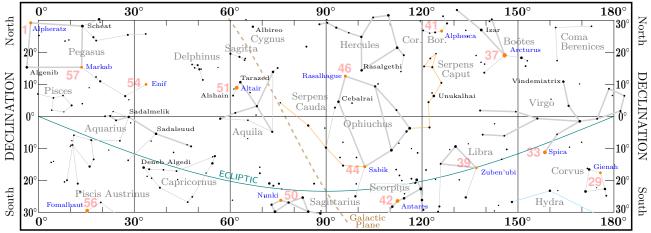
GENERATED USING SKYFIELD

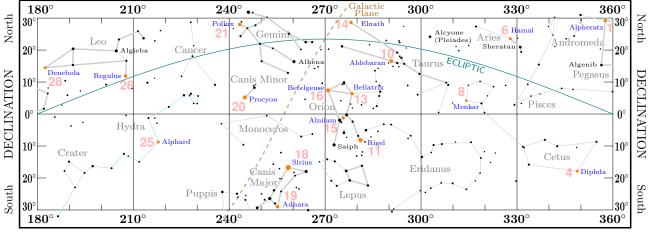
http://rhodesmill.org/skyfield/

EQUATORIAL STARS (SHA 0° to 180°)



SIDEREAL HOUR ANGLE

EQUATORIAL STARS (SHA 180° to 360°)



SIDEREAL HOUR ANGLE

LUNAR DISTANCE

2024

Author: Andrew Bauer

October 28, 2024

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° 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

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

Mon	GHA	ν	Dec	d	HP	-Sun	-Mars	-Antares	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	301°02.0	16.1'	N12°37.6	-12.7'	54.1'		111°18.5	94°21.8	48°29.1	6°35.9	42°22.4	73°41.4	86°13.9
1	315°37.0	16.1'	12°24.9	-12.8'	54.1'		110°50.8	93°52.2	47°59.5	7°01.4	42°51.9	74°09.4	86°43.1
2	330°12.2	16.2'	12° 12.1	-12.8'	54.1'		110°23.2	93°22.5	47°29.9	7°27.4	43°21.5	74°37.3	87°12.3
3	344°47.3	16.2'	11°59.3	-12.9'	54.1'		109°55.5	92°52.9	47°00.3	7°53.9	43°51.1	75°05.3	87°41.5
4	359°22.6	16.3'	11°46.5	-12.9'	54.1'		109°27.8	92°23.3	46°30.7	8°20.7	44°20.7	75°33.3	88° 10.8
5	13°57.8	16.3'	11°33.6	-12.9'	54.1'		109°00.2	91°53.8	46°01.2	8°47.8	44°50.2	76°01.2	88°40.0
6	28°33.1	16.4'	N11°20.6	-13.0'	54.1'		108°32.5	91°24.2	45°31.6	9°15.1	45° 19.8	76°29.2	89°09.2
7	43°08.5	16.4'	11°07.6	-13.0'	54.1'		108°04.9	90°54.6	45°02.1	9°42.6	45°49.4	76°57.2	89°38.4
8	57°43.9	16.5'	10°54.6	-13.1'	54.1'		107°37.2	90°25.0	44°32.5	10°10.4	46° 18.9	77°25.2	90°07.5
9	72°19.4	16.5'	10°41.6	-13.1'	54.1'	119°56.2	107°09.6	89°55.5	44°03.0	10°38.3	46° 48.5	77°53.1	90°36.7
10	86°54.9	16.5'	10°28.5	-13.1'	54.1'	119°29.3	106°42.0	89°25.9	43°33.4	11°06.3	47° 18.0	78°21.1	91°05.9
11	101°30.4	16.6'	10° 15.4	-13.2'	54.1'	119°02.5	106°14.3	88°56.3	43°03.9	11°34.5	47° 47.5	78°49.1	91°35.1
12	116°06.0	16.6'	$N10^{\circ}02.2$	-13.2'	54.1'	118°35.6	105°46.7	88°26.8	42°34.4	12°02.7	48° 17.1	79°17.1	92°04.3
13	130°41.6	16.7'	09°49.0	-13.2'	54.1'	118°08.7	105°19.1	87°57.2	42°04.9	12°31.1	48°46.6	79°45.1	92°33.4
14	145°17.2	16.7'	09°35.8	-13.3'	54.1'	117°41.9	104°51.5	87°27.7	41°35.3	12°59.5	49° 16.2	80°13.1	93°02.6
15	159°52.9	16.7'	09°22.5	-13.3'	54.1'	117°15.0	104°23.8	86°58.1	41°05.8	13°28.0	49° 45.7	80°41.1	93°31.8
16	174°28.7	16.8'	09°09.2	-13.3'	54.1'	116°48.1	103°56.2	86°28.6	40°36.3	13°56.6	50° 15.2	81°09.1	94°00.9
17	189°04.4	16.8'	08°55.9	-13.4'	54.1'	116°21.3	103°28.6	85°59.0	40°06.8	14°25.3	50°44.7	81°37.0	94°30.1
18	203°40.2	16.8'	N 08°42.5	-13.4'	54.1'	115°54.4	103°01.0	85°29.5	39°37.3	14°54.0	51°14.3	82°05.0	94°59.2
19	218°16.1	16.9'	08°29.1	-13.4'	54.1'	115°27.5	102°33.4	84°59.9	39°07.8	15°22.7	51°43.8	82°33.0	95°28.4
20	232°51.9	16.9'	$08^{\circ}15.7$	-13.5'	54.1'	115°00.7	102°05.8	84°30.4	38°38.3	15°51.5	52° 13.3	83°01.0	95°57.5
21	247°27.8	16.9'	08°02.2	-13.5'	54.1'	114°33.8	101°38.2	84°00.9	38°08.8	16°20.4	52°42.8	83°29.0	96°26.7
22	262°03.7	17.0'	07°48.8	-13.5'	54.1'	114°06.9	101°10.6	83°31.3	37°39.3	16°49.2	53° 12.3	83°57.1	96°55.8
23	276°39.7	17.0'	07°35.3	-13.5'	54.1'	113°40.1	100°43.0	83°01.8	37°09.8	17°18.1	53°41.9	84°25.1	97°25.0
1 st	SD	= 14.8	Mer. pass	s. 04:03					Sun S	D = 16.3'			

Moon (2nd Jan)

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unar Distance	(objects	with	largest	hourly	I D dal+	٦)
innar instance	10000	WILLIAM	IAIVESI	HOHITIV	1 I / CICIL	<i>a</i> ı

Tue	GHA	ν	Dec	d	HP	-Sun	-Mars	-Antares	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	291°15.7	17.0'	N 07°21.7	-13.6'	54.1'	113°13.2	100°15.4	82°32.3	36°40.3	17°47.1	54°11.4	84°53.1	97°54.1
1	305°51.7	17.0'	07°08.2	-13.6'	54.1'	112°46.3	99°47.7	82°02.7	36°10.8	18°16.1	54°40.9	85°21.1	98°23.3
2	320°27.7	17.1'	06°54.6	-13.6'	54.1'	112°19.5	99°20.1	81°33.2	35°41.3	18°45.1	55° 10.4	85°49.1	98°52.4
3	335°03.8	17.1'	$06^{\circ}41.0$	-13.6'	54.1'	111°52.6	98°52.5	81°03.6	35°11.8	19°14.1	55°40.0	86°17.1	99°21.6
4	349°39.9	17.1'	06°27.3	-13.7'	54.1'	111°25.7	98°24.9	80°34.1	34°42.3	19°43.2	56°09.5	86°45.2	99°50.7
5	4°16.0	17.1'	$06^{\circ}13.7$	-13.7'	54.1'	110°58.9	97°57.3	80°04.6	34°12.7	20°12.3	56°39.0	87°13.2	100°19.9
6	18°52.1	17.1'	N 06°00.0	-13.7'	54.1'	110°32.0	97° 29.7	79°35.0	33°43.2	20°41.4	57°08.5	87°41.2	100°49.0
7	33°28.2	17.2'	05°46.3	-13.7'	54.1'	110°05.1	97°02.1	79°05.5	33°13.7	21°10.5	57°38.1	88°09.2	101°18.2
8	48°04.4	17.2'	05°32.6	-13.7'	54.1'	109°38.2	96°34.4	78°35.9	32°44.2	21°39.7	58°07.6	88°37.3	101°47.3
9	62°40.6	17.2'	$05^{\circ}18.8$	-13.8'	54.1'	109°11.3	96°06.8	78°06.4	32°14.7	22°08.8	58° 37.2	89°05.3	102°16.5
10	77°16.8	17.2'	05°05.0	-13.8'	54.1'	108°44.4	95°39.2	77°36.8	31°45.2	22°38.0	59°06.7	89°33.4	102°45.7
11	91°53.0	17.2'	04°51.3	-13.8'	54.1'	108°17.5	95°11.5	77°07.2	31°15.7	23°07.2	59°36.3	90°01.4	103°14.8
12	106°29.2	17.2'	N 04°37.4	-13.8'	54.2'	107°50.6	94°43.9	76°37.7	30°46.2	23°36.5	60°05.8	90°29.5	103°44.0
13	121°05.4	17.2'	04°23.6	-13.8'	54.2'	107°23.7	94°16.3	76°08.1	30°16.7	24°05.7	60°35.4	90°57.5	104°13.1
14	135°41.7	17.3'	04°09.8	-13.9'	54.2'	106°56.8	93°48.6	75°38.5	29°47.1	24°35.0	61°04.9	91°25.6	104°42.3
15	150°17.9	17.3'	03°55.9	-13.9'	54.2'	106°29.9	93°20.9	75°08.9	29°17.6	25°04.3	61°34.5	91°53.7	105°11.5
16	164°54.2	17.3'	03°42.0	-13.9'	54.2'	106°03.0	92°53.3	74°39.3	28°48.1	25°33.6	62°04.1	92°21.7	105°40.7
17	179°30.5	17.3'	03°28.1	-13.9'	54.2'	105°36.0	92°25.6	74°09.7	28°18.5	26°02.9	62°33.7	92°49.8	106°09.8
18	194°06.8	17.3'	N 03°14.2	-13.9'	54.2'	105°09.1	91°58.0	73°40.1	27°49.0	26°32.2	63°03.3	93°17.9	106°39.0
19	208°43.1	17.3'	03°00.3	-13.9'	54.2'	104°42.2	91°30.3	73°10.5	27°19.4	27°01.6	63°32.8	93°46.0	107°08.2
20	223°19.4	17.3'	02°46.4	-13.9'	54.2'	104°15.2	91°02.6	72°40.9	26°49.9	27°30.9	64°02.5	94°14.1	107°37.4
21	237°55.7	17.3'	02°32.4	-14.0'	54.2'	103°48.2	90°34.9	72°11.3	26°20.3	28°00.3	64°32.1	94°42.2	108°06.6
22	252°32.0	17.3'	02°18.5	-14.0'	54.2'	103°21.3	90°07.2	71°41.7	25°50.8	28°29.7	65°01.7	95°10.3	108°35.8
23	267°08.3	17.3'	02°04.5	-14.0'	54.2'	102°54.3	89°39.5	71°12.0	25°21.2	28°59.1	65°31.3	95°38.4	109°05.0
2 nd	SD	= 14.8'	Mer. pass	s. 04:42					Sun S	D = 16.3'			

	Moon	(ard		
h	Moon	1.31a	lan I	

h)	
Wed	GHA	ν	Dec	d	HP	-Sun	-Mars	-Antares	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	281°44.6	17.3'	N 01°50.5	-14.0'	54.2'	102°27.3	89°11.8	70°42.4	24°51.6	29°28.5	66°00.9	96°06.5	109°34.2
1	296°20.9	17.3'	01°36.5	-14.0'	54.3'	102°00.3	88°44.0	70°12.7	24°22.1	29°58.0	66°30.6	96°34.6	110°03.5
2	310°57.2	17.3'	01°22.5	-14.0'	54.3'	101°33.3	88°16.3	69°43.0	23°52.5	30°27.4	67°00.2	97°02.8	110°32.7
3	325°33.5	17.3'	$01^{\circ}08.5$	-14.0'	54.3'	101°06.3	87°48.5	69°13.4	23°22.9	30°56.9	67°29.9	97°30.9	111°01.9
4	340°09.8	17.3'	00°54.5	-14.0'	54.3'	100°39.3	87°20.8	68°43.7	22°53.3	31°26.4	67°59.6	97°59.0	111°31.2
5	354°46.0	17.3'	00°40.4	-14.0'	54.3'	100°12.2	86°53.0	68°14.0	22°23.7	31°55.9	68°29.3	98°27.2	112°00.4
6	9°22.3	17.3'	N00°26.4	-14.0'	54.3'	99°45.2	86°25.2	67°44.3	21°54.1	32°25.4	68°59.0	98°55.3	112°29.7
7	23°58.6	17.3'	N 00°12.3	-14.1'	54.3'	99°18.1	85°57.5	67°14.6	21°24.4	32°55.0	69°28.7	99°23.5	112°58.9
8	38°34.8	17.2'	S 00°01.7	-14.1'	54.3'	98°51.0	85°29.7	66°44.8	20°54.8	33°24.5	69°58.4	99°51.7	113°28.2
9	53°11.1	17.2'	$00^{\circ}15.8$	-14.1'	54.3'	98°23.9	85°01.8	$66^{\circ}15.1$	20°25.2	33°54.1	70°28.1	100°19.8	113° 57.5
10	67°47.3	17.2'	00°29.8	-14.1'	54.4'	97°56.8	84°34.0	65°45.3	19°55.5	34°23.7	70°57.9	100°48.0	114°26.8
11	82°23.5	17.2'	00°43.9	-14.1'	54.4'	97°29.7	84°06.2	65°15.5	19°25.9	34°53.3	71°27.7	101°16.2	114°56.1
12	96°59.8	17.2'	S 00°58.0	-14.1'	54.4'	97°02.6	83°38.3	64°45.8	18° 56.2	35°22.9	71°57.4	101°44.4	115°25.4
13	111°36.0	17.2'	$01^{\circ}12.1$	-14.1'	54.4'	96°35.5	83°10.5	64°16.0	18° 26.6	35°52.6	72°27.2	102°12.6	115°54.7
14	126°12.1	17.2'	$01^{\circ}26.1$	-14.1'	54.4'	96°08.3	82°42.6	63°46.2	17°56.9	36°22.2	72°57.0	102°40.8	116°24.1
15	140°48.3	17.1'	01°40.2	-14.1'	54.4'	95°41.2	82°14.7	63°16.3	17°27.2	36°51.9	73°26.8	103°09.0	116°53.4
16	155°24.4	17.1'	01°54.3	-14.1'	54.4'	95°14.0	81°46.8	62°46.5	16°57.6	37°21.6	73°56.7	103°37.3	117°22.8
17	170°00.5	17.1'	02°08.4	-14.1'	54.4'	94°46.8	81°18.9	62°16.6	16°27.9	37°51.3	74°26.5	104°05.5	117°52.1
18	184°36.6	17.1'	S 02°22.5	-14.1'	54.5'	94°19.6	80°50.9	61°46.8	15°58.2	38°21.0	74°56.4	104°33.7	118°21.5
19	199°12.7	17.0'	02°36.5	-14.1'	54.5'	93°52.3	80°23.0	61°16.9	15° 28.5	38°50.8	75°26.2	105°02.0	118° 50.9
20	213°48.8	17.0'	02°50.6	-14.1'	54.5'	93°25.1	79°55.0	60°47.0	14°58.8	39°20.6	75°56.1	105°30.2	119°20.3
21	228°24.8	17.0'	03°04.7	-14.1'	54.5'	92°57.8	79°27.0	60°17.1	14° 29.1	39°50.3	76°26.0	105°58.5	119°49.7
22	243°00.8	17.0'	03°18.8	-14.1'	54.5'	92°30.6	78°59.0	59°47.1	13°59.4	40°20.2	76°56.0	106°26.8	
23	257°36.8	16.9'	03°32.8	-14.1'	54.5'	92°03.3	78°31.0	59°17.2	13°29.7	40°50.0	77°25.9	106°55.1	
3 rd	SD	= 14.8'	Mer. pas	s. 05:21					Sun S	5D = 16.3'			

h Moon (4 th Jan) Lunar Distance (objects with largest hourly LD delta))				
Thu	GHA	ν	Dec	d	HP	-Sun	-Mars	-Antares	-Spica	+Regulus	+Procyon	+Pollux	+Capella
0	272°12.7	16.9'	S 03°46.9	-14.1'	54.6'	91°35.9	78°03.0	58°47.2	13°00.0	41° 19.8	76°11.6	77°55.9	107°23.3
1	286°48.6	16.9'	$04^{\circ}01.0$	-14.1'	54.6'	91°08.6	77°34.9	58°17.2	12°30.3	41°49.7	76°39.5	78°25.9	107°51.6
2	301°24.5	16.8'	$04^{\circ}15.0$	-14.0'	54.6'	90°41.3	77°06.8	57°47.2	12°00.6	42° 19.6	77°07.4	78°55.9	108° 19.9
3	316°00.3	16.8'	$04^{\circ}29.1$	-14.0'	54.6'	90°13.9	76°38.8	57°17.2	11°30.9	42°49.5	77°35.3	79°25.9	108°48.3
4	330°36.1	16.8'	04°43.1	-14.0'	54.6'	89°46.5	76°10.6	56°47.1	11°01.2	43° 19.4	78°03.3	79°55.9	109° 16.6
5	345°11.9	16.7'	04°57.2	-14.0'	54.6'	89°19.1	75°42.5	56°17.1	10°31.6	43°49.4	78°31.3	80°26.0	109°44.9
6	359°47.7	16.7'	S 05°11.2	-14.0'	54.7'	88°51.7	75°14.4	55°47.0	10°01.9	44° 19.4	78°59.2	80°56.0	110°13.3
7	14°23.4	16.7'	05°25.2	-14.0'	54.7'	88°24.2	74°46.2	55°16.9	9°32.3	44°49.4	79°27.3	81°26.1	110°41.6
8	28°59.0	16.6'	05°39.2	-14.0'	54.7'	87°56.8	74°18.0	54°46.7	9°02.7	45° 19.4	79°55.3	81°56.3	111°10.0
9	43°34.6	16.6'	05°53.2	-14.0'	54.7'	87°29.3	73°49.8	54°16.6	8°33.2	45°49.4	80°23.4	82°26.4	111°38.3
10	58°10.2	16.5'	$06^{\circ}07.2$	-14.0'	54.7'	87°01.8	73°21.6	53°46.4	8°03.7	46° 19.5	80°51.5	82°56.6	112°06.7
11	72°45.8	16.5'	$06^{\circ}21.2$	-14.0'	54.8'	86°34.2	72°53.3	53°16.2	7°34.3	46°49.6	81°19.6	83°26.7	112°35.1
12	87°21.2	16.4'	S 06°35.1	-13.9'	54.8'	86°06.7	72°25.1	52°46.0	7°05.0	47° 19.7	81°47.8	83°56.9	113°03.4
13	101°56.7	16.4'	$06^{\circ}49.1$	-13.9'	54.8'	85°39.1	71°56.8	52°15.8	6°35.8	47° 49.8	82°16.0	84°27.2	113°31.8
14	116°32.1	16.4'	07°03.0	-13.9'	54.8'	85°11.5	71°28.5	51°45.5	6°06.7	48° 20.0	82°44.2	84°57.4	114°00.2
15	131°07.4	16.3'	$07^{\circ}16.9$	-13.9'	54.8'	84°43.9	71°00.1	51°15.2	5°37.8	48° 50.2	83°12.4	85°27.7	114°28.7
16	145°42.7	16.3'	07°30.8	-13.9'	54.9'	84°16.2	70°31.7	50°44.9	5°09.2	49°20.4	83°40.7	85°58.0	114°57.1
17	160°18.0	16.2'	07°44.7	-13.9'	54.9'	83°48.6	70°03.4	50°14.6	4°40.9	49° 50.7	84°09.0	86°28.3	115°25.5
18	174°53.2	16.1'	S 07°58.6	-13.8'	54.9'	83°20.9	69°35.0	49°44.2	4°13.0	50° 20.9	84°37.3	86°58.7	115°53.9
19	189°28.3	16.1'	$08^{\circ}12.4$	-13.8'	54.9'	82°53.1	69°06.5	49°13.9	3°45.8	50°51.2	85°05.6	87°29.0	116°22.4
20	204°03.4	16.0'	08°26.2	-13.8'	54.9'	82°25.4	68°38.1	48°43.5	3°19.5	51°21.5	85°34.0	87°59.4	116°50.8
21	218°38.5	16.0'	08°40.0	-13.8'	55.0'	81°57.6	68°09.6	48°13.0		51°51.9	86°02.4	88°29.9	117°19.3
22	233°13.5	15.9'	08°53.8	-13.8'	55.0'	81°29.8	67°41.1	47°42.6		52° 22.3	86°30.8	89°00.3	117°47.7
23	247°48.4	15.9'	09°07.6	-13.7'	55.0'	81°02.0	67°12.5	47°12.1		52° 52.7	86°59.2	89°30.8	118°16.2
4 th	SD	= 14.9'	Mer. pas	s. 06:01					Sun S	5D = 16.3'			

h		Моо	n (5 th Ja	n)			Lunar D	istance (objects	with larg	est hourly	LD delta)	
Fri	GHA	ν	Dec	d	HP	-Sun	-Mars	-Antares	-Venus	+Spica	+Regulus	+Procyon	+Pollux
0	262°23.2	15.8'	S 09°21.3	-13.7'	55.0'	80°34.2	66°44.0	46°41.6	43°58.7		53°23.1	87°27.7	90°01.3
1	276°58.0	15.7'	09°35.1	-13.7'	55.1'	80°06.3	66° 15.4	46°11.0	43°31.5		53°53.5	87°56.2	90°31.8
2	291°32.8	15.7'	09°48.8	-13.7'	55.1'	79°38.4	65°46.8	45°40.5	43°04.3		54°24.0	88°24.7	91°02.4
3	306°07.4	15.6'	10°02.4	-13.6'	55.1'	79°10.5	65°18.1	45°09.9	42°37.0		54°54.5	88°53.3	91°33.0
4	320°42.1	15.5'	$10^{\circ}16.1$	-13.6'	55.1'	78°42.5	64°49.5	44°39.3	42°09.8		55°25.1	89°21.9	92°03.6
5	335°16.6	15.5'	10°29.7	-13.6'	55.2'	78°14.5	64°20.8	44°08.6	41°42.5		55°55.7	89°50.5	92°34.2
6	349°51.1	15.4'	S 10°43.3	-13.6'	55.2'	77°46.5	63°52.1	43°37.9	41°15.2		56°26.3	90°19.1	93°04.9
7	4°25.5	15.3'	10°56.8	-13.5'	55.2'	77°18.5	63°23.3	43°07.2	40°47.8		56°56.9	90°47.8	93°35.6
8	18°59.8	15.3'	11°10.4	-13.5'	55.2'	76°50.4	62°54.5	42°36.5	40°20.4		57°27.5	91°16.5	94°06.3
9	33°34.1	15.2'	11°23.9	-13.5'	55.3'	76°22.3	62°25.7	42°05.7	39°53.1		57°58.2	91°45.2	94°37.1
10	48°08.3	15.1'	11°37.3	-13.4'	55.3'	75°54.2	61°56.9	41°34.9	39°25.6	4°40.3	58°29.0	92°13.9	95°07.9
11	62°42.4	15.0'	11°50.8	-13.4'	55.3'	75°26.0	61°28.0	41°04.1	38°58.2	5°09.0	58°59.7	92°42.7	95°38.7
12	77°16.4	15.0'	S 12°04.2	-13.4'	55.3'	74°57.8	60°59.1	40°33.3	38°30.7	5°38.2	59°30.5	93°11.5	96°09.5
13	91°50.4	14.9'	12°17.5	-13.3'	55.4'	74°29.6	60°30.2	40°02.4	38°03.3	6°07.7	60°01.3	93°40.3	96°40.4
14	106°24.3	14.8'	12°30.9	-13.3'	55.4'	74°01.4	60°01.2	39°31.5	37°35.7	6°37.4	60°32.2	94°09.2	97°11.3
15	120°58.1	14.7'	12°44.2	-13.3'	55.4'	73°33.1	59°32.2	39°00.5	37°08.2	7°07.3	61°03.1	94°38.1	97°42.3
16	135°31.9	14.7'	12°57.4	-13.2'	55.5'	73°04.8	59°03.2	38°29.5	36°40.7	7°37.4	61°34.0	95°07.0	98° 13.2
17	150°05.5	14.6'	13°10.6	-13.2'	55.5'	72°36.4	58°34.2	37°58.5	36°13.1	8°07.6	62°04.9	95°35.9	98°44.2
18	164°39.1	14.5'	S 13°23.8	-13.1'	55.5'	72°08.1	58°05.1	37°27.5	35°45.5	8°37.9	62°35.9	96°04.9	99° 15.3
19	179°12.6	14.4'	13°36.9	-13.1'	55.5'	71°39.6	57°36.0	36°56.4	35°17.8	9°08.4	63°06.9	96°33.8	99°46.4
20	193°46.0	14.3'	13°50.0	-13.1'	55.6'	71°11.2	57°06.8	36°25.3	34°50.2	9°39.0	63°38.0	97°02.9	100° 17.5
21	208°19.3	14.2'	14°03.1	-13.0'	55.6'	70°42.7	56° 37.7	35°54.1	34°22.5	10°09.6	64°09.1	97°31.9	100°48.6
22	222°52.5	14.1'	$14^{\circ}16.1$	-13.0'	55.6'	70°14.2	56°08.4	35°22.9	33°54.8	10°40.4	64°40.2	98°01.0	101°19.8
23	237°25.6	14.0'	$14^{\circ}29.1$	-12.9'	55.7'	69°45.7	55°39.2	34°51.7	33°27.1	11°11.2	65°11.4	98°30.1	101°51.0
5 th	SD	= 15.0'	Mer. pas	s. 06:42					Sun S	D = 16.3'			

h		Моо	n (6 th Ja	n)			Lunar D	istance (objects	with larg	est hourly	LD delta))
Sat	GHA	ν	Dec	d	HP	-Sun	-Mars	-Antares	-Venus	+Spica	+Regulus	+Procyon	+Pollux
0	251°58.7	14.0'	S 14°42.0	-12.9'	55.7'	69° 17.1	55°09.9	34°20.5	32°59.4	11°42.0	65°42.5	98°59.2	102°22.3
1	266°31.6	13.9'	14°54.8	-12.8'	55.7'	68°48.5	54°40.6	33°49.2	32°31.6	12°13.0	66°13.8	99°28.3	102°53.5
2	281°04.5	13.8'	15°07.7	-12.8'	55.7'	68° 19.8	54°11.3	33°17.9	32°03.8	12°44.0	66°45.0	99°57.5	103°24.9
3	295°37.3	13.7'	15°20.4	-12.7'	55.8'	67°51.2	53°41.9	32°46.5	31°36.0	13°15.1	67°16.3	100°26.7	103°56.2
4	310°10.0	13.6'	15°33.1	-12.7'	55.8'	67°22.5	53°12.5	32°15.1	31°08.1	13°46.2	67° 47.7	100°56.0	104°27.6
5	324°42.5	13.5'	15°45.8	-12.6'	55.8'	66°53.7	52°43.0	31°43.7	30°40.3	14°17.4	68° 19.0	101°25.2	104°59.0
6	339°15.0	13.4'	S 15°58.4	-12.6'	55.9'	66°24.9	52°13.5	31°12.2	30°12.4	14°48.6	68° 50.5	101°54.5	105°30.5
7	353°47.4	13.3'	$16^{\circ}11.0$	-12.5'	55.9'	65°56.1	51°44.0	30°40.7	29°44.5	15°19.9	69°21.9	102°23.8	106°02.0
8	8°19.7	13.2'	16°23.5	-12.4'	55.9'	65°27.2	51°14.5	30°09.2	29°16.6	15°51.3	69°53.4	102°53.1	106°33.5
9	22°51.9	13.1'	16°35.9	-12.4'	56.0'	64°58.3	50°44.9	29°37.6	28°48.6	16°22.7	70°24.9	103°22.5	107°05.1
10	37°24.0	13.0'	16°48.3	-12.3'	56.0'	64°29.4	50°15.3	29°06.0	28°20.7	16°54.1	70°56.5	103°51.9	107°36.7
11	51°55.9	12.9'	$17^{\circ}00.6$	-12.3'	56.0'	64°00.4	49°45.6	28°34.3	27°52.7	17°25.6	71°28.1	104°21.3	108°08.3
12	66°27.8	12.8'	S 17°12.9	-12.2'	56.1'	63°31.4	49°15.9	28°02.6	27°24.7	17°57.1	71°59.7	104°50.7	108°40.0
13	80°59.6	12.7'	$17^{\circ}25.1$	-12.1'	56.1'	63°02.4	48°46.2	27°30.9	26°56.7	18°28.7	72°31.4	105°20.2	109°11.8
14	95°31.2	12.6'	17°37.2	-12.1'	56.1'	62°33.3	48°16.4	26°59.1	26°28.7	19°00.3	73°03.1	105°49.7	109°43.5
15	110°02.8	12.4'	17°49.3	-12.0'	56.2'	62°04.2	47°46.6	26°27.3	26°00.6	19°32.0	73°34.9	106°19.2	110°15.3
16	124°34.2	12.3'	18°01.3	-11.9'	56.2'	61°35.1	47°16.7	25°55.5	25°32.6	20°03.8	74°06.7	106°48.8	110°47.2
17	139°05.6	12.2'	18°13.2	-11.9'	56.2'	61°05.9	46°46.9	25°23.6	25°04.5	20°35.5	74°38.5	107°18.3	111°19.1
18	153°36.8	12.1'	S 18°25.1	-11.8'	56.3'	60°36.6	46°16.9	24°51.7	24°36.4	21°07.3	75° 10.4	107°47.9	111°51.0
19	168°07.9	12.0'	18°36.9	-11.7'	56.3'	60°07.4	45°47.0	24°19.7	24°08.3	21°39.2	75°42.3	108°17.5	112°22.9
20	182°38.9	11.9'	18°48.6	-11.7'	56.3'	59°38.0	45°17.0	23°47.7	23°40.2	22°11.1	76°14.2	108°47.2	112°54.9
21	197°09.8	11.8'	19°00.3	-11.6'	56.4'	59°08.7	44°47.0	23°15.7	23°12.1	22°43.1	76°46.2	109°16.8	113°27.0
22	211°40.6	11.7'	$19^{\circ}11.9$	-11.5'	56.4'	58°39.3	44°16.9	22°43.6	22°44.0	23°15.1	77° 18.3	109°46.5	113°59.1
23	226°11.3	11.5'	19°23.4	-11.4'	56.4'	58°09.9	43°46.8	22°11.5	22°15.9	23°47.1	77°50.4	110°16.2	114°31.2
6 th	SD	= 15.2'	Mer. pas	s. 07:26					Sun S	5D = 16.3'			

h		Mod	n (7 th Ja	n)			Lunar D	istance	(objects ι	with larg	est hourly	LD delta)	
Sun	GHA	ν	Dec	d	HP	-Sun	-Mars	-Venus	-Antares	+Spica	+Regulus	+Procyon	
0	240°41.8	11 4'	S 10°34.8	-11 3'	56 5'	57°40 4	43°16.7	21°47.8	21°303	24°19.2	78° 22 5	110°45 9	Ī

Sun	GHA	ν	Dec	d	HP	-Sun	-Mars	-Venus	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	240°41.8	11.4'	S 19°34.8	-11.3'	56.5'	57°40.4	43°16.7	21°47.8	21°39.3	24°19.2	78°22.5	110°45.9	115°03.4
1	255°12.3	11.3'	$19^{\circ}46.1$	-11.3'	56.5'	57°10.9	42°46.5	21°19.7	21°07.1	24°51.3	78°54.6	111°15.7	115°35.6
2	269°42.6	11.2'	19°57.4	-11.2'	56.5'	56°41.4	42°16.3	20°51.6	20°34.9	25°23.5	79°26.9	111°45.4	116°07.8
3	284°12.8	11.1'	20°08.6	-11.1'	56.6'	56°11.8	41°46.0	20°23.5	20°02.6	25°55.7	79°59.1	112°15.2	116°40.1
4	298°42.9	11.0'	$20^{\circ}19.7$	-11.0'	56.6'	55°42.2	41°15.7	19°55.4	19°30.3	26°28.0	80°31.4	112°45.0	117°12.4
5	313°12.8	10.8'	20°30.7	-10.9'	56.6'	55°12.5	40°45.4	19°27.3	18°57.9	27°00.3	81°03.7	113°14.9	117°44.8
6	327°42.6	10.7'	S 20°41.6	-10.8'	56.7'	54°42.8	40°15.0	18°59.3	18°25.5	27°32.7	81°36.1	113°44.7	118°17.2
7	342°12.4	10.6'	20°52.4	-10.7'	56.7'	54°13.1	39°44.6	18°31.3	17°53.0	28°05.1	82°08.5	114°14.6	118°49.7
8	356°42.0	10.5'	$21^{\circ}03.2$	-10.7'	56.7'	53°43.3	39°14.1	18°03.3	17°20.6	28°37.6	82°41.0	114°44.5	119°22.2
9	11°11.4	10.3'	21°13.8	-10.6'	56.8'	53°13.4	38°43.6	17°35.3	16°48.0	29°10.1	83° 13.5	115°14.4	119°54.7
10	25°40.8	10.2'	21°24.4	-10.5'	56.8'	52°43.6	38°13.1	17°07.4	16°15.4	29°42.6	83°46.0	115°44.3	
11	40°10.0	10.1'	$21^{\circ}34.8$	-10.4'	56.8'	52°13.7	37°42.6	16°39.5	15°42.8	30°15.2	84°18.6	116°14.2	
12	54°39.1	10.0'	S 21°45.2	-10.3'	56.9'	51°43.7	37°12.0	16°11.7	15°10.2	30°47.8	84°51.3	116°44.2	
13	69°08.1	9.8'	$21^{\circ}55.5$	-10.2'	56.9'	51°13.7	36°41.3	15°44.0	14°37.5	31°20.5	85°23.9	$117^{\circ}14.1$	
14	83°36.9	9.7'	22°05.7	-10.1'	56.9'	50°43.7	36°10.6	15°16.3	14°04.8	31°53.2	85°56.7	117°44.1	
15	98°05.6	9.6'	22° 15.7	-10.0'	57.0'	50°13.6	35°39.9	14°48.8	13°32.0	32°26.0	86°29.4	118°14.1	
16	112°34.2	9.5'	22°25.7	-9.9'	57.0'	49°43.5	35°09.2	14°21.3	12°59.2	32°58.8	87°02.2	118°44.1	
17	127°02.7	9.3'	22°35.5	-9.8'	57.1'	49°13.4	34°38.4	13°53.9	12°26.3	33°31.7	87°35.1	119°14.1	
18	141°31.1	9.2'	S 22°45.3	-9.6'	57.1'	48°43.2	34°07.5	13°26.7	11°53.4	34°04.6	88° 08.0	119°44.2	
19	155°59.3	9.1'	22°54.9	-9.5'	57.1'	48°12.9	33°36.7	12°59.6	11°20.5	34°37.5	88°40.9		
20	170°27.4	9.0'	23°04.5	-9.4'	57.2'	47°42.6	33°05.8	12°32.8	10°47.5	35°10.5	89° 13.9		
21	184°55.3	8.8'	$23^{\circ}13.9$	-9.3'	57.2'	47°12.3	32°34.8	12°06.0	10°14.5	35°43.6	89°47.0		
22	199°23.2	8.7'	23°23.2	-9.2'	57.2'	46°42.0	32°03.9	11°39.6	9°41.5	36°16.7	90°20.0		
23	213°50.9	8.6'	23°32.4	-9.1'	57.3'	3' 46°11.6 31°32.8 11°13.4 9°08.4 36°49.8 90°53.2							
7 th	SD	= 15.4'	Mer. pas	s. 08:14		$Sun\;SD=16.3'$							

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

Mon	GHA	ν	Dec	d	HP	-Sun	-Mars	-Venus	± Antares	+Spica	+Arcturus	+Regulus
0	228°18.4	8.4'	S 23°41.5	-9.0'	57.3'	45°41.1	31°01.8	10°47.4	8°35.3	37°23.0	48°59.9	91°26.3
1	242°45.9	8.3'	23°50.4	-8.8'	57.3'	45°10.6	30°30.7	10°21.9	8°02.2	37°56.2	49°24.3	91°59.5
2	257°13.2	8.2'	23°59.3	-8.7'	57.4'	44°40.1	29°59.6	9°56.7	7°29.0	38°29.5	49°48.9	92°32.8
3	271°40.4	8.1'	24°08.0	-8.6'	57.4'	44°09.6	29°28.4	9°31.9	6°55.8	39°02.8	50°13.7	93°06.1
4	286°07.5	7.9'	24°16.6	-8.5'	57.5'	43°39.0	28°57.3	9°07.7	6°22.6	39°36.2	50°38.6	93°39.5
5	300°34.4	7.8'	24°25.0	-8.3'	57.5'	43°08.3	28°26.0	8°44.1	5°49.5	40°09.6	51°03.7	94°12.9
6	315°01.2	7.7'	S 24°33.4	-8.2'	57.5'	42°37.6	27°54.8	8°21.1	5°16.3	40°43.1	51°28.9	94°46.3
7	329°27.9	7.6'	24°41.6	-8.1'	57.6'	42°06.9	27°23.5	7°59.0	4°43.1	41°16.6	51°54.2	95° 19.8
8	343°54.5	7.4'	24°49.6	-7.9'	57.6'	41°36.1	26° 52.2	7°37.8	4°10.0	41°50.2	52°19.7	95°53.3
9	358°20.9	7.3'	24°57.6	-7.8'	57.6'	41°05.3	26°20.8		3°37.0	42°23.8	52°45.4	96°26.9
10	12°47.2	7.2'	25°05.4	-7.7'	57.7'	40°34.5	25°49.5		3°04.3	42°57.4	53°11.1	97°00.5
11	27°13.4	7.1'	$25^{\circ}13.1$	-7.5'	57.7'	40°03.6	25° 18.1		2°31.8	43°31.1	53°37.1	97°34.2
12	41°39.4	6.9'	S 25°20.6	-7.4'	57.7'		24°46.6		2°00.0	44°04.8	54°03.1	98°07.9
13	56°05.4	6.8'	$25^{\circ}28.0$	-7.3'	57.8'		24° 15.2			44°38.6	54°29.3	98°41.7
14	70°31.2	6.7'	25°35.2	-7.1'	57.8'		23°43.7			45°12.5	54°55.6	99° 15.5
15	84°56.8	6.6'	25°42.3	-7.0'	57.9'		23°12.2			45°46.3	55°22.0	99°49.3
16	99°22.4	6.4'	25°49.3	-6.8'	57.9'		22°40.7			46°20.3	55°48.6	100°23.2
17	113°47.8	6.3'	25°56.1	-6.7'	57.9'		22°09.2			46°54.2	56°15.3	100°57.1
18	128°13.2	6.2'	S 26°02.8	-6.5'	58.0'		21°37.6			47°28.3	56°42.1	101°31.1
19	142°38.4	6.1'	26°09.3	-6.4'	58.0'		21°06.0			48°02.3	57°09.0	102°05.2
20	157°03.4	6.0'	26° 15.7	-6.2'	58.0'		20°34.4			48°36.4	57°36.1	102°39.2
21	171°28.4	5.8'	26°21.9	-6.1'	58.1'		20°02.9		3°20.3	49°10.6	58°03.2	103° 13.3
22	185°53.3	5.7'	26°27.9	-5.9'	58.1'		19°31.3		3°53.8	49°44.8	58°30.5	103°47.5
23	200°18.0	5.6'	26°33.8	-5.7'	58.1'		18°59.6		4°27.5	50°19.0	58°57.9	104°21.7
8 th	SD :	= 15.6'	Mer. pas	s. 09:07	,				$Sun\;SD=1$	6.3'		

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

Tue	GHA	ν	Dec	d	HP	-Mars	+Antares	+Venus	+Hadar	+Spica	+Arcturus	+Acrux	+Regulus
0	214°42.6	5.5'	S 26°39.6	-5.6'	58.2'	18°28.0	5°01.3			50°53.3	59°25.4		104°56.0
1	229°07.1	5.4'	26°45.2	-5.4'	58.2'	17°56.4	5°35.3			51°27.7	59°53.0		105°30.3
2	243°31.5	5.3'	$26^{\circ}50.6$	-5.3'	58.3'	17°24.9	6°09.4			52°02.0	60°20.7		106°04.6
3	257°55.8	5.2'	26°55.8	-5.1'	58.3'	16°53.3	6°43.7			52°36.5	60°48.5		106°39.0
4	272°20.0	5.1'	27°00.9	-4.9'	58.3'	16°21.7	7° 17.9			53°10.9	61°16.5		107°13.4
5	286°44.0	5.0'	27°05.8	-4.8'	58.4'	15°50.2	7°52.3			53°45.5	61°44.5		107°47.9
6	301°08.0	4.9'	S 27°10.6	-4.6'	58.4'	15°18.7	8°26.7			54°20.0	62°12.6		108°22.4
7	315°31.9	4.8'	$27^{\circ}15.2$	-4.4'	58.4'	14°47.3	9°01.2	8°44.1		54° 54.6	62°40.8		108°57.0
8	329°55.6	4.7'	$27^{\circ}19.6$	-4.2'	58.5'	14°15.9	9°35.8	9°08.7		55°29.3	63°09.1		109°31.6
9	344°19.3	4.6'	27°23.8	-4.1'	58.5'	13°44.5	10° 10.4	9°34.0		56°04.0	63°37.5		110°06.2
10	358°42.9	4.5'	27°27.9	-3.9'	58.5'	13°13.3	10°45.1	9°59.9		56°38.7	64°06.0		110°40.9
11	13°06.3	4.4'	27°31.8	-3.7'	58.6'	12°42.1	11°19.8	10°26.4		57° 13.5	64°34.6		111°15.7
12	27°29.7	4.3'	S 27°35.5	-3.5'	58.6'	12°11.1	11°54.6	10°53.4		57°48.3	65°03.3		111°50.5
13	41°53.0	4.2'	27°39.0	-3.3'	58.6'	11°40.2	12°29.4	11°20.9		58°23.2	65°32.1		112°25.3
14	56°16.2	4.1'	27°42.3	-3.2'	58.7'	11°09.4	13°04.3	11°48.7	47° 12.7	58°58.1	66°00.9		113°00.1
15	70°39.3	4.0'	27°45.5	-3.0'	58.7'	10°38.8	13°39.2	12°16.9	47°28.2	59°33.1	66°29.9		113°35.0
16	85°02.3	3.9'	27°48.5	-2.8'	58.7'	10°08.5	14°14.2	12°45.4	47°44.0	60°08.1	66°58.9	59°26.7	114°10.0
17	99°25.3	3.9'	27°51.3	-2.6'	58.8'	9°38.4	14°49.2	13°14.2	48°00.0	60°43.1	67°28.0	59°42.1	114°45.0
18	113°48.1	3.8'	S 27°53.9	-2.4'	58.8'	9°08.7	15°24.2	13°43.3	48° 16.4	61° 18.2	67° 57.2	59°57.7	115° 20.0
19	128°10.9	3.7'	27°56.3	-2.2'	58.8'	8°39.3	15°59.4	14°12.7	48°33.0	61°53.3	68°26.5	60°13.4	115°55.1
20	142°33.6	3.6'	27°58.6	-2.1'	58.9'	8°10.4	16°34.5	14°42.2	48°49.9	62°28.5	68°55.8	60°29.3	116°30.2
21	156°56.3	3.6'	28°00.6	-1.9'	58.9'	7°42.0	17°09.7	15°12.0	49°07.0	63°03.7	69°25.2	60°45.5	117°05.4
22	171°18.8	3.5'	28°02.5	-1.7'	58.9'	7°14.3	17°44.9	15°41.9	49°24.4	63°38.9	69°54.7	61°01.8	117° 40.5
23	185°41.3	3.4'	28°04.2	-1.5'	59.0'	6°47.4	18°20.2	16°12.1	49°42.1	64°14.2	70°24.3	61°18.2	118°15.8
9 th	SD =	= 15.9'	Mer. pas	s. 10:05	i								

h Moon (10th Jan)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	+Mars	+Venus	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus	+Regulus
0	200°03.7	3.4'	S 28°05.6	-1.3'	59.0'		16°42.4	18°55.5	45°59.6	50°00.0	64°49.6	70°54.0	118°51.0
1	214°26.1	3.3'	28°06.9	-1.1'	59.0'		17°12.8	19°30.9	46° 16.4	50°18.1	65°24.9	71°23.7	119°26.4
2	228°48.4	3.2'	28°08.0	-0.9'	59.1'		17°43.4	20°06.3	46°33.6	50°36.5	66°00.4	71°53.4	
3	243°10.7	3.2'	28°08.9	-0.7'	59.1'		18°14.1	20°41.8	46°51.1	50°55.1	66°35.8	72°23.3	
4	257°32.9	3.1'	28°09.6	-0.5'	59.1'		18°45.0	21°17.2	47°08.8	51°14.0	$67^{\circ}11.3$	72°53.2	
5	271°55.0	3.1'	$28^{\circ}10.1$	-0.3'	59.2'		19°16.0	21°52.8	47°26.8	51°33.1	67°46.8	73°23.2	
6	286°17.1	3.0'	S 28°10.4	-0.1'	59.2'		19°47.1	22°28.3	47°45.1	51°52.4	68°22.4	73°53.3	
7	300°39.1	3.0'	28°10.6	0.1'	59.2'		20°18.3	23°03.9	48°03.6	52°12.0	68°58.0	74°23.4	
8	315°01.1	3.0'	$28^{\circ}10.5$	0.3'	59.3'		20°49.6	23°39.6	48°22.4	52°31.8	69°33.7	74°53.5	
9	329°23.1	2.9'	28°10.2	0.5'	59.3'		21°21.0	24°15.3	48°41.5	52°51.8	70°09.3	75°23.8	
10	343°45.0	2.9'	28°09.7	0.7'	59.3'		21°52.5	24°51.0	49°00.8	53°12.0	70°45.1	75°54.1	
11	358°06.9	2.9'	28°09.0	0.9'	59.3'		22°24.1	25°26.8	49°20.3	53°32.4	71°20.8	76°24.4	
12	12°28.8	2.8'	S 28°08.1	1.1'	59.4'		22°55.7	26°02.6	49°40.1	53°53.0	71°56.6	76°54.8	
13	26°50.6	2.8'	28°07.0	1.3'	59.4'		23°27.5	26°38.4	50°00.2	54°13.8	72°32.5	77°25.3	
14	41°12.4	2.8'	28°05.8	1.5'	59.4'		23°59.3	27° 14.3	50° 20.5	54°34.8	73°08.3	77°55.8	
15	55°34.2	2.8'	28°04.3	1.7'	59.5'		24°31.2	27°50.2	50°41.0	54°56.1	73°44.2	78°26.3	
16	69°56.0	2.7'	28°02.6	1.9'	59.5'		25°03.2	28°26.1	51°01.7	55°17.5	74°20.2	78°57.0	
17	84°17.7	2.7'	28°00.7	2.1'	59.5'		25°35.2	29°02.1	51°22.7	55°39.1	74°56.1	79°27.6	
18	98°39.4	2.7'	S 27°58.6	2.3'	59.5'		26°07.3	29°38.1	51°43.8	56°00.9	75°32.2	79°58.3	
19	113°01.2	2.7'	27°56.3	2.5'	59.6'		26°39.5	30° 14.2	52°05.2	56°22.8	76°08.2	80°29.1	
20	127°22.9	2.7'	27°53.8	2.7'	59.6'	7°41.8	27°11.8	30°50.2	52°26.8	56°45.0	76°44.3	80°59.9	
21	141°44.6	2.7'	$27^{\circ}51.1$	2.9'	59.6'				New N			·	.
22	156°06.3	2.7'	27°48.2	3.1'	59.6'		_			Лооп ——			
23	170°28.0	2.7'	27°45.1	3.3'	59.7'		_		New N	Лооп ——			
10 th	SD :	= 16.1'	Mer. pas	s. 11:08	,								

h Moon (11th Jan)

		IVIOOII	(II Ja	·· <i>)</i>		
Thu	GHA	ν	Dec	d	HP	
0	184°49.7	2.7'	S 27°41.8	3.5'	59.7'	New Moon
1	199°11.5	2.7'	27°38.2	3.7'	59.7'	New Moon
2	213°33.2	2.7'	27°34.5	3.9'	59.7'	New Moon
3	227°54.9	2.8'	27°30.6	4.1'	59.8'	New Moon
4	242°16.7	2.8'	27°26.5	4.3'	59.8'	New Moon
5	256°38.5	2.8'	27°22.2	4.5'	59.8'	New Moon
6	271°00.3	2.8'	S 27°17.6	4.7'	59.8'	New Moon
7	285°22.1	2.9'	27°12.9	4.9'	59.9'	New Moon
8	299°44.0	2.9'	27°08.0	5.1'	59.9'	New Moon
9	314°05.9	2.9'	27°02.9	5.3'	59.9'	New Moon
10	328°27.8	3.0'	26°57.6	5.5'	59.9'	New Moon
11	342°49.7	3.0'	$26^{\circ}52.1$	5.7'	59.9'	New Moon
12	357°11.7	3.0'	S 26°46.4	5.9'	60.0'	New Moon
13	11°33.8	3.1'	26°40.4	6.1'	60.0'	New Moon
14	25°55.9	3.1'	26°34.3	6.3'	60.0'	New Moon
15	40°18.0	3.2'	$26^{\circ}28.1$	6.5'	60.0'	New Moon
16	54°40.2	3.2'	$26^{\circ}21.6$	6.7'	60.0'	New Moon
17	69°02.4	3.3'	26°14.9	6.9'	60.1'	New Moon
18	83°24.7	3.3'	S 26°08.0	7.1'	60.1'	New Moon
19	97°47.0	3.4'	26°01.0	7.2'	60.1'	New Moon
20	112°09.4	3.5'	25°53.7	7.4'	60.1'	New Moon
21	126°31.9	3.5'	25°46.3	7.6'	60.1'	New Moon
22	140°54.4	3.6'	25°38.6	7.8'	60.2'	New Moon
23	155°17.0	3.7'	25°30.8	8.0'	60.2'	New Moon
11 th	SD =	= 16.3′	Mer. pass	. 12:12	2	

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

Fri	GHA	ν	Dec	d	HP	-Rigel	-Aldebaran	-Jupiter	-Fomalhaut	-Saturn
0	169°39.6	3.7'	S 25°22.8	8.2'	60.2'			New 1	Moon	
1	184°02.4	3.8'	$25^{\circ}14.7$	8.4'	60.2'			New 1	Moon	
2	198°25.2	3.9'	25°06.3	8.5'	60.2'			New 1	Лооп ———	
3	212°48.0	3.9'	24°57.8	8.7'	60.2'			New 1	Лооп ———	
4	227°11.0	4.0'	24°49.1	8.9'	60.2'			95°06.7	36°23.3	33°47.7
5	241°34.0	4.1'	24°40.2	9.1'	60.3'			94°29.9	35°51.6	33°11.1
6	255°57.1	4.2'	S 24°31.1	9.2'	60.3'			93°53.1	35°20.0	32°34.5
7	270°20.3	4.3'	24°21.8	9.4'	60.3'			93°16.3	34°48.5	31°57.9
8	284°43.5	4.3'	24°12.4	9.6'	60.3'			92°39.5	34° 17.2	31°21.2
9	299°06.9	4.4'	24°02.8	9.8'	60.3'			92°02.6	33°46.0	30°44.6
10	313°30.3	4.5'	23°53.1	9.9'	60.3'			91°25.8	33° 15.0	30°08.0
11	327°53.8	4.6'	23°43.2	10.1'	60.3'			90°49.0	32°44.2	29°31.3
12	342°17.4	4.7'	S 23°33.1	10.3'	60.3'			90°12.1	32° 13.5	28°54.6
13	356°41.1	4.8'	23°22.8	10.4'	60.3'			89°35.2	31°43.1	28°18.0
14	11°04.9	4.9'	23°12.4	10.6'	60.4'			88°58.3	31° 12.8	27°41.3
15	25°28.7	5.0'	23°01.8	10.7'	60.4'			88°21.4	30°42.8	27°04.6
16	39°52.7	5.1'	22°51.1	10.9'	60.4'	119°42.9		87°44.5	30° 13.0	26°27.9
17	54°16.7	5.1'	22°40.2	11.0'	60.4'	119°15.2		87°07.6	29°43.4	25°51.2
18	68°40.9	5.2'	S 22°29.2	11.2'	60.4'	118°47.4		86°30.7	29° 14.1	25°14.5
19	83°05.1	5.3'	22°18.0	11.4'	60.4'	118° 19.5	119°27.9	85°53.8	28°45.0	24°37.8
20	97°29.5	5.4'	22°06.6	11.5'	60.4'	117°51.4	118°51.5	85°16.8	28° 16.2	24°01.1
21	111°53.9	5.5'	$21^{\circ}55.1$	11.6'	60.4'	117°23.3	118°15.0	84°39.9	27° 47.8	23°24.4
22	126°18.4	5.6'	$21^{\circ}43.5$	11.8'	60.4'	116°55.1	117°38.5	84°02.9	27° 19.6	22°47.7
23	140°43.1	5.7'	21°31.7	11.9'	60.4'	116°26.8	117°02.1	83°26.0	26°51.7	22°11.0
12 th	SD :	= 16.4	′ Mer. pas	s. 13:14						

h Moon (13th Jan)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Capella	-Aldebaran	-Rigel	-Jupiter	-Fomalhaut	-Saturn	+Altair
0	155°07.8	5.8'	S 21°19.7	12.1'	60.4'		116°25.6	115°58.4	82°49.0	26°24.2	21°34.3	
1	169°32.6	5.9'	21°07.7	12.2'	60.4'		115°49.1	115°29.9	82° 12.1	25°57.1	20°57.6	
2	183°57.5	6.0'	20°55.4	12.4'	60.4'		115°12.6	115°01.4	81°35.1	25°30.4	20°20.9	
3	198°22.6	6.1'	$20^{\circ}43.1$	12.5'	60.4'		114°36.1	114°32.8	80°58.2	25°04.1	19°44.2	
4	212°47.7	6.2'	20°30.6	12.6'	60.4'		113°59.5	114°04.1	80°21.2	24°38.2	19°07.6	
5	227°12.9	6.3'	20°18.0	12.8'	60.4'		113°23.0	113°35.3	79°44.2	24°12.7	18°30.9	
6	241°38.2	6.4'	S 20°05.2	12.9'	60.4'		112°46.5	113°06.4	79°07.3	23°47.8	17°54.3	
7	256°03.7	6.5'	19°52.3	13.0'	60.4'		112°09.9	112°37.5	78°30.3	23°23.3	17°17.6	
8	270°29.2	6.6'	19°39.3	13.1'	60.4'		111°33.4	112°08.5	77°53.3	22°59.4	16°41.0	
9	284°54.8	6.7'	19°26.2	13.3'	60.4'		110°56.8	111°39.5	77°16.4	22°36.0	16°04.4	
10	299°20.6	6.8'	19°12.9	13.4'	60.4'		110°20.3	111°10.4	76°39.4	22°13.3	15°27.8	
11	313°46.4	6.9'	18°59.5	13.5'	60.4'		109°43.7	110°41.2	76°02.4	21°51.1	14°51.3	
12	328°12.3	7.0'	S 18°46.0	13.6'	60.4'		109°07.1	110°12.0	75°25.5	21°29.6	14°14.8	
13	342°38.4	7.1'	18°32.4	13.7'	60.4'		108°30.6	109°42.8	74°48.5	21°08.8	13°38.3	38°11.4
14	357°04.5	7.2'	18°18.6	13.8'	60.4'	119°43.0	107°54.0	109°13.4	74°11.6	20°48.7	13°01.8	38°27.1
15	11°30.7	7.3'	18°04.8	14.0'	60.4'	119°08.4	107°17.4	108°44.1	73°34.6	20°29.4	12°25.4	38°43.2
16	25°57.1	7.4'	$17^{\circ}50.8$	14.1'	60.4'	118°33.8	106°40.9	108°14.6	72°57.7	20°10.9	11°49.1	38°59.6
17	40°23.5	7.5'	$17^{\circ}36.8$	14.2'	60.4'	117°59.2	106°04.3	107°45.2	72°20.8	19°53.2	11°12.8	39°16.5
18	54°50.0	7.6'	S 17°22.6	14.3'	60.4'	117°24.5	105°27.8	107° 15.7	71°43.8	19°36.4	10°36.5	39°33.8
19	69°16.7	7.7'	17°08.3	14.4'	60.4'	116°49.9	104°51.2	106°46.1	71°06.9	19°20.5	10°00.4	39°51.4
20	83°43.4	7.8'	$16^{\circ}53.9$	14.5'	60.4'	116°15.2	104°14.7	106°16.6	70°30.0		9°24.3	40°09.4
21	98°10.2	7.9'	$16^{\circ}39.4$	14.6'	60.4'	115°40.5	103°38.1	105°47.0	69°53.1		8°48.3	40°27.8
22	112°37.2	8.0'	16°24.9	14.7'	60.4'	115°05.8	103°01.6	105°17.3	69°16.2		8°12.5	40°46.5
23	127°04.2	8.1'	$16^{\circ}10.2$	14.8'	60.4'	114°31.0	102°25.1	104°47.6	68°39.3		7°36.9	41°05.5
13 th	SD	= 16.5	′ Mer. pas	s. 14:12	!							

h Moon (14th Jan)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Rigel	-Aldebaran	-Jupiter	±Saturn	+Altair	+Sun
0	141°31.3	8.2'	S 15°55.4	14.9'	60.4'	118°34.7	113°56.3	104°17.9	101°48.5	68°02.4	7°01.4	41°24.9	
1	155°58.5	8.3'	15°40.5	15.0'	60.4'	118°00.8	113°21.5	103°48.2	101°12.0	67°25.6	6°26.2	41°44.6	
2	170°25.9	8.4'	$15^{\circ}25.6$	15.0'	60.4'	117°26.9	112°46.8	103°18.4	100°35.5	66°48.7	5°51.3	42°04.6	
3	184°53.3	8.5'	$15^{\circ}10.5$	15.1'	60.4'	116°52.9	112°12.0	102°48.6	99°59.0	66°11.9	5°16.9	42°24.9	
4	199°20.8	8.6'	14°55.4	15.2'	60.4'	116° 18.9	111°37.2	102°18.8	99°22.5	65°35.0	4°43.0	42°45.5	
5	213°48.4	8.7'	14°40.2	15.3'	60.4'	115°44.9	111°02.4	101°49.0	98°46.0	64°58.2	4°10.0	43°06.4	
6	228°16.1	8.8'	S 14°24.9	15.4'	60.4'	115° 10.9	110°27.6	101°19.1	98°09.5	64°21.4		43°27.6	
7	242°43.8	8.9'	$14^{\circ}09.5$	15.5'	60.4'	114°36.9	109°52.8	100°49.2	97°33.1	63°44.6		43°49.0	
8	257°11.7	9.0'	13°54.1	15.5'	60.4'	114°02.8	109°18.0	100°19.3	96°56.6	63°07.8		44°10.8	
9	271°39.7	9.1'	13°38.6	15.6'	60.3'	113°28.7	108°43.2	99°49.4	96°20.2	62°31.1		44°32.7	
10	286°07.7	9.1'	13°22.9	15.7'	60.3'	112°54.7	108°08.4	99°19.5	95°43.8	61°54.3		44°54.9	
11	300°35.9	9.2'	$13^{\circ}07.3$	15.7'	60.3'	112°20.6	107°33.5	98°49.6	95°07.4	61°17.6		45° 17.4	
12	315°04.1	9.3'	S 12°51.5	15.8'	60.3'	111°46.5	106°58.7	98°19.7	94°31.0	60°40.9		45°40.1	41°34.0
13	329°32.4	9.4'	12°35.7	15.9'	60.3'	111°12.4	106°23.9	97°49.7	93°54.6	60°04.2		46°03.0	42°08.0
14	344°00.8	9.5'	12° 19.8	15.9'	60.3'	110°38.3	105°49.1	97°19.8	93°18.2	59°27.5		46° 26.2	42°42.1
15	358°29.3	9.6'	12°03.9	16.0'	60.3'	110°04.1	105°14.3	96°49.9	92°41.9	58°50.8		46°49.6	43°16.1
16	12°57.8	9.6'	11°47.9	16.1'	60.3'	109°30.0	104°39.5	96°19.9	92°05.5	58°14.2		47°13.1	43°50.0
17	27°26.5	9.7'	$11^{\circ}31.9$	16.1'	60.3'	108°55.9	104°04.7	95°50.0	91°29.2	57°37.5		47°36.9	44°24.0
18	41°55.2	9.8'	S 11°15.7	16.2'	60.2'	108°21.8	103°29.9	95°20.0	90°52.9	57°00.9		48°00.9	44°58.0
19	56°24.0	9.9'	$10^{\circ}59.6$	16.2'	60.2'	107°47.6	102°55.1	94°50.1	90°16.6	56°24.3	5°13.7	48° 25.0	45°31.9
20	70°52.9	10.0'	10°43.3	16.3'	60.2'	107° 13.5	102°20.3	94°20.1	89°40.3	55°47.7	5°47.8	48°49.4	46°05.9
21	85°21.9	10.0'	$10^{\circ}27.1$	16.3'	60.2'	106°39.4	101°45.6	93°50.2	89°04.1	55°11.2	6°22.4	49°13.9	46°39.8
22	99°50.9	10.1'	$10^{\circ}10.7$	16.4'	60.2'	106°05.3	101°10.8	93°20.3	88°27.9	54°34.6	6°57.2	49°38.6	47°13.7
23	114°20.0	10.2'	09°54.4	16.4'	60.2'	105°31.1	100°36.1	92°50.3	87°51.7	53°58.1	7°32.3	50°03.5	47°47.6
14 th	SD	$=16.5^{\prime}$	Mer. pass	s. 15:06					$Sun\;SD=1$	6.3'			

h Moon (15th Jan)

Mon	GHA	ν	Dec	d	HP	-Pollux	-Capella	-Aldebaran	-Jupiter	+Saturn	+Fomalhaut	+Sun	+Altair
0	128°49.2	10.3'	S 09°37.9	16.5'	60.2'		100°01.3	87°15.5	53°21.6	8°07.6	19°52.2	48°21.5	50°28.5
1	143°18.5	10.3'	$09^{\circ}21.5$	16.5'	60.1'		99°26.6	86°39.3	52°45.2	8°43.0	20°09.6	48°55.4	50°53.7
2	157°47.8	10.4'	09°05.0	16.5'	60.1'		98°51.9	86°03.2	52°08.7	9° 18.5	20°27.8	49° 29.2	51°19.0
3	172°17.2	10.5'	08°48.4	16.6'	60.1'		98° 17.2	85°27.0	51°32.3	9°54.1	20°46.8	50°03.0	51°44.5
4	186°46.7	10.5'	08°31.8	16.6'	60.1'		97°42.5	84°50.9	50°55.9	10°29.8	21°06.6	50°36.9	52°10.1
5	201°16.2	10.6'	$08^{\circ}15.2$	16.7'	60.1'		97°07.8	84°14.8	50°19.5	11°05.5	21°27.0	51°10.6	52°35.9
6	215°45.8	10.7'	S 07°58.5	16.7'	60.1'		96°33.2	83°38.8	49°43.2	11°41.3	21°48.0	51°44.4	53°01.8
7	230°15.5	10.7'	$07^{\circ}41.8$	16.7'	60.1'		95°58.5	83°02.8	49°06.8	12° 17.1	22°09.7	52° 18.2	53°27.8
8	244°45.3	10.8'	$07^{\circ}25.1$	16.8'	60.0'		95°23.9	82°26.8	48°30.5	12°52.9	22°32.0	52°51.9	53°54.0
9	259°15.1	10.9'	07°08.4	16.8'	60.0'		94°49.3	81°50.8	47°54.2	13°28.7	22°54.9	53°25.6	54°20.2
10	273°44.9	10.9'	$06^{\circ}51.6$	16.8'	60.0'		94°14.7	81°14.8	47°18.0	14°04.5	23°18.3	53°59.3	54°46.6
11	288°14.8	11.0'	06°34.8	16.8'	60.0'		93°40.2	80°38.9	46°41.7	14°40.3	23°42.2	54°33.0	55°13.1
12	302°44.8	11.0'	S 06°18.0	16.9'	60.0'		93°05.7	80°03.0	46°05.5	15° 16.2	24°06.5	55°06.7	55°39.7
13	317°14.8	11.1'	$06^{\circ}01.1$	16.9'	59.9'		92°31.1	79°27.1	45°29.4	15°52.0	24°31.3	55°40.3	56°06.4
14	331°44.9	11.1'	05°44.2	16.9'	59.9'		91°56.6	78°51.2	44°53.2	16°27.8	24°56.6	56° 13.9	56°33.2
15	346°15.1	11.2'	05°27.3	16.9'	59.9'		91°22.2	78°15.4	44°17.1	17°03.7	25°22.2	56° 47.5	57°00.1
16	0°45.3	11.3'	05°10.4	16.9'	59.9'		90°47.7	77°39.6	43°41.0	17°39.5	25°48.3	57°21.0	57°27.1
17	15°15.5	11.3'	04°53.5	16.9'	59.9'		90°13.3	77°03.8	43°04.9	18° 15.3	26°14.7	57°54.6	57°54.2
18	29°45.8	11.4'	S 04°36.6	16.9'	59.8'		89°38.9	76°28.1	42°28.9	18°51.1	26°41.4	58°28.1	58°21.4
19	44°16.2	11.4'	$04^{\circ}19.6$	17.0'	59.8'	119°28.9	89°04.5	75°52.4	41°52.9	19°26.8	27°08.4	59°01.6	58°48.7
20	58°46.6	11.4'	04°02.7	17.0'	59.8'	118°52.7	88°30.2	75°16.7	41°16.9	20°02.6	27°35.8	59°35.1	59°16.0
21	73°17.0	11.5'	03°45.7	17.0'	59.8'	118°16.6	87°55.8	74°41.0	40°40.9	20°38.3	28°03.4	60°08.5	59°43.4
22	87°47.5	11.5'	03°28.7	17.0'	59.8'	117°40.4	87°21.5	74°05.4	40°05.0	21°14.1	28°31.4	60°41.9	60°10.9
23	102°18.1	11.6'	03°11.7	17.0'	59.7'	117°04.3	86°47.3	73°29.8	39°29.1	21°49.8	28°59.5	61°15.3	60°38.4
15 th	SD	= 16.4'	Mer. pass	s. 15:57					Sun SD	= 16.3'	·		

h	Moon	(16th Jan)	١

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Pollux	-Capella	-Aldebaran	-Jupiter	+Saturn	+Fomalhaut	+Altair	+Sun
0	116°48.6	11.6'	S 02°54.8	17.0'	59.7'	116°28.3	86°13.0	72°54.2	38°53.2	22°25.5	29°28.0	61°06.1	61°48.7
1	131°19.2	11.7'	02°37.8	17.0'	59.7'	115°52.2	85°38.8	72°18.7	38°17.4	23°01.1	29°56.6	61°33.7	62°22.0
2	145°49.9	11.7'	02°20.8	17.0'	59.7'	115° 16.2	85°04.6	71°43.2	37°41.6	23°36.8	30°25.5	62°01.5	62°55.3
3	160°20.6	11.7'	02°03.8	17.0'	59.7'	114°40.2	84°30.5	71°07.7	37°05.8	24°12.4	30°54.5	62°29.3	63°28.6
4	174°51.3	11.8'	01°46.8	17.0'	59.6'	114°04.3	83°56.3	70°32.3	36°30.1	24°48.0	31°23.8	62°57.2	64°01.9
5	189°22.1	11.8'	$01^{\circ}29.8$	17.0'	59.6'	113°28.3	83°22.3	69°56.9	35°54.4	25°23.6	31°53.2	63°25.1	64°35.1
6	203°52.9	11.8'	S 01°12.9	17.0'	59.6'	112°52.4	82°48.2	69°21.5	35°18.7	25°59.1	32°22.8	63°53.1	65°08.3
7	218°23.7	11.9'	00°55.9	17.0'	59.6'	112° 16.5	82°14.2	68°46.1	34°43.0	26°34.7	32°52.6	64°21.1	65°41.5
8	232°54.6	11.9'	00°38.9	16.9'	59.6'	111°40.7	81°40.2	68°10.8	34°07.4	27°10.2	33°22.6	64°49.1	66° 14.7
9	247°25.5	11.9'	00°22.0	16.9'	59.5'	111°04.9	81°06.2	67°35.5	33°31.8	27°45.6	33°52.6	65°17.3	66°47.8
10	261°56.4	11.9'	S 00°05.1	16.9'	59.5'	110°29.1	80°32.3	67°00.3	32°56.3	28°21.1	34°22.8	65°45.4	67°20.9
11	276°27.3	12.0'	N 00°11.9	16.9'	59.5'	109°53.3	79°58.4	66°25.1	32°20.8	28°56.5	34°53.2	66°13.6	67°54.0
12	290°58.3	12.0'	N 00°28.8	16.9'	59.5'	109° 17.6	79°24.5	65°49.9	31°45.3	29°31.9	35°23.7	66°41.8	68°27.0
13	305°29.3	12.0'	00°45.7	16.9'	59.4'	108°41.9	78°50.7	65°14.8	31°09.8	30°07.3	35°54.2	67° 10.1	69°00.0
14	320°00.3	12.0'	$01^{\circ}02.5$	16.9'	59.4'	108°06.2	78° 16.9	64°39.7	30°34.4	30°42.6	36°24.9	67°38.4	69°33.0
15	334°31.3	12.1'	$01^{\circ}19.4$	16.8'	59.4'	107°30.6	77°43.2	64°04.6	29°59.0	31°17.9	36°55.7	68°06.8	70°05.9
16	349°02.4	12.1'	01°36.2	16.8'	59.4'	106°55.0	77°09.4	63°29.5	29°23.7	31°53.2	37°26.6		70°38.9
17	3°33.5	12.1'	$01^{\circ}53.0$	16.8'	59.3'	106°19.4	76°35.8	62°54.5	28°48.4	32°28.5	37°57.6		71°11.8
18	18°04.6	12.1'	N 02°09.8	16.8'	59.3'	105°43.9	76°02.1	62°19.6	28°13.1	33°03.7	38°28.7		71°44.6
19	32°35.7	12.1'	02°26.6	16.7'	59.3'	105°08.4	75°28.5	61°44.7	27°37.9	33°38.9	38°59.8		72°17.5
20	47°06.8	12.1'	02°43.3	16.7'	59.3'	104°32.9	74°55.0	61°09.8	27°02.7	34°14.1	39°31.1		72°50.3
21	61°37.9	12.1'	03°00.0	16.7'	59.2'	103°57.4	74°21.4	60°34.9	26°27.5	34°49.3	40°02.4		73°23.1
22	76°09.1	12.2'	03°16.7	16.6'	59.2'	103°22.0	73°48.0	60°00.1	25°52.4	35°24.4	40°33.7		73°55.8
23	90°40.2	12.2'	03°33.3	16.6'	59.2'	102°46.6	73°14.5	59°25.3	25°17.3	35°59.5	41°05.2		74°28.5
16 th	SD	$= 16.3^{\prime}$	Mer. pass	. 16:45					Sun SD	= 16.3'			

Moon (17th Jan)

h

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Pollux	-Betelgeuse	-Capella	-Aldebaran	-Jupiter	+Saturn	+Fomalhaut	+Sun
0	105°11.4	12.2'	N03°49.9	16.6'	59.2'	102°11.2	78°00.6	72°41.1	58°50.6	24°42.3	36°34.5	41°36.7	75°01.2
1	119°42.6	12.2'	04°06.5	16.5'	59.1'	101°35.9	77°27.7	72°07.8	58°15.9	24°07.3	37°09.6	42°08.2	75°33.9
2	134°13.7	12.2'	04°23.1	16.5'	59.1'	101°00.6	76°54.8	71°34.4	57°41.2	23°32.3	37°44.6	42°39.8	76°06.5
3	148°44.9	12.2'	04°39.6	16.5'	59.1'	100°25.3	76°21.9	71°01.2	57°06.6	22°57.4	38° 19.5	43°11.5	76°39.1
4	163°16.1	12.2'	04°56.1	16.4'	59.1'	99°50.1	75°49.1	70°27.9	56°32.0	22°22.5	38° 54.5	43°43.2	77°11.7
5	177°47.3	12.2'	$05^{\circ}12.5$	16.4'	59.0'	99°14.9	75° 16.3	69°54.8	55°57.5	21°47.7	39°29.4	44° 14.9	77°44.2
6	192°18.5	12.2'	N05°28.9	16.4'	59.0'	98°39.7	74°43.6	69°21.6	55°23.0	21°12.9	40°04.3	44° 46.7	78°16.7
7	206°49.7	12.2'	05°45.2	16.3'	59.0'	98°04.6	74° 10.9	68°48.5	54°48.5	20°38.2	40°39.1	45° 18.5	78°49.2
8	221°20.9	12.2'	$06^{\circ}01.5$	16.3'	59.0'	97°29.5	73°38.2	68° 15.5	54°14.1	20°03.5	41°13.9	45°50.4	79°21.6
9	235°52.0	12.2'	$06^{\circ}17.8$	16.2'	58.9'	96°54.4	73°05.6	67°42.5	53°39.7	19°28.8	41°48.7	46°22.3	79°54.0
10	250°23.2	12.2'	06°34.0	16.2'	58.9'	96°19.3	72°33.0	67°09.5	53°05.4	18°54.2	42°23.5	46°54.2	80°26.4
11	264°54.4	12.2'	06°50.2	16.1'	58.9'	95°44.3	72°00.5	66°36.6	52°31.1	18°19.7	42°58.2	47°26.1	80°58.8
12	279°25.6	12.2'	N07°06.3	16.1'	58.9'	95°09.3	71°28.0	66°03.7	51°56.8	17°45.2	43°32.9	47°58.1	81°31.1
13	293°56.7	12.1'	07°22.4	16.0'	58.8'	94°34.4	70°55.6	65°30.9	51°22.6	17°10.7	44°07.6	48°30.1	82°03.4
14	308°27.9	12.1'	07°38.4	16.0'	58.8'	93°59.5	70°23.2	64°58.1	50°48.4	16°36.4	44°42.2	49°02.1	82°35.6
15	322°59.0	12.1'	07°54.4	15.9'	58.8'	93°24.6	69° 50.9	64°25.4	50°14.3	16°02.0	45°16.8	49°34.1	83°07.8
16	337°30.1	12.1'	$08^{\circ}10.3$	15.9'	58.8'	92°49.7	69° 18.6	63°52.8	49°40.2	15°27.8	45°51.4	50°06.2	83°40.0
17	352°01.3	12.1'	08°26.2	15.8'	58.7'	92°14.9	68°46.4	63°20.2	49°06.2	14°53.6	46°25.9	50°38.3	84°12.2
18	6°32.4	12.1'	N08°42.0	15.7'	58.7'	91°40.1	68° 14.2	62°47.6	48°32.2	14°19.4	47°00.4	51°10.4	84°44.3
19	21°03.4	12.1'	08°57.7	15.7'	58.7'	91°05.3	67°42.0	62°15.1	47°58.3	13°45.4	47°34.9	51°42.5	85°16.4
20	35°34.5	12.0'	09°13.4	15.6'	58.7'	90°30.6	67°09.9	61°42.6	47°24.4	13°11.4	48°09.4	52°14.6	85°48.5
21	50°05.6	12.0'	09°29.0	15.6'	58.6'	89°55.9	66° 37.9	61°10.2	46°50.5	12°37.5	48°43.8	52°46.7	86°20.5
22	64°36.6	12.0'	09°44.6	15.5'	58.6'	89°21.2	66°05.9	60°37.9	46°16.7	12°03.8	49°18.2	53° 18.8	86°52.5
23	79°07.6	12.0'	10°00.1	15.4'	58.6'	88°46.6	65°34.0	60°05.6	45°42.9	11°30.1	49°52.5	53°51.0	87°24.5
17 th	SD	= 16.1'	Mer. pass	. 17:33					Sun SD =	= 16.3		·	

h Moon (18th Jan)

Thu	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Aldebaran	-Jupiter	+Saturn	+Fomalhaut	+Sun
0	93°38.6	12.0'	N 10°15.6	15.4'	58.5'		90°55.4	88°12.0	45°09.2	10°56.5	50°26.9	54°23.1	87°56.5
1	108°09.5	11.9'	10°30.9	15.3'	58.5'		90°23.1	87° 37.4	44°35.6	10°23.1	51°01.2	54°55.3	88°28.4
2	122°40.5	11.9'	10°46.3	15.2'	58.5'		89°50.9	87°02.8	44°02.0	9°49.8	51°35.4	55° 27.4	89°00.2
3	137°11.4	11.9'	$11^{\circ}01.5$	15.2'	58.5'		89° 18.7	86°28.3	43°28.4	9°16.6	52°09.6	55°59.6	89°32.1
4	151°42.3	11.9'	$11^{\circ}16.7$	15.1'	58.4'		88°46.5	85°53.9	42°54.9	8°43.7	52°43.8	56°31.7	90°03.9
5	166°13.2	11.8'	11°31.8	15.0'	58.4'		88°14.3	85° 19.4	42°21.4	8°11.0	53° 18.0	57°03.9	90°35.7
6	180°44.0	11.8'	N11°46.8	15.0'	58.4'		87° 42.2	84°45.0	41°48.0	7°38.5	53°52.2	57°36.0	91°07.5
7	195°14.8	11.8'	12°01.8	14.9'	58.4'		87° 10.1	84° 10.6	41°14.7	7°06.3	54° 26.3	58°08.2	91°39.2
8	209°45.6	11.7'	12°16.7	14.8'	58.3'		86°38.0	83°36.2	40°41.4	6°34.6	55°00.3	58° 40.3	92°10.9
9	224°16.3	11.7'	$12^{\circ}31.5$	14.7'	58.3'	119°41.8	86°05.9	83°01.9	40°08.1	6°03.3	55°34.4	59° 12.5	92°42.5
10	238°47.1	11.7'	12°46.3	14.7'	58.3'	119°07.5	85°33.9	82°27.6	39°34.9	5°32.6	56°08.4	59°44.6	93°14.2
11	253°17.7	11.6'	13°00.9	14.6'	58.3'	118°33.3	85°02.0	81°53.4	39°01.8	5°02.6	56°42.4	60°16.8	93°45.8
12	267°48.4	11.6'	N13°15.5	14.5'	58.2'	117°59.2	84°30.0	81° 19.1	38°28.7		57° 16.3	60°48.9	94°17.4
13	282°19.0	11.6'	13°30.0	14.4'	58.2'	117°25.0	83°58.1	80°44.9	37°55.7		57°50.3	61°21.1	94°48.9
14	296°49.6	11.5'	13°44.5	14.4'	58.2'	116°50.9	83°26.2	80° 10.8	37°22.8		58°24.2	61°53.2	95°20.4
15	311°20.1	11.5'	13°58.8	14.3'	58.1'	116°16.8	82°54.4	79°36.6	36°49.9		58° 58.0	62°25.3	95°51.9
16	325°50.6	11.5'	14°13.1	14.2'	58.1'	115°42.8	82°22.6	79°02.5	36°17.0		59°31.9	62°57.4	96°23.3
17	340°21.1	11.4'	14°27.3	14.1'	58.1'	115°08.8	81°50.8	78°28.4	35°44.3		60°05.7	63°29.5	96°54.7
18	354°51.5	11.4'	N 14°41.4	14.0'	58.1'	114°34.8	81°19.0	77°54.4	35°11.6		60°39.4	64°01.6	97°26.1
19	9°21.9	11.3'	14°55.4	13.9'	58.0'	114°00.8	80°47.3	77°20.4	34°38.9		61°13.2	64°33.7	97°57.5
20	23°52.3	11.3'	15°09.3	13.8'	58.0'	113°26.9	80° 15.7	76°46.4	34°06.4		61°46.9	65°05.7	98°28.8
21	38°22.6	11.3'	15°23.2	13.7'	58.0'	112°53.0	79°44.0	76°12.4	33°33.9		62°20.6	65°37.8	99°00.1
22	52°52.8	11.2'	15°36.9	13.7'	58.0'	112°19.1	79°12.4	75°38.5	33°01.5		62°54.2	66°09.8	99°31.4
23	67°23.0	11.2'	15°50.6	13.6'	57.9'	111°45.3	78°40.9	75°04.6	32°29.1		63°27.9	66°41.9	100°02.6
18 th	SD	= 16.0'	Mer. pass	. 18:21				Sui	n SD = 16.3'	at 0h; 16.2′	at 23h		

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

Fri	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Aldebaran	+Jupiter	+Saturn	+Fomalhaut	+Sun
0	81°53.2	11.1'	$N16^{\circ}04.1$	13.5'	57.9'	111°11.5	78°09.3	74°30.7	31°56.8		64°01.4	67°13.9	100°33.8
1	96°23.3	11.1'	$16^{\circ}17.6$	13.4'	57.9'	110°37.7	77°37.9	73°56.9	31°24.7		64°35.0	67°45.9	101°05.0
2	110°53.4	11.0'	16°31.0	13.3'	57.9'	110°03.9	77°06.4	73°23.1	30°52.5		65°08.5	68°17.9	101°36.1
3	125°23.5	11.0'	16°44.3	13.2'	57.8'	109°30.2	76°35.0	72°49.3	30°20.5		65°42.0	68°49.8	102°07.3
4	139°53.4	10.9'	16°57.5	13.1'	57.8'	108°56.5	76°03.6	72°15.6	29°48.6	5°48.2	66°15.5	69°21.8	102°38.3
5	154°23.4	10.9'	$17^{\circ}10.6$	13.0'	57.8'	108°22.8	75°32.3	71°41.9	29°16.7	6°18.7	66°49.0	69°53.8	103°09.4
6	168°53.3	10.8'	$N17^{\circ}23.5$	12.9'	57.8'	107°49.2	75°01.0	71°08.2	28°45.0	6°49.7	67°22.4	70°25.7	103°40.4
7	183°23.1	10.8'	17°36.4	12.8'	57.7'	107°15.6	74°29.7	70°34.5	28°13.3	7°21.0	67°55.8	70°57.6	104°11.4
8	197°52.9	10.7'	17°49.2	12.7'	57.7'	106°42.0	73°58.5	70°00.9	27°41.7	7°52.5	68°29.1	71°29.5	104°42.4
9	212°22.7	10.7'	18°01.9	12.6'	57.7'	106°08.4	73°27.3	69°27.3	27°10.3	8°24.3	69°02.5	72°01.4	105°13.3
10	226°52.4	10.6'	$18^{\circ}14.5$	12.5'	57.7'	105°34.9	72°56.2	68°53.7	26°38.9	8°56.3	69°35.8	72°33.3	105°44.2
11	241°22.0	10.6'	18°27.0	12.4'	57.6'	105°01.4	72°25.1	68°20.2	26°07.7	9°28.4	70°09.0	73°05.1	106°15.1
12	255°51.6	10.5'	N 18°39.4	12.3'	57.6'	104°27.9	71°54.0	67°46.7	25°36.6	10°00.6	70°42.3	73°36.9	106°46.0
13	270°21.2	10.5'	$18^{\circ}51.7$	12.2'	57.6'	103°54.5	71°23.0	67° 13.2	25°05.6	10°32.9	71°15.5	74°08.8	107°16.8
14	284°50.6	10.4'	19°03.8	12.1'	57.5'	103°21.1	70°52.0	66°39.7	24°34.7	11°05.2	71°48.7	74°40.6	107°47.6
15	299°20.1	10.4'	19°15.9	12.0'	57.5'	102°47.7	70°21.1	66°06.3	24°04.0	11°37.7	72°21.8	75°12.3	108°18.3
16	313°49.5	10.3'	19°27.8	11.8'	57.5'	102°14.3	69°50.2	65°32.9	23°33.4	12°10.2	72°55.0	75°44.1	108°49.1
17	328°18.8	10.3'	19°39.7	11.7'	57.5'	101°41.0	69°19.4	64°59.5	23°02.9	12°42.7	73°28.1	76°15.8	109°19.8
18	342°48.1	10.2'	N 19°51.4	11.6'	57.4'	101°07.7	68° 48.6	64°26.2	22°32.6	13°15.2	74°01.2	76°47.6	109°50.5
19	357°17.3	10.2'	20°03.0	11.5'	57.4'	100°34.4	68° 17.8	63°52.8	22°02.5	13°47.8	74°34.2	77°19.3	110°21.1
20	11°46.5	10.1'	20°14.5	11.4'	57.4'	100°01.2	67°47.1	63° 19.6	21°32.6	14°20.4	75°07.2	77°51.0	110°51.7
21	26°15.6	10.1'	$20^{\circ}25.9$	11.3'	57.4'	99°28.0	67° 16.4	62°46.3	21°02.8	14°53.0	75°40.2	78°22.6	111°22.3
22	40°44.6	10.0'	20°37.2	11.2'	57.3'	98°54.8	66° 45.8	62°13.1	20°33.2	15°25.6	76°13.2	78°54.3	111°52.9
23	55°13.7	10.0'	20°48.3	11.0'	57.3'	98°21.6	66°15.2	61°39.9	20°03.9	15°58.2	76°46.1	79°25.9	112°23.4
19 th	SD	$= 15.8^{\prime}$	Mer. pass	. 19:11					Sun SE	0 = 16.2'			

h		Moor	n (20 th Ja	n)			Lunar	Distance	(objects w	ith larges	t hourly	LD delta)	
Sat	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Aldebaran	+Jupiter	+Saturn	+Fomalhaut	+Sun
0	69°42.6	9.9'	N20°59.4	10.9'	57.3'	97°48.5	65°44.7	61°06.7	19°34.7	16°30.8	77°19.0	79°57.5	112°53.9
1	84°11.5	9.8'	21°10.3	10.8'	57.3'	97° 15.4	65°14.2	60°33.5	19°05.8	17°03.4	77°51.9	80°29.1	113°24.4
2	98°40.3	9.8'	21°21.1	10.7'	57.2'	96°42.3	64°43.8	60°00.4	18°37.2	17°36.0	78°24.8	81°00.6	113°54.9
3	113°09.1	9.7'	21°31.8	10.6'	57.2'	96°09.2	64°13.4	59°27.3	18°08.8	$18^{\circ}08.6$	78°57.6	81°32.2	114°25.3
4	127°37.9	9.7'	21°42.3	10.4'	57.2'	95°36.2	63°43.1	58°54.2	17°40.7	18°41.2	79°30.4	82°03.7	114°55.7
5	142°06.5	9.6'	$21^{\circ}52.8$	10.3'	57.2'	95°03.2	63°12.8	58°21.2	17°12.9	$19^{\circ}13.8$	80°03.2	82°35.2	115°26.1
6	156°35.2	9.6'	$N22^{\circ}03.1$	10.2'	57.1'	94°30.2	62°42.5	57°48.2	16°45.4	19°46.4	80°35.9	83°06.7	115°56.4
7	171°03.7	9.5'	22°13.3	10.1'	57.1'	93°57.3	62°12.3	57° 15.2	16°18.3	$20^{\circ}19.0$	81°08.7	83°38.1	116°26.7
8	185°32.2	9.5'	22°23.3	9.9'	57.1'	93°24.3	61°42.2	56° 42.2	15°51.6	20°51.5	81°41.4	84°09.6	116°57.0
9	200°00.7	9.4'	22°33.3	9.8'	57.1'	92°51.4	61°12.1	56°09.3	15°25.3	$21^{\circ}24.1$	82°14.0	84°41.0	117°27.3
10	214°29.1	9.3'	22°43.1	9.7'	57.0'	92° 18.5	60°42.1	55°36.4	14°59.4	21°56.6	82°46.7	85°12.4	117°57.5
11	228°57.5	9.3'	22°52.8	9.6'	57.0'	91°45.7	$60^{\circ}12.1$	55°03.5	14°34.0	$22^{\circ}29.1$	83°19.3	85°43.7	118°27.7
12	243°25.8	9.2'	N23°02.3	9.4'	57.0'	91°12.9	59°42.2	54°30.6	14°09.2	23°01.6	83°51.9	86°15.1	118°57.9
13	257°54.0	9.2'	23°11.7	9.3'	57.0'	90°40.1	59°12.3	53°57.8	13°44.9	23°34.1	84°24.5	86°46.4	119°28.1
14	272°22.2	9.1'	23°21.0	9.2'	56.9'	90°07.3	58° 42.5	53°25.0	13°21.2	24°06.5	84°57.0	87°17.7	119°58.2
15	286°50.3	9.1'	23°30.2	9.0'	56.9'	89°34.6	58° 12.8	52°52.2	12°58.2	24°39.0	85°29.5	87°49.0	
16	301°18.4	9.0'	23°39.2	8.9'	56.9'	89°01.8	57°43.1	52° 19.5	12°36.0	25°11.4	86°02.0	88°20.2	
17	315°46.4	9.0'	23°48.1	8.8'	56.9'	88°29.1	57° 13.4	51°46.7	12°14.5	25°43.8	86°34.5	88°51.5	
18	330°14.4	8.9'	N23°56.8	8.6'	56.9'	87° 56.5	56° 43.8	51°14.0	11°53.9	26°16.2	87°06.9	89°22.7	
19	344°42.3	8.9'	24°05.5	8.5'	56.8'	87°23.8	56° 14.3	50°41.3	11°34.2	26°48.6	87°39.3	89°53.9	
20	359°10.2	8.8'	24°14.0	8.3'	56.8'	86°51.2	55°44.8	50°08.7		27°20.9	88°11.7	90°25.0	
21	13°38.0	8.8'	24°22.3	8.2'	56.8'	86° 18.6	55° 15.4	49°36.1		27°53.2	88°44.1	90°56.2	
22	28°05.8	8.7'	24°30.5	8.1'	56.8'	85°46.0	54°46.1	49°03.4		28°25.6	89°16.4	91°27.3	
23	42°33.5	8.7'	24°38.6	7.9'	56.7'	85° 13.5	54° 16.8	48°30.9		28°57.8	89°48.8	91°58.4	
SD = 15.6' Mer. pass. 20:03 $Sun SD = 16.2'$													

h		Moo	n (21 st Ja	n)			Lunar	Distance	(objects	with larg	est hourly	LD delta)	
Sun	GHA	ν	Dec	d	HP	-Arcturus	-Regulus	-Procyon	-Pollux	+Jupiter	+Achernar	+Saturn	+Fomalhaut
0	57°01.2	8.6'	N 24°46.5	7.8'	56.7'		84°41.0	53°47.6	47°58.3	29°30.1	87°58.0	90°21.1	92°29.4
1	71°28.9	8.6'	24°54.3	7.7'	56.7'		84°08.5	53°18.5	47°25.8	30°02.4	88°16.0	90°53.3	93°00.5
2	85°56.4	8.5'	25°02.0	7.5'	56.7'		83°36.0	52°49.4	46°53.3	30°34.6	88°34.0	91°25.6	93°31.5
3	100°24.0	8.5'	25°09.5	7.4'	56.6'		83°03.5	52°20.4	46°20.8	31°06.8	88°52.0	91°57.8	94°02.5
4	114°51.5	8.4'	$25^{\circ}16.8$	7.2'	56.6'		82°31.1	51°51.5	45°48.3	31°39.0	89°10.0	92°30.0	94°33.5
5	129° 18.9	8.4'	$25^{\circ}24.1$	7.1'	56.6'		81°58.7	51°22.6	45°15.9	32°11.2	89°28.0	93°02.2	95°04.4
6	143°46.3	8.4'	$N25^{\circ}31.1$	6.9'	56.6'		81°26.3	50°53.8	44°43.5	32°43.3	89°46.0	93°34.3	95°35.3
7	158° 13.7	8.3'	25°38.1	6.8'	56.6'		80°54.0	50°25.1	44°11.1	33°15.4	90°04.0	94°06.4	96°06.2
8	172°41.0	8.3'	25°44.9	6.6'	56.5'		80°21.6	49°56.5	43°38.7	33°47.6	90°21.9	94°38.6	96°37.1
9	187°08.3	8.2'	$25^{\circ}51.5$	6.5'	56.5'		79°49.3	49°27.9	43°06.4	34°19.6	90°39.8	95°10.6	97°07.9
10	201°35.5	8.2'	25°58.0	6.4'	56.5'		79°17.0	48°59.4	42°34.1	34°51.7	90°57.8	95°42.7	97°38.7
11	216°02.7	8.2'	26°04.4	6.2'	56.5'		78°44.8	48°31.0	42°01.8	35°23.8	91°15.6	96°14.7	98°09.5
12	230°29.9	8.1'	$N26^{\circ}10.6$	6.1'	56.4'		78°12.5	48°02.7	41°29.5	35°55.8	91°33.5	96°46.7	98°40.3
13	244°57.0	8.1'	$26^{\circ}16.6$	5.9'	56.4'		77°40.3	47°34.4	40°57.3	36°27.8	91°51.4	97°18.7	99°11.0
14	259°24.1	8.1'	26°22.5	5.8'	56.4'		77°08.1	47°06.3	40°25.1	36°59.8	92°09.2	97°50.7	99°41.7
15	273°51.1	8.0'	26°28.3	5.6'	56.4'		76°35.9	46°38.2	39°52.9	37°31.7	92°27.1	98°22.6	100°12.4
16	288° 18.1	8.0'	26°33.9	5.5'	56.4'		76°03.8	46°10.2	39°20.7	38°03.7	92°44.9	98°54.6	100°43.1
17	302°45.1	8.0'	26°39.3	5.3'	56.3'		75°31.6	45°42.3	38°48.5	38°35.6	93°02.6	99°26.5	101°13.7
18	317°12.1	7.9'	N 26°44.7	5.2'	56.3'		74°59.5	45°14.5	38°16.4	39°07.5	93°20.4	99°58.3	101°44.3
19	331°39.0	7.9'	26°49.8	5.0'	56.3'		74°27.5	44°46.8	37°44.3	39°39.4	93°38.1	100°30.2	102°14.9
20	346°05.9	7.9'	26°54.8	4.8'	56.3'	119°36.6	73°55.4	44°19.2	37°12.2	40°11.3	93°55.8	101°02.0	102°45.4
21	0°32.8	7.8'	$26^{\circ}59.7$	4.7'	56.2'	119°10.7	73°23.4	43°51.7	36°40.2	40°43.1	94°13.5	101°33.8	103°16.0
22	14°59.6	7.8'	27°04.4	4.5'	56.2'	118°44.8	72°51.3	43°24.3	36°08.1	41°14.9	94°31.2	102°05.6	103°46.5
23	29°26.4	7.8'	27°08.9	4.4'	56.2'	118°18.9	72°19.4	42°57.0	35°36.1	41°46.7	94°48.8	102°37.4	104°16.9

