69°10.2 $18^{\circ}02.4$ $73^{\circ}14.6$ $74^{\circ}39.7$ 79°46.7 73°45.1 73°56.5 74°56.0 98°06.9 13 99°33.7 9.3 21°14.9 9.9' 57.5 68°37.0 27°44.6 18°32.5 27°13.8 114°01.9 79°15 7 19°02.8 75°12.3 73°24.8 98°35.7 14 91' 21°24.8 9.8' 57.5 68°038 74°15.5 26°43.0 78°44.7 72°53.0 74°46.0 99°04.5 128°30.1 21°34.6 19°33.3 75°28.7 15 9.0 9.7 57.6 67°30.6 142°58.1 21°44.4 78°13.6 72°21.3 66°57.2 26°12.2 20°04.0 75°16.6 75°45.2 8.9 9.6 57.6 99°33.3 16 17 $157^{\circ}26.0$ 8.8 $21^{\circ}54.0$ 9.5' 57.7 77°42.5 71°49.4 $66^{\circ}23.9$ 25°41.5 20°34.9 $75^{\circ}47.2$ $76^{\circ}01.8$ $100^{\circ}02.2$ 171°538 77°11.3 71°17.6 25°10 9 76°18.5 N22°03 5 65°50 5 21°06.0 76°17.9 100°31 1 18 8.6 9 4 57.7 76°40.1 70°45.7 76°48.7 186°21.4 22°12.9 65°17.1 24°40.3 76°35.3 101°00.0 19 8.5 9.3 57.7 21°37.2 200°48.9 22°22.2 76°08.8 22°08.5 77°19.4 76°52.1 8.4 70°13.8 64°43.6 24°09.9 101°28.9 9.2 57.8 20 77°50.3 78°21.2 77°09.0 77°26.0 215°16.3 8.3 22°31.4 75°37.5 69°41.9 64°10.1 23°39.5 22°40.0 101°57.9 21 9.1 57.8 229°43.6 22°40.4 75°06.2 69°09.9 63°36.5 23°09.3 23°11.7 102°26.8 57.8

 $68^{\circ}37.9$

63°02.9

 $22^{\circ}39.1$

 $23^{\circ}43.4$

Sun SD = 15.7

Sun SD = 15.7

Lunar Distance (chiects with largest hourly ID dolta)

 $78^{\circ}52.1$

 $77^{\circ}43.1$

102°55.8

h		Моо	n (28 th Ju	ıl)			Lunar	Distance	(objects w	ith large	st hourly	LD delta)	
Wed	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Aldebaran	+Saturn	+Deneb	+Fomalhaut	+Altair
0	258°37.8	7.9'	N 22°58.2	8.7'	57.9'	74°03.4	68°05.9	62°29.2	22°09.1	24°15.3	78°00.3	79°23.1	103°24.8
1	273°04.7	7.8'	23°06.9	8.6'	58.0'	73°31.9	67°33.8	61°55.5	21°39.2	24°47.3	78° 17.5	79°54.2	103°53.9
2	287°31.5	7.7'	23° 15.5	8.5'	58.0'	73°00.3	67°01.7	61°21.8	21°09.5	$25^{\circ}19.5$	78°34.8	80°25.3	104°22.9
3	301°58.1	7.5'	23°24.0	8.3'	58.0'	72°28.8	66°29.6	60°48.0	20°39.9	25°51.7	78°52.2	80° 56.5	104°52.0
4	316°24.6	7.4'	23°32.3	8.2'	58.1'	71°57.1	65°57.5	60°14.2	20°10.5	$26^{\circ}24.1$	79°09.6	81°27.7	105°21.1
5	330°51.0	7.3'	23°40.5	8.1'	58.1'	71°25.5	65°25.3	59°40.3	19°41.3	$26^{\circ}56.5$	79°27.2	81°58.9	105°50.1
6	345°17.3	7.2'	N 23°48.6	8.0'	58.1'	70°53.8	64°53.1	59°06.4	19°12.3	$27^{\circ}29.1$	79°44.7	82°30.2	106°19.3
7	359°43.5	7.0'	23°56.6	7.8'	58.2'	70°22.0	64°20.9	58°32.4	18°43.6	28°01.8	80°02.4	83°01.6	106°48.4
8	14°09.5	6.9'	24°04.4	7.7'	58.2'	69°50.2	63°48.6	57°58.4	18°15.1	28°34.5	80°20.1	83°33.0	107°17.5
9	28°35.4	6.8'	$24^{\circ}12.1$	7.6'	58.3'	69°18.3	63°16.3	57°24.4	17°46.9	29°07.4	80°37.9	84°04.5	107°46.6
10	43°01.2	6.7'	$24^{\circ}19.6$	7.4'	58.3'	68°46.4	62°44.0	56°50.3	17°19.0	29°40.3	80°55.8	84°36.0	108°15.8
11	57°26.8	6.5'	24°27.0	7.3'	58.3'	68°14.5	62°11.7	56°16.1	16°51.5	$30^{\circ}13.3$	81°13.7	85°07.5	108°45.0
12	71°52.4	6.4'	N 24°34.3	7.1'	58.4'	67°42.5	61°39.4	55°42.0	16°24.3	30°46.5	81°31.7	85°39.1	109°14.1
13	86°17.8	6.3'	24°41.4	7.0'	58.4'	67°10.4	61°07.0	55°07.7	15°57.6	$31^{\circ}19.7$	81°49.8	86° 10.8	109°43.3
14	100°43.1	6.2'	24°48.4	6.8'	58.5'	66°38.4	60°34.6	54°33.5	15°31.3	31°52.9	82°07.9	86° 42.5	110°12.5
15	115°08.3	6.1'	24°55.3	6.7'	58.5'	66°06.2	60°02.2	53°59.1	15°05.5	32°26.3	82°26.1	87° 14.2	110°41.7
16	129°33.3	5.9'	25°02.0	6.6'	58.5'	65°34.0	59°29.7	53°24.8	14°40.2	32°59.8	82°44.3	87°46.0	111°10.9
17	143°58.3	5.8'	25°08.5	6.4'	58.6'	65°01.8	58°57.3	52°50.4	14°15.6	33°33.3	83°02.6	88° 17.8	111°40.0
18	158°23.1	5.7'	N 25°14.9	6.3'	58.6'	64°29.5	58°24.8	52°15.9	13°51.6	34°06.9	83°20.9	88°49.7	112°09.2
19	172°47.8	5.6'	25°21.2	6.1'	58.6'	63°57.2	57°52.3	51°41.4	13°28.4	34°40.6	83°39.3	89°21.6	112°38.4
20	187°12.4	5.5'	25°27.3	5.9'	58.7'	63°24.8	57°19.8	51°06.9	13°05.9	35°14.3	83°57.8	89°53.6	113°07.6
21	201°36.8	5.4'	25°33.3	5.8'	58.7'	62°52.4	56°47.2	50°32.3	12°44.4	35°48.1	84°16.3	90°25.6	113°36.8
22	216°01.2	5.2'	25°39.0	5.6'	58.8'	62°19.9	56°14.7	49°57.7	12°23.7	36°22.0	84°34.8	90°57.7	114°06.0
23	230°25.4	5.1'	25°44.7	5.5'	58.8'	61°47.4	55°42.1	49°23.0		36°56.0	84°53.4	91°29.8	114°35.1

h	Moon (29 th Jul)					Lunar Distance (objects with largest hourly LD delta)							
Thu	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Betelgeuse	+Saturn	+Deneb	+Fomalhaut	+Altair
0	244°49.6	5.0'	N 25°50.2	5.3'	58.8'	61°14.8	55°09.6	48°48.3	32°04.0	37°30.0	85°12.1	92°01.9	115°04.3
1	259°13.6	4.9'	25°55.5	5.2'	58.9'	60°42.2	54° 37.0	48°13.6	31°37.0	38°04.1	85°30.8	92°34.1	115°33.4
2	273°37.5	4.8'	26°00.6	5.0'	58.9'	60°09.6	54°04.4	47°38.8	31°10.1	38°38.3	85°49.5	93°06.3	116°02.6
3	288°01.3	4.7'	26°05.6	4.8'	59.0'	59°36.8	53°31.8	47°03.9	30°43.5	39°12.6	86°08.3	93°38.6	116°31.7
4	302°25.0	4.6'	26°10.4	4.7'	59.0'	59°04.1	52°59.2	46°29.0	30°17.0	39°46.9	86°27.1	94°10.9	117°00.8
5	316°48.6	4.5'	$26^{\circ}15.1$	4.5'	59.0'	58°31.3	52°26.6	45°54.1	29°50.8	40°21.2	86°46.0	94°43.3	117°29.8
6	331°12.1	4.4'	N 26°19.6	4.3'	59.1'	57°58.4	51°53.9	45°19.2	29°24.9	40°55.7	87°04.9	95° 15.6	117°58.9
7	345°35.5	4.3'	26°23.9	4.1'	59.1'	57° 25.5	51°21.3	44°44.1	28°59.2	41°30.2	87°23.9	95°48.1	118°27.9
8	359°58.7	4.2'	26°28.0	4.0'	59.1'	56°52.6	50°48.7	44°09.1	28°33.8	42°04.7	87°42.8	96° 20.5	118°57.0
9	14°21.9	4.1'	26°32.0	3.8'	59.2'	56° 19.6	$50^{\circ}16.1$	43°34.0	28°08.7	42°39.3	88°01.9	96°53.0	119°25.9
10	28°45.0	4.0'	26°35.8	3.6'	59.2'	55°46.6	49°43.4	42°58.9	27°43.9	43°14.0	88°20.9	97° 25.5	119°54.9
11	43°08.0	3.9'	26°39.4	3.4'	59.3'	55° 13.5	49°10.8	42°23.7	27°19.5	43°48.8	88°40.0	97°58.1	
12	57°30.9	3.8'	N 26°42.9	3.3'	59.3'	54°40.3	48°38.2	41°48.5	26°55.4	44°23.6	88°59.1	98° 30.7	
13	71°53.7	3.7'	26°46.1	3.1'	59.3'	54°07.2	48°05.6	41°13.3	26°31.6	44°58.5	89° 18.3	99°03.4	
14	86°16.5	3.6'	26°49.2	2.9'	59.4'	53°33.9	47°33.0	40°38.0	26°08.2	45°33.4	89°37.5	99°36.0	
15	100°39.1	3.6'	$26^{\circ}52.1$	2.7'	59.4'	53°00.7	47°00.4	40°02.6	25°45.2	46°08.4	89°56.7	100°08.7	
16	115°01.6	3.5'	26°54.8	2.5'	59.4'	52°27.3	46°27.9	39°27.3	25°22.7	46°43.4	90°15.9	100°41.5	
17	129°24.1	3.4'	26°57.4	2.4'	59.5'	51°54.0	45°55.3	38°51.9	25°00.6	47°18.5	90°35.2	101°14.2	
18	143°46.5	3.3'	N 26°59.7	2.2'	59.5'	51°20.6	45°22.8	38°16.4	24°39.0	47°53.7	90°54.4	101°47.0	
19	158°08.8	3.2'	27°01.9	2.0'	59.5'	50°47.1	44°50.3	37°41.0	24°17.8	48°28.9	91°13.7	102° 19.9	
20	172°31.0	3.2'	27°03.9	1.8'	59.6'	50°13.6	44° 17.8	37°05.5	23°57.2	49°04.1	91°33.0	102°52.7	
21	186°53.2	3.1'	27°05.7	1.6'	59.6'	49°40.1	43°45.3	36°29.9	23°37.2	49°39.5	91°52.4	103°25.6	
22	201°15.3	3.0'	27°07.3	1.4'	59.7'	49°06.5	43°12.9	35°54.3	23°17.7	50°14.8	92°11.7	103°58.5	
23	215°37.3	3.0'	27°08.7	1.2'	59.7'	48°32.8	42°40.5	35° 18.7	22°58.8	50°50.3	92°31.1	104°31.5	
29 th	SD = 16.0' Mer. pass. 08:00					$Sun\;SD=15.7'$							
	55 15.5 mer. page. co.co												

Moon (30th Jul) Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Betelgeuse	+Aldebaran	+Saturn	+Deneb	+Fomalhaut
0	229°59.3	2.9'	N 27°09.9	1.0'	59.7'	47°59.1	42°08.2	34°43.1	22°40.6		51°25.8	92°50.5	105°04.4
1	244°21.2	2.8'	27°10.9	0.8'	59.8'	47°25.4	41°35.9	34°07.4	22°23.0		52°01.3	93°09.8	105°37.4
2	258°43.0	2.8'	$27^{\circ}11.7$	0.6'	59.8'	46°51.6	41°03.6	33°31.7	22°06.1	13°44.4	52°36.9	93°29.2	106°10.4
3	273°04.8	2.7'	27°12.4	0.4'	59.8'	46°17.8	40°31.4	32°56.0	21°49.9	14°09.2	53° 12.5	93°48.6	106°43.4
4	287°26.5	2.7'	$27^{\circ}12.8$	0.2'	59.9'	45°44.0	39°59.3	32°20.2	21°34.5	14°34.8	53°48.2	94°08.1	107°16.5
5	301°48.1	2.6'	$27^{\circ}13.1$	0.0'	59.9'	45°10.1	39°27.2	31°44.5		15°01.2	54°24.0	94°27.5	107°49.6
6	316°09.7	2.6'	$N27^{\circ}13.1$	-0.2'	59.9'	44°36.1	38° 55.2	31°08.6		15°28.2	54°59.8	94°46.9	108°22.6
7	330°31.3	2.5'	27°12.9	-0.4'	60.0'	44°02.1	38° 23.2	30°32.8		15°55.9	55°35.6	95°06.3	108°55.8
8	344°52.8	2.5'	$27^{\circ}12.6$	-0.5'	60.0'	43°28.1	37°51.3	29°56.9		16°24.2	56° 11.5	95°25.7	109°28.9
9	359°14.3	2.4'	$27^{\circ}12.0$	-0.7'	60.0'	42°54.0	37° 19.5	29°21.1		16°53.0	56°47.4	95°45.1	110°02.0
10	13°35.7	2.4'	$27^{\circ}11.3$	-0.9'	60.1'	42°19.9	36°47.8	28°45.2		17°22.3	57°23.4	96°04.5	110°35.2
11	27°57.1	2.4'	27°10.3	-1.2'	60.1'	41°45.7	36°16.2	28°09.3		17°52.1	57°59.5	96°23.9	111°08.3
12	42°18.5	2.3'	N27°09.2	-1.4'	60.1'	41°11.5	35°44.7	27°33.3		18° 22.3	58° 35.6	96°43.3	111°41.5
13	56°39.8	2.3'	27°07.8	-1.6'	60.2'	40°37.3	35° 13.3	26°57.4		18° 52.9	59° 11.7	97°02.7	112°14.7
14	71°01.2	2.3'	27°06.3	-1.8'	60.2'	40°03.0	34°42.0	26°21.4		19°23.9	59°47.9	97°22.0	112°47.9
15	85°22.4	2.3'	27°04.5	-2.0'	60.2'		34° 10.8	25°45.5		19° 55.2	60°24.1	97°41.4	113°21.1
16	99°43.7	2.2'	27°02.6	-2.2'	60.2'		33°39.7	25°09.5		20°26.9	61°00.4	98°00.7	113°54.3
17	114°04.9	2.2'	27°00.4	-2.4'	60.3'		33°08.8	24°33.5		20°58.8	61°36.7	98°20.0	114°27.5
18	128°26.2	2.2'	N 26°58.1	-2.6'	60.3'		32°38.0	23°57.5		21°31.0	62°13.0	98°39.3	115°00.7
19	142°47.4	2.2'	26°55.5	-2.8'	60.3'		32°07.4	23°21.6		22°03.5	62°49.4	98°58.6	115°33.9
20	157°08.6	2.2'	26°52.7	-3.0'	60.4'		31°37.0	22°45.6		22° 36.3	63°25.9	99°17.8	116°07.1
21	171°29.8	2.2'	26°49.8	-3.2'	60.4'		31°06.7	22°09.6		23°09.2	64°02.3	99°37.0	116°40.3
22	185°51.0	2.2'	26°46.6	-3.4'	60.4'		30°36.6	21°33.7		23°42.4	64°38.9	99°56.2	117°13.5
23	200°12.1	2.2'	26°43.2	-3.6'	60.5'		30°06.8	20°57.8		24° 15.8	65° 15.4	100°15.4	117°46.7
30 th	SD	= 16.3'	Mer. pass	s. 09:03					Sun S	5D = 15.7'			

Moon (31st Jul) Lunar Distance (objects with largest hourly LD delta)

		IVIOO	ıı (21)r	11 <i>)</i>			Luna	il Distance (objects w	itii iargest i	iourly Li	J della)	
Sat	GHA	ν	Dec	d	HP	-Procyon	-Pollux	+Betelgeuse	+Capella	+Aldebaran	+Rigel	+Saturn	+Fomalhaut
0	214°33.3	2.2'	N 26°39.6	-3.8'	60.5'	29°37.1	20°21.9		22°23.6	24°49.4		65°52.1	118° 19.9
1	228°54.5	2.2'	26°35.9	-4.0'	60.5'	29°07.7	19°46.1		22°43.7	25°23.2		66°28.7	118°53.1
2	243°15.7	2.2'	26°31.9	-4.2'	60.5'	28°38.5	19°10.2		23°04.5	25°57.1		67°05.4	119° 26.3
3	257°36.9	2.2'	26° 27.7	-4.4'	60.6'	28°09.5	18°34.5		23°25.9	26°31.2		67°42.1	119°59.4
4	271°58.1	2.2'	26°23.3	-4.6'	60.6'	27°40.9	17°58.8		23°48.0	27°05.5		68° 18.9	
5	286°19.4	2.3'	26° 18.7	-4.8'	60.6'	27°12.5	17°23.1		24°10.7	27°39.9		68°55.7	
6	300°40.6	2.3'	N 26° 13.9	-5.0'	60.6'	26°44.4	16°47.6		24°33.9	28°14.4		69°32.5	
7	315°01.9	2.3'	26°08.9	-5.2'	60.7'	26°16.7	16°12.1		24°57.7	28°49.1		70°09.4	
8	329°23.2	2.3'	$26^{\circ}03.8$	-5.4'	60.7'	25°49.3	15°36.7		25°22.0	29°23.9	39°32.5	70°46.3	
9	343° 44.5	2.4'	25°58.4	-5.6'	60.7'	25°22.3	15°01.5		25°46.9	29°58.9	39°48.3	71°23.2	
10	358°05.9	2.4'	25°52.8	-5.8'	60.7'	24°55.6	14°26.4		26°12.2	30°33.9	40°04.5	72°00.2	
11	12°27.3	2.4'	25°47.0	-6.0'	60.8'	24°29.4	13°51.5	21°45.3	26°38.0	31°09.1	40°21.1	72°37.2	
12	26°48.7	2.5'	N 25°41.0	-6.2'	60.8'	24°03.6	13°16.7	22°01.8	27°04.2	31°44.4	40°38.1	73°14.3	
13	41°10.1	2.5'	25°34.8	-6.4'	60.8'	23°38.3	12°42.2	22°19.2	27°30.9	32°19.8	40°55.4	73°51.4	
14	55°31.6	2.5'	25°28.5	-6.6'	60.8'	23°13.5	12°08.0	22°37.3	27°57.9	32°55.2	41°13.2	74°28.5	
15	69°53.2	2.6'	25°21.9	-6.8'	60.8'	22°49.3	11°34.1	22°56.2	28°25.3	33°30.8	41°31.3	75°05.6	
16	84°14.8	2.6'	25° 15.2	-7.0'	60.9'	22°25.5	11°00.5	23°15.8	28°53.2	34°06.5	41°49.8	75°42.8	
17	98°36.4	2.7'	25°08.2	-7.1'	60.9'	22°02.4	10°27.3	23°36.1	29°21.3	34°42.2	42°08.7	76°20.0	
18	112°58.1	2.7'	$N25^{\circ}01.1$	-7.3'	60.9'	21°39.9	9°54.7	23°57.1	29°49.8	35°18.0	42°27.9	76° 57.2	
19	127° 19.8	2.8'	24°53.7	-7.5'	60.9'	21°18.1	9°22.6	24°18.8	30°18.6	35°53.9	42°47.5	77°34.5	
20	141°41.6	2.8'	24°46.2	-7.7'	60.9'	20°56.9	8°51.2	24°41.0	30°47.8	36°29.9	43°07.4	78° 11.8	
21	156°03.4	2.9'	24°38.5	-7.9'	61.0'	20°36.5	8°20.7	25°03.9	31°17.2	37°06.0	43°27.6	78°49.1	
22	170°25.3	3.0'	24°30.6	-8.1'	61.0'	20°16.9		25°27.3	31°46.9	37°42.1	43°48.1	79°26.4	
23	184°47.3	3.0'	24°22.5	-8.3'	61.0'	19°58.1		25°51.2	32°16.9	38°18.3	44°09.0	80°03.8	
31 st	SD	= 16.5'	Mer. pas	s. 10:08									

Sun	GHA	ν	Dec	d	HP	-Procyon	+Betelgeuse	+Capella	+Aldebaran	+Rigel	+Saturn	+Deneb				
0	199°09.3	3.1'	N 24°14.3	-8.4'	61.0'	19°40.2	26°15.7	32°47.1	38°54.5	44°30.2	80°41.2	107°57.1				
1	213°31.4	3.1'	24°05.8	-8.6'	61.0'	19°23.1	26°40.7									
2	227°53.5	3.2'	23°57.2	-8.8'	61.1'	19°07.0	27°06.1	33°48.3	40°07.2	45°13.4	81°56.0	108°32.0				
3	242°15.7	3.3'	23°48.4	-9.0'	61.1'		27°32.0									
4	256°38.0	3.4'	23°39.4	-9.2'	61.1'		27°58.4	34°50.4	41°20.1	45°57.8	83°11.0	109°06.5				
5	271°00.4	3.4'	23°30.2	-9.3'	61.1'		28°25.1	35°21.7	41°56.6	46°20.4	83°48.5	109°23.6				
6	285°22.8	3.5'	N23°20.9	-9.5'	61.1'		28°52.2	35°53.3	42°33.2	46°43.2	84°26.0	109°40.6				
7	299°45.3	3.6'	23°11.3	-9.7'	61.1'		29°19.8	36°25.0	43°09.9	47°06.4	85°03.5	109°57.4				
8	314°07.9	3.7'	23°01.7	-9.9'	61.1'		29°47.6	36° 57.0	43°46.6	47°29.8	85°41.1	110°14.2				
9	328°30.6	3.7'	22°51.8	-10.0'	61.2'		30°15.9	37°29.1	44°23.3	47°53.4	86°18.6	110°30.8				
10	342°53.3	3.8'	22°41.8	-10.2'	61.2'		30°44.4	38°01.4	45°00.1	48°17.3	86°56.2	110°47.4				
11	357°16.1	3.9'	22°31.6	-10.4'	61.2'		31°13.3 38°33.8 45°36.9 48°41.4 87°33.8 11									
12	11°39.0	4.0'	N22°21.2	-10.5'	61.2'		31°42.5									
13	26°02.0	4.1'	22°10.7	-10.7'	61.2'		32°11.9	39°39.1	46°50.6	49°30.3	88°49.1	111°36.2				
14	40°25.1	4.2'	22°00.0	-10.8'	61.2'		32°41.6	40°12.0	47°27.5	49°55.0	89°26.8	111°52.2				
15	54°48.3	4.2'	21°49.2	-11.0'	61.2'		33°11.6	40°45.0	48°04.5	50°20.0	90°04.4	112°08.1				
16	69°11.5	4.3'	21°38.2	-11.2'	61.2'		33°41.9	41°18.2	48°41.5	50°45.2	90°42.1	112°23.8				
17	83°34.9	4.4'	21°27.0	-11.3'	61.2'		34°12.3	41°51.5	49°18.5	$51^{\circ}10.6$	91°19.8	112°39.5				
18	97°58.3	4.5'	N 21°15.7	-11.5'	61.2'			<u>'</u>	New Moon ——		<u>'</u>	' i				
19	112°21.8	4.6'	21°04.2	-11.6'	61.2'				New Moon ——							
20	126°45.4	4.7'	20°52.6	-11.8'	61.3'				New Moon ——							
21	141°09.1	4.8'	20°40.8	-11.9'	61.3'				New Moon ——							
22	155°32.9	4.9'	20°28.9	-12.1'	61.3'											
23	169°56.8	5.0'	20°16.9	-12.2'	61.3'				New Moon ——							
1 st	SD	= 16.6	Mer. pas	s. 11:11			·		·							

h	Moon	(2 nd Αι	ıg)
---	------	---------------------	-----

Mon	GHA	ν	Dec	d	HP	
0	184°20.8	5.1'	N 20°04.7	-12.3'	61.3'	New Moon
1	198°44.9	5.2'	19°52.3	-12.5'	61.3'	New Moon
2	213°09.0	5.3'	19°39.8	-12.6'	61.3'	New Moon
3	227°33.3	5.4'	19°27.2	-12.7'	61.3'	New Moon
4	241°57.7	5.5'	19°14.5	-12.9'	61.3'	New Moon
5	256°22.1	5.6'	$19^{\circ}01.6$	-13.0'	61.3'	New Moon
6	270°46.7	5.7'	N 18°48.6	-13.1'	61.3'	New Moon
7	285°11.3	5.8'	18°35.5	-13.3'	61.3'	New Moon
8	299°36.1	5.9'	18°22.2	-13.4'	61.3'	New Moon
9	314°01.0	6.0'	18°08.8	-13.5'	61.3'	New Moon
10	328°25.9	6.1'	17°55.3	-13.6'	61.3'	New Moon
11	342°51.0	6.1'	$17^{\circ}41.7$	-13.7'	61.3'	New Moon
12	357°16.1	6.2'	N17°27.9	-13.9'	61.3'	New Moon
13	11°41.4	6.3'	$17^{\circ}14.1$	-14.0'	61.3'	New Moon
14	26°06.7	6.4'	$17^{\circ}00.1$	-14.1'	61.3'	New Moon
15	40°32.1	6.5'	16°46.0	-14.2'	61.3'	New Moon
16	54°57.7	6.6'	16°31.9	-14.3'	61.3'	New Moon
17	69°23.3	6.7'	$16^{\circ}17.6$	-14.4'	61.2'	New Moon
18	83°49.1	6.8'	$N16^{\circ}03.2$	-14.5'	61.2'	New Moon
19	98°14.9	6.9'	15°48.7	-14.6'	61.2'	New Moon
20	112°40.8	7.0'	15°34.1	-14.7'	61.2'	New Moon
21	127°06.8	7.1'	$15^{\circ}19.4$	-14.8'	61.2'	New Moon
22	141°33.0	7.2'	$15^{\circ}04.6$	-14.9'	61.2'	New Moon
23	155°59.2	7.3'	14°49.8	-15.0'	61.2'	New Moon
2 nd	SD	= 16.7	' Mer. pas	s. 12:11		

h Moon (3 rd Aug) Lunar Distance (objects with largest hourly LD delta)
--

Tue	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Arcturus	-Spica	-Mars	-Jupiter	-Regulus
0	170°25.5	7.4'	N 14°34.8	-15.0'	61.2'				— New Mo	on ———			
1	184°51.9	7.5'	$14^{\circ}19.8$	-15.1'	61.2'				New Mo	on ———			
2	199°18.4	7.6'	14°04.6	-15.2'	61.2'				New Mo	on ———			
3	213°45.0	7.7'	13°49.4	-15.3'	61.2'	109°24.6	96°12.2	91°58.7	68°20.3	63°36.6	50°31.4	11°10.4	9°41.6
4	228°11.7	7.8'	13°34.1	-15.4'	61.1'	108°46.6	95°42.2	91°29.2	67°50.8	62°58.7	49°55.1	10°34.1	9°04.7
5	242°38.5	7.9'	13°18.7	-15.5'	61.1'	108°08.7	95°12.2	90°59.7	67°21.4	62°20.8	49°18.9	9°58.1	8°27.9
6	257°05.3	8.0'	$N13^{\circ}03.3$	-15.5'	61.1'	107°30.7	94°42.2	90°30.2	66°52.1	61°42.9	48°42.7	9°22.2	7°51.3
7	271°32.3	8.1'	12°47.8	-15.6'	61.1'	106°52.8	94°12.1	90°00.7	66°22.9	61°05.1	48°06.5	8°46.6	7°15.0
8	285°59.4	8.1'	12°32.2	-15.7'	61.1'	106°14.9	93°42.1	89°31.2	65°53.7	60°27.3	47°30.3	8°11.2	6°39.0
9	300°26.5	8.2'	$12^{\circ}16.5$	-15.7'	61.1'	105°37.0	93°12.1	89°01.7	65°24.7	59°49.4	46°54.2	7°36.2	6°03.4
10	314°53.7	8.3'	12°00.8	-15.8'	61.1'	104°59.1	92°42.1	88°32.3	64°55.7	59°11.6	46°18.1	7°01.6	5°28.3
11	329°21.0	8.4'	11°45.0	-15.9'	61.0'	104°21.3	92°12.2	88°02.9	64°26.8	58°33.9	45°42.0	6°27.5	4°53.9
12	343°48.5	8.5'	$N11^{\circ}29.1$	-15.9'	61.0'	103°43.5	91°42.2	87°33.5	63°58.1	57°56.1	45°05.9	5°54.1	
13	358°15.9	8.6'	11°13.2	-16.0'	61.0'	103°05.7	91°12.2	87°04.1	63°29.4	57°18.4	44°29.9	5°21.5	
14	12°43.5	8.7'	10°57.2	-16.0'	61.0'	102°27.9	90°42.3	86°34.8	63°00.8	56°40.7	43°53.9		
15	27°11.2	8.7'	10°41.2	-16.1'	61.0'	101°50.1	90°12.4	86°05.5	62°32.4	56°03.0	43°17.9		
16	41°38.9	8.8'	10°25.1	-16.1'	61.0'	101°12.4	89°42.4	85°36.2	62°04.0	55°25.3	42°42.0		
17	56°06.8	8.9'	10°08.9	-16.2'	60.9'	100°34.7	89°12.6	85°06.9	61°35.8	54°47.7	42°06.1		
18	70°34.7	9.0'	N 09°52.8	-16.2'	60.9'	99°57.0	88°42.7	84°37.7	61°07.7	54°10.1	41°30.2		
19	85°02.7	9.1'	09°36.5	-16.3'	60.9'	99°19.3	88°12.8	84°08.5	60°39.7	53°32.5	40°54.3		
20	99°30.7	9.1'	09°20.2	-16.3'	60.9'	98°41.7	87°43.0	83°39.4	60°11.9	52°55.0	40°18.5		
21	113°58.9	9.2'	09°03.9	-16.4'	60.9'	98°04.1	87°13.2	83°10.3	59°44.1	52°17.4	39°42.7		
22	128°27.1	9.3'	08°47.5	-16.4'	60.8'	97°26.5	86°43.5	82°41.2	59°16.5	51°39.9	39°07.0		
23	142°55.4	9.4'	08°31.1	-16.4'	60.8'	96°49.0	86°13.7	82°12.2	58°49.1	51°02.5	38°31.3		
3 rd	SD	= 16.7	" Mer. pas	ss. 13:07	-								

	h	Moon (4 th Aug)	Lunar Distance (objects with largest hourly LD delta)
--	---	----------------------------	---

Wed	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Arcturus	-Spica	-Mars	+Regulus	+Jupiter
0	157°23.8	9.4'	N 08°14.7	-16.5'	60.8'	96° 11.5	85°44.0	81°43.2	58°21.7	50°25.0	37°55.6		
1	171°52.2	9.5'	07°58.2	-16.5'	60.8'	95°34.0	85°14.4	81°14.2	57°54.5	49°47.6	37°19.9		İ
2	186°20.7	9.6'	07°41.7	-16.5'	60.7'	94°56.5	84°44.7	80°45.4	57° 27.5	49°10.3	36°44.4	5°27.7	
3	200°49.3	9.7'	07°25.2	-16.6'	60.7'	94° 19.1	84°15.2	80°16.5	57°00.6	48°32.9	36°08.8	6°02.3	
4	215°18.0	9.7'	07°08.6	-16.6'	60.7'	93°41.7	83°45.6	79°47.7	56°33.8	47°55.6	35°33.3	6°37.5	
5	229°46.7	9.8'	06°52.0	-16.6'	60.7'	93°04.3	83°16.1	79°19.0	56° 07.2	47°18.4	34°57.8	7° 13.0	
6	244°15.5	9.9'	N06°35.4	-16.6'	60.6'	92°27.0	82°46.6	78°50.4	55°40.8	46°41.1	34°22.4	7°48.7	6°29.6
7	258°44.4	9.9'	06°18.7	-16.7'	60.6'	91°49.7	82°17.2	78°21.7	55° 14.5	46°03.9	33°47.0	8° 24.6	7°03.2
8	273°13.3	10.0'	$06^{\circ}02.1$	-16.7'	60.6'	91°12.4	81°47.9	77°53.2	54°48.4	45°26.7	33°11.7	9°00.7	7°37.2
9	287°42.3	10.1'	05°45.4	-16.7'	60.6'	90°35.2	81°18.5	77°24.7	54°22.4	44°49.6	32°36.4	9°36.9	8°11.7
10	302°11.4	10.1'	05°28.7	-16.7'	60.5'	89°58.0	80°49.3	76°56.3	53°56.7	44°12.5	32°01.1	10° 13.2	8°46.3
11	316°40.5	10.2'	$05^{\circ}12.0$	-16.7'	60.5'	89°20.8	80°20.1	76°27.9	53°31.1	43°35.5	31°25.9	10°49.6	9°21.3
12	331°09.7	10.3'	N 04°55.3	-16.7'	60.5'	88°43.7	79°50.9	75°59.6	53°05.7	42°58.5	30°50.8	11°26.0	9°56.3
13	345°39.0	10.3'	04°38.5	-16.7'	60.5'	88°06.6	79°21.8	75°31.4	52°40.4	42°21.5	30°15.7	12°02.4	10°31.6
14	0°08.3	10.4'	04°21.8	-16.8'	60.4'	87°29.6	78°52.7	75°03.2	52° 15.4	41°44.5	29°40.6	12° 38.9	11°06.9
15	14°37.7	10.4'	04°05.0	-16.8'	60.4'	86°52.6	78°23.8	74°35.2	51°50.6	41°07.6	29°05.7	13° 15.4	11°42.3
16	29°07.1	10.5'	03°48.2	-16.8'	60.4'	86° 15.6	77°54.8	74°07.2	51°25.9	40°30.8	28°30.7	13°51.9	12° 17.8
17	43°36.6	10.5'	03°31.5	-16.8'	60.3'	85°38.6	77°26.0	73°39.2	51°01.5	39°54.0	27°55.9	14°28.4	12°53.3
18	58°06.1	10.6'	N03°14.7	-16.8'	60.3'	85°01.7	76°57.2	73°11.4	50°37.2	39°17.2	27°21.1	15°04.9	13°28.9
19	72°35.7	10.6'	02°57.9	-16.8'	60.3'	84°24.9	76°28.4	72°43.6	50° 13.2	38°40.4	26°46.3	15°41.4	14°04.5
20	87°05.3	10.7'	02°41.2	-16.8'	60.3'	83°48.0	75°59.8	72°15.9	49°49.4	38°03.8	26°11.6	16° 17.9	14°40.1
21	101°35.0	10.7'	02°24.4	-16.8'	60.2'	83°11.3	75°31.2	71°48.3	49°25.8	37°27.1	25°37.0	16°54.3	15° 15.7
22	116°04.8	10.8'	02°07.7	-16.7'	60.2'	82°34.5	75°02.6	71°20.8	49°02.5	36°50.5	25°02.4	17° 30.8	15°51.3
23	130°34.5	10.8'	01°50.9	-16.7'	60.2'	81°57.8	74°34.2	70°53.4	48°39.3	36°13.9	24°28.0	18°07.2	16°27.0
4 th	SD	= 16.6	' Mer. pas	s. 13:59									

h Moon (5 th Aug)	h	Moon	(5 th	Aug)
------------------------------	---	------	------------------	------

Lunar Distance (objects with largest hourly LD delta)

HP -Altair -Antares -Rigil Kent. -Spica -Mars +Jupiter +Regulus

Thu	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	-Mars	+Jupiter	+Regulus	+Sun
0	145°04.4	10.9'	N01°34.2	-16.7'	60.1'		81°21.2	74°05.8	35°37.4	23°53.5	17°02.6	18°43.6	
1	159°34.3	10.9'	$01^{\circ}17.4$	-16.7'	60.1'		80°44.5	73°37.5	35°01.0	23° 19.2	17°38.3	19°20.0	
2	174°04.2	11.0'	$01^{\circ}00.7$	-16.7'	60.1'		80°08.0	73°09.3	34°24.5	22°44.9	18° 13.9	19°56.3	
3	188°34.1	11.0'	00°44.0	-16.7'	60.0'		79°31.4	72°41.1	33°48.2	22°10.8	18°49.5	20°32.6	
4	203°04.2	11.0'	00°27.3	-16.7'	60.0'		78°54.9	72°13.1	33°11.8	21°36.7	19°25.1	21°08.9	
5	217°34.2	11.1'	N 00° 10.7	-16.7'	60.0'		78° 18.5	71°45.1	32°35.5	21°02.7	20°00.6	21°45.2	
6	232°04.3	11.1'	S 00°06.0	-16.6'	59.9'		77°42.1	71°17.2	31°59.3	20°28.7	20°36.2	22°21.4	
7	246°34.4	11.2'	00°22.6	-16.6'	59.9'		77°05.7	70°49.4	31°23.1	19°54.9	21°11.7	22°57.6	
8	261°04.6	11.2'	00°39.2	-16.6'	59.9'		76°29.4	70°21.7	30°47.0	19°21.2	21°47.2	23°33.7	
9	275°34.8	11.2'	00°55.8	-16.6'	59.8'		75°53.1	69°54.1	30°10.9	18°47.6	22°22.6	24°09.9	41°25.7
10	290°05.0	11.3'	$01^{\circ}12.4$	-16.5'	59.8'		75°16.9	69°26.5	29°34.9	18°14.1	22°58.0	24°45.9	41°59.5
11	304°35.3	11.3'	01°28.9	-16.5'	59.8'		74°40.7	68°59.1	28°58.9	17°40.7	23°33.4	25°22.0	42°33.3
12	319°05.6	11.3'	S 01°45.4	-16.5'	59.7'		74°04.5	68°31.8	28°23.0	17°07.4	24°08.8	25°58.0	43°07.1
13	333°35.9	11.4'	$02^{\circ}01.9$	-16.4'	59.7'		73°28.4	68°04.5	27°47.1	16°34.3	24°44.1	26°33.9	43°40.8
14	348°06.3	11.4'	02°18.3	-16.4'	59.7'		72°52.4	67°37.4	27°11.3	16°01.3	25° 19.4	27°09.9	44°14.5
15	2°36.7	11.4'	02°34.8	-16.4'	59.6'		72°16.4	67°10.4	26°35.5	15°28.4	25°54.7	27°45.8	44°48.1
16	17°07.1	11.4'	$02^{\circ}51.1$	-16.3'	59.6'		71°40.4	66°43.4	25°59.8	14°55.8	26°29.9	28°21.6	45°21.7
17	31°37.5	11.5'	03°07.5	-16.3'	59.5'		71°04.5	66°16.6	25°24.2	14°23.3	27°05.1	28°57.4	45°55.2
18	46°08.0	11.5'	S 03°23.8	-16.3'	59.5'		70°28.7	65°49.9	24°48.6	13°50.9	27°40.3	29°33.2	46°28.7
19	60°38.5	11.5'	03°40.0	-16.2'	59.5'	119°46.2	69°52.8	65°23.3	24°13.0	13° 18.8	28° 15.4	30°08.9	47°02.1
20	75°09.0	11.5'	03°56.3	-16.2'	59.4'	119°16.9	69° 17.1	64°56.8	23°37.6	12°47.0	28°50.4	30°44.6	47°35.5
21	89°39.5	11.6'	$04^{\circ}12.5$	-16.1'	59.4'	118°47.6	68°41.3	64°30.4	23°02.1	12°15.4	29°25.5	31°20.2	48°08.9
22	104°10.1	11.6'	04°28.6	-16.1'	59.4'	118°18.3	68°05.7	64°04.1	22°26.8	11°44.0	30°00.5	31°55.8	48°42.2
23	118°40.6	11.6'	04°44.7	-16.1'	59.3'	117°49.0	67°30.0	63°37.9	21°51.5	11°13.0	30°35.4	32°31.3	49°15.4
5 th	SD	= 16.4	Mer. pas	s. 14:49					Sun SD =	= 15.8′			

h Moon (6 th Aug) L	Lunar Distance (objects with largest hourly LD delta)
--------------------------------	---

				<u> </u>					1				
Fri	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	-Mars	+Jupiter	+Regulus	+Sun
0	133°11.2	11.6'	S 05°00.7	-16.0'	59.3'	117°19.6	66°54.4	63°11.9	21°16.3	10°42.3	31°10.3	33°06.8	49°48.6
1	147°41.8	11.6'	$05^{\circ}16.7$	-16.0'	59.2'	116°50.2	66°18.9	62°46.0	20°41.1	10°12.0	31°45.2	33°42.3	50°21.8
2	162°12.4	11.6'	05°32.7	-15.9'	59.2'	116°20.8	65°43.4	62°20.2	20°06.0	9°42.2	32°20.0	34°17.7	50°54.9
3	176°43.1	11.6'	05°48.6	-15.9'	59.2'	115°51.4	65°08.0	61°54.5	19°31.0	9°12.9	32°54.8	34°53.0	51°27.9
4	191°13.7	11.7'	$06^{\circ}04.5$	-15.8'	59.1'	115°21.9	64°32.6	61°29.0	18°56.1	8°44.2	33°29.5	35°28.4	52°00.9
5	205°44.4	11.7'	06°20.3	-15.7'	59.1'	114°52.5	63°57.2	61°03.6	18°21.2	8°16.1	34°04.2	36°03.6	52°33.9
6	220°15.1	11.7'	S 06°36.0	-15.7'	59.1'	114°23.0	63°21.9	60°38.3	17°46.4	7°48.9	34°38.9	36°38.9	53°06.8
7	234°45.7	11.7'	$06^{\circ}51.7$	-15.6'	59.0'	113°53.5	62°46.7	60°13.2	17°11.7	7°22.5	35°13.5	37°14.0	53°39.7
8	249°16.4	11.7'	$07^{\circ}07.3$	-15.6'	59.0'	113°24.0	62°11.5	59°48.2	16°37.1		35°48.0	37°49.2	54°12.5
9	263°47.1	11.7'	07°22.9	-15.5'	58.9'	112°54.5	61°36.3	59°23.3	16°02.5		36°22.5	38°24.3	54°45.2
10	278°17.8	11.7'	07°38.4	-15.5'	58.9'	112°25.0	61°01.2	58°58.6	15°28.1		36°57.0	38°59.3	55°18.0
11	292°48.5	11.7'	07°53.9	-15.4'	58.9'	111°55.5	60°26.2	58°34.0	14°53.7		37°31.4	39°34.3	55°50.6
12	307°19.3	11.7'	S 08°09.3	-15.3'	58.8'	111°26.0	59°51.2	58°09.6	14°19.5		38°05.8	40°09.2	56°23.3
13	321°50.0	11.7'	08°24.6	-15.3'	58.8'	110°56.5	59°16.2	57°45.3	13°45.4		38°40.1	40°44.1	56°55.8
14	336°20.7	11.7'	08°39.9	-15.2'	58.7'	110°27.0	58°41.3	57°21.1	13°11.4		39°14.4	41°19.0	57°28.4
15	350°51.4	11.7'	$08^{\circ}55.1$	-15.1'	58.7'	109°57.6	58°06.4	56°57.2	12°37.5		39°48.6	41°53.8	58°00.8
16	5°22.1	11.7'	$09^{\circ}10.3$	-15.1'	58.7'	109°28.1	57°31.6	56°33.3	12°03.7		40°22.8	42°28.6	58°33.3
17	19°52.9	11.7'	09°25.3	-15.0'	58.6'	108°58.6	56°56.9	56°09.6	11°30.1		40°57.0	43°03.3	59°05.6
18	34°23.6	11.7'	S 09°40.3	-14.9'	58.6'	108°29.1	56°22.1	55°46.1	10°56.7		41°31.1	43°37.9	59°38.0
19	48°54.3	11.7'	09°55.3	-14.9'	58.6'	107°59.6	55°47.5	55°22.8	10°23.4		42°05.1	44°12.5	60°10.3
20	63°25.0	11.7'	$10^{\circ}10.1$	-14.8'	58.5'	107°30.2	55°12.9	54°59.6	9°50.4		42°39.1	44°47.1	60°42.5
21	77°55.7	11.7'	$10^{\circ}24.9$	-14.7'	58.5'	107°00.7	54°38.3	54°36.6	9°17.6		43°13.1	45°21.6	61°14.7
22	92°26.4	11.7'	$10^{\circ}39.6$	-14.6'	58.4'	106°31.3	54°03.8	54°13.7	8°45.0		43°47.0	45°56.1	61°46.8
23	106°57.1 11.7' 10°54.3 -14.6' 58.4					3.4' 106°01.9 53°29.3 53°51.1 8°12.8 44°20.8 46°30.5 62°1						62°18.9	
6 th	SD	= 16.2'	Mer. pas	s. 15:38					Sun SD =	= 15.8′			

h Moon (7 th Aug)	Lunar Distance (objects with largest hourly LD delta)
------------------------------	---

Sat	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Antares	±Spica	+Mars	+Jupiter	+Regulus	+Sun
0	121°27.8	11.7'	S 11°08.9	-14.5'	58.4'	105°32.5	53°28.5	52°54.9	7°40.9		44°54.7	47°04.9	62°50.9
1	135°58.5	11.7'	11°23.4	-14.4'	58.3'	105°03.1	53°06.2	52°20.5	7°09.5		45°28.4	47°39.2	63°22.9
2	150°29.2	11.7'	11°37.8	-14.3'	58.3'	104°33.7	52°44.1	51°46.2	6°38.6		46°02.1	48°13.5	63°54.9
3	164°59.8	11.7'	$11^{\circ}52.1$	-14.3'	58.2'	104°04.4	52°22.1	51°11.9	6°08.4		46°35.8	48°47.7	64°26.7
4	179°30.5	11.6'	12°06.4	-14.2'	58.2'	103°35.0	52°00.4	50°37.7	5°39.0		47°09.5	49°21.9	64°58.6
5	194°01.1	11.6'	12°20.6	-14.1'	58.2'	103°05.7	51°38.8	50°03.5		8°01.8	47°43.0	49°56.1	65°30.4
6	208°31.8	11.6'	S 12°34.7	-14.0'	58.1'	102°36.4	51°17.4	49°29.3		8°28.5	48°16.6	50°30.2	66°02.1
7	223°02.4	11.6'	12°48.7	-13.9'	58.1'	102°07.2	50°56.2	48°55.3		8°55.8	48°50.1	51°04.2	66°33.8
8	237°33.0	11.6'	13°02.6	-13.8'	58.0'	101°37.9	50°35.2	48°21.2		9°23.6	49°23.5	51°38.2	67°05.5
9	252°03.6	11.6'	13°16.4	-13.8'	58.0'	101°08.7	50° 14.4	47°47.2		9°51.8	49°56.9	52°12.2	67°37.1
10	266°34.1	11.6'	13°30.2	-13.7'	58.0'	100°39.5	49°53.8	47°13.3		10°20.4	50°30.2	52°46.1	68°08.6
11	281°04.7	11.5'	13°43.9	-13.6'	57.9'	100°10.3	49° 33.4	46°39.4		10°49.3	51°03.5	53°19.9	68°40.2
12	295°35.2	11.5'	S 13°57.5	-13.5'	57.9'	99°41.1	49°13.3	46°05.6		11°18.4	51°36.8	53°53.7	69°11.6
13	310°05.7	11.5'	$14^{\circ}11.0$	-13.4'	57.8'	99°12.0	48°53.3	45°31.8		11°47.8	52°10.0	54°27.5	69°43.0
14	324°36.2	11.5'	14°24.4	-13.3'	57.8'	98°42.9	48°33.6	44°58.0		12°17.4	52°43.2	55°01.2	70°14.4
15	339°06.7	11.5'	14°37.7	-13.2'	57.8'	98°13.8	$48^{\circ}14.1$	44°24.3		12°47.2	53°16.3	55°34.9	70°45.7
16	353°37.2	11.4'	14°50.9	-13.1'	57.7'	97°44.8	47°54.8	43°50.6		13°17.0	53°49.3	56°08.5	71°17.0
17	8°07.6	11.4'	$15^{\circ}04.1$	-13.0'	57.7'	97°15.8	47°35.7	43°17.0		13°47.1	54°22.4	56°42.1	71°48.2
18	22°38.1	11.4'	S 15°17.1	-12.9'	57.6'	96°46.8	47°16.9	42°43.5		14°17.2	54°55.4	57°15.6	72°19.4
19	37°08.5	11.4'	$15^{\circ}30.1$	-12.9'	57.6'	96°17.8	46°58.3	42°09.9		14°47.4	55°28.3	57°49.1	72°50.5
20	51°38.8	11.4'	15°42.9	-12.8'	57.6'	95°48.9	46° 39.9	41°36.5		15°17.6	56°01.2	58°22.5	73°21.6
21	66°09.2	11.3'	15°55.7	-12.7'	57.5'	95°20.0	46°21.8	41°03.0		15°48.0	56°34.0	58°55.9	73°52.6
22	80°39.5	11.3'	$16^{\circ}08.3$	-12.6'	57.5'	94°51.1	46°03.9	40°29.7	6°07.6	16°18.4	57°06.8	59°29.3	74°23.6
23	95°09.8	11.3'	16°20.9	-12.5'	57.5'	94°22.3	45°46.3	39°56.3	6°37.0	16°48.8	57°39.6	60°02.6	74°54.6
7 th	SD	= 15.9'	Mer. pas	s. 16:26					Sun SD =	= 15.8′			

Moon (8th Aug)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Antares	+Spica	+Jupiter	+Regulus	+Sun
0	109°40.1	11.3'	S 16°33.4	-12.4'	57.4'	118°48.2	93°53.5	45°28.9	39°23.0	7°06.9	58°12.3	60°35.8	75°25.5
1	124°10.3	11.2'	16°45.7	-12.3'	57.4'	118°18.4	93°24.8	45°11.8	38°49.8	7°37.3	58°44.9	61°09.0	75°56.4
2	138°40.6	11.2'	16°58.0	-12.2'	57.3'	117°48.7	92°56.0	44° 54.9	38°16.6	8°07.9	59°17.5	61°42.2	76°27.2
3	153°10.8	11.2'	$17^{\circ}10.2$	-12.1'	57.3'	117°18.9	92°27.3	44°38.3	37°43.4	8°38.9	59°50.1	62°15.3	76°57.9
4	167°41.0	11.1'	17°22.2	-12.0'	57.3'	116°49.2	91°58.7	44°22.0	37°10.3	9°10.0	60°22.7	62°48.4	77°28.7
5	182°11.1	11.1'	17°34.2	-11.9'	57.2'	116°19.5	91°30.0	44°05.9	36°37.3	9°41.4	60°55.1	63°21.4	77°59.3
6	196°41.2	11.1'	S 17°46.1	-11.8'	57.2'	115°49.8	91°01.5	43°50.1	36°04.2	10°12.8	61°27.6	63°54.4	78°30.0
7	211°11.3	11.1'	17°57.8	-11.6'	57.2'	115°20.1	90°32.9	43°34.6	35°31.3	10°44.4	62°00.0	64°27.4	79°00.6
8	225°41.4	11.0'	18°09.5	-11.5'	57.1'	114°50.4	90°04.4	43° 19.3	34°58.3	$11^{\circ}16.1$	62°32.3	65°00.3	79°31.1
9	240°11.4	11.0'	18°21.0	-11.4'	57.1'	114°20.8	89°35.9		34°25.5	11°47.8	63°04.6	65°33.1	80°01.6
10	254°41.4	11.0'	18°32.4	-11.3'	57.0'	113°51.1	89°07.5		33°52.6	12°19.6	63°36.9	66°06.0	80°32.1
11	269°11.4	10.9'	18°43.8	-11.2'	57.0'	113°21.5	88°39.1		33°19.8	12°51.5	64°09.1	66°38.7	81°02.5
12	283°41.3	10.9'	S 18°55.0	-11.1'	57.0'	112°51.8	88°10.7		32°47.0	13°23.4	64°41.3	67°11.5	81°32.9
13	298°11.3	10.9'	$19^{\circ}06.1$	-11.0'	56.9'	112°22.2	87°42.4		32°14.3	13°55.3	65°13.5	67°44.2	82°03.2
14	312°41.1	10.9'	$19^{\circ}17.1$	-10.9'	56.9'	111°52.6	87°14.1		31°41.7	14°27.2	65°45.6	68°16.8	82°33.5
15	327°11.0	10.8'	19°28.0	-10.8'	56.9'	111°23.1	86°45.9		31°09.0	14°59.1	66°17.6	68°49.4	83°03.7
16	341°40.8	10.8'	19°38.8	-10.7'	56.8'	110°53.5	86°17.7		30°36.4	15°31.0	66°49.6	69°22.0	83°33.9
17	356°10.6	10.8'	19°49.4	-10.6'	56.8'	110°23.9	85°49.5		30°03.9	16°03.0	67°21.6	69°54.5	84°04.1
18	10°40.4	10.7'	S 20°00.0	-10.4'	56.8'	109°54.4	85°21.4		29°31.4	16°34.9	67°53.5	70°27.0	84°34.2
19	25°10.1	10.7'	20°10.4	-10.3'	56.7'	109°24.9	84°53.3		28°58.9	17°06.9	68°25.4	70°59.4	85°04.3
20	39°39.8	10.7'	$20^{\circ}20.8$	-10.2'	56.7'	108°55.4	84°25.3		28°26.5	17°38.8	68°57.3	71°31.8	85°34.3
21	54°09.5	10.6'	$20^{\circ}31.0$	-10.1'	56.7'	108°25.9	83°57.3		27°54.1	18° 10.7	69°29.1	72°04.2	86°04.3
22	68°39.1	10.6'	20°41.1	-10.0'	56.6'	107°56.5	83°29.4		27°21.8	18°42.6	70°00.9	72°36.5	86°34.3
23	83°08.7 10.6' 20°51.1 -9.9' 56.6					$6.6'$ $107^{\circ}27.0$ $83^{\circ}01.4$ $26^{\circ}49.4$ $19^{\circ}14.5$ $70^{\circ}32.6$ $73^{\circ}08.8$ $87^{\circ}04$						87°04.2	
8 th	SD	= 15.7'	Mer. pas	s. 17:16		$Sun\;SD=15.8'$							

h		Moor	າ (9 th Au _ຄ	g)		L	unar Dist	ance (ob	jects wit	h largest	hourly l	LD delta)	
Mon	GHA	ν	Dec	d	HP	-Fomalhaut	-Deneb	-Altair	-Antares	+Spica	+Mars	+Jupiter	+Regulus
0	97°38.3	10.5'	S 21°00.9	-9.7'	56.5'	106° 57.6	105°27.0	82°33.6	26°17.2	19°46.4	29°30.5	71°04.3	73°41.0
1	112°07.8	10.5'	$21^{\circ}10.7$	-9.6'	56.5'	106°28.2	105°11.3	82°05.8	25°45.0	20°18.2	30°00.8	71°36.0	74°13.2
2	126°37.3	10.5'	21°20.3	-9.5'	56.5'	105°58.8	104°55.6	81°38.0	25°12.8	20°50.0	30°31.0	72°07.6	74°45.4
3	141°06.8	10.4'	21°29.8	-9.4'	56.4'	105°29.5	104°39.8	81°10.3	24°40.6	21°21.8	31°01.2	72°39.1	75°17.5
4	155°36.3	10.4'	21°39.2	-9.3'	56.4'	105°00.2	104°24.0	80°42.6	24°08.5	21°53.6	31°31.4	73°10.7	75°49.6
5	170°05.7	10.4'	$21^{\circ}48.5$	-9.2'	56.4'	104°30.8	104°08.1	80°14.9	23°36.4	22°25.4	32°01.5	73°42.2	76°21.6
6	184°35.1	10.4'	S 21°57.6	-9.0'	56.3'	104°01.6	103°52.2	79°47.4	23°04.4	22°57.1	32°31.7	74°13.6	76°53.6
7	199°04.4	10.3'	22°06.7	-8.9'	56.3'	103°32.3	103°36.3	79°19.8	22°32.4	23°28.8	33°01.7	74°45.1	77°25.6
8	213°33.7	10.3'	22°15.6	-8.8'	56.3'	103°03.0	103°20.3	78°52.3	22°00.5	24°00.5	33°31.8	75°16.5	77°57.6
9	228°03.0	10.3'	22°24.3	-8.7'	56.2'	102°33.8	103°04.3	78°24.9	21°28.5	24°32.2	34°01.8	75°47.8	78°29.4
10	242°32.3	10.2'	22°33.0	-8.5'	56.2'	102°04.6	102°48.3	77°57.5	20°56.6	25°03.8	34°31.9	76°19.1	79°01.3
11	257°01.5	10.2'	$22^{\circ}41.5$	-8.4'	56.2'	101°35.4	102°32.3	77°30.1	20°24.8	25°35.4	35°01.8	76°50.4	79°33.1
12	271°30.7	10.2'	S 22°50.0	-8.3'	56.1'	101°06.3	102°16.2	77°02.8	19°53.0	26°07.0	35°31.8	77°21.6	80°04.9
13	285°59.9	10.1'	22°58.2	-8.2'	56.1'	100°37.2	102°00.0	76°35.5	19°21.2	26°38.5	36°01.7	77°52.8	80°36.7
14	300°29.0	10.1'	23°06.4	-8.0'	56.1'	100°08.1	101°43.9	76°08.3	18°49.5	27°10.1	36°31.6	78°24.0	81°08.4
15	314°58.1	10.1'	23°14.5	-7.9'	56.1'	99°39.0	101°27.7	75°41.2	18°17.8	27°41.6	37°01.5	78°55.1	81°40.1
16	329°27.2	10.0'	23°22.4	-7.8'	56.0'	99°09.9	101°11.5	75°14.1	17°46.1	28°13.0	37°31.3	79°26.2	82°11.7
17	343°56.2	10.0'	23°30.2	-7.7'	56.0'	98°40.9	100°55.3	74°47.0	17°14.5	28°44.5	38°01.1	79°57.3	82°43.3
18	358°25.2	10.0'	S 23°37.8	-7.5'	56.0'	98°11.9	100°39.0	74°20.0	16°42.9	29°15.9	38°30.9	80°28.3	83°14.9
19	12°54.2	10.0'	23°45.3	-7.4'	55.9'	97°42.9	100°22.8	73°53.0	16°11.3	29°47.3	39°00.7	80°59.3	83°46.4
20	27°23.2	9.9'	23°52.7	-7.3'	55.9'	97°13.9	100°06.5	73°26.1	15°39.8	30°18.6	39°30.4	81°30.3	84°18.0
21	41°52.1	9.9'	24°00.0	-7.1'	55.9'	96°45.0	99°50.2	72°59.3	15°08.3	30°50.0	40°00.1	82°01.2	84°49.4
22	56°21.0	9.9'	24°07.2	-7.0'	55.8'	96°16.1	99°33.8	72°32.5	14°36.8	31°21.3	40°29.7	82°32.1	85°20.9
23	70°49.9	9.9'	24°14.2	-6.9'	55.8'	95°47.2	99°17.5	72°05.7	14°05.4	31°52.6	40°59.4	83°03.0	85°52.3
9 th	SD	= 15.4'	Mer. pass	. 18:07			-		-			-	

Tue GHA ν Dec d HP -Deneb -Fomalhaut -Altair -Antares +Spica +Mars +Jupiter +Regu	h		Moon	(10 th A	ug)			Lunar Dist	tance (ol	bjects wit	th largest	t hourly	LD delta)	
	Tue	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	-Antares	+Spica	+Mars	+Jupiter	+Regulus]

0	85°18.8	9.8'	S 24°21.1	-6.8'	55.8'	99°01.1	95°18.4	71°39.0	13°34.0	32°23.8	41°29.0	83°33.8	86°23.7
1	99°47.6	9.8'	24°27.8	-6.6'	55.8'	98°44.7	94°49.5	71°12.4	13°02.6	32°55.0	41°58.6	84°04.6	86°55.0
2	114°16.4	9.8'	24°34.4	-6.5'	55.7'	98°28.3	94°20.7	70°45.8	12°31.3	33°26.2	42°28.2	84°35.4	87°26.3
3	128°45.2	9.8'	24°40.9	-6.4'	55.7'	98°11.9	93°52.0	70°19.3	12°00.0	33°57.4	42°57.7	85°06.1	87°57.6
4	143°13.9	9.7'	24°47.3	-6.2'	55.7'	97°55.5	93°23.2	69°52.8	11°28.7	34°28.5	43°27.2	85°36.8	88°28.9
5	157°42.6	9.7'	24°53.5	-6.1'	55.6'	97°39.0	92°54.5	69°26.4	10°57.5	34°59.6	43°56.7	86°07.5	89°00.1
6	172°11.3	9.7'	S 24°59.6	-6.0'	55.6'	97°22.6	92°25.8	69°00.0	10°26.2	35°30.7	44°26.1	86°38.1	89°31.3
7	186°40.0	9.7'	25°05.6	-5.8'	55.6'	97°06.1	91°57.1	68°33.7	9°55.1	36°01.8	44°55.5	87°08.8	90°02.4
8	201°08.7	9.6'	25°11.4	-5.7'	55.6'	96°49.6	91°28.4	68°07.4	9°23.9	36°32.8	45°24.9	87°39.3	90°33.6
9	215°37.3	9.6'	$25^{\circ}17.1$	-5.6'	55.5'	96°33.2	90°59.8	67°41.2	8°52.8	37°03.8	45°54.3	88°09.9	91°04.7
10	230°05.9	9.6'	25°22.7	-5.4'	55.5'	96°16.7	90°31.2	67° 15.1	8°21.7	37°34.8	46°23.7	88°40.4	91°35.7
11	244°34.5	9.6'	$25^{\circ}28.1$	-5.3'	55.5'	96°00.2	90°02.6	66°49.0	7°50.6	38°05.7	46°53.0	89°10.9	92°06.8
12	259°03.1	9.6'	S 25°33.4	-5.2'	55.4'	95°43.7	89°34.1	66°23.0	7°19.6	38°36.7	47°22.3	89°41.4	92°37.8
13	273°31.7	9.5'	25°38.5	-5.0'	55.4'	95°27.2	89°05.6	65°57.1	6°48.6	39°07.6	47°51.5	90°11.8	93°08.8
14	288°00.2	9.5'	25°43.6	-4.9'	55.4'	95°10.7	88°37.1	65°31.2	6°17.6	39°38.4	48° 20.8	90°42.2	93°39.7
15	302°28.8	9.5'	25°48.5	-4.8'	55.4'	94°54.1	88°08.6	65°05.3	5°46.7	40°09.3	48°50.0	91°12.6	94°10.6
16	316°57.3	9.5'	25°53.2	-4.6'	55.3'	94°37.6	87°40.2	64°39.6	5°15.8	40°40.1	49° 19.2	91°42.9	94°41.5
17	331°25.8	9.5'	25°57.8	-4.5'	55.3'	94°21.1	87°11.8	64°13.8	4°44.9	41°10.9	49°48.4	92°13.3	95°12.4
18	345°54.2	9.5'	S 26°02.3	-4.3'	55.3'	94°04.6	86°43.4	63°48.2	4°14.0	41°41.7	50° 17.5	92°43.6	95°43.3
19	0°22.7	9.5'	26°06.6	-4.2'	55.3'	93°48.1	86°15.0	63°22.6	3°43.2	42°12.4	50°46.6	93°13.8	96°14.1
20	14°51.2	9.4'	$26^{\circ}10.9$	-4.1'	55.2'	93°31.6	85°46.7	62°57.1	3°12.4	42°43.1	51° 15.7	93°44.1	96°44.9
21	29°19.6	9.4'	26°14.9	-3.9'	55.2'	93°15.0	85°18.4	62°31.7	2°41.6	43°13.8	51°44.8	94°14.3	97°15.6
22	43°48.1	9.4'	$26^{\circ}18.9$	-3.8'	55.2'	92°58.5	84°50.1	62°06.3	2°10.8	43°44.5	52° 13.8	94°44.5	97°46.4
23	58°16.5	9.4'	26°22.7	-3.7'	55.2'	92°42.0	84°21.9	61°41.0	1°40.1	44°15.2	52°42.9	95°14.7	98°17.1
10 th	SD =	= 15.2'	Mer. pas	s. 18:58	3		-						

h Moon (11th Aug) Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	± Antares	+Spica	+Mars	+Jupiter	+Regulus
0	72°44.9	9.4'	S 26°26.3	-3.5'	55.1'	92°25.5	83°53.6	61°15.7	1°09.4	44°45.8	53°11.9	95°44.8	98°47.8
1	87°13.3	9.4'	26°29.8	-3.4'	55.1'	92°09.0	83°25.4	60°50.5	0°38.9	45°16.4	53°40.8	96°14.9	99°18.5
2	101°41.7	9.4'	26°33.2	-3.2'	55.1'	91°52.5	82°57.3	60°25.4	0°09.1	45°47.0	54°09.8	96°45.0	99°49.1
3	116°10.1	9.4'	26°36.5	-3.1'	55.1'	91°36.0	82°29.1	60°00.4		46° 17.5	54°38.7	97°15.1	100°19.7
4	130°38.5	9.4'	26°39.6	-3.0'	55.1'	91° 19.5	82°01.0	59°35.4		46°48.1	55°07.7	97°45.2	100°50.3
5	145°06.9	9.4'	26°42.5	-2.8'	55.0'	91°03.1	81°32.9	$59^{\circ}10.5$	1°24.0	47° 18.6	55°36.5	98°15.2	101°20.9
6	159°35.3	9.4'	S 26°45.4	-2.7'	55.0'	90°46.6	81°04.9	58°45.7	1°54.6	47°49.1	56°05.4	98°45.2	101°51.4
7	174°03.6	9.4'	26°48.1	-2.6'	55.0'	90°30.2	80°36.8	58°21.0	2°25.1	48°19.6	56°34.3	99°15.2	102°22.0
8	188°32.0	9.4'	26°50.6	-2.4'	55.0'	90°13.7	8.80°08	57°56.3	2°55.6	48°50.0	57°03.1	99°45.1	102°52.5
9	203°00.4	9.4'	26°53.1	-2.3'	54.9'	89°57.3	79°40.9	57°31.7	3°26.1	49°20.4	57°31.9	100°15.0	103°23.0
10	217°28.8	9.4'	26°55.3	-2.1'	54.9'	89°40.9	79°12.9	57°07.2	3°56.6	49°50.9	58°00.7	100°45.0	103°53.4
11	231°57.1	9.4'	26°57.5	-2.0'	54.9'	89°24.5	78°45.0	56°42.8	4°27.0	50°21.2	58°29.5	101°14.8	104°23.9
12	246°25.5	9.4'	S 26°59.5	-1.9'	54.9'	89°08.1	78°17.1	56°18.4	4°57.5	50°51.6	58°58.2	101°44.7	104°54.3
13	260°53.9	9.4'	27°01.4	-1.7'	54.9'	88°51.7	77°49.2	55°54.2	5°27.9	51°22.0	59°26.9	102°14.6	105°24.7
14	275°22.3	9.4'	27°03.1	-1.6'	54.8'	88° 35.3	77°21.4	55°30.0	5°58.3	51°52.3	59°55.6	102°44.4	105°55.0
15	289°50.7	9.4'	27°04.7	-1.5'	54.8'	88° 19.0	76°53.6	55°05.9	6°28.7	52°22.6	60°24.3	103°14.2	106°25.4
16	304°19.1	9.4'	$27^{\circ}06.1$	-1.3'	54.8'	88°02.6	76°25.8	54°41.8	6°59.0	52° 52.9	60°53.0	103°44.0	106°55.7
17	318°47.5	9.4'	$27^{\circ}07.5$	-1.2'	54.8'	87°46.3	75°58.1	$54^{\circ}17.9$	7°29.4	53°23.2	61°21.6	104°13.7	107°26.0
18	333°15.9	9.4'	S 27°08.6	-1.0'	54.8'	87°30.0	75°30.3	53°54.1	7°59.7	53°53.4	61°50.3	104°43.5	107°56.3
19	347°44.4	9.4'	27°09.7	-0.9'	54.7'	87° 13.7	75°02.6	53°30.3	8°30.0	54°23.7	62°18.9	105°13.2	108°26.6
20	2°12.8	9.5'	27°10.6	-0.8'	54.7'	86° 57.5	74°35.0	53°06.7	9°00.3	54°53.9	62°47.5	105°42.9	108°56.9
21	16°41.3	9.5'	$27^{\circ}11.3$	-0.6'	54.7'	86°41.2	74°07.3	52°43.1	9°30.5	55°24.1	63°16.1	106°12.6	109°27.1
22	31°09.7	9.5'	$27^{\circ}12.0$	-0.5'	54.7'	86°25.0	73°39.7	$52^{\circ}19.6$	10°00.8	55° 54.3	63°44.6	106°42.3	109°57.3
23	45°38.2	9.5'	27°12.5	-0.4'	54.7'	86°08.8	73°12.2	51°56.2	10°31.0	56°24.4	64°13.2	107°11.9	110°27.5
11 th	SD =	= 15.0′	Mer. pas	s. 19:51									

h		Moon	(12th Au	g)			Lunar E	Distance (ol	ojects wi	th largest	hourly L	D delta)	
Thu	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Antares	+Spica	+Jupiter	+Regulus
0	60°06.7	9.5'	S 27°12.8	-0.2'	54.6'		85°52.6	72°44.6	51°33.0	11°01.2	56°54.6	107°41.6	110°57.7
1	74°35.2	9.5'	$27^{\circ}13.0$	-0.1'	54.6'		85°36.5	72°17.1	51°09.8	11°31.4	57°24.7	108°11.2	111°27.9
2	89°03.8	9.6'	$27^{\circ}13.1$	0.1'	54.6'		85°20.4	71°49.6	50°46.7	12°01.6	57°54.8	108°40.8	111°58.0
3	103°32.3	9.6'	$27^{\circ}13.1$	0.2'	54.6'		85°04.3	71°22.2	50°23.7	12°31.7	58°24.9	109°10.3	112°28.1
4	118°00.9	9.6'	$27^{\circ}12.9$	0.3'	54.6'		84°48.2	70°54.7	50°00.9	13°01.9	58°55.0	109°39.9	112°58.3
5	132°29.5	9.6'	$27^{\circ}12.6$	0.5'	54.6'		84°32.1	70°27.3	49°38.1	13°32.0	59°25.1	110°09.5	113°28.4
6	146°58.1	9.6'	$S27^{\circ}12.1$	0.6'	54.5'		84°16.1	70°00.0	49°15.4	14°02.1	59°55.1	110°39.0	113°58.4
7	161°26.8	9.7'	$27^{\circ}11.5$	0.7'	54.5'		84°00.1	69°32.6	48°52.9	14°32.2	60°25.2	111°08.5	114°28.5
8	175°55.4	9.7'	$27^{\circ}10.8$	0.9'	54.5'		83°44.1	69°05.3	48°30.5	15°02.2	60°55.2	111°38.0	114°58.6
9	190°24.1	9.7'	27°09.9	1.0'	54.5'		83°28.2	68°38.1	48°08.1	15° 32.3	61°25.2	112°07.5	115°28.6
10	204°52.8	9.7'	27°08.9	1.1'	54.5'		83°12.3	68°10.8	47°45.9	16°02.4	61°55.2	112°37.0	115°58.6
11	219°21.6	9.8'	27°07.8	1.3'	54.5'		82°56.4	67°43.6	47°23.9	16°32.4	62°25.2	113°06.4	116°28.6
12	233°50.3	9.8'	S 27°06.5	1.4'	54.5'		82°40.5	67°16.4	47°01.9	17°02.4	62°55.1	113°35.8	116°58.6
13	248°19.1	9.8'	$27^{\circ}05.1$	1.5'	54.4'	119°51.8	82°24.7	66°49.3	46°40.1	17°32.4	63°25.1	114°05.3	117°28.6
14	262°48.0	9.9'	27°03.6	1.7'	54.4'	119°22.1	82°08.9	66°22.2	46°18.4	18°02.4	63°55.0	114°34.7	117°58.5
15	277°16.8	9.9'	$27^{\circ}01.9$	1.8'	54.4'	118°52.5	81°53.2	65°55.1	45°56.8	18° 32.4	64°24.9	115°04.1	118°28.5
16	291°45.7	9.9'	$27^{\circ}00.1$	1.9'	54.4'	118°22.9	81°37.5	65°28.1	45°35.3	19°02.3	64°54.9	115°33.5	118°58.4
17	306°14.6	10.0'	26°58.2	2.1'	54.4'	117°53.3	81°21.8	65°01.1	45°14.0	19°32.3	65°24.8	116°02.8	119°28.4
18	320°43.6	10.0'	S 26°56.2	2.2'	54.4'	117°23.7	81°06.1	64°34.1	44°52.8	20°02.2	65°54.6	116°32.2	119°58.3
19	335°12.6	10.0'	26°54.0	2.3'	54.4'	116°54.1	80°50.5	64°07.1	44°31.8	20°32.1	66°24.5	117°01.5	
20	349°41.6	10.1'	26°51.6	2.4'	54.3'	116°24.5	80°34.9	63°40.2	44°10.9	21°02.1	66°54.4	117°30.9	
21	4°10.7	10.1'	26°49.2	2.6'	54.3'	115°54.9	80°19.4	63°13.4	43°50.2	21°32.0	67°24.2	118°00.2	
22	18°39.8	10.1'	26°46.6	2.7'	54.3'	115°25.3	80°03.9	62°46.5	43°29.6	22°01.8	67°54.1	118°29.5	
23	33°08.9	10.2'	26°43.9	2.8'	54.3'	114°55.8	79°48.4	62°19.7	43°09.1	22°31.7	68°23.9	118°58.8	
12 th	SD	= 14.9'	Mer. pass	. 20:43									

n	Moon (13" Aug)	Lunar L	istance (o	bjects wi	tn iargest	nourly L	D deita)

Fri	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Antares	+Spica	+Arcturus	+Mars
0	47°38.1	10.2'	S 26°41.1	3.0'	54.3'	114°26.2	79°33.0	61°53.0	42°48.9	23°01.6	68°53.7	73° 29.5	76°02.0
1	62°07.3	10.3'	26°38.1	3.1'	54.3'	113°56.7	79°17.6	61°26.2	42°28.7	23°31.5	69°23.5	73°53.2	76°30.2
2	76°36.6	10.3'	26°35.0	3.2'	54.3'	113°27.1	79°02.3	60°59.6	42°08.8	24°01.3	69°53.3	74°16.9	76°58.3
3	91°05.9	10.3'	26°31.8	3.3'	54.3'	112°57.6	78°47.0	60°32.9	41°49.0	24°31.1	70°23.1	74° 40.6	77°26.5
4	105°35.2	10.4'	26°28.4	3.5'	54.2'	112°28.1	78°31.7	60°06.3	41°29.3	25°01.0	70°52.9	75°04.3	77°54.7
5	120°04.6	10.4'	26°25.0	3.6'	54.2'	111°58.6	78°16.5	59°39.7	41°09.9	25°30.8	71°22.7	75°28.1	78°22.8
6	134°34.1	10.5'	S 26°21.4	3.7'	54.2'	111°29.1	78°01.4	59°13.2	40°50.6	26°00.6	71°52.4	75°51.8	78°51.0
7	149°03.5	10.5'	$26^{\circ}17.7$	3.8'	54.2'	110°59.6	77°46.2	58°46.7	40°31.5	26°30.4	72°22.2	76° 15.6	79°19.1
8	163°33.1	10.6'	$26^{\circ}13.8$	4.0'	54.2'	110°30.1	77°31.2	58°20.3	40°12.6	27°00.2	72°51.9	76°39.4	79°47.2
9	178°02.6	10.6'	26°09.8	4.1'	54.2'	110°00.6	77°16.1	57°53.8	39°53.9	27°29.9	73°21.7	77°03.3	80°15.3
10	192°32.3	10.7'	26°05.7	4.2'	54.2'	109°31.1		57°27.5	39°35.4	27° 59.7	73°51.4	77°27.1	80°43.4
11	207°01.9	10.7'	$26^{\circ}01.5$	4.3'	54.2'	109°01.7		57°01.2	39°17.0	28° 29.5	74°21.1	77°50.9	81°11.5
12	221°31.7	10.8'	S 25°57.2	4.5'	54.2'	108°32.2		56°34.9	38°58.9	28°59.2	74°50.8	78° 14.8	81°39.6
13	236°01.4	10.8'	25°52.7	4.6'	54.1'	108°02.7		56°08.6	38°41.0	29°29.0	75°20.5	78°38.7	82°07.7
14	250°31.2	10.9'	25°48.2	4.7'	54.1'	107°33.3		55°42.5	38°23.3	29°58.7	75°50.2	79°02.5	82°35.8
15	265°01.1	10.9'	25°43.5	4.8'	54.1'	107°03.8		55°16.3	38°05.8	30°28.4	76°19.9	79°26.4	83°03.8
16	279°31.0	11.0'	25°38.6	4.9'	54.1'	106°34.4		54°50.2	37°48.5	30°58.1	76°49.6	79°50.3	83°31.9
17	294°01.0	11.0'	25°33.7	5.1'	54.1'	106°05.0		54°24.2	37°31.4	31°27.9	77°19.2	80°14.3	83°59.9
18	308°31.0	11.1'	S 25°28.6	5.2'	54.1'	105°35.5		53°58.2	37°14.6	31°57.6	77°48.9	80°38.2	84°28.0
19	323°01.1	11.1'	25°23.5	5.3'	54.1'	105°06.1		53°32.2	36°58.0	32°27.3	78°18.6	81°02.1	84°56.0
20	337°31.2	11.2'	25° 18.2	5.4'	54.1'	104°36.7		53°06.3	36°41.7	32°57.0	78°48.2	81°26.1	85°24.0
21	352°01.4	11.2'	$25^{\circ}12.8$	5.5'	54.1'	104°07.3		52°40.5	36°25.6	33°26.6	79°17.9	81°50.0	85°52.1
22	6°31.7	11.3'	25°07.2	5.6'	54.1'	103°37.8		52°14.7	36°09.7	33°56.3	79°47.5	82°14.0	86°20.1
23	21°02.0	11.4'	25°01.6	5.8'	54.1'	103°08.4		51°48.9	35°54.1	34°26.0	80°17.1	82°37.9	86°48.1
13 th	SD :	= 14.8'	Mer. pass	. 21:33									

h Moon (14th Aug)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus	+Mars
0	35°32.3	11.4'	S 24°55.9	5.9'	54.1'	102°39.0	51°23.3	34°55.7	56°56.0	61°15.4	80°46.8	83°01.9	87°16.1
1	50°02.7	11.5'	24°50.0	6.0'	54.1'	102°09.6	50°57.6	35°25.3	57°16.4	61°36.1	81°16.4	83°25.9	87°44.1
2	64°33.2	11.5'	24°44.0	6.1'	54.0'	101°40.2	50°32.1	35°55.0	57°36.9	61°56.9	81°46.0	83°49.9	88°12.1
3	79°03.7	11.6'	24°37.9	6.2'	54.0'	101°10.8	50°06.6	36°24.7	57°57.4	62°17.7	82°15.6	84°13.9	88°40.1
4	93°34.3	11.6'	$24^{\circ}31.7$	6.3'	54.0'	100°41.5	49°41.1	36°54.3	58°18.1	62°38.6	82°45.2	84°37.9	89°08.1
5	108°04.9	11.7'	24°25.4	6.4'	54.0'	100°12.1	49°15.7	37°24.0	58°38.8	62°59.6	83°14.8	85°01.9	89°36.0
6	122°35.6	11.8'	S 24°19.0	6.5'	54.0'	99°42.7	48°50.4	37°53.6	58°59.6	63°20.6	83°44.4	85°25.9	90°04.0
7	137°06.4	11.8'	$24^{\circ}12.5$	6.6'	54.0'	99°13.3	48°25.1	38°23.2	59°20.5	63°41.7	84°14.0	85°49.9	90°32.0
8	151°37.2	11.9'	24°05.8	6.7'	54.0'	98°43.9	47°59.9	38°52.9	59°41.4	64°02.9	84°43.6	86°13.9	91°00.0
9	166°08.1	11.9'	$23^{\circ}59.1$	6.9'	54.0'	98°14.6	47°34.8	39°22.5	60°02.4	64°24.1	85°13.2	86°37.9	91°27.9
10	180°39.0	12.0'	23°52.2	7.0'	54.0'	97°45.2	47°09.7	39°52.1	60°23.5	64°45.3	85°42.8	87°01.9	91°55.9
11	195°10.0	12.1'	23°45.3	7.1'	54.0'	97°15.8	46°44.7	40°21.7	60°44.7	65°06.7	86°12.4	87°26.0	92°23.8
12	209°41.0	12.1'	S 23°38.2	7.2'	54.0'	96°46.5	46°19.8	40°51.4	61°05.9	65°28.0	86°42.0	87°50.0	92°51.8
13	224°12.2	12.2'	23°31.1	7.3'	54.0'	96°17.1	45°55.0	41°21.0	61°27.2	65°49.4	87°11.5	88°14.0	93°19.7
14	238°43.3	12.2'	23°23.8	7.4'	54.0'	95°47.7	45°30.2	41°50.6	61°48.5	66° 10.9	87°41.1	88°38.0	93°47.7
15	253°14.6	12.3'	23° 16.4	7.5'	54.0'	95°18.4	45°05.5	42°20.2	62°09.9	66°32.5	88°10.7	89°02.1	94°15.6
16	267°45.8	12.4'	23°08.9	7.6'	54.0'	94°49.0	44°40.9	42°49.8	62°31.4	66°54.0	88°40.2	89°26.1	94°43.6
17	282°17.2	12.4'	23°01.4	7.7'	54.0'	94° 19.7	44°16.4	43°19.4	62°52.9	67° 15.7	89°09.8	89°50.1	95°11.5
18	296°48.6	12.5'	S 22°53.7	7.8'	54.0'	93°50.3	43°51.9	43°49.0	63°14.5	67°37.3	89°39.4	90°14.1	95°39.4
19	311°20.1	12.5'	22°45.9	7.9'	54.0'	93°20.9	43°27.6	44°18.6	63°36.2	67°59.1	90°08.9	90°38.2	96°07.4
20	325°51.6	12.6'	22°38.0	8.0'	54.0'	92°51.6	43°03.3	44°48.2	63°57.9	68°20.8	90°38.5	91°02.2	96°35.3
21	340°23.2	12.7'	$22^{\circ}30.1$	8.1'	54.0'	92°22.2	42°39.1	45°17.8	64°19.7	68°42.6	91°08.1	91°26.2	97°03.2
22	354°54.9	12.7'	$22^{\circ}22.0$	8.2'	54.0'	91°52.9	42°15.0	45°47.4	64°41.5	69°04.5	91°37.6	91°50.2	97°31.2
23	9°26.6	12.8'	22°13.8	8.3'	53.9'	91°23.5	41°51.0	46°17.0	65°03.4	69°26.4	92°07.2	92°14.2	97°59.1
14 th	SD :	= 14.7'	Mer. pass	. 22:21					·				

Moon (15th Aug)

h

Lunar Distance (objects with largest hourly LD delta)

_				<u> </u>		_		· •					
Sun	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus	+Mars
0	23°58.4	12.8'	S 22°05.5	8.4'	53.9'	90°54.2	41°27.1	46°46.6	65°25.3	69°48.4	92°36.7	92°38.2	98°27.0
1	38°30.2	12.9'	21°57.2	8.5'	53.9'	90°24.8	41°03.4	47°16.2	65°47.3	70°10.3	93°06.3	93°02.2	98°54.9
2	53°02.1	13.0'	21°48.7	8.5'	53.9'	89°55.5	40°39.7	47°45.8	66°09.3	70°32.4	93°35.8	93°26.2	99°22.9
3	67°34.1	13.0'	21°40.2	8.6'	53.9'	89°26.2	40°16.1	48°15.4	66°31.4	70°54.4	94°05.4	93°50.2	99°50.8
4	82°06.1	13.1'	21°31.6	8.7'	53.9'	88°56.8	39°52.6	48°45.0	66°53.6	71°16.5	94°35.0	94°14.2	100°18.7
5	96°38.2	13.1'	21°22.8	8.8'	53.9'	88°27.5	39°29.3	49°14.6	67°15.7	71°38.7	95°04.5	94°38.1	100°46.6
6	111°10.3	13.2'	S 21°14.0	8.9'	53.9'	87°58.1	39°06.1	49°44.2	67°38.0	72°00.9	95°34.1	95°02.1	101°14.5
7	125°42.5	13.3'	21°05.1	9.0'	53.9'	87°28.8	38°42.9	50°13.8	68°00.2	72°23.1	96°03.6	95°26.1	101°42.5
8	140°14.8	13.3'	$20^{\circ}56.1$	9.1'	53.9'	86°59.4	38°20.0	50°43.4	68°22.6	72°45.3	96°33.2	95°50.0	102°10.4
9	154°47.1	13.4'	20°47.0	9.2'	53.9'	86°30.1	37°57.1	51°13.0	68°44.9	73°07.6	97°02.7	96°14.0	102°38.3
10	169°19.5	13.4'	20°37.8	9.3'	53.9'	86°00.7	37°34.4	51°42.6	69°07.3	73°29.9	97°32.3	96°37.9	103°06.2
11	183°51.9	13.5'	$20^{\circ}28.6$	9.4'	53.9'	85°31.4	37°11.8	52°12.2	69°29.8	73°52.3	98°01.8	97°01.8	103°34.1
12	198°24.4	13.6'	S 20°19.2	9.4'	53.9'	85°02.0	36°49.3	52°41.8	69°52.3	74°14.7	98°31.4	97°25.8	104°02.1
13	212°57.0	13.6'	20°09.8	9.5'	53.9'	84°32.7	36°27.0	53°11.4	70°14.8	74°37.1	99°00.9	97°49.7	104°30.0
14	227°29.6	13.7'	20°00.2	9.6'	53.9'	84°03.3	36°04.9	53°41.0	70°37.4	74°59.5	99°30.5	98°13.6	104°57.9
15	242°02.3	13.7'	$19^{\circ}50.6$	9.7'	53.9'	83°34.0	35°42.9	54°10.6	71°00.0	75°22.0	100°00.1	98°37.4	105°25.8
16	256°35.0	13.8'	19°41.0	9.8'	53.9'	83°04.6	35°21.0	54°40.2	71°22.6	75°44.5	100°29.6	99°01.3	105°53.7
17	271°07.8	13.9'	19°31.2	9.8'	53.9'	82°35.3	34°59.4	55°09.8	71°45.3	76°07.1	100°59.2	99°25.2	106°21.7
18	285°40.7	13.9'	S 19°21.3	9.9'	53.9'	82°05.9	34°37.8	55°39.4	72°08.0	76°29.6	101°28.7	99°49.0	106°49.6
19	300°13.6	14.0'	19°11.4	10.0'	53.9'	81°36.5	34°16.5	56°09.0	72°30.7	76°52.2	101°58.3	100°12.8	107°17.5
20	314°46.6	14.0'	19°01.4	10.1'	53.9'	81°07.2	33°55.4	56°38.6	72°53.5	77°14.8	102°27.9	100°36.7	107°45.4
21	329°19.6	14.1'	$18^{\circ}51.3$	10.2'	53.9'	80°37.8	33°34.4	57°08.2	73°16.4	77° 37.5	102°57.5	101°00.5	108°13.4
22	343°52.7	14.1'	$18^{\circ}41.2$	10.2'	53.9'	80°08.5	33°13.6	57°37.8	73°39.2	78°00.2	103°27.0	101°24.2	108°41.3
23	358°25.8	14.2'	$18^{\circ}30.9$	10.3'	53.9'	79°39.1	32°53.0	58°07.4	74°02.1	78°22.8	103°56.6	101°48.0	109°09.2
15 th	SD	= 14.7'	Mer. pass	s. 23:06									

h Moon (16th Aug)