SD = 15.5' Mer. pass. 20:58

21st

Moon (22nd Jan)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Procyon	-Pollux	+Aldebaran	+Jupiter	+Saturn	+Fomalhaut
0	43°53.2	7.8'	N27°13.3	4.2'	56.2'		71°47.4	42°29.8	35°04.1	12°47.6	42°18.5	103°09.1	104°47.4
1	58°20.0	7.8'	27°17.5	4.1'	56.2'		71°15.4	42°02.7	34°32.2	13°09.7	42°50.2	103°40.9	105°17.8
2	72°46.8	7.7'	27°21.6	3.9'	56.1'		70°43.5	41°35.7	34°00.2	13°32.5	43°22.0	104°12.6	105°48.2
3	87°13.5	7.7'	27°25.5	3.8'	56.1'		70°11.6	41°08.9	33°28.3	13°55.8	43°53.7	104°44.2	106°18.5
4	101°40.2	7.7'	27°29.3	3.6'	56.1'		69°39.7	40°42.1	32°56.4	14°19.6	44°25.4	105°15.9	106°48.9
5	116°06.9	7.7'	27°32.9	3.5'	56.1'		69°07.8	40°15.5	32°24.5	14°44.0	44°57.1	105°47.5	107°19.1
6	130°33.6	7.7'	N 27°36.4	3.3'	56.1'		68°36.0	39°49.0	31°52.7	15°08.8	45°28.7	106°19.1	107°49.4
7	145°00.2	7.7'	27°39.7	3.2'	56.0'		68°04.2	39°22.6	31°20.8	15°33.9	46°00.4	106°50.7	108°19.7
8	159°26.9	7.6'	27°42.8	3.0'	56.0'		67°32.4	38°56.4	30°49.0	15°59.5	46°32.0	107°22.3	108°49.9
9	173°53.6	7.6'	27°45.8	2.8'	56.0'		67°00.6	38°30.3	30°17.2	16°25.4	47°03.6	107°53.9	109°20.0
10	188°20.2	7.6'	27°48.7	2.7'	56.0'		66°28.8	38°04.4	29°45.5	16°51.6	47°35.2	108°25.4	109°50.2
11	202°46.8	7.6'	27°51.4	2.5'	56.0'	119°59.0	65°57.1	37°38.5	29°13.7	17°18.1	48°06.7	108°56.9	110°20.3
12	217°13.4	7.6'	N 27°53.9	2.4'	55.9'	119°27.2	65°25.4	37°12.9	28°42.0	17°44.9	48°38.3	109°28.4	110°50.4
13	231°40.1	7.6'	27°56.3	2.2'	55.9'	118°55.5	64°53.7	36°47.4	28°10.3	18°11.9	49°09.8	109°59.9	111°20.4
14	246°06.7	7.6'	27°58.5	2.1'	55.9'	118°23.7	64°22.0	36°22.0	27°38.6	18°39.1	49°41.3	110°31.3	111°50.5
15	260°33.3	7.6'	28°00.5	1.9'	55.9'	117°52.0	63°50.4	35°56.8	27°07.0	19°06.5	50°12.8	111°02.8	112°20.5
16	274°59.9	7.6'	28°02.4	1.7'	55.9'	117°20.4	63°18.7	35°31.8	26°35.3	19°34.2	50°44.2	111°34.2	112°50.4
17	289°26.5	7.6'	28°04.2	1.6'	55.8'	116°48.7	62°47.1	35°06.9	26°03.7	20°02.0	51°15.6	112°05.5	113°20.4
18	303°53.2	7.6'	N 28°05.8	1.4'	55.8'	116°17.1	62°15.5	34°42.2	25°32.1	20°29.9	51°47.1	112°36.9	113°50.2
19	318°19.8	7.6'	28°07.2	1.3'	55.8'	115°45.4	61°44.0	34°17.7	25°00.6	20°58.0	52°18.5	113°08.3	114°20.1
20	332°46.4	7.6'	28°08.5	1.1'	55.8'	115°13.8	61°12.4	33°53.4	24°29.0	21°26.3	52°49.8	113°39.6	114°49.9
21	347°13.1	7.7'	28°09.6	1.0'	55.8'	114°42.2	60°40.9	33°29.3	23°57.5	21°54.7	53°21.2	114°10.9	115°19.7
22	1°39.7	7.7'	28°10.5	0.8'	55.7'	114°10.7	60°09.4	33°05.4	23°26.0	22°23.2	53°52.6	114°42.2	115°49.5
23	16°06.4	7.7'	28°11.3	0.6'	55.7'	113°39.1	59°37.9	32°41.7	22°54.5	22°51.8	54°23.9	115°13.5	116°19.2
22 nd	SD =	= 15.3′	Mer. pass	. 21:53	3								

h		Мооі	n (23 rd Ja	n)			Lunar	Distance	(objects	with larges	t hourly l	D delta)	
Tue	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	-Pollux	+Aldebaran	+Jupiter	+Saturn	+Fomalhaut
0	30°33.1	7.7'	N 28°12.0	0.5'	55.7'	113°07.6	107°21.2	59°06.4	22°23.1	23°20.5	54°55.2	115°44.7	116°48.9
1	44°59.8	7.7'	28°12.5	0.3'	55.7'	112°36.1	106°54.7	58° 35.0	21°51.7	23°49.3	55°26.5	116° 15.9	117° 18.6
2	59°26.5	7.7'	28°12.8	0.2'	55.7'	112°04.6	106°28.1	58° 03.5	21°20.3	24°18.2	55°57.7	116°47.2	117°48.2
3	73°53.2	7.8'	28°13.0	0.0'	55.6'	111°33.1	106°01.6	57°32.1	20°48.9	24°47.2	56°29.0	117° 18.3	118° 17.8
4	88°20.0	7.8'	28°13.0	-0.1'	55.6'	111°01.7	105°35.0	57°00.7	20°17.5	25°16.2	57°00.2	117°49.5	118°47.3
5	102°46.8	7.8'	$28^{\circ}12.9$	-0.3'	55.6'	110°30.3	105°08.5	56°29.4	19°46.2	25°45.4	57°31.4	118°20.7	$119^{\circ}16.9$
6	117°13.6	7.8'	N 28°12.6	-0.4'	55.6'	109°58.9	104°41.9	55°58.0	19°14.9	26°14.5	58°02.6	118°51.8	119°46.3
7	131°40.4	7.9'	28°12.2	-0.6'	55.6'	109°27.5	104° 15.3	55°26.7	18°43.6	26°43.8	58°33.8	119°22.9	
8	146°07.3	7.9'	28°11.6	-0.7'	55.5'	108°56.1	103°48.7	54°55.4	18°12.4	27°13.1	59°04.9	119°54.0	
9	160°34.1	7.9'	$28^{\circ}10.9$	-0.9'	55.5'	108°24.7	103°22.1	54°24.1	17°41.1	27°42.5	59°36.1		
10	175°01.1	7.9'	28°10.0	-1.0'	55.5'	107°53.4	102°55.5	53°52.8	17°09.9	28°11.9	60°07.2		
11	189°28.0	8.0'	28°08.9	-1.2'	55.5'	107°22.1	102°29.0	53°21.6	16°38.8	28°41.3	60°38.3		
12	203°55.0	8.0'	N 28°07.7	-1.4'	55.5'	106°50.8	102°02.4	52°50.3	16°07.6	29°10.8	61°09.3		
13	218°22.0	8.1'	28°06.4	-1.5'	55.5'	106°19.5	101°35.8	52° 19.1	15°36.5	29°40.3	61°40.4		
14	232°49.1	8.1'	28°04.8	-1.7'	55.4'	105°48.2	101°09.2	51°47.9	15°05.4	30°09.9	62°11.4		
15	247°16.1	8.1'	28°03.2	-1.8'	55.4'	105°17.0	100°42.6	51°16.7	14°34.4	30°39.5	62°42.5		
16	261°43.3	8.2'	28°01.4	-2.0'	55.4'	104°45.8	100° 16.0	50°45.6	14°03.4	31°09.2	63°13.5		
17	276°10.4	8.2'	27°59.4	-2.1'	55.4'	104°14.5	99°49.4	50°14.5	13°32.4	31°38.8	63°44.5		
18	290°37.7	8.3'	N27°57.3	-2.3'	55.4'	103°43.4	99°22.8	49°43.3	13°01.4	32°08.5	64°15.4		
19	305°04.9	8.3'	27°55.1	-2.4'	55.3'	103°12.2	98°56.2	49°12.2	12°30.5	32°38.2	64°46.4		
20	319°32.2	8.3'	27°52.7	-2.5'	55.3'	102°41.0	98°29.6	48°41.2	11°59.7	33°08.0	65°17.3		
21	333°59.6	8.4'	$27^{\circ}50.1$	-2.7'	55.3'	102°09.9	98°03.1	48° 10.1	11°28.9	33°37.7	65°48.2		
22	348°27.0	8.4'	27°47.4	-2.8'	55.3'	101°38.8	97°36.5	47°39.1	10°58.1	34°07.5	66°19.1		
23	2°54.4	8.5'	27°44.6	-3.0'	55.3'	101°07.7	97°09.9	47°08.0	10°27.4	34°37.3	66°50.0		
23 rd	SD :	= 15.2	Mer. pas	s. 22:48						-			

h Moon (24th Jan)

Lunar Distance	(objects with	largest hourl	y LD delta)
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			(- 1 341				Land	Distance	()	With larges		D derta)	
Wed	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	-Pollux	+Betelgeuse	+Capella	+Aldebaran	+Jupiter
0	17°21.9	8.6'	$N27^{\circ}41.6$	-3.1'	55.3'	100°36.6	96°43.4	46°37.0	9°56.7	25°30.2	27°24.0	35°07.1	67°20.9
1	31°49.5	8.6'	27°38.5	-3.3'	55.2'	100°05.5	96° 16.8	46°06.1	9°26.1	25°48.1	27°46.8	35°36.9	67°51.7
2	46°17.1	8.7'	27°35.2	-3.4'	55.2'	99°34.5	95°50.3	45°35.1	8°55.6	26°06.4	28°09.8	36°06.8	68°22.5
3	60°44.7	8.7'	27°31.8	-3.6'	55.2'	99°03.4	95°23.7	45°04.2	8°25.1	26°25.0	28°33.0	36°36.6	68°53.3
4	75°12.4	8.8'	27°28.2	-3.7'	55.2'	98°32.4	94°57.2	44°33.2	7°54.8	26°44.0	28°56.4	37°06.5	69°24.1
5	89°40.2	8.8'	$27^{\circ}24.5$	-3.8'	55.2'	98°01.4	94°30.7	44°02.3	7°24.6	27°03.3	29°20.1	37°36.4	69°54.9
6	104°08.0	8.9'	$N27^{\circ}20.7$	-4.0'	55.2'	97°30.4	94°04.2	43°31.5	6°54.5	27°22.9	29°43.9	38°06.3	70°25.7
7	118°35.9	9.0'	$27^{\circ}16.7$	-4.1'	55.1'	96°59.5	93°37.6	43°00.6	6°24.5	27°42.9	30°07.9	38°36.2	70°56.4
8	133°03.9	9.0'	$27^{\circ}12.5$	-4.3'	55.1'	96°28.5	93°11.2	42°29.7	5°54.7	28°03.1	30°32.1	39°06.1	71°27.1
9	147°31.9	9.1'	27°08.3	-4.4'	55.1'	95°57.6	92°44.7	41°58.9	5°25.2	28°23.6	30°56.5	39°36.0	71°57.8
10	162°00.0	9.1'	27°03.9	-4.5'	55.1'	95°26.7	92°18.2	41°28.1	4°56.0	28°44.4	31°21.0	40°05.9	72°28.5
11	176°28.1	9.2'	26°59.3	-4.7'	55.1'	94°55.8	91°51.7	40°57.3	4°27.2	29°05.5	31°45.6	40°35.8	72°59.2
12	190°56.3	9.3'	N 26°54.7	-4.8'	55.1'	94°24.9	91°25.3	40°26.6	3°58.9	29°26.8	32°10.5	41°05.7	73°29.8
13	205°24.6	9.3'	26°49.8	-4.9'	55.0'	93°54.1	90°58.8	39°55.8	3°31.4	29°48.3	32°35.4	41°35.6	74°00.5
14	219°53.0	9.4'	26°44.9	-5.1'	55.0'	93°23.2	90°32.4	39°25.1		30°10.1	33°00.5	42°05.5	74°31.1
15	234°21.4	9.5'	26°39.8	-5.2'	55.0'	92°52.4	90°06.0	38° 54.4		30°32.1	33°25.7	42°35.5	75°01.7
16	248°49.9	9.6'	26°34.6	-5.3'	55.0'	92°21.6	89°39.6	38°23.7		30°54.3	33°51.1	43°05.4	75°32.3
17	263°18.4	9.6'	26°29.3	-5.5'	55.0'	91°50.8	89°13.2	37°53.0		31°16.8	34°16.5	43°35.3	76°02.8
18	277°47.0	9.7'	$N26^{\circ}23.8$	-5.6'	55.0'	91°20.0	88°46.9	37°22.3		31°39.4	34°42.1	44°05.3	76°33.4
19	292°15.7	9.8'	$26^{\circ}18.2$	-5.7'	54.9'	90°49.3	88° 20.5	36°51.7		32°02.2	35°07.8	44°35.2	77°03.9
20	306°44.5	9.8'	$26^{\circ}12.5$	-5.9'	54.9'	90°18.5	87° 54.2	36°21.1		32°25.2	35°33.6	45°05.1	77°34.4
21	321°13.4	9.9'	26°06.6	-6.0'	54.9'	89°47.8	87°27.9	35°50.5		32°48.4	35°59.5	45°35.0	78°04.9
22	335°42.3	10.0'	26°00.6	-6.1'	54.9'	89°17.1	87°01.6	35° 19.9		33°11.8	36°25.5	46°05.0	78°35.4
23	350°11.3	10.1'	25°54.5	-6.2'	54.9'	88°46.4	86°35.3	34°49.4		33°35.3	36°51.5	46°34.9	79°05.9
24 th	SD	= 15.1'	Mer. pass	23:41						·			

h Moon (25th Jan)

Thu	GHA	ν	Dec	d	HP	-Rigil Kent.	-Spica	-Arcturus	-Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter
0	4°40.3	10.1'	N 25°48.3	-6.4'	54.9'	117° 43.5	88° 15.7	86°09.0	34°18.8		37°17.7	47°04.8	79°36.4
1	19°09.5	10.2'	25°41.9	-6.5'	54.9'	117°22.0	87°45.0	85°42.8	33°48.3		37°44.0	47°34.7	80°06.8
2	33°38.7	10.3'	25°35.4	-6.6'	54.8'	117°00.4	87° 14.4	85°16.6	33°17.8		38°10.3	48°04.6	80°37.2
3	48°08.0	10.4'	25°28.8	-6.7'	54.8'	116°38.8	86°43.8	84°50.4	32°47.4	4°25.3	38°36.7	48°34.5	81°07.6
4	62°37.4	10.5'	$25^{\circ}22.1$	-6.8'	54.8'	116° 17.1	86°13.1	84°24.2	32°16.9	4°53.9	39°03.2	49°04.4	81°38.0
5	77°06.9	10.5'	25°15.2	-7.0'	54.8'	115° 55.4	85°42.5	83°58.0	31°46.5	5°22.8	39°29.7	49°34.3	82°08.4
6	91°36.4	10.6'	N 25°08.3	-7.1'	54.8'	115°33.6	85°12.0	83°31.9	31°16.1	5°51.9	39°56.3	50°04.2	82°38.7
7	106°06.0	10.7'	25°01.2	-7.2'	54.8'	115° 11.7	84°41.4	83°05.8	30°45.7	6°21.3	40°23.0	50°34.1	83°09.1
8	120°35.7	10.8'	24°54.0	-7.3'	54.8'	114°49.8	84°10.8	82°39.7	30°15.3	6°50.8	40°49.8	51°04.0	83°39.4
9	135°05.5	10.9'	24°46.7	-7.4'	54.7'	114°27.9	83°40.3	82°13.6	29°45.0	7°20.5	41°16.6	51°33.9	84°09.7
10	149°35.4	10.9'	24°39.2	-7.5'	54.7'	114°05.9	83°09.8	81°47.6	29°14.6	7°50.2	41°43.4	52°03.7	84°40.0
11	164°05.3	11.0'	24°31.7	-7.7'	54.7'	113°43.8	82°39.3	81°21.5	28°44.3	8°20.1	42°10.3	52°33.6	85°10.3
12	178°35.3	11.1'	N 24°24.0	-7.8'	54.7'	113°21.7	82°08.8	80°55.5	28°14.1	8°50.0	42°37.3	53°03.4	85°40.5
13	193°05.5	11.2'	24°16.3	-7.9'	54.7'	112° 59.6	81°38.3	80°29.6	27°43.8	9°19.9	43°04.3	53°33.3	86°10.8
14	207°35.6	11.3'	24°08.4	-8.0'	54.7'	112° 37.4	81°07.9	80°03.6	27°13.6	9°49.9	43°31.4	54°03.1	86°41.0
15	222°05.9	11.4'	24°00.4	-8.1'	54.7'	112° 15.2	80°37.4	79°37.7	26°43.4	10°19.9	43°58.5	54°33.0	87°11.2
16	236°36.3	11.4'	23°52.3	-8.2'	54.6'	111°52.9	80°07.0	79°11.8	26°13.2	10°50.0	44°25.7	55°02.8	87°41.4
17	251°06.7	11.5'	23°44.1	-8.3'	54.6'	111°30.6	79°36.6	78°45.9	25°43.0	11°20.0	44°52.9	55°32.6	88°11.6
18	265°37.2	11.6'	N23°35.8	-8.4'	54.6'	111°08.3	79°06.2	78°20.1	25°12.9	11°50.1	45°20.1	56°02.4	88°41.8
19	280°07.8	11.7'	23°27.4	-8.5'	54.6'	110°45.9	78°35.8	77°54.3	24°42.7	12°20.2	45°47.4	56°32.2	89°11.9
20	294°38.5	11.8'	23°18.8	-8.6'	54.6'	110°23.5	78°05.4	77°28.5	24°12.7	12°50.3	46°14.7	57°02.0	89°42.1
21	309°09.3	11.9'	23°10.2	-8.7'	54.6'	110°01.0	77°35.1	77°02.7	23°42.6	13°20.4	46°42.1	57°31.8	90°12.2
22	323°40.2	11.9'	$23^{\circ}01.5$	-8.8'	54.6'	109°38.5	77°04.7	76°37.0	23°12.6	13°50.5	47°09.4	58°01.6	90°42.3
23	338°11.1	12.0'	22°52.7	-8.9'	54.5'	109°16.0	76°34.4	76°11.3	22°42.5	14°20.6	47°36.9	58°31.4	91°12.4
25 th	SE	0 = 15.0)' Mer. pas	ss:-									

h Moon (26 th Jan)	Lunar Distance (objects with largest hourly LD delta)
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Fri	GHA	ν	Dec	d	HP	-Antares	-Spica	-Arcturus	-Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter
0	352°42.1	12.1'	N22°43.7	-9.0'	54.5'		76°04.1	75°45.6	22°12.6	14°50.8	48°04.3	59°01.2	91°42.5
1	7°13.3	12.2'	22°34.7	-9.1'	54.5'		75°33.8	75°20.0	21°42.6	15°20.9	48°31.8	59°30.9	92°12.5
2	21°44.4	12.3'	22°25.6	-9.2'	54.5'		75°03.5	74°54.4	21°12.7	15°51.0	48°59.3	60°00.7	92°42.6
3	36°15.7	12.4'	22°16.4	-9.3'	54.5'		74°33.2	74°28.8	20°42.8	16°21.1	49°26.8	60°30.4	93°12.6
4	50°47.1	12.4'	22°07.1	-9.4'	54.5'	119°56.6	74°03.0	74°03.3	20°12.9	16°51.2	49° 54.4	61°00.2	93°42.6
5	65°18.5	12.5'	$21^{\circ}57.7$	-9.5'	54.5'	119°26.3	73°32.7	73°37.8	19°43.1	17°21.3	50°22.0	61°29.9	94°12.6
6	79°50.1	12.6'	N 21°48.2	-9.6'	54.5'	118°56.1	73°02.5	73°12.3	19°13.3	17°51.4	50°49.6	61°59.6	94°42.6
7	94°21.7	12.7'	21°38.6	-9.7'	54.4'	118°25.9	72°32.3	72°46.9	18°43.6	18°21.5	51°17.3	62°29.3	95°12.6
8	108°53.4	12.8'	21°28.9	-9.8'	54.4'	117°55.6	72°02.1	72°21.5	18°13.9	18°51.6	51°44.9	62°59.0	95°42.6
9	123°25.1	12.9'	$21^{\circ}19.1$	-9.9'	54.4'	117°25.5	71°31.9	71°56.2	17°44.2	19°21.6	52° 12.6	63°28.7	96°12.5
10	137°57.0	12.9'	21°09.3	-9.9'	54.4'	116°55.3	71°01.7	71°30.8	17°14.5	19°51.7	52°40.3	63°58.4	96°42.4
11	152°28.9	13.0'	20°59.3	-10.0'	54.4'	116°25.1	70°31.6	71°05.6	16°45.0	20°21.8	53°08.0	64°28.0	97°12.4
12	167°00.9	13.1'	N20°49.3	-10.1'	54.4'	115°54.9	70°01.4	70°40.3	16°15.4	20°51.8	53°35.8	64°57.7	97°42.3
13	181°33.0	13.2'	20°39.2	-10.2'	54.4'	115°24.8	69°31.3	70°15.1	15°45.9	21°21.9	54°03.5	65°27.3	98°12.2
14	196°05.2	13.3'	20°29.0	-10.3'	54.4'	114°54.7	69°01.2	69°49.9	15°16.5	21°51.9	54°31.3	65°57.0	98°42.0
15	210°37.5	13.3'	20°18.7	-10.4'	54.4'	114°24.6	68°31.1	69°24.8	14°47.1	22°21.9	54°59.1	66°26.6	99°11.9
16	225°09.8	13.4'	20°08.3	-10.4'	54.3'	113°54.5	68°01.0	68°59.7	14°17.8	22°51.9	55°26.9	66° 56.2	99°41.8
17	239°42.3	13.5'	19°57.9	-10.5'	54.3'	113°24.4	67°30.9	68°34.7	13°48.6	23°21.9	55°54.7	67°25.9	100°11.6
18	254°14.8	13.6'	N19°47.4	-10.6'	54.3'	112°54.3	67°00.9	68°09.7	13°19.4	23°51.9	56°22.5	67°55.5	100°41.4
19	268°47.3	13.7'	19°36.7	-10.7'	54.3'	112°24.2	66°30.8	67°44.7	12°50.3	24°21.9	56° 50.4	68°25.1	101°11.2
20	283°20.0	13.7'	$19^{\circ}26.1$	-10.8'	54.3'	111°54.2	66°00.8	67°19.8	12°21.3	24°51.9	57° 18.2	68° 54.7	101°41.0
21	297°52.7	13.8'	19°15.3	-10.8'	54.3'	111°24.1	65°30.7	66°55.0	11°52.4	25°21.9	57°46.1	69°24.2	102°10.8
22	312°25.6	13.9'	$19^{\circ}04.5$	-10.9'	54.3'	110°54.1	65°00.7	66°30.2	11°23.6	25°51.8	58° 14.0	69°53.8	102°40.6
23	326°58.5	14.0'	18°53.6	-11.0'	54.3'	110°24.1	64°30.7	66°05.4	10°54.9	26°21.8	58°41.9	70°23.4	103°10.4
26 th	SD	= 14.9'	Mer. pass	s. 00:30									

h Moon (2	27 th Jan)	Lunar Distance (ol	bjects with large	est hourly LD delta)
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Sat	GHA	ν	Dec	d	HP	-Antares	-Arcturus	-Spica	-Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter
0	341°31.4	14.0'	N 18°42.6	-11.1'	54.3'	109°54.1	65°40.7	64°00.7	10°26.4	26°51.7	59°09.8	70°52.9	103°40.1
1	356°04.5	14.1'	18°31.5	-11.1'	54.3'	109°24.1	65°16.0	63°30.8	9°58.0	27°21.6	59°37.7	71°22.5	104°09.8
2	10°37.6	14.2'	18°20.4	-11.2'	54.2'	108°54.1	64°51.4	63°00.8	9°29.8	27°51.6	60°05.7	71°52.0	104°39.6
3	25°10.8	14.3'	18°09.2	-11.3'	54.2'	108°24.2	64°26.8	62°30.8	9°01.7	28°21.5	60°33.6	72°21.5	105°09.3
4	39°44.1	14.3'	17°57.9	-11.3'	54.2'	107°54.2	64°02.2	62°00.9	8°33.9	28°51.4	61°01.5	72°51.0	105°39.0
5	54°17.4	14.4'	$17^{\circ}46.6$	-11.4'	54.2'	107°24.3	63°37.8	61°31.0	8°06.4	29°21.3	61°29.5	73°20.5	106°08.7
6	68°50.8	14.5'	N17°35.2	-11.5'	54.2'	106°54.3	63°13.4	61°01.0	7°39.2	29°51.1	61°57.4	73°50.0	106°38.4
7	83°24.3	14.6'	17°23.7	-11.5'	54.2'	106°24.4	62°49.0	60°31.1	7°12.4	30°21.0	62°25.4	74° 19.5	107°08.0
8	97°57.9	14.6'	17°12.2	-11.6'	54.2'	105°54.5	62°24.7	60°01.2	6°46.0	30°50.9	62°53.4	74°49.0	107°37.7
9	112°31.5	14.7'	17°00.5	-11.7'	54.2'	105°24.6	62°00.4	59°31.3	6°20.1	31°20.7	63°21.4	75° 18.5	108°07.3
10	127°05.2	14.8'	16°48.9	-11.7'	54.2'	104°54.7	61°36.2	59°01.5	5°54.8	31°50.6	63°49.3	75°47.9	108°36.9
11	141°39.0	14.8'	$16^{\circ}37.2$	-11.8'	54.2'	104°24.8	61°12.1	58°31.6	5°30.4	32°20.4	64° 17.3	76° 17.4	109°06.6
12	156°12.8	14.9'	N16°25.4	-11.9'	54.2'	103°55.0	60°48.0	58°01.8		32°50.2	64°45.3	76°46.8	109°36.2
13	170°46.7	15.0'	$16^{\circ}13.5$	-11.9'	54.2'	103°25.1	60°23.9	57°31.9		33°20.0	65°13.3	77° 16.2	110°05.8
14	185°20.7	15.0'	$16^{\circ}01.6$	-12.0'	54.1'	102°55.3	60°00.0	57°02.1		33°49.8	65°41.3	77° 45.7	110°35.3
15	199°54.7	15.1'	15°49.6	-12.0'	54.1'	102°25.4	59°36.1	56°32.3		34°19.6	66°09.3	78° 15.1	111°04.9
16	214°28.9	15.2'	15°37.6	-12.1'	54.1'	101°55.6	59°12.2	56°02.4		34°49.4	66°37.4	78°44.5	111°34.5
17	229°03.0	15.2'	$15^{\circ}25.5$	-12.1'	54.1'	101°25.8	58°48.5	55°32.6		35°19.2	67°05.4	79° 13.9	112°04.0
18	243°37.3	15.3'	N15°13.4	-12.2'	54.1'	100°56.0	58°24.7	55°02.9		35°49.0	67°33.4	79°43.3	112°33.6
19	258°11.6	15.4'	15°01.2	-12.3'	54.1'	100°26.2	58°01.1	54°33.1		36°18.7	68°01.4	80° 12.7	113°03.1
20	272°45.9	15.4'	14°48.9	-12.3'	54.1'	99°56.4	57°37.5	54°03.3		36°48.5	68° 29.5	80°42.0	113°32.6
21	287°20.4	15.5'	14°36.6	-12.4'	54.1'	99°26.6	57°14.0	53°33.5		37°18.2	68° 57.5	81°11.4	114°02.1
22	301°54.9	15.5'	14°24.3	-12.4'	54.1'	98°56.9	56°50.6	53°03.8		37°48.0	69°25.5	81°40.8	114°31.6
23	316°29.4	15.6'	$14^{\circ}11.9$	-12.5'	54.1'	98°27.1	56°27.2	52°34.0		38°17.7	69°53.6	82°10.1	115°01.1
27 th	SD	= 14.8'	Mer. pass	s. 01:16									

Moon (28th Jan)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Venus	-Antares	-Arcturus	-Spica	+Regulus	+Pollux	+Aldebaran	+Jupiter
0	331°04.0	15.7'	N13°59.4	-12.5'	54.1'		97°57.4	56°03.9	52°04.3		38°47.4	82°39.5	115°30.6
1	345°38.7	15.7'	13°46.9	-12.6'	54.1'		97°27.6	55°40.7	51°34.6		39°17.1	83°08.8	116°00.1
2	0°13.4	15.8'	13°34.3	-12.6'	54.1'		96°57.9	55° 17.6	51°04.9		39°46.8	83°38.1	116°29.6
3	14°48.2	15.8'	13°21.7	-12.7'	54.1'		96°28.2	54°54.5	50°35.2		40°16.5	84°07.4	116°59.0
4	29°23.0	15.9'	13°09.1	-12.7'	54.1'		95°58.5	54°31.5	50°05.5		40°46.2	84°36.8	117°28.5
5	43°57.9	15.9'	12°56.4	-12.7'	54.0'		95°28.8	54°08.6	49°35.8		41°15.9	85°06.1	117°57.9
6	58°32.9	16.0'	N12°43.6	-12.8'	54.0'		94°59.1	53°45.8	49°06.1	5°58.3	41°45.5	85°35.4	118°27.3
7	73°07.9	16.1'	12°30.9	-12.8'	54.0'		94°29.4	53°23.0	48°36.4	6°23.5	42°15.2	86°04.6	118°56.7
8	87°42.9	16.1'	12°18.0	-12.9'	54.0'	119°39.0	93°59.7	53°00.4	48°06.8	6°49.2	42°44.9	86°33.9	119°26.2
9	102°18.0	16.2'	12°05.2	-12.9'	54.0'	119°12.6	93°30.0	52°37.8	47°37.1	7° 15.5	43°14.5	87°03.2	119°55.6
10	116°53.2	16.2'	11°52.3	-13.0'	54.0'	118°46.2	93°00.3	52°15.3	47°07.5	7°42.2	43°44.2	87°32.5	
11	131°28.4	16.3'	11°39.3	-13.0'	54.0'	118°19.9	92°30.7	51°52.9	46°37.8	8°09.2	44°13.8	88°01.7	
12	146°03.6	16.3'	N11°26.3	-13.0'	54.0'	117°53.5	92°01.0	51°30.6	46°08.2	8°36.5	44°43.4	88°31.0	
13	160°39.0	16.4'	11°13.3	-13.1'	54.0'	117°27.1	91°31.4	51°08.4	45°38.5	9°04.0	45°13.1	89°00.2	
14	175°14.3	16.4'	11°00.2	-13.1'	54.0'	117°00.7	91°01.7	50°46.3	45°08.9	9°31.7	45°42.7	89°29.5	
15	189°49.7	16.4'	$10^{\circ}47.1$	-13.1'	54.0'	116°34.4	90°32.1	50°24.3	44°39.3	9°59.6	46°12.3	89°58.7	
16	204°25.1	16.5'	10°33.9	-13.2'	54.0'	116°08.0	90°02.5	50°02.4	44°09.7	10°27.7	46°41.9	90°27.9	
17	219°00.6	16.5'	10°20.8	-13.2'	54.0'	115°41.6	89°32.9	49°40.6	43°40.1	10°55.9	47°11.5	90°57.2	
18	233°36.2	16.6'	N 10°07.5	-13.3'	54.0'	115°15.3	89°03.2	49°18.9	43°10.5	11°24.2	47°41.1	91°26.4	
19	248°11.7	16.6'	09°54.3	-13.3'	54.0'	114°48.9	88°33.6	48° 57.3	42°40.9	11°52.6	48°10.7	91°55.6	
20	262°47.3	16.7'	09°41.0	-13.3'	54.0'	114°22.6	88°04.0	48°35.8	42°11.3	12°21.0	48°40.3	92°24.8	
21	277°23.0	16.7'	09°27.7	-13.3'	54.0'	113°56.2	87°34.4	48°14.5	41°41.7	12°49.6	49°09.8	92°54.0	
22	291°58.7	16.7'	$09^{\circ}14.3$	-13.4'	54.0'	113°29.9	87°04.8	47°53.2	41°12.2	13° 18.2	49°39.4	93°23.2	
23	306°34.4	16.8'	09°01.0	-13.4'	54.0'	113°03.6	86°35.2	47°32.1	40°42.6	13°46.9	50°09.0	93°52.4	
28 th	SD	= 14.7'	Mer. pas	s. 01:59									

h		Моо	n (29 th Ja	n)			Lunar D	istance (objects v	with larges	st hourly	LD delta)
Mon	GHA	ν	Dec	d	HP	-Mars	-Venus	-Antares	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	321°10.2	16.8'	N 08°47.6	-13.4'	54.0'		112°37.3	86°05.7	40°13.1	14°15.7	50°38.5	81°34.8	94°21.6
1	335°46.0	16.8'	08°34.1	-13.5'	54.0'		112°10.9	85°36.1	39°43.5	14°44.5	51°08.1	82°02.9	94°50.7
2	350°21.8	16.9'	08° 20.6	-13.5'	54.0'		111°44.6	85°06.5	39°13.9	15°13.3	51°37.7	82°31.0	95° 19.9
3	4°57.7	16.9'	08°07.2	-13.5'	54.0'		111°18.3	84°36.9	38°44.4	15°42.2	52°07.2	82°59.0	95°49.1
4	19°33.6	16.9'	07°53.6	-13.6'	54.0'		110°52.0	84°07.4	38°14.8	16°11.2	52°36.8	83°27.1	96°18.2
5	34°09.6	17.0'	$07^{\circ}40.1$	-13.6'	54.0'		110°25.7	83°37.8	37°45.3	16°40.1	53°06.3	83°55.1	96°47.4
6	48°45.5	17.0'	N07°26.5	-13.6'	54.0'		109°59.3	83°08.2	37° 15.8	17°09.1	53°35.9	84°23.2	97°16.6
7	63°21.5	17.0'	$07^{\circ}12.9$	-13.6'	54.0'		109°33.0	82°38.7	36°46.2	17°38.1	54°05.4	84°51.2	97°45.7
8	77°57.6	17.1'	06°59.3	-13.6'	54.0'		109°06.7	82°09.1	36°16.7	18°07.2	54°34.9	85°19.3	98°14.9
9	92°33.6	17.1'	06°45.6	-13.7'	54.0'	119°57.8	108°40.4	81°39.6	35°47.2	18°36.2	55°04.5	85°47.3	98°44.0
10	107°09.7	17.1'	06°32.0	-13.7'	54.0'	119°30.2	108°14.1	81°10.0	35° 17.7	19°05.3	55°34.0	86°15.4	99° 13.1
11	121°45.8	17.1'	$06^{\circ}18.3$	-13.7'	54.0'	119°02.7	107°47.8	80°40.5	34°48.1	19°34.4	56°03.5	86°43.4	99°42.3
12	136°22.0	17.2'	N 06°04.5	-13.7'	54.0'	118°35.2	107°21.5	80°10.9	34° 18.6	20°03.5	56°33.1	87°11.5	$100^{\circ}11.4$
13	150°58.1	17.2'	05°50.8	-13.8'	54.0'	118°07.6	106°55.2	79°41.4	33°49.1	20°32.7	57°02.6	87°39.5	100°40.6
14	165°34.3	17.2'	$05^{\circ}37.1$	-13.8'	54.0'	117°40.1	106°28.9	79°11.8	33°19.6	21°01.8	57°32.1	88°07.6	101°09.7
15	180°10.5	17.2'	05°23.3	-13.8'	54.0'	117°12.5	106°02.6	78°42.3	32°50.1	21°31.0	58°01.7	88°35.6	101°38.8
16	194°46.8	17.2'	$05^{\circ}09.5$	-13.8'	54.0'	116°45.0	105°36.3	78°12.8	32°20.6	22°00.2	58°31.2	89°03.7	102°07.9
17	209°23.0	17.3'	04°55.7	-13.8'	54.0'	116°17.5	105°10.0	77°43.2	31°51.1	22°29.4	59°00.7	89°31.7	102°37.0
18	223°59.3	17.3'	N 04°41.8	-13.8'	54.0'	115°49.9	104°43.7	77°13.7	31°21.6	22°58.6	59° 30.2	89°59.8	103°06.2
19	238°35.6	17.3'	04°28.0	-13.9'	54.0'	115°22.4	104°17.4	76°44.1	30°52.1	23°27.8	59°59.7	90°27.8	103°35.3
20	253°11.9	17.3'	$04^{\circ}14.1$	-13.9'	54.0'	114°54.8	103°51.1	76°14.6	30°22.6	23°57.1	60°29.3	90°55.8	104°04.4
21	267°48.2	17.3'	04°00.3	-13.9'	54.0'	114°27.3	103°24.8	75°45.1	29°53.1	24°26.3	60°58.8	91°23.9	104°33.5
22	282°24.5	17.3'	03°46.4	-13.9'	54.0'	113°59.8	102°58.5	75°15.5	29°23.6	24°55.6	61°28.3	91°51.9	105°02.6
23	297°00.9	17.4'	03°32.5	-13.9'	54.0'	113°32.2	102°32.2	74°46.0	28°54.1	25°24.9	61°57.8	92°20.0	105°31.7
29 th	SD	= 14.7	Mer. pas	s. 02:40								'	

h		Moor	n (30 th Ja	ın)			Lunar D	istance (objects v	with larges	st hourly	LD delta)
Tue	GHA	ν	Dec	d	HP	-Mars	-Venus	-Antares	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	311°37.2	17.4'	N03°18.6	-13.9'	54.0'	113°04.7	102°05.9	74°16.5	28°24.6	25°54.1	62°27.4	92°48.0	106°00.8
1	326°13.6	17.4'	03°04.6	-13.9'	54.0'	112°37.1	101°39.6	73°46.9	27°55.1	26°23.4	62°56.9	93°16.1	106°29.9
2	340°50.0	17.4'	02°50.7	-14.0'	54.0'	112°09.6	101°13.3	73°17.4	27°25.6	26°52.7	63°26.4	93°44.1	106°59.0
3	355°26.4	17.4'	02°36.7	-14.0'	54.0'	111°42.0	100°47.0	72°47.8	26°56.1	27°22.0	63°56.0	94°12.2	107°28.2
4	10°02.8	17.4'	02°22.8	-14.0'	54.0'	111°14.5	100°20.7	72°18.3	26°26.6	27°51.4	64°25.5	94°40.2	107°57.3
5	24°39.2	17.4'	02°08.8	-14.0'	54.0'	110°46.9	99°54.4	71°48.7	25°57.1	28°20.7	64°55.0	95°08.3	108°26.4
6	39°15.6	17.4'	N01°54.8	-14.0'	54.0'	110°19.4	99°28.1	71°19.2	25°27.6	28°50.0	65°24.6	95°36.3	108°55.5
7	53°52.0	17.4'	01°40.8	-14.0'	54.0'	109°51.8	99°01.8	70°49.6	24°58.1	29°19.4	65°54.1	96°04.4	109°24.6
8	68°28.4	17.4'	$01^{\circ}26.8$	-14.0'	54.0'	109°24.2	98°35.4	70°20.1	24°28.6	29°48.7	66°23.6	96°32.4	109°53.7
9	83°04.8	17.4'	$01^{\circ}12.8$	-14.0'	54.0'	108°56.7	98°09.1	69°50.5	23°59.1	30°18.1	66°53.2	97°00.5	110°22.8
10	97°41.3	17.4'	00°58.8	-14.0'	54.0'	108°29.1	97°42.8	69°21.0	23°29.6	30°47.5	67°22.7	97°28.5	110°51.9
11	112°17.7	17.4'	00°44.8	-14.0'	54.1'	108°01.5	97°16.5	68°51.4	23°00.1	31°16.9	67°52.3	97°56.5	111°21.0
12	126°54.1	17.4'	N 00°30.8	-14.0'	54.1'	107°33.9	96°50.1	68°21.8	22°30.6	31°46.3	68°21.8	98°24.6	111°50.1
13	141°30.5	17.4'	$00^{\circ}16.8$	-14.0'	54.1'	107°06.4	96°23.8	67°52.2	22°01.1	32°15.7	68°51.4	98°52.6	112°19.2
14	156°07.0	17.4'	N00°02.7	-14.0'	54.1'	106°38.8	95°57.4	67°22.7	21°31.6	32°45.1	69°21.0	99°20.7	112°48.3
15	170°43.4	17.4'	S 00°11.3	-14.0'	54.1'	106°11.2	95°31.1	66°53.1	21°02.1	33°14.5	69°50.5	99°48.7	113°17.4
16	185°19.8	17.4'	00°25.3	-14.0'	54.1'	105°43.6	95°04.7	66°23.5	20°32.6	33°43.9	70°20.1	100°16.8	113°46.5
17	199°56.2	17.4'	00°39.3	-14.0'	54.1'	105°16.0	94°38.4	65°53.9	20°03.1	34°13.4	70°49.7	100°44.8	114°15.6
18	214°32.6	17.4'	S 00°53.4	-14.0'	54.1'	104°48.3	94°12.0	65°24.3	19°33.5	34°42.8	71°19.3	101°12.9	114°44.8
19	229°09.0	17.4'	$01^{\circ}07.4$	-14.0'	54.1'	104°20.7	93°45.6	64°54.7	19°04.0	35°12.3	71°48.9	101°40.9	115°13.9
20	243°45.4	17.4'	$01^{\circ}21.4$	-14.0'	54.1'	103°53.1	93°19.2	64°25.1	18°34.5	35°41.8	72°18.5	102°09.0	115°43.0
21	258°21.7	17.4'	01°35.5	-14.0'	54.1'	103°25.5	92°52.8	63°55.5	18°05.0	36°11.2	72°48.1	102°37.0	116°12.1
22	272°58.1	17.3'	01°49.5	-14.0'	54.1'	102°57.8	92°26.4	63°25.8	17°35.5	36°40.7	73°17.7	103°05.1	116°41.2
23	287°34.4	17.3'	$02^{\circ}03.5$	-14.0'	54.1'	102°30.2	92°00.0	62°56.2	17°05.9	37°10.2	73°47.3	103°33.2	117°10.4
30 th	SD	= 14.7'	Mer. pas	s. 03:19									

h Moon (31 st Jan)	Lunar Distance (objects with largest hourly LD delta)
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Wed	GHA	ν	Dec	d	HP	-Sun	-Mars	-Antares	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	302°10.7	17.3'	S 02°17.5	-14.0'	54.2'		102°02.5	62°26.6	16°36.4	37°39.7	74°17.0	104°01.2	117°39.5
1	316°47.1	17.3'	02°31.6	-14.0'	54.2'		101°34.9	61°56.9	16°06.9	38°09.3	74°46.6	104°29.3	118°08.6
2	331°23.4	17.3'	02°45.6	-14.0'	54.2'		101°07.2	61°27.3	15°37.4	38°38.8	75°16.3	104°57.3	118°37.8
3	345°59.6	17.3'	02°59.6	-14.0'	54.2'		100°39.5	60°57.6	15°07.8	39°08.3	75°45.9	105°25.4	119°06.9
4	0°35.9	17.2'	03°13.6	-14.0'	54.2'		100°11.8	60°27.9	14°38.3	39°37.9	76°15.6	105°53.4	119°36.0
5	15°12.1	17.2'	03°27.6	-14.0'	54.2'		99°44.1	59°58.2	14°08.8	40°07.5	76°45.2	106°21.5	
6	29°48.4	17.2'	S 03°41.6	-14.0'	54.2'		99°16.4	59°28.5	13°39.3	40°37.0	77°14.9	106°49.6	
7	44°24.6	17.2'	03°55.6	-14.0'	54.2'	119°35.8	98°48.7	58°58.8	13°09.8	41°06.6	77°44.6	107°17.6	
8	59°00.7	17.1'	04°09.5	-14.0'	54.2'	119°08.8	98°21.0	58°29.1	12°40.3	41°36.2	78°14.3	107°45.7	
9	73°36.9	17.1'	04°23.5	-14.0'	54.3'	118°41.7	97°53.2	57°59.4	12°10.7	42°05.8	78°44.0	108°13.7	
10	88°13.0	17.1'	04°37.4	-13.9'	54.3'	118°14.7	97°25.5	57°29.7	11°41.2	42°35.5	79°13.8	108°41.8	
11	102°49.1	17.1'	04°51.4	-13.9'	54.3'	117°47.6	96°57.7	56°59.9	11°11.8	43°05.1	79°43.5	109°09.9	
12	117°25.2	17.0'	S 05°05.3	-13.9'	54.3'	117°20.5	96°29.9	56°30.2	10°42.3	43°34.8	80°13.2	109°37.9	
13	132°01.2	17.0'	$05^{\circ}19.2$	-13.9'	54.3'	116°53.4	96°02.2	56°00.4	10°12.8	44°04.4	80°43.0	110°06.0	
14	146°37.2	17.0'	05°33.1	-13.9'	54.3'	116°26.3	95°34.4	55°30.6	9°43.4	44°34.1	81°12.8	110°34.1	
15	161°13.2	16.9'	05°47.0	-13.9'	54.3'	115°59.1	95°06.6	55°00.8	9°14.0	45°03.8	81°42.5	111°02.1	
16	175°49.1	16.9'	06°00.9	-13.9'	54.3'	115°32.0	94°38.7	54°31.0	8°44.6	45°33.5	82°12.3	111°30.2	
17	190°25.0	16.9'	$06^{\circ}14.8$	-13.8'	54.4'	115°04.8	94°10.9	54°01.2	8°15.2	46°03.2	82°42.1	111°58.3	
18	205°00.9	16.8'	S 06°28.6	-13.8'	54.4'	114°37.6	93°43.1	53°31.4	7°45.9	46°33.0	83°12.0	112°26.4	
19	219°36.8	16.8'	06°42.4	-13.8'	54.4'	114°10.5	93°15.2	53°01.5	7°16.6	47°02.7	83°41.8	112°54.4	
20	234°12.6	16.8'	06°56.2	-13.8'	54.4'	113°43.3	92°47.3	52°31.7	6°47.5	47°32.5	84°11.6	113°22.5	
21	248°48.3	16.7'	$07^{\circ}10.0$	-13.8'	54.4'	113°16.0	92°19.4	52°01.8	6°18.4	48°02.3	84°41.5	113°50.6	
22	263°24.0	16.7'	07°23.8	-13.8'	54.4'	112°48.8	91°51.5	51°31.9	5°49.4	48°32.1	85°11.4	114°18.6	
23	277°59.7	16.6'	07°37.6	-13.7'	54.4'	112°21.6	91°23.6	51°02.0	5°20.6	49°01.9	85°41.3	114°46.7	
31 st	SD	= 14.8'	Mer. pas	s. 03:58					Sun S	D = 16.2'	-		

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

	П		IVIOC	и (т ге	D)			Lunar D	istance (objects	with larges	st nourly L	.D delta)	
1	Γhu	GHA	ν	Dec	d	HP	-Sun	-Mars	-Antares	±Spica	+Regulus	+Procyon	+Pollux	+Capella
	0	292°35.4	16.6'	S 07°51.3	-13.7'	54.5'	111°54.3	90°55.7	50°32.1	4°52.0	49°31.7	83°46.6	86°11.2	115° 14.8
	1	307°11.0	16.6'	08°05.0	-13.7'	54.5'	111°27.0	90°27.7	50°02.2	4°23.7	50°01.6	84°14.5	86°41.1	115°42.9
	2	321°46.5	16.5'	08°18.7	-13.7'	54.5'	110°59.7	89°59.8	49°32.2	3°55.7	50°31.4	84°42.4	87°11.0	116° 10.9
	3	336°22.0	16.5'	08°32.4	-13.6'	54.5'	110°32.4	89°31.8	49°02.3	3°28.3	51°01.3	85°10.4	87°41.0	116°39.0
	4	350°57.5	16.4'	08°46.0	-13.6'	54.5'	110°05.1	89°03.8	48°32.3	3°01.6	51°31.2	85°38.3	88°11.0	117°07.1
	5	5°32.9	16.4'	08°59.6	-13.6'	54.5'	109°37.7	88°35.8	48°02.3		52°01.1	86°06.3	88°41.0	117°35.1
	6	20°08.2	16.3'	S 09°13.2	-13.6'	54.6'	109°10.3	88°07.8	47°32.3		52°31.1	86°34.3	89°11.0	118°03.2
	7	34°43.5	16.3'	09°26.8	-13.5'	54.6'	108°42.9	87°39.7	47°02.2		53°01.0	87°02.4	89°41.0	118°31.3
	8	49°18.8	16.2'	09°40.3	-13.5'	54.6'	108°15.5	87°11.6	46°32.2		53°31.0	87°30.4	90°11.0	118°59.4
	9	63°54.0	16.1'	09°53.9	-13.5'	54.6'	107°48.1	86°43.6	46°02.1		54°01.0	87°58.5	90°41.1	119°27.4
- 1	10	78°29.2	16.1'	10°07.3	-13.5'	54.6'	107°20.7	86°15.4	45°32.0		54°31.0	88°26.5	91°11.2	119°55.5
	11	93°04.3	16.0'	10°20.8	-13.4'	54.7'	106°53.2	85°47.3	45°01.9		55°01.1	88°54.6	91°41.3	
	12	107°39.3	16.0'	S 10°34.2	-13.4'	54.7'	106°25.7	85° 19.2	44°31.8		55°31.1	89°22.8	92°11.4	
- 1	13	122°14.3	15.9'	10°47.6	-13.4'	54.7'	105°58.2	84°51.0	44°01.6		56°01.2	89°50.9	92°41.5	
- 1	14	136°49.2	15.9'	$11^{\circ}01.0$	-13.3'	54.7'	105°30.7	84°22.8	43°31.5		56°31.3	90°19.0	93°11.7	
- 1	15	151°24.1	15.8'	11°14.3	-13.3'	54.7'	105°03.1	83°54.6	43°01.3		57°01.4	90°47.2	93°41.9	
- 1	16	165°58.9	15.7'	11°27.6	-13.3'	54.8'	104°35.6	83°26.4	42°31.1		57°31.6	91°15.4	94°12.1	
	17	180°33.6	15.7'	11°40.9	-13.2'	54.8'	104°08.0	82°58.2	42°00.9	4°09.8	58°01.7	91°43.6	94°42.3	
	18	195°08.3	15.6'	S 11°54.1	-13.2'	54.8'	103°40.4	82°29.9	41°30.6	4°38.2	58°31.9	92°11.9	95°12.5	
- 1	19	209°42.9	15.5'	$12^{\circ}07.3$	-13.2'	54.8'	103°12.7	82°01.6	41°00.3	5°07.0	59°02.1	92°40.1	95°42.8	
- 1	20	224°17.4	15.5'	$12^{\circ}20.5$	-13.1'	54.8'	102°45.1	81°33.3	40°30.0	5°36.1	59°32.3	93°08.4	96°13.1	
	21	238°51.9	15.4'	12°33.6	-13.1'	54.9'	102°17.4	81°05.0	39°59.7	6°05.5	60°02.6	93°36.7	96°43.4	
	22	253°26.3	15.3'	12°46.7	-13.0'	54.9'	101°49.7	80°36.6	39°29.4	6°34.9	60°32.9	94°05.0	97°13.7	
	23	268°00.6	15.3'	12°59.7	-13.0'	54.9'	101°22.0	80°08.3	38°59.0	7°04.6	61°03.2	94°33.3	97°44.1	
	1 st	SD	= 14.9'	Mer. pas	s. 04:37					Sun S	5D = 16.2'			

h		Moon	(2 nd Feb)			Lunar D	istance	(objects v	vith large	est hourly	LD delta)	
Eri	CHV	1,	Doc	А	HD	Sun	Mars	Vonus	Antaros	⊥Spica	⊥ Pogulus	⊥ Drocyon	⊥ Polluy

Fri	GHA	ν	Dec	d	HP	-Sun	-Mars	-Venus	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	282°34.9	15.2'	S 13°12.7	-13.0'	54.9'	100°54.2	79°39.9	70°10.9	38°28.6	7°34.3	61°33.5	95°01.6	98°14.4
1	297°09.1	15.1'	13°25.7	-12.9'	54.9'	100°26.5	79°11.4	69°43.8	37°58.2	8°04.2	62°03.8	95°30.0	98°44.8
2	311°43.2	15.0'	13°38.6	-12.9'	55.0'	99°58.7	78°43.0	69°16.6	37°27.8	8°34.1	62°34.2	95°58.4	99° 15.3
3	326° 17.2	15.0'	13°51.5	-12.8'	55.0'	99°30.8	78° 14.5	68°49.3	36° 57.3	9°04.1	63°04.6	96°26.8	99°45.7
4	340°51.2	14.9'	14°04.3	-12.8'	55.0'	99°03.0	77°46.0	68°22.1	36° 26.9	9°34.2	63°35.0	96°55.2	100°16.2
5	355°25.1	14.8'	$14^{\circ}17.1$	-12.7'	55.0'	98°35.1	77° 17.5	67°54.8	35°56.3	10°04.4	64°05.5	97°23.7	100°46.7
6	9°58.9	14.7'	S 14°29.9	-12.7'	55.1'	98°07.2	76°49.0	67°27.6	35°25.8	10°34.6	64°36.0	97°52.1	101°17.2
7	24°32.6	14.7'	14°42.6	-12.6'	55.1'	97°39.3	76°20.4	67°00.2	34°55.2	11°04.9	65°06.5	98°20.6	101°47.8
8	39°06.3	14.6'	14°55.2	-12.6'	55.1'	97°11.3	75°51.8	66°32.9	34°24.7	11°35.2	65°37.0	98°49.1	102°18.3
9	53°39.8	14.5'	15°07.8	-12.5'	55.1'	96°43.3	75°23.2	66°05.5	33°54.0	12°05.6	66°07.6	99°17.6	102°49.0
10	68° 13.3	14.4'	15°20.4	-12.5'	55.2'	96°15.3	74° 54.5	65°38.2	33°23.4	12°36.0	66°38.1	99°46.2	103° 19.6
11	82°46.7	14.3'	$15^{\circ}32.9$	-12.4'	55.2'	95°47.3	74°25.8	65°10.7	32°52.7	13°06.5	67°08.8	100°14.7	103°50.2
12	97°20.0	14.2'	S 15°45.3	-12.4'	55.2'	95°19.2	73°57.1	64°43.3	32°22.0	13°37.0	67°39.4	100°43.3	104°20.9
13	111°53.3	14.1'	15°57.7	-12.3'	55.2'	94°51.1	73°28.4	64°15.8	31°51.3	14°07.5	68°10.1	101°11.9	104°51.7
14	126°26.4	14.1'	$16^{\circ}10.0$	-12.3'	55.3'	94°23.0	72°59.6	63°48.3	31°20.6	14°38.1	68°40.8	101°40.5	105°22.4
15	140°59.5	14.0'	16°22.3	-12.2'	55.3'	93°54.8	72°30.8	63°20.8	30°49.8	15°08.7	69°11.5	102°09.1	105°53.2
16	155°32.4	13.9'	16°34.5	-12.2'	55.3'	93°26.7	72°02.0	62°53.3	30° 19.0	15°39.4	69°42.3	102°37.8	106°24.0
17	170°05.3	13.8'	16°46.7	-12.1'	55.4'	92°58.4	71°33.2	62°25.7	29°48.1	16°10.1	70°13.1	103°06.5	106°54.8
18	184°38.1	13.7'	S 16°58.8	-12.0'	55.4'	92°30.2	71°04.3	61°58.1	29° 17.2	16°40.9	70°43.9	103°35.2	107°25.7
19	199°10.8	13.6'	$17^{\circ}10.9$	-12.0'	55.4'	92°01.9	70°35.4	61°30.4	28°46.3	17° 11.7	71°14.7	104°03.9	107°56.6
20	213°43.4	13.5'	$17^{\circ}22.9$	-11.9'	55.4'	91°33.6	70°06.4	61°02.8	28° 15.4	17°42.5	71°45.6	104°32.6	108°27.5
21	228° 15.9	13.4'	17°34.8	-11.9'	55.5'	91°05.3	69°37.5	60°35.1	27°44.4	18° 13.3	$72^{\circ}16.5$	105°01.4	108°58.5
22	242°48.3	13.3'	$17^{\circ}46.6$	-11.8'	55.5'	90°36.9	69°08.5	60°07.3	27° 13.4	18°44.2	72°47.5	105°30.1	109°29.4
23	257°20.6	13.2'	17°58.4	-11.7'	55.5'	90°08.5	68°39.4	59°39.6	26°42.4	19° 15.2	73°18.4	105°58.9	110°00.5
2 nd	SD	= 15.0'	Mer. pas	s. 05:19					Sun S	D = 16.2'			

Mer. pass. 06:04

SD = 15.1'

h		Мос	on (3 rd Fe	b)			Lunar D	istance	(objects v	with larg	est hourly	LD delta))
Sat	GHA	ν	Dec	d	HP	-Sun	-Mars	-Venus	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	271°52.8	13.1'	S 18°10.2	-11.7'	55.5'	89°40.1	68°10.4	59°11.8	26°11.4	19°46.1	73°49.5	106°27.7	110°31.5
1	286°24.9	13.0'	18°21.8	-11.6'	55.6'	89°11.6	67°41.3	58°44.0	25°40.3	20°17.1	74°20.5	106°56.6	111°02.6
2	300°56.9	12.9'	18°33.4	-11.5'	55.6'	88°43.1	67°12.1	58°16.1	25°09.1	20°48.2	74°51.6	107°25.4	111°33.7
3	315°28.8	12.8'	18°45.0	-11.5'	55.6'	88°14.6	66°43.0	57°48.2	24°38.0	21°19.3	75° 22.7	107°54.3	112°04.9
4	330°00.6	12.7'	18°56.4	-11.4'	55.7'	87°46.0	66°13.8	57°20.3	24°06.8	21°50.4	75°53.8	108°23.2	112°36.1
5	344°32.3	12.6'	$19^{\circ}07.8$	-11.3'	55.7'	87° 17.4	65°44.6	56°52.4	23°35.6	22°21.6	76°25.0	108°52.1	113°07.3
6	359°03.9	12.5'	S 19°19.1	-11.2'	55.7'	86°48.8	65°15.3	56°24.4	23°04.3	22°52.8	76°56.2	109°21.0	113°38.5
7	13°35.4	12.4'	19°30.4	-11.2'	55.8'	86°20.1	64°46.0	55°56.4	22°33.0	23°24.0	77° 27.5	109°49.9	114°09.8
8	28°06.7	12.3'	19°41.5	-11.1'	55.8'	85°51.4	64°16.7	55°28.3	22°01.7	23°55.3	77° 58.8	110°18.9	114°41.1
9	42°38.0	12.2'	19°52.6	-11.0'	55.8'	85°22.7	63°47.3	55°00.2	21°30.3	24°26.6	78°30.1	110°47.8	115° 12.5
10	57°09.2	12.1'	20°03.6	-10.9'	55.9'	84°53.9	63°17.9	54°32.1	20°58.9	24°57.9	79°01.4	111°16.8	115°43.9
11	71°40.2	11.9'	$20^{\circ}14.5$	-10.8'	55.9'	84°25.1	62°48.5	54°04.0	20°27.5	25°29.3	79°32.8	111°45.8	116° 15.3
12	86°11.2	11.8'	S 20°25.4	-10.8'	55.9'	83°56.2	62°19.0	53°35.8	19°56.0	26°00.7	80°04.2	112°14.9	116°46.8
13	100°42.0	11.7'	20°36.2	-10.7'	55.9'	83°27.4	61°49.5	53°07.6	19°24.5	26°32.2	80° 35.7	112°43.9	117° 18.3
14	115°12.7	11.6'	20°46.8	-10.6'	56.0'	82°58.4	61°20.0	52°39.3	18°53.0	27°03.7	81°07.2	113°12.9	117°49.8
15	129°43.4	11.5'	20°57.4	-10.5'	56.0'	82° 29.5	60°50.4	52°11.1	18°21.4	27°35.2	81°38.8	113°42.0	118°21.4
16	144°13.9	11.4'	21°07.9	-10.4'	56.0'	82°00.5	60°20.8	51°42.7	17°49.8	28°06.8	82°10.3	$114^{\circ}11.1$	118°53.0
17	158°44.2	11.3'	21°18.4	-10.3'	56.1'	81°31.5	59°51.1	51°14.4	17° 18.1	28°38.4	82°41.9	114°40.2	119°24.7
18	173°14.5	11.2'	S 21°28.7	-10.2'	56.1'	81°02.4	59°21.4	50°46.0	16°46.4	29°10.1	83° 13.6	115°09.3	119°56.4
19	187°44.7	11.0'	21°38.9	-10.2'	56.1'	80°33.3	58°51.7	50°17.6	16° 14.7	29°41.8	83°45.3	115°38.4	
20	202°14.7	10.9'	21°49.1	-10.1'	56.2'	80°04.1	58°21.9	49°49.1	15°42.9	30°13.5	84° 17.0	116°07.6	
21	216°44.6	10.8'	21°59.2	-10.0'	56.2'	79°34.9	57°52.1	49°20.6	15° 11.1	30°45.3	84°48.8	116°36.7	
22	231°14.4	10.7'	22°09.1	-9.9'	56.2'	79°05.7	57°22.3	48°52.1	14°39.3	31°17.2	85°20.6	117°05.9	
23	245°44.1	10.6'	22°19.0	-9.8'	56.3'	78°36.4	56°52.4	48°23.5	14°07.4	31°49.0	85°52.5	117°35.1	

Sun SD = 16.2'

h		Moor	n (4 th Fel	o)			Lunar [Distance	(objects	with larg	gest hourly	LD delta)
Sun	GHA	ν	Dec	d	HP	-Sun	-Mars	-Venus	-Antares	+Spica	+Arcturus	+Regulus	+Procyon
0	260°13.7	10.4'	S 22°28.7	-9.7'	56.3'	78°07.1	56°22.5	47°54.9	13°35.5	32°20.9	45°35.5	86°24.3	118°04.2
1	274°43.1	10.3'	22°38.4	-9.6'	56.4'	77°37.8	55°52.6	47°26.3	13°03.5	32°52.9	45°57.6	86°56.3	118°33.4
2	289°12.5	10.2'	22°48.0	-9.5'	56.4'	77°08.4	55°22.6	46°57.6	12°31.5	33°24.9	46° 19.9	87°28.3	119°02.7
3	303°41.7	10.1'	22°57.4	-9.4'	56.4'	76°39.0	54° 52.5	46°28.9	11°59.5	33°56.9	46° 42.4	88°00.3	119°31.9
4	318°10.8	10.0'	23°06.8	-9.3'	56.5'	76°09.5	54°22.4	46°00.1	11°27.4	34°29.0	47°05.0	88°32.3	
5	332°39.7	9.8'	$23^{\circ}16.1$	-9.1'	56.5'	75°40.0	53°52.3	45°31.3	10°55.3	35°01.1	47°27.8	89°04.4	
6	347°08.6	9.7'	S 23°25.2	-9.0'	56.5'	75°10.4	53°22.2	45°02.5	10°23.2	35°33.2	47°50.8	89°36.6	
7	1°37.3	9.6'	23°34.3	-8.9'	56.6'	74°40.8	52°52.0	44°33.6	9°51.0	36°05.4	48° 13.9	90°08.7	
8	16°05.9	9.5'	23°43.2	-8.8'	56.6'	74°11.2	52°21.7	44°04.7	9° 18.8	36° 37.7	48°37.2	90°41.0	
9	30°34.4	9.4'	23°52.0	-8.7'	56.6'	73°41.5	51°51.5	43°35.8	8°46.5	37° 10.0	49°00.7	91°13.2	
10	45°02.7	9.2'	24°00.7	-8.6'	56.7'	73°11.8	51°21.1	43°06.8	8° 14.2	37°42.3	49°24.3	91°45.5	
11	59°31.0	9.1'	24°09.3	-8.5'	56.7'	72°42.0	50° 50.8	42°37.8	7°41.9	38° 14.7	49°48.1	92°17.9	
12	73°59.1	9.0'	S 24°17.8	-8.4'	56.7'	72°12.2	50°20.4	42°08.7	7°09.5	38°47.1	50° 12.0	92°50.3	
13	88°27.1	8.9'	$24^{\circ}26.1$	-8.2'	56.8'	71°42.4	49°49.9	41°39.6	6°37.1	39° 19.6	50°36.1	93°22.7	
14	102°55.0	8.7'	24°34.4	-8.1'	56.8'	71°12.5	49° 19.5	41°10.5	6°04.7	39°52.1	51°00.3	93°55.2	
15	117°22.7	8.6'	24°42.5	-8.0'	56.9'	70°42.5	48°48.9	40°41.3	5°32.3	40°24.7	51°24.6	94°27.8	
16	131°50.3	8.5'	24°50.5	-7.9'	56.9'	70°12.5	48° 18.4	40°12.1	4°59.8	40°57.3	51°49.1	95°00.3	
17	146°17.8	8.4'	24°58.4	-7.7'	56.9'	69°42.5	47° 47.7	39°42.9	4°27.3	41°29.9	52° 13.8	95°32.9	
18	160°45.2	8.3'	S 25°06.1	-7.6'	57.0'	69°12.4	47° 17.1	39°13.6	3°54.9	42°02.6	52°38.5	96°05.6	
19	175°12.5	8.1'	$25^{\circ}13.7$	-7.5'	57.0'	68°42.3	46°46.4	38°44.2	3°22.5	42°35.3	53°03.4	96°38.3	
20	189°39.6	8.0'	$25^{\circ}21.2$	-7.4'	57.1'	68°12.1	46° 15.6	38°14.9	2°50.2	43°08.1	53°28.5	97°11.1	
21	204°06.6	7.9'	25°28.6	-7.2'	57.1'	67°41.9	45°44.9	37°45.5	2°18.1	43°41.0	53°53.7	97°43.9	
22	218°33.5	7.8'	25°35.8	-7.1'	57.1'	67°11.7	45°14.0	37°16.0	1°46.4	44°13.8	54° 19.0	98°16.7	
23	233°00.3	7.6'	25°42.9	-7.0'	57.2'	66°41.4	44°43.2	36°46.6		44°46.8	54° 44.4	98°49.6	
4 th	SD	= 15.4'	Mer. pass	. 06:53					Sun	SD = 16.2'			

0 247°26.9 7.5' \$25°49.8 -6.8' 57.2' 66°11.0 60°21.5 44°12.2 36°17.0 45°19.7 55°10. 1 261°53.4 7.4' 25°56.6 -6.7' 57.2' 65°40.6 59°56.3 43°41.3 35°47.5 45°52.8 55°35. 2 276°19.8 7.3' 26°03.3 -6.5' 57.3' 65°10.2 59°31.2 43°10.3 35°17.9 46°25.8 56°01. 3 290°46.1 7.2' 26°09.9 -6.4' 57.3' 64°39.7 59°06.2 42°39.2 34°48.3 46°58.9 56°27. 4 305°12.3 7.0' 26°16.2 -6.3' 57.4' 64°09.2 58°41.1 42°08.2 34°18.6 47°32.1 56°53. 5 319°38.3 6.9' 26°22.5 -6.1' 57.4' 63°38.6 58°16.2 41°37.0 33°48.9 48°05.3 57°19. 6 334°04.3 6.8' \$26°28.6 -6.0' 57.4' 63°08.0 57°51.2 41°05.8 33°19.2 2°46.8 48°38.6 57°45. 7 348°30.1 6.7' 26°34.6 -5.8' 57.5' 62°37.3 57°26.4 40°34.6 32°49.4 3°19.6 49°11.9 58°12. 8 2°55.8 6.6' 26°40.4 -5.7' 57.5' 62°06.6 57°01.6 40°03.4 32°19.6 3°52.6 49°45.2 58°38. 9 17°21.4 6.5' 26°46.0 -5.5' 57.6' 61°35.8 56°36.8 39°32.0 31°49.8 4°25.8 50°18.7 59°05. 11 46°12.2 6.2' 26°56.9 -5.2' 57.6' 61°05.0 56°12.1 39°00.7 31°19.9 4°59.0 50°52.1 59°32. 11 46°12.2 6.2' 26°56.9 -5.2' 57.6' 60°34.1 55°47.5 38°29.3 30°50.0 5°32.3 51°25.6 59°58. 12 60°37.4 6.1' \$27°02.1 -5.0' 57.7' 60°03.2 55°22.9 37°57.9 30°20.0 6°05.8 51°59.2 60°25. 13 75°02.6 6.0' 27°07.1 -4.9' 57.7' 59°32.3 54°58.4 37°26.4 29°50.1 6°39.3 52°32.8 60°52. 14 89°27.6 5.9' 27°12.0 -4.7' 57.8' 58°30.2 54°09.7 36°23.3 28°50.0 7°46.5 53°40.1 61°47. 18°2°42. 18°47.0 5.6' 27°25.7 -4.2' 57.8' 58°30.2 54°09.7 36°23.3 28°50.0 7°46.5 53°40.1 61°47. 132°42.0 5.6' 27°25.7 -4.2' 57.9' 57°28.0 53°21.2 35°20.0 27°49.8 8°53.9 54°47.7 62°42. 18°147°06.6 5.5' \$27°30.0 -4.1' 57.9' 56°56.8 52°57.1 34°48.3 27°19.7 9°27.7 55°21.5 63°09.	i)	y LD delta	est hourly	with large	(objects	Distance	Lunar L			b)	n (5ºº Fe	Moo		h
1 261°53.4 7.4' 25°56.6 -6.7' 57.2' 65°40.6 59°56.3 43°41.3 35°47.5 45°52.8 55°35. 2 276°19.8 7.3' 26°03.3 -6.5' 57.3' 66°10.2 59°31.2 43°10.3 35°17.9 46°25.8 56°01. 3 290°46.1 7.2' 26°09.9 -6.4' 57.3' 64°39.7 59°06.2 42°39.2 34°48.3 46°58.9 56°27. 4 305°12.3 7.0' 26°16.2 -6.3' 57.4' 64°09.2 58°41.1 42°08.2 34°18.6 47°32.1 56°53. 5 319°38.3 6.9' 26°22.5 -6.1' 57.4' 63°38.6 58°16.2 41°37.0 33°48.9 48°05.3 57°19. 6 334°04.3 6.8' \$26°28.6 -6.0' 57.4' 63°08.0 57°51.2 41°05.8 33°19.2 2°46.8 48°38.6 57°45. 7 348°30.1 6.7' 26°34.6 -5.8' 57.5' 62°37.3 57°26.4 40°34.6 32°49.4 3°19.6 49°45.2 58°38.	+Regulus	+Arcturus	+Spica	+Antares	-Venus	-Mars	-Altair	-Sun	HP	d	Dec	ν	GHA	Mon
2 276°19.8 7.3' 26°03.3 -6.5' 57.3' 65°10.2 59°31.2 43°10.3 35°17.9 46°25.8 56°01. 3 290°46.1 7.2' 26°09.9 -6.4' 57.3' 64°39.7 59°06.2 42°39.2 34°48.3 46°58.9 56°27. 4 305°12.3 7.0' 26°16.2 -6.3' 57.4' 64°09.2 58°41.1 42°08.2 34°18.6 47°32.1 56°53. 57.6' 66°01. 57.4' 63°38.6 58°16.2 41°37.0 33°48.9 48°05.3 57°19. 56°51. 57.4' 63°38.6 58°16.2 41°05.8 33°19.2 2°46.8 48°38.6 57°19. 6 334°04.3 6.8' \$26°28.6 -6.0' 57.4' 63°08.0 57°51.2 41°05.8 33°19.2 2°46.8 48°38.6 57°45. 7 348°30.1 6.7' 26°34.6 -5.8' 57.5' 62°37.3 57°26.4 40°34.6 32°49.4 3°19.6 49°11.9 58°12. 8 2°55.8 6.6' 26°40.4 -5.7' 57.5' 62°06.6 57°01.6 <td>99°22.6</td> <td>55° 10.0</td> <td>45°19.7</td> <td></td> <td>36°17.0</td> <td>44°12.2</td> <td>60°21.5</td> <td>66°11.0</td> <td>57.2'</td> <td>-6.8'</td> <td>S25°49.8</td> <td>7.5'</td> <td>247°26.9</td> <td>0</td>	99°22.6	55° 10.0	45°19.7		36°17.0	44°12.2	60°21.5	66°11.0	57.2'	-6.8'	S 25°49.8	7.5'	247°26.9	0
3 290°46.1 7.2' 26°09.9 -6.4' 57.3' 64°39.7 59°06.2 42°39.2 34°48.3 46°58.9 56°27. 4 305°12.3 7.0' 26°16.2 -6.3' 57.4' 64°09.2 58°41.1 42°08.2 34°18.6 47°32.1 56°53. 5 319°38.3 6.9' 26°22.5 -6.1' 57.4' 63°38.6 58°16.2 41°37.0 33°48.9 48°05.3 57°19. 6 334°04.3 6.8' \$26°28.6 -6.0' 57.4' 63°08.0 57°51.2 41°05.8 33°19.2 2°46.8 48°38.6 57°45. 7 348°30.1 6.7' 26°34.6 -5.8' 57.5' 62°37.3 57°26.4 40°34.6 32°49.4 3°19.6 49°41.9 58°12. 8 2°55.8 6.6' 26°40.4 -5.7' 57.5' 62°06.6 57°01.6 40°03.4 32°19.6 3°52.6 49°45.2 58°38. 9 17°21.4 6.5' 26°46.0 -5.5' 57	99°55.5	55°35.6	45°52.8		35°47.5	43°41.3	59°56.3	65°40.6	57.2'	-6.7'	25°56.6	7.4'	261°53.4	1
4 305°12.3 7.0' 26°16.2 -6.3' 57.4' 64°09.2 58°41.1 42°08.2 34°18.6 47°32.1 56°53. 5 319°38.3 6.9' 26°22.5 -6.1' 57.4' 63°38.6 58°16.2 41°37.0 33°48.9 48°05.3 57°19. 6 334°04.3 6.8' \$26°28.6 -6.0' 57.4' 63°08.0 57°51.2 41°05.8 33°19.2 2°46.8 48°38.6 57°45. 7 348°30.1 6.7' 26°34.6 -5.8' 57.5' 62°37.3 57°26.4 40°34.6 32°49.4 3°19.6 49°11.9 58°12. 8 2°55.8 6.6' 26°40.4 -5.7' 57.5' 62°06.6 57°01.6 40°34.6 32°49.4 3°19.6 49°45.2 58°38. 9 17°21.4 6.5' 26°40.4 -5.7' 57.6' 61°35.8 56°36.8 39°32.0 31°49.8 4°25.8 50°15.7 59°05. 10 31°46.8 6.4' 26°51.5 5	100°28.6	56°01.4	46°25.8		35°17.9	43°10.3	59°31.2	65°10.2	57.3'	-6.5'	26°03.3	7.3'	276°19.8	2
5 319°38.3 6.9' 26°22.5 -6.1' 57.4' 63°38.6 58°16.2 41°37.0 33°48.9 48°05.3 57°19. 6 334°04.3 6.8' \$26°28.6 -6.0' 57.4' 63°08.0 57°51.2 41°05.8 33°19.2 2°46.8 48°38.6 57°45. 7 348°30.1 6.7' 26°34.6 -5.8' 57.5' 62°37.3 57°26.4 40°34.6 32°49.4 3°19.6 49°11.9 58°12. 8 2°55.8 6.6' 26°40.4 -5.7' 57.5' 62°06.6 57°01.6 40°03.4 32°19.6 3°52.6 49°45.2 58°38. 9 17°21.4 6.5' 26°40.0 -5.5' 57.6' 61°35.8 56°36.8 39°32.0 31°49.8 4°25.8 50°18.7 59°05. 10 31°46.8 6.4' 26°51.5 -5.4' 57.6' 61°05.0 56°12.1 39°00.7 31°19.9 4°59.0 50°82.1 59°03. 11 46°12.2 6.2' 26	101°01.7	56°27.4	46°58.9		34°48.3	42°39.2	59°06.2	64°39.7	57.3'	-6.4'	26°09.9	7.2'	290°46.1	3
6 334°04.3 6.8' \$26°28.6 -6.0' 57.4' 63°08.0 57°51.2 41°05.8 33°19.2 2°46.8 48°38.6 57°45. 7 348°30.1 6.7' 26°34.6 -5.8' 57.5' 62°37.3 57°26.4 40°34.6 32°49.4 3°19.6 49°11.9 58°12. 8 2°55.8 6.6' 26°40.4 -5.7' 57.5' 62°06.6 57°01.6 40°03.4 32°19.6 3°52.6 49°45.2 58°38. 9 17°21.4 6.5' 26°46.0 -5.5' 57.6' 61°35.8 56°36.8 39°32.0 31°49.8 4°25.8 50°18.7 59°05. 10 31°46.8 6.4' 26°51.5 -5.4' 57.6' 61°05.0 56°12.1 39°00.7 31°19.9 4°59.0 50°52.1 59°32. 11 46°12.2 6.2' 26°56.9 -5.2' 57.6' 60°34.1 55°47.5 38°29.3 30°50.0 5°32.3 51°25.6 59°58. 12 60°37.4 6.1' \$27°02.1 -5.0' 57.7' 60°03.2 55°22.9 37°57.9 30°20.0 6°05.8 51°59.2 60°25. 13 75°02.6 6.0' 27°07.1 -4.9' 57.7' 59°32.3 54°58.4 37°26.4 29°50.1 6°39.3 52°32.8 60°52. 14 88°27.6 5.9' 27°12.0 -4.7' 57.8' 59°01.3 54°34.0 36°54.9 29°20.0 7°12.8 53°06.4 61°20. 15 103°52.5 5.8' 27°16.8 -4.6' 57.8' 58°30.2 54°09.7 36°23.3 28°50.0 7°46.5 53°40.1 61°47. 16 118°17.3 5.7' 27°21.3 -4.4' 57.8' 57°59.1 53°45.4 35°51.7 28°19.9 8°20.1 54°13.9 62°14. 17 132°42.0 5.6' 27°25.7 -4.2' 57.9' 57°28.0 53°21.2 35°20.0 27°49.8 8°53.9 54°47.7 62°42. 18 147°06.6 5.5' \$27°30.0 -4.1' 57.9' 56°56.8 52°57.1 34°48.3 27°19.7 9°27.7 55°21.5 63°09.	101°34.8	56°53.4	47°32.1		34°18.6	42°08.2	58°41.1	64°09.2	57.4'	-6.3'	$26^{\circ}16.2$	7.0'	305°12.3	4
7 348°30.1 6.7' 26°34.6 -5.8' 57.5' 62°37.3 57°26.4 40°34.6 32°49.4 3°19.6 49°11.9 58°12. 8 2°55.8 6.6' 26°40.4 -5.7' 57.5' 62°06.6 57°01.6 40°03.4 32°19.6 3°52.6 49°45.2 58°38. 9 17°21.4 6.5' 26°46.0 -5.5' 57.6' 61°35.8 56°36.8 39°32.0 31°49.8 4°25.8 50°18.7 59°05. 10 31°46.8 6.4' 26°51.5 -5.4' 57.6' 61°05.0 56°12.1 39°00.7 31°19.9 4°59.0 50°52.1 59°32. 11 46°12.2 6.2' 26°56.9 -5.2' 57.6' 60°34.1 55°47.5 38°29.3 30°50.0 5°32.3 51°25.6 59°58. 12 60°37.4 6.1' \$27°02.1 -5.0' 57.7' 60°03.2 55°22.9 37°57.9 30°20.0 6°05.8 51°59.2 60°25. 13 75°02.6 6.0' 27°07.1 -4.9' 57.7' 59°32.3 54°58.4 37°26.4 29°50.1 6°39.3 52°32.8 60°52. 14 89°27.6 5.9' 27°12.0 -4.7' 57.8' 59°01.3 54°34.0 36°54.9 29°20.0 7°12.8 53°06.4 61°20. 15 103°52.5 5.8' 27°16.8 -4.6' 57.8' 58°30.2 54°09.7 36°23.3 28°50.0 7°46.5 53°40.1 61°47. 16 118°17.3 5.7' 27°21.3 -4.4' 57.8' 57°59.1 53°45.4 35°51.7 28°19.9 8°20.1 54°13.9 62°14. 17 132°42.0 5.6' 27°25.7 -4.2' 57.9' 57°28.0 53°21.2 35°20.0 27°49.8 8°53.9 54°47.7 62°42. 18 147°06.6 5.5' \$27°30.0 -4.1' 57.9' 56°56.8 52°57.1 34°48.3 27°19.7 9°27.7 55°21.5 63°09.	102°08.0	57° 19.6	48°05.3		33°48.9	41°37.0	58°16.2	63°38.6	57.4'	-6.1'	$26^{\circ}22.5$	6.9'	319°38.3	5
8 2°55.8 6.6' 26°40.4 -5.7' 57.5' 62°06.6 57°01.6 40°03.4 32°19.6 3°52.6 49°45.2 58°38. 9 17°21.4 6.5' 26°46.0 -5.5' 57.6' 61°35.8 56°36.8 39°32.0 31°49.8 4°25.8 50°18.7 59°05. 10 31°46.8 6.4' 26°51.5 -5.4' 57.6' 61°05.0 56°12.1 39°00.7 31°19.9 4°59.0 50°52.1 59°35. 11 46°12.2 6.2' 26°56.9 -5.2' 57.6' 60°34.1 55°47.5 38°29.3 30°50.0 5°32.3 51°25.6 59°58. 12 60°37.4 6.1' \$27°02.1 -5.0' 57.7' 60°32.5 55°22.9 37°57.9 30°20.0 6°05.8 51°55.2 59°38. 13 75°02.6 6.0' 27°07.1 -4.9' 57.7' 59°32.3 54°58.4 37°26.4 29°50.1 6°39.3 52°32.8 60°52. 14 89°27.6	102°41.2	57°45.9	48°38.6	2°46.8	33°19.2	41°05.8	57°51.2	63°08.0	57.4'	-6.0'	S 26°28.6	6.8'	334°04.3	6
9 17°21.4 6.5' 26°46.0 -5.5' 57.6' 61°35.8 56°36.8 39°32.0 31°49.8 4°25.8 50°18.7 59°05. 10 31°46.8 6.4' 26°51.5 -5.4' 57.6' 61°05.0 56°12.1 39°00.7 31°19.9 4°59.0 50°52.1 59°32. 11 46°12.2 6.2' 26°56.9 -5.2' 57.6' 60°34.1 55°47.5 38°29.3 30°50.0 5°32.3 51°25.6 59°58. 12 60°37.4 6.1' \$27°02.1 -5.0' 57.7' 60°03.2 55°22.9 37°57.9 30°20.0 6°05.8 51°59.2 60°25. 13 75°02.6 6.0' 27°07.1 -4.9' 57.7' 59°32.3 54°38.4 37°26.4 29°50.1 6°39.3 52°32.8 60°52. 14 89°27.6 5.9' 27°12.0 -4.7' 57.8' 59°01.3 54°34.0 36°54.9 29°20.0 7°12.8 53°06.4 61°47. 15 103°52.5 <	103°14.5	58° 12.3	49°11.9	3°19.6	32°49.4	40°34.6	57°26.4	62°37.3	57.5'	-5.8'	26°34.6	6.7'	348°30.1	7
10 31°46.8 6.4' 26°51.5 -5.4' 57.6' 61°05.0 56°12.1 39°00.7 31°19.9 4°59.0 50°52.1 59°32. 11 46°12.2 6.2' 26°56.9 -5.2' 57.6' 60°34.1 55°47.5 38°29.3 30°50.0 5°32.3 51°25.6 59°58. 12 60°37.4 6.1' \$27°02.1 -5.0' 57.7' 60°03.2 55°22.9 37°57.9 30°20.0 6°05.8 51°59.2 60°25. 13 75°02.6 6.0' 27°07.1 -4.9' 57.7' 59°32.3 54°58.4 37°26.4 29°50.1 6°39.3 52°32.8 60°52. 14 89°27.6 5.9' 27°12.0 -4.7' 57.8' 59°01.3 54°34.0 36°54.9 29°20.0 7°12.8 53°06.4 61°20. 15 103°52.5 5.8' 27°16.8 -4.6' 57.8' 58°30.2 54°09.7 36°23.3 28°50.0 7°46.5 53°40.1 61°47. 16 118°17.3 5.7' 27°21.3 -4.4' 57.8' 57°59.1 53°45.4 35°51.7 28°19.9 8°20.1 54°47.7 62°42. 17 132°42.0 5.6' 27°25.7 -4.2' 57.9'	103°47.8	58° 38.8	49°45.2	3°52.6		40°03.4	57°01.6	62°06.6	57.5'	-5.7'	26°40.4	6.6'		8
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	104°21.1	59°05.4							57.6'	-5.5'		6.5'		9
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	104°54.6	59°32.1							57.6'	-5.4'		6.4'		10
13 75°02.6 6.0' 27°07.1 -4.9' 57.7' 59°32.3 54°58.4 37°26.4 29°50.1 6°39.3 52°32.8 60°52. 14 89°27.6 5.9' 27°12.0 -4.7' 57.8' 59°01.3 54°34.0 36°54.9 29°20.0 7°12.8 53°06.4 61°20. 15 103°52.5 5.8' 27°16.8 -4.6' 57.8' 58°30.2 54°09.7 36°23.3 28°50.0 7°46.5 53°40.1 61°47. 16 118°17.3 5.7' 27°21.3 -4.4' 57.8' 57°59.1 53°45.4 35°51.7 28°19.9 8°20.1 54°47.7 62°14. 17 132°42.0 5.6' 27°25.7 -4.2' 57.9' 57°28.0 53°21.2 35°20.0 27°49.8 8°53.9 54°47.7 62°42. 18 147°06.6 5.5' \$27°30.0 -4.1' 57.9' 56°56.8 52°57.1 34°48.3 27°19.7 9°27.7 55°21.5 63°09.	105°28.0	59°58.9	51°25.6	5°32.3	30°50.0	38°29.3	55°47.5	60°34.1	57.6'	-5.2'	26°56.9	6.2'	46°12.2	11
14 89°27.6 5.9' 27°12.0 -4.7' 57.8' 59°01.3 54°34.0 36°54.9 29°20.0 7°12.8 53°06.4 61°20. 15 103°52.5 5.8' 27°16.8 -4.6' 57.8' 58°30.2 54°09.7 36°23.3 28°50.0 7°46.5 53°40.1 61°47. 16 118°17.3 5.7' 27°21.3 -4.4' 57.8' 57°59.1 53°45.4 35°51.7 28°19.9 8°20.1 54°13.9 62°14. 17 132°42.0 5.6' 27°25.7 -4.2' 57.9' 57°28.0 53°21.2 35°20.0 27°49.8 8°53.9 54°47.7 62°42. 18 147°06.6 5.5' \$27°30.0 -4.1' 57.9' 56°56.8 52°57.1 34°48.3 27°19.7 9°27.7 55°21.5 63°09.	106°01.5	60°25.9							57.7'	-5.0'	S 27°02.1	6.1'		12
15 103°52.5 5.8' 27°16.8 -4.6' 57.8' 58°30.2 54°09.7 36°23.3 28°50.0 7°46.5 53°40.1 61°47. 16 118°17.3 5.7' 27°21.3 -4.4' 57.8' 57°59.1 53°45.4 35°51.7 28°19.9 8°20.1 54°13.9 62°14. 17 132°42.0 5.6' 27°25.7 -4.2' 57.9' 57°28.0 53°21.2 35°20.0 27°49.8 8°53.9 54°47.7 62°42. 18 147°06.6 5.5' \$27°30.0 -4.1' 57.9' 56°56.8 52°57.1 34°48.3 27°19.7 9°27.7 55°21.5 63°09.	106°35.1	60°52.9	52°32.8	6°39.3	29°50.1	37°26.4		59°32.3	57.7'	-4.9'	$27^{\circ}07.1$	6.0'	75°02.6	13
16 118°17.3 5.7' 27°21.3 -4.4' 57.8' 57°59.1 53°45.4 35°51.7 28°19.9 8°20.1 54°13.9 62°14. 17 132°42.0 5.6' 27°25.7 -4.2' 57.9' 57°28.0 53°21.2 35°20.0 27°49.8 8°53.9 54°47.7 62°42. 18 147°06.6 5.5' \$27°30.0 -4.1' 57.9' 56°56.8 52°57.1 34°48.3 27°19.7 9°27.7 55°21.5 63°09.	107°08.7	61°20.1							57.8'	-4.7'		5.9'		14
17 132°42.0 5.6' 27°25.7 -4.2' 57.9' 57°28.0 53°21.2 35°20.0 27°49.8 8°53.9 54°47.7 62°42. 18 147°06.6 5.5' \$27°30.0 -4.1' 57.9' 56°56.8 52°57.1 34°48.3 27°19.7 9°27.7 55°21.5 63°09.	107°42.4	61°47.3												1
18 147°06.6 5.5' S 27°30.0 -4.1' 57.9' 56°56.8 52°57.1 34°48.3 27°19.7 9°27.7 55°21.5 63°09.	108°16.1	62°14.7												
	108°49.8	62°42.1		8°53.9	1			57°28.0	57.9'	-4.2'	27°25.7	5.6'		17
19 161°31.1 5.4' 27°34.0 -3.9' 58.0' 56°25.5 52°33.1 34°16.6 26°49.6 10°01.6 55°55.4 63°37.	109°23.6	63°09.7	55°21.5	9°27.7	27°19.7	34°48.3	52°57.1	56°56.8	57.9'	-4.1'	S 27°30.0	5.5'	147°06.6	18
	109°57.5	63°37.3	55°55.4	10°01.6	26°49.6	34°16.6	52°33.1	56°25.5	58.0'	-3.9'	27°34.0	5.4'	161°31.1	19
	110°31.4	64°05.1							58.0'	-3.7'				20
	111°05.3	64°32.9												
	111°39.3	65°00.8												
	112°13.4	65°28.9	58°11.5	12°17.6	24°48.7	32°09.2	50°58.1	54°20.1	58.1'	-3.2'	27°48.7	5.0'	219°08.1	
SD = 15.6' Mer. pass. 07:48 Sun $SD = 16.2'$				$SD = \overline{16.2'}$	Sun				3	s. 07:48	Mer. pas	= 15.6'	SD :	5 th

	 141001			ЦΠ	_			` '	. At		<u> </u>	-1
h	Moor	ı (6 th Fe	h)			Lunar F)istance	(ohiects	with large	est hourh	LD delt	۱ د

Tue	GHA	ν	Dec	d	HP	-Sun	-Altair	-Mars	-Venus	+Antares	+Spica	+Arcturus	+Regulus
0	233°32.1	4.9'	S 27°51.9	-3.1'	58.2'	53°48.6	50°34.6	31°37.3	24°18.5	12°51.7	58°45.7	65°57.0	112°47.5
1	247°56.0	4.8'	27°54.9	-2.9'	58.2'	53°17.0	50°11.2	31°05.3	23°48.2	13°25.9	59°19.9	66°25.2	113°21.6
2	262°19.8	4.7'	27°57.8	-2.7'	58.2'	52°45.5	49°47.9	30°33.2	23°17.9	14°00.1	59°54.1	66°53.5	113°55.8
3	276°43.5	4.6'	$28^{\circ}00.5$	-2.5'	58.3'	52°13.8	49°24.8	30°01.2	22°47.6	14°34.4	60°28.4	67°21.9	114°30.1
4	291°07.2	4.6'	28°03.0	-2.3'	58.3'	51°42.2	49°01.8	29°29.1	22°17.3	15°08.7	61°02.8	67°50.3	115°04.4
5	305°30.7	4.5'	28°05.4	-2.2'	58.4'	51°10.4	48°38.9	28°56.9	21°47.0	15°43.1	61°37.2	68°18.9	115°38.7
6	319°54.2	4.4'	S 28°07.5	-2.0'	58.4'	50°38.7	48° 16.1	28°24.7	21°16.7	16°17.6	62°11.6	68°47.5	116°13.1
7	334°17.6	4.3'	28°09.5	-1.8'	58.4'	50°06.8	47°53.5	27°52.5	20°46.4	16°52.1	62°46.1	69°16.2	116°47.6
8	348°40.9	4.2'	28°11.3	-1.6'	58.5'	49°35.0	47°31.1	27°20.3	20°16.0	17°26.6	63°20.7	69°45.0	117°22.0
9	3°04.1	4.2'	$28^{\circ}12.9$	-1.4'	58.5'	49°03.0	47°08.8	26°48.0	19°45.7	18°01.2	63°55.3	70°13.9	117°56.6
10	17°27.2	4.1'	28°14.4	-1.2'	58.6'	48°31.1	46°46.6	26° 15.7	19°15.4	18°35.9	64°29.9	70°42.9	118°31.2
11	31°50.3	4.0'	$28^{\circ}15.6$	-1.1'	58.6'	47°59.1	46°24.6	25°43.3	18°45.2	19°10.6	65°04.6	71°11.9	119°05.8
12	46°13.3	3.9'	S 28°16.7	-0.9'	58.6'	47°27.0	46°02.8	25°10.9	18°14.9	19°45.3	65°39.4	71°41.0	119°40.5
13	60°36.3	3.9'	$28^{\circ}17.5$	-0.7'	58.7'	46°54.9	45°41.2	24°38.5	17°44.7	20°20.1	66°14.2	72°10.2	
14	74°59.1	3.8'	28°18.2	-0.5'	58.7'	46°22.7	45° 19.7	24°06.1	17°14.5	20°55.0	66°49.0	72°39.5	
15	89°21.9	3.7'	$28^{\circ}18.7$	-0.3'	58.8'	45°50.5	44°58.5	23°33.6	16°44.4	21°29.9	67°23.9	73°08.9	
16	103°44.7	3.7'	$28^{\circ}19.0$	-0.1'	58.8'	45°18.3	44°37.4	23°01.1	16°14.3	22°04.8	67°58.9	73°38.3	
17	118°07.4	3.6'	$28^{\circ}19.1$	0.1'	58.8'	44°46.0	44°16.5	22°28.6	15°44.3	22°39.9	68°33.9	74°07.8	
18	132°30.0	3.6'	S 28°19.0	0.3'	58.9'	44°13.7	43°55.8	21°56.0	15°14.4	23°14.9	69°08.9	74°37.3	
19	146°52.6	3.5'	$28^{\circ}18.7$	0.5'	58.9'	43°41.3	43°35.4	21°23.5	14°44.5	23°50.0	69°44.0	75°07.0	
20	161°15.1	3.5'	$28^{\circ}18.3$	0.7'	59.0'	43°08.9	43°15.2	20°50.9	14°14.8	24°25.2	70°19.2	75°36.7	
21	175°37.6	3.4'	28°17.6	0.9'	59.0'	42°36.4	42°55.2	20°18.3	13°45.2	25°00.4	70°54.4	76°06.4	
22	190°00.0	3.4'	28°16.7	1.1'	59.0'	42°03.9	42°35.4	19°45.7	13°15.7	25°35.6	71°29.6	76°36.3	
23	204°22.4	3.3'	28°15.7	1.3'	59.1'	41°31.3	42°15.9	19°13.1	12°46.5	26°10.9	72°04.9	77°06.2	
6 th	SD :	= 15.9'	Mer. pas	s. 08:47	,				Sun	SD = 16.2'			

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

n		IVIOOI	n (7 Fer	٥)			Lunar	Distance	Objects	with largest	nourly L	D deita)	
Wed	GHA	ν	Dec	d	HP	-Altair	-Mars	-Venus	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus
0	218°44.8	3.3'	S 28°14.4	1.5'	59.1'	41°56.6	18° 40.5	12°17.4	26°46.3	49°58.4	54°12.3	72°40.3	77°36.1
1	233°07.1	3.3'	28°12.9	1.7'	59.2'	41°37.6	18°07.9	11°48.5	27°21.7	50° 18.6	54°33.2	73°15.7	78°06.2
2	247°29.3	3.2'	28°11.3	1.9'	59.2'	41°18.9	17°35.2	11°19.9	27°57.1	50°39.0	54°54.3	73°51.1	78°36.3
3	261°51.6	3.2'	28°09.4	2.1'	59.2'	41°00.4	17°02.6	10°51.6	28°32.6	50°59.7	55°15.6	74°26.6	79°06.4
4	276°13.8	3.2'	28°07.4	2.3'	59.3'	40°42.2	16°30.1	10°23.6	29°08.2	51°20.5	55°37.1	75°02.2	79°36.6
5	290°36.0	3.2'	$28^{\circ}05.1$	2.5'	59.3'	40°24.4	15°57.5	9°56.1	29°43.8	51°41.6	55°58.8	75°37.8	80°06.9
6	304°58.1	3.1'	S 28°02.7	2.7'	59.3'	40°06.8	15°25.0	9°29.0	30°19.4	52°03.0	56°20.7	76°13.4	80°37.2
7	319°20.3	3.1'	28°00.0	2.9'	59.4'	39°49.5	14°52.5	9°02.5	30°55.1	52°24.5	56°42.8	76°49.1	81°07.6
8	333°42.4	3.1'	27°57.2	3.1'	59.4'	39°32.6	14°20.1	8°36.7	31°30.9	52°46.2	57°05.0	77°24.8	81°38.1
9	348°04.5	3.1'	$27^{\circ}54.1$	3.3'	59.5'	39° 15.9	13°47.7	8°11.6	32°06.7	53°08.2	57°27.4	78°00.6	82°08.6
10	2°26.6	3.1'	27°50.9	3.5'	59.5'	38°59.7	13°15.4	7°47.4	32°42.5	53°30.4	57°50.0	78°36.4	82°39.1
11	16°48.6	3.1'	27°47.4	3.7'	59.5'	38°43.7	12°43.3		33°18.4	53°52.7	58°12.8	79°12.3	83°09.7
12	31°10.7	3.1'	S 27°43.8	3.9'	59.6'	38°28.1	12°11.2		33°54.3	54° 15.3	58°35.7	79°48.2	83°40.4
13	45°32.8	3.1'	27°39.9	4.1'	59.6'	38° 12.9	11°39.3		34°30.3	54°38.0	58°58.8	80°24.2	84°11.1
14	59°54.8	3.1'	27°35.9	4.3'	59.6'		11°07.5		35°06.3	55°00.9	59°22.1	81°00.2	84°41.9
15	74°16.9	3.1'	27°31.6	4.5'	59.7'		10°35.9		35°42.4	55°24.0	59°45.5	81°36.3	85°12.7
16	88°38.9	3.1'	$27^{\circ}27.1$	4.7'	59.7'		10°04.6		$36^{\circ}18.5$	55°47.3	60°09.1	82°12.4	85°43.5
17	103°01.0	3.1'	27°22.5	4.9'	59.7'		9°33.5		36°54.6	56° 10.8	60°32.8	82°48.5	86°14.4
18	117°23.1	3.1'	S 27°17.6	5.1'	59.8'		9°02.8		37°30.8	56°34.5	60°56.7	83°24.7	86°45.4
19	131°45.2	3.1'	$27^{\circ}12.6$	5.3'	59.8'		8°32.5		38°07.1	56°58.3	61°20.7	84°01.0	87°16.4
20	146°07.3	3.1'	27°07.3	5.5'	59.8'		8°02.7		38°43.4	57°22.3	61°44.9	84°37.2	87°47.4
21	160°29.4	3.1'	$27^{\circ}01.9$	5.7'	59.9'		7°33.5		$39^{\circ}19.7$	57° 46.5	62°09.2	85°13.6	88°18.5
22	174°51.5	3.2'	26°56.2	5.9'	59.9'		7°05.0		$39^{\circ}56.1$	58° 10.8	62°33.7	85°49.9	88°49.6
23	189°13.7	3.2'	26°50.4	6.0'	59.9'		6°37.5		40°32.5	58°35.3	62°58.3	86°26.4	89°20.7
7 th	SD =	= 16.1'	Mer. pass	s. 09:50	0		-			-	-	-	

h Moon (8 th Feb)	Lunar Distance (objects with largest hourly LD delta)
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Thu	GHA	ν	Dec	d	HP	+Mars	+Venus	+Antares	+Rigil Kent.	+Hadar	+Acrux	+Spica	+Arcturus
0	203°35.9	3.2'	S 26°44.3	6.2'	60.0'			41°09.0	58°59.9	63°23.0	73°30.2	87°02.8	89°51.9
1	217°58.1	3.2'	$26^{\circ}38.1$	6.4'	60.0'			41°45.5	59°24.7	63°47.9	73°51.9	87°39.3	90°23.1
2	232°20.3	3.3'	26°31.6	6.6'	60.0'			42°22.0	59°49.7	64° 12.9	74°13.7	88° 15.8	90°54.4
3	246°42.6	3.3'	$26^{\circ}25.0$	6.8'	60.1'			42°58.6	60°14.8	64°38.0	74°35.5	88°52.4	91°25.7
4	261°04.9	3.3'	$26^{\circ}18.2$	7.0'	60.1'			43°35.2	60°40.0	65°03.3	74°57.5	89°29.0	91°57.0
5	275°27.2	3.4'	$26^{\circ}11.1$	7.2'	60.1'			44°11.9	61°05.4	65°28.6	75°19.6	90°05.7	92°28.4
6	289°49.6	3.4'	S 26°03.9	7.4'	60.2'			44°48.6	61°31.0	65°54.1	75°41.8	90°42.4	92°59.7
7	304°12.0	3.5'	25° 56.5	7.6'	60.2'			45°25.4	61°56.6	66° 19.8	76°04.0	91°19.1	93°31.1
8	318°34.4	3.5'	25°48.9	7.8'	60.2'			46°02.1	62°22.4	66° 45.5	76°26.4	91°55.9	94°02.6
9	332°56.9	3.5'	$25^{\circ}41.1$	8.0'	60.3'		8°54.0	46°39.0	62°48.4	67°11.3	76°48.8	92°32.7	94°34.0
10	347°19.5	3.6'	$25^{\circ}33.1$	8.2'	60.3'		9°21.3	47°15.8	63°14.4	67°37.3	77°11.3	93°09.6	95°05.5
11	1°42.1	3.6'	$25^{\circ}24.9$	8.4'	60.3'		9°49.2	47°52.7	63°40.6	68°03.4	77°33.9	93°46.5	95°37.0
12	16°04.7	3.7'	S 25°16.6	8.5'	60.3'		10°17.8	48°29.7	64°06.9	68°29.5	77°56.5	94°23.4	96°08.6
13	30°27.4	3.8'	25°08.0	8.7'	60.4'		10°46.9	49°06.6	64°33.4	68° 55.8	78°19.3	95°00.4	96°40.1
14	44°50.2	3.8'	24°59.3	8.9'	60.4'		11°16.4	49°43.7	64°59.9	69°22.2	78°42.1	95°37.4	97° 11.7
15	59°13.0	3.9'	24°50.4	9.1'	60.4'		11°46.4	50°20.7	65°26.6	69°48.7	79°05.0	96°14.4	97°43.3
16	73°35.9	3.9'	24°41.3	9.3'	60.4'		12°16.8	50°57.8	65°53.4	$70^{\circ}15.2$	79°27.9	96°51.5	98°14.9
17	87°58.8	4.0'	24°32.0	9.5'	60.5'		12°47.4	51°34.9	66°20.3	70°41.9	79°50.9	97°28.6	98°46.5
18	102°21.8	4.1'	S 24°22.5	9.6'	60.5'		13°18.4	52°12.0	66°47.3	71°08.7	80°14.0	98°05.7	99°18.1
19	116°44.9	4.1'	$24^{\circ}12.9$	9.8'	60.5'		13°49.7	52°49.2	67°14.4	71°35.5	80°37.2	98°42.9	99°49.7
20	131°08.0	4.2'	24°03.1	10.0'	60.6'	8°08.7	14°21.2	53°26.4	67°41.6	72°02.4	81°00.4	99°20.1	100°21.4
21	145°31.2	4.3'	$23^{\circ}53.1$	10.2'	60.6'	8°39.5	14°52.9	54°03.7	68°08.9	72°29.5	81°23.6	99°57.3	100°53.0
22	159°54.4	4.3'	23°42.9	10.3'	60.6'	9°10.8	15°24.8	54°41.0	68°36.3	72°56.6	81°47.0	100°34.6	101°24.7
23	174°17.8	4.4'	23°32.6	10.5'	60.6'	9°42.6	15°56.9	55°18.3	69°03.8	73°23.8	82°10.3	101°11.9	101°56.3
8 th	SD :	= 16.4'	Mer. pas	s. 10:53									

Moon (9th Feb)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	+Mars	+Venus	+Antares	+Rigil Kent.	+Hadar	+Acrux	+Spica	+Arcturus		
0	188°41.2	4.5'	S 23°22.0	10.7'	60.6'	10°14.9	16°29.1	55° 55.6	69°31.4	73°51.0	82°33.8	101°49.2	102°28.0		
1	203°04.7	4.6'	23°11.4	10.9'	60.7'	10°47.5	17°01.5	56°33.0	69°59.1	74°18.4	82°57.3	102°26.6	102°59.6		
2	217° 28.2	4.6'	23°00.5	11.0'	60.7'	11°20.4	17°34.1	57° 10.4	70°26.8	74°45.8	83°20.8	103°04.0	103°31.3		
3	231°51.8	4.7'	$22^{\circ}49.5$	11.2'	60.7'	11°53.5	18°06.8	57° 47.8	70°54.7	75°13.3	83°44.4	103°41.4	104°03.0		
4	246° 15.5	4.8'	22°38.3	11.3'	60.7'	12°27.0	18°39.6	58°25.3	71°22.6	75°40.8	84°08.0	104°18.9	104°34.6		
5	260°39.3	4.9'	22°27.0	11.5'	60.8'	13°00.6	19°12.5	59°02.8	71°50.7	76°08.5	84°31.7	104°56.3	105°06.2		
6	275°03.2	4.9'	S 22°15.4	11.7'	60.8'	13°34.4	19°45.5	59°40.3	72°18.8	76°36.2	84°55.4	105°33.8	105°37.9		
7	289°27.1	5.0'	22°03.8	11.8'	60.8'	14°08.4	20°18.6	60°17.8	72°47.0	77°03.9	85° 19.1	106°11.4	106°09.5		
8	303°51.1	5.1'	21°51.9	12.0'	60.8'		·	'		oon ——		·	'		
9	318° 15.2	5.2'	21°40.0	12.1'	60.8'										
10	332°39.4	5.3'	$21^{\circ}27.8$	12.3'	60.9'	0.9' New Moon ————									
11	347°03.7	5.4'	$21^{\circ}15.5$	12.4'	60.9'										
12	1°28.1	5.4'	S 21°03.1	12.6'	60.9'				New M	loon ——					
13	15°52.5	5.5'	20°50.5	12.7'	60.9'					loon ———					
14	30° 17.0	5.6'	20°37.7	12.9'	60.9'					loon ———					
15	44°41.6	5.7'	20°24.9	13.0'	60.9'				New M	loon ———					
16	59°06.3	5.8'	$20^{\circ}11.8$	13.2'	61.0'					loon ———					
17	73°31.1	5.9'	$19^{\circ}58.7$	13.3'	61.0'				New M	loon ———					
18	87°56.0	6.0'	S 19°45.4	13.4'	61.0'					loon ——					
19	102°20.9	6.0'	19°31.9	13.6'	61.0'				New M	loon ———					
20	116°46.0	6.1'	$19^{\circ}18.3$	13.7'	61.0'					loon ———					
21	131°11.1	6.2'	19°04.6	13.8'	61.0'										
22	145°36.3	6.3'	18°50.8	14.0'	61.0'					loon ———					
23	160°01.6	6.4'	18°36.8	14.1'	61.0'		_		New N	loon ——					
9 th	SD :	= 16.5	Mer. pas	s. 11:54											

h		Моо	n (10 th Fe	eb)			Lunar Dis	tance (ob	jects witl	h largest l	hourly LD	delta)					
Sat	GHA	ν	Dec	d	HP	-Sirius	-Betelgeuse	-Capella	-Polaris	-Rigel	-Aldebaran	-Jupiter	-Saturn				
0	174°27.0	6.5'	S 18°22.7	14.2'	61.1'				New M	oon ——							
1	188°52.5	6.6'	$18^{\circ}08.5$	14.3'	61.1'												
2	203°18.1	6.7'	$17^{\circ}54.1$	14.5'	61.1'												
3	217°43.8	6.8'	17°39.7	14.6'	61.1'												
4	232°09.5	6.8'	$17^{\circ}25.1$	14.7'	61.1'												
5	246°35.4	6.9'	$17^{\circ}10.4$	14.8'	61.1'				New M	oon ——							
6	261°01.3	7.0'	S 16°55.6	14.9'	61.1'												
7	275°27.3	7.1'	16°40.6	15.0'	61.1'				New M	oon ——							
8	289°53.4	7.2'	$16^{\circ}25.6$	15.1'	61.1'												
9	304°19.6	7.3'	$16^{\circ}10.5$	15.2'	61.1'												
10	318°45.9	7.4'	15°55.2	15.4'	61.1'		New Moon New Moon										
11	333°12.3	7.5'	$15^{\circ}39.8$	15.5'	61.1'												
12	347°38.7	7.5'	S 15°24.4	15.6'	61.1'				New M	oon ——							
13	2°05.2	7.6'	15°08.8	15.6'	61.1'				New M	oon ———							
14	16°31.9	7.7'	14°53.2	15.7'	61.1'				New M	oon ———							
15	30°58.6	7.8'	14°37.5	15.8'	61.2'	119° 17.3	115°53.3	111°06.6	104°25.3	101°57.8		67°33.7	7°03.1				
16	45°25.4	7.9'	14°21.6	15.9'	61.2'	118°54.8	115°18.4	110°30.8	104°09.1	101°27.2	98°16.0	66°56.0	6°26.5				
17	59°52.2	8.0'	14°05.7	16.0'	61.2'	118°32.1	114°43.5	109°54.9	103°52.9	100°56.6	97°38.6	66°18.4	5°50.1				
18	74°19.2	8.0'	S 13°49.7	16.1'	61.2'	118°09.2	114°08.5	109° 19.1	103°36.5	100°25.9	97°01.1	65°40.8	5°14.1				
19	88°46.2	8.1'	13°33.6	16.2'	61.2'	117°46.3	113°33.5	108°43.2	103°20.0	99°55.3	96°23.6	65°03.2	4°38.5				
20	103°13.4	8.2'	13°17.4	16.3'	61.2'	117°23.1	112°58.5	108°07.4	103°03.5	99°24.6	95°46.2	64°25.6	4°03.6				
21	117°40.6	8.3'	$13^{\circ}01.2$	16.3'	61.2'	116°59.9	112°23.5	107°31.5	102°46.9	98°53.8	95°08.7	63°48.0	3°29.6				
22	132°07.8	8.4'	12°44.8	16.4'	61.2'	116°36.5	111°48.4	106°55.6	102°30.2	98°23.1	94°31.3	63°10.4					
23	146°35.2	8.4'	12°28.4	16.5'	61.2'	116° 13.0	111°13.3	106° 19.7	102°13.4	97°52.3	93°53.8	62°32.7					
10 th	SD	= 16.7	Mer. pas	s. 12:51													

h Moon (11th Feb)

Sun	GHA	ν	Dec	d	HP	-Sirius	-Betelgeuse	-Capella	-Rigel	-Aldebaran	-Jupiter	+Saturn	+Fomalhaut
0	161°02.6	8.5'	S 12°11.9	16.6'	61.1'	115°49.4	110°38.2	105°43.8	97°21.5	93°16.3	61°55.1		
1	175°30.2	8.6'	11°55.4	16.6'	61.1'	115°25.6	110°03.1	105°07.8	96°50.7	92°38.9	61°17.6		
2	189°57.7	8.7'	11°38.7	16.7'	61.1'	115°01.7	109°27.9	104°31.9	96°19.9	92°01.4	60°40.0		
3	204°25.4	8.7'	$11^{\circ}22.0$	16.8'	61.1'	114°37.7	108°52.8	103°56.0	95°49.1	91°24.0	60°02.4		
4	218°53.2	8.8'	11°05.3	16.8'	61.1'	114°13.6	108°17.6	103°20.0	95°18.3	90°46.6	59°24.8		
5	233°21.0	8.9'	$10^{\circ}48.5$	16.9'	61.1'	113°49.4	107°42.4	102°44.1	94°47.5	90°09.1	58°47.3		
6	247°48.9	9.0'	S 10°31.6	16.9'	61.1'	113°25.1	107°07.2	102°08.2	94°16.6	89°31.7	58°09.7		
7	262°16.8	9.0'	$10^{\circ}14.6$	17.0'	61.1'	113°00.7	106°32.0	101°32.2	93°45.8	88° 54.3	57°32.2		
8	276°44.9	9.1'	09°57.6	17.1'	61.1'	112°36.2	105°56.8	100°56.3	93°15.0	88° 16.9	56°54.6		
9	291°13.0	9.2'	09°40.6	17.1'	61.1'	112°11.6	105°21.6	100°20.3	92°44.1	87° 39.5	56° 17.1	4°43.6	
10	305°41.1	9.2'	$09^{\circ}23.5$	17.2'	61.1'	111°46.9	104°46.3	99°44.4	92°13.3	87°02.2	55°39.6	5°19.2	20°06.8
11	320°09.4	9.3'	$09^{\circ}06.3$	17.2'	61.1'	111°22.2	104°11.1	99°08.5	91°42.5	86°24.8	55°02.1	5°55.2	20°25.2
12	334°37.7	9.4'	S 08°49.1	17.2'	61.1'	110°57.3	103°35.9	98°32.5	91°11.6	85°47.4	54°24.6	6°31.4	20°44.4
13	349°06.0	9.4'	$08^{\circ}31.9$	17.3'	61.1'	110°32.3	103°00.6	97°56.6	90°40.8	85°10.1	53°47.2	7°07.9	21°04.4
14	3°34.5	9.5'	$08^{\circ}14.6$	17.3'	61.1'	110°07.3	102°25.4	97°20.7	90°10.0	84°32.8	53°09.7	7°44.5	21°25.2
15	18°03.0	9.6'	07°57.2	17.4'	61.0'	109°42.2	101°50.2	96°44.8	89°39.2	83°55.5	52°32.3	8°21.3	21°46.7
16	32°31.5	9.6'	$07^{\circ}39.9$	17.4'	61.0'	109°17.1	101°15.0	96°08.9	89°08.4	83° 18.2	51°54.9	8°58.1	22°08.9
17	47°00.2	9.7'	$07^{\circ}22.5$	17.4'	61.0'	108°51.8	100°39.7	95°33.0	88°37.7	82°40.9	51°17.5	9°35.1	22°31.7
18	61°28.8	9.7'	S 07°05.0	17.5'	61.0'	108°26.5	100°04.5	94°57.1	88°06.9	82°03.7	50°40.1	10°12.0	22°55.1
19	75°57.6	9.8'	06°47.5	17.5'	61.0'	108°01.1	99°29.3	94°21.3	87°36.2	81°26.5	50°02.8	10°49.0	23°19.2
20	90°26.4	9.9'	06°30.0	17.5'	61.0'	107°35.7	98°54.1	93°45.4	87°05.5	80°49.2	49°25.4	11°26.1	23°43.8
21	104°55.2	9.9'	$06^{\circ}12.5$	17.6'	61.0'	107°10.2	98°18.9	93°09.6	86°34.8	80°12.1	48°48.1	12°03.1	24°08.9
22	119°24.1	10.0'	$05^{\circ}54.9$	17.6'	61.0'	106°44.7	97°43.7	92°33.8	86°04.1	79°34.9	48° 10.8	12°40.2	24°34.5
23	133°53.1	10.0'	05°37.4	17.6'	60.9'	106°19.1	97°08.6	91°58.0	85°33.5	78° 57.7	47°33.5	13°17.3	25°00.5
11 th	SD	= 16.7'	Mer. pass	s. 13:45					*		*		

h Moon (12th Feb)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Pollux	-Betelgeuse	-Capella	-Aldebaran	-Jupiter	+Saturn	+Fomalhaut	+Sun
0	148°22.1	10.1'	S 05°19.7	17.6'	60.9'		96°33.4	$91^{\circ}22.2$	78° 20.6	46°56.3	13°54.4	25°27.0	
1	162°51.2	10.1'	$05^{\circ}02.1$	17.6'	60.9'		95°58.3	90°46.5	77°43.5	46°19.1	14°31.5	25°54.0	
2	177°20.3	10.2'	04°44.5	17.7'	60.9'		95°23.1	$90^{\circ}10.7$	77°06.4	45°41.9	15°08.6	26°21.3	
3	191°49.5	10.2'	04°26.8	17.7'	60.9'		94°48.0	89°35.0	76° 29.4	45°04.7	15°45.7	26°49.0	
4	206°18.7	10.3'	$04^{\circ}09.1$	17.7'	60.9'	119°26.7	94°12.9	88°59.3	75°52.4	44°27.5	16°22.8	27°17.0	
5	220°47.9	10.3'	03°51.4	17.7'	60.8'	118°49.2	93°37.9	88°23.6	75° 15.4	43°50.4	16°59.8	27°45.3	
6	235°17.2	10.3'	S 03°33.7	17.7'	60.8'	118°11.7	93°02.8	87°48.0	74°38.4	43°13.3	17°36.9	28°14.0	
7	249°46.6	10.4'	$03^{\circ}16.0$	17.7'	60.8'	117°34.2	92°27.8	87°12.4	74°01.5	42°36.3	18°13.9	28°43.0	
8	264°16.0	10.4'	02°58.3	17.7'	60.8'	116°56.8	91°52.8	86°36.8	73°24.5	41°59.2	18°51.0	29°12.2	
9	278°45.4	10.5'	02°40.6	17.7'	60.8'	116°19.3	91°17.8	$86^{\circ}01.2$	72° 47.7	41°22.2	19°28.0	29°41.7	
10	293°14.9	10.5'	02°22.9	17.7'	60.7'	115°41.9	90°42.8	85°25.7	72°10.8	40°45.2	20°05.0	30°11.5	
11	307°44.4	10.5'	$02^{\circ}05.2$	17.7'	60.7'	115°04.5	90°07.9	84°50.2	71°34.0	40°08.3	20°42.0	30°41.5	
12	322°13.9	10.6'	S 01°47.4	17.7'	60.7'	114°27.2	89°33.0	84°14.7	70°57.2	39°31.3	21°18.9	31°11.7	
13	336°43.5	10.6'	$01^{\circ}29.7$	17.7'	60.7'	113°49.9	88°58.1	83°39.2	70°20.4	38°54.4	21°55.8	31°42.1	
14	351°13.1	10.6'	$01^{\circ}12.0$	17.7'	60.7'	113°12.6	88°23.2	83°03.8	69°43.7	38°17.6	22°32.7	32°12.7	
15	5°42.8	10.7'	00°54.3	17.7'	60.6'	112°35.3	87°48.4	82°28.4	69°07.0	37°40.8	23°09.6	32°43.5	
16	20°12.4	10.7'	00°36.6	17.7'	60.6'	111°58.1	87°13.6	81°53.1	68°30.4	37°04.0	23°46.5	33°14.4	
17	34°42.2	10.7'	$00^{\circ}18.9$	17.7'	60.6'	111°20.9	86°38.8	$81^{\circ}17.8$	67°53.7	36°27.2	24°23.3	33°45.5	
18	49°11.9	10.8'	S 00°01.3	17.7'	60.6'	110°43.7	86°04.1	$80^{\circ}42.5$	67° 17.2	35°50.5	25°00.1	34°16.8	
19	63°41.7	10.8'	N 00°16.4	17.6'	60.5'	110°06.6	85°29.4	80°07.2	66°40.6	35°13.8	25°36.9	34°48.2	
20	78°11.5	10.8'	00°34.0	17.6'	60.5'	109°29.4	84°54.7	79°32.0	66°04.1	34°37.2	26°13.7	35°19.8	40°28.9
21	92°41.3	10.8'	$00^{\circ}51.7$	17.6'	60.5'	108°52.4	84°20.1	78°56.9	65°27.6	34°00.6	26°50.4	35°51.5	41°03.2
22	107°11.1	10.9'	$01^{\circ}09.3$	17.6'	60.5'	108°15.3	83°45.5	$78^{\circ}21.7$	64°51.2	33°24.0	27°27.1	36°23.3	41°37.5
23	121°41.0	10.9'	01°26.9	17.6'	60.4'	107°38.3	83°10.9	77°46.6	64°14.8	32°47.4	28°03.7	36°55.2	42°11.8
12 th	SD	$= 16.6^{\prime}$	Mer. pass	. 14:36					Sun SD =	= 16.2′			

h Moon (13th Feb)

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Pollux	-Betelgeuse	-Capella	-Aldebaran	-Jupiter	+Saturn	+Fomalhaut	+Sun
0	136°10.9	10.9'	N 01°44.4	17.5'	60.4'	107°01.3	82°36.4	77°11.6	63°38.4	32°10.9	28°40.4	37°27.2	42°46.1
1	150°40.8	10.9'	02°01.9	17.5'	60.4'	106°24.4	82°01.9	76°36.6	63°02.1	31°34.5	29° 17.0	37°59.3	43°20.3
2	165°10.7	10.9'	02°19.4	17.5'	60.4'	105°47.5	81°27.5	76°01.6	62°25.8	30°58.1	29°53.5	38° 31.5	43°54.5
3	179°40.7	11.0'	02°36.9	17.4'	60.3'	105°10.6	80°53.1	75°26.7	61°49.6	30°21.7	30°30.1	39°03.8	44°28.7
4	194°10.6	11.0'	02°54.4	17.4'	60.3'	104°33.8	80°18.7	74°51.8	61°13.4	29°45.4	31°06.6	39°36.2	45°02.8
5	208°40.6	11.0'	$03^{\circ}11.8$	17.4'	60.3'	103°57.0	79°44.4	74°17.0	60°37.3	29°09.1	31°43.0	40°08.7	45°36.9
6	223°10.6	11.0'	N 03°29.2	17.3'	60.3'	103°20.2	79°10.1	73°42.2	60°01.2	28°32.8	32° 19.5	40°41.2	46°11.0
7	237°40.6	11.0'	03°46.5	17.3'	60.2'	102°43.5	78°35.9	73°07.4	59°25.1	27°56.6	32°55.9	41°13.8	46°45.0
8	252°10.6	11.0'	04°03.8	17.3'	60.2'	102°06.8	78°01.7	72°32.8	58°49.1	27°20.5	33°32.2	41°46.4	47°19.0
9	266°40.6	11.0'	04°21.1	17.2'	60.2'	101°30.1	77°27.5	71°58.1	58°13.1	26°44.4	34°08.5	42° 19.1	47°53.0
10	281°10.7	11.0'	04°38.3	17.2'	60.1'	100°53.5	76°53.4	71°23.5	57°37.2	26°08.3	34°44.8	42°51.9	48°26.9
11	295°40.7	11.0'	04°55.5	17.1'	60.1'	100°16.9	76°19.4	70°49.0	57°01.3	25°32.3	35°21.1	43°24.7	49°00.8
12	310°10.7	11.1'	N 05°12.6	17.1'	60.1'	99°40.4	75°45.4	70°14.5	56°25.5	24°56.3	35°57.3	43°57.6	49°34.7
13	324°40.8	11.1'	05°29.7	17.0'	60.1'	99°03.9	75°11.4	69°40.0	55°49.7	24°20.4	36°33.5	44°30.5	50°08.5
14	339°10.8	11.1'	05°46.8	17.0'	60.0'	98°27.4	74°37.5	69°05.6	55°14.0	23°44.5	37°09.6	45°03.4	50°42.3
15	353°40.9	11.1'	06°03.8	16.9'	60.0'	97°51.0	74°03.7	68°31.3	54°38.3	23°08.7	37°45.7	45°36.4	51°16.1
16	8°11.0	11.1'	06°20.7	16.9'	60.0'	97°14.6	73°29.9	67°57.0	54°02.6	22°33.0	38°21.8	46°09.4	51°49.8
17	22°41.0	11.1'	06°37.6	16.8'	59.9'	96°38.2	72°56.2	67°22.8	53°27.1	21°57.3	38°57.8	46° 42.4	52°23.5
18	37°11.1	11.1'	N 06°54.5	16.8'	59.9'	96°01.9	72°22.5	66°48.6	52°51.5	21°21.6	39°33.8	47° 15.5	52°57.2
19	51°41.1	11.1'	$07^{\circ}11.2$	16.7'	59.9'	95°25.6	71°48.8	66°14.5	52°16.0	20°46.0	40°09.8	47° 48.6	53°30.8
20	66°11.2	11.0'	07°28.0	16.7'	59.8'	94°49.4	71°15.2	65°40.4	51°40.6	20° 10.5	40°45.7	48°21.7	54°04.4
21	80°41.2	11.0'	07°44.7	16.6'	59.8'	94°13.2	70°41.7	65°06.4	51°05.2	19°35.1	41°21.5	48° 54.8	54°37.9
22	95°11.3	11.0'	$08^{\circ}01.3$	16.6'	59.8'	93°37.1	70°08.2	64°32.5	50°29.9	18°59.7	41°57.4	49°28.0	55°11.4
23	109°41.3	11.0'	08°17.8	16.5'	59.7'	93°01.0	69°34.8	63°58.6	49°54.7	18°24.3	42°33.2	50°01.1	55°44.9
13 th	SD	= 16.5'	Mer. pass	. 15:26					Sun SD =	= 16.2′			

h Moon (14th Feb)

Wed	GHA	ν	Dec	d	HP	-Regulus	-Pollux	-Capella	-Aldebaran	-Jupiter	+Saturn	+Fomalhaut	+Sun
0	124°11.3	11.0'	N08°34.3	16.4'	59.7'		92°24.9	63°24.8	49°19.4	17°49.1	43°08.9	50°34.3	56°18.3
1	138°41.3	11.0'	08°50.7	16.4'	59.7'		91°48.9	62°51.0	48°44.3	17°13.9	43°44.6	51°07.5	56°51.7
2	153°11.3	11.0'	09°07.1	16.3'	59.7'		91°12.9	62°17.3	48°09.2	16°38.8	44°20.3	51°40.7	57°25.0
3	167°41.3	11.0'	09°23.4	16.2'	59.6'		90°37.0	61°43.7	47°34.2	16°03.7	44°55.9	52°13.9	57°58.3
4	182°11.3	11.0'	09°39.6	16.2'	59.6'		90°01.1	61°10.1	46°59.2	15°28.8	45°31.5	52°47.1	58°31.6
5	196°41.3	11.0'	09°55.8	16.1'	59.6'		89°25.2	60°36.6	46°24.3	14°53.9	46°07.0	53°20.3	59°04.8
6	211°11.2	10.9'	N10°11.9	16.0'	59.5'		88°49.4	60°03.2	45°49.4	14°19.2	46°42.5	53°53.5	59°38.0
7	225°41.2	10.9'	10°27.9	15.9'	59.5'		88°13.6	59°29.8	45°14.6	13°44.5	47°18.0	54°26.7	60°11.1
8	240°11.1	10.9'	10°43.8	15.9'	59.5'		87° 37.9	58° 56.5	44°39.9	13°09.9	47°53.4	54°59.9	60°44.2
9	254°41.0	10.9'	10°59.7	15.8'	59.4'		87°02.2	58° 23.3	44°05.2	12°35.5	48°28.8	55°33.0	61°17.2
10	269°10.9	10.9'	$11^{\circ}15.5$	15.7'	59.4'		86°26.6	57°50.1	43°30.6	12°01.2	49°04.1	56°06.2	61°50.3
11	283°40.7	10.8'	11°31.2	15.6'	59.3'		85°51.0	57° 17.1	42°56.0	11°27.0	49°39.4	56°39.4	62°23.2
12	298°10.6	10.8'	N 11°46.8	15.6'	59.3'		85° 15.4	56°44.0	42°21.5	10°53.0	50°14.6	57°12.6	62°56.2
13	312°40.4	10.8'	12°02.4	15.5'	59.3'		84°39.9	56°11.1	41°47.1	10°19.2	50°49.8	57°45.7	63°29.1
14	327°10.2	10.8'	12°17.8	15.4'	59.2'		84°04.4	55°38.2	41°12.8	9°45.6	51°25.0	58°18.9	64°01.9
15	341°40.0	10.7'	12°33.2	15.3'	59.2'		83°29.0	55°05.4	40°38.5	9°12.2	52°00.1	58°52.0	64°34.7
16	356°09.7	10.7'	12°48.5	15.2'	59.2'	119°35.0	82°53.6	54°32.7	40°04.3	8°39.1	52°35.2	59°25.2	65°07.5
17	10°39.4	10.7'	13°03.7	15.1'	59.1'	118°59.7	82° 18.3	54°00.1	39°30.1	8°06.2	53°10.2	59°58.3	65°40.2
18	25°09.1	10.7'	N 13°18.9	15.0'	59.1'	118°24.5	81°43.0	53°27.5	38°56.1	7°33.8	53°45.2	60°31.4	66°12.9
19	39°38.8	10.6'	13°33.9	14.9'	59.1'	117°49.3	81°07.7	52°55.1	38°22.1	7°01.7	54°20.2	61°04.4	66°45.5
20	54°08.4	10.6'	13°48.9	14.9'	59.0'	117°14.2	80°32.5	52°22.7	37°48.2	6°30.2	54°55.1	61°37.5	67°18.1
21	68°38.0	10.6'	14°03.7	14.8'	59.0'	116°39.1	79°57.4	51°50.4	37°14.3	5°59.4	55°29.9	62°10.5	67°50.7
22	83°07.6	10.5'	14°18.5	14.7'	59.0'	116°04.0	79°22.3	51°18.1	36°40.6	5°29.4	56°04.7	62°43.6	68°23.2
23	97°37.2	10.5'	14°33.1	14.6'	58.9'	115°29.0	78°47.2	50°46.0	36°06.9		56°39.5	63°16.6	68°55.6
14 th	SD	= 16.3'	Mer. pass	. 16:16					Sun SD	= 16.2'			

h Moon (15th Feb)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Aldebaran	+Jupiter	+Saturn	+Fomalhaut	+Sun
0	112°06.7	10.5'	N14°47.7	14.5'	58.9'	114°54.0	81°41.5	78° 12.1	35°33.3		57°14.2	63°49.6	69°28.1
1	126°36.2	10.5'	15°02.2	14.4'	58.9'	114° 19.1	81°08.9	77°37.2	34°59.7		57°48.9	64°22.5	70°00.4
2	141°05.6	10.4'	$15^{\circ}16.6$	14.3'	58.8'	113°44.2	80°36.4	77°02.2	34°26.3		58°23.5	64°55.5	70°32.8
3	155°35.1	10.4'	15°30.9	14.2'	58.8'	113°09.3	80°03.9	76°27.3	33°53.0		58°58.1	65°28.4	71°05.1
4	170°04.4	10.3'	15°45.1	14.1'	58.8'	112°34.5	79°31.4	75°52.5	33°19.7		59°32.7	66°01.3	71°37.3
5	184°33.8	10.3'	$15^{\circ}59.1$	14.0'	58.7'	111°59.8	78°59.0	75° 17.6	32°46.5		60°07.2	66°34.1	72°09.5
6	199°03.1	10.3'	$N16^{\circ}13.1$	13.9'	58.7'	111°25.1	78° 26.7	74°42.9	32°13.5		60°41.7	67°07.0	72°41.7
7	213°32.4	10.2'	16°27.0	13.8'	58.6'	110°50.4	77° 54.4	74°08.1	31°40.5		61°16.1	67°39.8	73°13.8
8	228°01.6	10.2'	16°40.8	13.7'	58.6'	110° 15.8	77°22.1	73°33.5	31°07.6		61°50.5	68°12.6	73°45.9
9	242°30.8	10.2'	$16^{\circ}54.4$	13.6'	58.6'	109°41.2	76°49.9	72°58.8	30°34.8		62°24.8	68°45.4	74°17.9
10	257°00.0	10.1'	$17^{\circ}08.0$	13.5'	58.5'	109°06.6	76° 17.7	72°24.2	30°02.1		62°59.1	69°18.1	74°49.9
11	271°29.1	10.1'	$17^{\circ}21.5$	13.3'	58.5'	108°32.1	75° 45.6	71°49.7	29°29.6		63°33.3	69°50.8	75°21.9
12	285°58.2	10.0'	$N17^{\circ}34.8$	13.2'	58.5'	107°57.7	75° 13.6	71°15.2	28°57.1		64°07.5	70°23.5	75°53.8
13	300°27.2	10.0'	17°48.0	13.1'	58.4'	107°23.2	74°41.6	70°40.7	28°24.8		64°41.7	70°56.2	76°25.7
14	314°56.3	10.0'	18°01.2	13.0'	58.4'	106°48.9	74°09.7	70°06.3	27°52.5		65°15.8	71°28.8	76°57.5
15	329°25.2	9.9'	$18^{\circ}14.2$	12.9'	58.4'	106° 14.5	73°37.8	69°31.9	27°20.4		65°49.9	72°01.4	77°29.3
16	343°54.1	9.9'	18°27.1	12.8'	58.3'	105°40.3	73°05.9	68°57.6	26°48.5	6°20.7	66°23.9	72°34.0	78°01.0
17	358°23.0	9.8'	18°39.9	12.7'	58.3'	105°06.0	72°34.2	68°23.3	26°16.6	6°51.1	66°57.9	73°06.5	78°32.7
18	12°51.9	9.8'	N 18°52.5	12.6'	58.3'	104°31.8	72°02.4	67°49.0	25°44.9	7°22.1	67°31.9	73°39.0	79°04.4
19	27°20.7	9.8'	19°05.1	12.4'	58.2'	103°57.6	71°30.8	67°14.8	25°13.4	7°53.4	68°05.8	74°11.5	79°36.0
20	41°49.4	9.7'	19°17.5	12.3'	58.2'	103°23.5	70°59.2	66°40.7	24°41.9	8°25.0	68°39.6	74°44.0	80°07.5
21	56°18.1	9.7'	$19^{\circ}29.8$	12.2'	58.1'	102°49.5	70°27.6	66°06.6	24°10.7	8°56.8	69°13.4	75°16.4	80°39.1
22	70°46.8	9.6'	19°42.0	12.1'	58.1'	102° 15.4	69°56.1	65°32.5	23°39.6	9°28.8	69°47.2	75°48.8	81°10.5
23	85°15.4	9.6'	19°54.1	12.0'	58.1'	101°41.4	69°24.7	64°58.4	23°08.7	10°01.0	70°21.0	76°21.1	81°42.0
15 th	SD	$=16.1^{\prime}$	Mer. pass	. 17:07					Sun SD	= 16.2'			

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

Fri	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Aldebaran	+Jupiter	+Saturn	+Fomalhaut	+Sun
0	99°44.0	9.5'	N 20°06.0	11.8'	58.0'	101°07.5	68°53.3	64°24.5	22°37.9	10°33.3	70°54.6	76°53.4	82°13.4
1	114°12.6	9.5'	20°17.9	11.7'	58.0'	100°33.6	68°22.0	63°50.5	22°07.4	11°05.6	71°28.3	77°25.7	82°44.8
2	128°41.1	9.5'	$20^{\circ}29.6$	11.6'	58.0'	99°59.7	67°50.7	63°16.6	21°37.0	11°38.1	72°01.9	77°58.0	83°16.1
3	143°09.5	9.4'	20°41.2	11.5'	57.9'	99°25.9	67°19.5	62°42.7	21°06.9	12°10.6	72°35.5	78°30.2	83°47.4
4	157°37.9	9.4'	20°52.6	11.3'	57.9'	98°52.1	66°48.3	62°08.9	20°36.9	12°43.1	73°09.0	79°02.4	84°18.6
5	172°06.3	9.3'	$21^{\circ}04.0$	11.2'	57.9'	98°18.4	66°17.2	61°35.1	20°07.3	13° 15.7	73°42.5	79°34.5	84°49.8
6	186°34.6	9.3'	$N21^{\circ}15.2$	11.1'	57.8'	97°44.7	65°46.2	61°01.4	19°37.8	13°48.3	74°15.9	80°06.7	85°20.9
7	201°02.9	9.2'	21°26.2	10.9'	57.8'	97°11.0	65°15.3	60°27.7	19°08.6	14°21.0	74°49.3	80°38.8	85°52.1
8	215°31.1	9.2'	21°37.2	10.8'	57.8'	96°37.4	64°44.4	59°54.0	18°39.7	14°53.6	75°22.7	81°10.8	86°23.1
9	229°59.3	9.1'	21°48.0	10.7'	57.7'	96°03.8	64°13.5	59°20.4	18°11.1	15°26.3	75°56.0	81°42.8	86°54.2
10	244°27.4	9.1'	21°58.7	10.6'	57.7'	95°30.3	63°42.7	58°46.8	17°42.8	15°58.9	76°29.3	82°14.8	87°25.2
11	258°55.5	9.1'	$22^{\circ}09.2$	10.4'	57.7'	94°56.8	63°12.0	58°13.3	17°14.9	16°31.6	77°02.5	82°46.8	87°56.1
12	273°23.6	9.0'	$N22^{\circ}19.7$	10.3'	57.6'	94°23.3	62°41.4	57°39.8	16°47.3	17°04.2	77°35.7	83°18.7	88°27.0
13	287°51.6	9.0'	22°29.9	10.2'	57.6'	93°49.9	62°10.8	57°06.4	16°20.1	17°36.8	78°08.9	83°50.6	88°57.9
14	302°19.6	8.9'	22°40.1	10.0'	57.6'	93°16.5	61°40.2	56°32.9	15°53.4	18°09.5	78°42.0	84°22.4	89°28.7
15	316°47.5	8.9'	22°50.1	9.9'	57.5'	92°43.2	61°09.8	55°59.6	15°27.1	18°42.1	79°15.1	84°54.2	89°59.5
16	331°15.4	8.8'	23°00.0	9.7'	57.5'	92°09.9	60°39.4	55°26.2	15°01.2	19° 14.7	79°48.1	85°26.0	90°30.3
17	345°43.2	8.8'	23°09.7	9.6'	57.5'	91°36.6	60°09.1	54°52.9	14°35.9	19°47.2	80°21.1	85°57.8	91°01.0
18	0°11.0	8.8'	$N23^{\circ}19.4$	9.5'	57.4'	91°03.4	59°38.8	54°19.7	14°11.2	20°19.8	80°54.1	86°29.5	91°31.7
19	14°38.7	8.7'	23°28.8	9.3'	57.4'	90°30.2	59°08.6	53°46.5	13°47.1	20°52.3	81°27.0	87°01.1	92°02.3
20	29°06.5	8.7'	23°38.1	9.2'	57.4'	89°57.1	58°38.5	53°13.3	13°23.7	21°24.8	81°59.9	87°32.8	92°32.9
21	43°34.1	8.6'	23°47.3	9.0'	57.3'	89°24.0	58°08.5	52°40.2	13°00.9	21°57.3	82°32.7	88°04.4	93°03.5
22	58°01.8	8.6'	23°56.4	8.9'	57.3'	88°50.9	57°38.5	52°07.1	12°39.0	22°29.8	83°05.5	88°35.9	93°34.0
23	72°29.3	8.5'	24°05.3	8.8'	57.3'	88°17.9	57°08.6	51°34.0	12°17.9	23°02.2	83°38.3	89°07.5	94°04.5
16 th	SD	= 15.8'	Mer. pas	s. 17:59					Sun SD	= 16.2'			

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

Sat	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Betelgeuse	+Jupiter	+Saturn	+Fomalhaut	+Sun
0	86°56.9	8.5'	N 24°14.1	8.6'	57.2'	87°44.9	56°38.7	51°01.0	32°56.4	23°34.7	84°11.0	89°39.0	94°34.9
1	101°24.4	8.5'	24°22.7	8.5'	57.2'	87°12.0	56°09.0	50°28.0	32°31.6	24°07.0	84°43.7	90°10.4	95°05.3
2	115°51.9	8.4'	24°31.2	8.3'	57.2'	86°39.0	55°39.3	49°55.1	32°07.0	24°39.4	85°16.3	90°41.8	95°35.7
3	130°19.3	8.4'	24°39.5	8.2'	57.1'	86°06.2	55°09.7	49°22.1	31°42.7	25°11.7	85°49.0	91°13.2	96°06.0
4	144°46.7	8.4'	24°47.7	8.0'	57.1'	85°33.3	54°40.1	48°49.3	31°18.7	25°44.0	86°21.5	91°44.6	96°36.3
5	159°14.0	8.3'	24°55.7	7.9'	57.1'	85°00.5	54°10.7	48°16.4	30°54.9	26°16.3	86°54.1	92°15.9	97°06.6
6	173°41.4	8.3'	N25°03.6	7.8'	57.0'	84°27.8	53°41.3	47°43.6	30°31.5	26°48.6	87°26.6	92°47.2	97°36.8
7	188°08.6	8.2'	25°11.4	7.6'	57.0'	83°55.0	53°12.0	47°10.9	30°08.3	27° 20.8	87°59.0	93°18.4	98°07.0
8	202°35.9	8.2'	25°19.0	7.5'	57.0'	83°22.3	52°42.7	46°38.2	29°45.4	27°53.0	88°31.5	93°49.6	98°37.2
9	217°03.1	8.2'	25°26.4	7.3'	56.9'	82°49.7	52°13.6	46°05.5	29°22.8	28°25.1	89°03.9	94°20.8	99°07.3
10	231°30.3	8.1'	25°33.7	7.2'	56.9'	82°17.1	51°44.5	45°32.8	29°00.5	28°57.3	89°36.2	94°51.9	99°37.3
11	245°57.4	8.1'	25°40.9	7.0'	56.9'	81°44.5	51°15.6	45°00.2	28°38.6	29°29.4	90°08.6	95°23.0	100°07.4
12	260°24.5	8.1'	N25°47.9	6.9'	56.8'	81°11.9	50°46.7	44°27.6	28°17.0	30°01.4	90°40.8	95°54.1	100°37.4
13	274°51.6	8.1'	25°54.8	6.7'	56.8'	80°39.4	50°17.8	43°55.1	27°55.7	30°33.5	91°13.1	96°25.1	101°07.4
14	289°18.7	8.0'	$26^{\circ}01.5$	6.6'	56.8'	80°06.9	49°49.1	43°22.6	27°34.8	31°05.5	91°45.3	96°56.1	101°37.3
15	303°45.7	8.0'	26°08.0	6.4'	56.7'	79°34.5	49°20.5	42°50.1	27°14.3	31°37.5	92°17.5	97°27.0	102°07.2
16	318°12.7	8.0'	26°14.4	6.3'	56.7'	79°02.1	48°51.9	42°17.7	26°54.2	32°09.4	92°49.7	97°58.0	102°37.1
17	332°39.7	7.9'	26°20.7	6.1'	56.7'	78°29.7	48°23.5	41°45.3	26°34.4	32°41.4	93°21.8	98°28.8	103°06.9
18	347°06.6	7.9'	N 26°26.8	5.9'	56.6'	77°57.4	47°55.1	41°12.9	26°15.1	33° 13.3		98°59.7	103°36.7
19	1°33.5	7.9'	26°32.7	5.8'	56.6'	77°25.1	47°26.8	40°40.6	25°56.2	33°45.1		99°30.5	104°06.5
20	16°00.4	7.9'	26°38.5	5.6'	56.6'	76°52.8	46°58.7	40°08.3	25°37.7	34° 17.0		100°01.2	104°36.2
21	30°27.3	7.9'	26°44.2	5.5'	56.6'	76°20.6	46°30.6	39°36.0	25°19.7	34° 48.8		100°32.0	105°05.9
22	44°54.2	7.8'	26°49.6	5.3'	56.5'	75°48.4	46°02.6	39°03.8	25°02.1	35° 20.5		101°02.7	105°35.6
23	59°21.0	7.8'	26°55.0	5.2'	56.5'	75°16.2	45°34.7	38°31.6	24°45.0	35°52.3		101°33.3	106°05.3
17 th	SD =	= 15.6′	Mer. pass	. 18:54	4				Sun SD	0 = 16.2'			

Moon (18th Feb)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Procyon	-Pollux	+Aldebaran	+Jupiter	+Fomalhaut	+Sun
0	73°47.8	7.8'	N 27°00.2	5.0'	56.5'		74°44.0	45°07.0	37°59.4		36°24.0	102°04.0	106°34.9
1	88°14.6	7.8'	27°05.2	4.9'	56.4'		74°11.9	44°39.3	37°27.3		36°55.7	102°34.5	107°04.4
2	102°41.4	7.8'	$27^{\circ}10.1$	4.7'	56.4'		73°39.9	44°11.7	36°55.2		37°27.3	103°05.1	107°34.0
3	117°08.1	7.7'	27°14.8	4.6'	56.4'		73°07.8	43°44.3	36°23.1	12°05.9	37°59.0	103°35.6	108°03.5
4	131°34.9	7.7'	$27^{\circ}19.3$	4.4'	56.3'		72°35.8	43°16.9	35°51.1	12°25.9	38°30.6	104°06.1	108°33.0
5	146°01.6	7.7'	27°23.7	4.2'	56.3'		72°03.8	42°49.7	35°19.1	12°46.6	39°02.1	104°36.5	109°02.4
6	160°28.3	7.7'	N27°28.0	4.1'	56.3'		71°31.9	42°22.6	34°47.1	13°08.1	39°33.7	105°06.9	109°31.8
7	174°55.0	7.7'	27°32.1	3.9'	56.3'		70°59.9	41°55.6	34°15.2	13°30.2	40°05.2	105°37.3	110°01.2
8	189°21.7	7.7'	27°36.0	3.8'	56.2'		70°28.1	41°28.7	33°43.3	13°53.0	40°36.7	106°07.6	110°30.6
9	203°48.4	7.7'	27°39.8	3.6'	56.2'		69°56.2	41°02.0	33°11.4	14°16.2	41°08.1	106°37.9	110°59.9
10	218°15.1	7.7'	27°43.4	3.5'	56.2'		69°24.4	40°35.4	32°39.5	14°40.0	41°39.6	107°08.1	111°29.2
11	232°41.8	7.7'	27°46.8	3.3'	56.1'		68°52.6	40°08.9	32°07.7	15°04.3	42°11.0	107°38.4	111°58.4
12	247°08.5	7.7'	N27°50.2	3.1'	56.1'		68°20.8	39°42.5	31°35.9	15°29.0	42°42.3	108°08.5	112°27.7
13	261°35.1	7.7'	27°53.3	3.0'	56.1'		67°49.1	39° 16.3	31°04.2	15°54.1	43°13.7	108°38.7	112°56.9
14	276°01.8	7.7'	27°56.3	2.8'	56.1'		67°17.3	38°50.3	30°32.5	16°19.5	43°45.0	109°08.8	113°26.1
15	290°28.5	7.7'	$27^{\circ}59.1$	2.7'	56.0'		66°45.7	38°24.3	30°00.8	16°45.3	44°16.3	109°38.8	113°55.2
16	304°55.1	7.7'	28°01.8	2.5'	56.0'		66°14.0	37°58.5	29°29.1	17°11.3	44°47.5	110°08.9	114°24.3
17	319°21.8	7.7'	28°04.3	2.4'	56.0'	119°44.0	65°42.4	37°32.9	28°57.5	17°37.7	45°18.8	110°38.8	114°53.4
18	333°48.5	7.7'	N 28°06.7	2.2'	56.0'	119°12.3	65°10.8	37°07.4	28°25.9	18°04.3	45°50.0	111°08.8	115°22.5
19	348°15.2	7.7'	28°08.9	2.0'	55.9'	118°40.7	64°39.2	36°42.1	27°54.3	18°31.1	46°21.2	111°38.7	115°51.5
20	2°41.9	7.7'	$28^{\circ}10.9$	1.9'	55.9'	118°09.1	64°07.7	36° 16.9	27°22.7	18°58.1	46°52.3	112°08.6	116°20.5
21	17°08.6	7.7'	$28^{\circ}12.8$	1.7'	55.9'	117°37.6	63°36.2	35°51.9	26°51.2	19°25.4	47°23.4	112°38.4	116°49.5
22	31°35.3	7.7'	$28^{\circ}14.6$	1.6'	55.9'	117°06.0	63°04.7	35°27.1	26°19.7	19°52.8	47°54.5	113°08.2	117°18.4
23	46°02.0	7.7'	28°16.2	1.4'	55.8'	116°34.5	62°33.2	35°02.5	25°48.3	20°20.4	48°25.6	113°38.0	117°47.4
18 th	SD = 15.4' Mer. pass. 19:49								Sun	SD = 16.2'			

h		Moor	n (19 th Fe	eb)		Lunar Distance (objects with largest hourly LD delta)							
Mon	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	-Pollux	+Aldebaran	+Jupiter	+Fomalhaut	+Sun
0	60°28.8	7.8'	N 28°17.6	1.3'	55.8'	116°03.0	109°42.0	62°01.8	25°16.8	20°48.1	48°56.7	114°07.7	118° 16.3
1	74°55.5	7.8'	28°18.8	1.1'	55.8'	115°31.6	109° 15.8	61°30.4	24°45.4	21°16.0	49°27.7	114°37.4	118°45.1
2	89°22.3	7.8'	28°20.0	1.0'	55.8'	115°00.1	108°49.5	60°59.0	24°14.1	21°44.0	49°58.7	115°07.0	119°14.0
3	103°49.1	7.8'	28°20.9	0.8'	55.7'	114°28.7	108°23.2	60°27.7	23°42.7	22°12.2	50°29.7	115°36.6	119°42.8
4	118°15.9	7.8'	28°21.7	0.6'	55.7'	113°57.4	107°56.9	59°56.4	23°11.4	22°40.4	51°00.6	116°06.2	
5	132°42.7	7.8'	28°22.4	0.5'	55.7'	113°26.0	107°30.6	59°25.1	22°40.1	23°08.8	51°31.6	116°35.7	
6	147°09.5	7.9'	N28°22.8	0.3'	55.7'	112°54.7	107°04.3	58° 53.8	22°08.9	23°37.2	52°02.5	117°05.2	
7	161°36.4	7.9'	28°23.2	0.2'	55.6'	112°23.4	106°38.0	58°22.6	21°37.6	24°05.8	52°33.3	117°34.6	
8	176°03.3	7.9'	28°23.4	0.0'	55.6'	111°52.1	106°11.7	57°51.3	21°06.4	24°34.4	53°04.2	118°04.0	
9	190°30.2	8.0'	28°23.4	-0.1'	55.6'	111°20.8	105°45.4	57°20.1	20°35.3	25°03.1	53°35.0	118°33.4	
10	204°57.2	8.0'	28°23.3	-0.3'	55.6'	110°49.6	105° 19.1	56°49.0	20°04.1	25°31.9	54°05.8	119°02.7	
11	219°24.2	8.0'	28°23.0	-0.4'	55.5'	110°18.4	104°52.7	56° 17.8	19°33.0	26°00.7	54°36.6	119°32.0	
12	233°51.2	8.0'	N28°22.5	-0.6'	55.5'	109°47.2	104°26.4	55°46.7	19°01.9	26°29.6	55°07.4		
13	248°18.2	8.1'	28°22.0	-0.7'	55.5'	109°16.1	104°00.1	55° 15.6	18°30.9	26°58.6	55°38.1		
14	262°45.3	8.1'	28°21.2	-0.9'	55.5'	108°44.9	103°33.8	54° 44.5	17°59.9	27°27.6	56°08.8		
15	277°12.4	8.1'	28°20.3	-1.0'	55.4'	108°13.8	103°07.5	54° 13.5	17°28.9	27°56.7	56°39.5		
16	291°39.6	8.2'	$28^{\circ}19.3$	-1.2'	55.4'	107°42.7	102°41.1	53°42.5	16°57.9	28°25.8	57°10.2		
17	306°06.8	8.2'	28°18.1	-1.3'	55.4'	107°11.6	102°14.8	53°11.5	16°27.0	28°54.9	57°40.8		
18	320°34.0	8.3'	$N28^{\circ}16.8$	-1.5'	55.4'	106°40.6	101°48.5	52°40.5	15°56.1	29°24.1	58°11.5		
19	335°01.2	8.3'	28°15.3	-1.6'	55.4'	106°09.6	101°22.2	52°09.5	15°25.2	29°53.3	58°42.1		
20	349°28.6	8.4'	28°13.6	-1.8'	55.3'	105°38.6	100°55.9	51°38.6	14°54.3	30°22.6	59°12.7		
21	3°55.9	8.4'	$28^{\circ}11.8$	-1.9'	55.3'	105°07.6	100°29.5	51°07.7	14°23.5	30°51.9	59°43.2		
22	18°23.3	8.4'	28°09.9	-2.1'	55.3'	104°36.6	100°03.2	50°36.8	13°52.8	31°21.2	60°13.8		
23	32°50.7	8.5'	28°07.8	-2.2'	55.3'	104°05.7	99°36.9	50°05.9	13°22.0	31°50.6	60°44.3		
19 th	SD :	= 15.2'	Mer. pass	s. 20:44					Sun	SD = 16.2'			

h	Moon (20th Feb)	

Tue	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	-Pollux	+Betelgeuse	+Capella	+Aldebaran	+Jupiter
0	47°18.2	8.5'	N 28°05.6	-2.4'	55.3'	103°34.8	99°10.6	49°35.1	12°51.3		25°12.6	32°20.0	61°14.8
1	61°45.8	8.6'	28°03.2	-2.5'	55.2'	103°03.9	98°44.3	49°04.3	12°20.7	24°18.9	25°33.8	32°49.3	61°45.3
2	76°13.4	8.6'	28°00.7	-2.7'	55.2'	102°33.0	98°18.1	48° 33.5	11°50.1	24°34.6	25°55.2	33°18.8	62°15.7
3	90°41.0	8.7'	27°58.0	-2.8'	55.2'	102°02.1	97°51.8	48°02.7	11°19.5	24°50.6	26° 17.0	33°48.2	62°46.2
4	105°08.7	8.7'	27°55.2	-3.0'	55.2'	101°31.3	97°25.5	47°31.9	10°49.0	25°07.1	26°39.0	34°17.7	63°16.6
5	119°36.4	8.8'	27°52.2	-3.1'	55.1'	101°00.5	96°59.2	47°01.2	10°18.5	25°24.0	27°01.3	34°47.1	63°47.0
6	134°04.2	8.9'	$N27^{\circ}49.1$	-3.2'	55.1'	100°29.7	96°33.0	46° 30.5	9°48.1	25°41.3	27°23.8	35°16.6	64°17.4
7	148°32.1	8.9'	27°45.9	-3.4'	55.1'	99°58.9	96°06.7	45°59.8	9°17.7	25°59.0	27°46.6	35°46.1	64°47.7
8	163°00.0	9.0'	27°42.5	-3.5'	55.1'	99°28.1	95°40.5	45°29.1	8°47.4	26°17.0	28°09.5	36°15.6	65°18.1
9	177°28.0	9.0'	27°39.0	-3.7'	55.1'	98°57.4	95°14.2	44° 58.5	8°17.2	26°35.4	28°32.7	36°45.1	65°48.4
10	191°56.0	9.1'	27°35.3	-3.8'	55.1'	98°26.7	94°48.0	44°27.8	7°47.1	26°54.1	28°56.1	37°14.7	66°18.7
11	206°24.1	9.1'	$27^{\circ}31.5$	-3.9'	55.0'	97°56.0	94°21.8	43°57.2	7°17.1	27°13.1	29° 19.7	37°44.2	66°49.0
12	220°52.2	9.2'	$N27^{\circ}27.6$	-4.1'	55.0'	97°25.3	93°55.6	43°26.6	6°47.2	27°32.5	29°43.4	38°13.8	67°19.3
13	235°20.5	9.3'	27°23.5	-4.2'	55.0'	96°54.6	93°29.4	42°56.1	6°17.5	27°52.1	30°07.4	38°43.3	67°49.5
14	249°48.7	9.3'	27°19.3	-4.4'	55.0'	96°24.0	93°03.2	42°25.5	5°47.9	28°12.1	30°31.5	39°12.9	68°19.7
15	264°17.1	9.4'	$27^{\circ}14.9$	-4.5'	55.0'	95°53.4	92°37.1	41°55.0	5°18.5	28°32.3	30°55.7	39°42.5	68°50.0
16	278°45.5	9.5'	$27^{\circ}10.4$	-4.6'	54.9'	95°22.7	92°10.9	41°24.5	4°49.5	28°52.8	31°20.1	40°12.0	69°20.2
17	293°13.9	9.5'	27°05.8	-4.8'	54.9'	94°52.1	91°44.7	40°54.0	4°20.8	29°13.5	31°44.7	40°41.6	69°50.3
18	307°42.5	9.6'	$N27^{\circ}01.1$	-4.9'	54.9'	94°21.6	91°18.6	40°23.5	3°52.6	29°34.5	32°09.4	41°11.2	70°20.5
19	322°11.1	9.7'	26°56.2	-5.0'	54.9'	93°51.0	90°52.5	39°53.1	3°25.1	29°55.8	32°34.3	41°40.8	70°50.6
20	336°39.7	9.7'	$26^{\circ}51.1$	-5.2'	54.9'	93°20.5	90°26.4	39°22.6		30°17.3	32°59.2	42°10.4	71°20.8
21	351°08.5	9.8'	26°46.0	-5.3'	54.9'	92°49.9	90°00.3	38° 52.2		30°38.9	33°24.3	42°40.0	71°50.9
22	5°37.3	9.9'	26°40.7	-5.4'	54.8'	92°19.4	89°34.2	38°21.8		31°00.8	33°49.5	43°09.6	72°21.0
23	20°06.2	10.0'	26°35.3	-5.5'	54.8'	91°48.9	89°08.1	37°51.5		31°22.9	34°14.9	43°39.2	72°51.1
20 th	SD	= 15.1'	Mer. pass	. 21:37									

h Moon (21st Feb)

h

Wed	GHA	ν	Dec	d	HP	-Rigil Kent.	-Spica	-Arcturus	-Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter
0	34°35.1	10.0'	N 26°29.8	-5.7'	54.8'	119°54.7	91°18.4	88°42.1	37°21.1		34°40.3	44°08.8	73°21.1
1	49°04.2	10.1'	26°24.1	-5.8'	54.8'	119°33.7	90°48.0	88° 16.0	36°50.8		35°05.8	44°38.4	73°51.2
2	63°33.2	10.2'	26°18.3	-5.9'	54.8'	119°12.6	90°17.5	87°50.0	36°20.4		35°31.5	45°08.0	74°21.2
3	78°02.4	10.2'	26°12.4	-6.0'	54.8'	118°51.5	89°47.1	87°24.0	35°50.1		35°57.2	45°37.6	74°51.2
4	92°31.7	10.3'	26°06.3	-6.2'	54.7'	118°30.3	89°16.7	86°58.0	35° 19.9		36°23.0	46°07.1	75°21.2
5	107°01.0	10.4'	26°00.2	-6.3'	54.7'	118°09.0	88°46.3	86°32.1	34°49.6		36°49.0	46°36.7	75°51.2
6	121°30.4	10.5'	N25°53.9	-6.4'	54.7'	117°47.7	88°15.9	86°06.1	34° 19.4		37°15.0	47°06.3	76°21.2
7	135°59.8	10.5'	25°47.5	-6.5'	54.7'	117°26.3	87°45.5	85°40.2	33°49.1		37°41.0	47°35.9	76°51.1
8	150°29.4	10.6'	25°40.9	-6.7'	54.7'	117°04.8	87°15.2	85°14.3	33° 18.9	3°54.7	38°07.2	48°05.5	77°21.1
9	164°59.0	10.7'	25°34.3	-6.8'	54.7'	116°43.3	86°44.8	84°48.4	32°48.7	4°22.7	38°33.4	48°35.1	77°51.0
10	179°28.7	10.8'	25°27.5	-6.9'	54.6'	116°21.8	86°14.5	84°22.5	32° 18.6	4°51.1	38°59.7	49°04.7	78°20.9
11	193°58.5	10.9'	25°20.6	-7.0'	54.6'	116°00.1	85°44.2	83°56.6	31°48.4	5°19.9	39°26.1	49°34.3	78°50.8
12	208°28.3	10.9'	N25°13.6	-7.1'	54.6'	115°38.5	85°13.9	83°30.8	31°18.3	5°49.0	39°52.6	50°03.9	79°20.7
13	222°58.3	11.0'	25°06.5	-7.2'	54.6'	115°16.7	84°43.6	83°05.0	30°48.2	6°18.2	40°19.1	50°33.4	79°50.5
14	237°28.3	11.1'	24°59.2	-7.4'	54.6'	114°54.9	84°13.3	82°39.2	30° 18.1	6°47.6	40°45.6	51°03.0	80°20.4
15	251°58.4	11.2'	24°51.9	-7.5'	54.6'	114°33.1	83°43.1	82°13.4	29°48.0	7°17.1	41°12.3	51°32.6	80°50.2
16	266°28.5	11.2'	24°44.4	-7.6'	54.6'	114°11.2	83°12.8	81°47.6	29°18.0	7°46.6	41°38.9	52°02.1	81°20.1
17	280°58.8	11.3'	24°36.8	-7.7'	54.5'	113°49.3	82°42.6	81°21.9	28°47.9	8°16.3	42°05.7	52°31.7	81°49.9
18	295°29.1	11.4'	N24°29.1	-7.8'	54.5'	113°27.3	82°12.4	80°56.2	28° 17.9	8°46.0	42°32.5	53°01.3	82°19.7
19	309°59.5	11.5'	24°21.3	-7.9'	54.5'	113°05.3	81°42.2	80°30.5	27°47.9	9°15.7	42°59.3	53°30.8	82°49.5
20	324°30.0	11.6'	24°13.4	-8.0'	54.5'	112°43.2	81°12.0	80°04.8	$27^{\circ}17.9$	9°45.5	43°26.2	54°00.4	83°19.3
21	339°00.5	11.6'	24°05.4	-8.1'	54.5'	112°21.1	80°41.8	79°39.2	26°48.0	10°15.3	43°53.1	54°29.9	83°49.0
22	353°31.2	11.7'	23°57.3	-8.2'	54.5'	111°59.0	80°11.6	79°13.6	$26^{\circ}18.1$	10°45.1	44°20.1	54°59.5	84°18.8
23	8°01.9	11.8'	23°49.0	-8.3'	54.5'	111°36.8	79°41.5	78°48.0	25°48.1	11°15.0	44°47.1	55°29.0	84°48.5
21 st	SD	= 14.9'	Mer. pass	. 22:27									

	Moon (22 nd Fe) Lunar Distance	(objects with larg	est hourly LD delta)
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Thu	GHA	ν	Dec	d	HP	-Antares	-Spica	-Arcturus	-Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter
0	22°32.7	11.9'	N 23°40.7	-8.4'	54.5'		79°11.3	78°22.4	25°18.2	11°44.8	45°14.2	55°58.5	85°18.2
1	37°03.6	12.0'	23°32.3	-8.5'	54.4'		78°41.2	77°56.9	24°48.4	12°14.7	45°41.3	56°28.1	85°48.0
2	51°34.6	12.0'	23°23.7	-8.6'	54.4'		78°11.1	77°31.3	24°18.5	12°44.6	46°08.5	56°57.6	86°17.7
3	66°05.6	12.1'	23°15.1	-8.7'	54.4'		77°40.9	77°05.8	23°48.7	13° 14.5	46°35.6	57°27.1	86°47.3
4	80°36.7	12.2'	23°06.3	-8.8'	54.4'		77°10.8	76°40.4	23°18.9	13°44.4	47°02.8	57°56.6	87°17.0
5	95°07.9	12.3'	22°57.5	-8.9'	54.4'		76°40.8	76°14.9	22°49.1	14°14.3	47°30.1	58°26.1	87°46.7
6	109°39.2	12.4'	N22°48.6	-9.0'	54.4'		76°10.7	75°49.5	22°19.4	14°44.2	47°57.4	58°55.7	88°16.4
7	124°10.6	12.4'	22°39.5	-9.1'	54.4'		75°40.6	75°24.2	21°49.6	15°14.1	48°24.7	59°25.2	88°46.0
8	138°42.0	12.5'	22°30.4	-9.2'	54.4'		75°10.6	74°58.8	21°19.9	15°44.0	48°52.0	59°54.7	89°15.6
9	153°13.6	12.6'	22°21.1	-9.3'	54.3'		74°40.5	74°33.5	20°50.2	16° 13.9	49°19.4	60°24.1	89°45.3
10	167°45.2	12.7'	22°11.8	-9.4'	54.3'		74°10.5	74°08.2	20°20.6	16°43.8	49°46.8	60°53.6	90°14.9
11	182°16.8	12.8'	22°02.4	-9.5'	54.3'	119°34.0	73°40.5	73°42.9	19°51.0	17° 13.6	50°14.3	61°23.1	90°44.5
12	196°48.6	12.8'	N21°52.9	-9.6'	54.3'	119°04.0	73°10.5	73°17.7	19°21.4	17°43.5	50°41.7	61°52.6	91°14.1
13	211°20.4	12.9'	21°43.3	-9.7'	54.3'	118°34.0	72°40.5	72°52.5	18°51.8	18° 13.4	51°09.2	62°22.1	91°43.6
14	225°52.4	13.0'	21°33.6	-9.8'	54.3'	118°04.0	72°10.5	72°27.3	18°22.3	18°43.3	51°36.7	62°51.5	92°13.2
15	240°24.4	13.1'	21°23.8	-9.9'	54.3'	117°34.0	71°40.5	72°02.2	17°52.8	19° 13.2	52°04.2	63°21.0	92°42.8
16	254°56.4	13.2'	21°13.9	-10.0'	54.3'	117°04.0	71°10.5	71°37.1	17°23.4	19°43.1	52°31.8	63°50.4	93°12.3
17	269°28.6	13.2'	21°03.9	-10.0'	54.3'	116°34.0	70°40.5	71°12.0	16°53.9	20°12.9	52°59.4	64°19.9	93°41.9
18	284°00.8	13.3'	N20°53.9	-10.1'	54.2'	116°04.1	70°10.6	70°47.0	16°24.6	20°42.8	53°27.0	64°49.3	94°11.4
19	298°33.1	13.4'	20°43.8	-10.2'	54.2'	115°34.1	69°40.7	70°22.0	15°55.2	21°12.7	53°54.6	65°18.8	94°40.9
20	313°05.5	13.5'	20°33.5	-10.3'	54.2'	115°04.2	69°10.7	69°57.1	15°26.0	21°42.5	54°22.2	65°48.2	95°10.4
21	327°38.0	13.5'	20°23.2	-10.4'	54.2'	114°34.2	68°40.8	69°32.1	14°56.7	22°12.4	54°49.9	66°17.7	95°39.9
22	342°10.5	13.6'	$20^{\circ}12.9$	-10.5'	54.2'	114°04.3	68°10.9	69°07.3	14°27.6	22°42.2	55°17.6	66°47.1	96°09.4
23	356°43.1	13.7'	20°02.4	-10.5'	54.2'	113°34.4	67°41.0	68°42.4	13°58.4	23°12.1	55°45.3	67°16.5	96°38.9
22 nd	SD	= 14.8	Mer. pass	s. 23:14									

h Moon	(23 rd Feb)	Lunar Distance (o	objects with larg	gest hourly LD delta	a)
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Fri	GHA	ν	Dec	d	HP	-Antares	-Arcturus	-Spica	-Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter
0	11°15.8	13.8'	N 19°51.8	-10.6'	54.2'	113°04.5	68°17.6	67° 11.1	13°29.4	23°41.9	56°13.0	67°45.9	97°08.4
1	25°48.6	13.8'	19°41.2	-10.7'	54.2'	112°34.6	67°52.8	66°41.2	13°00.4	24°11.7	56°40.7	68°15.3	97°37.8
2	40°21.4	13.9'	19°30.5	-10.8'	54.2'	112°04.7	67°28.1	66°11.3	12°31.5	24°41.6	57°08.5	68°44.7	98°07.3
3	54°54.4	14.0'	19° 19.7	-10.9'	54.2'	111°34.8	67°03.4	65°41.4	12°02.7	25°11.4	57°36.2	69°14.1	98°36.7
4	69°27.3	14.1'	19°08.9	-10.9'	54.2'	111°05.0	66°38.8	$65^{\circ}11.6$	11°34.0	25°41.2	58°04.0	69°43.5	99°06.2
5	84°00.4	14.1'	18°57.9	-11.0'	54.1'	110°35.1	66°14.2	64°41.7	11°05.4	26°11.0	58°31.8	70°12.9	99°35.6
6	98°33.5	14.2'	N 18°46.9	-11.1'	54.1'	110°05.2	65°49.6	64°11.9	10°36.9	26°40.8	58°59.6	70°42.3	100°05.0
7	113°06.7	14.3'	18° 35.8	-11.2'	54.1'	109°35.4	65°25.1	63°42.0	10°08.6	27°10.6	59°27.4	71°11.7	100°34.5
8	127°40.0	14.3'	18°24.7	-11.2'	54.1'	109°05.6	65°00.7	63°12.2	9°40.4	27°40.4	59°55.2	71°41.1	101°03.9
9	142°13.4	14.4'	18° 13.5	-11.3'	54.1'	108°35.7	64°36.2	62°42.4	9°12.4	28°10.2	60°23.1	72°10.4	101°33.3
10	156°46.8	14.5'	18°02.2	-11.4'	54.1'	108°05.9	64°11.9	62°12.6	8°44.6	28°39.9	60°50.9	72°39.8	102°02.6
11	171°20.3	14.6'	17°50.8	-11.4'	54.1'	107°36.1	63°47.5	61°42.7	8° 17.0	29°09.7	61°18.8	73°09.2	102°32.0
12	185°53.8	14.6'	N17°39.4	-11.5'	54.1'	107°06.3	63°23.3	61°12.9	7°49.8	29°39.5	61°46.7	73°38.5	103°01.4
13	200°27.4	14.7'	17°27.9	-11.6'	54.1'	106°36.5	62°59.0	60°43.1	7°22.8	30°09.2	62°14.6	74°07.9	103°30.8
14	215°01.1	14.8'	$17^{\circ}16.3$	-11.6'	54.1'	106°06.7	62°34.9	60°13.4	6°56.3	30°39.0	62°42.5	74°37.2	104°00.1
15	229°34.9	14.8'	17°04.7	-11.7'	54.1'	105°36.9	62°10.7	59°43.6	6°30.2	31°08.7	63°10.4	75°06.6	104°29.5
16	244°08.7	14.9'	16°53.0	-11.8'	54.1'	105°07.1	61°46.7	59° 13.8	6°04.7	31°38.5	63°38.3	75°35.9	104°58.8
17	258°42.6	15.0'	16°41.2	-11.8'	54.1'	104°37.3	61°22.7	58°44.0	5°39.9	32°08.2	64°06.2	76°05.2	105°28.2
18	273°16.6	15.0'	N16°29.4	-11.9'	54.0'	104°07.5	60°58.7	58°14.3	5° 15.9	32°38.0	64°34.2	76°34.6	105°57.5
19	287°50.6	15.1'	$16^{\circ}17.5$	-11.9'	54.0'	103°37.8	60°34.8	57°44.5		33°07.7	65°02.1	77°03.9	106°26.8
20	302°24.7	15.1'	$16^{\circ}05.5$	-12.0'	54.0'	103°08.0	$60^{\circ}10.9$	57° 14.8		33°37.4	65°30.1	77°33.2	106°56.1
21	316°58.8	15.2'	$15^{\circ}53.5$	-12.1'	54.0'	102°38.3	59°47.1	56°45.0		34°07.1	65°58.0	78°02.5	107°25.5
22	331°33.0	15.3'	15°41.5	-12.1'	54.0'	102°08.5	59°23.4	56° 15.3		34°36.8	66°26.0	78°31.8	107°54.8
23	346°07.3	15.3'	15°29.3	-12.2'	54.0'	101°38.8	58°59.7	55° 45.6		35°06.5	66°54.0	79°01.1	108°24.1
23 rd	SD	= 14.8'	Mer. pass	s. 23:57									

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

Sat	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Arcturus	-Spica	+Regulus	+Pollux	+Aldebaran	+Jupiter
0	0°41.6	15.4'	N 15°17.1	-12.2'	54.0'	101°09.0	92°59.1	58°36.1	55°15.8		35°36.3	79°30.5	108°53.4
1	15°16.0	15.5'	15°04.9	-12.3'	54.0'	100°39.3	92°36.0	58° 12.6	54°46.1		36°05.9	79°59.8	109°22.6
2	29°50.5	15.5'	14°52.6	-12.4'	54.0'	100°09.6	92°12.9	57°49.1	54°16.4		36°35.6	80°29.0	109°51.9
3	44°25.0	15.6'	14°40.3	-12.4'	54.0'	99°39.9	91°49.8	57°25.7	53°46.7		37°05.3	80°58.3	110°21.2
4	58°59.5	15.6'	14°27.8	-12.5'	54.0'	99°10.2	91°26.7	57°02.3	53°17.0		37°35.0	81°27.6	110°50.5
5	73°34.2	15.7'	$14^{\circ}15.4$	-12.5'	54.0'	98°40.5	91°03.6	56°39.1	52°47.3		38°04.7	81°56.9	111°19.7
6	88°08.9	15.7'	N 14°02.9	-12.6'	54.0'	98°10.8	90°40.5	56° 15.8	52°17.6		38°34.4	82°26.2	111°49.0
7	102°43.6	15.8'	13°50.3	-12.6'	54.0'	97°41.1	90°17.4	55° 52.7	51°47.9		39°04.0	82°55.5	112°18.2
8	117°18.4	15.8'	13°37.7	-12.7'	54.0'	97°11.4	89°54.3	55°29.6	51°18.3		39°33.7	83°24.7	112°47.5
9	131°53.2	15.9'	13°25.1	-12.7'	54.0'	96°41.7	89°31.2	55°06.6	50°48.6		40°03.4	83°54.0	113°16.7
10	146°28.1	15.9'	13°12.3	-12.8'	54.0'	96°12.0	89°08.1	54°43.7	50°18.9		40°33.0	84°23.2	113°45.9
11	161°03.1	16.0'	$12^{\circ}59.6$	-12.8'	54.0'	95°42.3	88°45.1	54°20.9	49°49.3		41°02.7	84°52.5	114°15.2
12	175°38.1	16.1'	N 12°46.8	-12.8'	54.0'	95°12.6	88°22.0	53°58.1	49°19.6		41°32.3	85°21.8	114°44.4
13	190°13.1	16.1'	12°33.9	-12.9'	54.0'	94°43.0	87°58.9	53°35.4	48°49.9	6° 10.4	42°02.0	85°51.0	115°13.6
14	204°48.2	16.2'	$12^{\circ}21.1$	-12.9'	53.9'	94°13.3	87°35.8	53° 12.8	48°20.3	6°35.9	42°31.6	86°20.3	115°42.8
15	219°23.4	16.2'	12°08.1	-13.0'	53.9'	93°43.6	87°12.8	52°50.3	47°50.6	7°02.0	43°01.2	86°49.5	116°12.0
16	233°58.6	16.2'	$11^{\circ}55.1$	-13.0'	53.9'	93°14.0	86°49.7	52°27.9	47°21.0	7°28.5	43°30.9	87°18.7	116°41.2
17	248°33.8	16.3'	$11^{\circ}42.1$	-13.1'	53.9'	92°44.3	86°26.7	52°05.5	46°51.4	7°55.4	44°00.5	87°48.0	117°10.4
18	263°09.1	16.3'	N11°29.1	-13.1'	53.9'	92°14.7	86°03.7	51°43.3	46°21.7	8°22.6	44°30.1	88°17.2	117°39.6
19	277°44.5	16.4'	$11^{\circ}15.9$	-13.1'	53.9'	91°45.0	85°40.6	51°21.1	45°52.1	8° 50.0	44°59.7	88°46.4	118°08.8
20	292°19.8	16.4'	11°02.8	-13.2'	53.9'	91°15.4	85°17.6	50°59.1	45°22.5	9° 17.7	45°29.4	89°15.7	118°38.0
21	306°55.3	16.5'	10°49.6	-13.2'	53.9'	90°45.8	84°54.6	50°37.1	44°52.8	9°45.5	45°59.0	89°44.9	119°07.2
22	321°30.7	16.5'	10°36.4	-13.3'	53.9'	90°16.1	84°31.6	50° 15.2	44°23.2	10° 13.6	46°28.6	90°14.1	119°36.4
23	336°06.2	16.6'	10°23.2	-13.3'	53.9'	89°46.5	84°08.7	49°53.4	43°53.6	10°41.7	46°58.2	90°43.3	
24 th	SI	D = 14.	7' Mer. pa	ss:-									

Moon (25th Feb)

n		IVIOOI	n (25°° Fe	eb)			Lunar Di	stance (objects v	vith larges	t nourly	LD delta)	
Sun	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	350°41.8	16.6'	N 10°09.9	-13.3'	53.9'	89°16.9	83°45.7	80°03.5	43°24.0	11° 10.0	47°27.8	78°35.2	91°12.5
1	5°17.4	16.6'	09°56.5	-13.4'	53.9'	88°47.2	83°22.8	79°41.4	42°54.4	11°38.4	47°57.4	79°03.3	91°41.7
2	19°53.0	16.7'	09°43.2	-13.4'	53.9'	88°17.6	82°59.8	79°19.3	42°24.8	12°06.9	48°27.0	79°31.4	92°10.9
3	34°28.7	16.7'	09°29.8	-13.4'	53.9'	87°48.0	82°36.9	78° 57.2	41°55.2	12°35.4	48°56.6	79°59.5	92°40.1
4	49°04.4	16.7'	$09^{\circ}16.3$	-13.5'	53.9'	87°18.4	82°14.0	78°35.1	41°25.6	13°04.1	49°26.2	80°27.6	93°09.3
5	63°40.1	16.8'	$09^{\circ}02.9$	-13.5'	53.9'	86°48.8	81°51.1	78°13.0	40°56.0	13°32.8	49°55.8	80°55.7	93°38.5
6	78°15.9	16.8'	N 08°49.4	-13.5'	53.9'	86°19.2	81°28.2	77°51.0	40°26.4	14°01.6	50°25.4	81°23.8	94°07.7
7	92°51.7	16.8'	08°35.9	-13.6'	53.9'	85°49.5	81°05.4	77°29.0	39°56.8	14°30.4	50°55.0	81°51.9	94°36.9
8	107°27.6	16.9'	08°22.3	-13.6'	53.9'	85°19.9	80°42.5	77°07.0	39°27.2	14°59.2	51°24.6	82°20.0	95°06.1
9	122°03.5	16.9'	08°08.7	-13.6'	53.9'	84°50.3	80°19.7	76°45.1	38°57.6	15°28.2	51°54.2	82°48.1	95°35.3
10	136°39.4	16.9'	$07^{\circ}55.1$	-13.6'	53.9'	84°20.7	79°56.9	76°23.1	38°28.0	15°57.1	52°23.8	83°16.2	96°04.5
11	151°15.3	17.0'	$07^{\circ}41.5$	-13.7'	53.9'	83°51.1	79°34.1	76°01.2	37°58.4	16°26.1	52°53.4	83°44.4	96°33.7
12	165°51.3	17.0'	N 07°27.8	-13.7'	53.9'	83°21.5	79°11.4	75°39.4	37°28.9	16°55.1	53°23.0	84°12.5	97°02.8
13	180°27.3	17.0'	$07^{\circ}14.1$	-13.7'	53.9'	82°51.9	78°48.6	75° 17.5	36°59.3	17° 24.2	53°52.6	84°40.6	97°32.0
14	195°03.3	17.1'	07°00.4	-13.7'	53.9'	82°22.3	78°25.9	74°55.7	36°29.7	17°53.3	54°22.1	85°08.7	98°01.2
15	209°39.4	17.1'	06°46.7	-13.8'	53.9'	81°52.7	78°03.2	74°34.0	36°00.1	18° 22.4	54°51.7	85°36.8	98°30.4
16	224°15.5	17.1'	06°32.9	-13.8'	53.9'	81°23.1	77°40.5	74°12.2	35°30.5	18°51.5	55°21.3	86°05.0	98°59.5
17	238°51.6	17.1'	$06^{\circ}19.1$	-13.8'	53.9'	80°53.5	77°17.9	73°50.5	35°01.0	19°20.6	55°50.9	86°33.1	99°28.7
18	253°27.7	17.2'	N 06°05.3	-13.8'	53.9'	80°23.9	76°55.2	73°28.9	34°31.4	19°49.8	56°20.5	87°01.2	99°57.9
19	268°03.9	17.2'	05°51.5	-13.9'	53.9'	79°54.3	76°32.6	73°07.2	34°01.8	20°19.0	56°50.0	87°29.3	100°27.0
20	282°40.0	17.2'	05°37.6	-13.9'	53.9'	79°24.7	76°10.0	72°45.6	33°32.3	20°48.2	57°19.6	87°57.5	100°56.2
21	297°16.2	17.2'	05°23.8	-13.9'	53.9'	78°55.2	75°47.5	72°24.1	33°02.7	21° 17.4	57°49.2	88°25.6	101°25.3
22	311°52.5	17.2'	$05^{\circ}09.9$	-13.9'	53.9'	78°25.6	75°25.0	72°02.6	32°33.1	21°46.7	58°18.8	88°53.7	101°54.5
23	326°28.7	17.3'	04°56.0	-13.9'	53.9'	77°56.0	75°02.5	71°41.1	32°03.6	22°15.9	58°48.4	89°21.8	102°23.7
25 th	SD	= 14.7	Mer. pas	s. 00:38									

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I_	Moon (26 th Feb)	Lunar Distance (objects with largest hourly LD delta)
n	MOOD LADS FED L	I linar i listance i oniects with largest nollriv i i l'ideita i

Mon	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	341°04.9	17.3'	N 04°42.0	-13.9'	53.9'		77°26.4	74°40.0	31°34.0	22°45.2	59° 17.9	89°50.0	102°52.8
1	355°41.2	17.3'	04°28.1	-14.0'	53.9'		76°56.8	74°17.6	31°04.4	23°14.5	59° 47.5	90°18.1	103°22.0
2	10°17.5	17.3'	$04^{\circ}14.1$	-14.0'	53.9'		76°27.2	73°55.2	30°34.9	23°43.8	60°17.1	90°46.2	103°51.1
3	24°53.8	17.3'	04°00.2	-14.0'	53.9'		75°57.6	73°32.8	30°05.3	24°13.1	60°46.7	91°14.3	104°20.3
4	39°30.1	17.3'	03°46.2	-14.0'	53.9'		75°28.0	73°10.4	29°35.7	24°42.4	61°16.3	91°42.5	104°49.4
5	54°06.5	17.3'	03°32.2	-14.0'	53.9'		74°58.4	72°48.1	29°06.2	25°11.7	61°45.8	92°10.6	105°18.6
6	68°42.8	17.4'	N 03° 18.2	-14.0'	53.9'		74°28.8	72°25.8	28°36.6	25°41.1	62°15.4	92°38.7	105°47.7
7	83°19.2	17.4'	03°04.1	-14.0'	53.9'	119°39.7	73°59.2	72°03.6	28°07.1	26°10.4	62°45.0	93°06.8	106°16.9
8	97°55.6	17.4'	$02^{\circ}50.1$	-14.0'	53.9'	119°17.1	73°29.6	71°41.4	27°37.5	26°39.8	63°14.6	93°35.0	106°46.0
9	112°31.9	17.4'	02°36.1	-14.1'	53.9'	118°54.5	73°00.0	71°19.2	27°07.9	27°09.1	63°44.2	94°03.1	107°15.1
10	127°08.3	17.4'	02°22.0	-14.1'	53.9'	118°31.8	72°30.4	70°57.1	26°38.4	27°38.5	64°13.8	94°31.2	107°44.3
11	141°44.7	17.4'	02°07.9	-14.1'	53.9'	118°09.0	72°00.8	70°35.0	26°08.8	28°07.9	64°43.3	94°59.3	108°13.4
12	156°21.1	17.4'	N 01°53.9	-14.1'	53.9'	117°46.2	71°31.2	70°12.9	25°39.2	28°37.3	65° 12.9	95°27.5	108°42.6
13	170°57.5	17.4'	01°39.8	-14.1'	53.9'	117°23.3	$71^{\circ}01.6$	69°50.9	25°09.7	29°06.7	65°42.5	95°55.6	109°11.7
14	185°34.0	17.4'	$01^{\circ}25.7$	-14.1'	53.9'	117°00.4	70°32.0	69°28.9	24°40.1	29°36.1	66°12.1	96°23.7	109°40.8
15	200°10.4	17.4'	$01^{\circ}11.6$	-14.1'	53.9'	116°37.4	70°02.4	69°07.0	24° 10.5	30°05.5	66°41.7	96°51.8	110°10.0
16	214°46.8	17.4'	00°57.5	-14.1'	54.0'	116°14.4	69°32.8	68°45.1	23°41.0	30°34.9	67°11.3	97°20.0	110°39.1
17	229°23.2	17.4'	00°43.4	-14.1'	54.0'	115°51.3	69°03.2	68°23.2	23°11.4	31°04.4	67°40.9	97°48.1	111°08.2
18	243°59.6	17.4'	N00°29.3	-14.1'	54.0'	115°28.2	68°33.5	68°01.4	22°41.8	31°33.8	68° 10.5	98°16.2	111°37.4
19	258°36.1	17.4'	$00^{\circ}15.2$	-14.1'	54.0'	115°05.0	68°03.9	67°39.6	22°12.3	32°03.3	68°40.1	98°44.3	112°06.5
20	273°12.5	17.4'	N 00°01.0	-14.1'	54.0'	114°41.8	67°34.3	67°17.9	21°42.7	32°32.7	69°09.8	99°12.5	112°35.6
21	287°48.9	17.4'	S 00°13.1	-14.1'	54.0'	114°18.5	67°04.7	66°56.2	21°13.1	33°02.2	69°39.4	99°40.6	113°04.8
22	302°25.3	17.4'	00°27.2	-14.1'	54.0'	113°55.2	66°35.0	66°34.6	20°43.6	33°31.7	70°09.0	100°08.7	113°33.9
23	317°01.7	17.4'	00°41.3	-14.1'	54.0'	113°31.9	66°05.4	66°13.0	20°14.0	34°01.1	70°38.6	100°36.8	114°03.0
26 th	SD	= 14.7	Mer. pass	s. 01:18									

h	Moon	(27 th	Feb)

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Mars	-Venus	-Antares	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	331°38.1	17.4'	S 00°55.4	-14.1'	54.0'			65°35.8	19°44.4	34°30.6	71°08.2	101°04.9	114°32.2
1	346°14.5	17.4'	$01^{\circ}09.5$	-14.1'	54.0'			65°06.1	19°14.9	35°00.1	71°37.9	101°33.0	115°01.3
2	0°50.9	17.4'	$01^{\circ}23.7$	-14.1'	54.0'			64°36.5	18°45.3	35°29.6	72°07.5	102°01.1	115°30.4
3	15°27.3	17.4'	$01^{\circ}37.8$	-14.1'	54.0'			64°06.8	18°15.7	35°59.1	72°37.1	102°29.3	115°59.6
4	30°03.6	17.4'	$01^{\circ}51.9$	-14.1'	54.0'			63°37.2	17°46.1	36°28.6	73°06.8	102°57.4	116°28.7
5	44°40.0	17.3'	$02^{\circ}06.0$	-14.1'	54.0'			63°07.5	17°16.6	36°58.2	73°36.4	103°25.5	116°57.8
6	59°16.4	17.3'	S 02°20.1	-14.1'	54.0'			62°37.9	16°47.0	37°27.7	74°06.1	103°53.6	117°26.9
7	73°52.7	17.3'	$02^{\circ}34.2$	-14.1'	54.0'			62°08.2	16°17.4	37°57.2	74°35.7	104°21.7	117°56.1
8	88°29.0	17.3'	02°48.3	-14.1'	54.0'			61°38.5	15°47.9	38°26.8	75°05.4	104°49.8	118°25.2
9	103°05.3	17.3'	03°02.4	-14.1'	54.0'			61°08.9	15°18.3	38°56.3	75°35.1	105°17.9	118°54.3
10	117°41.6	17.3'	$03^{\circ}16.4$	-14.1'	54.1'			60°39.2	14°48.7	39°25.9	76°04.7	105°46.0	119°23.5
11	132°17.9	17.3'	03°30.5	-14.1'	54.1'			60°09.5	14°19.1	39°55.5	76°34.4	106°14.1	119°52.6
12	146°54.1	17.2'	S 03°44.5	-14.0'	54.1'			59°39.8	13°49.6	40°25.1	77°04.1	106°42.2	
13	161°30.4	17.2'	03°58.6	-14.0'	54.1'	119°56.1		59°10.1	13°20.0	40°54.6	77°33.8	107°10.3	
14	176°06.6	17.2'	04°12.6	-14.0'	54.1'	119°28.5		58°40.4	12°50.5	41°24.2	78°03.5	107°38.3	
15	190°42.8	17.2'	$04^{\circ}26.7$	-14.0'	54.1'	119°00.8		58°10.7	12°20.9	41°53.8	78°33.2	108°06.4	
16	205°18.9	17.1'	04°40.7	-14.0'	54.1'	118°33.0		57°41.0	11°51.4	42°23.5	79°02.9	108°34.5	
17	219°55.1	17.1'	04°54.7	-14.0'	54.1'	118°05.3		57°11.2	11°21.8	42°53.1	79°32.6	109°02.6	
18	234°31.2	17.1'	S 05°08.6	-14.0'	54.1'	117°37.6		56°41.5	10°52.3	43°22.7	80°02.3	109°30.7	
19	249°07.3	17.1'	$05^{\circ}22.6$	-14.0'	54.1'	117°09.9	119°43.1	56°11.8	10°22.8	43°52.3	80°32.1	109°58.7	
20	263°43.4	17.0'	05°36.6	-13.9'	54.1'	116°42.1	119° 16.5	55°42.0	9°53.3	44°22.0	81°01.8	110°26.8	
21	278°19.4	17.0'	$05^{\circ}50.5$	-13.9'	54.1'	116°14.4	118°50.0	55°12.3	9°23.8	44°51.7	81°31.5	110°54.9	
22	292°55.4	17.0'	$06^{\circ}04.4$	-13.9'	54.2'	115°46.6	118°23.4	54°42.5	8°54.4	45°21.3	82°01.3	111°23.0	
23	307°31.4	17.0'	$06^{\circ}18.3$	-13.9'	54.2'	115°18.9	117°56.8	54°12.7	8°24.9	45°51.0	82°31.1	111°51.0	
27 th	SD	= 14.7'	Mer. pas	s. 01:57									

Moon (28th Feb)

h

on (28 th Feb)	Lunar Distance	(ohiects with	largest hourly	(LD delta)
	Lunai Distance	(ODIECTS MITH	Targest Hours	LD ueitai

Wed	GHA	ν	Dec	d	HP	-Venus	-Mars	-Antares	±Spica	+Regulus	+Procyon	+Pollux	+Capella
0	322°07.4	16.9'	S 06°32.2	-13.9'	54.2'	117°30.2	114°51.1	53°43.0	7°55.6	46°20.7	80°45.2	83°00.8	112° 19.1
1	336°43.3	16.9'	$06^{\circ}46.1$	-13.8'	54.2'	117°03.6	114°23.3	53°13.2	7°26.2	46°50.4	81°12.9	83°30.6	112°47.1
2	351°19.2	16.9'	06°59.9	-13.8'	54.2'	116°37.0	113°55.5	52°43.4	6°56.9	47° 20.1	81°40.6	84°00.4	113° 15.2
3	5°55.1	16.8'	$07^{\circ}13.8$	-13.8'	54.2'	116°10.4	113°27.7	52°13.6	6°27.7	47° 49.8	82°08.4	84°30.2	113°43.2
4	20°30.9	16.8'	07°27.6	-13.8'	54.2'	115°43.7	112°59.9	51°43.8	5°58.5	48° 19.5	82°36.2	85°00.0	114°11.3
5	35°06.7	16.7'	$07^{\circ}41.4$	-13.8'	54.2'	115°17.1	112°32.1	51°13.9	5°29.5	48°49.3	83°03.9	85°29.8	114°39.3
6	49°42.4	16.7'	S 07°55.1	-13.7'	54.2'	114°50.4	112°04.3	50°44.1	5°00.6	49° 19.0	83°31.7	85°59.6	115°07.3
7	64°18.1	16.7'	08°08.9	-13.7'	54.2'	114°23.8	111°36.4	50°14.3	4°31.9	49° 48.8	83°59.6	86°29.4	115°35.3
8	78°53.8	16.6'	08°22.6	-13.7'	54.3'	113°57.1	111°08.6	49°44.4	4°03.5	50° 18.5	84°27.4	86°59.3	116°03.4
9	93°29.4	16.6'	08°36.3	-13.7'	54.3'	113°30.4	110°40.7	49°14.5	3°35.4	50°48.3	84°55.2	87°29.1	116°31.4
10	108°05.0	16.5'	08°49.9	-13.6'	54.3'	113°03.7	110°12.9	48°44.7	3°07.9	51° 18.1	85°23.1	87°59.0	116°59.4
11	122°40.5	16.5'	09°03.6	-13.6'	54.3'	112°37.0	109°45.0	48°14.8	2°41.2	51°47.9	85°50.9	88°28.9	117°27.4
12	137°16.0	16.5'	S 09°17.2	-13.6'	54.3'	112°10.3	109°17.1	47°44.9		52° 17.7	86°18.8	88°58.8	117°55.4
13	151°51.5	16.4'	09°30.7	-13.5'	54.3'	111°43.5	108°49.2	47°15.0		52°47.6	86°46.7	89°28.7	118°23.4
14	166°26.9	16.4'	09°44.3	-13.5'	54.3'	111°16.8	108°21.3	46°45.1		53° 17.4	87°14.6	89°58.6	118°51.4
15	181°02.3	16.3'	09°57.8	-13.5'	54.3'	110°50.0	107°53.3	46°15.2		53°47.3	87°42.5	90°28.5	119° 19.3
16	195°37.6	16.3'	$10^{\circ}11.3$	-13.5'	54.4'	110°23.3	107°25.4	45°45.2		54° 17.1	88°10.4	90°58.4	119°47.3
17	210°12.9	16.2'	10°24.7	-13.4'	54.4'	109°56.5	106°57.5	45°15.3		54°47.0	88°38.3	91°28.3	
18	224°48.1	16.2'	S 10°38.2	-13.4'	54.4'	109°29.7	106°29.5	44°45.3		55° 16.9	89°06.3	91°58.3	
19	239°23.2	16.1'	10°51.6	-13.4'	54.4'	109°02.9	106°01.5	44°15.3		55° 46.8	89°34.2	92°28.3	
20	253°58.4	16.1'	11°04.9	-13.3'	54.4'	108°36.1	105°33.5	43°45.3		56° 16.7	90°02.2	92°58.2	
21	268°33.4	16.0'	11°18.2	-13.3'	54.4'	108°09.2	105°05.5	43°15.3		56° 46.6	90°30.2	93°28.2	
22	283°08.4	16.0'	11°31.5	-13.2'	54.4'	107°42.4	104°37.5	42°45.3		57° 16.6	90°58.2	93°58.2	
23	297°43.4	15.9'	11°44.8	-13.2'	54.5'	107°15.5	104°09.5	42°15.3	3°52.2	57° 46.5	91°26.2	94°28.2	
28 th	SD	= 14.8	Mer. pas	s. 02:36									

h Moon (29th Feb)