Mon	GHA	ν	Dec	d	HP	-Rigel	-Aldebaran	-Saturn	-Fomalhaut	+Antares	+Arcturus	+Spica	+Mars
0	12°59.0	14.3'	S 18°20.6	10.4'	53.9'			79°09.7	32°32.7	58°37.1	102°11.8	104°26.2	109°37.2
1	27°32.3	14.3'	18°10.2	10.5'	53.9'			78°40.3	32°12.5	59°06.7	102°35.5	104°55.8	110°05.1
2	42°05.6	14.4'	17°59.7	10.5'	53.9'			78°11.0	31°52.5	59°36.3	102°59.2	105°25.4	110°33.1
3	56°39.0	14.4'	17°49.2	10.6'	53.9'		119°51.3	77°41.6	31°32.8	60°05.9	103°22.9	105°54.9	111°01.0
4	71°12.4	14.5'	17°38.6	10.7'	53.9'		119°22.2	77°12.2	31°13.3	60°35.6	103°46.6	106°24.5	111°28.9
5	85°45.8	14.5'	17°27.9	10.8'	53.9'		118°53.2	76°42.8	30°54.1	61°05.2	104°10.3	106°54.1	111°56.9
6	100°19.4	14.6'	S 17°17.1	10.8'	53.9'	119°53.0	118°24.1	76°13.5	30°35.1	61°34.9	104°33.9	107°23.7	112°24.8
7	114°52.9	14.6'	$17^{\circ}06.3$	10.9'	54.0'	119°30.9	117°55.1	75°44.1	30°16.3	62°04.5	104°57.5	107°53.3	112°52.8
8	129°26.6	14.7'	$16^{\circ}55.4$	11.0'	54.0'	119°08.7	117°26.0	75°14.7	29°57.8	62°34.2	105°21.1	108°22.9	113°20.7
9	144°00.2	14.7'	16°44.5	11.0'	54.0'	118°46.4	116° 57.0	74°45.3	29°39.6	63°03.8	105°44.7	108°52.5	113°48.7
10	158°34.0	14.8'	16°33.4	11.1'	54.0'	118°24.1	116°27.9	74°15.9	29°21.7	63°33.5	106°08.2	109°22.1	114°16.7
11	173°07.8	14.8'	16°22.3	11.2'	54.0'	118°01.8	115°58.8	73°46.5	29°04.0	64°03.1	106°31.8	109°51.8	114°44.6
12	187°41.6	14.9'	S 16°11.2	11.2'	54.0'	117°39.3	115°29.7	73°17.1	28°46.7	64°32.8	106°55.3	110°21.4	115°12.6
13	202°15.5	14.9'	15°59.9	11.3'	54.0'	117°16.8	115°00.6	72°47.7	28°29.6	65°02.5	107°18.8	110°51.0	115°40.6
14	216°49.4	15.0'	15°48.6	11.4'	54.0'	116°54.3	114°31.5	72°18.3	28°12.9	65°32.1	107°42.2	111°20.6	116°08.5
15	231°23.4	15.0'	15°37.3	11.4'	54.0'	116°31.7	114°02.3	71°48.9	27°56.5	66°01.8	108°05.6	111°50.3	116°36.5
16	245°57.4	15.1'	15°25.8	11.5'	54.0'	116°09.0	113°33.2	$71^{\circ}19.5$	27°40.4	66°31.5	108°29.0	112°19.9	117°04.5
17	260°31.5	15.1'	15°14.4	11.5'	54.0'	115°46.3	113°04.1	70°50.1	27°24.7	67°01.2	108°52.4	112°49.5	117°32.5
18	275°05.6	15.2'	S 15°02.8	11.6'	54.0'	115°23.5	112°34.9	70°20.6	27°09.3	67°30.9	109°15.7	113°19.2	118°00.5
19	289°39.8	15.2'	14°51.2	11.7'	54.0'	115°00.7	112°05.7	69°51.2		68°00.6	109°39.0	113°48.8	118°28.5
20	304°14.0	15.3'	14°39.5	11.7'	54.0'	114°37.8	111°36.6	69°21.8		68°30.3	110°02.3	114°18.5	118° 56.5
21	318°48.2	15.3'	14°27.8	11.8'	54.0'	114°14.8	111°07.4	68°52.4		69°00.0	110°25.6	114°48.2	119°24.5
22	333°22.5	15.3'	$14^{\circ}16.0$	11.8'	54.0'	113°51.8	110°38.2	68°22.9		69°29.7	110°48.8	115°17.8	119°52.5
23	347°56.9	15.4'	14°04.2	11.9'	54.0'	113°28.8	110°09.0	67°53.5		69°59.4	111°12.0	115°47.5	
16 th	SD	= 14.7'	Mer. pass	23:50									

Moon (17th Aug)

Lunar Distance (objects with largest hourly LD delta)

Lunar Distance (objects with largest hourly LD delta)

-Capella -Aldebaran -Saturn +Altair +Antares

33°53.9

 $33^{\circ}24.3$

 $32^{\circ}54.8$

 $32^{\circ}25.3$

55°43.4

 $56^{\circ}07.6$

56°32.0 56°56.4

06°06 4 | 42°46 1 | 47°57 1 |

Tue	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Antares	+Rigil Kent.	+Hadar	+Spica
0	2°31.3	15.4'	S 13°52.3	12.0'	54.0'		118°37.7	109°39.8	67°24.0	70°29.2	83°42.7	87°56.2	116°17.2
1	17°05.7	15.5'	13°40.3	12.0'	54.0'		118°10.0	109° 10.6	66°54.6	70°58.9	84°06.2	88°19.3	116°46.9
2	31°40.2	15.5'	13°28.3	12.1'	54.0'		117°42.4	108°41.4	66°25.1	71°28.7	84°29.7	88°42.5	117°16.6
3	46°14.7	15.6'	13° 16.3	12.1'	54.0'		117°14.6	108°12.1	65°55.7	71°58.4	84°53.2	89°05.6	117°46.3
4	60°49.3	15.6'	13°04.2	12.2'	54.0'		116°46.9	107°42.9	65°26.2	72°28.2	85° 16.7	89°28.7	118°16.0
5	75°23.8	15.6'	12°52.0	12.2'	54.0'		116°19.2	107°13.6	64°56.8	72°57.9	85°40.2	89°51.8	118°45.7
6	89°58.5	15.7'	S 12°39.8	12.3'	54.1'		115°51.4	106°44.4	64°27.3	73°27.7	86°03.8	90°15.0	119°15.4
7	104°33.1	15.7'	12°27.5	12.3'	54.1'		115°23.6	106° 15.1	63°57.8	73°57.5	86°27.4	90°38.1	119°45.1
8	119°07.9	15.7'	12° 15.2	12.4'	54.1'		114°55.7	105°45.8	63°28.4	74°27.2	86°50.9	91°01.3	
9	133°42.6	15.8'	12°02.8	12.4'	54.1'		114°27.9	105° 16.5	62°58.9	74°57.0	87° 14.5	91°24.4	
10	148°17.4	15.8'	$11^{\circ}50.4$	12.5'	54.1'		114°00.0	104°47.2	62°29.4	75°26.8	87°38.1	91°47.6	
11	162°52.2	15.8'	$11^{\circ}37.9$	12.5'	54.1'		113°32.1	104° 17.9	61°59.9	75°56.6	88°01.7	92°10.7	
12	177°27.0	15.9'	S 11°25.4	12.6'	54.1'		113°04.2	103°48.6	61°30.4	76°26.4	88°25.4	92°33.9	
13	192°01.9	15.9'	11° 12.9	12.6'	54.1'		112°36.3	103° 19.3	61°00.9	76°56.2	88°49.0	92°57.1	
14	206°36.8	15.9'	11°00.3	12.6'	54.1'		112°08.3	102°49.9	60°31.4	77°26.1	89°12.6	93°20.2	
15	221°11.8	16.0'	10°47.6	12.7'	54.1'		111°40.4	102°20.6	60°01.9	77°55.9	89°36.3	93°43.4	
16	235°46.8	16.0'	10°34.9	12.7'	54.1'	119°53.3	111°12.4	101°51.2	59°32.4	78°25.7	89°59.9	94°06.5	
17	250°21.8	16.0'	$10^{\circ}22.2$	12.8'	54.1'	119°25.7	110°44.4	101°21.8	59°02.9	78°55.6	90°23.6	94°29.7	
18	264°56.8	16.1'	S 10°09.4	12.8'	54.1'	118°58.2	110°16.3	100°52.5	58°33.4	79°25.5	90°47.2	94°52.8	
19	279°31.9	16.1'	09°56.6	12.9'	54.1'	118° 30.6	109°48.3	100°23.1	58°03.9	79°55.3	91°10.9	95°16.0	
20	294°07.0	16.1'	09°43.7	12.9'	54.2'	118°02.9	109°20.2	99°53.7	57°34.3	80°25.2	91°34.6	95°39.2	
21	308°42.1	16.2'	09°30.9	12.9'	54.2'	117°35.3	108°52.1	99°24.3	57°04.8	80°55.1	91°58.2	96°02.3	
22	323°17.3	16.2'	$09^{\circ}17.9$	13.0'	54.2'	117°07.6	108°24.0	98°54.9	56°35.3	81°25.0	92°21.9	96°25.4	
23	337°52.4	16.2'	09°04.9	13.0'	54.2'	116°39.8	107°55.9	98°25.4	56°05.7	81°54.9	92°45.6	96°48.6	
17 th	SE) = 14.7	" Mer. pa	ss:-									

Moon (18th Aug) Lunar Distance (objects with largest hourly LD delta) h

Wed	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar
0	352°27.6	16.2'	S 08°51.9	13.0'	54.2'	116°12.1	107°27.8	97° 56.0	55°36.2	39°42.6	82°24.8	93°09.3	97°11.7
1	7°02.9	16.2'	08°38.9	13.1'	54.2'	115°44.3	106°59.6	97°26.6	55°06.6	40°01.3	82°54.7	93°33.0	97°34.8
2	21°38.1	16.3'	08°25.8	13.1'	54.2'	115° 16.5	106°31.5	96°57.1	54°37.1	40°20.2	83°24.6	93°56.7	97°58.0
3	36°13.4	16.3'	08°12.7	13.2'	54.2'	114°48.7	106°03.3	96°27.6	54°07.5	40°39.3	83°54.6	94°20.3	98°21.1
4	50°48.7	16.3'	$07^{\circ}59.5$	13.2'	54.2'	114°20.9	105°35.0	95°58.2	53°38.0	40°58.6	84°24.5	94°44.0	98°44.2
5	65°24.0	16.3'	07°46.3	13.2'	54.2'	113°53.0	105°06.8	95°28.7	53°08.4	41°18.0	84°54.5	95°07.7	99°07.3
6	79°59.3	16.4'	S 07°33.1	13.3'	54.2'	113°25.1	104°38.6	94°59.2	52°38.8	41°37.6	85°24.4	95°31.4	99°30.3
7	94°34.7	16.4'	$07^{\circ}19.9$	13.3'	54.3'	112°57.2	104°10.3	94°29.7	52°09.3	41°57.4	85°54.4	95°55.1	99°53.4
8	109°10.0	16.4'	07°06.6	13.3'	54.3'	112°29.2	103°42.0	94°00.1	51°39.7	42°17.4	86°24.4	96°18.8	100°16.5
9	123°45.4	16.4'	06°53.3	13.3'	54.3'	112°01.3	103°13.7	93°30.6	51°10.1	42°37.5	86°54.4	96°42.4	100°39.5
10	138°20.8	16.4'	06°39.9	13.4'	54.3'	111°33.3	102°45.4	93°01.1	50°40.5	42°57.8	87°24.4	97°06.1	101°02.6
11	152°56.3	16.4'	06°26.5	13.4'	54.3'	111°05.3	102°17.1	92°31.5	50°11.0	43°18.3	87°54.4	97°29.8	101°25.6
12	167°31.7	16.4'	S 06°13.1	13.4'	54.3'	110°37.2	101°48.8	92°02.0	49°41.4	43°38.9	88°24.4	97°53.4	101°48.6
13	182°07.1	16.5'	05°59.7	13.5'	54.3'	110°09.2	101°20.4	91°32.4	49°11.8	43°59.6	88°54.4	98°17.1	102°11.6
14	196°42.6	16.5'	05°46.3	13.5'	54.3'	109°41.1	100°52.0	91°02.8	48° 42.2	44°20.5	89°24.5	98°40.7	102°34.6
15	211°18.1	16.5'	05°32.8	13.5'	54.3'	109°13.0	100°23.7	90°33.2	48° 12.6	44°41.6	89°54.5	99°04.4	102°57.5
16	225°53.5	16.5'	$05^{\circ}19.3$	13.5'	54.3'	108°44.9	99°55.2	90°03.6	47°43.0	45°02.8	90°24.6	99°28.0	103°20.5
17	240°29.0	16.5'	05°05.7	13.6'	54.4'	108°16.7	99°26.8	89°34.0	47° 13.4	45°24.1	90°54.7	99°51.7	103°43.4
18	255°04.5	16.5'	S 04°52.2	13.6'	54.4'	107°48.6	98°58.4	89°04.4	46°43.8	45°45.6	91°24.8	100°15.3	104°06.3
19	269°40.1	16.5'	04°38.6	13.6'	54.4'	107°20.4	98°29.9	88° 34.8	46° 14.2	46°07.2	91°54.9	100°38.9	104°29.2
20	284°15.6	16.5'	04°25.0	13.6'	54.4'	106°52.2	98°01.5	88°05.1	45°44.5	46°28.9	92°25.0	101°02.5	104°52.1
21	298°51.1	16.5'	04°11.4	13.6'	54.4'	106°23.9	97°33.0	87° 35.5	45° 14.9	46°50.8	92°55.1	101°26.1	105°14.9
22	313°26.6	16.5'	03°57.7	13.7'	54.4'	105°55.7	97°04.5	87°05.8	44°45.3	47°12.8	93°25.2	101°49.6	105°37.8
23	328°02.2	16.5'	03°44.1	13.7'	54.4'	105°27.4	96°36.0	86°36.1	44°15.7	47°34.9	93°55.4	102°13.2	106°00.6
18 th	SD	= 14.8'	Mer. pass	. 00:31									

0	342°37.7	16.5	5 03°30.4	13.7	54.4		96°07.5	86~06.4	43°46.1	4/~5/.1	94°25.5	102°36.8	106°23.3
1	357°13.2	16.5'	03°16.7	13.7'	54.5'		95°39.0	85°36.8	43°16.4	48°19.5	94°55.7	103°00.3	106°46.1
2	11°48.8	16.5'	03°03.0	13.7'	54.5'		95°10.4	85°07.0	42°46.8	48°41.9	95°25.9	103°23.8	107°08.8
3	26°24.3	16.5'	02°49.3	13.7'	54.5'		94°41.8	84°37.3	42°17.2	49°04.5	95°56.1	103°47.3	107°31.5
4	40°59.9	16.5'	02°35.5	13.8'	54.5'		94°13.3	84°07.6	41°47.6	49°27.2	96°26.3	104°10.8	107°54.2
5	55°35.4	16.5'	02°21.7	13.8'	54.5'		93°44.7	83°37.8	41°18.0	49°50.0	96° 56.5	104°34.3	108°16.9
6	70°10.9	16.5'	S 02°08.0	13.8'	54.5'		93°16.1	83°08.1	40°48.3	50°12.9	97°26.7	104°57.7	108°39.5
7	84°46.5	16.5'	01°54.2	13.8'	54.5'		92°47.5	82°38.3	40°18.7	50°35.9	97°57.0	105°21.2	109°02.1
8	99°22.0	16.5'	01°40.4	13.8'	54.5'		92°18.8	82°08.5	39°49.1	50°59.0	98°27.2	105°44.6	109°24.6
9	113°57.5	16.5'	$01^{\circ}26.6$	13.8'	54.6'		91°50.2	81°38.8	39°19.5	51°22.2	98° 57.5	106°08.0	109°47.1
10	128°33.0	16.5'	$01^{\circ}12.7$	13.8'	54.6'		91°21.5	81°09.0	38°49.8	51°45.5	99°27.8	106°31.4	110°09.6
11	143°08.5	16.5'	00°58.9	13.8'	54.6'		90°52.9	80°39.1	38°20.2	52°08.9	99°58.0	106°54.7	110°32.1
12	157°44.0	16.5'	S 00°45.0	13.9'	54.6'		90°24.2	80°09.3	37°50.6	52°32.3	100°28.3	107°18.1	110°54.5
13	172°19.5	16.5'	00°31.2	13.9'	54.6'		89°55.5	79°39.5	37°21.0	52°55.9	100°58.7	107°41.4	111°16.9
14	186°55.0	16.5'	00°17.3	13.9'	54.6'		89°26.8	79°09.6	36°51.4	53°19.6	101°29.0	108°04.6	111°39.3
15	201°30.5	16.5'	S 00°03.5	13.9'	54.6'		88°58.0	78°39.8	36°21.8	53°43.3	101°59.3	108°27.9	112°01.6
16	216°06.0	16.4'	N00°10.4	13.9'	54.7'		88° 29.3	78°09.9	35°52.2	54°07.2	102°29.7	108°51.1	112°23.8
17	230°41.4	16.4'	00°24.3	13.9'	54.7'	119°53.9	88°00.6	77°40.0	35°22.6	54°31.1	103°00.1	109°14.3	112°46.1
18	245°16.8	16.4'	N00°38.2	13.9'	54.7'	119°23.7	87°31.8	77°10.1	34°53.0	54°55.1	103°30.5	109°37.5	113°08.2
19	259°52.3	16.4'	$00^{\circ}52.1$	13.9'	54.7'	118°53.4	87°03.0	76°40.2	34°23.5	55°19.2	104°00.9	110°00.7	113°30.4

86°34.3

86°05.5

 $85^{\circ}36.6$

85°07.8

76°10.3 75°40.4

75°10.4

74°40.5

16.4

16.4'

16.3'

16.3'

SD = 14.8'

Moon (19th Aug)

ν

16 5

Dec

C02020 4

 $01^{\circ}06.0$

 $01^{\circ}33.8$

 $01^{\circ}47.7$

Mer. pass. 01:11

13.9'

13.9'

13.9'

13.9'

54.7'

54.7'

54.8'

118°23.2 117°52.9 117°22.6

116°52.3

ΗP

d

-Pollux

h

Thu

GHA

274°27.7

 $289^{\circ}03.0$

 $303^{\circ}38.4$

 $318^{\circ}13.8$

20

21

22

23

19th

110°23.8 110°46.9

111°09.9 111°32.9

+Rigil Kent.

04005 5

104°31.3

 $105^{\circ}01.7$

105°32.2 106°02.6

+Hadar

 $113^{\circ}52.5$

114° 14.5 114° 36.5

114°58.5

100006 0 106000 0

07°05.7

 $07^{\circ}19.4$

13.7'

13.6'

55.2'

55.2

108°54.5

 $108^{\circ}25.2$

 $105^{\circ}10.4$

 $104^{\circ}39.7$

63°08.0

 $62^{\circ}37.7$

21°13.0

 $20^{\circ}44.4$

41°34.2

 $41^{\circ}59.2$

66°36.0

 $67^{\circ}01.9$

 $118^{\circ}18.5$

293°39.1

 $308^{\circ}13.6$

23

15.6

15.5

Moon (20th Aug) h Lunar Distance (objects with largest hourly LD delta) Fri GHA HP -Aldebaran +Fomalhaut +Altair Dec d -Procyon -Pollux -Saturn +Antares +Rigil Kent. 332°49.1 N02°01.6 119°31.8 116°21.9 74°10.5 33°03.5 111°55.9 0 16.3 13.9 54.8 31°55.7 57°20.9 106°33.1 347°24.4 119°03.2 73°40.5 31°26.2 57°45.4 112°18.9 16.3 $02^{\circ}15.5$ 13.9 54.8 $115^{\circ}51.6$ 33°24.8 107°03.6 1 $1^{\circ}59.7$ 118°34.5 $115^{\circ}21.2$ 73°10.5 33°46.3 $58^{\circ}10.1$ 107°34.1 $112^{\circ}41.8$ 16.3 $02^{\circ}29.4$ 13.9' 54.8 $30^{\circ}56.7$ 108°04.6 3 $16^{\circ}34.9$ 02°43.3 13.9' 54.8 $118^{\circ}05.8$ $114^{\circ}50.9$ $72^{\circ}40.5$ 30°27.3 34°08.0 $58^{\circ}34.7$ $113^{\circ}04.6$ 16.2 31°10.2 72°10.5 4 16.2 02°57.1 13.9 54.8 117°37.0 114°20.5 29°57.8 34°29.9 58°59.5 108°35.2 113°27.5 117°08.3 $71^{\circ}40.5$ 34°52.1 109°05.7 5 45°45.4 16.2 $03^{\circ}11.0$ 13.9' 54.9 $113^{\circ}50.1$ 29°28.3 59°24.4 113°50.3 6 60°20.6 16.2 $N03^{\circ}24.9$ 13.9 54.9 $116^{\circ}39.4$ $113^{\circ}\,19.6$ $71^{\circ}10.4$ 28°58.9 $35^{\circ}14.4$ 59°49.3 109°36.3 $114^{\circ}13.0$ 74°55.7 $03^{\circ}38.8$ 116°10.6 115°41.7 114°35.7 $112^{\circ}49.2$ $70^{\circ}40.4$ 28°29.5 35°36.9 $60^{\circ}14.2$ $110^{\circ}06.9$ 16.1' 13.9' 54.9' 112° 18.7 111° 48.2 70°10.3 69°40.2 8 $89^{\circ}30.8$ 16.1 $03^{\circ}52.7$ 13.9' 54.9 $28^{\circ}00.2$ $35^{\circ}59.6$ $60^{\circ}39.3$ $110^{\circ}37.5$ $114^{\circ}58.4$ 115°12.8 36°22.5 61°04.4 61°29.5 111° 08.1 111° 38.7 104°05 9 04°06 5 115°21.0 9 16.1 13.9 54.9 27°30.8 114°43.9 115°43.6 118°41.0 04°20.4 111°17.7 69°10.1 27°01.5 36°45.5 10 16.0 13.8 54.9 133°16.1 04°34.2 114°14.9 110°47.2 68°40.0 37°08.8 61°54.7 26°32.2 112°09.4 $116^{\circ}06.1$ 11 16.0 13.8 55.0 147°51.1 $37^{\circ}32.2$ 112°40.0 12 16.0' $N04^{\circ}48.1$ 13.8' 55.0 $113^{\circ}46.0$ $110^{\circ}16.7$ $68^{\circ}09.9$ $26^{\circ}03.0$ $62^{\circ}20.0$ $116^{\circ}28.6$ 162°26.0 37°55.7 62°45.4 113°16.9 109°46.2 113°10.7 13 15.9 $05^{\circ}01.9$ 13.8' 55.0 67°39.8 25°33.7 $116^{\circ}51.0$ 67°09.6 38°19.4 177°01 0 109°15 6 112°47 9 25°04.6 63°10.8 113°41.4 117°13.4 14 15.9 05°157 13.8 55.0 66°39.5 191°35.9 112°18.8 108°45.0 38°43.3 63°36.2 114°12.2 117°35.7 $05^{\circ}29.5$ 24°35.4 15 15.9 13.8 55.0 206°10.7 05°43.3 111°49.7 66°09.3 24°06.3 39°07.3 64°01.7 114°42.9 117°57.9 15.8 13.8 55.0 $108^{\circ}14.4$ 16 17 220°45.5 15.8 $05^{\circ}57.1$ 13.8 $111^{\circ}20.6$ $107^{\circ}\,43.8$ $65^{\circ}39.1$ $23^{\circ}37.3$ $39^{\circ}31.4$ 64°27.3 115°13.6 $118^{\circ}20.1$ 55.1 39°55.7 235°20.3 110°51.4 107°13 1 65°08.9 64°52 9 115°44 4 N06°108 23°08.3 118°42 3 18 15.7 13.7 55.1 106°42.5 64°38.7 40°20.1 65°18.6 116°15.2 119°04.4 249°55.1 $06^{\circ}24.6$ 110°22.2 22°39.4 19 15.7 13.7 55.1 264°29.8 06°38.3 109°53.0 64°08.5 22°10.5 40°44.7 65°44.4 116°46.0 119°26.4 15.7 106°11.8 20 55.1 13.7 117° 16.8 117° 47.7 279°04.4 15.6 $06^{\circ}52.0$ 13.7 109°23.8 $105^{\circ}41.1$ 63°38.2 21°41.8 41°09.4 66°10.2 119°48.4 21 55.1

20 th	SD	= 14.9'	Mer. pass	s. 01:52					'				
h		Moon	(21 st Au	g)			Lunar	Distance (objects w	vith largest	hourly LD	delta)	
Sat	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran	+Fomalhaut	+Altair	+Antares
0	322°48.2	15.5'	N07°33.0	13.6'	55.2'	107°55.9	104°08.9	82°01.0	73°03.9	62°07.5	42°24.2	67°27.8	118°49.4
1	337°22.6	15.4'	07°46.6	13.6'	55.2'	107°26.6	103°38.1	81°31.9	72°34.8	61°37.2	42°49.4	67°53.8	119°20.3
2	351°57.1	15.4'	08°00.2	13.6'	55.2'	106°57.2	103°07.3	81°02.8	72°05.7	61°06.9	43°14.7	68°19.9	119°51.3
3	6°31.5	15.3'	08°13.8	13.6'	55.2'	106°27.8	102°36.5	80°33.7	71°36.6	60°36.6	43°40.1	68°46.0	
4	21°05.8	15.3'	08°27.4	13.5'	55.3'	105°58.4	102°05.7	80°04.6	71°07.5	60°06.2	44°05.7	69°12.1	
5	35°40.1	15.2'	08°40.9	13.5'	55.3'	105°28.9	101°34.8	79°35.4	70°38.4	59°35.9	44°31.3	69°38.3	
6	50°14.3	15.2'	N 08°54.4	13.5'	55.3'	104°59.4	101°04.0	79°06.3	70°09.3	59°05.5	44°57.0	70°04.5	
7	64°48.5	15.1'	09°07.9	13.5'	55.3'	104°29.9	100°33.1	78°37.1	69°40.1	58°35.2	45°22.9	70°30.8	
8	79°22.6	15.1'	09°21.4	13.4'	55.3'	104°00.4	100°02.2	78° 07.9	69°11.0	58°04.8	45°48.8	70°57.1	
9	93°56.7	15.0'	09°34.8	13.4'	55.4'	103°30.8	99°31.2	77°38.7	68°41.9	57°34.4	46°14.8	71°23.5	
10	108°30.7	15.0'	09°48.2	13.4'	55.4'	103°01.2	99°00.3	77°09.5	68°12.7	57°04.0	46°41.0	71°49.9	
11	123°04.6	14.9'	$10^{\circ}01.5$	13.3'	55.4'	102°31.6	98°29.3	76°40.3	67°43.6	56°33.6	47°07.2	72°16.4	
12	137°38.5	14.8'	N 10°14.9	13.3'	55.4'	102°02.0	97°58.3	76°11.1	67°14.4	56°03.2	47°33.5	72°42.8	
13	152° 12.4	14.8'	10°28.2	13.3'	55.5'	101°32.3	97°27.3	75°41.9	66°45.2	55°32.7	47°59.9	73°09.4	
14	166°46.2	14.7'	$10^{\circ}41.4$	13.2'	55.5'	101°02.6	96°56.2	75° 12.6	66°16.1	55°02.3	48°26.4	73°36.0	
15	181°19.9	14.7'	$10^{\circ}54.7$	13.2'	55.5'	100°32.9	96°25.2	74°43.4	65°46.9	54°31.8	48°53.0	74°02.6	
16	195°53.5	14.6'	$11^{\circ}07.9$	13.2'	55.5'	100°03.2	95°54.1	74° 14.1	65°17.7	54°01.3	49°19.7	74°29.2	
17	210°27.1	14.5'	$11^{\circ}21.0$	13.1'	55.5'	99°33.4	95°23.0	73°44.8	64°48.5	53°30.9	49°46.5	74°56.0	
18	225°00.6	14.5'	$N11^{\circ}34.1$	13.1'	55.6'	99°03.6	94°51.9	73° 15.5	64°19.4	53°00.4	50°13.3	75°22.7	
19	239°34.1	14.4'	11°47.2	13.0'	55.6'	98°33.8	94°20.7	72°46.2	63°50.2	52°29.9	50°40.2	75°49.5	
20	254°07.5	14.3'	12°00.3	13.0'	55.6'	98°04.0	93°49.5	72°16.9	63°21.0	51°59.3	51°07.2	76°16.3	
21	268°40.8	14.3'	12°13.3	13.0'	55.6'	97°34.1	93°18.3	71°47.6	62°51.8	51°28.8	51°34.3	76°43.1	
22	283°14.1	14.2'	12°26.2	12.9'	55.6'	97°04.2	92°47.1	71° 18.2	62°22.6	50°58.3	52°01.5	77°10.0	
23	297° 47.2	14.1'	$12^{\circ}39.1$	12.9'	55.7'	96°34.3	92°15.9	70°48.9	61°53.4	50°27.7	52°28.7	77°37.0	
21 st	SD	= 15.1'	Mer. pass	. 02:33									

h		Moon	(22 nd Au	g)			Lunar	Distance	(objects w	ith larges	st hourly L	D delta)	
Sun	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran	+Fomalhaut	+Altair
0	312°20.4	14.0'	N12°52.0	12.8'	55.7'		96°04.3	91°44.6	70°19.6	61°24.2	49°57.1	52°56.0	78°03.9
1	326°53.4	14.0'	13°04.8	12.8'	55.7'		95°34.4	91°13.3	69°50.2	60°55.0	49°26.6	53°23.4	78°30.9
2	341°26.4	13.9'	13°17.6	12.7'	55.7'		95°04.4	90°42.0	69°20.8	60°25.8	48°56.0	53°50.8	78°58.0
3	355°59.3	13.8'	13°30.3	12.7'	55.8'		94°34.4	90°10.7	68°51.5	59°56.6	48°25.4	54°18.3	79°25.1
4	10°32.1	13.7'	13°43.0	12.6'	55.8'		94°04.3	89°39.3	68°22.1	59°27.4	47°54.8	54°45.9	79°52.2
5	25°04.8	13.7'	13°55.7	12.6'	55.8'		93°34.2	89°07.9	67°52.7	58°58.2	47°24.2	55°13.6	80°19.3
6	39°37.5	13.6'	$N14^{\circ}08.3$	12.5'	55.8'		93°04.1	88°36.5	67°23.3	58°29.0	46°53.6	55°41.3	80°46.5
7	54°10.1	13.5'	14°20.8	12.5'	55.9'		92°34.0	88°05.1	66°53.9	57°59.8	46°22.9	56°09.1	81°13.7
8	68°42.6	13.4'	14°33.3	12.4'	55.9'		92°03.9	87°33.6	66°24.4	57°30.7	45°52.3	56°37.0	81°40.9
9	83°15.0	13.3'	14°45.7	12.4'	55.9'		91°33.7	87°02.1	65°55.0	$57^{\circ}01.5$	45°21.6	57°04.9	82°08.2
10	97°47.3	13.3'	14°58.1	12.3'	55.9'		$91^{\circ}03.5$	86°30.6	65°25.6	56°32.3	44°51.0	57°32.9	82°35.5
11	112°19.6	13.2'	$15^{\circ}10.4$	12.3'	56.0'		90°33.3	85°59.1	64°56.2	56°03.1	44°20.3	58°00.9	83°02.9
12	126°51.8	13.1'	$N15^{\circ}22.7$	12.2'	56.0'		90°03.1	85°27.5	64°26.7	55°33.9	43°49.7	58°29.0	83°30.2
13	141°23.9	13.0'	15°34.9	12.1'	56.0'		89°32.8	84°56.0	63°57.3	55°04.8	43°19.0	58°57.2	83°57.6
14	155°55.9	12.9'	15°47.0	12.1'	56.0'		89°02.5	84°24.4	63°27.8	54°35.6	42°48.3	59°25.4	84°25.1
15	170°27.8	12.8'	15°59.1	12.0'	56.1'	119°59.8	88°32.2	83°52.7	62°58.4	54°06.5	42°17.6	59°53.7	84°52.5
16	184°59.7	12.7'	$16^{\circ}11.1$	12.0'	56.1'	119°30.5	$88^{\circ}01.8$	83°21.1	62°28.9	53°37.4	41°47.0	60°22.0	85°20.0
17	199°31.4	12.7'	16°23.0	11.9'	56.1'	119°01.1	87°31.5	82°49.4	61°59.5	53°08.2	41°16.3	60°50.4	85°47.6
18	214°03.1	12.6'	N 16°34.9	11.8'	56.1'	118°31.6	$87^{\circ}01.1$	82°17.7	61°30.0	$52^{\circ}39.1$	40°45.6	61°18.9	86°15.1
19	228°34.6	12.5'	16°46.8	11.8'	56.2'	118°02.2	86°30.7	81°45.9	61°00.5	52°10.0	40°14.9	61°47.4	86°42.7
20	243°06.1	12.4'	$16^{\circ}58.5$	11.7'	56.2'	117°32.7	86°00.2	81°14.1	60°31.1	51°40.9	39°44.2	62°16.0	87°10.3
21	257°37.5	12.3'	$17^{\circ}10.2$	11.6'	56.2'	117°03.2	85°29.8	80°42.3	60°01.6	$51^{\circ}11.9$	39°13.5	62°44.6	87°37.9
22	272°08.8	12.2'	$17^{\circ}21.8$	11.6'	56.2'	116°33.6	84°59.3	80° 10.5	59°32.1	50°42.8	38°42.8	63°13.3	88°05.6
23	286°40.0	12.1'	17°33.4	11.5'	56.3'	116°04.1	84°28.8	79°38.7	59°02.7	50°13.8	38°12.1	63°42.1	88°33.3
22 nd	SD	= 15.2'	Mer. pass	. 03:17					Sun SD	0 = 15.8'			

h Moon (23rd Aug)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Aldebaran	+Saturn	+Fomalhaut	+Deneb	+Altair
0	301°11.1	12.0'	N 17°44.9	11.4'	56.3'	115°34.5	83°58.2	79°06.8	37°41.4		64°10.8		89°01.0
1	315°42.1	11.9'	17°56.3	11.3'	56.3'	115°04.8	83°27.7	78°34.9	37° 10.8		64°39.7		89°28.7
2	330°13.1	11.8'	18°07.6	11.3'	56.3'	114°35.2	82°57.1	78°03.0	36°40.1	10°45.2	65°08.6		89°56.5
3	344°43.9	11.7'	$18^{\circ}18.9$	11.2'	56.4'	114°05.5	82°26.5	77°31.0	36°09.4	11°07.8	65°37.5		90°24.3
4	359°14.6	11.6'	18°30.0	11.1'	56.4'	113°35.8	81°55.8	76°59.0	35°38.7	11°31.1	66°06.5		90°52.1
5	13°45.2	11.5'	18°41.1	11.0'	56.4'	113°06.1	81°25.2	76°27.0	35°08.1	11°55.2	66°35.6		91°19.9
6	28°15.8	11.4'	N 18°52.1	10.9'	56.5'	112°36.3	80°54.5	75°54.9	34°37.5	12° 19.9	67°04.7		91°47.8
7	42°46.2	11.3'	19°03.1	10.9'	56.5'	112°06.5	80°23.8	75°22.9	34°06.8	12°45.2	67° 33.8		92°15.7
8	57°16.5	11.2'	19° 13.9	10.8'	56.5'	111°36.7	79°53.1	74°50.8	33°36.2	13° 10.9	68°03.1		92°43.6
9	71°46.7	11.1'	19°24.7	10.7'	56.5'	111°06.8	79°22.3	74°18.6	33°05.6	13°37.2	68°32.3	72°13.9	93°11.5
10	86°16.9	11.0'	19°35.4	10.6'	56.6'	110°36.9	78°51.5	73°46.5	32°35.0	14°03.9	69°01.6	72°28.9	93°39.5
11	100°46.9	10.9'	19°46.0	10.5'	56.6'	110°07.0	78°20.7	73°14.3	32°04.5	14°31.1	69°30.9	72°44.1	94°07.5
12	115°16.8	10.8'	N 19°56.5	10.4'	56.6'	109°37.1	77°49.9	72°42.0	31°33.9	14°58.5	70°00.3	72°59.4	94°35.5
13	129°46.6	10.7'	20°06.9	10.3'	56.7'	109°07.1	77°19.0	72°09.8	31°03.4	15°26.4	70°29.8	73°14.8	95°03.5
14	144°16.4	10.6'	20°17.3	10.2'	56.7'	108°37.1	76°48.2	71°37.5	30°33.0	15°54.5	70°59.3	73°30.2	95°31.5
15	158°46.0	10.5'	20°27.5	10.1'	56.7'	108°07.0	76°17.3	71°05.2	30°02.5	16°22.9	71°28.8	73°45.7	95°59.6
16	173°15.5	10.4'	20°37.7	10.1'	56.7'	107°37.0	75°46.4	70°32.8	29°32.1	16°51.6	71°58.4	74°01.3	96°27.7
17	187°44.9	10.3'	20°47.7	10.0'	56.8'	107°06.8	75°15.4	70°00.5	29°01.7	17°20.6	72°28.0	74°17.0	96°55.7
18	202°14.2	10.2'	N20°57.7	9.9'	56.8'	106°36.7	74°44.5	69°28.1	28°31.4	17°49.7	72°57.7	74°32.8	97°23.9
19	216°43.4	10.1'	21°07.5	9.8'	56.8'	106°06.5	74°13.5	68°55.6	28°01.1	18° 19.1	73°27.4	74°48.7	97°52.0
20	231°12.4	10.0'	21°17.3	9.7'	56.9'	105°36.3	73°42.5	68°23.1	27°30.9	18°48.7	73°57.2	75°04.6	98°20.1
21	245°41.4	9.9'	21°27.0	9.6'	56.9'	105°06.1	73°11.4	67°50.6	27°00.7	19° 18.5	74°27.0	75°20.6	98°48.3
22	260°10.3	9.8'	21°36.5	9.5'	56.9'	104°35.8	72°40.4	67°18.1	26°30.6	19°48.5	74°56.9	75°36.7	99°16.5
23	274°39.0	9.7'	21°46.0	9.4'	56.9'	104°05.5	72°09.3	66°45.5	26°00.5	20°18.6	75°26.8	75°52.9	99°44.7
23 rd	SD	= 15.4'	Mer. pass	. 04:03					Sun SD	= 15.8'			

h Moon (24th Aug)

Lunar Distance (objects with largest hourly LD delta)

			(=: /:	0)					(asjects		, , , , , , , , , , , , , , , , , , ,	,	
Tue	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Aldebaran	+Saturn	+Fomalhaut	+Deneb	+Altair
0	289°07.7	9.5'	N 21°55.3	9.2'	57.0'	103°35.2	71°38.2	66°13.0	25°30.6	20°48.9	75°56.7	$76^{\circ}09.1$	100°12.9
1	303°36.2	9.4'	22°04.6	9.1'	57.0'	103°04.8	71°07.1	65°40.3	25°00.7	21°19.3	76° 26.7	76°25.4	100°41.1
2	318°04.7	9.3'	22°13.7	9.0'	57.0'	102°34.4	70°35.9	65°07.7	24°30.8	21°49.9	76° 56.7	76°41.8	101°09.4
3	332°33.0	9.2'	22°22.7	8.9'	57.1'	102°04.0	70°04.8	64°35.0	24°01.1	22°20.6	77°26.8	76°58.3	101°37.6
4	347°01.2	9.1'	22°31.7	8.8'	57.1'	101°33.5	69°33.6	64°02.2	23°31.5	22°51.5	77°56.9	77°14.8	102°05.9
5	1°29.3	9.0'	22°40.5	8.7'	57.1'	101°03.0	69°02.4	63°29.5	23°02.0	23°22.4	78°27.1	77°31.4	102°34.2
6	15°57.3	8.9'	N 22°49.2	8.6'	57.2'	100°32.5	68°31.2	62°56.7	22° 32.5	23°53.5	78°57.3	77°48.1	103°02.5
7	30°25.2	8.8'	22°57.7	8.5'	57.2'	100°01.9	67°59.9	62°23.9	22°03.3	24°24.7	79°27.5	78°04.9	103°30.7
8	44°53.0	8.7'	23°06.2	8.3'	57.2'	99°31.3	67°28.7	61°51.0	21°34.1	24°56.0	79°57.8	78°21.7	103°59.1
9	59°20.7	8.6'	23°14.6	8.2'	57.3'	99°00.7	66°57.4	61°18.1	21°05.1	25°27.4	80°28.1	78°38.6	104°27.4
10	73°48.2	8.5'	23°22.8	8.1'	57.3'	98°30.0	66°26.1	60°45.2	20°36.3	25°58.9	80°58.5	78°55.5	104°55.7
11	88°15.7	8.3'	23°30.9	8.0'	57.3'	97°59.3	65°54.8	60°12.2	20°07.7	26°30.5	81°28.9	79°12.5	105°24.0
12	102°43.0	8.2'	N 23°38.9	7.9'	57.3'	97°28.5	65°23.4	59°39.3	19° 39.2	27°02.2	81°59.3	79°29.6	105°52.4
13	117°10.3	8.1'	23°46.7	7.7'	57.4'	96°57.8	64°52.1	59°06.2	19°11.0	27°34.0	82°29.8	79°46.7	106°20.7
14	131°37.4	8.0'	23°54.5	7.6'	57.4'	96°26.9	64°20.7	58°33.2	18°43.0	28°05.9	83°00.3	80°03.9	106°49.1
15	146°04.4	7.9'	24°02.1	7.5'	57.4'	95°56.1	63°49.3	58°00.1	18° 15.2	28°37.9	83°30.9	80°21.2	107°17.4
16	160°31.3	7.8'	24°09.5	7.3'	57.5'	95°25.2	63°17.9	57°27.0	17°47.7	29°09.9	84°01.5	80°38.5	107°45.8
17	174°58.1	7.7'	24°16.9	7.2'	57.5'	94°54.3	62°46.5	56°53.8	17° 20.5	29°42.0	84°32.1	80°55.8	108°14.1
18	189°24.8	7.6'	N24°24.1	7.1'	57.5'	94°23.3	62°15.0	56°20.6	16°53.7	30°14.2	85°02.8	81°13.3	108°42.5
19	203°51.4	7.5'	24°31.2	7.0'	57.6'	93°52.3	61°43.6	55°47.4	16°27.2	30°46.5	85° 33.5	81°30.8	109°10.9
20	218°17.9	7.4'	24°38.1	6.8'	57.6'	93°21.3	61°12.1	55°14.1	16°01.1	31°18.9	86°04.3	81°48.3	109°39.2
21	232°44.2	7.3'	24°45.0	6.7'	57.6'	92°50.2	60°40.6	54°40.8	15°35.4	31°51.3	86°35.1	82°05.9	110°07.6
22	247°10.5	7.2'	24°51.6	6.5'	57.7'	92°19.1	60°09.1	54°07.5	15° 10.2	32°23.8	87°05.9	82°23.5	110°36.0
23	261°36.7	7.1'	24°58.2	6.4'	57.7'	91°47.9	59°37.6	53°34.1	14°45.5	32°56.3	87°36.8	82°41.2	111°04.3
24 th	SD =	= 15.5 [']	Mer. pass	. 04:54	1				Sun SD	0 = 15.8'			

h Moon (25th Aug)

Wed	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Betelgeuse	+Saturn	+Deneb	+Fomalhaut	+Altair
0	276°02.7	7.0'	N 25°04.6	6.3'	57.7'	91°16.8	59°06.1	53°00.7	35°25.3	33°29.0	82°59.0	88° 07.7	111°32.7
1	290°28.7	6.9'	25°10.8	6.1'	57.8'	90°45.5	58°34.5	52°27.3	34°57.9	34°01.7	83°16.8	88°38.6	112°01.0
2	304°54.5	6.7'	25°17.0	6.0'	57.8'	90°14.3	58°03.0	51°53.8	34°30.6	34°34.4	83°34.6	89°09.6	112°29.4
3	319°20.3	6.6'	25°22.9	5.8'	57.8'	89°43.0	57°31.4	51°20.3	34°03.4	35°07.3	83°52.5	89°40.6	112°57.7
4	333°45.9	6.5'	25°28.8	5.7'	57.9'	89°11.6	56°59.9	50°46.8	33°36.4	35°40.1	84°10.4	90°11.6	113°26.0
5	348°11.5	6.4'	25°34.4	5.5'	57.9'	88°40.3	56°28.3	50°13.2	33°09.6	36°13.1	84°28.4	90°42.7	113°54.3
6	2°36.9	6.3'	N 25°40.0	5.4'	57.9'	88°08.8	55°56.7	49°39.6	32°42.9	36°46.1	84°46.4	91°13.8	114°22.6
7	17°02.3	6.3'	25°45.3	5.2'	58.0'	87°37.4	55°25.1	49°06.0	32°16.3	37°19.2	85°04.5	91°45.0	114°50.9
8	31°27.5	6.2'	25°50.6	5.1'	58.0'	87°05.9	54°53.5	48°32.3	31°50.0	37°52.3	85°22.6	92°16.2	115°19.2
9	45°52.7	6.1'	25°55.7	4.9'	58.0'	86°34.4	54°21.9	47°58.6	31°23.8	38°25.5	85°40.8	92°47.4	115°47.4
10	60°17.7	6.0'	26°00.6	4.8'	58.1'	86°02.8	53°50.3	47°24.8	30°57.9	38°58.8	85°59.0	93° 18.7	116°15.7
11	74°42.7	5.9'	26°05.3	4.6'	58.1'	85°31.2	53°18.7	46°51.1	30°32.1	39°32.1	86°17.2	93°49.9	116°43.9
12	89°07.6	5.8'	$N26^{\circ}10.0$	4.5'	58.1'	84°59.6	52°47.1	46°17.2	30°06.5	40°05.4	86°35.4	94°21.3	117°12.1
13	103°32.3	5.7'	26° 14.4	4.3'	58.2'	84°27.9	52°15.5	45°43.4	29°41.2	40°38.9	86°53.7	94°52.6	117°40.3
14	117°57.0	5.6'	26° 18.7	4.1'	58.2'	83°56.1	51°43.9	45°09.5	29°16.2	41°12.3	87° 12.1	95°24.0	118°08.4
15	132°21.6	5.5'	26°22.8	4.0'	58.2'	83°24.4	51°12.3	44°35.6	28°51.3	41°45.9	87°30.4	95° 55.4	118°36.5
16	146°46.1	5.4'	26°26.8	3.8'	58.3'	82°52.6	50°40.6	44°01.6	28°26.8	42°19.5	87°48.8	96°26.8	119°04.6
17	161°10.6	5.3'	26°30.6	3.6'	58.3'	82°20.7	50°09.0	43°27.7	28°02.5	42°53.1	88°07.3	96°58.3	119°32.7
18	175°34.9	5.3'	N26°34.3	3.5'	58.3'	81°48.9	49°37.5	42°53.6	27°38.5	43°26.8	88°25.7	97°29.8	
19	189°59.1	5.2'	26°37.8	3.3'	58.4'	81°16.9	49°05.9	42°19.6	27°14.9	44°00.5	88°44.2	98°01.4	
20	204°23.3	5.1'	26°41.1	3.1'	58.4'	80°45.0	48°34.3	41°45.5	26°51.5	44°34.4	89°02.7	98° 32.9	
21	218°47.4	5.0'	26°44.2	3.0'	58.4'	80°13.0	48°02.7	41°11.4	26°28.6	45°08.2	89°21.2	99°04.5	
22	233°11.4	4.9'	26°47.2	2.8'	58.5'	79°40.9	47°31.2	40°37.2	26°05.9	45°42.1	89°39.8	99°36.1	
23	247°35.3	4.9'	26°50.0	2.6'	58.5'	79°08.9	46°59.6	40°03.1	25°43.7	46°16.1	89°58.4	100°07.8	
25 th	SD =	= 15.7'	Mer. pass	. 05:4	9				Sun SE	0 = 15.8'			

h	Moon	(26 th	Aug)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Betelgeuse	+Aldebaran	+Saturn	+Deneb	+Fomalhaut
0	261°59.2	4.8'	N 26°52.6	2.5'	58.5'	78°36.7	46°28.1	39°28.8	25°21.8		46°50.1	90°17.0	100°39.5
1	276°23.0	4.7'	26°55.1	2.3'	58.6'	78°04.6	45°56.6	38°54.6	25°00.4		47°24.1	90°35.6	101°11.2
2	290°46.7	4.6'	26°57.4	2.1'	58.6'	77°32.4	45°25.1	38°20.3	24°39.4		47°58.3	90°54.3	101°42.9
3	305°10.3	4.6'	26°59.5	1.9'	58.6'	77°00.1	44°53.7	37°46.0	24°18.9		48°32.4	91°12.9	102°14.7
4	319°33.9	4.5'	$27^{\circ}01.4$	1.8'	58.7'	76°27.8	44°22.2	37°11.7	23°58.9		49°06.6	91°31.6	102°46.4
5	333°57.4	4.4'	27°03.2	1.6'	58.7'	75°55.5	43°50.8	36°37.3	23°39.3		49°40.9	91°50.3	103°18.2
6	348°20.8	4.4'	N 27°04.8	1.4'	58.7'	75°23.2	43° 19.5	36°02.9	23°20.3		50°15.2	92°09.0	103°50.1
7	2°44.2	4.3'	27°06.2	1.2'	58.8'	74°50.8	42°48.1	35°28.5	23°01.9		50°49.6	92°27.7	104°21.9
8	17°07.5	4.3'	27°07.4	1.1'	58.8'	74°18.3	42°16.8	34°54.0	22°44.1		51°24.0	92°46.5	104°53.8
9	31°30.8	4.2'	27°08.5	0.9'	58.8'	73°45.8	41°45.6	34°19.5	22°26.8		51°58.4	93°05.2	105°25.7
10	45°54.0	4.1'	27°09.4	0.7'	58.9'	73°13.3	41°14.4	33°45.0	22°10.2	13°33.9	52°32.9	93°24.0	105°57.6
11	60°17.1	4.1'	$27^{\circ}10.0$	0.5'	58.9'	72°40.7	40°43.2	33°10.5	21°54.3	13°57.7	53°07.5	93°42.7	106°29.5
12	74°40.2	4.0'	$N27^{\circ}10.6$	0.3'	58.9'	72°08.1	40°12.1	32°35.9	21°39.1	14°22.2	53°42.1	94°01.5	107°01.5
13	89°03.3	4.0'	$27^{\circ}10.9$	0.1'	59.0'	71°35.5	39°41.0	32°01.3		14°47.4	54° 16.8	94°20.2	107°33.5
14	103°26.3	3.9'	$27^{\circ}11.0$	-0.0'	59.0'	71°02.8	39° 10.0	31°26.7		15° 13.3	54°51.5	94°39.0	108°05.4
15	117°49.2	3.9'	$27^{\circ}11.0$	-0.2'	59.0'	70°30.1	38°39.0	30°52.1		15°39.8	55°26.2	94°57.8	108°37.5
16	132°12.1	3.9'	$27^{\circ}10.7$	-0.4'	59.1'	69°57.3	38°08.2	30°17.4		16°06.9	56°01.0	95°16.5	109°09.5
17	146°35.0	3.8'	27°10.3	-0.6'	59.1'	69°24.5	37° 37.4	29°42.7		16°34.5	56°35.8	95°35.3	109°41.5
18	160°57.8	3.8'	N 27°09.7	-0.8'	59.1'	68°51.7	37°06.6	29°08.0		17°02.6	57° 10.7	95°54.1	110°13.6
19	175°20.6	3.7'	27°08.9	-1.0'	59.2'	68°18.8	36°36.0	28°33.3		17°31.2	57°45.6	96°12.8	110°45.6
20	189°43.3	3.7'	27°08.0	-1.2'	59.2'	67°45.9	36°05.4	27°58.6		18°00.2	58°20.6	96°31.6	111°17.7
21	204°06.0	3.7'	27°06.8	-1.3'	59.2'	67°12.9	35°34.9	27°23.8		18° 29.5	58°55.6	96°50.3	111°49.8
22	218°28.7	3.7'	27°05.5	-1.5'	59.2'	66°39.9	35°04.6	26°49.0		18° 59.3	59° 30.7	97°09.1	112°21.9
23	232°51.4	3.6'	27°03.9	-1.7'	59.3'	66°06.9	34°34.3	26°14.3		19°29.3	60°05.8	97°27.8	112°54.0
26 th	SD	= 16.0	Mer. pas	s. 06:49					Sun S	5D = 15.8'			

Moon (27th Aug)

Lunar Distance	(objects with	largest hourly	v LD delta)
----------------	---------------	----------------	-------------

	ivioon (21° Aug)					Lunar Distance (objects with largest hourly LD delta)								
Fri	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	+Aldebaran	+Capella	+Saturn	+Deneb	+Fomalhaut	
0	247°14.0	3.6'	N27°02.2	-1.9'	59.3'	65°33.8	34°04.2	25°39.5	19°59.7		60°41.0	97°46.5	113°26.1	
1	261°36.6	3.6'	27°00.3	-2.1'	59.3'	65°00.7	33°34.1	25°04.7	20°30.4		61°16.2	98°05.2	113°58.3	
2	275°59.2	3.6'	26°58.2	-2.3'	59.4'	64°27.5	33°04.2	24°29.9	21°01.4		61°51.4	98°23.8	114°30.4	
3	290°21.8	3.6'	26°55.9	-2.5'	59.4'	63°54.3	32°34.5	23°55.1	21°32.6		62°26.7	98°42.5	115°02.5	
4	304°44.3	3.5'	26°53.4	-2.7'	59.4'	63°21.1	32°04.8	23°20.3	22°04.1		63°02.0	99°01.1	115°34.7	
5	319°06.9	3.5'	26°50.7	-2.9'	59.5'	62°47.8	31°35.4	22°45.5	22°35.8	21°12.7	63°37.4	99°19.7	116°06.8	
6	333°29.4	3.5'	N 26°47.9	-3.1'	59.5'	62°14.5	31°06.1	22°10.7	23°07.7	21°29.1	64°12.8	99°38.3	116°38.9	
7	347°51.9	3.5'	26°44.8	-3.2'	59.5'	61°41.1	30°36.9	21°35.9	23°39.9	21°46.4	64°48.3	99°56.9	117°11.1	
8	2°14.4	3.5'	26°41.6	-3.4'	59.6'	61°07.7	30°08.0	21°01.2	24°12.2	22°04.3	65°23.8	100°15.4	117°43.2	
9	16°36.9	3.5'	$26^{\circ}38.1$	-3.6'	59.6'	60°34.3	29°39.2	20°26.4	24°44.7	22°23.0	65°59.4	100°33.9	118°15.4	
10	30°59.5	3.5'	26°34.5	-3.8'	59.6'	60°00.8	29° 10.7	19°51.7	25°17.4	22°42.3	66°35.0	100°52.4	118°47.5	
11	45°22.0	3.5'	26°30.7	-4.0'	59.7'	59°27.3	28°42.4	19°17.0	25°50.3	23°02.3	67°10.6	101°10.8	119°19.6	
12	59°44.5	3.5'	N26°26.7	-4.2'	59.7'	58°53.7	28° 14.3	18°42.4	26°23.3	23°22.9	67°46.3	101°29.2	119°51.7	
13	74°07.0	3.5'	26°22.5	-4.4'	59.7'	58°20.2	27°46.4	18°07.8	26°56.5	23°44.1	68°22.0	101°47.6		
14	88°29.5	3.5'	$26^{\circ}18.1$	-4.6'	59.7'	57°46.5	27° 18.8	17°33.3	27°29.8	24°05.9	68°57.7	102°05.9		
15	102°52.0	3.5'	$26^{\circ}13.6$	-4.8'	59.8'	57°12.9	26°51.6	16°58.8	28°03.3	24°28.3	69°33.5	102°24.2		
16	117°14.6	3.6'	26°08.8	-4.9'	59.8'	56°39.2	26°24.6	16°24.4	28°36.9	24°51.1	70°09.4	102°42.4		
17	131°37.1	3.6'	26°03.8	-5.1'	59.8'	56°05.5	25°57.9	15°50.1	29°10.6	25°14.5	70°45.2	103°00.6		
18	145°59.7	3.6'	N 25°58.7	-5.3'	59.9'	55°31.7	25°31.5	15°15.9	29°44.5	25°38.4	71°21.2	103°18.8		
19	160°22.3	3.6'	25°53.4	-5.5'	59.9'	54°57.9	25°05.5	14°41.8	30°18.4	26°02.7	71°57.1	103°36.9		
20	174°44.9	3.6'	25°47.9	-5.7'	59.9'	54°24.0	24°39.9	14°07.9	30°52.5	26° 27.5	72°33.1	103°54.9		
21	189°07.6	3.7'	25°42.2	-5.9'	59.9'	53°50.2	24° 14.7	13°34.1	31°26.7	26°52.7	73°09.1	104°12.9		
22	203°30.2	3.7'	25°36.3	-6.1'	60.0'	53°16.3	23°49.9	13°00.6	32°01.0	27°18.3	73°45.2	104°30.9		
23	217°52.9	3.7'	25°30.2	-6.3'	60.0'	52°42.3	23°25.6	12°27.2	32°35.4	27°44.3	74°21.3	104°48.8		
27 th	SD	= 16.2'	Mer. pas	s. 07:51					Sun SI	0 = 15.8'				

h	Moon	(28th	$\Delta u \sigma $

Sat	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	+Betelgeuse	+Capella	+Aldebaran	+Rigel	+Saturn
0	232°15.6	3.7'	N 25°24.0	-6.4'	60.0'	52°08.3	23°01.7	11°54.1	22°43.8	28°10.7	33°09.9	41°19.4	74°57.5
1	246°38.4	3.8'	25°17.6	-6.6'	60.0'	51°34.3	22°38.4	11°21.3	23°02.5	28°37.5	33°44.4	41°37.1	75°33.6
2	261°01.2	3.8'	25°10.9	-6.8'	60.1'	51°00.3	22°15.5	10°48.9	23°21.8	29°04.6	34°19.1	41°55.3	76°09.9
3	275°24.0	3.9'	25°04.1	-7.0'	60.1'	50°26.2	21°53.3	10°16.9	23°41.8	29°32.1	34°53.9	42°13.7	76°46.1
4	289°46.8	3.9'	24°57.2	-7.2'	60.1'	49°52.1	21°31.6	9°45.4	24°02.5	29°59.8	35°28.7	42°32.5	77°22.4
5	304°09.7	3.9'	24°50.0	-7.3'	60.2'	49°17.9	21°10.6	9°14.4	24°23.7	30°27.9	36°03.7	42°51.7	77°58.7
6	318°32.7	4.0'	N24°42.7	-7.5'	60.2'	48°43.7	20°50.2	8°44.2	24°45.5	30°56.3	36°38.7	43°11.1	78°35.1
7	332°55.6	4.0'	24°35.1	-7.7'	60.2'	48°09.5	20°30.6	8°14.8	25°07.9	31°24.9	37°13.7	43°30.9	79°11.5
8	347°18.7	4.1'	24°27.4	-7.9'	60.2'	47°35.3	20°11.6		25°30.8	31°53.8	37°48.9	43°51.0	79°47.9
9	1°41.7	4.1'	24°19.6	-8.1'	60.3'	47°01.0	19°53.5		25°54.3	32°23.0	38°24.1	44°11.3	80°24.4
10	16°04.8	4.2'	$24^{\circ}11.5$	-8.2'	60.3'	46°26.7	19°36.2		26°18.2	32°52.5	38°59.4	44°32.0	81°00.9
11	30°28.0	4.2'	24°03.3	-8.4'	60.3'	45°52.3	19°19.7		26°42.6	33°22.1	39°34.8	44°53.0	81°37.4
12	44°51.2	4.3'	N 23°54.9	-8.6'	60.3'	45°18.0	19°04.1		27°07.5	33°52.0	40°10.2	45°14.2	82°14.0
13	59°14.5	4.3'	23°46.3	-8.7'	60.3'	44°43.6			27°32.8	34°22.2	40°45.7	45°35.8	82°50.6
14	73°37.8	4.4'	23°37.6	-8.9'	60.4'	44°09.1			27°58.5	34°52.5	41°21.3	45°57.5	83°27.2
15	88°01.2	4.4'	23°28.6	-9.1'	60.4'	43°34.7			28°24.6	35°23.1	41°56.9	46°19.6	84°03.9
16	102°24.6	4.5'	$23^{\circ}19.5$	-9.3'	60.4'	43°00.2			28°51.1	35°53.8	42°32.6	46°41.9	84°40.6
17	116°48.1	4.6'	23°10.3	-9.4'	60.4'	42°25.7			29°17.9	36°24.8	43°08.4	47°04.5	85°17.3
18	131°11.7	4.6'	N 23°00.9	-9.6'	60.5'	41°51.1			29°45.2	36°55.9	43°44.1	47°27.3	85°54.0
19	145°35.3	4.7'	22°51.3	-9.8'	60.5'	41°16.6			30°12.7	37°27.2	44°20.0	47°50.4	86°30.8
20	159°59.0	4.7'	22°41.5	-9.9'	60.5'	40°42.0			30°40.6	37°58.7	44°55.9	48°13.7	87°07.6
21	174°22.7	4.8'	22°31.6	-10.1'	60.5'	40°07.4			31°08.8	38°30.3	45°31.9	48°37.3	87°44.5
22	188°46.5	4.9'	22°21.5	-10.2'	60.5'				31°37.2	39°02.1	46°07.9	49°01.0	88°21.3
23	203°10.4	4.9'	22°11.3	-10.4'	60.6'				32°06.0	39°34.1	46°43.9	49°25.0	88°58.2
28 th	SD	= 16.4	' Mer. pas	ss. 08:53					Sun SD	= 15.8'			

Moon (29th Aug)

h

Sun	GHA	ν	Dec	d	HP	+Pollux	+Procyon	+Betelgeuse	+Capella	+Aldebaran	+Rigel	+Saturn	+Deneb
0	217°34.3	5.0'	N 22°00.9	-10.5'	60.6'			32°35.0	40°06.2	47°20.0	49°49.2	89°35.1	111°50.1
1	231°58.4	5.1'	21°50.4	-10.7'	60.6'			33°04.3	40°38.4	47°56.2	50°13.6	90°12.1	112°05.6
2	246°22.4	5.1'	21°39.7	-10.9'	60.6'			33°33.9	41°10.8	48°32.3	50°38.3	90°49.0	112°21.1
3	260°46.6	5.2'	21°28.8	-11.0'	60.6'			34°03.7	41°43.3	49°08.6	51°03.1	91°26.0	112°36.3
4	275°10.8	5.3'	21°17.8	-11.2'	60.6'			34°33.7	42°15.9	49°44.9	51°28.1	92°03.0	112°51.5
5	289°35.1	5.4'	$21^{\circ}06.6$	-11.3'	60.7'			35°04.0	42°48.7	50°21.2	51°53.3	92°40.1	113°06.5
6	303°59.4	5.4'	N 20°55.3	-11.5'	60.7'	9°10.9		35°34.4	43°21.6	50°57.5	52°18.7	93°17.1	
7	318°23.9	5.5'	20°43.9	-11.6'	60.7'	9°42.4		36°05.1	43°54.6	51°33.9	52°44.3	93°54.2	
8	332°48.4	5.6'	20°32.3	-11.7'	60.7'	10° 14.5		36°36.0	44°27.7	52°10.4	53°10.1	94°31.3	
9	347°13.0	5.7'	20°20.5	-11.9'	60.7'	10°47.2		37°07.0	45°00.9	52°46.8	53°36.0	95°08.5	
10	1°37.6	5.7'	20°08.6	-12.0'	60.7'	11°20.5		37°38.3	45°34.2	53°23.3	54°02.1	95°45.6	
11	16°02.4	5.8'	$19^{\circ}56.6$	-12.2'	60.8'	11°54.1		38°09.7	46°07.6	53°59.9	54°28.4	96°22.8	
12	30°27.2	5.9'	N 19°44.4	-12.3'	60.8'	12°28.1		38°41.3	46°41.2	54°36.5	54°54.8	97°00.0	
13	44°52.1	6.0'	19°32.1	-12.4'	60.8'	13°02.5		39°13.0	47°14.8	55°13.1	55°21.4	97°37.2	
14	59°17.0	6.0'	$19^{\circ}19.7$	-12.6'	60.8'	13°37.1		39°44.9	47°48.5	55°49.7	55°48.1	98°14.4	
15	73°42.1	6.1'	$19^{\circ}07.1$	-12.7'	60.8'	14° 12.0		40°17.0	48°22.3	56°26.4	56°15.0	98°51.6	
16	88°07.2	6.2'	18°54.4	-12.8'	60.8'	14°47.1	19°36.5	40°49.2	48°56.1	57°03.1	56°42.1	99°28.9	
17	102°32.4	6.3'	18°41.6	-13.0'	60.8'	15°22.5	19°54.2	41°21.5	49°30.1	57°39.8	57°09.2	100°06.1	
18	116°57.7	6.4'	N 18°28.6	-13.1'	60.8'	15°58.0	20°12.8	41°54.0	50°04.1	58°16.5	57°36.6	100°43.4	
19	131°23.0	6.4'	$18^{\circ}15.5$	-13.2'	60.9'	16°33.6	20°32.2	42°26.5	50°38.2	58°53.3	58°04.0	101°20.7	
20	145°48.5	6.5'	18°02.3	-13.3'	60.9'	17°09.4	20°52.4	42°59.3	51°12.4	59°30.1	58°31.6	101°58.0	
21	160°14.0	6.6'	17°49.0	-13.5'	60.9'	17°45.4	21°13.4	43°32.1	51°46.6	60°06.9	58°59.3	102°35.4	
22	174°39.6	6.7'	17°35.5	-13.6'	60.9'	18°21.4	21°35.1	44°05.0	52°20.9	60°43.8	59°27.1	103°12.7	
23	189°05.2	6.7'	17°21.9	-13.7'	60.9'	18°57.6	21°57.5	44°38.1	52°55.3	61°20.7	59°55.1	103°50.1	
29 th	SD	= 16.5	Mer. pas	ss. 09:53									

n Moon	(30 th Aug)	Lunar Distance	(objects with	largest hourly	v LD delta)

Mon	GHA		Dec	d	HP	+Pollux	+Procyon	Potolgouso	+Sirius	Capalla	Direct	+Aldebaran	+Saturn
IVIOII		ν					_	+Betelgeuse		+Capella	+Rigel		
0	203°31.0	6.8'	$N17^{\circ}08.2$	-13.8'	60.9'	19°33.9	22°20.6	45°11.3	46°51.9	53°29.8	60°23.1	61°57.6	104°27.4
1	217°56.8	6.9'	16°54.4	-13.9'	60.9'	20° 10.2	22°44.3	45°44.5	47°07.3	54°04.3	60°51.3	62°34.5	105°04.8
2	232°22.7	7.0'	$16^{\circ}40.5$	-14.0'	60.9'	20°46.7	23°08.6	46° 17.9	47°23.1	54°38.8	61°19.6	63°11.4	105°42.2
3	246°48.7	7.1'	$16^{\circ}26.5$	-14.1'	60.9'	21°23.2	23°33.4	46°51.4	47°39.2	55°13.4	61°48.0	63°48.4	106°19.5
4	261°14.8	7.1'	16°12.3	-14.2'	60.9'	21°59.8	23°58.8	47°24.9	47°55.6	55°48.1	62°16.5	64°25.3	106°56.9
5	275°40.9	7.2'	$15^{\circ}58.1$	-14.3'	60.9'	22°36.5	24°24.6	47°58.5	48°12.3	56°22.8	62°45.0	65°02.3	107°34.3
6	290°07.1	7.3'	N 15°43.8	-14.4'	60.9'	23°13.2	24°51.0	48°32.3	48° 29.4	56°57.6	63° 13.7	65°39.3	108°11.8
7	304°33.4	7.4'	15°29.3	-14.6'	60.9'	23°50.0	25°17.8	49°06.1	48°46.7	57°32.4	63°42.5	66°16.3	108°49.2
8	318°59.8	7.5'	15°14.8	-14.6'	61.0'	24°26.8	25°45.1	49°39.9	49°04.3	58°07.3	64°11.4	66°53.4	109°26.6
9	333°26.2	7.5'	15°00.1	-14.7'	61.0'	25°03.7	26°12.7	50° 13.9	49°22.2	58°42.2	64°40.4	67°30.4	110°04.0
10	347°52.8	7.6'	14°45.4	-14.8'	61.0'	25°40.6	26°40.8	50°47.9	49°40.3	59°17.1	65°09.4	68° 07.5	110°41.4
11	2°19.4	7.7'	14°30.5	-14.9'	61.0'	26°17.6	27°09.2	51°22.0	49°58.7	59°52.1	65°38.5	68°44.5	111°18.9
12	16°46.0	7.8'	N 14°15.6	-15.0'	61.0'	26°54.6	27°37.9	51°56.1	50°17.4	60°27.1	66°07.7	69°21.6	111°56.3
13	31°12.8	7.8'	14°00.6	-15.1'	61.0'	27°31.6	28°07.0	52°30.3	50°36.4	61°02.2	66°37.0	69°58.7	112°33.7
14	45°39.6	7.9'	13°45.5	-15.2'	61.0'	28°08.7	28°36.4	53°04.6	50°55.6	61°37.3	67°06.4	70°35.8	113°11.1
15	60°06.5	8.0'	13°30.3	-15.3'	61.0'	28°45.8	29°06.1	53°38.9	51°15.1	62°12.4	67°35.8	71°12.9	113°48.6
16	74°33.5	8.1'	13°15.0	-15.4'	61.0'	29°22.9	29°36.1	54° 13.3	51°34.8	62°47.6	68°05.3	71°50.0	114°26.0
17	89°00.6	8.1'	12°59.6	-15.4'	61.0'	30°00.1	30°06.3	54° 47.7	51°54.7	63°22.8	68°34.9	72°27.1	115°03.4
18	103°27.7	8.2'	N12°44.2	-15.5'	61.0'	30° 37.2	30°36.8	55°22.2	52°14.9	63°58.0	69°04.5	73°04.2	115°40.8
19	117°54.9	8.3'	12°28.7	-15.6'	61.0'	31°14.4	31°07.6	55° 56.8	52°35.3	64°33.2	69°34.2	73°41.3	116°18.2
20	132°22.2	8.3'	12°13.1	-15.7'	61.0'	31°51.6	31°38.5	56°31.3	52°55.9	65°08.5	70°03.9	74° 18.5	116°55.6
21	146°49.5	8.4'	11°57.4	-15.7'	61.0'	32°28.9	32°09.7	57°06.0	53°16.8	65°43.8	70°33.7	74°55.6	117°33.1
22	161°16.9	8.5'	11°41.7	-15.8'	61.0'	33°06.1	32°41.1	57°40.6	53°37.8	66°19.1	71°03.6	75°32.7	118°10.4
23	175°44.4	8.5'	11°25.9	-15.9'	61.0'	33°43.4	33°12.7	58° 15.3	53°59.1	66°54.4	71°33.5	76°09.9	118°47.8
30 th	SD	= 16.6	' Mer. pas	s. 10:50				·					

L	n Moon (31st Aug)	Lunar Distance (objects with largest hourly LD delt	+-)
r	n IVIOON LST ²² AUGT	I linar Distance Conjects with largest nollriv LD delt	(a)

Tue	GHA	ν	Dec	d	HP	+Procyon	+Pollux	+Sirius	+Betelgeuse	+Capella	+Rigel	+Aldebaran	+Saturn
0	190°11.9	8.6'	N11°10.0	-15.9'	60.9'	33°44.4	34°20.6	54°20.6	58°50.0	67°29.7	72°03.4	76°47.0	119°25.2
1	204°39.5	8.7'	10°54.0	-16.0'	60.9'				New I				'
2	219°07.2	8.7'	10°38.0	-16.1'	60.9'				New I	Moon			
3	233°35.0	8.8'	10°22.0	-16.1'	60.9'				New I				
4	248°02.8	8.9'	10°05.9	-16.2'	60.9'				New I				
5	262°30.7	8.9'	09°49.7	-16.2'	60.9'				New I	Moon ———			
6	276°58.6	9.0'	N09°33.4	-16.3'	60.9'				New I	Moon			
7	291°26.6	9.1'	09°17.2	-16.3'	60.9'				New I	Moon			
8	305°54.7	9.1'	09°00.8	-16.4'	60.9'				New I	Moon ———			
9	320°22.8	9.2'	08°44.4	-16.4'	60.9'				New I	Moon ———			
10	334°51.0	9.2'	08°28.0	-16.5'	60.9'				New I				
11	349°19.2	9.3'	$08^{\circ}11.5$	-16.5'	60.9'				New I	Moon			
12	3°47.5	9.4'	N07°55.0	-16.6'	60.9'				New I				
13	18° 15.9	9.4'	07°38.4	-16.6'	60.8'					Moon ———			
14	32°44.3	9.5'	$07^{\circ}21.8$	-16.6'	60.8'				New I	Moon ———			
15	47° 12.8	9.5'	07°05.2	-16.7'	60.8'					Moon			
16	61°41.3	9.6'	06°48.5	-16.7'	60.8'					Moon			
17	76°09.9	9.6'	06°31.8	-16.7'	60.8'				New I	Moon			
18	90°38.5	9.7'	$N06^{\circ}15.1$	-16.8'	60.8'				New I				
19	105°07.2	9.7'	05°58.3	-16.8'	60.8'				New I	Moon ———			
20	119°36.0	9.8'	$05^{\circ}41.6$	-16.8'	60.8'					Moon			
21	134°04.8	9.8'	$05^{\circ}24.7$	-16.8'	60.7'				New I	Moon			
22	148°33.6	9.9'	$05^{\circ}07.9$	-16.9'	60.7'					Moon			
23	163°02.5	9.9'	04°51.1	-16.9'	60.7'				New I	Moon ———			
31 st	SD	= 16.6	' Mer. pas	ss. 11:44									

h Moon (1st Sep) Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Acrux	-Arcturus	-Mars	-Spica
0	177°31.4	10.0'	N04°34.2	-16.9'	60.7'			N	New Moon -			
1	192°00.4	10.0'	04°17.3	-16.9'	60.7'			N	New Moon -			
2	206°29.4	10.1'	04°00.4	-16.9'	60.7'			N	New Moon -			
3	220°58.5	10.1'	03°43.5	-16.9'	60.6'			N	lew Moon -			
4	235°27.6	10.1'	03°26.6	-16.9'	60.6'			N	lew Moon -			
5	249°56.7	10.2'	03°09.6	-16.9'	60.6'				New Moon -			
6	264°25.9	10.2'	N02°52.7	-16.9'	60.6'				New Moon -			
7	278°55.1	10.3'	02°35.8	-16.9'	60.6'							
8	293°24.4	10.3'	02°18.8	-16.9'	60.5'							
9	307°53.7	10.3'	$02^{\circ}01.9$	-16.9'	60.5'							
10	322°23.0	10.4'	$01^{\circ}44.9$	-16.9'	60.5'				lew Moon -			
11	336°52.3	10.4'	$01^{\circ}28.0$	-16.9'	60.5'	81°04.1	73°53.7	70°14.5	66°11.3	48°04.5	40°48.5	35°20.3
12	351°21.7	10.4'	$N01^{\circ}11.0$	-16.9'	60.5'	80°27.0	73°25.0	69°46.9	65°49.4	47°41.5	40°13.3	34°43.3
13	5°51.2	10.5'	00°54.1	-16.9'	60.4'	79°49.8	72°56.4	69°19.5	65°27.7	47°18.9	39°38.1	34°06.3
14	20°20.6	10.5'	00°37.2	-16.9'	60.4'	79°12.8	72°27.9	68°52.1	65°06.2	46°56.5	39°03.0	33°29.4
15	34°50.1	10.5'	00°20.3	-16.9'	60.4'	78°35.7	71°59.5	68°24.8	64°44.8	46°34.3	38°27.9	32°52.5
16	49°19.6	10.5'	N 00°03.4	-16.9'	60.4'	77°58.7	71°31.1	67°57.6	64°23.5	46°12.4	37°52.8	32°15.7
17	63°49.2	10.6'	S 00°13.5	-16.9'	60.3'	77°21.7	71°02.9	67°30.5	64°02.4	45°50.7	37°17.8	31°38.8
18	78°18.8	10.6'	S 00°30.4	-16.9'	60.3'	76° 44.7	70°34.7	67°03.5	63°41.4	45°29.4	36°42.8	31°02.1
19	92°48.4	10.6'	00°47.2	-16.8'	60.3'	76°07.8	70°06.5	66°36.6	63°20.6	45°08.3	36°07.9	30°25.3
20	107°18.0	10.6'	$01^{\circ}04.1$	-16.8'	60.3'	75°30.9	69°38.5	66°09.8	62°59.9	44°47.5	35°33.0	29°48.6
21	121°47.6	10.7'	$01^{\circ}20.9$	-16.8'	60.2'	74°54.0	69°10.6	65°43.1	62°39.4	44°27.0	34°58.2	29°11.9
22	136°17.3	10.7'	01°37.7	-16.8'	60.2'	74° 17.2	68°42.7	65°16.5	62°19.0	44°06.8	34°23.4	28°35.3
23	150°47.0	10.7'	01°54.4	-16.7'	60.2'	73°40.4	68°14.9	64°50.0	61°58.8	43°46.9	33°48.6	27°58.7
1 st	SD	= 16.6	Mer. pas	s. 12:36								

Moon (2 nd Sen) Lunar Distance (objects with largest bo	urly ID dolta)	

Thu	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Hadar	±Acrux	-Arcturus	-Mars	-Spica
0	165°16.7	10.7'	S 02°11.2	-16.7'	60.2'		73°03.6	67°47.3	64°23.6	61°38.8	43°27.3	33°13.9	27°22.2
1	179°46.4	10.7'	02°27.9	-16.7'	60.1		72°26.9	67° 19.7	63°57.4	61°18.9	43°08.0	32°39.2	26°45.7
2	194°16.2	10.8'	02°44.6	-16.7'	60.1'		71°50.2	66° 52.2	63°31.3	60°59.2	42°49.1	32°04.6	26°09.2
3	208°45.9	10.8'	03°01.2	-16.6'	60.1'		71°13.5	66°24.8	63°05.3	60°39.7	42°30.4	31°30.0	25°32.8
4	223°15.7	10.8'	03°17.8	-16.6'	60.0'		70°36.9	65° 57.6	62°39.4	60°20.4	42°12.1	30°55.5	24°56.5
5	237°45.5	10.8'	03°34.4	-16.5'	60.0'	119°51.0	70°00.3	65°30.4	62°13.7	60°01.2	41°54.2	30°21.1	24°20.2
6	252°15.3	10.8'	S 03°51.0	-16.5'	60.0'	119°21.1	69°23.8	65°03.3	61°48.1	59°42.3	41°36.6	29°46.7	23°43.9
7	266°45.1	10.8'	04°07.5	-16.5'	60.0'	118°51.1	68°47.3	64°36.4	61°22.6	59°23.5	41°19.4	29° 12.3	23°07.7
8	281°15.0	10.8'	04°24.0	-16.4'	59.9'	118°21.1	68°10.8	64°09.6	60°57.2	59°04.9	41°02.5	28°38.0	22°31.5
9	295°44.8	10.9'	04°40.4	-16.4'	59.9'	117°51.1	67°34.3	63°42.8	60°32.0	58°46.5	40°46.0	28°03.8	21°55.5
10	310°14.7	10.9'	04°56.8	-16.3'	59.9'	117°21.1	66°58.0	63° 16.2	60°06.9	58°28.3	40°29.8	27°29.6	21°19.4
11	324°44.5	10.9'	$05^{\circ}13.1$	-16.3'	59.8'	116°51.0	66°21.6	62°49.8	59°42.0	58°10.3	40°14.1	26°55.5	20°43.4
12	339°14.4	10.9'	S 05°29.4	-16.2'	59.8'	116°20.9	65°45.3	62°23.4	59°17.2	57°52.4	39°58.7	26°21.4	20°07.5
13	353°44.3	10.9'	05°45.6	-16.2'	59.8'	115°50.7	65°09.0	61°57.2	58°52.6	57°34.8		25°47.4	19°31.6
14	8°14.1	10.9'	$06^{\circ}01.8$	-16.1'	59.7'	115°20.6	64°32.8	61°31.0	58°28.1	57°17.4		25° 13.5	18°55.9
15	22°44.0	10.9'	$06^{\circ}18.0$	-16.1'	59.7'	114°50.4	63°56.6	61°05.1	58°03.8	57°00.2		24°39.7	18°20.1
16	37°13.9	10.9'	06°34.1	-16.0'	59.7'	114°20.2	63°20.4	60°39.2	57°39.7	56°43.2		24°05.9	17°44.5
17	51°43.8	10.9'	$06^{\circ}50.1$	-16.0'	59.6'	113°50.0	62°44.3	60°13.5	57° 15.7	56°26.5		23°32.2	17°08.9
18	66°13.7	10.9'	S 07°06.1	-15.9'	59.6'	113°19.8	62°08.2	59°47.9	56°51.8	56°09.9		22°58.5	16°33.4
19	80°43.6	10.9'	07°22.0	-15.9'	59.6'	112°49.5	61°32.2	59°22.5	56°28.2	55°53.6		22°25.0	15°58.0
20	95°13.5	10.9'	07°37.9	-15.8'	59.5'	112°19.3	60°56.2	58° 57.2	56°04.7	55°37.5		21°51.5	15°22.6
21	109°43.3	10.9'	07°53.7	-15.7'	59.5'	111°49.0	60°20.3	58°32.0	55°41.4	55°21.6		21°18.1	14°47.4
22	124°13.2	10.9'	08°09.5	-15.7'	59.5'	111°18.7	59°44.4	58° 07.0	55° 18.2	55°05.9		20°44.8	14°12.3
23	138°43.1	10.9'	08°25.1	-15.6'	59.4'	110°48.5	59°08.5	57° 42.2	54°55.2	54°50.5		20°11.6	13°37.2
2 nd	SD	= 16.4'	Mer. pas	s. 13:26									

h Moon ((3 rd Sep)	Lunar Distance (objects with	largest hourly LD de	elta)

Fri	GHA	ν	Dec	d	HP	-Altair	-Vega	-Antares	-Rigil Kent.	-Hadar	-Mars	-Spica	+Sun
0	153°13.0	10.9'	S 08°40.8	-15.6'	59.4'	110°18.2	96°02.0	58°32.7	57°17.5	54°32.5	19°38.5	13°02.3	
1	167°42.9	10.9'	08°56.3	-15.5'	59.4'	109°47.9	95°46.4	57°57.0	56°52.9	54°09.9	19°05.6	12°27.5	
2	182°12.7	10.9'	09°11.8	-15.4'	59.3'	109°17.6	95°30.8	57°21.2	56°28.6	53°47.5	18°32.7	11°52.9	
3	196°42.6	10.9'	09°27.2	-15.4'	59.3'	108°47.3	95°15.3	56°45.6	56°04.4	53°25.3	17°59.9	11°18.4	
4	211°12.5	10.8'	09°42.6	-15.3'	59.3'	108°17.1	94°59.7	56°09.9	55°40.3	53°03.2	17°27.2	10°44.1	
5	225°42.3	10.8'	09°57.9	-15.2'	59.2'	107°46.8	94°44.1	55°34.3	55°16.4	52°41.4	16°54.7	10°09.9	
6	240°12.1	10.8'	S 10°13.1	-15.1'	59.2'	107°16.5	94°28.5	54°58.8	54°52.7	52°19.8	16°22.3	9°36.0	
7	254°42.0	10.8'	10°28.2	-15.1'	59.2'	106°46.3	94°12.9	54°23.3	54°29.2	51°58.4	15°50.1	9°02.3	
8	269°11.8	10.8'	10°43.3	-15.0'	59.1'	106°16.0	93°57.3	53°47.9	54°05.8	51°37.2	15°18.0	8°29.0	
9	283°41.6	10.8'	10°58.2	-14.9'	59.1'	105°45.8	93°41.7	53°12.5	53°42.6	51°16.2	14°46.1	7°55.9	
10	298°11.4	10.8'	11° 13.2	-14.8'	59.0'	105°15.6	93°26.1	52°37.1	53°19.6	50°55.5	14°14.3	7°23.3	
11	312°41.2	10.8'	$11^{\circ}28.0$	-14.7'	59.0'	104°45.3	93°10.5	52°01.8	52°56.8	50°35.0	13°42.8	6°51.1	
12	327°10.9	10.8'	S 11°42.7	-14.7'	59.0'	104°15.1	92°54.9	51°26.5	52°34.2	50°14.6	13°11.5	6°19.6	
13	341°40.7	10.7'	11°57.4	-14.6'	58.9'	103°45.0	92°39.3	50°51.3	52°11.8	49°54.6	12°40.4	5°48.8	
14	356°10.4	10.7'	12° 12.0	-14.5'	58.9'	103°14.8	92°23.7	50°16.1	51°49.5	49°34.7	12°09.5	5°18.9	
15	10°40.1	10.7'	12°26.5	-14.4'	58.9'	102°44.6	92°08.2	49°41.0	51°27.5	49°15.1	11°39.0		
16	25°09.8	10.7'	12°40.9	-14.3'	58.8'	102°14.5	91°52.6	49°05.9	51°05.7	48°55.7	11°08.8		40°11.0
17	39°39.5	10.7'	12°55.2	-14.2'	58.8'	101°44.4	91°37.0	48°30.9	50°44.1	48°36.6	10°38.9		40°43.5
18	54°09.2	10.6'	S 13°09.4	-14.1'	58.7'	101°14.3	91°21.5	47°55.9	50°22.7	48° 17.7	10°09.4		41°16.0
19	68°38.8	10.6'	13°23.6	-14.1'	58.7'	100°44.2	91°06.0	47°21.0	50°01.5	47°59.1	9°40.4		41°48.5
20	83°08.5	10.6'	13°37.6	-14.0'	58.7'	100°14.2	90°50.5	46°46.1	49°40.5	47°40.7	9°11.9		42°20.9
21	97°38.1	10.6'	13°51.6	-13.9'	58.6'	99°44.2	90°35.0	46°11.3	49°19.8	47°22.6	8°44.0		42°53.3
22	112°07.6	10.6'	14°05.5	-13.8'	58.6'	99°14.2	90°19.5	45°36.5	48°59.2	47°04.7	8°16.8		43°25.6
23	126°37.2	10.5'	14°19.3	-13.7'	58.6'	98°44.2	90°04.1	45°01.8	48°38.9	46°47.1	7°50.4		43°57.8
3 rd	SD	= 16.2'	Mer. pas	s. 14:16					$Sun\;SD =$	15.8'			

Moon (4th Sep)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Hadar	-Antares	±Mars	+Spica	+Sun
0	141°06.8	10.5'	S 14°33.0	-13.6'	58.5'		98°14.3	48° 18.9	46°29.8	44°27.1	7°24.9		44°30.0
1	155°36.3	10.5'	14°46.5	-13.5'	58.5'		97°44.4	47°59.0	46°12.8	43°52.4			45°02.2
2	170°05.8	10.5'	15°00.0	-13.4'	58.4'		97°14.5	47° 39.4	45°56.0	43°17.8			45°34.3
3	184°35.3	10.5'	15°13.4	-13.3'	58.4'		96°44.7	47°20.1	45°39.5	42°43.3			46°06.4
4	199°04.7	10.4'	15°26.7	-13.2'	58.4'		96°14.8	47°01.0	45°23.3	42°08.8			46°38.4
5	213°34.2	10.4'	15°39.9	-13.1'	58.3'		95°45.1	46°42.1	45°07.4	41°34.3			47° 10.4
6	228°03.6	10.4'	S 15°53.0	-13.0'	58.3'		95°15.3	46°23.5	44°51.8	40°59.9			47°42.3
7	242°32.9	10.4'	$16^{\circ}06.0$	-12.9'	58.2'	119°46.0	94°45.6	46°05.2	44°36.5	40°25.6		6°09.2	48°14.2
8	257°02.3	10.3'	16°18.9	-12.8'	58.2'	119° 15.4	94°15.9	45°47.1	44°21.5	39°51.3		6°39.6	48°46.1
9	271°31.6	10.3'	16°31.7	-12.7'	58.2'	118° 44.8	93°46.3	45°29.3		39°17.0		7°10.6	49°17.8
10	286°00.9	10.3'	16°44.4	-12.6'	58.1'	118° 14.2	93°16.6	45° 11.8		38°42.8		7°42.1	49°49.6
11	300°30.2	10.3'	$16^{\circ}56.9$	-12.5'	58.1'	117°43.6	92°47.1	44° 54.5		38°08.6		8°13.8	50°21.3
12	314°59.5	10.2'	S 17°09.4	-12.4'	58.0'	117°13.0	92°17.5	44°37.6		37°34.5		8°45.8	50°52.9
13	329°28.7	10.2'	17°21.8	-12.2'	58.0'	116°42.4	91°48.0	44°20.9		37°00.4		9°18.0	51°24.5
14	343°57.9	10.2'	17°34.0	-12.1'	58.0'	116° 11.8	91°18.6	44°04.5		36°26.4		9°50.3	51°56.1
15	358°27.0	10.1'	17°46.2	-12.0'	57.9'	115°41.2	90°49.2	43°48.3		35°52.5		10°22.8	52°27.6
16	12°56.2	10.1'	17°58.2	-11.9'	57.9'	115° 10.7	90°19.8	43°32.5		35°18.5		10°55.4	52°59.0
17	27°25.3	10.1'	$18^{\circ}10.1$	-11.8'	57.9'	114°40.2	89°50.4	43°17.0		34°44.7		11°28.1	53°30.4
18	41°54.4	10.1'	S 18°21.9	-11.7'	57.8'	114°09.6	89°21.1	43°01.8		34°10.9		12°00.8	54°01.8
19	56°23.4	10.0'	18°33.6	-11.6'	57.8'	113°39.1	88°51.9			33°37.1		12°33.6	54°33.1
20	70°52.5	10.0'	18°45.2	-11.5'	57.7'	113°08.6	88°22.7			33°03.4		13°06.4	55°04.4
21	85°21.5	10.0'	$18^{\circ}56.6$	-11.3'	57.7'	112°38.2	87°53.5			32°29.7		13°39.3	55°35.6
22	99°50.4	9.9'	$19^{\circ}08.0$	-11.2'	57.7'	112°07.7	87°24.4			31°56.0	7°55.8	14°12.1	56°06.7
23	114°19.4	9.9'	19°19.2	-11.1'	57.6'	111°37.3	86°55.3			31°22.5	8°21.5	14°45.0	56°37.9
4 th	SD	= 16.0'	Mer. pas	s. 15:06				Sun SD =	15.8' at 0h	n; 15.9′ at 2	3h		

h	Moon	(5th (Sen)