Thu	GHA	ν	Dec	d	HP	-Venus	-Mars	-Altair	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	312°18.3	15.8'	S 11°58.0	-13.2'	54.5'	106°48.7	103°41.4	93°45.9	41°45.3	4°20.6	58°16.5	91°54.2	94°58.3
1	326°53.1	15.8'	$12^{\circ}11.1$	-13.1'	54.5'	106°21.8	103°13.4	93°21.1	41°15.2	4°49.4	58°46.5	92°22.2	95°28.3
2	341°27.9	15.7'	12°24.3	-13.1'	54.5'	105°54.9	102°45.3	92°56.2	40°45.2	5° 18.5	59°16.5	92°50.3	95°58.4
3	356°02.6	15.7'	12°37.4	-13.0'	54.5'	105°28.0	102° 17.2	92°31.4	40°15.1	5°47.7	59°46.5	93°18.3	96°28.5
4	10°37.3	15.6'	$12^{\circ}50.4$	-13.0'	54.5'	105°01.0	101°49.1	92°06.5	39°45.0	6°17.1	60°16.6	93°46.4	96°58.5
5	25°11.9	15.5'	13°03.4	-13.0'	54.6'	104°34.1	101°21.0	91°41.7	39°14.9	6°46.6	60°46.6	94°14.4	97°28.6
6	39°46.4	15.5'	S 13°16.4	-12.9'	54.6'	104°07.1	100°52.9	91°16.8	38°44.7	7°16.2	61°16.7	94°42.5	97°58.8
7	54°20.9	15.4'	$13^{\circ}29.3$	-12.9'	54.6'	103°40.1	100°24.7	90°51.9	38°14.6	7°45.9	61°46.7	95°10.6	98°28.9
8	68°55.3	15.3'	13°42.2	-12.8'	54.6'	103°13.1	99°56.6	90°27.0	37°44.4	8° 15.6	62°16.8	95°38.7	98°59.0
9	83°29.6	15.3'	$13^{\circ}55.0$	-12.8'	54.6'	102°46.1	99°28.4	90°02.0	37°14.3	8°45.4	62°47.0	96°06.8	99°29.2
10	98°03.9	15.2'	$14^{\circ}07.8$	-12.7'	54.6'	102°19.1	99°00.2	89°37.1	36°44.1	9°15.3	63°17.1	96°35.0	99°59.4
11	112°38.1	15.1'	$14^{\circ}20.5$	-12.7'	54.7'	101°52.0	98°32.0	89°12.1	36°13.9	9°45.2	63°47.2	97°03.1	100°29.6
12	127°12.2	15.1'	S 14°33.2	-12.6'	54.7'	101°25.0	98°03.7	88°47.2	35°43.6	10°15.2	64°17.4	97°31.3	100°59.8
13	141°46.3	15.0'	$14^{\circ}45.8$	-12.6'	54.7'	100°57.9	97°35.5	88°22.2	35°13.4	10°45.2	64°47.6	97°59.4	101°30.0
14	156°20.3	14.9'	$14^{\circ}58.4$	-12.5'	54.7'	100°30.8	97°07.2	87°57.2	34°43.1	11°15.2	65°17.8	98°27.6	102°00.3
15	170°54.2	14.8'	$15^{\circ}11.0$	-12.5'	54.7'	100°03.7	96°38.9	87°32.2	34°12.9	11°45.3	65°48.0	98°55.8	102°30.5
16	185°28.0	14.8'	15°23.4	-12.4'	54.7'	99°36.5	96° 10.6	87°07.2	33°42.6	12°15.4	66°18.2	99°24.0	103°00.8
17	200°01.8	14.7'	15°35.9	-12.4'	54.8'	99°09.4	95°42.3	86°42.1	33°12.3	12°45.6	66°48.5	99°52.2	103°31.1
18	214°35.5	14.6'	S 15°48.2	-12.3'	54.8'	98°42.2	95° 14.0	86°17.1	32°41.9	13° 15.7	67°18.8	100°20.4	104°01.4
19	229°09.1	14.5'	$16^{\circ}00.6$	-12.3'	54.8'	98°15.0	94°45.6	85°52.1	32°11.6	13°46.0	67°49.0	100°48.7	104°31.8
20	243°42.7	14.5'	$16^{\circ}12.8$	-12.2'	54.8'	97°47.8	94° 17.3	85°27.0	31°41.2	14°16.2	68°19.4	101°16.9	105°02.1
21	258°16.2	14.4'	$16^{\circ}25.0$	-12.1'	54.8'	97°20.6	93°48.9	85°02.0	31°10.8	14°46.4	68°49.7	101°45.1	105°32.5
22	272°49.5	14.3'	16° 37.2	-12.1'	54.9'	96°53.3	93°20.4	84°36.9	30°40.4	15° 16.7	69°20.0	102°13.4	106°02.9
23	287°22.8	14.2'	16°49.3	-12.0'	54.9'	96°26.1	92°52.0	84°11.8	30°10.0	15°47.1	69°50.4	102°41.7	106°33.3
29 th	SD	= 14.9'	Mer. pas	s. 03:16									

h		Моо	n (1 st Ma	ır)			Lunar D	istance (objects v	vith large	est hourly	LD delta)	
Fri	GHA	ν	Dec	d	HP	-Sun	-Venus	-Mars	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	301°56.1	14.1'	S 17°01.3	-12.0'	54.9'		95°58.8	92°23.6	29°39.6	16° 17.4	70°20.8	103°10.0	107°03.8
1	316°29.2	14.1'	$17^{\circ}13.2$	-11.9'	54.9'	119°55.1	95°31.4	91°55.1	29°09.1	16°47.8	70°51.2	103°38.3	107°34.2
2	331°02.3	14.0'	$17^{\circ}25.1$	-11.8'	54.9'	119°27.2	95°04.1	91°26.6	28°38.6	17° 18.2	71°21.6	104°06.6	108°04.7
3	345°35.3	13.9'	17°37.0	-11.8'	55.0'	118°59.2	94°36.8	90°58.1	28°08.1	17°48.6	71°52.1	104°34.9	108°35.2
4	0°08.1	13.8'	$17^{\circ}48.7$	-11.7'	55.0'	118°31.2	94°09.4	90°29.5	27°37.6	18° 19.0	72°22.6	105°03.2	109°05.7
5	14°41.0	13.7'	$18^{\circ}00.5$	-11.6'	55.0'	118°03.3	93°42.0	90°01.0	27°07.0	18°49.5	72°53.1	105°31.5	109°36.3
6	29°13.7	13.6'	S 18°12.1	-11.6'	55.0'	117°35.2	93° 14.6	89°32.4	26°36.5	19°20.0	73°23.6	105°59.9	110°06.8
7	43°46.3	13.5'	18°23.7	-11.5'	55.0'	117°07.2	92°47.1	89°03.8	26°05.9	19°50.5	73°54.1	106°28.2	110°37.4
8	58°18.9	13.5'	18°35.2	-11.4'	55.1'	116°39.1	92°19.7	88°35.2	25°35.3	20°21.1	74°24.7	106°56.6	111°08.0
9	72°51.3	13.4'	18°46.6	-11.4'	55.1'	116°11.1	91°52.2	88°06.5	25°04.6	20°51.7	74°55.3	107°25.0	111°38.6
10	87°23.7	13.3'	$18^{\circ}58.0$	-11.3'	55.1'	115°43.0	91°24.7	87°37.8	24°34.0	21°22.3	75°25.9	107°53.3	112°09.3
11	101°55.9	13.2'	$19^{\circ}09.2$	-11.2'	55.1'	115°14.8	90°57.1	87°09.2	24°03.3	21°52.9	75°56.5	108°21.7	112°40.0
12	116°28.1	13.1'	S 19°20.5	-11.1'	55.2'	114°46.7	90°29.6	86°40.4	23°32.6	22°23.5	76°27.2	108°50.1	113°10.7
13	131°00.2	13.0'	19°31.6	-11.1'	55.2'	114°18.5	90°02.0	86°11.7	23°01.8	22°54.2	76°57.9	109°18.5	113°41.4
14	145°32.2	12.9'	19°42.7	-11.0'	55.2'	113°50.3	89°34.4	85°42.9	22°31.1	23°24.9	77°28.6	109°46.9	114°12.1
15	160°04.1	12.8'	19°53.6	-10.9'	55.2'	113°22.0	89°06.7	85°14.1	22°00.3	23°55.7	77°59.3	110°15.4	114°42.9
16	174°35.9	12.7'	20°04.6	-10.8'	55.3'	112°53.8	88°39.1	84°45.3	21°29.5	24°26.4	78°30.1	110°43.8	115°13.7
17	189°07.6	12.6'	$20^{\circ}15.4$	-10.7'	55.3'	112°25.5	88°11.4	84°16.5	20°58.7	24°57.2	79°00.8	111°12.2	115°44.5
18	203°39.2	12.5'	S 20°26.1	-10.7'	55.3'	111°57.2	87°43.7	83°47.6	20°27.8	25°28.0	79°31.6	111°40.7	116°15.4
19	218°10.7	12.4'	20°36.8	-10.6'	55.3'	111°28.9	87° 16.0	83° 18.7	19°56.9	25°58.9	80°02.5	112°09.1	116°46.2
20	232°42.2	12.3'	20°47.4	-10.5'	55.4'	111°00.5	86°48.2	82°49.8	19°26.0	26°29.7	80°33.3	112°37.6	117°17.1
21	247°13.5	12.2'	20°57.9	-10.4'	55.4'	110°32.1	86°20.4	82°20.9	18°55.1	27°00.6	81°04.2	113°06.0	117°48.1
22	261°44.7	12.1'	$21^{\circ}08.3$	-10.3'	55.4'	110°03.7	85°52.6	81°51.9	18°24.1	27°31.6	81°35.1	113°34.5	118°19.0
23	276°15.8	12.0'	21°18.6	-10.2'	55.4'	109°35.3	85°24.8	81°22.9	17°53.2	28°02.5	82°06.1	114°03.0	118°50.0
1 st	SD	= 15.0'	Mer. pas	s. 03:59					Sun S	D = 16.1'			

h		Моо	n (2 nd Ma	ar)			Lunar D	istance	(objects	with larg	est hourly	LD delta)	
Sat	GHA	ν	Dec	d	HP	-Sun	-Venus	-Mars	-Antares	+Spica	+Arcturus	+Regulus	+Procyon
0	290°46.8	11.9'	S 21°28.9	-10.1'	55.5'	109°06.8	84°56.9	80°53.9	17°22.1	28°33.5	43°12.6	82°37.0	114°31.5
1	305°17.7	11.8'	21°39.0	-10.1'	55.5'	108°38.3	84°29.0	80°24.8	16°51.1	29°04.5	43°32.9	83°08.0	115°00.0
2	319°48.6	11.7'	21°49.1	-10.0'	55.5'	108°09.8	84°01.1	79°55.7	16°20.0	29°35.5	43°53.4	83°39.1	115°28.4
3	334°19.3	11.6'	21°59.0	-9.9'	55.5'	107°41.2	83°33.1	79°26.6	15°48.9	30°06.6	44°14.0	84°10.1	115°56.9
4	348°49.9	11.5'	22°08.9	-9.8'	55.6'	107°12.6	83°05.1	78°57.5	15°17.8	30°37.7	44°34.8	84°41.2	116°25.4
5	3°20.4	11.4'	$22^{\circ}18.7$	-9.7'	55.6'	106°44.0	82°37.1	78°28.3	14°46.7	31°08.8	44°55.8	85°12.3	116°53.9
6	17°50.8	11.3'	S 22°28.4	-9.6'	55.6'	106°15.4	82°09.1	77°59.1	14°15.5	31°40.0	45°17.0	85°43.4	117°22.4
7	32°21.1	11.2'	22°38.0	-9.5'	55.6'	105°46.7	81°41.0	77°29.9	13°44.3	32°11.2	45°38.3	86°14.6	117°51.0
8	46°51.3	11.1'	22°47.4	-9.4'	55.7'	105°18.0	81°12.9	77°00.7	13°13.0	32°42.4	45°59.8	86°45.8	118° 19.5
9	61°21.4	11.0'	22°56.8	-9.3'	55.7'	104°49.3	80°44.8	76°31.4	12°41.8	33°13.6	46°21.5	87°17.0	118°48.0
10	75°51.3	10.9'	23°06.1	-9.2'	55.7'	104°20.5	80°16.6	76°02.1	12°10.5	33°44.9	46°43.3	87°48.3	119° 16.5
11	90°21.2	10.8'	$23^{\circ}15.3$	-9.1'	55.8'	103°51.7	79°48.4	75°32.7	11°39.2	34°16.2	47°05.3	88°19.6	119°45.0
12	104°51.0	10.7'	S 23°24.4	-9.0'	55.8'	103°22.9	79°20.2	75°03.4	11°07.8	34°47.6	47°27.4	88°50.9	
13	119°20.6	10.5'	23°33.4	-8.9'	55.8'	102°54.0	78°52.0	74°34.0	10°36.4	35°19.0	47°49.7	89°22.2	
14	133°50.2	10.4'	23°42.2	-8.8'	55.8'	102°25.2	78°23.7	74°04.5	10°05.0	35°50.4	48°12.2	89°53.6	
15	148°19.6	10.3'	23°51.0	-8.7'	55.9'	101°56.2	77°55.4	73°35.0	9°33.6	36°21.8	48°34.8	90°25.0	
16	162°49.0	10.2'	23°59.7	-8.5'	55.9'	101°27.3	77°27.0	73°05.5	9°02.1	36°53.3	48°57.5	90°56.5	
17	177°18.2	10.1'	24°08.2	-8.4'	55.9'	100°58.3	76°58.6	72°36.0	8°30.6	37°24.8	49°20.4	91°27.9	
18	191°47.3	10.0'	S 24°16.6	-8.3'	56.0'	100°29.3	76°30.2	72°06.5	7°59.0	37°56.3	49°43.4	91°59.5	
19	206°16.3	9.9'	24°25.0	-8.2'	56.0'	100°00.2	76°01.8	71°36.9	7°27.5	38°27.9	50°06.6	92°31.0	
20	220°45.2	9.8'	24°33.2	-8.1'	56.0'	99°31.1	75°33.3	71°07.2	6°55.9	38°59.5	50°29.9	93°02.6	
21	235°14.0	9.7'	24°41.3	-8.0'	56.1'	99°02.0	75°04.8	70°37.6	6°24.3	39°31.2	50°53.3	93°34.2	
22	249°42.7	9.6'	24°49.2	-7.9'	56.1'	98°32.9	74°36.2	70°07.9	5°52.6	40°02.8	51°16.9	94°05.8	
23	264°11.3	9.5'	24°57.1	-7.7'	56.1'	98°03.7	74°07.7	69°38.1	5°20.9	40°34.5	51°40.6	94°37.5	
2 nd	SD	= 15.1'	Mer. pas	s. 04:46					Sun S	D = 16.1'	-		

h		Моо	n (3 rd Ma	ar)			Lunar Dis	stance (d	objects w	ith larges	t hourly	LD delta)	
Sun	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	-Mars	± Antares	+Spica	+Arcturus	+Regulus
0	278°39.7	9.4'	S 25°04.8	-7.6'	56.2'	97°34.4		73°39.0	69°08.4	4°49.3	41°06.3	52°04.4	95°09.2
1	293°08.1	9.2'	25°12.5	-7.5'	56.2'	97°05.2		73° 10.4	68°38.6	4°17.5	41°38.1	52°28.4	95°41.0
2	307°36.3	9.1'	25°20.0	-7.4'	56.2'	96°35.9		72°41.7	68°08.7	3°45.8	42°09.9	52°52.5	96°12.8
3	322°04.5	9.0'	25°27.3	-7.2'	56.3'	96°06.6		72°13.0	67°38.9	3°14.1	42°41.7	53°16.7	96°44.6
4	336°32.5	8.9'	25°34.6	-7.1'	56.3'	95°37.2		71°44.2	67°09.0	2°42.4	43°13.6	53°41.0	97°16.4
5	351°00.4	8.8'	$25^{\circ}41.7$	-7.0'	56.3'	95°07.8		71° 15.4	66°39.0	2°10.8	43°45.6	54°05.4	97°48.3
6	5°28.2	8.7'	S 25°48.7	-6.9'	56.3'	94°38.3		70°46.6	66°09.0	1°39.3	44°17.5	54°30.0	98°20.3
7	19°55.9	8.6'	25°55.5	-6.7'	56.4'	94°08.9		70° 17.7	65°39.0	1°08.3	44°49.5	54°54.6	98°52.2
8	34°23.5	8.5'	26°02.3	-6.6'	56.4'	93°39.4		69°48.8	65°09.0		45°21.6	55°19.4	99°24.2
9	48°51.0	8.4'	26°08.9	-6.5'	56.4'	93°09.8		69° 19.9	64°38.9		45°53.6	55°44.3	99°56.3
10	63°18.4	8.3'	26°15.3	-6.3'	56.5'	92°40.2		68°50.9	64°08.8		46°25.7	56°09.3	100°28.3
11	77°45.7	8.2'	$26^{\circ}21.7$	-6.2'	56.5'	92°10.6		68°21.9	63°38.6		46°57.9	56°34.4	101°00.4
12	92°12.9	8.1'	S 26°27.9	-6.1'	56.5'	91°40.9		67°52.8	63°08.4		47°30.1	56°59.7	101°32.6
13	106°39.9	8.0'	26°33.9	-5.9'	56.6'	91°11.2		67°23.7	62°38.2	2°09.4	48°02.3	57°25.0	102°04.8
14	121°06.9	7.9'	26°39.8	-5.8'	56.6'	90°41.5	80°25.1	66° 54.6	62°07.9	2°41.3	48°34.6	57°50.4	102°37.0
15	135°33.8	7.8'	26°45.6	-5.6'	56.7'	90°11.7	79°54.3	66°25.4	61°37.6	3°13.4	49°06.9	58°16.0	103°09.3
16	150°00.5	7.7'	26°51.3	-5.5'	56.7'	89°41.8	79°23.5	65°56.2	61°07.2	3°45.6	49°39.2	58°41.6	103°41.6
17	164°27.2	7.6'	26°56.8	-5.3'	56.7'	89°12.0	78°52.7	65°27.0	60°36.8	4°17.9	50°11.6	59°07.3	104°13.9
18	178°53.7	7.5'	S 27°02.1	-5.2'	56.8'	88°42.1	78°21.8	64°57.7	60°06.4	4°50.3	50°44.1	59°33.2	104°46.3
19	193°20.2	7.4'	27°07.3	-5.1'	56.8'	88°12.1	77°51.0	64°28.4	59°35.9	5°22.7	51°16.5	59°59.1	105°18.7
20	207°46.6	7.3'	$27^{\circ}12.4$	-4.9'	56.8'	87°42.1	77°20.0	63°59.0	59°05.4	5°55.1	51°49.0	60°25.1	105°51.2
21	222°12.8	7.2'	$27^{\circ}17.3$	-4.8'	56.9'	87°12.1	76°49.1	63°29.6	58°34.8	6°27.6	52°21.6	60°51.2	106°23.7
22	236°39.0	7.1'	$27^{\circ}22.0$	-4.6'	56.9'	86°42.1	76°18.1	63°00.1	58°04.3	7°00.2	52°54.2	61°17.5	106°56.3
23	251°05.0	7.0'	27°26.6	-4.5'	56.9'	86°11.9	75°47.1	62°30.6	57°33.6	7°32.8	53°26.8	61°43.8	107°28.8
3 rd	SD :	= 15.3′	Mer. pas	s. 05:37					Sun SI	0 = 16.1'			

h	Moon	(4 th	Mar')
11	IVIOUII	(+	iviai	,

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	-Mars	+Antares	+Spica	+Arcturus	+Regulus
0	265°31.0	6.9'	S 27°31.1	-4.3'	57.0'	85°41.8	75°16.0	62°01.1	57°03.0	8°05.5	53°59.5	62°10.2	108°01.5
1	279°56.9	6.8'	27°35.4	-4.1'	57.0'	85°11.6	74°44.9	61°31.5	56°32.2	8°38.2	54°32.2	62°36.7	108°34.1
2	294°22.6	6.7'	27°39.5	-4.0'	57.0'	84°41.4	74° 13.8	$61^{\circ}01.9$	56°01.5	9°10.9	55°05.0	63°03.3	109°06.9
3	308°48.3	6.6'	27°43.5	-3.8'	57.1'	84°11.1	73°42.7	60°32.2	55°30.7	9°43.7	55°37.8	63° 29.9	109°39.6
4	323°13.9	6.5'	27° 47.4	-3.7'	57.1'	83°40.8	73°11.5	60°02.5	54°59.8	10°16.5	56°10.6	63°56.7	110°12.4
5	337°39.4	6.4'	$27^{\circ}51.0$	-3.5'	57.2'	83°10.4	72°40.3	59°32.8	54°29.0	10°49.4	56°43.5	64°23.5	110°45.2
6	352°04.8	6.3'	S 27°54.5	-3.4'	57.2'	82°40.0	72°09.0	59°03.0	53°58.0	11°22.4	57°16.4	64°50.5	111°18.1
7	6°30.1	6.2'	27°57.9	-3.2'	57.2'	82°09.5	71°37.8	58°33.2	53°27.1	11°55.3	57°49.4	65° 17.5	111°51.1
8	20°55.4	6.1'	28°01.1	-3.0'	57.3'	81°39.0	71°06.5	58°03.3	52°56.1	12°28.3	58°22.4	65°44.6	112°24.0
9	35°20.5	6.1'	28°04.1	-2.9'	57.3'	81°08.5	70°35.1	57°33.4	52°25.0	13°01.4	58°55.5	66°11.8	112°57.0
10	49°45.6	6.0'	28°07.0	-2.7'	57.3'	80°37.9	70°03.8	57°03.4	51°53.9	13°34.5	59°28.6	66°39.0	113°30.1
11	64°10.5	5.9'	$28^{\circ}09.7$	-2.5'	57.4'	80°07.3	69°32.4	56°33.4	51°22.8	14°07.7	60°01.7	67°06.4	114°03.2
12	78°35.4	5.8'	S 28°12.2	-2.4'	57.4'	79°36.6	69°01.0	$56^{\circ}03.4$	50°51.6	14°40.9	60°34.9	67°33.8	114°36.3
13	93°00.3	5.7'	28° 14.6	-2.2'	57.5'	79°05.9	68° 29.5	55°33.3	50°20.4	15°14.1	61°08.2	68°01.3	115°09.5
14	107°25.0	5.7'	28° 16.8	-2.0'	57.5'	78°35.1	67°58.0	55°03.2	49°49.1	15°47.4	61°41.5	68°28.9	115°42.7
15	121°49.7	5.6'	28° 18.8	-1.9'	57.5'	78°04.3	67° 26.5	54°33.0	49°17.8	16°20.7	62°14.8	68° 56.5	116°16.0
16	136°14.3	5.5'	28°20.6	-1.7'	57.6'	77°33.5	66°55.0	54°02.8	48°46.5	16°54.1	62°48.2	69°24.3	116°49.3
17	150°38.8	5.4'	28°22.3	-1.5'	57.6'	77°02.6	66°23.4	53°32.5	48°15.1	17°27.5	63°21.6	69°52.1	117°22.7
18	165°03.2	5.4'	S 28°23.8	-1.3'	57.6'	76°31.6	65°51.8	53°02.2	47°43.6	18°01.0	63°55.1	70°20.0	117°56.1
19	179°27.6	5.3'	28°25.1	-1.2'	57.7'	76°00.7	65°20.2	52°31.8	47°12.1	18°34.5	64°28.6	70°47.9	118°29.6
20	193°51.9	5.2'	28° 26.3	-1.0'	57.7'	75°29.6	64°48.5	52°01.4	46°40.6	19°08.1	65°02.1	71°16.0	119°03.1
21	208°16.2	5.2'	$28^{\circ}27.3$	-0.8'	57.8'	74°58.5	64°16.9	$51^{\circ}31.0$	46°09.0	19°41.7	65°35.7	71°44.1	119°36.6
22	222°40.4	5.1'	28°28.1	-0.6'	57.8'	74°27.4	63°45.2	51°00.5	45°37.4	20°15.4	66°09.4	72°12.3	
23	237°04.5	5.1'	28°28.7	-0.4'	57.8'	73°56.2	63°13.4	50°29.9	45°05.8	20°49.1	66°43.1	72°40.5	
4 th	SD =	= 15.5′	Mer. pas	s. 06:33	1				Sun SI	0 = 16.1'			

Moon (5th Mar)

h

Lunar Distance (objects with largest hourly LD)

Tue	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	-Mars	+Antares	+Hadar	+Spica	+Arcturus
0	251°28.5	5.0'	S 28°29.1	-0.3'	57.9'	73°25.0	62°41.7	49°59.3	44°34.0	21°22.8	51°00.8	67°16.8	73°08.8
1	265°52.6	4.9'	28°29.4	-0.1'	57.9'	72°53.7	62°09.9	49°28.7	44°02.3	21°56.6	51°19.2	67°50.6	73°37.2
2	280°16.5	4.9'	28°29.5	0.1'	58.0'	72°22.4	61°38.1	48°58.0	43°30.5	22°30.5	51°37.9	68° 24.5	74°05.7
3	294°40.4	4.8'	28°29.4	0.3'	58.0'	71°51.1	61°06.3	48° 27.3	42°58.6	23°04.4	51°56.7	68° 58.3	74°34.2
4	309°04.2	4.8'	28°29.1	0.5'	58.0'	71°19.7	60°34.5	47° 56.5	42°26.8	23°38.3	52° 15.8	69°32.3	75°02.8
5	323°28.0	4.7'	28°28.7	0.6'	58.1'	70°48.2	60°02.6	47°25.7	41°54.8	24°12.3	52°35.0	70°06.3	75°31.4
6	337°51.8	4.7'	S 28°28.0	0.8'	58.1'	70°16.7	59° 30.7	46°54.9	41°22.8	24°46.3	52°54.5	70°40.3	76°00.1
7	352°15.5	4.7'	28°27.2	1.0'	58.1'	69°45.1	58° 58.8	46°24.0	40°50.8	25°20.4	53°14.1	71°14.4	76°28.9
8	6°39.1	4.6'	28°26.2	1.2'	58.2'	69°13.5	58° 26.9	45°53.0	40°18.8	25°54.5	53°34.0	71°48.5	76°57.8
9	21°02.7	4.6'	28°25.0	1.4'	58.2'	68°41.9	57° 54.9	45°22.0	39°46.6	26°28.7	53°54.0	72°22.7	77°26.7
10	35°26.3	4.5'	28°23.6	1.6'	58.3'	68°10.2	57°23.0	44°50.9	39°14.5	27°03.0	54° 14.2	72°56.9	77°55.7
11	49°49.9	4.5'	28°22.0	1.8'	58.3'	67°38.4	56°51.0	44°19.8	38°42.3	27°37.2	54°34.6	73°31.2	78°24.7
12	64°13.4	4.5'	S 28°20.3	1.9'	58.3'	67°06.6	56° 19.0	43°48.7	38°10.0	28°11.6	54°55.3	74°05.5	78°53.8
13	78°36.8	4.4'	28°18.3	2.1'	58.4'	66°34.8	55° 47.0	43° 17.5	37°37.7	28°45.9	55° 16.0	74°39.9	79°23.0
14	93°00.3	4.4'	28°16.2	2.3'	58.4'	66°02.9	55° 15.0	42°46.3	37°05.4	29°20.4	55°37.0	75° 14.3	79°52.2
15	107°23.7	4.4'	28°13.9	2.5'	58.5'	65°31.0	54° 42.9	42° 15.0	36°33.0	29°54.8	55°58.2	75°48.7	80°21.4
16	121°47.1	4.4'	28°11.4	2.7'	58.5'	64°59.0	54°10.9	41°43.7	36°00.6	30°29.4	56° 19.5	76°23.3	80°50.8
17	136°10.5	4.3'	28°08.7	2.9'	58.5'	64°26.9	53°38.8	41°12.3	35°28.1	31°03.9	56°41.0	76°57.8	81°20.2
18	150°33.8	4.3'	S 28°05.8	3.1'	58.6'	63°54.9	53°06.7	40°40.9	34°55.6	31°38.5	57°02.6	77°32.4	81°49.6
19	164°57.1	4.3'	28°02.7	3.3'	58.6'	63°22.7	52°34.7	40°09.4	34°23.0	32°13.2	57°24.5	78°07.1	82°19.1
20	179°20.4	4.3'	27°59.4	3.5'	58.7'	62°50.5	52°02.6	39° 37.9	33°50.4	32°47.9	57°46.5	78°41.8	82°48.7
21	193°43.7	4.3'	27°56.0	3.6'	58.7'	62°18.3	51°30.5	39°06.3	33°17.8	33°22.7	58°08.6	79°16.6	83°18.3
22	208°07.0	4.3'	27°52.3	3.8'	58.7'	61°46.0	50° 58.4	38°34.7	32°45.1	33°57.5	58° 30.9	79°51.4	83°47.9
23	222°30.3	4.3'	27°48.5	4.0'	58.8'	61°13.7	50°26.3	38°03.0	32°12.3	34°32.4	58°53.4	80°26.2	84°17.7
5 th	SD :	= 15.8'	Mer. pass	s. 07:32	2				Sun SD	= 16.1'			

h Moon (6th Mar)

Wed	GHA	ν	Dec	d	HP	-Sun	-Fomalhaut	-Venus	-Mars	+Antares	+Rigil Kent.	+Spica	+Arcturus	
0	236°53.6	4.3'	S 27°44.5	4.2'	58.8'	60°41.3	49°54.2	37°31.3	31°39.6	35°07.3	54°54.8	81°01.1	84°47.4	
1	251°16.8	4.3'	27°40.3	4.4'	58.9'	60°08.9	49°22.1	36°59.6	31°06.7	35°42.2	55°17.3	81°36.1	85°17.2	
2	265°40.1	4.3'	27°35.8	4.6'	58.9'	59°36.4	48°50.0	36°27.8	30°33.9	36° 17.3	55°40.0	82°11.1	85°47.1	
3	280°03.3	4.3'	27°31.2	4.8'	58.9'	59°03.9	48°18.0	35°55.9	30°01.0	36°52.3	56°02.9	82°46.1	86°17.0	
4	294°26.6	4.3'	27°26.5	5.0'	59.0'	58°31.3	47°45.9	35°24.1	29°28.0	37°27.4	56°25.9	83°21.2	86°47.0	
5	308°49.8	4.3'	$27^{\circ}21.5$	5.2'	59.0'	57°58.7	47°13.8	34°52.1	28°55.0	38°02.6	56°49.1	83°56.4	87°17.0	
6	323°13.1	4.3'	S 27°16.3	5.4'	59.1'	57°26.0	46°41.8	34°20.1	28°22.0	38° 37.8	57°12.4	84°31.6	87°47.0	
7	337°36.4	4.3'	$27^{\circ}11.0$	5.5'	59.1'	56°53.3	46°09.7	33°48.1	27°48.9	39° 13.0	57°35.9	85°06.8	88°17.1	
8	351°59.7	4.3'	27°05.4	5.7'	59.1'	56°20.6	45°37.7	33°16.1	27°15.8	39°48.4	57°59.6	85°42.1	88°47.3	
9	6°23.0	4.3'	26°59.7	5.9'	59.2'	55° 47.7	45°05.7	32°43.9	26°42.7	40°23.7	58°23.5	86°17.5	89°17.5	
10	20°46.3	4.3'	26°53.8	6.1'	59.2'	55° 14.9	44°33.7	32°11.8	26°09.5	40°59.1	58°47.4	86°52.9	89°47.7	
11	35°09.6	4.3'	26°47.7	6.3'	59.2'	54°42.0	44°01.8	31°39.6	25°36.3	41°34.6	59°11.6	87°28.3	90°18.0	
12	49°32.9	4.4'	S 26°41.4	6.5'	59.3'	54°09.0	43°29.9	31°07.4	25°03.0	42°10.1	59°35.9	88°03.8	90°48.3	
13	63°56.3	4.4'	26°34.9	6.7'	59.3'	53°36.0	42°58.0	30°35.1	24°29.7	42°45.6	60°00.3	88°39.4	91°18.6	
14	78°19.7	4.4'	26°28.2	6.9'	59.4'	53°02.9	42°26.1	30°02.7	23°56.4	43°21.2	60°24.9	89°14.9	91°49.0	
15	92°43.1	4.4'	26°21.4	7.0'	59.4'	52°29.8	41°54.3	29°30.4	23°23.1	43°56.8	60°49.6	89°50.6	92°19.5	
16	107°06.5	4.5'	26°14.3	7.2'	59.4'	51°56.7	41°22.5	28°58.0	22°49.7	44°32.5	61°14.5	90°26.3	92°49.9	
17	121°30.0	4.5'	$26^{\circ}07.1$	7.4'	59.5'	51°23.5	40°50.8	28°25.5	22°16.3	45°08.3	61°39.5	91°02.0	93°20.4	
18	135°53.5	4.5'	S 25°59.7	7.6'	59.5'	50°50.3	40°19.1	27°53.0	21°42.8	45°44.1	62°04.6	91°37.8	93°51.0	
19	150°17.0	4.6'	$25^{\circ}52.1$	7.8'	59.5'	50°17.0	39°47.5	27°20.5	21°09.3	46° 19.9	62°29.9	92°13.6	94°21.5	
20	164°40.6	4.6'	25°44.3	8.0'	59.6'	49°43.6	39°15.9	26°47.9	20°35.8	46°55.8	62°55.3	92°49.5	94°52.2	
21	179°04.1	4.6'	25°36.3	8.1'	59.6'	49°10.2	38°44.4	26°15.3	20°02.3	47°31.7	63°20.8	93°25.4	95°22.8	
22	193°27.8	4.7'	25°28.2	8.3'	59.7'	48° 36.8	38°13.0	25°42.7	19°28.8	48°07.7	63°46.5	94°01.4	95°53.5	
23	23 207°51.4 4.7' 25°19.9 8.5' 59.7'						48°03.3 37°41.6 25°10.0 18°55.2 48°43.7 64°12.3 94°37.4 96°24.							
6 th	th $SD = 16.0'$ Mer. pass. 08:33						SunSD=16.1'							

h Moon (7	^{7th} Mar)
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Lunar Distance (objects with largest hourly LD delta)

Thu	GHA						-Fomalhaut	-Venus	-Mars	+Antares	+Rigil Kent.	+Spica	+Arcturus	
0	222°15.1	4.7'	S 25°11.3	8.7'	59.7'	47°29.8	37°10.3	24°37.2	18°21.6	49°19.8	64°38.2	95°13.4	96°54.9	
1	236°38.9	4.8'	25°02.7	8.9'	59.8'	46°56.3	36°39.1	24°04.5	17°48.0	49°55.9	65°04.2	95°49.5	97°25.6	
2	251°02.7	4.8'	24°53.8	9.0'	59.8'	46°22.6	36°08.0	23°31.7	17°14.5	50°32.0	65°30.3	96°25.7	97°56.4	
3	265°26.5	4.9'	24°44.8	9.2'	59.8'	45°49.0	35°37.0	22°58.9	16°40.9	51°08.3	65° 56.6	97°01.9	98°27.2	
4	279°50.4	4.9'	24°35.5	9.4'	59.9'	45° 15.3	35°06.1	22°26.0	16°07.3	51°44.5	66°23.0	97°38.1	98°58.0	
5	294°14.3	5.0'	$24^{\circ}26.1$	9.6'	59.9'	44°41.5	34°35.3	21°53.1	15°33.7	52°20.8	66° 49.4	98°14.4	99°28.8	
6	308°38.3	5.0'	S 24°16.6	9.7'	59.9'	44°07.8	34°04.7	21°20.2	15°00.1	52°57.1	$67^{\circ}16.0$	98°50.8	99°59.7	
7	323°02.3	5.1'	24°06.8	9.9'	60.0'	43°33.9	33°34.1	20°47.3	14°26.5	53°33.5	67° 42.7	99°27.1	100°30.6	
8	337°26.4	5.1'	23°56.9	10.1'	60.0'	43°00.0	33°03.7	20°14.3	13°53.0	54°10.0	68°09.5	100°03.6	101°01.5	
9	351°50.5	5.2'	23°46.8	10.3'	60.0'	42°26.1	32°33.5	19°41.3	13°19.5	54°46.4	68°36.4	100°40.0	101°32.4	
10	6°14.7	5.2'	23°36.6	10.4'	60.1'	41°52.2	32°03.4	19°08.3	12°46.1	55°23.0	69°03.5	101°16.5	102°03.3	
11	20°39.0	5.3'	23°26.2	10.6'	60.1'	41°18.2	31°33.4	18°35.3	12°12.7	55°59.5	69°30.6	101°53.1	102°34.3	
12	35°03.3	5.4'	S 23°15.6	10.8'	60.1'	40°44.1	31°03.7	18°02.2	11°39.4	56°36.1	69°57.8	102°29.7	103°05.2	
13	49°27.6	5.4'	23°04.8	10.9'	60.2'	40°10.0	30°34.1	17°29.2	11°06.2	57°12.8	70°25.1	103°06.3	103°36.2	
14	63°52.0	5.5'	22°53.9	11.1'	60.2'		30°04.7	16°56.1	10°33.1	57°49.5	70°52.5	103°43.0	104°07.2	
15	78°16.5	5.5'	22°42.8	11.2'	60.2'		29°35.6	16°23.0	10°00.1	58°26.2	71°20.0	104°19.7	104°38.2	
16	92°41.0	5.6'	22°31.6	11.4'	60.3'		29°06.7	15°49.9	9°27.4	59°03.0	71°47.5	104°56.5	105°09.1	
17	107°05.6	5.7'	22°20.2	11.6'	60.3'		28°38.0	15°16.9	8°54.8	59°39.8	72°15.2	105°33.3	105°40.1	
18	121°30.3	5.7'	S 22°08.6	11.7'	60.3'		28° 09.5	14°43.8	8°22.5	60°16.7	72°43.0	106°10.2	106°11.1	
19	135°55.0	5.8'	$21^{\circ}56.9$	11.9'	60.4'		27°41.4	14°10.7	7°50.6	60°53.6	73°10.8	106°47.0	106°42.1	
20	150°19.8	5.8'	21°45.0	12.0'	60.4'		27°13.5	13°37.7	7°19.1	61°30.5	73°38.7	107°24.0	107°13.1	
21	164°44.6	5.9'	21°32.9	12.2'	60.4'		26°46.0	13°04.7	6°48.1	62°07.5	74°06.7	108°00.9	107°44.1	
22	179°09.5	6.0'	21°20.8	12.3'	60.5'		26° 18.7	12°31.7	6°17.8	62°44.5	74°34.8	108°38.0	108°15.1	
23	193°34.5	6.0'	21°08.4	12.5'	60.5'	5' 25°51.8 11°58.8 5°48.3 63°21.5 75°02.9 109°15.0 108°46.						108°46.1		
7 th	SD	= 16.3'	Mer. pas	s. 09:34		$Sun\;SD=16.1'$								

Moon (8th Mar)

Lunar Distance (objects with largest hourly LD delta)

h		Моо	n (8 th Ma	ar)			Lunar Distance (objects with largest hourly LD delta)							
Fri	GHA	ν	Dec	d	HP	-Fomalhaut	-Venus	+Mars	+Antares	+Rigil Kent.	+Hadar	+Arcturus	+Spica	
0	207°59.5	6.1'	S 20°55.9	12.6'	60.5'	25°25.3	11°26.0		63°58.6	75°31.1	79°45.3	109°17.0	109°52.1	
1	222°24.7	6.2'	20°43.3	12.8'	60.5'	24°59.2	10°53.2		64°35.8	75°59.4	80°13.1	109°48.0	110°29.2	
2	236°49.8	6.2'	20°30.5	12.9'	60.6'	24°33.5	10°20.5		65°12.9	76°27.8	80°40.9	110°18.9	111°06.4	
3	251°15.1	6.3'	20°17.6	13.1'	60.6'	24°08.2	9°48.0		65°50.1	76° 56.2	81°08.8	110°49.8	111°43.6	
4	265°40.4	6.4'	20°04.5	13.2'	60.6'	23°43.4	9°15.6		66°27.4	77°24.8	81°36.8	111°20.7	112°20.8	
5	280°05.8	6.4'	19°51.3	13.4'	60.7'	23°19.2	8°43.3		67°04.7	77°53.3	82°04.8	111°51.6	112°58.1	
6	294°31.2	6.5'	S 19°37.9	13.5'	60.7'	22°55.4	8°11.4		67°42.0	78°22.0	82°32.9	112°22.5	113°35.4	
7	308°56.7	6.6'	19°24.4	13.6'	60.7'	22°32.2	7°39.7		68° 19.3	78°50.6	83°01.0	112°53.3	114°12.7	
8	323°22.3	6.7'	19°10.8	13.8'	60.7'	22°09.5	7°08.3		68°56.7	79° 19.4	83°29.2	113°24.2	114°50.1	
9	337°48.0	6.7'	18°57.0	13.9'	60.8'	21°47.5	6°37.5		69°34.1	79°48.2	83°57.4	113°54.9	115°27.5	
10	352°13.7	6.8'	18°43.1	14.0'	60.8'	21°26.2	6°07.2		70°11.6	80°17.1	84°25.6	114°25.7	116°04.9	
11	6°39.5	6.9'	$18^{\circ}29.1$	14.2'	60.8'	21°05.6	5°37.6		70°49.1	80°46.0	84°53.9	114°56.4	116°42.4	
12	21°05.3	6.9'	S 18°14.9	14.3'	60.8'	20°45.6			71°26.6	81°15.0	85°22.3	115°27.1	117° 19.9	
13	35°31.3	7.0'	18°00.6	14.4'	60.9'	20°26.5			72°04.1	81°44.0	85°50.7	115°57.7	117°57.4	
14	49°57.3	7.1'	17°46.2	14.5'	60.9'	20°08.2			72°41.7	82°13.1	86°19.1	116°28.4	118°35.0	
15	64°23.3	7.1'	17°31.6	14.7'	60.9'	19°50.7			73° 19.3	82°42.2	86°47.5	116°58.9	119°12.6	
16	78°49.5	7.2'	$17^{\circ}17.0$	14.8'	60.9'	19°34.1			73°56.9	83°11.3	87°16.0	117°29.4	119°50.2	
17	93°15.7	7.3'	$17^{\circ}02.2$	14.9'	60.9'	19°18.5			74°34.6	83°40.5	87°44.5	117°59.9		
18	107°41.9	7.3'	S 16°47.3	15.0'	61.0'			7°13.8	75° 12.3	84°09.8	88°13.0	118°30.3		
19	122°08.3	7.4'	16°32.3	15.1'	61.0'			7°45.9	75°50.0	84°39.0	88°41.6	119°00.6		
20	136°34.7	7.5'	$16^{\circ}17.1$	15.2'	61.0'			8°18.6	76°27.8	85°08.4	89°10.2	119°30.9		
21	151°01.2	7.5'	$16^{\circ}01.9$	15.4'	61.0'			8°51.6	77°05.5	85°37.7	89°38.8			
22	165°27.7	7.6'	$15^{\circ}46.5$	15.5'	61.0'			9°25.1	77°43.4	86°07.1	90°07.4			
23	179°54.3	7.7'	$15^{\circ}31.1$	15.6'	61.1'			9°58.8	78°21.2	86° 36.5	90°36.1			
8 th	SD	= 16.5	Mer. pas	s. 10:32										

Moon (9th Mar)

Sat	GHA	ν	Dec	d	HP	+Venus	+Mars	+Altair	+Antares	+Rigil Kent.	+Hadar	+Acrux			
0	194°21.0	7.7'	S 15°15.5	15.7'	61.1'		10°32.8	42°09.0	78°59.0	87°06.0	91°04.7	97°09.2			
1	208°47.8	7.8'	14°59.8	15.8'	61.1'		11°07.1	42°29.7	79°36.9	87°35.4	91°33.4	97°33.1			
2	223°14.6	7.9'	14°44.0	15.9'	61.1'		11°41.5	42°50.8	80°14.8	88°04.9	92°02.1	97°57.0			
3	237°41.5	7.9'	14°28.2	16.0'	61.1'		12°16.1	43°12.2	80°52.7	88°34.4	92°30.8	98°20.8			
4	252°08.4	8.0'	14°12.2	16.1'	61.1'		12°50.8	43°33.8	81°30.7	89°04.0	92°59.5	98°44.6			
5	266°35.4	8.1'	13°56.1	16.2'	61.2'	6°23.0	13°25.6	43°55.8	82°08.6	89°33.5	93°28.3	99°08.4			
6	281°02.5	8.1'	S 13°40.0	16.3'	61.2'	6°54.1	14°00.6	44°18.1	82°46.6	90°03.1	93°57.0	99°32.2			
7	295°29.6	8.2'	13°23.7	16.3'	61.2'	7°25.8	14°35.7	44°40.7	83°24.6	90°32.7	94°25.7	99°56.0			
8	309°56.8	8.3'	13°07.3	16.4'	61.2'	7°58.0	15° 10.9	45°03.6	84°02.6	91°02.3	94°54.5	100°19.7			
9	324°24.1	8.3'	12°50.9	16.5'	61.2'	8°30.5	15°46.1	45°26.7	84°40.7	91°31.9	95°23.2	100°43.4			
10	338°51.4	8.4'	12°34.4	16.6'	61.2'		9°03.4 16°21.5 45°50.1 85°18.7 92°01.6 95°51.9								
11	353°18.7	8.4'	12°17.8	16.7'	61.2'	9°36.5	16°56.9	46°13.8	85°56.8	92°31.2	96°20.6	101°30.6			
12	7°46.2	8.5'	S 12°01.1	16.8'	61.3'	10°09.8	17°32.3	46°37.7	86°34.9	93°00.8	96°49.3	101°54.2			
13	22°13.7	8.6'	11°44.3	16.8'	61.3'	10°43.3	18°07.9	47°01.9	87°13.0	93°30.5	97°18.0	102°17.7			
14	36°41.2	8.6'	11°27.5	16.9'	61.3'	11°17.0	18°43.5	47°26.4	87°51.1	94°00.1	97°46.7	102°41.1			
15	51°08.8	8.7'	11°10.6	17.0'	61.3'	11°50.9	19°19.1	47°51.0	88°29.3	94°29.8	98°15.4	103°04.5			
16	65°36.5	8.7'	10°53.6	17.1'	61.3'	12°24.8	19°54.8	48°15.9	89°07.4	94°59.4	98°44.1	103°27.9			
17	80°04.2	8.8'	10°36.5	17.1'	61.3'				New Mo	on ———					
18	94°32.0	8.8'	S 10°19.4	17.2'	61.3'				New Mo	on ———					
19	108°59.8	8.9'	10°02.2	17.3'	61.3'				New Mo	on ———					
20	123°27.7	8.9'	09°44.9	17.3'	61.3'					on ———					
21	137°55.7	9.0'	09°27.6	17.4'	61.3'										
22	152°23.6	9.0'	09°10.2	17.4'	61.3'					on ———					
23	166°51.7	9.1'	08°52.7	17.5'	61.3'				New Mo	on ————					
9 th	SD:	= 16.7	′ Mer. pas	s. 11:28	:										

h	Moon	(10^{th})	Mar))
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Sun	GHA	ν	Dec	d	HP	
0	181°19.8	9.1'	S 08°35.2	17.6'	61.3'	New Moon
1	195°47.9	9.2'	08°17.7	17.6'	61.4'	New Moon
2	210°16.1	9.2'	$08^{\circ}00.1$	17.7'	61.4'	New Moon
3	224°44.3	9.3'	07°42.4	17.7'	61.4'	New Moon
4	239°12.6	9.3'	07°24.7	17.7'	61.4'	New Moon
5	253°40.9	9.4'	07°07.0	17.8'	61.4'	New Moon
6	268°09.2	9.4'	S 06°49.2	17.8'	61.4'	New Moon
7	282°37.6	9.4'	06°31.4	17.9'	61.4'	New Moon
8	297°06.1	9.5'	$06^{\circ}13.5$	17.9'	61.4'	New Moon
9	311°34.5	9.5'	05°55.6	17.9'	61.4'	New Moon
10	326°03.0	9.6'	05°37.7	18.0'	61.4'	New Moon
11	340°31.6	9.6'	$05^{\circ}19.7$	18.0'	61.4'	New Moon
12	355°00.2	9.6'	S 05°01.7	18.0'	61.4'	New Moon
13	9°28.8	9.7'	04°43.7	18.1'	61.4'	New Moon
14	23°57.5	9.7'	04°25.6	18.1'	61.3'	New Moon
15	38°26.1	9.7'	04°07.5	18.1'	61.3'	New Moon
16	52°54.9	9.7'	03°49.5	18.1'	61.3'	New Moon
17	67°23.6	9.8'	$03^{\circ}31.3$	18.1'	61.3'	New Moon
18	81°52.4	9.8'	S 03°13.2	18.1'	61.3'	New Moon
19	96°21.2	9.8'	$02^{\circ}55.1$	18.2'	61.3'	New Moon
20	110°50.0	9.9'	$02^{\circ}36.9$	18.2'	61.3'	New Moon
21	125°18.9	9.9'	$02^{\circ}18.7$	18.2'	61.3'	New Moon
22	139°47.8	9.9'	02°00.6	18.2'	61.3'	New Moon
23	154°16.7	9.9'	01°42.4	18.2'	61.3'	New Moon
10 th	SD	= 16.7'	Mer. pas	s. 12:21		

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

Mon	GHA	ν	Dec	ď	HP	-Procyon	-Pollux	-Sirius	-Betelgeuse	-Capella	-Rigel	-Aldebaran	-Jupiter
0	168°45.6	9.9'	S 01°24.2	18.2'	61.3'				New M	oon ——			
1	183°14.5	10.0'	01°06.0	18.2'	61.3'				New M	oon ——			
2	197°43.5	10.0'	00°47.8	18.2'	61.3'	113°36.8	112°29.3	99°23.2	87°44.4	82°21.5	77°26.1	69°01.9	42°03.4
3	212°12.5	10.0'	00°29.6	18.2'	61.2'	113°01.8	111°51.2	98°56.5	87°08.8	81°45.3	76°55.6	68°24.5	41°25.9
4	226°41.5	10.0'	S 00°11.4	18.2'	61.2'	112°26.8	111°13.2	98°29.8	86°33.3	81°09.1	76°25.1	67°47.0	40°48.4
5	241°10.5	10.0'	N 00°06.7	18.2'	61.2'	111°51.7	110°35.1	98°03.1	85°57.8	80°33.0	75°54.7	67°09.6	40°11.0
6	255°39.5	10.0'	N00°24.9	18.2'	61.2'	111°16.7	109°57.1	97°36.4	85°22.3	79°56.8	75°24.3	66°32.2	39°33.5
7	270°08.6	10.1'	00°43.1	18.1'	61.2'	110°41.6	109°19.1	97°09.7	84°46.8	79°20.8	74°54.0	65°54.8	38°56.1
8	284°37.6	10.1'	$01^{\circ}01.2$	18.1'	61.2'	110°06.5	108°41.1	96°42.9	84°11.3	78°44.7	74°23.7	65°17.5	38°18.8
9	299°06.7	10.1'	$01^{\circ}19.3$	18.1'	61.2'	109°31.4	108°03.1	96°16.2	83°35.9	78°08.6	73°53.5	64°40.1	37°41.4
10	313°35.8	10.1'	01°37.4	18.1'	61.1'	108°56.4	107°25.1	95°49.4	83°00.5	77°32.6	73°23.4	64°02.8	37°04.1
11	328°04.9	10.1'	01°55.5	18.1'	61.1'	108°21.3	106°47.2	95°22.6	82°25.1	76°56.6	72°53.3	63°25.6	36°26.8
12	342°34.0	10.1'	$N02^{\circ}13.6$	18.0'	61.1'	107°46.2	106°09.3	94°55.8	81°49.8	76°20.7	72°23.3	62°48.3	35°49.5
13	357°03.1	10.1'	02°31.6	18.0'	61.1'	107°11.1	105°31.4	94°29.1	81°14.5	75°44.7	71°53.3	62°11.1	35°12.2
14	11°32.2	10.1'	02°49.7	18.0'	61.1'	106°36.0	104°53.5	94°02.3	80°39.2	75°08.9	71°23.5	61°33.9	34°35.0
15	26°01.3	10.1'	03°07.7	18.0'	61.1'	106°01.0	104°15.7	93°35.5	80°03.9	74°33.0	70°53.6	60°56.8	33°57.8
16	40°30.4	10.1'	03°25.6	17.9'	61.0'	105°25.9	103°37.8	93°08.7	79°28.7	73°57.2	70°23.9	60°19.6	33°20.7
17	54°59.5	10.1'	03°43.6	17.9'	61.0'	104°50.8	103°00.0	92°42.0	78°53.5	73°21.4	69°54.3	59°42.6	32°43.5
18	69°28.6	10.1'	N04°01.5	17.9'	61.0'	104°15.8	102°22.3	92°15.2	78°18.3	72°45.6	69°24.7	59°05.5	32°06.4
19	83°57.7	10.1'	04°19.3	17.8'	61.0'	103°40.7	101°44.5	91°48.5	77°43.2	72°09.9	68°55.2	58°28.5	31°29.4
20	98°26.8	10.1'	04°37.2	17.8'	61.0'	103°05.7	101°06.8	91°21.7	77°08.1	71°34.2	68° 25.8	57°51.5	30°52.3
21	112°55.9	10.1'	04°55.0	17.8'	60.9'	102°30.7	100°29.1	90°55.0	76°33.1	70°58.6	67° 56.4	57°14.6	30°15.3
22	127°25.0	10.1'	$05^{\circ}12.7$	17.7'	60.9'	101°55.7	99°51.4	90°28.3	75°58.1	70°23.0	67°27.2	56°37.7	29°38.4
23	141°54.1	10.1'	05°30.4	17.7'	60.9'	101°20.7	99°13.8	90°01.6	75°23.1	69°47.5	66°58.0	56°00.8	29°01.5
11 th	SD	= 16.7'	Mer. pass	. 13:12									

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I_	Moon (12 th Mar)	Lunar Distance (objects with largest hourly LD delta)
n	MOOD HZ Mari	I linar i listance i oniects with largest nollriv i i l'oreita i

Tue	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Sirius	-Betelgeuse	-Capella	-Rigel	-Aldebaran	-Jupiter
0	156°23.2	10.1'	N 05°48.1	17.6'	60.9'	100°45.7	98°36.2	89°34.9	74°48.2	$69^{\circ}12.0$	66°29.0	55°24.0	28°24.6
1	170°52.3	10.1'	06°05.7	17.6'	60.8'	100°10.7	97°58.6	89°08.3	74°13.3	68°36.5	66°00.0	54°47.2	27°47.8
2	185°21.4	10.1'	06°23.3	17.5'	60.8'	99°35.8	97°21.1	88°41.7	73°38.4	$68^{\circ}01.1$	65°31.2	54°10.4	27°11.0
3	199°50.4	10.0'	06°40.8	17.5'	60.8'	99°00.9	96°43.5	88°15.1	73°03.6	67°25.7	65°02.4	53°33.7	26°34.2
4	214°19.5	10.0'	06°58.3	17.4'	60.8'	98°26.0	96°06.1	87°48.5	72°28.9	66°50.4	64°33.7	52°57.1	25°57.5
5	228°48.5	10.0'	$07^{\circ}15.7$	17.4'	60.8'	97°51.1	95°28.6	87°22.0	71°54.2	$66^{\circ}15.1$	64°05.2	52°20.5	25°20.9
6	243°17.5	10.0'	N07°33.0	17.3'	60.7'	97°16.2	94°51.2	86°55.5	71°19.6	65°39.9	63°36.8	51°43.9	24°44.3
7	257°46.5	10.0'	07°50.3	17.2'	60.7'	96°41.4	94°13.8	86°29.0	70°45.0	65°04.8	63°08.4	51°07.4	24°07.7
8	272°15.5	10.0'	08°07.6	17.2'	60.7'	96°06.6	93°36.5	86°02.6	70°10.4	64°29.7	62°40.2	50°31.0	23°31.2
9	286°44.5	10.0'	08°24.7	17.1'	60.6'	95°31.8	92°59.2	85°36.2	69°35.9	63°54.6	62°12.1	49°54.5	22°54.8
10	301°13.5	9.9'	08°41.9	17.0'	60.6'	94°57.1	92°21.9	85°09.9	69°01.5	$63^{\circ}19.6$	61°44.1	49°18.2	22°18.4
11	315°42.4	9.9'	08°58.9	17.0'	60.6'	94°22.4	91°44.6	84°43.6	68°27.1	62°44.7	61°16.3	48°41.9	21°42.0
12	330°11.3	9.9'	N 09°15.9	16.9'	60.6'	93°47.7	91°07.4	84°17.3	67°52.8	62°09.8	60°48.5	48°05.6	21°05.8
13	344°40.2	9.9'	09°32.8	16.8'	60.5'	93°13.0	90°30.3	83°51.1	67°18.6	61°35.0	60°20.9	47°29.4	20°29.5
14	359°09.1	9.9'	09°49.6	16.8'	60.5'	92°38.4	89°53.1	83°24.9	66°44.4	61°00.3	59°53.5	46°53.3	19°53.4
15	13°38.0	9.8'	10°06.4	16.7'	60.5'	92°03.8	89°16.0	82°58.8	66°10.2	60°25.6	59°26.1	46°17.2	19° 17.3
16	28°06.8	9.8'	10°23.1	16.6'	60.4'	91°29.2	88°39.0	82°32.8	65°36.1	59°50.9	58°58.9	45°41.2	18°41.3
17	42°35.6	9.8'	10°39.7	16.5'	60.4'	90°54.7	88°02.0	82°06.8	65°02.1	59° 16.4	58°31.9	45°05.2	18°05.4
18	57°04.4	9.8'	N10°56.3	16.5'	60.4'	90°20.2	87°25.0	81°40.8	64°28.2	$58^{\circ}41.9$	58°04.9	44°29.3	17°29.5
19	71°33.1	9.7'	$11^{\circ}12.7$	16.4'	60.4'	89°45.8	86°48.1	81°14.9	63°54.3	58°07.5	57°38.2	43°53.4	16°53.8
20	86°01.9	9.7'	$11^{\circ}29.1$	16.3'	60.3'	89°11.4	86°11.2	80°49.1	63°20.5	57°33.1	57°11.5	43°17.6	16° 18.1
21	100°30.6	9.7'	11°45.4	16.2'	60.3'	88°37.0	85°34.3	80°23.3	62°46.8	56°58.8	56°45.1	42°41.9	15°42.5
22	114°59.3	9.6'	12°01.6	16.1'	60.3'	88°02.7	84°57.5	79°57.6	62°13.1	56°24.6	56°18.8	42°06.3	15°07.1
23	129°27.9	9.6'	12°17.8	16.0'	60.2'	87°28.4	84°20.7	79°32.0	61°39.5	55°50.5	55°52.6	41°30.7	14°31.7
12 th	SD	= 16.6'	Mer. pass	s. 14:04									

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

Wed	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Capella	-Aldebaran	-Jupiter	+Sun	+Achernar
0	143°56.5	9.6'	N12°33.8	16.0'	60.2'		86°54.1	83°44.0	55°16.4	40°55.2	13°56.5		69°42.7
1	158°25.1	9.6'	12°49.8	15.9'	60.2'	119°49.5	86°19.9	83°07.3	54°42.5	40° 19.7	13°21.3		69°59.6
2	172°53.6	9.5'	13°05.6	15.8'	60.1'	119°12.9	85°45.7	82°30.6	54°08.6	39°44.4	12°46.4		70°16.6
3	187°22.2	9.5'	13°21.4	15.7'	60.1'	118°36.4	85°11.6	81°54.0	53°34.7	39°09.1	12°11.6		70°33.7
4	201°50.7	9.5'	13°37.1	15.6'	60.1'	117°59.9	84°37.5	81°17.5	53°01.0	38°33.8	11°36.9		70°50.8
5	216°19.1	9.4'	13°52.6	15.5'	60.0'	117°23.4	84°03.5	80°41.0	52°27.3	37°58.7	11°02.5		71°08.1
6	230°47.5	9.4'	$N14^{\circ}08.1$	15.4'	60.0'	116°47.0	83°29.5	80°04.5	51°53.8	37°23.6	10°28.3		71°25.4
7	245°15.9	9.3'	14°23.5	15.3'	60.0'	116°10.7	82°55.6	79°28.1	51°20.3	36°48.7	9°54.3		71°42.8
8	259°44.2	9.3'	14°38.8	15.2'	59.9'	115°34.3	82°21.7	78°51.7	50°46.9	36° 13.8	9°20.6	41°21.8	72°00.3
9	274°12.6	9.3'	14°54.0	15.1'	59.9'	114°58.1	81°47.8	78°15.3	50°13.6	35°39.0	8°47.3	41°55.6	72°17.8
10	288°40.8	9.2'	$15^{\circ}09.1$	15.0'	59.9'	114°21.8	81°14.0	77°39.1	49°40.4	35°04.2	8°14.3	42°29.4	72°35.4
11	303°09.1	9.2'	15°24.0	14.9'	59.8'	113°45.6	80°40.3	77°02.8	49°07.3	34°29.6	7°41.9	43°03.1	72°53.1
12	317°37.3	9.2'	N15°38.9	14.8'	59.8'	113°09.5	80°06.6	76°26.6	48°34.3	33°55.1	7°09.9	43°36.8	73°10.9
13	332°05.4	9.1'	15°53.7	14.7'	59.8'	112°33.4	79°33.0	75°50.5	48°01.4	33°20.6	6°38.7	44°10.4	73°28.7
14	346°33.5	9.1'	$16^{\circ}08.3$	14.5'	59.7'	111°57.4	78°59.4	75°14.3	47°28.6	32°46.3	6°08.3	44°44.0	73°46.6
15	1°01.6	9.0'	16°22.9	14.4'	59.7'	111°21.4	78°25.9	74°38.3	46°55.9	32°12.0		45°17.6	74°04.5
16	15°29.6	9.0'	16°37.3	14.3'	59.6'	110°45.4	77°52.4	74°02.3	46°23.3	31°37.9		45°51.1	74°22.6
17	29°57.6	9.0'	$16^{\circ}51.6$	14.2'	59.6'	110°09.5	77°19.0	73°26.3	45°50.8	31°03.9		46°24.5	74°40.6
18	44°25.6	8.9'	$N17^{\circ}05.8$	14.1'	59.6'	109°33.6	76°45.6	72°50.4	45°18.4	30°30.0		46°57.9	74°58.7
19	58°53.5	8.9'	$17^{\circ}19.9$	14.0'	59.5'	108°57.8	76°12.3	72°14.5	44°46.1	29° 56.2		47°31.3	75°16.9
20	73°21.4	8.8'	17°33.9	13.8'	59.5'	108°22.0	75°39.0	71°38.7	44°14.0	29° 22.5		48°04.6	75°35.1
21	87°49.2	8.8'	17°47.7	13.7'	59.5'	107°46.3	75°05.8	71°02.9	43°41.9	28°48.9		48°37.8	75°53.4
22	102°17.0	8.7'	18°01.4	13.6'	59.4'	107°10.6	74°32.7	70°27.2	43°10.0	28° 15.5		49°11.0	76°11.7
23	116°44.7	8.7'	18° 15.1	13.5'	59.4'	106°35.0	73°59.6	69°51.5	42°38.2	27°42.2		49°44.2	76°30.0
13 th	SD	= 16.4	′ Mer. pas	s. 14:56		SunSD=16.1'							

h

Moon (14 th Mar) Lunar Distance (objects with largest hourly LD de	elta)
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Thu	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Capella	-Aldebaran	+Jupiter	+Sun	+Achernar
0	131°12.4	8.7'	$N18^{\circ}28.5$	13.4'	59.3'	105°59.4	73°26.6	69°15.9	42°06.6	27°09.0		50°17.3	76°48.4
1	145°40.1	8.6'	18°41.9	13.2'	59.3'	105°23.9	72°53.6	68°40.3	41°35.0	26°36.0		50°50.4	77°06.8
2	160°07.7	8.6'	18°55.1	13.1'	59.3'	104°48.4	72°20.7	68°04.8	41°03.6	26°03.2		51°23.4	77°25.3
3	174°35.3	8.5'	19°08.2	13.0'	59.2'	104°13.0	71°47.9	67°29.3	40°32.4	25°30.5		51°56.4	77°43.8
4	189°02.8	8.5'	19°21.2	12.9'	59.2'	103°37.6	71°15.1	66°53.8	40°01.3	24°57.9		52°29.3	78°02.3
5	203°30.3	8.4'	19°34.1	12.7'	59.1'	103°02.2	70°42.4	66°18.5	39°30.3	24°25.5		53°02.2	78°20.9
6	217°57.7	8.4'	N19°46.8	12.6'	59.1'	102°27.0	70°09.8	65°43.1	38°59.4	23°53.4		53°35.0	78°39.5
7	232°25.1	8.4'	19°59.4	12.5'	59.1'	101°51.7	69°37.2	65°07.8	38°28.8	23°21.4		54°07.8	78°58.1
8	246°52.5	8.3'	20°11.9	12.3'	59.0'	101°16.5	69°04.7	64°32.6	37°58.2	22°49.5		54°40.5	79°16.7
9	261°19.8	8.3'	20°24.2	12.2'	59.0'	100°41.4	68°32.2	63°57.4	37°27.9	22°17.9	6°50.2	55°13.2	79°35.4
10	275°47.0	8.2'	20°36.4	12.1'	59.0'	100°06.3	67°59.9	63°22.3	36°57.7	21°46.6	7°20.8	55°45.9	79°54.1
11	290°14.2	8.2'	20°48.4	11.9'	58.9'	99°31.3	67°27.5	62°47.2	36°27.6	21°15.4	7°51.9	56°18.5	80°12.8
12	304°41.4	8.1'	$N21^{\circ}00.3$	11.8'	58.9'	98°56.3	66°55.3	62°12.1	35°57.8	20°44.5	8°23.4	56°51.0	80°31.5
13	319°08.5	8.1'	$21^{\circ}12.1$	11.6'	58.8'	98°21.3	66°23.1	61°37.2	35°28.1	20°13.9	8°55.3	57°23.5	80°50.2
14	333°35.6	8.0'	21°23.8	11.5'	58.8'	97°46.4	65°51.0	61°02.2	34°58.6	19°43.5	9°27.4	57°55.9	81°09.0
15	348°02.7	8.0'	21°35.3	11.4'	58.8'	97°11.6	65°19.0	60°27.3	34°29.3	19° 13.4	9°59.7	58°28.3	81°27.8
16	2°29.7	8.0'	21°46.6	11.2'	58.7'	96°36.8	64°47.0	59°52.5	34°00.2	18°43.6	10°32.2	59°00.7	81°46.5
17	16°56.6	7.9'	21°57.8	11.1'	58.7'	96°02.0	64°15.1	59°17.7	33°31.3	18° 14.2	11°04.8	59°32.9	82°05.3
18	31°23.6	7.9'	$N22^{\circ}08.9$	10.9'	58.6'	95°27.3	63°43.3	58°43.0	33°02.6	17°45.1	11°37.6	60°05.2	82°24.1
19	45°50.4	7.8'	22°19.8	10.8'	58.6'	94°52.7	63°11.6	58°08.3	32°34.1	17° 16.4	12°10.4	60°37.4	82°42.9
20	60°17.3	7.8'	22°30.6	10.6'	58.6'	94°18.1	62°39.9	57°33.6	32°05.8	16°48.1	12°43.3	61°09.5	83°01.7
21	74°44.1	7.8'	22°41.3	10.5'	58.5'	93°43.5	62°08.3	56°59.0	31°37.8	16°20.2	13°16.3	61°41.6	83°20.5
22	89°10.8	7.7'	22°51.8	10.3'	58.5'	93°09.0	61°36.8	56°24.5	31°10.0	15°52.8	13°49.3	62°13.7	83°39.3
23	103°37.5	7.7'	23°02.1	10.2'	58.4'	92°34.6	61°05.3	55°50.0	30°42.5	15°25.9	14°22.3	62°45.7	83°58.1
14 th	SD	= 16.2	′ Mer. pas	s. 15:50		$Sun\;SD=16.1'$							

h Moon ((15 th Mar)	Lunar Distance (objects with largest	: hourly LD delta)
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Fri	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Betelgeuse	-Capella	+Jupiter	+Sun	+Achernar
0	118°04.2	7.6'	N23°12.3	10.0'	58.4'	92°00.2	60°34.0	55° 15.6	36°20.3	30°15.1	14°55.4	63°17.6	84°16.9
1	132°30.9	7.6'	23°22.3	9.9'	58.4'	91°25.8	60°02.7	54°41.2	35°53.1	29°48.1	15°28.5	63°49.5	84°35.8
2	146°57.4	7.6'	23°32.2	9.7'	58.3'	90°51.5	59°31.5	54°06.8	35°26.0	29°21.3	16°01.6	64°21.4	84°54.6
3	161°24.0	7.5'	23°42.0	9.6'	58.3'	90°17.3	59°00.4	53°32.5	34°59.2	28°54.9	16°34.7	64°53.2	85°13.4
4	175°50.5	7.5'	23°51.6	9.4'	58.2'	89°43.1	58°29.3	52°58.3	34°32.6	28°28.7	17°07.7	65°24.9	85°32.1
5	190°17.0	7.5'	24°01.0	9.3'	58.2'	89°08.9	57°58.4	52°24.1	34°06.2	28°02.8	17°40.8	65°56.6	85°50.9
6	204°43.5	7.4'	N24°10.3	9.1'	58.2'	88°34.8	57° 27.5	51°50.0	33°40.1	27°37.2	18°13.9	66°28.3	86°09.7
7	219°09.9	7.4'	24°19.4	9.0'	58.1'	88°00.8	56° 56.7	51° 15.9	33°14.2	27°11.9	18°47.0	66°59.9	86°28.5
8	233°36.3	7.3'	24°28.4	8.8'	58.1'	87° 26.7	56°26.0	50°41.8	32°48.6	26°47.0	19°20.0	67°31.4	86°47.2
9	248°02.6	7.3'	24°37.2	8.7'	58.0'	86° 52.8	55°55.4	50°07.8	32°23.3	26°22.5	19°53.0	68°03.0	87°05.9
10	262°28.9	7.3'	24°45.9	8.5'	58.0'	86° 18.9	55°24.8	49°33.9	31°58.2	25°58.3	20°26.0	68°34.4	87°24.7
11	276°55.2	7.3'	24°54.4	8.4'	58.0'	85°45.0	54°54.4	49°00.0	31°33.4	25°34.4	20°59.0	69°05.8	87°43.4
12	291°21.5	7.2'	$N25^{\circ}02.8$	8.2'	57.9'	85°11.2	54°24.0	48°26.1	31°08.9	25°11.0	21°32.0	69°37.2	88°02.0
13	305°47.7	7.2'	$25^{\circ}10.9$	8.0'	57.9'	84°37.4	53°53.7	47°52.3	30°44.7	24°48.0	22°04.9	70°08.5	88°20.7
14	320°13.9	7.2'	$25^{\circ}19.0$	7.9'	57.8'	84°03.7	53°23.6	47° 18.6	30°20.9	24°25.4	22°37.8	70°39.8	88°39.4
15	334°40.0	7.1'	25°26.9	7.7'	57.8'	83°30.0	52°53.5	46° 44.9	29°57.3	24°03.2	23°10.7	71°11.0	88°58.0
16	349°06.2	7.1'	25°34.6	7.6'	57.8'	82° 56.4	52°23.5	46°11.2	29°34.1	23°41.5	23°43.5	71°42.2	89°16.6
17	3°32.3	7.1'	25°42.1	7.4'	57.7'	82°22.8	51°53.6	45°37.6	29°11.2	23°20.3	24°16.3	72°13.3	89°35.2
18	17°58.4	7.1'	N 25°49.5	7.2'	57.7'	81°49.3	51°23.8	45°04.0	28°48.6	22°59.6	24°49.1	72°44.4	89°53.7
19	32°24.4	7.0'	25°56.7	7.1'	57.6'	81° 15.8	50°54.1	44°30.5	28°26.5	22°39.3	25°21.8	73°15.4	90°12.3
20	46°50.5	7.0'	26°03.8	6.9'	57.6'	80°42.4	50°24.5	43°57.0	28°04.6	22°19.7	25°54.5	73°46.4	90°30.8
21	61°16.5	7.0'	26°10.7	6.7'	57.6'	80°09.0	49°55.0	43°23.6	27°43.2	22°00.5	26°27.2	74°17.4	90°49.2
22	75°42.5	7.0'	26°17.5	6.6'	57.5'	79°35.7	49°25.6	42°50.3	27°22.2	21°42.0	26°59.8	74°48.3	91°07.7
23	90°08.5	7.0'	26°24.1	6.4'	57.5'	79°02.4	48°56.3	42°16.9	27°01.6	21°24.0	27°32.4	75°19.1	91°26.1
15 th	SD	= 15.9	Mer. pass	s. 16:45					Sun SD	= 16.1'			

h	Moon	(16 th	Mar)	

Sat	GHA	ν	Dec	d	HP	-Arcturus	-Regulus	-Procyon	-Pollux	+Aldebaran	+Jupiter	+Sun	+Achernar
0	104°34.4	6.9'	N 26°30.5	6.3'	57.4'		78°29.1	48°27.1	41°43.6		28°05.0	75°49.9	91°44.5
1	119°00.4	6.9'	26°36.7	6.1'	57.4'		77°55.9	47°58.0	41°10.4		28°37.5	76°20.7	92°02.8
2	133°26.3	6.9'	26°42.8	5.9'	57.4'		77°22.8	47° 29.0	40°37.2		29°10.0	76°51.4	92°21.2
3	147°52.2	6.9'	26°48.8	5.8'	57.3'		76°49.7	47°00.2	40°04.1		29°42.4	77°22.1	92°39.5
4	162°18.1	6.9'	26°54.5	5.6'	57.3'		76°16.6	46°31.4	39°31.0		30°14.8	77°52.7	92°57.7
5	176°44.0	6.9'	$27^{\circ}00.1$	5.4'	57.2'		75°43.6	46°02.8	38°57.9		30°47.2	78°23.3	93°15.9
6	191°09.9	6.9'	N 27°05.5	5.3'	57.2'		75° 10.6	45°34.3	38°24.9		31°19.5	78°53.8	93°34.1
7	205°35.8	6.9'	27°10.8	5.1'	57.2'	119°56.2	74°37.7	45°05.9	37°52.0		31°51.8	79°24.3	93°52.2
8	220°01.7	6.9'	27°15.9	4.9'	57.1'	119°29.8	74°04.8	44°37.6	37° 19.1		32°24.1	79°54.7	94°10.3
9	234°27.5	6.9'	27°20.9	4.8'	57.1'	119°03.4	73°32.0	44°09.4	36°46.2		32°56.3	80°25.1	94°28.4
10	248°53.4	6.9'	27°25.6	4.6'	57.1'	118°37.0	72°59.2	43°41.4	36°13.4	12°19.3	33°28.5	80°55.5	94°46.4
11	263°19.2	6.9'	27°30.2	4.4'	57.0'	118°10.6	72°26.4	43°13.5	35°40.6	12°39.7	34°00.6	81°25.8	95°04.4
12	277°45.1	6.9'	N27°34.7	4.3'	57.0'	117°44.1	71°53.7	42°45.7	35°07.9	13°01.0	34°32.7	81°56.1	95°22.3
13	292°10.9	6.9'	27°39.0	4.1'	57.0'	117° 17.6	71°21.1	42°18.1	34°35.2	13°23.0	35°04.8	82°26.3	95°40.2
14	306°36.8	6.9'	27°43.1	3.9'	56.9'	116°51.1	70°48.4	41°50.5	34°02.5	13°45.6	35°36.8	82°56.5	95°58.1
15	321°02.6	6.9'	27°47.0	3.8'	56.9'	116°24.6	70° 15.9	41°23.2	33°29.9	14°08.9	36°08.8	83°26.6	96°15.9
16	335°28.5	6.9'	27°50.8	3.6'	56.8'	115°58.0	69°43.3	40°55.9	32°57.4	14°32.7	36°40.8	83°56.7	96°33.6
17	349°54.4	6.9'	27°54.4	3.4'	56.8'	115°31.5	69°10.8	40°28.9	32°24.9	14°57.0	37°12.7	84°26.8	96°51.3
18	4°20.2	6.9'	N 27°57.8	3.3'	56.8'	115°04.9	68°38.4	40°01.9	31°52.4	15°21.8	37°44.6	84°56.8	97°09.0
19	18°46.1	6.9'	28°01.1	3.1'	56.7'	114°38.3	68°06.0	39°35.1	31°20.0	15°47.1	38°16.4	85°26.8	97°26.6
20	33°12.0	6.9'	28°04.2	3.0'	56.7'	114°11.7	67°33.6	39°08.5	30°47.6	16°12.7	38°48.2	85°56.7	97°44.1
21	47°37.9	6.9'	28°07.2	2.8'	56.7'	113°45.1	67°01.3	38°42.0	30°15.2	16°38.6	39°20.0	86°26.6	98°01.6
22	62°03.8	6.9'	28°10.0	2.6'	56.6'	113° 18.5	66°29.0	38° 15.7	29°42.9	17°04.9	39°51.7	86°56.4	98°19.1
23	76°29.8	6.9'	28°12.6	2.5'	56.6'	112°51.8	65°56.8	37°49.5	29°10.7	17°31.5	40°23.4	87°26.3	98°36.5
16 th	SD =	SD = 15.7' Mer. pass. 17:42 $Sun SD = 16.1'$											

Moon (17th Mar)

Lunar Distance (objects with largest hourly LD delta)

h		Moor	ո (17 th Ma	ar)		Lunar Distance (objects with largest hourly LD delta)							
Sun	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	-Pollux	+Aldebaran	+Capella	+Jupiter	+Sun
0	90°55.7	7.0'	N 28°15.1	2.3'	56.6'	119°25.9	112°25.2	65°24.6	28°38.4	17°58.3		40°55.0	87°56.0
1	105°21.7	7.0'	28°17.3	2.1'	56.5'	118°53.7	111°58.5	64°52.4	28°06.3	18°25.4		41°26.6	88°25.8
2	119°47.7	7.0'	28°19.5	2.0'	56.5'	118°21.5	111°31.9	64°20.3	27°34.1	18°52.7		41°58.2	88°55.4
3	134°13.7	7.0'	28°21.4	1.8'	56.5'	117°49.4	111°05.2	63°48.2	27°02.0	19°20.3		42°29.7	89°25.1
4	148°39.7	7.1'	28°23.2	1.6'	56.4'	117°17.3	110°38.6	63°16.2	26°30.0	19°48.0		43°01.2	89°54.7
5	163°05.8	7.1'	28°24.9	1.5'	56.4'	116°45.2	110°11.9	62°44.2	25° 57.9	20°15.9		43°32.7	90°24.3
6	177°31.8	7.1'	N28°26.3	1.3'	56.4'	116°13.2	109°45.3	62°12.2	25°26.0	20°43.9		44°04.1	90°53.8
7	191°58.0	7.1'	28°27.7	1.1'	56.3'	115°41.2	109°18.6	61°40.3	24°54.0	21°12.1		44°35.5	91°23.3
8	206°24.1	7.2'	28°28.8	1.0'	56.3'	115°09.3	108°51.9	61°08.4	24°22.1	21°40.4		45°06.9	91°52.8
9	220°50.3	7.2'	28°29.8	0.8'	56.3'	114°37.4	108°25.3	60°36.5	23°50.3	22°08.9		45°38.2	92°22.2
10	235°16.5	7.2'	28°30.6	0.7'	56.2'	114°05.5	107°58.6	60°04.7	23° 18.5	22°37.5		46°09.5	92°51.6
11	249°42.7	7.3'	28°31.3	0.5'	56.2'	113°33.7	107°31.9	59°33.0	22°46.7	23°06.1		46°40.7	93°20.9
12	264°09.0	7.3'	N28°31.8	0.3'	56.2'	113°01.9	107°05.3	59°01.2	22°15.0	23°34.9		47°11.9	93°50.3
13	278°35.3	7.3'	28°32.1	0.2'	56.1'	112°30.1	106°38.6	58°29.5	21°43.3	24°03.7		47°43.1	94°19.5
14	293°01.6	7.4'	28°32.3	0.0'	56.1'	111°58.4	106°12.0	57°57.9	21°11.6	24°32.7		48°14.2	94°48.8
15	307°28.0	7.4'	28°32.3	-0.1'	56.1'	111°26.7	105°45.3	57°26.3	20°40.0	25°01.7		48°45.3	95°18.0
16	321°54.4	7.5'	28°32.2	-0.3'	56.0'	110°55.1	105°18.7	56°54.7	20°08.4	25°30.8	20°44.8	49°16.4	95°47.2
17	336°20.9	7.5'	28°31.9	-0.5'	56.0'	110°23.4	104°52.1	56°23.1	19°36.9	25°59.9	21°00.5	49°47.5	96°16.3
18	350°47.4	7.6'	N28°31.4	-0.6'	56.0'	109°51.9	104°25.4	55°51.6	19°05.4	26°29.1	21°16.7	50°18.5	96°45.4
19	5°14.0	7.6'	28°30.8	-0.8'	55.9'	109°20.3	103°58.8	55°20.1	18°33.9	26°58.3	21°33.4	50°49.4	97°14.5
20	19°40.6	7.6'	28°30.1	-0.9'	55.9'	108°48.8	103°32.2	54°48.7	18°02.5	27°27.6	21°50.7	51°20.4	97°43.5
21	34°07.2	7.7'	$28^{\circ}29.1$	-1.1'	55.9'	108°17.3	103°05.6	54°17.3	17°31.1	27°56.9	22°08.4	51°51.3	98°12.5
22	48°33.9	7.7'	$28^{\circ}28.1$	-1.2'	55.8'	107°45.9	102°39.0	53°45.9	16°59.8	28°26.3	22°26.6	52°22.2	98°41.5
23	63°00.7	7.8'	28°26.8	-1.4'	55.8'	107°14.5	102°12.4	53°14.5	16°28.5	28°55.7	22°45.2	52°53.0	99°10.4
17 th	SD :	= 15.4'	Mer. pass	s. 18:38	8:38 Sun SD = $16.1'$								

Moon (18th Mar)

Mon	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	-Pollux	+Capella	+Aldebaran	+Jupiter	+Sun
0	77°27.5	7.9'	N 28°25.5	-1.5'	55.8'	106°43.1	101°45.9	52°43.2	15°57.2	23°04.3	29°25.2	53°23.8	99°39.3
1	91°54.3	7.9'	28°23.9	-1.7'	55.7'	106°11.7	101°19.3	52°12.0	15°26.0	23°23.7	29° 54.6	53°54.6	100°08.2
2	106°21.2	8.0'	28°22.2	-1.8'	55.7'	105°40.4	100°52.7	51°40.7	14°54.9	23°43.5	30°24.1	54°25.4	100°37.0
3	120°48.2	8.0'	28°20.4	-2.0'	55.7'	105°09.1	100°26.2	$51^{\circ}09.5$	14°23.7	24°03.7	30°53.7	$54^{\circ}56.1$	101°05.8
4	135°15.2	8.1'	28°18.4	-2.1'	55.7'	104°37.9	99°59.7	50°38.3	13°52.6	24°24.3	31°23.2	55°26.8	101°34.6
5	149°42.3	8.1'	28°16.2	-2.3'	55.6'	104°06.7	99°33.2	50°07.2	13°21.6	24°45.1	31°52.8	55°57.4	102°03.3
6	164°09.4	8.2'	N 28°14.0	-2.4'	55.6'	103°35.5	99°06.7	49°36.1	12°50.6	25°06.3	32°22.4	56°28.0	102°32.0
7	178°36.6	8.3'	$28^{\circ}11.5$	-2.6'	55.6'	103°04.3	98°40.2	49°05.0	12°19.6	25°27.8	32°51.9	56° 58.6	103°00.7
8	193°03.9	8.3'	28°08.9	-2.7'	55.5'	102°33.2	98°13.7	48°33.9	11°48.7	25°49.6	33°21.6	57°29.2	103°29.4
9	207°31.2	8.4'	28°06.2	-2.9'	55.5'	102°02.1	97°47.2	48°02.9	11°17.9	26°11.6	33°51.2	57° 59.8	103°58.0
10	221°58.6	8.5'	28°03.3	-3.0'	55.5'	101°31.0	97°20.8	47°31.9	10°47.1	26°33.9	34°20.8	58°30.3	104°26.6
11	236°26.1	8.5'	28°00.3	-3.2'	55.5'	101°00.0	96°54.4	47°01.0	10°16.3	26°56.4	34°50.5	59°00.7	104°55.1
12	250°53.6	8.6'	$N27^{\circ}57.1$	-3.3'	55.4'	100°28.9	96°27.9	46°30.1	9°45.7	27° 19.2	35°20.1	59°31.2	105°23.7
13	265°21.2	8.7'	27°53.8	-3.5'	55.4'	99°58.0	96°01.5	45°59.2	9°15.0	27° 42.2	35°49.8	60°01.6	105°52.2
14	279°48.8	8.7'	$27^{\circ}50.3$	-3.6'	55.4'	99°27.0	95°35.2	45°28.3	8°44.5	28°05.5	36° 19.4	60°32.0	106°20.7
15	294°16.6	8.8'	27°46.7	-3.7'	55.4'	98°56.1	95°08.8	44°57.5	8°14.0	28°28.9	36°49.1	61°02.4	106°49.1
16	308°44.4	8.9'	27°43.0	-3.9'	55.3'	98°25.2	94°42.4	44°26.7	7°43.7	28° 52.5	37° 18.8	61°32.7	107°17.5
17	323°12.2	8.9'	$27^{\circ}39.1$	-4.0'	55.3'	97°54.3	94°16.1	43°55.9	7°13.4	29°16.3	37°48.4	62°03.1	107°45.9
18	337°40.2	9.0'	$N27^{\circ}35.1$	-4.2'	55.3'	97°23.5	93°49.8	43°25.1	6°43.2	29°40.3	38° 18.1	62°33.3	108°14.3
19	352°08.2	9.1'	27°30.9	-4.3'	55.3'	96°52.6	93°23.5	42°54.4	6°13.2	30°04.5	38°47.8	63°03.6	108°42.6
20	6°36.3	9.2'	$27^{\circ}26.6$	-4.4'	55.2'	96°21.8	92°57.2	42°23.7	5°43.4	30°28.8	39° 17.4	63°33.8	109°10.9
21	21°04.4	9.2'	27°22.2	-4.6'	55.2'	95°51.1	92°30.9	$41^{\circ}53.1$	5°13.7	30°53.2	39°47.1	64°04.1	109°39.2
22	35°32.7	9.3'	27°17.6	-4.7'	55.2'	95°20.3	92°04.7	41°22.4	4°44.3	31° 17.9	40° 16.8	64°34.2	110°07.5
23	50°01.0	9.4'	27°12.9	-4.8'	55.2'	94°49.6	91°38.5	40°51.8	4°15.3	31°42.6	40°46.4	65°04.4	110°35.7
18 th	SD :	= 15.2'	Mer. pas	s. 19:33					Sun S	D = 16.1'			

h Moon (19 th Ma

Tue	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	±Pollux	+Capella	+Aldebaran	+Jupiter	+Sun
0	64°29.4	9.5'	N 27°08.1	-5.0'	55.1'	94°18.9	91°12.3	40°21.2	3°46.8	32°07.5	41°16.1	65°34.5	111°03.9
1	78°57.8	9.5'	27°03.1	-5.1'	55.1'	93°48.3	90°46.1	39°50.7	3°18.9	32°32.5	41°45.8	66°04.7	111°32.1
2	93°26.4	9.6'	26°58.0	-5.2'	55.1'	93°17.6	90° 19.9	39°20.2		32°57.7	42° 15.4	66°34.7	112°00.3
3	107°55.0	9.7'	26°52.7	-5.4'	55.1'	92°47.0	89°53.8	38°49.7		33°22.9	42°45.1	67°04.8	112°28.4
4	122°23.7	9.8'	26°47.4	-5.5'	55.0'	92°16.4	89°27.7	38°19.2		33°48.3	43°14.7	67°34.9	112°56.6
5	136°52.5	9.9'	26°41.9	-5.6'	55.0'	91°45.8	89°01.6	37°48.8		34°13.8	43°44.4	68°04.9	113°24.6
6	151°21.3	9.9'	N 26°36.3	-5.7'	55.0'	91°15.3	88°35.5	37°18.3		34°39.3	44°14.0	68°34.9	113°52.7
7	165°50.3	10.0'	26°30.5	-5.9'	55.0'	90°44.8	88°09.4	36°47.9		35°05.0	44°43.6	69°04.8	114°20.8
8	180°19.3	10.1'	26°24.6	-6.0'	55.0'	90°14.3	87°43.4	36°17.6		35°30.8	45° 13.2	69°34.8	114°48.8
9	194°48.4	10.2'	$26^{\circ}18.6$	-6.1'	54.9'	89°43.8	87°17.4	35°47.2		35°56.6	45°42.9	70°04.7	115°16.8
10	209°17.6	10.3'	$26^{\circ}12.5$	-6.2'	54.9'	89°13.3	86°51.4	35°16.9		36°22.6	46° 12.5	70°34.6	115°44.8
11	223°46.8	10.4'	$26^{\circ}06.3$	-6.4'	54.9'	88°42.9	86°25.4	34°46.6		36°48.6	46°42.1	71°04.5	116°12.7
12	238°16.2	10.4'	N 25°59.9	-6.5'	54.9'	88°12.5	85°59.4	34°16.4		37°14.7	47° 11.7	71°34.4	116°40.7
13	252°45.6	10.5'	25°53.4	-6.6'	54.8'	87°42.1	85°33.5	33°46.1		37°40.9	47°41.3	72°04.2	117°08.6
14	267°15.2	10.6'	25°46.8	-6.7'	54.8'	87°11.7	85°07.6	33°15.9	3°55.5	38°07.1	48° 10.8	72°34.0	117°36.5
15	281°44.8	10.7'	25°40.1	-6.8'	54.8'	86°41.4	84°41.7	32°45.7	4°23.9	38°33.4	48°40.4	73°03.8	118°04.4
16	296°14.4	10.8'	25°33.2	-7.0'	54.8'	86°11.0	84°15.9	32°15.5	4°52.7	38°59.8	49° 10.0	73°33.6	118°32.2
17	310°44.2	10.9'	25°26.3	-7.1'	54.8'	85°40.7	83°50.0	31°45.4	5°21.7	39°26.2	49° 39.5	74°03.4	119°00.0
18	325°14.1	10.9'	N25°19.2	-7.2'	54.7'	85°10.4	83°24.2	31°15.3	5°51.0	39°52.7	50°09.1	74°33.1	119°27.9
19	339°44.0	11.0'	$25^{\circ}12.0$	-7.3'	54.7'	84°40.1	82°58.4	30°45.2	6°20.3	40°19.3	50°38.6	75°02.9	119°55.7
20	354°14.0	11.1'	25°04.7	-7.4'	54.7'	84°09.9	82°32.7	30°15.1	6°49.8	40°45.9	51°08.2	75°32.6	
21	8°44.1	11.2'	24°57.2	-7.5'	54.7'	83°39.7	82°07.0	29°45.1	7°19.4	41°12.6	51°37.7	76°02.3	
22	23°14.3	11.3'	24°49.7	-7.6'	54.7'	83°09.4	81°41.3	29°15.1	7°49.1	41°39.3	52°07.2	76°31.9	
23	37°44.6	11.4'	24°42.1	-7.8'	54.7'	82°39.2	81°15.6	28°45.1	8°18.8	42°06.1	52°36.7	77°01.6	
19 th	SD	$= 15.0^{\prime}$	Mer. pass	. 20:24					Sun S	SD = 16.1'			

Moon (20th Mar)

h

- 1	unar Distance	(nhiects	with	largest	hourly	I D delta

Wed	GHA	ν	Dec	d	HP	-Antares	-Spica	-Arcturus	-Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter
0	52°15.0	11.5'	N 24°34.3	-7.9'	54.6'		82°09.1	80°49.9	28°15.1	8°48.5	42°32.9	53°06.2	77°31.2
1	66°45.4	11.5'	24°26.5	-8.0'	54.6'		81°38.9	80°24.3	27°45.2	9°18.3	42°59.7	53°35.7	78°00.8
2	81°16.0	11.6'	24°18.5	-8.1'	54.6'		81°08.7	79°58.7	27°15.2	9°48.1	43°26.6	54°05.2	78°30.4
3	95°46.6	11.7'	24°10.4	-8.2'	54.6'		80°38.6	79°33.1	26°45.3	10°17.9	43°53.6	54°34.7	79°00.0
4	110°17.3	11.8'	24°02.2	-8.3'	54.6'		80°08.5	79°07.6	26°15.5	10°47.7	44°20.6	55°04.2	79°29.6
5	124°48.1	11.9'	23°53.9	-8.4'	54.5'		79°38.4	78°42.1	25°45.6	11°17.5	44°47.6	55°33.6	79°59.1
6	139°19.0	12.0'	N23°45.6	-8.5'	54.5'		79°08.3	78°16.6	25°15.8	11°47.4	45°14.6	56°03.1	80°28.7
7	153°49.9	12.0'	23°37.1	-8.6'	54.5'		78°38.3	77°51.1	24°46.0	12°17.2	45°41.7	56°32.5	80°58.2
8	168°21.0	12.1'	23°28.5	-8.7'	54.5'		78°08.2	77°25.7	24°16.2	12°47.1	46°08.9	57°02.0	81°27.7
9	182°52.1	12.2'	23°19.8	-8.8'	54.5'		77°38.2	77°00.3	23°46.5	13° 16.9	46°36.0	57°31.4	81°57.2
10	197°23.3	12.3'	23°11.0	-8.9'	54.5'		77°08.1	76°34.9	23°16.8	13°46.8	47°03.2	58°00.8	82°26.6
11	211°54.6	12.4'	23°02.1	-9.0'	54.5'		76°38.1	76°09.6	22°47.1	14°16.6	47°30.4	58°30.2	82°56.1
12	226°26.0	12.5'	N22°53.1	-9.1'	54.4'		76°08.2	75°44.3	22°17.4	14°46.4	47°57.7	58°59.6	83°25.5
13	240°57.4	12.5'	22°44.0	-9.2'	54.4'		75°38.2	75°19.0	21°47.8	15° 16.3	48°25.0	59°29.0	83°55.0
14	255°29.0	12.6'	22°34.8	-9.3'	54.4'		75°08.2	74°53.7	21°18.2	15°46.1	48°52.3	59°58.4	84°24.4
15	270°00.6	12.7'	22°25.6	-9.4'	54.4'		74°38.3	74°28.5	20°48.6	16° 15.9	49°19.6	60°27.8	84°53.8
16	284°32.3	12.8'	22°16.2	-9.5'	54.4'		74°08.3	74°03.4	20°19.1	16°45.8	49°47.0	60°57.2	85°23.2
17	299°04.1	12.9'	22°06.7	-9.6'	54.4'	119°31.9	73°38.4	73°38.2	19°49.6	17°15.6	50°14.3	61°26.5	85°52.5
18	313°36.0	13.0'	N21°57.2	-9.6'	54.3'	119°02.0	73°08.5	73°13.1	19°20.1	17°45.4	50°41.8	61°55.9	86°21.9
19	328°08.0	13.0'	21°47.5	-9.7'	54.3'	118°32.1	72°38.6	72°48.0	18°50.6	18° 15.2	51°09.2	62°25.3	86°51.3
20	342°40.0	13.1'	21°37.8	-9.8'	54.3'	118°02.2	72°08.7	72°23.0	18°21.2	18°45.0	51°36.6	62°54.6	87°20.6
21	357°12.1	13.2'	21°28.0	-9.9'	54.3'	117°32.3	71°38.8	71°57.9	17°51.9	19° 14.8	52°04.1	63°23.9	87°49.9
22	11°44.3	13.3'	$21^{\circ}18.1$	-10.0'	54.3'	117°02.4	71°09.0	71°33.0	17°22.5	19°44.6	52°31.6	63°53.3	88°19.2
23	26°16.6	13.4'	21°08.1	-10.1'	54.3'	116°32.6	70°39.1	71°08.0	16°53.3	20°14.3	52°59.1	64°22.6	88°48.5
20 th	SD	= 14.9	Mer. pass	s. 21:12									

T.	Moon (0.1 St	N 4 - N	
h	Moon (フロジ	Mari	

Moon ((21 st Mar)			Lunar D	istance ((objects v	vith large	est hourly	LD delta)		
ν	Dec	d	HP	-Antares	-Arcturus	-Spica	-Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter	

Thu	GHA	ν	Dec	d	HP	-Antares	-Arcturus	-Spica	-Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter
0	40°49.0	13.4'	N 20°58.0	-10.2'	54.3'	116°02.7	70°43.1	70°09.3	16°24.0	20°44.1	53°26.6	64°51.9	89° 17.8
1	55°21.4	13.5'	20°47.9	-10.2'	54.3'	115°32.9	70°18.3	69°39.5	15°54.8	21°13.9	53°54.2	65°21.2	89°47.1
2	69°53.9	13.6'	20°37.6	-10.3'	54.2'	115°03.1	69°53.4	69°09.6	15°25.7	21°43.6	54°21.8	65°50.6	90°16.4
3	84°26.5	13.7'	20°27.3	-10.4'	54.2'	114°33.3	69°28.6	68° 39.8	14°56.6	22°13.4	54°49.3	66°19.9	90°45.6
4	98°59.2	13.7'	$20^{\circ}16.9$	-10.5'	54.2'	114°03.5	69°03.9	68° 10.0	14°27.6	22°43.1	55°16.9	66°49.1	91°14.9
5	113°31.9	13.8'	20°06.4	-10.6'	54.2'	113°33.7	68°39.2	67°40.2	13°58.6	23°12.8	55°44.6	67°18.4	91°44.1
6	128°04.8	13.9'	N 19°55.8	-10.6'	54.2'	113°03.9	68° 14.5	67° 10.5	13°29.7	23°42.6	56°12.2	67°47.7	92°13.3
7	142°37.7	14.0'	19°45.2	-10.7'	54.2'	112°34.1	67°49.8	66°40.7	13°00.9	24°12.3	56°39.8	68°17.0	92°42.6
8	157°10.6	14.1'	19°34.5	-10.8'	54.2'	112°04.3	67°25.2	66° 10.9	12°32.1	24°42.0	57°07.5	68°46.3	93°11.8
9	171°43.7	14.1'	19°23.7	-10.9'	54.2'	111°34.6	67°00.7	65°41.2	12°03.5	25°11.7	57°35.2	69°15.5	93°41.0
10	186°16.8	14.2'	19° 12.8	-11.0'	54.2'	111°04.8	66°36.2	65°11.5	11°34.9	25°41.4	58°02.9	69°44.8	94°10.2
11	200°50.0	14.3'	$19^{\circ}01.8$	-11.0'	54.1'	110°35.1	$66^{\circ}11.7$	64°41.7	11°06.4	26°11.1	58°30.6	70°14.0	94°39.3
12	215°23.3	14.3'	N 18°50.8	-11.1'	54.1'	110°05.4	65°47.3	64°12.0	10°38.1	26°40.8	58°58.3	70°43.3	95°08.5
13	229°56.6	14.4'	18°39.7	-11.2'	54.1'	109°35.6	65°22.9	63°42.3	10°09.9	27°10.4	59°26.0	71°12.5	95°37.7
14	244°30.0	14.5'	18° 28.5	-11.2'	54.1'	109°05.9	64°58.6	63°12.6	9°41.9	27°40.1	59°53.8	71°41.8	96°06.8
15	259°03.5	14.6'	18° 17.3	-11.3'	54.1'	108°36.2	64°34.3	62°42.9	9° 14.1	28°09.8	60°21.5	72°11.0	96°36.0
16	273°37.1	14.6'	$18^{\circ}06.0$	-11.4'	54.1'	108°06.5	64° 10.0	62°13.2	8°46.5	28°39.4	60°49.3	72°40.2	97°05.1
17	288°10.7	14.7'	17°54.6	-11.4'	54.1'	107°36.8	63°45.8	61°43.5	8° 19.1	29°09.1	61°17.1	73°09.5	97°34.3
18	302°44.4	14.8'	N17°43.2	-11.5'	54.1'	107°07.1	63°21.7	61°13.8	7°52.0	29°38.7	61°44.8	73°38.7	98°03.4
19	317°18.2	14.8'	17°31.7	-11.6'	54.1'	106°37.4	62°57.6	60°44.2	7°25.2	30°08.4	62°12.6	74°07.9	98° 32.5
20	331°52.0	14.9'	$17^{\circ}20.1$	-11.6'	54.1'	106°07.8	62°33.5	60°14.5	6° 58.8	30°38.0	62°40.5	74°37.1	99°01.6
21	346°25.9	15.0'	$17^{\circ}08.4$	-11.7'	54.1'	105°38.1	$62^{\circ}09.5$	59°44.8	6°32.9	31°07.6	63°08.3	75°06.3	99°30.7
22	0°59.8	15.0'	$16^{\circ}56.7$	-11.8'	54.1'	105°08.4	61°45.6	59° 15.2	6°07.6	31°37.3	63°36.1	75°35.5	99°59.8
23	15°33.9	15.1'	16°45.0	-11.8'	54.0'	104°38.8	61°21.7	58° 45.5	5°42.9	32°06.9	64°03.9	76°04.7	100°28.9
21 st	SD	= 14.8'	Mer. pas	s. 21:56									

h	Moon	(22 nd	Mar))