			<i>y</i> (0	. /					10000			,	
Sun	GHA	ν	Dec	d	HP	-Fomalhaut	-Deneb	-Altair	-Antares	+Mars	+Spica	+Arcturus	+Sun
0	128°48.3	9.9'	S 19°30.3	-11.0'	57.6'	111°06.9	107°32.6	86°26.3	30°48.9	8°47.7	15°17.9		57°08.9
1	143°17.2	9.9'	19°41.3	-10.9'	57.5'	110° 36.5	107°16.9	85°57.3	30°15.4	9°14.6	15°50.8		57°40.0
2	157°46.0	9.8'	19°52.2	-10.7'	57.5'	110°06.1	107°01.1	85°28.3	29°42.0	9°41.9	16°23.6		58°11.0
3	172°14.9	9.8'	20°02.9	-10.6'	57.5'	109°35.8	106°45.3	84°59.4	29°08.6	10°09.5	16°56.5		58°41.9
4	186°43.7	9.8'	$20^{\circ}13.5$	-10.5'	57.4'	109°05.5	106°29.4	84°30.6	28°35.2	10°37.5	17°29.3		59°12.8
5	201°12.4	9.7'	$20^{\circ}24.0$	-10.4'	57.4'	108°35.1	106°13.5	84°01.8	28°01.9	11°05.8	18°02.2		59°43.6
6	215°41.2	9.7'	S 20°34.4	-10.3'	57.3'	108°04.9	105°57.5	83°33.1	27°28.7	11°34.4	18°35.0		60°14.4
7	230°09.9	9.7'	20°44.7	-10.1'	57.3'	107°34.6	105°41.5	83°04.4	26°55.5	12°03.1	19°07.7		60°45.2
8	244°38.6	9.7'	20°54.8	-10.0'	57.3'	107°04.4	105°25.4	82°35.7	26°22.3	12°32.1	19°40.5		61°15.9
9	259°07.2	9.6'	21°04.8	-9.9'	57.2'	106°34.2	105°09.3	82°07.1	25°49.2	13°01.1	20°13.2		61°46.5
10	273°35.8	9.6'	21°14.7	-9.8'	57.2'	106°04.0	104°53.1	81°38.6	25°16.1	13°30.3	20°46.0		62°17.1
11	288°04.4	9.6'	$21^{\circ}24.5$	-9.6'	57.2'	105°33.9	104°36.9	81°10.1	24°43.1	13°59.7	21°18.6		62°47.7
12	302°33.0	9.5'	S 21°34.1	-9.5'	57.1'	105°03.7	104°20.7	80°41.6	24°10.1	14°29.1	21°51.3	41°16.9	63°18.2
13	317°01.5	9.5'	21°43.6	-9.4'	57.1'	104°33.6	104°04.4	80°13.2	23°37.2	14°58.6	22°23.9	41°32.4	63°48.7
14	331°30.1	9.5'	21°53.0	-9.2'	57.0'	104°03.6	103°48.0	79°44.9	23°04.3	15°28.2	22°56.5	41°48.2	64°19.1
15	345°58.5	9.5'	22°02.2	-9.1'	57.0'	103°33.5	103°31.7	79°16.6	22°31.5	15°57.8	23°29.1	42°04.2	64°49.5
16	0°27.0	9.4'	22°11.3	-9.0'	57.0'	103°03.5	103°15.3	78°48.4	21°58.7	16°27.5	24°01.6	42°20.4	65°19.8
17	14°55.4	9.4'	22°20.3	-8.9'	56.9'	102°33.6	102°58.9	78°20.2	21°25.9	16°57.2	24°34.1	42°36.9	65°50.1
18	29°23.8	9.4'	S 22°29.2	-8.7'	56.9'	102°03.6	102°42.4	77°52.1	20°53.2	17°27.0	25°06.6	42°53.6	66°20.4
19	43°52.2	9.4'	22°37.9	-8.6'	56.9'	101°33.7	102°25.9	77°24.0	20°20.6	17°56.8	25°39.0	43°10.5	66°50.6
20	58°20.6	9.3'	22°46.5	-8.5'	56.8'	101°03.8	102°09.4	76°56.0	19°47.9	18°26.6	26°11.4	43°27.6	67°20.7
21	72°48.9	9.3'	22°54.9	-8.3'	56.8'	100°33.9	101°52.9	76°28.1	19°15.4	18°56.4	26°43.7	43°45.0	67°50.9
22	87°17.2	9.3'	23°03.3	-8.2'	56.7'	100°04.1	101°36.3	76°00.2	18°42.8	19°26.3	27°16.1	44°02.5	68°20.9
23	101°45.5	9.3'	23°11.5	-8.1'	56.7'	99°34.3	101°19.7	75°32.3	18°10.4	19°56.1	27°48.4	44°20.3	68°51.0
5 th	SD	= 15.7	' Mer. pas	ss. 15:58					Sun SD =	= 15.9′			

		(c+h	c \	
h	Moon	(hui	Senl	

		Lunar Dist	ance (ob	jects wit	h largest	hourly l	LD delta)	
HP	-Deneb	-Fomalhaut	-Altair	-Antares	+Mars	+Spica	+Arcturus	+Sun

Mon	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	-Antares	+Mars	+Spica	+Arcturus	+Sun
0	116°13.7	9.2'	S 23°19.5	-7.9'	56.7'	101°03.1	99°04.5	75°04.5	17°37.9	20°26.0	28°20.6	44°38.3	69°20.9
1	130°42.0	9.2'	23°27.4	-7.8'	56.6'	100°46.5	98°34.8	74°36.8	17°05.5	20°55.8	28°52.8	44°56.4	69°50.9
2	145°10.2	9.2'	23°35.2	-7.7'	56.6'	100°29.8	98°05.1	74°09.2	16°33.1	21°25.7	29°25.0	45°14.7	70°20.8
3	159°38.4	9.2'	23°42.9	-7.5'	56.6'	100°13.1	97°35.4	73°41.5	16°00.8	21°55.5	29°57.2	45°33.2	70°50.7
4	174°06.5	9.1'	23°50.4	-7.4'	56.5'	99°56.4	97°05.8	73°14.0	15°28.6	22°25.4	30°29.3	45°51.9	71°20.5
5	188°34.7	9.1'	23°57.8	-7.2'	56.5'	99°39.7	96°36.2	72°46.5	14°56.3	22°55.2	31°01.3	46°10.8	71°50.2
6	203°02.8	9.1'	S 24°05.0	-7.1'	56.5'	99°23.0	96°06.6	72°19.1	14°24.1	23°25.0	31°33.4	46°29.8	72°20.0
7	217°30.9	9.1'	24°12.1	-7.0'	56.4'	99°06.2	95°37.1	71°51.7	13°52.0	23°54.8	32°05.4	46°49.0	72°49.7
8	231°59.0	9.1'	$24^{\circ}19.1$	-6.8'	56.4'	98°49.5	95°07.6	71°24.4	13° 19.9	24°24.6	32°37.3	47°08.3	73°19.3
9	246°27.1	9.0'	24°25.9	-6.7'	56.4'	98°32.7	94°38.1	70°57.2	12°47.8	24°54.4	33°09.2	47°27.8	73°48.9
10	260°55.1	9.0'	24°32.6	-6.6'	56.3'	98° 15.9	94°08.7	70°30.0	12° 15.8	25°24.2	33°41.1	47°47.4	74°18.5
11	275°23.2	9.0'	24°39.2	-6.4'	56.3'	97°59.1	93°39.3	70°02.9	11°43.8	25°53.9	34°13.0	48°07.2	74°48.0
12	289°51.2	9.0'	S 24°45.6	-6.3'	56.3'	97°42.3	93°09.9	69°35.9	11°11.8	26°23.7	34°44.8	48°27.1	75°17.5
13	304°19.2	9.0'	24°51.9	-6.1'	56.2'	97° 25.5	92°40.5	69°08.9	10°39.9	26°53.4	35°16.6	48°47.1	75°47.0
14	318°47.1	9.0'	24°58.0	-6.0'	56.2'	97°08.7	92°11.2	68°42.0	10°08.1	27°23.1	35°48.3	49°07.3	76°16.4
15	333°15.1	9.0'	25°04.0	-5.9'	56.2'	96°51.9	91°42.0	68°15.1	9°36.2	27°52.7	36°20.0	49°27.6	76°45.8
16	347°43.1	8.9'	25°09.9	-5.7'	56.1'	96°35.0	91°12.7	67°48.4	9°04.4	28°22.4	36°51.7	49°48.1	77°15.1
17	2°11.0	8.9'	$25^{\circ}15.6$	-5.6'	56.1'	96° 18.2	90°43.5	67°21.6	8°32.7	28°52.0	37°23.3	50°08.6	77°44.4
18	16°38.9	8.9'	S 25°21.2	-5.4'	56.1'	96°01.4	90°14.4	66°55.0	8°01.0	29°21.6	37°54.9	50°29.3	78°13.7
19	$31^{\circ}06.9$	8.9'	25°26.6	-5.3'	56.0'	95°44.5	89°45.2	66°28.4	7°29.3	29°51.2	38°26.5	50°50.0	78°42.9
20	45°34.8	8.9'	25°31.9	-5.2'	56.0'	95°27.7	89°16.1	66°01.9	6°57.7	30°20.7	38°58.0	51°10.9	79°12.1
21	60°02.7	8.9'	25°37.0	-5.0'	56.0'	95°10.9	88°47.1	65°35.5	6°26.1	30°50.3	39°29.5	51°31.9	79°41.2
22	74°30.6	8.9'	$25^{\circ}42.1$	-4.9'	55.9'	94°54.0	88°18.0	65°09.1	5°54.5	31°19.8	40°01.0	51°53.0	80°10.3
23	88°58.5	8.9'	25°46.9	-4.7'	55.9'	94°37.2	87°49.1	64°42.8	5°23.0	31°49.2	40°32.4	52°14.2	80°39.4
6 th	SD =	= 15.5 [']	Mer. pas	s. 16:51	1		-		Sun SD =	= 15.9 [']			

 $47^{\circ}11.9$

61°39.9

 $76^{\circ}07.9$

21

23

9.0'

9.0'

26°58.1

26°59.7

 $27^{\circ}01.1$

-1.6

-1.3

55.3

55.2

88°29.0

88°12.4

 $87^{\circ}55.9$

Moon (7th Sep) Lunar Distance (objects with largest hourly LD delta) Tue GHA Dec d HP -Deneb -Fomalhaut -Altair **±**Antares +Mars +Spica +Arcturus +Sun 103°26.3 **S**25°51.7 94°20.4 87°20.1 4°51.5 32°18.7 81°08.4 0 8.9 -4.6 55.9 64° 16.6 41°03.8 52°35.5 117°54.2 25°56.2 94°03.5 86°51.2 32°48.1 41°35.2 52°56.9 8.9 55.8 63°50.4 4°20.0 81°37.4 -4.4 33°17.5 33°46.9 132°22.1 $26^{\circ}00.7$ 93°46.7 $86^{\circ}22.3$ 3°48.6 42°06.5 $53^{\circ}18.4$ $82^{\circ}06.4$ 8.9 -4.3 55.8 $63^{\circ}24.3$ 3 $146^{\circ}49.9$ 8.9 $26^{\circ}05.0$ -4.2 $93^{\circ}29.9$ $85^{\circ}53.4$ $62^{\circ}58.3$ $3^{\circ}17.2$ 42°37.8 $53^{\circ}40.0$ $82^{\circ}35.3$ 4 161°17.8 8 9 26°09.1 -4.0 55.7 93°13.1 85°24.6 62°324 2°45.9 34°16.3 43°09.1 54°01.6 83°04.2 26°13.2 84°55.8 62°06.5 2°14.6 34°45.6 54°23.4 5 175°45.6 8.9 -3.9 55.7 92°56.3 43°40.3 83°33.0 6 $190^{\circ}13.5$ 8.9 $\textbf{S}26^{\circ}17.0$ -3.7 55.7 92°39.5 $84^{\circ}27.1$ $61^{\circ}40.8$ $1^{\circ}43.3$ $35^{\circ}14.9$ 44°11.5 $54^{\circ}45.2$ $84^{\circ}01.9$ 92°22.7 204°41.4 $26^{\circ}20.8$ $83^{\circ}58.4$ $61^{\circ}15.1$ $1^{\circ}12.0$ $35^{\circ}44.1$ 44°42.6 $55^{\circ}07.1$ 84°30.7 8.9' -3.6' 55.7 36°13.4 36°42.6 55°29.1 55°51.1 8 219°09.2 8.9 $26^{\circ}24.4$ 55.6 $92^{\circ}05.9$ $83^{\circ}29.7$ $60^{\circ}49.4$ $0^{\circ}40.8$ 45°13.8 $84^{\circ}59.4$ 91°49.1 91°32.4 83°01.1 82°32.5 45°44.9 233°37 1 26°27.8 60°23.9 85°28.1 9 8 9 -3.3 55.6 $0^{\circ}09.7$ 85°56.8 248°04.9 26°31.1 37°11.8 46°15.9 56°13.3 59°58.4 10 8.9 -3.2'55.6 26°34.3 91°15.6 82°03.9 59°33.0 37°41.0 46°47.0 56°35.5 86°25.5 262°32.8 8.9 -3.0'11 55.5 **S**26°37.3 81°35.4 38°10.1 47°18.0 12 $277^{\circ}00.7$ 8.9 -2.9 55.5 $90^{\circ}58.9$ 59°07.7 1°23.7 $56^{\circ}57.7$ $86^{\circ}54.1$ 26°40.2 90°42.2 47°48.9 291°28.5 81°06.9 58°42.5 1°54.7 38°39.2 57°20.1 57°42.4 13 8.9 -2.7 55.5 87°22.7 87°51.2 26°42 9 58° 17.4 2°25.8 305°564 90°25 5 80°38.4 39°08.3 48°19 9 14 8 9 -2.6 55.5 320°24.3 26°45.5 90°08.8 80°10.0 2°56.7 39°37.4 48°50.8 58°04.9 88°19.8 57°52.3 15 8.9 -2.4'55.4 334°52.2 26°47.9 89°52.1 79°41.6 57°27.4 40°06.4 49°21.7 58°27.4 88°48.3 16 8.9 -2.3 55.4 3°27.7 349°20.1 8.9 $26^{\circ}50.3$ -2.2 89°35.4 $79^{\circ}\,13.3$ $57^{\circ}\,02.5$ $3^{\circ}58.6$ 40°35.4 $49^{\circ}52.5$ $58^{\circ}50.0$ $89^{\circ}16.7$ 17 55.4 89°18.8 **S**26°52.4 78°44.9 56° 37.7 $41^{\circ}04.4$ 50°23 4 59°12.6 89°45.2 3°48 0 4°29 5 18 8 9 -2.0' 55.3 18°16.0 89°02.2 78°16.7 5°00.4 59°35.3 90°13.6 26°54.4 56° 13.0 $41^{\circ}33.4$ 50°54.2 19 8.9 -1.9'55.3 32°43.9 26°56.3 88°45.6 77°48.4 55°48.4 42°02.3 51°24.9 59°58.0 90°41.9 5°31.2 20 9.0 -1.7 55.3

 $77^{\circ}20.2$

 $76^{\circ}52.1$

 $76^{\circ}23.9$

55°23.9

54°59.5

 $54^{\circ}35.1$

 $6^{\circ}02.0$

6°32.8

 $7^{\circ}03.5$

42°31.2

43°00.1

 $43^{\circ}29.0$

51°55.7

52°26.4

 $52^{\circ}57.1$

60°20.8

60°43.6

 $61^{\circ}06.5$

91°10.3

91°38.6

 $92^{\circ}06.9$

7 th	SD -	= 15.2 [']	Mer. pass	17.44					Sun SD =	- 15 9'			
<u> </u>	35 -								Sun SD =	- 13.3			
h		Моо	n (8 th Se	p)			Lunar D	istance (ob	jects wit	:h largest	hourly L	D delta)	
Wed	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Antares	+Mars	+Spica	+Sun
0	90°35.9	9.0'	S 27°02.4	-1.2'	55.2'		87°39.4	75°55.8	54°10.9	7°34.3	43°57.8	53°27.7	92°35.2
1	105°03.9	9.0'	27°03.6	-1.0'	55.2'		87°22.9	75°27.8	53°46.8	8°05.0	44°26.7	53°58.3	93°03.4
2	119°31.9	9.1'	27°04.6	-0.9'	55.1'		87°06.4	74°59.7	53°22.7	8°35.6	44°55.5	54°28.9	93°31.6
3	134°00.0	9.1'	27°05.5	-0.8'	55.1'		86°50.0	74°31.8	52°58.8	9°06.3	45°24.2	54°59.5	93°59.8
4	148°28.1	9.1'	27°06.3	-0.6'	55.1'		86°33.6	74°03.8	52°35.0	9°36.9	45°53.0	55°30.1	94°27.9
5	162°56.2	9.1'	$27^{\circ}06.9$	-0.5'	55.1'		86°17.2	73°35.9	52°11.2	10°07.4	46°21.7	56°00.6	94°56.0
6	177°24.3	9.2'	S 27°07.4	-0.3'	55.0'		86°00.8	73°08.0	51°47.6	10°38.0	46°50.4	56°31.1	95°24.1
7	191°52.5	9.2'	27°07.7	-0.2'	55.0'		85°44.5	72°40.2	51°24.1	11°08.5	47°19.1	57°01.6	95°52.2
8	206°20.7	9.2'	27°07.9	-0.1'	55.0'		85°28.1	72°12.4	51°00.7	11°39.0	47°47.7	57°32.0	96°20.3
9	220°48.9	9.2'	27°08.0	0.1'	55.0'		85°11.9	71°44.6	50°37.4	12°09.5	48°16.4	58°02.4	96°48.3
10	235°17.1	9.3'	27°07.9	0.2'	54.9'		84°55.6	71°16.9	50°14.2	12°40.0	48°45.0	58°32.9	97°16.3
11	249°45.4	9.3'	27°07.7	0.4'	54.9'		84°39.4	70°49.2	49°51.1	13°10.4	49°13.6	59°03.2	97°44.2
12	264°13.7	9.3'	S 27°07.3	0.5'	54.9'		84°23.2	70°21.6	49°28.1	13°40.8	49°42.1	59°33.6	98°12.2
13	278°42.0	9.4'	27°06.8	0.6'	54.9'		84°07.0	69°54.0	49°05.3	14°11.2	50°10.7	60°03.9	98°40.1
14	293°10.4	9.4'	27°06.2	0.8'	54.9'		83°50.9	69°26.4	48°42.5	14°41.6	50°39.2	60°34.2	99°08.0
15	307°38.8	9.4'	27°05.4	0.9'	54.8'		83°34.8	68° 58.9	48°19.9	15°11.9	51°07.7	61°04.5	99°35.9
16	322°07.2	9.5'	27°04.5	1.0'	54.8'		83°18.7	68°31.4	47°57.4	15°42.2	51°36.2	61°34.8	100°03.7
17	336°35.7	9.5'	27°03.5	1.2'	54.8'		83°02.7	68°03.9	47°35.1	16°12.5	52°04.7	62°05.0	100°31.6
18	351°04.2	9.5'	S 27°02.3	1.3'	54.8'	119°56.2	82°46.7	67°36.5	47°12.9	16°42.8	52°33.1	62°35.2	100°59.4
19	5°32.7	9.6'	$27^{\circ}01.0$	1.4'	54.8'	119°26.2	82°30.8	67°09.1	46°50.8	17°13.0	53°01.5	63°05.4	101°27.2
20	20°01.3	9.6'	26°59.6	1.6'	54.7'	118°56.2	82°14.8	66°41.8	46°28.8	17°43.3	53°29.9	63°35.6	101°54.9
21	34°29.9	9.7'	26°58.0	1.7'	54.7'	118°26.2	81°58.9	66°14.5	46°06.9	18°13.5	53°58.3	64°05.8	102°22.7
22	48°58.6	9.7'	26°56.3	1.8'	54.7'	117°56.3	81°43.1	65°47.2	45°45.3	18°43.7	54°26.7	64°35.9	102°50.4
23	63°27.3	9.7'	26°54.4	2.0'	54.7'	117°26.3	81°27.3	65°20.0	45°23.7	19°13.8	54°55.0	65°06.0	103°18.1
8 th	SD :	= 15.1'	Mer. pas	s. 18:37	,				Sun SD :	= 15.9'			

h		Moor	າ (9 th Sep)			Lunar D	istance (ob	jects wit	h largest	hourly L	D delta)	
Thu	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Antares	+Mars	+Spica	+Sun
0	77°56.0	9.8'	S 26°52.4	2.1'	54.7'	116°56.4	81°11.5	64°52.8	45°02.3	19°44.0	55°23.4	65°36.1	103°45.8
1	92°24.8	9.8'	26°50.3	2.2'	54.6'	116°26.5	80°55.8	64°25.7	44°41.0	20°14.1	55°51.7	66°06.2	104°13.4
2	106°53.6	9.9'	26°48.1	2.4'	54.6'	115°56.6	80°40.1	63°58.6	44° 19.9	20°44.2	56°20.0	66°36.3	104°41.1
3	121°22.4	9.9'	26°45.7	2.5'	54.6'	115°26.7	80°24.5	63°31.5	43°58.9	21°14.3	56°48.3	67°06.3	105°08.7
4	135°51.4	10.0'	26°43.2	2.6'	54.6'	114°56.9	80°08.9	63°04.5	43°38.1	21°44.4	57°16.5	67°36.4	105°36.3
5	150°20.3	10.0'	26°40.6	2.8'	54.6'	114°27.0	79°53.3	62°37.5	43°17.4	22°14.5	57°44.8	68°06.4	106°03.9
6	164°49.3	10.0'	S 26°37.8	2.9'	54.6'	113°57.2	79°37.8	62°10.6	42°56.9	22°44.5	58°13.0	68°36.4	106°31.5
7	179°18.3	10.1'	26°35.0	3.0'	54.5'	113°27.4	79°22.3	61°43.7	42°36.6	23°14.5	58°41.2	69°06.3	106°59.0
8	193°47.4	10.1'	26°31.9	3.1'	54.5'	112°57.6	79°06.9	61°16.9	42°16.4	23°44.5	59°09.4	69°36.3	107°26.6
9	208°16.6	10.2'	26°28.8	3.3'	54.5'	112°27.8	78°51.5	60°50.1	41°56.4	24°14.5	59°37.6	70°06.2	107°54.1
10	222°45.8	10.2'	26°25.5	3.4'	54.5'	111°58.0	78°36.1	60°23.3	41°36.6	24°44.5	60°05.8	70°36.2	108°21.6
11	237°15.0	10.3'	$26^{\circ}22.1$	3.5'	54.5'	111°28.3	78°20.9	59°56.6	41°17.0	25°14.4	60°34.0	71°06.1	108°49.1
12	251°44.3	10.3'	S 26°18.6	3.6'	54.5'	110°58.5	78°05.6	59°29.9	40°57.5	25°44.4	61°02.1	71°36.0	109° 16.5
13	266°13.6	10.4'	$26^{\circ}15.0$	3.8'	54.4'	110°28.8	77°50.4	59°03.3	40°38.2	26°14.3	61°30.2	72°05.9	109°44.0
14	280°43.0	10.4'	26°11.2	3.9'	54.4'	109°59.0	77°35.3	58°36.7	40° 19.1	26°44.2	61°58.3	72°35.7	110°11.4
15	295°12.5	10.5'	26°07.3	4.0'	54.4'	109°29.3	77°20.2	58°10.2	40°00.2	27°14.1	62°26.4	73°05.6	110°38.8
16	309°42.0	10.5'	26°03.3	4.1'	54.4'	108°59.6	77°05.1	57°43.7	39°41.5	27°44.0	62°54.5	73°35.4	111°06.3
17	324°11.5	10.6'	$25^{\circ}59.1$	4.3'	54.4'	108°29.9		57°17.3	39°23.0	28°13.9	63°22.6	74°05.2	111°33.6
18	338°41.1	10.7'	S 25°54.9	4.4'	54.4'	108°00.3		56°50.9	39°04.7	28°43.7	63°50.7	74°35.1	112°01.0
19	353°10.8	10.7'	25°50.5	4.5'	54.4'	107°30.6		56°24.6	38°46.6	29°13.5	64°18.7	75°04.8	112°28.4
20	7°40.5	10.8'	25°46.0	4.6'	54.3'	107°01.0		55°58.3	38°28.7	29°43.4	64°46.8	75°34.6	112°55.7
21	22°10.2	10.8'	25°41.3	4.7'	54.3'	106°31.3		55°32.0	38° 11.1	30°13.2	65°14.8	76°04.4	113°23.1
22	36°40.1	10.9'	25°36.6	4.9'	54.3'	106°01.7		55°05.9	37°53.6	30°43.0	65°42.8	76°34.2	113°50.4
23	51°09.9	10.9'	25°31.7	5.0'	54.3'	105°32.1		54°39.7	37° 36.4	31°12.8	66°10.8	77°03.9	114°17.7
9 th	SD :	= 14.9'	Mer. pass	. 19:28					Sun SD =	= 15.9'			

h Moon (10th Sep)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	+Antares	+Mars	+Spica	+Arcturus	+Sun
0	65°39.9	11.0'	S 25°26.8	5.1'	54.3'	105°02.4	54°13.6	37°19.4	31°42.6	66°38.8	77°33.7	80°23.4	114°45.0
1	80°09.9	11.1'	$25^{\circ}21.7$	5.2'	54.3'	104°32.8	53°47.6	37°02.7	32°12.3	67°06.8	78°03.4	80°47.4	115°12.3
2	94°39.9	11.1'	$25^{\circ}16.4$	5.3'	54.3'	104°03.2	53°21.6	36°46.2	32°42.1	67°34.7	78°33.1	81°11.4	115°39.6
3	109°10.0	11.2'	$25^{\circ}11.1$	5.4'	54.3'	103°33.7	52°55.7	36°29.9	33°11.8	68°02.7	79°02.8	81°35.4	116°06.9
4	123°40.2	11.2'	25°05.7	5.6'	54.2'	103°04.1	52°29.8	36°13.9	33°41.6	68°30.7	79°32.5	81°59.4	116°34.1
5	138°10.4	11.3'	$25^{\circ}00.1$	5.7'	54.2'	102°34.5	52°04.0	35°58.1	34°11.3	68° 58.6	80°02.2	82°23.5	117°01.4
6	152°40.7	11.3'	S 24°54.4	5.8'	54.2'	102°05.0	51°38.3	35°42.6	34°41.0	69°26.5	80°31.9	82°47.5	117°28.6
7	167°11.1	11.4'	24°48.6	5.9'	54.2'	101°35.4	51°12.6	35°27.4	35°10.7	69°54.5	81°01.5	83°11.5	117°55.8
8	181°41.5	11.5'	24°42.7	6.0'	54.2'	101°05.9	50°47.0		35°40.4	70°22.4	81°31.2	83°35.5	118°23.1
9	196°12.0	11.5'	24°36.7	6.1'	54.2'	100°36.3	50°21.4		36°10.1	70°50.3	82°00.9	83°59.6	118°50.3
10	210°42.5	11.6'	24°30.6	6.2'	54.2'	100°06.8	49°55.9		36°39.8	71° 18.2	82°30.5	84°23.6	119°17.5
11	225°13.1	11.7'	24°24.4	6.3'	54.2'	99°37.3	49°30.4		37°09.5	71°46.1	83°00.1	84° 47.7	119°44.7
12	239°43.7	11.7'	S 24°18.0	6.4'	54.2'	99°07.8	49°05.0		37°39.2	72°14.0	83°29.8	85°11.7	
13	254°14.4	11.8'	$24^{\circ}11.6$	6.6'	54.2'	98°38.2	48°39.7		38°08.8	72°41.9	83°59.4	85°35.7	
14	268°45.2	11.8'	24°05.0	6.7'	54.2'	98°08.7	48°14.5		38°38.5	73°09.7	84°29.0	85°59.8	
15	283°16.1	11.9'	23°58.4	6.8'	54.1'	97°39.2	47°49.3		39°08.1	73°37.6	84°58.6	86°23.8	
16	297°46.9	12.0'	$23^{\circ}51.6$	6.9'	54.1'	97°09.8	47°24.2		39°37.8	74°05.5	85°28.2	86° 47.9	
17	312°17.9	12.0'	23°44.7	7.0'	54.1'	96°40.3	46°59.2		40°07.4	74°33.3	85° 57.8	87°11.9	
18	326°48.9	12.1'	S 23°37.7	7.1'	54.1'	96°10.8	46°34.2		40°37.0	75°01.2	86°27.4	87°36.0	
19	341°20.0	12.1'	23°30.7	7.2'	54.1'	95°41.3	46°09.3		41°06.6	75°29.0	86°57.0	88°00.0	
20	355°51.2	12.2'	23°23.5	7.3'	54.1'	95°11.8	45°44.5		41°36.3	75°56.9	87° 26.6	88°24.1	
21	10°22.4	12.3'	23°16.2	7.4'	54.1'	94°42.4	45°19.8		42°05.9	76°24.7	87°56.1	88°48.1	
22	24°53.6	12.3'	23°08.8	7.5'	54.1'	94°12.9	44°55.1		42°35.5	76°52.5	88° 25.7	89°12.2	
23	39°25.0	12.4'	23°01.3	7.6'	54.1'	93°43.4	44°30.5		43°05.1	77°20.4	88°55.3	89°36.2	
10 th	SD :	= 14.8′	Mer. pass	. 20:17					Sun SD =	= 15.9′			

h Moon (11th Sep)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Hadar	+Mars	+Spica	+Arcturus
Jat											_	-	
0	53°56.4	12.5'	S 22°53.7	7.7'	54.1'	93°14.0	44°06.1	43°34.7	63°06.8	67°29.5	77°48.2	89°24.8	90°00.2
1	68°27.8	12.5'	22°46.0	7.8'	54.1'	92°44.5	43°41.7	44°04.3	63°28.3	67°51.2	78° 16.0	89°54.4	90°24.3
2	82°59.3	12.6'	22°38.2	7.9'	54.1'	92°15.1	43°17.4	44°33.9	63°50.0	68°12.9	78°43.8	90°23.9	90°48.3
3	97°30.9	12.6'	22°30.3	8.0'	54.1'	91°45.6	42°53.1	45°03.5	64°11.7	68°34.6	79°11.7	90°53.5	91°12.3
4	112°02.5	12.7'	22°22.4	8.1'	54.1'	91°16.2	42°29.0	45°33.1	64°33.5	68°56.4	79°39.5	91°23.0	91°36.4
5	126°34.3	12.8'	22° 14.3	8.2'	54.1'	90°46.7	42°05.0	46°02.6	64°55.3	69°18.3	80°07.3	91°52.6	92°00.4
6	141°06.0	12.8'	S 22°06.1	8.3'	54.1'	90°17.3	41°41.1	46°32.2	65°17.1	69°40.2	80°35.1	92°22.1	92°24.4
7	155°37.8	12.9'	21°57.8	8.4'	54.1'	89°47.9	41°17.2	47°01.8	65°39.1	70°02.1	81°02.9	92°51.7	92°48.4
8	170°09.7	12.9'	21°49.5	8.5'	54.0'	89°18.4	40°53.5	47°31.4	66°01.0	70°24.1	81°30.7	93°21.2	93°12.4
9	184°41.7	13.0'	21°41.0	8.6'	54.0'	88°49.0	40°29.9	48°01.0	66°23.0	70°46.1	81°58.5	93°50.8	93°36.4
10	199°13.7	13.1'	21°32.5	8.6'	54.0'	88°19.6	40°06.4	48° 30.5	66°45.1	71°08.1	82°26.3	94°20.3	94°00.4
11	213°45.8	13.1'	$21^{\circ}23.8$	8.7'	54.0'	87°50.1	39°43.0	49°00.1	67°07.2	71°30.2	82°54.1	94°49.8	94°24.4
12	228°17.9	13.2'	S 21°15.1	8.8'	54.0'	87°20.7	39°19.7	49°29.7	67°29.4	71°52.3	83°21.9	95°19.4	94°48.3
13	242°50.1	13.3'	21°06.3	8.9'	54.0'	86°51.2	38°56.5	49°59.3	67°51.6	72°14.5	83°49.7	95°48.9	95°12.3
14	257°22.3	13.3'	20°57.3	9.0'	54.0'	86°21.8	38°33.5	50°28.8	68°13.8	72°36.6	84° 17.5	96°18.4	95°36.3
15	271°54.7	13.4'	20°48.3	9.1'	54.0'	85°52.4	38°10.6	50°58.4	68°36.1	72°58.9	84°45.3	96°48.0	96°00.2
16	286°27.0	13.4'	20°39.3	9.2'	54.0'	85°22.9	37°47.8	51°28.0	68°58.5	73°21.1	85°13.1	97°17.5	96°24.2
17	300°59.5	13.5'	20°30.1	9.3'	54.0'	84°53.5	37°25.2	51°57.5	69°20.8	73°43.4	85°40.9	97°47.0	96°48.1
18	315°32.0	13.6'	S 20°20.8	9.3'	54.0'	84°24.1	37°02.6	52°27.1	69°43.3	74°05.7	86°08.7	98°16.6	97°12.0
19	330°04.5	13.6'	$20^{\circ}11.5$	9.4'	54.0'	83°54.6	36°40.3	52° 56.7	70°05.7	74°28.1	86°36.5	98°46.1	97°36.0
20	344°37.1	13.7'	$20^{\circ}02.1$	9.5'	54.0'	83°25.2	36°18.1	53°26.3	70°28.2	74°50.5	87°04.3	99°15.6	97°59.9
21	359°09.8	13.7'	$19^{\circ}52.5$	9.6'	54.0'	82°55.8	35°56.0	53°55.9	70°50.8	75°12.9	87°32.1	99°45.2	98°23.8
22	13°42.5	13.8'	19°42.9	9.7'	54.0'	82°26.3	35°34.1	54° 25.4	71°13.3	75°35.4	88°00.0	100°14.7	98°47.6
23	28°15.3	13.8'	19°33.3	9.8'	54.0'	81°56.9	35°12.3	54° 55.0	71°36.0	75°57.8	88°27.8	100°44.3	99°11.5
11 th	SD :	= 14.8′	Mer. pass	. 21:03									

h Moon (12th Sep)

Sun	GHA	ν	Dec	d	HP	-Rigel	-Aldebaran	-Saturn	-Fomalhaut	+Antares	+Mars	+Arcturus	+Spica
0	42°48.1	13.9'	S 19°23.5	9.8'	54.0'			81°27.4	34°50.7	55°24.6	88°55.6	99°35.4	101°13.8
1	57°21.0	14.0'	$19^{\circ}13.7$	9.9'	54.0'			80°58.0	34°29.3	55°54.2	89°23.4	99°59.2	101°43.4
2	71°54.0	14.0'	19°03.7	10.0'	54.0'			80°28.6	34°08.1	56°23.8	89°51.2	100°23.0	102°12.9
3	86°27.0	14.1'	$18^{\circ}53.7$	10.1'	54.0'			79°59.1	33°47.0	56°53.4	90°19.0	100°46.9	102°42.5
4	101°00.0	14.1'	18°43.7	10.2'	54.0'			79°29.7	33°26.1	57°23.0	90°46.9	101°10.7	103°12.0
5	115°33.2	14.2'	18°33.5	10.2'	54.0'			79°00.2	33°05.4	57°52.6	91°14.7	101°34.5	103°41.6
6	130°06.3	14.2'	S 18°23.3	10.3'	54.0'			78°30.7	32°45.0	58°22.2	91°42.5	101°58.2	104°11.2
7	144°39.6	14.3'	$18^{\circ}13.0$	10.4'	54.0'			78°01.3	32°24.7	58°51.8	92°10.4	102°22.0	104°40.7
8	159°12.8	14.3'	18°02.6	10.5'	54.0'			77°31.8	32°04.6	59°21.4	92°38.2	102°45.7	105°10.3
9	173°46.2	14.4'	$17^{\circ}52.1$	10.5'	54.0'			77°02.3	31°44.8	59°51.0	93°06.1	103°09.5	105°39.9
10	188°19.6	14.4'	$17^{\circ}41.6$	10.6'	54.0'		119°37.6	76°32.9	31°25.2	60°20.7	93°33.9	103°33.2	106°09.5
11	202°53.0	14.5'	$17^{\circ}31.0$	10.7'	54.0'		119°08.6	76°03.4	31°05.8	60°50.3	94°01.8	103°56.9	106°39.0
12	217°26.5	14.5'	S 17°20.3	10.7'	54.0'		118°39.6	75°33.9	30°46.6	61°19.9	94°29.6	104°20.5	107°08.6
13	232°00.0	14.6'	$17^{\circ}09.6$	10.8'	54.0'	119°43.9	118°10.5	75°04.4	30°27.7	61°49.6	94°57.5	104°44.2	107°38.2
14	246°33.6	14.6'	$16^{\circ}58.8$	10.9'	54.0'	119°21.7	117°41.4	74°34.9	30°09.1	62°19.2	95°25.4	105°07.8	108°07.8
15	261°07.3	14.7'	$16^{\circ}47.9$	11.0'	54.0'	118°59.5	117°12.4	74°05.5	29°50.7	62°48.9	95°53.2	105°31.4	108°37.4
16	275°40.9	14.7'	16°36.9	11.0'	54.0'	118°37.1	116°43.3	73°36.0	29°32.6	63°18.5	96°21.1	105°55.0	109°07.1
17	290°14.7	14.8'	16°25.9	11.1'	54.1'	118°14.8	116°14.2	73°06.5	29°14.8	63°48.2	96°49.0	106°18.6	109°36.7
18	304°48.5	14.8'	S 16°14.8	11.2'	54.1'	117°52.3	115°45.1	72°36.9	28°57.3	64°17.9	97°16.9	106°42.1	110°06.3
19	319°22.3	14.9'	$16^{\circ}03.7$	11.2'	54.1'	117°29.8	115°15.9	72°07.4	28°40.0	64°47.5	97°44.8	107°05.7	110°35.9
20	333°56.2	14.9'	$15^{\circ}52.4$	11.3'	54.1'	117°07.2	114°46.8	71°37.9	28°23.1	65°17.2	98°12.7	107°29.2	111°05.6
21	348°30.1	15.0'	$15^{\circ}41.2$	11.3'	54.1'	116°44.6	114°17.7	71°08.4	28°06.5	65°46.9	98°40.6	107°52.6	111°35.2
22	3°04.1	15.0'	15° 29.8	11.4'	54.1'	116°21.9	113°48.5	70°38.9	27°50.2	66°16.6	99°08.5	108°16.1	112°04.9
23	17°38.1	15.1'	15° 18.4	11.5'	54.1'	115°59.2	113°19.3	70°09.3	27°34.3	66°46.3	99°36.5	108°39.5	112°34.5
12 th	SD	$=14.7^{\prime}$	Mer. pass	. 21:47									

h Moon (13th Sep)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Capella	-Rigel	-Aldebaran	-Saturn	+Antares	+Rigil Kent.	+Mars	+Spica
0	32°12.2	15.1'	S 15°06.9	11.5'	54.1'		115°36.4	112°50.2	69°39.8	67° 16.0	81°11.6	100°04.4	113°04.2
1	46°46.3	15.1'	14°55.4	11.6'	54.1'		115°13.5	112°21.0	69°10.2	67° 45.7	81°35.0	100°32.3	113°33.9
2	61°20.4	15.2'	14°43.8	11.7'	54.1'		114°50.6	111°51.8	68°40.7	68° 15.5	81°58.3	101°00.3	114°03.6
3	75°54.6	15.2'	14°32.1	11.7'	54.1'		114°27.6	111°22.6	68°11.1	68°45.2	82°21.7	101°28.2	114°33.3
4	90°28.8	15.3'	14°20.4	11.8'	54.1'	119°46.3	114°04.6	110°53.3	67°41.6	69°15.0	82°45.2	101°56.2	115°03.0
5	105°03.1	15.3'	14°08.6	11.8'	54.1'	119°18.7	113°41.5	110°24.1	67°12.0	69°44.7	83°08.6	102°24.2	115°32.7
6	119°37.4	15.4'	S 13°56.8	11.9'	54.1'	118°51.1	113°18.4	109°54.8	66°42.4	70° 14.5	83°32.1	102°52.2	116°02.4
7	134°11.8	15.4'	13°44.9	11.9'	54.1'	118°23.4	112°55.2	109°25.6	66°12.8	70°44.2	83°55.5	103°20.2	116°32.1
8	148°46.2	15.4'	13°33.0	12.0'	54.1'	117°55.7	112°32.0	108°56.3	65°43.2	71° 14.0	84°19.0	103°48.2	117°01.8
9	163°20.6	15.5'	13°21.0	12.1'	54.1'	117°28.0	112°08.7	108°27.0	65°13.6	71°43.8	84°42.5	104°16.2	117°31.6
10	177°55.1	15.5'	13°08.9	12.1'	54.1'	117°00.3	111°45.4	107°57.7	64°44.0	72°13.6	85°06.1	104°44.2	118°01.3
11	192°29.6	15.5'	12°56.8	12.2'	54.2'	116°32.5	111°22.0	107°28.4	64°14.4	72°43.4	85°29.6	105° 12.2	118°31.1
12	207°04.1	15.6'	S 12°44.6	12.2'	54.2'	116°04.7	110°58.6	106°59.1	63°44.8	73° 13.2	85°53.2	105°40.2	119°00.9
13	221°38.7	15.6'	12°32.4	12.3'	54.2'	115°36.9	110°35.1	106°29.8	63°15.2	73°43.1	86°16.8	106°08.3	119°30.6
14	236°13.3	15.6'	12°20.1	12.3'	54.2'	115°09.0	110°11.6	106°00.4	62°45.5	74° 12.9	86°40.3	106°36.3	
15	250°47.9	15.7'	12°07.8	12.4'	54.2'	114°41.1	109°48.1	105°31.0	62°15.9	74°42.8	87°03.9	107°04.4	
16	265°22.6	15.7'	11°55.4	12.4'	54.2'	114°13.2	109°24.5	105°01.7	61°46.3	75° 12.6	87°27.6	107°32.5	
17	279°57.3	15.7'	11°43.0	12.5'	54.2'	113°45.3	109°00.8	104°32.3	61°16.6	75°42.5	87°51.2	108°00.6	
18	294°32.1	15.8'	S 11°30.5	12.5'	54.2'	113°17.4	108°37.1	104°02.9	60°46.9	76° 12.4	88°14.8	108°28.7	
19	309°06.8	15.8'	11°18.0	12.6'	54.2'	112°49.4	108°13.4	103°33.5	60°17.3	76°42.3	88°38.5	108°56.8	
20	323°41.7	15.8'	11°05.4	12.6'	54.2'	112°21.4	107°49.6	103°04.0	59°47.6	77° 12.2	89°02.1	109°24.9	
21	$338^{\circ}16.5$	15.9'	10°52.8	12.7'	54.2'	111°53.4	107°25.8	102°34.6	59°17.9	77°42.1	89°25.8	109°53.0	
22	352°51.3	15.9'	10°40.2	12.7'	54.2'	111°25.3	107°02.0	102°05.2	58°48.2	78° 12.0	89°49.5	110°21.1	
23	7°26.2	15.9'	10°27.5	12.7'	54.2'	110°57.2	106°38.1	101°35.7	58°18.5	78°42.0	90°13.2	110°49.3	
13 th	SD	= 14.7'	Mer. pass	s. 22:29							·		

Moon (14th Sep)

n		ivioon	(14 56	ep)			Lunar L	distance (o	bjects w	ith largest	nourly LD (ieita)	
Tue	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Antares	+Rigil Kent.	+Hadar	+Mars
0	22°01.1	15.9'	S 10°14.7	12.8'	54.3'	119°11.2	110°29.2	101°06.2	57°48.8	79°11.9	90°36.9	94°42.8	111°17.4
1	36°36.1	16.0'	$10^{\circ}01.9$	12.8'	54.3'	118° 43.5	110°01.0	100°36.7	57°19.1	79°41.9	91°00.6	95°06.0	111°45.6
2	51°11.0	16.0'	$09^{\circ}49.1$	12.9'	54.3'	118° 15.8	109°32.9	100°07.2	56°49.3	80°11.8	91°24.3	95°29.2	112°13.8
3	65°46.0	16.0'	09°36.2	12.9'	54.3'	117°48.0	109°04.7	99°37.7	56°19.6	80°41.8	91°48.1	95°52.4	112°42.0
4	80°21.0	16.0'	09°23.3	13.0'	54.3'	117°20.2	108°36.6	99°08.2	55°49.9	81°11.8	92°11.8	96°15.5	113°10.2
5	94°56.1	16.1'	09° 10.4	13.0'	54.3'	116°52.3	108°08.4	98°38.6	55°20.1	81°41.8	92°35.5	96°38.7	113°38.4
6	109°31.1	16.1'	S 08°57.4	13.0'	54.3'	116°24.5	107°40.1	98°09.1	54°50.4	82°11.9	92°59.3	97°01.9	114°06.6
7	124°06.2	16.1'	08°44.3	13.1'	54.3'	115°56.6	107°11.9	97°39.5	54°20.6	82°41.9	93°23.0	97°25.1	114°34.9
8	138°41.3	16.1'	08°31.2	13.1'	54.3'	115°28.7	106°43.6	97°09.9	53°50.8	83°12.0	93°46.8	97°48.3	115°03.1
9	153°16.4	16.1'	$08^{\circ}18.1$	13.1'	54.3'	115°00.7	106°15.3	96°40.3	53°21.1	83°42.0	94°10.5	98°11.5	115°31.4
10	167°51.6	16.2'	$08^{\circ}05.0$	13.2'	54.4'	114°32.7	105°47.0	96°10.7	52°51.3	84°12.1	94°34.3	98°34.7	115°59.7
11	182°26.7	16.2'	$07^{\circ}51.8$	13.2'	54.4'	114°04.7	105°18.7	95°41.1	52°21.5	84°42.2	94°58.0	98°57.8	116°27.9
12	197°01.9	16.2'	S 07°38.6	13.3'	54.4'	113°36.7	104°50.3	95°11.4	51°51.7	85°12.3	95°21.8	99°21.0	116°56.2
13	211°37.1	16.2'	07°25.3	13.3'	54.4'	113°08.6	104°22.0	94°41.8	51°21.9	85°42.4	95°45.6	99°44.1	117°24.5
14	226°12.3	16.2'	$07^{\circ}12.1$	13.3'	54.4'	112°40.5	103°53.6	94°12.1	50°52.1	86°12.5	96°09.3	100°07.3	117°52.9
15	240°47.5	16.2'	06°58.7	13.4'	54.4'	112°12.4	103°25.2	93°42.4	50°22.2	86°42.7	96°33.1	100°30.4	118°21.2
16	255°22.7	16.2'	06°45.4	13.4'	54.4'	111°44.2	102°56.7	93°12.7	49°52.4	87°12.8	96° 56.8	100°53.5	118°49.6
17	269°58.0	16.3'	06°32.0	13.4'	54.4'	111°16.1	102°28.3	92°43.0	49°22.6	87°43.0	97°20.6	101°16.7	119°17.9
18	284°33.2	16.3'	S 06° 18.6	13.4'	54.4'	110°47.9	101°59.8	92°13.3	48°52.7	88°13.2	97°44.4	101°39.8	119°46.3
19	299°08.5	16.3'	$06^{\circ}05.1$	13.5'	54.5'	110° 19.6	101°31.3	91°43.5	48°22.9	88°43.4	98°08.1	102°02.8	
20	313°43.7	16.3'	$05^{\circ}51.7$	13.5'	54.5'	109°51.4	101°02.8	91°13.8	47°53.0	89°13.6	98°31.9	102°25.9	
21	328°19.0	16.3'	05°38.2	13.5'	54.5'	109°23.1	100°34.3	90°44.0	47°23.2	89°43.8	98°55.6	102°49.0	
22	342°54.3	16.3'	05°24.7	13.6'	54.5'	108°54.8	100°05.7	90°14.2	46°53.3	90°14.1	99° 19.4	103°12.0	
23	357°29.6	16.3'	05°11.1	13.6'	54.5'	108°26.5	99°37.2	89°44.4	46°23.4	90°44.3	99°43.1	103°35.1	
14 th	SD	= 14.8'	Mer. pass	s. 23:10							·		

	_	
L .	Moon (15 th Sen)	Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar
0	12°04.9	16.3'	S 04°57.5	13.6'	54.5'	107°58.1	99°08.6	89°14.6	45°53.5	45°38.9	91°14.6	100°06.8	103°58.1
1	26°40.2	16.3'	04°43.9	13.6'	54.5'	107°29.7	98°40.0	88°44.8	45°23.7	46°00.6	91°44.9	100°30.6	104°21.1
2	41°15.5	16.3'	04°30.3	13.6'	54.5'	107°01.3	98°11.3	88°14.9	44°53.8	46°22.5	92°15.2	100°54.3	104°44.1
3	55°50.8	16.3'	$04^{\circ}16.6$	13.7'	54.6'	106°32.9	97°42.7	87°45.1	44°23.9	46°44.5	92°45.5	101°18.0	105°07.1
4	70°26.2	16.3'	04°03.0	13.7'	54.6'	106°04.4	97°14.0	87° 15.2	43°54.0	47°06.6	93°15.8	101°41.7	105°30.0
5	85°01.5	16.3'	03°49.3	13.7'	54.6'	105°36.0	96°45.4	86°45.3	43°24.1	47°28.9	93°46.2	102°05.4	105°52.9
6	99°36.8	16.3'	S 03°35.6	13.7'	54.6'	105°07.5	96°16.7	86° 15.4	42°54.1	47°51.3	94°16.5	102°29.1	106°15.8
7	114°12.1	16.3'	03°21.8	13.8'	54.6'	104°38.9	95°48.0	85°45.5	42°24.2	48°13.8	94°46.9	102°52.7	106°38.7
8	128°47.4	16.3'	$03^{\circ}08.1$	13.8'	54.6'	104°10.4	95°19.2	85° 15.6	41°54.3	48°36.4	95°17.3	103°16.4	107°01.6
9	143°22.8	16.3'	02°54.3	13.8'	54.6'	103°41.8	94°50.5	84°45.6	41°24.4	48°59.1	95°47.7	103°40.0	107°24.4
10	157°58.1	16.3'	02°40.5	13.8'	54.7'	103°13.2	94°21.7	84°15.6	40°54.5	49°22.0	96°18.1	104°03.7	107°47.2
11	172°33.4	16.3'	02°26.7	13.8'	54.7'	102°44.6	93°52.9	83°45.7	40°24.5	49°45.0	96°48.6	104°27.3	108°10.0
12	187°08.7	16.3'	S 02°12.9	13.8'	54.7'	102°16.0	93°24.1	83° 15.7	39°54.6	50°08.0	97°19.0	104°50.9	108°32.8
13	201°44.0	16.3'	$01^{\circ}59.0$	13.9'	54.7'	101°47.3	92°55.3	82°45.7	39°24.7	50°31.2	97°49.5	105°14.4	108°55.5
14	216°19.3	16.3'	$01^{\circ}45.2$	13.9'	54.7'	101°18.7	92°26.5	82° 15.7	38°54.8	50°54.5	98°20.0	105°38.0	109°18.2
15	230°54.5	16.3'	$01^{\circ}31.3$	13.9'	54.7'	100°50.0	91°57.6	81°45.6	38°24.8	51°17.9	98°50.5	106°01.6	109°40.8
16	245°29.8	16.3'	01°17.4	13.9'	54.7'	100°21.2	91°28.8	81° 15.6	37°54.9	51°41.4	99°21.0	106°25.1	110°03.5
17	260°05.1	16.3'	01°03.6	13.9'	54.7'	99°52.5	90°59.9	80°45.5	37°25.0	52°05.0	99°51.6	106°48.6	110°26.1
18	274°40.3	16.2'	S 00°49.7	13.9'	54.8'	99°23.7	90°31.0	80° 15.4	36°55.0	52°28.7	100°22.1	107° 12.1	110°48.7
19	289°15.6	16.2'	00°35.7	13.9'	54.8'	98°55.0	90°02.1	79°45.3	36°25.1	52°52.5	100°52.7	107°35.5	111°11.2
20	303°50.8	16.2'	$00^{\circ}21.8$	13.9'	54.8'	98°26.1	89°33.2	79° 15.2	35°55.2	53°16.4	101°23.3	107°59.0	111°33.7
21	318°26.0	16.2'	S 00°07.9	13.9'	54.8'	97°57.3	89°04.2	78° 45.1	35°25.3	53°40.3	101°53.9	108°22.4	111°56.1
22	333°01.2	16.2'	N 00°06.1	13.9'	54.8'	97°28.5	88°35.3	78° 15.0	34°55.4	54°04.4	102°24.5	108°45.8	112°18.6
23	347°36.4	16.2'	00°20.0	14.0'	54.8'	96°59.6	88°06.3	77°44.8	34°25.5	54°28.6	102°55.1	109°09.1	112°40.9
15 th	SD	= 14.9'	Mer. pass	. 23:51									

h Moon (16th Sep)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Aldebaran	-Saturn	+Fomalhaut	+Altair	+Antares	+Rigil Kent.
0	2°11.6	16.2'	N 00°33.9	14.0'	54.9'		119°28.9	77°14.6	33°55.6	30°55.8	54°52.8	103°25.8	109°32.5
1	16°46.7	16.1'	00°47.9	14.0'	54.9'		118°58.3	76°44.5	33°25.7	31°15.8	55°17.1	103°56.4	109°55.8
2	31°21.9	16.1'	$01^{\circ}01.9$	14.0'	54.9'		118°27.8	76°14.3	32°55.8	31°36.0	55°41.5	104°27.1	110°19.1
3	45°57.0	16.1'	$01^{\circ}15.8$	14.0'	54.9'		117°57.3	75°44.1	32°25.9	31°56.4	56°06.0	104°57.8	110°42.3
4	60°32.1	16.1'	$01^{\circ}29.8$	14.0'	54.9'		117°26.7	75°13.8	31°56.0	32°17.2	56°30.6	105°28.6	111°05.5
5	75°07.2	16.1'	01°43.8	14.0'	54.9'		116°56.1	74°43.6	31°26.2	32°38.1	56°55.2	105°59.3	111°28.7
6	89°42.2	16.0'	N 01°57.7	14.0'	54.9'	119°34.1	116°25.5	74°13.3	30°56.3	32°59.3	57°20.0	106°30.0	111°51.9
7	104°17.2	16.0'	$02^{\circ}11.7$	14.0'	55.0'	119°05.1	115°54.9	73°43.1	30°26.5	33°20.8	57°44.8	107°00.8	112°15.0
8	118°52.2	16.0'	02°25.7	14.0'	55.0'	118°36.2	115°24.3	73°12.8	29°56.7	33°42.5	58°09.7	107°31.6	112°38.1
9	133°27.2	16.0'	02°39.6	14.0'	55.0'	118°07.2	114°53.6	72°42.5	29°26.9	34°04.3	58°34.6	108°02.4	113°01.1
10	148°02.2	15.9'	02°53.6	14.0'	55.0'	117°38.1	114°22.9	72°12.2	28°57.1	34°26.4	58°59.6	108°33.2	113°24.1
11	162°37.1	15.9'	03°07.6	14.0'	55.0'	117°09.1	113°52.3	71°41.8	28°27.4	34°48.7	59°24.7	109°04.1	113°47.1
12	177°12.0	15.9'	N 03°21.5	14.0'	55.0'	116°40.0	113°21.5	71°11.5	27°57.7	35°11.2	59°49.9	109°34.9	114°10.0
13	191°46.9	15.8'	03°35.5	13.9'	55.1'	116°10.8	112°50.8	70°41.1	27°28.0	35°33.9	60°15.1	110°05.8	114°32.9
14	206°21.7	15.8'	03°49.4	13.9'	55.1'	115°41.7	112°20.1	70°10.8	26°58.3	35°56.8	60°40.4	110°36.7	114°55.7
15	220°56.5	15.8'	04°03.4	13.9'	55.1'	115°12.5	111°49.3	69°40.4	26°28.7	36°19.9	61°05.8	111°07.6	115°18.5
16	235°31.3	15.7'	04°17.3	13.9'	55.1'	114°43.3	111°18.5	69°10.0	25°59.1	36°43.2	61°31.2	111°38.5	115°41.2
17	250°06.0	15.7'	04°31.2	13.9'	55.1'	114°14.0	110°47.7	68°39.6	25°29.5	37°06.6	61°56.7	112°09.5	116°03.9
18	264°40.7	15.7'	N04°45.1	13.9'	55.1'	113°44.7	110°16.9	68°09.1	25°00.0	37°30.2	62°22.3	112°40.5	116°26.6
19	279°15.4	15.6'	04°59.0	13.9'	55.2'	113°15.4	109°46.0	67°38.7	24°30.5	37°53.9	62°47.9	113°11.4	116°49.2
20	293°50.1	15.6'	$05^{\circ}12.9$	13.9'	55.2'	112°46.0	109°15.2	67°08.2	24°01.0	38°17.9	63°13.6	113°42.4	117°11.7
21	308°24.7	15.6'	05°26.8	13.9'	55.2'	112°16.7	108°44.3	66°37.8	23°31.7	38°41.9	63°39.3	114° 13.5	117°34.2
22	322°59.2	15.5'	05°40.7	13.8'	55.2'	111°47.3	108°13.4	66°07.3	23°02.3	39°06.2	64°05.1	114°44.5	117°56.6
23	337°33.7	15.5'	05°54.5	13.8'	55.2'	111°17.8	107°42.5	65°36.8	22°33.1	39°30.5	64°31.0	115° 15.6	118°19.0
16 th	SI	0 = 15.0)' Mer. pas	ss:-							-		

h Moon (17th Sep)

Lunar Distance (objects with largest hourly LD delta)

			. (2)	' /					\ 3	1011 101 8000 1			
Fri	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Aldebaran	+Fomalhaut	+Altair	+Antares	+Rigil Kent.
0	352°08.2	15.4'	N 06°08.4	13.8'	55.2'	110°48.4	107°11.5	84°52.1	65°06.3	39°55.1	64°56.9	115°46.6	118°41.3
1	6°42.7	15.4'	06°22.2	13.8'	55.3'	110°18.9	106°40.6	84°22.8	64°35.8	40°19.7	65°22.9	116°17.7	119°03.5
2	21°17.1	15.4'	06°36.0	13.8'	55.3'	109°49.4	106°09.6	83°53.5	64°05.2	40°44.5	65°48.9	116°48.8	119°25.7
3	35°51.4	15.3'	06°49.8	13.8'	55.3'	109°19.8	105°38.6	83°24.2	63°34.7	41°09.5	66° 14.9	117°20.0	119°47.8
4	50°25.7	15.3'	07°03.5	13.7'	55.3'	108°50.2	105°07.6	82°54.8	63°04.1	41°34.5	66°41.1	117°51.1	
5	65°00.0	15.2'	$07^{\circ}17.3$	13.7'	55.3'	108°20.6	104°36.6	82°25.4	62°33.6	41°59.7	67°07.3	118°22.3	
6	79°34.2	15.2'	N 07°31.0	13.7'	55.3'	107°51.0	104°05.5	81°56.1	62°03.0	42°25.0	67°33.5	118°53.5	
7	94°08.4	15.1'	07°44.7	13.7'	55.4'	107°21.4	103°34.5	81°26.7	61°32.4	42°50.4	67°59.8	119°24.7	
8	108°42.5	15.1'	07°58.4	13.7'	55.4'	106°51.7	103°03.4	80°57.3	61°01.8	43°16.0	68°26.1	119°55.9	
9	123°16.6	15.0'	$08^{\circ}12.0$	13.6'	55.4'	106°22.0	102°32.3	80°27.8	60°31.1	43°41.6	68°52.5		
10	137°50.7	15.0'	08°25.6	13.6'	55.4'	105°52.2	102°01.1	79°58.4	60°00.5	44°07.4	69°18.9		
11	152°24.6	14.9'	08°39.2	13.6'	55.4'	105°22.5	101°30.0	79°29.0	59°29.8	44°33.3	69°45.4		
12	166°58.6	14.9'	N 08°52.8	13.5'	55.5'	104°52.7	100°58.8	78°59.5	58°59.2	44°59.3	70°11.9		
13	181°32.4	14.8'	09°06.4	13.5'	55.5'	104°22.9	100°27.6	78°30.0	58°28.5	45°25.4	70°38.4		
14	196°06.3	14.8'	$09^{\circ}19.9$	13.5'	55.5'	103°53.0	99°56.4	78°00.6	57°57.8	45°51.6	71°05.0		
15	210°40.0	14.7'	09°33.4	13.5'	55.5'	103°23.2	99°25.2	77°31.1	57°27.1	46°17.8	71°31.7		
16	225°13.7	14.7'	09°46.8	13.4'	55.5'	102°53.3	98°53.9	77°01.6	56°56.4	46°44.2	71°58.4		
17	239°47.4	14.6'	10°00.2	13.4'	55.5'	102°23.4	98°22.7	76°32.1	56°25.7	47°10.7	72°25.1		
18	254°21.0	14.5'	N 10°13.6	13.4'	55.6'	101°53.5	97°51.4	76°02.5	55°55.0	47°37.3	72°51.9		
19	268°54.5	14.5'	10°27.0	13.3'	55.6'	101°23.5	97°20.1	75°33.0	55°24.2	48°03.9	73° 18.7		
20	283°28.0	14.4'	10°40.3	13.3'	55.6'	100°53.5	96°48.8	75°03.5	54°53.5	48°30.7	73°45.6		
21	298°01.4	14.4'	10°53.6	13.2'	55.6'	100°23.5	96° 17.4	74°33.9	54°22.7	48°57.5	74° 12.5		
22	312°34.8	14.3'	11°06.8	13.2'	55.6'	99°53.5	95°46.1	74°04.3	53°52.0	49°24.5	74°39.4		
23	327°08.1	14.2'	11°20.0	13.2'	55.7'	99°23.4	95° 14.7	73°34.8	53°21.2	49°51.5	75°06.4		
17 th	SD	= 15.1'	Mer. pass	s. 00:32				-					

h Moon (18th Sep)

Lunar Distance	(objects with	largest hourly	/ LD delta))
----------------	---------------	----------------	-------------	---

		111001	(10 00	r)			= 44.	Bistairee (or mounty L		
Sat	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Rigel	-Capella	-Aldebaran	+Fomalhaut	+Altair
0	341°41.3	14.2'	$N11^{\circ}33.2$	13.1'	55.7'	98°53.4	94°43.3	73°05.2	66°35.8	64°12.8	52°50.4	50°18.5	75°33.4
1	356°14.5	14.1'	11°46.3	13.1'	55.7'	98°23.3	94°11.9	72°35.6	66°11.3	63°43.4	52°19.6	50°45.7	76°00.4
2	10°47.6	14.0'	11°59.4	13.0'	55.7'	97°53.1	93°40.4	72°06.0	65°46.8	63°14.0	51°48.8	51°13.0	76°27.5
3	25°20.6	14.0'	12°12.4	13.0'	55.7'	97°23.0	93°09.0	71°36.4	65°22.4	62°44.6	51°18.0	51°40.3	76°54.7
4	39°53.6	13.9'	12°25.4	12.9'	55.8'	96°52.8	92°37.5	71°06.8	64°57.9	62°15.2	50°47.2	52°07.7	77°21.8
5	54°26.5	13.8'	12°38.4	12.9'	55.8'	96°22.7	92°06.0	70°37.2	64°33.6	61°45.8	50°16.3	52°35.1	77°49.0
6	68°59.3	13.8'	$N12^{\circ}51.3$	12.9'	55.8'	95°52.4	91°34.5	70°07.6	64°09.2	61°16.4	49°45.5	53°02.7	78°16.2
7	83°32.1	13.7'	13°04.1	12.8'	55.8'	95°22.2	91°02.9	69°38.0	63°44.9	60°47.0	49°14.6	53°30.3	78°43.5
8	98°04.8	13.6'	13°16.9	12.8'	55.8'	94°52.0	90°31.4	69°08.3	63°20.7	60°17.6	48°43.8	53°58.0	79°10.8
9	112°37.4	13.6'	13°29.7	12.7'	55.9'	94°21.7	89°59.8	68°38.7	62°56.5	59°48.2	48°12.9	54°25.7	79°38.1
10	127°10.0	13.5'	13°42.4	12.7'	55.9'	93°51.4	89°28.2	68°09.1	62°32.3	59°18.8	47°42.1	54°53.5	80°05.4
11	141°42.5	13.4'	$13^{\circ}55.1$	12.6'	55.9'	93°21.1	88°56.6	67°39.4	62°08.2	58°49.5	47°11.2	55°21.4	80°32.8
12	156°14.9	13.3'	$N14^{\circ}07.7$	12.5'	55.9'	92°50.7	88°24.9	67°09.8	61°44.1	58°20.1	46°40.3	55°49.3	81°00.2
13	170°47.2	13.3'	14°20.2	12.5'	55.9'	92°20.4	87°53.3	66°40.1	61°20.1	57°50.7	46°09.5	56°17.3	81°27.7
14	185°19.4	13.2'	14°32.7	12.4'	56.0'	91°50.0	87°21.6	66° 10.5	60°56.2	57°21.4	45°38.6	56°45.4	81°55.1
15	199°51.6	13.1'	14°45.1	12.4'	56.0'	91°19.6	86°49.9	65°40.8	60°32.3	56°52.0	45°07.7	57°13.5	82°22.6
16	214°23.7	13.0'	14°57.5	12.3'	56.0'	90°49.2	86°18.2	65°11.2	60°08.4	56°22.7	44°36.8	57°41.7	82°50.2
17	228°55.7	12.9'	$15^{\circ}09.8$	12.3'	56.0'	90°18.7	85°46.4	64°41.5	59°44.6	55°53.4	44°05.9	58°09.9	83°17.7
18	243°27.7	12.9'	$N15^{\circ}22.1$	12.2'	56.0'	89°48.3	85°14.7	64°11.9	59°20.9	55°24.1	43°35.0	58°38.2	83°45.3
19	257°59.6	12.8'	15°34.3	12.1'	56.1'	89°17.8	84°42.9	63°42.2	58°57.3	54°54.8	43°04.1	59°06.6	84°12.9
20	272°31.3	12.7'	15°46.4	12.1'	56.1'	88°47.3	84°11.1	63° 12.5	58°33.7	54°25.5	42°33.3	59°35.0	84°40.5
21	287°03.0	12.6'	15°58.5	12.0'	56.1'	88°16.8	83°39.3	62°42.9	58°10.1	53°56.2	42°02.4	60°03.5	85°08.2
22	301°34.7	12.5'	$16^{\circ}10.5$	11.9'	56.1'	87°46.2	83°07.4	62°13.2	57°46.7	53°27.0	41°31.5	60°32.0	85°35.9
23	316°06.2	12.5'	16°22.4	11.9'	56.1'	87°15.7	82°35.5	61°43.6	57°23.3	52°57.7	41°00.6	61°00.6	86°03.6
18 th	SD	$= 15.2^{\prime}$	Mer. pass	. 01:15									

Moon (19th Sep) Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Jupiter	-Regulus	-Procyon	-Pollux	+Saturn	+Fomalhaut	+Deneb	+Altair
0	330°37.7	12.4'	N 16°34.3	11.8'	56.2'		119°01.0	86°45.1	82°03.7		61°29.2		86°31.3
1	345°09.0	12.3'	16°46.0	11.7'	56.2'		118°29.0	86°14.5	81°31.8		61°57.9		86°59.1
2	359°40.3	12.2'	16°57.8	11.7'	56.2'		117°56.9	85°43.9	80°59.8		62°26.6		87°26.8
3	14°11.5	12.1'	$17^{\circ}09.4$	11.6'	56.2'		117°24.9	85°13.3	80°27.9		62°55.4		87°54.6
4	28°42.6	12.0'	$17^{\circ}21.0$	11.5'	56.2'		116°52.8	84°42.6	79°55.9		63°24.2		88°22.5
5	43°13.6	11.9'	17°32.5	11.4'	56.3'		116°20.7	84°12.0	79°23.9		63°53.1		88°50.3
6	57°44.6	11.9'	N17°43.9	11.4'	56.3'		115°48.6	83°41.3	78°51.9	10°59.8	64°22.0		89°18.2
7	72°15.4	11.8'	17°55.3	11.3'	56.3'		115°16.5	83°10.6	78°19.9	11°23.2	64°50.9		89°46.0
8	86°46.2	11.7'	$18^{\circ}06.6$	11.2'	56.3'		114°44.3	82°39.9	77°47.8	11°47.2	65°19.9		90°13.9
9	101°16.9	11.6'	18°17.8	11.1'	56.3'		114°12.1	82°09.1	77°15.8	12°11.8	65°49.0		90°41.8
10	115°47.5	11.5'	18°28.9	11.0'	56.4'		113°39.9	81°38.4	76°43.7	12°37.1	66°18.1		91°09.8
11	130°18.0	11.4'	18°39.9	11.0'	56.4'		113°07.7	81°07.6	76°11.6	13°02.9	66°47.3		91°37.7
12	144°48.4	11.3'	N 18°50.9	10.9'	56.4'		112°35.5	80°36.8	75°39.4	13°29.2	67°16.4		92°05.7
13	159°18.7	11.2'	19°01.7	10.8'	56.4'		112°03.2	80°06.0	75°07.3	13°55.9	67°45.7		92°33.7
14	173°48.9	11.1'	19°12.5	10.7'	56.5'		111°30.9	79°35.2	74°35.1	14°23.0	68°14.9	72°13.1	93°01.7
15	188°19.0	11.0'	19°23.2	10.6'	56.5'		110°58.6	79°04.4	74°02.9	14°50.5	68°44.3	72°28.2	93°29.7
16	202°49.0	10.9'	19°33.8	10.5'	56.5'		110°26.3	78°33.5	73°30.7	15°18.4	69°13.6	72°43.4	93°57.7
17	217°19.0	10.8'	19°44.3	10.4'	56.5'		109°53.9	78°02.6	72°58.4	15°46.5	69°43.0	72°58.7	94°25.8
18	231°48.8	10.8'	N 19°54.8	10.3'	56.5'		109°21.5	77°31.7	72°26.2	16°14.9	70°12.4	73°14.1	94°53.8
19	246°18.6	10.7'	20°05.1	10.2'	56.6'		108°49.1	77°00.9	71°53.9	16°43.6	70°41.9	73°29.5	95°21.9
20	260°48.2	10.6'	20°15.3	10.1'	56.6'	119°51.7	108°16.7	76°29.9	71°21.6	17°12.6	71°11.4	73°45.0	95°50.0
21	275°17.8	10.5'	20°25.5	10.0'	56.6'	119° 19.9	107°44.3	75°59.0	70°49.3	17°41.8	71°41.0	74°00.6	96°18.1
22	289°47.3	10.4'	20°35.5	9.9'	56.6'	118°48.0	107°11.8	75°28.1	70°16.9	18°11.1	72°10.6	74°16.3	96°46.2
23	304°16.7	10.3'	20°45.5	9.8'	56.6'	118°16.1	106°39.3	74°57.1	69°44.6	18°40.7	72°40.2	74°32.0	97°14.3
19 th	SD	$=15.3^{\prime}$	Mer. pass	. 02:01									

Moon (20th Sep) h Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Jupiter	-Regulus	-Procyon	-Pollux	+Saturn	+Fomalhaut	+Deneb	+Altair
0	318°45.9	10.2'	N20°55.3	9.7'	56.7'	117°44.2	106°06.8	74°26.1	69°12.2	19°10.5	73°09.9	74°47.9	97°42.4
1	333°15.1	10.1'	21°05.1	9.6'	56.7'	117° 12.2	105°34.2	73°55.2	68°39.8	19°40.4	73°39.6	75°03.8	98°10.6
2	347°44.2	10.0'	$21^{\circ}14.7$	9.5'	56.7'	116°40.2	105°01.7	73°24.2	68°07.3	20°10.5	74°09.3	75°19.8	98°38.7
3	2°13.2	9.9'	21°24.3	9.4'	56.7'	116°08.2	104°29.1	72°53.2	67°34.9	20°40.7	74°39.1	75°35.8	99°06.9
4	16°42.1	9.8'	21°33.7	9.3'	56.8'	115°36.2	103°56.5	72°22.1	67°02.4	21°11.1	75°08.9	75°52.0	99°35.0
5	31°10.9	9.7'	21°43.0	9.2'	56.8'	115°04.2	103°23.9	71°51.1	66°29.9	21°41.6	75°38.7	76°08.1	100°03.2
6	45°39.6	9.6'	N21°52.3	9.1'	56.8'	114°32.1	102°51.2	71°20.1	65°57.4	22°12.3	76°08.6	76°24.4	100°31.4
7	60°08.2	9.5'	22°01.4	9.0'	56.8'	114°00.0	102°18.5	70°49.0	65°24.8	22°43.0	76°38.5	76°40.7	100°59.5
8	74°36.7	9.4'	22°10.4	8.9'	56.8'	113°27.9	101°45.8	70°17.9	64°52.3	23°13.9	77°08.5	76°57.2	101°27.7
9	89°05.1	9.3'	22° 19.3	8.8'	56.9'	112°55.7	101°13.1	69°46.8	64°19.7	23°44.9	77°38.4	77°13.6	101°55.9
10	103°33.4	9.2'	22°28.1	8.7'	56.9'	112°23.6	100°40.4	69°15.8	63°47.1	24°15.9	78°08.4	77°30.2	102°24.1
11	118°01.7	9.1'	22°36.7	8.6'	56.9'	111°51.4	100°07.6	68°44.6	63°14.5	24°47.1	78°38.5	77°46.7	102°52.3
12	132°29.8	9.0'	N 22°45.3	8.4'	56.9'	111°19.2	99°34.8	68°13.5	62°41.8	25°18.4	79°08.6	78°03.4	103°20.5
13	146°57.8	8.9'	22°53.7	8.3'	57.0'	110°46.9	99°02.0	67°42.4	62°09.1	25°49.8	79°38.7	78°20.1	103°48.7
14	161°25.7	8.8'	23°02.1	8.2'	57.0'	110°14.7	98°29.1	67°11.3	61°36.4	26°21.2	80°08.8	78°36.9	104°16.9
15	175°53.6	8.7'	23°10.3	8.1'	57.0'	109°42.4	97°56.3	66°40.1	61°03.7	26°52.7	80°39.0	78°53.7	104°45.0
16	190°21.3	8.6'	23° 18.3	8.0'	57.0'	109°10.1	97°23.4	66°09.0	60°31.0	27°24.3	81°09.1	79°10.6	105°13.2
17	204°48.9	8.5'	23°26.3	7.8'	57.1'	108°37.7	96°50.5	65°37.8	59°58.2	27°56.0	81°39.4	79°27.6	105°41.4
18	219°16.5	8.5'	N23°34.1	7.7'	57.1'	108°05.4	96°17.5	65°06.7	59°25.5	28°27.8	82°09.6	79°44.6	106°09.6
19	233°44.0	8.4'	23°41.8	7.6'	57.1'	107°33.0	95°44.6	64°35.5	58°52.6	28°59.6	82°39.9	80°01.7	106°37.8
20	248°11.3	8.3'	23°49.4	7.5'	57.1'	107°00.6	95°11.6	64°04.3	58°19.8	29°31.5	83°10.2	80°18.8	107°06.0
21	262°38.6	8.2'	23°56.9	7.3'	57.1'	106°28.2	94°38.6	63°33.1	57°47.0	30°03.4	83°40.6	80°36.0	107°34.1
22	277°05.7	8.1'	24°04.2	7.2'	57.2'	105°55.7	94°05.5	63°01.9	57°14.1	30°35.5	84°10.9	80°53.2	108°02.3
23	291°32.8	8.0'	24°11.4	7.1'	57.2'	105°23.2	93°32.5	62°30.7	56°41.2	31°07.5	84°41.3	81°10.5	108°30.5
20 th	SD	= 15.5'	Mer. pass	. 02:51									

h		Moor	ı (21 st Se	p)		•	Lunar D	istance (objects v	vith large	st hourly	LD delta)	
Tue	GHA	ν	Dec	d	HP	-Jupiter	-Regulus	-Procyon	-Pollux	+Saturn	+Deneb	+Fomalhaut	+Altair
0	305°59.8	7.9'	N 24°18.5	6.9'	57.2'	104°50.7	92°59.4	61°59.5	56°08.3	31°39.7	81°27.8	85°11.7	108°58.6
1	320°26.7	7.8'	24°25.4	6.8'	57.2'	104° 18.2	92°26.3	61°28.3	55° 35.4	32°11.9	81°45.1	85°42.2	109°26.8
2	334°53.5	7.7'	24°32.2	6.7'	57.3'	103°45.6	91°53.1	60°57.1	55°02.4	32°44.1	82°02.6	86°12.7	109°54.9
3	349°20.2	7.6'	24°38.9	6.5'	57.3'	103°13.0	91°20.0	60°25.9	54°29.4	33°16.5	82°20.0	86°43.2	110°23.0
4	3°46.8	7.5'	24°45.4	6.4'	57.3'	102°40.4	90°46.8	59°54.7	53°56.4	33°48.8	82°37.5	87°13.7	110°51.1
5	18° 13.4	7.4'	24°51.8	6.3'	57.3'	102°07.8	90°13.6	59°23.5	53°23.4	34°21.2	82°55.1	87°44.3	111°19.2
6	32°39.8	7.4'	N 24°58.0	6.1'	57.4'	101°35.1	89°40.4	58°52.2	52°50.4	34°53.7	83°12.7	88°14.8	111°47.3
7	47°06.2	7.3'	25°04.1	6.0'	57.4	101°02.5	89°07.1	58°21.0	52° 17.3	35°26.2	83°30.3	88°45.4	112° 15.4
8	61°32.5	7.2'	25°10.1	5.8'	57.4	100°29.7	88°33.8	57°49.8	51°44.2	35°58.8	83°48.0	89°16.1	112°43.4
9	75°58.6 90°24.7	7.1' 7.0'	25° 15.9 25° 21.6	5.7'	57.4'	99°57.0 99°24.2	88°00.5 87°27.2	57°18.6 56°47.4	51°11.1 50°37.9	36°31.4 37°04.1	84°05.7	89°46.7 90°17.4	113°11.4
10 11	90 24.7 104°50.7	7.0 6.9'	25°27.1	5.5' 5.4'	57.5' 57.5'	99°24.2 98°51.5	87 27.2 86°53.8	56° 47.4 56° 16.1	50° 37.9	37 04.1 37°36.8	84°23.4 84°41.2	90 17.4 90°48.1	113°39.4 114°07.4
12	119° 16.7	6.8'	N25°32.5	5.2'	57.5'	98° 18.6 97° 45.8	86°20.4	55°44.9	49°31.6	38°09.6	84°59.0	91°18.8	114°35.4
13 14	133°42.5 148°08.3	6.8' 6.7'	25°37.8 25°42.9	5.1' 4.9'	57.5' 57.5'	97°45.8 97°12.9	85°47.0 85°13.6	55°13.7 54°42.5	48°58.4 48°25.2	38° 42.4 39° 15.2	85°16.9 85°34.8	91°49.6 92°20.3	115°03.3 115°31.2
15	162°34.0	6.6'	25° 47.8	4.9 4.8'	57.5' 57.6'	96°40.0	84°40.1	54°42.5	46 25.2 47°52.0	39° 48.1	85°52.7	92°51.1	115 51.2 115°59.1
16	176° 59.6	6.5	25° 52.6	4.6'	57.6'	96°40.0	84°06.6	54 11.5 53°40.1	47 52.0 47°18.7	40°21.1	86°10.7	92 51.1 93°21.9	115 59.1 116°27.0
17	191°25.1	6.5	25° 57.2	4.5'	57.6'	95°34.2	83°33.1	53°09.0	46°45.4	40°54.0	86°28.6	93°52.8	116° 54.8
18	205°50.6	6.4'	N26°01.7	4.3'	57.6'	95°01.2	82°59.5	52°37.8	46°12.1	41°27.1	86°46.6	94°23.6	117° 22.7
19	205 50.6 220°16.0	6.3	26°06.1	4.3 4.2'	57.0 57.7'	95 01.2 94°28.2	82 59.5 82°26.0	52 37.8 52°06.6	45°38.8	41 27.1 42°00.1	80 40.0 87°04.7	94 23.6 94°54.5	117 22.7 117°50.4
20	234°41.3	6.2'	26°10.3	4.0'	57.7'	94° 26.2 93° 55.2	81°52.4	51°35.5	45°05.4	42°33.2	87°22.7	95°25.4	117 30.4 118° 18.2
21	249°06.5	6.2'	26°14.3	3.9'	57.7'	93°22.1	81°18.8	51°04.3	44°32.0	42° 35.2	87°40.8	95°56.3	118° 45.9
22	263°31.6	6.1'	26° 18.1	3.7'	57.7'	92°49.1	80°45.1	50°33.2	43°58.7	43°39.5	87°58.9	96°27.2	110° 13.5
23	277° 56.7	6.0'	26°21.8	3.5'	57.8'	92° 16.0	80°11.4	50°02.1	43° 25.2	44°12.8	88°17.1	96°58.2	119°41.2
21 st	SD =	= 15.6′	Mer. pass	. 03:44	1						ı		

h Moon (22nd Sep)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Sun	-Jupiter	-Regulus	-Pollux	+Aldebaran	+Saturn	+Deneb	+Fomalhaut
0	292°21.8	6.0'	N 26°25.4	3.4'	57.8'	108°08.4	91°42.8	79°37.7	42°51.8		44°46.0	88°35.2	97°29.1
1	306°46.7	5.9'	26°28.8	3.2'	57.8'	107°37.2	91°09.7	79°04.0	42°18.4		45° 19.3	88°53.4	98°00.1
2	321°11.6	5.8'	26°32.0	3.1'	57.8'	107°05.9	90°36.5	78°30.2	41°44.9		45°52.7	89°11.6	98°31.1
3	335°36.4	5.8'	26°35.1	2.9'	57.9'	106°34.6	90°03.3	77°56.5	41°11.4		46°26.0	89°29.8	99°02.1
4	350°01.2	5.7'	26°38.0	2.7'	57.9'	106°03.3	89°30.1	77°22.7	40°37.9		46°59.5	89°48.1	99°33.2
5	4°25.9	5.6'	26°40.7	2.6'	57.9'	105°32.0	88°56.8	76°48.8	40°04.4		47°32.9	90°06.3	100°04.2
6	18°50.5	5.6'	N 26°43.3	2.4'	57.9'	105°00.6	88°23.5	76°15.0	39°30.8		48°06.4	90°24.6	100°35.3
7	33°15.1	5.5'	26°45.7	2.2'	58.0'	104°29.2	87°50.2	75°41.1	38°57.2		48°39.9	90°42.8	101°06.4
8	47°39.6	5.5'	26°47.9	2.1'	58.0'	103°57.8	87°16.8	75°07.1	38°23.7		49°13.5	91°01.1	101°37.4
9	62°04.1	5.4'	26°50.0	1.9'	58.0'	103°26.3	86°43.5	74°33.2	37°50.1		49°47.1	91°19.4	102°08.6
10	76°28.5	5.4'	26°51.9	1.7'	58.0'	102°54.8	86°10.1	73°59.2	37°16.4		50°20.7	91°37.7	102°39.7
11	90°52.9	5.3'	26°53.7	1.6'	58.1'	102°23.3	85°36.6	73°25.2	36°42.8		50°54.4	91°56.0	103°10.8
12	105°17.2	5.3'	N 26°55.2	1.4'	58.1'	101°51.8	85°03.2	72°51.2	36°09.1		51°28.1	92°14.4	103°42.0
13	119°41.4	5.2'	26°56.6	1.2'	58.1'	101°20.2	84°29.7	72°17.2	35°35.5		52°01.8	92°32.7	104°13.1
14	134°05.7	5.2'	26°57.9	1.1'	58.1'	100°48.6	83°56.2	71°43.1	35°01.8		52°35.6	92°51.0	104°44.3
15	148°29.8	5.1'	26°58.9	0.9'	58.2'	100°17.0	83°22.7	71°09.0	34°28.1	12°59.2	53°09.4	93°09.3	105°15.5
16	162°54.0	5.1'	26°59.8	0.7'	58.2'	99°45.4	82°49.1	70°34.8	33°54.3	13°21.6	53°43.3	93°27.7	105°46.7
17	177°18.1	5.1'	27°00.5	0.5'	58.2'	99°13.7	82°15.5	70°00.7	33°20.6	13°44.8	54° 17.2	93°46.0	106°17.9
18	191°42.1	5.0'	$N27^{\circ}01.1$	0.4'	58.2'	98°42.0	81°41.9	69°26.5	32°46.9	14°08.8	54°51.1	94°04.4	106°49.1
19	206°06.2	5.0'	27°01.4	0.2'	58.3'	98°10.3	81°08.2	68°52.2	32°13.1	14°33.4	55°25.0	94°22.7	107°20.3
20	220°30.1	5.0'	$27^{\circ}01.6$	0.0'	58.3'	97°38.5	80°34.6	68°18.0	31°39.3	14°58.7	55°59.0	94°41.0	107°51.5
21	234°54.1	4.9'	27°01.6	-0.2'	58.3'	97°06.7	80°00.8	67°43.7	31°05.5	15°24.6	56°33.0	94°59.3	108°22.7
22	249°18.0	4.9'	27°01.5	-0.3'	58.3'	96°34.9	79°27.1	67°09.4	30°31.8	15°51.0	57°07.1	95°17.7	108°54.0
23	263°41.9	4.9'	27°01.2	-0.5'	58.4'	96°03.1	78°53.4	66°35.1	29°57.9	16°17.9	57°41.2	95°36.0	109°25.2
22 nd	SD	= 15.8	Mer. pas	s. 04:42					Sun	SD = 15.9'			

h Moon (23rd Sep)

Lunar Distance (objects with largest hourly LD delta)

			. (=3 03	1/					_ \ _ J	o 11.1611 141.60			
Thu	GHA	ν	Dec	d	HP	-Sun	-Jupiter	-Regulus	-Pollux	+Aldebaran	+Capella	+Saturn	+Fomalhaut
0	278°05.8	4.8'	N 27°00.6	-0.7'	58.4'	95°31.2	78°19.6	66°00.7	29°24.1	16°45.2		58°15.3	109°56.5
1	292°29.6	4.8'	27°00.0	-0.9'	58.4'	94°59.3	77°45.8	65°26.3	28°50.3	17° 13.1		58°49.4	110°27.7
2	306°53.4	4.8'	$26^{\circ}59.1$	-1.0'	58.4'	94°27.4	77°11.9	64°51.9	28° 16.5	17°41.3		59°23.6	110°59.0
3	321°17.2	4.8'	$26^{\circ}58.1$	-1.2'	58.4'	93°55.4	76°38.0	64°17.5	27° 42.7	18°09.8		59°57.8	111°30.2
4	335°41.0	4.8'	26°56.9	-1.4'	58.5'	93°23.5	76°04.1	63°43.0	27°08.8	18° 38.8		60°32.1	112°01.5
5	350°04.8	4.7'	26°55.5	-1.6'	58.5'	92°51.4	75°30.2	63°08.5	26°35.0	19°08.0		61°06.4	112°32.8
6	4°28.5	4.7'	N 26°53.9	-1.7'	58.5'	92°19.4	74°56.3	62°34.0	26°01.2	19°37.6		61°40.7	113°04.0
7	18°52.3	4.7'	26°52.1	-1.9'	58.5'	91°47.3	74°22.3	61°59.4	25°27.3	20°07.4		62°15.0	113°35.3
8	33°16.0	4.7'	26°50.2	-2.1'	58.6'	91°15.2	73°48.3	61°24.8	24°53.5	20°37.5		62°49.4	114°06.5
9	47°39.7	4.7'	26°48.1	-2.3'	58.6'	90°43.1	73°14.2	60°50.2	24° 19.7	21°07.8		63°23.8	114°37.8
10	62°03.4	4.7'	26°45.8	-2.5'	58.6'	90°11.0	72°40.2	60°15.6	23°45.9	21°38.4		63°58.3	115°09.0
11	76°27.1	4.7'	26°43.4	-2.6'	58.6'	89°38.8	72°06.1	59°40.9	23°12.1	22°09.2		64°32.8	115°40.3
12	90°50.8	4.7'	N 26°40.8	-2.8'	58.7'	89°06.6	71°32.0	59°06.2	22°38.3	22°40.1	21°25.2	65°07.3	116°11.5
13	105°14.5	4.7'	26°38.0	-3.0'	58.7'	88°34.4	70°57.8	58°31.5	22°04.6	23°11.3	21°41.3	65°41.8	116°42.7
14	119°38.2	4.7'	26°35.0	-3.2'	58.7'	88°02.1	70°23.6	57°56.8	21°30.8	23°42.7	21°58.1	66°16.4	117°14.0
15	134°01.9	4.7'	26°31.8	-3.3'	58.7'	87°29.8	69°49.4	57°22.0	20°57.1	24° 14.2	22°15.6	66°51.0	117°45.2
16	148°25.6	4.7'	26°28.5	-3.5'	58.8'	86°57.5	69°15.2	56°47.2	20°23.4	24° 45.9	22°33.7	67°25.6	118°16.4
17	162°49.3	4.7'	$26^{\circ}24.9$	-3.7'	58.8'	86°25.1	68°40.9	56°12.3	19°49.8	25° 17.8	22°52.4	68°00.3	118°47.5
18	177°13.0	4.7'	$N26^{\circ}21.2$	-3.9'	58.8'	85°52.8	68°06.6	55°37.5	19° 16.2	25°49.8	23°11.8	68°35.0	119°18.7
19	191°36.8	4.7'	26°17.4	-4.0'	58.8'	85°20.4	67°32.3	55°02.6	18°42.6	26°21.9	23°31.7	69°09.7	119°49.9
20	206°00.5	4.8'	26°13.3	-4.2'	58.9'	84°47.9	66°58.0	54°27.7	18°09.1	26° 54.2	23°52.2	69°44.5	
21	220°24.3	4.8'	$26^{\circ}09.1$	-4.4'	58.9'	84°15.5	66°23.6	53°52.7	17°35.7	27° 26.6	24°13.2	70°19.3	
22	234°48.0	4.8'	26°04.7	-4.6'	58.9'	83°43.0	65°49.2	53°17.7	17°02.3	27° 59.2	24°34.8	70°54.1	
23	249°11.8	4.8'	$26^{\circ}00.1$	-4.8'	58.9'	83°10.5	65°14.8	52°42.7	16°29.1	28°31.8	24°56.8	71°29.0	
23 rd	SD :	= 15.9'	Mer. pas	s. 05:41					Su	n SD $= 15.9'$			

h Moon (24th Sep)