Fri	GHA	ν	Dec	d	HP	-Antares	-Arcturus	-Spica	±Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter
0	30°07.9	15.2'	$N16^{\circ}33.1$	-11.9'	54.0'	104°09.1	60°57.9	58°15.9	5°19.2	32°36.5	64°31.8	76°33.9	100°58.0
1	44°42.1	15.2'	$16^{\circ}21.2$	-12.0'	54.0'	103°39.5	60°34.1	57°46.3		33°06.1	64°59.7	77°03.1	101°27.1
2	59°16.3	15.3'	16°09.3	-12.0'	54.0'	103°09.9	60°10.4	57°16.6		33°35.7	65°27.5	77°32.3	101°56.2
3	73°50.6	15.3'	15°57.2	-12.1'	54.0'	102°40.2	59°46.7	56°47.0		34°05.3	65°55.4	78°01.5	102°25.2
4	88°24.9	15.4'	15°45.2	-12.1'	54.0'	102°10.6	59°23.1	56°17.4		34°34.9	66°23.3	78°30.7	102°54.3
5	102°59.3	15.5'	15°33.0	-12.2'	54.0'	101°41.0	58°59.5	55°47.8		35°04.5	66°51.2	78°59.9	103°23.4
6	117°33.8	15.5'	N 15°20.8	-12.2'	54.0'	101°11.3	58°36.0	55°18.2		35°34.1	67°19.1	79°29.0	103°52.4
7	132°08.3	15.6'	15°08.6	-12.3'	54.0'	100°41.7	58°12.6	54°48.5		36°03.7	67°47.0	79°58.2	104°21.5
8	146°42.9	15.6'	14°56.3	-12.4'	54.0'	100°12.1	57°49.2	54°18.9		36°33.3	68°14.9	80°27.4	104°50.5
9	161°17.5	15.7'	14°43.9	-12.4'	54.0'	99°42.5	57°25.9	53°49.3		37°02.9	68°42.8	80°56.6	105°19.6
10	175°52.2	15.7'	14°31.5	-12.5'	54.0'	99°12.9	57°02.7	53°19.8		37°32.4	69°10.8	81°25.7	105°48.6
11	190°26.9	15.8'	$14^{\circ}19.1$	-12.5'	54.0'	98°43.3	56°39.5	52°50.2		38°02.0	69°38.7	81°54.9	106° 17.6
12	205°01.7	15.8'	N 14°06.5	-12.6'	54.0'	98° 13.7	56°16.4	52°20.6		38°31.6	70°06.6	82°24.1	106°46.7
13	219°36.6	15.9'	13°54.0	-12.6'	54.0'	97°44.1	55°53.4	51°51.0		39°01.2	70°34.6	82°53.2	107° 15.7
14	234°11.5	16.0'	13°41.3	-12.7'	54.0'	97° 14.5	55°30.4	51°21.4		39°30.7	71°02.6	83°22.4	107°44.7
15	248°46.4	16.0'	13°28.7	-12.7'	54.0'	96°44.9	55°07.5	50°51.8		40°00.3	71°30.5	83°51.5	108° 13.7
16	263°21.4	16.1'	$13^{\circ}16.0$	-12.8'	53.9'	96°15.3	54°44.7	50°22.3		40°29.9	71°58.5	84°20.7	108°42.8
17	277°56.5	16.1'	13°03.2	-12.8'	53.9'	95°45.8	54°21.9	49°52.7		40°59.4	72°26.5	84°49.9	109°11.8
18	292°31.6	16.2'	$N12^{\circ}50.4$	-12.9'	53.9'	95°16.2	53°59.3	49°23.1		41°29.0	72°54.5	85°19.0	109°40.8
19	307°06.7	16.2'	12°37.5	-12.9'	53.9'	94°46.6	53°36.7	48°53.5	6°08.7	41°58.6	73°22.5	85°48.2	110°09.8
20	321°41.9	16.2'	12°24.6	-13.0'	53.9'	94°17.0	53°14.2	48°24.0	6°34.0	42°28.1	73°50.5	86°17.3	110°38.8
21	336°17.2	16.3'	$12^{\circ}11.7$	-13.0'	53.9'	93°47.4	52°51.7	47°54.4	6°59.9	42°57.7	74°18.5	86°46.5	111°07.8
22	350°52.5	16.3'	11°58.7	-13.0'	53.9'	93° 17.9	52°29.4	47°24.8	7°26.2	43°27.2	74°46.5	87°15.6	111°36.8
23	5°27.8	16.4'	11°45.6	-13.1'	53.9'	92°48.3	52°07.1	46°55.3	7°52.9	43°56.8	75°14.5	87°44.8	112°05.8
22 nd	SD	= 14.7	Mer. pas	s. 22:38									

Moon (23rd Mar)

Lunar Distance (objects with largest hourly LD delta)

h		Моог	n (23 rd M	ar)		Lunar Distance (objects with largest hourly LD delta)							
Sat	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Spica	+Regulus	+Pollux	+Aldebaran	+Jupiter
0	20°03.2	16.4'	N11°32.5	-13.1'	53.9'	92°18.7	86°08.1	82°21.3	46°25.7	8° 19.9	44°26.3	88°13.9	112°34.8
1	34°38.6	16.5'	11° 19.4	-13.2'	53.9'	91°49.1	85°45.1	81°59.0	45°56.2	8°47.2	44°55.9	88°43.1	113°03.8
2	49°14.1	16.5'	11°06.3	-13.2'	53.9'	91°19.6	85°22.1	81°36.8	45°26.6	9° 14.7	45°25.4	89°12.2	113°32.8
3	63°49.6	16.5'	$10^{\circ}53.1$	-13.2'	53.9'	90°50.0	84°59.1	81°14.5	44°57.1	9°42.4	45°55.0	89°41.3	114°01.8
4	78°25.1	16.6'	10°39.8	-13.3'	53.9'	90°20.4	84°36.1	80°52.3	44°27.5	10° 10.3	46°24.6	90°10.5	114°30.8
5	93°00.7	16.6'	$10^{\circ}26.5$	-13.3'	53.9'	89°50.9	84°13.2	80°30.1	43°57.9	10°38.3	46°54.1	90°39.6	114°59.8
6	107°36.4	16.7'	$N10^{\circ}13.2$	-13.4'	53.9'	89°21.3	83°50.2	80°08.0	43°28.4	11°06.5	47°23.7	91°08.8	115°28.8
7	122°12.0	16.7'	09°59.9	-13.4'	53.9'	88°51.7	83°27.3	79°45.8	42°58.8	11°34.8	47°53.2	91°37.9	115°57.8
8	136°47.7	16.7'	09°46.5	-13.4'	53.9'	88°22.1	83°04.3	79°23.7	42°29.3	12°03.1	48°22.8	92°07.1	116°26.8
9	151°23.5	16.8'	09°33.1	-13.5'	53.9'	87°52.6	82°41.4	79°01.6	41°59.7	12°31.6	48°52.3	92°36.2	116°55.8
10	165°59.2	16.8'	$09^{\circ}19.6$	-13.5'	53.9'	87°23.0	82° 18.5	78°39.5	41°30.2	13°00.2	49°21.9	93°05.4	117°24.8
11	180°35.0	16.8'	$09^{\circ}06.1$	-13.5'	53.9'	86°53.4	81°55.6	78°17.4	41°00.6	13°28.8	49°51.4	93°34.5	117°53.8
12	195°10.9	16.9'	N08°52.6	-13.6'	53.9'	86°23.9	81°32.7	77°55.4	40°31.0	13°57.5	50°21.0	94°03.6	118°22.7
13	209°46.7	16.9'	08°39.0	-13.6'	53.9'	85°54.3	81°09.8	77°33.4	40°01.5	14°26.3	50°50.5	94°32.8	118°51.7
14	224°22.6	16.9'	08° 25.4	-13.6'	53.9'	85°24.7	80°47.0	77°11.4	39°31.9	14°55.1	51°20.1	95°01.9	119°20.7
15	238°58.6	17.0'	$08^{\circ}11.8$	-13.6'	53.9'	84°55.1	80°24.1	76°49.4	39°02.4	15°23.9	51°49.7	95°31.1	119°49.7
16	253°34.5	17.0'	07°58.2	-13.7'	53.9'	84°25.5	80°01.3	76°27.5	38°32.8	15° 52.8	52°19.2	96°00.2	
17	268°10.5	17.0'	07°44.5	-13.7'	53.9'	83°56.0	79°38.5	76°05.5	38°03.2	16°21.8	52°48.8	96°29.4	
18	282°46.5	17.0'	N07°30.8	-13.7'	53.9'	83°26.4	79° 15.7	75°43.6	37°33.7	16° 50.7	53°18.4	96°58.5	
19	297°22.6	17.1'	$07^{\circ}17.1$	-13.8'	53.9'	82°56.8	78°53.0	75°21.8	37°04.1	17° 19.8	53°47.9	97°27.7	
20	311°58.6	17.1'	07°03.3	-13.8'	53.9'	82°27.2	78°30.2	74°59.9	36°34.6	17°48.8	54°17.5	97°56.8	
21	326°34.7	17.1'	06°49.5	-13.8'	53.9'	81°57.6	78° 07.5	74°38.1	36°05.0	18° 17.9	54°47.1	98° 26.0	
22	341°10.8	17.1'	06°35.7	-13.8'	53.9'	81°28.0	77°44.8	74°16.4	35°35.4	18°47.0	55°16.7	98°55.1	
23	355°47.0	17.2'	06°21.9	-13.9'	53.9'	80°58.4	77°22.1	73°54.6	35°05.8	19° 16.1	55°46.2	99°24.3	
23 rd	SD	= 14.7	Mer. pas	s. 23:17			-					-	

Moon (24th Mar)

Sun	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	10°23.1	17.2'	N 06°08.0	-13.9'	53.9'		80°28.9	76°59.4	34°36.3	19°45.3	56°15.8	86°56.7	99°53.4
1	24°59.3	17.2'	05°54.2	-13.9'	53.9'		79°59.3	76°36.8	34°06.7	20°14.5	56°45.4	87°24.8	100°22.6
2	39°35.5	17.2'	05°40.2	-13.9'	53.9'		79°29.7	76°14.1	33°37.1	20°43.7	57°15.0	87°53.0	100°51.8
3	54°11.7	17.2'	05°26.3	-13.9'	53.9'		79°00.1	75°51.5	33°07.5	21°12.9	57°44.6	88°21.1	101°20.9
4	68°47.9	17.2'	05°12.4	-14.0'	53.9'		78°30.4	75°29.0	32°38.0	21°42.1	58°14.2	88°49.3	101°50.1
5	83°24.2	17.3'	04°58.4	-14.0'	53.9'		78°00.8	75°06.4	32°08.4	22°11.4	58°43.8	89°17.4	102°19.2
6	98°00.5	17.3'	N 04°44.4	-14.0'	53.9'		77°31.2	74°43.9	31°38.8	22°40.6	59°13.4	89°45.6	102°48.4
7	112°36.7	17.3'	04°30.4	-14.0'	53.9'		77°01.6	74°21.4	$31^{\circ}09.2$	23°09.9	59°43.0	90°13.8	103°17.6
8	127°13.0	17.3'	04°16.4	-14.0'	53.9'		76°32.0	73°58.9	30°39.6	23°39.3	60°12.6	90°41.9	103°46.7
9	141°49.3	17.3'	04°02.4	-14.0'	53.9'		76°02.4	73°36.5	$30^{\circ}10.0$	24°08.6	60°42.2	91°10.1	104°15.9
10	156°25.6	17.3'	03°48.3	-14.1'	53.9'		75°32.7	73°14.1	29°40.4	24°37.9	61°11.8	91°38.3	104°45.1
11	171°02.0	17.3'	03°34.3	-14.1'	53.9'		75°03.1	72°51.7	$29^{\circ}10.8$	25°07.3	61°41.4	92°06.5	105°14.3
12	185°38.3	17.3'	N03°20.2	-14.1'	53.9'		74°33.5	72°29.3	28°41.2	25°36.6	62°11.1	92°34.6	105°43.4
13	200°14.7	17.4'	$03^{\circ}06.1$	-14.1'	53.9'	119°43.3	74°03.8	72°07.0	$28^{\circ}11.6$	26°06.0	62°40.7	93°02.8	106°12.6
14	214°51.0	17.4'	02°52.0	-14.1'	53.9'	119°20.7	73°34.2	71°44.7	27°42.0	26°35.4	63°10.3	93°31.0	106°41.8
15	229°27.4	17.4'	02°37.9	-14.1'	53.9'	118°58.1	73°04.5	71°22.4	$27^{\circ}12.4$	27°04.8	63°40.0	93°59.2	$107^{\circ}11.0$
16	244°03.7	17.4'	02°23.7	-14.1'	53.9'	118°35.4	72°34.9	71°00.2	26°42.7	27°34.3	64°09.6	94°27.4	107°40.1
17	258°40.1	17.4'	02°09.6	-14.2'	54.0'	118°12.6	72°05.2	70°38.0	$26^{\circ}13.1$	28°03.7	64°39.3	94°55.6	108°09.3
18	273°16.5	17.4'	N 01°55.5	-14.2'	54.0'	117°49.8	71°35.5	70°15.9	25°43.5	28°33.1	65°08.9	95°23.8	108°38.5
19	287°52.9	17.4'	$01^{\circ}41.3$	-14.2'	54.0'	117°27.0	71°05.9	69°53.8	$25^{\circ}13.9$	29°02.6	65°38.6	95°52.0	109°07.7
20	302°29.2	17.4'	$01^{\circ}27.1$	-14.2'	54.0'	117°04.0	70°36.2	69°31.7	24°44.2	29°32.1	66°08.2	96°20.2	109°36.9
21	317°05.6	17.4'	$01^{\circ}13.0$	-14.2'	54.0'	116°41.0	70°06.5	69°09.7	$24^{\circ}14.6$	30°01.5	66°37.9	96°48.4	110°06.1
22	331°42.0	17.4'	00°58.8	-14.2'	54.0'	116°18.0	69°36.8	68°47.7	23°44.9	30°31.0	67°07.6	97°16.6	110°35.3
23	346°18.4	17.4'	00°44.6	-14.2'	54.0'	115°54.9	69°07.1	68°25.7	23°15.3	31°00.5	67°37.3	97°44.8	111°04.5
24 th	SD	= 14.7	Mer. pas	s. 23:56									-

Lunar Distance (objects with largest hourly LD delta) Antares | Rigil Kent | Spica | + Regulus | + Pollux | + Capella |

Mon	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	0°54.8	17.4'	N 00°30.4	-14.2'	54.0'	115°31.7	68°37.5	68°03.8	22°45.6	31°30.1	68°06.9	98°13.0	111°33.7
1	15°31.1	17.4'	$00^{\circ}16.2$	-14.2'	54.0'	115°08.5	68°07.8	67°41.9	22°16.0	31°59.6	68°36.6	98°41.3	112°02.9
2	30°07.5	17.4'	N 00°02.0	-14.2'	54.0'	114°45.3	67°38.0	67°20.1	21°46.3	32°29.1	69°06.3	99°09.5	112°32.1
3	44°43.9	17.4'	S 00°12.2	-14.2'	54.0'	114°22.0	67°08.3	66°58.3	21°16.7	32°58.7	69°36.0	99°37.7	113°01.3
4	59°20.2	17.4'	00°26.4	-14.2'	54.0'	113°58.6	66°38.6	66°36.6	20°47.0	33°28.2	70°05.7	100°05.9	113°30.5
5	73°56.6	17.3'	00°40.6	-14.2'	54.0'	113°35.2	66°08.9	66°14.9	20°17.3	33°57.8	70°35.5	100°34.1	113°59.7
6	88°32.9	17.3'	S 00°54.8	-14.2'	54.0'	113°11.8	65°39.2	65°53.3	19°47.7	34°27.4	71°05.2	101°02.4	114°29.0
7	103°09.3	17.3'	$01^{\circ}09.1$	-14.2'	54.0'	112°48.3	65°09.4	65°31.7	19° 18.0	34°56.9	71°34.9	101°30.6	114°58.2
8	117°45.6	17.3'	01°23.3	-14.2'	54.0'	112°24.7	64°39.7	$65^{\circ}10.1$	18°48.3	35°26.5	72°04.6	101°58.8	115°27.4
9	132°21.9	17.3'	$01^{\circ}37.5$	-14.2'	54.0'	112°01.2	64°09.9	64°48.6	18° 18.6	35°56.2	72°34.4	102°27.0	115°56.6
10	146°58.2	17.3'	$01^{\circ}51.7$	-14.2'	54.0'	111°37.5	63°40.2	64°27.2	17°48.9	36°25.8	73°04.1	102°55.3	116°25.8
11	161°34.5	17.3'	02°05.9	-14.2'	54.0'	111°13.8	63°10.4	64°05.8	17° 19.3	36°55.4	73°33.9	103°23.5	116°55.1
12	176°10.8	17.3'	S 02°20.1	-14.2'	54.1'	110°50.1	62°40.6	63°44.5	16°49.6	37°25.0	74°03.7	103°51.7	117°24.3
13	190°47.0	17.2'	02°34.3	-14.2'	54.1'	110°26.4	62°10.8	63°23.2	$16^{\circ}19.9$	37°54.7	74°33.4	104°19.9	117°53.5
14	205°23.3	17.2'	02°48.5	-14.2'	54.1'	110°02.6	61°41.1	63°02.0	15°50.2	38°24.3	75°03.2	104°48.2	118°22.7
15	219°59.5	17.2'	$03^{\circ}02.6$	-14.2'	54.1'	109°38.7	$61^{\circ}11.3$	62°40.9	15°20.5	38°54.0	75°33.0	105°16.4	118°52.0
16	234°35.7	17.2'	03°16.8	-14.2'	54.1'	109°14.9	60°41.5	62°19.8	14°50.8	39°23.7	76°02.8	105°44.6	119°21.2
17	249°11.9	17.2'	03°31.0	-14.2'	54.1'	108°50.9	$60^{\circ}11.7$	61°58.7	14°21.1	39°53.4	76°32.6	106°12.8	119°50.5
18	263°48.1	17.1'	S 03°45.1	-14.1'	54.1'	108°27.0	59°41.8	61°37.8	13°51.4	40°23.1	77°02.4	106°41.1	
19	278°24.2	17.1'	03°59.3	-14.1'	54.1'	108°03.0	59°12.0	$61^{\circ}16.9$	13°21.7	40°52.8	77°32.2	107°09.3	
20	293°00.3	17.1'	04° 13.4	-14.1'	54.1'	107°39.0	58°42.2	60°56.0	12°52.0	41°22.5	78°02.0	107°37.5	
21	307°36.4	17.1'	04°27.5	-14.1'	54.1'	107°14.9	58° 12.3	60°35.3	12°22.3	41°52.2	78°31.9	108°05.7	
22	322°12.5	17.1'	04°41.7	-14.1'	54.1'	106°50.8	57° 42.5	60°14.6	11°52.6	42°22.0	79°01.7	108°34.0	
23	336°48.6	17.0'	04°55.8	-14.1'	54.1'	106°26.7	57° 12.6	59°54.0	11°23.0	42°51.7	79°31.5	109°02.2	
25 th	SI	D = 14.	7' Mer. pa	ss:-									

h Moon (26th Mar)

Lunar Distance (objects with largest hourly LD delta)

			. (==					· (·	<u> </u>	tii iai 600t	,		
Tue	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Antares	-Spica	+Regulus	+Procyon	+Pollux	+Capella
0	351°24.6	17.0'	S 05°09.9	-14.1'	54.1'	106°02.5	59°33.4	56°42.8	10°53.3	43°21.5	77°57.4	80°01.4	109°30.4
1	6°00.6	17.0'	05°23.9	-14.1'	54.2'	105°38.3	59° 13.0	$56^{\circ}12.9$	10°23.6	43°51.3	78°25.2	80°31.3	109°58.6
2	20°36.6	16.9'	05°38.0	-14.0'	54.2'	105°14.1	58° 52.6	55°43.0	9°54.0	44°21.0	78°53.0	$81^{\circ}01.1$	110°26.9
3	35°12.5	16.9'	05°52.0	-14.0'	54.2'	104°49.8	58° 32.2	55°13.1	9°24.3	44°50.8	79°20.8	81°31.0	110°55.1
4	49°48.4	16.9'	$06^{\circ}06.1$	-14.0'	54.2'	104°25.6	58° 12.0	54°43.2	8°54.7	45°20.6	79°48.6	82°00.9	111°23.3
5	64°24.3	16.9'	$06^{\circ}20.1$	-14.0'	54.2'	104°01.2	57°51.8	54°13.3	8°25.1	45°50.5	80°16.4	82°30.8	111°51.5
6	79°00.2	16.8'	S 06°34.1	-14.0'	54.2'	103°36.9	57°31.8	53°43.4	7°55.6	46°20.3	80°44.2	83°00.7	112°19.7
7	93°36.0	16.8'	06°48.0	-14.0'	54.2'	103°12.5	57° 11.8	53°13.5	7°26.0	46°50.1	81°12.1	83°30.6	112°47.9
8	108°11.8	16.7'	$07^{\circ}02.0$	-13.9'	54.2'	102°48.1	56°51.9	52°43.5	6°56.6	47°20.0	81°39.9	84°00.6	113°16.1
9	122°47.5	16.7'	$07^{\circ}15.9$	-13.9'	54.2'	102°23.7	56°32.1	52°13.6	6°27.2	47°49.8	82°07.8	84°30.5	113°44.3
10	137°23.2	16.7'	07°29.8	-13.9'	54.2'	101°59.2	56°12.3	51°43.6	5°57.8	48°19.7	82°35.7	85°00.5	114°12.5
11	151°58.9	16.6'	07°43.7	-13.9'	54.2'	101°34.7	55°52.7	51°13.7	5°28.6	48°49.6	83°03.6	85°30.4	114°40.7
12	166°34.5	16.6'	S 07°57.6	-13.8'	54.3'	101°10.2	55° 33.2	50°43.7	4°59.5	49°19.4	83°31.5	86°00.4	115°08.9
13	181°10.1	16.6'	08°11.4	-13.8'	54.3'	100°45.7	55° 13.7	50°13.7	4°30.6	49°49.3	83°59.4	86°30.4	115°37.0
14	195°45.7	16.5'	08°25.3	-13.8'	54.3'	100°21.1	54°54.4	49°43.7	4°01.9	50°19.3	84°27.4	87°00.3	116°05.2
15	210°21.2	16.5'	08°39.1	-13.8'	54.3'	99°56.5	54°35.2	49°13.7	3°33.6	50°49.2	84°55.3	87°30.3	116°33.4
16	224°56.7	16.4'	08°52.8	-13.7'	54.3'	99°31.9	54° 16.0	48°43.7	3°05.9	51°19.1	85°23.3	88°00.3	117°01.5
17	239°32.1	16.4'	09°06.6	-13.7'	54.3'	99°07.3	53°57.0	48°13.7	2°38.9	51°49.1	85°51.3	88°30.4	117°29.7
18	254°07.5	16.3'	S 09°20.3	-13.7'	54.3'	98°42.6	53°38.1	47°43.6		52°19.0	86° 19.2	89°00.4	117°57.8
19	268°42.8	16.3'	09°33.9	-13.6'	54.3'	98°18.0	53° 19.3	$47^{\circ}13.6$		52°49.0	86°47.3	89°30.4	118°26.0
20	283°18.1	16.2'	09°47.6	-13.6'	54.3'	97°53.3	53°00.6	46°43.5		53°19.0	87° 15.3	90°00.5	118°54.1
21	297°53.4	16.2'	$10^{\circ}01.2$	-13.6'	54.4'	97°28.6	52°42.0	46°13.4		53°49.0	87°43.3	90°30.5	119°22.2
22	312°28.6	16.2'	$10^{\circ}14.8$	-13.6'	54.4'	97°03.8	52°23.5	45°43.4		54°19.0	88°11.3	$91^{\circ}00.6$	119°50.3
23	327°03.7	16.1'	10°28.3	-13.5'	54.4'	96°39.1	52°05.2	45°13.3		54°49.0	88°39.4	91°30.7	
26 th	SD	= 14.8'	Mer. pas	s. 00:35									

h Moon (27th Mar)

Wed	GHA	ν	Dec	d	HP	-Fomalhaut	-Mars	-Altair	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	341°38.8	16.1'	S 10°41.9	-13.5'	54.4'			96°14.3	44°43.2		55° 19.0	89°07.4	92°00.8
1	356°13.9	16.0'	10°55.3	-13.4'	54.4'			95°49.5	44°13.1		55°49.0	89°35.5	92°30.9
2	10°48.9	15.9'	11°08.8	-13.4'	54.4'			95°24.7	43°42.9		56° 19.1	90°03.6	93°01.0
3	25°23.8	15.9'	11°22.2	-13.4'	54.4'			94°59.8	43°12.8		56°49.2	90°31.7	93°31.1
4	39°58.7	15.8'	$11^{\circ}35.6$	-13.3'	54.4'			94°35.0	42°42.7	3°25.5	57° 19.2	90°59.8	94°01.3
5	54°33.6	15.8'	11°48.9	-13.3'	54.4'			94°10.1	42°12.5	3°53.8	57°49.3	91°27.9	94°31.4
6	69°08.4	15.7'	S 12°02.2	-13.3'	54.5'			93°45.3	41°42.3	4°22.5	58° 19.4	91°56.0	95°01.6
7	83°43.1	15.7'	12°15.5	-13.2'	54.5'			93°20.4	41°12.1	4°51.6	58° 49.6	92°24.2	95°31.8
8	98°17.8	15.6'	12°28.7	-13.2'	54.5'			92°55.4	40°41.9	5°20.8	59° 19.7	92°52.3	96°01.9
9	112°52.4	15.6'	12°41.9	-13.1'	54.5'			92°30.5	40°11.7	5°50.3	59°49.8	93°20.5	96°32.1
10	127°26.9	15.5'	12°55.0	-13.1'	54.5'			92°05.6	39°41.5	6°19.8	60°20.0	93°48.6	97°02.4
11	142°01.4	15.4'	13°08.1	-13.0'	54.5'			91°40.6	39°11.3	6°49.5	60°50.1	94°16.8	97°32.6
12	156°35.8	15.4'	S 13°21.1	-13.0'	54.5'	119°39.2		91°15.7	38°41.0	7°19.3	61°20.3	94°45.0	98°02.8
13	171°10.2	15.3'	13°34.1	-12.9'	54.5'	119° 10.8		90°50.7	38°10.8	7°49.1	61°50.5	95°13.2	98°33.1
14	185°44.5	15.2'	13°47.1	-12.9'	54.6'	118° 42.4		90°25.7	37°40.5	8°19.0	62°20.7	95°41.4	99°03.3
15	200°18.7	15.2'	14°00.0	-12.9'	54.6'	118° 13.9		90°00.7	37°10.2	8°49.0	62°50.9	96°09.6	99°33.6
16	214°52.9	15.1'	14°12.8	-12.8'	54.6'	117°45.5		89°35.7	36°39.9	9°19.0	63°21.2	96°37.8	100°03.9
17	229°27.0	15.0'	14°25.6	-12.8'	54.6'	117° 17.0	119°36.6	89°10.7	36°09.6	9°49.0	63°51.4	97°06.0	100°34.2
18	244°01.1	15.0'	S 14°38.4	-12.7'	54.6'	116°48.4	119°08.3	88°45.6	35°39.3	10°19.1	64°21.7	97°34.3	101°04.5
19	258°35.0	14.9'	$14^{\circ}51.1$	-12.6'	54.6'	116° 19.9	118°39.9	88°20.6	35°08.9	10°49.2	64°52.0	98°02.5	101°34.8
20	273°08.9	14.8'	15°03.7	-12.6'	54.6'	115°51.3	118°11.5	87°55.5	34°38.6	11°19.4	65°22.3	98°30.7	102°05.2
21	287°42.8	14.8'	$15^{\circ}16.3$	-12.5'	54.7'	115°22.7	117°43.1	87°30.5	34°08.2	11°49.6	65°52.6	98°59.0	102°35.5
22	302°16.5	14.7'	$15^{\circ}28.9$	-12.5'	54.7'	114°54.1	117°14.7	87°05.4	33°37.8	12°19.8	66°22.9	99°27.3	103°05.9
23	316°50.2	14.6'	15°41.3	-12.4'	54.7'	114°25.4	116°46.3	86°40.3	33°07.5	12°50.0	66°53.2	99°55.5	103°36.3
27 th	SD	= 14.8'	Mer. pas	s. 01:16									

Thu	GHA	ν	Dec	d	HP	-Saturn	-Mars	-Fomalhaut	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	331°23.8	14.5'	S 15°53.8	-12.4'	54.7'		116° 17.9	113°56.7	32°37.1	13°20.3	67°23.6	100°23.8	104°06.7
1	345°57.4	14.5'	$16^{\circ}06.1$	-12.3'	54.7'		115°49.4	113°28.0	32°06.6	13°50.6	67°54.0	100°52.1	104°37.1
2	0°30.9	14.4'	$16^{\circ}18.5$	-12.2'	54.7'		115°21.0	112°59.2	31°36.2	14°20.9	68°24.3	101°20.4	105°07.5
3	15°04.3	14.3'	$16^{\circ}30.7$	-12.2'	54.8'		114°52.5	112°30.5	31°05.7	14°51.2	68°54.7	101°48.7	105°38.0
4	29°37.6	14.2'	16°42.9	-12.1'	54.8'		114°24.0	112°01.7	30°35.3	15°21.6	69°25.1	102°17.0	106°08.5
5	44°10.8	14.2'	$16^{\circ}55.0$	-12.1'	54.8'		113°55.5	111°32.8	30°04.8	15°52.0	69°55.6	102°45.3	106°38.9
6	58°44.0	14.1'	$$17^{\circ}07.1$	-12.0'	54.8'		113°26.9	111°04.0	29°34.3	16°22.4	70°26.0	103°13.6	107°09.4
7	73°17.1	14.0'	$17^{\circ}19.1$	-11.9'	54.8'		112°58.4	110°35.1	29°03.8	16°52.8	70°56.5	103°42.0	107°39.9
8	87°50.1	13.9'	$17^{\circ}31.0$	-11.9'	54.8'		112°29.8	110°06.2	28°33.2	17°23.3	71°26.9	104°10.3	108°10.4
9	102°23.0	13.9'	$17^{\circ}42.9$	-11.8'	54.9'		112°01.2	109°37.3	28°02.7	17°53.7	71°57.4	104°38.6	108°41.0
10	116°55.9	13.8'	$17^{\circ}54.7$	-11.7'	54.9'		111°32.7	109°08.3	27°32.1	18°24.2	72°27.9	105°07.0	109°11.5
11	131°28.6	13.7'	18°06.4	-11.7'	54.9'	119°57.8	111°04.0	108°39.4	27°01.6	18°54.7	72°58.5	105°35.3	109°42.1
12	146°01.3	13.6'	S 18°18.1	-11.6'	54.9'	119°27.5	110°35.4	108°10.3	26°31.0	19°25.2	73°29.0	106°03.6	110°12.7
13	160°33.9	13.5'	$18^{\circ}29.7$	-11.5'	54.9'	118°57.2	110°06.8	107°41.3	26°00.4	19°55.8	73°59.6	106°32.0	110°43.3
14	175°06.5	13.4'	18°41.2	-11.4'	54.9'	118°26.9	109°38.1	107°12.3	25°29.7	20°26.4	74°30.1	107°00.3	111°13.9
15	189°38.9	13.4'	18°52.6	-11.4'	55.0'	117°56.5	109°09.4	106°43.2	24°59.1	20°56.9	75°00.7	107°28.7	111°44.5
16	204°11.3	13.3'	19°04.0	-11.3'	55.0'	117°26.2	108°40.8	106°14.1	24°28.4	21°27.5	75°31.3	107°57.1	112°15.2
17	218°43.5	13.2'	19°15.3	-11.2'	55.0'	116°55.8	108°12.0	105°45.0	23°57.7	21°58.2	76°02.0	108°25.4	112°45.8
18	233°15.7	13.1'	S 19°26.5	-11.1'	55.0'	116°25.4	107°43.3	105°15.8	23°27.1	22°28.8	76°32.6	108°53.8	113°16.5
19	247°47.8	13.0'	19°37.7	-11.1'	55.0'	115°55.0	107°14.6	104°46.7	22°56.3	22°59.5	77°03.3	109°22.2	113°47.2
20	262°19.8	12.9'	$19^{\circ}48.7$	-11.0'	55.0'	115°24.5	106°45.8	104°17.5	22°25.6	23°30.2	77°33.9	109°50.5	114°18.0
21	276°51.7	12.8'	$19^{\circ}59.7$	-10.9'	55.1'	114°54.1	106°17.0	103°48.2	21°54.9	24°00.9	78°04.6	110°18.9	114°48.7
22	291°23.6	12.7'	20° 10.6	-10.8'	55.1'	114°23.6	105°48.2	103°19.0	21°24.1	24°31.6	78°35.3	110°47.3	115°19.4
23	305°55.3	12.7'	20°21.4	-10.7'	55.1'	113°53.1	105°19.4	102°49.7	20°53.3	25°02.3	79°06.1	111°15.7	115°50.2
28 th	SD	= 14.9'	Mer. pas	s. 01:58									

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

	zanar zistante (exjecte man langest nearly zz acita)												
Fri	GHA	ν	Dec	d	HP	-Saturn	-Mars	-Fomalhaut	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	320°26.9	12.6'	S 20°32.2	-10.7'	55.1'	113°22.6	104°50.6	102°20.4	20°22.5	25°33.1	79°36.8	111°44.0	116°21.0
1	334°58.5	12.5'	20°42.8	-10.6'	55.1'	112°52.1	104°21.7	101°51.1	19°51.7	26°03.9	80°07.6	112°12.4	116°51.8
2	349°30.0	12.4'	20°53.4	-10.5'	55.2'	112°21.5	103°52.8	101°21.8	19°20.9	26°34.7	80°38.4	112°40.8	117°22.7
3	4°01.4	12.3'	21°03.9	-10.4'	55.2'	111°50.9	103°23.9	100°52.4	18°50.0	27°05.5	81°09.2	113°09.2	117°53.5
4	18°32.6	12.2'	$21^{\circ}14.2$	-10.3'	55.2'	111°20.4	102°55.0	100°23.1	18° 19.1	27°36.3	81°40.0	113°37.5	118°24.4
5	33°03.8	12.1'	$21^{\circ}24.5$	-10.2'	55.2'	110°49.7	102°26.1	99°53.6	17°48.2	28°07.2	82°10.9	114°05.9	118°55.3
6	47°34.9	12.0'	S 21°34.8	-10.1'	55.2'	110°19.1	101°57.2	99°24.2	17° 17.3	28°38.1	82°41.7	114°34.3	119°26.2
7	62°05.9	11.9'	21°44.9	-10.0'	55.3'	109°48.5	101°28.2	98°54.8	16°46.4	29°09.0	83°12.6	115°02.7	119°57.1
8	76°36.9	11.8'	21°54.9	-9.9'	55.3'	109°17.8	100°59.2	98°25.3	16° 15.4	29°39.9	83°43.5	115°31.0	
9	91°07.7	11.7'	22°04.8	-9.8'	55.3'	108°47.1	100°30.2	97°55.8	15°44.5	30° 10.9	84°14.4	115°59.4	
10	105°38.4	11.6'	22° 14.7	-9.7'	55.3'	108°16.4	100°01.2	97°26.3	15° 13.5	30°41.8	84°45.4	116°27.7	
11	120°09.0	11.5'	22°24.4	-9.6'	55.3'	107°45.7	99°32.1	96°56.7	14°42.5	31° 12.8	85°16.3	116°56.1	
12	134°39.6	11.4'	S 22°34.1	-9.5'	55.4'	107°15.0	99°03.0	96°27.2	14°11.4	31°43.8	85°47.3	117°24.4	
13	149°10.0	11.3'	22°43.6	-9.4'	55.4'	106°44.2	98°33.9	95°57.6	13°40.4	32°14.9	86°18.3	117°52.8	
14	163°40.4	11.2'	22°53.1	-9.3'	55.4'	106°13.4	98°04.8	95°28.0	13°09.3	32°45.9	86°49.4	118°21.1	
15	178°10.6	11.2'	23°02.4	-9.2'	55.4'	105°42.6	97°35.7	94°58.3	12°38.2	33°17.0	87°20.4	118°49.5	
16	192°40.8	11.1'	23°11.6	-9.1'	55.4'	105°11.8	97°06.5	94°28.7	12°07.1	33°48.1	87°51.5	119°17.8	
17	207°10.8	11.0'	23°20.8	-9.0'	55.5'	104°40.9	96°37.4	93°59.0	11°36.0	34° 19.2	88°22.6	119°46.1	
18	221°40.8	10.9'	S 23°29.8	-8.9'	55.5'	104°10.0	96°08.2	93°29.3	11°04.8	34°50.3	88°53.7		
19	236°10.6	10.8'	23°38.7	-8.8'	55.5'	103°39.1	95°38.9	92°59.6	10°33.6	35°21.5	89°24.8		
20	250°40.4	10.7'	23°47.5	-8.7'	55.5'	103°08.2	95°09.7	92°29.8	10°02.4	35°52.7	89°56.0		
21	265°10.1	10.6'	23°56.2	-8.6'	55.5'	102°37.3	94°40.4	92°00.1	9°31.2	36°23.9	90°27.1		
22	279°39.6	10.5'	24°04.8	-8.5'	55.6'	102°06.3	$94^{\circ}11.1$	91°30.3	9°00.0	36°55.1	90°58.3		
23	294°09.1	10.4'	24°13.3	-8.4'	55.6'	101°35.3	93°41.8	91°00.5	8°28.7	37°26.4	91°29.6		
29 th	SD	= 15.0'	Mer. pas	s. 02:43									

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

Sat	GHA	ν	Dec	d	HP	-Sun	-Saturn	-Mars	-Fomalhaut	± Antares	+Spica	+Arcturus	+Regulus
0	308°38.5	10.3'	S 24°21.7	-8.3'	55.6'		101°04.3	93° 12.5	90°30.6	7°57.5	37°57.6	49°47.8	92°00.8
1	323°07.8	10.2'	24°30.0	-8.1'	55.6'		100°33.3	92°43.1	90°00.8	7°26.1	38°28.9	50°10.8	92°32.1
2	337°37.0	10.1'	24°38.1	-8.0'	55.7'		100°02.3	92°13.8	89°30.9	6°54.8	39°00.3	50°33.9	93°03.4
3	352°06.1	10.0'	24°46.1	-7.9'	55.7'		99°31.2	91°44.3	89°01.0	6°23.5	39°31.6	50°57.1	93°34.7
4	6°35.0	9.9'	$24^{\circ}54.1$	-7.8'	55.7'		99°00.1	91°14.9	88°31.1	5°52.1	40°03.0	51°20.4	94°06.0
5	21°03.9	9.8'	$25^{\circ}01.8$	-7.7'	55.7'		98°28.9	90°45.5	88°01.1	5°20.7	40°34.4	51°43.9	94°37.4
6	35°32.7	9.7'	S 25°09.5	-7.6'	55.8'		97°57.8	90°16.0	87°31.2	4°49.3	41°05.8	52°07.4	95°08.8
7	50°01.4	9.6'	$25^{\circ}17.1$	-7.4'	55.8'		97°26.6	89°46.5	87°01.2	4°17.9	41°37.3	52°31.1	95°40.2
8	64°30.0	9.5'	25°24.5	-7.3'	55.8'		96°55.4	89°17.0	86°31.2	3°46.5	42°08.7	52°54.9	96°11.6
9	78°58.6	9.4'	25°31.8	-7.2'	55.8'		96°24.2	88°47.4	$86^{\circ}01.1$	3°15.1	42°40.2	53°18.8	96°43.1
10	93°27.0	9.3'	25°39.0	-7.1'	55.9'		95°53.0	88°17.8	85°31.1	2°43.7	43°11.7	53°42.9	97°14.6
11	107°55.3	9.2'	25°46.0	-6.9'	55.9'		95°21.7	87°48.2	85°01.0	2°12.3	43°43.3	54°07.0	97°46.1
12	122°23.5	9.1'	S 25°53.0	-6.8'	55.9'		94°50.4	87° 18.6	84°30.9	1°41.0	44°14.9	54°31.2	98°17.6
13	136°51.6	9.0'	25°59.8	-6.7'	55.9'		94°19.1	86°49.0	84°00.8	1°09.9	44°46.5	54°55.6	98°49.2
14	151°19.7	8.9'	26°06.4	-6.5'	56.0'		93°47.7	86° 19.3	83°30.6	0°39.7	45°18.1	55°20.0	99°20.8
15	165°47.6	8.9'	26° 13.0	-6.4'	56.0'		93°16.3	85°49.6	83°00.5		45°49.7	55°44.5	99°52.4
16	180°15.5	8.8'	$26^{\circ}19.4$	-6.3'	56.0'	119°46.7	92°44.9	85°19.9	82°30.3		46°21.4	56°09.2	100°24.0
17	194°43.2	8.7'	26°25.6	-6.1'	56.0'	119° 17.4	92°13.5	84°50.1	82°00.1		46°53.1	56°33.9	100°55.7
18	209°10.9	8.6'	S 26°31.8	-6.0'	56.1'	118°48.1	91°42.0	84°20.3	81°29.9		47°24.8	56°58.7	101°27.4
19	223°38.5	8.5'	26°37.8	-5.9'	56.1'	118° 18.8	91°10.6	83°50.5	80°59.6	2°03.0	47°56.6	57°23.7	101°59.1
20	238°06.0	8.4'	26°43.6	-5.7'	56.1'	117°49.5	90°39.1	83°20.7	80°29.3	2°34.6	48°28.4	57°48.7	102°30.8
21	252°33.4	8.3'	26°49.3	-5.6'	56.1'	117°20.1	90°07.5	82°50.8	79°59.0	3°06.3	49°00.2	58°13.8	103°02.6
22	267°00.7	8.2'	26° 54.9	-5.4'	56.2'	116°50.7	89°36.0	82°20.9	79°28.7	3°38.1	49°32.0	58°39.0	103°34.4
23	281°27.9	8.1'	27°00.4	-5.3'	56.2'	116°21.3	89°04.4	81°51.0	78°58.4	4°09.9	50°03.9	59°04.3	104°06.2
30 th	SD	= 15.2'	Mer. pass	. 03:33					Sun SD	= 16.0'			

Lunar Distance (objects with largest hourly LD delta) -Saturn -Mars -Fomalhaut +Antares +Spica +Arcturus +Regulus

Sun	GHA	ν	Dec	d	HP	-Sun	-Saturn	-Mars	-Fomalhaut	+Antares	+Spica	+Arcturus	+Regulus
0	295°55.0	8.0'	S 27°05.7	-5.2'	56.2'	115°51.9	88°32.7	81°21.1	78°28.0	4°41.8	50°35.8	59°29.7	104°38.1
1	310°22.1	8.0'	$27^{\circ}10.8$	-5.0'	56.2'	115°22.4	88°01.1	80°51.1	77°57.7	5°13.6	51°07.7	59°55.2	105°09.9
2	324°49.0	7.9'	27° 15.9	-4.9'	56.3'	114°52.9	87°29.4	80°21.1	77°27.3	5°45.6	51°39.7	60°20.7	105°41.8
3	339° 15.9	7.8'	27°20.7	-4.7'	56.3'	114°23.3	86°57.7	79°51.0	76°56.8	$6^{\circ}17.5$	52°11.7	60°46.4	106°13.8
4	353°42.7	7.7'	27°25.4	-4.6'	56.3'	113°53.8	86°26.0	79°21.0	76°26.4	6°49.5	52°43.7	61°12.1	106°45.7
5	8°09.4	7.6'	27°30.0	-4.4'	56.3'	113°24.2	85°54.2	78°50.9	75°55.9	$7^{\circ}21.6$	53°15.7	61°37.9	107°17.7
6	22°36.1	7.5'	S 27°34.4	-4.3'	56.4'	112°54.6	85°22.4	78°20.8	75° 25.5	7°53.6	53°47.8	62°03.8	107°49.8
7	37°02.6	7.5'	27°38.7	-4.1'	56.4'	112°24.9	84°50.6	77°50.6	74°55.0	8°25.7	54°19.9	62°29.7	108°21.8
8	51°29.1	7.4'	27°42.9	-4.0'	56.4'	111°55.2	84°18.7	77°20.4	74° 24.4	8°57.9	54°52.0	62°55.8	108°53.9
9	65°55.5	7.3'	27°46.8	-3.8'	56.5'	111°25.5	83°46.9	76°50.2	73°53.9	9°30.0	55°24.2	63°21.9	109°26.0
10	80°21.8	7.2'	27°50.6	-3.7'	56.5'	110°55.8	83°14.9	76°20.0	73°23.3	10°02.2	55°56.3	63°48.1	109°58.1
11	94°48.0	7.2'	27°54.3	-3.5'	56.5'	110°26.0	82°43.0	75°49.7	72°52.7	10°34.4	56°28.6	64°14.3	110°30.3
12	109°14.2	7.1'	S 27°57.8	-3.4'	56.5'	109°56.2	82°11.0	75°19.4	72°22.1	$11^{\circ}06.7$	57°00.8	64°40.7	111°02.5
13	123°40.3	7.0'	28°01.2	-3.2'	56.6'	109°26.4	81°39.0	74°49.1	71°51.5	11°39.0	57°33.1	65°07.1	111°34.7
14	138°06.3	6.9'	28°04.4	-3.0'	56.6'	108°56.5	81°07.0	74°18.7	71°20.9	12°11.3	58°05.4	65°33.6	112°07.0
15	152°32.3	6.9'	28°07.4	-2.9'	56.6'	108°26.6	80°34.9	73°48.3	70°50.2	12°43.6	58°37.8	66°00.1	112°39.3
16	166°58.1	6.8'	28°10.3	-2.7'	56.7'	107°56.7	80°02.8	73°17.9	70° 19.5	$13^{\circ}16.0$	59°10.1	66°26.7	113°11.6
17	181°23.9	6.7'	28°13.0	-2.6'	56.7'	107°26.7	79°30.7	72°47.5	69°48.8	13°48.4	59°42.5	66°53.4	113°44.0
18	195°49.7	6.7'	S 28°15.6	-2.4'	56.7'	106°56.7	78°58.5	72°17.0	69°18.1	14°20.9	60°15.0	67°20.2	114°16.4
19	210° 15.4	6.6'	28°18.0	-2.2'	56.7'	106°26.7	78°26.3	71°46.4	68° 47.4	14°53.3	60°47.4	67°47.0	114°48.8
20	224°41.0	6.6'	28°20.3	-2.1'	56.8'	105°56.6	77°54.1	71°15.9	68° 16.6	15°25.8	61°20.0	68°13.9	115°21.2
21	239°06.5	6.5'	28°22.3	-1.9'	56.8'	105°26.6	77°21.8	70°45.3	67° 45.9	15°58.4	61°52.5	68°40.9	115°53.7
22	253°32.0	6.4'	28°24.2	-1.7'						69°07.9	116°26.2		
23	267°57.5 6.4' 28°26.0 -1.6' 56.9'					104°26.3 76°17.2 69°44.0 66°44.3 17°03.6 62°57.7 69°35.0 116°58.8							116°58.8
31 st	SD = 15.3' Mer. pass. 04:26					Sun SD = 16.0'							

h Moon (1st Apr)

Lunar Distance	(ahiacta	· wi+h	largest	hourly	ו ח	dal+a)	١
i iinar i jistance	LODIECTS	: w/ith	iargest	nouriv	11)	delta	١

n		IVIOO	n (1 Ap	r)			Lunar Distance (objects with largest hourly LD delta)						
Mon	GHA	ν	Dec	d	HP	-Sun	-Saturn	-Mars	-Fomalhaut	+Antares	+Spica	+Arcturus	+Regulus
0	282°22.9	6.3'	S 28°27.6	-1.4'	56.9'	103°56.1	75°44.9	69°13.4	66°13.5	17°36.2	63°30.3	70°02.2	117°31.3
1	296°48.2	6.3'	$28^{\circ}29.0$	-1.3'	56.9'	103°25.9	75°12.5	68°42.6	65°42.6	18°08.9	64°03.0	70°29.4	118°04.0
2	311°13.4	6.2'	28°30.2	-1.1'	57.0'	102°55.6	74°40.0	68°11.9	65°11.8	18°41.6	64°35.7	70°56.7	118°36.6
3	325°38.7	6.2'	28°31.3	-0.9'	57.0'	102°25.3	74°07.6	67°41.1	64°40.9	19° 14.3	65°08.4	71°24.0	119°09.3
4	340°03.8	6.1'	28°32.2	-0.7'	57.0'	101°55.0	73°35.1	67°10.3	64°10.0	19°47.1	65°41.2	71°51.4	119°42.0
5	354°28.9	6.1'	28°33.0	-0.6'	57.0'	101°24.6	73°02.6	66°39.4	63°39.1	20° 19.9	66°14.0	72°18.9	
6	8°54.0	6.0'	S 28°33.6	-0.4'	57.1'	100°54.3	72°30.0	66°08.5	63°08.2	20°52.8	66°46.8	72°46.4	
7	23°19.0	6.0'	28°34.0	-0.2'	57.1'	100°23.8	71°57.4	65°37.6	62°37.2	21°25.7	67°19.7	73°14.0	
8	37°44.0	5.9'	28°34.2	-0.1'	57.1'	99°53.4	71°24.8	65°06.7	62°06.3	21°58.6	67°52.6	73°41.6	
9	52°09.0	5.9'	28°34.3	0.1'	57.2'	99°22.9	70°52.1	64°35.7	61°35.3	22°31.5	68°25.6	74°09.3	
10	66°33.9	5.9'	28°34.2	0.3'	57.2'	98°52.3	70°19.4	64°04.6	61°04.4	23°04.5	68°58.5	74°37.0	
11	80°58.7	5.8'	28°33.9	0.5'	57.2'	98°21.8	69°46.7	63°33.6	60°33.4	23°37.5	69°31.6	75°04.8	
12	95°23.5	5.8'	S 28°33.4	0.6'	57.3'	97°51.2	69°13.9	63°02.5	60°02.4	24° 10.6	70°04.6	75°32.7	
13	109°48.3	5.8'	28°32.8	0.8'	57.3'	97° 20.5	68°41.1	62°31.3	59°31.4	24°43.7	70°37.7	76°00.6	
14	124°13.1	5.7'	28°32.0	1.0'	57.3'	96°49.8	68°08.2	62°00.2	59°00.4	25° 16.8	71°10.8	76°28.6	
15	138°37.8	5.7'	28°31.0	1.2'	57.4'	96° 19.1	67°35.3	61°29.0	58°29.3	25°50.0	71°44.0	76°56.6	
16	153°02.5	5.7'	28°29.9	1.3'	57.4'	95° 48.4	67°02.4	60°57.7	57°58.3	26°23.2	72°17.2	77°24.6	
17	167°27.2	5.6'	28°28.5	1.5'	57.4'	95° 17.6	66°29.5	60°26.4	57°27.2	26°56.4	72°50.4	77°52.8	
18	181°51.8	5.6'	S 28°27.0	1.7'	57.5'	94°46.8	65°56.5	59°55.1	56°56.2	27°29.7	73°23.7	78°20.9	
19	$196^{\circ}16.5$	5.6'	28°25.3	1.9'	57.5'	94°15.9	65°23.4	59°23.8	56°25.1	28°03.0	73°57.0	78°49.2	
20	210°41.1	5.6'	28°23.5	2.0'	57.5'	93°45.0	64°50.4	58°52.4	55°54.0	28°36.4	74°30.3	79°17.4	
21	225°05.7	5.6'	28°21.4	2.2'	57.6'	93°14.1	64°17.3	58°21.0	55°23.0	29°09.8	75°03.7	79°45.7	
22	239°30.2	5.6'	28° 19.2	2.4'	57.6'	92°43.1	63°44.1	57°49.5	54°51.9	29°43.2	75°37.1	80°14.1	
23	253°54.8	5.5'	28° 16.8	2.6'	57.6'	92°12.1	63°10.9	57°18.0	54°20.8	30° 16.7	76°10.6	80°42.5	
1 st	SD =	= 15.5 [']	Mer. pass	s. 05:23	;				Sun SD	0 = 16.0'			

h		Moon	ı (2 nd Ap	or)			Lunar	Distance	(object	s with larg	gest hourly L	_D delta)
Tue	CHA	1/	Dec	d	HP	-Sun	-Vonus	-Saturn	-Mars	⊥Antares	⊥Rigil Kent	+Snica	⊥ Δrcturus

Tue	GHA	ν	Dec	d	HP	-Sun	-Venus	-Saturn	-Mars	+Antares	+Rigil Kent.	+Spica	+Arcturus
0	268°19.3	5.5'	S 28°14.3	2.7'	57.7'	91°41.0	74°58.1	62°37.7	56°46.4	30°50.2	52°10.5	76°44.1	81°11.0
1	282°43.8	5.5'	$28^{\circ}11.5$	2.9'	57.7'	91°09.9	74°27.6	62°04.5	56° 14.9	31°23.7	52°31.0	77°17.6	81°39.5
2	297°08.3	5.5'	28°08.6	3.1'	57.7'	90°38.8	73°57.1	61°31.2	55°43.3	31°57.3	52°51.7	77°51.2	82°08.1
3	311°32.9	5.5'	28°05.5	3.3'	57.8'	90°07.7	73°26.5	60°57.8	55° 11.6	32°30.9	53°12.5	78°24.8	82°36.7
4	325°57.4	5.5'	28°02.2	3.5'	57.8'	89°36.5	72°56.0	60°24.5	54°39.9	33°04.6	53°33.6	78°58.5	83°05.3
5	340°21.8	5.5'	27°58.8	3.6'	57.8'	89°05.2	72°25.3	59°51.1	54°08.2	33°38.3	53°54.8	79°32.2	83°34.0
6	354°46.3	5.5'	S 27°55.2	3.8'	57.9'	88°33.9	71°54.7	59°17.6	53°36.4	34°12.0	54°16.2	80°05.9	84°02.7
7	9°10.8	5.5'	27°51.3	4.0'	57.9'	88°02.6	71°24.0	58°44.1	53°04.6	34°45.8	54°37.7	80°39.7	84°31.5
8	23°35.3	5.5'	27°47.4	4.2'	57.9'	87°31.3	70°53.2	58°10.6	52°32.7	35°19.6	54°59.4	81°13.5	85°00.3
9	37°59.8	5.5'	27°43.2	4.3'	58.0'	86°59.9	70°22.5	57°37.0	52°00.9	35°53.4	55°21.3	81°47.3	85°29.2
10	52°24.3	5.5'	27°38.8	4.5'	58.0'	86°28.4	69°51.6	57°03.4	51°28.9	36°27.3	55°43.3	82°21.2	85°58.1
11	66°48.9	5.5'	27°34.3	4.7'	58.0'	85°56.9	69°20.8	56°29.8	50°57.0	37°01.3	56°05.5	82°55.1	86°27.0
12	81°13.4	5.5'	S 27°29.6	4.9'	58.1'	85°25.4	68°49.9	55°56.1	50°25.0	37°35.2	56°27.8	83°29.1	86°56.0
13	95°37.9	5.5'	27°24.8	5.1'	58.1'	84°53.9	68°19.0	55°22.4	49°52.9	38°09.3	56°50.3	84°03.1	87°25.0
14	110°02.4	5.6'	$27^{\circ}19.7$	5.2'	58.1'	84°22.3	67°48.0	54°48.6	49°20.8	38°43.3	57°12.9	84°37.1	87°54.1
15	124°27.0	5.6'	$27^{\circ}14.5$	5.4'	58.2'	83°50.6	67°17.0	54°14.8	48°48.7	39°17.4	57°35.7	85°11.2	88°23.2
16	138°51.6	5.6'	$27^{\circ}09.1$	5.6'	58.2'	83°18.9	66°45.9	53°40.9	48°16.6	39°51.5	57°58.6	85°45.3	88°52.3
17	153°16.2	5.6'	27°03.5	5.8'	58.2'	82°47.2	66°14.8	53°07.1	47°44.3	40°25.7	58°21.7	86°19.5	89°21.5
18	167°40.8	5.6'	S 26°57.7	5.9'	58.3'	82°15.5	65°43.7	52°33.1	47° 12.1	40°59.9	58°44.9	86°53.7	89°50.7
19	182°05.4	5.7'	$26^{\circ}51.8$	6.1'	58.3'	81°43.7	65°12.5	51°59.2	46°39.8	41°34.2	59°08.3	87°28.0	90°19.9
20	196°30.1	5.7'	26°45.7	6.3'	58.3'	81°11.8	64°41.3	51°25.2	46°07.5	42°08.5	59°31.8	88°02.2	90°49.2
21	$210^{\circ}54.7$	5.7'	26°39.4	6.5'	58.4'	80°39.9	64°10.0	50°51.1	45°35.1	42°42.8	59°55.4	88°36.6	91°18.5
22	225°19.4	5.7'	26°33.0	6.6'	58.4'	80°08.0	63°38.7	50°17.0	45°02.7	43°17.2	60°19.2	89°10.9	91°47.8
23	239°44.2	5.8'	26°26.3	6.8'	58.4'	79°36.1	63°07.4	49°42.9	44°30.3	43°51.6	60°43.1	89°45.3	92°17.2
2 nd	SD =	= 15.7′	Mer. pass	. 06:22	2				Sur	SD = 16.0'			

h	Moon	(3 rd	Apr)	

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Sun	-Venus	-Saturn	-Mars	+Antares	+Rigil Kent.	+Spica	+Arcturus
0	254°08.9	5.8'	S 26°19.5	7.0'	58.5'	79°04.1	62°36.0	49°08.7	43°57.8	44°26.0	61°07.1	90°19.8	92°46.6
1	268°33.7	5.8'	26°12.6	7.1'	58.5'	78°32.0	62°04.6	48°34.5	43°25.3	45°00.5	61°31.2	90°54.3	93°16.0
2	282°58.5	5.8'	26°05.4	7.3'	58.5'	77°59.9	61°33.1	48°00.3	42°52.7	45°35.1	61°55.5	91°28.8	93°45.5
3	297°23.4	5.9'	25°58.1	7.5'	58.6'	77°27.8	61°01.6	47°26.0	42°20.1	46°09.7	62°19.9	92°03.4	94°15.0
4	311°48.2	5.9'	25°50.6	7.7'	58.6'	76°55.6	60°30.0	46°51.6	41°47.5	46°44.3	62°44.4	92°38.0	94°44.5
5	326°13.2	6.0'	25°42.9	7.8'	58.6'	76°23.4	59°58.4	46°17.3	41°14.8	47°18.9	63°09.0	93°12.7	95°14.1
6	340°38.1	6.0'	S 25°35.1	8.0'	58.7'	75°51.2	59°26.8	45°42.8	40°42.0	47°53.7	63°33.8	93°47.4	95°43.6
7	355°03.1	6.0'	25°27.1	8.2'	58.7'	75°18.9	58°55.1	45°08.4	40°09.3	48°28.4	63°58.6	94°22.1	96°13.2
8	9°28.1	6.1'	25°19.0	8.3'	58.7'	74°46.5	58°23.4	44°33.9	39°36.5	49°03.2	64°23.6	94°56.9	96°42.8
9	23°53.2	6.1'	25°10.6	8.5'	58.8'	74°14.2	57°51.7	43°59.3	39°03.6	49°38.0	64°48.7	95°31.7	97° 12.5
10	38°18.3	6.2'	25°02.1	8.7'	58.8'	73°41.7	57°19.9	43°24.8	38°30.7	50°12.9	65°13.9	96°06.6	97°42.2
11	52°43.5	6.2'	24°53.5	8.8'	58.8'	73°09.3	56°48.0	42°50.1	37°57.8	50°47.8	65°39.2	96°41.5	98°11.9
12	67°08.7	6.2'	S 24°44.6	9.0'	58.9'	72°36.8	56°16.2	42°15.5	37°24.8	51°22.8	66°04.6	97°16.4	98°41.6
13	81°33.9	6.3'	24°35.6	9.2'	58.9'	72°04.2	55°44.2	41°40.8	36°51.8	51°57.8	66°30.1	97°51.4	99°11.3
14	95°59.2	6.3'	24°26.5	9.3'	58.9'	71°31.7	55°12.3	41°06.0	36° 18.8	52°32.8	66°55.7	98°26.4	99°41.1
15	110°24.6	6.4'	24°17.2	9.5'	59.0'	70°59.0	54°40.3	40°31.2	35°45.7	53°07.9	67°21.4	99°01.5	100° 10.8
16	124°50.0	6.4'	24°07.7	9.6'	59.0'	70°26.4	54°08.2	39°56.4	35° 12.5	53°43.0	67°47.2	99°36.6	100°40.6
17	139°15.4	6.5'	23°58.1	9.8'	59.0'	69°53.7	53°36.1	39°21.5	34°39.4	54°18.2	68°13.2	100°11.8	101°10.4
18	153°40.9	6.5'	S 23°48.3	10.0'	59.1'	69°20.9	53°04.0	38°46.6	34°06.2	54°53.4	68°39.2	100°47.0	101°40.2
19	168°06.4	6.6'	23°38.3	10.1'	59.1'	68°48.1	52°31.8	38°11.7	33°32.9	55°28.6	69°05.3	101°22.2	102°10.1
20	182°32.0	6.6'	23°28.2	10.3'	59.1'	68°15.3	51°59.6	37°36.7	32°59.6	56°03.9	69°31.5	101°57.5	102°39.9
21	196°57.6	6.7'	23°17.9	10.4'	59.2'	67°42.4	51°27.4	37°01.6	32°26.3	56°39.2	69°57.8	102°32.8	103°09.8
22	211°23.3	6.7'	23°07.5	10.6'	59.2'	67°09.5	50°55.1	36°26.6	31°52.9	57°14.6	70°24.1	103°08.2	103°39.6
23	225°49.1	6.8'	22°56.9	10.7'	59.2'	66°36.5	50°22.7	35°51.5	31°19.5	57°50.0	70°50.6	103°43.6	104°09.5
3 rd	SD :	= 15.9	['] Mer. pas	s. 07:21					Su	n SD = 16.0	'		

h	Moon	(4 th	Apr))

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Sun	-Venus	-Saturn	-Mars	+Antares	+Rigil Kent.	+Spica	+Arcturus
	240°14.9	6.9'	S 22°46.2			66°03.5	49°50.4	35°16.3	30°46.0	58°25.4	71°17.2	104°19.0	104°39.4
0				10.9'	59.3'								
1	254°40.7 269°06.6	6.9'	22°35.3	11.0'	59.3'	65°30.5	49°18.0 48°45.5	34°41.1 34°05.9	30°12.6 29°39.0	59°00.9 59°36.5	71°43.8	104°54.5 105°30.0	105°09.3 105°39.2
2 3	283°32.6	7.0' 7.0'	22°24.3 22°13.1	11.2' 11.3'	59.3' 59.4'	64°57.4 64°24.3	48° 45.5 48° 13.0	34 05.9 33°30.6	29°39.0	60°12.0	72°10.5 72°37.3	105 30.0 106°05.6	105 39.2 106°09.1
4	203 32.0 297°58.6	7.0 7.1'	22°01.8	11.5'	59.4 59.4'	63°51.1	46 13.0 47°40.5	32°55.3	29 05.5 28°31.9	60°47.6	73°04.2	106°05.0	106°39.0
5	312°24.7	7.1	21°50.3	11.6'	59.4'	63°17.9	47° 07.9	32°19.9	27°58.2	61°23.3	73°31.2	100°41.2 107°16.8	100 39.0 107°08.9
6	326°50.8	7.2'	S 21°38.6	11.8'	59.5'	62°44.7	46°35.3	31°44.5	27°24.5	61°59.0	73°58.2	107°52.5	107°38.8
7	341°17.0	7.2'	21°26.9	11.9'	59.5'	62°11.4	46°02.6	31°09.1	26°50.8	62°34.7	74°25.3	108°28.2	108°08.7
8	355°43.2	7.3'	21°15.0	12.1'	59.5'	61°38.1	45°29.9	30°33.6	26°17.1	63°10.5	74°52.5	109°04.0	108°38.6
9	10°09.5	7.4'	21°02.9	12.2'	59.6'	61°04.7	44°57.2	29°58.1	25°43.3	63°46.3	75° 19.8	109°39.8	109°08.5
10	24°35.9	7.4'	20°50.7	12.3'	59.6'	60°31.3	44°24.4	29°22.5	25°09.4	64°22.2	75°47.1	110°15.7	109°38.4
11	39°02.3	7.5'	20°38.4	12.5'	59.6'	59°57.9	43°51.6	28°46.9	24°35.6	64°58.1	76°14.5	110°51.5	110°08.3
12	53°28.8	7.5'	S 20°25.9	12.6'	59.6'	59°24.4	43° 18.7	28°11.3	24°01.7	65°34.0	76°42.0	111°27.5	110°38.2
13	67°55.3	7.6'	20° 13.3	12.7'	59.7'	58° 50.9	42°45.8	27°35.6	23°27.7	66°10.0	77°09.5	112°03.4	111°08.0
14	82°21.9	7.7'	20°00.5	12.9'	59.7'	58° 17.3	42°12.9	26°59.9	22°53.8	66°46.0	77°37.2	112°39.4	111°37.9
15	96°48.6	7.7'	19° 47.7	13.0'	59.7'	57°43.7	41°39.9	26°24.2	22°19.8	67°22.0	78°04.8	113°15.5	112°07.7
16	111°15.3	7.8'	19°34.6	13.1'	59.8'	57°10.1	41°06.9	25°48.4	21°45.7	67°58.1	78°32.6	113°51.6	112°37.5
17	125°42.0	7.8'	19°21.5	13.3'	59.8'	56°36.4	40°33.8	25°12.6	21°11.7	68°34.3	79°00.4	114°27.7	113°07.3
18	140°08.9	7.9'	S 19°08.2	13.4'	59.8'	56°02.7	40°00.7	24°36.7	20°37.6	69°10.4	79°28.2	115°03.8	113°37.1
19	154°35.8	7.9'	$18^{\circ}54.8$	13.5'	59.9'	55°28.9	39°27.6	24°00.8	20°03.4	69°46.6	79°56.1	115°40.0	114°06.9
20	169°02.7	8.0'	18°41.3	13.7'	59.9'	54°55.1	38° 54.4	23°24.9	19°29.3	70°22.9	80°24.1	116°16.3	114°36.6
21	183°29.7	8.1'	$18^{\circ}27.6$	13.8'	59.9'	54°21.3	38°21.2	22°48.9	18°55.1	70°59.2	80°52.1	116°52.5	115°06.3
22	197°56.8	8.1'	18° 13.9	13.9'	59.9'	53°47.4	37°48.0	22°12.9	18°20.9	71°35.5	81°20.2	117°28.9	115°36.0
23	212°23.9	8.2'	18°00.0	14.0'	60.0'	53° 13.5	37°14.7	21°36.9	17°46.6	72°11.9	81°48.3	118°05.2	116°05.6
4 th	SD	= 16.2'	Mer. pas	s. 08:18	3				Su	n SD = 16.0	′		

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Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Sun	-Venus	-Saturn	-Mars	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	226°51.0	8.2'	S 17°45.9	14.1'	60.0'	52°39.6	36°41.4	21°00.8	17° 12.3	72°48.2	82°16.5	116°35.2	118°41.6
1	241°18.3	8.3'	17°31.8	14.3'	60.0'	52°05.6	36°08.0	20°24.7	16°38.0	73°24.7	82°44.7	117°04.8	119°18.0
2	255°45.6	8.3'	$17^{\circ}17.5$	14.4'	60.1'	51°31.6	35°34.6	19°48.6	16°03.7	74°01.1	83°13.0	117°34.3	119°54.5
3	270°12.9	8.4'	$17^{\circ}03.2$	14.5'	60.1'	50°57.5	35°01.2	19°12.4	15°29.4	74°37.6	83°41.3	118°03.8	
4	284°40.3	8.5'	16°48.7	14.6'	60.1'	50°23.4	34°27.7	18°36.2	14°55.0	75° 14.2	84°09.7	118°33.3	
5	299°07.8	8.5'	$16^{\circ}34.1$	14.7'	60.1'	49°49.3	33°54.2	17°59.9	14°20.6	75°50.8	84°38.1	119°02.7	
6	313°35.3	8.6'	S 16°19.4	14.8'	60.2'	49°15.1	33°20.7	17°23.7	13°46.2	76°27.4	85°06.6	119°32.1	
7	328°02.8	8.6'	$16^{\circ}04.5$	14.9'	60.2'	48°40.9	32°47.1	16°47.4	13° 11.8	77°04.0	85°35.1		İ
8	342°30.5	8.7'	15°49.6	15.0'	60.2'	48°06.7	32°13.5	16°11.1	12°37.4	77°40.7	86°03.6		
9	356°58.1	8.7'	15°34.6	15.1'	60.2'	47°32.5	31°39.9	15°34.7	12°03.0	78° 17.4	86°32.2		
10	11°25.8	8.8'	$15^{\circ}19.4$	15.2'	60.3'	46°58.2	31°06.2	14°58.3	11°28.6	78° 54.2	87°00.8		
11	25°53.6	8.8'	$15^{\circ}04.2$	15.3'	60.3'	46°23.8	30°32.5	14°21.9	10°54.2	79°30.9	87°29.4		
12	40°21.5	8.9'	S 14°48.8	15.4'	60.3'	45°49.5	29°58.7	13°45.5	10° 19.8	80°07.8	87°58.1		
13	54°49.3	8.9'	14°33.4	15.5'	60.3'	45°15.1	29°25.0	13°09.0	9°45.5	80°44.6	88°26.8		İ
14	69°17.3	9.0'	14°17.8	15.6'	60.4'	44°40.6	28°51.2	12°32.6	9°11.1	81°21.5	88°55.5		
15	83°45.2	9.0'	14°02.2	15.7'	60.4'	44°06.2	28°17.3	11°56.1	8°36.9	81°58.4	89°24.3		
16	98°13.3	9.1'	13°46.5	15.8'	60.4'	43°31.7	27°43.5	11°19.6	8°02.7	82°35.3	89°53.1		
17	112°41.4	9.1'	13°30.6	15.9'	60.4'	42°57.2	27°09.6	10°43.0	7°28.6	83°12.3	90°21.9		
18	127°09.5	9.2'	S 13°14.7	16.0'	60.5'	42°22.6	26°35.6	10°06.5	6°54.6	83°49.3	90°50.7		
19	141°37.7	9.2'	12°58.7	16.1'	60.5'	41°48.0	26°01.7	9°30.0	6°20.7	84°26.4	91°19.6		
20	156°05.9	9.3'	12°42.6	16.2'	60.5'	41°13.4	25°27.7	8°53.4	5°47.1	85°03.4	91°48.5		
21	170°34.1	9.3'	12°26.4	16.3'	60.5'	40°38.8	24°53.7	8°16.9	5° 13.9	85°40.5	92°17.4		
22	185°02.5	9.4'	$12^{\circ}10.2$	16.4'	60.5'	40°04.1	24°19.6	7°40.4	4°41.0	86° 17.6	92°46.3		
23	199°30.8	9.4'	11°53.8	16.4'	60.6'		23°45.6	7°03.9	4°08.7	86°54.8	93°15.2		
5 th	SD	= 16.4	Mer. pas	s. 09:13					Su	n SD = 16.0	,		

h Moon (6th Apr)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Venus	±Saturn	± Mars	+Fomalhaut	+Altair	+Antares	+Rigil Kent.	+Hadar
0	213°59.2	9.4'	S 11°37.4	16.5'	60.6'	23°11.5	6°27.5	3°37.4		47°15.3	87°32.0	93°44.1	97°31.2
1	228°27.6	9.5'	11°20.9	16.6'	60.6'	22°37.3	5°51.1			47°39.2	88°09.2	94°13.1	97°59.2
2	242°56.1	9.5'	11°04.3	16.7'	60.6'	22°03.2	5°14.9			48°03.4	88°46.4	94°42.1	98°27.2
3	257°24.6	9.6'	10°47.6	16.7'	60.6'	21°29.0	4°38.8			48°27.7	89°23.7	95°11.0	98°55.2
4	271°53.2	9.6'	10°30.9	16.8'	60.7'	20°54.8	4°03.0			48°52.3	90°01.0	95°40.0	99°23.2
5	286°21.8	9.6'	$10^{\circ}14.1$	16.9'	60.7'	20°20.5	3°27.5			49°17.1	90°38.3	96°09.0	99°51.2
6	300°50.4	9.7'	S 09°57.2	16.9'	60.7'	19°46.3	2°52.7			49°42.1	91°15.6	96°37.9	100°19.1
7	315°19.1	9.7'	09°40.3	17.0'	60.7'	19°12.0			19°49.4	50°07.3	91°53.0	97°06.9	100°47.1
8	329°47.8	9.7'	09°23.2	17.1'	60.7'	18°37.7			20°06.9	50°32.8	92°30.3	97°35.9	101°15.0
9	344°16.5	9.8'	09°06.2	17.1'	60.8'	18°03.4			20°25.2	50°58.4	93°07.8	98°04.9	101°43.0
10	358°45.3	9.8'	08°49.0	17.2'	60.8'	17°29.0			20°44.3	51°24.2	93°45.2	98°33.8	102°10.9
11	13°14.1	9.8'	08°31.8	17.3'	60.8'	16°54.6			21°04.2	51°50.2	94°22.6	99°02.8	102°38.7
12	27°43.0	9.9'	S 08°14.6	17.3'	60.8'	16°20.2			21°24.9	52°16.3	95°00.1	99°31.7	103°06.6
13	42°11.8	9.9'	07°57.3	17.4'	60.8'	15°45.8		4°50.5	21°46.3	52°42.7	95°37.6	100°00.7	103°34.4
14	56°40.7	9.9'	$07^{\circ}39.9$	17.4'	60.8'	15°11.4		5°23.9	22°08.4	53°09.2	96°15.1	100°29.6	104°02.2
15	71°09.7	10.0'	07°22.5	17.5'	60.8'	14°36.9		5°57.7	22°31.1	53°35.9	96°52.7	100°58.5	104°30.0
16	85°38.6	10.0'	07°05.0	17.5'	60.9'	14°02.5	3°41.6	6°31.9	22°54.5	54°02.7	97°30.2	101°27.4	104°57.7
17	100°07.6	10.0'	06°47.5	17.6'	60.9'	13°28.0	4°17.5	7°06.3	23°18.5	54°29.7	98°07.8	101°56.3	105°25.4
18	114°36.6	10.0'	S 06°30.0	17.6'	60.9'	12°53.5	4°53.8	7°40.9	23°43.1	54°56.9	98°45.4	102°25.1	105°53.1
19	129°05.6	10.0'	$06^{\circ}12.3$	17.6'	60.9'	12°19.0	5°30.3	8° 15.7	24°08.1	55°24.2	99°23.0	102°54.0	106°20.7
20	143°34.7	10.1'	05°54.7	17.7'	60.9'	11°44.4	6°07.0	8°50.6	24° 33.7	55°51.7	100°00.6	103°22.8	106°48.3
21	158°03.7	10.1'	05°37.0	17.7'	60.9'	11°09.9	6°43.8	9°25.7	24°59.8	56°19.3	100°38.3	103°51.5	107°15.8
22	172°32.8	10.1'	05°19.3	17.8'	60.9'	10°35.3	7°20.8	10°00.8	25°26.4	56°47.0	101°15.9	104°20.3	107°43.3
23	187°01.9	10.1'	05°01.5	17.8'	60.9'	10°00.7	7°57.8	10°36.0	25°53.4	57°14.9	101°53.6	104°49.0	108°10.7
6 th	SD	= 16.5'	Mer. pass	s. 10:05									

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

			(1 7 1 7 1						0 (00)0000				
Sun	GHA	ν	Dec	d	HP	±Venus	+Saturn	+Mars	+Fomalhaut	+Altair	+Antares	+Rigil Kent.	+Hadar
0	201°31.0	10.1'	S 04°43.7	17.8'	60.9'	9°26.1	8°34.9	11°11.3	26°20.8	57°42.9	102°31.3	105°17.6	108°38.1
1	216°00.2	10.2'	04°25.9	17.9'	61.0'	8°51.5	9°12.0	11°46.6	26°48.6	58°11.0	103°09.0	105°46.3	109°05.4
2	230°29.3	10.2'	04°08.0	17.9'	61.0'	8° 16.9	9°49.2	12°22.0	27°16.8	58°39.2	103°46.7	106° 14.9	109°32.6
3	244°58.5	10.2'	$03^{\circ}50.1$	17.9'	61.0'	7°42.3	10°26.5	12°57.4	27°45.3	59°07.6	104°24.4	106°43.4	109°59.8
4	259°27.7	10.2'	03°32.2	17.9'	61.0'	7°07.7	11°03.7	13°32.9	28°14.2	59°36.1	105°02.2	107° 11.9	110°27.0
5	273°56.9	10.2'	03°14.2	18.0'	61.0'	6°33.0	11°41.0	14°08.4	28°43.4	60°04.7	105°39.9	107°40.4	110°54.0
6	288°26.1	10.2'	S 02°56.3	18.0'	61.0'	5°58.4	12°18.4	14°43.9	29°12.9	60°33.4	106° 17.7	108° 08.8	111°21.0
7	302°55.3	10.2'	02°38.3	18.0'	61.0'	5°23.8	12°55.7	$15^{\circ}19.5$	29°42.7	61°02.2	106°55.4	108° 37.2	111°47.9
8	317°24.5	10.2'	02°20.3	18.0'	61.0'	4°49.1	13°33.1	$15^{\circ}55.1$	30°12.8	61°31.1	107°33.2	109°05.5	112°14.8
9	331°53.8	10.2'	02°02.3	18.0'	61.0'	4° 14.5	$14^{\circ}10.5$	16°30.8	30°43.1	62°00.1	108°11.0	109°33.7	112°41.6
10	346°23.0	10.2'	$01^{\circ}44.2$	18.1'	61.0'	3°39.9	14°47.9	17°06.4	31°13.7	62°29.2	108°48.8	110°01.9	113°08.3
11	0°52.2	10.2'	$01^{\circ}26.2$	18.1'	61.0'	3°05.4	15°25.4	17°42.1	31°44.6	62°58.4	109°26.6	110°30.1	113°34.9
12	15°21.5	10.2'	S 01°08.1	18.1'	61.0'	2°30.9	16°02.8	18°17.8	32°15.6	63°27.7	110°04.4	110°58.1	114°01.4
13	29°50.7	10.2'	00°50.0	18.1'	61.0'	1°56.6	16°40.3	18°53.5	32°46.9	63°57.1	110°42.2	111°26.1	114°27.8
14	44°20.0	10.2'	00°31.9	18.1'	61.0'	1°22.6	$17^{\circ}17.7$	19°29.2	33°18.4	64°26.6	111°20.0	111°54.0	114°54.1
15	58°49.2	10.2'	S 00°13.8	18.1'	61.0'		17°55.2	20°04.9	33°50.1	64°56.1	111°57.9	112°21.9	115°20.4
16	73°18.5	10.2'	N 00°04.2	18.1'	61.0'		18°32.7	20°40.7	34°21.9	65°25.7	112°35.7	112°49.7	115°46.5
17	87°47.7	10.2'	00°22.3	18.1'	61.0'		19°10.2	21°16.4	34°54.0	65°55.4	113° 13.5	113° 17.4	116°12.5
18	102°16.9	10.2'	N 00°40.4	18.1'	61.0'		19°47.7	21°52.2	35°26.2	66°25.2	113°51.3	113° 45.0	116°38.4
19	116°46.2	10.2'	00°58.5	18.1'	61.0'		20°25.2	22°28.0	35°58.5	66°55.0	114°29.2	114° 12.5	117°04.3
20	131°15.4	10.2'	$01^{\circ}16.6$	18.1'	61.0'	2°10.1	21°02.7	23°03.8	36°31.1	67°24.9	115°07.0	114°39.9	117°30.0
21	145°44.6	10.2'	$01^{\circ}34.7$	18.1'	61.0'	2°44.6	21°40.2	23°39.6	37°03.7	67°54.9	115°44.8	115°07.3	117°55.5
22	160°13.8	10.2'	$01^{\circ}52.7$	18.1'	61.0'	3°19.1	22°17.7	24°15.3	37°36.5	68°24.9	116°22.7	115°34.5	118°21.0
23	174°43.0	10.2'	02°10.8	18.0'	61.0'	3°53.7	22°55.2	24°51.1	38°09.5	68°55.0	117°00.5	116°01.7	118°46.3
7 th	SD	= 16.6'	Mer. pass	. 10:56									

h		Моо	n (8 th Ap	r)			Lunar	Distanc	e (objects w	ith large	st hourly LD) delta)
Mon	GHA	ν	Dec	d	HP	+Venus	+Saturn	+Mars	+Fomalhaut	+Altair	+Rigil Kent.	+Antares
0	189°12 2	10 2'	N02°28.8	18 0'	61.0'	4°28.3	23°32 8	25°26.9	38°42.5	69°25.2	116°28.8	117°38 3

			200		• • • •	1 7 011415	10000000	1111415	Tomamaar	170000	Trugii rtonti	1711164165	111444
0	189°12.2	10.2'	N 02°28.8	18.0'	61.0'	4°28.3	23°32.8	25°26.9	38°42.5	69°25.2	116°28.8	117°38.3	119°11.5
1	203°41.4	10.2'	02°46.8	18.0'	61.0'	5°03.0	24°10.3	26°02.7	39°15.7	69°55.4	116°55.7	118°16.1	119°36.6
2	218°10.6	10.1'	03°04.8	18.0'	61.0'		· —	<u> </u>					•
3	232°39.7	10.1'	03°22.8	18.0'	61.0'								
4	247°08.8	10.1'	03°40.8	17.9'	61.0'		_						
5	261°38.0	10.1'	03°58.7	17.9'	61.0'		_		New	Moon —			
6	276°07.1	10.1'	N04° 16.6	17.9'	61.0'				New	Moon —			
7	290°36.1	10.1'	04°34.5	17.9'	61.0'								
8	305°05.2	10.0'	04°52.4	17.8'	61.0'				New	Moon —			
9	319°34.2	10.0'	05° 10.2	17.8'	61.0'								
10	334°03.2	10.0'	05°28.0	17.8'	61.0'								
11	348°32.2	10.0'	05°45.8	17.7'	60.9'								
12	3°01.2	9.9'	N06°03.5	17.7'	60.9'								
13	17°30.1	9.9'	06°21.2	17.6'	60.9'				New	Moon —			
14	31°59.1	9.9'	06°38.8	17.6'	60.9'								
15	46°27.9	9.9'	06° 56.4	17.5'	60.9'								
16	60°56.8	9.8'	07° 13.9	17.5'	60.9'								
17	75°25.6	9.8'	07°31.4	17.4	60.9'				New	Moon —			
18	89°54.4	9.8'	N 07°48.9	17.4	60.9'								
19	104°23.2	9.7'	08°06.3	17.3	60.9								
20	118°51.9	9.7'	08°23.6	17.3	60.8								
21	133°20.6	9.7'	08°40.9	17.2'	60.8'								
22	147°49.2	9.6'	08°58.2	17.2	60.8				New	Moon —			
23	162°17.9	9.6'	09°15.3	17.1	60.8'								
8 th									11011				
8	SD	= 16.6'	Mer. pass	s. 11:47									

+Hadar

h Moon (9th Apr)

Tue	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran	-Jupiter	+Achernar
0	176°46.4	9.5'	N 09°32.4	17.0'	60.8'				New	Moon ——			
1	191°15.0	9.5'	09°49.5	17.0'	60.8'				New	Moon ——			
2	205°43.5	9.5'	10°06.4	16.9'	60.7'				New	Moon ——			
3	220°11.9	9.4'	10°23.4	16.8'	60.7'				New	Moon ——			
4	234°40.4	9.4'	10°40.2	16.8'	60.7'								
5	249°08.7	9.3'	$10^{\circ}57.0$	16.7'	60.7'				New	Moon ——			
6	263°37.1	9.3'	N11°13.7	16.6'	60.7'				New	Moon ——			
7	278°05.4	9.2'	11°30.3	16.5'	60.7'								
8	292°33.6	9.2'	11°46.8	16.5'	60.6'				New	Moon ——			
9	307°01.8	9.2'	12°03.3	16.4'	60.6'								
10	321°30.0	9.1'	$12^{\circ}19.7$	16.3'	60.6'								
11	335°58.1	9.1'	12°36.0	16.2'	60.6'				New	Moon ——			
12	350°26.2	9.0'	N 12°52.2	16.1'	60.6'	119°46.0	86°16.9	83°03.7	60°29.6	54°38.7	40°16.5	18°57.1	70°02.0
13	4°54.2	9.0'	13°08.3	16.0'	60.5'	119°08.9	85°42.2	82°26.4	59°55.8	54°04.3	39°40.6	18°21.2	70°19.3
14	19°22.1	8.9'	13°24.3	15.9'	60.5'	118°31.8	85°07.5	81°49.2	59°21.9	53°29.9	39°04.8	17°45.3	70°36.6
15	33°50.1	8.9'	13°40.3	15.9'	60.5'	117°54.7	84°32.9	81°12.1	58°48.2	52°55.6	38°29.0	17°09.6	70°54.1
16	48°17.9	8.8'	$13^{\circ}56.1$	15.8'	60.5'	117°17.6	83°58.3	80°34.9	58°14.5	52°21.4	37°53.2	16°33.9	71°11.7
17	62°45.7	8.8'	$14^{\circ}11.9$	15.7'	60.4	116°40.5	83°23.7	79°57.8	57°40.9	51°47.2	37°17.6	15°58.4	71°29.3
18	77°13.5	8.7'	N14°27.6	15.6'	60.4'	116°03.5	82°49.2	79°20.8	57°07.4	51°13.2	36°42.0	15°22.9	71°47.1
19	91°41.2	8.7'	14°43.1	15.5'	60.4'	115°26.5	82°14.7	78°43.7	56°33.9	50°39.2	36°06.5	14°47.6	72°04.9
20	106°08.9	8.6'	14°58.6	15.4'	60.4'	114°49.6	81°40.2	78°06.7	56°00.5	50°05.2	35°31.1	14°12.4	72°22.8
21	120°36.5	8.6'	15°14.0	15.3'	60.3'	114° 12.7	81°05.8	77° 29.7	55°27.2	49°31.4	34°55.7	13°37.3	72°40.8
22	135°04.0	8.5'	15°29.2	15.2'	60.3'	113°35.8	80°31.4	76°52.8	54°54.0	48°57.7	34°20.4	13°02.4	72°58.9
23	149°31.5	8.4'	15°44.4	15.0'	60.3'	112°58.9	79°57.1	76° 15.8	54°20.9	48°24.0	33°45.2	12°27.6	73°17.1
9 th	SD	= 16.6	′ Mer. pas	s. 12:40	1								

n Woon (10" Apr) Lunar Distance (opiects with largest nourly LD de	h	Moon (10 th Apr)	Lunar Distance (objects with largest hourly LD delt
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Wed	GHA	ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran	-Jupiter	+Achernar
0	163°59.0	8.4'	N15°59.4	14.9'	60.3'	112°22.1	79°22.8	75°39.0	53°47.8	47°50.4	33°10.1	11°53.1	73°35.3
1	178°26.4	8.3'	16°14.4	14.8'	60.2'	111°45.3	78°48.5	75°02.1	53°14.8	47°17.0	32°35.1	11°18.7	73°53.6
2	192°53.7	8.3'	16°29.2	14.7'	60.2'	111°08.6	78°14.3	74°25.3	52°42.0	46°43.6	32°00.2	10°44.6	74°11.9
3	207°21.0	8.2'	16°43.9	14.6'	60.2'	110°31.9	77°40.1	73°48.5	52°09.2	46°10.3	31°25.4	10°10.8	74°30.4
4	221°48.2	8.2'	16°58.5	14.5'	60.1'	109°55.2	77°06.0	73°11.8	51°36.5	45°37.1	30°50.6	9°37.3	74°48.9
5	236°15.4	8.1'	$17^{\circ}13.0$	14.4'	60.1'	109°18.5	76°31.9	72°35.1	51°03.9	45°04.1	30°16.0	9°04.2	75°07.4
6	250°42.5	8.1'	$N17^{\circ}27.4$	14.3'	60.1'	108°41.9	75°57.9	71°58.4	50°31.4	44°31.1	29°41.5	8°31.6	75°26.0
7	265°09.6	8.0'	$17^{\circ}41.6$	14.1'	60.1'	108°05.3	75°23.9	71°21.8	49°59.1	43°58.2	29°07.1	7°59.4	75°44.7
8	279°36.6	7.9'	17°55.8	14.0'	60.0'	107°28.8	74°49.9	70°45.2	49° 26.8	43°25.5	28°32.9	7°27.9	76°03.4
9	294°03.5	7.9'	18°09.8	13.9'	60.0'	106°52.3	74°16.1	70°08.7	48° 54.6	42°52.9	27°58.7	6°57.2	76°22.2
10	308°30.4	7.8'	18°23.7	13.8'	60.0'	106°15.8	73°42.2	69°32.1	48°22.6	42°20.4	27°24.7	6°27.3	76°41.0
11	322°57.2	7.8'	18°37.4	13.6'	59.9'	105°39.4	73°08.4	68°55.7	47°50.6	41°48.0	26°50.9		76°59.9
12	337°24.0	7.7'	$N18^{\circ}51.0$	13.5'	59.9'	105°03.0	72°34.7	68°19.2	47° 18.8	41°15.8	26°17.1		77°18.8
13	351°50.7	7.7'	19°04.5	13.4'	59.9'	104°26.7	72°01.0	67°42.8	46°47.1	40°43.7	25°43.6		77°37.7
14	6°17.4	7.6'	19° 17.9	13.2'	59.8'	103°50.4	71°27.4	67°06.5	46° 15.5	40°11.7	25°10.2		77°56.7
15	20°44.0	7.5'	19°31.2	13.1'	59.8'	103°14.1	70°53.9	66°30.2	45°44.1	39°39.8	24°36.9		78°15.8
16	35°10.5	7.5'	19°44.3	13.0'	59.8'	102°37.9	70°20.4	65°53.9	45°12.8	39°08.1	24°03.8		78°34.8
17	49°37.0	7.4'	19°57.2	12.8'	59.7'	102°01.7	69°46.9	65°17.7	44°41.6	38°36.6	23°31.0		78°54.0
18	64°03.4	7.4'	$N20^{\circ}10.1$	12.7'	59.7'	101°25.6	69°13.5	64°41.5	44°10.5	38°05.2	22°58.3		79°13.1
19	78°29.8	7.3'	20°22.8	12.6'	59.7'	100°49.5	68°40.2	64°05.4	43°39.6	37°34.0	22°25.8		79°32.3
20	92°56.1	7.3'	20°35.3	12.4'	59.6'	100°13.5	68°06.9	63°29.3	43°08.8	37°02.9	21°53.5		79°51.4
21	107°22.4	7.2'	20°47.8	12.3'	59.6'	99°37.5	67°33.7	62°53.2	42°38.2	36°32.0	21°21.5		80°10.7
22	121°48.6	7.2'	$21^{\circ}00.1$	12.1'	59.6'	99°01.5	67°00.6	62°17.2	42°07.8	36°01.3	20°49.7		80°29.9
23	136°14.8	7.1'	21°12.2	12.0'	59.5'	98°25.6	66°27.5	61°41.2	41°37.4	35°30.7	20°18.2		80°49.2
10 th	SD	= 16.4'	Mer. pas	s. 13:34									

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I_	Moon (11 th Apr)	Lunar Distance (objects with largest hourly LD delta)
n	MOOD LII ADEL	I linar i listance i oniects with largest nollriv i i l'heita i

T1	GHA				LID	Damilia	D	D-II	C	Aldelesses	1 1	1 5	1 A -l
Thu		ν	Dec	d	HP	-Regulus	-Procyon	-Pollux	-Capella	-Aldebaran	+Jupiter	+Sun	+Achernar
0	150°40.9	7.0'	N21°24.2	11.8'	59.5'	97°49.7	65°54.5	61°05.3	35°00.4	19°47.0			81°08.5
1	165°06.9	7.0'	21°36.0	11.7'	59.5'	97°13.9	65°21.6	60°29.4	34°30.2	19°16.1			81°27.8
2	179°32.9	6.9'	21°47.7	11.6'	59.4'	96°38.1	64°48.7	59°53.6	34°00.2	18°45.4			81°47.1
3	193°58.8	6.9'	21°59.3	11.4'	59.4'	96°02.3	64°15.9	59° 17.8	33°30.5	18°15.2			82°06.4
4	208°24.7	6.8'	22°10.7	11.3'	59.4'	95°26.6	63°43.2	58°42.0	33°00.9	17°45.3			82°25.8
5	222°50.6	6.8'	22°21.9	11.1'	59.3'	94°51.0	63°10.5	58°06.3	32°31.6	17°15.8			82°45.1
6	237°16.3	6.7'	N22°33.0	10.9'	59.3'	94°15.4	62°37.9	57°30.7	32°02.5	16°46.7	7°33.8		83°04.5
7	251°42.1	6.7'	22°44.0	10.8'	59.3'	93°39.8	62°05.4	56°55.1	31°33.7	16°18.1	8°04.5		83°23.8
8	266°07.8	6.6'	22°54.8	10.6'	59.2'	93°04.3	61°33.0	56° 19.5	31°05.1	15°50.0	8°35.8		83°43.2
9	280°33.4	6.6'	23°05.4	10.5'	59.2'	92°28.8	61°00.6	55°44.0	30°36.7	15°22.4	9°07.5		84°02.6
10	294°59.0	6.5'	23°15.9	10.3'	59.1'	91°53.4	60°28.3	55°08.5	30°08.6	14°55.4	9°39.5		84°22.0
11	309°24.5	6.5'	23°26.2	10.2'	59.1'	91°18.0	59°56.1	54°33.1	29°40.8	14°29.0	10°11.8		84°41.3
12	323°50.0	6.4'	N23°36.4	10.0'	59.1'	90°42.7	59°24.0	53°57.8	29° 13.3	14°03.4	10°44.3		85°00.7
13	338°15.5	6.4'	23°46.4	9.8'	59.0'	90°07.4	58°52.0	53°22.4	28°46.0	13°38.4	11°17.0		85°20.1
14	352°40.9	6.4'	23°56.2	9.7'	59.0'	89°32.2	58°20.0	52°47.2	28° 19.1	13°14.3	11°49.8		85°39.5
15	7°06.2	6.3'	24°05.9	9.5'	59.0'	88° 57.0	57°48.1	52°11.9	27°52.5	12°51.0	12°22.8		85°58.8
16	21°31.6	6.3'	24°15.4	9.4'	58.9'	88°21.8	57°16.3	51°36.7	27°26.3	12°28.7	12°55.8		86°18.2
17	35°56.8	6.2'	24°24.8	9.2'	58.9'	87°46.7	56° 44.6	51°01.6	27°00.3		13°29.0	40°13.6	86°37.5
18	50°22.1	6.2'	N24°34.0	9.0'	58.8'	87° 11.7	56° 13.0	50°26.5	26°34.8		14°02.2	40°46.2	86°56.8
19	64°47.3	6.2'	24°43.0	8.9'	58.8'	86°36.7	55°41.5	49°51.5	26°09.6		14°35.5	41°18.8	87°16.2
20	79°12.4	6.1'	24°51.9	8.7'	58.8'	86°01.7	55°10.0	49° 16.5	25°44.8		15°08.8	41°51.4	87°35.5
21	93°37.5	6.1'	25°00.6	8.5'	58.7'	85°26.8	54°38.7	48°41.6	25°20.4		15°42.1	42°23.9	87°54.7
22	108°02.6	6.1'	25°09.1	8.4'	58.7'	84°52.0	54°07.4	48°06.7	24°56.5		16°15.5	42°56.4	88°14.0
23	122°27.7	6.0'	$25^{\circ}17.5$	8.2'	58.7'	84° 17.2	53°36.2	47°31.8	24°33.0		16°48.9	43°28.8	88°33.3
11 th	SD = 16.2′ Mer. pass. 14:30 Sun SD = 15.9′												

h	Moon	(12 th	Apr)	

Lunar Distance (objects with largest hourly LD delta) -Regulus -Procyon -Pollux +Aldebaran +Jupiter +Sun +Ache