Fri	GHA	ν	Dec	d	HP	-Sun	-Jupiter	-Regulus	-Pollux	+Betelgeuse	+Capella	+Aldebaran	+Saturn				
0	263°35.7	4.8'	N 25°55.4	-4.9'	59.0'	82°37.9	64°40.3	52°07.7	15°55.9		25°19.3	29°04.6	72°03.9				
1	277°59.5	4.9'	25°50.4	-5.1'	59.0'	82°05.3	64°05.8	51°32.6	15°22.8		25°42.3	29°37.4	72°38.8				
2	292°23.3	4.9'	25°45.3	-5.3'	59.0'	81°32.7	63°31.3	50°57.5	14°49.9		26°05.7	30°10.4	73°13.7				
3	306°47.2	4.9'	25°40.1	-5.4'	59.0'	81°00.1	62°56.8	50°22.4	14°17.1		26°29.6	30°43.5	73°48.7				
4	321°11.1	4.9'	25°34.6	-5.6'	59.0'	80°27.5	62°22.2	49°47.3	13°44.4	21°40.8	26°53.8	31°16.6	74°23.7				
5	335°35.1	5.0'	25°29.0	-5.8'	59.1'	79°54.8	61°47.6	49°12.1	13°12.0	21°56.7	27°18.4	31°49.9	74°58.8				
6	349°59.1	5.0'	N25°23.2	-6.0'	59.1'	79°22.1	61°13.0	48°36.9	12°39.8	22°13.4	27°43.4	32°23.2	75°33.8				
7	4°23.1	5.0'	25°17.2	-6.1'	59.1'	78°49.3	60°38.4	48°01.7	12°07.8	22°30.7	28°08.8	32°56.7	76°08.9				
8	18°47.1	5.1'	25°11.1	-6.3'	59.1'	78°16.6	60°03.7	47°26.5	11°36.1	22°48.7	28°34.5	33°30.2	76°44.1				
9	33°11.2	5.1'	25°04.8	-6.5'	59.2'	77°43.8	59°29.0	46°51.2	11°04.7	23°07.3	29°00.5	34°03.8	77°19.2				
10	47°35.3	5.1'	24°58.3	-6.6'	59.2'	77°11.0	58°54.3	46°15.9	10°33.7	23°26.6	29°26.8	34°37.4	77°54.4				
11	61°59.4	5.2'	24°51.7	-6.8'	59.2'	76°38.1	58°19.5	45°40.5	10°03.2	23°46.4	29°53.5	35°11.2	78°29.6				
12	76°23.6	5.2'	N 24°44.9	-7.0'	59.2'	76°05.2	57°44.7	45°05.2	9°33.2	24°06.8	30°20.4	35°45.0	79°04.9				
13	90°47.8	5.3'	24°37.9	-7.1'	59.2'	75°32.3	57°09.9	44°29.8	9°03.9	24°27.8	30°47.6	36°18.9	79°40.1				
14	105°12.1	5.3'	24°30.7	-7.3'	59.3'	74°59.4	56°35.1	43°54.4	8°35.2	24°49.3	31°15.1	36°52.8	80°15.4				
15	119°36.4	5.4'	24°23.4	-7.5'	59.3'	74°26.5	56°00.2	43°19.0	8°07.5	25°11.3	31°42.9	37°26.8	80°50.8				
16	134°00.7	5.4'	24°16.0	-7.6'	59.3'	73°53.5	55°25.4	42°43.5		25°33.9	32°10.9	38°00.9	81°26.1				
17	148°25.2	5.4'	24°08.3	-7.8'	59.3'	73°20.5	54°50.5	42°08.0		25°56.8	32°39.1	38°35.1	82°01.5				
18	162°49.6	5.5'	N 24°00.5	-8.0'	59.4'	72°47.4	54°15.5	41°32.5		26°20.3	33°07.6	39°09.3	82°36.9				
19	177°14.1	5.5'	23°52.6	-8.1'	59.4'	72°14.4	53°40.6	40°57.0		26°44.1	33°36.3	39°43.6	83°12.4				
20	191°38.6	5.6'	23°44.4	-8.3'	59.4'	71°41.3	53°05.6	40°21.4		27°08.4	34°05.2	40°17.9	83°47.8				
21	206°03.2	5.7'	23°36.1	-8.4'	59.4'	71°08.2	52°30.6	39°45.8		27°33.1	34°34.3	40°52.3	84°23.3				
22	220°27.9	5.7'	23°27.7	-8.6'	59.4'	70°35.1	51°55.5	39°10.2		27°58.2	35°03.6	41°26.7	84°58.8 85°34.4				
23	234°52.6	5.8'	23°19.1	-8.8'	59.5'	70°01.9	51°20.5	38°34.5		28°23.6	35°33.1	0°20.4 35°45.0 36°18.9 36°52.8 37°26.8 37°26.8 38°35.1 38°35.1 38°35.1 38°07.6 39°09.3 38°36.3 39°43.6 40°17.9 4°34.3 40°52.3 5°03.6 41°26.7					
24 th	SD	= 16.1	Mer. pas	s. 06:42	!				Su	n SD = 15.9'							

Moon (25th Sep) Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Sun	-Jupiter	-Regulus	+Pollux	+Betelgeuse	+Capella	+Aldebaran	+Saturn
0	249°17.4	5.8'	N23°10.3	-8.9'	59.5'	69°28.7	50°45.4	37°58.9		28°49.4	36°02.8	42°35.7	86°10.0
1	263°42.2	5.9'	23°01.4	-9.1'	59.5'	68°55.5	50°10.3	37°23.2		29°15.5	36°32.6	43° 10.3	86°45.6
2	278°07.1	5.9'	22°52.4	-9.2'	59.5'	68°22.3	49°35.2	36°47.5		29°42.0	37°02.7	43°45.0	87°21.2
3	292°32.0	6.0'	22°43.1	-9.4'	59.5'	67°49.0	49°00.0	36°11.8		30°08.7	37°32.9	44° 19.7	87°56.9
4	306°57.0	6.0'	22°33.8	-9.5'	59.6'	67°15.7	48°24.9	35°36.0		30°35.8	38°03.2	44°54.4	88°32.5
5	321°22.0	6.1'	22°24.2	-9.7'	59.6'	66°42.4	47°49.7	35°00.2		31°03.1	38°33.7	45°29.2	89°08.2
6	335°47.1	6.2'	N 22°14.6	-9.8'	59.6'	66°09.1	47°14.4	34°24.4		31°30.8	39°04.4	46°04.1	89°44.0
7	350°12.3	6.2'	22°04.7	-10.0'	59.6'								90°19.7
8		6.3'		-10.1'	59.6'								90°55.5
													91°31.3
10													92°07.1
11	47°53.6	6.5'	21°24.0	-10.5'	59.7'	63°22.1	44°18.0	31°25.1		33°52.6	41°39.8	48° 58.9	92°43.0
12	62°19.1	6.5'	N21°13.4	-10.7'	59.7'	62°48.6	43°42.7	30°49.1		34°21.7	42°11.3	49°34.0	93°18.9
13	76°44.6	6.6'	21°02.8	-10.8'	59.7'	62°15.1	43°07.3	30°13.2		34°51.0	42°42.8	50°09.1	93°54.8
14		6.7'		-11.0'	59.7'								94°30.7
15		6.7'			59.8'								95°06.7
1 -													95°42.6
17	134°27.4	6.9'	20°18.6	-11.4'	59.8'	60°00.9	40°45.6	27°49.2	10°37.0	36°50.1	44°50.3	52°30.0	96°18.6
18	148°53.3	6.9'	N 20°07.3	-11.5'	59.8'	59°27.3	40°10.2	27°13.1	11°08.7	37°20.3	45°22.4	53°05.4	96°54.6
19		7.0'		-11.6'	59.8'								97°30.7
-													98°06.7
21		7.1'		-11.9'	59.9'								98°42.8
22		7.2'		-12.0'	59.9'								99°18.9
23	221°03.6	7.3'	19°08.4	-12.1'	59.9'	56°39.0	37°12.6	24°12.6	13°53.1	39°53.8	48°04.4	56°02.5	99°55.0
25 th	6 335°47.1 6.2' N22°14.6 -9.8' 59.6' 66°09.1 47°14.4 34°24.4 31°30.8 39°04.4 46°04.1 89 7 350°12.3 6.2' 22°04.7 -10.0' 59.6' 65°35.7 46°39.2 33°48.6 31°58.6 39°35.2 46°38.9 90 8 4°37.5 6.3' 21°54.8 -10.1' 59.6' 65°02.3 46°03.9 33°12.7 32°26.8 40°06.2 47°13.9 90 9 19°02.8 6.4' 21°44.7 -10.3' 59.7' 64°28.9 45°28.6 32°36.9 32°55.2 40°37.2 47°48.8 91 10 33°28.2 6.4' 21°34.4 -10.4' 59.7' 63°55.5 44°53.3 32°01.0 33°52.6 41°39.8 48°58.9 92 12 62°19.1 6.5' N21°13.4 -10.7' 59.7' 62°48.6 43°42.7 30°49.1 34°21.7 42°11.3 49°34.0 93 13 76°44.6 6.6'												

Moon (26th Sep) h Lunar Distance (objects with largest hourly LD delta)

				<u> </u>					_ \ _ J	<u> </u>	, a		
Sun	GHA	ν	Dec	d	HP	-Sun	-Jupiter	-Regulus	+Pollux	+Betelgeuse	+Capella	+Aldebaran	+Saturn
0	235°29.9	7.3'	N 18°56.3	-12.3'	59.9'	56°05.3	36°37.0	23°36.5	14°26.9	40°24.9	48°37.1	56°38.0	100°31.1
1	249°56.3	7.4'	18°44.0	-12.4'	59.9'	55°31.5	36°01.4	23°00.4	15°00.8	40°56.2	49°09.9	57° 13.5	101°07.3
2	264°22.7	7.5'	18°31.6	-12.5'	59.9'	54°57.8	35°25.9	22°24.2	15°34.9	41°27.6	49°42.7	57°49.1	101°43.5
3	278°49.1	7.5'	$18^{\circ}19.1$	-12.6'	59.9'	54°24.0	34°50.2	21°48.0	16°09.3	41°59.1	50° 15.6	58° 24.7	102°19.7
4	293°15.7	7.6'	18°06.5	-12.7'	60.0'	53°50.2	34°14.6	21°11.8	16°43.7	42°30.8	50°48.6	59°00.4	102°55.9
5	307°42.3	7.7'	$17^{\circ}53.7$	-12.9'	60.0'	53°16.4	33°39.0	20°35.6	17°18.3	43°02.6	51°21.7	59°36.0	103°32.1
6	322°09.0	7.7'	N 17°40.9	-13.0'	60.0'	52°42.5	33°03.4	19°59.4	17°53.1	43°34.5	51°54.8	60°11.7	104°08.3
7	336°35.7	7.8'	$17^{\circ}27.9$	-13.1'	60.0'	52°08.7	32°27.7	19°23.2	18°28.0	44°06.5	52°28.0	60°47.4	104°44.6
8	351°02.5	7.9'	17°14.8	-13.2'	60.0'	51°34.8	31°52.1	18°47.0	19°03.0	44°38.6	53°01.3	61°23.2	105°20.9
9	5°29.4	7.9'	$17^{\circ}01.6$	-13.3'	60.0'	51°01.0	31°16.4	18°10.8	19°38.0	45°10.8	53°34.6	61°59.0	105°57.2
10	19°56.3	8.0'	16°48.3	-13.4'	60.0'	50°27.1	30°40.7	17°34.6	20°13.2	45°43.1	54°08.0	62°34.8	106°33.5
11	34°23.3	8.1'	16°34.9	-13.5'	60.1'	49°53.2	30°05.0	16°58.4	20°48.5	46°15.5	54°41.4	63° 10.6	107°09.8
12	48°50.4	8.1'	$N16^{\circ}21.4$	-13.6'	60.1'	49°19.2	29°29.3	16°22.2	21°23.9	46°48.0	55° 15.0	63°46.5	107°46.2
13	63°17.6	8.2'	16°07.7	-13.7'	60.1'	48°45.3	28°53.6	15°46.0	21°59.3	47°20.6	55°48.5	64°22.3	108°22.5
14	77°44.8	8.3'	15°54.0	-13.8'	60.1'	48°11.4	28°17.9	15°09.9	22°34.8	47°53.3	56°22.2	64°58.2	108°58.9
15	92°12.0	8.3'	15°40.2	-13.9'	60.1'	47°37.4	27°42.3	14°33.7	23°10.4	48°26.0	56°55.8	65°34.1	109°35.3
16	106°39.4	8.4'	15°26.3	-14.0'	60.1'	47°03.4	27°06.6	13°57.5	23°46.0	48°58.9	57°29.6	66°10.1	110°11.6
17	121°06.8	8.5'	15°12.2	-14.1'	60.1'	46°29.5	26°30.9	13°21.4	24°21.7	49°31.8	58°03.4	66°46.0	110°48.1
18	135°34.2	8.5'	N 14°58.1	-14.2'	60.1'	45°55.5	25°55.2	12°45.3	24°57.5	50°04.8	58° 37.2	67°22.0	111°24.5
19	150°01.8	8.6'	14°43.9	-14.3'	60.1'	45°21.5	25°19.5	12°09.3	25°33.3	50°37.9	59°11.1	67°58.0	112°00.9
20	164°29.4	8.7'	14°29.6	-14.4'	60.1'	44°47.4	24°43.8	11°33.3	26°09.1	51°11.0	59°45.0	68°34.0	112°37.3
21	178°57.0	8.7'	14°15.2	-14.5'	60.2'	44°13.4	24°08.1	10°57.3	26°45.0	51°44.2	60° 19.0	69° 10.1	113°13.8
22	193°24.7	8.8'	14°00.7	-14.6'	60.2'	43°39.4	23°32.4	10°21.5	27°21.0	52°17.5	60°53.0	69°46.1	113°50.3
23	207°52.5	8.8'	13°46.1	-14.7'	60.2'	43°05.3	22°56.8	9°45.7	27°57.0	52°50.9	61°27.1	70°22.2	114°26.7
26 th	SD	= 16.3	B' Mer. pas	ss. 08:37					Su	n SD = 15.9'			

h Moon (27 th Sen) Lunar Distance (chiects with largest ho	aurly I D dal+	· ¬)

Mon	GHA	ν	Dec	d	HP	-Sun	-Jupiter	± Regulus	+Pollux	+Betelgeuse	+Capella	+Aldebaran	+Saturn
0	222°20.3	8.9'	N 13°31.5	-14.7'	60.2'	42°31.3	22°21.1	9°10.0	28°33.0	53°24.3	62°01.2	70°58.3	115°03.2
1	236°48.2	9.0'	13° 16.7	-14.8'	60.2'	41°57.2	21°45.5	8°34.5	$29^{\circ}09.1$	53°57.7	62°35.3	71°34.4	115°39.7
2	251°16.2	9.0'	13°01.9	-14.9'	60.2'	41°23.2	21°09.9	7°59.1	29°45.2	54°31.3	63°09.5	72°10.5	116° 16.2
3	265°44.2	9.1'	12°47.0	-15.0'	60.2'	40°49.1	20°34.3	7°23.9	$30^{\circ}21.3$	55°04.9	63°43.7	72°46.7	116°52.7
4	280°12.3	9.1'	12°32.0	-15.1'	60.2'	40° 15.0	19°58.7	6°49.0	30°57.5	55°38.5	64°18.0	73°22.8	117°29.2
5	294°40.4	9.2'	$12^{\circ}16.9$	-15.1'	60.2'		19°23.2	6°14.4	31°33.7	56°12.2	64°52.2	73°59.0	118°05.7
6	309°08.6	9.2'	$N12^{\circ}01.8$	-15.2'	60.2'		18°47.7	5°40.3	32°09.9	56°45.9	65°26.6	74°35.2	118° 42.2
7	323°36.8	9.3'	$11^{\circ}46.6$	-15.3'	60.2'		18°12.2	5°06.7	$32^{\circ}46.1$	57°19.7	66°00.9	75°11.4	119° 18.7
8	338°05.1	9.3'	11°31.3	-15.4'	60.2'		17°36.8	4°34.0	33°22.4	57°53.6	66° 35.3	75°47.6	119°55.2
9	352°33.5	9.4'	$11^{\circ}16.0$	-15.4'	60.2'		17°01.4		33°58.7	58°27.4	67°09.7	76°23.8	
10	$7^{\circ}01.9$	9.5'	11°00.5	-15.5'	60.2'		16°26.1		34°35.0	59°01.4	67°44.1	77°00.0	
11	21°30.3	9.5'	10°45.0	-15.5'	60.2'		15°50.8		$35^{\circ}11.4$	59°35.3	68° 18.6	77°36.3	
12	35°58.8	9.6'	$N10^{\circ}29.5$	-15.6'	60.2'		15°15.6		35°47.8	60°09.4	68°53.1	78°12.5	
13	50°27.4	9.6'	10° 13.9	-15.7'	60.2'		14°40.5		$36^{\circ}24.1$	60°43.4	69°27.6	78°48.8	
14	64°56.0	9.7'	09°58.2	-15.7'	60.3'		14°05.5		$37^{\circ}00.6$	61°17.5	70°02.1	79°25.0	
15	79°24.7	9.7'	09°42.5	-15.8'	60.3'		13°30.6		37°37.0	61°51.6	70°36.7	80°01.3	
16	93°53.4	9.8'	09°26.7	-15.8'	60.3'		12°55.8		$38^{\circ}13.4$	62°25.8	71°11.3	80°37.6	
17	108°22.1	9.8'	09°10.9	-15.9'	60.3'		12°21.2		38°49.9	63°00.0	71°45.9	81°13.9	
18	122°50.9	9.8'	N08°55.0	-15.9'	60.3'		11°46.7		39°26.3	63°34.2	72°20.5	81°50.1	
19	137°19.8	9.9'	08°39.0	-16.0'	60.3'		11°12.4		40°02.8	64°08.5	72°55.1	82°26.4	
20	151°48.7	9.9'	08°23.0	-16.0'	60.3'		10°38.4		40°39.3	64°42.7	73°29.8	83°02.7	
21	166°17.6	10.0'	08°07.0	-16.1'	60.3'		10°04.5		$41^{\circ}15.8$	65°17.0	74°04.5	83°39.0	
22	180°46.6	10.0'	07°50.9	-16.1'	60.3'		9°31.0		41°52.3	65°51.4	74°39.2	84°15.4	l
23	195°15.6	10.1'	07°34.7	-16.2'	60.3'		8°57.9	5°39.5	42°28.9	66°25.7	75° 13.9	84°51.7	
27 th	SD	= 16.4	Mer. pass	s. 09:31					Sur	SD = 15.9'			

 $90^{\circ}37.4$

 $99^{\circ}22.2$

89°08.1

Lunar Distance (objects with largest hourly LD delta)

57°06.2

 $54^{\circ}20.2$

 $80^{\circ}14.7$

-16.7'

60.1

 $7^{\circ}24.5$

 $00^{\circ}58.9$

Mer. pass. 10:22

Moon (28th Sep)

 $183^{\circ}02.0$

23

28th

10.7'

 $\mathsf{SD} = 16.4'$

Tue	GHA	ν	Dec	d	HP	±Jupiter	+Regulus	+Procyon	+Pollux	+Betelgeuse	+Capella	+Rigel	+Aldebaran
0	209°44.6	10.1'	$N07^{\circ}18.6$	-16.2'	60.3'	8°25.2	6°13.7	41°24.8	43°05.4	67°00.1	75°48.6	79°06.9	85°28.0
1	224°13.7	10.1'	$07^{\circ}02.3$	-16.3'	60.3'	7°53.0	6°48.4	41°57.8	43°41.9	67°34.5	76°23.3	79°36.7	86°04.3
2	238°42.9	10.2'	06°46.1	-16.3'	60.3'	7°21.5	7°23.4	42°30.9	44°18.5	68°09.0	76°58.0	80°06.6	86°40.6
3	253°12.1	10.2'	06°29.8	-16.3'	60.2'	6°50.7	7°58.7	43°04.1	44°55.0	68°43.4	77°32.8	80°36.6	87°16.9
4	267°41.3	10.2'	$06^{\circ}13.5$	-16.4'	60.2		8°34.2	43°37.3	45°31.6	69°17.9	78°07.5	81°06.5	87°53.2
5	282°10.5	10.3'	$05^{\circ}57.1$	-16.4'	60.2'		9°09.9	44°10.7	46°08.2	69°52.4	78°42.3	81°36.5	88°29.5
6	296°39.8	10.3'	N 05°40.7	-16.4'	60.2'		9°45.7	44°44.1	46°44.7	70°26.8	79° 17.0	82°06.5	89°05.8
7	311°09.1	10.4'	05°24.3	-16.5'	60.2'		10°21.7	45°17.6	47°21.3	71°01.4	79°51.8	82°36.5	89°42.2
8	325°38.5	10.4'	05°07.8	-16.5'	60.2'		10°57.7	45°51.1	47°57.9	71°35.9	80°26.6	83°06.5	90°18.5
9	340°07.8	10.4'	04°51.3	-16.5'	60.2'		11°33.9	46°24.7	48°34.4	72°10.4	81°01.3	83°36.5	90°54.8
10	354°37.3	10.4'	04°34.8	-16.5'	60.2'		12°10.0	46°58.4	49°11.0	72°45.0	81°36.1	84°06.6	91°31.1
11	9°06.7	10.5'	04°18.3	-16.5'	60.2'		12°46.3	47°32.1	49°47.6	73°19.5	82°10.9	84°36.6	92°07.3
12	23°36.2	10.5'	N 04°01.8	-16.6'	60.2'		13°22.6	48°05.9	50°24.2	73°54.1	82° 45.7	85°06.7	92°43.6
13	38°05.7	10.5'	03°45.2	-16.6'	60.2'		13°58.9	48°39.7	51°00.7	74°28.7	83°20.5	85°36.7	93°19.9
14	52°35.2	10.6'	03°28.6	-16.6'	60.2'		14°35.3	49°13.6	51°37.3	75°03.3	83°55.3	86°06.8	93°56.2
15	67°04.8	10.6'	03°12.0	-16.6'	60.2'		15°11.7	49°47.5	52°13.9	75°37.9	84°30.0	86°36.9	94°32.4
16	81°34.3	10.6'	02°55.4	-16.6'	60.2'		15°48.1	50°21.4	52°50.4	76°12.5	85°04.8	87°07.0	95°08.7
17	96°03.9	10.6'	02°38.8	-16.6'	60.2'		16°24.5	50°55.4	53°27.0	76°47.1	85°39.6	87°37.0	95°44.9
18	110°33.6	10.6'	$N02^{\circ}22.1$	-16.6'	60.2'		17°01.0	51°29.5	54°03.5	77°21.7	86° 14.3	88°07.1	96°21.2
19	125°03.2	10.7'	02°05.5	-16.7'	60.1'		17°37.4	52°03.6	54°40.1	77°56.3	86°49.1	88°37.2	96°57.4
20	139°32.9	10.7'	01°48.8	-16.7'	60.1'		18° 13.9	52°37.7	55°16.6	78°30.9	87°23.9	89°07.3	97°33.6
21	154°02.5	10.7'	01°32.2	-16.7'	60.1'		18°50.4	53°11.8	55°53.2	79°05.5	87°58.6	89°37.3	98°09.8
22	168°32.2	10.7'	$01^{\circ}15.5$	-16.7'	60.1'		19°26.9	53°46.0	56°29.7	79°40.1	88°33.3	90°07.4	98°46.0
23	1830020	10 7'	00°E0 0	16 7'	60 1'	70245	200034	E40303	57°06 2	000147	on∘no 1	000274	ດດ≎ລລລ

 $20^{\circ}03.4$

h		Moor	n (29 th Se	p)			Lunar	Distance	(objects	with largest	hourly LD	delta)			
Wed	GHA	ν	Dec	d	HP	+Jupiter	+Regulus	+Procyon	+Pollux	+Betelgeuse	+Capella	+Rigel	+Aldebaran		
0	197°31.7	10.7'	N 00°42.2	-16.7'	60.1'	7°56.0	20°39.9	54°54.4	57°42.7	80°49.2	89°42.8	91°07.4	99°58.3		
1	212°01.4	10.8'	00°25.5	-16.7'	60.1'	8°28.1	21°16.4	55°28.6	58°19.2	81°23.8	90°17.5	91°37.5	100°34.5		
2	226°31.2	10.8'	N 00°08.9	-16.6'	60.1'	9°00.7	21°52.9	56°02.9	58°55.7	81°58.4	90°52.1	92°07.5	101°10.6		
3	241°01.0	10.8'	S 00°07.8	-16.6'	60.1'	9°33.7	22°29.4	56°37.2	59°32.2	82°33.0	91°26.8	92°37.4	101°46.7		
4	255°30.8	10.8'	00°24.4	-16.6'	60.0'	10°07.1	23°05.9	57°11.5	60°08.6	83°07.6	92°01.5	93°07.4	102°22.8		
5	270°00.6	10.8'	$00^{\circ}41.0$	-16.6'	60.0'	10°40.7	23°42.3	57°45.8	60°45.1	83°42.1	92°36.1	93°37.4	102°58.9		
6	284°30.4	10.8'	S 00°57.7	-16.6'	60.0'	11°14.6	24° 18.8	58°20.2	61°21.5	84°16.7	93°10.8	94°07.3	103°35.0		
7	299°00.2	10.8'	$01^{\circ}14.3$	-16.6'	60.0'	11°48.7 24°55.3 58°54.5 61°58.0 84°51.2 93°45.4 94°37.2 104 12°23.0 25°31.7 59°28.9 62°34.4 85°25.7 94°20.0 95°07.1 104 12°57.4 26°08.2 60°03.3 63°10.8 86°00.3 94°54.5 95°37.0 105									
8	313°30.0	10.8'	01°30.9	-16.6'	60.0'	12°23.0 25°31.7 59°28.9 62°34.4 85°25.7 94°20.0 95°07.1 10 12°57.4 26°08.2 60°03.3 63°10.8 86°00.3 94°54.5 95°37.0 10									
9	327°59.9	10.8'	$01^{\circ}47.4$	-16.6'	60.0'	0' 12°57.4 26°08.2 60°03.3 63°10.8 86°00.3 94°54.5 95°37.0									
10	342°29.7	10.8'	02°04.0	-16.5'	60.0'	' 13°31.9 26°44.6 60°37.7 63°47.1 86°34.8 95°29.1 96°06.8 105									
11	356°59.5	10.8'	$02^{\circ}20.5$	-16.5'	59.9'	13°31.9 26°44.6 60°37.7 63°47.1 86°34.8 95°29.1 96°06.8 105°59.1									
12	11°29.4	10.8'	S 02°37.0	-16.5'	59.9'				Ne	w Moon ——					
13	25°59.2	10.9'	02°53.5	-16.5'	59.9'					w Moon ——					
14	40°29.1	10.9'	03°10.0	-16.4'	59.9'				Ne	w Moon ——					
15	54°58.9	10.9'	03°26.5	-16.4'	59.9'				Ne	w Moon ——					
16	69°28.8	10.8'	03°42.9	-16.4'	59.9'				Ne	w Moon ——					
17	83°58.6	10.8'	03°59.3	-16.4'	59.8'				Ne	w Moon ——					
18	98°28.5	10.8'	S 04°15.6	-16.3'	59.8'				Ne	w Moon ——					
19	112°58.3	10.8'	04°31.9	-16.3'	59.8'				Ne	w Moon ——					
20	127°28.2	10.8'	04°48.2	-16.2'	59.8'				Ne	w Moon ——					
21	141°58.0	10.8'	05°04.5	-16.2'	59.8'										
22	156°27.8	10.8'	05°20.7	-16.2'	59.7'										
23	170°57.7	10.8'	05°36.8	-16.1'	59.7'	.7' New Moon ————									
29 th	SD	= 16.4'	Mer. pass	s. 11:12											

h		Moor	n (30 th Se	ep)		Luna	r Distand	ce (objects	with large	est hourl	y LD de	lta)
Thu	GHA	ν	Dec	d	HP	-Altair	-Vega	-Rigil Kent.	-Antares	-Hadar	-Mars	-Spica
0	185°27.5	10.8'	S 05°53.0	-16.1'	59.7'			Ne	w Moon —			
1	199°57.3	10.8'	$06^{\circ}09.1$	-16.0'	59.7'			Ne	w Moon —			
2	214°27.1	10.8'	$06^{\circ}25.1$	-16.0'	59.7'			Ne				
3	228°56.8	10.8'	$06^{\circ}41.1$	-15.9'	59.6'			Ne	w Moon —			
4	243°26.6	10.8'	06°57.0	-15.9'	59.6'			Ne				
5	257°56.4	10.7'	$07^{\circ}12.9$	-15.8'	59.6'			Ne	w Moon —			
6	272°26.1	10.7'	S 07°28.8	-15.8'	59.6'			Ne	w Moon —			
7	286°55.9	10.7'	07°44.6	-15.7'	59.6'			Ne				
8	301°25.6	10.7'	08°00.3	-15.7'	59.5'			Ne	w Moon —			
9	315°55.3	10.7'	$08^{\circ}16.0$	-15.6'	59.5'			Ne				
10	330°25.0	10.7'	$08^{\circ}31.6$	-15.6'	59.5'			Ne				
11	344°54.6	10.6'	08°47.2	-15.5'	59.5'			Ne	w Moon —			
12	359°24.3	10.6'	S 09°02.7	-15.4'	59.4'							
13	13°53.9	10.6'	$09^{\circ}18.1$	-15.4'	59.4'			Ne	w Moon —			
14	28°23.5	10.6'	09°33.5	-15.3'	59.4'			Ne	w Moon —			
15	42°53.1	10.6'	09°48.8	-15.2'	59.4'			Ne	w Moon —			
16	57°22.7	10.5'	$10^{\circ}04.1$	-15.2'	59.3'			Ne				
17	71°52.2	10.5'	$10^{\circ}19.2$	-15.1'	59.3'			Ne	w Moon —			
18	86°21.7	10.5'	S 10°34.3	-15.0'	59.3'				w Moon —			
19	100°51.2	10.5'	$10^{\circ}49.4$	-15.0'	59.2'	105°52.8	93°42.3	53°53.2	53°23.4	51°26.4	32°58.6	8°04.5
20	115°20.7	10.4'	$11^{\circ}04.4$	-14.9'	59.2'	105°22.2	93°26.5	53°30.1	52°47.8	51°05.5	32°25.0	7°31.3
21	129°50.1	10.4'	$11^{\circ}19.2$	-14.8'	59.2'	104°51.7	93°10.7	53°07.1	52°12.1	50°44.8	31°51.4	6°58.5
22	144°19.6	10.4'	$11^{\circ}34.1$	-14.7'	59.2'	104°21.2	92°54.8	52°44.3	51°36.5	50°24.3	31°17.9	6°26.3
23	158°48.9	10.4'	11°48.8	-14.7'	59.1'	103°50.6	92°39.0	52°21.7	51°00.9	50°04.1	30°44.4	5°54.7
30 th	SD	= 16.3'	Mer. pas	s. 12:02								

Moon (1st Oct)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Antares	-Hadar	-Mars	±Spica	+Venus
0	173°18.3	10.3'	S 12°03.5	-14.6'	59.1'		103°20.1	51°59.3	50°25.4	49°44.1	30°11.0	5°24.0	
1	187°47.7	10.3'	$12^{\circ}18.0$	-14.5'	59.1'		102°49.6	51°37.1	49°49.9	49°24.3	29°37.6		
2	202°17.0	10.3'	12°32.5	-14.4'	59.1'		102°19.1	51°15.0	49° 14.4	49°04.7	29°04.3		
3	216°46.3	10.3'	12°46.9	-14.3'	59.0'		101°48.6	50°53.2	48°39.0	48°45.4	28°31.0		
4	231°15.5	10.2'	$13^{\circ}01.3$	-14.2'	59.0'		101°18.1	50°31.6	48°03.6	48°26.4	27°57.8		
5	245°44.7	10.2'	$13^{\circ}15.5$	-14.2'	59.0'		100°47.6	50°10.2	47°28.2	48°07.6	27°24.7		
6	260°13.9	10.2'	S 13°29.7	-14.1'	58.9'		100°17.1	49°49.0	46°52.9	47°49.0	26°51.5		
7	274°43.1	10.1'	13°43.7	-14.0'	58.9'		99°46.7	49°28.1	46° 17.6	47°30.7	26°18.5		
8	289°12.2	10.1'	13°57.7	-13.9'	58.9'		99°16.3	49°07.4	45°42.3	47°12.7	25°45.5		
9	303°41.3	10.1'	$14^{\circ}11.6$	-13.8'	58.8'		98°45.8	48°46.8	45°07.1	46°54.9	25°12.5		
10	318°10.4	10.0'	14°25.4	-13.7'	58.8'		98° 15.4	48°26.6	44°31.9	46°37.5	24°39.6		
11	332°39.4	10.0'	$14^{\circ}39.1$	-13.6'	58.8'		97°45.1	48°06.5	43°56.8	46°20.2	24°06.8		
12	347°08.4	10.0'	S 14°52.7	-13.5'	58.7'		97°14.7	47°46.7	43°21.7	46°03.3	23°34.1		
13	1°37.4	9.9'	15°06.2	-13.4'	58.7'		96°44.4	47°27.2	42°46.6	45°46.7	23°01.4		
14	16°06.4	9.9'	$15^{\circ}19.6$	-13.3'	58.7'		96°14.1	47°07.9	42°11.6	45°30.3	22°28.7		
15	30°35.3	9.9'	15°33.0	-13.2'	58.7'		95°43.8	46°48.8	41°36.6	45°14.2	21°56.2		8°45.3
16	45°04.1	9.8'	15°46.2	-13.1'	58.6'		95°13.5	46°30.0	41°01.7	44°58.5	21°23.7		9°09.8
17	59°33.0	9.8'	15°59.3	-13.0'	58.6'	119°50.2	94°43.3	46°11.5	40°26.8	44°43.0	20°51.3	6°04.9	9°35.0
18	74°01.8	9.8'	S 16°12.3	-12.9'	58.6'	119°19.1	94°13.1	45°53.2	39°51.9	44°27.8	20°18.9	6°36.0	10°00.7
19	88°30.5	9.7'	$16^{\circ}25.2$	-12.8'	58.5'	118°48.0	93°42.9	45°35.2	39° 17.1		19°46.7	7°07.7	10°27.0
20	102°59.3	9.7'	$16^{\circ}38.0$	-12.7'	58.5'	118°16.9	93°12.7	45°17.5	38° 42.3		19°14.5	7°39.8	10°53.7
21	117°28.0	9.7'	$16^{\circ}50.7$	-12.6'	58.5'	117°45.8	92°42.6	45°00.1	38°07.6		18°42.4	8°12.2	11°20.8
22	131°56.6	9.6'	17°03.3	-12.5'	58.4'	117°14.7	92°12.5	44°42.9	37°32.9		18°10.5	8°44.9	11°48.2
23	146°25.2	9.6'	$17^{\circ}15.8$	-12.4'	58.4'	116°43.6	91°42.5	44°26.1	36°58.2		17°38.6	9°17.8	12°16.0
1 st	SD	= 16.1'	Mer. pas	s. 12:53									

Moon (2nd Oct)

Lunar Distance (objects with largest hourly LD delta)

11		IVIOC	л (Z О	CL)		L	unar Dist	ance (or	ijecis wii	ii iargesi	. Hourry i	LD della)
Sat	GHA	ν	Dec	d	HP	-Fomalhaut	-Deneb	-Altair	-Antares	-Mars	+Spica	+Venus	+Arcturus
0	160°53.8	9.6'	S 17°28.2	-12.3'	58.4'	116°12.5	109°58.3	91°12.5	36°23.6	17°06.8	9°50.8	12°43.9	
1	175°22.4	9.5'	17°40.4	-12.1'	58.3'	115°41.4	109°42.9	90°42.5	35°49.0	16°35.1	10°24.0	13°12.1	
2	189°50.9	9.5'	$17^{\circ}52.6$	-12.0'	58.3'	115°10.3	109°27.5	90°12.5	35° 14.5	16°03.5	10°57.3	13°40.5	
3	204°19.4	9.4'	$18^{\circ}04.6$	-11.9'	58.3'	114°39.3	109°11.9	89°42.6	34°40.0	15°32.1	11°30.7	14°09.1	
4	218°47.8	9.4'	$18^{\circ}16.5$	-11.8'	58.2'	114°08.2	108°56.3	89°12.7	34°05.6	15°00.8	12°04.1	14°37.8	
5	233°16.2	9.4'	18°28.3	-11.7'	58.2'	113°37.1	108°40.6	88°42.9	33°31.1	14°29.6	12°37.5	15°06.6	
6	247°44.6	9.3'	S 18°40.0	-11.6'	58.2'	113°06.1	108°24.8	88°13.1	32°56.8	13°58.6	13°11.1	15°35.6	
7	262°12.9	9.3'	18°51.6	-11.5'	58.1'	112°35.1	108°09.0	87°43.3	32°22.5	13°27.7	13°44.6	16°04.6	
8	276°41.2	9.3'	19°03.0	-11.3'	58.1'	112°04.0	107°53.1	87°13.6	31°48.2	12°57.0	14°18.2	16°33.8	
9	291°09.5	9.2'	$19^{\circ}14.4$	-11.2'	58.1'	111°33.0	107°37.1	86°43.9	31° 13.9	12°26.6	14°51.7	17°03.0	
10	305°37.7	9.2'	19°25.6	-11.1'	58.0'	111°02.0	107°21.1	86°14.2	30°39.7	11°56.3	15°25.3	17°32.3	
11	320°05.9	9.2'	19°36.7	-11.0'	58.0'	110°31.1	107°04.9	85°44.6	30°05.6	11°26.3	15°58.9	18°01.6	
12	334°34.1	9.1'	S 19°47.6	-10.8'	58.0'	110°00.1	106°48.8	85°15.1	29°31.5	10°56.5	16°32.4	18°31.0	
13	349°02.2	9.1'	19°58.5	-10.7'	57.9'	109°29.1	106°32.5	84°45.6	28°57.4	10°27.0	17°06.0	19°00.4	
14	3°30.3	9.1'	20°09.2	-10.6'	57.9'	108°58.2	106°16.3	84°16.1	28°23.4	9°57.9	17°39.6	19°29.9	
15	17°58.3	9.0'	20°19.8	-10.5'	57.8'	108°27.3	105°59.9	83°46.7	27°49.4	9°29.1	18°13.1	19°59.4	
16	32°26.3	9.0'	20°30.3	-10.3'	57.8'	107°56.4	105°43.5	83°17.3	27° 15.5	9°00.7	18°46.6	20°28.9	
17	46°54.3	8.9'	20°40.6	-10.2'	57.8'	107°25.6	105°27.1	82°48.0	26°41.6	8°32.9	19°20.1	20°58.4	
18	61°22.3	8.9'	S 20°50.9	-10.1'	57.7'	106°54.7	105°10.6	82°18.7	26°07.7	8°05.6	19°53.6	21°28.0	
19	75°50.2	8.9'	21°00.9	-10.0'	57.7'	106°23.9	104°54.1	81°49.4	25°33.9	7°38.9	20°27.1	21°57.5	
20	90°18.1	8.8'	21°10.9	-9.8'	57.7'	105°53.1	104°37.5	81°20.3	25°00.1	7°13.0	21°00.5	22°27.1	40°45.9
21	104°45.9	8.8'	21°20.7	-9.7'	57.6'	105°22.3	104°20.8	80°51.1	24°26.4	6°48.0	21°33.9	22°56.6	41°01.3
22	119°13.7	8.8'	21°30.4	-9.6'	57.6'	104°51.6	104°04.2	80°22.0	23°52.8		22°07.3	23°26.2	41°17.0
23	133°41.5	8.8'	21°40.0	-9.4'	57.6'	104°20.8	103°47.4	79°53.0	23° 19.1		22°40.6	23°55.8	41°33.0
2 nd	SD	= 15.9	′ Mer. pa:	ss. 13:45					-			-	

h Moon (3rd Oct)

Sun	GHA	ν	Dec	d	HP	-Fomalhaut	-Deneb	-Altair	-Antares	+Mars	+Spica	+Venus	+Sun
0	148°09.3	8.7'	S 21°49.4	-9.3'	57.5'	103°50.1	103°30.7	79°24.0	22°45.5		23°13.9	24°25.3	
1	162°37.0	8.7'	21°58.7	-9.2'	57.5'	103°19.5	103°13.9	78°55.1	22°12.0		23°47.2	24°54.9	
2	177°04.7	8.7'	22°07.9	-9.0'	57.5'	102°48.8	102°57.1	78°26.2	21°38.5		24°20.5	25°24.4	
3	191°32.4	8.6'	$22^{\circ}16.9$	-8.9'	57.4'	102°18.2	102°40.2	77°57.4	21°05.0		24°53.7	25°53.9	
4	206°00.0	8.6'	22°25.8	-8.8'	57.4'	101°47.6	102°23.3	77°28.6	20°31.6		25°26.9	26°23.4	
5	220°27.6	8.6'	22°34.6	-8.6'	57.4'	101°17.1	102°06.4	76°59.9	19°58.2		26°00.1	26°52.9	
6	234°55.2	8.6'	S 22°43.2	-8.5'	57.3'	100°46.5	101°49.4	76°31.3	19°24.9		26°33.2	27°22.4	41°06.5
7	249°22.7	8.5'	22°51.7	-8.3'	57.3'	100°16.0	101°32.4	76°02.7	18°51.6		27°06.3	27°51.9	41°37.1
8	263°50.3	8.5'	23°00.0	-8.2'	57.3'	99°45.6	101°15.4	75°34.2	18° 18.4		27°39.3	28°21.3	42°07.7
9	278°17.8	8.5'	23°08.2	-8.1'	57.2'	99°15.1	100°58.4	75°05.7	17°45.2		28°12.3	28°50.7	42°38.2
10	292°45.2	8.4'	23°16.3	-7.9'	57.2'	98°44.7	100°41.3	74°37.3	17°12.0		28°45.3	29°20.1	43°08.7
11	307°12.7	8.4'	23°24.2	-7.8'	57.1'	98°14.3	100°24.2	74°08.9	16°38.9		29°18.2	29°49.5	43°39.2
12	321°40.1	8.4'	S 23°32.0	-7.6'	57.1'	97°44.0	100°07.1	73°40.6	16°05.8		29°51.1	30°18.8	44°09.6
13	336°07.5	8.4'	23°39.6	-7.5'	57.1'	97°13.7	99°50.0	73°12.4	15°32.8		30°24.0	30°48.2	44°40.0
14	350°34.9	8.4'	23°47.1	-7.4'	57.0'	96°43.4	99°32.9	72°44.2	14°59.8		30°56.8	31°17.5	45°10.3
15	5°02.2	8.3'	23°54.5	-7.2'	57.0'	96°13.2	99°15.7	72°16.1	14°26.9		31°29.6	31°46.7	45°40.6
16	19°29.6	8.3'	24°01.7	-7.1'	57.0'	95°43.0	98°58.5	71°48.0	13°54.0		32°02.4	32°16.0	46°10.9
17	33°56.9	8.3'	24°08.8	-6.9'	56.9'	95°12.8	98°41.4	71°20.1	13°21.1		32°35.1	32°45.2	46°41.1
18	48°24.2	8.3'	S 24°15.7	-6.8'	56.9'	94°42.6	98°24.2	70°52.1	12°48.3	7° 15.4	33°07.8	33°14.4	47°11.3
19	62°51.5	8.3'	24°22.5	-6.6'	56.9'	94°12.5	98°06.9	70°24.3	12° 15.6	7°40.6	33°40.4	33°43.6	47°41.4
20	77°18.7	8.2'	24°29.2	-6.5'	56.8'	93°42.5	97°49.7	69°56.5	11°42.8	8°06.4	34°13.0	34°12.7	48°11.6
21	91°46.0	8.2'	24°35.7	-6.4'	56.8'	93°12.4	97°32.5	69°28.8	11°10.2	8°32.7	34°45.6	34°41.8	48°41.6
22	106°13.2	8.2'	24°42.0	-6.2'	56.8'	92°42.4	97°15.2	69°01.2	10°37.5	8°59.4	35°18.1	35°10.9	49°11.6
23	120°40.4	8.2'	24°48.2	-6.1'	56.7'	92°12.5	96°58.0	68°33.6	10°04.9	9°26.6	35°50.6	35°39.9	49°41.6
3 rd	SD :	= 15.7'	Mer. pas	s. 14:39)	SunSD=16.0'							

h Moon (4 th (Oct)	
---------------------------	------	--

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	± Antares	+Mars	+Venus	+Spica	+Sun
0	135°07.6	8.2'	S 24°54.3	-5.9'	56.7'	96°40.7	91°42.5	68°06.1	9°32.4	9°54.1	36°08.9	36°23.0	50°11.6
1	149°34.8	8.2'	25°00.2	-5.8'	56.7'	96°23.5	91°12.7	67°38.6	8°59.8	10°21.8	36° 37.9	36°55.4	50°41.5
2	164°02.0	8.2'	25°06.0	-5.6'	56.6'	96°06.2	90°42.8	67°11.3	8°27.4	10°49.8	37°06.8	37°27.8	51°11.4
3	178°29.2	8.2'	25°11.6	-5.5'	56.6'	95°49.0	90°13.0	66°44.0	7°54.9	11°17.9	37°35.8	38°00.1	51°41.2
4	192°56.3	8.2'	$25^{\circ}17.1$	-5.3'	56.6'	95°31.7	89°43.2	66°16.7	7°22.6	11°46.3	38°04.6	38°32.4	52°11.0
5	207°23.5	8.1'	25°22.4	-5.2'	56.5'	95°14.5	89° 13.5	65°49.6	6°50.2	12°14.8	38°33.5	39°04.7	52°40.7
6	221°50.6	8.1'	S 25°27.6	-5.0'	56.5'	94°57.2	88°43.8	65°22.5	6°17.9	12°43.4	39°02.3	39°36.9	53°10.4
7	236°17.8	8.1'	25°32.6	-4.9'	56.5'	94°39.9	88°14.1	64°55.5	5°45.7	13°12.1	39°31.1	40°09.1	53°40.1
8	250°44.9	8.1'	25°37.5	-4.7'	56.4'	94°22.7	87° 44.5	64°28.6	5°13.4	13°40.9	39°59.8	40°41.2	54°09.7
9	265°12.1	8.1'	25°42.2	-4.6'	56.4'	94°05.4	87° 14.9	64°01.8	4°41.3	14°09.8	40°28.6	41°13.3	54°39.3
10	279°39.2	8.1'	25°46.8	-4.4'	56.4'	93°48.2	86° 45.4	63°35.0	4°09.2	14°38.7	40°57.3	41°45.4	55°08.9
11	294°06.3	8.1'	$25^{\circ}51.3$	-4.3'	56.3'	93°31.0	86° 15.9	63°08.3	3°37.1	15°07.7	41°25.9	42°17.4	55°38.4
12	308°33.5	8.1'	S 25°55.6	-4.1'	56.3'	93°13.7	85°46.4	62°41.7	3°05.1	15°36.8	41°54.5	42°49.4	56°07.9
13	323°00.6	8.1'	25°59.7	-4.0'	56.3'	92°56.5	85° 17.0	62°15.2	2°33.1	16°05.9	42°23.1	43°21.3	56°37.3
14	337°27.7	8.1'	26°03.7	-3.8'	56.2'	92°39.3	84°47.6	61°48.7	2°01.3	16°35.0	42°51.7	43°53.3	57°06.7
15	351°54.9	8.1'	26°07.6	-3.7'	56.2'	92°22.1	84° 18.2	61°22.4	1°29.5	17°04.1	43°20.2	44°25.1	57°36.1
16	6°22.0	8.2'	$26^{\circ}11.3$	-3.6'	56.2'	92°04.9	83°48.9	60°56.1	0°58.1	17°33.3	43°48.7	44°57.0	58°05.4
17	20°49.2	8.2'	$26^{\circ}14.8$	-3.4'	56.1'	91°47.8	83° 19.7	60°29.9		18°02.5	44°17.2	45°28.8	58°34.7
18	35°16.3	8.2'	S 26°18.2	-3.3'	56.1'	91°30.6	82°50.4	60°03.8		18°31.7	44°45.6	46°00.5	59°04.0
19	49°43.5	8.2'	$26^{\circ}21.5$	-3.1'	56.1'	91°13.5	82°21.2	59°37.8		19°00.9	45°14.0	46°32.3	59°33.2
20	64°10.7	8.2'	26°24.6	-3.0'	56.0'	90°56.3	81°52.1	59°11.8		19°30.1	45° 42.3	47°04.0	60°02.4
21	78°37.8	8.2'	$26^{\circ}27.6$	-2.8'	56.0'	90°39.2	81°23.0	58°46.0	1°43.0	19°59.3	46° 10.7	47°35.6	60°31.5
22	93°05.0	8.2'	26°30.4	-2.7'	56.0'	90°22.1	80°53.9	58°20.2	2°14.5	20°28.5	46°39.0	48°07.2	61°00.6
23	107°32.3	8.2'	26°33.0	-2.5'	56.0'	90°05.1	80°24.9	57°54.6	2°46.0	20°57.7	47°07.2	48°38.8	61°29.7
4 th	SD =	= 15.5'	Mer. pas	s. 15:34	ļ	$Sun\;SD=16.0'$							

Moon (5th Oct)

h

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	+Antares	+Mars	+Venus	+Spica	+Sun
0	121°59.5	8.2'	S 26°35.5	-2.4'	55.9'	89°48.0	79°55.9	57°29.0	3°17.6	21°26.9	47°35.4	49°10.4	61°58.8
1	136°26.7	8.3'	26°37.9	-2.4'	55.9'	89°31.0	79° 33.9	57° 03.5	3°49.1	21°56.1	48°03.6	49°41.9	62°27.8
2	150° 54.0	8.3'	26°40.1	-2.2' -2.1'	55.9'	89°14.0	78°58.1	56°38.1	4°20.6	22°25.2	48°31.8	50°13.3	62°56.7
3	165°21.3	8.3'	26°42.2	-1.9'	55.8'	88°57.0	78°29.3	56° 12.9	4°52.1	22°54.4	48°59.9	50°44.8	63°25.6
4	179°48.6	8.3'	26°44.1	-1.8'	55.8'	88°40.0	78° 00.5	55° 47.7	5°23.5	23°23.6	49°28.0	51°16.2	63°54.5
5	194°15.9	8.3'	26°45.9	-1.6'	55.8'	88°23.1	77°31.7	55°22.6	5°55.0	23°52.7	49°56.1	51°47.6	64°23.4
6	208°43.2	8.4'	S 26°47.6	-1.5'	55.7'	88°06.1	77°03.0	54°57.6	6°26.3	24°21.9	50°24.1	52°18.9	64°52.2
7	223°10.6	8.4'	26°49.0	-1.3'	55.7'	87°49.2	76°34.3	54°32.7	6°57.7	24°51.0	50°52.2	52°50.2	65°21.0
8	237°38.0	8.4'	26°50.4	-1.2'	55.7'	87°32.4	76°05.6	54°07.9	7°29.0	25°20.1	51°20.1	53°21.5	65°49.8
9	252°05.4	8.4'	$26^{\circ}51.6$	-1.1'	55.7'	87°15.5	75°37.1	53°43.3	8°00.3	25°49.1	51°48.1	53°52.7	66°18.5
10	266°32.8	8.5'	26°52.6	-0.9'	55.6'	86°58.7	75°08.5	53° 18.7	8°31.6	26°18.2	52°16.0	54°23.9	66°47.2
11	281°00.3	8.5'	$26^{\circ}53.5$	-0.8'	55.6'	86°41.9	74°40.0	$52^{\circ}54.2$	9°02.8	26°47.3	52°43.9	54°55.1	67°15.9
12	295°27.8	8.5'	S 26°54.3	-0.6'	55.6'	86°25.2	74° 11.5	52°29.9	9°34.0	27°16.3	53°11.7	55°26.2	67°44.5
13	309°55.3	8.6'	26°54.9	-0.5'	55.5'	86°08.5	73°43.1	52°05.6	10°05.1	27°45.3	53°39.5	55°57.3	68°13.1
14	324°22.9	8.6'	26°55.4	-0.3'	55.5'	85°51.8	73° 14.7	51°41.5	10°36.2	28°14.3	54°07.3	56°28.4	68°41.6
15	338°50.4	8.6'	26°55.7	-0.2'	55.5'	85°35.1	72°46.4	$51^{\circ}17.5$	11°07.3	28°43.3	54°35.1	56°59.4	69°10.2
16	353°18.1	8.7'	26°55.9	-0.0'	55.5'	85°18.5	72°18.1	50°53.6	11°38.4	29°12.2	55°02.8	57°30.5	69°38.6
17	7°45.7	8.7'	26°56.0	0.1'	55.4'	85°01.9	71°49.9	50°29.8	12°09.4	29°41.1	55°30.5	58°01.4	70°07.1
18	22°13.4	8.7'	S 26°55.9	0.2'	55.4'	84°45.3	71°21.7	$50^{\circ}06.1$	12°40.4	30°10.0	55°58.2	58°32.4	70°35.5
19	36°41.1	8.8'	26°55.6	0.4'	55.4'	84°28.8	70°53.5	49°42.6	13°11.4	30°38.9	56°25.8	59°03.3	71°03.9
20	51°08.9	8.8'	26°55.2	0.5'	55.4'	84°12.3	70°25.4	$49^{\circ}19.2$	13°42.3	31°07.8	56°53.5	59°34.2	71°32.3
21	65°36.7	8.8'	26°54.7	0.7'	55.3'	83°55.9	69° 57.4	48° 55.9	14°13.2	31°36.6	57°21.0	60°05.0	72°00.7
22	80°04.6	8.9'	26°54.1	0.8'	55.3'	83°39.4	69°29.3	48°32.7	14°44.1	32°05.4	57°48.6	60°35.9	72°29.0
23	94°32.5	8.9'	26°53.3	0.9'	55.3'								
5 th	SD =	= 15.3′	Mer. pas	s. 16:28	;	$Sun\;SD=16.0'$							

h Moon (6th Oct)

Wed	GHA	ν	Dec	d	HP	-Saturn -Deneb -Fomalhaut -Altair +Antares +Mars +Spica +Sun							
0	109°00.4	9.0'	S 26°52.3	1.1'	55.3'	119°08.9	83°06.7	68° 33.4	47°46.8	15°45.7	33°03.0	61°37.4	73°25.5
1	123°28.4	9.0'	26°51.2	1.2'	55.2'	118°38.3	82°50.4	68°05.6	47°24.0	16°16.5	33°31.8	62°08.2	73°53.7
2	137°56.4	9.1'	26°50.0	1.4'	55.2'	118°07.7	82°34.2	67° 37.7	47°01.4	16°47.3	34°00.5	62°38.9	74°21.9
3	152°24.4	9.1'	26°48.7	1.5'	55.2'	117°37.2	82°17.9	67°09.9	46°38.9	17°18.0	34°29.2	63°09.6	74°50.1
4	166°52.6	9.2'	26°47.2	1.6'	55.2'	117°06.6	82°01.8	66° 42.2	46°16.6	17°48.7	34°57.9	63°40.2	75°18.2
5	181°20.7	9.2'	26°45.5	1.8'	55.1'	116°36.1	81°45.6	66° 14.5	45°54.4	18°19.4	35°26.6	64° 10.8	75°46.3
6	195°48.9	9.3'	S 26°43.8	1.9'	55.1'	116°05.6	81°29.5	65°46.9	45°32.3	18°50.0	35°55.2	64°41.4	76°14.4
7	210°17.2	9.3'	26°41.9	2.0'	55.1'	115°35.2	81°13.5	65° 19.3	45°10.4	19°20.6	36°23.8	65°12.0	76°42.5
8	224°45.5	9.4'	26°39.8	2.2'	55.1'	115°04.7	80°57.5	64°51.7	44°48.6	19°51.2	36°52.4	65°42.5	77°10.5
9	239°13.8	9.4'	26°37.7	2.3'	55.0'	114°34.3	80°41.5	64°24.2	44°27.1	20°21.8	37°21.0	66°13.1	77°38.5
10	253°42.2	9.5'	26°35.4	2.4'	55.0'	114°03.9	80°25.6	63°56.8	44°05.6	20°52.3	37°49.6	66°43.6	78°06.5
11	$268^{\circ}10.7$	9.5'	26°32.9	2.6'	55.0'	113°33.5	80°09.7	63°29.4	43°44.3	21°22.8	38°18.1	67°14.0	78°34.4
12	282°39.2	9.6'	S 26°30.4	2.7'	55.0'	113°03.2	79°53.9	63°02.0	43°23.2	21°53.3	38°46.6	67°44.5	79°02.3
13	297°07.8	9.6'	26°27.6	2.8'	54.9'	112°32.9	79°38.2	62°34.7	43°02.3	22°23.8	39°15.1	68° 14.9	79°30.2
14	311°36.4	9.7'	26°24.8	3.0'	54.9'	112°02.5	79°22.4	62°07.4	42°41.5	22°54.2	39°43.6	68°45.3	79°58.1
15	$326^{\circ}05.1$	9.7'	26°21.9	3.1'	54.9'	111°32.3	79°06.8	61°40.2	42°20.9	23°24.6	40°12.0	69° 15.6	80°26.0
16	340°33.8	9.8'	$26^{\circ}18.8$	3.2'	54.9'	111°02.0	78°51.1	61°13.1	42°00.5	23°55.0	40°40.5	69°46.0	80°53.8
17	355°02.6	9.8'	26°15.5	3.3'	54.9'	110°31.8	78°35.6	60°46.0	41°40.2	24°25.4	41°08.9	70°16.3	81°21.6
18	9°31.4	9.9'	S 26°12.2	3.5'	54.8'	110°01.5	78°20.1	60° 18.9	41°20.1	24°55.7	41°37.3	70°46.6	81°49.4
19	24°00.4	10.0'	26°08.7	3.6'	54.8'	109°31.4	78°04.6	59°51.9	41°00.3	25°26.0	42°05.7	71°16.9	82°17.1
20	38°29.3	10.0'	$26^{\circ}05.1$	3.7'	54.8'	109°01.2	77°49.2	59°25.0	40°40.6	25°56.3	42°34.0	71°47.1	82°44.9
21	52°58.3	10.1'	$26^{\circ}01.4$	3.9'	54.8'	108°31.0	77°33.8	58°58.1	40°21.1	26°26.6	43°02.4	72°17.3	83°12.6
22	67°27.4	10.1'	25°57.5	4.0'	54.8'	108°00.9	77° 18.5	58°31.3	40°01.8	26°56.8	43°30.7	72°47.6	83°40.3
23	81°56.6	10.2'	25°53.6	4.1'	54.7'	107°30.8	77°03.3	58°04.5	39°42.7	27°27.1	43°59.0	73° 17.7	84°07.9
6 th	SD :	= 15.1'	Mer. pass	. 17:21		SunSD=16.0'							

h		Moor	n (7 th Oct	t)		Lunar Distance (objects with largest hourly LD delta)							
Thu	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Antares	+Mars	+Spica	+Sun
0	96°25.8	10.3'	S 25°49.5	4.2'	54.7'	107°00.7	76°48.1	57°37.7	39°23.8	27°57.3	44°27.2	73°47.9	84°35.6
1	110°55.1	10.3'	25°45.2	4.3'	54.7'	106°30.6	76°33.0	57°11.1	39°05.2	28°27.4	44°55.5	74°18.0	85°03.2
2	125°24.4	10.4'	25°40.9	4.5'	54.7'	106°00.5	76°17.9	56°44.5	38°46.7	28°57.6	45°23.8	74°48.2	85°30.8
3	139°53.8	10.5'	25°36.4	4.6'	54.7'	105°30.5	76°02.9	56°17.9	38°28.5	29°27.7	45°52.0	75°18.3	85°58.4
4	154°23.3	10.5'	25°31.8	4.7'	54.7'	105°00.5		55°51.4	38° 10.5	29°57.9	46°20.2	75°48.3	86°25.9
5	168°52.8	10.6'	$25^{\circ}27.1$	4.8'	54.6'	104°30.5		55°24.9	37°52.7	30°28.0	46°48.4	76°18.4	86°53.5
6	183°22.4	10.7'	S 25°22.3	4.9'	54.6'	104°00.5		54°58.5	37°35.1	30°58.1	47°16.6	76°48.5	87°21.0
7	197°52.0	10.7'	25°17.3	5.1'	54.6'	103°30.5		54°32.2	37°17.8	31°28.1	47°44.7	77°18.5	87°48.5
8	212°21.8	10.8'	25°12.3	5.2'	54.6'	103°00.6		54°06.0	37°00.7	31°58.2	48°12.9	77°48.5	88°16.0
9	226°51.5	10.9'	25°07.1	5.3'	54.6'	102°30.6		53°39.7	36°43.9	32°28.2	48°41.0	78°18.5	88°43.5
10	241°21.4	10.9'	25°01.8	5.4'	54.6'	102°00.7		53°13.6	36°27.3	32°58.2	49°09.1	78°48.4	89°10.9
11	255°51.3	11.0'	24°56.4	5.5'	54.5'	101°30.8		52°47.5	36°11.0	33°28.2	49°37.2	79°18.4	89°38.3
12	270°21.3	11.1'	S 24°50.8	5.6'	54.5'	101°00.9		52°21.5	35°55.0	33°58.2	50°05.3	79°48.3	90°05.8
13	284°51.3	11.1'	24°45.2	5.8'	54.5'	100°31.1		51°55.5	35°39.2	34°28.1	50°33.3	80°18.3	90°33.2
14	299°21.5	11.2'	24°39.5	5.9'	54.5'	100°01.2		51°29.6	35°23.7	34°58.1	51°01.4	80°48.2	91°00.5
15	313°51.6	11.3'	24°33.6	6.0'	54.5'	99°31.4		51°03.8	35°08.5	35°28.0	51°29.4	81°18.1	91°27.9
16	328°21.9	11.3'	24°27.6	6.1'	54.5'	99°01.5		50°38.1		35°57.9	51°57.4	81°47.9	91°55.2
17	342°52.2	11.4'	24°21.5	6.2'	54.4'	98°31.7		50°12.4		36°27.8	52°25.4	82°17.8	92°22.6
18	357°22.6	11.5'	S 24°15.3	6.3'	54.4'	98°01.9		49°46.8		36°57.7	52°53.4	82°47.6	92°49.9
19	11°53.1	11.5'	24°09.0	6.4'	54.4'	97°32.1		49°21.2		37°27.5	53°21.4	83°17.5	93°17.2
20	26°23.6	11.6'	24°02.6	6.5'	54.4'	97°02.4		48°55.7		37°57.4	53°49.4	83°47.3	93°44.5
21	40°54.2	11.7'	23°56.1	6.6'	54.4'	96°32.6		48°30.3		38°27.2	54°17.4	84°17.1	94°11.8
22	55°24.9	11.7'	23°49.5	6.7'	54.4'	96°02.9		48°05.0		38°57.1	54°45.3	84°46.9	94°39.0
23	69°55.6	11.8'	23°42.7	6.8'	54.4'	95°33.1		47°39.8		39°26.9	55°13.2		95°06.3

7 th	SD	SD = 14.9' Mer. pass. 18:11					SunSD = 16.0'							
h	•	Moon	(8 th Oct	t)			Lunar D	Distance (objects v	vith largest l	nourly L[O delta)		
Fri	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Antares	+Mars	+Rigil Kent.	+Venus	+Arcturus	+Sun	
0	84°26.4	11.9'	S 23°35.9	6.9'	54.4'	95°03.4	47°14.6	39°56.7	55°41.2	60°37.8	80°17.2	86° 56.3	95°33.5	
1	98°57.2	11.9'	23°28.9	7.0'	54.3'	94°33.7	46°49.5	40°26.5	56°09.1	60°59.0	80°43.7	87° 20.5	96°00.7	
2	113°28.2	12.0'	$23^{\circ}21.9$	7.1'	54.3'	94°04.0	46°24.5	40°56.2	56°37.0	61°20.3	81°10.2	87°44.7	96°28.0	
3	127°59.2	12.1'	23°14.7	7.2'	54.3'	93°34.3	45°59.5	41°26.0	57°04.9	61°41.6	81°36.7	88°08.9	96°55.2	
4	142°30.3	12.1'	23°07.5	7.3'	54.3'	93°04.7	45°34.7	41°55.8	57°32.7	62°03.0	82°03.2	88°33.1	97°22.3	
5	157°01.4	12.2'	23°00.1	7.4'	54.3'	92°35.0	45°09.9	42°25.5	58°00.6	62°24.5	82°29.7	88°57.2	97°49.5	
6	171°32.6	12.3'	S 22°52.7	7.5'	54.3'	92°05.3	44°45.3	42°55.2	58°28.5	62°46.0	82°56.2	89°21.4	98°16.7	
7	186°03.9	12.3'	22°45.1	7.6'	54.3'	91°35.7	44°20.7	43°25.0	58° 56.3	63°07.5	83°22.7	89°45.5	98°43.8	
8	200°35.2	12.4'	22°37.5	7.7'	54.3'	91°06.0	43°56.2	43°54.7	59°24.2	63°29.1	83°49.1	90°09.7	99°11.0	
9	215°06.6	12.5'	22°29.8	7.8'	54.3'	90°36.4	43°31.8	44°24.4	59°52.0	63°50.8	84° 15.6	90°33.8	99°38.1	
10	229°38.1	12.5'	$22^{\circ}21.9$	7.9'	54.3'	90°06.8	43°07.5	44°54.1	60° 19.8	64°12.5	84°42.0	90°58.0	100°05.3	
11	244°09.7	12.6'	22°14.0	8.0'	54.3'	89°37.2	42°43.3	45°23.7	60°47.7	64°34.3	85°08.5	91°22.1	100°32.4	
12	258°41.3	12.7'	S 22°06.0	8.1'	54.2'	89°07.6	42°19.2	45°53.4	61°15.5	64°56.1	85°34.9	91°46.2	100°59.5	
13	273°13.0	12.7'	21°57.8	8.2'	54.2'	88°38.0	41°55.2	46°23.1	61°43.3	65°18.0	86°01.3	92°10.3	101°26.6	
14	287°44.7	12.8'	21°49.6	8.3'	54.2'	88°08.4	41°31.3	46°52.8	62°11.1	65°39.9	86° 27.7	92°34.4	101°53.7	
15	302°16.5	12.9'	21°41.3	8.4'	54.2'	87°38.8	41°07.5	47°22.4	62°38.9	66°01.8	86°54.1	92°58.5	102°20.8	
16	316°48.4	12.9'	$21^{\circ}32.9$	8.5'	54.2'	87°09.2	40°43.8	47°52.1	63°06.7	66°23.8	87°20.5	93°22.6	102°47.8	
17	331°20.3	13.0'	21°24.4	8.6'	54.2'	86°39.7	40°20.2	48°21.7	63°34.4	66°45.9	87°46.9	93°46.6	103°14.9	
18	345°52.4	13.1'	S 21°15.8	8.7'	54.2'	86°10.1	39°56.8	48°51.3	64°02.2	67°08.0	88° 13.3	94°10.7	103°42.0	
19	0°24.4	13.1'	$21^{\circ}07.1$	8.8'	54.2'	85°40.6	39°33.5	49°21.0	64°30.0	67°30.1	88°39.7	94°34.7	104°09.0	
20	14°56.6	13.2'	20°58.4	8.8'	54.2'	85°11.0	39°10.3	49°50.6	64°57.8	67°52.3	89°06.0	94°58.8	104°36.1	
21	29°28.8	13.3'	20°49.5	8.9'	54.2'	84°41.5	38°47.2	50°20.2	65°25.5	68°14.5	89°32.4	95°22.8	105°03.1	
22	44°01.0	13.3'	20°40.6	9.0'	54.2'	84°11.9	38°24.2	50°49.8	65°53.3	68°36.8	89°58.8	95°46.8	105°30.2	
23	58° 33.4	13.4'	20°31.6	9.1'	54.2'	83°42.4	38°01.4	51°19.4	66°21.0	68°59.1	90°25.1	96°10.8	105°57.2	
8 th	SD = 14.8' Mer. pass. 18:58					SunSD=16.0'								

h		Моо	n (9 th Oc	t)		Lunar Distance (objects with largest hourly LD delta)							
Sat	GHA	ν	Dec	d	HP	-Rigel	-Aldebaran	-Saturn	-Fomalhaut	+Antares	+Mars	+Venus	+Sun
0	73°05.8	13.5'	S 20°22.5	9.2'	54.2'			83°12.9	37° 38.7	51°49.1	66°48.8	90°51.5	106°24.3
1	87°38.2	13.5'	20°13.3	9.3'	54.2'			82°43.3	37°16.2	52°18.7	67°16.6	91°17.8	106°51.3
2	102°10.8	13.6'	20°04.0	9.4'	54.2'			82°13.8	36°53.8	52°48.3	67°44.3	91°44.2	107°18.3
3	116°43.3	13.6'	19°54.6	9.4'	54.2'			81°44.3	36°31.5	53°17.9	68°12.0	92°10.5	107°45.3
4	131°16.0	13.7'	19°45.2	9.5'	54.2'			81°14.8	36°09.4	53°47.5	68°39.8	92°36.9	108°12.4
5	145°48.7	13.8'	19°35.7	9.6'	54.1'			80°45.3	35° 47.5	54°17.0	69°07.5	93°03.2	108°39.4
6	160°21.5	13.8'	S 19°26.1	9.7'	54.1'			80°15.8	35°25.7	54°46.6	69°35.3	93°29.6	109°06.4
7	174°54.3	13.9'	19°16.4	9.8'	54.1'			79°46.2	35°04.1	55°16.2	70°03.0	93°55.9	109°33.4
8	189°27.2	13.9'	$19^{\circ}06.6$	9.8'	54.1'			79°16.7	34° 42.7	55°45.8	70°30.8	94°22.2	110°00.4
9	204°00.1	14.0'	18°56.8	9.9'	54.1'			78°47.2	34°21.4	56°15.4	70°58.5	94°48.6	110°27.4
10	218°33.1	14.1'	18°46.9	10.0'	54.1'			78°17.7	34°00.3	56°45.0	71°26.2	95°14.9	110°54.4
11	233°06.2	14.1'	18°36.9	10.1'	54.1'			77°48.2	33°39.4	57°14.6	71°54.0	95°41.2	111°21.4
12	247°39.3	14.2'	S 18°26.8	10.1'	54.1'			77°18.7	33° 18.7	57°44.2	72°21.7	96°07.6	111°48.4
13	262°12.5	62°12.5 14.2' 18°16.7 10.2' 54.1'						76°49.2	32°58.2	58°13.8	72°49.5	96°33.9	112°15.5
14	276°45.7							76°19.7	32° 37.9	58°43.3	73°17.2	97°00.3	112°42.5
15	291°19.0	14.3'	$17^{\circ}56.2$	10.4'	54.1'			75°50.2	32° 17.9	59°12.9	73°44.9	97°26.6	113°09.5
16	305°52.3	14.4'	17°45.8	10.4'	54.1'			75°20.7	31°58.0	59°42.5	74°12.7	97°52.9	113°36.5
17	320°25.7	14.5'	17°35.4	10.5'	54.1'		119°48.3	74°51.2	31°38.4	60°12.1	74°40.4	98° 19.3	114°03.5
18	334°59.2	14.5'	S 17°24.9	10.6'	54.1'		119°19.3	74°21.7	31°18.9	60°41.7	75°08.2	98°45.6	114°30.5
19	349°32.7	14.6'	$17^{\circ}14.3$	10.6'	54.1'		118°50.2	73°52.2	30°59.8	61°11.3	75°35.9	99°12.0	114°57.5
20	4°06.3	14.6'	$17^{\circ}03.6$	10.7'	54.1'	119°57.1	118°21.2	73°22.7	30°40.8	61°40.9	76°03.7	99°38.3	115°24.5
21	18°39.9	14.7'	16°52.9	10.8'	54.1'	119°34.9	117°52.2	72°53.2	30°22.2	62°10.5	76°31.5	100°04.7	115°51.5
22	33°13.5	14.7'	$16^{\circ}42.1$	10.9'	54.1'	119° 12.6	117°23.1	72°23.7	30°03.8	62°40.1	76°59.2	100°31.0	116°18.6
23	47°47.2	14.8'	16°31.3	10.9'	54.1'	118°50.3	116°54.0	71°54.1	29°45.6	63°09.8	77°27.0	100°57.4	116°45.6
9 th	SD = 14.8' Mer. pass. 19:43						SunSD=16.0'						

Moon (10th Oct) Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Capella	-Rigel	-Aldebaran	-Saturn	+Antares	+Mars	+Venus	+Sun
0	62°21.0	14.8'	S 16°20.4	11.0'	54.1'		118°27.9	116°25.0	71°24.6	63°39.4	77°54.8	101°23.8	117°12.6
1	76°54.8	14.9'	$16^{\circ}09.4$	11.1'	54.1'		118°05.5	115°55.9	70°55.1	64°09.0	78°22.6	101°50.1	117°39.6
2	91°28.7	14.9'	15°58.3	11.1'	54.1'		117°43.0	115°26.8	70°25.6	64°38.6	78°50.3	102°16.5	118°06.7
3	106°02.6	15.0'	15°47.2	11.2'	54.1'		117°20.4	114°57.7	69°56.1	65°08.3	79°18.1	102°42.9	118°33.7
4	120°36.5	15.0'	$15^{\circ}36.0$	11.2'	54.2'		116°57.8	114°28.6	69°26.5	65°37.9	79°45.9	103°09.3	119°00.7
5	135°10.5	15.0'	$15^{\circ}24.8$	11.3'	54.2'		116°35.1	113°59.4	68°57.0	66°07.6	80°13.7	103°35.7	119°27.8
6	149°44.6	15.1'	S 15°13.5	11.4'	54.2'		116°12.3	113°30.3	68°27.5	66°37.2	80°41.5	104°02.1	119°54.8
7	164°18.6	15.1'	$15^{\circ}02.1$	11.4'	54.2'		115°49.5	113°01.2	67°57.9	67°06.9	81°09.3	104°28.5	
8	178°52.8	15.2'	14°50.7	11.5'	54.2'		115°26.6	112°32.0	67°28.4	67°36.5	81°37.2	104°54.9	
9	193°26.9	15.2'	$14^{\circ}39.2$	11.5'	54.2'		115°03.7	112°02.9	66°58.8	68°06.2	82°05.0	105°21.3	
10	208°01.2	15.3'	$14^{\circ}27.6$	11.6'	54.2'		114°40.8	111°33.7	66°29.3	68°35.9	82°32.8	105°47.7	
11	222°35.4	15.3'	$14^{\circ}16.0$	11.7'	54.2'	119°52.0	114°17.7	111°04.5	65°59.7	69°05.6	83°00.7	106°14.1	
12	237°09.7	15.3'	S 14°04.4	11.7'	54.2'	119°24.5	113°54.7	110°35.3	65°30.1	69°35.3	83°28.5	106°40.6	
13	251°44.1	15.4'	$13^{\circ}52.7$	11.8'	54.2'	118°57.0	113°31.5	110°06.1	65°00.6	70°05.0	83°56.4	107°07.0	
14	266°18.4	15.4'	13°40.9	11.8'	54.2'	118°29.4 118°01.8	113°08.4	109°36.9	64°31.0	70°34.7	84°24.3	107°33.5	
15	280°52.9	°52.9 15.5' 13°29.0 11.9' 54.2'					112°45.1	109°07.6	64°01.4	71°04.4	84°52.1	107°59.9	
16	295°27.3	15.5'	$13^{\circ}17.1$	11.9'	54.2'	117°34.2	112°21.8	108°38.4	63°31.8	71°34.1	85°20.0	108°26.4	
17	310°01.8	15.5'	$13^{\circ}05.2$	12.0'	54.2'	117°06.6	111°58.5	108°09.1	63°02.2	72°03.9	85°47.9	108°52.9	
18	324°36.3	15.6' S 12°53.2 12.1' 54.2'				116°38.9	111°35.1	107°39.9	62°32.6	72°33.6	86° 15.8	109°19.4	
19	339°10.9	15.6'	$12^{\circ}41.1$	12.1'	54.2'	116°11.2	111°11.7	107°10.6	62°03.0	73°03.4	86°43.8	109°45.9	İ
20	353°45.5	15.6'	$12^{\circ}29.0$	12.2'	54.2'	115°43.5	110°48.3	106°41.3	61°33.4	73°33.1	87°11.7	110°12.4	
21	8°20.1	15.7'	$12^{\circ}16.9$	12.2'	54.2'	115°15.7	110°24.7	106°12.0	61°03.7	74°02.9	87°39.6	110°38.9	
22	22°54.8	15.7'	12°04.7	12.3'	54.3'	114°47.9	110°01.2	105°42.7	60°34.1	74°32.7	88°07.6	111°05.4	
23	37°29.5	15.7'	$11^{\circ}52.4$	12.3'	54.3'	3' 114°20.1 109°37.6 105°13.3 60°04.5 75°02.5 88°35.5 111°32.0							
10 th	SD	= 14.8'	Mer. pass	. 20:26		$Sun\;SD=16.0'$							

Moon (11th Oct) h Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Antares	+Rigil Kent.	+Mars	+Venus
0	52°04.2	15.8'	S 11°40.1	12.4'	54.3'		113°52.3	104°44.0	59°34.8	75°32.3	87°48.0	89°03.5	111°58.5
1	66°39.0	15.8'	11°27.8	12.4'	54.3'		113°24.4	104°14.6	59°05.2	76°02.2	88° 11.5	89°31.5	112°25.1
2	81°13.7	15.8'	11°15.4	12.5'	54.3'		112°56.6	103°45.3	58°35.5	76°32.0	88°35.1	89°59.5	112°51.6
3	95°48.6	15.8'	11°02.9	12.5'	54.3'		112°28.7	103°15.9	58°05.8	77°01.8	88° 58.7	90°27.5	113° 18.2
4	110°23.4	15.9'	10°50.4	12.5'	54.3'		112°00.7	102°46.5	57°36.1	77°31.7	89°22.2	90°55.5	113°44.8
5	124°58.3	15.9'	10°37.9	12.6'	54.3'		111°32.8	102°17.0	57°06.4	78°01.6	89° 45.8	91°23.5	114°11.4
6	139°33.2	15.9'	S 10°25.3	12.6'	54.3'	119°51.7	111°04.8	101°47.6	56°36.7	78°31.5	90°09.4	91°51.6	114°38.0
7	154°08.1	15.9'	$10^{\circ}12.6$	12.7'	54.3'	119°24.0	110°36.8	101°18.2	56°07.0	79°01.4	90°33.1	92°19.6	115°04.7
8	168°43.0	16.0'	10°00.0	12.7'	54.3'	118°56.3	110°08.8	100°48.7	55°37.3	79°31.3	90°56.7	92°47.7	115°31.3
9	183°18.0	16.0'	09°47.2	12.8'	54.4'	118°28.6	109°40.7	100°19.2	55°07.6	80°01.2	91°20.3	93°15.8	115°58.0
10	197°53.0	16.0'	09°34.5	12.8'	54.4'	118°00.8	109°12.6	99°49.7	54°37.9	80°31.2	91°43.9	93°43.9	116°24.6
11	212°28.0	16.0'	09°21.7	12.8'	54.4'	117°33.0	108°44.5	99°20.2	54°08.1	81°01.1	92°07.6	94°12.0	116°51.3
12	227°03.0	16.0'	S 09°08.8	12.9'	54.4'	117°05.2	108° 16.4	98°50.7	53°38.4	81°31.1	92°31.3	94°40.1	117° 18.0
13	241°38.0	16.1'	08°55.9	12.9'	54.4'	116°37.3	107°48.2	98°21.2	53°08.6	82°01.1	92°54.9	95°08.3	117°44.7
14	256°13.1	16.1'	08°43.0	13.0'	54.4'	116°09.4	107°20.1	97°51.6	52°38.8	82°31.1	93° 18.6	95°36.5	118° 11.4
15	270°48.2	16.1'	08°30.0	13.0'	54.4'	115°41.5	106°51.9	97°22.0	52°09.0	83°01.1	93°42.3	96°04.6	118°38.2
16	285°23.3	16.1'	08°17.0	13.0'	54.4'	115° 13.5	106°23.6	96°52.5	51°39.2	83°31.1	94°05.9	96°32.8	119°04.9
17	299°58.4	16.1'	08°04.0	13.1'	54.4'	114°45.5	105°55.4	96°22.8	51°09.4	84°01.2	94°29.6	97°01.0	119°31.7
18	314°33.5	16.1'	S 07°50.9	13.1'	54.5'	114°17.5	105°27.1	95°53.2	50°39.6	84°31.2	94°53.3	97°29.2	119°58.5
19	329°08.7	16.2'	07°37.8	13.2'	54.5'	113°49.5	104°58.8	95°23.6	50°09.8	85°01.3	95° 17.0	97°57.5	
20	343°43.8	16.2'	07°24.6	13.2'	54.5'	113°21.4	104°30.5	94°53.9	49°40.0	85°31.4	95° 40.7	98°25.7	
21	358°19.0	16.2'	$07^{\circ}11.5$	13.2'	54.5'	112°53.3	104°02.2	94°24.3	49°10.1	86°01.5	96°04.4	98°54.0	
22	12°54.2	16.2'	06°58.2	13.3'	54.5'	112°25.1	103°33.8	93°54.6	48°40.3	86°31.7	96°28.1	99°22.3	
23	27°29.4	16.2'	06°45.0	13.3'	54.5'	111°56.9	103°05.4	93°24.9	48°10.4	87°01.8	96°51.8	99°50.6	
11 th	SD	$= 14.8^{\prime}$	Mer. pass	s. 21:07									

	_	
h	Moon (12 th Oct)	Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Altair	+Antares	+Rigil Kent.	+Mars
0	42°04.6	16.2'	S 06°31.7	13.3'	54.5'	111°28.7	102°37.0	92°55.1	47°40.6	42°59.0	87°32.0	97°15.6	100°18.9
1	56°39.8	16.2'	$06^{\circ}18.4$	13.3'	54.5'	111°00.5	102°08.6	92°25.4	47°10.7	43°19.8	88°02.2	97°39.3	100°47.2
2	71°15.0	16.2'	$06^{\circ}05.0$	13.4'	54.6'	110°32.2	101°40.1	91°55.6	46°40.8	43°40.7	88°32.4	98°03.0	101°15.6
3	85°50.2	16.2'	05°51.7	13.4'	54.6'	110°03.9	101°11.7	91°25.9	46°10.9	44°01.7	89°02.6	98°26.7	101°44.0
4	100°25.5	16.2'	05°38.2	13.4'	54.6'	109°35.6	100°43.2	90°56.1	45°41.0	44°22.9	89°32.8	98°50.4	102°12.4
5	115°00.7	16.2'	05°24.8	13.5'	54.6'	109°07.3	100°14.6	90°26.3	45°11.1	44°44.3	90°03.1	99°14.1	102°40.8
6	129°35.9	16.2'	S 05°11.3	13.5'	54.6'	108°38.9	99°46.1	89°56.4	44°41.2	45°05.8	90°33.3	99°37.8	103°09.2
7	144°11.2	16.2'	04°57.8	13.5'	54.6'	108° 10.5	99°17.5	89°26.6	44°11.2	45°27.4	91°03.6	100°01.5	103°37.6
8	158°46.4	16.2'	04°44.3	13.5'	54.6'	107°42.1	98°48.9	88° 56.7	43°41.3	45°49.2	91°33.9	100°25.2	104°06.1
9	173°21.6	16.2'	04°30.8	13.6'	54.7'	107° 13.6	98°20.3	88°26.8	43°11.4	46°11.2	92°04.3	100°48.9	104°34.6
10	187°56.9	16.2'	04° 17.2	13.6'	54.7'	106°45.1	97°51.7	87°56.9	42°41.4	46°33.2	92°34.6	101°12.6	105°03.1
11	202°32.1	16.2'	04°03.6	13.6'	54.7'	106° 16.6	97°23.0	87°27.0	42°11.4	46°55.4	93°05.0	101°36.2	105°31.6
12	217°07.3	16.2'	S 03°50.0	13.6'	54.7'	105°48.0	96°54.3	86°57.0	41°41.5	47°17.8	93°35.4	101°59.9	106°00.1
13	231°42.6	16.2'	03°36.4	13.7'	54.7'	105° 19.4	96°25.6	86°27.1	41°11.5	47°40.2	94°05.8	102°23.6	106°28.7
14	246°17.8	16.2'	03°22.7	13.7'	54.7'	104°50.8	95°56.9	85° 57.1	40°41.5	48°02.8	94°36.2	102°47.2	106°57.3
15	260°53.0	16.2'	03°09.0	13.7'	54.8'	104°22.2	95°28.1	85°27.1	40°11.5	48°25.5	95°06.7	103°10.9	107°25.9
16	275°28.2	16.2'	02°55.3	13.7'	54.8'	103°53.6	94°59.4	84°57.1	39°41.5	48°48.4	95°37.1	103°34.5	107°54.5
17	290°03.4	16.2'	02°41.6	13.7'	54.8'	103°24.9	94°30.6	84°27.0	39°11.5	49°11.3	96°07.6	103°58.2	108°23.1
18	304°38.6	16.2'	S 02°27.8	13.8'	54.8'	102°56.2	94°01.8	83°57.0	38°41.5	49°34.4	96°38.1	104°21.8	108°51.8
19	319°13.8	16.2'	$02^{\circ}14.1$	13.8'	54.8'	102°27.4	93°32.9	83°26.9	38°11.5	49°57.6	97°08.7	104°45.4	109°20.5
20	333°49.0	16.2'	$02^{\circ}00.3$	13.8'	54.8'	101°58.7	93°04.1	82°56.8	37°41.5	50°20.9	97°39.2	105°09.0	109°49.1
21	348°24.2	16.2'	01°46.5	13.8'	54.9'	101°29.9	92°35.2	82°26.7	37°11.5	50°44.3	98°09.8	105°32.6	110°17.9
22	2°59.3	16.1'	01°32.7	13.8'	54.9'	101°01.0	92°06.3	81°56.5	36°41.4	51°07.8	98°40.4	105°56.1	110°46.6
23	17°34.5	16.1'	01° 18.8	13.8'	54.9'	100°32.2	91°37.4	81°26.4	36°11.4	51°31.4	99°11.0	106° 19.7	111°15.4
12 th	SD	= 14.9'	Mer. pass	s. 21:48									

Moon (13th Oct)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Aldebaran	-Saturn	+Altair	+Antares	+Rigil Kent.	+Mars
0	32°09.6	16.1'	S 01°05.0	13.9'	54.9'			80°56.2	35°41.4	51°55.1	99°41.6	106°43.2	111°44.1
1	46°44.7	16.1'	$00^{\circ}51.1$	13.9'	54.9'			80°26.0	35°11.4	52°18.9	100°12.3	107°06.7	112°12.9
2	61°19.8	16.1'	00°37.3	13.9'	54.9'			79°55.8	34°41.3	52°42.9	100°43.0	107°30.2	112°41.8
3	75°54.9	16.1'	00°23.4	13.9'	55.0'			79°25.5	34°11.3	53°06.9	101°13.7	107°53.7	113°10.6
4	90°29.9	16.0'	S 00°09.5	13.9'	55.0'			78°55.3	33°41.3	53°31.0	101°44.4	108° 17.2	113°39.5
5	105°05.0	16.0'	N 00°04.4	13.9'	55.0'			78°25.0	33°11.3	53°55.2	102°15.1	108°40.6	114°08.4
6	119°40.0	16.0'	N 00°18.3	13.9'	55.0'			77° 54.7	32°41.2	54°19.5	102°45.9	109°04.0	114°37.3
7	134°15.0	16.0'	00°32.2	13.9'	55.0'		119°37.9	77°24.4	32°11.2	54°43.9	103°16.7	109°27.4	115°06.2
8	148°50.0	16.0'	00°46.2	13.9'	55.1'		119°07.3	76° 54.0	31°41.2	55°08.4	103°47.5	109°50.8	115°35.2
9	163°24.9	15.9'	$01^{\circ}00.1$	13.9'	55.1'		118°36.6	76°23.6	31°11.2	55°33.0	104°18.3	110°14.1	116°04.1
10	177°59.9	15.9'	$01^{\circ}14.1$	13.9'	55.1'		118°05.9	75°53.3	30°41.2	55°57.7	104°49.2	110°37.4	116°33.1
11	192°34.8	15.9'	$01^{\circ}28.0$	14.0'	55.1'		117°35.2	75°22.9	30°11.2	56°22.4	105°20.1	111°00.7	117°02.2
12	207°09.6	15.8'	N 01°42.0	14.0'	55.1'		117°04.5	74°52.4	29°41.2	56°47.3	105°51.0	111°24.0	117°31.2
13	221°44.5	15.8'	01°55.9	14.0'	55.1'	119°42.7	116°33.7	74°22.0	29°11.3	57°12.2	106°21.9	111°47.2	118°00.3
14	236°19.3	15.8'	02°09.9	14.0'	55.2'	119°13.6	116°02.9	73°51.5	28°41.3	57°37.2	106°52.9	112° 10.4	118°29.3
15	250°54.1	15.8'	02°23.8	14.0'	55.2'	118°44.4	115°32.1	73°21.0	28°11.4	58°02.3	107°23.8	112°33.6	118°58.4
16	265°28.9	15.7'	02°37.8	14.0'	55.2'	118°15.2	115°01.3	72°50.5	27°41.5	58°27.4	107°54.8	112°56.7	119°27.6
17	280°03.6	15.7'	$02^{\circ}51.7$	14.0'	55.2'	117°45.9	114°30.4	72°20.0	27°11.6	58°52.7	108°25.9	113° 19.8	119°56.7
18	294°38.3	15.7'	N03°05.7	14.0'	55.2'	117°16.6	113°59.5	71°49.4	26°41.8	59°18.0	108°56.9	113°42.9	
19	309°13.0	15.6'	03°19.7	14.0'	55.3'	116°47.3	113°28.6	71° 18.9	26°11.9	59°43.4	109°28.0	114°05.9	i i
20	323°47.6	15.6'	03°33.6	14.0'	55.3'	116° 17.9	112°57.7	70°48.3	25°42.1	60°08.9	109°59.1	114°28.9	
21	338°22.2	15.6'	03°47.6	13.9'	55.3'	115°48.5	112°26.7	70° 17.7	25°12.3	60°34.4	110°30.2	114°51.8	
22	352°56.7	15.5'	04°01.5	13.9'	55.3'	115° 19.1	111°55.7	69°47.0	24°42.6	61°00.0	111°01.3	115° 14.7	
23	7°31.2	15.5'	04°15.5	13.9'	55.3'	114°49.6	111°24.7	69°16.4	24°12.9	61°25.7	111°32.5	115°37.5	
13 th	SD	= 15.0'	Mer. pass	. 22:29									

h		Moor	n (14 th Oc	ct)			Lun	ar Distance	(objects w	ith largest h	ourly LE) delta)	
Thu	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Aldebaran	+Fomalhaut	+Altair	+Antares	+Rigil Kent.
0	22°05.7	15.4'	N 04°29.4	13.9'	55.4'	114°20.1	110°53.7	88°23.0	68°45.7	37°02.8	61°51.4	112°03.7	116°00.4
1	36°40.2	15.4'	04°43.3	13.9'	55.4'	113°50.5	110°22.6	87°53.5	68°15.0	37°26.5	62°17.3	112°34.9	116°23.1
2	51°14.6	15.4'	04°57.2	13.9'	55.4'	113°20.9	109°51.5	87°24.0	67°44.3	37°50.3	62°43.1	113°06.1	116°45.8
3	65°48.9	15.3'	$05^{\circ}11.2$	13.9'	55.4'	112°51.3	109°20.4	86°54.5	67°13.6	38°14.3	63°09.1	113°37.4	117°08.5
4	80°23.2	15.3'	$05^{\circ}25.1$	13.9'	55.4'	112°21.6	108°49.3	86°24.9	66°42.8	38°38.5	63°35.1	114°08.7	117°31.1
5	94°57.5	15.2'	05°38.9	13.9'	55.5'	111°51.9	108°18.1	85°55.4	66°12.1	39°02.9	64°01.2	114°40.0	117°53.7
6	109°31.7	15.2'	N 05°52.8	13.9'	55.5'	111°22.2	107°47.0	85°25.8	65°41.3	39°27.4	64°27.3	115°11.3	118°16.2
7	124°05.9	15.1'	06°06.7	13.8'	55.5'	110°52.4	107° 15.7	84°56.2	65°10.5	39°52.0	64°53.5	115°42.7	118°38.6
8	138°40.0	15.1'	06°20.5	13.8'	55.5'	110°22.6	106°44.5	84°26.6	64°39.6	40°16.8	65° 19.8	116°14.1	119°01.0
9	153°14.1	15.0'	06°34.4	13.8'	55.5'	109°52.8	106°13.2	83°56.9	64°08.8	40°41.8	65°46.1	116°45.5	119°23.3
10	167°48.2	15.0'	06°48.2	13.8'	55.6'	109°22.9	105°42.0	83°27.3	63°37.9	41°06.9	66° 12.5	117°16.9	119°45.6
11	182°22.1	14.9'	$07^{\circ}02.0$	13.8'	55.6'	108°53.0	105°10.6	82°57.6	63°07.0	41°32.1	66°39.0	117°48.4	
12	196°56.1	14.9'	N 07°15.8	13.8'	55.6'	108°23.1	104°39.3	82°27.9	62°36.1	41°57.5	67°05.5	118°19.9	
13	211°30.0	14.8'	07°29.5	13.7'	55.6'	107°53.1	104°07.9	81°58.1	62°05.2	42°23.0	67°32.0	118°51.4	
14	226°03.8	14.8'	07°43.3	13.7'	55.7'	107°23.1	103°36.6	81°28.4	61°34.2	42°48.6	67°58.7	119°22.9	
15	240°37.6	14.7'	07°57.0	13.7'	55.7'	106°53.1	103°05.1	80°58.6	61°03.3	43°14.4	68°25.3	119°54.5	
16	255°11.3	14.7'	$08^{\circ}10.7$	13.7'	55.7'	106°23.0	102°33.7	80°28.9	60°32.3	43°40.2	68°52.0		
17	269°45.0	14.6'	08°24.4	13.7'	55.7'	105°52.9	102°02.2	79°59.1	60°01.3	44°06.2	69° 18.8		
18	284°18.6	14.6'	N 08°38.0	13.6'	55.7'	105°22.8	101°30.8	79°29.2	59°30.3	44°32.3	69°45.6		
19	298°52.1	14.5'	08°51.6	13.6'	55.8'	104°52.6	100°59.2	78°59.4	58°59.2	44°58.6	70° 12.5		
20	313°25.6	14.4'	09°05.2	13.6'	55.8'	104°22.4	100°27.7	78°29.6	58°28.2	45°24.9	70°39.5		
21	327°59.1	14.4'	$09^{\circ}18.8$	13.5'	55.8'	103°52.2	99°56.1	77°59.7	57°57.1	45°51.3	71°06.4		
22	342°32.4	14.3'	09°32.4	13.5'	55.8'	103°22.0	99°24.5	77°29.8	57°26.0	46°17.9	71°33.5		
23	357°05.7	14.2'	09°45.9	13.5'	55.8'	102°51.7	98°52.9	76°59.9	56°54.9	46°44.5	72°00.5		
14 th	SD	= 15.1'	Mer. pass	. 23:12			-	-					

h Moon (15th Oct)

			. (10 00	- /			Lana	Bistailee (Terr language			
Fri	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Fomalhaut	+Altair
0	11°39.0	14.2'	N09°59.4	13.4'	55.9'	102°21.4	98°21.3	76°30.0	67°37.9	56°23.8	12°26.7	47°11.3	72°27.7
1	26°12.2	14.1'	10°12.8	13.4'	55.9'	101°51.0	97°49.6	76°00.1	67°08.1	55°52.7	12°01.8	47°38.2	72°54.9
2	40°45.3	14.1'	10°26.2	13.4'	55.9'	101°20.6	97°17.9	75°30.1	66°38.4	55°21.5	11°37.5	48°05.1	73°22.1
3	55°18.3	14.0'	10°39.6	13.3'	55.9'	100°50.2	96°46.2	75°00.1	66°08.7	54°50.3	11°13.8	48°32.2	73°49.3
4	69°51.3	13.9'	10°52.9	13.3'	56.0'	100°19.8	96°14.5	74°30.2	65°38.9	54°19.1	10°50.7	48°59.3	74°16.6
5	84°24.3	13.9'	11°06.2	13.3'	56.0'	99°49.4	95°42.7	74°00.2	65°09.2	53°47.9	10°28.5	49°26.5	74°44.0
6	98°57.1	13.8'	N11°19.5	13.2'	56.0'	99°18.9	95°10.9	73°30.2	64°39.4	53°16.7	10°07.0	49°53.9	75°11.4
7	113°29.9	13.7'	11°32.7	13.2'	56.0'	98°48.3	94°39.1	73°00.1	64°09.7	52°45.5	9°46.6	50°21.3	75°38.8
8	128°02.6	13.6'	11°45.9	13.1'	56.0'	98°17.8	94°07.3	72°30.1	63°39.9	52°14.2		50°48.8	76°06.3
9	142°35.2	13.6'	$11^{\circ}59.1$	13.1'	56.1'	97°47.2	93°35.4	72°00.1	63°10.1	51°43.0		51°16.3	76°33.8
10	157°07.8	13.5'	12°12.2	13.1'	56.1'	97°16.6	93°03.5	71°30.0	62°40.4	51°11.7		51°44.0	77°01.4
11	171°40.3	13.4'	12°25.2	13.0'	56.1'	96°46.0	92°31.6	71°00.0	62°10.6	50°40.4		52°11.8	77°29.0
12	186°12.7	13.4'	N12°38.3	13.0'	56.1'	96°15.3	91°59.6	70°29.9	61°40.8	50°09.1		52°39.6	77°56.6
13	200°45.1	13.3'	12°51.2	12.9'	56.1'	95°44.7	91°27.7	69° 59.8	61°11.0	49°37.8		53°07.5	78°24.3
14	215°17.4	13.2'	13°04.2	12.9'	56.2'	95°14.0	90°55.7	69° 29.7	60°41.3	49°06.5		53°35.5	78°52.0
15	229°49.6	13.1'	13°17.0	12.8'	56.2'	94°43.2	90°23.7	68° 59.6	60°11.5	48°35.1		54°03.5	79°19.8
16	244°21.7	13.0'	13°29.8	12.8'	56.2'	94°12.5	89°51.6	68° 29.5	59°41.7	48°03.8		54°31.6	79°47.6
17	258°53.7	13.0'	13°42.6	12.7'	56.2'	93°41.7	89°19.6	67°59.3	59°11.9	47°32.4		54°59.8	80°15.4
18	273°25.7	12.9'	N13°55.3	12.7'	56.3'	93°10.9	88°47.5	67°29.2	58° 42.2	47°01.1		55°28.1	80°43.2
19	287°57.6	12.8'	14°08.0	12.6'	56.3'	92°40.0	88°15.4	66° 59.1	58° 12.4	46°29.7		55°56.4	81°11.1
20	302°29.4	12.7'	14°20.6	12.6'	56.3'	92°09.2	87°43.2	66°28.9	57° 42.7	45°58.3		56°24.8	81°39.0
21	317°01.1	12.6'	14°33.2	12.5'	56.3'	91°38.3	87°11.1	65°58.8	57° 12.9	45°26.9		56°53.3	82°07.0
22	331°32.8	12.6'	14°45.7	12.4'	56.3'	91°07.4	86°38.9	65°28.6	56°43.2	44°55.5		57°21.9	82°35.0
23	346°04.3	12.5'	14°58.1	12.4'	56.4'	90°36.4	86°06.7	64°58.4	56°13.4	44°24.1		57°50.5	83°03.0
15 th	SD	$= 15.2^{\prime}$	Mer. pass	. 23:58									

Moon (16th Oct) Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Aldebaran	+Saturn	+Fomalhaut	+Deneb	+Altair
0	0°35.8	12.4'	N 15°10.5	12.3'	56.4'		90°05.5	85°34.4	43°52.7		58°19.1		83°31.1
1	15°07.2	12.3'	15°22.8	12.2'	56.4'		89°34.5	85°02.2	43°21.3		58°47.8		83°59.2
2	29°38.5	12.2'	15°35.0	12.2'	56.4'		89°03.5	84° 29.9	42°49.9		59°16.6		84°27.3
3	44°09.7	12.1'	15°47.2	12.1'	56.4'		88° 32.5	83°57.6	42°18.5		59°45.5		84°55.4
4	58°40.9	12.1'	15°59.3	12.1'	56.5'		88°01.4	83°25.2	41°47.0		60°14.4		85°23.6
5	73°11.9	12.0'	$16^{\circ}11.4$	12.0'	56.5'	119°50.1	87°30.4	82°52.9	41°15.6		60°43.4		85°51.8
6	87°42.9	11.9'	$N16^{\circ}23.4$	11.9'	56.5'	119°17.6	86°59.3	82°20.5	40°44.2		61°12.4		86°20.0
7	102°13.8	11.8'	16°35.3	11.8'	56.5'	118°45.1	86°28.1	81°48.1	40°12.8		61°41.4		86°48.2
8	116°44.5	11.7'	$16^{\circ}47.1$	11.8'	56.6'	118° 12.5	85°57.0	81° 15.7	39°41.3		62°10.6		87°16.5
9	131°15.2	11.6'	$16^{\circ}58.9$	11.7'	56.6'	117°40.0	85°25.8	80°43.2	39°09.9	11°02.4	62°39.8		87°44.8
10	145°45.8	11.5'	$17^{\circ}10.6$	11.6'	56.6'	117°07.4	84°54.7	80° 10.8	38°38.5	11°26.3	63°09.0		88°13.1
11	160°16.4	11.4'	17°22.2	11.5'	56.6'	116°34.8	84°23.5	79°38.3	38°07.1	11°51.0	63°38.3		88°41.5
12	174°46.8	11.3'	N17°33.7	11.5'	56.6'	116°02.1	83°52.2	79°05.7	37°35.7	12°16.3	64°07.6		89°09.8
13	189°17.1	11.2'	17°45.2	11.4'	56.7'	115°29.5	83°21.0	78°33.2	37°04.3	12°42.2	64°37.0		89°38.2
14	203°47.4	11.2'	17°56.6	11.3'	56.7'	114°56.8	82°49.8	78°00.6	36°32.9	13°08.6	65°06.4		90°06.6
15	218°17.5	11.1'	$18^{\circ}07.9$	11.2'	56.7'	114°24.1	82° 18.5	77°28.1	36°01.5	13°35.6	65°35.9		90°35.1
16	232°47.6	11.0'	$18^{\circ}19.1$	11.1'	56.7'	113°51.4	81°47.2	76°55.4	35°30.1	14°02.9	66°05.5		91°03.5
17	247°17.5	10.9'	18°30.3	11.1'	56.7'	113°18.6	81°15.9	76°22.8	34°58.8	14°30.7	66°35.1	71°29.4	91°32.0
18	261°47.4	10.8'	N18°41.3	11.0'	56.8'	112°45.8	80°44.5	75°50.2	34°27.5	14°58.8	67°04.7	71°44.5	92°00.5
19	276°17.2	10.7'	18°52.3	10.9'	56.8'	112°13.0	80°13.2	75° 17.5	33°56.1	15°27.2	67°34.3	71°59.8	92°29.0
20	290°46.9	10.6'	19°03.1	10.8'	56.8'	111°40.2	79°41.8	74°44.8	33°24.9	15°56.0	68°04.1	72°15.1	92°57.5
21	305°16.5	10.5'	19°13.9	10.7'	56.8'	111°07.4	79°10.4	74°12.1	32°53.6	16°25.1	68°33.8	72°30.5	93°26.0
22	319°46.0	10.4'	19°24.6	10.6'	56.9'	110°34.5	78°39.0	73°39.3	32°22.3	16°54.4	69°03.6	72°46.0	93°54.6
23	334°15.4	10.3'	19°35.2	10.5'	56.9'	110°01.6	78°07.6	73°06.6	31°51.1	17°23.9	69°33.5	73°01.6	94°23.1
16 th	SE	O = 15.4	l' Mer. pas	ss:-									

n Wigon (17" Oct) Lunar Distance (objects with largest nourly LD dei	h	Moon (17 th Oct)	Lunar Distance (objects with largest hourly LD delt
--	---	-----------------------------	---

Sun	GHA	ν	Dec	d	HP	-Jupiter	-Regulus	-Procyon	-Pollux	+Saturn	+Fomalhaut	+Deneb	+Altair
0	348°44.7	10.2'	N 19°45.7	10.4'	56.9'		109°28.7	77°36.2	72°33.8	17°53.7	70°03.4	73°17.3	94°51.7
1	3°13.9	10.1'	19°56.2	10.3'	56.9'		108°55.8	77°04.7	72°01.0	18°23.7	70°33.3	73°33.1	95°20.3
2	17°43.0	10.0'	20°06.5	10.2'	56.9'		108°22.8	76°33.3	71°28.1	18°53.8	71°03.3	73°48.9	95°48.9
3	32°12.0	9.9'	20°16.7	10.1'	57.0'		107°49.8	76°01.8	70°55.3	19°24.2	71°33.3	74°04.9	96°17.6
4	46°40.9	9.8'	20°26.8	10.0'	57.0'		107°16.8	75°30.3	70°22.4	19°54.7	72°03.3	74°20.9	96°46.2
5	61°09.8	9.7'	20°36.8	9.9'	57.0'		106°43.8	74°58.8	69°49.5	20°25.4	72°33.4	74°37.0	97°14.8
6	75°38.5	9.6'	N20°46.8	9.8'	57.0'		106°10.7	74°27.2	69°16.6	20°56.2	73°03.5	74°53.2	97°43.5
7	90°07.1	9.5'	20°56.6	9.7'	57.0'		105°37.7	73°55.7	68°43.7	21°27.2	73°33.7	75°09.4	98°12.1
8	104°35.6	9.4'	21°06.3	9.6'	57.1'		105°04.6	73°24.2	68°10.7	21°58.2	74°03.9	75°25.7	98°40.8
9	119°04.1	9.3'	21°15.9	9.5'	57.1'		104°31.4	72°52.6	67°37.8	22°29.5	74°34.1	75°42.1	99°09.5
10	133°32.4	9.2'	21°25.4	9.4'	57.1'		103°58.3	72°21.0	67°04.8	23°00.8	75°04.3	75°58.6	99°38.1
11	148°00.7	9.2'	21°34.8	9.3'	57.1'		103°25.1	71°49.4	66°31.7	23°32.2	75°34.6	76°15.1	100°06.8
12	162°28.8	9.1'	N 21°44.0	9.2'	57.1'		102°52.0	71°17.9	65°58.7	24°03.7	76°05.0	76°31.7	100°35.5
13	176°56.9	9.0'	21°53.2	9.0'	57.2'	119°33.5	102°18.8	70°46.3	65°25.6	24°35.4	76°35.3	76°48.4	101°04.2
14	191°24.8	8.9'	22°02.2	8.9'	57.2'	119°00.8	101°45.5	70°14.6	64°52.6	25°07.1	77°05.7	77°05.2	101°32.9
15	205°52.7	8.8'	22°11.2	8.8'	57.2'	118°28.1	101°12.3	69°43.0	64°19.5	25°38.9	77°36.2	77°22.0	102°01.6
16	220°20.5	8.7'	22°20.0	8.7'	57.2'	117°55.4	100°39.0	69°11.4	63°46.4	26°10.8	78°06.6	77°38.8	102°30.3
17	234°48.1	8.6'	22°28.7	8.6'	57.2'	117°22.7	100°05.7	68°39.7	63°13.2	26°42.8	78°37.1	77°55.8	102°59.0
18	249°15.7	8.5'	N22°37.3	8.5'	57.3'	116°50.0	99°32.4	68°08.1	62°40.1	27°14.9	79°07.6	78°12.8	103°27.7
19	263°43.2	8.4'	22°45.7	8.3'	57.3'	116°17.2	98°59.1	67°36.4	62°06.9	27°47.0	79°38.2	78°29.9	103°56.4
20	278°10.6	8.3'	22°54.0	8.2'	57.3'	115°44.4	98°25.7	67°04.8	61°33.7	28°19.2	80°08.7	78°47.0	104°25.1
21	292°37.9	8.2'	23°02.2	8.1'	57.3'	115°11.6	97°52.4	66°33.1	61°00.5	28°51.5	80°39.3	79°04.2	104°53.8
22	307°05.1	8.1'	23°10.3	8.0'	57.3'	114°38.8	97°19.0	66°01.4	60°27.3	29°23.8	81°10.0	79°21.4	105°22.5
23	321°32.2	8.0'	23°18.3	7.8'	57.4'	114°05.9	96°45.5	65°29.8	59°54.0	29°56.2	81°40.6	79°38.7	105°51.1
17 th	SD	$= 15.5^{\prime}$	Mer. pass	. 00:47									

h Moon (18 th Oct)	Lunar Distance (ob	jects with largest hourly	LD delta)
-------------------------------	--------------------	---------------------------	-----------

Mon	GHA	ν	Dec	d	HP	-Jupiter	-Regulus	-Procyon	-Pollux	+Saturn	+Deneb	+Fomalhaut	+Altair
0	335°59.2	7.9'	N23°26.1	7.7'	57.4'	113°33.0	96°12.1	64°58.1	59°20.8	30°28.7	79°56.0	82°11.3	106°19.8
1	350°26.2	7.8'	23°33.8	7.6'	57.4'	113°00.1	95°38.7	64°26.4	58°47.5	31°01.2	80°13.5	82°42.0	106°48.5
2	4°53.0	7.7'	23°41.4	7.4'	57.4'	112°27.2	95°05.2	63°54.7	58°14.2	31°33.8	80°30.9	83°12.7	107°17.1
3	19°19.7	7.7'	23°48.8	7.3'	57.4'	111°54.3	94°31.7	63°23.0	57°40.9	32°06.4	80°48.4	83°43.5	107°45.8
4	33°46.4	7.6'	23°56.1	7.2'	57.5'	111°21.3	93°58.2	62°51.3	57°07.5	32°39.1	81°06.0	84°14.3	108°14.4
5	48°13.0	7.5'	24°03.3	7.0'	57.5'	110°48.3	93°24.6	$62^{\circ}19.6$	56°34.2	33°11.8	81°23.6	84°45.1	108°43.0
6	62°39.5	7.4'	N24°10.3	6.9'	57.5'	110°15.3	92°51.1	61°47.9	56°00.8	33°44.6	81°41.2	85°15.9	109°11.6
7	77°05.9	7.3'	24°17.2	6.8'	57.5'	109°42.3	92°17.5	$61^{\circ}16.2$	55°27.4	34°17.4	81°58.9	85°46.8	109°40.2
8	91°32.2	7.2'	24°24.0	6.6'	57.5'	109°09.3	91°43.9	60°44.5	54°54.0	34°50.3	82°16.7	86°17.6	110°08.8
9	105°58.4	7.1'	24°30.6	6.5'	57.6'	108°36.2	91°10.3	60°12.9	54°20.6	35°23.2	82°34.4	86°48.5	110°37.4
10	120°24.5	7.1'	24°37.1	6.3'	57.6'	108°03.1	90°36.6	59°41.2	53°47.2	35°56.2	82°52.3	87°19.5	111°05.9
11	134°50.6	7.0'	24°43.4	6.2'	57.6'	107°30.0	90°03.0	59°09.5	53°13.7	36°29.2	83°10.1	87°50.4	111°34.5
12	149°16.6	6.9'	N 24°49.6	6.0'	57.6'	106°56.9	89°29.3	58°37.8	52°40.2	37°02.3	83°28.0	88°21.3	112°03.0
13	163°42.5	6.8'	24°55.6	5.9'	57.6'	106°23.7	88°55.6	$58^{\circ}06.1$	52°06.8	37°35.4	83°46.0	88°52.3	112°31.4
14	178°08.3	6.7'	25°01.5	5.8'	57.6'	105°50.6	88°21.9	57°34.5	51°33.3	38°08.5	84°03.9	89°23.3	112°59.9
15	192°34.0	6.7'	25°07.3	5.6'	57.7'	105°17.4	87°48.2	57°02.8	50°59.7	38°41.7	84°22.0	89°54.3	113°28.3
16	206°59.7	6.6'	25°12.9	5.5'	57.7'	104°44.2	87°14.4	56°31.2	50°26.2	39°14.9	84°40.0	90°25.4	113°56.7
17	221°25.2	6.5'	25°18.3	5.3'	57.7'	104°11.0	86°40.6	55°59.5	49°52.7	39°48.1	84°58.1	90°56.4	114°25.1
18	235°50.7	6.4'	N25°23.6	5.2'	57.7'	103°37.7	86°06.9	55°27.9	49°19.1	40°21.4	85°16.2	91°27.5	114°53.5
19	250°16.2	6.4'	25°28.8	5.0'	57.7'	103°04.5	85°33.0	54°56.3	48°45.5	40°54.7	85°34.3	91°58.5	115°21.8
20	264°41.5	6.3'	25°33.8	4.8'	57.8'	102°31.2	84°59.2	54°24.6	48°12.0	41°28.1	85°52.5	92°29.6	115°50.1
21	279°06.8	6.2'	25°38.6	4.7'	57.8'	101°57.9	84°25.4	53°53.0	47°38.4	42°01.4	86°10.7	93°00.7	116°18.4
22	293°32.0	6.1'	25°43.3	4.5'	57.8'	101°24.6	83°51.5	53°21.5	47°04.7	42°34.9	86°28.9	93°31.8	116°46.6
23	307°57.2	6.1'	25°47.9	4.4'	57.8'	100°51.2	83°17.6	52°49.9	46°31.1	43°08.3	86°47.2	94°03.0	117°14.8
18 th	SD =	= 15.7′	Mer. pass	. 01:40)								

h	Moon	(19 th	Oct)	۱

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Jupiter	-Regulus	-Procyon	-Pollux	+Aldebaran	+Saturn	+Fomalhaut	+Altair
0	322°22.3	6.0'	$N25^{\circ}52.2$	4.2'	57.8'	100°17.9	82°43.7	52° 18.4	45°57.5		43°41.8	94°34.1	117°42.9
1	336°47.3	6.0'	25°56.5	4.1'	57.8'	99°44.5	82°09.8	51°46.8	45°23.8		44°15.3	95°05.3	118°11.0
2	351°12.2	5.9'	26°00.5	3.9'	57.9'	99°11.1	81°35.9	51° 15.3	44°50.2		44°48.8	95°36.5	118°39.1
3	5°37.1	5.8'	26°04.4	3.7'	57.9'	98°37.7	81°01.9	50°43.8	44°16.5		45°22.4	96°07.6	119°07.1
4	20°02.0	5.8'	26°08.2	3.6'	57.9'	98°04.3	80°28.0	50°12.4	43°42.8		45°56.0	96°38.8	119°35.1
5	34°26.7	5.7'	$26^{\circ}11.7$	3.4'	57.9'	97°30.8	79°54.0	49°40.9	43°09.1		46°29.6	97°10.0	
6	48°51.4	5.7'	$N26^{\circ}15.2$	3.3'	57.9'	96°57.4	79°20.0	49°09.5	42°35.4		47°03.3	97°41.3	
7	63°16.1	5.6'	26°18.4	3.1'	58.0'	96°23.9	78°45.9	48°38.1	42°01.7		47°37.0	98°12.5	
8	77°40.7	5.6'	$26^{\circ}21.5$	2.9'	58.0'	95°50.4	78°11.9	48°06.7	41°28.0		48°10.7	98°43.7	
9	92°05.3	5.5'	26°24.4	2.8'	58.0'	95°16.9	77°37.8	47°35.4	40°54.2		48°44.4	99°14.9	
10	106°29.8	5.5'	26°27.2	2.6'	58.0'	94°43.3	77°03.8	47°04.1	40°20.5		49°18.2	99°46.2	
11	120°54.2	5.4'	26°29.8	2.4'	58.0'	94°09.8	76°29.7	46°32.8	39°46.7		49°52.0	100°17.4	
12	135°18.6	5.4'	N26°32.2	2.3'	58.0'	93°36.2	75°55.6	46°01.6	39°13.0		50°25.8	100°48.7	
13	149°43.0	5.3'	26°34.5	2.1'	58.1'	93°02.6	75°21.4	45°30.4	38°39.2		50°59.7	101°19.9	
14	164°07.3	5.3'	26°36.5	1.9'	58.1'	92°29.0	74°47.3	44°59.3	38°05.4		51°33.5	101°51.2	
15	178°31.6	5.2'	26°38.5	1.7'	58.1'	91°55.4	74°13.1	44°28.2	37°31.6		52°07.4	102°22.5	
16	192°55.8	5.2'	26°40.2	1.6'	58.1'	91°21.8	73°38.9	43°57.1	36°57.8		52°41.3	102°53.8	
17	207°20.0	5.2'	26°41.8	1.4'	58.1'	90°48.1	73°04.8	43°26.1	36°24.1		53°15.3	103°25.0	
18	221°44.2	5.1'	N26°43.2	1.2'	58.1'	90°14.4	72°30.5	42°55.1	35°50.3		53°49.2	103°56.3	
19	236°08.3	5.1'	26°44.4	1.1'	58.2'	89°40.7	71°56.3	42°24.2	35°16.4		54°23.2	104°27.6	
20	250°32.4	5.1'	26°45.5	0.9'	58.2'	89°07.0	71°22.1	41°53.3	34°42.6		54°57.2	104°58.9	
21	264°56.5	5.0'	26°46.4	0.7'	58.2'	88°33.3	70°47.8	41°22.5	34°08.8	13°03.5	55°31.3	105°30.1	
22	279°20.5	5.0'	26°47.1	0.5'	58.2'	87°59.6	70°13.5	40°51.8	33°35.0	13°26.8	56°05.3	106°01.4	
23	293°44.5	5.0'	26°47.7	0.4'	58.2'	87°25.8	69°39.2	40°21.1	33°01.2	13°50.8	56°39.4	106°32.7	
19 th	SD =	= 15.8′	Mer. pass	. 02:3	7								

h Moon (20th Oct)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Sun	-Jupiter	-Regulus	-Pollux	+Aldebaran	+Capella	+Saturn	+Fomalhaut
0	308°08.5	5.0'	N26°48.0	0.2'	58.2'	•	86°52.1	69°04.9	32°27.4	14° 15.5	, capena	57°13.5	107°04.0
1 1	322°32.5	5.0'	26°48.2	0.2	56.∠ 58.3'		86°18.3	68°30.6	32 27.4 31°53.6	14 15.5 14°40.8		57° 47.6	107 04.0 107°35.2
2	336°56.4	4.9'	26°48.3	-0.1'	58.3		85°44.5	67°56.3	31°19.8	15°06.7		58°21.8	107 35.2 108°06.5
3	351°20.4	4.9'	26°48.1	-0.1	58.3		85°10.6	67°21.9	30°46.0	15°33.2		58°55.9	108°37.7
4	5°44.3	4.9'	26° 47.8	-0.5	58.3'		84°36.8	66°47.6	30°12.2	16°00.2		59°30.1	100°09.0
5	20°08.2	4.9'	26°47.3	-0.7'	58.3'		84°03.0	66°13.2	29°38.4	16°27.6		60°04.3	109°40.2
6	34°32.1	4.9'	N26°46.6	-0.8'	58.3'		83°29.1	65°38.8	29°04.6	16°55.5		60°38.6	110°11.5
7	48°56.0	4.9'	26°45.8	-1.0'	58.3'		82°55.2	65°04.3	28°30.8	17°23.8		61°12.8	110 11.3 110°42.7
8	63°19.9	4.9'	26°44.8	-1.2'	58.4		82°21.3	64°29.9	27°57.0	17°52.4		61°47.1	111° 13.9
9	77°43.7	4.9'	26°43.6	-1.4'	58.4'		81°47.4	63°55.5	27°23.3	18°21.4		62°21.4	111°45.1
10	92°07.6	4.9'	26°42.2	-1.5'	58.4'	119°50.8	81°13.5	63°21.0	26°49.5	18°50.7		62°55.7	112°16.3
11	106°31.5	4.9'	26°40.7	-1.7'	58.4'	119°18.9	80°39.5	62°46.5	26°15.8	19°20.2		63°30.0	112°47.5
12	120°55.4	4.9'	N 26°39.0	-1.9'	58.4'	118°47.1	80°05.6	62°12.0	25°42.1	19°50.1		64°04.3	113°18.7
13	135°19.2	4.9'	26°37.1	-2.1'	58.4'	118°15.2	79°31.6	61°37.5	25°08.4	20°20.2		64°38.7	113°49.9
14	149°43.1	4.9'	26°35.0	-2.2'	58.4'	117°43.2	78°57.6	61°03.0	24°34.7	20°50.5		65°13.1	114°21.0
15	164°07.0	4.9'	26°32.8	-2.4'	58.5'	117°11.3	78°23.6	60°28.5	24°01.0	21°21.0		65°47.5	114°52.1
16	178°30.9	4.9'	26°30.3	-2.6'	58.5'	116°39.4	77°49.6	59°53.9	23°27.4	21°51.8		66°21.9	115°23.2
17	192°54.8	4.9'	26°27.8	-2.8'	58.5'	116°07.4	77°15.6	59°19.3	22°53.8	22°22.7		66°56.3	115°54.3
18	207°18.7	4.9'	N26°25.0	-2.9'	58.5'	115°35.4	76°41.5	58°44.8	22°20.3	22°53.8	21°47.8	67°30.8	116°25.4
19	221°42.7	5.0'	26°22.1	-3.1'	58.5'	115°03.4	76°07.5	58°10.2	21°46.8	23°25.1	22°04.2	68°05.3	116°56.5
20	236°06.6	5.0'	$26^{\circ}18.9$	-3.3'	58.5'	114°31.4	75°33.4	57°35.6	21°13.3	23°56.6	22°21.2	68°39.7	117°27.5
21	250°30.6	5.0'	$26^{\circ}15.7$	-3.5'	58.5'	113°59.4	74°59.3	57°00.9	20°39.8	24°28.2	22°38.8	69°14.2	117°58.5
22	264°54.6	5.0'	26°12.2	-3.6'	58.6'	113°27.3	74°25.2	56°26.3	20°06.5	24°59.9	22°57.1	69°48.8	118°29.5
23	279°18.6	5.0'	26°08.6	-3.8'	58.6'	112°55.3	73°51.1	55°51.6	19°33.1	25°31.8	23°16.0	70°23.3	119°00.4
20 th	SD :	= 15.9'	Mer. pass	s. 03:36	Sun SD = $16.1'$								

h Moon (21st Oct)

Lunar Distance (objects with largest hourly LD delta) HP -Sun - Juniter - Regulus - Pollux + Betelgeuse + Capella + Aldebaran

Thu	GHA	ν	Dec	d	HP	HP -Sun -Jupiter -Regul			-Pollux	+Betelgeuse	+Capella	+Aldebaran	+Saturn
0	293°42.6	5.1'	N 26°04.8	-4.0'	58.6'	112°23.2	73° 17.0	55°17.0	18°59.9		23°35.5	26°03.8	70°57.9
1	308°06.7	5.1'	26°00.8	-4.1'	58.6'	111°51.1	72°42.8	54°42.3	18°26.7		23°55.5	26°35.9	71°32.4
2	322°30.8	5.1'	25°56.7	-4.3'	58.6'	111°19.0	72°08.7	54°07.6	17°53.6		24°16.0	27°08.1	72°07.0
3	336°54.9	5.2'	25°52.4	-4.5'	58.6'	110°46.9	71°34.5	53°32.9	17°20.6		24°37.0	27°40.4	72°41.6
4	351°19.1	5.2'	25°47.9	-4.7'	58.6'	110° 14.7	71°00.3	52°58.2	16°47.7		24°58.6	28° 12.9	73°16.3
5	5°43.3	5.2'	25°43.2	-4.8'	58.7'	109°42.6	70°26.1	52°23.5	16°14.9		25°20.6	28°45.4	73°50.9
6	20°07.5	5.3'	N25°38.4	-5.0'	58.7'	109°10.4	69°51.9	51°48.7	15°42.2		25°43.0	29° 18.0	74°25.6
7	34°31.8	5.3'	25°33.4	-5.2'	58.7'	108°38.2	69° 17.7	51°13.9	15°09.7		26°05.9	29°50.8	75°00.2
8	48°56.1	5.3'	25°28.3	-5.3'	58.7'	108°06.0	68°43.4	50°39.2	14°37.3		26°29.2	30°23.6	75°34.9
9	63°20.4	5.4'	25°22.9	-5.5'	58.7'	107°33.8	68°09.2	50°04.4	14°05.1		26°52.9	30°56.4	76°09.6
10	77°44.8	5.4'	25°17.5	-5.7'	58.7'	107°01.6	67°34.9	49°29.6	13°33.1	21°36.3	27° 17.0	31°29.4	76°44.4
11	92°09.2	5.5'	$25^{\circ}11.8$	-5.8'	58.7'	106°29.4	67°00.6	48°54.8	13°01.3	21°52.5	27°41.4	32°02.4	77°19.1
12	106°33.7	5.5'	N 25°06.0	-6.0'	58.8'	105°57.1	66°26.3	48°19.9	12°29.8	22°09.5	28°06.2	32°35.5	77°53.8
13	120°58.2	5.6'	25°00.0	-6.1'	58.8'	105°24.8	65°52.0	47°45.1	11°58.6	22°27.1	28°31.3	33°08.7	78°28.6
14	135°22.8	5.6'	24°53.9	-6.3'	58.8'	104°52.5	65° 17.7	47° 10.2	11°27.7	22°45.3	28°56.7	33°41.9	79°03.4
15	149°47.4	5.7'	24°47.6	-6.5'	58.8'	104°20.3	64°43.4	46°35.4	10°57.2	23°04.2	29°22.5	34° 15.2	79°38.2
16	164°12.0	5.7'	24°41.1	-6.6'	58.8'	103°47.9	64°09.1	46°00.5	10°27.1	23°23.6	29°48.5	34°48.5	80°13.0
17	178°36.8	5.8'	24°34.5	-6.8'	58.8'	103°15.6	63°34.7	45°25.6	9°57.6	23°43.6	30°14.8	35°22.0	80°47.8
18	193°01.5	5.8'	N24°27.7	-6.9'	58.8'	102°43.3	63°00.3	44°50.7	9°28.7	24°04.2	30°41.4	35°55.4	81°22.7
19	207°26.3	5.9'	24°20.8	-7.1'	58.8'	102° 10.9	62°26.0	44° 15.8	9°00.4	24°25.3	31°08.3	36°28.9	81°57.5
20	221°51.2	5.9'	$24^{\circ}13.7$	-7.3'	58.9'	101°38.6	61°51.6	43°40.9	8°33.0	24°46.9	31°35.4	37°02.5	82°32.4
21	236°16.2	6.0'	24°06.4	-7.4'	58.9'	101°06.2	61°17.2	43°05.9	8°06.5	25°08.9	32°02.7	37°36.1	83°07.3
22	250°41.1	6.0'	23°59.0	-7.6'	58.9'	100°33.8	60°42.7	42°31.0		25°31.4	32°30.3	38°09.8	83°42.1
23	265°06.2 6.1' 23°51.4 -7.7' 58.9					100°01.4	60°08.3	41°56.0		25°54.4	32°58.1	38°43.5	84°17.1
21 st	SD = 16.0' Mer. pass. 04:36								Sur	SD = 16.1'			

h	Moon	(22nd	Oct	
n	IVIOON	1 / /	UCTI	

h		Моо	n (22 nd O	ct)			Lunar D	istance	(objects v	with larg	est hourly	LD delta)	
Fri	GHA	ν	Dec	d	HP	-Acrux	-Sun	-Jupiter	-Regulus	+Pollux	+Capella	+Aldebaran	+Saturn
0	279°31.3	6.2'	N23°43.7	-7.9'	58.9'	105°11.6	99°29.0	59°33.9	41°21.1		33° 26.0	39°17.3	84°52.0
1	293°56.5	6.2'	23°35.8	-8.0'	58.9'	104°49.2	98°56.5	58°59.4	40°46.1		33°54.3	39°51.1	85°26.9
2	308°21.7	6.3'	23°27.8	-8.2'	58.9'	104°26.6	98°24.1	58° 25.0	40°11.1		34°22.7	40°24.9	86°01.9
3	322°47.0	6.4'	23° 19.6	-8.3'	58.9'	104°04.0	97°51.6	57° 50.5	39°36.1		34°51.2	40°58.8	86°36.8
4	337°12.4	6.4'	23°11.3	-8.5'	58.9'	103°41.4	97°19.1	57°16.0	39°01.1		35°20.0	41°32.7	87°11.8
5	351°37.8	6.5'	23°02.8	-8.6'	59.0'	103°18.7	96°46.7	56°41.5	38°26.0		35°49.0	42°06.7	87°46.8
6	6°03.3	6.6'	N22°54.2	-8.8'	59.0'	102°55.9	96°14.2	56°07.0	37°51.0		36°18.1	42°40.7	88°21.8
7	20°28.8	6.6'	22°45.5	-8.9'	59.0'	102°33.1	95°41.6	55°32.5	37° 15.9		36°47.3	43°14.7	88°56.8
8	34°54.4	6.7'	22°36.6	-9.0'	59.0'	102°10.2	95°09.1	54°58.0	36°40.9		37° 16.8	43°48.8	89°31.8
9	49°20.1	6.8'	22°27.5	-9.2'	59.0'	101°47.3	94°36.6	54°23.4	36°05.8		37°46.3	44°22.9	90°06.9
10	63°45.9	6.8'	22°18.3	-9.3'	59.0'	101°24.3	94°04.0	53°48.9	35°30.7		38° 16.1	44°57.0	90°41.9
11	78°11.7	6.9'	22°09.0	-9.5'	59.0'	101°01.2	93°31.5	53°14.3	34°55.7		38° 45.9	45°31.2	91°17.0
12	92°37.6	7.0'	N 21°59.5	-9.6'	59.0'	100°38.2	92°58.9	52°39.8	34°20.6		39° 15.9	46°05.4	91°52.0
13	107°03.5	7.0'	21°49.9	-9.7'	59.0'	100°15.0	92°26.3	52°05.2	33°45.4		39°46.0	46°39.6	92°27.1
14	121°29.6	7.1'	21°40.1	-9.9'	59.1'	99°51.8	91°53.7	51°30.6	33°10.3		40°16.3	47°13.9	93°02.2
15	135°55.7	7.2'	21°30.3	-10.0'	59.1'	99°28.6	91°21.1	50°56.0	32°35.2		40° 46.7	47°48.2	93°37.3
16	150°21.8	7.2'	21°20.3	-10.1'	59.1'	99°05.4	90°48.5	50°21.4	32°00.1		41° 17.2	48°22.5	94°12.5
17	164°48.1	7.3'	$21^{\circ}10.1$	-10.3'	59.1'	98°42.1	90°15.9	49°46.8	31°24.9		41°47.8	48°56.9	94°47.6
18	179°14.4	7.4'	N 20°59.8	-10.4'	59.1'	98°18.7	89°43.2	49°12.2	30°49.8		42° 18.5	49°31.3	95°22.7
19	193°40.8	7.5'	20°49.4	-10.5'	59.1'	97°55.4	89°10.6	48° 37.6	30° 14.6		42°49.3	50°05.7	95°57.9
20	208°07.2	7.5'	20°38.9	-10.7'	59.1'	97°31.9	88°37.9	48°02.9	29°39.5	9°12.4	43°20.2	50°40.1	96°33.1
21	222°33.8	7.6'	20°28.2	-10.8'	59.1'	97°08.5	88°05.2	47°28.3	29°04.3	9°41.2	43°51.2	51°14.5	97°08.2
22	237°00.3	7.7'	20° 17.4	-10.9'	59.1'	96°45.0	87°32.5	46°53.6	28°29.1	10°10.7	44°22.3	51°49.0	97°43.4
23	251°27.0	7.7'	20°06.5	-11.0'	59.1'	96°21.5	86°59.8	46° 19.0	27°53.9	10°40.8	44°53.5	52°23.5	98°18.6
22 nd	SD	= 16.1	.' Mer. pas	ss. 05:35					Sun S	D = 16.1'			

h		Моо	n (23 rd O	ct)			Lunar [Distance	(objects	with larg	gest hourly	/ LD delta)	
Sat	GHA	ν	Dec	d	HP	-Acrux	-Sun	-Jupiter	-Regulus	+Pollux	+Capella	+Aldebaran	+Saturn
0	265°53.8	7.8'	N 19°55.4	-11.2'	59.1'	95°58.0	86°27.1	45°44.3	27° 18.7	11°11.4	45°24.8	52°58.0	98°53.8
1	280°20.6	7.9'	19°44.3	-11.3'	59.2'	95°34.4	85°54.4	45°09.6	26°43.6	11°42.5	45°56.2	53°32.6	99°29.0
2	294°47.5	8.0'	19°33.0	-11.4'	59.2'	95°10.8	85°21.7	44°34.9	26°08.4	12°14.0	46°27.7	54°07.2	100°04.3
3	309°14.4	8.0'	19°21.6	-11.5'	59.2'	94°47.2	84°48.9	44°00.2	25°33.1	12°45.8	46°59.2	54°41.8	100°39.5
4	323°41.5	8.1'	$19^{\circ}10.1$	-11.6'	59.2'	94°23.5	84°16.2	43°25.5	24°57.9	13°17.9	47°30.8	55°16.4	101°14.7
5	338°08.6	8.2'	18°58.4	-11.8'	59.2'	93°59.9	83°43.4	42°50.8	24°22.7	13°50.2	48°02.5	55°51.0	101°50.0
6	352°35.7	8.2'	N18°46.7	-11.9'	59.2'	93°36.2	83° 10.6	42°16.1	23°47.5	14°22.9	48°34.3	56°25.7	102°25.3
7	7°03.0	8.3'	18°34.8	-12.0'	59.2'	93°12.5	82°37.9	41°41.4	23°12.3	14°55.7	49°06.1	57°00.4	103°00.5
8	21°30.3	8.4'	18°22.8	-12.1'	59.2'	92°48.7	82°05.1	41°06.7	22°37.1	15°28.7	49°38.0	57°35.1	103°35.8
9	35°57.7	8.5'	18°10.7	-12.2'	59.2'	92°25.0	81°32.3	40°32.0	22°01.9	16°01.9	50°10.0	58°09.8	104°11.1
10	50°25.2	8.5'	17°58.5	-12.3'	59.2'	92°01.2	80° 59.5	39°57.2	21°26.7	16°35.3	50°42.1	58°44.5	104°46.4
11	64°52.7	8.6'	17°46.2	-12.4'	59.2'	91°37.5	80°26.6	39°22.5	20°51.5	17°08.8	51°14.2	59°19.3	105°21.7
12	79°20.3	8.7'	$N17^{\circ}33.8$	-12.5'	59.2'	91°13.7	79°53.8	38°47.8	20° 16.2	17°42.5	51°46.3	59°54.0	105°57.0
13	93°48.0	8.7'	17°21.3	-12.6'	59.3'	90°49.9	79°21.0	38°13.0	19°41.0	18°16.2	52°18.6	60°28.8	106°32.3
14	108°15.7	8.8'	17°08.7	-12.7'	59.3'	90°26.1	78°48.1	37°38.3	19°05.8	18°50.1	52°50.9	61°03.6	107°07.7
15	122°43.6	8.9'	16°55.9	-12.8'	59.3'	90°02.3	78° 15.2	37°03.5	18°30.7	19°24.1	53°23.2	61°38.5	107°43.0
16	137°11.4	9.0'	16°43.1	-12.9'	59.3'	89°38.4	77°42.4	36°28.8	17° 55.5	19°58.1	53°55.6	62°13.3	108° 18.3
17	151°39.4	9.0'	16°30.2	-13.0'	59.3'	89°14.6	77°09.5	35°54.0	17°20.3	20°32.3	54°28.0	62°48.2	108°53.7
18	166°07.4	9.1'	$N16^{\circ}17.2$	-13.1'	59.3'	88°50.8	76°36.6	35°19.3	16° 45.2	21°06.5	55°00.5	63°23.0	109°29.0
19	180°35.5	9.2'	16°04.1	-13.2'	59.3'	88°27.0	76°03.7	34°44.5	16° 10.0	21°40.8	55°33.1	63°57.9	110°04.4
20	195°03.7	9.2'	15°50.8	-13.3'	59.3'	88°03.1	75°30.8	34°09.8	15°34.9	22°15.2	56°05.7	64°32.8	110°39.8
21	209°31.9	9.3'	15°37.5	-13.4'	59.3'	87°39.3	74°57.9	33°35.0	14°59.8	22°49.6	56°38.3	65°07.8	111°15.1
22	224°00.2	9.4'	15°24.1	-13.5'	59.3'	87°15.5	74°25.0	33°00.3	14°24.7	23°24.1	57°11.0	65°42.7	111°50.5
23	238°28.5	9.4'	$15^{\circ}10.7$	-13.6'	59.3'	86°51.6	73°52.1	32°25.6	13°49.7	23°58.7	57°43.8	66°17.6	112°25.9
23 rd	SD	= 16.1	.' Mer. pas	s. 06:31				•	Sun :	SD = 16.1'			

Moon (24th Oct)

Lunar Distance (objects with largest hourly LD delta)

Lunar Distance (objects with largest hourly LD delta)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Acrux	-Sun	-Jupiter	-Regulus	+Pollux	+Capella	+Aldebaran	+Saturn
0	252°56.9	9.5'	N 14°57.1	-13.7'	59.3'	86°27.8	73° 19.2	31°50.8	13°14.7	24°33.3	58°16.5	66°52.6	113°01.3
1	267°25.4	9.5'	14°43.4	-13.7'	59.3'	86°04.0	72°46.2	31°16.1	12°39.8	25°08.0	58°49.4	67°27.6	113°36.7
2	281°54.0	9.6'	14°29.7	-13.8'	59.3'	85°40.2	72°13.3	30°41.3	12°04.9	25°42.7	59°22.2	68°02.6	114° 12.1
3	296°22.6	9.7'	$14^{\circ}15.8$	-13.9'	59.3'	85°16.4	71°40.3	30°06.6	11°30.0	26°17.4	59°55.1	68°37.6	114°47.5
4	310°51.2	9.7'	$14^{\circ}01.9$	-14.0'	59.3'	84°52.6	71°07.4	29°31.9	10°55.2	26°52.2	60°28.0	69°12.6	115°22.9
5	325°20.0	9.8'	13°47.9	-14.1'	59.4'	84°28.9	70°34.4	28°57.2	10°20.6	27°27.1	61°01.0	69°47.6	115°58.3
6	339°48.8	9.9'	N13°33.9	-14.2'	59.4'	84°05.1	70°01.4	28°22.5	9°46.0	28°01.9	61°34.0	70°22.6	116°33.7
7	354°17.6	9.9'	13° 19.7	-14.2'	59.4'	83°41.4	69°28.4	27°47.8	9°11.5	28°36.8	62°07.1	70°57.7	117°09.1
8	8°46.5	10.0'	13°05.5	-14.3'	59.4'	83° 17.7	68° 55.5	27°13.1	8°37.2	29°11.8	62°40.2	71°32.7	117°44.6
9	23°15.5	10.0'	12°51.2	-14.4'	59.4'	82°54.0	68°22.5	26°38.4	8°03.1	29°46.7	63°13.3	72°07.8	118°20.0
10	37°44.5	10.1'	12°36.8	-14.4'	59.4'	82°30.3	67°49.5	26°03.8	7°29.2	30°21.7	63°46.4	72°42.9	118°55.4
11	52°13.6	10.1'	12°22.4	-14.5'	59.4'	82°06.7	67° 16.5	25°29.1	6°55.6	30°56.8	64°19.6	73°18.0	119°30.8
12	66°42.8	10.2'	$N12^{\circ}07.9$	-14.6'	59.4'	81°43.0	66°43.5	24°54.5	6°22.3	31°31.8	64°52.8	73°53.1	
13	81°12.0	10.2'	11°53.3	-14.7'	59.4'	81°19.4	66° 10.5	24°19.9	5°49.5	32°06.9	65°26.0	74°28.2	
14	95°41.2	10.3'	11°38.6	-14.7'	59.4'	80°55.9	65°37.4	23°45.3	5°17.3	32°42.0	65°59.3	75°03.3	
15	110°10.5	10.4'	11°23.9	-14.8'	59.4'	80°32.3	65°04.4	23°10.7	4°46.0	33°17.1	66°32.5	75°38.4	
16	124°39.9	10.4'	$11^{\circ}09.1$	-14.8'	59.4'	80°08.8	64°31.4	22°36.2		33°52.3	67°05.9	76°13.6	
17	139°09.3	10.5'	10°54.3	-14.9'	59.4'	79°45.3	63°58.4	22°01.7		34°27.5	67°39.2	76°48.7	
18	153°38.7	10.5'	N10°39.4	-15.0'	59.4'	79°21.9	63°25.3	21°27.2		35°02.7	68°12.5	77°23.9	
19	168°08.2	10.6'	10°24.4	-15.0'	59.4'								
20	182°37.8	10.6'	10°09.4	-15.1'	59.4'	78°35.1	62° 19.3	20°18.3		36°13.1	69°19.3	78°34.2	
21	197°07.4	10.6'	09°54.3	-15.1'	59.4'								
22	211°37.0	10.7'	09°39.2	-15.2'	59.4'	77°48.5	61°13.2	19°09.7		37°23.6	70°26.2	79°44.5	
23	226°06.7	10.7'	09°24.0	-15.2'	59.4'	77°25.2	60°40.2	18°35.4		37°58.9	70°59.7	80°19.7	
24 th	SD	= 16.2	Mer. pas	s. 07:24					Sun S	SD = 16.1'		-	

Moon (25th Oct) Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Acrux	-Sun	-Jupiter	+Regulus	+Pollux	+Betelgeuse	+Capella	+Aldebaran
0	240°36.4	10.8'	N 09°08.7	-15.3'	59.4'	77°02.0	60°07.1	18°01.2		38°34.2	62°39.9	71°33.2	80°54.9
1	255°06.2	10.8'	08°53.5	-15.3'	59.4'	76°38.9	59°34.1	17°27.0		39°09.5	63°13.1	72°06.7	81°30.1
2	269°36.0	10.9'	08°38.1	-15.4'	59.4'	76° 15.8	59°01.0	16°53.0		39°44.8	63°46.3	72°40.2	82°05.3
3	284°05.9	10.9'	08°22.7	-15.4'	59.4'	75°52.7	58°28.0	16°19.0		40°20.2	64°19.6	73°13.7	82°40.5
4	298°35.8	10.9'	08°07.3	-15.5'	59.4'	75°29.7	57°54.9	15°45.1		40°55.5	64°52.9	73°47.3	83°15.7
5	313°05.7	11.0'	$07^{\circ}51.8$	-15.5'	59.4'	75°06.8	57°21.9	15°11.2		41°30.9	65°26.2	74°20.8	83°50.9
6	327°35.7	11.0'	N07°36.3	-15.6'	59.4'	74°43.9	56°48.8	14°37.5		42°06.2	65°59.6	74°54.4	84°26.1
7	342°05.7	11.1'	07°20.8	-15.6'	59.4'	74°21.1	56°15.7	14°04.0	5°54.1	42°41.6	66°33.0	75°28.0	85°01.4
8	356°35.8	11.1'	$07^{\circ}05.2$	-15.6'	59.4'	73°58.3	55°42.7	13°30.5	6°27.0	43°17.0	67°06.3	76°01.6	85°36.6
9	11°05.9	11.1'	06°49.5	-15.7'	59.4'	73°35.6	55°09.6	12°57.2	7°00.4	43°52.4	67°39.8	76°35.3	86°11.8
10	25°36.0	11.2'	06°33.9	-15.7'	59.4'	73°13.0	54°36.6	12°24.1	7°34.2	44°27.8	68°13.2	77°08.9	86°47.0
11	40°06.1	11.2'	$06^{\circ}18.1$	-15.7'	59.4'	72°50.4	54°03.5	11°51.2	8°08.2	45°03.2	68°46.7	77°42.5	87°22.3
12	54°36.3	11.2'	N 06°02.4	-15.8'	59.4'	72°27.9	53°30.5	11°18.6	8°42.5	45°38.7	69°20.1	78°16.2	87°57.5
13	69°06.5	11.2'	05°46.6	-15.8'	59.4'	72°05.5	52°57.5	10°46.2	9°16.9	$46^{\circ}14.1$	69°53.6	78°49.9	88°32.7
14	83°36.8	11.3'	05°30.8	-15.8'	59.4'	71°43.1	52°24.4	10°14.1	9°51.5	46°49.5	70°27.1	79°23.5	89°08.0
15	98°07.1	11.3'	05° 15.0	-15.9'	59.4'	71°20.8	51°51.4	9°42.3	10°26.2	47°25.0	71°00.7	79°57.2	89°43.2
16	112°37.4	11.3'	04°59.1	-15.9'	59.4'	70°58.6	51°18.3	9°11.1	11°01.1	48°00.4	71°34.2	80°30.9	90°18.4
17	127°07.7	11.3'	04°43.3	-15.9'	59.4'	70°36.5	50°45.3	8°40.3	11°36.0	48°35.9	72°07.8	81°04.6	90°53.7
18	141°38.0	11.4'	N 04°27.4	-15.9'	59.4'	70°14.4	50°12.3	8°10.1	12°11.0	49°11.4	72°41.3	81°38.3	91°28.9
19	156°08.4	11.4'	$04^{\circ}11.4$	-16.0'	59.4'	69°52.5	49°39.2	7°40.6	12°46.1	49°46.8	73°14.9	82°12.0	92°04.1
20	170°38.8	11.4'	03°55.5	-16.0'	59.4'	69°30.6	49°06.2	7°12.0	13°21.2	50°22.3	73°48.5	82°45.7	92°39.4
21	185°09.2	11.4'	03°39.5	-16.0'	59.4'	69°08.8	48°33.2		13°56.4	50°57.8	74°22.1	83°19.4	93°14.6
22	199°39.7	11.5'	03°23.5	-16.0'	59.4'	68°47.1	48°00.2		14°31.6	51°33.2	74°55.7	83°53.2	93°49.8
23	214°10.1	11.5'	03°07.5	-16.0'	59.4'	68°25.5	47°27.2		15°06.9	52°08.7	75°29.4	84°26.9	94°25.1
25 th	SD	= 16.2'	Mer. pas	s. 08:14					Sun	SD = 16.1	·'		

Moon (26th Oct) h

Lunar Distance (objects with largest hourly LD delta)

									(5000	,	
Tue	GHA	ν	Dec	d	HP	-Acrux	-Sun	+Regulus	+Procyon	+Pollux	+Betelgeuse	+Capella	+Aldebaran
0	228°40.6	11.5'	N 02°51.5	-16.0'	59.4'	68°04.0	46°54.2	15°42.2	50°11.8	52°44.2	76°03.0	85°00.6	95°00.3
1	243°11.1	11.5'	02°35.5	-16.0'	59.4'	67° 42.5	46°21.2	16° 17.5	50°44.8	53° 19.7	76°36.6	85°34.3	95°35.5
2	257°41.6	11.5'	02°19.4	-16.1'	59.4'	67°21.2	45°48.2	16°52.8	51°18.0	53°55.2	77° 10.3	86°08.1	96°10.7
3	272°12.1	11.5'	02°03.4	-16.1'	59.4'	67°00.0	45° 15.2	17°28.2	51°51.1	54°30.6	77°44.0	86°41.8	96°45.9
4	286°42.6	11.5'	01°47.3	-16.1'	59.4'	66°38.9	44°42.3	18°03.6	52°24.3	55°06.1	78° 17.6	87°15.5	97°21.1
5	301°13.2	11.6'	01°31.2	-16.1'	59.3'	66° 17.9	44°09.3	18°39.0	52°57.6	55°41.6	78°51.3	87°49.2	97°56.3
6	315°43.8	11.6'	N 01°15.1	-16.1'	59.3'	65°57.0	43°36.4	19°14.4	53°30.8	56°17.1	79°25.0	88°23.0	98°31.5
7	330°14.3	11.6'	$00^{\circ}59.1$	-16.1'	59.3'	65°36.2	43°03.4	19°49.9	54°04.1	56°52.6	79°58.7	88°56.7	99°06.7
8	344°44.9	11.6'	00°43.0	-16.1'	59.3'	65° 15.6	42°30.5	20°25.3	54°37.4	57°28.1	80°32.3	89°30.4	99°41.9
9	359°15.5	11.6'	00°26.9	-16.1'	59.3'	64°55.0	41°57.6	21°00.8	55°10.8	58°03.5	81°06.0	90°04.1	100°17.1
10	13°46.1	11.6'	N 00°10.8	-16.1'	59.3'	64°34.6	41°24.7	21°36.2	55°44.2	58°39.0	81°39.7	90°37.8	100°52.3
11	28°16.7	11.6'	S 00°05.3	-16.1'	59.3'	64°14.3	40°51.8	22°11.7	56°17.6	59°14.5	82°13.4	91°11.5	101°27.4
12	42°47.3	11.6'	S 00°21.4	-16.1'	59.3'	63°54.1	40°18.9	22°47.2	56°51.0	59°50.0	82°47.1	91°45.2	102°02.6
13	57°17.9	11.6'	00°37.4	-16.1'	59.3'	63°34.0		23°22.7	57°24.5	60°25.4	83°20.8	92°18.9	102°37.7
14	71°48.5	11.6'	00°53.5	-16.1'	59.3'	63°14.1		23°58.1	57°58.0	61°00.9	83°54.5	92°52.6	103°12.9
15	86°19.1	11.6'	$01^{\circ}09.6$	-16.1'	59.3'	62°54.3		24°33.6	58°31.5	61°36.4	84°28.1	93°26.2	103°48.0
16	100°49.7	11.6'	01°25.6	-16.0'	59.3'	62°34.6		25°09.1	59°05.0	62°11.8	85°01.8	93°59.9	104°23.1
17	115°20.3	11.6'	$01^{\circ}41.7$	-16.0'	59.3'	62°15.1		25°44.6	59°38.6	62°47.3	85°35.5	94°33.5	104°58.3
18	129°50.9	11.6'	S 01°57.7	-16.0'	59.3'	61°55.7		26°20.1	60°12.1	63°22.7	86°09.2	95°07.2	105°33.4
19	144°21.5	11.6'	02°13.7	-16.0'	59.2'	61°36.5		26°55.6	60°45.7	63°58.2	86°42.9	95°40.8	106°08.4
20	158°52.1	11.6'	02°29.7	-16.0'	59.2'	61°17.4		27°31.1	61°19.3	64°33.6	87° 16.5	96°14.4	106°43.5
21	173°22.7	11.6'	02°45.7	-16.0'	59.2'	60°58.5		28°06.5	61°52.9	65°09.0	87°50.2	96°48.0	107°18.6
22	187°53.3	11.6'	03°01.7	-15.9'	59.2'	60°39.7 60°21.1		28°42.0	62°26.5	65°44.4	88°23.8	97°21.6	107°53.7
23	202°23.9	202°23.9 11.6' 03°17.6 -15.9' 59.2						29°17.5	63°00.2	66°19.8	88°57.5	97°55.2	108°28.7
26 th	SD	= 16.2	Mer. pas	s. 09:03					Sun	SD = 16.1'			

Wed	GHA	ν	Dec	d	HP	± Acrux	-Hadar	-Spica	+Jupiter	+Regulus	+Procyon	+Pollux	+Aldebaran
0	216°54.5	11.6'	S 03°33.5	-15.9'	59.2'	60°02.6			11°32.0	29°53.0	63°33.8	66°55.2	109°03.7
1	231°25.0	11.6'	03°49.4	-15.9'	59.2'	59°44.3			12°04.6	30°28.4	64°07.5	67°30.6	109°38.7
2	245°55.6	11.5'	04°05.3	-15.8'	59.2'	59°26.1			12°37.4	31°03.9	64°41.1	68°06.0	110°13.7
3	260°26.1	11.5'	$04^{\circ}21.1$	-15.8'	59.2'	59°08.2			13°10.4	31°39.3	65°14.8	68°41.4	110°48.7
4	274°56.6	11.5'	04°37.0	-15.8'	59.2'	58°50.4			13°43.6	32°14.8	65°48.5	69°16.8	111°23.7
5	289°27.2	11.5'	04°52.8	-15.8'	59.1'	58°32.7			14°16.9	32°50.2	66°22.2	69°52.1	111°58.6
6	303°57.7	11.5'	S 05°08.5	-15.7'	59.1'	58° 15.3			14°50.4	33°25.6	66°55.9	70°27.5	112°33.6
7	318°28.1	11.5'	05°24.2	-15.7'	59.1'	57°58.0			15°23.9	34°01.0	67°29.6	71°02.8	113°08.5
8	332°58.6	11.4'	05°39.9	-15.7'	59.1'	57°40.9			15°57.6	34° 36.4	68°03.3	71°38.1	113°43.4
9	347°29.0	11.4'	05°55.6	-15.6'	59.1'	57°24.0	58° 37.9		16°31.3	35°11.8	68°37.0	72° 13.5	114°18.3
10	$1^{\circ}59.5$	11.4'	$06^{\circ}11.2$	-15.6'	59.1'	57°07.2	58° 14.2		17°05.1	35°47.2	69°10.7	72°48.8	114°53.2
11	16°29.9	11.4'	06°26.8	-15.5'	59.1'	56°50.7	57°50.6		17°38.9	36°22.6	69°44.4	73°24.1	115°28.0
12	31°00.3	11.4'	S 06°42.4	-15.5'	59.1'	56°34.4	57°27.2		18°12.9	36°58.0	70°18.1	73°59.3	116°02.9
13	45°30.6	11.3'	06°57.9	-15.5'	59.0'	56° 18.2	57°03.9		18°46.8	37°33.3	70°51.8	74°34.6	116°37.7
14	60°01.0	11.3'	$07^{\circ}13.3$	-15.4'	59.0'	56°02.3	56°40.7		19°20.8	38°08.7	71°25.5	75°09.9	117°12.5
15	74°31.3	11.3'	07°28.7	-15.4'	59.0'	55°46.5	56° 17.7		19°54.9	38°44.0	71°59.2	75°45.1	117°47.2
16	89°01.6	11.3'	07°44.1	-15.3'	59.0'	55°31.0	55° 54.8	_	20°29.0	39° 19.3	72°32.9	76°20.3	118°22.0
17	103°31.9	11.2'	07°59.4	-15.3'	59.0'	55° 15.7	55°32.1	14°32.3	21°03.1	39°54.6	73°06.6	76°55.5	118°56.7
18	118°02.1	11.2'	S 08°14.7	-15.2'	59.0'	55°00.6	55°09.6	13°57.7	21°37.2	40°29.9	73°40.3	77°30.7	119°31.4
19	132°32.3	11.2'	08°29.9	-15.2'	59.0'		54°47.2	13°23.1	22°11.4	41°05.2	74°14.0	78°05.9	
20	147°02.5	11.2'	$08^{\circ}45.1$	-15.1'	58.9'		54°25.0	12°48.6	22°45.6	41°40.5	74°47.6	78°41.1	
21	161°32.7	11.1'	09°00.2	-15.1'	58.9'		54°02.9	12°14.2	23°19.8	42° 15.7	75°21.3	79°16.2	
22	176°02.8	11.1'	09°15.3	-15.0'	58.9'		53°41.1	11°40.0	23°54.0	42°50.9	75°55.0	79°51.3	
23	190°32.9	11.1'	09°30.3	-15.0'	58.9'		53°19.4	11°05.8	24°28.2	43°26.1	76°28.6	80°26.5	
27 th	SD	= 16.1'	Mer. pas	s. 09:52									

Moon (28th Oct) Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Hadar	-Spica	+Jupiter	+Regulus	+Procyon	+Pollux	+Betelgeuse	+Capella
0	205°03.0	11.0'	S 09°45.2	-14.9'	58.9'	52°57.8	10°31.8	25°02.5	44°01.3	77°02.3	81°01.6	102°54.1	111°47.8
1	219°33.0	11.0'	10°00.1	-14.8'	58.9'	52°36.5	9°57.9	25°36.7	44°36.5	77°35.9	81°36.6	103°27.3	112°20.7
2	234°03.0	11.0'	$10^{\circ}15.0$	-14.8'	58.8'	52° 15.3	9°24.2	26°10.9	45° 11.7	78°09.5	82°11.7	104°00.4	112°53.6
3	248°33.0	10.9'	10°29.7	-14.7'	58.8'	51°54.4	8°50.7	26°45.2	45°46.8	78°43.2	82°46.7	104°33.6	113°26.5
4	263°03.0	10.9'	10°44.4	-14.6'	58.8'	51°33.6	8°17.5	27°19.4	46°22.0	79°16.8	83°21.8	105°06.7	113°59.3
5	277°32.9	10.9'	$10^{\circ}59.1$	-14.6'	58.8'	51°13.0	7°44.6	27°53.7	46°57.1	79°50.4	83°56.8	105°39.8	114°32.1
6	292°02.7	10.8'	S 11°13.7	-14.5'	58.8'	50°52.7	7°12.1	28°27.9	47°32.2	80°23.9	84°31.8	106°12.8	115°04.8
7	306°32.6	10.8'	11°28.2	-14.4'	58.8'	50°32.5	6°40.0	29°02.2	48°07.2	80°57.5	85°06.7	106°45.9	115°37.5
8	321°02.3	10.8'	11°42.6	-14.4'	58.7'	50° 12.6	6°08.5	29°36.4	48° 42.3	81°31.1	85°41.7	107°18.9	116°10.2
9	335°32.1	10.7'	11°57.0	-14.3'	58.7'	49°52.8	5°37.7	30°10.6	49° 17.3	82°04.6	86°16.6	107°51.8	116°42.8
10	350°01.8	10.7'	12°11.3	-14.2'	58.7'	49°33.3	5°07.9	30°44.8	49°52.3	82°38.1	86°51.5	108°24.8	117°15.4
11	4°31.5	10.6'	$12^{\circ}25.5$	-14.1'	58.7'	49°14.0		31°19.1	50°27.3	83°11.6	87°26.4	108°57.6	117°47.9
12	19°01.1	10.6'	S 12°39.6	-14.1'	58.7'	48°55.0		31°53.3	51°02.3	83°45.1	88°01.3	109°30.5	118°20.4
13	33°30.7	10.6'	12°53.7	-14.0'	58.6'	48°36.1		32°27.5	51°37.3	84°18.6	88°36.1	110°03.3	118°52.8
14	48°00.3	10.5'	13°07.7	-13.9'	58.6'	48° 17.6		33°01.6	52° 12.2	84°52.0	89°10.9	110°36.1	119°25.2
15	62°29.8	10.5'	13°21.6	-13.8'	58.6'	47°59.2		33°35.8	52°47.1	85°25.5	89°45.7	111°08.9	119°57.5
16	76°59.3	10.4'	13°35.4	-13.8'	58.6'	47°41.1		34°10.0	53°22.0	85°58.9	90°20.5	111°41.6	
17	91°28.7	10.4'	13°49.2	-13.7'	58.6'	47°23.2		34°44.1	53°56.9	86°32.3	90°55.3	112°14.3	
18	105°58.1	10.3'	S 14°02.9	-13.6'	58.5'	47°05.6		35°18.3	54°31.7	87°05.6	91°30.0	112°46.9	
19	120°27.5	10.3'	$14^{\circ}16.4$	-13.5'	58.5'	46°48.3		35°52.4	55°06.5	87°39.0	92°04.7	113°19.5	
20	134°56.8	10.3'	14°29.9	-13.4'	58.5'	8.5' 46°31.2							
21	149°26.0	10.2'	14°43.4	-13.3'	58.5'	46°14.4		37°00.6	56° 16.1	88°45.6	93°14.0	114°24.5	
22	163°55.2	10.2'	$14^{\circ}56.7$	-13.2'	58.4'					w Moon —	·	·	
23	178°24.4	10.1'	15°09.9	-13.1'	58.4'		_		Ne	w Moon —			
28 th	SD	= 16.1	Mer. pas	s. 10:41			-				-		

Moon (29th Oct) h

		141001				
Fri	GHA	ν	Dec	d	HP	
0	192°53.5	10.1'	S 15°23.0	-13.0'	58.4'	New Moon
1	207°22.6	10.0'	$15^{\circ}36.1$	-13.0'	58.4'	New Moon
2 3	221°51.7	10.0'	$15^{\circ}49.0$	-12.9'	58.4'	New Moon
3	236°20.7	9.9'	$16^{\circ}01.9$	-12.8'	58.3'	New Moon
4	250°49.6	9.9'	$16^{\circ}14.6$	-12.7'	58.3'	New Moon
5	265°18.5	9.8'	16°27.3	-12.6'	58.3'	New Moon
6	279°47.3	9.8'	S 16°39.9	-12.5'	58.3'	New Moon
7	294°16.1	9.8'	$16^{\circ}52.3$	-12.4'	58.2'	New Moon
8	308°44.9	9.7'	$17^{\circ}04.7$	-12.3'	58.2'	New Moon
9	323°13.6	9.7'	$17^{\circ}16.9$	-12.2'	58.2'	New Moon
10	337°42.3	9.6'	$17^{\circ}29.1$	-12.0'	58.2'	New Moon
11	352°10.9	9.6'	$17^{\circ}41.1$	-11.9'	58.1'	New Moon
12	6°39.4	9.5'	S 17°53.1	-11.8'	58.1'	New Moon
13	21°08.0	9.5'	18°04.9	-11.7'	58.1'	New Moon
14	35°36.4	9.4'	$18^{\circ}16.6$	-11.6'	58.1'	New Moon
15	50°04.9	9.4'	18°28.2	-11.5'	58.1'	New Moon
16	64°33.2	9.3'	18° 39.7	-11.4'	58.0'	New Moon
17	79°01.6	9.3'	$18^{\circ}51.1$	-11.3'	58.0'	New Moon
18	93°29.9	9.2'	S 19°02.4	-11.2'	58.0'	New Moon
19	107°58.1	9.2'	19° 13.5	-11.0'	57.9'	New Moon
20	122°26.3	9.1'	19°24.6	-10.9'	57.9'	New Moon
21	136°54.4	9.1'	19°35.5	-10.8'	57.9'	New Moon
22	151°22.5	9.1'	19°46.3	-10.7'	57.9'	New Moon
23	165°50.6	9.0'	19°57.0	-10.6'	57.8'	New Moon
29 th	SD	= 15.9'	Mer. pas	s. 11:32		

Sat	GHA	ν	Dec	d	HP	-Fomalhaut	-Deneb	-Achernar	-Altair	-Mars	-Antares	-Venus
0	180°18.6	9.0'	S 20°07.5	-10.4'	57.8'				w Moon —			
1	194°46.5	8.9'	20°18.0	-10.3'	57.8'			Ne	w Moon —			
2	209°14.4	8.9'	20°28.3	-10.2'	57.8'							
3	223°42.3	8.8'	20°38.5	-10.1'	57.7'							
4	238°10.1	8.8'	20°48.6	-9.9'	57.7'							
5	252°37.9	8.7'	20°58.5	-9.8'	57.7'			Ne	w Moon —			
6	267°05.7	8.7'	S 21°08.3	-9.7'	57.7'			Ne	w Moon —			
7	281°33.4	8.7'	21°18.0	-9.6'	57.6'	105°14.2	104°09.4		80°37.7	24°48.3	24°14.8	12°33.2
8	296°01.0	8.6'	21°27.6	-9.4'	57.6'	104°43.4	103°52.6		80°08.5	24°16.6	23°41.0	12°04.6
9	310°28.6	8.6'	21°37.0	-9.3'	57.6'	104°12.6	103°35.7		79°39.3	23°45.0	23°07.2	11°36.1
10	324°56.2	8.5'	21°46.3	-9.2'	57.5'	103°41.8	103°18.7		79°10.1	23°13.4	22°33.5	11°07.8
11	339°23.7	8.5'	21°55.5	-9.0'	57.5'	103°11.0	103°01.7		78°41.0	22°41.9	21°59.8	10°39.8
12	353°51.2	8.5'	S 22°04.5	-8.9'	57.5'	102°40.3	102°44.7		78° 11.9	22°10.4	21°26.2	10°12.0
13	8°18.7	8.4'	22°13.4	-8.8'	57.5'	102°09.6	102°27.6		77°42.9	21°38.9	20°52.5	9°44.6
14	22°46.1	8.4'	22°22.2	-8.6'	57.4'	101°38.8	102°10.5		77°13.9	21°07.5	20°18.9	9°17.5
15	37°13.4	8.3'	22°30.8	-8.5'	57.4'	101°08.2	101°53.4		76°45.0	20°36.2	19°45.4	8°50.7
16	51°40.8	8.3'	22°39.3	-8.4'	57.4'	100°37.5	101°36.2	98°03.7	76°16.1	20°04.9	19°11.9	8°24.5
17	66°08.1	8.3'	22°47.6	-8.2'	57.4'	100°06.8	101°19.0	97°48.7	75°47.3	19°33.7	18°38.4	7°58.7
18	80°35.3	8.2'	S 22°55.9	-8.1'	57.3'	99°36.2	101°01.8	97°33.6	75° 18.5	19°02.6	18°04.9	7°33.6
19	95°02.6	8.2'	23°03.9	-7.9'	57.3'	99°05.6	100°44.5	97° 18.6	74°49.8	18°31.4	17°31.5	7°09.1
20	109°29.8	8.2'	23°11.9	-7.8'	57.3'	98°35.0	100°27.2	97°03.5	74°21.1	18°00.4	16°58.1	6°45.5
21	123°56.9	8.1'	23°19.7	-7.7'	57.2'	98°04.5	100°09.9	96°48.4	73°52.5	17°29.4	16°24.8	6°22.8
22	138°24.1	8.1'	23°27.3	-7.5'	57.2'	97°34.0	99°52.5	96°33.3	73°23.9	16°58.5	15°51.5	
23	152°51.2	8.1'	23°34.9	-7.4'	57.2'	97°03.4	99°35.1	96° 18.2	72°55.4	16°27.7	15°18.2	
30 th	SD	= 15.8	Mer. pa	ss. 12:26								

h	Moon (31st Oct)					Lur	nar Distance	e (objects	with larg	gest houi	rly LD de	lta)
Sun	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Achernar	-Altair	-Mars	-Antares	+V

Sun	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Achernar	-Altair	-Mars	-Antares	+Venus
0	167° 18.2	8.0'	S 23°42.2	-7.2'	57.2'	99°17.7	96°33.0	96°03.0	72°26.9	15°56.9	14°45.0	
1	181°45.3	8.0'	23°49.5	-7.1'	57.1'	99°00.3	96°02.5	95°47.9	71°58.5	15°26.2	14°11.8	
2	196°12.3	8.0'	23°56.6	-7.0'	57.1'	98°42.9	95°32.1	95°32.7	71°30.2	14°55.6	13°38.6	
3	210°39.3	8.0'	24°03.5	-6.8'	57.1'	98°25.5	95°01.7	95°17.6	71°01.9	14°25.0	13°05.5	
4	225°06.3	7.9'	24°10.3	-6.7'	57.0'	98°08.0	94°31.3	95°02.4	70°33.6	13°54.6	12°32.4	
5	239°33.2	7.9'	24°17.0	-6.5'	57.0'	97°50.5	94°01.0	94°47.2	70°05.5	13°24.3	11°59.3	
6	254°00.1	7.9'	S 24°23.5	-6.4'	57.0'	97°33.0	93°30.7	94°32.1	69°37.4	12°54.0	11°26.3	
7	268°27.0	7.9'	24°29.9	-6.2'	57.0'	97° 15.5	93°00.4	94°16.9	69°09.3	12°23.9	10°53.3	
8	282°53.9	7.8'	24°36.1	-6.1'	56.9'	96°58.0	92°30.1	94°01.7	68°41.4	11°53.9	10°20.3	
9	297°20.7	7.8'	24°42.2	-5.9'	56.9'	96°40.5	91°59.9	93°46.5	68° 13.4	11°24.1	9°47.4	
10	311°47.5	7.8'	24°48.1	-5.8'	56.9'	96°22.9	91°29.7	93°31.3	67°45.6	10°54.3	9°14.6	
11	326° 14.4	7.8'	24°53.9	-5.6'	56.8'	96°05.4	90°59.5	93°16.1	67° 17.8	10°24.8	8°41.7	
12	340°41.2	7.8'	S 24°59.5	-5.5'	56.8'	95°47.9	90°29.4	93°01.0	66°50.1	9°55.4	8°08.9	
13	355°07.9	7.8'	25°05.0	-5.3'	56.8'	95°30.3	89°59.3	92°45.8	66°22.4	9°26.3	7°36.2	
14	9°34.7	7.8'	25°10.4	-5.2'	56.7'	95° 12.8	89°29.2	92°30.6	65°54.9	8°57.3	7°03.5	
15	24°01.5	7.7'	$25^{\circ}15.6$	-5.0'	56.7'	94°55.2	88°59.2	92°15.4	65°27.4	8°28.7	6°30.8	
16	38°28.2	7.7'	25°20.6	-4.9'	56.7'	94°37.6	88°29.2	92°00.3	64°59.9	8°00.3	5°58.2	
17	52°54.9	7.7'	25°25.5	-4.7'	56.7'	94°20.1	87°59.3	91°45.1	64°32.6	7°32.3	5°25.6	
18	67°21.6	7.7'	S 25°30.2	-4.6'	56.6'	94°02.5	87°29.3	91°30.0	64°05.3	7°04.8	4°53.1	7°12.5
19	81°48.4	7.7'	25°34.8	-4.4'	56.6'	93°45.0	86°59.4	91°14.9	63°38.1	6°37.7	4°20.6	7°36.4
20	$96^{\circ}15.1$	7.7'	25°39.3	-4.3'	56.6'	93°27.5	86°29.6	90°59.7	63°10.9	6°11.2	3°48.2	8°00.9
21	110°41.8	7.7'	25°43.5	-4.1'	56.5'	93°09.9	85°59.7	90°44.6	62°43.8	5°45.5	3°15.9	8°25.8
22	125°08.5	7.7'	25° 47.7	-4.0'	56.5'	92°52.4	85°30.0	90°29.5	62°16.9	5°20.6	2°43.7	8°51.2
23	139°35.2	7.7'	25°51.7	-3.8'	56.5'	92°34.9	85°00.2	90°14.5	61°50.0		2°11.7	9°16.9
31 st	SD :	= 15.6'	Mer. pas	s. 13:20)							

h Moon (1st Nov) Lunar Distance (objects with largest hourly LD delta)

- 11		IVIOO	11 (T 140	v)			Luliai Di	stance (obje	ECIS WILL	i largest II	ourly Li	Juertaj	
Mon	GHA	ν	Dec	d	HP	-Deneb	-Achernar	-Fomalhaut	-Altair	± Antares	+Mars	+Venus	+Sun
0	154°01.9	7.7'	S 25°55.5	-3.7'	56.5'	92°17.3	89° 59.4	84°30.5	61°23.1	1°40.0		9°43.0	
1	168°28.6	7.7'	25°59.2	-3.5'	56.4'	91°59.8	89°44.4	84°00.8	60°56.4	1°09.0		10°09.3	
2	182°55.3	7.7'	26°02.7	-3.4'	56.4'	91°42.3	89°29.3	83°31.2	60°29.7			10°35.8	
3	197°22.0	7.7'	$26^{\circ}06.1$	-3.2'	56.4'	91°24.9	89° 14.3	83°01.6	60°03.1			11°02.5	
4	211°48.7	7.7'	26°09.4	-3.1'	56.3'	91°07.4		82°32.0	59°36.7	0°39.8		11°29.4	
5	226°15.4	7.7'	$26^{\circ}12.5$	-2.9'	56.3'	90°50.0		82°02.5	59°10.3			11°56.4	
6	240°42.1	7.7'	S 26°15.4	-2.8'	56.3'	90°32.5		81°33.0	58°43.9			12°23.5	
7	255°08.9	7.7'	$26^{\circ}18.2$	-2.6'	56.3'	90°15.1		81°03.6	58°17.7	2°10.8		12°50.8	
8	269°35.6	7.8'	26°20.8	-2.5'	56.2'	89°57.7		80°34.1	57°51.6	2°42.5		13°18.1	
9	284°02.4	7.8'	26°23.3	-2.3'	56.2'	89°40.3		80°04.8	57°25.5	3°14.3		13°45.6	
10	298°29.2	7.8'	$26^{\circ}25.6$	-2.2'	56.2'	89°22.9		79°35.5	56°59.6	3°46.1		14°13.1	
11	312°55.9	7.8'	$26^{\circ}27.8$	-2.0'	56.1'	89°05.6		79°06.2	56°33.7	4°18.0		14°40.6	
12	327°22.8	7.8'	S 26°29.8	-1.9'	56.1'	88°48.3		78°36.9	56°08.0	4°49.8		15°08.2	
13	341°49.6	7.8'	26°31.7	-1.7'	56.1'	88°31.0		78°07.7	55°42.3	5°21.7		15°35.8	
14	356°16.4	7.9'	26°33.4	-1.6'	56.1'	88°13.7		77°38.6	55°16.7	5°53.5		16°03.5	
15	10°43.3	7.9'	26°35.0	-1.4'	56.0'	87°56.5		77°09.4	54°51.3	6°25.3		16°31.2	
16	25°10.2	7.9'	26°36.5	-1.3'	56.0'	87°39.2		76°40.4	54°25.9	6°57.1		16°59.0	
17	39°37.1	7.9'	26°37.7	-1.1'	56.0'	87°22.0		76°11.3	54°00.7	7°28.9	6°14.8	17°26.7	
18	54°04.0	8.0'	S 26°38.9	-1.0'	56.0'	87°04.9		75°42.3	53°35.5	8°00.6	6°40.6	17°54.5	
19	68°31.0	8.0'	26°39.9	-0.8'	55.9'	86°47.7		75°13.4	53°10.5	8°32.3	7°07.0	18°22.3	
20	82°58.0	8.0'	26°40.7	-0.7'	55.9'	86°30.6		74°44.5	52°45.5	9°04.0	7°33.8	18°50.0	40°10.1
21	97°25.0	8.1'	26°41.4	-0.5'	55.9'	86°13.5		74°15.6	52°20.7	9°35.7	8°00.9	19°17.8	40°39.0
22	111°52.0	8.1'	26°41.9	-0.4'	55.8'	85°56.5		73°46.8	51°56.0	10°07.3	8°28.3	19°45.6	41°07.9
23	126°19.1	8.1'	26°42.3	-0.2'	55.8'	85°39.5		73°18.1	51°31.4	10°38.9	8°56.0	20°13.4	41°36.8
1 st	SD :	= 15.4'	Mer. pas	s. 14:15	,				Sun SD =	16.1'			

h		Моог	n (2 nd No	v)			Lunar D	istance (ob	jects wit	h largest	hourly LI	O delta)	
Tue	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Mars	+Antares	+Venus	+Sun
0	140°46.2	8.2'	S 26°42.6	-0.1'	55.8'		85°22.5	72°49.3	51°06.9	9°23.8	11°10.4	20°41.2	42°05.6
1	155°13.4	8.2'	26°42.7	0.0'	55.8'		85°05.5	72°20.7	50°42.6	9°51.7	11°42.0	$21^{\circ}09.0$	42°34.4
2	169°40.6	8.2'	26°42.6	0.2'	55.7'		84°48.6	71°52.0	50°18.3	10° 19.8	12°13.5	21°36.8	43°03.1
3	184°07.8	8.3'	26°42.4	0.3'	55.7'		84°31.7	71°23.4	49°54.2	10°48.0	12°44.9	22°04.6	43°31.8
4	198°35.1	8.3'	26°42.1	0.5'	55.7'	119°32.2	84°14.9	70°54.9	49°30.2	11°16.3	13°16.4	22°32.4	44°00.5
5	213°02.4	8.3'	26°41.6	0.6'	55.7'	119°01.0	83°58.1	70°26.4	49°06.4	11°44.7	13°47.8	23°00.1	44°29.2
6	227°29.7	8.4'	S 26°41.0	0.8'	55.6'	118°29.8	83°41.3	69°58.0	48°42.7	12° 13.1	14°19.1	23°27.9	44°57.9
7	241°57.1	8.4'	26°40.2	0.9'	55.6'	117°58.6	83°24.6	69°29.6	48°19.1	12°41.6	14°50.5	23°55.6	45°26.5
8	256°24.5	8.5'	26°39.3	1.1'	55.6'	117°27.5	83°07.9	69°01.2	47°55.6	13°10.1	15°21.8	24°23.4	45°55.1
9	270°52.0 285°19.5	8.5' 8.6'	26°38.3	1.2'	55.6'	116°56.3	82°51.2 82°34.6	68°32.9	47°32.3 47°09.1	13°38.7 14°07.3	15°53.1	24°51.1	46°23.6 46°52.2
10 11	285 19.5 299°47.1	8.6'	26°37.1 26°35.7	1.3' 1.5'	55.5' 55.5'	116°25.2 115°54.2	82°18.1	68°04.7 67°36.5	47 09.1 46°46.0	14 07.3 14°35.9	16°24.3 16°55.5	25°18.8 25°46.5	40 52.2 47°20.7
12	314°14.7 328°42.4	8.7'	S 26°34.3 26°32.6	1.6'	55.5'	115°23.1 114°52.1	82°01.5 81°45.1	67°08.3 66°40.2	46°23.1 46°00.4	15°04.6 15°33.2	17°26.7 17°57.9	26°14.1 26°41.8	47°49.1 48°17.6
13 14	343°10.1	8.7' 8.8'	26°32.6	1.8' 1.9'	55.5' 55.4'	114 52.1 114°21.2	81 45.1 81°28.6	66° 12.2	45°37.8	15 33.2 16°01.9	17 57.9 18°29.0	20 41.8 27°09.4	48 17.6 48°46.0
15	357°37.9	8.8'	26°29.0	2.0'	55.4'	114 21.2 113° 50.2	81°12.3	65°44.2	45°15.3	16°30.6	18 29.0 19°00.1	27°37.0	49°14.4
16	12°05.7	8.9'	26°27.0	2.2'	55.4'	113° 19.3	80°55.9	65°16.2	44°53.0	16°59.2	19°31.1	28°04.6	49°42.8
17	26°33.6	8.9'	26°24.8	2.3'	55.4'	112°48.4	80°39.6	64°48.3	44°30.9	17°27.9	20°02.2	28°32.2	50°11.1
18	41°01.6	9.0'	S 26°22.5	2.4'	55.3'	112° 17.5	80°23.4	64°20.5	44°08.9	17°56.6	20°33.2	28°59.8	50°39.4
19	55°29.5	9.1'	26°20.0	2.6'	55.3'	111°46.7	80°07.2	63°52.7	43°47.1	18° 25.2	21°04.2	29°27.3	51°07.7
20	69°57.6	9.1'	26°17.5	2.7'	55.3'	111°15.8	79°51.1	63°24.9	43°25.5	18°53.9	21°35.1	29°54.8	51°36.0
21	84°25.7	9.2'	26°14.8	2.8'	55.3'	110°45.0	79°35.0	62°57.2	43°04.0	19°22.6	22°06.0	30°22.4	52°04.2
22	98°53.9	9.2'	26°11.9	3.0'	55.2'	110°14.3	79°18.9	62°29.6	42°42.7	19°51.2	22°36.9	30°49.8	52°32.4
23	113°22.1	9.3'	26°08.9	3.1'	55.2'	109°43.5	79°03.0	62°02.0	42°21.6	20°19.9	23°07.8	31°17.3	53°00.6
2 nd	SD :	= 15.2'	Mer. pass	s. 15:10					Sun SD =	= 16.1′			

h		Moon	(3 rd Nov	')			Lunar D	istance (c	bjects wit	h largest	hourly LI	O delta)	
Wed	GHA	1/	Dec	d	HP	-Saturn	-Deneh	-Fomalhau	t -∆ltair	⊥Mars	⊥∆ntares	⊥Venus	Γ