Fri	GHA	ν	Dec	d	HP	-Arcturus	-Regulus	-Procyon	-Pollux	+Aldebaran	+Jupiter	+Sun	+Achernar
0	136°52.7	6.0'	N25°25.7	8.0'	58.6'		83°42.4	53°05.2	46°57.0		17°22.3	44°01.2	88°52.5
1	151°17.7	6.0'	25°33.7	7.9'	58.6'		83°07.7	52°34.2	46°22.3		17°55.7	44°33.5	89°11.7
2	165°42.7	5.9'	25°41.5	7.7'	58.5'		82°33.1	52°03.3	45°47.6		18°29.1	45°05.7	89°30.9
3	180°07.6	5.9'	25°49.2	7.5'	58.5'		$81^{\circ}58.5$	51°32.6	45°13.0		19°02.5	45°38.0	89°50.0
4	194°32.5	5.9'	25°56.7	7.3'	58.5'		81°23.9	51°01.9	44°38.4		19°35.9	46°10.1	90°09.2
5	208°57.4	5.9'	$26^{\circ}04.1$	7.2'	58.4'		80°49.4	50°31.3	44°03.8		20°09.3	46°42.3	90°28.3
6	223°22.2	5.8'	$N26^{\circ}11.2$	7.0'	58.4'		$80^{\circ}14.9$	50°00.9	43°29.3		20°42.6	47°14.3	90°47.3
7	237°47.1	5.8'	26°18.2	6.8'	58.3'		79°40.5	49°30.5	42°54.9		21°16.0	47°46.4	91°06.4
8	252°11.9	5.8'	26°25.0	6.6'	58.3'		79°06.2	49°00.3	42°20.5		21°49.3	48°18.3	91°25.4
9	266°36.7	5.8'	26°31.7	6.5'	58.3'		78°31.8	48°30.2	41°46.1		22°22.6	48°50.3	91°44.4
10	281°01.4	5.8'	26°38.1	6.3'	58.2'		77°57.6	48°00.2	41°11.8		22°55.9	49°22.2	92°03.3
11	295°26.2	5.7'	26°44.4	6.1'	58.2'		77°23.4	47°30.3	40°37.6		23°29.1	49°54.0	92°22.2
12	309°50.9	5.7'	N26°50.5	5.9'	58.1'		76°49.2	47°00.5	40°03.4		24°02.3	50°25.8	92°41.1
13	324°15.7	5.7'	26°56.5	5.8'	58.1'		$76^{\circ}15.1$	46°30.8	39°29.2		24°35.5	50°57.5	92°59.9
14	338°40.4	5.7'	27°02.3	5.6'	58.1'		75°41.0	46°01.3	38°55.1		25°08.7	51°29.2	93°18.7
15	353°05.1	5.7'	27°07.8	5.4'	58.0'		75°07.0	45°31.9	38°21.1		25°41.8	52°00.8	93°37.5
16	7°29.8	5.7'	27°13.3	5.2'	58.0'	119°51.4	74°33.0	45°02.6	37°47.1		26°14.9	52°32.4	93°56.2
17	21°54.5	5.7'	$27^{\circ}18.5$	5.1'	57.9'	119°24.2	73°59.1	44°33.4	37°13.1		26°47.9	53°03.9	94°14.8
18	36°19.2	5.7'	N27°23.6	4.9'	57.9'	118°57.0	73°25.3	44°04.4	36°39.2		27°21.0	53°35.4	94°33.5
19	50°43.9	5.7'	27°28.4	4.7'	57.9'	118°29.7	$72^{\circ}51.4$	43°35.5	36°05.4		27°54.0	54°06.9	94°52.0
20	65°08.5	5.7'	27°33.1	4.5'	57.8'	118°02.5	$72^{\circ}17.7$	43°06.8	35°31.6	12°46.7	28°26.9	54°38.2	95°10.6
21	79°33.2	5.7'	27°37.7	4.4'	57.8'	117°35.2	71°43.9	42°38.2	34°57.8	13°08.8	28°59.8	55°09.6	95°29.1
22	93°57.9	5.7'	27°42.0	4.2'	57.7'	117°07.8	$71^{\circ}10.3$	42°09.7	34°24.1	13°31.7	29°32.7	55°40.9	95°47.5
23	108°22.6	5.7'	27°46.2	4.0'	57.7'	116°40.5	70°36.6	41°41.4	33°50.5	13°55.3	30°05.5	56°12.1	96°05.9
12 th	SD =	= 16.0′	Mer. pass	. 15:29	•				Sun S	D = 15.9'			

Moon (13th Apr)

Lunar Distance (objects with largest hourly LD delta)

h		Моо	n (13 th Ap	or)			Lunar [Distance (objects	with largest	hourly L	D delta)	
Sat	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Procyon	-Pollux	+Aldebaran	+Jupiter	+Sun	+Achernar
0	122°47.3	5.7'	N 27°50.2	3.8'	57.7'		70°03.1	41°13.2	33°16.9	14°19.4	30°38.3	56°43.3	96°24.2
1	137°12.0	5.7'	27°54.0	3.6'	57.6'		69°29.5	40°45.2	32°43.3	14°44.2	31°11.1	57° 14.5	96°42.5
2	151°36.8	5.7'	27°57.7	3.5'	57.6'		68°56.1	40°17.4	32°09.8	15°09.5	31°43.8	57°45.6	97°00.7
3	166°01.5	5.8'	28°01.1	3.3'	57.5'		68°22.6	39°49.7	31°36.4	15°35.2	32°16.5	58° 16.6	97°18.9
4	180°26.2	5.8'	28°04.4	3.1'	57.5'		67°49.2	39°22.2	31°03.0	16°01.4	32°49.2	58°47.6	97°37.0
5	194°51.0	5.8'	28°07.6	2.9'	57.5'		67°15.9	38°54.8	30°29.6	16°27.9	33°21.8	59° 18.6	97°55.1
6	209°15.8	5.8'	$N28^{\circ}10.5$	2.8'	57.4'		66°42.6	38°27.6	29°56.3	16°54.9	33°54.3	59°49.5	98°13.1
7	223°40.6	5.8'	28°13.3	2.6'	57.4'		66°09.4	38°00.6	29°23.0	17°22.1	34°26.8	60°20.3	98°31.0
8	238°05.4	5.9'	$28^{\circ}15.9$	2.4'	57.4'	119°37.6	65°36.2	37°33.8	28°49.8	17°49.6	34°59.3	60°51.2	98°48.9
9	252°30.3	5.9'	28°18.3	2.2'	57.3'	119°04.4	65°03.0	37°07.1	28°16.7	18°17.4	35°31.7	61°21.9	99°06.7
10	266°55.2	5.9'	28°20.5	2.1'	57.3'	118°31.3	64°30.0	36°40.7	27°43.5	18°45.5	36°04.1	61°52.6	99°24.5
11	281°20.1	5.9'	28°22.6	1.9'	57.2'	117°58.2	63°56.9	36°14.4	27°10.5	19°13.7	36°36.5	62°23.3	99°42.2
12	295°45.0	6.0'	N28°24.5	1.7'	57.2'	117°25.1	63°23.9	35°48.3	26°37.5	19°42.2	37°08.8	62°53.9	99°59.8
13	310°10.0	6.0'	28°26.2	1.5'	57.2'	116°52.1	62°51.0	35°22.5	26°04.5	20°10.9	37°41.1	63°24.5	100°17.4
14	324°35.0	6.0'	28°27.7	1.4'	57.1'	116°19.1	62°18.0	34°56.8	25°31.6	20°39.7	38°13.3	63°55.1	100°34.9
15	339°00.0	6.1'	28°29.1	1.2'	57.1'	115°46.2	61°45.2	34°31.4	24°58.7	21°08.7	38°45.5	64°25.6	100°52.4
16	353°25.1	6.1'	28°30.3	1.0'	57.0'	115°13.4	61°12.4	34°06.2	24°25.9	21°37.8	39°17.6	64°56.0	101°09.7
17	7°50.2	6.2'	28°31.3	0.9'	57.0'	114°40.5	60°39.6	33°41.2	23°53.1	22°07.0	39°49.8	65°26.4	101°27.0
18	22°15.3	6.2'	$N28^{\circ}32.2$	0.7'	57.0'	114°07.7	60°06.9	33°16.5	23°20.4	22°36.4	40°21.8	65°56.7	101°44.3
19	36°40.5	6.2'	28°32.8	0.5'	56.9'	113°35.0	59°34.2	32°52.0	22°47.7	23°05.8	40°53.8	66°27.0	102°01.4
20	51°05.8	6.3'	28°33.4	0.3'	56.9'	113°02.3	59°01.6	32°27.7	22°15.1	23°35.4	41°25.8	66°57.3	102°18.5
21	65°31.1	6.3'	28°33.7	0.2'	56.9'	112°29.7	58°29.0	32°03.7	21°42.5	24°05.0	41°57.8	67°27.5	102°35.5
22	79°56.4	6.4'	28°33.9	0.0'	56.8'	111°57.1	57°56.5	31°40.0	21°09.9	24°34.7	42°29.7	67°57.7	102°52.5
23	94°21.8	6.4'	28°33.9	-0.2'	56.8'	111°24.5	57°24.0	31°16.5	20°37.4	25°04.5	43°01.5	68°27.8	103°09.3
13 th	SD	= 15.7	' Mer. pass	. 16:27					Sun S	5D = 15.9'			

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

Sun	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	-Pollux	+Capella	+Aldebaran	+Jupiter	+Sun
0	108°47.2	6.5'	N28°33.7	-0.3'	56.7'	110°52.0	105°15.2	$56^{\circ}51.5$	20°05.0	20°45.0	25°34.4	43°33.3	68° 57.9
1	123°12.7	6.5'	28°33.4	-0.5'	56.7'	110°19.5	104°47.8	$56^{\circ}19.1$	19°32.6	21°01.2	26°04.3	44°05.1	69°27.9
2	137°38.2	6.6'	28°32.9	-0.7'	56.7'	109°47.1	104°20.5	55°46.7	19°00.3	21°18.0	26°34.3	44°36.8	69°57.9
3	152°03.8	6.7'	28°32.2	-0.8'	56.6'	109°14.7	103°53.2	55°14.4	18°28.0	21°35.3	27°04.3	45°08.5	70°27.9
4	166°29.5	6.7'	28°31.4	-1.0'	56.6'	108°42.3	103°25.9	54°42.2	17°55.7	21°53.1	27°34.4	45°40.2	70°57.8
5	180°55.2	6.8'	28°30.4	-1.2'	56.6'	108°10.0	102°58.6	54°09.9	17°23.5	22°11.5	28°04.5	46°11.8	71°27.7
6	195°21.0	6.8'	N 28°29.3	-1.3'	56.5'	107°37.8	102°31.3	53°37.7	16°51.4	22°30.3	28°34.6	46°43.4	71°57.5
7	209°46.8	6.9'	28°27.9	-1.5'	56.5'	107°05.6	102°04.1	53°05.6	16° 19.3	22°49.5	29°04.8	47°14.9	72°27.3
8	224°12.7	7.0'	28°26.5	-1.6'	56.5'	106°33.4	101°36.8	52°33.5	15°47.2	23°09.2	29°35.0	47°46.4	72°57.0
9	238°38.7	7.0'	28°24.8	-1.8'	56.4'	106°01.3	101°09.6	52°01.4	15° 15.2	23°29.3	30°05.2	48°17.9	73°26.7
10	253°04.7	7.1'	28°23.0	-2.0'	56.4'	105°29.2	100°42.4	51°29.4	14°43.3	23°49.8	30°35.4	48°49.3	73°56.4
11	267°30.8	7.2'	$28^{\circ}21.1$	-2.1'	56.4'	104°57.1	100°15.2	50°57.5	14°11.4	24°10.6	31°05.7	49°20.6	74°26.0
12	281°57.0	7.2'	$N28^{\circ}19.0$	-2.3'	56.3'	104°25.1	99°48.0	50°25.5	13°39.6	24°31.8	31°35.9	49°52.0	74°55.6
13	296°23.2	7.3'	$28^{\circ}16.7$	-2.4'	56.3'	103°53.2	99°20.9	49°53.7	13°07.8	24°53.3	32°06.2	50°23.3	75°25.1
14	310°49.5	7.4'	28°14.3	-2.6'	56.3'	103°21.2	98°53.8	49°21.8	12°36.1	25°15.2	32°36.5	50°54.5	75°54.6
15	325°15.9	7.5'	$28^{\circ}11.7$	-2.7'	56.2'	102°49.3	98°26.7	48°50.0	12°04.4	25°37.3	33°06.8	51°25.8	76°24.0
16	339°42.4	7.5'	28°09.0	-2.9'	56.2'	102°17.5	97°59.6	48°18.2	11°32.8	25°59.8	33°37.1	51°56.9	76°53.5
17	354°08.9	7.6'	28°06.1	-3.0'	56.1'	101°45.7	97°32.5	47°46.5	11°01.2	26°22.5	34°07.4	52°28.1	77°22.8
18	8°35.5	7.7'	N 28°03.0	-3.2'	56.1'	101°13.9	97°05.5	47°14.8	10°29.7	26°45.5	34°37.7	52°59.2	77°52.2
19	23°02.2	7.8'	27°59.8	-3.3'	56.1'	100°42.2	96°38.5	46°43.2	9°58.3	27°08.7	35°08.0	53°30.3	78°21.5
20	37°29.0	7.9'	27°56.5	-3.5'	56.1'	100°10.5	96°11.5	$46^{\circ}11.6$	9°27.0	27°32.1	35°38.3	54°01.3	78°50.7
21	51°55.8	7.9'	27°53.0	-3.6'	56.0'	99°38.8	95° 44.5	45°40.0	8°55.7	27°55.8	36°08.7	54°32.3	79° 19.9
22	66°22.8	8.0'	27°49.4	-3.8'	56.0'	99°07.2	95° 17.6	45°08.5	8°24.6	28°19.7	36°39.0	55°03.2	79°49.1
23	80°49.8	8.1'	27°45.6	-3.9'	56.0'	98°35.6	94°50.6	44°37.0	7°53.5	28°43.8	37°09.3	55°34.2	80°18.3
14 th	SD :	= 15.5'	Mer. pas	s. 17:24					Sun SI	D = 15.9'			

h	Moon	(15 th	Apr))

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	±Pollux	+Capella	+Aldebaran	+Jupiter	+Sun
0	95°16.9	8.2'	N 27°41.6	-4.1'	55.9'	98°04.1	94°23.7	44°05.6	7°22.5	29°08.1	37°39.6	56°05.1	80°47.4
1	109°44.1	8.3'	27°37.6	-4.2'	55.9'	97°32.6	93°56.9	43°34.2	6°51.7	29°32.5	38°09.8	56°35.9	81°16.5
2	124°11.3	8.4'	27°33.4	-4.4'	55.9'	97°01.1	93°30.0	43°02.8	6°21.0	29°57.1	38°40.1	57°06.7	81°45.5
3	138°38.7	8.4'	27°29.0	-4.5'	55.8'	96°29.7	93°03.2	42°31.5	5°50.4	30°21.9	39°10.4	57°37.5	82°14.5
4	153°06.1	8.5'	27°24.5	-4.6'	55.8'	95°58.3	92°36.4	42°00.2	5°20.1	30°46.9	39°40.7	58°08.2	82°43.4
5	167°33.7	8.6'	$27^{\circ}19.8$	-4.8'	55.8'	95°26.9	92°09.7	41°29.0	4°50.0	31°12.0	40°10.9	58°39.0	83°12.4
6	182°01.3	8.7'	$N27^{\circ}15.1$	-4.9'	55.7'	94°55.6	91°42.9	40°57.7	4°20.3	31°37.2	40°41.2	59°09.6	83°41.3
7	196°29.0	8.8'	$27^{\circ}10.1$	-5.1'	55.7'	94°24.3	91°16.2	40°26.6	3°51.1	32°02.6	41°11.4	59°40.3	84°10.1
8	210°56.8	8.9'	$27^{\circ}05.1$	-5.2'	55.7'	93°53.1	90°49.5	39°55.4	3°22.5	32°28.0	41°41.6	60°10.9	84°38.9
9	225°24.7	9.0'	26°59.9	-5.3'	55.6'	93°21.9	90°22.9	39°24.3	2°54.8	32°53.7	42°11.8	60°41.5	85°07.7
10	239°52.7	9.1'	26°54.6	-5.5'	55.6'	92°50.7	89°56.2	38°53.3		33° 19.4	42°42.0	61°12.0	85°36.5
11	254°20.7	9.2'	$26^{\circ}49.1$	-5.6'	55.6'	92°19.5	89°29.7	38°22.2		33°45.2	43°12.2	61°42.5	86°05.2
12	268°48.9	9.3'	N 26°43.5	-5.7'	55.6'	91°48.4	89°03.1	$37^{\circ}51.3$		$34^{\circ}11.1$	43°42.4	62°13.0	86°33.9
13	283°17.2	9.4'	26°37.8	-5.9'	55.5'	91°17.3	88°36.5	$37^{\circ}20.3$		34°37.2	44°12.5	62°43.4	87°02.5
14	297°45.5	9.4'	26°31.9	-6.0'	55.5'	90°46.3	88°10.0	36°49.4		35°03.3	44°42.6	63°13.8	87°31.2
15	312°14.0	9.5'	26°25.9	-6.1'	55.5'	90°15.2	87°43.6	$36^{\circ}18.5$		35°29.5	45°12.8	63°44.2	87°59.7
16	326°42.5	9.6'	$26^{\circ}19.8$	-6.2'	55.4'	89°44.2	87°17.1	35°47.6		35°55.8	45°42.9	64°14.6	88°28.3
17	341°11.1	9.7'	$26^{\circ}13.6$	-6.4'	55.4'	89°13.3	86°50.7	$35^{\circ}16.8$		36°22.2	46°13.0	64°44.9	88°56.8
18	355°39.9	9.8'	N 26°07.2	-6.5'	55.4'	88°42.4	86°24.3	34°46.0		36°48.6	46°43.0	65°15.2	89°25.3
19	10°08.7	9.9'	26°00.8	-6.6'	55.4'	88°11.5	85°58.0	34° 15.3		37° 15.2	47°13.1	65°45.4	89°53.8
20	24°37.6	10.0'	$25^{\circ}54.1$	-6.7'	55.3'	87°40.6	85°31.6	33°44.6		37°41.8	47°43.1	66°15.7	90°22.2
21	39°06.6	10.1'	25° 47.4	-6.9'	55.3'	87°09.8	85°05.3	33° 13.9	3°57.1	38°08.4	48°13.2	66°45.9	90°50.6
22	53°35.8	10.2'	25°40.6	-7.0'	55.3'	86°39.0	84°39.1	32°43.3	4°26.0	38°35.1	48°43.2	67°16.0	91°19.0
23	68°05.0	10.3'	25°33.6	-7.1'	55.2'	86°08.2	84°12.9	32°12.7	4°55.3	39°01.9	49°13.2	67°46.2	91°47.3
15 th	SD	$=15.3^{\prime}$	Mer. pass	. 18:18					Sun S	D=15.9'			

Moon (16th Apr)

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Tue	GHA	ν	Dec	d	HP	-Rigil Kent.	-Spica	-Arcturus	-Regulus	+Pollux	+Aldebaran	+Jupiter	+Sun
0	82°34.3	10.4'	N 25°26.5	-7.2'	55.2'	116°00.7	85°37.4	83°46.7	31°42.1	5°24.8	49°43.2	68°16.3	92°15.6
1	97°03.7	10.5'	25°19.3	-7.3'	55.2'	115°38.7	85°06.7	83°20.5	31°11.6	5°54.5	50° 13.1	68°46.4	92°43.9
2	111°33.2	10.6'	25°12.0	-7.4'	55.2'	$115^{\circ}16.6$	84°36.0	82°54.4	30°41.0	6°24.3	50°43.1	69° 16.4	93°12.2
3	126°02.8	10.7'	25°04.5	-7.5'	55.1'	114°54.4	84°05.4	82°28.3	30°10.6	6°54.2	51° 13.0	69°46.4	93°40.4
4	140°32.5	10.8'	24°57.0	-7.7'	55.1'	114°32.3	83°34.7	82°02.2	29°40.1	7°24.2	51°42.9	70°16.4	94°08.6
5	155°02.3	10.9'	24°49.3	-7.8'	55.1'	114° 10.0	83°04.1	81°36.2	29°09.7	7°54.3	52° 12.8	70°46.4	94°36.8
6	169°32.1	11.0'	N 24°41.6	-7.9'	55.1'	113°47.8	82°33.5	81°10.2	28°39.4	8°24.4	52°42.7	71°16.4	95°04.9
7	184°02.1	11.1'	24°33.7	-8.0'	55.0'	113°25.5	82°03.0	80°44.2	28°09.0	8°54.5	53° 12.6	71°46.3	95°33.1
8	198°32.2	11.2'	24°25.7	-8.1'	55.0'	113°03.1	81°32.5	80°18.3	27°38.7	9°24.7	53°42.4	72°16.2	96°01.1
9	213°02.4	11.3'	24°17.6	-8.2'	55.0'	112°40.8	81°02.0	79°52.4	27°08.5	9°54.8	54° 12.2	72°46.0	96°29.2
10	227°32.7	11.4'	24°09.4	-8.3'	55.0'	112° 18.4	80°31.5	79°26.6	26°38.2	10°25.0	54°42.0	73° 15.9	96°57.3
11	242°03.0	11.5'	24°01.1	-8.4'	55.0'	111°56.0	80°01.0	79°00.7	26°08.0	10°55.2	55°11.8	73°45.7	97°25.3
12	256°33.5	11.6'	N 23°52.6	-8.5'	54.9'	111°33.5	79°30.6	78°34.9	25°37.9	11°25.3	55°41.6	74° 15.5	97°53.3
13	271°04.0	11.7'	23°44.1	-8.6'	54.9'	111°11.0	79°00.2	78°09.2	25°07.7	11°55.5	56°11.4	74°45.3	98°21.2
14	285°34.7	11.7'	23°35.5	-8.7'	54.9'	110°48.5	78° 29.8	77°43.5	24°37.6	12°25.7	56°41.1	75° 15.0	98°49.2
15	300°05.4	11.8'	23°26.8	-8.8'	54.9'	110°25.9	77° 59.5	77°17.8	24°07.6	12°55.8	57° 10.9	75°44.8	99°17.1
16	314°36.3	11.9'	23°18.0	-8.9'	54.8'	110°03.4	$77^{\circ}29.1$	76°52.2	23°37.5	13°26.0	57°40.6	76° 14.5	99°45.0
17	329°07.2	12.0'	23°09.0	-9.0'	54.8'	109°40.8	76°58.8	76°26.6	23°07.5	13°56.1	58° 10.3	76°44.1	100°12.9
18	343°38.3	12.1'	N 23°00.0	-9.1'	54.8'	109°18.1	76°28.5	76°01.0	22°37.6	14°26.3	58°40.0	77° 13.8	100°40.7
19	358°09.4	12.2'	22°50.9	-9.2'	54.8'	108°55.5	75°58.3	75°35.5	22°07.6	14°56.4	59°09.6	77°43.4	101°08.5
20	12°40.6	12.3'	22°41.7	-9.3'	54.8'	108°32.8	75°28.0	75°10.0	21°37.8	15°26.5	59° 39.3	78° 13.0	101°36.3
21	27°11.9	12.4'	22°32.4	-9.4'	54.7'	108° 10.1	74°57.8	74°44.5	21°07.9	15°56.6	60°08.9	78°42.6	102°04.1
22	41°43.3	12.5'	22°23.0	-9.5'	54.7'	107°47.4	74°27.6	74°19.1	20°38.1	16°26.7	60°38.6	79° 12.2	102°31.9
23	56°14.8	12.6'	$22^{\circ}13.5$	-9.6'	54.7'	107°24.6	73°57.5	73°53.8	20°08.3	16°56.7	61°08.2	79°41.7	102°59.6
16 th	SD	= 15.1'	Mer. pass	. 19:08					Sun SD	= 15.9'			

h Moon (17	th Apr) Lunar D)
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Lunar Distance	(objects with	largest hourly	/ LD delta)
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Wed	GHA	ν	Dec	d	HP	-Antares	-Arcturus	-Spica	-Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter
0	70°46.4	12.7'	N22°03.9	-9.7'	54.7'	119°20.9	73°28.4	73°27.3	19°38.6	17°26.8	50°24.4	61°37.8	80°11.3
1	85°18.1	12.8'	21°54.3	-9.8'	54.7'	118°50.8	73°03.1	72°57.2	19°08.9	17°56.8	50°52.0	62°07.4	80°40.8
2	99°49.8	12.9'	21°44.5	-9.8'	54.6'	118°20.6	72°37.9	72°27.0	18°39.3	18° 26.8	51°19.7	62°36.9	81°10.3
3	114°21.7	12.9'	21°34.7	-9.9'	54.6'	117°50.5	72°12.7	$71^{\circ}57.0$	18°09.7	18° 56.9	51°47.3	63°06.5	81°39.7
4	128°53.6	13.0'	21°24.7	-10.0'	54.6'	117°20.4	71°47.5	71°26.9	17°40.1	19°26.8	52°15.0	63°36.0	82°09.2
5	143°25.7	13.1'	$21^{\circ}14.7$	-10.1'	54.6'	116°50.4	71°22.4	70°56.8	17°10.6	19°56.8	52°42.7	64°05.5	82°38.6
6	157°57.8	13.2'	N21°04.6	-10.2'	54.6'	116°20.3	70°57.3	70°26.8	16°41.2	20°26.8	53°10.4	64°35.1	83°08.0
7	172°30.0	13.3'	20°54.4	-10.3'	54.5'	115°50.3	70°32.3	69°56.8	16°11.8	20°56.7	53°38.1	65°04.5	83°37.4
8	187°02.3	13.4'	20°44.2	-10.3'	54.5'	115°20.3	70°07.3	69°26.8	15°42.4	21°26.7	54°05.8	65°34.0	84°06.8
9	201°34.7	13.5'	20°33.8	-10.4'	54.5'	114°50.3	69°42.3	68°56.8	15°13.1	21°56.6	54°33.6	66°03.5	84°36.2
10	216°07.1	13.5'	20°23.4	-10.5'	54.5'	114°20.3	69°17.4	68°26.8	14°43.9	22°26.5	55°01.3	66°33.0	85°05.5
11	230°39.7	13.6'	$20^{\circ}12.9$	-10.6'	54.5'	113°50.4	68°52.5	67°56.8	14°14.7	22°56.4	55°29.1	67°02.4	85°34.8
12	245°12.3	13.7'	$N20^{\circ}02.3$	-10.7'	54.5'	113°20.4	68°27.7	67°26.9	13°45.6	23°26.3	55°56.9	67°31.8	86°04.1
13	259°45.0	13.8'	19°51.6	-10.7'	54.4'	112°50.5	68°02.9	66°57.0	13°16.6	23°56.2	56°24.6	68°01.3	86°33.4
14	274°17.8	13.9'	19°40.9	-10.8'	54.4'	112°20.6	67°38.2	$66^{\circ}27.1$	12°47.7	24°26.0	56°52.4	68°30.7	87°02.7
15	288°50.7	14.0'	19°30.0	-10.9'	54.4'	111°50.7	67°13.5	65°57.2	12°18.9	24°55.9	57°20.2	69°00.1	87°32.0
16	303°23.6	14.0'	$19^{\circ}19.2$	-11.0'	54.4'	111°20.8	66°48.9	65°27.3	11°50.2	25°25.7	57°48.0	69°29.5	88°01.2
17	317°56.7	14.1'	19°08.2	-11.0'	54.4'	110°50.9	66°24.3	64°57.5	11°21.5	25°55.5	58°15.9	69°58.8	88°30.4
18	332°29.8	14.2'	$N18^{\circ}57.2$	-11.1'	54.4'	110°21.1	65°59.8	64°27.6	10°53.0	26°25.3	58°43.7	70°28.2	88°59.7
19	347°03.0	14.3'	18°46.0	-11.2'	54.4'	109°51.2	65°35.3	63°57.8	10°24.7	26°55.1	59°11.5	70°57.6	89°28.9
20	1°36.3	14.4'	18°34.9	-11.2'	54.3'	109°21.4	65°10.8	63°28.0	9°56.5	27°24.9	59°39.3	71°26.9	89°58.1
21	16°09.6	14.4'	18°23.6	-11.3'	54.3'	108°51.6	64°46.4	62°58.2	9°28.5	27°54.7	60°07.2	71°56.2	90°27.2
22	30°43.1	14.5'	18°12.3	-11.4'	54.3'	108°21.8	64°22.1	62°28.4	9°00.6	28°24.4	60°35.0	72°25.6	90°56.4
23	45°16.6	14.6'	18°00.9	-11.5'	54.3'	107°52.0	63°57.8	61°58.6	8°33.0	28°54.2	61°02.9	72°54.9	91°25.6
17 th	SD	= 14.9	Mer. pas	s. 19:53									

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

Thu	GHA	ν	Dec	d	HP	-Antares	-Arcturus	-Spica	-Regulus	+Pollux	+Capella	+Aldebaran	+Jupiter
0	59°50.1	14.7'	N 17°49.5	-11.5'	54.3'	107°22.2	63°33.6	61°28.8	8°05.7	29°23.9	61°30.8	73°24.2	91°54.7
1	74°23.8	14.7'	17°37.9	-11.6'	54.3'	106°52.5	63°09.4	60°59.1	7°38.7	29°53.6	61°58.6	73°53.5	92°23.8
2	88°57.5	14.8'	17°26.4	-11.6'	54.3'	106°22.7	62°45.3	60°29.3	7°12.1	30°23.3	62°26.5	74°22.8	92°52.9
3	103°31.3	14.9'	$17^{\circ}14.7$	-11.7'	54.3'	105°53.0	62°21.2	59°59.6	6°45.9	30°53.0	62°54.4	74°52.0	93°22.0
4	118°05.2	14.9'	$17^{\circ}03.0$	-11.8'	54.2'	105°23.3	61°57.2	59°29.9	6°20.2	31°22.7	63°22.3	75°21.3	93°51.1
5	132°39.1	15.0'	$16^{\circ}51.2$	-11.8'	54.2'	104°53.5	61°33.2	59°00.2	5°55.2	31°52.4	63°50.2	75°50.6	94°20.2
6	147°13.1	15.1'	$N16^{\circ}39.4$	-11.9'	54.2'	104°23.8	61°09.3	58°30.5	5°30.9	32°22.1	64°18.1	76° 19.8	94°49.3
7	161°47.2	15.1'	$16^{\circ}27.5$	-12.0'	54.2'	103°54.1	60°45.5	58°00.8		32°51.8	64°46.0	76°49.1	95°18.4
8	176°21.3	15.2'	$16^{\circ}15.5$	-12.0'	54.2'	103°24.4	60°21.7	57°31.1		33°21.4	65°13.9	77° 18.3	95°47.4
9	190°55.6	15.3'	$16^{\circ}03.5$	-12.1'	54.2'	102°54.8	59°57.9	57°01.4		33°51.1	65°41.8	77°47.5	96°16.5
10	205°29.8	15.3'	$15^{\circ}51.5$	-12.1'	54.2'	102°25.1	59°34.3	56°31.8		34°20.7	66°09.7	78° 16.8	96°45.5
11	220°04.2	15.4'	15°39.3	-12.2'	54.2'	101°55.4	59°10.7	56°02.1		34°50.3	66°37.7	78°46.0	97°14.5
12	234°38.6	15.5'	$N15^{\circ}27.1$	-12.2'	54.2'	101°25.8	58°47.1	55°32.5		35°20.0	67°05.6	79°15.2	97°43.5
13	249°13.0	15.5'	$15^{\circ}14.9$	-12.3'	54.2'	100°56.1	58°23.6	55°02.8		35°49.6	67°33.5	79°44.4	98°12.5
14	263°47.6	15.6'	$15^{\circ}02.6$	-12.3'	54.1'	100°26.5	58°00.2	54°33.2		36°19.2	68°01.5	80° 13.6	98°41.5
15	278°22.1	15.6'	14°50.3	-12.4'	54.1'	99°56.9	57°36.9	54°03.6		36°48.8	68°29.4	80°42.8	99°10.5
16	292°56.8	15.7'	14°37.9	-12.5'	54.1'	99°27.2	57°13.6	53°34.0		37°18.4	68°57.4	81°11.9	99°39.5
17	307°31.5	15.8'	14°25.4	-12.5'	54.1'	98°57.6	56°50.4	53°04.4		37°48.0	69°25.3	81°41.1	100°08.5
18	322°06.3	15.8'	N 14°12.9	-12.6'	54.1'	98°28.0	56°27.2	52°34.8		38°17.6	69°53.3	82° 10.3	100°37.5
19	336°41.1	15.9'	14°00.3	-12.6'	54.1'	97°58.4	56°04.2	52°05.2		38°47.2	70°21.2	82°39.5	101°06.4
20	351°15.9	15.9'	13°47.7	-12.7'	54.1'	97°28.8	55°41.2	51°35.6		39°16.7	70°49.2	83°08.6	101°35.4
21	5°50.9	16.0'	13°35.1	-12.7'	54.1'	96°59.2	55°18.2	51°06.0		39°46.3	71° 17.2	83° 37.8	102°04.3
22	20°25.9	16.0'	13°22.4	-12.7'	54.1'	96°29.6	54°55.4	50°36.4		40°15.9	71°45.1	84°06.9	102°33.3
23	35°00.9	16.1'	13°09.6	-12.8'	54.1'	96°00.0	54°32.6	50°06.9		40°45.4	72°13.1	84°36.1	103°02.2
18 th	SD	= 14.8'	Mer. pas	s. 20:36									

Moon (19th Apr) h

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Arcturus	-Spica	+Regulus	+Pollux	+Aldebaran	+Jupiter
0	49°36.0	16.1'	N12°56.8	-12.8'	54.1'	95°30.5	88°37.6	54°09.9	49°37.3		41°15.0	85°05.2	103°31.2
1	64°11.1	16.2'	12°44.0	-12.9'	54.1'	95°00.9	88°14.6	53°47.3	49°07.8	5°57.2	41°44.5	85°34.4	104°00.1
2	78°46.3	16.2'	12°31.1	-12.9'	54.1'	94°31.3	87°51.6	53°24.8	48°38.2	6°22.1	42°14.1	86°03.5	104°29.0
3	93°21.6	16.3'	12°18.2	-13.0'	54.0'	94°01.8	87°28.5	53°02.3	48°08.6	6°47.7	42°43.6	86°32.7	104°58.0
4	107°56.8	16.3'	12°05.2	-13.0'	54.0'	93°32.2	87°05.5	52°39.9	47°39.1	7° 13.7	43°13.2	87°01.8	105°26.9
5	122°32.2	16.4'	11°52.2	-13.1'	54.0'	93°02.6	86°42.5	52° 17.6	47°09.5	7°40.2	43°42.7	87°30.9	105°55.8
6	137°07.6	16.4'	N11°39.2	-13.1'	54.0'	92°33.1	86°19.5	51°55.4	46°40.0	8°07.1	44°12.2	88°00.0	106°24.7
7	151°43.0	16.5'	$11^{\circ}26.1$	-13.1'	54.0'	92°03.5	85°56.5	51°33.3	46°10.5	8°34.2	44°41.8	88°29.2	106°53.6
8	166°18.5	16.5'	11°12.9	-13.2'	54.0'	91°34.0	85°33.5	51°11.3	45°40.9	9°01.6	45°11.3	88°58.3	107°22.5
9	180°54.0	16.6'	10°59.7	-13.2'	54.0'	91°04.4	85°10.6	50°49.4	45°11.4	9°29.2	45°40.8	89°27.4	107°51.4
10	195°29.5	16.6'	10°46.5	-13.3'	54.0'	90°34.9	84°47.6	50°27.6	44°41.9	9°56.9	46°10.4	89°56.5	108°20.3
11	210°05.1	16.6'	10°33.3	-13.3'	54.0'	90°05.4	84°24.6	50°05.8	44°12.3	10°24.9	46°39.9	90°25.7	108°49.2
12	224°40.7	16.7'	N10°20.0	-13.3'	54.0'	89°35.8	84°01.7	49°44.2	43°42.8	10°53.0	47°09.4	90°54.8	109°18.1
13	239°16.4	16.7'	10°06.7	-13.4'	54.0'	89°06.3	83°38.8	49°22.6	43°13.3	11°21.2	47°38.9	91°23.9	109°47.0
14	253°52.1	16.7'	09°53.3	-13.4'	54.0'	88°36.7	83°15.8	49°01.2	42°43.8	11°49.5	48°08.5	91°53.0	110°15.9
15	268°27.9	16.8'	09°39.9	-13.4'	54.0'	88°07.2	82°52.9	48°39.9	42°14.2	12° 17.9	48°38.0	92°22.1	110°44.8
16	283°03.7	16.8'	09°26.5	-13.5'	54.0'	87°37.6	82°30.0	48° 18.7	41°44.7	12°46.3	49°07.5	92°51.2	111°13.7
17	297°39.5	16.9'	09°13.0	-13.5'	54.0'	87°08.1	82°07.2	47°57.6	41°15.2	13° 14.9	49°37.0	93°20.3	111°42.6
18	312°15.3	16.9'	N08°59.5	-13.5'	54.0'	86°38.6	81°44.3	47°36.6	40°45.7	13°43.5	50°06.6	93°49.4	112°11.5
19	326°51.2	16.9'	08°46.0	-13.6'	54.0'	86°09.0	81°21.4	$47^{\circ}15.7$	40°16.1	14° 12.2	50°36.1	94°18.6	112°40.4
20	341°27.1	16.9'	08°32.4	-13.6'	54.0'	85°39.5	80°58.6	46°54.9	39°46.6	14°41.0	51°05.6	94°47.7	113°09.3
21	356°03.1	17.0'	$08^{\circ}18.8$	-13.6'	54.0'	85°09.9	80°35.8	46°34.3	39°17.1	15°09.8	51°35.1	95°16.8	113°38.2
22	10°39.0	17.0'	08°05.2	-13.6'	54.0'	84°40.4	80°13.0	$46^{\circ}13.8$	38°47.5	15°38.6	52°04.7	95°45.9	114°07.1
23	25°15.1	17.0'	07°51.6	-13.7'	54.0'	84°10.8	79°50.2	45°53.4	38°18.0	16°07.5	52°34.2	96°15.0	114°35.9
19 th	SD	= 14.7'	Mer. pas	s. 21:16									

Moon (20th Apr)

Sat	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Pollux	+Aldebaran	+Jupiter
0	39°51.1	17.1'	N 07°37.9	-13.7'	54.0'		83°41.3	79°27.4	37°48.5	16°36.4	53°03.7	96°44.1	115°04.8
1	54°27.1	17.1'	07°24.2	-13.7'	54.0'		83°11.8	79°04.7	37°19.0	17°05.4	53°33.3	97° 13.2	115°33.7
2	69°03.2	17.1'	07°10.4	-13.8'	54.0'		82°42.2	78°41.9	36°49.4	17°34.4	54°02.8	97°42.4	116°02.6
3	83°39.3	17.1'	06°56.7	-13.8'	54.0'		82°12.6	78°19.2	$36^{\circ}19.9$	18°03.4	54°32.4	98° 11.5	116°31.5
4	98°15.5	17.2'	06°42.9	-13.8'	54.0'		81°43.1	77°56.5	35°50.4	18°32.5	55°01.9	98°40.6	117°00.4
5	112°51.6	17.2'	$06^{\circ}29.1$	-13.8'	54.0'		81°13.5	77°33.8	35°20.8	19°01.6	55°31.4	99°09.7	117°29.3
6	127°27.8	17.2'	N 06°15.3	-13.9'	54.0'		80°44.0	77°11.2	34°51.3	19°30.7	56°01.0	99°38.9	117°58.2
7	142°04.0	17.2'	06°01.4	-13.9'	54.0'		80°14.4	76°48.5	34°21.7	19°59.8	56°30.6	100°08.0	118°27.2
8	156°40.2	17.2'	05°47.5	-13.9'	54.0'		79°44.8	76°25.9	33°52.2	20°29.0	57°00.1	100°37.1	118°56.1
9	171°16.4	17.2'	05°33.6	-13.9'	54.0'		79°15.2	76°03.3	33°22.6	20°58.2	57°29.7	101°06.2	119°25.0
10	185°52.7	17.3'	$05^{\circ}19.7$	-13.9'	54.0'		78°45.7	75°40.8	32°53.1	21°27.4	57°59.2	101°35.4	119°53.9
11	200°28.9	17.3'	05°05.8	-14.0'	54.0'		78°16.1	75°18.2	32°23.5	21°56.6	58°28.8	102°04.5	
12	215°05.2	17.3'	N04°51.8	-14.0'	54.0'		77°46.5	74°55.7	31°53.9	22°25.8	58°58.4	102°33.7	
13	229°41.5	17.3'	04°37.8	-14.0'	54.0'		77°16.9	74°33.2	31°24.4	22°55.1	59°28.0	103°02.8	
14	244°17.8	17.3'	04°23.8	-14.0'	54.0'		76°47.3	74°10.7	30°54.8	23°24.4	59°57.6	103°32.0	
15	258°54.1	17.3'	04°09.8	-14.0'	54.0'		76°17.7	73°48.3	30°25.2	23°53.7	60°27.1	104°01.1	
16	273°30.4	17.3'	03°55.8	-14.0'	54.0'		75°48.1	73°25.9	29°55.6	24°23.0	60°56.7	104°30.3	
17	288°06.8	17.3'	03°41.7	-14.1'	54.0'		75°18.5	73°03.5	29°26.1	24°52.3	61°26.3	104°59.4	
18	302°43.1	17.4'	N03°27.7	-14.1'	54.0'		74°48.9	72°41.1	28°56.5	25°21.7	61°56.0	105°28.6	
19	317°19.5	17.4'	03°13.6	-14.1'	54.0'	119°54.9	74°19.2	72°18.8	28°26.9	25°51.0	62°25.6	105°57.7	
20	331°55.8	17.4'	02°59.5	-14.1'	54.0'	119°32.3	73°49.6	71°56.5	27°57.3	26°20.4	62°55.2	106° 26.9	
21	346°32.2	17.4'	02°45.4	-14.1'	54.0'	119°09.7	73°20.0	71°34.2	27°27.7	26°49.8	63°24.8	106°56.1	
22	1°08.6	17.4'	02°31.3	-14.1'	54.0'	118°47.1	72°50.3	71°12.0	26°58.1	27°19.2	63°54.5	107°25.3	
23	15°44.9	17.4'	02°17.1	-14.1'	54.0'	118°24.4	72°20.7	70°49.8	26°28.4	27°48.6	64°24.1	107°54.4	
20 th	SD	= 14.7'	Mer. pas	s. 21:55									

h Moon (21st Apr)

h

Sun	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	30°21.3	17.4'	N 02°03.0	-14.2'	54.0'	118°01.6	71°51.0	70°27.6	25°58.8	28°18.1	64°53.8	95°09.3	108°23.6
1	44° 57.7	17.4'	01°48.8	-14.2'	54.0'	117°38.7	71°21.3	70°05.5	25°29.2	28°47.5	65°23.4	95°37.5	108°52.8
2	59°34.0	17.4'	01°34.7	-14.2'	54.0'	117°15.8	70°51.6	69°43.4	24°59.5	29°17.0	65°53.1	96°05.7	109°22.0
3	74° 10.4	17.4'	01°20.5	-14.2'	54.1'	116°52.9	70°22.0	69°21.3	24°29.9	29°46.5	66°22.7	96°33.9	109°51.2
4	88°46.8	17.4'	$01^{\circ}06.3$	-14.2'	54.1'	116°29.9	69°52.3	68° 59.3	24°00.3	30°16.0	66°52.4	97°02.1	110°20.4
5	103°23.2	17.4'	$00^{\circ}52.1$	-14.2'	54.1'	116°06.8	69°22.6	68°37.3	23°30.6	30°45.5	67°22.1	97°30.3	110°49.6
6	117°59.5	17.4'	N 00°37.9	-14.2'	54.1'	115°43.6	68°52.9	68° 15.4	23°00.9	31°15.0	67°51.8	97°58.6	111° 18.8
7	132°35.9	17.4'	00°23.7	-14.2'	54.1'	115°20.4	68°23.1	67° 53.5	22°31.3	31°44.6	68°21.5	98° 26.8	111°48.1
8	147° 12.2	17.3'	N 00°09.5	-14.2'	54.1'	114°57.2	67°53.4	67°31.6	22°01.6	32°14.1	68°51.2	98°55.0	112° 17.3
9	161°48.6	17.3'	S 00°04.7	-14.2'	54.1'	114°33.9	67°23.7	67°09.8	21°31.9	32°43.7	69°21.0	99°23.3	112°46.5
10	176°24.9	17.3'	$00^{\circ}18.9$	-14.2'	54.1'	114°10.6	66°53.9	66°48.0	21°02.2	33°13.2	69°50.7	99°51.5	113°15.8
11	191°01.2	17.3'	00°33.1	-14.2'	54.1'	113°47.1	66°24.2	66°26.3	20°32.5	33°42.8	70°20.4	100°19.8	113°45.0
12	205°37.6	17.3'	S 00°47.3	-14.2'	54.1'	113°23.7	65°54.4	66°04.6	20°02.8	34°12.4	70°50.2	100°48.0	114°14.2
13	220°13.9	17.3'	$01^{\circ}01.6$	-14.2'	54.1'	113°00.2	65°24.7	65°43.0	19°33.1	34°42.1	71°19.9	101°16.3	114°43.5
14	234°50.2	17.3'	$01^{\circ}15.8$	-14.2'	54.1'	112°36.6	64°54.9	65°21.4	19°03.4	35°11.7	71°49.7	101°44.5	115° 12.8
15	249°26.4	17.3'	01°30.0	-14.2'	54.1'	112°13.0	64°25.1	64° 59.8	18°33.7	35°41.3	72°19.5	102°12.8	115°42.0
16	264°02.7	17.3'	01°44.2	-14.2'	54.1'	111°49.4	63°55.3	64°38.3	18°04.0	36°11.0	72°49.3	102°41.1	116°11.3
17	278°39.0	17.2'	01°58.5	-14.2'	54.1'	111°25.7	63°25.5	64°16.9	17°34.2	36°40.7	73°19.1	103°09.3	116°40.6
18	293° 15.2	17.2'	S 02°12.7	-14.2'	54.2'	111°02.0	62°55.7	63°55.5	17°04.5	37°10.3	73°48.9	103°37.6	117°09.8
19	307°51.4	17.2'	02°26.9	-14.2'	54.2'	110°38.2	62°25.8	63°34.2	16°34.7	37°40.0	74°18.7	104°05.9	117°39.1
20	322°27.6	17.2'	02°41.1	-14.2'	54.2'	110°14.3	61°56.0	63°12.9	$16^{\circ}05.0$	38°09.8	74°48.6	104°34.2	118°08.4
21	337°03.8	17.2'	02°55.3	-14.2'	54.2'	109°50.5	61°26.1	62°51.7	15°35.2	38°39.5	75°18.4	105°02.5	118° 37.7
22	351°39.9	17.1'	$03^{\circ}09.5$	-14.2'	54.2'	109°26.6	60°56.3	62°30.5	15°05.5	39°09.2	75°48.3	105°30.7	119°07.0
23	$6^{\circ}16.1$	17.1'	03°23.7	-14.2'	54.2'	109°02.6	60°26.4	62°09.4	14°35.7	39°39.0	76°18.1	105°59.0	119°36.3
21 st	SD	= 14.7'	Mer. pas	s. 22:34									

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

Mon	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Antares	-Spica	+Regulus	+Procyon	+Pollux	+Capella
0	20°52.2	17.1'	S 03°37.9	-14.2'	54.2'	108°38.6	61°48.4	59°56.5	14°05.9	40°08.8	74°58.0	76°48.0	106°27.3
1	35°28.3	17.1'	$03^{\circ}52.1$	-14.2'	54.2'	108°14.6	61°27.4	59°26.6	13°36.2	40°38.5	75°25.8	77°17.9	106°55.6
2	50°04.3	17.0'	04°06.3	-14.2'	54.2'	107°50.5	61°06.5	58° 56.7	13°06.4	41°08.3	75°53.5	77°47.8	107°23.9
3	64°40.4	17.0'	04°20.4	-14.2'	54.2'	107°26.4	60°45.6	58°26.8	12°36.6	41°38.1	76°21.3	78° 17.7	107°52.2
4	79°16.4	17.0'	04°34.6	-14.1'	54.2'	107°02.2	60°24.9	57°56.8	12°06.8	42°08.0	76°49.1	78°47.6	108°20.5
5	93°52.4	17.0'	04°48.8	-14.1'	54.2'	106°38.0	60°04.1	57°26.9	11°37.1	42°37.8	77°16.9	79°17.6	108°48.8
6	108°28.3	16.9'	S 05°02.9	-14.1'	54.3'	106°13.8	59°43.5	56°56.9	11°07.3	43°07.6	77°44.7	79°47.5	109°17.2
7	123°04.2	16.9'	05°17.0	-14.1'	54.3'	105°49.5	59°22.9	56°27.0	10°37.5	43°37.5	78°12.6	80°17.5	109°45.5
8	137°40.1	16.9'	$05^{\circ}31.1$	-14.1'	54.3'	105°25.2	59°02.4	55°57.0	10°07.8	44°07.4	78°40.4	80°47.4	110°13.8
9	152°16.0	16.8'	05°45.2	-14.1'	54.3'	105°00.9	58°42.0	55°27.0	9°38.0	44°37.3	79°08.3	81°17.4	110°42.1
10	166°51.8	16.8'	05°59.3	-14.1'	54.3'	104°36.5	58°21.7	54°57.0	9°08.3	45°07.2	79°36.2	81°47.4	111°10.4
11	181°27.6	16.8'	06°13.4	-14.0'	54.3'	104°12.1	58°01.4	54°27.0	8°38.6	45°37.1	80°04.1	82°17.4	111°38.7
12	196°03.4	16.7'	S 06°27.4	-14.0'	54.3'	103°47.7	57°41.2	53°56.9	8°08.9	46°07.1	80°32.1	82°47.5	112°07.0
13	210°39.1	16.7'	06°41.4	-14.0'	54.3'	103°23.2	57°21.1	53°26.9	7°39.2	46°37.0	81°00.0	83°17.5	112°35.4
14	225°14.8	16.6'	06°55.5	-14.0'	54.3'	102°58.7	57°01.1	52°56.8	7°09.6	47°07.0	81°28.0	83°47.6	113°03.7
15	239°50.4	16.6'	07°09.5	-14.0'	54.4'	102°34.2	56°41.2	52°26.7	6°40.1	47°37.0	81°56.0	84°17.6	113°32.0
16	254°26.0	16.6'	07°23.4	-14.0'	54.4'	102°09.6	56°21.3	51°56.7	6°10.6	48°07.0	82°24.0	84°47.7	114°00.3
17	269°01.6	16.5'	07°37.4	-13.9'	54.4'	101°45.0	56°01.6	51°26.6	5°41.2	48°37.0	82°52.0	85°17.8	114°28.6
18	283°37.1	16.5'	S 07°51.3	-13.9'	54.4'	101°20.4	55°41.9	50°56.4	5°11.9	49°07.0	83°20.1	85°47.9	114°56.9
19	298°12.6	16.4'	08°05.2	-13.9'	54.4'	100°55.8	55°22.4	50°26.3	4°42.8	49°37.0	83°48.1	86°18.0	115°25.3
20	312°48.0	16.4'	$08^{\circ}19.1$	-13.9'	54.4'	100°31.1	55°02.9	49°56.2	4°13.9	50°07.1	84°16.2	86°48.1	115°53.6
21	327°23.4	16.3'	08°33.0	-13.8'	54.4'	100°06.4	54°43.5	49°26.0	3°45.3	50°37.2	84°44.3	87°18.3	116°21.9
22	341°58.7	16.3'	08°46.8	-13.8'	54.4'	99°41.6	54°24.3	48°55.8	3° 17.2	51°07.3	85°12.4	87°48.5	116°50.2
23	356°34.0	16.3'	09°00.6	-13.8'	54.4'	99°16.9	54°05.1	48°25.7	2°49.7	51°37.4	85°40.6	88° 18.6	117°18.5
22 nd	SD	= 14.8'	Mer. pas	s. 23:14									

h Moon (23 rd Apr)	Lunar Distance (ol	bjects with larg	gest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	11°09.3	16.2'	S 09°14.4	-13.8'	54.5'		98°52.1	53°46.0	47°55.5		52°07.5	86°08.7	88°48.8
1	25°44.5	16.2'	09°28.2	-13.7'	54.5'		98°27.3	53°27.1	47°25.3		52°37.6	86°36.9	89° 19.0
2	40°19.6	16.1'	09°41.9	-13.7'	54.5'		98°02.4	53°08.3	46°55.0		53°07.8	87°05.0	89°49.2
3	54°54.7	16.0'	09°55.6	-13.7'	54.5'		97°37.6	52°49.5	46°24.8		53°37.9	87°33.2	90° 19.5
4	69°29.8	16.0'	10°09.3	-13.6'	54.5'		97°12.7	52°30.9	45°54.5		54°08.1	88°01.4	90°49.7
5	84°04.8	15.9'	$10^{\circ}22.9$	-13.6'	54.5'		96°47.8	52°12.4	45°24.3		54°38.3	88°29.7	91°20.0
6	98°39.7	15.9'	S 10°36.5	-13.6'	54.5'		96°22.9	51°54.1	44°54.0		55°08.5	88°57.9	91°50.3
7	113°14.6	15.8'	$10^{\circ}50.1$	-13.5'	54.5'		95°57.9	51°35.8	44°23.7		55°38.8	89°26.1	92°20.6
8	127°49.4	15.8'	11°03.6	-13.5'	54.6'		95°32.9	51°17.7	43°53.3		56°09.0	89°54.4	92°50.9
9	142°24.2	15.7'	$11^{\circ}17.1$	-13.5'	54.6'		95°07.9	50°59.7	43°23.0		56°39.3	90°22.7	93°21.2
10	156°58.9	15.7'	11°30.6	-13.4'	54.6'		94°42.9	50°41.9	42°52.7		57°09.6	90°51.0	93°51.5
11	171°33.6	15.6'	$11^{\circ}44.0$	-13.4'	54.6'		94°17.9	50°24.1	42°22.3	3°44.9	57°39.8	91°19.3	94°21.9
12	186°08.2	15.5'	S 11°57.4	-13.4'	54.6'		93°52.8	50°06.6	41°51.9	4° 13.7	58°10.2	91°47.6	94°52.3
13	200°42.7	15.5'	12°10.8	-13.3'	54.6'		93°27.7	49°49.1	41°21.5	4°42.8	58°40.5	92°16.0	95°22.6
14	215°17.2	15.4'	12°24.1	-13.3'	54.6'		93°02.6	49°31.8	$40^{\circ}51.1$	5°12.2	59°10.8	92°44.3	95°53.0
15	229°51.6	15.4'	12°37.4	-13.2'	54.7'		92°37.5	49°14.7	40°20.7	5°41.8	59°41.2	93°12.7	96°23.5
16	244°26.0	15.3'	12°50.6	-13.2'	54.7'		92°12.4	48°57.7	39°50.2	6°11.6	60°11.6	93°41.0	96°53.9
17	259°00.3	15.2'	13°03.8	-13.1'	54.7'		91°47.3	48°40.8	39°19.8	6°41.4	60°42.0	94°09.4	97°24.3
18	273°34.5	15.2'	S 13°16.9	-13.1'	54.7'	119°47.2	91°22.1	48°24.1	38°49.3	7°11.4	61°12.4	94°37.8	97°54.8
19	288°08.7	15.1'	13°30.0	-13.1'	54.7'	119°18.6	90°56.9	48°07.6	38°18.8	7°41.4	61°42.8	95°06.2	98°25.3
20	302°42.8	15.0'	13°43.1	-13.0'	54.7'	118°50.0	90°31.7	47°51.2	37°48.3	8°11.5	62°13.2	95°34.7	98°55.8
21	317°16.8	15.0'	$13^{\circ}56.1$	-13.0'	54.7'	118°21.3	90°06.5	47°35.0	$37^{\circ}17.8$	8°41.7	62°43.7	96°03.1	99°26.3
22	331°50.7	14.9'	$14^{\circ}09.0$	-12.9'	54.8'	117°52.6	89°41.3	47°19.0	36°47.3	9°11.9	63°14.2	96°31.6	99°56.8
23	346°24.6	14.8'	14°21.9	-12.9'	54.8'	117°23.9	89°16.1	47°03.2	36°16.7	9°42.2	63°44.7	97°00.0	100°27.4
23 rd	SD	= 14.9'	Mer. pas	s. 23:56									

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

Wed	GHA	ν	Dec	d	HP	-Fomalhaut	-Achernar	-Altair	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	0°58.4	14.7'	S 14°34.8	-12.8'	54.8'	116°55.2		88°50.8	35°46.1	10°12.5	64° 15.2	97°28.5	100°57.9
1	15°32.2	14.7'	14°47.6	-12.8'	54.8'	116°26.4		88°25.6	35° 15.5	10°42.9	64°45.7	97°57.0	101°28.5
2	30°05.9	14.6'	15°00.3	-12.7'	54.8'	115°57.6		88°00.3	34°44.9	11°13.3	65° 16.3	98°25.5	101°59.1
3	44°39.5	14.5'	15°13.0	-12.6'	54.8'	115°28.7		87°35.0	34°14.3	11°43.7	65°46.8	98°54.0	102°29.7
4	59°13.0	14.4'	15°25.7	-12.6'	54.8'	114°59.9		87°09.7	33°43.7	12°14.2	66° 17.4	99°22.5	103°00.4
5	73°46.4	14.4'	$15^{\circ}38.3$	-12.5'	54.9'	114°31.0	106°50.2	86°44.4	33°13.0	12°44.7	66°48.0	99°51.0	103°31.0
6	88°19.8	14.3'	S 15°50.8	-12.5'	54.9'	114°02.0	106°35.1	86°19.1	32°42.3	13°15.2	67°18.6	100°19.5	104°01.7
7	102°53.1	14.2'	16°03.3	-12.4'	54.9'	113°33.1	106°19.9	85°53.8	32°11.7	13°45.8	67°49.2	100°48.1	104°32.4
8	117°26.3	14.1'	$16^{\circ}15.7$	-12.4'	54.9'	113°04.1	106°04.7	85°28.5	31°40.9	14°16.4	68° 19.9	101°16.6	105°03.1
9	131°59.5	14.1'	$16^{\circ}28.0$	-12.3'	54.9'	112°35.0	105°49.4	85°03.1	31°10.2	14°47.0	68° 50.6	101°45.2	105°33.8
10	146°32.5	14.0'	16°40.3	-12.2'	54.9'	112°06.0	105°34.0	84°37.8	30°39.5	15°17.6	69°21.3	102°13.8	106°04.5
11	161°05.5	13.9'	$16^{\circ}52.6$	-12.2'	55.0'	111°36.9	105°18.5	84°12.5	30°08.7	15°48.3	69°52.0	102°42.3	106°35.2
12	175°38.4	13.8'	S 17°04.7	-12.1'	55.0'	111°07.8	105°03.0	83°47.1	29°37.9	16°18.9	70°22.7	103°10.9	107°06.0
13	190°11.2	13.7'	$17^{\circ}16.8$	-12.0'	55.0'	110°38.7	104°47.5	83°21.7	29°07.1	16°49.6	70°53.4	103°39.5	107°36.8
14	204°44.0	13.7'	17°28.9	-12.0'	55.0'	110°09.5	104°31.8	82°56.4	28°36.3	17°20.4	71°24.2	104°08.1	108°07.6
15	219°16.6	13.6'	17°40.8	-11.9'	55.0'	109°40.3	104°16.1	82°31.0	28°05.5	17°51.1	71°54.9	104°36.7	108°38.4
16	233°49.2	13.5'	17°52.7	-11.8'	55.0'	109°11.1	104°00.4	82°05.7	27°34.7	18°21.9	72°25.7	105°05.3	109°09.3
17	248°21.7	13.4'	$18^{\circ}04.6$	-11.8'	55.1'	108°41.8	103°44.5	81°40.3	27°03.8	18°52.7	72°56.6	105°33.9	109°40.1
18	262°54.1	13.3'	S 18°16.3	-11.7'	55.1'	108°12.6	103°28.7	81°14.9	26°32.9	19°23.5	73°27.4	106°02.6	110°11.0
19	277°26.4	13.2'	18°28.0	-11.6'	55.1'	107°43.3	103°12.7	80°49.5	26°02.0	19°54.3	73°58.2	106°31.2	110°41.9
20	291°58.7	13.1'	18°39.6	-11.5'	55.1'	107°13.9	102°56.7	80°24.2	25°31.1	20°25.2	74°29.1	106°59.8	111°12.8
21	306°30.8	13.1'	18°51.2	-11.5'	55.1'	106°44.6	102°40.7	79°58.8	25°00.2	20°56.1	75°00.0	107°28.4	111°43.7
22	321°02.9	13.0'	$19^{\circ}02.6$	-11.4'	55.1'	106° 15.2	102°24.6	79°33.4	24°29.2	21°27.0	75°30.9	107°57.1	112°14.7
23	335°34.9	12.9'	19°14.0	-11.3'	55.2'	105°45.8	102°08.4	79°08.1	23°58.2	21°57.9	76°01.8	108°25.7	112°45.6
24 th	SI	O = 14.9	9' Mer. pa	ss:-									

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

Thu	GHA	ν	Dec	d	HP	-Mars	-Saturn	-Fomalhaut	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	350°06.7	12.8'	S 19°25.3	-11.2'	55.2'		119° 16.5	105°16.4	23°27.2	22°28.8	76°32.7	108°54.4	113°16.6
1	4°38.5	12.7'	19°36.5	-11.2'	55.2'		118°45.7	104°47.0	22°56.2	22°59.8	77°03.7	109°23.0	113°47.6
2	19°10.2	12.6'	19°47.7	-11.1'	55.2'		118° 14.9	104°17.5	22°25.2	23°30.8	77°34.7	109°51.7	114° 18.6
3	33°41.9	12.5'	$19^{\circ}58.8$	-11.0'	55.2'		117°44.1	103°48.0	21°54.2	24°01.8	78°05.7	110°20.4	114°49.7
4	48°13.4	12.4'	20°09.8	-10.9'	55.2'		117°13.3	103°18.5	21°23.1	24°32.8	78°36.7	110°49.0	115°20.7
5	62°44.8	12.3'	20°20.7	-10.8'	55.3'		116°42.4	102°48.9	20°52.0	25°03.8	79°07.7	111°17.7	115°51.8
6	77°16.2	12.3'	S 20°31.5	-10.7'	55.3'		116°11.5	102°19.3	20°20.9	25°34.9	79°38.8	111°46.3	116°22.9
7	91°47.4	12.2'	20°42.2	-10.6'	55.3'		115°40.7	101°49.8	19°49.8	26°06.0	80°09.8	112°15.0	116°54.0
8	106°18.6	12.1'	20°52.8	-10.6'	55.3'		115°09.7	101°20.1	19° 18.7	26°37.1	80°40.9	112°43.6	117°25.1
9	120°49.7	12.0'	21°03.4	-10.5'	55.3'		114°38.8	100°50.5	18°47.5	27°08.2	81°12.0	113°12.3	117°56.2
10	135°20.6	11.9'	$21^{\circ}13.9$	-10.4'	55.3'		114°07.9	100°20.8	18°16.3	27°39.3	81°43.2	113°41.0	118°27.4
11	149°51.5	11.8'	21°24.2	-10.3'	55.4'		113°36.9	99°51.1	17°45.2	28°10.5	82°14.3	114°09.6	118°58.6
12	164°22.3	11.7'	S 21°34.5	-10.2'	55.4'		113°05.9	99°21.4	17° 13.9	28°41.7	82°45.5	114°38.3	119°29.8
13	178°53.0	11.6'	21°44.7	-10.1'	55.4'		112°34.9	98°51.7	16°42.7	29° 12.9	83°16.6	115°06.9	
14	193°23.6	11.5'	21°54.8	-10.0'	55.4'		112°03.9	98°22.0	16°11.5	29°44.1	83°47.8	115°35.6	
15	207°54.1	11.4'	22°04.8	-9.9'	55.4'		111°32.9	97°52.2	15°40.2	30° 15.3	84°19.1	116°04.2	
16	222°24.5	11.3'	$22^{\circ}14.7$	-9.8'	55.5'		111°01.8	97°22.4	15°08.9	30°46.6	84°50.3	116°32.8	
17	236°54.8	11.2'	22°24.5	-9.7'	55.5'		110°30.8	96°52.6	14°37.6	31°17.9	85°21.6	117°01.5	
18	251°25.0	11.1'	S 22°34.2	-9.6'	55.5'		109°59.7	96°22.7	14°06.3	31°49.2	85°52.8	117°30.1	
19	265°55.2	11.0'	22°43.8	-9.5'	55.5'	119°33.7	109°28.5	95°52.9	13°34.9	32°20.5	86°24.1	117°58.7	
20	280°25.2	10.9'	22°53.3	-9.4'	55.5'	119°04.3	108°57.4	95°23.0	13°03.6	32°51.8	86°55.5	118°27.3	
21	294°55.1	10.8'	23°02.7	-9.3'	55.5'	118°34.8	108°26.3	94°53.1	12°32.2	33°23.2	87°26.8	118°55.9	
22	309°25.0	10.7'	$23^{\circ}11.9$	-9.2'	55.6'	118°05.3	107°55.1	94°23.2	12°00.8	33°54.6	87°58.2	119°24.5	
23	323°54.7	10.6'	23°21.1	-9.1'	55.6'	117°35.8	107°23.9	93°53.2	11°29.4	34°26.0	88°29.5	119°53.1	
25 th	SD	= 15.0'	Mer. pas	s. 00:41									

h Moon (26 th Apr)	Lunar Distance (d	objects with larg	gest hourly LD delta)
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Fri	GHA	ν	Dec	d	HP	-Mars	-Saturn	-Fomalhaut	-Altair	-Antares	+Spica	+Arcturus	+Regulus
0	338°24.4	10.6'	S 23°30.2	-9.0'	55.6'	117°06.3	106°52.7	93°23.3	68°36.9	10°58.0	34°57.4	47°36.7	89°00.9
1 1	352°53.9	10.5'	23°39.1	-8.8'	55.6'	116°36.8	106°21.4	92°53.3	68°11.8	10°26.5	35°28.9	47°59.1	89°32.3
2	7°23.4	10.4'	23°48.0	-8.7'	55.6'	116°07.2	105°50.2	92°23.3	67°46.8	9°55.0	36°00.3	48°21.6	90°03.8
3	21°52.7	10.3'	23°56.7	-8.6'	55.7'	115°37.6	105°18.9	91°53.2	67°21.9	9°23.5	36°31.8	48° 44.2	90°35.2
4	36°22.0	10.2'	24°05.3	-8.5'	55.7'	115°08.0	104°47.6	91°23.2	66°56.9	8°52.0	37°03.3	49°07.0	91°06.7
5	50°51.2	10.1'	24°13.8	-8.4'	55.7'	114°38.4	104°16.3	90°53.1	66°32.0	8°20.5	37°34.8	49°29.9	91°38.2
6	65°20.2	10.0'	S 24°22.2	-8.3'	55.7'	114°08.7	103°45.0	90°23.0	66°07.1	7°49.0	38°06.4	49°53.0	92°09.7
7	79°49.2	9.9'	24°30.5	-8.2'	55.7'	113°39.1	103°13.6	89°52.9	65°42.3	7°17.4	38°38.0	50° 16.2	92°41.3
8	94°18.1	9.8'	24°38.7	-8.0'	55.8'	113°09.4	102°42.3	89°22.8	65°17.5	6°45.8	39°09.5	50° 39.5	93°12.8
9	108°46.9	9.7'	24°46.7	-7.9'	55.8'	112°39.7	102°10.9	88°52.7	64°52.7	6°14.2	39°41.1	51°02.9	93°44.4
10	123°15.6	9.6'	24°54.6	-7.8'	55.8'	112°10.0	101°39.5	88°22.5	64°28.0	5°42.6	40°12.8	51°26.4	94°16.0
11	137°44.2	9.5'	25°02.4	-7.7'	55.8'	111°40.2	101°08.0	87°52.3	64°03.3	5°11.0	40°44.4	51°50.1	94°47.6
12	152°12.7	9.4'	S 25°10.1	-7.5'	55.8'	111°10.5	100°36.6	87°22.1	63°38.6	4°39.4	41°16.1	52°13.9	95°19.2
13	166°41.1	9.3'	25° 17.6	-7.4'	55.9'	110°40.7	100°05.1	86°51.9	63°14.0	4°07.7	41°47.8	52° 37.8	95°50.9
14	181°09.5	9.2'	25°25.0	-7.3'	55.9'	110°10.9	99°33.6	86°21.7	62°49.4	3°36.1	42°19.5	53°01.8	96°22.6
15	195°37.7	9.1'	25°32.3	-7.2'	55.9'	109°41.1	99°02.1	85°51.4	62°24.9	3°04.5	42°51.2	53°25.9	96°54.2
16	210°05.8	9.1'	25°39.5	-7.0'	55.9'	109°11.2	98°30.5	85°21.2	62°00.4	2°32.9	43°23.0	53°50.1	97°26.0
17	224°33.9	9.0'	25°46.5	-6.9'	55.9'	108°41.4	97°59.0	84°50.9	61°36.0	2°01.4	43°54.7	54°14.4	97°57.7
18	239°01.9	8.9'	S 25°53.4	-6.8'	56.0'	108° 11.5	97°27.4	84°20.6	61°11.6	1°30.0	44°26.5	54°38.9	98°29.5
19	253°29.7	8.8'	26°00.2	-6.6'	56.0'	107°41.6	96°55.8	83°50.3	60°47.3	0°59.1	44°58.4	55°03.4	99°01.2
20	267°57.5	8.7'	$26^{\circ}06.8$	-6.5'	56.0'	107°11.6	96°24.2	83° 19.9	60°23.0		45°30.2	55°28.0	99°33.0
21	282°25.2	8.6'	$26^{\circ}13.3$	-6.4'	56.0'	106°41.7	95°52.5	82°49.6	59°58.8		46°02.0	55° 52.7	100°04.9
22	296°52.8	8.5'	26° 19.7	-6.2'	56.0'	106°11.7	95°20.9	82° 19.2	59°34.6		46°33.9	56° 17.6	100°36.7
23	311°20.4	8.4'	26°25.9	-6.1'	56.1'	105°41.7	94°49.2	81°48.8	59°10.5		47°05.8	56°42.5	101°08.6
26 th	SD	= 15.2'	Mer. pass	. 01:29									

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

Sat	GHA	ν	Dec	d	HP	-Mars	-Saturn	-Fomalhaut	-Altair	+Antares	+Spica	+Arcturus	+Regulus
0	325°47.8	8.4'	S 26°32.0	-6.0'	56.1'	105°11.7	94° 17.5	81°18.4	58°46.4		47° 37.7	57°07.5	101°40.4
1	340°15.2	8.3'	26°38.0	-5.8'	56.1'	104°41.7	93°45.8	80°48.0	58°22.4	2°16.1	48°09.7	57°32.6	102°12.3
2	354°42.4	8.2'	26°43.8	-5.7'	56.1'	104°11.6	93°14.0	80°17.6	57°58.5	2°47.9	48°41.7	57° 57.8	102°44.3
3	9°09.6	8.1'	26°49.5	-5.5'	56.1'	103°41.6	92°42.3	79°47.1	57°34.6	3°19.8	49°13.6	58°23.0	103°16.2
4	23°36.7	8.0'	26°55.0	-5.4'	56.2'	103°11.5	92° 10.5	79°16.7	57°10.9	3°51.7	49°45.6	58°48.4	103°48.2
5	38°03.8	7.9'	27°00.4	-5.2'	56.2'	102°41.3	91°38.7	78°46.2	56°47.1	4°23.6	50° 17.7	59°13.9	104°20.2
6	52°30.7	7.9'	S 27°05.6	-5.1'	56.2'	102°11.2	91°06.8	78°15.7	56°23.5	4°55.6	50°49.7	59°39.4	104°52.2
7	66°57.6	7.8'	$27^{\circ}10.7$	-4.9'	56.2'	101°41.0	90°35.0	77°45.2	55°59.9	5°27.7	51°21.8	60°05.0	105°24.2
8	81°24.4	7.7'	$27^{\circ}15.7$	-4.8'	56.3'	101°10.9	90°03.1	77°14.7	55°36.4	5°59.7	51°53.9	60°30.7	105°56.3
9	95°51.1	7.6'	27°20.5	-4.7'	56.3'	100°40.7	89°31.2	76°44.1	55°13.0	6°31.8	52°26.0	60°56.4	106°28.3
10	110°17.7	7.6'	$27^{\circ}25.1$	-4.5'	56.3'	100°10.4	88°59.3	76°13.6	54°49.7	7°03.9	52°58.2	61°22.3	107°00.4
11	124°44.3	7.5'	27°29.6	-4.4'	56.3'	99°40.2	88°27.3	75°43.0	54°26.4	7°36.1	53°30.3	61°48.2	107°32.5
12	139°10.8	7.4'	S 27°34.0	-4.2'	56.3'	99°09.9	87°55.4	75°12.4	54°03.3	8°08.3	54°02.5	62°14.2	108°04.7
13	153°37.2	7.4'	27°38.2	-4.0'	56.4'	98°39.6	87°23.4	74°41.8	53°40.2	8°40.5	54°34.7	62°40.3	108°36.8
14	168°03.5	7.3'	27°42.2	-3.9'	56.4'	98°09.3	86°51.4	74°11.2	53°17.2	9°12.7	55°06.9	63°06.4	109°09.0
15	182°29.8	7.2'	$27^{\circ}46.1$	-3.7'	56.4'	97°39.0	86° 19.3	73°40.6	52°54.3	9°44.9	55°39.2	63°32.6	109°41.2
16	196°56.0	7.1'	27°49.9	-3.6'	56.4'	97°08.6	85°47.3	73°10.0	52°31.5	10°17.2	56°11.4	63°58.9	110°13.4
17	211°22.2	7.1'	27°53.4	-3.4'	56.4'	96°38.2	85° 15.2	72°39.3	52°08.9	10°49.5	56°43.7	64°25.2	110°45.7
18	225°48.3	7.0'	S 27°56.9	-3.3'	56.5'	96°07.8	84°43.1	72°08.7	51°46.3	11°21.8	57° 16.1	64°51.6	111°18.0
19	240°14.3	7.0'	$28^{\circ}00.1$	-3.1'	56.5'	95°37.4	84°11.0	71°38.0	51°23.8	11°54.1	57°48.4	65°18.1	111°50.2
20	254°40.2	6.9'	28°03.2	-3.0'	56.5'	95°06.9	83°38.8	71°07.3	51°01.4	12°26.5	58° 20.8	65°44.6	112°22.6
21	269°06.1	6.8'	28°06.2	-2.8'	56.5'	94°36.5	83°06.7	70°36.7	50°39.2	12°58.9	58°53.1	66°11.2	112°54.9
22	283°32.0	6.8'	$28^{\circ}09.0$	-2.6'	56.6'	94°06.0	82°34.5	70°06.0	50°17.1	13°31.3	59°25.6	66°37.9	113°27.2
23	297°57.8	6.7'	28°11.6	-2.5'	56.6'	93°35.4	82°02.3	69°35.3	49°55.1	14°03.7	59°58.0	67°04.6	113°59.6
27 th	SD =	= 15.3′	Mer. pas	s. 02:22	!								

h		Moor	ո (28 th Aյ	or)			Lunar	Distance	(objects w	ith largest	hourly	LD delta)	
Sun	GHA	ν	Dec	d	HP	-Venus	-Mars	-Saturn	-Fomalhaut	+Antares	+Spica	+Arcturus	+Regulus
0	312°23.5	6.7'	S 28°14.1	-2.3'	56.6'		93°04.9	81°30.0	69°04.6	14°36.2	60°30.4	67°31.4	114°32.0
1	326°49.2	6.6'	28°16.4	-2.1'	56.6'		92°34.3	80°57.8	68°33.8	15°08.7	61°02.9	67° 58.3	115°04.5
2	341°14.8	6.6'	$28^{\circ}18.5$	-2.0'	56.6'		92°03.8	80°25.5	68°03.1	15°41.2	61°35.4	68°25.2	115°36.9
3	355°40.4	6.5'	28°20.5	-1.8'	56.7'		91°33.1	79°53.2	67°32.3	16°13.7	62°07.9	68°52.1	116°09.4
4	10°05.9	6.5'	28°22.3	-1.6'	56.7'		91°02.5	79°20.9	67°01.6	16°46.2	62°40.5	69°19.2	116°41.9
5	24°31.4	6.4'	28°24.0	-1.5'	56.7'		90°31.8	78°48.5	66°30.8	17°18.8	63°13.1	69°46.2	117°14.4
6	38°56.8	6.4'	S 28°25.5	-1.3'	56.7'		90°01.2	78°16.1	66°00.1	17°51.4	63°45.7	70°13.4	117°46.9
7	53°22.2	6.3'	28°26.8	-1.2'	56.8'	119°42.3	89°30.5	77°43.7	65°29.3	18°24.0	64°18.3	70°40.5	118°19.5
8	67°47.5	6.3'	28°27.9	-1.0'	56.8'	119°12.8	88°59.7	77°11.3	64°58.5	18°56.7	64°50.9	71°07.8	118°52.1
9	82°12.9	6.3'	28°28.9	-0.8'	56.8'	118°43.2	88°29.0	76°38.9	64°27.7	19°29.4	65°23.6	71°35.1	119°24.7
10	96°38.1	6.2'	28°29.7	-0.6'	56.8'		87°58.2	76°06.4	63°56.9	20°02.1	65°56.3	72°02.4	119°57.3
11	111°03.4	6.2'	28°30.4	-0.5'	56.8'		87°27.4	75°33.9	63°26.1	20°34.8	66°29.0	72°29.8	
12	125°28.6	6.2'	S 28°30.9	-0.3'	56.9'		86° 56.6	75°01.4	62°55.3	21°07.5	67°01.7	72°57.2	
13	139°53.7	6.1'	28°31.2	-0.1'	56.9'		86°25.7	74°28.8	62°24.5	21°40.3	67°34.5	73°24.7	
14	154°18.9	6.1'	28°31.3	0.0'	56.9'		85°54.9	73°56.3	61°53.7	22°13.1	68°07.3	73°52.3	
15	168°44.0	6.1'	28°31.3	0.2'	56.9'		85°24.0	73°23.7	61°22.9	22°45.9	68°40.1	74° 19.8	
16	183°09.1	6.1'	28°31.1	0.4'	57.0'		84°53.0	72°51.1	60°52.1	23°18.7	69°12.9	74°47.5	
17	197°34.1	6.0'	28°30.7	0.5'	57.0'		84°22.1	72°18.4	60°21.3	23°51.6	69°45.8	75° 15.1	
18	211°59.2	6.0'	S 28°30.1	0.7'	57.0'		83°51.1	71°45.7	59°50.5	24°24.5	70°18.6	75°42.9	
19	226°24.2	6.0'	28°29.4	0.9'	57.0'		83°20.1	71°13.1	59°19.7	24°57.4	70°51.5	76° 10.6	
20	240°49.2	6.0'	28°28.5	1.1'	57.1'		82°49.1	70°40.3	58°48.8	25°30.3	71°24.5	76°38.4	
21	255°14.2	6.0'	28°27.5	1.2'	57.1'		82°18.1	70°07.6	58°18.0	26°03.3	71°57.4	77°06.3	
22	269°39.2	6.0'	28°26.3	1.4'	57.1'		81°47.0	69°34.8	57°47.2	26°36.3	72°30.4	77°34.2	
23	284°04.1	5.9'	28°24.8	1.6'	57.1'		81°15.9	69°02.0	57°16.4	27°09.3	73°03.4	78°02.1	
28 th	SD :	= 15.4'	Mer. pas	s. 03:18	3								

h Moon (20 th Apr) Lunar Distance (objects with la	act bourly ID dol

			· (=3 · · · ·			zana: ziotane (especie meni la gestinani) zz uont							
Mon	GHA	ν	Dec	d	HP	-Sun	-Mars	-Saturn	-Fomalhaut	+Antares	+Hadar	+Spica	+Arcturus
0	298°29.1	5.9'	S 28°23.3	1.7'	57.2'		80°44.8	68°29.2	56°45.6	27°42.3	54°36.6	73°36.5	78°30.1
1	312°54.0	5.9'	28°21.5	1.9'	57.2'		80°13.6	67°56.4	56°14.8	28°15.4	54°56.5	74°09.5	78°58.1
2	327°18.9	5.9'	$28^{\circ}19.6$	2.1'	57.2'		79°42.5	67°23.5	55°44.0	28°48.5	55° 16.5	74°42.6	79°26.1
3	341°43.8	5.9'	28° 17.5	2.3'	57.2'	119°35.3	79°11.3	66°50.6	55°13.2	29°21.6	55°36.7	75°15.7	79°54.2
4	356°08.8	5.9'	28° 15.2	2.4'	57.2'	119°04.6	78°40.0	66°17.7	54°42.4	29°54.7	55°57.1	75°48.8	80°22.3
5	10°33.7	5.9'	$28^{\circ}12.8$	2.6'	57.3'	118°33.9	78°08.8	65°44.8	54°11.6	30°27.9	56° 17.6	76°22.0	80°50.5
6	24°58.6	5.9'	S 28°10.2	2.8'	57.3'	118°03.2	77°37.5	65°11.8	53°40.8	31°01.1	56°38.2	76°55.2	81°18.7
7	39°23.5	5.9'	28°07.4	3.0'	57.3'	117°32.4	77°06.2	64°38.8	53°10.1	31°34.3	56°59.0	77°28.4	81°46.9
8	53°48.5	5.9'	28°04.4	3.1'	57.3'	117°01.6	76°34.9	64°05.8	52°39.3	32°07.6	57°20.0	78°01.6	82°15.2
9	68°13.4	5.9'	28°01.3	3.3'	57.4'	116°30.8	76°03.6	63°32.8	52°08.6	32°40.8	57°41.1	78°34.9	82°43.5
10	82°38.3	6.0'	27°58.0	3.5'	57.4'	115°59.9	75°32.2	62°59.7	51°37.9	33°14.1	58°02.3	79°08.2	83°11.8
11	97°03.3	6.0'	$27^{\circ}54.5$	3.6'	57.4'	115°29.0	75°00.8	62°26.6	51°07.1	33°47.4	58°23.6	79°41.5	83°40.2
12	111°28.2	6.0'	S 27°50.9	3.8'	57.4'	114°58.1	74°29.4	61°53.5	50°36.4	34°20.8	58°45.1	80°14.8	84°08.6
13	125°53.2	6.0'	$27^{\circ}47.1$	4.0'	57.5'	114°27.2	73°57.9	61°20.3	50°05.8	34°54.2	59°06.8	80°48.2	84°37.0
14	140°18.2	6.0'	27°43.1	4.2'	57.5'	113°56.2	73°26.4	60°47.1	49°35.1	35°27.6	59°28.5	81°21.6	85°05.5
15	154°43.2	6.0'	27°38.9	4.3'	57.5'	113°25.3	72°54.9	60°13.9	49°04.5	36°01.0	59°50.4	81°55.0	85°34.0
16	169°08.3	6.0'	27°34.6	4.5'	57.5'	112°54.3	72°23.4	59°40.7	48°33.8	36°34.4	60°12.4	82°28.5	86°02.5
17	183°33.3	6.1'	27°30.1	4.7'	57.6'	112°23.2	71°51.8	59°07.4	48°03.2	37°07.9	60°34.5	83°01.9	86°31.0
18	197°58.4	6.1'	S 27°25.4	4.8'	57.6'	111°52.2	71°20.2	58°34.2	47°32.7	37°41.4	60°56.8	83°35.4	86°59.6
19	212°23.5	6.1'	27°20.5	5.0'	57.6'	111°21.1	70°48.6	58°00.9	47°02.1	38°15.0	61°19.1	84°09.0	87°28.2
20	226°48.6	6.1'	$27^{\circ}15.5$	5.2'	57.6'	110°49.9	70°17.0	57°27.5	46°31.6	38°48.5	61°41.6	84°42.5	87°56.8
21	241°13.7	6.2'	$27^{\circ}10.3$	5.4'	57.7'	110°18.8	69°45.3	56°54.2	46°01.1	39°22.1	62°04.2	85°16.1	88°25.5
22	255°38.9	6.2'	27°05.0	5.5'	57.7'	109°47.6	69° 13.6	56°20.8	45°30.6	39°55.7	62°26.9	85°49.7	88°54.2
23	270°04.1	6.2'	26°59.5	5.7'	57.7'	109°16.4	68°41.9	55°47.3	45°00.2	40°29.4	62°49.8	86°23.3	89°22.9
29 th	SD =	= 15.6′	Mer. pass	s. 04:10	5	$Sun\;SD=15.9'$							

h	Moon	(30th	Anr)

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Sun	-Mars	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Spica	+Arcturus
0	284°29.4	6.3'	S 26°53.8	5.9'	57.7'	108°45.2	68°10.1	55° 13.9	44°29.8	41°03.0	58°49.6	86°57.0	89°51.6
1	298°54.6	6.3'	26°47.9	6.0'	57.8'	108°14.0	67°38.4	54°40.4	43°59.5	41°36.7	59°12.6	87° 30.7	90°20.4
2	313°19.9	6.3'	$26^{\circ}41.9$	6.2'	57.8'	107°42.7	67°06.6	54°06.9	43°29.2	42°10.4	59°35.7	88°04.4	90°49.2
3	327°45.3	6.4'	26°35.7	6.4'	57.8'	107°11.4	66°34.7	53°33.4	42°58.9	42°44.2	59°58.9	88°38.1	91°18.0
4	$342^{\circ}10.7$	6.4'	26°29.4	6.5'	57.8'	106°40.0	66°02.9	52°59.8	42°28.7	43°18.0	60°22.3	89°11.9	91°46.8
5	356°36.1	6.5'	26°22.8	6.7'	57.9'	106°08.7	65°31.0	52°26.3	41°58.5	43°51.8	60°45.7	89°45.7	92°15.6
6	$11^{\circ}01.5$	6.5'	S 26°16.1	6.8'	57.9'	105°37.3	64°59.1	51°52.7	41°28.4	44°25.6	61°09.3	90°19.5	92°44.5
7	25°27.0	6.5'	26°09.3	7.0'	57.9'	105°05.9	64°27.1	51°19.0	40°58.3	44°59.5	61°33.0	90°53.4	93°13.4
8	39°52.6	6.6'	26°02.3	7.2'	57.9'	104°34.4	63°55.2	50°45.3	40°28.3	45°33.4	61°56.8	91°27.3	93°42.3
9	54°18.2	6.6'	$25^{\circ}55.1$	7.3'	58.0'	104°02.9	63°23.2	50°11.7	39°58.3	46°07.3	62°20.7	92°01.2	94°11.2
10	68°43.8	6.7'	25°47.8	7.5'	58.0'	103°31.4	62°51.1	49°37.9	39°28.4	46°41.2	62°44.7	92°35.1	94°40.1
11	83°09.5	6.7'	25°40.3	7.7'	58.0'	102°59.9	62°19.1	49°04.2	38°58.6	47°15.2	63°08.8	93°09.1	95°09.1
12	97°35.2	6.8'	S 25°32.6	7.8'	58.0'	102°28.4	61°47.0	48°30.4	38°28.9	47°49.2	63°33.1	93°43.1	95°38.1
13	$112^{\circ}01.0$	6.8'	25°24.8	8.0'	58.1'	101°56.8	61°14.9	47° 56.6	37°59.2	48°23.2	63°57.4	94° 17.1	96°07.0
14	126°26.8	6.9'	$25^{\circ}16.9$	8.1'	58.1'	101°25.2	60°42.7	47°22.8	37°29.6	48°57.3	64°21.8	94°51.2	96°36.0
15	140°52.7	6.9'	25°08.7	8.3'	58.1'	100°53.5	60°10.6	46°48.9	37°00.1	49°31.4	64°46.4	95°25.2	97°05.0
16	155°18.6	7.0'	25°00.4	8.4'	58.1'	100°21.8	59°38.4	46°15.0	36°30.7	50°05.5	65°11.0	95°59.3	97°34.1
17	169°44.6	7.0'	24°52.0	8.6'	58.2'	99°50.1	59°06.2	45°41.1	36°01.4	50°39.6	65°35.7	96°33.5	98°03.1
18	184°10.6	7.1'	S 24°43.4	8.7'	58.2'	99°18.4	58°33.9	45°07.1	35°32.1	51°13.8	66°00.5	97°07.6	98°32.1
19	198°36.7	7.1'	24°34.7	8.9'	58.2'	98°46.7	58°01.6	44°33.2	35°03.0	51°48.0	66°25.5	97°41.8	99°01.2
20	213°02.8	7.2'	24°25.8	9.1'	58.2'	98°14.9	57°29.3	43°59.2	34°34.0	52°22.2	66°50.5	98°16.1	99°30.3
21	227°29.0	7.3'	$24^{\circ}16.7$	9.2'	58.3'	97°43.1	56°57.0	43°25.1	34°05.1	52°56.5	67°15.5	98°50.3	99°59.3
22	241°55.3	7.3'	24°07.5	9.4'	58.3'	97°11.2	56°24.6	42°51.1	33°36.4	53°30.8	67°40.7	99°24.6	100°28.4
23	256°21.6	7.4'	23°58.1	9.5'	58.3'	96°39.4	55°52.2	42°17.0	33°07.7	54°05.1	68°06.0	99°58.9	100°57.5
30 th	SD =	= 15.7′	Mer. pass	s. 05:14	4				Sun S	D = 15.9'			

h

Moon (1st May)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Sun	-Mars	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Spica	+Arcturus	
0	270°48.0	7.4'	S 23°48.6	9.7'	58.3'	96°07.5	55°19.8	41°42.8	32°39.2	54°39.4	68°31.3	100°33.2	101°26.6	
1	285°14.4	7.5'	23°39.0	9.8'	58.4'	95°35.5	54°47.3	41°08.7	32°10.9	55°13.8	68°56.8	101°07.6	101°55.7	
2	299°40.9	7.5'	23°29.2	9.9'	58.4'	95°03.6	54°14.8	40°34.5	31°42.7	55°48.2	69°22.3	101°42.0	102°24.8	
3	314°07.4	7.6'	23°19.2	10.1'	58.4'	94°31.6	53°42.3	40°00.3	31°14.6	56°22.6	69°47.9	102°16.4	102°53.9	
4	328°34.0	7.7'	23°09.2	10.2'	58.4'	93°59.6	53°09.8	39°26.1	30°46.8	56°57.1	70°13.5	102°50.9	103°23.0	
5	343°00.7	7.7'	22°58.9	10.4'	58.5'	93°27.5	52°37.2	38°51.8	30°19.1	57°31.6	70°39.3	103°25.3	103°52.1	
6	357°27.4	7.8'	S 22°48.5	10.5'	58.5'	92°55.5	52°04.6	38°17.5	29°51.6	58°06.1	71°05.1	103°59.8	104°21.2	
7	11°54.2	7.8'	22°38.0	10.7'	58.5'	92°23.4	51°32.0	37°43.2	29°24.3	58°40.6	71°31.0	104°34.4	104°50.3	
8	26°21.1	7.9'	22°27.4	10.8'	58.5'	91°51.2	50°59.3	37°08.8	28° 57.2	59°15.2	71°57.0	105°09.0	105°19.4	
9	40°48.0	8.0'	22°16.6	10.9'	58.6'	91°19.1	50°26.6	36°34.5	28°30.3	59°49.8	72°23.0	105°43.6	105°48.5	
10	55°14.9	8.0'	22°05.6	11.1'	58.6'	90°46.9	49°53.9	36°00.0	28°03.7	60°24.5	72°49.1	106°18.2	106°17.6	
11	69°42.0	8.1'	21°54.6	11.2'	58.6'	90°14.7	49°21.2	35°25.6	27°37.3	60°59.1	73°15.3	106°52.8	106°46.7	
12	84°09.1	8.2'	S 21°43.4	11.3'	58.6'	89°42.4	48°48.4	34°51.1	27°11.2	61°33.8	73°41.5	107°27.5	107° 15.8	
13	98°36.2	8.2'	21°32.0	11.5'	58.7'	89°10.1	48°15.6	34°16.6	26°45.4	62°08.5	74°07.8	108°02.2	107°44.9	
14	113°03.5	8.3'	21°20.6	11.6'	58.7'	88°37.8	47°42.8	33°42.1	26° 19.9	62°43.3	74°34.2	108°37.0	108°14.0	
15	127°30.7	8.3'	$21^{\circ}09.0$	11.7'	58.7'	88°05.5	47°09.9	33°07.6	25°54.6	63°18.1	75°00.6	109°11.7	108°43.0	
16	141°58.1	8.4'	20°57.2	11.9'	58.7'	87°33.1	46°37.0	32°33.0	25°29.7	63°52.9	75°27.1	109°46.5	109°12.1	
17	156°25.5	8.5'	20°45.4	12.0'	58.8'	87°00.7	46°04.1	31°58.4	25°05.2	64°27.7	75°53.7	110°21.4	109°41.1	
18	170°53.0	8.5'	S 20°33.4	12.1'	58.8'	86°28.3	45°31.1	31°23.7	24°41.0	65°02.6	76°20.3	110°56.2	110°10.1	
19	185°20.5	8.6'	$20^{\circ}21.2$	12.2'	58.8'	85°55.9	44°58.2	30°49.0	24° 17.2	65°37.5	76°47.0	111°31.1	110°39.1	
20	199°48.1	8.7'	20°09.0	12.4'	58.8'	85°23.4	44°25.2	30°14.3	23°53.8	66°12.4	77°13.7	112°06.0	111°08.1	
21	214°15.8	8.7'	19°56.6	12.5'	58.9'	84°50.9	43°52.1	29°39.6	23°30.8	66°47.4	77°40.5	112°41.0	111°37.0	
22	228°43.5	8.8'	19°44.1	12.6'	58.9'	84°18.3	43°19.0	29°04.9	23°08.3	67°22.4	78°07.4	113°16.0	112°06.0	
23	243°11.3	8.8'	19°31.5	12.7'	58.9'	83°45.8	42°46.0	28°30.1	22°46.3	67°57.4	78°34.3	113°51.0	112°34.9	
1 st	SD :	= 15.9'	Mer. pas	s. 06:11			$Sun\;SD=15.9'$							

h	Moon	(2nd	May	
11	IVIOOIII	1/	iviavi	

Thu	GHA	ν	Dec	d	HP	-Sun	-Mars	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	257°39.1	8.9'	S 19°18.8	12.9'	58.9'	83°13.2	42°12.8	27°55.3	22°24.7	68°32.4	79°01.2	113°03.8	114°26.0
1	272°07.0	9.0'	$19^{\circ}05.9$	13.0'	58.9'	82°40.6	41°39.7	27°20.4	22°03.7	69°07.5	79°28.2	113°32.7	115°01.1
2	286°35.0	9.0'	18°53.0	13.1'	59.0'	82°07.9	41°06.5	26°45.5	21°43.3	69°42.6	79°55.3	114°01.5	115° 36.2
3	301°03.0	9.1'	18°39.9	13.2'	59.0'	81°35.2	40°33.3	$26^{\circ}10.6$	21°23.4	70°17.7	80°22.4	114°30.4	116°11.3
4	315°31.1	9.2'	18°26.7	13.3'	59.0'	81°02.5	40°00.0	25°35.7	21°04.2	70°52.9	80°49.5	114°59.2	116°46.4
5	329°59.3	9.2'	18°13.3	13.4'	59.0'	80°29.8	39°26.8	25°00.7	20°45.6	71°28.1	81°16.7	115°27.9	117°21.6
6	344°27.5	9.3'	S 17°59.9	13.5'	59.1'	79°57.0	38°53.5	24°25.8	20°27.7	72°03.3	81°43.9	115°56.6	117°56.8
7	358°55.8	9.3'	17°46.4	13.7'	59.1'	79°24.2	38°20.1	23°50.7	20° 10.5	72°38.5	82°11.2	116°25.3	118° 32.0
8	13°24.1	9.4'	17°32.7	13.8'	59.1'	78°51.4	37°46.8	23°15.7	19°54.0	73°13.8	82°38.5	116°54.0	119°07.3
9	27°52.5	9.4'	$17^{\circ}19.0$	13.9'	59.1'	78°18.5	37°13.4	22°40.6	19°38.3	73°49.1	83°05.9	117°22.6	119°42.6
10	42°20.9	9.5'	$17^{\circ}05.1$	14.0'	59.2'	77°45.7	36°40.0	22°05.5		74°24.4	83°33.3	117°51.2	
11	56°49.4	9.6'	$16^{\circ}51.1$	14.1'	59.2'	77°12.7	36°06.5	21°30.4		74°59.8	84°00.7	118°19.7	
12	71°18.0	9.6'	S 16°37.0	14.2'	59.2'	76°39.8	35°33.1	20°55.3		75°35.2	84°28.2	118°48.2	
13	85°46.6	9.7'	16°22.9	14.3'	59.2'	76°06.8	34°59.6	20°20.1		76°10.6	84°55.7	119°16.6	
14	100°15.3	9.7'	$16^{\circ}08.6$	14.4'	59.3'	75°33.8	34°26.0	19°44.9		76°46.0	85°23.3	119°45.0	
15	114°44.0	9.8'	15°54.2	14.5'	59.3'	75°00.8	33°52.5	19°09.6		77°21.5	85°50.9		
16	129°12.8	9.8'	15°39.7	14.6'	59.3'	74°27.8	33°18.9	18°34.4		77°57.0	86°18.5		
17	143°41.6	9.9'	15°25.1	14.7'	59.3'	73°54.7	32°45.3	$17^{\circ}59.1$		78°32.5	86°46.1		
18	158°10.5	9.9'	S 15°10.5	14.8'	59.3'	73°21.6	32°11.6	17°23.8		79°08.1	87°13.8		
19	172°39.4	10.0'	14°55.7	14.9'	59.4'	72°48.5	31°38.0	16°48.4		79°43.7	87°41.5		
20	187°08.4	10.0'	14°40.9	14.9'	59.4'	72°15.3	31°04.3	16°13.1		80°19.3	88°09.2		
21	201°37.5	10.1'	$14^{\circ}25.9$	15.0'	59.4'	71°42.1	30°30.5	15°37.7		80°54.9	88°37.0		
22	216°06.5	10.1'	$14^{\circ}10.9$	15.1'	59.4'	71°08.9	29°56.8	15°02.3		81°30.6	89°04.8		
23	230°35.7	10.2'	13°55.7	15.2'	59.4'	70°35.7	29°23.0	14°26.8		82°06.3	89°32.6		
2 nd	SD	$= 16.1^{\prime}$	Mer. pass	s. 07:04					Sun	SD = 15.9'			

h	Moon	(3 rd	May)

Lunar Distance (objects with largest hourly LD delta) Mars | ±Fomalhaut | -Saturn | +Altair | +Antares | +Rigil Kent.