Wed	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Mars	+Antares	+Venus	+Sun
0	127°50.4	9.4'	S 26°05.8	3.2'	55.2'	109°12.8	78°47.0	61°34.5	42°00.7	20°48.5	23°38.6	31°44.7	53°28.8
1	142°18.7	9.4'	26°02.6	3.4'	55.2'	108°42.1	78°31.2	61°07.0	41°39.9	21°17.1	24°09.4	32°12.2	53°56.9
2	156°47.2	9.5'	25°59.2	3.5'	55.1'	108°11.5	78° 15.3	60°39.6	41°19.4	21°45.7	24°40.2	32°39.6	54°25.0
3	171°15.6	9.5'	25°55.7	3.6'	55.1'	107°40.8	77°59.6	60° 12.3	40°59.0	22°14.3	25°11.0	33°07.0	54°53.1
4	185°44.2	9.6'	$25^{\circ}52.1$	3.8'	55.1'	107°10.2	77°43.9	59°45.0	40°38.8	22°42.9	25°41.7	33°34.3	55°21.1
5	200°12.8	9.7'	25°48.3	3.9'	55.1'	106°39.6	77°28.2	59° 17.7	40°18.9	23°11.4	26°12.4	34°01.7	55°49.2
6	214°41.5	9.7'	S 25°44.4	4.0'	55.1'	106°09.1	77°12.6	58° 50.5	39°59.1	23°40.0	26°43.1	34°29.0	56°17.2
7	229°10.2	9.8'	25°40.4	4.1'	55.0'	105°38.5	76°57.1	58°23.4	39°39.5	24°08.5	27°13.7	34°56.3	56°45.2
8	243°39.0	9.9'	25°36.3	4.3'	55.0'	105°08.0	76°41.6	57° 56.4	39°20.2	24°37.1	27°44.3	35°23.6	57°13.1
9	258°07.9	9.9'	25°32.0	4.4'	55.0'	104°37.5	76°26.2	57° 29.4	39°01.1	25°05.6	28°14.9	35°50.9	57°41.1
10	272°36.8	10.0'	25°27.6	4.5'	55.0'	104°07.1	76°10.9	57°02.4	38°42.2	25°34.0	28°45.5	36°18.1	58°09.0
11	287°05.8	10.1'	25°23.1	4.6'	55.0'	103°36.6	75°55.6	56°35.5	38°23.5	26°02.5	29°16.0	36°45.3	58°36.8
12	301°34.9	10.2'	S 25°18.5	4.8'	54.9'	103°06.2	75°40.3	56°08.7	38°05.0	26°31.0	29°46.6	37°12.5	59°04.7
13	316°04.1	10.2'	25°13.8	4.9'	54.9'	102°35.8	75°25.2	55° 42.0	37°46.8	26°59.4	30°17.1	37°39.7	59°32.5
14	330°33.3	10.3'	25°08.9	5.0'	54.9'	102°05.5	75°10.1	55° 15.3	37°28.9	27°27.8	30°47.5	38°06.9	60°00.4
15	345°02.6	10.4'	25°03.9	5.1'	54.9'	101°35.1	74°55.1	54° 48.7	37°11.1	27°56.2	31°18.0	38°34.0	60°28.1
16	359°32.0	10.4'	24°58.8	5.2'	54.9'	101°04.8		54°22.1	36°53.7	28°24.6	31°48.4	39°01.1	60°55.9
17	14°01.4	10.5'	24°53.5	5.3'	54.8'	100°34.5		53°55.6	36°36.4	28°53.0	32°18.8	39°28.2	61°23.7
18	28°30.9	10.6'	S 24°48.2	5.5'	54.8'	100°04.2		53°29.2	36°19.5	29°21.3	32°49.2	39°55.3	61°51.4
19	43°00.5	10.7'	24°42.7	5.6'	54.8'	99°33.9		53°02.9	36°02.8	29°49.7	33°19.5	40°22.4	62°19.1
20	57°30.1	10.7'	24°37.2	5.7'	54.8'	99°03.7		52°36.6	35°46.4	30°18.0	33°49.8	40°49.4	62°46.8
21	71°59.9	10.8'	24°31.5	5.8'	54.8'	98°33.5		52° 10.4	35°30.2	30°46.3	34°20.2	41°16.5	63°14.4
22	86°29.7	10.9'	24°25.7	5.9'	54.7'	98°03.3		51°44.2	35°14.3	31°14.6	34°50.4	41°43.5	63°42.1
23	100°59.6	11.0'	24°19.7	6.0'	54.7'	97°33.1		51°18.1	34°58.8	31°42.8	35°20.7	42°10.5	64°09.7
3 rd	SD :	= 15.1'	Mer. pass	. 16:02					Sun SD =	= 16.1			

h Moon (4th Nov) Lunar Distance (objects with largest hourly LD delta)

$\overline{}$								\ ,		6000	,	
Thu	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Mars	+Antares	+Venus	+Rigil Kent.	+Sun
0	115°29.5	11.0'	S 24°13.7	6.1'	54.7'	97°03.0	50°52.1	32°11.1	35°50.9	42°37.5	57°57.0	64°37.3
1	129°59.5	11.1'	24°07.6	6.3'	54.7'	96°32.8	50°26.2	32°39.3	36°21.2	43°04.4	58°17.9	65°04.9
2	144°29.6	11.2'	24°01.3	6.4'	54.7'	96°02.7	50°00.4	33°07.5	36°51.4	43°31.3	58°38.8	65°32.4
3	158°59.8	11.3'	23°55.0	6.5'	54.7'	95°32.6	49°34.6	33°35.7	37°21.5	43°58.3	58°59.7	66°00.0
4	173°30.1	11.3'	23°48.5	6.6'	54.6'	95°02.6	49°08.9	34°03.9	37°51.7	44°25.2	59°20.8	66°27.5
5	188°00.4	11.4'	23°41.9	6.7'	54.6'	94°32.5	48°43.3	34°32.1	38°21.8	44°52.1	59°41.9	66°55.0
6	202°30.8	11.5'	S 23°35.2	6.8'	54.6'	94°02.5	48° 17.8	35°00.2	38°52.0	45°18.9	60°03.1	67°22.5
7	$217^{\circ}01.3$	11.6'	23°28.4	6.9'	54.6'	93°32.5	47°52.4	35°28.3	39°22.1	45°45.8	60°24.3	67°49.9
8	231°31.8	11.6'	23°21.6	7.0'	54.6'	93°02.5	47°27.0	35°56.5	39°52.1	46°12.6	60°45.6	68°17.4
9	246°02.4	11.7'	23°14.6	7.1'	54.6'	92°32.5	47°01.7	36°24.6	40°22.2	46°39.4	61°07.0	68°44.8
10	260°33.1	11.8'	23°07.5	7.2'	54.5'	92°02.5	46°36.6	36°52.7	40°52.3	47°06.2	61°28.4	69°12.2
11	275°03.9	11.9'	23°00.3	7.3'	54.5'	91°32.6	46°11.5	37°20.7	41°22.3	47°33.0	61°49.9	69°39.6
12	289°34.8	11.9'	S 22°53.0	7.4'	54.5'	91°02.7	45°46.5	37°48.8	41°52.3	47°59.8	62°11.5	70°07.0
13	304°05.7	12.0'	22°45.6	7.5'	54.5'	90°32.8	45°21.6	38°16.8	42°22.3	48°26.6	62°33.0	70°34.3
14	318°36.7	12.1'	22°38.1	7.6'	54.5'	90°02.9	44°56.7	38°44.8	42°52.3	48°53.3	62°54.7	71°01.7
15	333°07.8	12.2'	22°30.5	7.7'	54.5'	89°33.0	44°32.0	39°12.9	43°22.2	49°20.0	63°16.4	71°29.0
16	347°38.9	12.2'	22°22.8	7.8'	54.5'	89°03.1	44°07.4	39°40.9	43°52.2	49°46.8	63°38.1	71°56.3
17	$2^{\circ}10.2$	12.3'	22°15.0	7.9'	54.5'	88°33.3	43°42.9	40°08.8	44°22.1	50°13.5	63°59.9	72°23.6
18	16°41.5	12.4'	S 22°07.1	8.0'	54.4'	88°03.5	43° 18.5	40°36.8	44°52.0	50°40.1	64°21.8	72°50.9
19	31°12.8	12.4'	21°59.1	8.1'	54.4'	87°33.7	42°54.2	41°04.8	45°21.9	51°06.8	64°43.7	73°18.2
20	45°44.3	12.5'	$21^{\circ}51.0$	8.2'	54.4'	87°03.9	42°30.0	41°32.7	45°51.8	51°33.5	65°05.6	73°45.4
21	$60^{\circ}15.8$	12.6'	21°42.9	8.3'	54.4'	86°34.1	42°05.9	42°00.7	46°21.7	52°00.1	65°27.6	74°12.7
22	74°47.4	12.7'	21°34.6	8.3'	54.4'	86°04.3	41°41.9	42°28.6	46°51.5	52°26.8	65°49.6	74°39.9
23	89°19.1	12.7'	21°26.3	8.4'	54.4'	85°34.6	41°18.0	42°56.5	47°21.3	52°53.4	66°11.7	75°07.1
4 th	SD :	= 14.9'	Mer. pass	. 16:51				S	$Sun\;SD=16$.1′		

h Moon (5 th Nov)	Lunar Distance (objects with larg	est hourly LD delta)
----------	----------------------	------------------	-------------------	---------------------	---

Fri	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Mars	+Antares	+Venus	+Rigil Kent.	+Sun
0	103°50.8	12.8'	S 21°17.8	8.5'	54.4'	85°04.8	40°54.3	43°24.4	47°51.2	53°20.0	66°33.8	75°34.3
1	118°22.6	12.9'	21°09.3	8.6'	54.4'	84°35.1	40°30.7	43°52.3	48°21.0	53°46.6	66°56.0	76°01.5
2	132°54.5	13.0'	21°00.7	8.7'	54.4'	84°05.4	40°07.2	44°20.1	48°50.8	54° 13.2	67°18.1	76°28.7
3	147°26.5	13.0'	20°52.0	8.8'	54.3'	83°35.7	39°43.8	44°48.0	49°20.6	54°39.8	67°40.4	76°55.8
4	161°58.5	13.1'	20°43.2	8.9'	54.3'	83°06.0	39°20.5	45°15.9	49°50.4	55°06.3	68°02.6	77°23.0
5	176°30.6	13.2'	20°34.3	9.0'	54.3'	82°36.3	38° 57.4	45°43.7	50°20.1	55°32.9	68°25.0	77°50.1
6	191°02.8	13.2'	S 20°25.4	9.0'	54.3'	82°06.7	38°34.4	46°11.5	50°49.9	55° 59.5	68°47.3	78°17.3
7	205°35.0	13.3'	20°16.3	9.1'	54.3'	81°37.0	38° 11.6	46°39.4	51°19.6	56°26.0	69°09.7	78°44.4
8	220°07.4	13.4'	20°07.2	9.2'	54.3'	81°07.4	37°48.9	47°07.2	51°49.3	56° 52.5	69°32.1	79°11.5
9	234°39.7	13.4'	19°58.0	9.3'	54.3'	80°37.7	37°26.4	47°35.0	52°19.1	57° 19.0	69°54.5	79°38.6
10	249°12.2	13.5'	19°48.7	9.4'	54.3'	80°08.1	37°04.0	48°02.8	52°48.8	57°45.6	70°17.0	80°05.7
11	263°44.7	13.6'	19°39.3	9.5'	54.3'	79°38.5	36°41.7	48°30.6	53°18.5	58° 12.1	70°39.5	80°32.8
12	278° 17.3	13.7'	S 19°29.9	9.5'	54.3'	79°08.9	36° 19.7	48° 58.3	53°48.2	58° 38.6		80°59.8
13	292°49.9	13.7'	19°20.3	9.6'	54.3'	78°39.3	35° 57.7	49°26.1	54°17.9	59°05.0		81°26.9
14	307°22.7	13.8'	19°10.7	9.7'	54.2'	78°09.7	35°36.0	49°53.9	54°47.5	59°31.5		81°54.0
15	321°55.4	13.9'	19°01.1	9.8'	54.2'	77°40.2	35° 14.4	50°21.6	55°17.2	59°58.0		82°21.0
16	336°28.3	13.9'	18°51.3	9.8'	54.2'	77°10.6	34°53.0	50°49.4	55°46.9	60°24.5		82°48.0
17	351°01.2	14.0'	$18^{\circ}41.5$	9.9'	54.2'	76°41.1	34°31.8	51°17.1	56°16.5	60°50.9		83°15.1
18	5°34.2	14.0'	S 18°31.6	10.0'	54.2'	76°11.5	34° 10.8	51°44.9	56°46.2	61°17.4		83°42.1
19	20°07.2	14.1'	18°21.6	10.1'	54.2'	75°42.0	33°50.0	52°12.6	57°15.8	61°43.8		84°09.1
20	34°40.3	14.2'	18°11.5	10.1'	54.2'	75°12.4	33°29.3	52°40.3	57°45.5	62°10.3		84°36.1
21	49°13.5	14.2'	18°01.4	10.2'	54.2'	74°42.9	33°08.9	53°08.1	58°15.1	62°36.7		85°03.1
22	63°46.7	14.3'	$17^{\circ}51.2$	10.3'	54.2'	74°13.4	32°48.7	53°35.8	58°44.7	63°03.2		85°30.2
23	78°20.0	14.4'	17°40.9	10.3'	54.2'	73°43.9	32°28.7	54°03.5	59°14.3	63°29.6		85°57.2
5 th	SD	= 14.8'	Mer. pass	s. 17:37			-	5	oun SD = 16	.1'		

h Moon (6th Nov)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Aldebaran	-Capella	-Rigel	-Saturn	+Mars	+Antares	+Venus	+Sun
0	92°53.4	14.4'	S 17°30.6	10.4'	54.2'				73°14.4	54°31.2	59°43.9	63°56.0	86°24.1
1	107°26.8	14.5'	17°20.2	10.5'	54.2'	119°50.3			72°44.9	54°58.9	60°13.6	64°22.5	86°51.1
2	122°00.3	14.5'	$17^{\circ}09.7$	10.5'	54.2'	119°21.2			72°15.4	55°26.6	60°43.2	64°48.9	87°18.1
3	136°33.8	14.6'	$16^{\circ}59.1$	10.6'	54.2'	118°52.2			71°45.9	55°54.3	61°12.8	65°15.3	87°45.1
4	151°07.4	14.6'	$16^{\circ}48.5$	10.7'	54.2'	118°23.1			71°16.4	56°22.0	61°42.4	65°41.7	88°12.1
5	165°41.0	14.7'	16°37.8	10.7'	54.2'	117°54.1		119°44.4	70°46.9	56°49.7	62°12.0	66°08.2	88°39.1
6	180°14.7	14.8'	S 16°27.1	10.8'	54.2'	117°25.0		119°22.1	70°17.5	57°17.4	62°41.6	66°34.6	89°06.0
7	194°48.5	14.8'	$16^{\circ}16.3$	10.9'	54.2'	116°55.9		118°59.7	69°48.0	57°45.1	63°11.1	67°01.0	89°33.0
8	209°22.3	14.9'	16°05.4	10.9'	54.2'	116°26.9		118°37.3	69°18.5	58°12.8	63°40.7	67°27.4	90°00.0
9	223°56.1	14.9'	15°54.5	11.0'	54.2'	115°57.8		118°14.8	68°49.0	58°40.5	64°10.3	67°53.8	90°27.0
10	238°30.0	15.0'	15°43.5	11.1'	54.2'	115°28.7		117°52.3	68°19.6	59°08.2	64°39.9	68°20.2	90°53.9
11	253°04.0	15.0'	15°32.4	11.1'	54.2'	114°59.6		117°29.7	67°50.1	59°35.9	65°09.5	68°46.6	91°20.9
12	267°38.0	15.1'	S 15°21.3	11.2'	54.2'	114°30.6		117°07.1	67°20.7	60°03.6	65°39.1	69°13.1	91°47.9
13	282°12.1	15.1'	$15^{\circ}10.1$	11.2'	54.2'	114°01.5		116°44.4	66°51.2	60°31.3	66°08.7	69°39.5	92°14.8
14	296°46.2	15.2'	14°58.9	11.3'	54.2'	113°32.4		116°21.6	66°21.8	60°59.0	66°38.3	70°05.9	92°41.8
15	311°20.4	15.2'	14°47.6	11.4'	54.2'	113°03.3		115°58.8	65°52.3	61°26.7	67°07.9	70°32.3	93°08.8
16	325°54.6	15.3'	14°36.2	11.4'	54.2'	112°34.2		115°35.9	65°22.9	61°54.4	67°37.5	70°58.7	93°35.8
17	340°28.8	15.3'	14°24.8	11.5'	54.2'	112°05.1		115°13.0	64°53.4	62°22.1	68°07.1	71°25.1	94°02.7
18	355°03.1	15.4'	S 14°13.3	11.5'	54.2'	111°36.0		114°50.0	64°24.0	62°49.8	68°36.6	71°51.6	94°29.7
19	9°37.5	15.4'	$14^{\circ}01.8$	11.6'	54.2'	111°06.9	119°45.9	114°27.0	63°54.5	63°17.5	69°06.2	72°18.0	94°56.7
20	24°11.9	15.4'	13°50.2	11.6'	54.2'	110°37.7	119°18.5	114°04.0	63°25.1	63°45.2	69°35.9	72°44.4	95°23.7
21	38°46.3	15.5'	13°38.6	11.7'	54.2'	110°08.6	118°51.1	113°40.9	62°55.6	64°12.9	70°05.5	73°10.9	95°50.7
22	53°20.8	15.5'	13°26.9	11.7'	54.2'	109°39.5	118°23.7	113°17.7	62°26.2	64°40.6	70°35.1	73°37.3	96°17.6
23	67°55.3	15.6'	13°15.1	11.8'	54.2'	109° 10.3	117°56.2	112°54.5	61°56.7	65°08.3	71°04.7	74°03.8	96°44.6
6 th	SD	= 14.8'	Mer. pass	. 18:20					Sun SD =	= 16.1′			

Moon (7th Nov)

h		Moor	1 (/" No	v)			Lunar Dis	tance (obje	ects with	largest	hourly LD	delta)	
Sun	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Mars	+Antares	+Venus	+Sun
0	82°29.9	15.6'	S 13°03.3	11.8'	54.2'		117°28.8	108°41.2	61°27.3	65°36.1	71°34.3	74°30.2	97°11.6
1	97°04.5	15.6'	$12^{\circ}51.5$	11.9'	54.2'		117°01.3	108°12.0	60°57.8	66°03.8	72°03.9	74°56.7	97°38.6
2	111°39.2	15.7'	$12^{\circ}39.6$	11.9'	54.2'		116°33.7	107°42.9	60°28.3	66°31.5	72°33.5	75°23.1	98°05.6
3	126°13.8	15.7'	$12^{\circ}27.7$	12.0'	54.2'		116°06.2	107°13.7	59°58.9	66°59.3	73°03.2	75°49.6	98°32.7
4	140°48.5	15.8'	$12^{\circ}15.7$	12.0'	54.2'		115°38.6	106°44.5	59°29.4	67°27.0	73°32.8	76°16.1	98° 59.7
5	155°23.3	15.8'	12°03.6	12.1'	54.2'		115°11.0	106°15.3	59°00.0	67°54.8	74°02.5	76°42.6	99°26.7
6	169°58.1	15.8'	S 11°51.5	12.1'	54.2'		114°43.4	105°46.1	58°30.5	68°22.6	74°32.1	77°09.0	99°53.7
7	184°32.9	15.9'	11°39.4	12.2'	54.2'		114°15.8	105°16.9	58°01.0	68°50.3	75°01.8	77°35.5	100°20.8
8	199°07.8	15.9'	11°27.2	12.2'	54.2'		113°48.1	104°47.7	57°31.6	69°18.1	75°31.4	78°02.0	100°47.8
9	213°42.7	15.9'	$11^{\circ}14.9$	12.3'	54.2'		113°20.5	104°18.5	57°02.1	69°45.9	76°01.1	78°28.6	101°14.8
10	228°17.6	16.0'	$11^{\circ}02.7$	12.3'	54.3'		112°52.8	103°49.2	56°32.6	70°13.7	76°30.8	78°55.1	101°41.9
11	242°52.5	16.0'	$10^{\circ}50.3$	12.4'	54.3'		112°25.0	103°20.0	56°03.1	70°41.5	77°00.5	79°21.6	102°09.0
12	257°27.5	16.0'	S 10°38.0	12.4'	54.3'		111°57.3	102°50.7	55°33.6	71°09.3	77° 30.2	79°48.1	102°36.0
13	272°02.5	16.0'	$10^{\circ}25.6$	12.5'	54.3'		111°29.5	102°21.5	55°04.1	71°37.1	77° 59.9	80°14.7	103°03.1
14	286°37.6	16.1'	$10^{\circ}13.1$	12.5'	54.3'	119°59.1	111°01.8	101°52.2	54°34.7	72°05.0	78° 29.6	80°41.2	103°30.2
15	301°12.6	16.1'	$10^{\circ}00.6$	12.5'	54.3'	119°31.6	110°34.0	101°22.9	54°05.2	72°32.8	78°59.3	81°07.8	103°57.3
16	315°47.7	16.1'	09°48.1	12.6'	54.3'	119°04.0	110°06.1	100°53.6	53°35.6	73°00.7	79°29.1	81°34.4	104°24.4
17	330°22.8	16.1'	09°35.5	12.6'	54.3'	118°36.4	109°38.3	100°24.3	53°06.1	73°28.5	79°58.8	82°01.0	104°51.6
18	344°58.0	16.2'	S 09°22.9	12.7'	54.3'	118°08.7	109°10.4	99°55.0	52°36.6	73°56.4	80°28.6	82°27.6	105°18.7
19	359°33.1	16.2'	$09^{\circ}10.2$	12.7'	54.3'	117°41.1	108°42.5	99°25.6	52°07.1	74°24.3	80°58.4	82°54.2	105°45.8
20	14°08.3	16.2'	08°57.5	12.7'	54.3'	117°13.4	108°14.6	98°56.3	51°37.6	74°52.2	81°28.1	83°20.8	106°13.0
21	28°43.5	16.2'	08°44.8	12.8'	54.3'	116°45.6	107°46.7	98°26.9	51°08.0	75°20.1	81°57.9	83°47.5	106°40.2
22	43°18.8	16.2'	08°32.0	12.8'	54.4'	116°17.9	107°18.7	97°57.5	50°38.5	75°48.0	82°27.7	84°14.1	107°07.3
23	57°54.0	16.3'	08°19.2	12.8'	54.4'	115°50.1	106°50.7	97°28.1	50°09.0	76°15.9	82°57.6	84°40.8	107°34.5
7 th	SD	$= 14.8^{\prime}$	Mer. pass	s. 19:02					$Sun\;SD =$	16.1'			

h	Moon (8 th Nov)	Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Mars	+Antares	+Venus	+Sun
0	72°29.3	16.3'	S 08°06.3	12.9'	54.4'	115°22.3	106°22.7	96°58.7	49°39.4	76°43.9	83°27.4	85°07.5	108°01.7
1	87°04.5	16.3'	07°53.4	12.9'	54.4'	114°54.4	105°54.7	96°29.3	49°09.8	77°11.9	83°57.2	85°34.2	108°29.0
2	101°39.8	16.3'	07°40.5	13.0'	54.4'	114°26.6	105°26.7	95°59.9	48°40.3	77°39.8	84°27.1	86°00.9	108°56.2
3	116°15.1	16.3'	07°27.6	13.0'	54.4'	113°58.7	104°58.6	95°30.4	48°10.7	78°07.8	84°57.0	86°27.6	109°23.4
4	130°50.5	16.3'	$07^{\circ}14.6$	13.0'	54.4'	113°30.7	104°30.5	95°01.0	47°41.1	78°35.8	85°26.9	86°54.3	109°50.7
5	145°25.8	16.3'	$07^{\circ}01.5$	13.1'	54.4'	113°02.8	104°02.4	94°31.5	47°11.6	79°03.9	85°56.8	87°21.1	110°17.9
6	160°01.1	16.4'	S 06°48.5	13.1'	54.4'	112°34.8	103°34.3	94°02.0	46°42.0	79°31.9	86°26.7	87°47.8	110°45.2
7	174°36.5	16.4'	06°35.4	13.1'	54.5'	112°06.8	103°06.1	93°32.5	46°12.4	79°59.9	86° 56.6	88°14.6	111°12.5
8	189°11.8	16.4'	06°22.3	13.1'	54.5'	111°38.7	102°37.9	93°03.0	45°42.8	80°28.0	87°26.6	88°41.4	111°39.8
9	203°47.2	16.4'	$06^{\circ}09.1$	13.2'	54.5'	111°10.6	102°09.7	92°33.4	45°13.1	80°56.1	87° 56.5	89°08.2	112°07.2
10	218°22.6	16.4'	05°56.0	13.2'	54.5'	110°42.5	101°41.5	92°03.9	44°43.5	81°24.2	88° 26.5	89°35.1	112°34.5
11	232°58.0	16.4'	05°42.8	13.2'	54.5'	110°14.4	101°13.3	91°34.3	44°13.9	81°52.3	88° 56.5	90°01.9	113°01.9
12	247°33.4	16.4'	S 05°29.5	13.3'	54.5'	109°46.3	100°45.0	91°04.7	43°44.3	82°20.4	89°26.5	90°28.8	113°29.3
13	262°08.8	16.4'	$05^{\circ}16.3$	13.3'	54.5'	109°18.1	100° 16.7	90°35.1	43°14.6	82°48.6	89° 56.6	90°55.6	113°56.7
14	276°44.2	16.4'	05°03.0	13.3'	54.6'	108°49.9	99°48.4	90°05.4	42°45.0	83°16.8	90°26.6	91°22.5	114°24.1
15	291°19.6	16.4'	04°49.7	13.3'	54.6'	108°21.6	99°20.1	89°35.8	42°15.3	83°45.0	90°56.7	91°49.5	114°51.5
16	305°55.0	16.4'	04°36.3	13.4'	54.6'	107°53.4	98°51.7	89°06.1	41°45.7	84°13.2	91°26.8	92°16.4	115°18.9
17	320°30.4	16.4'	04°22.9	13.4'	54.6'	107°25.1	98°23.4	88°36.5	41°16.0	84°41.4	91°56.9	92°43.4	115°46.4
18	335°05.8	16.4'	S 04°09.5	13.4'	54.6'	106°56.8	97°55.0	88°06.7	40°46.3	85°09.6	92°27.0	93°10.3	116°13.9
19	349°41.2	16.4'	03°56.1	13.4'	54.6'	106°28.4	97°26.6	87°37.0	40°16.7	85°37.9	92°57.2	93°37.3	116°41.4
20	4°16.6	16.4'	03°42.7	13.5'	54.6'	106°00.0	96°58.1	87°07.3	39°47.0	86°06.2	93°27.3	94°04.4	117°08.9
21	18°52.0	16.4'	03°29.2	13.5'	54.7'	105°31.6	96° 29.7	86°37.5	39°17.3	86°34.5	93°57.5	94°31.4	117°36.5
22	33°27.4	16.4'	03°15.7	13.5'	54.7'	105°03.2	96°01.2	86°07.7	38°47.6	87°02.8	94°27.7	94°58.4	118°04.0
23	48°02.7	16.4'	03°02.2	13.5'	54.7'	104°34.7	95°32.7	85°37.9	38°17.9	87°31.2	94°58.0	95°25.5	118°31.6
8 th	SD	= 14.8'	Mer. pass	. 19:42					Sun SD =	16.1'			

h Moon (9th Nov)

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Pollux	-Betelgeuse	-Aldebaran	-Saturn	+Mars	+Antares	+Venus	+Sun		
0	62°38.1	16.4'	S 02°48.7	13.5'	54.7'		104°06.3	85°08.1	37°48.2	87°59.5	95°28.2	95°52.6	118°59.2		
1	77°13.5	16.4'	02°35.2	13.6'	54.7'		103°37.7	84°38.3	37°18.5	88°27.9	95°58.5	96°19.7	119°26.8		
2	91°48.8	16.3'	$02^{\circ}21.6$	13.6'	54.8'		103°09.2	84°08.4	36°48.8	88°56.3	96°28.8	96°46.9	119°54.4		
3	106°24.2	16.3'	02°08.0	13.6'	54.8'		102°40.6	83°38.6	36°19.0	89°24.7	96°59.1	97°14.1			
4	120°59.5	16.3'	$01^{\circ}54.4$	13.6'	54.8'		102°12.0	83°08.6	35°49.3	89°53.2	97°29.4	97°41.2			
5	135°34.8	16.3'	$01^{\circ}40.8$	13.6'	54.8'		101°43.4	82°38.7	35°19.6	90°21.7	97°59.8	98°08.4			
6	150°10.1	16.3'	S 01°27.2	13.6'	54.8'		101°14.7	82°08.8	34°49.9	90°50.2	98°30.2	98°35.7			
7	164°45.4	16.3'	$01^{\circ}13.5$	13.7'	54.8'		100°46.1	81°38.8	34°20.2	91°18.7	99°00.6	99°02.9			
8	179°20.7	16.3'	00°59.9	13.7'	54.9'		100°17.4	81°08.8	33°50.4	91°47.2	99°31.0	99°30.2			
9	193°55.9	16.2'	00°46.2	13.7'	54.9'		99°48.6	80°38.8	33°20.7	92°15.8	100°01.4	99°57.5			
10	208°31.2	16.2'	00°32.5	13.7'	54.9'		99°19.9	80°08.8	32°51.0	92°44.4	100°31.9	100°24.8			
11	223°06.4	16.2'	$00^{\circ}18.8$	13.7'	54.9'		98°51.1	79°38.7	32°21.3	93°13.0	101°02.4	100°52.2			
12	237°41.6	16.2'	S 00°05.1	13.7'	54.9'		98°22.2	79°08.6	31°51.5	93°41.7	101°32.9	101°19.6			
13	252°16.8	16.2'	N 00°08.7	13.7'	55.0'		97°53.4	78° 38.5	31°21.8	94°10.3	102°03.5	101°47.0			
14	266°51.9	16.1'	00°22.4	13.7'	55.0'		97°24.5	78°08.4	30°52.1	94°39.0	102°34.1	102°14.4			
15	281°27.0	16.1'	$00^{\circ}36.1$	13.8'	55.0'	119°49.0	96°55.6	77° 38.3	30°22.4	95°07.7	103°04.7	102°41.8			
16	296°02.1	16.1'	00°49.9	13.8'	55.0'	119°18.6	96°26.7	77°08.1	29°52.7	95°36.5	103°35.3	103°09.3			
17	310°37.2	16.0'	$01^{\circ}03.7$	13.8'	55.0'	118°48.1	95°57.7	76°37.9	29°23.0	96°05.2	104°05.9	103°36.8			
18	325°12.3	16.0'	$N01^{\circ}17.4$	13.8'	55.1'	118°17.6	95°28.7	76°07.7	28°53.4	96°34.0	104°36.6	104°04.4			
19	339°47.3	16.0'	01°31.2	13.8'	55.1'	117°47.1	94°59.7	75° 37.5	28°23.7	97°02.8	105°07.3	104°31.9			
20	354°22.3	16.0'	$01^{\circ}45.0$	13.8'	55.1'	117°16.6	94°30.7	75°07.2	27°54.1	97°31.7	105°38.0	104°59.5			
21	8°57.2	15.9'	$01^{\circ}58.8$	13.8'	55.1'	116°46.0	94°01.6	74°36.9	27°24.4	98°00.6	106°08.8	105°27.1			
22	23°32.2	15.9'	$02^{\circ}12.6$	13.8'	55.1'	116°15.4	93°32.5	74°06.6	26°54.8	98°29.4	106°39.6	105°54.7			
23	38°07.0	15.9'	02°26.4	13.8'	55.2'	115°44.8	93°03.4	73°36.2	26°25.2	98°58.4	107°10.4	106°22.4			
9 th	SD	$= 14.9^{\prime}$	Mer. pass	. 20:23			SunSD = 16.1'								

Moon (10th Nov)

h

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Aldebaran	+Altair	+Mars	+Venus	+Antares
0	52°41.9	15.8'	N02°40.2	13.8'	55.2'	118° 31.5	115°14.1	92°34.3	73°05.9	58°10.8	99°27.3	106°50.1	107°41.2
1	67°16.7	15.8'	02°54.0	13.8'	55.2'	118°02.4	114°43.4	92°05.1	72°35.5	58°36.0	99°56.3	107° 17.8	108°12.1
2	81°51.5	15.8'	03°07.8	13.8'	55.2'	117°33.2	114°12.7	91°35.9	72°05.1	59°01.2	100°25.3	107° 45.5	108°43.0
3	96°26.3	15.7'	03°21.6	13.8'	55.3'	117°04.0	113°42.0	91°06.6	71°34.6	59°26.6	100°54.3	108°13.3	109°13.9
4	111°01.0	15.7'	03°35.4	13.8'	55.3'	116°34.7	113°11.2	90°37.4	71°04.2	59°52.0	101°23.4	108°41.1	109°44.8
5	125°35.7	15.6'	03°49.2	13.8'	55.3'	116°05.4	112°40.4	90°08.1	70°33.7	60°17.5	101°52.5	109°08.9	110°15.8
6	140°10.3	15.6'	N04°03.0	13.8'	55.3'	115°36.0	112°09.6	89°38.8	70°03.2	60°43.0	102°21.6	109°36.8	110°46.8
7	154°44.9	15.5'	04°16.8	13.8'	55.4'	115°06.6	111°38.7	89°09.4	69°32.6	61°08.7	102°50.8	110°04.7	111°17.8
8	169°19.4	15.5'	04°30.6	13.8'	55.4'	114°37.2	111°07.8	88°40.1	69°02.1	61°34.4	103°20.0	110°32.6	111°48.9
9	183°53.9	15.5'	04°44.3	13.8'	55.4'	114°07.7	110°36.9	88° 10.7	68°31.5	62°00.1	103°49.2	111°00.6	112°20.0
10	198°28.4	15.4'	04°58.1	13.8'	55.4'	113°38.2	110°05.9	87°41.2	68°00.9	62°26.0	104°18.4	111°28.5	112°51.1
11	213°02.8	15.4'	05°11.9	13.8'	55.4'	113°08.6	109°35.0	87°11.8	67°30.2	62°51.9	104°47.7	111°56.5	113°22.3
12	227°37.2	15.3'	N05°25.7	13.8'	55.5'	112°39.0	109°03.9	86° 42.3	66°59.6	63°17.9	105°17.0	112°24.6	113°53.5
13	242°11.5	15.3'	05°39.4	13.7'	55.5'	112°09.3	108°32.9	86° 12.8	66°28.9	63°44.0	105°46.3	112°52.6	114°24.7
14	256°45.7	15.2'	05°53.2	13.7'	55.5'	111°39.7	108°01.8	85°43.3	65°58.2	64°10.1	106°15.6	113°20.7	114°55.9
15	271°19.9	15.2'	06°06.9	13.7'	55.5'	111°09.9	107°30.7	85° 13.7	65°27.4	64°36.3	106°45.0	113°48.9	115°27.2
16	285°54.1	15.1'	06°20.6	13.7'	55.6'	110°40.2	106°59.6	84°44.1	64°56.7	65°02.5	107°14.4	114° 17.0	115°58.5
17	300°28.2	15.1'	06°34.3	13.7'	55.6'	110°10.4	106°28.4	84° 14.5	64°25.9	65°28.9	107°43.9	114°45.2	116°29.8
18	315°02.3	15.0'	N 06°48.0	13.7'	55.6'	109°40.5	105°57.2	83°44.9	63°55.0	65°55.2	108°13.4	115°13.4	117°01.2
19	329°36.3	14.9'	07°01.7	13.7'	55.6'	109°10.6	105°26.0	83° 15.2	63°24.2	66°21.7	108°42.9	115°41.7	117°32.6
20	344°10.2	14.9'	07°15.4	13.7'	55.7'	108°40.7	104°54.7	82°45.5	62°53.3	66°48.2	109°12.4	116°09.9	118°04.0
21	358°44.1	14.8'	07°29.0	13.6'	55.7'	108° 10.8	104°23.4	82° 15.8	62°22.4	67°14.8	109°42.0	116°38.2	118° 35.5
22	13°17.9	14.8'	07°42.7	13.6'	55.7'	107°40.8	103°52.0	81°46.1	61°51.5	67°41.4	110°11.6	117°06.6	119°07.0
23	27°51.7	14.7'	07°56.3	13.6'	55.8'	107°10.7	103°20.7	81°16.3	61°20.5	68°08.1	110°41.2	117°35.0	119°38.5
10 th	SD	$= 15.1^{\prime}$	Mer. pass	. 21:05									

h Moon (11th Nov)

Thu	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Aldebaran	+Fomalhaut	+Altair	+Mars	+Venus
0	42°25.4	14.6'	N 08°09.9	13.6'	55.8'	106°40.6	102°49.3	80°46.5	60°49.6	43°31.0	68°34.9	111°10.9	118°03.4
1	56°59.0	14.6'	08°23.4	13.6'	55.8'	106°10.5	102° 17.9	80°16.7	60°18.6	43°56.9	69°01.7	111°40.6	118°31.8
2	71°32.6	14.5'	08°37.0	13.5'	55.8'	105°40.4	101°46.4	79°46.8	59°47.5	44°22.8	69°28.6	112°10.3	119°00.3
3	86°06.1	14.5'	08°50.5	13.5'	55.9'	105°10.2	101°14.9	79°17.0	59°16.5	44°48.9	69°55.5	112°40.1	119°28.8
4	100°39.6	14.4'	09°04.0	13.5'	55.9'	104°39.9	100°43.4	78°47.1	58°45.4	45°15.1	70°22.5	113°09.9	119°57.3
5	115°13.0	14.3'	$09^{\circ}17.5$	13.5'	55.9'	104°09.7	100°11.8	78°17.2	58°14.3	45°41.4	70°49.6	113°39.7	
6	129°46.3	14.2'	N09°31.0	13.4'	55.9'	103°39.4	99°40.2	77°47.2	57°43.2	46°07.8	71°16.7	114°09.6	
7	144°19.5	14.2'	09°44.4	13.4'	56.0'	103°09.0	99°08.6	77°17.2	57°12.0	46°34.4	71°43.8	114°39.5	
8	158°52.7	14.1'	09°57.8	13.4'	56.0'	102°38.6	98°36.9	76°47.3	56°40.9	47°01.0	72°11.0	115°09.4	
9	173°25.8	14.0'	$10^{\circ}11.2$	13.3'	56.0'	102°08.2	98°05.2	76°17.2	56°09.6	47°27.8	72°38.3	115°39.3	
10	187°58.9	14.0'	10°24.5	13.3'	56.0'	101°37.8	97°33.5	75°47.2	55°38.4	47°54.6	73°05.6	116°09.3	
11	202°31.8	13.9'	10°37.9	13.3'	56.1'	101°07.3	97°01.8	75°17.1	55°07.2	48°21.6	73°33.0	116°39.4	
12	217°04.7	13.8'	$N10^{\circ}51.1$	13.2'	56.1'	100°36.7	96°30.0	74°47.1	54°35.9	48°48.7	74°00.4	117°09.4	
13	231°37.5	13.7'	11°04.4	13.2'	56.1'	100°06.2	95°58.1	74°17.0	54°04.6	49°15.9	74°27.9	117°39.5	
14	246°10.3	13.7'	11°17.6	13.2'	56.2'	99°35.6	95°26.3	73°46.8	53°33.3	49°43.1	74°55.4	118°09.6	
15	260°42.9	13.6'	11°30.8	13.1'	56.2'	99°04.9	94°54.4	73°16.7	53°01.9	50°10.5	75°23.0	118°39.8	
16	275°15.5	13.5'	11°43.9	13.1'	56.2'	98°34.2	94°22.5	72°46.5	52°30.6	50°38.0	75°50.6	119°10.0	
17	289°48.0	13.4'	$11^{\circ}57.0$	13.1'	56.2'	98°03.5	93°50.5	72°16.3	51°59.2	51°05.5	$76^{\circ}18.3$	119°40.2	
18	304°20.4	13.3'	$N12^{\circ}10.1$	13.0'	56.3'	97°32.8	93° 18.5	71°46.1	51°27.7	51°33.2	76°46.0		
19	318°52.8	13.3'	12°23.1	13.0'	56.3'	97°02.0	92°46.5	71°15.9	50°56.3	52°00.9	$77^{\circ}13.8$		
20	333°25.0	13.2'	$12^{\circ}36.1$	12.9'	56.3'	96°31.2	92°14.4	70°45.6	50°24.9	52°28.8	77°41.6		
21	347°57.2	13.1'	$12^{\circ}49.0$	12.9'	56.3'	96°00.3	91°42.3	70°15.3	49°53.4	52°56.7	78°09.5		
22	2°29.3	13.0'	13°01.9	12.8'	56.4'	95°29.4	91°10.2	69°45.1	49°21.9	53°24.7	78° 37.4		
23	17°01.3	12.9'	13°14.7	12.8'	56.4'	94°58.5	90°38.0	69°14.7	48°50.3	53°52.8	79°05.4		
11 th	SD	$=15.2^{\prime}$	Mer. pass	. 21:50									

h Moon (12th Nov)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Betelgeuse	-Aldebaran	+Saturn	+Fomalhaut	+Altair
0	31°33.2	12.8'	N13°27.5	12.7'	56.4'		94° 27.5	90°05.8	68°44.4	48° 18.8		54°21.0	79°33.4
1	46°05.1	12.7'	13°40.3	12.7'	56.5'		93°56.5	89°33.6	68°14.1	47° 47.2		54°49.2	80°01.4
2	60°36.8	12.7'	13°53.0	12.6'	56.5'		93°25.5	89°01.3	67°43.7	47° 15.7		55° 17.5	80°29.5
3	75°08.5	12.6'	14°05.6	12.6'	56.5'		92°54.4	88°29.0	67°13.3	46°44.1		55°46.0	80°57.6
4	89°40.1	12.5'	14°18.2	12.5'	56.5'		92°23.3	87°56.7	66°42.9	46°12.4		56°14.5	81°25.8
5	104°11.5	12.4'	14°30.7	12.5'	56.6'		91°52.2	87°24.3	66°12.5	45°40.8		56°43.0	81°54.0
6	118°42.9	12.3'	N14°43.2	12.4'	56.6'		91°21.0	86°51.9	65°42.1	45°09.2		57°11.7	82°22.3
7	133°14.2	12.2'	14°55.7	12.4'	56.6'		90°49.8	86° 19.5	65°11.7	44°37.5		57°40.4	82°50.5
8	147°45.4	12.1'	15°08.0	12.3'	56.7'		90°18.6	85°47.0	64°41.2	44°05.8		58°09.2	83°18.9
9	162°16.6	12.0'	15°20.3	12.3'	56.7'		89°47.3	85° 14.5	64°10.8	43°34.1		58°38.1	83°47.2
10	176°47.6	11.9'	15°32.6	12.2'	56.7'		89°16.0	84°42.0	63°40.3	43°02.4		59°07.0	84°15.7
11	191°18.5	11.8'	15°44.8	12.1'	56.7'		88°44.7	84°09.4	63°09.8	42°30.7		59°36.0	84°44.1
12	205°49.3	11.7'	N15°56.9	12.1'	56.8'		88°13.3	83°36.8	62°39.3	41°58.9		60°05.1	85°12.6
13	220°20.0	11.6'	$16^{\circ}09.0$	12.0'	56.8'		87°41.9	83°04.2	62°08.8	41°27.2	10°47.4	60°34.2	85°41.1
14	234°50.7	11.5'	$16^{\circ}21.0$	11.9'	56.8'	119°28.7	87° 10.5	82°31.5	61°38.3	40°55.4	11°11.1	61°03.4	86°09.7
15	249°21.2	11.4'	16°32.9	11.9'	56.8'	118°55.9	86°39.1	81°58.8	61°07.7	40°23.6	11°35.5	61°32.7	86°38.2
16	263°51.6	11.3'	16°44.7	11.8'	56.9'	118°23.0	86°07.6	81°26.1	60°37.2	39°51.9	12°00.6	62°02.1	87°06.9
17	278°22.0	11.2'	$16^{\circ}56.5$	11.7'	56.9'	117°50.1	85°36.0	80°53.3	60°06.6	39°20.1	12°26.4	62°31.5	87°35.5
18	292°52.2	11.1'	$N17^{\circ}08.2$	11.6'	56.9'	117°17.2	85°04.5	80°20.5	59°36.1	38°48.3	12°52.7	63°00.9	88°04.2
19	307°22.4	11.0'	$17^{\circ}19.9$	11.6'	57.0'	116°44.2	84°32.9	79°47.7	59°05.5	38° 16.5	13° 19.6	63°30.5	88°32.9
20	321°52.4	10.9'	17°31.4	11.5'	57.0'	116°11.2	84°01.3	79°14.8	58°35.0	37°44.7	13°46.9	64°00.1	89°01.7
21	336°22.3	10.8'	17°42.9	11.4'	57.0'	115°38.2	83°29.7	78°41.9	58°04.4	37° 12.9	14° 14.7	64°29.7	89°30.5
22	350°52.1	10.7'	17°54.3	11.3'	57.0'	115°05.2	82°58.0	78°09.0	57°33.9	36°41.1	14°42.8	64°59.4	89°59.3
23	5°21.9	10.6'	18°05.7	11.2'	57.1'	114°32.1	82°26.3	77°36.0	57°03.3	36°09.3	15°11.4	65°29.2	90°28.1
12 th	SD	= 15.4'	Mer. pass	. 22:38				-					

h Moon (13th Nov)

Lunar Distance (objects with largest hourly LD delta)

			(20			zana: zistanes (esjects min iaigest nearly zz deita)							
Sat	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Aldebaran	+Saturn	+Fomalhaut	+Deneb	+Altair
0	19°51.5	10.5'	$N18^{\circ}16.9$	11.2'	57.1'	113°59.0	81°54.6	77°03.0	35°37.5	15°40.2	65°59.0	71°10.8	90°57.0
1	34°21.0	10.4'	18°28.1	11.1'	57.1'	113°25.8	81°22.8	76°30.0	35°05.7	16°09.4	66°28.9	71°26.1	91°25.9
2	48°50.4	10.3'	18°39.2	11.0'	57.2'	112°52.6	80°51.0	75°56.9	34°33.9	16°38.9	66°58.9	71°41.6	91°54.8
3	63°19.7	10.2'	18°50.1	10.9'	57.2'	112° 19.4	80° 19.2	75°23.8	34°02.1	17°08.6	67°28.9	71°57.1	92°23.8
4	77°48.9	10.1'	$19^{\circ}01.1$	10.8'	57.2'	111°46.1	79°47.4	74°50.7	33°30.4	17°38.6	67°58.9	72°12.8	92°52.8
5	92°18.0	10.0'	$19^{\circ}11.9$	10.7'	57.2'	111°12.8	79° 15.5	74° 17.5	32°58.6	18°08.8	68°29.0	72°28.5	93°21.8
6	106°47.0	9.9'	$N19^{\circ}22.6$	10.6'	57.3'	110°39.5	78°43.6	73°44.3	32°26.9	18°39.2	68°59.2	72°44.4	93°50.8
7	121°15.9	9.8'	19°33.2	10.5'	57.3'	110°06.1	78° 11.7	73°11.1	31°55.1	19°09.8	69°29.4	73°00.3	94°19.8
8	135°44.7	9.7'	19°43.8	10.4'	57.3'	109°32.7	77°39.8	72°37.9	31°23.4	19°40.6	69°59.7	73°16.3	94°48.9
9	150°13.4	9.6'	19°54.2	10.3'	57.3'	108°59.3	77°07.8	72°04.6	30°51.8	20°11.5	70°30.0	73°32.5	95°18.0
10	164°41.9	9.5'	20°04.6	10.2'	57.4'	108°25.9	76°35.8	71°31.3	30°20.1	20°42.7	71°00.3	73°48.7	95°47.1
11	179°10.4	9.4'	$20^{\circ}14.8$	10.1'	57.4'	107°52.4	76°03.8	70°57.9	29°48.5	21°13.9	71°30.7	74°05.0	96°16.3
12	193°38.8	9.2'	N 20°25.0	10.0'	57.4'	107°18.9	75°31.8	70°24.6	29°16.9	21°45.4	72°01.2	74°21.4	96°45.4
13	208°07.0	9.1'	20°35.0	9.9'	57.4'	106°45.3	74°59.7	69°51.1	28°45.3	22°16.9	72°31.7	74°37.8	97°14.6
14	222°35.1	9.0'	20°44.9	9.8'	57.5'	106°11.7	74°27.6	69° 17.7	28°13.8	22°48.6	73°02.3	74°54.4	97°43.8
15	237°03.2	8.9'	20°54.8	9.7'	57.5'	105°38.1	73°55.5	68°44.2	27°42.4	23°20.4	73°32.9	75°11.0	98°13.0
16	251°31.1	8.8'	21°04.5	9.6'	57.5'	105°04.5	73°23.4	68° 10.7	27°11.0	23°52.3	74°03.5	75°27.7	98°42.2
17	265°58.9	8.7'	$21^{\circ}14.1$	9.5'	57.6'	104°30.8	72°51.3	67°37.2	26°39.6	24°24.4	74°34.2	75°44.5	99°11.5
18	280°26.6	8.6'	$N21^{\circ}23.7$	9.4'	57.6'	103°57.1	72°19.1	67°03.7	26°08.3	24°56.5	75°04.9	76°01.4	99°40.7
19	294°54.2	8.5'	21°33.1	9.3'	57.6'	103°23.3	71°46.9	66°30.1	25°37.1	25°28.7	75°35.7	76°18.4	100°10.0
20	309°21.7	8.4'	21°42.3	9.2'	57.6'	102°49.6	71°14.7	65°56.5	25°05.9	26°01.1	76°06.5	76°35.4	100°39.3
21	323°49.1	8.3'	21°51.5	9.1'	57.7'	102°15.7	70°42.5	65°22.8	24°34.9	26°33.5	76°37.4	76°52.5	101°08.5
22	338°16.4	8.2'	22°00.6	8.9'	57.7'	101°41.9	70°10.2	64°49.2	24°03.9	27°06.0	77°08.3	77°09.7	101°37.8
23	352°43.6	8.1'	22°09.5	8.8'	57.7'	101°08.1	69°38.0	64° 15.5	23°33.0	27°38.6	77°39.2	77°27.0	102°07.1
13 th	SD	= 15.6'	Mer. pass	. 23:30									

h Moon (14th Nov)

Sun	GHA	ν	Dec	d	HP	-Jupiter	-Regulus	-Procyon	-Pollux	+Saturn	+Deneb	+Fomalhaut	+Altair
0	7°10.6	8.0'	N22°18.3	8.7'	57.7'		100°34.2	69°05.7	63°41.7	28°11.3	77°44.3	78°10.2	102°36.5
1	21°37.6	7.9'	22°27.0	8.6'	57.8'		100°00.2	68°33.4	63°08.0	28°44.1	78°01.7	78°41.2	103°05.8
2	36°04.4	7.8'	22°35.6	8.5'	57.8'		99°26.3	68°01.1	62°34.2	29°16.9	78°19.1	79°12.3	103°35.1
3	50°31.2	7.7'	22°44.1	8.3'	57.8'		98°52.3	67°28.8	62°00.4	29°49.8	78°36.7	79°43.4	104°04.5
4	64°57.9	7.5'	22°52.4	8.2'	57.8'		98°18.3	66°56.4	61°26.6	30°22.8	78°54.3	80°14.5	104°33.8
5	79°24.4	7.4'	23°00.6	8.1'	57.9'	119°50.4	97°44.3	66°24.1	60°52.7	30°55.9	79°11.9	80°45.7	105°03.1
6	93°50.9	7.3'	N23°08.7	7.9'	57.9'	119°16.8	97° 10.2	65°51.7	60°18.8	31°29.0	79°29.7	81°16.9	105°32.5
7	108°17.2	7.2'	23°16.6	7.8'	57.9'	118°43.2	96°36.1	65°19.3	59°44.9	32°02.2	79°47.4	81°48.1	106°01.8
8	122°43.4	7.1'	23°24.4	7.7'	57.9'	118°09.6	96°02.0	64°46.9	59°11.0	32°35.4	80°05.3	82°19.4	106°31.1
9	137°09.6	7.0'	23°32.1	7.5'	58.0'	117°35.9	95°27.8	64°14.5	58°37.0	33°08.7	80°23.2	82°50.7	107°00.5
10	151°35.6	6.9'	23°39.6	7.4'	58.0'	117°02.2	94°53.6	63°42.1	58°03.0	33°42.1	80°41.1	83°22.0	107°29.8
11	166°01.6	6.8'	23°47.0	7.3'	58.0'	116°28.5	94°19.4	63°09.7	57°29.0	34° 15.5	80°59.1	83°53.4	107°59.1
12	180°27.4	6.7'	N23°54.3	7.1'	58.0'	115°54.8	93°45.2	62°37.3	56°55.0	34°49.0	81°17.2	84°24.8	108°28.5
13	194°53.2	6.7'	24°01.4	7.0'	58.0'	115°21.0	93°10.9	62°04.9	56°20.9	35°22.5	81°35.3	84°56.2	108°57.8
14	209°18.8	6.6'	24°08.4	6.8'	58.1'	114°47.2	92°36.6	61°32.4	55°46.8	35°56.0	81°53.5	85°27.6	109°27.1
15	223°44.4	6.5'	24°15.2	6.7'	58.1'	114°13.4	92°02.3	61°00.0	55° 12.7	36°29.7	82°11.7	85°59.1	109°56.4
16	238°09.8	6.4'	24°21.9	6.6'	58.1'	113°39.5	91°28.0	60°27.5	54°38.6	37°03.3	82°30.0	86°30.6	110°25.7
17	252°35.2	6.3'	24°28.5	6.4'	58.1'	113°05.7	90°53.6	59°55.1	54°04.4	37°37.1	82°48.3	87°02.2	110°54.9
18	267°00.5	6.2'	N 24°34.9	6.3'	58.2'	112°31.7	90°19.2	59°22.6	53°30.3	38° 10.8	83°06.7	87°33.8	111°24.2
19	281°25.7	6.1'	24°41.1	6.1'	58.2'	111°57.8	89°44.8	58°50.2	52°56.1	38°44.7	83°25.1	88°05.3	111°53.5
20	295°50.7	6.0'	24°47.2	6.0'	58.2'	111°23.8	89°10.3	58°17.7	52°21.8	39° 18.5	83°43.5	88°37.0	112°22.7
21	310°15.8	5.9'	24°53.2	5.8'	58.2'	110°49.9	88° 35.8	57°45.2	51°47.6	39°52.4	84°02.0	89°08.6	112°51.9
22	324°40.7	5.8'	24°59.0	5.6'	58.3'	110°15.8	88°01.3	57°12.8	51°13.3	40°26.4	84°20.5	89°40.3	113°21.1
23	339°05.5	5.8'	25°04.6	5.5'	58.3'	109°41.8	87°26.8	56°40.3	50°39.1	41°00.3	84°39.1	90°12.0	113°50.2
14 th	SD	= 15.7	7′ Mer. pas	ss:-									

Moon (15th Nov)

Lunar Distance (objects with largest hourly LD delta)

Lunar Distance (objects with largest hourly LD delta)

-Jupiter -Regulus -Pollux +Capella +Aldebaran +Saturn +Fomalhaut

Mon	GHA	ν	Dec	d	HP	-Jupiter	-Regulus	-Procyon	-Pollux	+Saturn	+Deneb	+Fomalhaut	+Altair
0	353°30.3	5.7'	N 25°10.1	5.3'	58.3'	109°07.7	86°52.3	56°07.9	50°04.8	41°34.4	84°57.7	90°43.7	114°19.4
1	7°54.9	5.6'	25°15.5	5.2'	58.3'	108°33.7	86°17.7	55°35.5	49°30.5	42°08.4	85°16.3	91°15.4	114°48.5
2	22°19.5	5.5'	25°20.7	5.0'	58.3'	107°59.5	85°43.1	55°03.0	48°56.1	42°42.5	85°35.0	91°47.1	115°17.6
3	36°44.0	5.4'	25°25.7	4.9'	58.4'	107°25.4	85°08.5	54°30.6	48°21.8	43°16.7	85°53.7	92°18.9	115°46.7
4	51°08.5	5.4'	25°30.5	4.7'	58.4'	106°51.2	84°33.9	53°58.2	47°47.4	43°50.9	86°12.4	92°50.7	116°15.7
5	65°32.8	5.3'	25°35.2	4.5'	58.4'	106°17.0	83°59.2	53°25.8	47°13.0	44°25.1	86°31.2	93°22.5	116°44.7
6	79°57.1	5.2'	N 25°39.8	4.4'	58.4'	105°42.8	83°24.5	52°53.4	46°38.6	44°59.3	86°50.0	93°54.3	117°13.6
7	94°21.3	5.1'	25°44.2	4.2'	58.4'	105°08.6	82°49.8	52°21.0	46°04.2	45°33.6	87°08.8	94°26.2	117°42.6
8	108°45.5	5.1'	25°48.4	4.0'	58.5'	104°34.3	82°15.1	51°48.6	45°29.8	46°07.9	87°27.6	94°58.0	118°11.5
9	123°09.5	5.0'	25°52.4	3.9'	58.5'	104°00.1	81°40.3	51°16.3	44°55.3	46°42.3	87°46.5	95°29.9	118°40.3
10	137°33.6	4.9'	25°56.3	3.7'	58.5'	103°25.8	81°05.5	50°43.9	44°20.8	47°16.7	88°05.4	96°01.8	119°09.1
11	151°57.5	4.9'	26°00.0	3.5'	58.5'	102°51.4	80°30.7	50°11.6	43°46.4	47°51.1	88°24.3	96°33.7	119°37.9
12	166°21.4	4.8'	N 26°03.5	3.4'	58.5'	102°17.1	79°55.9	49°39.3	43°11.9	48°25.5	88°43.2	97°05.6	
13	180°45.2	4.8'	26°06.9	3.2'	58.6'	101°42.7	79°21.1	49°07.1	42°37.4	49°00.0	89°02.2	97°37.5	
14	195°08.9	4.7'	$26^{\circ}10.1$	3.0'	58.6'	101°08.3	78°46.2	48°34.8	42°02.8	49°34.5	89°21.1	98°09.5	
15	209°32.6	4.6'	26°13.2	2.9'	58.6'	100°33.9	78°11.4	48°02.6	41°28.3	50°09.0	89°40.1	98°41.4	
16	223°56.3	4.6'	$26^{\circ}16.0$	2.7'	58.6'	99°59.5	77°36.5	47°30.4	40°53.8	50°43.6	89°59.1	99°13.4	
17	238°19.9	4.5'	$26^{\circ}18.7$	2.5'	58.6'	99°25.1	77°01.6	46°58.3	40°19.2	51°18.2	90°18.1	99°45.3	
18	252°43.4	4.5'	N 26°21.2	2.3'	58.6'	98°50.6	76°26.6	46°26.2	39°44.7	51°52.8	90°37.1	100°17.3	
19	267°06.9	4.4'	26°23.5	2.2'	58.7'	98°16.1	75°51.7	45°54.1	39°10.1	52°27.4	90°56.1	100°49.3	
20	281°30.4	4.4'	26°25.7	2.0'	58.7'	97°41.6	75°16.7	45°22.0	38°35.5	53°02.1	91°15.1	101°21.3	
21	295°53.8	4.4'	26°27.7	1.8'	58.7'	97°07.1	74°41.7	44°50.0	38°00.9	53°36.8	91°34.1	101°53.2	
22	310°17.1	4.3'	$26^{\circ}29.5$	1.6'	58.7'	96°32.5	74°06.7	44°18.1	37°26.4	54°11.5	91°53.2	102°25.2	
23	324°40.5	4.3'	26°31.1	1.5'	58.7'	95°58.0	73°31.7	43°46.2	36°51.8	54°46.3	92°12.2	102°57.2	
15 th	SD =	= 15.9′	Mer. pass	. 00:27	7								

Moon (16th Nov) Lunar Distance (objects with largest hourly LD delta) h

									\				<u> </u>
Tue	GHA	ν	Dec	d	HP	-Spica	-Jupiter	-Regulus	-Pollux	+Aldebaran	+Saturn	+Deneb	+Fomalhaut
0	339°03.8	4.3'	N 26°32.6	1.3'	58.7'		95°23.4	72°56.6	36° 17.2		55°21.0	92°31.2	103°29.2
1	353°27.0	4.2'	26°33.9	1.1'	58.8'		94°48.8	72°21.6	35°42.6		55°55.8	92°50.3	104°01.2
2	7°50.2	4.2'	26°35.0	0.9'	58.8'		94°14.2	71°46.5	35°08.0		56°30.6	93°09.3	104°33.2
3	22°13.4	4.2'	26°35.9	0.7'	58.8'		93°39.6	71°11.4	34°33.4		57°05.5	93°28.3	105°05.2
4	36°36.6	4.1'	26°36.6	0.6'	58.8'		93°04.9	70°36.3	33°58.8	13°04.2	57°40.3	93°47.3	105°37.2
5	50°59.7	4.1'	26°37.2	0.4'	58.8'		92°30.3	70°01.2	33°24.2	13°28.4	58°15.2	94°06.3	106°09.2
6	65°22.8	4.1'	N26°37.5	0.2'	58.8'		91°55.6	69°26.0	32°49.6	13°53.4	58°50.1	94°25.3	106°41.2
7	79°45.9	4.1'	26°37.7	0.0'	58.8'		91°20.9	68°50.9	32° 15.0	14° 19.1	59°25.0	94°44.3	107°13.1
8	94°09.0	4.1'	26°37.8	-0.2'	58.9'		90°46.2	68°15.7	31°40.4	14° 45.5	60°00.0	95°03.3	107°45.1
9	108°32.1	4.0'	26°37.6	-0.3'	58.9'		90°11.5	67°40.5	31°05.8	15° 12.5	60°34.9	95°22.2	108°17.1
10	122°55.1	4.0'	26°37.2	-0.5'	58.9'		89°36.7	67°05.3	30°31.2	15° 40.0	61°09.9	95°41.2	108°49.0
11	137°18.2	4.0'	26°36.7	-0.7'	58.9'		89°02.0	66°30.1	29°56.7	16°08.0	61°44.9	96°00.1	109°21.0
12	151°41.2	4.0'	N 26°36.0	-0.9'	58.9'	119°58.3	88°27.2	65°54.9	29°22.1	16°36.5	62°19.9	96°19.0	109°52.9
13	166°04.2	4.0'	26°35.1	-1.1'	58.9'	119°23.1	87°52.4	65°19.7	28°47.6	17°05.3	62°55.0	96°37.9	110°24.9
14	180°27.2	4.0'	26°34.0	-1.3'	58.9'	118°47.8	87°17.6	64°44.4	28°13.0	17°34.6	63°30.0	96°56.7	110°56.8
15	194°50.2	4.0'	26°32.8	-1.4'	59.0'	118°12.6	86°42.8	64°09.2	27°38.5	18°04.3	64°05.1	97°15.6	111°28.7
16	209°13.3	4.0'	26°31.3	-1.6'	59.0'	117°37.3	86°08.0	63°33.9	27°04.0	18°34.2	64°40.1	97°34.4	112°00.6
17	223°36.3	4.0'	26°29.7	-1.8'	59.0'	$117^{\circ}02.1$	85°33.2	62°58.6	26°29.6	19°04.5	65°15.2	97°53.2	112°32.4
18	237°59.3	4.0'	N 26°27.9	-2.0'	59.0'	116°26.8	84°58.3	62°23.3	25°55.1	19°35.1	65°50.4	98°11.9	113°04.3
19	252°22.4	4.1'	26°25.9	-2.2'	59.0'	115°51.5	84°23.5	61°48.0	25°20.7	20°05.9	66°25.5	98°30.6	113°36.1
20	266°45.4	4.1'	26°23.8	-2.3'	59.0'	115°16.2	83°48.6	61°12.7	24°46.3	20° 36.9	67°00.6	98°49.3	114°07.9
21	281°08.5	4.1'	26°21.4	-2.5'	59.0'	114°40.8	83°13.8	60°37.4	24°12.0	21°08.2	67°35.8	99°08.0	114°39.7
22	295°31.6	4.1'	26°18.9	-2.7'	59.0'	114°05.5	82°38.9	60°02.0	23°37.6	21°39.7	68°10.9	99°26.6	115°11.5
23	309°54.7	4.1'	26°16.2	-2.9'	59.0'	113°30.2	82°04.0	59°26.7	23°03.4	22°11.4	68°46.1	99°45.2	115°43.2
16 th	SD :	= 16.0'	Mer. pas	s. 01:27									

0	324°17.8	4.1'	$N26^{\circ}13.3$	-3.1'	59.1'	112°54.8	81°29.1	58°51.3	22°29.1	21°56.0	22°43.3	69°21.3	116°14.9
1	338°40.9	4.2'	26° 10.2	-3.2'	59.1'	112°19.5	80°54.2	58°16.0	21°55.0	22°12.5	23°15.3	69°56.5	116°46.6
2	353°04.1	4.2'	26°07.0	-3.4'	59.1'	$111^{\circ}44.1$	80°19.2	57°40.6	21°20.8	22°29.8	23°47.5	70°31.7	117°18.3
3	7°27.3	4.2'	26°03.6	-3.6'	59.1'	111°08.7	79°44.3	57°05.2	20°46.8	22°47.7	24°19.8	71°07.0	117°49.9
4	21°50.5	4.3'	26°00.0	-3.8'	59.1'	110°33.3	79°09.4	56°29.8	20°12.8	23°06.3	24°52.3	71°42.2	118°21.5
5	36°13.8	4.3'	25°56.2	-4.0'	59.1'	109°57.9	78°34.4	55°54.4	19°38.8	23°25.5	25°25.0	72°17.5	118°53.1
6	50°37.1	4.3'	$N25^{\circ}52.2$	-4.1'	59.1'	109°22.5	77°59.5	55°19.0	19°05.0	23°45.3	25°57.7	72°52.7	119°24.6
7	65°00.4	4.4'	25°48.1	-4.3'	59.1'	108°47.1	77°24.5	54°43.6	18°31.2	24°05.6	26°30.6	73°28.0	119°56.1
8	79°23.7	4.4'	25°43.8	-4.5'	59.1'	108°11.7	76°49.5	54°08.2	17°57.6	24°26.5	27°03.5	74°03.3	
9	93°47.1	4.4'	25°39.3	-4.7'	59.1'	107°36.2	76°14.6	53°32.8	17°24.0	24°47.9	27°36.6	74°38.6	
10	108°10.6	4.5'	25°34.6	-4.8'	59.1'	107°00.8	75°39.6	52°57.3	16°50.6	25°09.9	28°09.8	75°13.9	
11	122°34.1	4.5'	25°29.8	-5.0'	59.2'	106°25.3	75°04.6	52°21.9	16°17.3	25°32.3	28°43.0	75°49.2	
12	136°57.6	4.6'	N 25°24.8	-5.2'	59.2'	105°49.9	74°29.6	51°46.5	15°44.2	25°55.1	29°16.4	76°24.5	
13	151°21.2	4.6'	$25^{\circ}19.6$	-5.3'	59.2'	105°14.4	73°54.6	51°11.0	15°11.2	26°18.4	29°49.8	76°59.8	
14	165°44.8	4.7'	$25^{\circ}14.3$	-5.5'	59.2'	104°39.0	73°19.6	50°35.6	14°38.4	26°42.2	30°23.3	77°35.2	
15	180°08.5	4.7'	25°08.8	-5.7'	59.2'	104°03.5	72°44.6	50°00.1	14°05.8	27°06.3	30°56.9	78°10.5	
16	194°32.3	4.8'	25°03.1	-5.9'	59.2'	103°28.0	72°09.6	49°24.6	13°33.5	27°30.8	31°30.5	78°45.8	
17	208°56.0	4.8'	24°57.2	-6.0'	59.2'	102°52.5	71°34.5	48°49.2	13°01.4	27°55.7	32°04.2	79°21.2	
18	223°19.9	4.9'	N 24°51.2	-6.2'	59.2'	102°17.0	70°59.5	48°13.7	12°29.7	28°20.9	32°38.0	79°56.5	
19	237°43.8	5.0'	24°45.0	-6.4'	59.2'	101°41.5	70°24.5	47°38.2	11°58.2	28°46.5	33°11.8	80°31.9	
20	252°07.8	5.0'	24°38.7	-6.5'	59.2'	101°06.0	69°49.5	47°02.7	11°27.2	29°12.4	33°45.7	81°07.3	
21	266°31.8	5.1'	24°32.1	-6.7'	59.2'	100°30.5	69°14.4	46°27.3	10°56.6	29°38.6	34°19.7	81°42.7	
22	280°55.9	5.2'	24°25.5	-6.8'	59.2'	99°55.0	68°39.4	45°51.8	10°26.5	30°05.1	34°53.7	82°18.0	

69°14.4 68°39.4 68°04.3

5.2'

SD = 16.1'

 $295^{\circ}20.1$

Moon (17th Nov)

Dec

HP

-Spica

99°19.5

-7.0'

24°18.6

Mer. pass. 02:29

59.2'

h

Wed

23

17th

GHA

45°16.3

 $9^{\circ}57.1$

30°31.8

82°18.0 82°53.4

 $35^{\circ}27.7$

h Moon (18th Nov)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Sun	-Spica	-Jupiter	-Regulus	+Betelgeuse	+Capella	+Aldebaran	+Saturn
0	309°44.3	5.3'	$N24^{\circ}11.6$	-7.2'	59.2'		98°44.0	67°29.3	44°40.8	23°59.4	30°58.9	36°01.8	83°28.8
1	324°08.6	5.4'	24°04.4	-7.3'	59.2'		98°08.5	66°54.3	44°05.3	24°21.1	31°26.2	36° 35.9	84°04.2
2	338°32.9	5.4'	23°57.1	-7.5'	59.2'		97°33.0	66°19.2	43°29.8	24°43.3	31°53.7	37° 10.1	84°39.6
3	352°57.4	5.5'	23°49.6	-7.6'	59.3'		96°57.5	65°44.2	42°54.4	25°05.9	32°21.5	37°44.3	85°15.0
4	7°21.9	5.6'	23°42.0	-7.8'	59.3'		96°21.9	65°09.1	42°18.9	25°29.1	32°49.5	38° 18.6	85°50.4
5	21°46.4	5.6'	23°34.2	-7.9'	59.3'		95°46.4	64°34.1	41°43.4	25°52.7	33° 17.8	38°52.8	86°25.8
6	36°11.1	5.7'	N23°26.3	-8.1'	59.3'		95° 10.9	63°59.0	41°07.9	26°16.7	33°46.2	39° 27.2	87°01.2
7	50°35.8	5.8'	23°18.2	-8.2'	59.3'		94°35.3	63°24.0	40°32.4	26°41.1	34°14.8	40°01.5	87°36.6
8	65°00.6	5.9'	23°09.9	-8.4'	59.3'		93°59.8	62°48.9	39°56.9	27°05.9	34°43.6	40°35.9	88°12.0
9	79°25.5	6.0'	$23^{\circ}01.5$	-8.5'	59.3'		93°24.3	62°13.9	39°21.4	27°31.1	35° 12.6	41° 10.3	88°47.4
10	93°50.4	6.0'	22°53.0	-8.7'	59.3'		92°48.7	61°38.8	38°45.9	27°56.6	35°41.8	41°44.7	89°22.8
11	108°15.5	6.1'	22°44.3	-8.8'	59.3'		92°13.2	61°03.8	38°10.4	28°22.4	36°11.2	42° 19.2	89°58.2
12	122°40.6	6.2'	$N22^{\circ}35.5$	-9.0'	59.3'		91°37.7	60°28.7	37°35.0	28°48.6	36°40.7	42°53.7	90°33.6
13	137°05.8	6.3'	22°26.5	-9.1'	59.3'		91°02.1	59°53.7	36°59.5	29°15.0	37° 10.3	43°28.2	91°09.1
14	151°31.0	6.4'	22°17.4	-9.3'	59.3'		90°26.6	59°18.6	36°24.0	29°41.8	37°40.1	44°02.7	91°44.5
15	165°56.4	6.4'	22°08.1	-9.4'	59.3'		89°51.0	58°43.6	35°48.5	30°08.8	38° 10.1	44°37.3	92°19.9
16	180°21.8	6.5'	21°58.7	-9.5'	59.3'		89° 15.5	58°08.5	35°13.0	30°36.1	38°40.1	45°11.9	92°55.3
17	194°47.3	6.6'	21°49.2	-9.7'	59.3'		88°40.0	57°33.5	34°37.6	31°03.7	39°10.3	45°46.5	93°30.7
18	209°12.9	6.7'	N 21°39.5	-9.8'	59.3'	119°58.5	88°04.4	56°58.5	34°02.1	31°31.4	39°40.7	46°21.1	94°06.1
19	223°38.6	6.8'	21°29.7	-9.9'	59.3'	119°25.6	87°28.9	56°23.4	33°26.7	31°59.5	40°11.1	46°55.7	94°41.5
20	238°04.4	6.9'	$21^{\circ}19.7$	-10.1'	59.3'	118°52.7	86°53.4	55°48.4	32°51.2	32°27.7	40°41.7	47° 30.4	95°16.9
21	252°30.3	6.9'	$21^{\circ}09.6$	-10.2'	59.3'	118°19.8	86° 17.8	55°13.4	32°15.8	32°56.2	41°12.4	48°05.1	95°52.3
22	266°56.2	7.0'	20°59.4	-10.3'	59.3'	117°46.9	85°42.3	54°38.4	31°40.3	33°24.8	41°43.2	48° 39.7	96°27.7
23	281°22.2	7.1'	20°49.1	-10.5'	59.3'	117°14.0	85°06.8	54°03.4	31°04.9	33°53.6	42°14.0	49° 14.4	97°03.1
18 th	SD	= 16.2	2' Mer. pas	s. 03:29					Sur	SD = 16.2'			

Moon (19th Nov)

h

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	ď	HP	-Sun	-Spica	-Jupiter	-Regulus	+Pollux	+Capella	+Aldebaran	+Saturn
0	295°48.3	7.2'	N 20°38.6	-10.6'	59.3'	116°41.1	84°31.3	53°28.4	30°29.5		42°45.0	49°49.1	97°38.5
1	310°14.5	7.3'	20°28.0	-10.7'	59.3'	116°08.2	83°55.7	52°53.4	29°54.0		43°16.1	50°23.9	98°13.9
2	324°40.8	7.4'	20°17.3	-10.8'	59.3'	115°35.3	83°20.2	52°18.4	29°18.6	9°39.5	43°47.3	50°58.6	98°49.3
3	339°07.2	7.5'	20°06.5	-11.0'	59.3'	115°02.4	82°44.7	51°43.4	28°43.2	10°08.6	44°18.5	51°33.3	99°24.7
4	353°33.6	7.5'	19°55.5	-11.1'	59.3'	114°29.5	82°09.2	51°08.4	28°07.8	10°38.3	44°49.8	52°08.1	100°00.1
5	8°00.2	7.6'	19°44.4	-11.2'	59.3'	113°56.6	81°33.7	50°33.4	27°32.4	11°08.6	45°21.3	52°42.9	100°35.4
6	22°26.8	7.7'	$N19^{\circ}33.2$	-11.3'	59.3'	113°23.7	80°58.2	49°58.4	26°57.1	11°39.4	45°52.7	53°17.6	101°10.8
7	36°53.5	7.8'	19°21.9	-11.4'	59.3'	112°50.8	80°22.6	49°23.5	26°21.7	12°10.6	46°24.3	53°52.4	101°46.2
8	51°20.3	7.9'	19°10.5	-11.5'	59.3'	112° 17.9	79°47.1	48°48.5	25°46.3	12°42.2	46°55.9	54°27.2	102°21.5
9	65°47.2	8.0'	18°58.9	-11.7'	59.3'	111°45.0	79°11.6	48°13.5	25°11.0	13°14.1	47°27.6	55°02.0	102°56.9
10	80°14.2	8.1'	18°47.3	-11.8'	59.3'	111°12.2	78°36.2	47°38.6	24°35.7	13°46.3	47°59.4	55°36.8	103°32.2
11	94°41.3	8.1'	18°35.5	-11.9'	59.3'	110°39.3	78°00.7	47°03.7	24°00.3	14°18.7	48°31.2	56°11.6	104°07.6
12	109°08.4	8.2'	N18°23.6	-12.0'	59.3'	110°06.4	77°25.2	46°28.7	23°25.0	14°51.4	49°03.1	56°46.5	104°42.9
13	123°35.6	8.3'	$18^{\circ}11.7$	-12.1'	59.3'	109°33.5	76°49.7	45°53.8	22°49.8	15°24.3	49°35.1	57°21.3	105°18.3
14	138°03.0	8.4'	17°59.6	-12.2'	59.3'	109°00.7	76°14.2	45°18.9	22°14.5	15°57.3	50°07.1	57°56.1	105°53.6
15	152°30.4	8.5'	17°47.4	-12.3'	59.3'	108°27.8	75°38.7	44°44.0	21°39.2	16°30.5	50°39.1	58°30.9	106°28.9
16	166°57.9	8.6'	17°35.1	-12.4'	59.3'	107°54.9	75°03.3	44°09.1	21°04.0	17°03.9	51°11.2	59°05.8	107°04.2
17	181°25.4	8.7'	17°22.7	-12.5'	59.3'	107°22.1	74°27.8	43°34.2	20°28.8	17°37.4	51°43.4	59°40.6	107°39.5
18	195°53.1	8.7'	$N17^{\circ}10.2$	-12.6'	59.3'	106°49.2	73°52.4	42°59.4	19°53.6	18°11.0	52°15.6	60°15.5	108°14.8
19	210°20.8	8.8'	16°57.6	-12.7'	59.3'	106°16.4	73°16.9	42°24.5	19°18.4	18°44.7	52°47.8	60°50.3	108°50.1
20	224°48.6	8.9'	16°44.9	-12.8'	59.3'	105°43.5	72°41.5	41°49.6	18°43.3	19°18.6	53°20.1	61°25.2	109°25.4
21	239°16.6	9.0'	16°32.1	-12.9'	59.3'	105°10.7	72°06.0	41°14.8	18°08.2	19°52.5	53°52.5	62°00.0	110°00.7
22	253°44.5	9.1'	$16^{\circ}19.3$	-13.0'	59.3'	104°37.8	71°30.6	40°40.0	17°33.1	20°26.5	54°24.8	62°34.9	110°35.9
23	268°12.6	9.1'	16°06.3	-13.1'	59.3'	104°05.0	70°55.1	40°05.2	16°58.1	21°00.5	54°57.3	63°09.7	111°11.2
19 th	SD	= 16.2	.' Mer. pas	ss. 04:27					Sun S	D = 16.2'			

h Moon (20th Nov) Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Sun	-Spica	-Jupiter	-Regulus	+Pollux	+Capella	+Aldebaran	+Saturn
0	282°40.8	9.2'	N 15°53.2	-13.1'	59.2'	103°32.2	70°19.7	39°30.4	16°23.0	21°34.7	55°29.7	63°44.6	111°46.4
1	297°09.0	9.3'	15°40.1	-13.2'	59.2'	102°59.4	69°44.3	38°55.6	15°48.1	22°08.9	56°02.2	64°19.4	112°21.7
2	311°37.3	9.4'	15°26.9	-13.3'	59.2'	102°26.5	69°08.9	38°20.8	15°13.1	22°43.1	56°34.7	64°54.3	112°56.9
3	326°05.7	9.5'	$15^{\circ}13.6$	-13.4'	59.2'	101°53.7	68°33.5	37°46.1	14°38.3	23°17.4	57°07.3	65°29.1	113°32.1
4	340°34.2	9.5'	15°00.2	-13.5'	59.2'	101°20.9	67°58.1	37°11.3	14°03.4	23°51.8	57°39.8	66°04.0	114°07.4
5	355°02.7	9.6'	14°46.7	-13.6'	59.2'	100°48.1	67°22.7	36°36.6	13°28.7	24°26.2	58°12.5	66°38.8	114°42.6
6	9°31.3	9.7'	$N14^{\circ}33.1$	-13.6'	59.2'	100°15.3	66°47.3	36°01.9	12°53.9	25°00.6	58°45.1	67° 13.7	115°17.7
7	24°00.0	9.8'	$14^{\circ}19.5$	-13.7'	59.2'	99°42.5	66°12.0	35°27.2	12°19.3	25°35.1	59°17.8	67°48.5	115°52.9
8	38°28.8	9.8'	14°05.8	-13.8'	59.2'	99°09.8	65°36.6	34°52.5	11°44.8	26°09.6	59°50.5	68°23.4	116°28.1
9	52°57.6	9.9'	13°52.0	-13.9'	59.2'	98°37.0	65°01.2	34°17.9	11°10.3	26°44.1	60°23.2	68° 58.2	117°03.3
10	67°26.6	10.0'	13°38.1	-13.9'	59.2'	98°04.2	64°25.9	33°43.2	10°36.0	27°18.7	60°55.9	69°33.1	117°38.4
11	81°55.5	10.1'	13°24.2	-14.0'	59.2'	97°31.5	63°50.5	33°08.6	10°01.8	27°53.2	61°28.7	70°07.9	118°13.5
12	96°24.6	10.1'	$N13^{\circ}10.2$	-14.1'	59.2'	96°58.7	63°15.2	32°34.0	9°27.7	28° 27.8	62°01.5	70°42.7	118°48.7
13	110°53.7	10.2'	12°56.1	-14.1'	59.2'	96°26.0	62°39.9	31°59.5	8°53.8	29°02.5	62°34.3	71° 17.6	119°23.8
14	125°22.9	10.3'	12°42.0	-14.2'	59.2'	95°53.2	62°04.5	31°24.9	8°20.2	29°37.1	63°07.1	71°52.4	119°58.9
15	139°52.2	10.3'	12°27.8	-14.3'	59.2'	95°20.5	61°29.2	30°50.4	7°46.8	30°11.8	63°40.0	72°27.2	
16	154°21.6	10.4'	$12^{\circ}13.5$	-14.3'	59.2'	94°47.8	60°53.9	30°15.9	7°13.7	30°46.5	64°12.8	73°02.1	
17	168°51.0	10.5'	11°59.2	-14.4'	59.2'	94°15.0	60°18.6	29°41.4	6°41.0	31°21.2	64°45.7	73°36.9	
18	183°20.4	10.5'	N 11°44.8	-14.5'	59.2'	93°42.3	59°43.3	29°06.9	6°08.8	31°55.9	65°18.6	74°11.7	
19	197°50.0	10.6'	11°30.3	-14.5'	59.1'	93°09.6	59°08.1	28°32.5	5°37.3	32°30.6	65°51.5	74°46.5	
20	212°19.6	10.7'	11°15.8	-14.6'	59.1'	92°36.9	58°32.8	27°58.1	5°06.5	33°05.4	66°24.4	75°21.3	
21	226°49.2	10.7'	11°01.2	-14.6'	59.1'	92°04.2	57°57.5	27°23.7		33°40.1	66°57.4	75°56.1	
22	241°19.0	10.8'	$10^{\circ}46.6$	-14.7'	59.1'	91°31.6	57°22.3	26°49.4		34°14.9	67°30.3	76°30.9	
23	255°48.8	10.8'	10°31.9	-14.7'	59.1'	90°58.9	56°47.0	26°15.1		34°49.6	68°03.3	77°05.7	
20 th	SD	= 16.2'	Mer. pas	s. 05:21					Sun S	5D = 16.2'			