Fri	GHA	ν	Dec	d	HP	-Sun	-Mars	±Fomalhaut	-Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar
0	245°04.9	10.2'	S 13°40.5	15.3'	59.5'	70°02.4	28°49.2		13°51.4	44°14.2	82°42.0	90°00.4	93°54.4
1	259°34.1	10.3'	$13^{\circ}25.2$	15.4'	59.5'	69°29.1	28° 15.4		13° 15.9	44°35.4	83°17.8	90°28.2	94°21.4
2	274°03.4	10.3'	13°09.8	15.5'	59.5'	68°55.8	27°41.5		12°40.4	44°56.8	83°53.5	90°56.1	94°48.5
3	288°32.7	10.4'	12°54.4	15.5'	59.5'	68°22.4	27°07.6		12°04.9	45°18.6	84°29.3	91°24.0	95°15.5
4	303°02.0	10.4'	12°38.8	15.6'	59.6'	67°49.1	26°33.7		11°29.3	45°40.5	85°05.2	91°51.9	95°42.6
5	317°31.5	10.4'	$12^{\circ}23.2$	15.7'	59.6'	67° 15.7	25°59.8		10°53.7	46°02.7	85°41.0	92°19.8	96°09.7
6	332°00.9	10.5'	S 12°07.5	15.8'	59.6'	66°42.3	25°25.8		10°18.2	46°25.1	86°16.9	92°47.7	96°36.7
7	346°30.4	10.5'	$11^{\circ}51.7$	15.9'	59.6'	66°08.8	24°51.8		9°42.6	46°47.8	86°52.8	93° 15.7	97°03.8
8	0°59.9	10.6'	11°35.9	15.9'	59.6'	65°35.3	24° 17.8		9°07.0	47°10.7	87°28.7	93°43.6	97°30.8
9	15°29.5	10.6'	$11^{\circ}19.9$	16.0'	59.7'	65°01.8	23°43.8		8°31.3	47°33.8	88°04.7	94°11.6	97°57.9
10	29°59.1	10.6'	11°03.9	16.1'	59.7'	64°28.3	23°09.7		7°55.7	47°57.1	88°40.7	94°39.6	98°25.0
11	44°28.8	10.7'	10°47.9	16.1'	59.7'	63°54.8	22°35.6		7°20.1	48°20.7	89°16.7	95°07.6	98°52.0
12	58°58.4	10.7'	S 10°31.7	16.2'	59.7'	63°21.2	22°01.5		6°44.5	48°44.4	89°52.7	95° 35.5	99°19.1
13	73°28.1	10.7'	$10^{\circ}15.5$	16.3'	59.7'	62°47.6	21°27.4		6°08.9	49°08.4	90°28.8	96°03.5	99°46.1
14	87°57.9	10.8'	09°59.2	16.3'	59.7'	62°14.0	20°53.2		5°33.3	49°32.6	91°04.9	96°31.5	100°13.1
15	102°27.7	10.8'	09°42.9	16.4'	59.8'	61°40.3	20° 19.0	19°46.7	4°57.7	49°56.9	91°41.0	96° 59.5	100°40.1
16	116°57.5	10.8'	09°26.5	16.5'	59.8'	61°06.7	19°44.8	20°03.2	4°22.3	50°21.4	92°17.1	97°27.5	101°07.1
17	131°27.3	10.9'	$09^{\circ}10.0$	16.5'	59.8'	60°33.0	19° 10.6	20° 20.5	3°47.0	50°46.2	92°53.3	97°55.5	101°34.1
18	145°57.2	10.9'	S 08°53.5	16.6'	59.8'	59°59.3	18° 36.3	20°38.7	3°11.8	51°11.1	93°29.4	98°23.5	102°01.1
19	160°27.1	10.9'	08°37.0	16.6'	59.8'	59°25.5	18°02.0	20° 57.5	2°37.0	51°36.1	94°05.6	98°51.5	102°28.0
20	174°57.0	11.0'	08°20.3	16.7'	59.9'	58°51.8	17° 27.7	21° 17.1	2°03.0	52°01.4	94°41.9	99° 19.5	102°55.0
21	189°27.0	11.0'	08°03.6	16.7'	59.9'	58° 18.0	16°53.4	21°37.4		52°26.8	95°18.1	99°47.5	103°21.9
22	203°57.0	11.0'	07°46.9	16.8'	59.9'	57°44.2	16° 19.0	21°58.4		52°52.4	95°54.4	100°15.4	103°48.8
23	218°27.0	11.0'	$07^{\circ}30.1$	16.8'	59.9'	57°10.4	15°44.6	22°20.0		53°18.1	96°30.7	100°43.4	104°15.6
3 rd	SD	= 16.2'	Mer. pass	o7:56					Sun SI	D = 15.9'			

Moon (4th May)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Sun	-Mars	+Saturn	+Fomalhaut	+Altair	+Antares	+Rigil Kent.	+Hadar
0	232°57.0	11.0'	S 07°13.3	16.9'	59.9'	56°36.5	15°10.2		22°42.2	53°44.0	97°07.0	101°11.3	104°42.4
1	247°27.0	11.1'	06°56.4	16.9'	59.9'	56°02.7	14°35.8		23°04.9	54°10.1	97°43.3	101°39.2	105°09.2
2	261°57.1	11.1'	06°39.4	17.0'	59.9'	55°28.8	14°01.4		23° 28.3	54°36.3	98°19.7	102°07.2	105°36.0
3	276°27.2	11.1'	06°22.5	17.0'	60.0'	54°54.9	13°26.9		23°52.1	55°02.6	98°56.0	102°35.0	106°02.7
4	290°57.3	11.1'	06°05.4	17.1'	60.0'	54°21.0	12°52.4	3°00.0	24° 16.5	55°29.1	99°32.4	103°02.9	106°29.4
5	305°27.4	11.1'	05°48.4	17.1'	60.0'	53°47.0	12°17.9	3°35.3	24°41.3	55°55.8	100°08.9	103°30.8	106°56.1
6	319°57.5	11.1'	S 05°31.3	17.1'	60.0'	53°13.0	11°43.4	4°10.8	25°06.6	56°22.5	100°45.3	103°58.6	107°22.7
7	334°27.7	11.2'	$05^{\circ}14.1$	17.2'	60.0'	52°39.1	11°08.9	4°46.6	25° 32.3	56°49.4	101°21.8	104°26.4	107°49.3
8	348°57.8	11.2'	04°56.9	17.2'	60.0'	52°05.1	10°34.3	5°22.5	25° 58.5	57°16.5	101°58.2	104°54.2	108°15.8
9	3°28.0	11.2'	04°39.7	17.2'	60.0'	51°31.0	9°59.7	5°58.4	26° 25.0	57°43.6	102°34.7	105°21.9	108°42.3
10	17°58.2	11.2'	04°22.5	17.3'	60.1'	50°57.0	9°25.2	6°34.5	26°51.9	58°10.9	103°11.2	105°49.6	109°08.7
11	32°28.4	11.2'	$04^{\circ}05.2$	17.3'	60.1'	50°23.0	8°50.5	$7^{\circ}10.6$	27° 19.2	58°38.3	103°47.8	106° 17.3	109°35.1
12	46°58.6	11.2'	S 03°47.9	17.3'	60.1'	49°48.9	8° 15.9	7°46.8	27°46.8	59°05.8	104°24.3	106°45.0	110°01.5
13	61°28.8	11.2'	03°30.6	17.4'	60.1'	49°14.8	7°41.3	8°23.0	28° 14.8	59°33.4	105°00.9	107°12.6	110°27.7
14	75°59.0	11.2'	03°13.2	17.4'	60.1'	48°40.7	7°06.6	8°59.2	28°43.0	60°01.2	105°37.5	107°40.2	110°54.0
15	90°29.2	11.2'	02°55.8	17.4'	60.1'	48°06.6	6°31.9	9°35.5	29° 11.5	60°29.0	$106^{\circ}14.1$	108°07.7	111°20.1
16	104°59.4	11.2'	02°38.4	17.4'	60.1'	47°32.4	5°57.2	$10^{\circ}11.8$	29°40.4	60°57.0	106°50.7	108°35.2	111°46.2
17	119°29.6	11.2'	$02^{\circ}21.0$	17.5'	60.1'	46°58.3	5°22.5	10°48.1	30°09.5	61°25.0	107°27.4	109°02.6	112°12.2
18	133°59.8	11.2'	S 02°03.5	17.5'	60.2'	46°24.1	4°47.8	11°24.5	30°38.8	61°53.2	108°04.0	109°30.0	112°38.2
19	148°30.0	11.2'	$01^{\circ}46.0$	17.5'	60.2'	45°50.0	4°13.1	12°00.9	31°08.4	62°21.4	108°40.7	109°57.3	113°04.1
20	163°00.2	11.2'	$01^{\circ}28.6$	17.5'	60.2'	45°15.8	3°38.3	12°37.3	31°38.2	62°49.8	109°17.4	110°24.6	113°29.9
21	177°30.4	11.2'	$01^{\circ}11.0$	17.5'	60.2'	44°41.6	3°03.6	13° 13.7	32°08.3	63°18.2	$109^{\circ}54.1$	110°51.9	113°55.6
22	192°00.6	11.2'	00°53.5	17.5'	60.2'	44°07.3	2°28.9	13°50.2	32° 38.6	63°46.7	110°30.8	111°19.1	114°21.3
23	206°30.8	11.2'	00°36.0	17.5'	60.2'	43°33.1	1°54.2	14°26.6	33°09.1	64°15.4	$111^{\circ}07.5$	111°46.2	114°46.9
4 th	SD	= 16.3'	Mer. pass	. 08:46		$Sun\;SD=15.9'$							

h Moon (5th May)

Sun	GHA	ν	Dec	d	HP	-Sun	±Mars	+Saturn	+Fomalhaut	+Altair	+Antares	+Rigil Kent.	+Hadar
0	221°01.0	11.2'	S 00°18.5	17.5'	60.2'	42°58.9	1° 19.5	15°03.1	33°39.7	64°44.1	111°44.2	112°13.2	115°12.4
1	235°31.1	11.2'	S 00°00.9	17.5'	60.2'	42°24.6	0°45.2	15°39.6	34°10.6	65°12.8	112°21.0	112°40.2	115°37.8
2	250°01.3	11.1'	N 00°16.6	17.6'	60.2'	41°50.4		$16^{\circ}16.1$	34°41.6	65°41.7	112°57.7	113°07.2	116°03.1
3	264°31.4	11.1'	00°34.2	17.6'	60.2'	41°16.1		16°52.7	35°12.8	66°10.6	113°34.5	113°34.0	116°28.3
4	279°01.6	11.1'	$00^{\circ}51.7$	17.6'	60.2'	40°41.8		17°29.2	35°44.2	66°39.7	114°11.3	114°00.8	116°53.5
5	293°31.7	11.1'	$01^{\circ}09.3$	17.6'	60.2'	40°07.5	1°36.0	18°05.8	36° 15.7	67°08.7	114°48.1	114°27.5	117°18.5
6	308°01.8	11.1'	N 01°26.8	17.6'	60.3'		2°10.7	18°42.4	36° 47.4	67°37.9	115°24.9	114°54.2	117°43.4
7	322°31.9	11.1'	01°44.4	17.5'	60.3'		2°45.6	19° 18.9	37° 19.2	68°07.1	116°01.7	115°20.7	118°08.2
8	337°01.9	11.0'	$02^{\circ}01.9$	17.5'	60.3'		3°20.4	19°55.5	37°51.2	68°36.4	116°38.6	115° 47.2	118°32.9
9	351°32.0	11.0'	$02^{\circ}19.5$	17.5'	60.3'		3°55.3	20°32.2	38°23.3	69°05.8	117°15.4	116°13.6	118°57.5
10	6°02.0	11.0'	02°37.0	17.5'	60.3'		4°30.2	21°08.8	38° 55.5	69°35.2	117°52.2	116°39.9	119°22.0
11	20°32.0	11.0'	02°54.5	17.5'	60.3'		5°05.1	21°45.4	39°27.8	70°04.7	118°29.1	117°06.1	119°46.4
12	35°02.0	11.0'	$N03^{\circ}12.0$	17.5'	60.3'		5°40.1	22°22.0	40°00.3	70°34.2	119°06.0	117° 32.2	
13	49°32.0	10.9'	03°29.5	17.5'	60.3'		6° 15.0	22°58.7	40°32.9	71°03.8	119°42.8	117°58.2	
14	64°01.9	10.9'	03°47.0	17.5'	60.3'		6° 50.0	23°35.3	41°05.5	71°33.4		118°24.1	
15	78°31.8	10.9'	04°04.5	17.4'	60.3'		7°24.9	24°12.0	41°38.3	72°03.1		118°49.9	
16	93°01.6	10.8'	04°21.9	17.4'	60.3'		7°59.9	24°48.7	42°11.2	72°32.9		119° 15.6	
17	107°31.5	10.8'	04°39.4	17.4'	60.3'		8°34.9	25°25.3	42°44.1	73°02.7		119°41.2	
18	122°01.3	10.8'	N 04°56.8	17.4'	60.3'		9°09.8	26°02.0	43° 17.2	73°32.5			
19	136°31.1	10.7'	$05^{\circ}14.1$	17.3'	60.3'		9°44.8	26°38.7	43°50.3	74°02.4			
20	151°00.8	10.7'	05°31.5	17.3'	60.3'		10°19.8	27° 15.4	44°23.6	74°32.3			
21	165°30.5	10.7'	05°48.8	17.3'	60.3'		10°54.8	27°52.1	44° 56.9	75°02.3			
22	180°00.2	10.6'	06°06.1	17.3'	60.3'		11°29.8	28°28.8	45°30.3	75°32.3			
23	194°29.8	10.6'	06°23.3	17.2'	60.3'		12°04.8	29°05.5	46°03.7	76°02.3			
5 th	SD	$=16.4^{\prime}$	Mer. pass	. 09:35					Sun SI	0 = 15.9'			

h		Moor	n (6 th Ma	y)		Lunar Dis	tance (o	bjects wi	th largest ho	ourly LD delta)
Mon	GHA	ν	Dec	d	HP	± Achernar	+Mars	+Saturn	+Fomalhaut	+Altair
0	208°59.4	10.6'	N 06°40.6	17.2'	60.3'		12°39.8	29°42.2	46° 37.2	76°32.4
1	223°29.0	10.5'	06°57.8	17.1'	60.3'		13° 14.8	30° 18.9	47° 10.8	77°02.5
2	237°58.5	10.5'	$07^{\circ}14.9$	17.1'	60.3'		13°49.8	30°55.6	47° 44.5	77°32.7
3	252°28.0	10.4'	07°32.0	17.1'	60.3'		14°24.8	31°32.3	48° 18.2	78°02.8
4	266°57.4	10.4'	$07^{\circ}49.1$	17.0'	60.3'		14° 59.8	32°09.0	48°51.9	78°33.0
5	281°26.8	10.3'	$08^{\circ}06.1$	17.0'	60.3'		15°34.8	32°45.7	49° 25.8	79°03.3
6	295°56.1	10.3'	N08°23.1	16.9'	60.3'		16°09.8	33°22.4	49°59.6	79°33.5
7	310°25.4	10.2'	08°40.0	16.9'	60.3'		16°44.8	33°59.1	50°33.6	80°03.8
8	324°54.7	10.2'	08°56.9	16.8'	60.3'	66°11.0	17° 19.8	34°35.8	51°07.5	80°34.1
9	339°23.9	10.1'	09°13.7	16.8'	60.3'	66°26.2	17°54.8	35° 12.5	51°41.6	81°04.4
10	353°53.0	10.1'	09°30.5	16.7'	60.3'	66°41.6	18°29.8	35°49.2	52° 15.6	81°34.7
11	8°22.1	10.0'	09°47.2	16.7'	60.3'	66°57.1	19°04.8	36°25.9	52°49.7	82°05.1
12	22°51.1	10.0'	N10°03.9	16.6'	60.3'	67°12.8	19°39.8	37°02.6	53°23.9	82°35.4
13	37°20.1	9.9'	10°20.5	16.5'	60.3'	67°28.6	20°14.8	37°39.3	53°58.1	83°05.8
14	51°49.1	9.9'	10°37.1	16.5'	60.3'	67°44.5	20°49.8	38° 16.0	54° 32.3	83°36.2
15	66°18.0	9.8'	10°53.5	16.4'	60.2'	68°00.6	21°24.7	38° 52.7	55°06.5	84°06.6
16	80°46.8	9.8'	$11^{\circ}10.0$	16.4'	60.2'	68°16.8	21°59.7	39°29.3	55°40.8	84°37.0
17	95°15.6	9.7'	11°26.3	16.3'	60.2'	68°33.1	22°34.6	40°06.0	56° 15.1	85°07.4
18	109°44.3	9.7'	N11°42.6	16.2'	60.2'	68°49.5	23°09.6	40°42.6	56° 49.5	85°37.8
19	124°12.9	9.6'	11°58.8	16.1'	60.2'	69°06.0	23°44.5	41°19.3	57° 23.8	86°08.2
20	138°41.5	9.5'	$12^{\circ}15.0$	16.1'	60.2'	69°22.7	24° 19.5	41°55.9	57° 58.2	86°38.6
21	153°10.1	9.5'	12°31.0	16.0'	60.2'	69°39.5	24°54.4	42°32.5	58° 32.6	87°09.0
22	167°38.5	9.4'	$12^{\circ}47.0$	15.9'	60.2'	69°56.4	25°29.3	43°09.1	59°07.0	87°39.4
23	182°06.9	9.4'	13°03.0	15.8'	60.2'	70°13.4	26°04.2	43°45.7	59°41.5	88°09.8
6 th	SD	= 16.4'	Mer. pass	. 10:25						

h		Моо	n (7 th Ma	ıy)		Lunar I	Distance	(objects witl	h largest ho	ourly LD delta)
Tue	GHA	ν	Dec	d	HP	+Mars	+Saturn	+Fomalhaut	+Achernar	+Altair
0	196°35.3	9.3'	N 13°18.8	15.8'	60.2'	26°39.1	44°22.3	60°16.0	70°30.5	88°40.2
1	211°03.6	9.2'	13°34.6	15.7'	60.2'	27°13.9	44°58.9	60°50.4	70°47.7	89°10.6
2	225°31.8	9.2'	13°50.2	15.6'	60.1'	27°48.8	45°35.5	61°24.9	71°05.0	89°41.0
3	240°00.0	9.1'	14°05.8	15.5'	60.1'	28°23.6	46°12.0	61°59.4	71°22.4	90°11.4
4	254°28.1	9.0'	14°21.3	15.4'	60.1'	28°58.5	46°48.6	62°34.0	71°39.9	90°41.7
5	268°56.1	9.0'	14°36.7	15.3'	60.1'	29°33.3	47°25.1	63°08.5	71°57.5	91°12.1
6	283°24.0	8.9'	$N14^{\circ}52.1$	15.2'	60.1'	30°08.1	48°01.6	63°43.0	72°15.1	91°42.4
7	297°51.9	8.8'	15°07.3	15.1'	60.1'	30°42.9	48°38.1	64°17.6	72°32.9	92°12.7
8	312°19.8	8.8'	15°22.4	15.0'	60.1'	31°17.7	49°14.6	64°52.2	72°50.8	92°43.0
9	326°47.5	8.7'	15°37.5	14.9'	60.0'	31°52.4	49°51.1	65°26.7	73°08.7	93°13.3
10	341°15.2	8.6'	15°52.4	14.8'	60.0'	32°27.2	50°27.5	66°01.3	73°26.7	93°43.6
11	355°42.8	8.5'	16°07.3	14.7'	60.0'		· ——	New M	oon	·
12	10°10.4	8.5'	$N16^{\circ}22.0$	14.6'	60.0'			New M	oon ———	
13	24°37.9	8.4'	16°36.6	14.5'	60.0'			New M	oon ———	
14	39°05.3	8.3'	16°51.2	14.4'	60.0'			New M	oon ———	
15	53°32.6	8.3'	17°05.6	14.3'	60.0'			New M	oon	
16	67°59.9	8.2'	$17^{\circ}19.9$	14.2'	59.9'			New M	oon	
17	82°27.1	8.1'	17°34.1	14.1'	59.9'			New M	oon	
18	96°54.2	8.1'	N17°48.2	14.0'	59.9'			New M	oon ———	
19	111°21.2	8.0'	18°02.2	13.9'	59.9'			New M	oon ———	
20	125°48.2	7.9'	$18^{\circ}16.0$	13.7'	59.9'			New M	oon ———	
21	140°15.1	7.8'	18°29.8	13.6'	59.8'			New M	oon ———	
22	154°42.0	7.8'	18°43.4	13.5'	59.8'			New M	oon ———	
23	169°08.7	7.7'	$18^{\circ}56.9$	13.4'	59.8'			New M	oon ———	
7 th	SD	= 16.4	['] Mer. pas	s. 11:18						

h		Мос	on (8 th Ma	y)			Lunar D	Distance	(objects v	with larg	gest hourly l	LD delta)	
Wed	GHA	ν	Dec	d	HP	-Regulus	-Adhara	-Sirius	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran
0	183°35.4	7.6'	N 19°10.3	13.3'	59.8'				Nev	w Moon —			
1	198°02.0	7.5'	19°23.5	13.1'	59.8'				Nev	w Moon —			
2	212°28.6	7.5'	19°36.6	13.0'	59.7'				Nev	и Moon —			
3	226°55.0	7.4'	19°49.6	12.9'	59.7'				Nev	w Moon —			
4	241°21.4	7.3'	20°02.5	12.7'	59.7'				Nev	w Moon —			
5	255°47.8	7.3'	20°15.2	12.6'	59.7'				Nev	w Moon —			
6	270°14.0	7.2'	N20°27.9	12.5'	59.7'								
7	284°40.2	7.1'	20°40.3	12.3'	59.6'				Nev	и Moon —			
8	299°06.3	7.0'	20°52.6	12.2'	59.6'				Nev	и Moon —			
9	313°32.4	7.0'	21°04.8	12.1'	59.6'				Nev	и Moon —			
10	327°58.4	6.9'	$21^{\circ}16.9$	11.9'	59.6'				Nev	w Moon —			
11	342°24.3	6.8'	21°28.8	11.8'	59.5'				Nev	w Moon —			
12	356°50.1	6.8'	N21°40.6	11.6'	59.5'				Nev	w Moon —			
13	11°15.9	6.7'	21°52.2	11.5'	59.5'				Nev	и Moon —			
14	25°41.6	6.6'	22°03.7	11.3'	59.5'				Nev	и Moon —			
15	40°07.2	6.6'	$22^{\circ}15.0$	11.2'	59.4'								
16	54°32.8	6.5'	22°26.2	11.0'	59.4'								
17	68°58.3	6.4'	22°37.2	10.9'	59.4'				Nev	w Moon —			
18	83°23.7	6.4'	N 22°48.1	10.7'	59.4'				Nev	w Moon —			
19	97°49.1	6.3'	22°58.8	10.6'	59.3'				Nev	w Moon —			
20	112°14.4	6.2'	23°09.4	10.4'	59.3'				Nev	w Moon —			
21	126°39.6	6.2'	$23^{\circ}19.8$	10.3'	59.3'	91°31.7	70°40.9	60°14.8	60°07.6	54°47.0	35°57.2	29°53.2	14°37.7
22	141°04.8	6.1'	23°30.1	10.1'	59.3'		70°24.2	59°54.0	59°35.2	54°11.3	35°29.0	29°25.3	14°11.4
23	155°30.0	6.1'	23°40.2	9.9'	59.2'	90°20.4	70°07.7	59°33.4	59°02.8	53°35.7	35°01.0	28°57.8	13°45.8
8 th	SD	= 16.3	′ Mer. pas	s. 12:13									

h Moon (9 th May)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Regulus	-Adhara	-Sirius	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran
0	169°55.0	6.0'	N23°50.1	9.8'	59.2'	89°44.8	69°51.3	59°12.9	58°30.5	53°00.0	34°33.3	28°30.6	13°21.1
1	184°20.0	6.0'	23°59.9	9.6'	59.2'	89°09.2	69°35.0	58°52.6	57°58.2	52°24.4	34°05.8	28°03.6	12°57.2
2	198°45.0	5.9'	24°09.5	9.5'	59.1'	88°33.7	69°18.8	58°32.5	57°26.0	51°48.9	33°38.6	27°37.0	12°34.2
3	213°09.9	5.8'	$24^{\circ}19.0$	9.3'	59.1'	87°58.2	69°02.8	58°12.6	56°53.9	51°13.4	33°11.6	27°10.8	
4	227°34.7	5.8'	24°28.3	9.1'	59.1'	87°22.8	68°46.9	57°52.8	56°21.9	50°37.9	32°44.9	26°44.9	
5	241°59.5	5.7'	24°37.4	9.0'	59.1'	86°47.4	68°31.1	57°33.2	55°50.0	50°02.4	32°18.5	26°19.4	
6	256°24.2	5.7'	N 24°46.4	8.8'	59.0'	86°12.0	68°15.5	57°13.8	55°18.1	49°27.0	31°52.3	25°54.2	
7	270°48.9	5.6'	24°55.2	8.6'	59.0'	85°36.7	68°00.0	56°54.6	54°46.3	48°51.7	31°26.5	25°29.5	
8	285°13.5	5.6'	25°03.8	8.5'	59.0'	85°01.4	67°44.6	56°35.6	54°14.6	48°16.3	31°00.9	25°05.2	
9	299°38.1	5.5'	25°12.3	8.3'	58.9'	84°26.1	67°29.4	56°16.7	53°43.0	47°41.0	30°35.7	24°41.3	
10	314°02.7	5.5'	25°20.6	8.1'	58.9'	83°50.9	67°14.3	55°58.1	53°11.4	47°05.8	30°10.8	24°17.9	
11	328°27.2	5.5'	25°28.7	7.9'	58.9'	83°15.7		55°39.6	52°40.0	46°30.6	29°46.3	23°55.0	
12	342°51.6	5.4'	N25°36.6	7.8'	58.8'	82°40.5		55°21.4	52°08.6	45°55.4	29°22.1	23°32.6	
13	357°16.0	5.4'	25°44.4	7.6'	58.8'	82°05.4		55°03.3	51°37.4	45°20.2	28°58.3	23°10.7	
14	11°40.4	5.3'	25°52.0	7.4'	58.8'	81°30.4		54°45.5	51°06.2	44°45.1	28°34.8	22°49.3	
15	26°04.7	5.3'	25°59.4	7.2'	58.7'	80°55.3		54°27.8	50°35.2	44°10.1	28°11.8	22°28.5	
16	40°29.0	5.3'	26°06.7	7.1'	58.7'	80°20.3		54°10.4	50°04.2	43°35.0	27°49.1	22°08.3	
17	54°53.3	5.2'	26°13.8	6.9'	58.7'	79°45.4		53°53.2	49°33.3	43°00.1	27°26.9	21°48.8	
18	69°17.5	5.2'	N 26°20.6	6.7'	58.6'	79° 10.5		53°36.2	49°02.6	42°25.1	27°05.2	21°29.8	
19	83°41.7	5.2'	26°27.4	6.5'	58.6'	78°35.6		53°19.4	48°31.9	41°50.2	26°43.8	21°11.6	
20	98°05.9	5.1'	26°33.9	6.4'	58.6'	78°00.8		53°02.9	48°01.3	41°15.4	26°23.0	20°54.0	
21	112°30.0	5.1'	26°40.3	6.2'	58.6'	77°26.0		52°46.5	47°30.9	40°40.6	26°02.6	20°37.1	
22	126°54.1	5.1'	26°46.5	6.0'	58.5'	76°51.2		52°30.4	47°00.6	40°05.8	25°42.8	20°21.0	
23	141°18.2	5.1'	26°52.5	5.8'	58.5'	76°16.5		52°14.6	46°30.4	39°31.0	25°23.5	20°05.7	
9 th	SD =	= 16.1'	Mer. pass	. 13:11	1								

Moon (10th May)

Lunar Distance (objects with largest hourly LD delta)

h		Moon	(10 th Ma	ay)			Lunar I	Distance	(objects v	with large	st hourly	/ LD delta)	
Fri	GHA	ν	Dec	d	HP	-Acrux	-Arcturus	-Spica	-Regulus	-Procyon	-Pollux	-Betelgeuse	+Aldebaran
0	155°42.3	5.1'	N 26°58.3	5.6'	58.5'				75°41.8	46°00.3	38°56.3	25°04.7	
1	170°06.4	5.0'	27°03.9	5.5'	58.4'				75°07.2	45°30.3	38°21.7	24°46.4	
2	184°30.4	5.0'	27°09.4	5.3'	58.4'		119°53.7		74°32.6	45°00.4	$37^{\circ}47.1$	24°28.8	
3	198°54.4	5.0'	27°14.7	5.1'	58.4'		119°26.0		73°58.1	44°30.7	$37^{\circ}12.5$	24°11.7	
4	213°18.4	5.0'	$27^{\circ}19.8$	4.9'	58.3'		118°58.3		73°23.6	44°01.1	36°38.0	23°55.3	
5	227°42.4	5.0'	27°24.7	4.7'	58.3'		118°30.6		72°49.1	43°31.7	36°03.5	23°39.4	
6	242°06.4	5.0'	N27°29.4	4.6'	58.3'		118°02.8		72°14.7	43°02.3	35°29.1	23°24.3	12°45.3
7	256°30.4	5.0'	27°34.0	4.4'	58.2'		117°35.0		71°40.4	42°33.1	34°54.7		13°07.9
8	270°54.3	5.0'	27°38.4	4.2'	58.2'		117°07.1		71°06.0	42°04.1	34°20.3		13°31.4
9	285°18.3	5.0'	27°42.5	4.0'	58.1'		116°39.3		70°31.8	41°35.2	33°46.0		13°55.5
10	299°42.3	5.0'	27°46.5	3.8'	58.1'		116°11.4		69°57.5	41°06.4	33°11.8		14°20.3
11	314°06.3	5.0'	27°50.4	3.6'	58.1'		115°43.5		69°23.3	40°37.8	32°37.6		14°45.7
12	328°30.2	5.0'	N27°54.0	3.5'	58.0'		115°15.5		68°49.2	40°09.4	32°03.4		15°11.7
13	342°54.2	5.0'	27°57.5	3.3'	58.0'		114°47.6		68° 15.0	39°41.1	31°29.3		15°38.1
14	357°18.2	5.0'	28°00.7	3.1'	58.0'		114°19.6		67°41.0	39°13.0	30°55.2		16°04.9
15	11°42.2	5.0'	28°03.8	2.9'	57.9'		113°51.7		67°07.0	38°45.1	30°21.1		16°32.2
16	26°06.2	5.0'	28°06.7	2.7'	57.9'		113°23.7		66° 33.0	38° 17.3	29°47.1		16°59.8
17	40°30.3	5.1'	28°09.5	2.5'	57.9'		112°55.7		65°59.0	37°49.7	29°13.2		17°27.8
18	54°54.3	5.1'	N28°12.0	2.4'	57.8'		112°27.7	119°26.9	65°25.1	37° 22.3	28°39.3		17°56.0
19	69°18.4	5.1'	28°14.4	2.2'	57.8'		111°59.6	118°53.0	64°51.3	36°55.1	28°05.4		18°24.6
20	83°42.5	5.1'	28°16.6	2.0'	57.8'		111°31.6	118°19.1	64° 17.5	36°28.1	27°31.6		18°53.3
21	98°06.6	5.1'	$28^{\circ}18.6$	1.8'	57.7'	119°55.2	111°03.6	117°45.3	63°43.7	36°01.3	26°57.9		19°22.3
22	112°30.7	5.2'	28°20.4	1.6'	57.7'	119°39.5	110°35.5	117°11.5	63° 10.0	35°34.6	26°24.1		19°51.5
23	126°54.9	5.2'	28°22.0	1.5'	57.7'	119°23.8	110°07.5	116°37.8	62°36.3	35°08.2	25°50.5		20°20.9
10 th	SD =	= 15.9'	Mer. pass	s. 14:1:	1								

Moon (11th May)

Sat	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	-Pollux	+Capella	+Aldebaran	+Rigel	+Sun
0	141°19.1	5.2'	N 28°23.5	1.3'	57.6'	116°04.1	109°39.5	62°02.7	25°16.8		20°50.5		
1	155°43.4	5.3'	28°24.7	1.1'	57.6'	115°30.5	109°11.4	61°29.1	24°43.2		21°20.2		
2	170°07.6	5.3'	28°25.8	0.9'	57.6'	114°56.9	108°43.4	60°55.6	24°09.7		21°50.1		
3	184°31.9	5.3'	28°26.8	0.7'	57.5'	114°23.3	108° 15.4	60°22.1	23°36.2		22°20.1		
4	198°56.3	5.4'	28°27.5	0.6'	57.5'	113°49.8	107°47.3	59°48.6	23°02.8		22°50.2		
5	213°20.7	5.4'	28°28.1	0.4'	57.4'	113°16.3	107°19.3	59°15.2	22°29.4		23°20.5		
6	227°45.1	5.5'	N28°28.4	0.2'	57.4'	112°42.9	106°51.3	58°41.9	21°56.0		23°50.8		
7	242°09.6	5.5'	28°28.7	0.0'	57.4'	112°09.5	106°23.3	58°08.6	21°22.7		24°21.2		41°17.4
8	256°34.1	5.6'	28°28.7	-0.1'	57.3'	111°36.2	105°55.3	57°35.3	20°49.5	20°28.5	24°51.7		41°48.2
9	270°58.7	5.6'	28°28.5	-0.3'	57.3'	111°02.9	105°27.3	57°02.1	20°16.3	20°44.3	25°22.2		42°19.0
10	285°23.3	5.7'	28°28.2	-0.5'	57.3'	110°29.6	104°59.3	56°28.9	19°43.1	21°00.6	25°52.9		42°49.8
11	299°48.0	5.7'	28°27.7	-0.7'	57.2'	109°56.4	104°31.3	55°55.7	19°10.0	21°17.6	26°23.5		43°20.5
12	314°12.8	5.8'	N28°27.1	-0.8'	57.2'	109°23.3	104°03.4	55°22.6	18°37.0	21°35.1	26°54.3		43°51.2
13	328°37.6	5.9'	28°26.2	-1.0'	57.2'	108°50.2	103°35.4	54°49.6	18°04.0	21°53.2	27°25.1		44°21.8
14	343°02.4	5.9'	28°25.2	-1.2'	57.1'	108°17.1	103°07.5	54°16.6	17°31.0	22°11.8	27°55.9		44°52.4
15	357°27.3	6.0'	28°24.0	-1.3'	57.1'	107°44.0	102°39.6	53°43.6	16°58.1	22°30.9	28°26.7		45°23.0
16	11°52.3	6.1'	28°22.7	-1.5'	57.1'	107°11.1	102°11.7	53°10.7	16°25.3	22°50.5	28°57.6		45°53.5
17	26°17.4	6.1'	28°21.2	-1.7'	57.0'	106°38.1	101°43.8	52°37.8	15°52.5	23°10.6	29°28.6	41°12.7	46°23.9
18	40°42.5	6.2'	N28°19.5	-1.9'	57.0'	106°05.2	101°16.0	52°05.0	15° 19.7	23°31.1	29°59.5	41°28.1	46°54.4
19	55°07.7	6.3'	28°17.6	-2.0'	57.0'	105°32.3	100°48.1	51°32.2	14°47.0	23°51.9	30°30.5	41°43.8	47°24.8
20	69°32.9	6.3'	28°15.6	-2.2'	56.9'	104°59.5	100°20.3	50°59.5	14°14.4	24°13.2	31°01.5	41°59.8	47°55.1
21	83°58.3	6.4'	28°13.4	-2.3'	56.9'	104°26.7	99°52.5	50°26.8	13°41.8	24°34.9	31°32.5	42°16.0	48°25.4
22	98°23.7	6.5'	28°11.1	-2.5'	56.9'	103°54.0	99°24.7	49°54.1	13°09.3	24°56.9	32°03.5	42°32.5	48°55.7
23	112°49.2	6.6'	28°08.6	-2.7'	56.8'	103°21.3	98°57.0	49°21.5	12°36.9	25°19.2	32°34.5	42°49.1	49°25.9
11 th	SD :	= 15.7	Mer. pass	s. 15:11					Sun SE	0 = 15.8'			

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

Arcturus -Regulus -Pollux +Betelgeuse +Capella +Aldebar

Sun	GHA	ν	Dec	d	HP								
0	127°14.7	6.6'	N 28°05.9	-2.8'	56.8'	102°48.7	98°29.2	48°48.9	12°04.5	24°30.3	25°41.9	33°05.6	49°56.1
1	141°40.4	6.7'	28°03.1	-3.0'	56.7'	102°16.1	98°01.5	48°16.4	11°32.1	24°46.9	26°04.8	33°36.6	50°26.2
2	156°06.1	6.8'	28°00.1	-3.2'	56.7'	101°43.5	97°33.8	47°43.9	10°59.9	25°04.1	26°28.1	34°07.7	50°56.3
3	170°31.9	6.9'	27°56.9	-3.3'	56.7'	101°11.0	97°06.1	47°11.5	10°27.7	25°21.6	26°51.6	34°38.7	51°26.3
4	184°57.8	7.0'	27°53.6	-3.5'	56.6'	100°38.5	96°38.5	46°39.1	9°55.6	25°39.6	27°15.3	35°09.8	51°56.4
5	199°23.7	7.1'	$27^{\circ}50.1$	-3.6'	56.6'	100°06.0	96°10.9	46°06.7	9°23.6	25°58.1	27°39.3	35°40.8	52°26.3
6	213°49.8	7.1'	N 27°46.5	-3.8'	56.6'	99°33.6	95°43.3	45°34.4	8°51.6	26°16.9	28°03.6	36°11.8	52°56.3
7	228°15.9	7.2'	27°42.7	-3.9'	56.5'	99°01.3	95° 15.7	45°02.1	8° 19.8	26°36.1	28°28.0	36°42.9	53°26.2
8	242°42.2	7.3'	27°38.8	-4.1'	56.5'	98°29.0	94°48.2	44°29.9	7°48.1	26°55.6	28°52.7	37° 13.9	53°56.0
9	257°08.5	7.4'	27°34.7	-4.2'	56.5'	97°56.7	94°20.7	43°57.7	7° 16.5	27° 15.5	29°17.5	37°44.9	54°25.8
10	271°34.9	7.5'	27°30.5	-4.4'	56.4'	97°24.5	93°53.2	43°25.6	6°45.1	27°35.8	29°42.6	38° 15.9	54°55.6
11	286°01.4	7.6'	$27^{\circ}26.1$	-4.5'	56.4'	96°52.3	93°25.7	42°53.5	6°13.8	27°56.4	30°07.8	38°46.9	55°25.3
12	300°28.0	7.7'	$N27^{\circ}21.6$	-4.7'	56.4'	96°20.1	92°58.3	42°21.4	5°42.8	28° 17.2	30°33.2	39° 17.9	55°55.0
13	314°54.7	7.8'	$27^{\circ}16.9$	-4.8'	56.3'	95°48.0	92°30.9	41°49.4	5°12.0	28°38.4	30°58.7	39°48.9	56°24.7
14	329°21.5	7.9'	$27^{\circ}12.1$	-5.0'	56.3'	95°15.9	92°03.5	41°17.5	4°41.5	28° 59.8	31°24.4	40° 19.9	56°54.3
15	343°48.4	8.0'	$27^{\circ}07.1$	-5.1'	56.3'	94°43.9	91°36.2	40°45.5	4°11.5	29°21.6	31°50.3	40°50.8	57°23.9
16	358°15.3	8.1'	27°02.0	-5.2'	56.2'	94°11.9	91°08.9	40°13.6	3°42.1	29°43.5	32°16.2	41°21.8	57°53.4
17	12°42.4	8.2'	26°56.8	-5.4'	56.2'	93°39.9	90°41.6	39°41.8	3°13.6	30°05.7	32°42.3	41°52.7	58°22.9
18	27°09.6	8.3'	N26°51.4	-5.5'	56.2'	93°08.0	90°14.4	39°10.0		30°28.2	33°08.6	42°23.6	58°52.4
19	41°36.9	8.4'	26°45.8	-5.7'	56.1'	92°36.1	89°47.2	38°38.2		30°50.9	33°34.9	42°54.5	59°21.8
20	56°04.2	8.5'	26°40.2	-5.8'	56.1'	92°04.3	89°20.0	38°06.5		31°13.8	34°01.3	43°25.3	59°51.2
21	70°31.7	8.6'	26°34.4	-5.9'	56.1'	91°32.5	88°52.9	37°34.8		31°36.9	34°27.9	43°56.2	60°20.5
22	84°59.3	8.7'	26°28.4	-6.1'	56.1'	91°00.7	88°25.8	37°03.2		32°00.2	34°54.5	44°27.0	60°49.8
23	99°27.0	8.8'	26°22.4	-6.2'	56.0'	90°29.0	87°58.7	36°31.6		32°23.6	35°21.2	44°57.8	61°19.1
12 th	SD	= 15.5'	Mer. pas	s. 16:07					Sun	SD = 15.8'			

Moon (13th May)

h

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Rigil Kent.	-Spica	-Arcturus	-Regulus	+Pollux	+Capella	+Aldebaran	+Sun
0	113°54.8	8.9'	N26°16.2	-6.3'	56.0'	119°00.0	89°57.3	87°31.7	36°00.0		35°48.1	45°28.6	61°48.3
1	128°22.6	9.0'	26°09.8	-6.5'	56.0'	118°37.9	89°25.6	87°04.7	35°28.5		36°15.0	45° 59.4	62°17.5
2	142°50.6	9.1'	26°03.4	-6.6'	55.9'	118° 15.8	88°54.0	86°37.7	34°57.0		36°41.9	46°30.1	62°46.7
3	157°18.7	9.2'	25°56.8	-6.7'	55.9'	117°53.6	88°22.4	86°10.8	34°25.6		37°09.0	47°00.9	63°15.8
4	171°46.9	9.3'	25°50.0	-6.8'	55.9'	117°31.3	87°50.9	85°43.9	33°54.2		37°36.1	47°31.6	63°44.9
5	186°15.2	9.4'	25°43.2	-7.0'	55.8'	117°09.0	87°19.4	85°17.0	33°22.8		38°03.3	48°02.2	64°14.0
6	200°43.6	9.5'	N25°36.2	-7.1'	55.8'	116°46.6	86°47.9	84°50.2	32°51.5	4° 19.8	38°30.6	48°32.9	64°43.0
7	215°12.1	9.6'	$25^{\circ}29.1$	-7.2'	55.8'	116°24.2	86°16.4	84°23.4	32°20.2	4°49.4	38°57.9	49°03.6	65°12.0
8	229°40.8	9.7'	25°21.9	-7.3'	55.8'	116°01.7	85°45.0	83°56.7	31°49.0	5° 19.3	39°25.2	49° 34.2	65°40.9
9	244°09.5	9.8'	25° 14.6	-7.5'	55.7'	115°39.2	85°13.7	83°30.0	31°17.8	5°49.4	39°52.7	50°04.8	66°09.8
10	258°38.3	9.9'	$25^{\circ}07.1$	-7.6'	55.7'	115° 16.7	84°42.3	83°03.3	30°46.6	6° 19.7	40°20.1	50°35.4	66°38.7
11	273°07.2	10.0'	24°59.5	-7.7'	55.7'	114°54.1	84°11.0	82°36.7	30°15.5	6°50.1	40°47.6	51°05.9	67°07.5
12	287°36.3	10.1'	N 24°51.8	-7.8'	55.6'	114°31.5	83°39.8	82°10.1	29°44.4	7°20.6	41°15.2	51°36.4	67°36.4
13	302°05.4	10.3'	24°44.0	-7.9'	55.6'	114°08.8	83°08.6	81°43.6	29°13.4	7°51.2	41°42.8	52°07.0	68°05.1
14	316°34.7	10.4'	24°36.1	-8.0'	55.6'	113°46.1	82°37.4	81°17.1	28°42.4	8°21.8	42°10.4	52° 37.4	68°33.9
15	331°04.0	10.5'	24°28.1	-8.1'	55.5'	113°23.4	82°06.2	80°50.6	28°11.5	8°52.5	42°38.1	53°07.9	69°02.6
16	345°33.5	10.6'	$24^{\circ}19.9$	-8.3'	55.5'	113°00.6	81°35.1	80°24.2	27°40.5	9°23.1	43°05.8	53°38.3	69°31.3
17	0°03.1	10.7'	$24^{\circ}11.7$	-8.4'	55.5'	112°37.9	81°04.0	79°57.8	27°09.7	9°53.8	43°33.6	54°08.8	69°59.9
18	14°32.7	10.8'	N24°03.3	-8.5'	55.5'	112° 15.0	80°32.9	79°31.4	26°38.8	10°24.5	44°01.4	54° 39.2	70°28.5
19	29°02.5	10.9'	23°54.8	-8.6'	55.4'	111°52.2	80°01.9	79°05.1	26°08.0	10°55.2	44°29.2	55°09.5	70°57.1
20	43°32.4	11.0'	23°46.3	-8.7'	55.4'	111°29.3	79°30.9	78°38.9	25°37.3	11°25.9	44°57.0	55° 39.9	71°25.7
21	58°02.4	11.1'	23°37.6	-8.8'	55.4'	111°06.4	78°59.9	78°12.7	25°06.6	11°56.6	45°24.9	56° 10.2	71°54.2
22	72°32.5	11.2'	23°28.8	-8.9'	55.4'	110°43.5	78°29.0	77°46.5	24°35.9	12°27.3	45°52.7	56° 40.5	72°22.7
23	87°02.7	11.3'	23°19.9	-9.0'	55.3'	110°20.5	77°58.1	77°20.4	24°05.3	12°58.0	46°20.7	57°10.8	72°51.1
13 th	SD	$=15.3^{\prime}$	Mer. pass	. 17:00					Sun SD	= 15.8'			

h Moon (14th May)

Lunar Distance	(objects with	largest hourly	/ LD delta))
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Tue	GHA	ν	Dec	d	HP	-Antares	-Spica	-Arcturus	-Regulus	+Pollux	+Capella	+Aldebaran	+Sun
0	101°33.0	11.4'	N23°10.9	-9.1'	55.3'		77°27.2	76°54.3	23°34.7	13°28.7	46°48.6	57°41.0	73°19.6
1	116°03.4	11.5'	23°01.8	-9.2'	55.3'		76°56.3	76°28.2	23°04.1	13°59.3	47° 16.5	58° 11.3	73°47.9
2	130°33.9	11.6'	22°52.6	-9.3'	55.3'		76°25.5	76°02.2	22°33.6	14°30.0	47° 44.5	58°41.5	74°16.3
3	145°04.5	11.7'	22°43.4	-9.4'	55.2'		75°54.7	75°36.3	22°03.1	15°00.6	48° 12.5	59° 11.7	74°44.7
4	159°35.3	11.8'	22°34.0	-9.5'	55.2'		75°24.0	75°10.4	21°32.7	15°31.2	48° 40.5	59°41.9	75°13.0
5	174°06.1	11.9'	22°24.5	-9.6'	55.2'		74°53.2	74°44.5	21°02.3	16°01.8	49°08.5	60°12.0	75°41.2
6	188°37.0	12.0'	$N22^{\circ}14.9$	-9.7'	55.2'		74°22.5	74°18.7	20°32.0	16°32.3	49°36.5	60°42.1	76°09.5
7	203°08.0	12.1'	22°05.3	-9.8'	55.1'	119°45.7	73°51.9	73°52.9	20°01.7	17°02.9	50°04.6	61°12.2	76°37.7
8	217°39.1	12.2'	21°55.5	-9.8'	55.1'	119°15.0	73°21.2	73°27.2	19°31.5	17°33.4	50° 32.6	61°42.3	77°05.9
9	232°10.4	12.3'	21°45.7	-9.9'	55.1'	118°44.4	72°50.6	73°01.5	19°01.3	18°03.9	51°00.7	62° 12.4	77°34.1
10	246°41.7	12.4'	21°35.7	-10.0'	55.1'	118°13.8	72°20.0	72°35.9	18°31.2	18°34.4	51°28.8	62°42.4	78°02.2
11	261°13.1	12.5'	21°25.7	-10.1'	55.0'	117°43.3	71°49.4	72°10.3	18°01.1	19°04.8	51°56.8	63° 12.4	78°30.3
12	275°44.6	12.6'	$N21^{\circ}15.6$	-10.2'	55.0'	117°12.7	71°18.9	71°44.8	17°31.1	19°35.3	52°24.9	63°42.4	78°58.4
13	290°16.2	12.7'	21°05.4	-10.3'	55.0'	116°42.2	70°48.4	71°19.3	17°01.1	20°05.7	52°53.0	64°12.4	79°26.5
14	304°47.9	12.8'	20°55.2	-10.4'	55.0'	116°11.7	70°17.9	70°53.9	16°31.2	20°36.1	53°21.1	64°42.3	79°54.5
15	319°19.7	12.9'	20°44.8	-10.4'	54.9'	115°41.2	69°47.5	70°28.5	16°01.3	21°06.5	53°49.3	65° 12.3	80°22.5
16	333°51.6	13.0'	20°34.4	-10.5'	54.9'	115°10.8	69°17.0	70°03.1	15°31.5	21°36.8	54°17.4	65°42.2	80°50.5
17	348°23.6	13.1'	20°23.8	-10.6'	54.9'	114°40.4	68°46.6	69°37.9	15°01.8	22°07.2	54°45.5	66°12.1	81°18.5
18	2°55.7	13.2'	N 20°13.2	-10.7'	54.9'	114°10.0	68°16.2	69°12.6	14°32.1	22°37.5	55°13.6	66°42.0	81°46.4
19	17°27.9	13.3'	20°02.6	-10.8'	54.9'	113°39.6	67°45.9	68°47.4	14°02.5	23°07.8	55°41.8	67° 11.8	82°14.3
20	32°00.2	13.4'	19°51.8	-10.8'	54.8'	113°09.3	67°15.5	68°22.3	13°33.0	23°38.1	56°09.9	67°41.6	82°42.2
21	46°32.6	13.5'	19°41.0	-10.9'	54.8'	112°39.0	66°45.2	67°57.2	13°03.6	24°08.3	56° 38.0	68° 11.5	83°10.1
22	61°05.0	13.5'	19°30.1	-11.0'	54.8'	112°08.7	66°14.9	67°32.2	12°34.2	24°38.5	57°06.2	68°41.2	83°37.9
23	75°37.6	13.6'	19°19.1	-11.1'	54.8'	111°38.4	65°44.7	67°07.2	12°05.0	25°08.8	57°34.3	69°11.0	84°05.7
14 th	SD	= 15.1	' Mer. pass	s. 17:48					Sun SE	0 = 15.8'			

50°29.0

 $65^{\circ}03.4$

22 23

15th

15.4'

15.5

SD = 14.9

 $14^{\circ}48.5$

 $14^{\circ}36.0$

Mer. pass. 18:32

-12.5'

-12.5

54.4'

54.4'

 $100^{\circ}\,07.5$

 $99^{\circ}37.6$

Moon (15th May) h Lunar Distance (objects with largest hourly LD delta) Wed +Pollux **GHA** Dec d HP -Antares -Arcturus -Spica -Regulus +Capella +Aldebaran +Sun 90°10.2 N19°08.0 111°08.1 25°38.9 13.7 -11.154.8 66°42.3 65°14.4 11°35.9 58°02.5 69°40.8 84°33.5 0 104°42.9 64°44.2 11°06.9 26°09.1 58°30.6 70°10.5 85°01.3 13.8 18°56.9 54.7 110°37.9 $66^{\circ}17.5$ -11.2 1 119°15.8 $110^{\circ}\,07.7$ $65^{\circ}52.7$ 64°14.0 10°38.0 58°58.8 70°40.2 $85^{\circ}29.1$ 13.9 $18^{\circ}45.7$ -11.3 54.7 $26^{\circ}39.3$ 133°48.7 $109^{\circ}37.5$ 71°09.9 14.0 18°34.4 -11.3' 54.7' $65^{\circ}27.9$ 63°43.8 $10^{\circ}09.3$ $27^{\circ}09.4$ 59°26.9 $85^{\circ}56.8$ 27°39 5 59°55 1 4 148°21.6 14.1 18°23.1 -11.4 54.7 109°07.3 65°03.2 63°13.7 9°40.7 71°39.6 86°24.5 162°54.7 64°38.6 9°12.4 28°09.6 60°23.3 86°52.2 5 14.2 18°11.7 -11.5' 54.7' 108°37.2 62°43.5 72°09.3 6 177°27.9 14.2 $N18^{\circ}00.2$ -11.5' 54.7' $108^{\circ}\,07.1$ $64^{\circ}14.0$ 62°13.4 $8^{\circ}44.2$ $28^{\circ}39.7$ $60^{\circ}51.4$ $72^{\circ}38.9$ $87^{\circ}\,19.9$ 192°01.1 17°48.7 $107^{\circ}\,37.0$ $63^{\circ}49.5$ 61°43.3 $8^{\circ}16.3$ $29^{\circ}09.8$ $61^{\circ}19.6$ 73°08.6 $87^{\circ}47.5$ 14.3 -11.6' 54.6' 7°48.7 7°21.4 107°06.9 8 206°34.4 14.4 $17^{\circ}37.1$ 54.6' 63°25.1 61°13.2 29°39.8 $61^{\circ}47.7$ 73°38.2 $88^{\circ}15.2$ -11.7 106°36.8 74°07.8 74°37.4 17°25.4 60°43.2 30°09.8 221°07.8 62°15.9 88°42 8 9 14.5 -11.7 54.6 63°00.7 17°13.7 62°36.3 62°44.0 60°13.1 6°54.6 30°39.8 89°10.4 235°41.3 106°06.8 10 14.6 -11.8 54.6 250°14.9 17°01.9 105°36.7 62°12.0 59°43.1 31°09.8 63°12.2 89°38.0 14.6 54.6' 6°28.2 $75^{\circ}07.0$ 11 -11.8'**N**16°50.1 $75^{\circ}36.5$ 12 264°48.5 14.7 -11.9 54.6' $105^{\circ}06.7$ $61^{\circ}47.8$ 59°13.1 $6^{\circ}02.4$ $31^{\circ}39.8$ $63^{\circ}40.3$ $90^{\circ}05.5$ 64°08.5 64°36.6 58°43.1 279°22.2 104°36.7 32°09.8 76°06.0 13 14.8 16°38.2 -12.0' 54.5 61°23.7 $5^{\circ}37.2$ 90°33.0 104°06.7 58°13.1 91°00.6 293°56.0 16°26.2 60°59.6 32°39.7 76°35.6 14 14.9 -12.0' 54.5 $5^{\circ}13.0$ 91°28.1 91°55.6 103°36.8 60°35.6 65°04.8 308°29.9 16°14.2 57°43.2 33°09.6 $77^{\circ}05.1$ 15 14.9 -12.154.5 16°02.1 103°06.8 60°11.6 57°13.2 33°39.5 65°32.9 77°34.6 323°03.8 15.0 -12.1 54.5 16 17 $337^{\circ}37.8$ $15^{\circ}50.0$ -12.2' 54.5 $102^{\circ}36.9$ 59°47.8 56°43.3 $34^{\circ}09.4$ $66^{\circ}01.1$ $78^{\circ}04.1$ $92^{\circ}23.0$ 15.1 352°11.9 N15°37.8 102°07.0 59°23 9 34°393 66°292 78°33 5 92°50 5 56°134 18 15.2 -12.2 54.5 79°03.0 93°17.9 $6^{\circ}46.1$ 15°25.5 54.4 101°37.1 59°00.2 55°43.5 35°09.2 66°57.4 19 15.2 -12.3'15°13.2 101°07.2 58°36.5 35°39.0 67°25.5 21°20.3 54.4 55°13.6 79°32.4 93°45.4 20 15.3 -12.421 35°54.6 $15^{\circ}00.9$ -12.4' 54.4 100°37.3 58°12.9 54°43.8 36°08.9 67°53.7 80°01.8 94°12.8 15.4

	h	Moon (16 th May)	Lunar Distance (objects with largest hourly LD delta)
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57°49.4

 $57^{\circ}25.9$

54°13.9

53°44.1

36°38.7

 $37^{\circ}08.5$

Sun SD = 15.8'

68°21.8

 $68^{\circ}49.9$

80°31.3

 $81^{\circ}00.7$

94°40.2

 $95^{\circ}07.6$

Thur	CIIA			٠,	LID	A t	D!!! I/+	A4	C	ı Danıdın	L Dallana	. CII-	L Aldahaman
Thu	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Arcturus	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	79°37.9	15.6'	N14°23.5	-12.6'	54.4'	99°07.8	91°22.7	57°02.5	53°14.3		37°38.3	69°18.1	81°30.0
1	94°12.4	15.6'	14°10.9	-12.6'	54.4'	98°38.0	90°59.5	56°39.2	52°44.5		38°08.1	69°46.2	81°59.4
2	108°47.1	15.7'	13°58.3	-12.7'	54.4'	98°08.2	90°36.3	56° 16.0	52°14.7		38°37.9	70°14.3	82°28.8
3	123°21.7	15.7'	13°45.7	-12.7'	54.3'	97°38.4	90°13.1	55°52.8	51°44.9		39°07.6	70°42.5	82°58.1
4	137°56.5	15.8'	13°33.0	-12.7'	54.3'	97°08.6	89°49.9	55°29.7	51°15.1		39°37.4	71°10.6	83°27.5
5	152°31.3	15.9'	13°20.2	-12.8'	54.3'	96°38.9	89°26.7	55°06.7	50°45.4		40°07.1	71°38.7	83°56.8
6	167°06.2	15.9'	N13°07.4	-12.8'	54.3'	96°09.1	89°03.5	54°43.8	50°15.6		40°36.8	72°06.9	84°26.1
7	181°41.1	16.0'	12°54.6	-12.9'	54.3'	95°39.4	88°40.4	54°21.0	49°45.9		41°06.6	72°35.0	84°55.5
8	196°16.1	16.0'	12°41.7	-12.9'	54.3'	95°09.6	88°17.2	53° 58.2	49°16.2		41°36.3	73°03.1	85°24.8
9	210°51.1	16.1'	12°28.8	-13.0'	54.3'	94°39.9	87°54.1	53°35.5	48°46.5	6°11.5	42°06.0	73°31.2	85°54.1
10	225°26.2	16.1'	12°15.9	-13.0'	54.3'	94°10.2	87°30.9	53° 13.0	48°16.8	6°37.3	42°35.7	73°59.4	86°23.3
11	240°01.3	16.2'	$12^{\circ}02.9$	-13.0'	54.3'	93°40.5	87°07.8	52° 50.5	47°47.1	7°03.5	43°05.3	74° 27.5	86°52.6
12	254°36.5	16.2'	N 11°49.8	-13.1'	54.3'	93°10.8	86°44.7	52°28.1	47°17.4	7°30.2	43°35.0	74°55.6	87°21.9
13	269°11.8	16.3'	11°36.7	-13.1'	54.2'	92°41.1	86°21.6	52°05.8	46°47.7	7°57.2	44°04.7	75°23.7	87°51.1
14	283°47.1	16.3'	11°23.6	-13.2'	54.2'	92°11.4	85°58.5	51°43.5	46°18.1	8°24.6	44°34.3	75°51.8	88°20.4
15	298°22.4	16.4'	$11^{\circ}10.5$	-13.2'	54.2'	91°41.8	85°35.5	51°21.4	45°48.4	8°52.1	45°04.0	76°19.9	88°49.6
16	312°57.8	16.4'	10°57.3	-13.2'	54.2'	91°12.1	85°12.4	50° 59.4	45°18.8	9° 19.9	45°33.6	76°48.0	89°18.9
17	327°33.3	16.5'	10°44.0	-13.3'	54.2'	90°42.4	84°49.4	50°37.5	44°49.1	9°47.9	46°03.2	77°16.2	89°48.1
18	342°08.8	16.5'	N10°30.8	-13.3'	54.2'	90°12.8	84°26.3	50° 15.7	44°19.5	10° 15.9	46°32.9	77°44.3	90°17.3
19	356°44.3	16.6'	$10^{\circ}17.5$	-13.3'	54.2'	89°43.2	84°03.3	49°53.9	43°49.9	10°44.2	47°02.5	78°12.4	90°46.5
20	11°19.9	16.6'	$10^{\circ}04.1$	-13.4'	54.2'	89°13.5	83°40.3	49°32.3	43°20.2	11°12.5	47°32.1	78°40.5	91°15.7
21	25°55.5	16.7'	09°50.8	-13.4'	54.2'	88°43.9	83°17.4	49° 10.8	42°50.6	11°41.0	48°01.7	79°08.6	91°44.9
22	40°31.1	16.7'	09°37.4	-13.4'	54.2'	88°14.3	82°54.4	48° 49.4	42°21.0	12°09.5	48°31.3	79°36.7	92°14.1
23	55°06.8	16.7'	09°23.9	-13.5'	54.2'	87°44.7	82°31.5	48°28.1	41°51.4	12°38.1	49°00.9	80°04.8	92°43.3
16 th	SD	= 14.8'	Mer. pas	s. 19:13					*				

h Moon (17 th May)	Lunar Distance (objects with largest hourly LD delta)
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		101001	1 (11 1416	<i>-」 </i>				1	02,0000.	vitil laiges			
Fri	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	69°42.6	16.8'	N 09°10.5	-13.5'	54.2'	87°15.0	82°08.5	78°29.6	41°21.8	13°06.8	49°30.5	80°32.9	93°12.5
1	84°18.4	16.8'	08°57.0	-13.5'	54.2'	86°45.4	81°45.6	78°07.5	40°52.2	13° 35.5	50°00.1	81°01.0	93°41.7
2	98°54.2	16.8'	08°43.4	-13.6'	54.2'	86°15.8	81°22.7	77°45.4	40°22.6	14°04.3	50°29.7	81°29.2	94°10.9
3	113°30.0	16.9'	08°29.9	-13.6'	54.2'	85°46.2	80°59.8	77°23.4	39°53.1	14° 33.2	50°59.3	81°57.3	94°40.1
4	128°05.9	16.9'	$08^{\circ}16.3$	-13.6'	54.1'	85°16.6	80°37.0	77°01.4	39°23.5	15°02.1	51°28.8	82°25.4	95°09.2
5	142°41.8	16.9'	08°02.7	-13.6'	54.1'	84°47.0	80°14.2	76°39.5	38°53.9	15°31.0	51°58.4	82°53.5	95°38.4
6	157°17.8	17.0'	N07°49.0	-13.7'	54.1'	84°17.5	79°51.3	76°17.5	38°24.3	15°59.9	52°28.0	83°21.6	96°07.6
7	171°53.8	17.0'	07°35.4	-13.7'	54.1'	83°47.9	79°28.5	75°55.6	37°54.7	16°28.9	52°57.6	83°49.7	96°36.7
8	186°29.8	17.0'	07°21.7	-13.7'	54.1'	83°18.3	79°05.8	75°33.7	37°25.2	16°58.0	53°27.1	84°17.8	97°05.9
9	201°05.8	17.1'	07°08.0	-13.7'	54.1'	82°48.7	78°43.0	75°11.9	36°55.6	17°27.0	53°56.7	84°45.9	97°35.0
10	215°41.9	17.1'	06°54.2	-13.8'	54.1'	82°19.1	78°20.3	74°50.1	36°26.0	17°56.1	54°26.3	85°14.0	98°04.2
11	230°18.0	17.1'	06°40.5	-13.8'	54.1'	81°49.5	77°57.6	74°28.3	35°56.5	18°25.2	54°55.8	85°42.2	98°33.3
12	244°54.1	17.1'	N06°26.7	-13.8'	54.1'	81°20.0	77°34.9	74°06.6	35°26.9	18°54.4	55°25.4	86°10.3	99°02.5
13	259°30.2	17.2'	$06^{\circ}12.9$	-13.8'	54.1'	80°50.4	77°12.2	73°44.8	34°57.4	19°23.5	55°55.0	86°38.4	99°31.6
14	274°06.4	17.2'	05°59.1	-13.9'	54.1'	80°20.8	76°49.6	73°23.2	34°27.8	19°52.7	56°24.5	87°06.5	100°00.8
15	288°42.6	17.2'	05°45.2	-13.9'	54.1'	79°51.2	76°27.0	73°01.5	33°58.2	20°21.9	56°54.1	87°34.6	100°29.9
16	303°18.8	17.2'	05°31.3	-13.9'	54.1'	79°21.6	76°04.4	72°39.9	33°28.7	20°51.1	57°23.7	88°02.7	100°59.0
17	317°55.0	17.2'	05°17.4	-13.9'	54.1'	78°52.0	75°41.8	72°18.3	32°59.1	21°20.3	57°53.2	88°30.9	101°28.2
18	332°31.3	17.3'	N 05°03.5	-13.9'	54.1'	78°22.5	75°19.3	71°56.8	32°29.6	21°49.6	58°22.8	88°59.0	101°57.3
19	347°07.5	17.3'	04°49.6	-13.9'	54.1'	77°52.9	74°56.8	71°35.3	32°00.0	22° 18.8	58°52.4	89°27.1	102°26.5
20	1°43.8	17.3'	04°35.7	-14.0'	54.1'	77°23.3	74°34.3	71°13.8	31°30.4	22°48.1	59°21.9	89°55.3	102°55.6
21	16°20.1	17.3'	04°21.7	-14.0'	54.1'	76°53.7	74°11.8	70°52.4	31°00.9	23° 17.4	59°51.5	90°23.4	103°24.8
22	30°56.4	17.3'	04°07.7	-14.0'	54.1'	76°24.1	73°49.4	70°31.0	30°31.3	23°46.7	60°21.1	90°51.5	103°53.9
23	45°32.7	17.3'	03°53.7	-14.0'	54.1'	75°54.5	73°27.0	70°09.7	30°01.7	24°16.0	60°50.7	91°19.7	104°23.0
17 th	SD	= 14.8	Mer. pass	s. 19:53									

Moon (18th May)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	60°09.1	17.3'	N 03°39.7	-14.0'	54.1'		75°24.9	73°04.7	29°32.1	24°45.4	61°20.3	91°47.8	104°52.2
1	74°45.4	17.4'	03°25.7	-14.0'	54.1'		74°55.3	72°42.3	29°02.6	25°14.7	61°49.9	92°15.9	105°21.3
2	89°21.7	17.4'	03°11.7	-14.0'	54.1'		74°25.7	72°20.0	28°33.0	25°44.1	62°19.5	92°44.1	105°50.5
3	103°58.1	17.4'	02°57.6	-14.1'	54.1'	119°41.0	73°56.1	71°57.7	28°03.4	26°13.5	62°49.1	93°12.2	106°19.6
4	118°34.5	17.4'	02°43.6	-14.1'	54.1'	119°18.4	73°26.5	71°35.5	27°33.8	26°42.8	63°18.7	93°40.4	106°48.8
5	133°10.8	17.4'	02°29.5	-14.1'	54.1'	118°55.8	72°56.9	71°13.3	27°04.2	27°12.2	63°48.3	94°08.5	107°17.9
6	147°47.2	17.4'	N 02°15.4	-14.1'	54.1'	118°33.0	72°27.2	70°51.1	26°34.6	27°41.6	64°17.9	94°36.7	107°47.1
7	162°23.6	17.4'	02°01.3	-14.1'	54.1'	118°10.2	71°57.6	70°29.0	26°05.0	28°11.1	64°47.5	95°04.8	108°16.3
8	177°00.0	17.4'	01°47.2	-14.1'	54.1'	117°47.4	71°28.0	70°06.9	25°35.4	28°40.5	65°17.1	95°33.0	108°45.4
9	191°36.4	17.4'	01°33.1	-14.1'	54.1'	117°24.5	70°58.3	69°44.8	25°05.8	29°09.9	65°46.7	96°01.2	109°14.6
10	206°12.8	17.4'	$01^{\circ}19.0$	-14.1'	54.1'	117°01.5	70°28.7	69°22.8	24°36.2	29°39.4	66°16.4	96°29.3	109°43.8
11	220°49.1	17.4'	01°04.8	-14.1'	54.2'	116°38.5	69°59.0	69°00.8	24°06.6	30°08.9	66°46.0	96°57.5	110°12.9
12	235°25.5	17.4'	N 00°50.7	-14.1'	54.2'	116°15.4	69°29.4	68°38.9	23°37.0	30°38.4	67°15.7	97°25.7	110°42.1
13	250°01.9	17.4'	00°36.6	-14.1'	54.2'	115°52.3	68°59.7	68°17.0	23°07.4	31°07.9	67°45.3	97°53.9	111°11.3
14	264°38.3	17.4'	00°22.4	-14.2'	54.2'	115°29.1	68°30.0	67°55.1	22°37.7	31°37.4	68°15.0	98°22.0	111°40.5
15	279°14.6	17.4'	N 00°08.3	-14.2'	54.2'	115°05.9	68°00.3	67°33.3	22°08.1	32°06.9	68°44.7	98°50.2	112°09.7
16	293°51.0	17.4'	S 00°05.9	-14.2'	54.2'	114°42.6	67°30.6	67°11.5	21°38.4	32°36.4	69°14.3	99°18.4	112°38.9
17	308°27.4	17.3'	$00^{\circ}20.0$	-14.2'	54.2'	114°19.3	67°00.9	66°49.7	21°08.8	33°06.0	69°44.0	99°46.6	113°08.1
18	323°03.7	17.3'	S 00°34.2	-14.2'	54.2'	113°55.9	66°31.2	66°28.0	20°39.1	33°35.5	70°13.7	100°14.8	113°37.3
19	337°40.0	17.3'	00°48.4	-14.2'	54.2'	113°32.4	66°01.5	66°06.4	20°09.5	34°05.1	70°43.4	100°43.0	114°06.5
20	352°16.4	17.3'	$01^{\circ}02.5$	-14.2'	54.2'	113°08.9	65°31.8	65°44.8	19°39.8	34°34.7	71°13.2	101°11.2	114°35.7
21	6°52.7	17.3'	$01^{\circ}16.7$	-14.2'	54.2'	112°45.4	65°02.0	65°23.2	19°10.1	35°04.3	71°42.9	101°39.4	115°04.9
22	21°29.0	17.3'	01°30.9	-14.2'	54.2'	112°21.8	64°32.3	65°01.7	18°40.4	35°33.9	72°12.6	102°07.6	115°34.2
23	36°05.3	17.3'	01°45.0	-14.2'	54.2'	111°58.1	64°02.5	64°40.3	18°10.7	36°03.5	72°42.4	102°35.9	116°03.4
18 th	SD	= 14.8'	Mer. pas	s. 20:32									

h		Moon	(19 th Ma	ay)			Lunar Di	stance (c	bjects w	ith largest	hourly	LD delta)	
Sun	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Antares	-Spica	+Regulus	+Pollux	+Capella	+Aldebaran
0	50°41.5	17.2'	S 01°59.2	-14.2'	54.2'	111°34.5	64°18.9	63°32.8	17°41.0	36°33.2	73°12.1	103°04.1	116°32.6
1	65°17.8	17.2'	$02^{\circ}13.4$	-14.2'	54.2'	111°10.7	63°57.5	63°03.0	17°11.3	37°02.8	73°41.9	103°32.3	117°01.9
2	79°54.0	17.2'	$02^{\circ}27.5$	-14.2'	54.2'	110°47.0	63°36.2	62°33.2	16°41.6	37°32.5	74° 11.7	104°00.5	117°31.1
3	94°30.2	17.2'	02°41.7	-14.2'	54.3'	110°23.1	63°15.0	62°03.4	16°11.9	38°02.2	74°41.5	104°28.8	118°00.4
4	109°06.4	17.2'	02°55.8	-14.1'	54.3'	109°59.3	62°53.8	61°33.6	15°42.2	38°31.9	75° 11.3	104°57.0	118°29.6
5	123°42.6	17.1'	$03^{\circ}10.0$	-14.1'	54.3'	109°35.4	62°32.7	61°03.7	15°12.5	39°01.6	75°41.1	105°25.2	118°58.9
6	138°18.7	17.1'	S 03°24.1	-14.1'	54.3'	109°11.4	62°11.6	60°33.9	14°42.7	39°31.3	76° 10.9	105°53.5	119°28.2
7	152°54.8	17.1'	03°38.3	-14.1'	54.3'	108°47.4	61°50.6	60°04.1	14°13.0	40°01.0	76°40.7	106°21.7	119°57.5
8	167°30.9	17.1'	03°52.4	-14.1'	54.3'	108°23.4	61°29.7	59°34.2	13°43.2	40°30.8	77° 10.6	106°50.0	
9	182°07.0	17.0'	04°06.5	-14.1'	54.3'	107°59.3	61°08.8	59°04.3	13°13.5	41°00.5	77°40.5	107°18.2	
10	196°43.1	17.0'	04°20.6	-14.1'	54.3'	107°35.2	60°48.0	58°34.4	12°43.7	41°30.3	78° 10.3	107°46.5	
11	211°19.1	17.0'	04°34.7	-14.1'	54.3'	107°11.0	60°27.2	58°04.5	12°14.0	42°00.1	78°40.2	108°14.8	
12	225°55.1	17.0'	S 04°48.8	-14.1'	54.3'	106°46.8	60°06.5	57°34.6	11°44.2	42°29.9	79°10.1	108°43.0	
13	240°31.0	16.9'	$05^{\circ}02.9$	-14.1'	54.3'	106°22.6	59°45.9	57°04.7	11°14.5	42°59.8	79°40.0	109°11.3	
14	255°07.0	16.9'	$05^{\circ}17.0$	-14.1'	54.4'	105°58.3	59°25.4	56°34.8	10°44.7	43°29.6	80°10.0	109°39.6	
15	269°42.8	16.9'	$05^{\circ}31.0$	-14.0'	54.4'	105°34.0	59°04.9	56°04.8	10°15.0	43°59.5	80°39.9	110°07.9	
16	284°18.7	16.8'	$05^{\circ}45.1$	-14.0'	54.4'	105°09.7	58° 44.5	55°34.8	9°45.2	44°29.3	81°09.9	110°36.1	
17	298°54.5	16.8'	$05^{\circ}59.1$	-14.0'	54.4'	104°45.3	58°24.2	55°04.8	9°15.5	44°59.2	81°39.9	111°04.4	
18	313°30.3	16.8'	S 06°13.1	-14.0'	54.4'	104°20.9	58°03.9	54°34.8	8°45.7	45°29.2	82°09.8	111°32.7	
19	328°06.1	16.7'	$06^{\circ}27.1$	-14.0'	54.4'	103°56.4	57°43.8	54°04.8	8°16.0	45°59.1	82°39.8	112°01.0	
20	342°41.8	16.7'	$06^{\circ}41.1$	-14.0'	54.4'	103°32.0	57° 23.7	53°34.8	7°46.4	46°29.0	83°09.9	112°29.3	
21	357°17.5	16.6'	$06^{\circ}55.1$	-14.0'	54.4'	103°07.4	57°03.7	53°04.8	7°16.7	46°59.0	83°39.9	112°57.6	
22	11°53.1	16.6'	$07^{\circ}09.0$	-13.9'	54.4'	102°42.9	56°43.8	52°34.7	6°47.1	47°29.0	84° 10.0	113°25.9	
23	26°28.7	16.5'	$07^{\circ}23.0$	-13.9'	54.5'	102°18.3	56°23.9	52°04.6	6°17.6	47°59.0	84°40.0	113°54.2	
19 th	SD	= 14.8'	Mer. pas	s. 21:11									

h	Moon (20 th May)	Lunar Dis	tance (ol	bjects wit	th largest	hourly LD	delta)	

Mon	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Antares	± Spica	+Regulus	+Procyon	+Pollux	+Capella
0	41°04.2	16.5'	S 07°36.9	-13.9'	54.5'	101°53.7	56°04.2	51°34.5	5°48.1	48°29.0	82°43.5	85°10.1	114°22.5
1	55°39.7	16.5'	07°50.8	-13.9'	54.5'	101°29.0	55°44.5	51°04.4	5°18.7	48°59.0	83°11.6	85°40.2	114°50.8
2	70°15.2	16.4'	08°04.6	-13.8'	54.5'	101°04.4	55°25.0	50°34.3	4°49.5	49°29.0	83°39.7	86°10.3	115°19.1
3	84°50.6	16.4'	08°18.5	-13.8'	54.5'	100°39.6	55°05.5	50°04.1	4°20.4	49°59.1	84°07.8	86°40.5	115°47.4
4	99°26.0	16.3'	08°32.3	-13.8'	54.5'	100°14.9	54°46.2	49°34.0	3°51.6	50°29.2	84°35.9	87°10.6	116°15.7
5	114°01.3	16.3'	08°46.1	-13.8'	54.5'	99°50.1	54°26.9	49°03.8	3°23.2	50°59.3	85°04.0	87°40.8	116°44.0
6	128°36.5	16.2'	S 08°59.9	-13.8'	54.6'	99°25.3	54°07.7	48°33.6	2°55.4	51°29.4	85°32.2	88°11.0	117°12.3
7	143°11.8	16.2'	09°13.6	-13.7'	54.6'	99°00.5	53°48.7	48°03.4	2°28.5	51°59.6	86°00.4	88°41.2	117°40.6
8	157°46.9	16.1'	09°27.4	-13.7'	54.6'	98°35.6	53°29.7	47°33.2		52°29.7	86°28.6	89°11.4	118°08.9
9	172°22.0	16.1'	09°41.1	-13.7'	54.6'	98°10.7	53°10.9	47°02.9		52°59.9	86°56.8	89°41.6	118°37.2
10	186°57.1	16.0'	09°54.7	-13.6'	54.6'	97°45.8	52°52.1	46°32.6		53°30.1	87°25.0	90°11.9	119°05.5
11	201°32.1	15.9'	10°08.4	-13.6'	54.6'	97°20.9	52°33.5	46°02.3		54°00.3	87°53.3	90°42.2	119°33.8
12	216°07.0	15.9'	S 10°22.0	-13.6'	54.6'	96°55.9	52°15.0	45°32.0		54°30.6	88°21.6	91°12.5	
13	230°41.9	15.8'	10°35.6	-13.5'	54.7'	96°30.9	51°56.6	45°01.7		55°00.8	88°49.9	91°42.8	
14	245°16.8	15.8'	$10^{\circ}49.1$	-13.5'	54.7'	96°05.9	51°38.4	44°31.4		55°31.1	89°18.2	92°13.1	
15	259°51.5	15.7'	11°02.6	-13.5'	54.7'	95°40.8	51°20.2	44°01.0		56°01.4	89°46.5	92°43.5	
16	274°26.2	15.7'	11°16.1	-13.4'	54.7'	95°15.8	51°02.2	43°30.6		56°31.7	90°14.8	93°13.8	
17	289°00.9	15.6'	11°29.6	-13.4'	54.7'	94°50.7	50°44.3	43°00.2		57°02.0	90°43.2	93°44.2	
18	303°35.5	15.5'	S 11°43.0	-13.4'	54.7'	94°25.6	50°26.6	42°29.8	3°37.1	57°32.4	91°11.6	94°14.6	
19	318°10.0	15.5'	$11^{\circ}56.3$	-13.3'	54.7'	94°00.4	50°09.0	41°59.4	4°06.0	58°02.8	91°40.0	94°45.1	
20	332°44.5	15.4'	12°09.7	-13.3'	54.8'	93°35.3	49°51.5	41°28.9	4°35.2	58°33.2	92°08.4	95°15.5	
21	347°18.9	15.3'	12°23.0	-13.3'	54.8'	93°10.1	49°34.2	40°58.4	5°04.7	59°03.6	92°36.9	95°46.0	
22	1°53.2	15.3'	12°36.2	-13.2'	54.8'	92°44.9	49°17.0	40°27.9	5°34.4	59°34.0	93°05.3	96°16.5	
23	16°27.4	15.2'	12°49.5	-13.2'	54.8'	92°19.6	48°59.9	39°57.4	6°04.2	60°04.5	93°33.8	96°47.0	
20 th	SD	= 14.9'	Mer. pas	s. 21:52									

h Moon (21st May)

h

Tue	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	31°01.6	15.1'	S 13°02.6	-13.1'	54.8'		91°54.4	48°43.1	39°26.9	6°34.2	60°35.0	94°02.3	97° 17.5
1	45°35.8	15.1'	$13^{\circ}15.8$	-13.1'	54.8'	119°53.1	91°29.1	48°26.3	38° 56.3	7°04.3	61°05.5	94°30.8	97°48.1
2	60°09.8	15.0'	13°28.9	-13.0'	54.9'	119°24.5	91°03.8	48°09.8	38° 25.7	7°34.4	61°36.0	94°59.3	98° 18.7
3	74°43.8	14.9'	13°41.9	-13.0'	54.9'	118°55.8	90°38.5	47°53.3	37°55.1	8°04.7	62°06.5	95°27.9	98°49.2
4	89° 17.7	14.8'	13°54.9	-13.0'	54.9'	118°27.1	90°13.2	47°37.1	37°24.5	8°35.0	62°37.1	95°56.4	99° 19.9
5	103°51.5	14.8'	$14^{\circ}07.9$	-12.9'	54.9'	117°58.3	89°47.8	47°21.0	36°53.8	9°05.3	63°07.7	96°25.0	99°50.5
6	118°25.3	14.7'	S 14°20.8	-12.9'	54.9'	117°29.5	89°22.5	47°05.1	36°23.2	9°35.7	63°38.3	96°53.6	100°21.2
7	132°59.0	14.6'	14°33.6	-12.8'	55.0'	117°00.7	88°57.1	46°49.4	35°52.5	10°06.2	64°09.0	97°22.2	100°51.8
8	147°32.6	14.5'	14°46.4	-12.8'	55.0'	116°31.8	88°31.7	46°33.9	35°21.8	10°36.7	64°39.6	97°50.8	101°22.5
9	162°06.1	14.5'	14°59.2	-12.7'	55.0'	116°02.9	88°06.3	46°18.5	34°51.0	11°07.2	65°10.3	98°19.5	101°53.3
10	176°39.6	14.4'	$15^{\circ}11.9$	-12.7'	55.0'	115°34.0	87°40.8	46°03.3	34°20.3	11°37.8	65°41.0	98°48.1	102°24.0
11	191°12.9	14.3'	$15^{\circ}24.6$	-12.6'	55.0'	115°05.0	87° 15.4		33°49.5	12°08.4	66°11.7	99°16.8	102°54.8
12	205°46.2	14.2'	S 15°37.1	-12.5'	55.0'	114°36.0	86°49.9		33° 18.7	12°39.1	66° 42.5	99°45.5	103°25.6
13	220°19.4	14.1'	$15^{\circ}49.7$	-12.5'	55.1'	114°06.9	86°24.5		32°47.9	13°09.7	67° 13.2	100°14.2	103°56.4
14	234°52.6	14.0'	$16^{\circ}02.2$	-12.4'	55.1'	113°37.8	85°59.0		32°17.0	13°40.5	67°44.0	100°42.9	104°27.2
15	249°25.6	14.0'	$16^{\circ}14.6$	-12.4'	55.1'	113°08.7	85°33.5		31°46.1	14°11.2	68° 14.8	101°11.6	104°58.1
16	263°58.6					112°39.6	85°08.0		31°15.2	14°42.0	68° 45.7	101°40.3	105°29.0
17	278°31.5					112°10.4	84°42.4		30°44.3	15°12.8	69°16.6	102°09.1	105°59.9
18	293°04.2					111°41.1	84°16.9		30°13.4	15°43.6	69°47.4	102°37.9	106°30.8
19	307°36.9	7°36.9 13.6' 17°03.7 -12.1' 55.2				111°11.9	83°51.4		29°42.4	16°14.5	70°18.3	103°06.6	107°01.7
20	322°09.6					110°42.6	83°25.8		29° 11.5	16°45.4	70°49.3	103°35.4	107°32.7
21	336°42.1					110°13.3 109°43.9	83°00.2		28°40.4	17°16.3	71°20.2	104°04.2	108°03.7
22	351°14.5						82°34.7		28°09.4	17°47.3	71°51.2	104°33.1	108°34.7
23	5°46.9 13.3' 17°51.8 -11.9' 55.2'					109°14.5	82°09.1		27°38.4	18°18.3	72°22.2	105°01.9	109°05.8
21 st	SD	= 15.0'	Mer. pas	s. 22:36			-			-			

Moon (22 nd May)	Lunar Distance (objects with largest hourly LD delta)
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Wed	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	20°19.2	13.2'	S 18°03.7	-11.8'	55.3'		108°45.1	81°43.5	27°07.3	18°49.3	72°53.2	105°30.7	109°36.8
1	34°51.3	13.1'	$18^{\circ}15.4$	-11.7'	55.3'		108°15.7	81°17.9	26°36.2	19°20.3	73°24.3	105°59.6	110°07.9
2	49°23.4	13.0'	18°27.2	-11.6'	55.3'		107°46.2	80°52.3	26°05.1	19°51.4	73°55.4	106°28.4	110°39.0
3	63°55.4	12.9'	18°38.8	-11.6'	55.3'		107°16.7	80°26.7	25°33.9	20°22.5	74° 26.5	106°57.3	111°10.2
4	78°27.3	12.8'	18°50.4	-11.5'	55.3'		106°47.1	80°01.1	25°02.8	20°53.6	74°57.6	107°26.2	111°41.3
5	92°59.1	12.7'	$19^{\circ}01.9$	-11.4'	55.4'		106°17.5	79°35.5	24°31.6	21°24.7	75°28.7	107°55.1	112°12.5
6	107°30.8	12.6'	S 19°13.3	-11.3'	55.4'		105°47.9	79°09.9	24°00.3	21°55.9	75°59.9	108°24.0	112°43.7
7	122°02.4	12.5'	19°24.6	-11.3'	55.4'		105°18.3	78°44.3	23°29.1	22°27.1	76°31.1	108°52.9	113°14.9
8	136°33.9	12.4'	19°35.9	-11.2'	55.4'		104°48.6	78°18.7	22°57.8	22°58.3	77°02.3	109°21.8	113°46.2
9	151°05.4	12.3'	19°47.1	-11.1'	55.4'		104°18.9	77°53.0	22°26.5	23°29.6	77°33.6	109°50.7	114°17.5
10	165°36.7	12.2'	19°58.2	-11.0'	55.5'	119°51.8	103°49.2	77°27.4	21°55.2	24°00.8	78°04.8	110°19.7	114°48.8
11	180°07.9	12.1'	20°09.2	-10.9'	55.5'	119°20.6	103°19.4	77°01.8	21°23.9	24°32.1	78°36.1	110°48.6	115°20.1
12	194°39.0	12.0'	S 20°20.1	-10.8'	55.5'	118°49.4	102°49.6	76°36.2	20°52.5	25°03.5	79°07.4	111°17.6	115°51.5
13	209°10.1	11.9'	20°31.0	-10.8'	55.5'	118°18.2	102°19.8	76°10.6	20°21.1	25°34.8	79°38.8	111°46.5	116°22.8
14	223°41.0	11.8'	20°41.7	-10.7'	55.6'	117°46.9	101°50.0	75°45.0	19°49.7	26°06.2	80° 10.2	112°15.5	116°54.2
15	238°11.8	11.7'	20°52.4	-10.6'	55.6'	117°15.6	101°20.1	75°19.4	19°18.3	26°37.6	80°41.5	112°44.4	117°25.7
16	252°42.6	11.6'	21°03.0	-10.5'	55.6'	116°44.3	100°50.2	74°53.8	18°46.8	27°09.0	81°13.0	113°13.4	117°57.1
17	267°13.2	11.5'	21°13.5	-10.4'	55.6'	116°13.0	100°20.2	74°28.2	18°15.4	27°40.5	81°44.4	113°42.4	118°28.6
18	281°43.7	11.4'	S 21°23.9	-10.3'	55.6'	115°41.6	99°50.3	74°02.6	17°43.9	28°12.0	82° 15.9	114°11.4	119°00.1
19	296°14.2	11.3'	21°34.2	-10.2'	55.7'	115°10.2	99°20.3	73°37.0	17°12.3	28°43.5	82°47.4	114°40.3	119°31.6
20	310°44.5	11.2'	21°44.4	-10.1'	55.7'	114°38.8	98°50.3	73°11.5	16°40.8	29°15.0	83° 18.9	115°09.3	
21	325°14.7	11.1'	21°54.5	-10.0'	55.7'	114°07.4	98°20.2	72°45.9	16°09.2	29°46.6	83°50.4	115°38.3	
22	339°44.9	11.0'	22°04.5	-9.9'	55.7'	113°35.9	97°50.1	72°20.4	15°37.6	30°18.1	84°22.0	116°07.3	
23	354°14.9	10.9'	22°14.4	-9.8'	55.7'	113°04.4	97°20.0	71°54.8	15°06.0	30°49.7	84°53.6	116°36.3	
22 nd	SD	= 15.1'	Mer. pas	s. 23:24									

h Moon (23 rd May)	Lunar Distance (objects with largest hourly LD delta)
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Thu	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Antares	+Spica	+Arcturus	+Regulus	+Procyon
0	8°44.8	10.8'	S 22°24.3	-9.7'	55.8'	112°32.9	96°49.9	71°29.3	14°34.3	31°21.4	45°05.7	85°25.2	117°05.2
1	23°14.7	10.7'	22°34.0	-9.6'	55.8'	112°01.4	96°19.8	71°03.8	14°02.6	31°53.0	45°27.2	85°56.8	117°34.2
2	37°44.4	10.6'	22°43.6	-9.5'	55.8'	111°29.8	95°49.6	70°38.3	13°30.9	32°24.7	45°48.9	86°28.5	118°03.2
3	52°14.0	10.5'	22°53.1	-9.4'	55.8'	110°58.2	95°19.4	70°12.8	12°59.2	32°56.4	46°10.8	87°00.2	118°32.2
4	66°43.5	10.4'	23°02.5	-9.3'	55.8'	110°26.6	94°49.1	69°47.4	12°27.5	33°28.2	46°32.8	87°31.9	119°01.1
5	81°12.9	10.3'	23°11.8	-9.2'	55.9'	109°55.0	94°18.9	69°21.9	11°55.7	33°59.9	46°54.9	88°03.6	119°30.1
6	95°42.2	10.2'	S 23°21.0	-9.1'	55.9'	109°23.3	93°48.6	68° 56.5	11°23.9	34°31.7	47°17.2	88°35.4	119°59.1
7	110°11.5	10.1'	23°30.1	-9.0'	55.9'	108°51.6	93°18.3	68°31.1	10°52.1	35°03.5	47°39.7	89°07.2	
8	124°40.6	10.0'	23°39.1	-8.9'	55.9'	108°19.9	92°47.9	68°05.7	10°20.3	35°35.4	48°02.3	89°39.0	
9	139°09.6	9.9'	23°47.9	-8.7'	56.0'	107°48.2	92°17.6	67°40.4	9°48.4	36°07.2	48°25.1	90°10.8	
10	153°38.5	9.8'	23°56.7	-8.6'	56.0'	107°16.4	91°47.2	67° 15.1	9°16.5	36°39.1	48°48.0	90°42.7	
11	168°07.3	9.7'	24°05.3	-8.5'	56.0'	106°44.6	91°16.8	66°49.8	8°44.6	37°11.0	49°11.1	91°14.5	
12	182°36.0	9.6'	S 24°13.8	-8.4'	56.0'	106°12.8	90°46.4	66°24.5	8°12.7	37°43.0	49°34.3	91°46.4	
13	197°04.6	9.5'	24°22.2	-8.3'	56.0'	105°41.0	90°15.9	65°59.2	7°40.7	38°14.9	49°57.6	92°18.4	
14	211°33.1	9.4'	24°30.5	-8.2'	56.1'	105°09.1	89°45.4	65°34.0	7°08.7	38°46.9	50°21.1	92°50.3	
15	226°01.5	9.3'	24°38.6	-8.0'	56.1'	104°37.3	89°14.9	65°08.9	6°36.8	39°18.9	50°44.7	93°22.3	
16	240°29.8	9.2'	24°46.6	-7.9'	56.1'	104°05.3	88°44.4	64°43.7	6°04.8	39°51.0	51°08.4	93°54.3	
17	254°58.0	9.1'	24°54.6	-7.8'	56.1'	103°33.4	88°13.8	64°18.6	5°32.7	40°23.0	51°32.3	94°26.4	
18	269°26.1	9.0'	S 25°02.3	-7.7'	56.2'	103°01.5	87°43.3	63°53.5	5°00.7	40°55.1	51°56.3	94°58.4	
19	283°54.1	8.9'	$25^{\circ}10.0$	-7.5'	56.2'	102°29.5	87°12.7	63°28.5	4°28.7	41°27.2	52°20.4	95°30.5	
20	298°22.0	8.8'	$25^{\circ}17.5$	-7.4'	56.2'	101°57.5	86°42.1	63°03.5	3°56.6	41°59.4	52°44.6	96°02.6	
21	312°49.8	8.7'	25°24.9	-7.3'	56.2'	101°25.4	86°11.4	62°38.5	3°24.6	42°31.5	53°08.9	96°34.7	
22	327°17.6	8.6'	25°32.2	-7.1'	56.2'	100°53.4	85°40.8	62°13.6	2°52.6	43°03.7	53°33.4	97°06.9	
23	341°45.2	8.5'	25°39.3	-7.0'	56.3'	100°21.3	85°10.1	61°48.7	2°20.7	43°35.9	53°58.0	97°39.1	
23 rd	SD	= 15.2	' Mer. pas	ss:-									

h Moon (24th May)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Mars	-Saturn	-Fomalhaut	-Altair	± Antares	+Spica	+Arcturus	+Regulus
0	356°12.7	8.4'	S 25°46.3	-6.9'	56.3'		99°49.2	84°39.4	61°23.9	1°48.9	44°08.2	54°22.7	98°11.3
1	10°40.1	8.3'	25°53.2	-6.7'	56.3'		99°17.1	84°08.7	60°59.1	1°17.5	44°40.4	54°47.4	98°43.5
2	25°07.4	8.2'	25°59.9	-6.6'	56.3'		98°44.9	83°37.9	60°34.4		45°12.7	55° 12.3	99°15.8
3	39°34.7	8.1'	26°06.5	-6.5'	56.3'		98° 12.7	83°07.2	60°09.8		45°45.0	55° 37.3	99°48.0
4	54°01.8	8.1'	26°13.0	-6.3'	56.4'		97°40.5	82°36.4	59°45.1		46°17.4	56°02.4	100°20.3
5	68°28.9	8.0'	$26^{\circ}19.3$	-6.2'	56.4'		97°08.3	82°05.6	59°20.6		46°49.7	56°27.6	100°52.7
6	82°55.9	7.9'	S 26°25.5	-6.0'	56.4'		96°36.0	81°34.8	58°56.1		47°22.1	56°52.9	101°25.0
7	97°22.7	7.8'	26°31.5	-5.9'	56.4'		96°03.7	81°03.9	58°31.6	2°01.5	47°54.5	57°18.3	101°57.4
8	111°49.5	7.7'	26°37.4	-5.7'	56.5'		95°31.4	80°33.1	58°07.3	2°33.5	48°27.0	57°43.8	102°29.8
9	126°16.2	7.6'	26°43.1	-5.6'	56.5'		94°59.1	80°02.2	57°42.9	3°05.8	48°59.4	58°09.4	103°02.2
10	140°42.8	7.5'	26°48.7	-5.5'	56.5'		94°26.8	79°31.3	57°18.7	3°38.1	49°31.9	58°35.0	103°34.6
11	155°09.4	7.4'	26°54.2	-5.3'	56.5'		93°54.4	79°00.4	56°54.5	4°10.5	50°04.4	59°00.8	104°07.1
12	169°35.8	7.4'	S 26°59.5	-5.2'	56.5'		93°22.0	78°29.5	56°30.4	4°42.9	50°36.9	59°26.6	104°39.6
13	184°02.2	7.3'	27°04.6	-5.0'	56.6'		92°49.6	77°58.5	56°06.4	5°15.4	51°09.5	59°52.6	105°12.1
14	198°28.4	7.2'	27°09.6	-4.9'	56.6'		92°17.1	77°27.6	55°42.4	5°47.9	51°42.1	60°18.6	105°44.7
15	212°54.6	7.1'	$27^{\circ}14.5$	-4.7'	56.6'		91°44.7	76°56.6	55°18.6	6°20.5	52°14.7	60°44.7	106°17.2
16	227°20.8	7.0'	$27^{\circ}19.2$	-4.5'	56.6'		91°12.2	76°25.6	54°54.8	6°53.1	52°47.3	61°10.9	106°49.8
17	241°46.8	7.0'	27°23.7	-4.4'	56.6'		90°39.6	75°54.6	54°31.1	7°25.7	53°19.9	61°37.1	107°22.4
18	256°12.8	6.9'	S 27°28.1	-4.2'	56.7'		90°07.1	75°23.6	54°07.5	7°58.3	53°52.6	62°03.5	107°55.0
19	270°38.7	6.8'	27°32.3	-4.1'	56.7'	119°34.4	89°34.5	74°52.5	53°43.9	8°31.0	54°25.3	62°29.9	108°27.7
20	285°04.5	6.8'	27°36.4	-3.9'	56.7'	119°03.5	89°01.9	74°21.5	53°20.5	9°03.7	54°58.0	62°56.4	109°00.4
21	299°30.3	6.7'	27°40.3	-3.8'	56.7'	118°32.7	88°29.3	73°50.4	52°57.2	9°36.5	55°30.8	63°22.9	109°33.1
22	313°55.9	6.6'	$27^{\circ}44.1$	-3.6'	56.8'	118°01.8	87°56.7	73°19.3	52°33.9	10°09.2	56°03.6	63°49.5	110°05.8
23	328°21.6	6.6'	27°47.7	-3.4'	56.8'	117°30.9	87°24.0	72°48.3	52°10.8	10°42.0	56°36.4	64°16.3	110°38.6
24 th	SD :	= 15.3'	Mer. pas	s. 00:16	<u> </u>								

Moon (25th May)