Moon (21st Nov) Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Sun	-Rigil Kent.	-Spica	-Jupiter	+Regulus	+Pollux	+Capella	+Aldebaran
0	$270^{\circ}18.6$	10.9'	N 10°17.2	-14.8'	59.1'	90°26.2	89°59.4	56°11.8	25°40.8		35°24.4	68°36.2	77°40.5
1	284°48.5	11.0'	10°02.4	-14.8'	59.1'	89°53.6	89°31.6	55°36.6	25°06.6		35°59.2	69°09.2	78°15.2
2	299° 18.5	11.0'	09°47.6	-14.9'	59.1'	89°20.9	89°03.8	55°01.4	24°32.4		36°34.0	69°42.2	78°50.0
3	313°48.5	11.1'	09°32.7	-14.9'	59.1'	88°48.3	88° 35.9	54°26.2	23°58.3		37°08.8	70°15.2	79°24.8
4	$328^{\circ}18.6$	11.1'	09°17.8	-15.0'	59.1'	88°15.7	88°08.2	53°51.0	23°24.2		37°43.6	70°48.2	79°59.5
5	342°48.7	11.2'	09°02.8	-15.0'	59.1'	87°43.1	87°40.4	53°15.8	22°50.1		38°18.4	71°21.2	80°34.3
6	$357^{\circ}18.9$	11.2'	N 08°47.8	-15.1'	59.1'	87°10.4	87° 12.6	52°40.6	22°16.1		38°53.2	71°54.3	81°09.0
7	$11^{\circ}49.1$	11.3'	08°32.7	-15.1'	59.1'	86°37.8	86°44.8	52°05.4	21°42.2		39°28.0	72°27.3	81°43.7
8	$26^{\circ}19.4$	11.3'	08°17.6	-15.1'	59.1'	86°05.3	86° 17.1	51°30.3	21°08.3		40°02.8	73°00.3	82°18.5
9	40°49.7	11.4'	08°02.5	-15.2'	59.0'	85°32.7	85°49.4	50°55.1	20°34.4		40°37.6	73°33.4	82°53.2
10	55°20.1	11.4'	07°47.3	-15.2'	59.0'	85°00.1	85°21.7	50°20.0	20°00.7		41°12.4	74°06.4	83°27.9
11	69°50.6	11.5'	$07^{\circ}32.1$	-15.2'	59.0'	84°27.5	84°54.0	49°44.9	19°26.9		41°47.2	74°39.5	84°02.6
12	84°21.0	11.5'	N 07°16.9	-15.3'	59.0'	83°55.0	84°26.3	49°09.8	18°53.3		42°22.0	75°12.5	84°37.3
13	98°51.6	11.6'	$07^{\circ}01.6$	-15.3'	59.0'	83°22.4	83°58.7	48°34.7	18°19.8	6°12.2	42°56.8	75°45.6	85°12.0
14	113°22.1	11.6'	06°46.3	-15.3'	59.0'	82°49.9	83°31.0	47°59.6	17°46.3	6°44.3	43°31.6	76°18.6	85°46.7
15	127° 52.7	11.6'	$06^{\circ}31.0$	-15.4'	59.0'	82°17.4	83°03.4	47°24.5	17°13.0	7° 16.9	44°06.4	76°51.7	86°21.3
16	142°23.4	11.7'	$06^{\circ}15.6$	-15.4'	59.0'	81°44.9	82°35.9	46°49.4	16°39.7	7°49.8	44°41.2	77°24.7	86°56.0
17	$156^{\circ}54.1$	11.7'	06°00.2	-15.4'	59.0'	81°12.4	82°08.3	46°14.4	16°06.6	8°23.0	45°16.0	77°57.8	87°30.6
18	171°24.8	11.8'	N 05°44.8	-15.4'	59.0'	80°39.9	81°40.8	45°39.3	15°33.6	8° 56.5	45°50.8	78°30.8	88°05.3
19	185°55.6	11.8'	05°29.3	-15.5'	59.0'	80°07.4	81° 13.3	45°04.3	15°00.7	9°30.1	46°25.6	79°03.9	88°39.9
20	200°26.4	11.8'	$05^{\circ}13.9$	-15.5'	58.9'	79°34.9	80°45.8	44°29.3	14°28.0	10°03.9	47°00.4	79°36.9	89°14.5
21	214°57.2	11.9'	04°58.4	-15.5'	58.9'	79°02.4	80°18.4	43°54.3	13°55.4	10°37.8	47°35.2	80°10.0	89°49.1
22	229°28.1	11.9'	04°42.9	-15.5'	58.9'	78°30.0	79°51.0	43°19.3	13°23.1	11°11.8	48°09.9	80°43.0	90°23.7
23	243°59.0	11.9'	04°27.3	-15.5'	58.9'	77°57.5	79°23.6	42°44.3	12°50.9	11°46.0	48°44.7	81°16.1	90°58.3
21 st	SD	= 16.1'	Mer. pass	s. 06:11					Sun S	D = 16.2'			

h		Moor	n (22 nd No	ov)			Lunar Di	stance (objects v	with larges	t hourly	LD delta)	
Mon	GHA	ν	Dec	d	HP	-Rigil Kent.	-Sun	-Spica	-Jupiter	+Regulus	+Pollux	+Capella	+Aldebaran
0	258°29.9	12.0'	$N04^{\circ}11.8$	-15.6'	58.9'	78°56.3	77°25.1	42°09.3	12° 19.0	12°20.2	49°19.5	81°49.1	91°32.9
1	273°00.9	12.0'	03°56.2	-15.6'	58.9'	78°29.0	76°52.7	41°34.4	11°47.4	12°54.4	49°54.3	82°22.1	92°07.5
2	287°31.9	12.0'	03°40.6	-15.6'	58.9'	78°01.7	76°20.3	40°59.4	11°16.0	13°28.8	50°29.0	82°55.2	92°42.0
3	302°02.9	12.1'	$03^{\circ}25.0$	-15.6'	58.9'	77°34.5	75°47.9	40°24.5	10°45.0	14°03.1	51°03.8	83°28.2	93°16.6
4	316°34.0	12.1'	03°09.4	-15.6'	58.9'	77°07.3	75°15.5	39°49.6	10° 14.5	14°37.6	51°38.5	84°01.2	93°51.1
5	331°05.0	12.1'	02°53.8	-15.6'	58.9'	76°40.1	74°43.1	39° 14.7	9°44.3	15°12.0	52°13.3	84°34.2	94° 25.7
6	345°36.1	12.1'	N02°38.2	-15.6'	58.9'	76°13.0	74°10.8	38°39.8	9°14.8	15°46.5	52°48.0	85°07.2	95°00.2
7	0°07.3	12.1'	$02^{\circ}22.6$	-15.6'	58.8'	75°46.0	73°38.4	38°04.9	8° 45.8	16°21.0	53°22.7	85°40.2	95°34.7
8	14°38.4	12.2'	$02^{\circ}06.9$	-15.6'	58.8'	75°19.0	73°06.1	37°30.0	8° 17.6	16°55.5	53°57.4	86°13.2	96°09.2
9	29°09.6	12.2'	$01^{\circ}51.3$	-15.6'	58.8'	74°52.0	72°33.7	36°55.2	7°50.2	17°30.1	54°32.2	86°46.2	96°43.6
10	43°40.8	12.2'	$01^{\circ}35.6$	-15.7'	58.8'	74°25.1	72°01.4	36°20.4		18°04.6	55°06.9	87° 19.2	97° 18.1
11	58°12.0	12.2'	$01^{\circ}20.0$	-15.7'	58.8'	73°58.2	71°29.1	35° 45.5		18°39.2	55°41.6	87°52.1	97°52.6
12	72°43.2	12.2'	N 01°04.3	-15.7'	58.8'	73°31.4	70°56.8	35° 10.7		19°13.8	56°16.2	88°25.1	98° 27.0
13	87°14.4	12.2'	00°48.7	-15.7'	58.8'	73°04.6	70°24.5	34°35.9		19°48.4	56°50.9	88°58.0	99°01.4
14	101°45.7	12.3'	00°33.0	-15.6'	58.8'	72°37.9	69°52.3	34°01.2		20°23.0	57°25.6	89°31.0	99° 35.9
15	$116^{\circ}16.9$	12.3'	$00^{\circ}17.4$	-15.6'	58.8'	72°11.2	69°20.0	33°26.4		20°57.6	58°00.3	90°03.9	100° 10.3
16	130°48.2	12.3'	$N00^{\circ}01.7$	-15.6'	58.7'	71°44.6	68°47.7	32°51.7		21°32.2	58°34.9	90°36.8	100°44.7
17	$145^{\circ}19.5$	12.3'	S 00°13.9	-15.6'	58.7'	71°18.1	68°15.5	32° 16.9		22°06.8	59°09.6	91°09.7	101°19.0
18	159°50.8	12.3'	S 00°29.5	-15.6'	58.7'	70°51.6	67°43.3	31°42.2		22°41.4	59°44.2	91°42.6	101°53.4
19	174°22.1	12.3'	00°45.2	-15.6'	58.7'	70°25.2	67°11.1	31°07.5		23°16.1	60°18.8	92° 15.5	102°27.7
20	188°53.4	12.3'	$01^{\circ}00.8$	-15.6'	58.7'	69°58.8	66°38.9	30°32.9		23°50.7	60°53.5	92°48.4	103°02.1
21	203°24.7	12.3'	$01^{\circ}16.4$	-15.6'	58.7'	69°32.5	66°06.7	29°58.2		24°25.3	61°28.1	93°21.2	103°36.4
22	217°56.0	12.3'	$01^{\circ}32.0$	-15.6'	58.7'	69°06.3	65°34.5	29°23.6		24°59.9	62°02.7	93°54.1	104° 10.7
23	232°27.3	12.3'	01°47.6	-15.6'	58.7'	68°40.1	65°02.4	28°49.0		25°34.5	62°37.3	94°26.9	104°45.0
22 nd	SD	= 16.1	Mer. pas	s. 06:59					Sun S	D = 16.2'			

	_	
h	Moon (23rd Nov)	Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Rigil Kent.	-Hadar	-Sun	-Spica	+Regulus	+Pollux	+Betelgeuse	+Aldebaran
0	246°58.7	12.3'	S 02°03.1	-15.6'	58.6'	68°14.0	64°48.0	64°30.2	28°14.4	26°09.1	63°11.9	85°53.7	105°19.3
1	261°30.0	12.3'	02°18.7	-15.5'	58.6'	67°48.0	64°23.2	63°58.1	27°39.8	26°43.7	63°46.4	86°26.6	105°53.5
2	276°01.3	12.3'	02°34.2	-15.5'	58.6'	67°22.1	63°58.5	63°26.0	27°05.2	27° 18.3	64°21.0	86°59.5	106°27.8
3	290°32.6	12.3'	02°49.7	-15.5'	58.6'	66°56.2	63°33.9	62°53.9	26°30.7	27° 52.9	64°55.5	87°32.3	107°02.0
4	305°04.0	12.3'	03°05.2	-15.5'	58.6'	66°30.4	63°09.4	62°21.8	25°56.2	28° 27.5	65°30.1	88°05.2	107°36.2
5	319°35.3	12.3'	03°20.7	-15.5'	58.6'	66°04.7	62°45.0	61°49.7	25°21.7	29°02.0	66°04.6	88°38.1	108° 10.4
6	334°06.6	12.3'	S 03°36.2	-15.4'	58.6'	65°39.0	62°20.7	61°17.6	24°47.2	29°36.6	66°39.1	89°10.9	108°44.6
7	348°37.9	12.3'	$03^{\circ}51.6$	-15.4'	58.6'	65°13.5	61°56.5	60°45.6	24°12.8	30°11.2	67°13.6	89°43.7	109° 18.8
8	3°09.2	12.3'	04°07.0	-15.4'	58.5'	64°48.0	61°32.4	60°13.6	23°38.4	30°45.7	67°48.1	90°16.6	109°52.9
9	17°40.5	12.3'	04°22.4	-15.4'	58.5'	64°22.6	61°08.4	59°41.5	23°04.0	31°20.3	68°22.6	90°49.4	110°27.1
10	32°11.8	12.3'	04°37.7	-15.3'	58.5'	63°57.3	60°44.6	59°09.5	22°29.6	31°54.8	68°57.1	91°22.2	111°01.2
11	46°43.0	12.3'	04°53.0	-15.3'	58.5'	63°32.1	60°20.8	58° 37.5	21°55.2	32°29.3	69°31.6	91°55.0	111°35.3
12	61°14.3	12.2'	S 05°08.3	-15.3'	58.5'	63°07.0	59°57.2	58° 05.6	21°20.9	33°03.9	70°06.0	92°27.7	112°09.4
13	75°45.5	12.2'	05°23.6	-15.2'	58.5'	62°41.9	59°33.6	57°33.6	20°46.7	33°38.4	70°40.5	93°00.5	112°43.4
14	90°16.8	12.2'	05°38.8	-15.2'	58.5'	62°17.0	59° 10.2	57°01.6	20°12.4	34° 12.9	71°14.9	93°33.2	113° 17.5
15	104°48.0	12.2'	05°54.0	-15.2'	58.5'	61°52.2	58°46.9	56°29.7	19°38.2	34°47.4	71°49.3	94°05.9	113°51.5
16	119°19.2	12.2'	06°09.2	-15.1'	58.4'	61°27.5	58°23.8	55°57.8	19°04.0	35°21.8	72°23.7	94°38.7	114°25.5
17	133°50.3	12.2'	06°24.3	-15.1'	58.4'	61°02.8	58°00.7	55°25.9	18°29.9	35°56.3	72°58.1	95°11.3	114°59.5
18	148°21.5	12.1'	S 06°39.4	-15.0'	58.4'	60°38.3	57° 37.8	54°54.0	17°55.8	36°30.8	73°32.5	95°44.0	115°33.5
19	162°52.7	12.1'	06°54.4	-15.0'	58.4'	60°13.9	57° 15.1	54°22.1	17°21.7	37°05.2	74°06.8	96°16.7	116°07.4
20	177°23.8	12.1'	07°09.4	-15.0'	58.4'	59°49.6	56° 52.4	53°50.3	16°47.7	37°39.6	74°41.2	96°49.3	116°41.4
21	191°54.9	12.1'	07°24.4	-14.9'	58.4'	59°25.4	56°30.0	53° 18.4	16°13.8	38° 14.1	75°15.5	97°21.9	117° 15.3
22	206°26.0	12.1'	07°39.3	-14.9'	58.4'	59°01.3	56°07.6	52°46.6	15°39.9	38° 48.5	75°49.8	97°54.6	117°49.2
23	220°57.0	12.0'	07°54.2	-14.8'	58.3'	58°37.4	55° 45.4	52° 14.8	15°06.0	39°22.9	76°24.2	98°27.1	118°23.0
23 rd	SD	= 16.0'	Mer. pas	s. 07:47					Sun	SD = 16.2'		-	-

Moon (24th Nov) Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Rigil Kent.	-Hadar	-Sun	-Spica	+Jupiter	+Regulus	+Procyon	+Pollux
0	235°28.0	12.0'	S 08°09.0	-14.8'	58.3'	58°13.5	55°23.3	51°43.0	14°32.2	16°57.5	39°57.2	73°05.6	76°58.4
1	249°59.1	12.0'	08°23.8	-14.7'	58.3'	57°49.8	55°01.4	51°11.3	13°58.5	17°30.1	40°31.6	73°38.4	77°32.7
2	264°30.0	12.0'	08°38.5	-14.7'	58.3'	57°26.2	54°39.7	50°39.5	13°24.9	18°02.9	41°06.0	74°11.3	78°07.0
3	279°01.0	11.9'	08°53.2	-14.6'	58.3'	57°02.8	54°18.1	50°07.8	12°51.3	18°35.7	41°40.3	74°44.2	78°41.3
4	293°31.9	11.9'	09°07.8	-14.6'	58.3'	56°39.4	53°56.6	49°36.0	12°17.9	19°08.5	42°14.7	75°17.0	79°15.5
5	308°02.8	11.9'	09°22.4	-14.5'	58.2'	56°16.2	53°35.4	49°04.3	11°44.5	19°41.4	42°49.0	75°49.9	79°49.7
6	322°33.7	11.8'	S 09°37.0	-14.5'	58.2'	55°53.2	53°14.3	48°32.6	11°11.3	20°14.4	43°23.3	76°22.7	80°23.9
7	337°04.5	11.8'	09°51.4	-14.4'	58.2'	55°30.2	52°53.3	48°01.0	10°38.2	20°47.4	43°57.6	76°55.6	80°58.1
8	351°35.3	11.8'	10°05.8	-14.4'	58.2'	55°07.4	52°32.6	47°29.3	10°05.3	21°20.4	44°31.9	77°28.4	81°32.3
9	6°06.1	11.7'	10°20.2	-14.3'	58.2'	54°44.8	52°12.0	46°57.7	9°32.5	21°53.5	45°06.1	78°01.2	82°06.5
10	20°36.8	11.7'	10°34.5	-14.2'	58.2'	54°22.3	51°51.6	46°26.1	9°00.0	22°26.6	45°40.4	78°34.0	82°40.6
11	35°07.5	11.7'	10°48.8	-14.2'	58.2'	54°00.0	51°31.4	45°54.5	8°27.6	22°59.7	46°14.6	79°06.8	83°14.8
12	49°38.2	11.6'	S 11°02.9	-14.1'	58.1'	53°37.8	51°11.4	45°22.9	7°55.6	23°32.8	46°48.9	79°39.6	83°48.9
13	64°08.8	11.6'	$11^{\circ}17.1$	-14.1'	58.1'	53°15.8	50°51.5	44°51.3	7°24.0	24°06.0	47°23.1	80°12.4	84°23.0
14	78°39.4	11.6'	11°31.1	-14.0'	58.1'	52°53.9	50°31.9	44°19.8	6°52.7	24°39.2	47°57.3	80°45.2	84°57.1
15	93°09.9	11.5'	11°45.1	-13.9'	58.1'	52°32.2	50°12.4	43°48.3	6°22.0	25°12.4	48°31.4	81°18.0	85°31.2
16	107°40.4	11.5'	$11^{\circ}59.0$	-13.9'	58.1'	52°10.7	49°53.2	43°16.8	5°52.0	25°45.6	49°05.6	81°50.7	86°05.2
17	122°10.9	11.4'	$12^{\circ}12.9$	-13.8'	58.1'	51°49.3	49°34.2	42°45.3	5°22.8	26°18.8	49°39.8	82°23.5	86°39.3
18	136°41.3	11.4'	S 12°26.7	-13.7'	58.0'	51°28.1	49°15.3	42°13.9		26°52.0	50°13.9	82°56.2	87°13.3
19	151°11.7	11.3'	12°40.4	-13.6'	58.0'	51°07.1	48°56.7	41°42.4		27°25.3	50°48.0	83°28.9	87°47.3
20	165°42.1	11.3'	$12^{\circ}54.0$	-13.6'	58.0'	50°46.3	48°38.3	41°11.0		27°58.5	51°22.1	84°01.6	88°21.3
21	180°12.4	11.3'	13°07.6	-13.5'	58.0'	50°25.6	48°20.2	40°39.6		28°31.7	51°56.2	84°34.3	88°55.3
22	194°42.6	11.2'	13°21.1	-13.4'	58.0'	50°05.2	48°02.2	40°08.2		29°05.0	52°30.3	85°07.0	89°29.2
23	209°12.9	11.2'	13°34.5	-13.4'	58.0'	49°44.9	47°44.5			29°38.2	53°04.3	85°39.6	90°03.2
24 th	SD	= 15.9'	Mer. pas	s. 08:35					Sun SE	0 = 16.2'			

h		Moor	า (25 th No	ov)			Lunar [Distance	(objects	with large	st hourly l	_D delta)	
Thu	GHA	ν	Dec	d	HP	-Rigil Kent.	-Hadar	+Spica	+Jupiter	+Regulus	+Procyon	+Pollux	+Betelgeuse
0	223°43.0	11.1'	S 13°47.9	-13.3'	57.9'	49°24.9	47°27.0		30°11.5	53°38.4	86°12.3	90°37.1	111°54.3
1	238°13.2	11.1'	$14^{\circ}01.2$	-13.2'	57.9'	49°05.0	47°09.8		30°44.8	54°12.4	86°44.9	91°11.0	112°26.2
2	252°43.3	11.0'	$14^{\circ}14.4$	-13.1'	57.9'	48°45.3	46°52.8		31°18.0	54°46.4	87° 17.5	91°44.9	112°58.1
3	267°13.3	11.0'	14°27.5	-13.0'	57.9'	48°25.9	46°36.1		31°51.3	55°20.4	87°50.2	92°18.8	113°30.0
4	281°43.3	10.9'	14°40.5	-13.0'	57.9'	48°06.7	46°19.6		32°24.5	55°54.3	88° 22.7	92°52.6	114°01.8
5	296°13.2	10.9'	$14^{\circ}53.5$	-12.9'	57.9'	47°47.6	46°03.3		32°57.7	56°28.3	88°55.3	93°26.5	114°33.6
6	310°43.1	10.8'	S 15°06.3	-12.8'	57.8'	47°28.8	45°47.4		33°31.0	57°02.2	89°27.9	94°00.3	115°05.3
7	325°13.0	10.8'	$15^{\circ}19.1$	-12.7'	57.8'	47°10.3	45°31.6		34°04.2	57°36.1	90°00.4	94°34.1	115°37.1
8	339°42.8	10.7'	15°31.8	-12.6'	57.8'	46°51.9	45°16.2		34°37.4	58°10.0	90°32.9	95°07.9	116°08.7
9	354°12.5	10.7'	15°44.4	-12.5'	57.8'	46°33.8	45°01.0		35°10.7	58°43.9	91°05.4	95°41.6	116°40.4
10	8°42.2	10.6'	$15^{\circ}56.9$	-12.4'	57.8'	46°15.9			35°43.9	59°17.8	91°37.9	96°15.4	117°12.0
11	23°11.9	10.6'	$16^{\circ}09.4$	-12.3'	57.7'	45°58.3		6°24.2	36°17.1	59°51.6	92°10.4	96°49.1	117°43.5
12	37°41.5	10.5'	S 16°21.7	-12.2'	57.7'	45°40.9		6°54.6	36°50.3	60°25.5	92° 42.8	97°22.8	118°15.0
13	52°11.0	10.5'	16°34.0	-12.2'	57.7'	45°23.8		7°25.5	37°23.4	60°59.3	93°15.3	97°56.5	118°46.5
14	66°40.5	10.4'	$16^{\circ}46.1$	-12.1'	57.7'	45°06.9		7°56.8	37°56.6	61°33.1	93°47.7	98°30.2	119°17.9
15	81°10.0	10.4'	$16^{\circ}58.2$	-12.0'	57.7'	44°50.3		8°28.4	38°29.8	62°06.8	94°20.1	99°03.8	119°49.3
16	95°39.3	10.3'	$17^{\circ}10.1$	-11.9'	57.7'	44°34.0		9°00.2	39°02.9	62°40.6	94°52.4	99°37.5	
17	110°08.7	10.3'	$17^{\circ}22.0$	-11.8'	57.6'	44°17.9		9°32.2	39°36.1	63°14.3	95°24.8	100°11.1	
18	124°38.0	10.2'	S 17°33.8	-11.7'	57.6'	44°02.1		10°04.4	40°09.2	63°48.1	95°57.1	100°44.7	
19	139°07.2	10.2'	17°45.4	-11.6'	57.6'	43°46.5		10°36.8	40°42.3	64°21.8	96°29.4	101°18.2	
20	153°36.4	10.1'	17°57.0	-11.5'	57.6'	43°31.3		11°09.3	41°15.4	64°55.4	97°01.7	101°51.8	
21	168°05.5	10.1'	$18^{\circ}08.5$	-11.4'	57.6'			11°41.8	41°48.5	65°29.1	97°34.0	102°25.3	
22	182°34.6	10.0'	$18^{\circ}19.8$	-11.3'	57.5'			12°14.5	42°21.6	66°02.7	98°06.2	102°58.8	
23	197°03.6	10.0'	18°31.1	-11.2'	57.5'			12°47.2	42°54.6	66°36.3	98°38.4	103°32.3	
25 th	SD	= 15.8'	Mer. pas	s. 09:24									

h		Moon	(26 th N	ov)			Lunar D	Distance (objects wi	th largest	: hourly LE) delta)	
Fri	GHA	ν	Dec	d	HP	+Spica	+Arcturus	+Jupiter	+Regulus	+Adhara	+Procyon	+Sirius	+Pollux
						l .			l .		_		

0	211°32.6	9.9'	S 18°42.2	-11.0'	57.5'	13°19.9		43°27.7	67°09.9	95°56.5	99°10.6	103°56.1	104°05.8
1	226°01.5	9.9'	18°53.3	-10.9'	57.5'	13°52.8		44°00.7	67°43.5	96°16.9	99°42.8	104°20.8	104°39.2
2	240°30.4	9.8'	19°04.2	-10.8'	57.5'	14°25.6		44°33.7	68°17.1	96°37.3	100°14.9	104°45.4	105°12.6
3	254°59.2	9.8'	$19^{\circ}15.1$	-10.7'	57.4'	14°58.5		45°06.7	68°50.6	96°57.6	100°47.0	105°10.0	105°46.0
4	269°28.0	9.7'	$19^{\circ}25.8$	-10.6'	57.4'	15°31.4		45°39.7	69°24.1	97°17.9	101°19.1	105°34.5	106°19.4
5	283°56.7	9.7'	19°36.4	-10.5'	57.4'	16°04.4		46°12.7	69°57.6	97°38.1	101°51.2	105°59.0	106°52.8
6	298°25.3	9.6'	S 19°46.9	-10.4'	57.4'	16°37.3		46°45.6	70°31.1	97°58.3	102°23.2	106°23.4	107°26.1
7	312°53.9	9.6'	19°57.3	-10.3'	57.4'	17°10.3		47°18.6	71°04.6	98°18.5	102°55.2	106°47.8	107°59.4
8	327°22.5	9.5'	20°07.5	-10.2'	57.3'	17°43.3		47°51.5	71°38.0	98°38.6	103°27.2	107°12.1	108°32.7
9	341°51.0	9.4'	$20^{\circ}17.7$	-10.0'	57.3'	18°16.3		48°24.4	72°11.4	98°58.7	103°59.2	107°36.3	109°06.0
10	356°19.4	9.4'	20°27.7	-9.9'	57.3'	18°49.3		48°57.3	72°44.8	99°18.7	104°31.1	108°00.4	109°39.2
11	10°47.8	9.3'	20°37.7	-9.8'	57.3'	19°22.3		49°30.1	73°18.2	99°38.7	105°03.0	108°24.5	110°12.4
12	25°16.2	9.3'	S 20°47.5	-9.7'	57.3'	19°55.3		50°03.0	73°51.5	99°58.6	105°34.9	108°48.6	110°45.6
13	39°44.5	9.2'	20°57.2	-9.6'	57.2'	20°28.3		50°35.8	74°24.8	100°18.5	106°06.7	109°12.5	111°18.8
14	54°12.7	9.2'	$21^{\circ}06.7$	-9.4'	57.2'	21°01.3		$51^{\circ}08.6$	74°58.1	100°38.3	106°38.6	109°36.4	111°51.9
15	68°40.9	9.1'	$21^{\circ}16.2$	-9.3'	57.2'	21°34.3	40°57.1	51°41.4	75°31.4	100°58.1	107°10.4	110°00.2	112°25.1
16	83°09.0	9.1'	$21^{\circ}25.5$	-9.2'	57.2'	22°07.2	41°12.4	52°14.2	76°04.7	101°17.8	107°42.1	110°24.0	112°58.2
17	97°37.1	9.0'	21°34.7	-9.1'	57.2'	22°40.2	41°28.0	52°46.9	76°37.9	101°37.5	108°13.8	110°47.6	113°31.3
18	112°05.2	9.0'	S 21°43.8	-8.9'	57.1'	23°13.2	41°43.9	53°19.7	77°11.1	101°57.1	108°45.5	111°11.2	114°04.3
19	126°33.2	8.9'	21°52.7	-8.8'	57.1'	23°46.1	42°00.0	53°52.4	77°44.3	102°16.7	109°17.2	111°34.7	114°37.3
20	141°01.1	8.9'	$22^{\circ}01.5$	-8.7'	57.1'	24°19.1	42°16.4	54°25.1	78°17.5	102°36.2	109°48.8	111°58.2	115°10.4
21	155°29.0	8.9'	$22^{\circ}10.2$	-8.6'	57.1'	24°52.0	42°33.0	54°57.7	78°50.7	102°55.6	110°20.4	112°21.5	115°43.3
22	169°56.9	8.8'	22°18.8	-8.4'	57.1'	25°24.9	42°49.9	55°30.4	79°23.8	103°15.0	110°52.0	112°44.8	116°16.3
23	184°24.7	8.8'	22°27.2	-8.3'	57.0'	25°57.9	43°07.0	56°03.0	79°56.9	103°34.3	111°23.5	113°08.0	116°49.2
26 th	SD	= 15.7	' Mer. pas	ss. 10:15									

Moon (27th Nov) Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	+Spica	+Arcturus	+Jupiter	+Regulus	+Adhara	+Procyon	+Sirius	+Pollux	
0	198°52.4	8.7'	S 22°35.5	-8.2'	57.0'	26°30.7	43°24.3	56°35.6	80°30.0	103°53.6	111°55.0	113°31.1	117°22.1	
1	213°20.1	8.7'	22°43.7	-8.0'	57.0'	27°03.6	43°41.9	57°08.2	81°03.0	104°12.8	112°26.5	113°54.1	117°55.0	
2	227°47.8	8.6'	22°51.8	-7.9'	57.0'	27°36.5	43°59.7	57°40.8	81°36.0	104°31.9	112°57.9	114°17.0	118°27.9	
3	242°15.4	8.6'	22°59.7	-7.8'	56.9'	28°09.3	44°17.8	58°13.4	82°09.0	104°50.9	113°29.3	114°39.8	119°00.7	
4	256°43.0	8.5'	23°07.5	-7.6'	56.9'	28°42.2	44°36.0	58°45.9	82°42.0	105°09.9	114°00.7	115°02.6	119°33.5	
5	271°10.6	8.5'	$23^{\circ}15.1$	-7.5'	56.9'	29°15.0	44°54.5	59°18.4	83° 15.0	105°28.8	114°32.0	115°25.2		
6	285°38.1	8.5'	S 23°22.6	-7.4'	56.9'	29°47.8	45°13.1	59°50.9	83°47.9	105°47.7	115°03.3	115°47.8		
7	300°05.5	8.4'	23°30.0	-7.2'	56.9'	30°20.5	45°32.0	60°23.3	84°20.8	106°06.4	115°34.5	116°10.2		
8	314°33.0	8.4'	23°37.2	-7.1'	56.8'	30°53.3	45°51.0	60°55.8	84°53.7	106°25.1	116°05.8	116°32.6		
9	329°00.4	8.3'	23°44.3	-7.0'	56.8'	31°26.0	46°10.3	61°28.2	85°26.6	106°43.7	116°36.9	116°54.8		
10	343°27.7	8.3'	23°51.3	-6.8'	56.8'	' New Moon — ' '								
11	357°55.0	8.3'	$23^{\circ}58.1$	-6.7'	56.8'									
12	12°22.3	8.2'	S 24°04.8	-6.5'	56.8'				New	Moon ——				
13	26°49.5	8.2'	24°11.4	-6.4'	56.7'									
14	41°16.7	8.2'	24°17.8	-6.3'	56.7'									
15	55°43.9	8.1'	24°24.0	-6.1'	56.7'									
16	70°11.1	8.1'	24°30.2	-6.0'	56.7'									
17	84°38.2	8.1'	$24^{\circ}36.1$	-5.8'	56.6'				New	Moon ——				
18	99°05.3	8.1'	S 24°42.0	-5.7'	56.6'									
19	113°32.3	8.0'	24°47.7	-5.6'	56.6'				New	Moon				
20	127°59.4	8.0'	24°53.2	-5.4'	56.6'									
21	142°26.4	8.0'	24°58.6	-5.3'	56.6'									
22	156°53.4	8.0'	25°03.9	-5.1'	56.5'				INCVV					
23	171°20.3	7.9'	25°09.0	-5.0'	56.5'				New	Moon ——				
27 th	SD :	= 15.5'	Mer. pas	s. 11:09)									

Moon (28th Nov) Lunar Distance (objects with largest hourly LD delta)

n		ivioor	1 (28°° IV	ov)		Lunar I	distance (or	ojects w	ith larges	st nourly Li	J deita)
Sun	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	-Venus	-Ma	rs
0	185°47.3	7.9'	S 25°14.0	-4.8'	56.5'			New	Moon —		
1	200°14.2	7.9'	25°18.8	-4.7'	56.5'			New	Moon		
2	214°41.1	7.9'	25°23.5	-4.5'	56.4'			New	Moon		
3	229°08.0	7.9'	25°28.1	-4.4'	56.4'			New	Moon		
4	243°34.8	7.9'	25°32.4	-4.2'	56.4'			New	Moon		
5	258°01.7	7.8'	25°36.7	-4.1'	56.4'			New	Moon —		
6	272°28.5	7.8'	S 25°40.8	-3.9'	56.3'			New	Moon		
7	286°55.4	7.8'	25°44.7	-3.8'	56.3'			New	Moon		
8	301°22.2	7.8'	25°48.5	-3.6'	56.3'			New	Moon		
9	315°49.0	7.8'	25°52.2	-3.5'	56.3'			New	Moon		
10	330°15.8	7.8'	25°55.7	-3.4'	56.3'			New	Moon		
11	344°42.6	7.8'	$25^{\circ}59.0$	-3.2'	56.2'			New	Moon —		
12	359°09.4	7.8'	S 26°02.2	-3.1'	56.2'			New	Moon		
13	13°36.2	7.8'	26°05.3	-2.9'	56.2'			New	Moon		
14	28°03.0	7.8'	26°08.2	-2.8'	56.2'			New	Moon		
15	42°29.8	7.8'	$26^{\circ}10.9$	-2.6'	56.1'			New	Moon		
16	56°56.6	7.8'	26°13.6	-2.5'	56.1'				Moon		
17	71°23.4	7.8'	$26^{\circ}16.0$	-2.3'	56.1'			New	Moon —		
18	85°50.2	7.8'	S 26°18.3	-2.2'	56.1'			New	Moon		
19	100°17.0	7.8'	26°20.5	-2.0'	56.1'			New	Moon		
20	114°43.8	7.8'	26°22.5	-1.9'	56.0'			New	Moon		
21	129°10.7	7.8'	26°24.4	-1.7'	56.0'						
22	143°37.5	7.9'	$26^{\circ}26.1$	-1.6'	56.0'				Moon		
23	158°04.3	7.9'	26°27.6	-1.4'	56.0'	88°03.1	77°32.3	55°05.2	18°14.6		16°27.4
28 th	SD :	= 15.4'	Mer. pas	s. 12:04	1				-	-	

	_	
1.	Moon (20th Nov)	Lunar Distance (objects with largest hourly I D delta)
n	MOON 1 24" MOVI	I linar i listance i oniects with largest noliriv i i l'ideita i

Mon	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	-Venus	-Mars
0	172°31.2	7.9'	S 26°29.0	-1.3'	55.9'		87°45.8	77°03.2	54°39.7	17°45.9	15°57.5
1	186°58.1	7.9'	26°30.3	-1.1'	55.9'		87°28.4	76°34.2	54°14.2	17°17.1	15°27.7
2	201°25.0	7.9'	26°31.4	-1.0'	55.9'		87°11.1	76°05.2	53°48.9	16°48.4	14°57.9
3	215°51.9	7.9'	26°32.4	-0.8'	55.9'		86°53.8	75°36.2	53°23.6	16° 19.7	14°28.1
4	230°18.8	8.0'	26°33.2	-0.7'	55.9'		86°36.6	75°07.3	52°58.5	15°51.0	13°58.4
5	244°45.8	8.0'	26°33.9	-0.5'	55.8'		86°19.3	74°38.4	52°33.4	15°22.4	13°28.7
6	259°12.8	8.0'	S 26°34.4	-0.4'	55.8'		86°02.1	74°09.6	52°08.5	14°53.8	12°59.1
7	273°39.8	8.0'	26°34.8	-0.2'	55.8'		85°44.9	73°40.7	51°43.7	14°25.2	12°29.5
8	288°06.8	8.1'	26°35.0	-0.1'	55.8'		85°27.8	73°12.0	51°19.0	13°56.6	12°00.0
9	302°33.9	8.1'	$26^{\circ}35.1$	0.1'	55.7'	119°49.3	85°10.7	72°43.2	50°54.3	13°28.1	11°30.5
10	317°01.0	8.1'	$26^{\circ}35.1$	0.2'	55.7'	119°18.0	84°53.6	72°14.5	50°29.9	12°59.6	11°01.0
11	331°28.1	8.2'	26°34.9	0.4'	55.7'	118°46.6	84°36.5	71°45.9	50°05.5	12°31.2	10°31.6
12	345°55.3	8.2'	S 26°34.5	0.5'	55.7'	118° 15.3	84°19.5	71°17.3	49°41.2	12°02.7	10°02.3
13	0°22.5	8.2'	26°34.0	0.6'	55.7'	117°44.0	84°02.5	70°48.7	49°17.1	11°34.3	9°33.0
14	14°49.7	8.3'	26°33.4	0.8'	55.6'	117° 12.8	83°45.5	70°20.2	48°53.1	11°06.0	9°03.8
15	29°16.9	8.3'	26°32.6	0.9'	55.6'	116°41.5	83°28.6	69°51.7	48°29.2	10°37.6	8°34.6
16	43°44.2	8.3'	26°31.7	1.1'	55.6'	116°10.3	83°11.7	69°23.2	48°05.4	10°09.3	8°05.6
17	58°11.6	8.4'	26°30.6	1.2'	55.6'	115°39.1	82°54.9	68°54.8	47°41.8	9°41.1	7°36.6
18	72°39.0	8.4'	S 26°29.4	1.4'	55.5'	115°07.9	82°38.1	68°26.5	47°18.3	9°12.9	7°07.7
19	87°06.4	8.5'	26°28.0	1.5'	55.5'	114°36.7	82°21.3	67°58.2	46°55.0	8°44.7	6°39.0
20	101°33.8	8.5'	$26^{\circ}26.5$	1.6'	55.5'	114°05.6	82°04.6	67°29.9	46°31.7	8° 16.5	6°10.4
21	116°01.4	8.6'	26°24.9	1.8'	55.5'	113°34.5	81°47.9	67°01.7	46°08.7	7°48.4	5°41.9
22	130°28.9	8.6'	26°23.1	1.9'	55.5'	113°03.4	81°31.3	66°33.5	45°45.7	7°20.4	5°13.7
23	144°56.5	8.7'	26°21.2	2.1'	55.4'	112°32.3	81°14.7	66°05.4	45°23.0	6°52.4	4°45.7
29 th	SD =	= 15.3′	Mer. pas	s. 12:58	3						

h		Moon	(30 th No	v)		Lunar D	istance (objects wit	h largest	hourly L	D delta)
Tue	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	± V enus	±Mars
0	159°24.2	8.7'	S 26°19.1	2.2'	55.4'	112°01.3	80°58.1	65°37.3	45°00.3	6°24.4	4°18.1
1	173°51.9	8.8'	$26^{\circ}16.9$	2.3'	55.4'	111°30.3	80°41.6	65°09.3	44°37.9	5°56.6	3°51.0
2	188°19.6	8.8'	$26^{\circ}14.6$	2.5'	55.4'	110°59.3	80°25.2	64°41.3	44°15.5	5°28.7	3°24.5
3	202°47.4	8.9'	$26^{\circ}12.1$	2.6'	55.4'	110°28.3	80°08.8	64°13.3	43°53.4	5°01.0	2°58.8
4	217°15.3	8.9'	$26^{\circ}09.5$	2.7'	55.3'	109°57.3	79°52.4	63°45.5	43°31.4	4°33.4	
5	231°43.2	9.0'	26°06.8	2.9'	55.3'	109°26.4	79°36.1	63°17.6	43°09.6	4°05.9	
6	246°11.2	9.0'	S 26°03.9	3.0'	55.3'	108°55.5	79° 19.8	62°49.8	42°47.9	3°38.6	
7	260°39.2	9.1'	$26^{\circ}00.9$	3.1'	55.3'	108°24.6	79°03.6	62°22.1	42°26.4	3°11.5	
8	275°07.3	9.1'	25° 57.7	3.3'	55.2'	107°53.8	78°47.4	61°54.4	42°05.1	2°44.7	
9	289°35.4	9.2'	25° 54.4	3.4'	55.2'	107°22.9	78°31.3	61°26.8	41°44.0	2°18.5	
10	304°03.6	9.3'	$25^{\circ}51.0$	3.5'	55.2'	106°52.1	78° 15.3	60°59.3	41°23.1	1°53.0	
11	318°31.9	9.3'	25°47.5	3.7'	55.2'	106°21.3	77°59.3	60°31.7	41°02.4		
12	333°00.2	9.4'	S 25°43.8	3.8'	55.2'	105°50.6	77°43.4	60°04.3	40°41.8		
13	347°28.6	9.5'	25°40.0	3.9'	55.1'	105°19.8	77° 27.5	59°36.9	40°21.5		
14	1°57.1	9.5'	$25^{\circ}36.1$	4.1'	55.1'	104°49.1	77° 11.7	59°09.5	40°01.3		
15	16°25.6	9.6'	25°32.0	4.2'	55.1'	104°18.4	76°55.9	58°42.3	39°41.4		
16	30°54.2	9.7'	25°27.8	4.3'	55.1'	103°47.7	76°40.2	58°15.0	39°21.7		4°03.7
17	45°22.8	9.7'	25°23.5	4.4'	55.1'	103°17.1	76°24.5	57°47.9	39°02.2		4°30.7
18	59°51.6	9.8'	S 25°19.1	4.6'	55.1'	102°46.5	76°09.0	57°20.8	38°42.9		4°58.0
19	74°20.3	9.9'	$25^{\circ}14.5$	4.7'	55.0'	102° 15.9	75°53.4	56°53.7	38°23.8	2°38.5	5°25.6
20	88°49.2	9.9'	25°09.8	4.8'	55.0'	101°45.3	75°38.0	56°26.7	38°05.0	3°04.9	5°53.4
21	103°18.1	10.0'	25°05.0	4.9'	55.0'	101°14.7	75°22.6	55°59.8	37°46.4	3°31.6	6°21.3
22	117°47.1	10.1'	$25^{\circ}00.1$	5.1'	55.0'	100°44.2	75°07.3	55°33.0	37°28.0	3°58.5	6°49.3
23	132°16.2	10.1'	24°55.0	5.2'	55.0'	100°13.7	74°52.0	55°06.2	37°09.9	4°25.6	7°17.4
30 th	SD	= 15.1'	Mer. pass	13:52							

	<u> </u>	_ 15.1	ivici. puss.	10.02								
h		Моог	n (1 st Dec	:)		Luna	ar Distan	ce (objects	with lar	gest hou	rly LD d	elta)
Wed	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Venus	+Mars	+Sun
0	146°45.3	10.2'	S 24°49.9	5.3'	54.9'	99°43.2	74°36.8	54°39.4	36°52.1	4°52.7	7°45.6	
1	161°14.5	10.3'	24°44.6	5.4'	54.9'	99°12.7	74°21.7	54°12.8	36°34.4	5°19.9	8°13.8	
2	175°43.8	10.4'	24°39.2	5.5'	54.9'	98°42.2	74°06.6	53°46.2	36°17.1	5°47.1	8°42.1	
3	190°13.2	10.4'	24°33.6	5.6'	54.9'	98°11.8		53°19.7	36°00.0	6°14.3	9°10.3	
4	204°42.6	10.5'	24°28.0	5.8'	54.9'	97°41.4		52°53.2	35°43.2	6°41.6	9°38.6	
5	219°12.1	10.6'	24°22.2	5.9'	54.8'	97°11.0		52°26.8	35°26.7	7°08.8	10°06.9	
6	233°41.7	10.7'	S 24°16.3	6.0'	54.8'	96°40.7		52°00.5	35° 10.5	7°36.1	10°35.3	
7	248°11.3	10.7'	24°10.3	6.1'	54.8'	96°10.3		51°34.3	34°54.5	8°03.4	11°03.6	
8	262°41.0	10.8'	24°04.2	6.2'	54.8'	95°40.0		51°08.2	34°38.8	8°30.7	11°31.9	
9	277°10.8	10.9'	23°58.0	6.3'	54.8'	95°09.7		50°42.1	34°23.5	8°57.9	12°00.2	
10	291°40.7	11.0'	23°51.7	6.4'	54.8'	94°39.4		50°16.1	34°08.4	9°25.2	12°28.6	
11	306°10.7	11.0'	23°45.3	6.5'	54.7'	94°09.2		49°50.2		9°52.4	12°56.9	
12	320°40.7	11.1'	S 23°38.7	6.7'	54.7'	93°38.9		49°24.3		10°19.6	13°25.2	
13	335°10.8	11.2'	23°32.1	6.8'	54.7'	93°08.7		48°58.6		10°46.9	13°53.5	
14	349°41.0	11.3'	23°25.3	6.9'	54.7'	92°38.5		48°32.9		11°14.1	14°21.8	
15	4°11.3	11.3'	23°18.5	7.0'	54.7'	92°08.4		48°07.3		11°41.3	14°50.1	
16	18°41.6	11.4'	23°11.5	7.1'	54.7'	91°38.2		47°41.8		12°08.4	15°18.4	_
17	33°12.0	11.5'	23°04.4	7.2'	54.6'	91°08.1		47°16.4		12°35.6	15°46.6	41°01.7
18	47°42.5	11.6'	S 22°57.2	7.3'	54.6'	90°38.0		46°51.1		13°02.8	16°14.9	41°29.3
19	62°13.1	11.7'	22°50.0	7.4'	54.6'	90°07.9		46°25.8		13°29.9	16°43.1	41°56.9
20	76°43.7	11.7'	22°42.6	7.5'	54.6'	89°37.8		46°00.7		13°57.0	17°11.4	42°24.4
21	91°14.5	11.8'	22°35.1	7.6'	54.6'	89°07.7		45°35.7		14°24.1	17°39.6	42°51.9
22	105°45.3	11.9'	22°27.5	7.7'	54.6'	88°37.7		45°10.7		14°51.2	18°07.8	43°19.4
23	120°16.2	12.0'	22°19.8	7.8'	54.6'	88°07.7		44°45.9		15°18.3	18°36.0	43°46.9
1 st	SD	= 15.0'	Mer. pass	. 14:43	3			Sun	SD = 16.2	,		

h		Moon	(2 nd Dec	:)		Lunar [Distance (o	bjects wi	th larges	st hourly LD delta)
Thu	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Venus	+Mars	+Sun
0	134°47.1	12.0'	S 22°12.1	7.9'	54.5'	87°37.7	44°21.2	15°45.3	19°04.1	44°14.4
1	149°18.2	12.1'	22°04.2	8.0'	54.5'	87°07.7	43°56.5	16°12.4	19°32.3	44°41.9
2	163°49.3	12.2'	21°56.2	8.1'	54.5'	86°37.8	43°32.0	16°39.4	20°00.5	45°09.3
3	178°20.5	12.3'	21°48.2	8.2'	54.5'	86°07.8	43°07.6	17°06.4	20°28.6	45°36.7
4	192°51.7	12.4'	21°40.0	8.2'	54.5'	85°37.9	42°43.3	17°33.4	20°56.7	46°04.1
5	207°23.1	12.4'	21°31.8	8.3'	54.5'	85°08.0	42°19.1	18°00.3	21°24.8	46°31.5
6	221°54.5	12.5'	S 21°23.4	8.4'	54.5'	84°38.1	41°55.0	18°27.3	21°52.9	46°58.9
7	236°26.0	12.6'	$21^{\circ}15.0$	8.5'	54.4'	84°08.2	41°31.1	18°54.2	22°21.0	47°26.3
8	250°57.6	12.7'	21°06.5	8.6'	54.4'	83°38.4	41°07.2	19°21.2	22°49.0	47°53.6
9	265°29.3	12.7'	20°57.9	8.7'	54.4'	83°08.5	40°43.5	19°48.1	23° 17.1	48°21.0
10	280°01.0	12.8'	20°49.2	8.8'	54.4'	82°38.7	40°20.0	20°15.0	23°45.1	48°48.3
11	294°32.8	12.9'	20°40.4	8.9'	54.4'	82°08.9	39° 56.5	20°41.9	24°13.1	49°15.6
12	309°04.7	13.0'	S 20°31.5	9.0'	54.4'	81°39.1	39° 33.2	21°08.7	24°41.2	49°42.9
13	323°36.7	13.0'	20°22.6	9.0'	54.4'	81°09.4	39° 10.0	21°35.6	25°09.1	50°10.2
14	338°08.7	13.1'	$20^{\circ}13.6$	9.1'	54.4'	80°39.6	38°47.0	22°02.4	25°37.1	50°37.5
15	352°40.8	13.2'	20°04.4	9.2'	54.4'	80°09.9	38°24.1	22°29.2	26°05.1	51°04.7
16	7°13.0	13.3'	19°55.2	9.3'	54.3'	79°40.1	38°01.4	22°56.0	26°33.0	51°32.0
17	21°45.2	13.3'	19°46.0	9.4'	54.3'	79° 10.4	37°38.8	23°22.8	27°01.0	51°59.2
18	36°17.6	13.4'	S 19°36.6	9.4'	54.3'	78°40.8	37° 16.4	23°49.6	27°28.9	52°26.4
19	50°50.0	13.5'	$19^{\circ}27.2$	9.5'	54.3'	78° 11.1	36°54.1	24°16.4	27°56.8	52°53.6
20	65°22.4	13.5'	$19^{\circ}17.7$	9.6'	54.3'	77°41.4	36° 32.0	24°43.1	28°24.7	53°20.8
21	79°55.0	13.6'	$19^{\circ}08.1$	9.7'	54.3'	77°11.8	36° 10.1	25°09.9	28°52.6	53°48.0
22	94°27.6	13.7'	18°58.4	9.7'	54.3'	76°42.1	35°48.3	25°36.6	29° 20.5	54°15.1
23	109°00.3	13.8'	18°48.6	9.8'	54.3'	76° 12.5	35°26.7	26°03.3	29°48.4	54°42.3
2 nd	SD	= 14.9'	Mer. pass	. 15:30	1			Sun SD	= 16.2'	

h		Moon	(3 rd Dec	:)		Lun	ar Distance	e (object	s with larg	est hourl	y LD del	ta)
Fri	GHA	ν	Dec	d	HP	-Rigel	-Aldebaran	-Saturn	-Fomalhaut	+Venus	+Mars	+

Fri	GHA	ν	Dec	d	HP	-Rigel	-Aldebaran	-Saturn	-Fomalhaut	+Venus	+Mars	+Sun	
0	123°33.1	13.8'	S 18°38.8	9.9'	54.3'			75°42.9	35°05.3	26°30.0	30°16.2	55°09.5	
1	138°05.9	13.9'	18°28.9	10.0'	54.3'			75° 13.3	34°44.1	26°56.7	30°44.1	55°36.6	
2	152°38.8	14.0'	$18^{\circ}19.0$	10.0'	54.2'			74°43.7	34°23.1	27°23.4	31°11.9	56°03.7	
3	167°11.8	14.0'	$18^{\circ}08.9$	10.1'	54.2'			74°14.2	34°02.3	27°50.1	31°39.7	56°30.8	
4	181°44.8	14.1'	$17^{\circ}58.8$	10.2'	54.2'			73°44.6	33°41.7	28°16.8	32°07.6	56°57.9	
5	196°17.9	14.2'	$17^{\circ}48.6$	10.2'	54.2'			73°15.1	33°21.3	28°43.4	32°35.4	57°25.0	
6	210°51.1	14.2'	S 17°38.4	10.3'	54.2'			72°45.6	33°01.1	29°10.0	33°03.1	57°52.1	
7	225°24.3	14.3'	$17^{\circ}28.1$	10.4'	54.2'			72°16.0	32°41.1	29°36.7	33°30.9	58°19.2	
8	239°57.6	14.4'	$17^{\circ}17.7$	10.5'	54.2'			71°46.5	32°21.4	30°03.3	33°58.7	58°46.3	
9	254°31.0	14.4'	17°07.2	10.5'	54.2'		119°55.5	71° 17.1	32°01.9	30°29.9	34°26.5	59°13.3	
10	269°04.4	14.5'	$16^{\circ}56.7$	10.6'	54.2'		119°26.4	70°47.6	31°42.7	30°56.5	34° 54.2	59°40.4	
11	283°37.9	14.6'	$16^{\circ}46.1$	10.6'	54.2'		118°57.2	70°18.1	31°23.7	31°23.1	35°22.0	60°07.4	
12	298°11.5	14.6'	S 16°35.5	10.7'	54.2'		118°28.1	69°48.7	31°04.9	31°49.7	35°49.7	60°34.4	
13	312°45.1	14.7'	16°24.8	10.8'	54.2'	119°55.8	117°59.0	69° 19.2	30°46.4	32°16.3	36° 17.4	61°01.5	
14	327°18.7	14.7'	$16^{\circ}14.0$	10.8'	54.2'	119°33.4	117°29.9	68°49.8	30°28.2	32°42.8	36° 45.2	61°28.5	
15	341°52.5	14.8'	$16^{\circ}03.2$	10.9'	54.2'	119°11.0	117°00.7	68°20.3	30°10.3	33°09.4	37° 12.9	61°55.5	
16	356°26.3	14.9'	15°52.3	11.0'	54.2'	118°48.5	116°31.6	67°50.9	29°52.6	33°35.9	37°40.6	62°22.5	
17	$11^{\circ}00.1$	14.9'	15°41.3	11.0'	54.1'	118°26.0	116°02.5	67°21.5	29°35.2	34°02.5	38°08.3	62°49.5	
18	25°34.1	15.0'	S 15°30.3	11.1'	54.1'	118°03.4	115°33.4	66°52.1	29° 18.2	34°29.0	38° 36.0	63°16.5	
19	40°08.0	15.0'	$15^{\circ}19.2$	11.1'	54.1'	117°40.8	115°04.3	66°22.7	29°01.4	34°55.5	39°03.7	63°43.5	
20	54°42.1	15.1'	$15^{\circ}08.1$	11.2'	54.1'	117°18.1	114°35.2	65°53.4	28°45.0	35°22.1	39°31.4	64°10.5	
21	69°16.2	15.1'	$14^{\circ}56.9$	11.2'	54.1'	116°55.4	114°06.1	65°24.0	28°28.9	35°48.6	39°59.0	64°37.4	
22	83°50.3	15.2'	14°45.6	11.3'	54.1'	116°32.6	113°37.0	64°54.6	28°13.1	36°15.1	40°26.7	65°04.4	
23	98°24.5	15.2'	14°34.3	11.4'	54.1'	116°09.8	113°07.9	64°25.3	27°57.7	36°41.6	40°54.4	65°31.4	
3 rd	SD	= 14.8'	Mer. pass	. 16:15	-		·	Su	n SD = 16.2'				

h Moon (4th Dec) Lunar Distance (objects with largest hourly LD delta)

n		IVIOO	n (4" De	c)			Lunar Dis	tance (obje	ects with	largest	nourly L	D deita)	
Sat	GHA	ν	Dec	d	HP	-Capella	-Rigel	-Aldebaran	-Saturn	+Altair	+Venus	+Mars	+Sun
0	112°58.7	15.3'	S 14°23.0	11.4'	54.1'		115°46.9	112°38.8	63°55.9		37°08.1	41°22.0	65°58.3
1	127°33.0	15.4'	14°11.6	11.5'	54.1'		115°24.0	112°09.7	63°26.6		37°34.6	41°49.7	66°25.3
2	142°07.4	15.4'	$14^{\circ}00.1$	11.5'	54.1'		115°01.1	111°40.6	62°57.3		38°01.1	42°17.3	66°52.2
3	156°41.8	15.5'	13°48.6	11.6'	54.1'	119°41.9	114°38.1	111°11.5	62°27.9		38°27.6	42°45.0	67°19.2
4	171°16.3	15.5'	13°37.0	11.6'	54.1'	119° 14.6	114°15.0	110°42.4	61°58.6		38°54.1	43°12.6	67°46.1
5	185°50.8	15.6'	13°25.4	11.7'	54.1'	118°47.3	113°51.9	110°13.3	61°29.3		39°20.6	43°40.3	68°13.1
6	200°25.3	15.6'	S 13°13.7	11.7'	54.1'	118° 19.9	113°28.8	109°44.2	61°00.0		39°47.1	44°07.9	68°40.0
7	214°59.9	15.6'	13°02.0	11.8'	54.1'	117°52.5	113°05.6	109°15.1	60°30.7		40°13.5	44°35.6	69°07.0
8	229°34.6	15.7'	$12^{\circ}50.3$	11.8'	54.1'	117°25.1	112°42.4	108°46.0	60°01.4		40°40.0	45°03.2	69°33.9
9	244°09.2	15.7'	12°38.4	11.9'	54.1'	116°57.7	112°19.2	108°16.9	59°32.1		41°06.5	45°30.8	70°00.8
10	258°44.0	15.8'	$12^{\circ}26.6$	11.9'	54.1'	116°30.3	111°55.9	107°47.8	59°02.9		41°33.0	45°58.5	70°27.8
11	273°18.8	15.8'	12°14.7	12.0'	54.1'	116°02.8	111°32.5	107°18.7	58°33.6		41°59.4	46°26.1	70°54.7
12	287°53.6	15.9'	S 12°02.7	12.0'	54.1'	115°35.4	111°09.2	106°49.6	58°04.3		42°25.9	46°53.7	71°21.6
13	302°28.4	15.9'	$11^{\circ}50.7$	12.0'	54.1'	115°07.9	110°45.8	106°20.5	57°35.0		42°52.4	47°21.4	71°48.6
14	317°03.3	15.9'	11°38.7	12.1'	54.1'	114°40.4	110°22.3	105°51.4	57°05.8		43°18.9	47°49.0	72°15.5
15	331°38.3	16.0'	$11^{\circ}26.6$	12.1'	54.1'	114° 12.9	109°58.9	105°22.3	56°36.5	34°56.3	43°45.3	48°16.6	72°42.4
16	346°13.3	16.0'	$11^{\circ}14.4$	12.2'	54.1'	113°45.4	109°35.4	104°53.2	56°07.3	35°11.8	44°11.8	48°44.3	73°09.4
17	0°48.3	16.1'	11°02.3	12.2'	54.1'	113° 17.8	109°11.8	104°24.1	55°38.0	35°27.5	44°38.3	49°11.9	73°36.3
18	15°23.3	16.1'	S 10°50.1	12.3'	54.1'	112°50.3	108°48.3	103°55.0	55°08.8	35°43.5	45°04.7	49°39.5	74°03.3
19	29°58.4	16.1'	10°37.8	12.3'	54.1'	112°22.7	108°24.7	103°25.9	54°39.5	35°59.7	45°31.2	50°07.2	74°30.2
20	44°33.6	16.2'	$10^{\circ}25.5$	12.3'	54.1'	111°55.1	108°01.0	102°56.8	54°10.3	36°16.2	45°57.7	50°34.8	74°57.1
21	59°08.7	16.2'	10°13.2	12.4'	54.1'	111°27.5	107°37.4	102°27.6	53°41.1	36°32.9	46°24.2	51°02.4	75°24.1
22	73°43.9	16.2'	10°00.8	12.4'	54.1'	110°59.9	107°13.7	101°58.5	53°11.8	36°49.9	46°50.7	51°30.1	75°51.0
23	88°19.1	16.3'	09°48.4	12.5'	54.1'	110°32.3	106°49.9	101°29.4	52°42.6	37°07.1	47°17.1	51°57.7	76°18.0
4 th	SD	= 14.8'	Mer. pas	s. 16:57					Sun SD =	16.2'			

1.	Moon (5 th Dec)	Lunar Distance (objects with largest hourly ID delta)
n	Moon (5" Dec)	I linar i listance i oniects with largest nollriv i i li delta i

Sun	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Altair	+Venus	+Mars	+Sun
0	102°54.4	16.3'	S 09°35.9	12.5'	54.1'	119°13.5	110°04.6	101°00.2	52°13.4	37°24.5	47°43.6	52°25.4	76°44.9
1	117°29.7	16.3'	09°23.4	12.5'	54.2'	118°46.1	109°36.9	100°31.1	51°44.2	37°42.1	48°10.1	52°53.0	77°11.9
2	132°05.0	16.3'	09°10.9	12.6'	54.2'	118°18.6	109°09.3	100°02.0	51°14.9	37°59.9	48°36.6	53°20.7	77°38.9
3	146°40.3	16.4'	08°58.4	12.6'	54.2'	117°51.0	108°41.6	99°32.8	50°45.7	38°18.0	49°03.1	53°48.3	78°05.8
4	161°15.7	16.4'	08°45.8	12.6'	54.2'	117°23.5	108°13.9	99°03.6	50°16.5	38°36.2	49°29.6	54°16.0	78°32.8
5	175°51.1	16.4'	08°33.1	12.7'	54.2'	116°55.9	107°46.1	98°34.5	49°47.3	38°54.7	49°56.1	54°43.7	78°59.8
6	190°26.5	16.4'	S 08°20.5	12.7'	54.2'	116°28.4	107°18.4	98°05.3	49°18.1	39°13.3	50°22.7	55°11.4	79°26.8
7	205°02.0	16.5'	08°07.8	12.7'	54.2'	116°00.8	106°50.6	97°36.1	48°48.8	39°32.2	50°49.2	55°39.0	79°53.8
8	219°37.5	16.5'	07°55.0	12.8'	54.2'	115°33.1	106°22.9	97°06.9	48°19.6	39°51.2	51°15.7	56°06.7	80°20.8
9	234°12.9	16.5'	07°42.3	12.8'	54.2'	115°05.5	105°55.1	96°37.7	47°50.4	40°10.4	51°42.3	56°34.4	80°47.8
10	248°48.5	16.5'	07°29.5	12.8'	54.2'	114°37.8	105°27.3	96°08.5	47°21.2	40°29.8	52°08.8	57°02.1	81°14.8
11	263°24.0	16.5'	$07^{\circ}16.7$	12.9'	54.2'	114°10.1	104°59.5	95°39.3	46°52.0	40°49.3	52°35.4	57°29.9	81°41.8
12	277°59.5	16.6'	S 07°03.8	12.9'	54.2'	113°42.4	104°31.6	95°10.1	46°22.8	41°09.0	53°01.9	57°57.6	82°08.8
13	292°35.1	16.6'	06°50.9	12.9'	54.2'	113°14.7	104°03.8	94°40.9	45°53.6	41°28.9	53°28.5	58°25.3	82°35.9
14	307°10.7	16.6'	06°38.0	12.9'	54.2'	112°46.9	103°35.9	94°11.7	45°24.3	41°49.0	53°55.1	58°53.0	83°02.9
15	321°46.3	16.6'	$06^{\circ}25.1$	13.0'	54.3'	112°19.1	103°08.1	93°42.4	44°55.1	42°09.2	54°21.6	59°20.8	83°30.0
16	336°21.9	16.6'	$06^{\circ}12.1$	13.0'	54.3'	111°51.3	102°40.2	93°13.2	44°25.9	42°29.6	54°48.2	59°48.5	83°57.1
17	350°57.5	16.6'	$05^{\circ}59.1$	13.0'	54.3'	111°23.5	102°12.3	92°43.9	43°56.7	42°50.1	55°14.8	60°16.3	84°24.1
18	5°33.2	16.6'	S 05°46.1	13.0'	54.3'	110°55.7	101°44.3	92°14.6	43°27.5	43°10.8	55°41.5	60°44.1	84°51.2
19	20°08.8	16.7'	05°33.1	13.1'	54.3'	110°27.8	101°16.4	91°45.3	42°58.3	43°31.6	56°08.1	61°11.9	85°18.3
20	34°44.5	16.7'	05°20.0	13.1'	54.3'	109°59.9	100°48.4	91°16.0	42°29.1	43°52.6	56°34.7	61°39.7	85°45.4
21	49°20.1	16.7'	05°06.9	13.1'	54.3'	109°32.0	100°20.5	90°46.7	41°59.9	44°13.7	57°01.4	62°07.5	86°12.5
22	63°55.8	16.7'	04°53.8	13.1'	54.3'	109°04.1	99°52.5	90°17.4	41°30.7	44°35.0	57°28.0	62°35.3	86°39.7
23	78°31.5	16.7'	04°40.6	13.2'	54.3'	108°36.1	99°24.5	89°48.1	41°01.5	44°56.3	57°54.7	63°03.1	87°06.8
5 th	SD	$= 14.8^{\prime}$	Mer. pass	s. 17:37				S	SD = 1	6.2'			

(cth D

Moon (6th Dec) Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Aldebaran	-Saturn	+Altair	+Venus	+Mars	+Sun
0	93°07.2	16.7'	S 04°27.5	13.2'	54.3'	108°08.1	98°56.4	89°18.7	40°32.3	45° 17.9	58°21.4	63°31.0	87°34.0
1	107°42.9	16.7'	$04^{\circ}14.3$	13.2'	54.4'	107°40.1	98°28.4	88°49.4	40°03.0	45°39.5	58°48.1	63°58.8	88°01.1
2	122°18.6	16.7'	$04^{\circ}01.1$	13.2'	54.4'	107° 12.1	98°00.3	88°20.0	39°33.8	46°01.3	59°14.8	64°26.7	88°28.3
3	136°54.3	16.7'	03°47.9	13.2'	54.4'	106°44.1	97°32.3	87°50.6	39°04.6	46°23.2	59°41.5	64°54.6	88°55.5
4	151°30.0	16.7'	03°34.6	13.3'	54.4'	106° 16.0	97°04.2	87°21.2	38°35.4	46°45.2	60°08.3	65°22.5	89°22.7
5	166°05.7	16.7'	03°21.4	13.3'	54.4'	105°47.9	96°36.1	86°51.8	38°06.2	47°07.4	60°35.0	65°50.4	89°49.9
6	180°41.4	16.7'	S 03°08.1	13.3'	54.4'	105° 19.8	96°08.0	86°22.4	37°37.0	47°29.6	61°01.8	66°18.3	90°17.2
7	195°17.1	16.7'	02°54.8	13.3'	54.4'	104°51.7	95°39.8	85°53.0	37°07.8	47°52.0	61°28.6	66°46.3	90°44.4
8	209°52.8	16.7'	02°41.4	13.3'	54.4'	104°23.6	95°11.7	85°23.5	36°38.6	48° 14.5	61°55.4	67°14.2	91°11.7
9	224°28.5	16.7'	02°28.1	13.4'	54.5'	103°55.4	94°43.5	84°54.0	36°09.4	48°37.1	62°22.2	67°42.2	91°39.0
10	239°04.1	16.7'	02°14.8	13.4'	54.5'	103°27.2	94° 15.3	84°24.6	35°40.2	48°59.8	62°49.0	68°10.2	92°06.3
11	253°39.8	16.7'	02°01.4	13.4'	54.5'	102°59.0	93°47.1	83°55.1	35°11.0	49°22.6	63°15.8	68°38.2	92°33.6
12	268°15.5	16.7'	S 01°48.0	13.4'	54.5'	102°30.7	93° 18.8	83°25.6	34°41.9	49°45.6	63°42.7	69°06.2	93°00.9
13	282°51.1	16.7'	01°34.6	13.4'	54.5'	102°02.5	92°50.6	82°56.0	34°12.7	50°08.6	64°09.6	69°34.2	93°28.3
14	297°26.8	16.6'	$01^{\circ}21.2$	13.4'	54.5'	101°34.2	92°22.3	82°26.5	33°43.5	50°31.7	64°36.5	70°02.3	93°55.7
15	312°02.4	16.6'	01°07.8	13.4'	54.6'	101°05.9	91°54.0	81°56.9	33°14.3	50°55.0	65°03.4	70°30.4	94°23.1
16	326°38.1	16.6'	00°54.3	13.4'	54.6'	100°37.5	91°25.7	81°27.3	32°45.2	51°18.3	65°30.3	70°58.5	94°50.5
17	341°13.7	16.6'	00°40.9	13.5'	54.6'	100°09.2	90°57.4	80°57.7	32°16.0	51°41.7	65°57.3	71°26.6	95°17.9
18	355°49.3	16.6'	S 00°27.4	13.5'	54.6'	99°40.8	90°29.1	80°28.1	31°46.8	52°05.3	66°24.3	71°54.7	95°45.3
19	10°24.9	16.6'	$00^{\circ}14.0$	13.5'	54.6'	99°12.4	90°00.7	79°58.5	31°17.7	52°28.9	66°51.3	72°22.9	96°12.8
20	25°00.4	16.5'	S 00°00.5	13.5'	54.6'	98°44.0	89°32.4	79°28.8	30°48.6	52°52.6	67°18.3	72°51.0	96°40.3
21	39°36.0	16.5'	N 00°13.0	13.5'	54.7'	98° 15.5	89°04.0	78°59.2	30°19.5	53° 16.4	67°45.3	73°19.2	97°07.8
22	54°11.5	16.5'	00°26.5	13.5'	54.7'	97°47.1	88° 35.5	78°29.5	29°50.3	53°40.3	68°12.4	73°47.4	97°35.3
23	68°47.0	16.5'	00°40.0	13.5'	54.7'	97° 18.6	88°07.1	77°59.8	29°21.2	54°04.3	68°39.4	74°15.7	98°02.9
6 th	SD	= 14.8'	Mer. pass	. 18:17					Sun $SD = 1$	L6.2'			

h Moon (7th Dec) Lunar Distance (objects with largest hourly LD delta)

									,				
Tue	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Aldebaran	+Altair	+Venus	+Mars	+Sun
0	83°22.5	16.5'	N 00°53.5	13.5'	54.7'		119°36.8	96°50.1	77°30.0	54°28.3	69°06.5	74°43.9	98°30.4
1	97°58.0	16.4'	$01^{\circ}07.0$	13.5'	54.7'		119°06.8	96°21.5	77°00.3	54°52.5	69°33.6	75° 12.2	98°58.0
2	112°33.4	16.4'	$01^{\circ}20.6$	13.5'	54.8'		118°36.8	95°52.9	76°30.5	55°16.7	70°00.8	75°40.5	99°25.6
3	127°08.8	16.4'	01°34.1	13.5'	54.8'		118°06.8	95°24.4	76°00.7	55°41.1	70°27.9	76°08.8	99°53.2
4	141°44.2	16.4'	01°47.6	13.5'	54.8'		117°36.7	94°55.7	75°30.9	56°05.5	70°55.1	76°37.2	100°20.9
5	$156^{\circ}19.6$	16.3'	$02^{\circ}01.2$	13.5'	54.8'		117°06.6	94°27.1	75°01.1	56°29.9	71°22.3	77°05.5	100°48.6
6	170°54.9	16.3'	N 02°14.7	13.5'	54.8'	119°55.7	116°36.5	93°58.4	74°31.3	56°54.5	71°49.6	77°33.9	101°16.3
7	185°30.2	16.3'	02°28.2	13.5'	54.9'	119°27.0	116°06.4	93°29.8	74°01.4	57°19.2	72°16.8	78°02.3	101°44.0
8	200°05.5	16.2'	02°41.8	13.5'	54.9'	118°58.4	115°36.2	93°01.0	73°31.5	57°43.9	72°44.1	78°30.8	102°11.8
9	214°40.7	16.2'	02°55.3	13.5'	54.9'	118°29.7	115°06.0	92°32.3	73°01.6	58°08.7	73°11.4	78° 59.2	102°39.5
10	$229^{\circ}15.9$	16.2'	03°08.9	13.5'	54.9'	118°00.9	114°35.8	92°03.5	72°31.6	58°33.6	73°38.7	79°27.7	103°07.3
11	243°51.1	16.1'	03°22.4	13.5'	54.9'	117°32.1	114°05.6	91°34.8	72°01.7	58°58.5	74°06.1	79°56.2	103°35.2
12	258°26.2	16.1'	N 03°36.0	13.5'	55.0'	117°03.3	113°35.3	91°05.9	71°31.7	59°23.5	74°33.5	80°24.8	104°03.0
13	273°01.3	16.1'	03°49.5	13.5'	55.0'	116°34.4	113°05.0	90°37.1	71°01.7	59°48.6	75°00.9	80°53.3	104°30.9
14	287°36.4	16.0'	04°03.0	13.5'	55.0'	116°05.5	112°34.7	90°08.2	70°31.7	60°13.8	75°28.3	81°21.9	104°58.8
15	302°11.4	16.0'	$04^{\circ}16.6$	13.5'	55.0'	115°36.5	112°04.3	89°39.3	70°01.6	60°39.0	75°55.8	81°50.6	105°26.7
16	316°46.4	15.9'	04°30.1	13.5'	55.1'	115°07.6	111°33.9	89°10.4	69°31.5	61°04.4	76°23.3	82°19.2	105°54.7
17	331°21.3	15.9'	04°43.6	13.5'	55.1'	114°38.5	111°03.5	88°41.5	69°01.4	61°29.7	76°50.8	82°47.9	106°22.7
18	345°56.2	15.9'	N 04°57.1	13.5'	55.1'	114°09.5	110°33.1	88°12.5	68°31.3	61°55.2	77°18.3	83° 16.6	106°50.7
19	0°31.1	15.8'	$05^{\circ}10.6$	13.5'	55.1'	113°40.4	110°02.6	87°43.5	68°01.2	62°20.7	77°45.9	83°45.3	107°18.7
20	15°05.9	15.8'	$05^{\circ}24.1$	13.5'	55.2'	113°11.2	109°32.1	87°14.5	67°31.0	62°46.3	78°13.5	84°14.1	107°46.8
21	29°40.7	15.7'	05°37.6	13.5'	55.2'	112°42.0	109°01.6	86°45.5	67°00.8	63°11.9	78°41.1	84°42.8	108°14.9
22	44°15.4	15.7'	$05^{\circ}51.1$	13.5'	55.2'	112°12.8	108°31.1	86°16.4	66°30.6	63°37.7	79°08.8	85°11.7	108°43.0
23	58°50.0	15.6'	06°04.6	13.5'	55.2'	111°43.6	108°00.5	85°47.3	66°00.3	64°03.4	79°36.5	85°40.5	109°11.1
7 th	SD	= 14.9'	Mer. pass	. 18:58					$Sun\;SD=1$.6.2'			

h Moon	(8 th Dec)	Lunar Distance (objects with la	rgest hourly LD delta)
--------	-----------------------	------------------	-----------------	-----------------------	---

Wed	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Aldebaran	+Altair	+Venus	+Mars	+Sun
0	73°24.7	15.6'	$N06^{\circ}18.1$	13.5'	55.2'	111°14.3	107°29.9	85° 18.2	65°30.1	64°29.3	80°04.2	86°09.4	109°39.3
1	87°59.2	15.5'	06°31.5	13.4'	55.3'	110°44.9	106°59.2	84°49.0	64°59.8	64°55.2	80°31.9	86°38.3	110°07.5
2	102°33.7	15.5'	06°45.0	13.4'	55.3'	110° 15.5	106°28.5	84° 19.9	64°29.5	65°21.2	80°59.7	87°07.2	110°35.8
3	117°08.2	15.4'	06°58.4	13.4'	55.3'	109°46.1	105°57.8	83°50.7	63°59.1	65°47.2	81°27.5	87°36.2	111°04.1
4	131°42.6	15.3'	07°11.8	13.4'	55.4'	109°16.7	105°27.1	83°21.4	63°28.7	66°13.3	81°55.4	88°05.2	111°32.4
5	146°16.9	15.3'	07°25.2	13.4'	55.4'	108°47.2	104°56.3	82°52.2	62°58.3	66°39.5	82°23.2	88°34.2	112°00.7
6	160°51.2	15.2'	N07°38.6	13.4'	55.4'	108° 17.7	104°25.5	82°22.9	62°27.9	67°05.7	82°51.1	89°03.3	112°29.1
7	175°25.4	15.2'	07°52.0	13.3'	55.4'	107°48.1	103°54.7	81°53.6	61°57.5	67°32.0	83°19.1	89°32.4	112°57.5
8	189°59.6	15.1'	08°05.3	13.3'	55.5'	107°18.5	103°23.8	81°24.3	61°27.0	67°58.4	83°47.0	90°01.5	113°25.9
9	204°33.7	15.0'	08°18.6	13.3'	55.5'	106°48.8	102°52.9	80° 54.9	60°56.5	68°24.8	84°15.0	90°30.6	113°54.3
10	219°07.8	15.0'	08°31.9	13.3'	55.5'	106°19.1	102°21.9	80°25.5	60°25.9	68°51.2	84°43.1	90°59.8	114°22.8
11	233°41.7	14.9'	08°45.2	13.3'	55.5'	105°49.4	101°51.0	79°56.1	59°55.4	69°17.7	85°11.1	91°29.1	114°51.4
12	248°15.7	14.9'	N08°58.5	13.2'	55.6'	105°19.6	101°20.0	79°26.7	59°24.8	69°44.3	85°39.2	91°58.3	115° 19.9
13	262°49.5	14.8'	09°11.7	13.2'	55.6'	104°49.8	100°48.9	78° 57.2	58°54.2	70°11.0	86°07.4	92°27.6	115°48.5
14	277°23.3	14.7'	09°25.0	13.2'	55.6'	104°20.0	100°17.8	78° 27.7	58°23.6	70°37.7	86°35.5	92°56.9	116° 17.2
15	291°57.0	14.6'	09°38.2	13.2'	55.7'	103°50.1	99°46.7	77°58.2	57°52.9	71°04.4	87°03.7	93°26.3	116°45.8
16	306°30.7	14.6'	09°51.3	13.1'	55.7'	103°20.2	99°15.6	77°28.7	57°22.2	71°31.2	87°32.0	93°55.7	117°14.5
17	321°04.2	14.5'	10°04.5	13.1'	55.7'	102°50.2	98°44.4	76°59.1	56°51.5	71°58.1	88°00.2	94°25.1	117°43.2
18	335°37.7	14.4'	N10°17.6	13.1'	55.7'	102°20.2	98°13.2	76°29.5	56°20.7	72°25.0	88°28.5	94°54.6	118°12.0
19	350°11.2	14.4'	10°30.7	13.1'	55.8'	101°50.2	97°41.9	75° 59.9	55°49.9	72°52.0	88°56.9	95°24.1	118°40.8
20	4°44.5	14.3'	10°43.8	13.0'	55.8'	101°20.1	97°10.7	75° 30.3	55°19.1	73°19.0	89°25.3	95°53.6	119°09.6
21	19°17.8	14.2'	10°56.8	13.0'	55.8'	100°50.0	96°39.3	75°00.6	54°48.3	73°46.1	89°53.7	96°23.2	119°38.5
22	33°51.0	14.1'	11°09.8	13.0'	55.9'	100°19.8	96°08.0	74°30.9	54°17.5	74°13.2	90°22.1	96°52.8	
23	48°24.1	14.0'	11°22.8	12.9'	55.9'	99°49.6	95°36.6	74°01.2	53°46.6	74°40.4	90°50.6	97°22.4	
8 th	SD	= 15.1'	Mer. pass	. 19:40				-	$Sun\;SD=1$	6.2'			

h		Моо	n (9 th Dec	:)			Lunai	r Distance (objects wit	th largest ho	ourly LD	delta)	
Thu	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Aldebaran	+Fomalhaut	+Altair	+Venus	+Mars
0	62°57.2	14.0'	$N11^{\circ}35.7$	12.9'	55.9'	99°19.4	95°05.2	73°31.4	53°15.7	50°06.2	75°07.6	91°19.1	97°52.1
1	77°30.2	13.9'	$11^{\circ}48.6$	12.9'	56.0'	98°49.1	94°33.7	73°01.7	52°44.7	50°33.1	75°34.9	91°47.7	98°21.8
2	92°03.0	13.8'	$12^{\circ}01.5$	12.8'	56.0'	98°18.8	94°02.2	72°31.9	52°13.8	51°00.2	76°02.3	92°16.3	98°51.6
3	106°35.8	13.7'	12° 14.3	12.8'	56.0'	97°48.5	93°30.6	72°02.0	51°42.8	51°27.4	76°29.6	92°44.9	99°21.4
4	121°08.6	13.6'	$12^{\circ}27.1$	12.7'	56.1'	97°18.1	92°59.0	71°32.2	51°11.8	51°54.6	76°57.1	93°13.6	99°51.2
5	135°41.2	13.6'	12°39.8	12.7'	56.1'	96°47.6	92°27.4	71°02.3	50°40.7	52°22.0	77°24.6	93°42.3	100°21.1
6	150°13.8	13.5'	$N12^{\circ}52.5$	12.7'	56.1'	96°17.1	91°55.8	70°32.4	50°09.6	52°49.4	77°52.1	94°11.1	100°51.0
7	164°46.2	13.4'	13°05.2	12.6'	56.1'	95°46.6	91°24.1	70°02.5	49°38.5	53°17.0	78° 19.7	94°39.8	101°20.9
8	179°18.6	13.3'	13° 17.8	12.6'	56.2'	95°16.1	90°52.3	69°32.6	49°07.4	53°44.6	78°47.4	95°08.7	101°50.9
9	193°50.9	13.2'	13°30.4	12.5'	56.2'	94°45.5	90°20.6	69°02.6	48°36.3	54°12.3	79° 15.0	95°37.5	102°20.9
10	208°23.1	13.1'	13°42.9	12.5'	56.2'	94°14.8	89°48.7	68°32.6	48°05.1	54°40.1	79°42.8	96°06.4	102°51.0
11	222°55.2	13.0'	13°55.4	12.4'	56.3'	93°44.2	89° 16.9	68°02.6	47°33.9	55°08.0	80° 10.6	96°35.4	103°21.1
12	237°27.2	12.9'	N14°07.9	12.4'	56.3'	93°13.5	88°45.0	67°32.6	47°02.7	55°36.0	80°38.4	97°04.4	103°51.2
13	251°59.1	12.8'	14°20.2	12.3'	56.3'	92°42.7	88°13.1	67°02.5	46°31.4	56°04.0	81°06.3	97°33.4	104°21.4
14	266°30.9	12.7'	14°32.6	12.3'	56.4'	92°11.9	87°41.1	66°32.4	46°00.2	56°32.1	81°34.2	98°02.5	104°51.6
15	281°02.7	12.6'	14°44.9	12.2'	56.4'	91°41.1	87°09.1	66°02.3	45°28.9	57°00.3	82°02.2	98°31.6	105°21.9
16	295°34.3	12.5'	14°57.1	12.2'	56.4'	91°10.2	86°37.0	65°32.2	44°57.6	57°28.6	82°30.2	99°00.7	105°52.2
17	310°05.8	12.4'	15°09.3	12.1'	56.5'	90°39.3	86°04.9	65°02.1	44°26.2	57°57.0	82°58.2	99°29.9	106°22.5
18	324°37.3	12.3'	N 15°21.4	12.1'	56.5'	90°08.4	85°32.8	64°31.9	43°54.9	58° 25.5	83°26.3	99°59.1	106°52.9
19	339°08.6	12.2'	$15^{\circ}33.5$	12.0'	56.5'	89°37.4	85°00.6	64°01.7	43°23.5	58°54.0	83°54.5	100°28.4	107°23.3
20	353°39.9	12.1'	$15^{\circ}45.5$	12.0'	56.6'	89°06.3	84°28.4	63°31.5	42°52.1	59°22.6	84°22.7	100°57.7	107°53.8
21	8°11.0	12.0'	$15^{\circ}57.5$	11.9'	56.6'	88°35.3	83°56.2	63°01.3	42°20.6	59°51.3	84°50.9	101°27.0	108°24.3
22	22°42.0	11.9'	$16^{\circ}09.4$	11.8'	56.6'	88°04.2	83°23.9	62°31.1	41°49.2	60°20.0	85° 19.2	101°56.4	108°54.8
23	37°13.0	11.8'	$16^{\circ}21.2$	11.8'	56.7'	87°33.0	82°51.5	62°00.8	41°17.7	60°48.9	85°47.5	102°25.9	109°25.4
9 th	SD	= 15.3'	Mer. pass	. 20:26							•		

Moon (10th Dec) h Lunar Distance (objects with largest hourly LD delta)

		101001	1 (10 00	- /				Distance	(02)0000		ot mounty ED	40.04)	
Fri	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Aldebaran	+Saturn	+Fomalhaut	+Venus	+Mars
0	51°43.8	11.7'	N 16°33.0	11.7'	56.7'	119° 16.7	87°01.8	82°19.2	40°46.2	12°19.6	61°17.8	102°55.3	109°56.0
1	66°14.5	11.6'	16°44.7	11.6'	56.7'	118°44.2	86°30.6	81°46.8	40°14.7	12°45.3	61°46.8	103°24.8	110°26.7
2	80°45.1	11.5'	16°56.3	11.6'	56.8'	118°11.6	85°59.4	81°14.3	39°43.2	13°11.6	62°15.8	103°54.4	110°57.4
3	95°15.6	11.4'	17°07.9	11.5'	56.8'	117°39.0	85°28.1	80°41.8	39°11.7	13°38.3	62°44.9	104°24.0	111°28.2
4	109°46.0	11.3'	17°19.4	11.4'	56.8'	117°06.3	84° 56.7	80°09.3	38°40.2	14°05.5	63°14.1	104°53.6	111°59.0
5	124°16.3	11.2'	$17^{\circ}30.8$	11.4'	56.9'	116°33.6	84°25.3	79°36.7	38°08.6	14°33.1	63°43.4	105°23.3	112°29.8
6	138°46.5	11.1'	N17°42.2	11.3'	56.9'	116°00.9	83°53.9	79°04.1	37°37.0	15°01.1	64°12.7	105°53.0	113°00.7
7	153°16.6	11.0'	17°53.4	11.2'	56.9'	115°28.1	83°22.5	78°31.4	37°05.5	15°29.5	64°42.1	106°22.8	113°31.6
8	167°46.5	10.9'	18°04.6	11.1'	57.0'	114°55.3	82°51.0	77°58.7	36°33.9	15°58.1	65°11.6	106°52.6	114°02.6
9	182°16.4	10.7'	18° 15.8	11.1'	57.0'	114°22.4	82° 19.5	77°25.9	36°02.3	16°27.1	65°41.1	107°22.5	114°33.6
10	196°46.1	10.6'	18°26.8	11.0'	57.0'	113°49.5	81°47.9	76°53.2	35°30.7	16°56.3	66°10.7	107°52.4	115°04.6
11	211°15.8	10.5'	$18^{\circ}37.8$	10.9'	57.1'	113° 16.5	81°16.3	76°20.3	34°59.1	17°25.8	66°40.4	108°22.3	115°35.7
12	225°45.3	10.4'	N 18°48.7	10.8'	57.1'	112°43.5	80°44.7	75°47.4	34°27.4	17°55.5	67°10.1	108°52.3	116°06.8
13	240°14.7	10.3'	18°59.5	10.7'	57.2'	112° 10.5	80°13.0	75° 14.5	33°55.8	18°25.5	67°39.9	109°22.3	116°38.0
14	254°44.0	10.2'	19°10.2	10.6'	57.2'	111°37.4	79°41.3	74°41.6	33°24.2	18°55.6	68°09.7	109°52.4	117°09.2
15	269°13.1	10.1'	19°20.9	10.6'	57.2'	111°04.2	79°09.5	74°08.6	32°52.6	19°26.0	68°39.6	110°22.5	117°40.5
16	283°42.2	9.9'	19°31.4	10.5'	57.3'	110°31.0	78° 37.7	73°35.5	32°21.0	19°56.6	69°09.6	110°52.6	118°11.8
17	298°11.1	9.8'	19°41.9	10.4'	57.3'	109°57.8	78°05.9	73°02.5	31°49.4	20°27.3	69°39.7	111°22.8	118°43.2
18	312°40.0	9.7'	N 19°52.2	10.3'	57.3'	109°24.6	77°34.1	72°29.3	31°17.8	20°58.2	70°09.8	111°53.1	119°14.6
19	327°08.7	9.6'	20°02.5	10.2'	57.4'	108°51.2	77°02.2	71°56.2	30°46.3	21°29.2	70°39.9	112°23.3	119°46.0
20	341°37.3	9.5'	20°12.7	10.1'	57.4'	108° 17.9	76°30.2	71°23.0	30°14.7	22°00.4	71°10.1	112°53.7	
21	356°05.7	9.4'	20°22.8	10.0'	57.4'	107°44.5	75°58.3	70°49.7	29°43.2	22°31.8	71°40.4	113°24.0	
22	10°34.1	9.2'	20°32.8	9.9'	57.5'	107°11.1	75°26.3	70°16.4	29°11.7	23°03.3	72°10.8	113°54.4	
23	25°02.3	9.1'	20°42.7	9.8'	57.5'	106°37.6	74°54.3	69°43.1	28°40.2	23°34.9	72°41.1	114°24.9	
10 th	SD	$=15.5^{\prime}$	Mer. pass	. 21:16									

	_		
h	Moon (11 th Dec)	Lunar Distance (objects with largest hourly LD delta)	

Sat	GHA	ν	Dec	d	HP	-Jupiter	-Regulus	-Procyon	-Pollux	+Saturn	+Fomalhaut	+Altair	+Venus
0	39°30.4	9.0'	N 20°52.5	9.7'	57.5'		106°04.1	74°22.2	69°09.7	24°06.6	73°11.6	97°47.8	114°55.4
1	53°58.4	8.9'	21°02.2	9.6'	57.6'		105°30.5	73°50.1	68°36.3	24°38.5	73°42.1	98°17.0	115°25.9
2	68°26.3	8.8'	$21^{\circ}11.7$	9.5'	57.6'		104°56.9	73°18.0	68°02.9	25° 10.4	74° 12.7	98°46.3	115°56.5
3	82°54.1	8.6'	21°21.2	9.4'	57.6'		104°23.2	72°45.8	67°29.4	25°42.5	74°43.3	99°15.5	116°27.1
4	97°21.7	8.5'	21°30.6	9.3'	57.7'		103°49.5	72°13.6	66°55.8	26°14.7	75°14.0	99°44.8	116°57.8
5	111°49.2	8.4'	21°39.9	9.2'	57.7'		103°15.8	71°41.4	66°22.2	26°47.0	75° 44.7	100°14.2	117°28.5
6	126°16.7	8.3'	N21°49.0	9.0'	57.7'		102°42.0	71°09.1	65°48.6	27° 19.4	76° 15.5	100°43.5	117°59.3
7	140°43.9	8.2'	21°58.0	8.9'	57.8'		102°08.2	70°36.8	65° 15.0	27°51.9	76°46.3	101°12.9	118°30.1
8	155°11.1	8.0'	22°07.0	8.8'	57.8'		101°34.3	70°04.5	64°41.3	28°24.4	77° 17.2	101°42.3	119°00.9
9	169°38.1	7.9'	22°15.8	8.7'	57.8'		101°00.4	69°32.2	64°07.5	28°57.1	77°48.1	102°11.7	119°31.8
10	184°05.1	7.8'	22°24.5	8.6'	57.9'		100°26.4	68°59.8	63°33.7	29°29.9	78°19.1	102°41.1	
11	198°31.9	7.7'	22°33.0	8.5'	57.9'		99°52.4	68°27.4	62°59.9	30°02.7	78°50.2	103°10.6	
12	212°58.6	7.6'	$N22^{\circ}41.5$	8.3'	58.0'		99°18.4	67°55.0	62°26.0	30°35.6	79°21.3	103°40.0	
13	227°25.2	7.5'	22°49.8	8.2'	58.0'		98°44.3	67°22.5	61°52.1	31°08.6	79°52.4	104°09.5	
14	241°51.6	7.3'	22°58.0	8.1'	58.0'		98°10.2	66°50.0	61°18.2	31°41.7	80°23.6	104°39.0	
15	256°18.0	7.2'	23°06.1	7.9'	58.1'		97°36.0	66°17.5	60°44.2	32°14.9	80°54.8	105°08.5	
16	270°44.2	7.1'	23°14.0	7.8'	58.1'		97°01.8	65°45.0	60°10.2	32°48.1	81°26.1	105°38.0	
17	285°10.3	7.0'	23°21.9	7.7'	58.1'		96°27.5	65°12.4	59°36.1	33°21.4	81°57.5	106°07.6	
18	299°36.3	6.9'	N23°29.5	7.6'	58.2'		95°53.2	64°39.8	59°02.0	33°54.8	82°28.8	106°37.1	
19	314°02.2	6.8'	23°37.1	7.4'	58.2'		95° 18.9	64°07.2	58°27.9	34°28.2	83°00.2	107°06.7	
20	328°27.9	6.7'	23°44.5	7.3'	58.2'		94°44.5	63°34.6	57°53.7	35°01.7	83°31.7	107°36.2	
21	342°53.6	6.5'	23°51.8	7.1'	58.3'	119°44.9	94°10.1	63°01.9	57° 19.5	35°35.3	84°03.2	108°05.8	
22	357°19.1	6.4'	23°59.0	7.0'	58.3'	119°10.8	93°35.7	62°29.2	56°45.3	36°09.0	84°34.8	108°35.4	
23	11°44.5	6.3'	24°06.0	6.9'	58.3'	118°36.7	93°01.2	61°56.6	56°11.0	36°42.7	85°06.4	109°05.0	
11 th	SD =	= 15.7'	Mer. pass	s. 22:11	1								

h Moon (12th Dec)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Jupiter	-Regulus	-Procyon	-Pollux	+Saturn	+Deneb	+Fomalhaut	+Altair
0	26°09.8	6.2'	N 24°12.8	6.7'	58.4'	118°02.5	92°26.6	61°23.8	55°36.7	37°16.4	81°56.9	85°38.0	109°34.5
1	40°35.1	6.1'	24°19.5	6.6'	58.4'	117°28.3	91°52.0	60°51.1	55°02.3	37°50.3	82°15.4	86°09.7	110°04.1
2	55°00.2	6.0'	24°26.1	6.4'	58.4'	116°54.1	91°17.4	60°18.4	54°27.9	38°24.2	82°34.0	86°41.4	110°33.7
3	69°25.1	5.9'	24°32.6	6.3'	58.4'	116°19.8	90°42.7	59°45.6	53°53.5	38°58.1	82°52.5	87° 13.2	111°03.3
4	83°50.0	5.8'	24°38.8	6.1'	58.5'	115°45.4	90°08.0	59° 12.8	53°19.0	39°32.1	83°11.2	87°45.0	111°32.9
5	98°14.8	5.7'	24°45.0	6.0'	58.5'	115°11.1	89°33.3	58°40.0	52°44.5	40°06.2	83°29.9	88°16.8	112°02.5
6	112°39.5	5.6'	N 24°51.0	5.8'	58.5'	114°36.7	88°58.5	58°07.2	52°10.0	40°40.3	83°48.7	88°48.7	112°32.0
7	127°04.0	5.5'	24°56.8	5.7'	58.6'	114°02.2	88°23.7	57° 34.4	51°35.4	41°14.5	84°07.5	89° 20.6	113°01.6
8	141°28.5	5.4'	25°02.5	5.5'	58.6'	113°27.7	87°48.8	57°01.5	51°00.8	41°48.8	84°26.3	89° 52.6	113°31.1
9	155°52.9	5.3'	25°08.0	5.4'	58.6'	112°53.2	87°13.9	56°28.7	50°26.1	42°23.0	84°45.2	90°24.6	114°00.7
10	170°17.1	5.2'	25°13.3	5.2'	58.7'	112°18.6	86°39.0	55°55.8	49°51.5	42°57.4	85°04.1	90°56.6	114°30.2
11	184°41.3	5.1'	$25^{\circ}18.6$	5.0'	58.7'	111°44.0	86°04.0	55°23.0	49°16.7	43°31.8	85°23.1	91°28.6	114°59.7
12	199°05.4	5.0'	N25°23.6	4.9'	58.7'	111°09.3	85°29.0	54°50.1	48°42.0	44°06.2	85°42.1	92°00.7	115°29.2
13	213°29.4	4.9'	25°28.5	4.7'	58.8'	110°34.6	84°54.0	54° 17.2	48°07.2	44°40.7	86°01.2	92°32.8	115°58.7
14	227°53.3	4.8'	25°33.2	4.6'	58.8'	109°59.9	84°18.9	53°44.4	47°32.4	45°15.3	86°20.3	93°05.0	116°28.2
15	242°17.1	4.7'	25°37.8	4.4'	58.8'	109°25.1	83°43.7	53° 11.5	46°57.6	45°49.9	86°39.4	93° 37.2	116°57.6
16	256°40.8	4.6'	25°42.2	4.2'	58.9'	108°50.3	83°08.6	52°38.6	46°22.7	46°24.5	86°58.6	94°09.4	117°27.0
17	271°04.4	4.5'	25°46.4	4.1'	58.9'	108°15.5	82°33.4	52°05.7	45°47.8	46°59.2	87° 17.8	94°41.6	117°56.4
18	285°27.9	4.5'	N25°50.4	3.9'	58.9'	107°40.6	81°58.1	51°32.9	45°12.9	47°34.0	87°37.0	95°13.9	118°25.8
19	299°51.4	4.4'	25°54.3	3.7'	58.9'	107°05.7	81°22.9	51°00.0	44°38.0	48°08.7	87°56.3	95°46.2	118°55.1
20	314°14.8	4.3'	25°58.0	3.5'	59.0'	106°30.7	80°47.6	50°27.1	44°03.0	48°43.6	88° 15.6	96° 18.5	119°24.4
21	328°38.0	4.2'	$26^{\circ}01.6$	3.4'	59.0'	105°55.7	80°12.2	49°54.3	43°28.0	49°18.5	88°34.9	96° 50.9	119°53.7
22	343°01.3	4.1'	26°05.0	3.2'	59.0'	105°20.7	79°36.8	49°21.4	42°53.0	49°53.4	88°54.3	97°23.2	
23	357°24.4	4.1'	26°08.1	3.0'	59.1'	104°45.6	79°01.4	48°48.6	42°17.9	50°28.3	89°13.6	97°55.6	
12 th	SD =	= 15.9′	Mer. pass	. 23:11									

h Moon (13th Dec) Lunar Distance (objects with largest hourly LD delta)

			(-						(,	
Mon	GHA	ν	Dec	d	HP	-Spica	-Jupiter	-Regulus	-Pollux	+Aldebaran	+Saturn	+Deneb	+Fomalhaut
0	11°47.5	4.0'	$N26^{\circ}11.2$	2.8'	59.1'		104°10.5	78°26.0	41°42.8		51°03.3	89°33.1	98°28.1
1	26°10.5	3.9'	26°14.0	2.7'	59.1'		103°35.4	77°50.5	41°07.7		51°38.4	89°52.5	99°00.5
2	40°33.4	3.9'	$26^{\circ}16.7$	2.5'	59.1'		103°00.2	77°15.0	40°32.6		52°13.5	90°11.9	99°33.0
3	54°56.2	3.8'	$26^{\circ}19.2$	2.3'	59.2'		102°25.0	76°39.5	39°57.4		52°48.6	90°31.4	100°05.4
4	69°19.0	3.7'	$26^{\circ}21.5$	2.1'	59.2'		101°49.7	76°03.9	39°22.3		53°23.8	90°50.8	100°37.9
5	83°41.8	3.7'	26°23.6	1.9'	59.2'		101°14.5	75°28.3	38°47.1		53°59.0	91°10.3	101°10.5
6	98°04.5	3.6'	N 26°25.5	1.8'	59.2'		100°39.2	74°52.6	38°11.9		54°34.2	91°29.8	101°43.0
7	112°27.1	3.6'	26°27.3	1.6'	59.3'		100°03.8	74°17.0	37°36.6		55°09.5	91°49.3	102°15.6
8	126°49.6	3.5'	26°28.9	1.4'	59.3'		99°28.5	73°41.2	37°01.4		55°44.9	92°08.8	102°48.1
9	141°12.2	3.5'	26°30.3	1.2'	59.3'		98°53.1	73°05.5	36°26.1		56°20.2	92°28.4	103°20.7
10	155°34.6	3.4'	$26^{\circ}31.5$	1.0'	59.3'		98°17.6	72°29.7	35°50.9		56°55.6	92°47.9	103°53.3
11	169°57.0	3.4'	26°32.5	0.8'	59.4'		97°42.2	71°54.0	35°15.6		57°31.0	93°07.4	104°25.9
12	184°19.4	3.3'	N 26°33.4	0.7'	59.4'		97°06.7	71°18.1	34°40.3		58°06.5	93°26.9	104°58.5
13	198°41.8	3.3'	26°34.0	0.5'	59.4'		96°31.2	70°42.3	34°04.9		58°42.0	93°46.5	105°31.1
14	213°04.0	3.3'	26°34.5	0.3'	59.4'		95°55.6	70°06.4	33°29.6	13°23.1	59°17.6	94°06.0	106°03.8
15	227°26.3	3.2'	26°34.8	0.1'	59.5'		95°20.0	69°30.5	32°54.3	13°48.5	59°53.1	94°25.5	106°36.4
16	241°48.5	3.2'	26°34.8	-0.1'	59.5'		94°44.4	68°54.6	32°18.9	14°14.7	60°28.7	94°45.1	107°09.0
17	256°10.7	3.2'	26°34.7	-0.3'	59.5'		94°08.8	68°18.6	31°43.6	14°41.6	61°04.4	95°04.6	107°41.7
18	270°32.9	3.1'	N 26°34.4	-0.5'	59.5'		93°33.1	67°42.6	31°08.2	15°09.1	61°40.0	95°24.1	108°14.3
19	284°55.0	3.1'	26°34.0	-0.7'	59.6'		92°57.4	67°06.6	30°32.9	15°37.2	62°15.7	95°43.6	108°47.0
20	299°17.2	3.1'	26°33.3	-0.9'	59.6'		92°21.7	66°30.5	29°57.5	16°05.9	62°51.5	96°03.1	109°19.6
21	313°39.3	3.1'	26°32.4	-1.1'	59.6'	119°57.8	91°46.0	65°54.5	29°22.2	16°35.0	63°27.2	96°22.6	109°52.3
22	328°01.3	3.1'	26°31.4	-1.2'	59.6'	119°21.8	91°10.2	65°18.4	28°46.8	17°04.6	64°03.0	96°42.0	110°24.9
23	342°23.4	3.1'	26°30.1	-1.4'	59.6'	118°45.6	90°34.4	64°42.3	28°11.5	17°34.6	64°38.8	97°01.4	110°57.6
13 th	SD	= 16.	1' Mer. pa	ss:-									

h		Mooi	n (14"' De	ec)			Lunar	Distance	(objects	s with larges	st hourly l	LD delta)		
Tue	GHA	ν	Dec	d	HP	-Spica	-Jupiter	-Regulus	-Pollux	+Aldebaran	+Capella	+Saturn	+Fomalhaut	
0	356°45.5	3.0'	N26°28.7			118°09.5				18°05.0		65°14.6	111°30.2	

14 th		= 16.3'				104 15.0	10 09.3	30 09.1	14 10.9	30 40.2	27 03.1	19 05.2	
22 23	312°53.4 327°15.9	3.5' 3.6'	25°09.3 25°03.5	-5.7' -5.9'	60.0' 60.0'	104°49.5 104°13.0	76°45.6 76°09.3	50°46.2 50°09.7	14°50.4 14°16.9	30°11.6 30°46.2	26°40.3 27°05.1	78°28.9 79°05.2	
21	298°30.9	3.5'	25°14.8	-5.6'	60.0'	105°26.1	77°21.8	51°22.7	15°24.1	29°37.1	26°16.0	77°52.6	
20	284°08.4	3.4'	25°20.2	-5.4'	60.0'	106°02.6	77°58.0	51°59.2	15°58.0	29°02.7	25°52.1	77°16.3	
19	269°46.0	3.4'	25°25.4	-5.2'	60.0'	106°39.1	78°34.2	52°35.7	16°32.1	28°28.4	25°28.7	76°40.1	
18	255°23.7	3.4'	N 25°30.4	-5.0'	60.0'	107°15.6	79°10.3	53°12.2	17°06.3	27° 54.1	25°05.8	76°03.8	
17	241°01.4	3.3'	25°35.3	-4.8'	59.9'	107°52.1	79°46.5	53°48.7	17°40.7	27°20.0	24°43.4	75°27.6	
16	226°39.1	3.3'	25°39.9	-4.7'	59.9'	108°28.5	80°22.7	54°25.1	18° 15.2	26°46.0	24°21.5	74°51.4	
15	212°16.8	3.2'	25°44.4	-4.5'	59.9'	109°05.0	80°58.8	55°01.6	18°49.8	26°12.1	24°00.3	74°15.2	119°38.0
14	197°54.6	3.2'	25°48.7	-4.3'	59.9'	109°41.4	81°34.9	55°38.0	19°24.5	25°38.4	23°39.6	73°39.0	119°05.7
13	183°32.4	3.2'	25°52.8	-4.1'	59.9'	110°17.9	82°11.0	56°14.4	19°59.3	25°04.8	23°19.5	73°02.8	118°33.3
12	169°10.3	3.2'	N25°56.7	-3.9'	59.9'	110°54.3	82°47.1	56°50.8	20°34.1	24°31.3	23°00.1	72°26.7	118°00.9
11	154°48.1	3.1'	26°00.4	-3.7'	59.9'	111°30.6	83°23.2	57°27.2	21°09.1	23°58.0	22°41.4	71°50.6	117°28.4
10	140°26.0	3.1'	26°03.9	-3.5'	59.8'	112°07.0	83°59.2	58°03.6	21°44.1	23°24.8	22°23.3	71°14.4	116°56.0
9	126°03.9	3.1'	26°07.2	-3.3'	59.8'	112°43.4	84°35.2	58°39.9	22°19.1	22°51.8	22°06.0	70°38.4	116°23.5
8	111°41.8	3.1'	26°10.4	-3.1'	59.8'	113° 19.7	85°11.2	59°16.2	23° 54.2	22° 19.0	21°49.4	70°02.3	115°50.9
6 7	82°57.7 97°19.8	3.1' 3.1'	N26°16.1 26°13.3	-2.8 -3.0'	59.8'	114° 32.3 113° 56.0	85°47.2	59°52.6	24°04.5 23°29.4	21°14.0 21°46.4		69°26.3	114°45.8 115°18.4
	82°57.7		N26°16.1	-2.8'	59.1°	114°32.3	86°23.2	60°28.8	24° 04.5	20 41.8 21° 14.0		68°50.2	114 15.3 114°45.8
5	68°35.7	3.0'	26°18.7	-2.4 -2.6'	59.7'	115 44.6 115°08.5	86°59.2	61°05.1	24°39.7	20° 41.8		68°14.2	113 40.7 114°13.3
3 4	39°51.6 54°13.6	3.0' 3.0'	26°23.3 26°21.1	-2.2' -2.4'	59.7' 59.7'	116°21.0 115°44.8	88°11.0 87°35.1	62°17.6 61°41.4	25°50.2 25°15.0	19°38.3 20°09.9		67°02.3 67°38.3	113°08.1 113°40.7
2	25°29.6	3.0'	26°25.3	-2.0'	59.7'	116°57.2	88°46.9	62°53.8	26°25.5	19°06.9		66°26.4	112°35.5
1	11°07.5	3.0'	26°27.1	-1.8'	59.7'	117°33.4	89°22.8	63°30.0	27°00.8	18°35.8		65°50.5	112°02.9
0	356°45.5	3.0'	N26°28.7	-1.6'	59.7'	118°09.5	89°58.6	64°06.1	27°36.2	18°05.0		65°14.6	111°30.2

h Moon (15th Dec)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Spica	-Jupiter	-Regulus	-Pollux	+Betelgeuse	+Capella	+Aldebaran	+Saturn
0	341°38.5	3.6'	N 24°57.6	-6.1'	60.0'	103°36.4	75°33.1	49°33.1	13°43.7	21°17.1	27°30.3	31°20.8	79°41.5
1	356°01.1	3.7'	24°51.5	-6.3'	60.0'	102°59.8	74°56.8	48°56.6	13°10.7	21°34.2	27°55.8	31°55.6	80°17.9
2	10°23.8	3.8'	24°45.2	-6.5'	60.0'	102°23.2	74°20.6	48°20.0	12°38.1	21°52.1	28°21.8	32°30.4	80°54.2
3	24°46.6	3.8'	24°38.7	-6.6'	60.1'	101°46.6	73°44.3	47°43.4	12°05.8	22°10.7	28°48.1	33°05.3	81°30.6
4	39°09.4	3.9'	24°32.1	-6.8'	60.1'	101°10.0	73°08.0	47°06.9	11°34.0	22°30.0	29°14.8	33°40.2	82°06.9
5	53°32.3	3.9'	24°25.3	-7.0'	60.1'	100°33.4	72°31.8	46°30.3	11°02.6	22°50.0	29°41.8	34°15.2	82°43.3
6	67°55.2	4.0'	N 24°18.3	-7.2'	60.1'	99°56.8	71°55.5	45°53.7	10°31.8	23°10.7	30°09.1	34°50.3	83°19.7
7	82°18.2	4.1'	24°11.1	-7.3'	60.1'	99°20.1	71°19.2	45°17.1	10°01.7	23°31.9	30°36.8	35°25.4	83°56.1
8	96°41.3	4.1'	24°03.8	-7.5'	60.1'	98°43.5	70°42.9	44°40.5	9°32.2	23°53.8	31°04.7	36°00.6	84°32.5
9	111°04.4	4.2'	23°56.3	-7.7'	60.1'	98°06.9	70°06.5	44°03.9	9°03.7	24°16.2	31°32.9	36°35.8	85°08.9
10	125°27.6	4.3'	23°48.6	-7.8'	60.1'	97°30.2	69°30.2	43°27.2		24°39.2	32°01.3	37°11.1	85°45.3
11	139°50.9	4.3'	23°40.8	-8.0'	60.1'	96°53.5	68°53.9	42°50.6		25°02.7	32°30.0	37°46.4	86°21.7
12	154°14.2	4.4'	N 23°32.8	-8.2'	60.1'	96°16.9	68°17.6	42°14.0		25°26.6	32°59.0	38°21.8	86°58.2
13	168°37.6	4.5'	23°24.7	-8.3'	60.1'	95°40.2	67°41.2	41°37.4		25°51.1	33°28.1	38°57.2	87°34.6
14	183°01.1	4.6'	23°16.3	-8.5'	60.1'	95°03.5	67°04.9	41°00.8		26°16.0	33°57.5	39°32.6	88°11.0
15	197°24.7	4.7'	23°07.8	-8.6'	60.1'	94°26.8	66°28.6	40°24.1		26°41.3	34°27.1	40°08.1	88°47.5
16	211°48.4	4.7'	22°59.2	-8.8'	60.1'	93°50.2	65°52.2	39°47.5		27°07.0	34°56.9	40°43.6	89°23.9
17	226°12.1	4.8'	22°50.4	-9.0'	60.1'	93°13.5	65°15.9	39°10.9		27°33.1	35°26.9	41°19.1	90°00.4
18	240°35.9	4.9'	N 22°41.4	-9.1'	60.1'	92°36.8	64°39.6	38°34.2		27°59.6	35°57.1	41°54.7	90°36.8
19	254°59.8	5.0'	22°32.3	-9.3'	60.2'	92°00.1	64°03.2	37°57.6		28°26.4	36°27.5	42°30.3	91°13.3
20	269°23.8	5.1'	22°23.1	-9.4'	60.2'	91°23.4	63°26.9	37°21.0		28°53.6	36°58.0	43°05.9	91°49.7
21	283°47.9	5.2'	22°13.6	-9.6'	60.2'	90°46.7	62°50.6	36°44.4		29°21.1	37°28.7	43°41.6	92°26.2
22	298°12.1	5.2'	22°04.1	-9.7'	60.2'	90°10.0	62°14.2	36°07.7		29°48.8	37°59.5	44°17.3	93°02.6
23	312°36.3	5.3'	21°54.3	-9.9'	60.2'	89°33.3	61°37.9	35°31.1		30°16.9	38°30.5	44°53.0	93°39.1
15 th	SD	= 16.4	Mer. pas	s. 01:17	,								

h Moon (16th Dec) Lunar Distance (objects with largest hourly LD delta)

									o (objects men languet meanly 12 denta)				
Thu	GHA	ν	Dec	d	HP	-Arcturus	-Spica	-Jupiter	-Regulus	+Pollux	+Capella	+Aldebaran	+Saturn
0	327°00.6	5.4'	N 21°44.5	-10.0'	60.2'	89°03.6	88°56.6	61°01.6	34°54.5		39°01.6	45°28.7	94°15.5
1	341°25.1	5.5'	21°34.5	-10.2'	60.2'	88°33.8	88° 19.9	60°25.2	34° 17.9		39°32.9	46°04.4	94°52.0
2	355°49.6	5.6'	21°24.3	-10.3'	60.2'	88°04.0	87°43.2	59°48.9	33°41.3		40°04.3	46°40.2	95°28.4
3	10°14.2	5.7'	21°14.0	-10.4'	60.2'	87°34.2	87°06.6	59° 12.6	33°04.7		40°35.8	47°16.0	96°04.9
4	24°38.9	5.8'	21°03.6	-10.6'	60.2'	87°04.5	86°29.9	58°36.3	32°28.2		41°07.4	47°51.8	96°41.3
5	39°03.7	5.9'	20°53.0	-10.7'	60.2'	86°34.7	85°53.2	58°00.0	31°51.6		41°39.2	48°27.6	97°17.8
6	53°28.5	6.0'	N 20°42.3	-10.8'	60.2'	86°05.0	85° 16.5	57°23.7	31° 15.0		42°11.0	49°03.4	97°54.2
7	67°53.5	6.1'	20°31.5	-11.0'	60.2'	85°35.3	84°39.8	56°47.4	30°38.5		42°43.0	49°39.2	98°30.6
8	82°18.6	6.2'	20°20.5	-11.1'	60.2'	85°05.5	84°03.2	56°11.1	30°01.9		43°15.0	50°15.1	99°07.0
9	96°43.8	6.3'	20°09.4	-11.2'	60.2'	84°35.8	83°26.5	55°34.8	29°25.4		43°47.2	50°50.9	99°43.4
10	111°09.0	6.4'	$19^{\circ}58.1$	-11.4'	60.2'	84°06.2	82°49.8	54°58.6	28°48.9	10°10.6	44°19.4	51°26.8	100°19.8
11	125°34.4	6.4'	19°46.8	-11.5'	60.1'	83°36.5	82°13.2	54°22.3	28° 12.4	10°41.0	44°51.7	52°02.6	100°56.2
12	139°59.8	6.5'	N 19°35.3	-11.6'	60.1'	83°06.9	81°36.6	53°46.0	27°35.9	11°12.0	45°24.1	52°38.5	101°32.6
13	154°25.4	6.6'	19°23.7	-11.7'	60.1'	82°37.2	80°59.9	53°09.8	26°59.4	11°43.5	45°56.6	53°14.4	102°09.0
14	168°51.0	6.7'	$19^{\circ}11.9$	-11.9'	60.1'	82°07.7	80°23.3	52°33.6	26°22.9	12°15.5	46°29.1	53°50.3	102°45.4
15	183°16.7	6.8'	$19^{\circ}00.1$	-12.0'	60.1'	81°38.1	79°46.7	51°57.4	25°46.5	12°47.9	47°01.8	54°26.2	103°21.7
16	197°42.6	6.9'	18°48.1	-12.1'	60.1'	81°08.5	79°10.1	51°21.2	25°10.1	13°20.7	47°34.5	55°02.1	103°58.1
17	212°08.5	7.0'	18°36.0	-12.2'	60.1'	80°39.0	78°33.5	50°45.0	24°33.7	13°53.7	48°07.2	55°38.0	104°34.4
18	226°34.5	7.1'	N 18°23.8	-12.3'	60.1'	80°09.6	77°56.9	50°08.8	23°57.3	14°27.1	48°40.0	56°13.9	105°10.8
19	241°00.6	7.2'	$18^{\circ}11.5$	-12.4'	60.1'	79°40.1	77°20.3	49°32.6	23°21.0	15°00.7	49°12.9	56°49.8	105°47.1
20	255°26.9	7.3'	$17^{\circ}59.1$	-12.5'	60.1'	79°10.7	76°43.7	48° 56.5	22°44.6	15°34.5	49°45.9	57°25.7	106°23.4
21	269°53.2	7.4'	17°46.5	-12.6'	60.1'	78°41.3	76°07.1	48°20.4	22°08.3	16°08.5	50° 18.9	58°01.6	106°59.7
22	284°19.6	7.5'	17°33.9	-12.7'	60.1'	78°12.0	75°30.6	47°44.3	21°32.0	16°42.6	$50^{\circ}51.9$	58°37.5	107°36.0
23	298°46.1	7.6'	17°21.1	-12.8'	60.1'	77°42.6	74°54.0	47°08.2	20°55.8	17°17.0	51°25.0	59°13.4	108°12.2
16 th	SD	= 16.4	1' Mer. pas	ss. 02:17									

h Moon (1	17 th Dec)	Lunar Distance	objects with la	argest hourly	, LD delta)
-----------	-----------------------	----------------	-----------------	---------------	------------	---

Fri	GHA	ν	Dec	d	HP	-Antares	-Spica	-Jupiter	-Regulus	+Pollux	+Capella	+Aldebaran	+Saturn
0	313°12.7	7.7'	N 17°08.3	-12.9'	60.1'		74°17.5	46°32.1	20°19.6	17°51.4	51°58.1	59°49.3	108° 48.5
1	327°39.4	7.8'	16°55.3	-13.0'	60.1'	119°26.8	73°41.0	45°56.0	19°43.4	18°26.0	52°31.3	60°25.2	109°24.7
2	342°06.2	7.9'	16°42.3	-13.1'	60.1'	118°50.2	73°04.5	45°20.0	19°07.2	19°00.7	53°04.5	61°01.1	110°00.9
3	356°33.0	8.0'	16°29.2	-13.2'	60.1'	118° 13.7	72°28.0	44°43.9	18°31.1	19°35.4	53°37.8	61°36.9	110°37.1
4	$11^{\circ}00.0$	8.1'	$16^{\circ}15.9$	-13.3'	60.0'	117°37.1	71°51.5	44°07.9	17°55.1	20°10.3	54°11.1	62°12.8	111°13.3
5	25°27.1	8.2'	$16^{\circ}02.6$	-13.4'	60.0'	117°00.6	71°15.1	43°32.0	17°19.0	20°45.3	54°44.4	62°48.7	111°49.5
6	39°54.2	8.3'	N15°49.2	-13.5'	60.0'	116°24.1	70°38.6	42°56.0	16°43.1	21°20.3	55°17.7	63°24.5	112°25.6
7	54°21.5	8.3'	15°35.6	-13.6'	60.0'	115°47.6	70°02.2	42°20.1	16°07.2	21°55.3	55°51.1	64°00.4	113°01.8
8	68°48.8	8.4'	15°22.0	-13.7'	60.0'	115°11.1	69°25.8	41°44.1	15°31.3	22°30.5	56°24.6	64°36.3	113°37.9
9	83°16.3	8.5'	15°08.3	-13.8'	60.0'	114°34.7	68°49.4	41°08.2	14°55.5	23°05.7	56°58.0	65°12.1	114°14.0
10	97°43.8	8.6'	14°54.6	-13.9'	60.0'	113°58.2	68°13.0	40°32.4	14°19.8	23°40.9	57°31.5	65°47.9	114°50.1
11	112°11.4	8.7'	14°40.7	-13.9'	60.0'	113°21.8	67°36.6	39°56.5	13°44.1	24°16.2	58°05.0	66°23.7	115°26.1
12	126°39.1	8.8'	N 14°26.8	-14.0'	60.0'	112°45.4	67°00.3	39°20.7	13°08.5	24°51.5	58°38.5	66°59.5	116°02.2
13	141°06.9	8.9'	14°12.8	-14.1'	60.0'	112°09.0	66°24.0	38°44.9	12°33.1	25°26.8	59°12.0	67°35.3	116°38.2
14	155°34.8	9.0'	13°58.7	-14.2'	59.9'	111°32.6	65°47.7	38°09.2	11°57.7	26°02.2	59°45.6	68°11.1	117° 14.2
15	170°02.8	9.1'	13°44.5	-14.2'	59.9'	110°56.3	65°11.4	37°33.4	11°22.5	26°37.6	60°19.2	68°46.9	117°50.1
16	184°30.9	9.1'	13°30.3	-14.3'	59.9'	110° 19.9	64°35.1	36°57.7	10°47.4	27°13.0	60°52.7	69°22.7	118°26.1
17	198°59.0	9.2'	13°16.0	-14.4'	59.9'	109°43.6	63°58.8	36°22.0	10°12.4	27°48.4	61°26.4	69°58.4	119°02.0
18	213°27.2	9.3'	N 13°01.6	-14.4'	59.9'	109°07.3	63°22.6	35°46.4	9°37.7	28°23.9	62°00.0	70°34.1	119°37.9
19	227°55.5	9.4'	12°47.1	-14.5'	59.9'	108°31.0	62°46.3	35°10.8	9°03.1	28°59.4	62°33.6	71°09.9	
20	242°23.9	9.5'	12°32.6	-14.6'	59.9'	107°54.7	62°10.1	34°35.2	8°28.9	29°34.8	63°07.2	71°45.6	
21	256°52.4	9.6'	12°18.0	-14.6'	59.8'	107° 18.5	61°34.0	33°59.6	7°54.9	30°10.3	63°40.9	72°21.3	
22	271°21.0	9.6'	12°03.4	-14.7'	59.8'	106°42.3	60°57.8	33°24.1	7°21.3	30°45.8	64°14.5	72°56.9	
23	285°49.6	9.7'	11°48.7	-14.8'	59.8'	106°06.1	60°21.7	32°48.6	6°48.2	31°21.3	64°48.2	73°32.6	
17 th	SD	= 16.4	' Mer. pas	s. 03:14									

h	Moon	(18 th	Dec))

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Antares	-Spica	-Jupiter	±Regulus	+Pollux	+Betelgeuse	+Capella	+Aldebaran
0	300°18.3	9.8'	N 11°33.9	-14.8'	59.8'	105°29.9	59°45.5	32°13.2	6° 15.7	31°56.8	56°11.6	65°21.9	74°08.2
1	314°47.1	9.9'	$11^{\circ}19.1$	-14.9'	59.8'	104°53.7	59°09.4	31°37.8	5°43.9	32°32.4	56°45.0	65°55.6	74°43.9
2	329°16.0	9.9'	11°04.3	-14.9'	59.8'	104°17.5	58°33.4	31°02.4		33°07.9	57°18.3	66°29.2	75°19.5
3	343°44.9	10.0'	10°49.3	-15.0'	59.8'	103°41.4	57°57.3	30°27.1		33°43.4	57°51.7	67°02.9	75°55.1
4	358°14.0	10.1'	10°34.4	-15.0'	59.7'	103°05.3	57°21.3	29°51.8		34°18.9	58°25.1	67°36.6	76°30.6
5	12°43.1	10.2'	$10^{\circ}19.3$	-15.1'	59.7'	102°29.2	56°45.3	29°16.6		34°54.4	58°58.5	68°10.3	77°06.2
6	27°12.2	10.2'	N 10°04.3	-15.1'	59.7'	101°53.2	56°09.3	28°41.4		35°29.9	59°31.9	68°44.0	77°41.7
7	41°41.5	10.3'	09°49.2	-15.2'	59.7'	101°17.1	55°33.3	28°06.3		36°05.4	60°05.3	69°17.6	78°17.2
8	56°10.8	10.4'	09°34.0	-15.2'	59.7'	100°41.1	54°57.4	27°31.2		36°40.9	60°38.8	69°51.3	78°52.7
9	70°40.2	10.5'	09°18.8	-15.2'	59.7'	100°05.1	54°21.4	26°56.1		37°16.4	61°12.2	70°25.0	79°28.2
10	85°09.6	10.5'	09°03.5	-15.3'	59.6'	99°29.1	53°45.5	26°21.1		$37^{\circ}51.8$	61°45.7	70°58.7	80°03.7
11	99°39.2	10.6'	08°48.2	-15.3'	59.6'	98°53.2	53°09.7	25°46.2		38°27.3	62°19.1	71°32.3	80°39.1
12	114°08.7	10.7'	N08°32.9	-15.4'	59.6'	98°17.2	52°33.8	25°11.3		39°02.8	62°52.6	72°06.0	81°14.5
13	128°38.4	10.7'	08°17.6	-15.4'	59.6'	97°41.3	51°58.0	24°36.5		39°38.2	63°26.1	72°39.6	81°49.9
14	143°08.1	10.8'	08°02.2	-15.4'	59.6'	97°05.4	51°22.2	24°01.8		40°13.7	63°59.5	73°13.3	82°25.3
15	157°37.9	10.8'	07°46.7	-15.5'	59.6'	96°29.6	50°46.4	23°27.1		40°49.1	64°33.0	73°46.9	83°00.7
16	172°07.7	10.9'	07°31.3	-15.5'	59.5'	95°53.7	50°10.7	22°52.5		41°24.5	65°06.5	74°20.5	83°36.0
17	186°37.6	11.0'	$07^{\circ}15.8$	-15.5'	59.5'	95°17.9	49°34.9	22°17.9		41°59.9	65°40.0	74°54.2	84°11.3
18	201°07.6	11.0'	N 07°00.3	-15.5'	59.5'	94°42.1	48°59.2	21°43.5		42°35.3	66°13.4	75°27.8	84°46.6
19	215°37.6	11.1'	06°44.7	-15.6'	59.5'	94°06.4	48°23.6	21°09.1	6°28.6	43°10.6	66°46.9	76°01.4	85°21.8
20	230°07.7	11.1'	$06^{\circ}29.1$	-15.6'	59.5'	93°30.6	47°47.9	20°34.8	7°01.0	43°46.0	67°20.4	76°35.0	85°57.1
21	244°37.8	11.2'	$06^{\circ}13.6$	-15.6'	59.4'	92°54.9	47°12.3	20°00.6	7°33.9	44°21.3	67°53.8	77°08.5	86°32.3
22	259°08.0	11.2'	05°57.9	-15.6'	59.4'	92°19.2	46°36.7	19°26.5	8°07.1	44°56.6	68°27.3	77°42.1	87°07.5
23	273°38.2	11.3'	05°42.3	-15.7'	59.4'	91°43.5	46°01.1	18°52.5	8°40.6	45°31.9	69°00.8	78°15.6	87°42.7
18 th	SD	= 16.3	Mer. pas	s. 04:07									

Moon (19th Dec)

h

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Sun	-Antares	-Spica	-Jupiter	+Regulus	+Pollux	+Capella	+Aldebaran
0	288°08.5	11.3'	N 05°26.6	-15.7'	59.4'	108°02.1	91°07.9	45°25.6	18°18.7	9°14.4	46°07.2	78°49.2	88°17.8
1	302°38.9	11.4'	05°11.0	-15.7'	59.4	107°29.1	90°32.3	44°50.1	17°44.9	9°48.4	46°42.5	79°22.7	88°52.9
2	317°09.3	11.4'	04°55.3	-15.7'	59.4'	106°56.1	89°56.7	44° 14.6	17°11.3	10°22.5	47°17.7	79°56.2	89°28.0
3	331°39.7	11.5'	04°39.6	-15.7'	59.3'	106°23.1	89°21.1	43°39.1	16°37.8	10°56.7	47°53.0	80°29.7	90°03.1
4	346°10.2	11.5'	04°23.9	-15.7'	59.3'	105°50.2	88°45.6	43°03.7	16°04.5	11°31.1	48°28.2	81°03.1	90°38.1
5	0°40.7	11.6'	04°08.1	-15.7'	59.3'	105°17.2	88°10.1	42°28.3	15°31.4	12°05.5	49°03.4	81°36.6	91°13.2
6	15°11.3	11.6'	N03°52.4	-15.7'	59.3'	104°44.3	87°34.6	41°52.9	14°58.4	12°40.1	49°38.6	82°10.0	91°48.2
7	29°41.9	11.7'	03°36.6	-15.8'	59.3'	104°11.5	86°59.1	41° 17.5	14°25.6	13°14.6	50°13.7	82°43.4	92°23.1
8	44°12.6	11.7'	03°20.9	-15.8'	59.2'	103°38.6	86°23.7	40°42.2	13°53.1	13°49.3	50°48.9	83°16.8	92°58.1
9	58°43.3	11.7'	$03^{\circ}05.1$	-15.8'	59.2'	103°05.8	85°48.2	40°06.9	13°20.8	14°23.9	51°24.0	83°50.2	93°33.0
10	73°14.0	11.8'	02°49.4	-15.8'	59.2'	102°33.0	85°12.9	39°31.7	12°48.8	14°58.6	51°59.1	84°23.5	94°07.9
11	87°44.8	11.8'	02°33.6	-15.8'	59.2'	102°00.2	84°37.5	38°56.4	12°17.1	15°33.4	52°34.1	84°56.9	94°42.8
12	102°15.6	11.8'	N02°17.8	-15.8'	59.1'	101°27.5	84°02.2	38°21.2	11°45.8	16°08.1	53°09.2	85°30.2	95°17.6
13	116°46.4	11.9'	$02^{\circ}02.1$	-15.8'	59.1'	100°54.8	83°26.8	37°46.0	11°14.8	16°42.9	53°44.2	86°03.5	95°52.4
14	131°17.3	11.9'	01°46.3	-15.8'	59.1'	100°22.1	82°51.6	37° 10.9	10°44.3	17° 17.6	54°19.2	86°36.7	96°27.2
15	145°48.2	11.9'	$01^{\circ}30.5$	-15.8'	59.1'	99°49.4	82°16.3	36°35.8	10°14.3	17°52.4	54°54.2	87°10.0	97°01.9
16	160°19.2	12.0'	01°14.8	-15.8'	59.1'	99°16.8	81°41.1	36°00.7	9°44.9	18°27.2	55°29.2	87°43.2	97°36.7
17	174°50.2	12.0'	00°59.0	-15.7'	59.0'	98°44.1	81°05.9	35°25.6	9°16.1	19°02.0	56°04.1	88°16.4	98°11.4
18	189°21.2	12.0'	N00°43.3	-15.7'	59.0'	98°11.5	80°30.7	34°50.6	8°48.2	19°36.8	56°39.0	88°49.6	98°46.1
19	203°52.2	12.1'	00°27.5	-15.7'	59.0'	97°39.0	79°55.5	34° 15.6	8°21.1	20°11.5	57°13.9	89°22.7	99°20.7
20	218°23.2	12.1'	N 00°11.8	-15.7'	59.0'	97°06.4	79°20.4	33°40.7		20°46.3	57°48.8	89°55.9	99°55.3
21	232°54.3	12.1'	S 00°03.9	-15.7'	59.0'	96°33.9	78°45.3	33°05.7		21°21.1	58°23.6	90°29.0	100°29.9
22	247°25.4	12.1'	00°19.6	-15.7'	58.9'	96°01.4	78°10.2	32°30.8		21°55.8	58°58.5	91°02.1	101°04.5
23	261°56.6	12.1'	00°35.3	-15.7'	58.9'	95°29.0	77°35.2	31°56.0		22°30.6	59°33.3	91°35.1	101°39.0
19 th	SD	= 16.2	Mer. pas	s. 04:57		Sun SD = 16.2'							

h Moon (20th Dec)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Sun	-Antares	-Rigil Kent.	-Spica	+Regulus	+Pollux	+Betelgeuse	+Aldebaran
0	276°27.7	12.2'	S 00°51.0	-15.7'	58.9'	94°56.6	77°00.2	70°26.2	31°21.1	23°05.3	60°08.0	82°53.3	102°13.5
1	290°58.9	12.2'	$01^{\circ}06.7$	-15.6'	58.9'	94°24.1	76°25.2	69°59.7	30°46.3	23°40.0	60°42.8	83°26.4	102°48.0
2	305°30.1	12.2'	01°22.3	-15.6'	58.8'	93°51.8	75°50.2	69°33.3	30°11.6	24°14.7	61° 17.5	83°59.5	103°22.5
3	320°01.3	12.2'	01°38.0	-15.6'	58.8'	93°19.4	75° 15.3	69°07.0	29°36.8	24°49.4	61°52.2	84°32.5	103°56.9
4	334°32.5	12.2'	01°53.6	-15.6'	58.8'	92°47.1	74°40.4	68°40.7	29°02.1	25°24.1	62°26.9	85°05.5	104°31.3
5	349°03.7	12.2'	$02^{\circ}09.1$	-15.6'	58.8'	92°14.8	74°05.5	68°14.5	28°27.5	25°58.7	63°01.6	85°38.5	105°05.6
6	3°35.0	12.3'	S 02°24.7	-15.5'	58.8'	91°42.5	73°30.6	67°48.4	27°52.8	26°33.4	63°36.2	86°11.5	105°40.0
7	18°06.2	12.3'	02°40.2	-15.5'	58.7'	91°10.3	72°55.8	67°22.4	27°18.3	27°08.0	64°10.8	86°44.5	106°14.3
8	32°37.5	12.3'	02°55.8	-15.5'	58.7'	90°38.0	72°21.0	66°56.5	26°43.7	27°42.6	64°45.4	87° 17.4	106°48.5
9	47°08.8	12.3'	03°11.2	-15.5'	58.7'	90°05.9	71°46.2	66°30.6	26°09.2	28°17.2	65°20.0	87°50.3	107°22.8
10	61°40.1	12.3'	03°26.7	-15.4'	58.7'	89°33.7	71°11.5	66°04.8	25°34.7	28°51.7	65°54.5	88°23.2	107°57.0
11	76°11.4	12.3'	03°42.1	-15.4'	58.6'	89°01.5	70°36.8	65°39.2	25°00.2	29°26.3	66°29.0	88°56.0	108°31.2
12	90°42.7	12.3'	S 03°57.5	-15.4'	58.6'	88°29.4	70°02.1	65°13.6	24°25.8	30°00.8	67°03.5	89°28.9	109°05.3
13	105°14.0	12.3'	04°12.9	-15.3'	58.6'	87°57.3	69°27.4	64°48.1	23°51.5	30°35.3	67°37.9	90°01.7	109°39.5
14	119°45.3	12.3'	04°28.2	-15.3'	58.6'	87°25.3	68°52.7	64°22.7	23°17.1	31°09.8	68° 12.4	90°34.5	110°13.6
15	134°16.6	12.3'	04°43.5	-15.3'	58.6'	86°53.3	68°18.1	63°57.4	22°42.9	31°44.2	68°46.8	91°07.2	110°47.6
16	148°47.9	12.3'	04°58.8	-15.2'	58.5'	86°21.2	67°43.5	63°32.2	22°08.6	32°18.7	69°21.2	91°40.0	111°21.7
17	163°19.2	12.3'	05°14.0	-15.2'	58.5'	85°49.3	67°09.0	63°07.1	21°34.4	32°53.1	69°55.5	92°12.7	111°55.7
18	177°50.5	12.3'	S 05°29.2	-15.2'	58.5'	85°17.3	66°34.4	62°42.2	21°00.3	33°27.5	70°29.9	92°45.3	112°29.6
19	192°21.8	12.3'	05°44.4	-15.1'	58.5'	84°45.4	65°59.9	62°17.3	20°26.2	34°01.8	71°04.2	93°18.0	113°03.6
20	206°53.1	12.3'	05°59.5	-15.1'	58.4'	84°13.5	65°25.5	61°52.5	19°52.1	34°36.2	71°38.5	93°50.6	113°37.5
21	221°24.4	12.3'	$06^{\circ}14.6$	-15.0'	58.4'	83°41.6	64°51.0	61°27.8	19°18.1	35°10.5	72°12.7	94°23.2	114°11.4
22	235°55.7	12.3'	$06^{\circ}29.6$	-15.0'	58.4'	83°09.8	64°16.6	61°03.3	18°44.1	35°44.8	72°47.0	94°55.8	114°45.2
23	250°27.0	12.3'	06°44.6	-14.9'	58.4'	82°37.9	63°42.2	60°38.8	18°10.2	36°19.1	73°21.2	95°28.3	115°19.0
20 th	SD	= 16.1'	Mer. pas	s. 05:45		SunSD = 16.2'							

h

Moon (21st Dec) Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Sun	-Antares	-Rigil Kent.	-Spica	+Regulus	+Procyon	+Pollux	+Aldebaran
0	264°58.3	12.3'	S 06°59.5	-14.9'	58.3'	82°06.1	63°07.8	60°14.5	17°36.4	36°53.3	70°05.4	73°55.4	115°52.8
1	279°29.6	12.3'	$07^{\circ}14.4$	-14.9'	58.3'	81°34.4	62°33.4	59°50.3	17°02.6	37°27.6	70°38.1	74°29.5	116°26.6
2	294°00.9	12.3'	07°29.3	-14.8'	58.3'	81°02.6	61°59.1	59°26.2	16°28.9	38°01.8	71°10.8	75°03.6	117°00.3
3	308°32.1	12.2'	$07^{\circ}44.1$	-14.8'	58.3'	80°30.9	61°24.8	59°02.2	15°55.2	38°36.0	71°43.6	75°37.8	117°34.0
4	323°03.3	12.2'	07°58.9	-14.7'	58.3'	79°59.2	60°50.5	58°38.4	15°21.7	39°10.1	72°16.3	76°11.8	118°07.6
5	337°34.6	12.2'	08°13.6	-14.7'	58.2'	79°27.6	60°16.3	58°14.7	14°48.2	39°44.3	72°48.9	76°45.9	118°41.3
6	352°05.8	12.2'	S 08°28.2	-14.6'	58.2'	78°55.9	59°42.1	57°51.1	14°14.8	40°18.4	73°21.6	77°19.9	119°14.8
7	6°37.0	12.2'	08°42.8	-14.5'	58.2'	78°24.3	59°07.9	57°27.6	13°41.4	40°52.5	73°54.2	77°53.9	119°48.4
8	21°08.1	12.2'	08°57.4	-14.5'	58.2'	77°52.7	58°33.7	57°04.3	13°08.2	41°26.6	74°26.9	78°27.9	
9	35°39.3	12.1'	$09^{\circ}11.9$	-14.4'	58.1'	77°21.2	57°59.6	56°41.1	12°35.1	42°00.6	74°59.5	79°01.9	
10	50° 10.4	12.1'	09°26.3	-14.4'	58.1'	76°49.6	57°25.5	56°18.0	12°02.1	42°34.6	75°32.1	79°35.8	
11	64°41.6	12.1'	09°40.7	-14.3'	58.1'	76°18.1	56°51.4	55°55.1	11°29.2	43°08.6	76°04.7	80°09.7	
12	79°12.7	12.1'	S 09°55.0	-14.3'	58.1'	75°46.6	56°17.3	55°32.3	10°56.5	43°42.6	76°37.2	80°43.6	
13	93°43.7	12.1'	$10^{\circ}09.2$	-14.2'	58.0'	75°15.2	55°43.3	55°09.7	10°23.9	44°16.5	77°09.8	81°17.5	
14	108° 14.8	12.0'	10°23.4	-14.1'	58.0'	74°43.8	55°09.3	54°47.2	9°51.5	44°50.5	77°42.3	81°51.3	
15	122°45.8	12.0'	10°37.6	-14.1'	58.0'	74°12.4	54°35.3	54°24.9	9°19.4	45°24.4	78°14.8	82°25.1	
16	137°16.8	12.0'	$10^{\circ}51.7$	-14.0'	58.0'	73°41.0	54°01.3	54°02.7	8°47.5	45°58.3	78°47.3	82°58.9	
17	151°47.8	12.0'	$11^{\circ}05.7$	-13.9'	57.9'	73°09.6	53°27.4	53°40.7	8°15.9	46°32.1	79°19.8	83°32.6	
18	166°18.8	11.9'	S 11°19.6	-13.9'	57.9'	72°38.3	52°53.5	53°18.9	7°44.6	47°05.9	79°52.2	84°06.4	
19	180°49.7	11.9'	11°33.5	-13.8'	57.9'	72°07.0	52°19.6	52°57.2	7°13.8	47°39.7	80°24.7	84°40.1	
20	195°20.6	11.9'	11°47.3	-13.7'	57.9'	71°35.7	51°45.8	52°35.6	6°43.5	48°13.5	80°57.1	85°13.8	
21	209°51.5	11.8'	$12^{\circ}01.1$	-13.7'	57.9'	71°04.5	51°11.9	52°14.3	6°13.8	48°47.3	81°29.5	85°47.4	
22	224°22.3	11.8'	$12^{\circ}14.7$	-13.6'	57.8'	70°33.2	50°38.1	51°53.1	5°44.8	49°21.0	82°01.9	86°21.0	
23	238°53.1	11.8'	12°28.3	-13.5'	57.8'	70°02.0	50°04.3	51°32.1		49°54.7	82°34.2	86°54.7	
21 st	SD	= 15.9'	Mer. pas	s. 06:33	-			Sun	SD = 16.2	at 0h; 16.3'	at 23h		

Moon (22 nd Dec)	Lunar Distance	(objects with la	rgest hourly LD	delta)
1010011 (22 Dec)	Luliai Distance	(ODJECES WILLI IS	ngest nounty LD	ucitai

10/I	CIIA				LID	-Sun -Rigil KentAntares					I Damilia	1 D	L Dallana
Wed	GHA	ν	Dec	d	HP				-Hadar	+Jupiter	+Regulus	+Procyon	+Pollux
0	253°23.9	11.7'	S 12°41.9	-13.5'	57.8'	69°30.9	51°11.3	49°30.6	48°58.9	24° 27.7	50°28.4	83°06.5	87°28.2
1	267°54.6	11.7'	12°55.3	-13.4'	57.8'	68° 59.7	50°50.6	48° 56.9	48°40.7	25°00.4	51°02.1	83°38.9	88°01.8
2	282°25.3	11.7'	13°08.7	-13.3'	57.7'	68°28.6	50°30.1	48°23.2	48°22.6	25°33.1	51°35.7	84°11.1	88°35.3
3	296°56.0	11.6'	13°22.0	-13.2'	57.7'	67°57.5	50°09.9	47°49.5	48°04.8	26°05.8	52°09.3	84°43.4	89°08.8
4	311°26.7	11.6'	13°35.3	-13.2'	57.7'	67°26.4	49°49.8	47° 15.8	47°47.2	26°38.6	52°42.9	85°15.7	89°42.3
5	325°57.3	11.6'	13°48.4	-13.1'	57.7'	66°55.4	49°29.9	46°42.2	47°29.8	27°11.3	53°16.5	85°47.9	90°15.8
6	340°27.8	11.5'	S 14°01.5	-13.0'	57.7'	66°24.3	49°10.2	46°08.6	47°12.7	27°44.0	53°50.0	86°20.1	90°49.2
7	354°58.4	11.5'	$14^{\circ}14.5$	-12.9'	57.6'	65°53.3	48°50.7	45°35.0	46°55.8	28° 16.8	54°23.5	86°52.3	91°22.6
8	9°28.9	11.5'	14°27.4	-12.8'	57.6'	65°22.4	48°31.4	45°01.4	46°39.2	28° 49.5	54°57.0	87°24.5	91°56.0
9	23°59.3	11.4'	14°40.2	-12.8'	57.6'	64°51.4	48°12.3	44°27.9	46°22.8	29°22.2	55°30.5	87°56.6	92°29.4
10	38°29.7	11.4'	14°53.0	-12.7'	57.6'	64°20.5	47°53.4	43°54.4	46°06.6	29°55.0	56°04.0	88°28.7	93°02.7
11	53°00.1	11.3'	15°05.7	-12.6'	57.5'	63°49.6	47°34.8	43°20.9	45°50.7	30° 27.7	56°37.4	89°00.8	93°36.0
12	67°30.5	11.3'	S 15°18.3	-12.5'	57.5'	63°18.7	47°16.4	42° 47.5	45°35.1	31°00.4	57°10.8	89°32.9	94°09.3
13	82°00.7	11.3'	15°30.8	-12.4'	57.5'	62°47.8	46°58.1	42°14.0	45°19.7	31°33.2	57°44.2	90°04.9	94°42.6
14	96°31.0	11.2'	15°43.2	-12.3'	57.5'	62°17.0	46°40.2	41°40.6	45°04.6	32°05.9	58°17.5	90°37.0	95° 15.8
15	111°01.2	11.2'	15°55.5	-12.2'	57.4'	61°46.2	46°22.4	41°07.2		32° 38.6	58°50.9	91°09.0	95°49.0
16	125°31.4	11.1'	$16^{\circ}07.7$	-12.1'	57.4'	61°15.4	46°04.9	40°33.9		33° 11.3	59°24.2	91°40.9	96°22.2
17	140°01.5	11.1'	$16^{\circ}19.9$	-12.1'	57.4'	60°44.7	45°47.6	40°00.5		33°44.0	59°57.4	92°12.9	96°55.4
18	154°31.6	11.0'	S 16°32.0	-12.0'	57.4'	60°13.9	45°30.6	39°27.2		34° 16.7	60°30.7	92°44.8	97°28.5
19	169°01.6	11.0'	16°43.9	-11.9'	57.4'	59°43.2	45°13.8	38° 53.9		34°49.3	61°04.0	93°16.7	98°01.6
20	183°31.6	10.9'	16°55.8	-11.8'	57.3'	59° 12.5	44°57.3	38° 20.6		35°22.0	61°37.2	93°48.6	98° 34.7
21	198°01.6	10.9'	17°07.6	-11.7'	57.3'	58°41.9	44°41.0	37° 47.4		35°54.7	62°10.4	94°20.5	99°07.8
22	212°31.5	10.9'	$17^{\circ}19.3$	-11.6'	57.3'	58°11.2	44°25.0	37° 14.2		36°27.3	62°43.5	94°52.3	99°40.9
23	227°01.3	10.8'	17°30.8	-11.5'	57.3'	57°40.6	44°09.2	36°41.0		36° 59.9	63°16.7	95°24.1	100°13.9
22 nd	SD	= 15.8'	Mer. pas	s. 07:21		Sun SD = 16.3'							

	_	
1.	Moon (23rd Dec)	Lunar Distance (objects with largest hourly LD delta)
n	MOON 1/314 DECT	I linar i listance i oniects with largest nollriv i i li delta i

Thu	GHA	ν	Dec	d	HP	-Sun	-Antares	+Spica	+Jupiter	+Regulus	+Procyon	+Pollux	+Sirius
0	241°31.1	10.8'	S 17°42.3	-11.4'	57.2'	57°10.0	36°07.8	10°08.3	37°32.5	63°49.8	95°55.9	100°46.9	101°22.1
1	256°00.9	10.7'	17°53.7	-11.3'	57.2'	56°39.5	35°34.7	10°39.9	38°05.1	64°22.9	96°27.7	101°19.9	101°46.7
2	270°30.6	10.7'	18°05.0	-11.2'	57.2'	56°08.9	35°01.5	11°11.7	38° 37.7	64°56.0	96°59.4	101°52.8	102°11.3
3	285°00.3	10.6'	$18^{\circ}16.2$	-11.1'	57.2'	55°38.4	34°28.4	11°43.5	39° 10.3	65°29.0	97°31.1	102°25.7	102°35.8
4	299°29.9	10.6'	18°27.3	-11.0'	57.2'	55°07.9	33°55.3	12°15.5	39°42.9	66°02.1	98°02.8	102°58.6	103°00.2
5	313°59.5	10.5'	18°38.3	-10.9'	57.1'	54°37.4	33°22.3	12°47.5	40° 15.4	66°35.1	98°34.5	103°31.5	103°24.6
6	328°29.0	10.5'	S 18°49.2	-10.8'	57.1'	54°07.0	32°49.3	13°19.6	40°47.9	67°08.1	99°06.1	104°04.4	103°49.0
7	342°58.5	10.4'	19°00.0	-10.7'	57.1'	53°36.5	32°16.2	13°51.7	41°20.5	67°41.0	99°37.7	104°37.2	104°13.3
8	357°27.9	10.4'	$19^{\circ}10.6$	-10.6'	57.1'	53°06.1	31°43.2	14°23.9	41°53.0	68°14.0	100°09.3	105°10.0	104°37.5
9	11°57.3	10.3'	19°21.2	-10.5'	57.0'	52°35.8	31°10.3	14°56.1	42°25.5	68°46.9	100°40.9	105°42.8	105°01.7
10	26°26.6	10.3'	19°31.7	-10.4'	57.0'	52°05.4	30°37.3	15°28.3	42°57.9	69°19.8	101°12.4	106° 15.6	105°25.9
11	40°55.9	10.2'	19°42.0	-10.2'	57.0'	51°35.1	30°04.4	16°00.6	43°30.4	69°52.7	101°43.9	106°48.3	105°49.9
12	55°25.1	10.2'	S 19°52.3	-10.1'	57.0'	51°04.7	29°31.5	16°32.9	44°02.8	70°25.6	102°15.4	107°21.0	106°13.9
13	69°54.3	10.1'	20°02.4	-10.0'	57.0'	50°34.5	28°58.6	17°05.2	44°35.3	70°58.4	102°46.8	107°53.7	106°37.9
14	84°23.5	10.1'	20°12.4	-9.9'	56.9'	50°04.2	28°25.8	17°37.5	45°07.7	71°31.2	103°18.2	108°26.4	107°01.8
15	98°52.6	10.0'	20°22.3	-9.8'	56.9'	49°33.9	27°53.0	18°09.8	45°40.1	72°04.0	103°49.6	108°59.0	107°25.6
16	113°21.6	10.0'	20°32.1	-9.7'	56.9'	49°03.7	27°20.1	18°42.2	46°12.4	72°36.8	104°21.0	109°31.7	107°49.4
17	127°50.6	9.9'	20°41.8	-9.6'	56.9'	48°33.5	26°47.4	19°14.5	46°44.8	73°09.5	104°52.3	110°04.3	108°13.1
18	142°19.5	9.9'	S 20°51.4	-9.5'	56.9'	48°03.4	26°14.6	19°46.9	47° 17.1	73°42.2	105°23.7	110°36.8	108°36.8
19	156°48.4	9.8'	21°00.9	-9.3'	56.8'	47°33.2	25°41.9	20°19.2	47° 49.5	74°14.9	105°54.9	111°09.4	109°00.4
20	171°17.3	9.8'	$21^{\circ}10.2$	-9.2'	56.8'	47°03.1	25°09.1	20°51.5	48°21.8	74°47.6	106°26.2	111°41.9	109°23.9
21	185°46.1	9.8'	$21^{\circ}19.4$	-9.1'	56.8'	46°33.0	24°36.4	21°23.9	48°54.1	75°20.3	106°57.4	112°14.4	109°47.3
22	200°14.8	9.7'	21°28.5	-9.0'	56.8'	46°02.9	24°03.8	21°56.2	49°26.3	75°52.9	107°28.6	112°46.9	110°10.7
23	214°43.5	9.7'	21°37.5	-8.9'	56.7'	45°32.8	23°31.1	22°28.5	49°58.6	76°25.5	107°59.8	113°19.4	110°34.0
23 rd	SD	= 15.6'	Mer. pas	s. 08:10		$Sun\;SD=16.3'$							

h	Moon (24th Dec)	Lunar Di

SD = 15.5' Mer. pass. 09:02

								_						
	h		Moo	n (24 th D	ec)			Lunar [Distance	(objects)	with larges	st hourly L	.D delta)	
	Fri	GHA	ν	Dec	d	HP	-Sun	-Antares	+Spica	+Jupiter	+Regulus	+Procyon	+Sirius	+Pollux
ſ	0	229°12.2	9.6'	S 21°46.4	-8.7'	56.7'	45°02.8	22°58.5	23°00.8	50° 30.8	76°58.1	108°30.9	110°57.2	113°51.8
ı	1	243°40.8	9.6'	21°55.1	-8.6'	56.7'	44°32.7	22°25.9	23°33.1	51°03.1	77°30.7	109°02.0	111°20.4	114°24.2
ı	2	258°09.4	9.5'	22°03.8	-8.5'	56.7'	44°02.8	21°53.3	24°05.4	51°35.3	78°03.2	109°33.1	111°43.4	114°56.6
ı	3	272°37.9	9.5'	22°12.3	-8.4'	56.7'	43°32.8	21°20.7	24°37.7	52°07.5	78°35.8	110°04.1	112°06.5	115°29.0
ı	4	287°06.4	9.4'	22°20.6	-8.3'	56.6'	43°02.8	20°48.2	25°10.0	52°39.6	79°08.3	110°35.1	112°29.4	116°01.3
ı	5	301°34.8	9.4'	22°28.9	-8.1'	56.6'	42°32.9	20° 15.6	25°42.3	53°11.8	79°40.8	111°06.1	112°52.2	116°33.6
ı	6	316°03.2	9.3'	S 22°37.0	-8.0'	56.6'	42°03.0	19°43.1	26°14.6	53°43.9	80°13.2	111°37.1	113°15.0	117°05.9
ı	7	330°31.5	9.3'	22°45.0	-7.9'	56.6'	41°33.1	19° 10.7	26°46.8	54°16.0	80°45.7	112°08.0	113°37.7	117°38.2
l	8	344°59.8	9.3'	22°52.9	-7.8'	56.6'	41°03.2	18°38.2	27°19.0	54°48.1	81°18.1	112°38.9	114°00.3	118°10.5
ı	9	359°28.1	9.2'	23°00.7	-7.6'	56.5'	40°33.4	18°05.8	27°51.3	55° 20.2	81°50.5	113°09.7	114°22.8	118°42.7
١	10	13°56.3	9.2'	23°08.3	-7.5'	56.5'	40°03.6	17°33.3	28°23.5	55°52.3	82°22.9	113°40.6	114°45.2	119°14.9
١	11	28°24.4	9.1'	23°15.8	-7.4'	56.5'		17°01.0	28°55.7	56°24.3	82°55.3	$114^{\circ}11.4$	115°07.6	119°47.1
ı	12	42°52.6	9.1'	S 23°23.2	-7.2'	56.5'		16°28.6	29°27.9	56°56.3	83°27.6	114°42.1	115°29.8	
ı	13	57°20.6	9.0'	23°30.4	-7.1'	56.4'		15°56.2	30°00.0	57°28.4	83°59.9	115°12.8	115°52.0	
ı	14	71°48.7	9.0'	23°37.5	-7.0'	56.4'		15°23.9	30°32.2	58°00.3	84°32.2	115°43.5	116°14.0	
ı	15	86°16.7	9.0'	23°44.5	-6.8'	56.4'		14°51.6	31°04.3	58° 32.3	85°04.5	116°14.2	116°36.0	
ı	16	100°44.7	8.9'	23°51.3	-6.7'	56.4'		14° 19.3	31°36.4	59°04.3	85°36.8	116°44.8	116°57.9	
ı	17	115°12.6	8.9'	23°58.0	-6.6'	56.4'		13°47.1	32°08.5	59°36.2	86°09.0	117°15.4	117° 19.7	
	18	129°40.5	8.9'	S 24°04.6	-6.4'	56.3'		13° 14.8	32°40.6	60°08.1	86°41.2	117°45.9	117°41.3	
ı	19	144°08.3	8.8'	24°11.0	-6.3'	56.3'		12°42.6	33°12.7	60°40.0	87°13.4	118°16.4	118°02.9	
ı	20	158°36.1	8.8'	24°17.3	-6.2'	56.3'		12° 10.4	33°44.8	61°11.9	87°45.6	118°46.9	118°24.4	
ı	21	173°03.9	8.7'	24°23.5	-6.0'	56.3'		11°38.2	34°16.8	61°43.8	88°17.7	119°17.4	118°45.8	
	22	187°31.7	8.7'	24°29.5	-5.9'	56.3'		11°06.1	34°48.8	62° 15.6	88°49.9	119°47.8	119°07.0	
ı	22	2010504	0 7'	24°2E 4	E 0'	E6 2'	l	100240	3E 0 3U U	620 47 4	່໑ດ≎ລລດ		110000	

 $\mathsf{Sun}\;\mathsf{SD}=16.3'$

L-	Moon (25 th Dec)	Lunar Distance (objects with largest hourly ID delta)
n	MOOD (25 Dec)	I linar i distance conjects with largest notifiv i id delta i

Sat	GHA	ν	Dec	d	HP	± Antares	+Spica	+Arcturus	+Jupiter	+Regulus	+Adhara
0	216°27.1	8.7'	S 24°41.2	-5.6'	56.2'	10°01.9	35°52.8	48°56.8	63°19.3	89°54.1	109°09.1
1	230°54.7	8.6'	24°46.8	-5.5'	56.2'	9°29.8	36°24.8	49°17.1	63°51.0	90°26.1	109°26.7
2	245°22.4	8.6'	24°52.3	-5.3'	56.2'	8°57.7	36°56.8	49°37.6	64°22.8	90°58.2	109°44.2
3	259°50.0	8.6'	24°57.7	-5.2'	56.2'	8°25.7	37°28.7	49°58.1	64°54.6	91°30.2	110°01.7
4	274°17.5	8.5'	25°02.9	-5.1'	56.1'	7°53.7	38°00.7	50°18.8	65°26.3	92°02.2	110°19.0
5	288°45.1	8.5'	25°07.9	-4.9'	56.1'	7°21.7	38°32.6	50°39.7	65°58.0	92°34.2	110°36.3
6	303°12.6	8.5'	S 25°12.9	-4.8'	56.1'	6°49.7	39°04.5	51°00.6	66°29.7	93°06.2	110°53.5
7	317°40.1	8.5'	$25^{\circ}17.7$	-4.6'	56.1'	6°17.8	39°36.3	51°21.7	67°01.4	93°38.1	111°10.6
8	332°07.5	8.4'	25°22.3	-4.5'	56.1'	5°45.9	40°08.2	51°42.9	67°33.1	94° 10.1	111°27.6
9	346°35.0	8.4'	25°26.8	-4.4'	56.0'	5°14.1	40°40.0	52°04.2	68°04.7	94°42.0	111°44.5
10	1°02.4	8.4'	$25^{\circ}31.2$	-4.2'	56.0'	4°42.3	41°11.8	52°25.7	68°36.3	95° 13.9	112°01.3
11	15°29.8	8.4'	25°35.4	-4.1'	56.0'	4°10.5	41°43.6	52°47.2	69°07.9	95° 45.7	112°18.0
12	29°57.2	8.4'	S 25°39.5	-3.9'	56.0'	3°38.8	42°15.4	53°08.9	69°39.5	96° 17.6	112°34.6
13	44°24.6	8.4'	25°43.4	-3.8'	56.0'	3°07.2	42°47.2	53°30.6	70°11.1	96°49.4	112°51.1
14	58°51.9	8.3'	25°47.2	-3.7'	55.9'	2°35.8	43°19.0	53°52.5	70°42.6	97°21.2	113°07.5
15	73°19.3	8.3'	25°50.9	-3.5'	55.9'	2°04.5	43°50.7	54°14.5	71°14.2	97°53.0	113°23.8
16	87°46.6	8.3'	25°54.4	-3.4'	55.9'	1°33.6	44°22.4	54°36.5	71°45.7	98°24.8	113°40.0
17	102°13.9	8.3'	25°57.8	-3.2'	55.9'	1°03.7	44°54.1	54°58.7	72°17.2	98° 56.5	113°56.1
18	116°41.2	8.3'	S 26°01.0	-3.1'	55.9'		45°25.8	55°20.9	72°48.6	99°28.3	114°12.1
19	131°08.5	8.3'	$26^{\circ}04.1$	-2.9'	55.8'		45°57.4	55°43.3	73°20.1	100°00.0	114°28.0
20	145°35.8	8.3'	26°07.0	-2.8'	55.8'		46°29.1	56°05.7	73°51.5	100°31.7	114°43.7
21	160°03.1	8.3'	26°09.8	-2.6'	55.8'		47°00.7	56°28.2	74°22.9	101°03.3	114°59.4
22	174°30.3	8.3'	26°12.4	-2.5'	55.8'		47°32.3	56°50.8	74°54.3	101°35.0	115°14.9
23	188°57.6	8.3'	26°14.9	-2.4'	55.8'	2°14.7	48°03.9	57°13.4	75°25.7	102°06.6	115°30.4
25 th	SD :	= 15.3'	Mer. pas	s. 09:56	i						

Moon (26th Dec) Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus	+Acrux	+Jupiter	+Regulus
0	203°24.9	8.3'	S 26°17.3	-2.2'	55.8'	2°45.9			48°35.4	57°36.2		75°57.1	102°38.2
1	217°52.1	8.3'	$26^{\circ}19.5$	-2.1'	55.7'	3°17.2			49°07.0	57°59.0		76°28.4	103°09.8
2	232°19.4	8.3'	$26^{\circ}21.6$	-1.9'	55.7'	3°48.6			49°38.5	58°21.9		76°59.8	103°41.4
3	246°46.7	8.3'	26°23.5	-1.8'	55.7'	4°20.0			50°10.0	58°44.8		77°31.1	104° 12.9
4	261°13.9	8.3'	26°25.3	-1.6'	55.7'	4°51.4			50°41.5	59°07.9		78°02.4	104°44.5
5	275°41.2	8.3'	26°26.9	-1.5'	55.7'	5°22.9			51°13.0	59°30.9		78°33.6	105°16.0
6	290°08.5	8.3'	S 26°28.4	-1.3'	55.6'	5°54.3			51°44.5	59°54.1		79°04.9	105°47.5
7	304°35.8	8.3'	26°29.7	-1.2'	55.6'	6°25.7			52°15.9	60°17.3		79°36.1	106° 18.9
8	319°03.1	8.3'	26°30.9	-1.1'	55.6'	6°57.2			52°47.3	60°40.6		80°07.3	106°50.4
9	333°30.4	8.3'	26°32.0	-0.9'	55.6'	7°28.6			53°18.7	61°03.9		80°38.5	107°21.8
10	347°57.7	8.3'	26°32.9	-0.8'	55.6'	8°00.0			53°50.1	61°27.3		81°09.7	107°53.2
11	2°25.0	8.3'	26°33.7	-0.6'	55.5'	8°31.4			54°21.5	61°50.8	57°38.3	81°40.9	108°24.6
12	16°52.4	8.4'	S 26°34.3	-0.5'	55.5'	9°02.8			54°52.8	62°14.3	57°53.6	82°12.0	108°56.0
13	31°19.7	8.4'	26°34.8	-0.3'	55.5'	9°34.1		46°24.0	55°24.2	62°37.8	58°08.9	82°43.1	109°27.3
14	45°47.1	8.4'	$26^{\circ}35.1$	-0.2'	55.5'	10°05.5		46°39.4	55°55.5	63°01.5	58°24.4	83°14.2	109°58.7
15	60°14.5	8.4'	26°35.3	-0.0'	55.5'	10°36.8		46°55.0	56°26.8	63°25.1	58°40.0	83°45.3	110°30.0
16	74°41.9	8.4'	26°35.3	0.1'	55.5'	11°08.1		47° 10.7	56°58.0	63°48.8	58°55.7	84°16.4	111°01.3
17	89°09.4	8.5'	26°35.2	0.2'	55.4'	11°39.4		47°26.6	57°29.3	64°12.6	59°11.5	84°47.4	111°32.6
18	103°36.8	8.5'	S 26°35.0	0.4'	55.4'	12°10.7		47°42.8	58°00.5	64°36.3	59°27.5	85°18.4	112°03.8
19	118°04.3	8.5'	26°34.6	0.5'	55.4'	12°42.0		47°59.1	58°31.7	65°00.2	59°43.6	85°49.4	112°35.0
20	132°31.8	8.5'	$26^{\circ}34.1$	0.7'	55.4'	13°13.2		48° 15.5	59°02.9	65°24.0	59°59.8	86°20.4	113°06.3
21	146°59.4	8.6'	26°33.4	0.8'	55.4'	13°44.4	44°47.3	48°32.2	59°34.1	65°48.0	60°16.1	86°51.4	113°37.5
22	161°26.9	8.6'	26°32.6	0.9'	55.3'	14°15.6	45°02.7	48°49.0	60°05.3	66°11.9	60°32.5	87°22.4	114°08.6
23	175°54.5	8.6'	26°31.7	1.1'	55.3'	14°46.8	45°18.2	49°06.0	60°36.4	66°35.9	60°49.0	87°53.3	114°39.8
26 th	SD =	= 15.2′	Mer. pas	s. 10:50)								

Moon (27th Dec) Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	+Antares	+Rigil Kent.	+Hadar	+Acrux	+Spica	+Arcturus	+Jupiter	+Regulus
0	190°22.2	8.7'	S 26°30.6	1.2'	55.3'	15°18.0	45°34.0	49°23.1	61°05.6	61°07.6	66°59.9	88°24.2	115° 10.9
1	204°49.8	8.7'	26°29.3	1.4'	55.3'				New I	Moon ——		<u>'</u>	'
2	219°17.5	8.7'	$26^{\circ}28.0$	1.5'	55.3'								
3	233°45.2	8.8'	$26^{\circ}26.5$	1.6'	55.3'								İ
4	248°13.0	8.8'	26°24.8	1.8'	55.2'								
5	262°40.8	8.8'	$26^{\circ}23.0$	1.9'	55.2'				New I	Moon ——			
6	277°08.7	8.9'	S 26°21.1	2.1'	55.2'				New I	Moon ——			
7	291°36.6	8.9'	$26^{\circ}19.0$	2.2'	55.2'				New I	Moon ——			
8	306°04.5	9.0'	$26^{\circ}16.8$	2.3'	55.2'				New I	Moon ——			
9	320°32.5	9.0'	$26^{\circ}14.5$	2.5'	55.2'								
10	335°00.5	9.1'	$26^{\circ}12.0$	2.6'	55.1'				New I	Moon ——			
11	349°28.5	9.1'	$26^{\circ}09.4$	2.7'	55.1'				New I	Moon ——			
12	3°56.7	9.2'	S 26°06.7	2.9'	55.1'				New I	Moon ——			
13	18°24.8	9.2'	26°03.8	3.0'	55.1'								
14	32°53.0	9.3'	26°00.8	3.1'	55.1'				New I	Moon ——			
15	47°21.3	9.3'	25°57.6	3.3'	55.1'				New I	Moon ——			
16	61°49.6	9.4'	25°54.4	3.4'	55.0'								İ
17	76°18.0	9.4'	25°51.0	3.5'	55.0'				New I	Moon ——			
18	90°46.4	9.5'	S 25°47.4	3.7'	55.0'				New I	Moon ——			
19	105°14.8	9.5'	25°43.8	3.8'	55.0'								
20	119°43.4	9.6'	25°40.0	3.9'	55.0'				New I	Moon ——			
21	134°11.9	9.6'	25°36.0	4.1'	55.0'								
22	148°40.6	9.7'	25°32.0	4.2'	54.9'				New I	Moon ——			
23	163°09.3	9.8'	25°27.8	4.3'	54.9'				New I	Moon ——			
27 th	SD =	= 15.1′	Mer. pass	s. 11:44	1								

Moon (28th Dec) Lunar Distance (objects with largest hourly LD delta) h

			(=0 =0				,		1	
Tue	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Venus	-Mars
0	177°38.0	9.8'	S 25°23.5	4.4'	54.9'			New	Moon	
1	192°06.9	9.9'	$25^{\circ}19.1$	4.6'	54.9'				Moon	
2	206°35.7	9.9'	$25^{\circ}14.5$	4.7'	54.9'			New	Moon	
3	221°04.7	10.0'	25°09.8	4.8'	54.9'			New	Moon	
4	235°33.7	10.1'	25°05.0	4.9'	54.8'			New	Moon —	
5	250°02.8	10.1'	$25^{\circ}00.1$	5.0'	54.8'			New	Moon —	
6	264°31.9	10.2'	S 24°55.1	5.2'	54.8'			New	Moon	
7	279°01.1	10.3'	24°49.9	5.3'	54.8'			New	Moon	
8	293°30.3	10.3'	24°44.6	5.4'	54.8'			New	Moon	
9	307°59.7	10.4'	24°39.2	5.5'	54.8'			New	Moon —	
10	322°29.1	10.5'	24°33.7	5.6'	54.8'			New	Moon —	
11	336°58.5	10.5'	$24^{\circ}28.0$	5.8'	54.7'			New	Moon —	
12	351°28.1	10.6'	S 24°22.3	5.9'	54.7'			New	Moon	
13	5°57.7	10.7'	24° 16.4	6.0'	54.7'					
14	20°27.3	10.7'	24° 10.4	6.1'	54.7'					
15	34°57.1	10.8'	24°04.3	6.2'	54.7'					
16	49°26.9	10.9'	23°58.1	6.3'	54.7'					
17	63°56.8	11.0'	23°51.8	6.4'	54.7'			New	Moon —	
18	78°26.7	11.0'	S 23°45.4	6.5'	54.6'	94°03.0	50°09.1	33°59.5	24°05.8	8°27.1
19	92°56.7	11.1'	23°38.8	6.7'	54.6'	93°32.8	49°43.2		23°38.6	
20	107°26.8	11.2'	23°32.2	6.8'	54.6'	93°02.7	49°17.5		23°11.5	7°30.3
21	121°57.0	11.2'	23°25.4	6.9'	54.6'	92°32.6	48°51.8		22°44.4	7°01.9
22	136°27.2	11.3'	$23^{\circ}18.5$	7.0'	54.6'	92°02.6	48°26.2		22°17.3	
23	150°57.6	11.4'	23°11.6	7.1'	54.6'	91°32.5	48°00.7		21°50.2	6°05.2
28 th	SD	= 15.0'	Mer. pass	. 12:35						·

	and the second s	
h	Moon (29 th Dec)	Lunar Distance

Wed	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Venus	± Mars
0	165°28.0	11.5'	S 23°04.5	7.2'	54.6'	91°02.5	47°35.3	21°23.2	5°36.9
1	179°58.4	11.5'	22°57.3	7.3'	54.5'	90°32.5	47°10.0	20°56.2	5°08.7
2	194°29.0	11.6'	22°50.0	7.4'	54.5'	90°02.5	46°44.7	20°29.2	4°40.5
3	208°59.6	11.7'	22°42.6	7.5'	54.5'	89°32.5	46°19.6	20°02.3	4°12.3
4	223°30.2	11.8'	22°35.1	7.6'	54.5'	89°02.5	45°54.5	19°35.4	3°44.3
5	238°01.0	11.8'	22°27.5	7.7'	54.5'	88°32.5	45°29.5	19°08.5	3°16.3
6	252°31.8	11.9'	S 22°19.8	7.8'	54.5'	88°02.6	45°04.6	18°41.6	2°48.4
7	267°02.7	12.0'	$22^{\circ}12.1$	7.9'	54.5'	87°32.7	44°39.9	18°14.8	2°20.7
8	281°33.7	12.1'	22°04.2	8.0'	54.5'	87°02.8	44°15.2	17°48.0	1°53.3
9	296°04.8	12.1'	21°56.2	8.1'	54.4'	86°32.9	43°50.6	17°21.2	1°26.4
10	310°35.9	12.2'	$21^{\circ}48.1$	8.2'	54.4'	86°03.0	43°26.2	16°54.5	
11	325°07.1	12.3'	21°39.9	8.3'	54.4'	85°33.1	43°01.8	16°27.8	
12	339°38.4	12.4'	S 21°31.7	8.4'	54.4'	85°03.3	42°37.6	16°01.2	
13	354°09.8	12.4'	21°23.3	8.4'	54.4'	84°33.4	42°13.5	15°34.5	
14	8°41.2	12.5'	$21^{\circ}14.9$	8.5'	54.4'	84°03.6	41°49.5	15°08.0	
15	23°12.7	12.6'	$21^{\circ}06.3$	8.6'	54.4'	83°33.8	41°25.6	14°41.4	
16	37°44.3	12.7'	20°57.7	8.7'	54.4'	83°04.0	41°01.8	14°15.0	
17	52°15.9	12.7'	20°49.0	8.8'	54.3'	82°34.3	40°38.2	13°48.5	2°28.0
18	66°47.7	12.8'	S 20°40.2	8.9'	54.3'	82°04.5	40°14.7	13°22.1	2°55.6
19	81°19.5	12.9'	20°31.3	9.0'	54.3'	81°34.8	39°51.3	12°55.8	3°23.3
20	95°51.4	13.0'	20°22.3	9.1'	54.3'	81°05.0	39°28.0	12°29.5	3°51.1
21	110°23.3	13.0'	$20^{\circ}13.3$	9.1'	54.3'	80°35.3	39°04.9	12°03.3	4°18.9
22	124°55.3	13.1'	20°04.1	9.2'	54.3'	80°05.6	38°42.0	11°37.2	4°46.8
23	139°27.4	13.2'	19°54.9	9.3'	54.3'	79°35.9	38°19.2	11°11.1	5°14.7
29 th	SD	= 14.9'	Mer. pass	13:24					

h Moon (30th Dec) Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Rigel	-Aldebaran	-Saturn	-Fomalhaut	-Venus	+Mars
0	153°59.6	13.2'	S 19°45.6	9.4'	54.3'			79°06.3	37°56.5	10°45.2	5°42.6
1	168°31.8	13.3'	$19^{\circ}36.2$	9.5'	54.3'			78°36.6	37°34.0	10°19.3	6°10.5
2	183°04.2	13.4'	$19^{\circ}26.7$	9.5'	54.2'			78°07.0	37°11.6	9°53.5	6°38.5
3	197°36.6	13.5'	$19^{\circ}17.2$	9.6'	54.2'			77°37.3	36°49.5	9°27.9	7°06.4
4	212°09.0	13.5'	$19^{\circ}07.5$	9.7'	54.2'			77°07.7	36°27.5	9°02.3	7°34.3
5	226°41.5	13.6'	18°57.8	9.8'	54.2'			76°38.1	36°05.6	8°37.0	8°02.2
6	241°14.1	13.7'	S 18°48.1	9.9'	54.2'			76°08.5	35°43.9	8°11.8	8°30.1
7	255°46.8	13.7'	18°38.2	9.9'	54.2'			75°39.0	35°22.5	7°46.7	8°58.0
8	270°19.6	13.8'	$18^{\circ}28.3$	10.0'	54.2'			75°09.4	35°01.2	7°21.9	9°25.9
9	284°52.4	13.9'	$18^{\circ}18.3$	10.1'	54.2'			74°39.9	34°40.1	6°57.4	9°53.8
10	299°25.2	13.9'	18°08.2	10.1'	54.2'			74°10.3	34°19.2	6°33.2	10°21.6
11	313°58.2	14.0'	$17^{\circ}58.1$	10.2'	54.2'			73°40.8	33°58.5	6°09.3	10°49.5
12	328°31.2	14.1'	S 17°47.8	10.3'	54.2'			73°11.3	33°38.0	5°45.9	11°17.3
13	343°04.3	14.2'	$17^{\circ}37.6$	10.4'	54.2'			72°41.8	33°17.7	5°23.0	11°45.2
14	357°37.5	14.2'	$17^{\circ}27.2$	10.4'	54.1'			72°12.3	32°57.6	5°00.7	12°13.0
15	12°10.7	14.3'	$17^{\circ}16.8$	10.5'	54.1'			71°42.9	32°37.8	4°39.3	12°40.8
16	26°44.0	14.4'	17°06.3	10.6'	54.1'			71°13.4	32°18.2		13°08.7
17	41°17.3	14.4'	$16^{\circ}55.7$	10.6'	54.1'		119°44.1	70°44.0	31°58.9		13°36.5
18	55°50.7	14.5'	S 16°45.1	10.7'	54.1'		119°14.8	70° 14.5	31°39.8		14°04.3
19	70°24.2	14.5'	16°34.4	10.7'	54.1'		118°45.6	69°45.1	31°20.9		14°32.0
20	84°57.7	14.6'	$16^{\circ}23.7$	10.8'	54.1'		118°16.4	69° 15.7	31°02.3		14°59.8
21	99°31.3	14.7'	$16^{\circ}12.9$	10.9'	54.1'	119°50.6	117°47.2	68°46.3	30°44.0		15°27.6
22	114°05.0	14.7'	16°02.0	10.9'	54.1'	119°28.2	117°18.1	68° 17.0	30°25.9		15°55.4
23	128°38.7	14.8'	$15^{\circ}51.1$	11.0'	54.1'	119°05.7	116°48.9	67°47.6	30°08.2		16°23.1
30 th	SD = 14.8'		Mer. pass	s. 14:10							

h Moon (31st Dec) Lunar Distance (objects with largest hourly LD delta)

- 11		IVIOOI	I (SI DE	<i>(</i>)		Lulial Distance (objects with largest nounly LD delta)							
Fri	GHA	ν	Dec	d	HP	-Capella	-Rigel	-Aldebaran	-Saturn	-Fomalhaut	+Venus	+Mars	+Sun
0	143°12.5	14.9'	S 15°40.1	11.0'	54.1'		118°43.2	116°19.7	67° 18.2	29°50.7		16°50.9	
1	157°46.4	14.9'	15°29.0	11.1'	54.1'		118°20.6	115°50.5	66°48.9	29°33.5		17°18.6	
2	172°20.3	15.0'	$15^{\circ}17.9$	11.2'	54.1'		117°58.0	115°21.3	66° 19.6	29°16.7	İ	17°46.3	İ
3	186°54.3	15.0'	15°06.8	11.2'	54.1'		117°35.3	114°52.2	65°50.2	29°00.2		18° 14.0	
4	201°28.3	15.1'	14°55.6	11.3'	54.1'		117°12.5	114°23.0	65°20.9	28°43.9		18°41.7	
5	216°02.4	15.1'	14°44.3	11.3'	54.0'		116°49.7	113°53.8	64°51.6	28°28.1		19°09.4	
6	230°36.5	15.2'	S 14°32.9	11.4'	54.0'		116°26.9	113°24.7	64°22.3	28°12.5		19°37.1	
7	245° 10.7	15.3'	$14^{\circ}21.6$	11.4'	54.0'		116°04.0	112°55.5	63°53.0	27°57.3		20°04.8	
8	259°45.0	15.3'	$14^{\circ}10.1$	11.5'	54.0'		115°41.1	112°26.4	63°23.8			20°32.5	
9	274°19.3	15.4'	13°58.6	11.5'	54.0'		115°18.2	111°57.3	62°54.5		5°12.3	21°00.2	
10	288°53.7	15.4'	13°47.1	11.6'	54.0'	119°53.1	114°55.2	111°28.1	62°25.3		5°34.7	21°27.8	
11	303°28.1	15.5'	13°35.5	11.6'	54.0'	119°25.7	114°32.1	110°59.0	61°56.0		5°57.7	21°55.5	
12	318°02.5	15.5'	S 13°23.9	11.7'	54.0'	118°58.3	114°09.0	110°29.9	61°26.8		6°21.2	22°23.2	
13	332°37.1	15.6'	13°12.2	11.7'	54.0'	118°31.0	113°45.9	110°00.7	60°57.6		6°45.0	22°50.8	
14	347°11.6	15.6'	13°00.4	11.8'	54.0'	118°03.6	113°22.7	109°31.6	60°28.4		7°09.1	23°18.4	41°06.3
15	1°46.3	15.7'	12°48.7	11.8'	54.0'	117°36.1	112°59.5	109°02.5	59°59.2		7°33.5	23°46.1	41°33.3
16	16°20.9	15.7'	12°36.8	11.9'	54.0'	117°08.7	112°36.3	108°33.4	59°30.0		7°58.2	24°13.7	42°00.3
17	30°55.6	15.8'	12°25.0	11.9'	54.0'	116°41.3	112°13.0	108°04.3	59°00.8		8°23.0	24°41.3	42°27.3
18	45°30.4	15.8'	S 12°13.0	12.0'	54.0'	116°13.8	111°49.7	107°35.1	58°31.7		8°47.9	25°08.9	42°54.3
19	60°05.2	15.9'	12°01.1	12.0'	54.0'	115°46.3	111°26.4	107°06.0	58°02.5		9°13.0	25°36.6	43°21.3
20	74°40.1	15.9'	11°49.1	12.1'	54.0'	115°18.9	111°03.0	106°36.9	57°33.3		9°38.3	26°04.2	43°48.3
21	89° 15.0	15.9'	11°37.0	12.1'	54.0'	114°51.4	110°39.6	106°07.8	57°04.2		10°03.6	26°31.8	44°15.2
22	103°49.9	16.0'	11°24.9	12.1'	54.0'	114°23.9	110°16.1	105°38.7	56°35.1		10°29.0	26°59.4	44°42.2
23	118°24.9	16.0'	11°12.8	12.2'	54.0'	113°56.3	109°52.6	105°09.6	56°05.9		10°54.5	27°27.0	45°09.2
31st	SD = 14.7' Mer. pass. 14:53					$Sun\;SD=16.3'$							