Lunar Distance (objects with largest hourly LD delta)

n		ivioon	(25" 101	ay)			Lunar	Distance (d	bjects w	ith largest	nourly	LD deita)	
Sat	GHA	ν	Dec	d	HP	-Mars	-Saturn	-Fomalhaut	-Altair	+Antares	+Spica	+Arcturus	+Regulus
0	342°47.1	6.5'	S 27°51.1	-3.3'	56.8'	117°00.0	86°51.3	72°17.2	51°47.8	11°14.8	57°09.2	64°43.0	111°11.3
1	357°12.6	6.4'	27°54.4	-3.1'	56.8'	116°29.0	86°18.6	71°46.1	51°24.9	11°47.6	57°42.0	65°09.9	111°44.1
2	11°38.0	6.4'	27°57.5	-2.9'	56.8'	115°58.0	85°45.9	71°14.9	51°02.0	12°20.5	58° 14.9	65°36.8	112°16.9
3	26°03.4	6.3'	28°00.5	-2.8'	56.9'	115°27.0	85°13.1	70°43.8	50°39.4	12°53.4	58° 47.8	66°03.8	112°49.8
4	40°28.7	6.2'	28°03.3	-2.6'	56.9'	114°56.0	84°40.4	70°12.7	50°16.8	13°26.3	59°20.7	66°30.8	113°22.6
5	54°53.9	6.2'	28°05.9	-2.5'	56.9'	114°25.0	84°07.6	69°41.5	49°54.3	13°59.2	59°53.6	66°57.9	113°55.5
6	69°19.1	6.1'	S 28°08.3	-2.3'	56.9'	113°53.9	83°34.7	69°10.3	49°32.0	14°32.2	60°26.6	67°25.1	114°28.4
7	83°44.3	6.1'	28°10.6	-2.1'	56.9'	113°22.8	83°01.9	68°39.2	49°09.8	15°05.1	60°59.5	67° 52.3	115°01.4
8	98°09.4	6.0'	28°12.7	-2.0'	57.0'	112°51.7	82°29.0	68°08.0	48°47.8	15°38.2	61°32.5	68° 19.6	115°34.3
9	112°34.4	6.0'	28°14.7	-1.8'	57.0'	112°20.6	81°56.1	67°36.8	48°25.9	16°11.2	62°05.6	68°46.9	116°07.3
10	126°59.4	5.9'	$28^{\circ}16.5$	-1.6'	57.0'	111°49.4	81°23.2	67°05.6	48°04.1	16°44.2	62°38.6	69°14.3	116°40.3
11	141°24.3	5.9'	$28^{\circ}18.1$	-1.4'	57.0'	111°18.2	80°50.3	66°34.4	47°42.5	17°17.3	63°11.7	69°41.8	117°13.3
12	155°49.2	5.9'	S 28°19.5	-1.3'	57.1'	110°47.0	80° 17.3	66°03.2	47°21.0	17°50.4	63°44.8	70°09.3	117°46.3
13	170°14.1	5.8'	28°20.8	-1.1'	57.1'	110°15.8	79°44.3	65°32.0	46°59.7	18°23.5	64° 17.9	70°36.8	118°19.4
14	184°38.9	5.8'	28°21.9	-0.9'	57.1'	109°44.5	79°11.3	65°00.8	46°38.6	18°56.6	64°51.0	71°04.5	118°52.5
15	199°03.7	5.7'	28°22.8	-0.8'	57.1'	109°13.3	78°38.3	64°29.6	46°17.6	19°29.8	65°24.2	71°32.1	119°25.6
16	213°28.4	5.7'	28°23.6	-0.6'	57.1'	108°42.0	78°05.3	63°58.4	45°56.8	20°03.0	65°57.4	71°59.8	119°58.7
17	227°53.2	5.7'	28°24.2	-0.4'	57.2'	108°10.6	77°32.2	63°27.1	45°36.1	20°36.2	66°30.6	72°27.6	
18	242°17.8	5.7'	S 28°24.6	-0.2'	57.2'	107°39.3	76°59.1	62°55.9	45°15.7	21°09.4	67°03.8	72°55.4	
19	256°42.5	5.6'	28°24.8	-0.1'	57.2'	107°07.9	76°26.0	62°24.7	44°55.4	21°42.7	67°37.0	73°23.3	
20	271°07.1	5.6'	28°24.8	0.1'	57.2'	106°36.6	75°52.8	61°53.4	44°35.3	22°15.9	68°10.3	73°51.2	
21	285°31.7	5.6'	28°24.7	0.3'	57.2'	106°05.2	75° 19.7	61°22.2	44°15.4	22°49.2	68°43.6	74° 19.2	
22	299°56.3	5.6'	28°24.4	0.5'	57.3'	105°33.7	74°46.5	60°51.0	43°55.8	23°22.6	69°16.9	74°47.2	
23	314°20.9	5.5'	28°24.0	0.6'	57.3'	105°02.3	74°13.3	60°19.8	43°36.3	23°55.9	69°50.2	75° 15.2	
25 th	SD:	= 15.5 [']	Mer. pas	s. 01:12	2								

h Moon (26th May)

Sun	GHA	ν	Dec	d	HP	-Mars	-Saturn	-Fomalhaut	-Altair	+Antares	+Hadar	+Spica	+Arcturus
0	328°45.4	5.5'	S 28°23.3	0.8'	57.3'	104°30.8	73°40.1	59°48.6	43°17.0	24°29.3	52°48.9	70°23.6	75°43.3
1	343°10.0	5.5'	28°22.5	1.0'	57.3'	103°59.3	73°06.8	59° 17.3	42°58.0	25°02.6	53°08.1	70°57.0	76°11.4
2	357°34.5	5.5'	28°21.5	1.2'	57.3'	103°27.8	72°33.5	58° 46.1	42°39.2	25°36.0	53°27.5	71°30.4	76°39.6
3	11°59.0	5.5'	28°20.4	1.3'	57.4'	102°56.3	72°00.3	58° 14.9	42°20.6	26°09.5	53°47.1	72°03.8	77°07.8
4	26°23.5	5.5'	$28^{\circ}19.0$	1.5'	57.4'	102°24.7	71°26.9	57°43.7	42°02.2	26°42.9	54°06.8	72°37.2	77°36.1
5	40°48.0	5.5'	$28^{\circ}17.5$	1.7'	57.4'	101°53.2	70°53.6	57° 12.5	41°44.1	27°16.4	54°26.7	73°10.7	78°04.4
6	55°12.4	5.5'	S 28°15.8	1.9'	57.4'	101°21.6	70°20.3	56°41.3	41°26.2	27°49.9	54°46.8	73°44.2	78°32.7
7	69°36.9	5.5'	$28^{\circ}13.9$	2.1'	57.4'	100°49.9	69°46.9	56° 10.2	41°08.6	28°23.4	55°07.0	74° 17.7	79°01.1
8	84°01.4	5.5'	$28^{\circ}11.9$	2.2'	57.5'	100°18.3	69°13.5	55° 39.0	40°51.3	28°56.9	55°27.4	74°51.2	79°29.5
9	98°25.9	5.5'	28°09.6	2.4'	57.5'	99°46.6	68°40.1	55° 07.9	40°34.2	29°30.4	55°47.9	75°24.7	79°57.9
10	112°50.4	5.5'	28°07.2	2.6'	57.5'	99°15.0	68°06.6	54° 36.7	40°17.4	30°04.0	56°08.6	75°58.3	80°26.4
11	127°14.9	5.5'	28°04.6	2.8'	57.5'	98°43.3	67°33.2	54°05.6	40°00.8	30°37.6	56°29.4	76°31.9	80°54.9
12	141°39.4	5.5'	S 28°01.9	2.9'	57.5'	98°11.5	66°59.7	53°34.5	39°44.6	31°11.2	56°50.4	77°05.5	81°23.4
13	156°03.9	5.5'	$27^{\circ}59.0$	3.1'	57.6'	97°39.8	66°26.2	53°03.4	39°28.7	31°44.9	57°11.5	77°39.1	81°51.9
14	170°28.4	5.5'	27°55.8	3.3'	57.6'	97°08.0	65°52.7	52°32.3	39°13.0	32°18.5	57°32.8	78° 12.8	82°20.5
15	184°53.0	5.6'	27°52.6	3.5'	57.6'	96°36.3	65°19.1	52°01.2	38°57.7	32°52.2	57°54.2	78°46.5	82°49.2
16	199°17.5	5.6'	$27^{\circ}49.1$	3.6'	57.6'	96°04.5	64°45.6	51° 30.2	38°42.7	33°25.9	58° 15.8	79°20.1	83° 17.8
17	213°42.1	5.6'	27°45.5	3.8'	57.6'	95°32.6	64°12.0	50°59.2		33°59.6	58°37.4	79°53.8	83°46.5
18	228°06.7	5.6'	S 27°41.7	4.0'	57.7'	95°00.8	63°38.4	50°28.2		34°33.3	58° 59.2	80°27.6	84° 15.2
19	242°31.3	5.6'	27°37.7	4.2'	57.7'	94°28.9	63°04.8	49°57.2		35°07.1	59°21.2	81°01.3	84°43.9
20	256°55.9	5.7'	27°33.5	4.3'	57.7'	93°57.1	62°31.1	49°26.3		35°40.9	59°43.2	81°35.1	85°12.7
21	271°20.6	5.7'	27°29.2	4.5'	57.7'	93°25.2	61°57.5	48°55.4		36°14.6	60°05.4	82°08.9	85°41.5
22	285°45.3	5.7'	27°24.7	4.7'	57.7'	92°53.2	61°23.8	48° 24.5		36°48.5	60°27.7	82°42.7	86°10.3
23	300°10.0	5.8'	27°20.0	4.8'	57.8'	92°21.3	60°50.1	47°53.6		37°22.3	60°50.1	83°16.5	86°39.1
26 th	SD =	= 15.6′	Mer. pass	s. 02:10)								

Moon (27th May)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Mars	-Achernar	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Spica	+Arcturus
0	314°34.8	5.8'	S 27°15.2	5.0'	57.8'	91°49.3	69°33.5	60°16.4	47°22.8	37°56.1	56°50.3	83°50.4	87°07.9
1	328°59.6	5.8'	$27^{\circ}10.1$	5.2'	57.8'	91°17.4	69° 18.2	59°42.6	46°52.0	38°30.0	57° 12.8	84° 24.2	87°36.8
2	343°24.4	5.9'	$27^{\circ}05.0$	5.4'	57.8'	90°45.4	69°03.0	59°08.9	46°21.3	39°03.9	57° 35.4	84°58.1	88°05.7
3	357°49.3	5.9'	26°59.6	5.5'	57.8'	90°13.3	68°47.9	58°35.1	45°50.6	39°37.8	57° 58.2	85°32.0	88°34.6
4	12°14.2	5.9'	$26^{\circ}54.1$	5.7'	57.8'	89°41.3	68°32.8	58°01.3	45°19.9	40°11.8	58°21.1	86°06.0	89°03.5
5	26°39.1	6.0'	26°48.4	5.9'	57.9'	89°09.2		57°27.5	44°49.3	40°45.7	58°44.1	86°39.9	89°32.5
6	41°04.1	6.0'	S 26°42.5	6.0'	57.9'	88°37.2		56°53.7	44°18.7	41°19.7	59°07.2	87°13.9	90°01.4
7	55°29.2	6.1'	26°36.5	6.2'	57.9'	88°05.1		56° 19.8	43°48.2	41°53.7	59° 30.4	87°47.8	90°30.4
8	69°54.3	6.1'	26°30.3	6.4'	57.9'	87°33.0		55°45.9	43°17.7	42°27.7	59° 53.8	88°21.8	90°59.4
9	84°19.4	6.2'	26°23.9	6.5'	57.9'	87°00.8		55° 12.0	42°47.3	43°01.7	60° 17.3	88°55.9	91°28.4
10	98°44.6	6.2'	26° 17.4	6.7'	58.0'	86°28.7		54°38.1	42°16.9	43°35.7	60°40.9	89°29.9	91°57.4
11	113°09.8	6.3'	$26^{\circ}10.7$	6.9'	58.0'	85°56.5		54°04.2	41°46.6	44°09.8	61°04.6	90°04.0	92°26.5
12	127°35.1	6.3'	S 26°03.8	7.0'	58.0'	85°24.3		53°30.2	41°16.4	44°43.9	61°28.4	90°38.0	92°55.5
13	142°00.4	6.4'	25°56.8	7.2'	58.0'	84°52.1		52°56.3	40°46.2	45°18.0	61°52.3	91°12.1	93°24.6
14	156°25.8	6.4'	25°49.6	7.3'	58.0'	84°19.9		52°22.3	40°16.1	45°52.1	62° 16.3	91°46.2	93°53.7
15	170°51.2	6.5'	25°42.3	7.5'	58.0'	83°47.6		51°48.3	39°46.1	46°26.2	62°40.4	92°20.4	94°22.7
16	185°16.7	6.6'	25°34.8	7.7'	58.1'	83°15.4		51°14.3	39°16.1	47°00.4	63°04.7	92°54.5	94°51.8
17	199°42.3	6.6'	$25^{\circ}27.1$	7.8'	58.1'	82°43.1		50°40.2	38°46.2	47°34.6	63°29.0	93°28.7	95°20.9
18	214°07.9	6.7'	S 25°19.3	8.0'	58.1'	82°10.8		50°06.1	38°16.4	48°08.8	63°53.4	94°02.9	95°50.0
19	228°33.6	6.7'	$25^{\circ}11.3$	8.1'	58.1'	81°38.5		49°32.1	37°46.7	48°43.0	64° 17.9	94°37.1	96°19.1
20	242°59.3	6.8'	25°03.2	8.3'	58.1'	81°06.2		48°58.0	37°17.1	49°17.2	64° 42.5	95°11.3	96°48.2
21	257°25.1	6.9'	24°54.9	8.4'	58.1'	80°33.8		48°23.9	36°47.6	49°51.4	65°07.2	95°45.5	97°17.3
22	271°51.0	6.9'	24°46.5	8.6'	58.2'	80°01.4		47° 49.7	36°18.2	50°25.7	65°32.0	96° 19.8	97°46.4
23	286°16.9	7.0'	24°37.9	8.7'	58.2'	79°29.1		47° 15.6	35°48.9	51°00.0	65°56.9	96°54.1	98°15.6
27 th	SD =	= 15.8′	Mer. pass	s. 03:09	9								

h		Moon	(28 th M	ay)			Luna	r Distand	ce (objects	with large	st hourly LD	delta)	
Tue	GHA	ν	Dec	d	HP	-Sun	-Mars	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Spica	+Arcturus
0	300°42.9	7.1'	S 24°29.1	8.9'	58.2'		78°56.6	46°41.4	35°19.8	51°34.3	66°21.9	97°28.4	98°44.7
1	315°09.0	7.1'	24°20.2	9.0'	58.2'		78°24.2	46°07.2	34°50.7	52°08.6	66°46.9	98°02.7	99°13.8
2	329°35.1	7.2'	24°11.2	9.2'	58.2'		77°51.8	45°33.0	34°21.8	52°42.9	67° 12.0	98°37.0	99°42.9
3	344°01.3	7.3'	24°02.0	9.3'	58.3'		77° 19.3	44°58.8	33°53.0	53° 17.3	67°37.2	99°11.4	100°12.0
4	358°27.6	7.3'	23°52.7	9.5'	58.3'		76°46.9	44°24.5	33°24.3	53°51.7	68°02.5	99°45.7	100°41.1
5	12°53.9	7.4'	23°43.2	9.6'	58.3'		76° 14.4	43°50.3	32°55.8	54°26.0	68°27.9	100°20.1	101°10.3
6	27°20.3	7.5'	S 23°33.6	9.8'	58.3'		75°41.9	43°16.0	32°27.5	55°00.5	68°53.3	100°54.5	101°39.4
7	41°46.8	7.5'	23°23.8	9.9'	58.3'		75°09.3	42°41.7	31°59.3	55° 34.9	69° 18.8	101°28.9	102°08.5
8	56°13.4	7.6'	23°13.9	10.1'	58.3'		74°36.8	42°07.4	31°31.2	56°09.3	69°44.4	102°03.4	102°37.6
9	70°40.0	7.7'	23°03.8	10.2'	58.4'		74°04.2	41°33.1	31°03.4	56° 43.8	70°10.0	102°37.8	103°06.6
10	85°06.7	7.8'	22°53.6	10.3'	58.4'	119°50.3	73°31.6	40°58.7	30°35.7	57° 18.2	70°35.8	103°12.3	103°35.7
11	99°33.5	7.8'	22°43.3	10.5'	58.4'	119° 18.3	72°59.1	40°24.4	30°08.3	57° 52.7	71°01.5	103°46.8	104°04.8
12	114°00.3	7.9'	S 22°32.8	10.6'	58.4'	118°46.3	72°26.4	39°50.0	29°41.0	58°27.2	71°27.4	104°21.3	104°33.8
13	128°27.2	8.0'	22°22.2	10.7'	58.4'	118° 14.3	71°53.8	39°15.6	29°14.0	59°01.8	71°53.3	104°55.8	105°02.9
14	142°54.2	8.1'	22°11.5	10.9'	58.4'	117°42.2	71°21.2	38°41.2	28°47.2	59°36.3	72° 19.3	105°30.3	105°31.9
15	157°21.2	8.1'	22°00.6	11.0'	58.4'	117°10.2	70°48.5	38°06.8	28°20.6	60° 10.9	72°45.3	106°04.9	106°00.9
16	171°48.4	8.2'	$21^{\circ}49.6$	11.1'	58.5'	116°38.1	70° 15.8	37°32.3	27°54.3	60°45.4	73°11.4	106°39.4	106°29.9
17	186°15.6	8.3'	21°38.5	11.3'	58.5'	116°06.0	69°43.1	36°57.9	27°28.3	61°20.0	73°37.6	107°14.0	106°58.9
18	200°42.9	8.4'	S 21°27.2	11.4'	58.5'	115°33.9	69° 10.4	36°23.4	27°02.5	61°54.6	74°03.8	107°48.6	107°27.9
19	215°10.2	8.4'	21°15.8	11.5'	58.5'	115°01.8	68°37.7	35°48.9	26°37.0	62°29.3	74°30.0	108°23.2	107°56.8
20	229°37.7	8.5'	21°04.3	11.6'	58.5'	114°29.6	68°05.0	35°14.4	26°11.9	63°03.9	74°56.3	108°57.9	108°25.7
21	244°05.2	8.6'	20°52.6	11.8'	58.5'	113°57.5	67°32.2	34°39.8	25°47.1	63°38.6	75° 22.7	109°32.5	108°54.6
22	258°32.7	8.7'	20°40.9	11.9'	58.6'	113°25.3	66° 59.4	34°05.3	25°22.6	64°13.2	75°49.1	110°07.2	109°23.5
23	273°00.4	8.7'	20°29.0	12.0'	58.6'	112°53.1	66°26.6	33°30.7	24°58.5	64°47.9	76° 15.6	110°41.9	109°52.4
28 th	SD	= 15.9'	Mer. pas	s. 04:06					Sun S	SD = 15.8'			

h Moon (29th May)

Wed	GHA	ν	Dec	d	HP	-Sun	-Mars	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	287°28.1	8.8'	S 20°17.0	12.1'	58.6'	112°20.9	65°53.8	32°56.1	24°34.8	65°22.6	76°42.1	110°21.2	111°16.6
1	301°55.9	8.9'	20°04.8	12.2'	58.6'	111°48.6	65°21.0	32°21.6	24°11.4	65°57.4	77°08.7	110°50.0	111°51.3
2	316°23.8	8.9'	19°52.6	12.4'	58.6'	111°16.4	64°48.2	31°46.9	23°48.6	66°32.1	77°35.3	111°18.8	112°26.0
3	330°51.7	9.0'	19°40.2	12.5'	58.6'	110°44.1	64°15.3	31°12.3	23°26.1	67°06.8	78°01.9	111°47.5	113°00.8
4	345°19.8	9.1'	19°27.7	12.6'	58.6'	110°11.9	63°42.4	30°37.7	23°04.1	67°41.6	78°28.6	112°16.2	113°35.5
5	359°47.9	9.2'	$19^{\circ}15.1$	12.7'	58.7'	109°39.6	63°09.6	30°03.0	22°42.6	68°16.4	78°55.4	112°44.9	114°10.3
6	$14^{\circ}16.0$	9.2'	S 19°02.4	12.8'	58.7'	109°07.3	62°36.7	29°28.3	22°21.7	68°51.2	79°22.2	113°13.6	114°45.1
7	28°44.3	9.3'	18°49.6	12.9'	58.7'	108°34.9	62°03.7	28°53.7	22°01.3	69°26.0	79°49.0	113°42.2	115°19.9
8	43°12.6	9.4'	18°36.7	13.0'	58.7'	108°02.6	61°30.8	28°18.9	21°41.4	70°00.9	80°15.8	114°10.8	115°54.7
9	57°41.0	9.5'	18°23.6	13.1'	58.7'	107°30.2	60°57.9	27°44.2	21°22.2	70°35.7	80°42.7	114°39.3	116°29.6
10	72°09.4	9.5'	$18^{\circ}10.5$	13.3'	58.7'	106°57.9	60°24.9	27°09.5	21°03.5	71°10.6	81°09.7	115°07.8	117°04.4
11	86°37.9	9.6'	17°57.2	13.4'	58.7'	106°25.5	59°51.9	26°34.7	20°45.6	71°45.4	81°36.6	115°36.2	117°39.3
12	101°06.5	9.7'	S 17°43.9	13.5'	58.8'	105°53.1	59°18.9	26°00.0	20°28.3	72°20.3	82°03.6	116°04.6	118°14.2
13	115°35.2	9.7'	17°30.4	13.6'	58.8'	105°20.7	58°45.9	25°25.2	20°11.7	72°55.2	82°30.6	116°33.0	118°49.1
14	130°03.9	9.8'	$17^{\circ}16.9$	13.7'	58.8'	104°48.2	58°12.9	24°50.4	19°55.9	73°30.2	82°57.7	$117^{\circ}01.3$	119°24.0
15	144°32.7	9.9'	17°03.2	13.8'	58.8'	104° 15.8	57°39.9	24°15.6	19°40.9	74°05.1	83°24.8	117°29.6	119°58.9
16	159°01.6	9.9'	16°49.5	13.9'	58.8'	103°43.3	57°06.8	23°40.7		74°40.1	83°51.9	117°57.8	
17	173°30.6	10.0'	16°35.6	13.9'	58.8'	103°10.8	56°33.7	23°05.9		75°15.0	84°19.0	118°25.9	
18	187°59.6	10.1'	S 16°21.7	14.0'	58.8'	102°38.3	56°00.7	22°31.0		75°50.0	84°46.2	118°54.0	
19	202°28.6	10.1'	$16^{\circ}07.6$	14.1'	58.9'	102°05.8	55°27.6	21°56.2		76°25.0	85°13.4	119°22.0	
20	216°57.8	10.2'	15°53.5	14.2'	58.9'	101°33.3	54°54.5	21°21.3		77°00.0	85°40.6	119°50.0	
21	231°27.0	10.3'	15°39.3	14.3'	58.9'	101°00.7	54°21.3	20°46.4		77° 35.1	86°07.8		
22	245°56.2	10.3'	15°24.9	14.4'	58.9'	100°28.2	53°48.2	20°11.5		78° 10.1	86°35.1		
23	260°25.5	10.4'	15°10.5	14.5'	58.9'	99°55.6	53°15.0	19°36.5		78°45.2	87°02.4		
29 th	SD	= 16.0'	Mer. pass	s. 05:01					Sun S	5D = 15.8'			

h Moon (30th May)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Sun	-Mars	\pm Fomalhaut	-Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar
0	274°54.9	10.4'	S 14°56.1	14.6'	58.9'	99°23.0	52°41.9		19°01.6	42°10.7	79°20.3	87°29.7	91°28.3
1	289°24.4	10.5'	$14^{\circ}41.5$	14.7'	58.9'	98°50.4	52°08.7		18° 26.6	42°30.1	79°55.3	87° 57.0	91°54.9
2	303°53.9	10.6'	14°26.8	14.7'	58.9'	98° 17.8	51°35.5		17°51.6	42°49.8	80°30.4	88°24.3	92°21.5
3	318°23.5	10.6'	$14^{\circ}12.1$	14.8'	59.0'	97°45.2	51°02.3		17°16.7	43°09.7	81°05.6	88°51.7	92°48.1
4	332°53.1	10.7'	13°57.3	14.9'	59.0'	$97^{\circ}12.5$	50°29.1		16°41.7	43°30.0	81°40.7	89°19.0	93°14.7
5	347°22.8	10.7'	13°42.4	15.0'	59.0'	96°39.9	49°55.8		16°06.6	43°50.4	82°15.8	89°46.4	93°41.3
6	1°52.5	10.8'	S 13°27.4	15.1'	59.0'	96°07.2	49°22.6		15°31.6	44°11.1	82°51.0	90°13.8	94°07.9
7	16°22.3	10.8'	13° 12.3	15.1'	59.0'	95°34.5	48°49.3		14°56.6	44°32.1	83°26.2	90°41.2	94°34.5
8	30°52.1	10.9'	12°57.2	15.2'	59.0'	95°01.8	48°16.1		14°21.5	44°53.3	84°01.4	91°08.6	95°01.1
9	45°22.1	11.0'	12°42.0	15.3'	59.0'	94°29.1	47°42.8		13°46.4	45°14.8	84°36.6	91°36.0	95°27.7
10	59°52.0	11.0'	12°26.7	15.3'	59.0'	93°56.4	47°09.5		13°11.4	45°36.4	85°11.8	92°03.4	95°54.3
11	74°22.0	11.1'	$12^{\circ}11.4$	15.4'	59.1'	93°23.7	46°36.1		12°36.3	45°58.3	85°47.0	92°30.8	96°20.8
12	88°52.1	11.1'	S 11°56.0	15.5'	59.1'	92°50.9	46°02.8		12°01.2	46°20.5	86°22.2	92°58.3	96°47.4
13	103°22.2	11.2'	11°40.5	15.5'	59.1'	92°18.1	45°29.5		11°26.0	46°42.8	86°57.5	93°25.7	97°14.0
14	117°52.3	11.2'	11°24.9	15.6'	59.1'	91°45.4	44°56.1		10°50.9	47°05.4	87°32.8	93°53.1	97°40.5
15	132°22.5	11.2'	$11^{\circ}09.3$	15.7'	59.1'	91°12.6	44°22.8		10° 15.8	47°28.1	88°08.0	94°20.6	98°07.1
16	146°52.8	11.3'	10°53.6	15.7'	59.1'	90°39.8	43°49.4		9°40.6	47°51.1	88°43.3	94°48.0	98°33.6
17	161°23.1	11.3'	10°37.9	15.8'	59.1'	90°06.9	43°16.0		9°05.4	48°14.2	89°18.7	95°15.4	99°00.1
18	175°53.4	11.4'	S 10°22.1	15.9'	59.1'	89°34.1	42°42.6		8°30.3	48°37.6	89°54.0	95° 42.9	99°26.7
19	190°23.8	11.4'	$10^{\circ}06.2$	15.9'	59.1'	89°01.3	42°09.2		7°55.1	49°01.1	90°29.3	96°10.3	99°53.1
20	204°54.2	11.5'	09°50.3	16.0'	59.2'	88°28.4	41°35.8		7° 19.9	49°24.9	91°04.7	96°37.7	100°19.6
21	219°24.6	11.5'	09°34.4	16.0'	59.2'	87°55.5	41°02.3	19°55.2	6°44.7	49°48.8	91°40.0	97°05.1	100°46.1
22	233°55.1	11.5'	09° 18.3	16.1'	59.2'	87°22.6	40°28.9	20°11.2	6°09.5	50°12.8	92°15.4	97°32.5	101°12.5
23	248°25.7	11.6'	09°02.3	16.1'	59.2'	86°49.8	39°55.4	20°28.0	5°34.3	50°37.1	92°50.8	97°59.9	101°38.9
30 th	SD	$= 16.1^{\prime}$	Mer. pass	. 05:52					Sun SI	D = 15.8'			

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

Fri	GHA	ν	Dec	d	HP	-Polaris	-Sun	-Mars	±Saturn	+Fomalhaut	+Altair	+Antares	+Rigil Kent.
0	262°56.2	11.6'	S 08°46.1	16.2'	59.2'	98°26.6	86°16.8	39°22.0	4°59.1	20°45.5	51°01.5	93°26.2	98°27.3
1	277°26.9	11.6'	$08^{\circ}29.9$	16.2'	59.2'	98°10.1	85°43.9	38° 48.5	4°23.9	21°03.7	51°26.1	94°01.6	98°54.7
2	291°57.5	11.7'	$08^{\circ}13.7$	16.3'	59.2'	97°53.6	85°11.0	38° 15.0	3°48.7	21°22.7	51°50.8	94°37.0	99°22.0
3	306°28.2	11.7'	07°57.4	16.3'	59.2'	97°37.0	84°38.1	37°41.5	3°13.5	21°42.3	52° 15.7	95°12.4	99°49.4
4	320°58.9	11.7'	$07^{\circ}41.1$	16.4'	59.2'	97°20.4	84°05.1	37°08.0	2°38.4	22°02.5	52°40.7	95°47.9	100°16.7
5	335°29.6	11.8'	07°24.8	16.4'	59.2'	97°03.7	83°32.1	36°34.4	2°03.5	22°23.3	53°05.9	96°23.3	100°44.0
6	350°00.4	11.8'	S 07°08.3	16.5'	59.3'	96°47.0	82°59.2	36°00.9	1°28.8	22°44.8	53°31.2	96°58.8	101°11.3
7	4°31.2	11.8'	$06^{\circ}51.9$	16.5'	59.3'	96°30.3	82°26.2	35°27.4	0°54.9	23°06.7	53°56.7	97°34.3	101°38.5
8	19°02.0	11.8'	06°35.4	16.5'	59.3'	96°13.5	81°53.2	34°53.8		23°29.2	54°22.3	98°09.8	102°05.8
9	33°32.8	11.9'	$06^{\circ}18.9$	16.6'	59.3'	95°56.7	81°20.2	34°20.3		23°52.2	54°48.0	98°45.3	102°33.0
10	48°03.7	11.9'	$06^{\circ}02.3$	16.6'	59.3'	95°39.8	80°47.1	33°46.7		24° 15.7	55° 13.9	99°20.8	103°00.2
11	62°34.6	11.9'	05°45.7	16.6'	59.3'	95°23.0	80°14.1	33°13.1		24°39.7	55° 39.9	99°56.3	103°27.4
12	77°05.5	11.9'	S 05°29.1	16.7'	59.3'	95°06.0	79°41.1	32°39.5	2°07.5	25°04.0	56°06.0	100°31.9	103°54.5
13	91°36.4	11.9'	05°12.4	16.7'	59.3'	94°49.1	79°08.0	32°05.9	2°42.6	25° 28.8	56°32.3	101°07.4	104°21.6
14	106°07.3	12.0'	04°55.7	16.7'	59.3'	94°32.1	78°35.0	31°32.3	3°17.8	25°54.0	56° 58.6	101°43.0	104°48.7
15	120°38.3	12.0'	04°39.0	16.8'	59.3'	94°15.1	78°01.9	30°58.7	3°53.1	26° 19.6	57°25.1	102°18.5	105°15.7
16	135°09.3	12.0'	04°22.2	16.8'	59.3'	93°58.1	77°28.8	30°25.1	4°28.5	26° 45.5	57°51.7	102°54.1	105°42.8
17	149°40.3	12.0'	04°05.4	16.8'	59.3'	93°41.0	76°55.7	29°51.5	5°03.8	27° 11.8	58° 18.4	103°29.7	106°09.7
18	164°11.3	12.0'	S 03°48.6	16.8'	59.4'	93°24.0	76°22.6	29° 17.8	5°39.3	27°38.4	58°45.2	104°05.3	106°36.7
19	178°42.3	12.0'	03°31.8	16.9'	59.4'	93°06.9	75°49.5	28°44.2	6°14.7	28°05.4	59° 12.1	104°40.9	107°03.6
20	193°13.3	12.0'	$03^{\circ}14.9$	16.9'	59.4'	92°49.8	75°16.4	28° 10.6	6°50.2	28° 32.6	59°39.1	105°16.5	107°30.4
21	207°44.4	12.0'	$02^{\circ}58.1$	16.9'	59.4'	92°32.6	74°43.3	27°36.9	7°25.6	29°00.1	60°06.2	105°52.2	107°57.2
22	222°15.4	12.1'	$02^{\circ}41.2$	16.9'	59.4'	92°15.5	74°10.1	27°03.3	8°01.1	29°27.9	60°33.4	106°27.8	108°24.0
23	236° 46.5	12.1'	02°24.3	16.9'	59.4'	91°58.3	73°37.0	26°29.6	8°36.6	29°55.9	61°00.7	107°03.5	108°50.7
31 st	SD	$= 16.1^{\prime}$	Mer. pass	s. 06:41					Su	n SD $= 15.8'$			

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

Sat	GHA	ν	Dec	d	HP	-Polaris	-Sun	-Jupiter	-Mars	+Saturn	+Fomalhaut	+Altair	+Antares
0	251°17.5	12.1'	S 02°07.3	16.9'	59.4'	91°41.1	73°03.8		25°55.9	9°12.1	30°24.2	61°28.1	107°39.1
1	265°48.6	12.1'	$01^{\circ}50.4$	17.0'	59.4'	91°23.9	72°30.7		25°22.3	9°47.7	30°52.7	61°55.6	108°14.8
2	280°19.6	12.1'	01°33.4	17.0'	59.4'	91°06.7	71°57.5		24°48.6	10°23.2	31°21.5	62°23.1	108°50.5
3	294°50.7	12.1'	$01^{\circ}16.5$	17.0'	59.4'	90°49.5	71°24.3		24°14.9	10°58.8	31°50.5	62°50.8	109°26.1
4	309°21.8	12.1'	00°59.5	17.0'	59.4'	90°32.3	70°51.1		23°41.2	11°34.3	32°19.6	63°18.5	110°01.8
5	323°52.8	12.1'	00°42.5	17.0'	59.4'	90°15.0	70°17.9		23°07.5	12°09.9	32°49.0	63°46.3	110°37.5
6	338°23.9	12.1'	S 00°25.5	17.0'	59.4'	89°57.8	69°44.7		22°33.9	12°45.5	33°18.6	64°14.2	111°13.2
7	352°54.9	12.0'	S 00°08.5	17.0'	59.4'	89°40.6	69°11.5		22°00.2	13°21.1	33°48.3	64°42.2	111°49.0
8	7°26.0	12.0'	N 00°08.5	17.0'	59.4'	89°23.3	68°38.3		21°26.5	13°56.7	34°18.2	65°10.2	112°24.7
9	21°57.0	12.0'	00°25.5	17.0'	59.4'	89°06.1	68°05.1		20°52.8	14°32.3	34°48.3	65°38.3	113°00.4
10	36°28.0	12.0'	00°42.5	17.0'	59.4'	88°48.9	67°31.9		20°19.1	15°07.9	35°18.6	66°06.5	113°36.2
11	50°59.1	12.0'	$00^{\circ}59.5$	17.0'	59.5'	88°31.6	66°58.6		19°45.5	15°43.5	35°49.0	66°34.8	114°11.9
12	65°30.1	12.0'	N 01°16.5	17.0'	59.5'	88°14.4	66°25.4		19°11.8	16°19.2	36°19.5	67°03.1	114°47.7
13	80°01.1	12.0'	01°33.5	17.0'	59.5'	87°57.2	65°52.1	55°53.0	18°38.1	16°54.8	36°50.2	67°31.5	115°23.4
14	94°32.0	12.0'	$01^{\circ}50.5$	17.0'	59.5'	87°39.9	65°18.9	55° 18.0	18°04.5	17°30.4	37°21.0	67°59.9	115°59.2
15	109°03.0	11.9'	$02^{\circ}07.5$	17.0'	59.5'	87°22.7	64°45.6	54°42.9	17°30.8	18°06.1	37°52.0	68°28.4	116°35.0
16	123°34.0	11.9'	02°24.5	17.0'	59.5'	87°05.5	64°12.4	54°07.9	16°57.2	18°41.8	38°23.1	68°57.0	117°10.7
17	138°04.9	11.9'	02°41.5	17.0'	59.5'	86°48.3	63°39.1	53°32.9	16°23.6	19°17.4	38°54.3	69°25.6	117°46.5
18	152°35.8	11.9'	N 02°58.4	17.0'	59.5'	86°31.2	63°05.8	52°57.8	15°50.0	19°53.1	39°25.6	69°54.3	118°22.3
19	167°06.7	11.9'	03°15.4	16.9'	59.5'	86°14.0	62°32.6	52°22.8	15°16.4	20°28.8	39°57.0	70°23.0	118°58.1
20	181°37.5	11.8'	03°32.3	16.9'	59.5'	85°56.9	61°59.3	51°47.8	14°42.8	21°04.5	40°28.5	70°51.8	119°33.9
21	196°08.4	11.8'	03°49.2	16.9'	59.5'	85°39.7	61°26.0	51° 12.7	14°09.2	21°40.2	41°00.2	71°20.6	
22	210°39.2	11.8'	04°06.2	16.9'	59.5'	85°22.6	60°52.7	50°37.7	13°35.7	22°15.9	41°31.9	71°49.5	
23	225°10.0	11.8'	04°23.0	16.9'	59.5'	85°05.5	60°19.4	50°02.6	13°02.2	22°51.6	42°03.7	72°18.4	
1 st	SD	$= 16.2^{\prime}$	Mer. pass.	07:29					Sun	SD = 15.8'			

II WOOII (Z Juli)	h	Moon	(2 nd Jun`)
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Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Polaris	-Achernar	-Sun	-Jupiter	-Mars	+Saturn	+Fomalhaut	+Altair
0	239°40.8	11.7'	N 04°39.9	16.8'	59.5'	84°48.5		59°46.2	49°27.6	12°28.8	23°27.3	42°35.6	72°47.3
1	254°11.5	11.7'	04°56.7	16.8'	59.5'	84°31.4		59°12.9	48°52.5	11°55.4	24°03.0	43°07.6	73°16.3
2	268°42.2	11.7'	05°13.6	16.8'	59.5'	84°14.4		58°39.6	48°17.5	11°22.0	24°38.7	43°39.7	73°45.4
3	283°12.9	11.6'	05°30.4	16.8'	59.5'	83°57.4		58°06.3	47°42.4	10°48.7	25° 14.4	44°11.9	74°14.5
4	297°43.5	11.6'	05°47.1	16.7'	59.5'	83°40.5		57°33.0	47°07.4	10° 15.4	25°50.1	44°44.1	74°43.6
5	312°14.1	11.6'	06°03.9	16.7'	59.5'	83°23.6		56°59.7	46°32.3	9°42.3	26°25.9	45° 16.4	75°12.8
6	326°44.7	11.5'	N 06°20.6	16.7'	59.5'	83°06.7		56°26.4	45°57.3	9°09.2	27°01.6	45° 48.8	75°42.0
7	341°15.2	11.5'	06°37.3	16.6'	59.5'	82°49.8		55°53.1	45°22.2	8°36.3	27°37.3	46°21.2	76°11.2
8	355°45.7	11.5'	06°53.9	16.6'	59.5'	82°33.0		55°19.8	44°47.2	8°03.4	28° 13.1	46°53.8	76°40.5
9	10°16.1	11.4'	$07^{\circ}10.5$	16.6'	59.5'	82°16.2		54°46.5	44°12.1	7°30.8	28° 48.8	47° 26.3	77°09.8
10	24°46.6	11.4'	$07^{\circ}27.1$	16.5'	59.5'	81°59.4		54°13.2	43°37.1	6°58.4	29°24.5	47°59.0	77°39.1
11	39°16.9	11.3'	07°43.6	16.5'	59.5'	81°42.7		53°39.9	43°02.1	6°26.2	30°00.3	48°31.7	78°08.5
12	53°47.3	11.3'	N08°00.1	16.5'	59.5'	81°26.1		53°06.6	42°27.0	5°54.3	30°36.0	49°04.4	78°37.9
13	68°17.5	11.2'	08°16.6	16.4'	59.5'	81°09.5		52°33.3	41°52.0	5°22.9	31°11.8	49°37.2	79°07.3
14	82°47.8	11.2'	08°33.0	16.4'	59.5'	80°52.9		52°00.0	41°17.0	4°52.1	31°47.5	50° 10.1	79°36.7
15	97°18.0	11.1'	08°49.4	16.3'	59.5'	80°36.4		51°26.7	40°42.0	4°22.1	32°23.3	50°43.0	80°06.2
16	111°48.1	11.1'	09°05.7	16.3'	59.5'	80°19.9		50°53.4	40°06.9		32°59.0	51°16.0	80°35.7
17	126°18.2	11.0'	09°22.0	16.2'	59.5'	80°03.5		50°20.1	39°31.9		33°34.8	51°49.0	81°05.2
18	140°48.2	11.0'	N09°38.2	16.2'	59.5'	79°47.1		49°46.8	38°56.9		34° 10.5	52°22.0	81°34.7
19	155°18.2	10.9'	09°54.3	16.1'	59.5'	79°30.8	67°04.1	49°13.5	38°21.9		34°46.2	52°55.1	82°04.2
20	169°48.2	10.9'	$10^{\circ}10.5$	16.1'	59.5'	79°14.5	67°19.2	48°40.2	37°47.0		35°22.0	53°28.3	82°33.8
21	184°18.0	10.8'	10°26.5	16.0'	59.5'	78°58.3	67°34.5	48°07.0	37°12.0		35° 57.7	54°01.4	83°03.4
22	198°47.9	10.8'	10°42.5	16.0'	59.5'	78°42.1	67°49.9	47°33.7	36°37.0		36°33.5	54°34.6	83°32.9
23	213°17.7	10.7'	10°58.5	15.9'	59.5'	78°26.0	68°05.4	47°00.4	36°02.1		37°09.2	55°07.9	84°02.5
2 nd	SD	= 16.2'	Mer. pass	. 08:18					Sun S	D = 15.8'			

Moon (3rd Jun)

h

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Polaris	±Achernar	-Sun	-Jupiter	+Mars	+Saturn	+Fomalhaut	+Altair
0	227°47.4	10.7'	N11°14.4	15.8'	59.5'	78°10.0	68°21.0	46°27.2	35°27.1		37°45.0	55°41.2	84°32.1
1	242°17.0	10.6'	11°30.2	15.8'	59.5'	77°54.1	68°36.8	45°53.9	34°52.2		38°20.7	56°14.5	85°01.7
2	256°46.6	10.5'	11°46.0	15.7'	59.5'	77°38.2	68°52.7	45° 20.7	34°17.3		38°56.4	56°47.8	85°31.4
3	271°16.2	10.5'	$12^{\circ}01.7$	15.6'	59.5'	77°22.3	69°08.7	44°47.4	33°42.4		39°32.2	57°21.2	86°01.0
4	285°45.6	10.4'	$12^{\circ}17.3$	15.6'	59.4'	77°06.6	69°24.8	44°14.2	33°07.5		40°07.9	57°54.6	86°30.6
5	300°15.1	10.4'	12°32.9	15.5'	59.4'	76°50.9	69°41.0	43°41.0	32°32.6		40°43.6	58°28.0	87°00.3
6	314°44.4	10.3'	N 12°48.4	15.4'	59.4'	76°35.3	69°57.3	43°07.8	31°57.7	5°09.8	41°19.4	59°01.5	87°29.9
7	329°13.7	10.2'	13°03.8	15.4'	59.4'	76°19.7	70°13.7	42°34.6	31°22.9	5°41.0	41°55.1	59°35.0	87°59.6
8	343°42.9	10.2'	13° 19.2	15.3'	59.4'	76°04.3	70°30.3	42°01.4	30°48.1	6°12.6	42°30.8	60°08.5	88°29.2
9	358°12.1	10.1'	13°34.5	15.2'	59.4'	75°48.9	70°46.9	41°28.2	30°13.3	6°44.6	43°06.5	60°42.0	88°58.9
10	12°41.2	10.0'	13°49.7	15.1'	59.4'	75°33.6	71°03.6	40°55.0	29°38.5	7°16.9	43°42.2	61°15.5	89°28.5
11	27°10.2	10.0'	$14^{\circ}04.8$	15.1'	59.4'	75°18.3	71°20.4	40°21.8	29°03.7	7°49.4	44°17.9	61°49.1	89°58.1
12	41°39.2	9.9'	$N14^{\circ}19.9$	15.0'	59.4'	75°03.2	71°37.4		28°29.0	8°22.1	44°53.6	62°22.7	90°27.8
13	56°08.0	9.8'	14°34.8	14.9'	59.4'	74°48.1	71°54.4		27°54.2	8°55.0	45°29.3	62°56.3	90°57.4
14	70°36.9	9.7'	14°49.7	14.8'	59.4'		72°11.5		27°19.5	9°28.0	46°05.0	63°29.9	91°27.0
15	85°05.6	9.7'	15°04.5	14.7'	59.4'		72°28.7		26°44.9	10°01.0	46°40.6	64°03.5	91°56.6
16	99°34.3	9.6'	$15^{\circ}19.2$	14.6'	59.4'		72°46.0		26°10.2	10°34.2	47°16.3	64°37.2	92°26.2
17	114°02.9	9.5'	15°33.9	14.5'	59.4'		73°03.3		25°35.6	11°07.4	47°52.0	65°10.9	92°55.8
18	128°31.4	9.5'	N 15°48.4	14.4'	59.3'		73°20.8		25°01.1	11°40.7	48°27.6	65°44.5	93°25.4
19	142°59.9	9.4'	$16^{\circ}02.9$	14.4'	59.3'		73°38.3		24°26.5	12°14.0	49°03.3	66°18.2	93°55.0
20	157°28.2	9.3'	$16^{\circ}17.2$	14.3'	59.3'		73°55.9		23°52.0	12°47.3	49°38.9	66°51.9	94°24.5
21	171°56.6	9.2'	$16^{\circ}31.5$	14.2'	59.3'		74° 13.6		23°17.6	13°20.7	50°14.5	67°25.6	94°54.1
22	186°24.8	9.2'	16°45.6	14.1'	59.3'		74°31.3		22°43.1	13°54.2	50°50.2	67°59.3	95°23.6
23	200°52.9	9.1'	16°59.7	14.0'	59.3'		74°49.2		22°08.8	14°27.6	51°25.8	68°33.0	95°53.1
3 rd	SD	= 16.2'	Mer. pass	s. 09:07					Sun SI	0 = 15.8'		·	

h Moon (4th Jun)

CHV

Tue	GHA	ν	Dec	d	HP	-Jupiter	+Mars	+Saturn	+Fomalhaut	+Achernar	+Deneb	+Altair
0	215°21.0	9.0'	N 17°13.6	13.9'	59.3'	21°34.4	15°01.1	52°01.4	69°06.8	75°07.1		96°22.6
1	229°49.0	8.9'	17°27.5	13.8'	59.3'	21°00.2	15°34.6	52°37.0	69°40.5	75°25.0		96°52.0
2	244°17.0	8.8'	17°41.3	13.7'	59.3'	20°25.9	16°08.0	53°12.5	70°14.2	75°43.1		97°21.4
3	258°44.8	8.8'	17°54.9	13.5'	59.3'	19°51.8	16°41.6	53°48.1	70°48.0	76°01.2		97°50.9
4	273°12.6	8.7'	18°08.5	13.4'	59.2'	19°17.7	17°15.1	54°23.7	71°21.7	76° 19.3		98°20.2
5	287°40.3	8.6'	18°21.9	13.3'	59.2'	18°43.7	17°48.6	54°59.2	71°55.4	76° 37.5		98°49.6
6	302°07.9	8.5'	N 18°35.2	13.2'	59.2'	18°09.7	18°22.1	55°34.7	72°29.2	76°55.8		99°18.9
7	316°35.4	8.5'	18°48.4	13.1'	59.2'	17°35.8	18°55.6	56°10.3	73°02.9	77° 14.1		99°48.2
8	331°02.9	8.4'	$19^{\circ}01.5$	13.0'	59.2'	17°02.1	19°29.2	56°45.8	73°36.7	77° 32.5		100° 17.5
9	345°30.3	8.3'	19°14.5	12.9'	59.2'	16°28.4	20°02.7	57°21.3	74° 10.4	77°51.0		100°46.7
10	359°57.6	8.2'	19°27.4	12.7'	59.2'	15°54.8	20°36.2	57° 56.8	74° 44.2	78°09.5		101°15.9
11	14°24.8	8.1'	19°40.1	12.6'	59.2'	15°21.3	21°09.7	58° 32.2	75° 17.9	78°28.0		101°45.1
12	28°51.9	8.1'	$N19^{\circ}52.8$	12.5'	59.1'	14°48.0	21°43.2	59°07.7	75°51.6	78°46.6		102°14.2
13	43°19.0	8.0'	20°05.3	12.4'	59.1'	14°14.8	22°16.8	59°43.1	76° 25.4	79°05.2	78°56.7	102°43.3
14	57°46.0	7.9'	20°17.7	12.3'	59.1'	13°41.8	22°50.3	60°18.5	76°59.1	79°23.9	79°11.8	103°12.4
15	72°12.9	7.8'	20°29.9	12.1'	59.1'	13°08.9	23°23.7	60°54.0	77° 32.8	79°42.6	79°26.9	103°41.4
16	86°39.7	7.7'	20°42.0	12.0'	59.1'	12°36.2	23°57.2	61°29.4	78°06.5	80°01.4	79°42.0	104°10.4
17	101°06.4	7.7'	20°54.1	11.9'	59.1'	12°03.8	24°30.7	62°04.7	78°40.2	80°20.2	79°57.3	104°39.3
18	115°33.1	7.6'	N 21°05.9	11.7'	59.1'	11°31.6	25°04.2	62°40.1	79° 13.9	80°39.0	80°12.5	105°08.2
19	129°59.7	7.5'	21°17.7	11.6'	59.0'	10°59.7	25°37.6	63°15.5	79°47.6	80°57.9	80°27.8	105°37.0
20	144°26.2	7.4'	21°29.3	11.5'	59.0'	10°28.1	26°11.1	63°50.8	80°21.3	81° 16.8	80°43.2	106°05.8
21	158°52.6	7.4'	21°40.8	11.3'	59.0'	9°56.9	26°44.5	64°26.1	80°54.9	81°35.7	80°58.5	106°34.6
22	173°19.0	7.3'	$21^{\circ}52.1$	11.2'	59.0'	9°26.1	27°17.9	65°01.4	81°28.6	81°54.7	81°14.0	107°03.3
23	187°45.2	7.2'	22°03.3	11.1'	59.0'	8°55.9	27°51.3	65°36.7	82°02.2	82°13.6	81°29.4	107°31.9
4 th	SD	= 16.2	' Mer. pas	s. 10:00								

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

Wed	GHA	ν	Dec	d	HP	-Jupiter	+Mars	+Saturn	+Deneb	+Achernar	+Fomalhaut	+Altair		
0	202°11.4	7.1'	N22°14.4	10.9'	59.0'	8°26.2	28°24.7	66°12.0	81°44.9	82°32.6	82° 35.9	108°00.5		
1	216°37.6	7.0'	22°25.3	10.8'	58.9'	7°57.2	28°58.1	66°47.2	82°00.5	82°51.7	83°09.5	108°29.0		
2	231°03.6	7.0'	22°36.1	10.6'	58.9'	7°29.1	29°31.5	67°22.4	82°16.0	83°10.7	83°43.1	108°57.5		
3	245°29.6	6.9'	22°46.7	10.5'	58.9'		30°04.8	67°57.6	82°31.6	83°29.8	84° 16.7	109°25.9		
4	259°55.5	6.8'	22°57.2	10.3'	58.9'		30°38.1	68°32.8	82°47.2	83°48.9	84°50.2	109°54.2		
5	274°21.3	6.8'	23°07.5	10.2'	58.9'		31°11.4	69°08.0	83°02.9	84°08.0	85°23.8	110°22.5		
6	288°47.1	6.7'	N23°17.7	10.1'	58.9'		31°44.7	69°43.1	83° 18.6	84°27.1	85°57.3	110°50.7		
7	303°12.8	6.6'	23°27.8	9.9'	58.8'		32°18.0	70°18.3	83°34.3	84°46.3	86° 30.9	111°18.9		
8	317°38.4	6.5'	23°37.7	9.7'	58.8'		32°51.3	70°53.4	83°50.0	85°05.4	87°04.4	111°47.0		
9	332°03.9	6.5'	23°47.4	9.6'	58.8'		33°24.5	71°28.5	84°05.8	85°24.6	87° 37.9	112°15.0		
10	346°29.4	6.4'	23°57.0	9.4'	58.8'		33°57.7	72°03.5	84°21.6	85°43.8	88°11.3	112°42.9		
11	0°54.8	6.3'	24°06.5	9.3'	58.8'									
12	15°20.1	6.3'	N 24°15.8	9.1'	58.7'		35°04.1	73°13.6	84°53.2	86°22.1	89° 18.2	113°38.6		
13	29°45.4	6.2'	24°24.9	9.0'	58.7'		35°37.3	73°48.6	85°09.0	86°41.3	89°51.6	114°06.3		
14	44°10.6	6.1'	24°33.9	8.8'	58.7'		36°10.4	74°23.6	85°24.8	87°00.5	90°25.0	114°34.0		
15	58°35.7	6.1'	24°42.7	8.7'	58.7'		36°43.5	74°58.5	85°40.7	87° 19.7	90°58.3	115°01.6		
16	73°00.8	6.0'	24°51.3	8.5'	58.7'		37°16.6	75°33.4	85°56.6	87°38.8	91°31.7	115°29.0		
17	87°25.8	6.0'	24°59.8	8.3'	58.6'		37°49.7	76°08.3	86°12.4	87°58.0	92°05.0	115°56.4		
18	101°50.8	5.9'	$N25^{\circ}08.2$	8.2'	58.6'		38°22.8	76°43.2	86°28.3	88° 17.2	92°38.3	116°23.8		
19	116°15.7	5.8'	25°16.3	8.0'	58.6'		38°55.8	77°18.1	86°44.2	88°36.4	93°11.6	116°51.0		
20	130°40.5	5.8'	25°24.3	7.8'	58.6'				New M	oon		.		
21	145°05.3	5.7'	25°32.2	7.7'	58.6'				— New M	oon ———				
22	159°30.1	5.7'	25°39.8	7.5'	58.5'									
23	173°54.7	5.6'	25°47.3	7.3'	58.5'				—–- New M	oon ———				
5 th	SD	= 16.1'	Mer. pass	s. 10:56										

h Moon (6th Jun)

n		IVIOOI	n (biii Jur	1)		
Thu	GHA	ν	Dec	d	HP	
0	188°19.4	5.6'	N 25°54.6	7.2'	58.5'	New Moon
1	202°43.9	5.5'	26°01.8	7.0'	58.5'	New Moon
2	217°08.5	5.5'	26°08.8	6.8'	58.4'	New Moon
3	231°33.0	5.4'	$26^{\circ}15.6$	6.6'	58.4'	New Moon
4	245°57.4	5.4'	26°22.3	6.5'	58.4'	New Moon
5	260°21.8	5.4'	26°28.7	6.3'	58.4'	New Moon
6	274°46.2	5.3'	N 26°35.0	6.1'	58.3'	New Moon
7	289°10.5	5.3'	26°41.2	5.9'	58.3'	New Moon
8	303°34.8	5.3'	$26^{\circ}47.1$	5.8'	58.3'	New Moon
9	317°59.0	5.2'	26°52.9	5.6'	58.3'	New Moon
10	332°23.3	5.2'	26°58.5	5.4'	58.3'	New Moon
11	346°47.4	5.2'	27°03.9	5.2'	58.2'	New Moon
12	1°11.6	5.1'	$N27^{\circ}09.1$	5.1'	58.2'	New Moon
13	15°35.7	5.1'	$27^{\circ}14.2$	4.9'	58.2'	New Moon
14	29°59.9	5.1'	$27^{\circ}19.1$	4.7'	58.2'	New Moon
15	44°23.9	5.1'	27°23.8	4.5'	58.1'	New Moon
16	58°48.0	5.1'	27°28.3	4.3'	58.1'	New Moon
17	73°12.1	5.0'	27°32.7	4.2'	58.1'	New Moon
18	87°36.1	5.0'	$N27^{\circ}36.8$	4.0'	58.1'	New Moon
19	102°00.1	5.0'	27°40.8	3.8'	58.0'	New Moon
20	116°24.1	5.0'	27°44.6	3.6'	58.0'	New Moon
21	130°48.1	5.0'	27°48.2	3.4'	58.0'	New Moon
22	145°12.1	5.0'	$27^{\circ}51.7$	3.3'	57.9'	New Moon
23	159°36.1	5.0'	27°55.0	3.1'	57.9'	New Moon
6 th	SD =	= 16.0'	Mer. pass	. 11:55	5	

h Moon (7 th Jun)) Lunar Distance (objects with larg	gest hourly LD delta)
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			(1 Ju				a. D. 15 ta 11	(S WILLI IGI	0		/
Fri	GHA	ν	Dec	d	HP	-Acrux	-Spica	-Arcturus	-Regulus	-Procyon	-Pollux	+Capella
0	174°00.1	5.0'	N 27°58.0	2.9'	57.9'				New Moon -			
1	188°24.1	5.0'	28°00.9	2.7'	57.9'				New Moon -			
2	202°48.1	5.0'	28°03.6	2.5'	57.8'				New Moon -			
3	217° 12.1	5.0'	28°06.2	2.4'	57.8'				New Moon -			
4	231°36.1	5.0'	28°08.5	2.2'	57.8'				New Moon -			
5	246°00.1	5.0'	$28^{\circ}10.7$	2.0'	57.8'				New Moon -			
6	260°24.2	5.0'	$N28^{\circ}12.7$	1.8'	57.7'	119°58.4	118°01.8	111°20.1	64°00.0	36°11.4	27°14.8	
7	274°48.2	5.1'	28° 14.5	1.6'	57.7'	119°42.7	117°27.9	110°52.0	63°26.2	35°44.6	26°41.0	
8	289°12.3	5.1'	$28^{\circ}16.1$	1.4'	57.7'	119°26.9	116°54.1	110°24.0	62°52.4	35° 17.9	26°07.2	
9	303°36.3	5.1'	28° 17.6	1.3'	57.6'	119°10.9	116°20.3	109°55.9	62°18.6	34°51.4	25°33.4	
10	318°00.4	5.1'	$28^{\circ}18.9$	1.1'	57.6'	118°54.9	115°46.5	109°27.8	61°44.9	34°25.1	24°59.7	
11	332°24.6	5.2'	$28^{\circ}19.9$	0.9'	57.6'	118°38.6	115°12.7	108°59.7	61°11.1	33°59.1	24°26.0	
12	346°48.7	5.2'	N 28°20.8	0.7'	57.6'	118°22.3	114°39.0	108°31.6	60°37.5	33°33.3	23°52.4	
13	1°12.9	5.2'	$28^{\circ}21.6$	0.5'	57.5'	118°05.8	114°05.3	108°03.5	60°03.8	33°07.7	23° 18.8	
14	15°37.1	5.2'	$28^{\circ}22.1$	0.4'	57.5'	117°49.3	113°31.6	107°35.3	59°30.2	32°42.3	22°45.2	
15	30°01.4	5.3'	28° 22.5	0.2'	57.5'	117°32.6	112°58.0	107°07.2	58° 56.7	32° 17.2	22°11.7	
16	44°25.6	5.3'	28°22.7	0.0'	57.4'	117°15.8	112°24.4	106°39.1	58°23.1	31°52.4	21°38.2	
17	58°50.0	5.4'	28°22.7	-0.2'	57.4'	116°58.9	111°50.9	106°11.0	57°49.6	31°27.8	21°04.7	
18	73°14.3	5.4'	N28°22.5	-0.3'	57.4'	116°41.8	111°17.4	105°42.8	57°16.2	31°03.5	20°31.3	20°42.6
19	87°38.7	5.4'	28°22.2	-0.5'	57.4'	116°24.7	110°43.9	105°14.7	56°42.8	30°39.5	19°58.0	20°58.8
20	102°03.2	5.5'	$28^{\circ}21.7$	-0.7'	57.3'	116°07.5	110°10.4	104°46.6	56°09.4	30°15.8	19°24.6	21°15.6
21	116°27.7	5.5'	28°21.0	-0.9'	57.3'	115°50.2	109°37.0	104° 18.5	55°36.0	29°52.4	18°51.4	21°33.0
22	130°52.2	5.6'	28°20.1	-1.0'	57.3'	115°32.7	109°03.6	103°50.4	55°02.7	29°29.3	18° 18.1	21°51.0
23	145°16.8	5.6'	28° 19.1	-1.2'	57.2'	115°15.2	108°30.3	103°22.3	54°29.4	29°06.6	17°44.9	22°09.6
7 th	SD	= 15.8	Mer. pas	s. 12:55								

h Moon (8th Jun)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	-Procyon	-Pollux	+Capella	+Betelgeuse	+Rigel
0	159°41.4	5.7'	N 28°17.9	-1.4'	57.2'	107°57.0	102°54.2	53°56.2	28°44.1	17°11.8	22°28.6		
1	174°06.2	5.8'	$28^{\circ}16.5$	-1.6'	57.2'	107°23.7	102°26.1	53°23.0	28°22.1	16°38.7	22°48.2		
2	188°30.9	5.8'	28°14.9	-1.7'	57.2'	106°50.5	101°58.0	52°49.8	28°00.4	16°05.6	23°08.3		41°00.7
3	202°55.7	5.9'	28°13.2	-1.9'	57.1'	106°17.3	101°30.0	52°16.6	27°39.0	15°32.6	23°28.7		41°16.2
4	217°20.6	5.9'	28°11.3	-2.1'	57.1'	105°44.1	101°01.9	51°43.5	27°18.1	14°59.6	23°49.7		41°31.9
5	231°45.6	6.0'	28°09.2	-2.2'	57.1'	105°11.0	100°33.9	51°10.5	26°57.5	14°26.7	24°11.0		41°47.8
6	246°10.6	6.1'	N 28°07.0	-2.4'	57.0'	104°37.9	100°05.9	50°37.4	26°37.3	13°53.9	24°32.7		42°04.1
7	260°35.6	6.1'	28°04.6	-2.6'	57.0'	104°04.8	99°37.8	50°04.5	26°17.6	13°21.1	24°54.8	23°46.8	42°20.5
8	275°00.8	6.2'	28°02.0	-2.7'	57.0'	103°31.8	99°09.8	49°31.5	25°58.3	12°48.3	25°17.2	24°02.5	42°37.2
9	289°26.0	6.3'	27°59.3	-2.9'	57.0'	102°58.8	98°41.9	48°58.6	25°39.5	12°15.6	25°40.0	24°18.6	42°54.2
10	303°51.3	6.4'	27°56.4	-3.1'	56.9'	102°25.8	98°13.9	48°25.7	25°21.2	11°43.0	26°03.1	24°35.3	43°11.4
11	318°16.7	6.4'	27°53.3	-3.2'	56.9'	101°52.9	97°46.0	47°52.9	25°03.3	11°10.5	26°26.5	24°52.4	43°28.8
12	332°42.1	6.5'	$N27^{\circ}50.1$	-3.4'	56.9'	101°20.0	97°18.0	47°20.1	24°45.9	10°38.0	26°50.1	25°10.1	43°46.4
13	347°07.6	6.6'	27°46.7	-3.5'	56.8'	100°47.2	96°50.1	46°47.3	24°29.0	10°05.6	27°14.1	25°28.1	44°04.2
14	1°33.2	6.7'	27°43.2	-3.7'	56.8'	100°14.4	96°22.2	46°14.5	24°12.7	9°33.3	27°38.3	25°46.7	44°22.3
15	15°58.9	6.8'	27°39.5	-3.9'	56.8'	99°41.6	95°54.4	45°41.9	23°56.9	9°01.1	28°02.7	26°05.6	44°40.5
16	30°24.7	6.8'	27°35.6	-4.0'	56.8'	99°08.9	95°26.5	45°09.2	23°41.7	8°29.0	28°27.4	26°24.9	44°59.0
17	44°50.5	6.9'	27°31.6	-4.2'	56.7'	98°36.2	94°58.7	44°36.6		7°57.0	28°52.2	26°44.6	45°17.6
18	59°16.4	7.0'	N27°27.4	-4.3'	56.7'	98°03.5	94°30.9	44°04.0		7°25.1	29°17.3	27°04.7	45°36.4
19	73°42.5	7.1'	27°23.1	-4.5'	56.7'	97°30.9	94°03.1	43°31.4		6°53.4	29°42.6	27°25.1	45°55.4
20	88°08.6	7.2'	27°18.6	-4.6'	56.6'	96°58.3	93°35.4	42°58.9		6°21.9	30°08.1	27°45.9	46°14.6
21	102°34.8	7.3'	27°14.0	-4.8'	56.6'	96°25.7	93°07.6	42°26.5		5°50.7	30°33.7	28°07.0	46°34.0
22	117°01.1 7.4' 27°09.2 -4.9' 56.6					95°53.2	92°39.9	41°54.0		5°19.7	30°59.6	28°28.4	46°53.5
23	131°27.4 7.5' 27°04.3 -5.1' 56.5					95°20.7	92°12.3	41°21.6		4°49.1	31°25.5	28°50.1	47°13.2
8 th	SD	= 15.6	Mer. pas	s. 13:54									

Moon (9th Jun)

h

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

Sun	GHA	ν	Dec	d	HP	-Spica	-Arcturus	-Regulus	±Pollux	+Betelgeuse	+Capella	+Sun	+Rigel
0	145°53.9	7.6'	N26°59.2	-5.2'	56.5'	94°48.2	91°44.6	40°49.3	4°19.1	29°12.0	31°51.7		47°33.0
1	160°20.5	7.7'	26°54.0	-5.4'	56.5'	94°15.8	91°17.0	40°17.0	3°49.6	29°34.3	32°17.9		47°53.0
2	174°47.1	7.8'	26°48.6	-5.5'	56.5'	93°43.4	90°49.4	39°44.7	3°21.2	29° 56.8	32°44.3		48° 13.1
3	189°13.9	7.9'	26°43.1	-5.7'	56.4'	93°11.1	90°21.9	39°12.4		30° 19.5	33°10.9		48°33.4
4	203°40.8	8.0'	26°37.5	-5.8'	56.4'	92°38.8	89°54.3	38°40.2		30°42.5	33°37.5		48°53.8
5	218°07.7	8.1'	26°31.7	-5.9'	56.4'	92°06.5	89°26.8	38°08.1		31°05.7	34°04.3		49°14.4
6	232°34.8	8.2'	N26°25.7	-6.1'	56.3'	91°34.2	88°59.4	37°35.9		31°29.1	34°31.2		49°35.1
7	247°01.9	8.3'	$26^{\circ}19.6$	-6.2'	56.3'	91°02.0	88°31.9	37°03.8		31°52.7	34°58.2		49°55.9
8	261°29.2	8.4'	26°13.4	-6.4'	56.3'	90°29.9	88°04.5	36°31.8		32°16.5	35°25.3		50°16.8
9	275°56.5	8.5'	$26^{\circ}07.1$	-6.5'	56.3'	89°57.7	87°37.1	35°59.8		32°40.5	35°52.4		50°37.9
10	290°24.0	8.6'	26°00.6	-6.6'	56.2'	89°25.6	87°09.8	35°27.8		33°04.7	36°19.7		50°59.0
11	304°51.5	8.7'	25°54.0	-6.8'	56.2'	88°53.6	86°42.5	34°55.8		33°29.1	36°47.0		51°20.3
12	319°19.2	8.8'	N25°47.2	-6.9'	56.2'	88°21.5	86°15.2	34°23.9		33°53.6	37°14.5		51°41.7
13	333°47.0	8.9'	25°40.3	-7.0'	56.1'	87°49.5	85°48.0	33°52.1		34°18.2	37°42.0		52°03.2
14	348°14.9	9.0'	25°33.3	-7.1'	56.1'	87°17.6	85°20.8	33°20.2		34°43.1	38°09.5		52°24.8
15	2°42.8	9.1'	25°26.2	-7.3'	56.1'	86°45.6	84°53.6	32°48.5	4°25.4	35°08.0	38°37.2		52°46.5
16	17°10.9	9.2'	25°18.9	-7.4'	56.1'	86°13.7	84°26.5	32°16.7	4°55.1	35°33.1	39°04.9		53°08.3
17	31°39.1	9.3'	25°11.5	-7.5'	56.0'	85°41.9	83°59.4	31°45.0	5°25.1	35°58.3	39°32.6		53°30.2
18	46°07.4	9.4'	N 25°04.0	-7.6'	56.0'	85°10.1	83°32.3	31°13.3	5°55.5	36°23.7	40°00.4	40°04.8	53°52.2
19	60°35.8	9.5'	24°56.4	-7.8'	56.0'	84°38.3	83°05.3	30°41.7	6°26.0	36°49.1	40°28.3	40°33.9	54°14.3
20	75°04.3	9.6'	24°48.6	-7.9'	55.9'	84°06.5	82°38.4	30°10.1	6°56.7	37° 14.7	40°56.2	41°03.1	54°36.5
21	89°32.9	9.7'	24°40.8	-8.0'	55.9'	83°34.8	82°11.4	29°38.5	7°27.6	37°40.4	41°24.2	41°32.2	54°58.7
22	104°01.7	9.8'	24°32.8	-8.1'	55.9'	83°03.1	81°44.5	29°07.0	7°58.5	38°06.2	41°52.2	42°01.3	55°21.0
23	118°30.5	9.9'	24°24.7	-8.2'	55.9'	82°31.4	81°17.7	28°35.5	8°29.4	38°32.1	42°20.2	42°30.4	55°43.4
9 th	SD :	= 15.4'	Mer. pass	s. 14:49)	Sun SD = 15.7'							

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

Mon	GHA	ν	Dec	d	HP	-Antares	-Spica	-Arcturus	-Regulus	+Pollux	+Betelgeuse	+Capella	+Sun
0	132°59.4	10.0'	$N24^{\circ}16.4$	-8.3'	55.8'		81°59.8	80°50.8	28°04.1	9°00.4	38°58.0	42°48.3	42°59.4
1	147°28.5	10.2'	$24^{\circ}08.1$	-8.5'	55.8'		81°28.2	80°24.1	27°32.7	9°31.5	39°24.1	43°16.4	43°28.4
2	161°57.6	10.3'	23°59.6	-8.6'	55.8'		80°56.7	79°57.3	27°01.3	10°02.6	39°50.2	43°44.6	43°57.4
3	176°26.9	10.4'	$23^{\circ}51.1$	-8.7'	55.8'		80°25.1	79°30.7	26°30.0	10°33.7	40°16.5	44°12.8	44°26.3
4	190°56.3	10.5'	23°42.4	-8.8'	55.7'		79°53.6	79°04.0	25°58.7	11°04.8	40°42.8	44°41.0	44°55.2
5	205°25.8	10.6'	23°33.6	-8.9'	55.7'		79°22.2	78°37.4	25°27.5	11°35.9	41°09.2	45°09.2	45°24.1
6	219°55.4	10.7'	N23°24.7	-9.0'	55.7'		78°50.7	78° 10.8	24°56.3	12°07.0	41°35.6	45°37.5	45°53.0
7	234°25.0	10.8'	23°15.8	-9.1'	55.7'		78°19.4	77° 44.3	24°25.1	12°38.1	42°02.1	46°05.8	46°21.8
8	248°54.9	10.9'	23°06.7	-9.2'	55.6'		77°48.0	77° 17.9	23°54.0	13°09.1	42°28.7	46°34.1	46°50.6
9	263°24.8	11.0'	22°57.5	-9.3'	55.6'		77°16.7	76°51.4	23°22.9	13°40.2	42°55.3	47°02.5	47°19.4
10	277°54.8	11.1'	22°48.2	-9.4'	55.6'		76°45.4	76°25.1	22°51.9	14°11.3	43°22.0	47°30.8	47°48.1
11	292°24.9	11.2'	22°38.8	-9.5'	55.6'		76°14.1	75°58.7	22°20.9	14°42.3	43°48.8	47°59.2	48°16.8
12	306°55.1	11.3'	$N22^{\circ}29.3$	-9.6'	55.5'		75°42.8	75°32.4	21°50.0	15°13.4	44°15.6	48°27.6	48°45.5
13	321°25.5	11.4'	$22^{\circ}19.7$	-9.7'	55.5'		75°11.6	75°06.2	21°19.1	15°44.4	44°42.4	48°56.0	49°14.2
14	335°55.9	11.5'	22°10.0	-9.8'	55.5'		74°40.5	74°40.0	20°48.2	16°15.4	45°09.3	49°24.5	49°42.8
15	350°26.4	11.6'	22°00.2	-9.9'	55.5'		74°09.3	74° 13.9	20°17.4	16°46.4	45°36.3	49°52.9	50°11.4
16	4°57.1	11.8'	$21^{\circ}50.3$	-10.0'	55.4'	119°32.3	73°38.2	73°47.8	19°46.6	17°17.3	46°03.3	50°21.4	50°40.0
17	19°27.9	11.9'	21°40.3	-10.1'	55.4'	119°01.2	73°07.1	73°21.7	19° 15.9	17°48.3	46°30.3	50°49.8	51°08.5
18	33°58.7	12.0'	$N21^{\circ}30.3$	-10.2'	55.4'	118°30.1	72°36.0	72°55.7	18°45.2	18°19.2	46°57.4	51°18.3	51°37.0
19	48°29.7	12.1'	$21^{\circ}20.1$	-10.2'	55.4'	117°59.1	72°05.0	72°29.8	18° 14.6	18°50.1	47°24.5	51°46.8	52°05.5
20	63°00.7	12.2'	21°09.9	-10.3'	55.3'	117°28.1	71°34.0	72°03.9	17°44.1	19°21.0	47°51.6	52°15.3	52°34.0
21	77°31.9	12.3'	20°59.6	-10.4'	55.3'	116°57.1	71°03.0	71°38.1	17° 13.6	19°51.8	48°18.8		53°02.4
22	92°03.2	12.4'	$20^{\circ}49.1$	-10.5'	55.3'	116°26.2	70°32.1	71°12.3	16°43.1	20°22.7	48°46.0		53°30.8
23	106°34.5	12.5'	20°38.6	-10.6'	55.3'	115°55.3	70°01.2	70°46.5	16°12.7	20°53.5	49°13.2		53°59.2
10 th	SD	= 15.2	' Mer. pas	s. 15:40					Sun SI	D = 15.7'			

h	Moon	(11^{th})	Jun')
11	1410011	(+ +	Juli	,

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Antares	-Arcturus	-Spica	-Regulus	+Pollux	+Procyon	+Betelgeuse	+Sun
0	121°06.0	12.6'	N 20°28.1	-10.7'	55.2'	115°24.4	70°20.9	69°30.3	15°42.4	21°24.3	27°33.2	49°40.5	54°27.6
1	135°37.6	12.7'	20°17.4	-10.7'	55.2'	114°53.5	69°55.2	68°59.4	15°12.1	21°55.0	27°52.9	50° 07.8	54°55.9
2	150°09.2	12.8'	20°06.7	-10.8'	55.2'	114°22.7	69°29.7	68°28.6	14°41.9	22°25.8	28°13.0	50°35.1	55°24.2
3	164°41.0	12.9'	19°55.8	-10.9'	55.2'	113°51.9	69°04.1	67°57.8	14°11.8	22°56.5	28°33.3	51°02.4	55°52.5
4	179°12.9	13.0'	19°44.9	-11.0'	55.1'	113°21.1	68°38.7	67°27.0	13°41.7	23°27.2	28°53.8	51°29.8	56°20.7
5	193°44.8	13.1'	19°34.0	-11.1'	55.1'	112°50.3	68°13.3	66°56.3	13°11.7	23°57.8	29° 14.6	51°57.2	56°48.9
6	208°16.9	13.2'	$N19^{\circ}22.9$	-11.1'	55.1'	112°19.6	67°47.9	66°25.6	12°41.8	24°28.5	29°35.7	52°24.6	57°17.1
7	222°49.0	13.2'	$19^{\circ}11.8$	-11.2'	55.1'	111°48.9	67°22.6	65°54.9	12°12.0	24°59.1	29°57.0	52°52.0	57°45.3
8	237°21.3	13.3'	19°00.6	-11.3'	55.1'	111°18.2	66°57.4	65°24.2	11°42.3	25°29.7	30° 18.5	53° 19.4	58°13.5
9	251°53.6	13.4'	18°49.3	-11.3'	55.0'	110°47.6	66°32.2	64°53.6	11°12.8	26°00.3	30°40.3	53°46.9	58°41.6
10	266°26.0	13.5'	18°38.0	-11.4'	55.0'	110°17.0	66°07.1	64°23.0	10°43.3	26°30.8	31°02.2	54° 14.4	59°09.7
11	280°58.6	13.6'	$18^{\circ}26.5$	-11.5'	55.0'	109°46.4	65°42.1	63°52.4	10°14.0	27°01.4	31°24.4	54°41.8	59°37.8
12	295°31.2	13.7'	$N18^{\circ}15.1$	-11.6'	55.0'	109°15.8	65°17.1	63°21.8	9°44.8	27°31.9	31°46.7	55°09.4	60°05.8
13	310°03.9	13.8'	$18^{\circ}03.5$	-11.6'	55.0'	108°45.3	64°52.2	62°51.3	9°15.8	28°02.3	32°09.2	55° 36.9	60°33.8
14	324°36.7	13.9'	$17^{\circ}51.9$	-11.7'	54.9'	108°14.7	64°27.3	62°20.8	8°47.0	28°32.8	32°31.9	56°04.4	61°01.8
15	339°09.6	14.0'	17°40.2	-11.7'	54.9'	107°44.2	64°02.5	61°50.3	8°18.4	29°03.2	32°54.8	56°31.9	61°29.8
16	353°42.5	14.1'	$17^{\circ}28.5$	-11.8'	54.9'	107°13.8	63°37.8	61°19.8	7°50.1	29°33.7	33° 17.8	56° 59.5	61°57.8
17	8°15.6	14.1'	$17^{\circ}16.7$	-11.9'	54.9'	106°43.3	63°13.1	60°49.4	7°22.1	30°04.1	33°41.0	57°27.0	62°25.7
18	22°48.7	14.2'	N 17°04.8	-11.9'	54.9'	106°12.9	62°48.5	60°18.9	6°54.5	30°34.4	34°04.3	57°54.6	62°53.6
19	37°22.0	14.3'	$16^{\circ}52.9$	-12.0'	54.8'	105°42.5	62°24.0	59°48.5	6°27.3	31°04.8	34°27.8	58°22.2	63°21.5
20	51°55.3	14.4'	16°40.9	-12.1'	54.8'	105°12.1	61°59.5	59°18.2	6°00.6	31°35.1	34°51.4	58° 49.8	63°49.4
21	66°28.7	14.5'	16°28.8	-12.1'	54.8'	104°41.8	61°35.1	58°47.8	5°34.6	32°05.4	35° 15.2	59° 17.4	64°17.2
22	81°02.1	14.6'	$16^{\circ}16.7$	-12.2'	54.8'	104°11.4	61°10.8	58°17.5	5°09.3	32°35.7	35°39.1	59°45.0	64°45.1
23	95°35.7	14.6'	16°04.5	-12.2'	54.8'	103°41.1	60°46.5	57°47.2		33°06.0	36°03.1	60°12.6	65°12.9
11 th	SD	= 15.1'	Mer. pas	s. 16:26		SunSD=15.7'							

h		Moo	n (12 th Ju	ın)		Lunar Distance (objects with largest hourly LD delta)							
Wed	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Arcturus	-Spica	+Regulus	+Pollux	+Betelgeuse	+Sun
0	110°09.3	14.7'	N15°52.3	-12.3'	54.7'	103° 10.8	94°24.0	60°22.3	57° 16.9		33°36.2	60°40.2	65°40.6
1	124°43.0	14.8'	15°40.0	-12.3'	54.7'	102°40.5	94°00.5	59°58.2	56°46.6		34°06.5	61°07.8	66°08.4
2	139°16.8	14.9'	15°27.7	-12.4'	54.7'	102°10.3	93°36.9	59°34.1	56° 16.4		34°36.7	61°35.5	66°36.1
3	153°50.7	14.9'	15°15.3	-12.4'	54.7'	101°40.1	93°13.4	59° 10.2	55°46.2		35°06.9	62°03.1	67°03.9
4	168°24.6	15.0'	$15^{\circ}02.9$	-12.5'	54.7'	101°09.9	92°49.9	58°46.3	55° 16.0		35°37.0	62°30.7	67°31.6
5	182°58.7	15.1'	14°50.4	-12.5'	54.7'	100°39.7	92°26.4	58°22.4	54°45.8		36°07.2	62°58.4	67°59.3
6	197°32.7	15.2'	N14°37.8	-12.6'	54.6'	100°09.5	92°02.9	57°58.7	54° 15.6		36°37.3	63°26.0	68°26.9
7	212°06.9	15.2'	14°25.3	-12.6'	54.6'	99°39.4	91°39.4	57°35.0	53°45.5		37°07.4	63°53.7	68°54.6
8	226°41.1	15.3'	14°12.6	-12.7'	54.6'	99°09.2	91°15.9	57° 11.5	53° 15.4		37°37.5	64°21.3	69°22.2
9	241°15.5	15.4'	13°59.9	-12.7'	54.6'	98°39.1	90°52.5	56°48.0	52°45.3		38°07.6	64°49.0	69°49.8
10	255°49.8	15.4'	13°47.2	-12.8'	54.6'	98°09.0	90°29.0	56°24.5	52° 15.2		38°37.6	65°16.6	70°17.4
11	270°24.3	15.5'	13°34.4	-12.8'	54.6'	97°38.9	90°05.6	56°01.2	51°45.1		39°07.7	65°44.3	70°45.0
12	284°58.8	15.6'	$N13^{\circ}21.6$	-12.9'	54.6'	97°08.9	89°42.2	55°37.9	51° 15.1		39°37.7	66°11.9	71°12.5
13	299°33.4	15.6'	13°08.8	-12.9'	54.5'	96°38.9	89°18.8	55° 14.8	50°45.0		40°07.7	66°39.6	71°40.1
14	314°08.0	15.7'	12°55.8	-12.9'	54.5'	96°08.8	88°55.4	54°51.7	50° 15.0		40°37.7	67°07.3	72°07.6
15	328°42.7	15.8'	12°42.9	-13.0'	54.5'	95°38.8	88°32.0	54°28.7	49°45.0		41°07.7	67°34.9	72°35.1
16	343°17.5	15.8'	12°29.9	-13.0'	54.5'	95°08.8	88°08.6	54°05.8	49° 15.0	5°40.2	41°37.6	68°02.6	73°02.6
17	357°52.3	15.9'	$12^{\circ}16.9$	-13.1'	54.5'	94°38.9	87°45.3	53°43.0	48°45.1	6°06.1	42°07.6	68°30.3	73°30.1
18	12°27.2	15.9'	N 12°03.8	-13.1'	54.5'	94°08.9	87°22.0	53°20.3	48° 15.1	6°32.5	42°37.5	68°57.9	73°57.5
19	27°02.1	16.0'	11°50.7	-13.1'	54.5'	93°39.0	86°58.6	52° 57.7	47°45.2	6°59.4	43°07.4	69°25.6	74°25.0
20	41°37.1	16.1'	11°37.6	-13.2'	54.4'	93°09.0	86°35.3	52°35.1	47° 15.3	7°26.6	43°37.3	69°53.3	74°52.4
21	56°12.2	16.1'	11°24.4	-13.2'	54.4'	92°39.1	86°12.1	52° 12.7	46° 45.4	7°54.2	44°07.2	70°20.9	75°19.8
22	70°47.3	16.2'	$11^{\circ}11.2$	-13.3'	54.4'	92°09.2	85°48.8	51°50.4	46° 15.5	8°22.0	44°37.1	70°48.6	75°47.2
23	85°22.5	16.2'	10°57.9	-13.3'	54.4'	54.4' 91°39.3 85°25.6 51°28.2 45°45.6 8°50.0 45°06.9 71°16.3 76°14						76°14.6	
12 th	SD	= 14.9	Mer. pas	s. 17:09					Sun SD	= 15.7'			

)			Lunar Dis	stance (objects w	ith larges [,]	t hourly	LD delta)
d	HP	-Antares	-Rigil Kent.	-Hadar	-Snica	+Regulus	+Pollux	+Betelger	

Thu	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Spica	+Regulus	+Pollux	+Betelgeuse	+Sun
0	99°57.7	16.3'	N 10°44.6	-13.3'	54.4'	91°09.5	85°02.3	81°16.7	45°15.7	9° 18.2	45°36.8	71°43.9	76°42.0
1 1	114°33.0	16.3'	10°31.3	-13.4'	54.4'	90°39.6	84°39.1	80°54.3	44°45.9	9°46.6	46°06.6	72°11.6	77°09.4
2	129°08.3	16.4'	10°17.9	-13.4'	54.4'	90°09.8	84°16.0	80°31.9	44°16.0	10° 15.1	46°36.4	72°39.3	77°36.7
3	143°43.7	16.4'	10°04.6	-13.4'	54.4'	89°39.9	83°52.8	80°09.5	43°46.2	10°43.7	47°06.3	73°06.9	78°04.0
4	158°19.1	16.5'	09°51.1	-13.4'	54.4'	89°10.1	83°29.6	79°47.1	43°16.4	11°12.4	47°36.0	73°34.6	78°31.4
5	172°54.6	16.5'	09°37.7	-13.5'	54.4'	88°40.3	83°06.5	79°24.8	42°46.6	11°41.1	48°05.8	74°02.2	78°58.7
6	187°30.1	16.6'	N09°24.2	-13.5'	54.3'	88°10.5	82°43.4	79°02.5	42°16.8	12° 10.0	48°35.6	74°29.9	79°26.0
7	202°05.7	16.6'	09°10.7	-13.5'	54.3'	87°40.7	82°20.3	78°40.3	41°47.1	12°38.9	49°05.4	74°57.6	79°53.3
8	216°41.3	16.7'	08°57.2	-13.6'	54.3'	87°11.0	81°57.3	78°18.0	41°17.3	13°07.8	49°35.1	75°25.2	80°20.6
9	231°16.9	16.7'	08°43.6	-13.6'	54.3'	86°41.2	81°34.2	77°55.8	40°47.5	13°36.8	50°04.9	75°52.9	80°47.8
10	245°52.6	16.7'	08°30.0	-13.6'	54.3'	86°11.4	81°11.2	77°33.7	40°17.8	14°05.9	50°34.6	76°20.6	81°15.1
11	260°28.3	16.8'	08°16.4	-13.6'	54.3'	85°41.7	80°48.2	$77^{\circ}11.5$	39°48.1	14°35.0	51°04.3	76°48.2	81°42.4
12	275°04.1	16.8'	N 08°02.8	-13.7'	54.3'	85°12.0	80°25.3	76°49.4	39°18.4	15°04.1	51°34.0	77°15.9	82°09.6
13	289°39.9	16.8'	07°49.1	-13.7'	54.3'	84°42.2	80°02.3	76°27.3	38°48.6	15° 33.2	52°03.7	77°43.5	82°36.8
14	304°15.8	16.9'	07°35.4	-13.7'	54.3'	84°12.5	79°39.4	76°05.3	38°18.9	16°02.4	52°33.4	78°11.2	83°04.1
15	318°51.7	16.9'	07°21.7	-13.7'	54.3'	83°42.8	79°16.5	75°43.3	37°49.2	16°31.6	53°03.1	78°38.9	83°31.3
16	333°27.6	17.0'	07°08.0	-13.8'	54.3'	83°13.1	78°53.7	75°21.4	37°19.6	17°00.8	53°32.8	79°06.5	83°58.5
17	348°03.5	17.0'	06°54.2	-13.8'	54.3'	82°43.4	78°30.8	74°59.4	36°49.9	17°30.0	54°02.5	79°34.2	84°25.7
18	2°39.5	17.0'	N 06°40.4	-13.8'	54.2'	82°13.7	78°08.0	74°37.5	36°20.2	17°59.3	54°32.1	80°01.8	84°52.9
19	17° 15.5	17.0'	06°26.6	-13.8'	54.2'	81°44.1	77°45.2	74° 15.7	35°50.5	18°28.6	55°01.8	80°29.5	85°20.1
20	31°51.6	17.1'	$06^{\circ}12.8$	-13.8'	54.2'	81°14.4	77°22.5	73°53.9	35°20.9	18° 57.8	55°31.4	80°57.2	85°47.2
21	46°27.6	17.1'	05°59.0	-13.9'	54.2'	80°44.7	76°59.8	73°32.1	34°51.2	19°27.1	56°01.1	81°24.8	86°14.4
22	61°03.7	17.1'	05°45.1	-13.9'	54.2'	80°15.1	76°37.1	73°10.3	34°21.6	19°56.4	56°30.7	81°52.5	86°41.6
23	75°39.9	17.2'	05°31.3	-13.9'	54.2'	79°45.4	76°14.4	72°48.6	33°51.9	20°25.8	57°00.4	82°20.1	87°08.8
13 th	SD	= 14.8'	Mer. pass	s. 17:49					Sun SI	O = 15.7'			

Moon (14th Jun)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Procyon	+Pollux	+Betelgeuse
0	90°16.0	17.2'	N 05°17.4	-13.9'	54.2'		79°15.7	75°51.7	33°22.3	20°55.1	57°07.0	57°30.0	82°47.8
1	104°52.2	17.2'	05°03.5	-13.9'	54.2'		78°46.1	75°29.1	32°52.7	21°24.4	57°33.9	57°59.6	83°15.4
2	119°28.4	17.2'	04°49.5	-13.9'	54.2'		78°16.5	75°06.6	32°23.0	21°53.8	58°00.7	58°29.3	83°43.1
3	134°04.6	17.2'	04°35.6	-14.0'	54.2'		77°46.8	74°44.0	31°53.4	22°23.1	58°27.6	58°58.9	84°10.7
4	148°40.8	17.3'	04°21.7	-14.0'	54.2'		77°17.2	74°21.5	31°23.8	22°52.5	58°54.5	59°28.5	84°38.4
5	163°17.1	17.3'	04°07.7	-14.0'	54.2'		76°47.6	73°59.0	30°54.2	23°21.9	59°21.4	59°58.1	85°06.1
6	177°53.4	17.3'	N 03°53.7	-14.0'	54.2'		76°17.9	73°36.6	30°24.6	23°51.2	59°48.4	60°27.7	85°33.7
7	192°29.7	17.3'	03°39.7	-14.0'	54.2'		75°48.3	73°14.2	29°55.0	24°20.6	60°15.4	60°57.3	86°01.4
8	207°06.0	17.3'	03°25.7	-14.0'	54.2'		75°18.7	72°51.8	29°25.4	24°50.0	60°42.4	61°26.9	86°29.0
9	221°42.3	17.3'	03°11.7	-14.0'	54.2'		74°49.1	72°29.4	28°55.8	25°19.4	61°09.4	61°56.5	86°56.7
10	236°18.6	17.3'	02°57.7	-14.0'	54.2'		74°19.4	72°07.1	28°26.2	25°48.8	61°36.5	62°26.1	87°24.3
11	250°55.0	17.4'	02°43.7	-14.0'	54.2'	119°44.4	73°49.8	71°44.8	27°56.6	26°18.2	62°03.5	62°55.7	87°52.0
12	265°31.3	17.4'	N 02°29.6	-14.0'	54.2'	119°21.8	73°20.2	71°22.6	27°27.0	26°47.7	62°30.6	63°25.4	88°19.7
13	280°07.7	17.4'	$02^{\circ}15.6$	-14.1'	54.2'	118°59.1	72°50.6	71°00.4	26°57.4	27°17.1	62°57.7	63°55.0	88°47.3
14	294°44.1	17.4'	02°01.5	-14.1'	54.2'	118°36.3	72°21.0	70°38.3	26°27.8	27°46.5	63°24.9	64°24.6	89°15.0
15	309°20.5	17.4'	01°47.5	-14.1'	54.2'	118°13.5	71°51.3	70°16.1	25°58.2	28°15.9	63°52.0	64°54.2	89°42.6
16	323°56.8	17.4'	01°33.4	-14.1'	54.2'	117°50.6	71°21.7	69°54.1	25°28.6	28°45.4	64°19.2	65°23.8	90°10.3
17	338°33.2	17.4'	$01^{\circ}19.3$	-14.1'	54.2'	117°27.6	70°52.1	69°32.0	24°59.0	29°14.8	64°46.4	65°53.4	90°38.0
18	353°09.6	17.4'	N 01°05.2	-14.1'	54.2'	117°04.6	70°22.5	69°10.0	24°29.4	29°44.3	65°13.6	66°23.0	91°05.6
19	7°46.0	17.4'	00°51.1	-14.1'	54.2'	116°41.6	69°52.9	68°48.1	23°59.8	30°13.8	65°40.9	66°52.6	91°33.3
20	22°22.4	17.4'	00°37.0	-14.1'	54.2'	116°18.5	69°23.2	68°26.2	23°30.2	30°43.2	66°08.1	67°22.2	92°01.0
21	36°58.8	17.4'	00°22.9	-14.1'	54.2'	115°55.3	68°53.6	68°04.3	23°00.6	31°12.7	66°35.4	67°51.8	92°28.6
22	51°35.2	17.4'	N 00°08.8	-14.1'	54.2'	115°32.1	68°24.0	67°42.5	22°31.0	31°42.2	67°02.7	68°21.4	92°56.3
23	66°11.6	17.4'	S 00°05.2	-14.1'	54.2'	115°08.9	67°54.3	67°20.7	22°01.4	32°11.7	67°30.0	68°51.1	93°24.0
14 th	SD	= 14.8	Mer. pas	s. 18:28									

Moon (15th Jun) h Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Procyon	+Pollux	+Betelgeuse
0	80°48.0	17.4'	S 00°19.4	-14.1'	54.2'	114°45.6	67°24.7	66°59.0	21°31.8	32°41.2	67°57.3	69°20.7	93°51.6
1	95°24.4	17.4'	00°33.5	-14.1'	54.2'	114°22.2	66°55.1	66°37.3	21°02.2	33°10.7	68°24.7	69°50.3	94°19.3
2	110°00.8	17.4'	00°47.6	-14.1'	54.2'	113°58.8	66° 25.4	66°15.6	20°32.6	33°40.2	68°52.1	70°19.9	94°47.0
3	124°37.2	17.4'	01°01.7	-14.1'	54.2'	113°35.4	65°55.8	65°54.0	20°03.0	34°09.8	69° 19.5	70°49.6	95°14.7
4	139°13.5	17.4'	$01^{\circ}15.8$	-14.1'	54.2'	113°11.9	$65^{\circ}26.1$	65°32.5	19°33.4	34°39.3	69°46.9	71°19.2	95°42.3
5	153°49.9	17.3'	$01^{\circ}29.9$	-14.1'	54.2'	112°48.4	64°56.4	65°11.0	19°03.8	35°08.8	$70^{\circ}14.3$	71°48.9	96°10.0
6	168°26.2	17.3'	S 01°43.9	-14.1'	54.2'	112°24.8	64°26.8	64°49.6	18°34.1	35°38.4	70°41.8	72°18.5	96°37.7
7	183°02.6	17.3'	$01^{\circ}58.0$	-14.1'	54.2'	112°01.2	63°57.1	64°28.2	18°04.5	36°07.9	71°09.2	72°48.2	97°05.4
8	197°38.9	17.3'	$02^{\circ}12.1$	-14.1'	54.2'	111°37.5	63°27.4	64°06.9	17°34.9	36°37.5	71°36.7	73°17.9	97°33.1
9	212°15.2	17.3'	02°26.2	-14.1'	54.2'	111°13.8	62°57.7	63°45.6	17°05.3	37°07.1	72°04.2	73°47.5	98°00.8
10	226°51.5	17.3'	02°40.3	-14.1'	54.3'	110°50.0	62°28.0	63°24.4	16°35.6	37°36.7	72°31.7	74°17.2	98°28.5
11	241°27.8	17.3'	02°54.4	-14.1'	54.3'	110°26.2	$61^{\circ}58.3$	63°03.2	16°06.0	38°06.3	72°59.3	74°46.9	98°56.2
12	256°04.0	17.2'	S 03°08.4	-14.1'	54.3'	110°02.4	61°28.6	62°42.2	15°36.3	38°35.9	73°26.8	75°16.6	99°23.9
13	270°40.3	17.2'	03°22.5	-14.1'	54.3'	109°38.5	60°58.9	62°21.1	15°06.7	39°05.5	73°54.4	75°46.3	99°51.6
14	285°16.5	17.2'	03°36.6	-14.0'	54.3'	109°14.6	60°29.1	62°00.1	14°37.0	39°35.1	74°22.0	76°16.0	100°19.3
15	299°52.7	17.2'	03°50.6	-14.0'	54.3'	108°50.7	59°59.4	61°39.2	14°07.4	40°04.8	74°49.6	76°45.8	100°47.0
16	314°28.8	17.1'	04°04.6	-14.0'	54.3'	108°26.7	59°29.7	61°18.4	13°37.7	40°34.4	75° 17.3	77°15.5	101°14.7
17	329°05.0	17.1'	04° 18.7	-14.0'	54.3'	108°02.6	58°59.9	60°57.6	13°08.0	41°04.1	75°44.9	77°45.2	101°42.4
18	343°41.1	17.1'	S 04°32.7	-14.0'	54.3'	107°38.6	58°30.1	60°36.9	12°38.4	41°33.8	76° 12.6	78°15.0	102°10.1
19	358°17.2	17.1'	04° 46.7	-14.0'	54.3'	107°14.5	58°00.4	60°16.2	12°08.7	42°03.5	76°40.3	78°44.8	102°37.8
20	12°53.3	17.0'	05°00.7	-14.0'	54.3'	106°50.3	57°30.6	59°55.6	11°39.0	42°33.2	77°08.0	79°14.5	103°05.5
21	27°29.3	17.0'	05° 14.6	-14.0'	54.3'	106°26.2	57°00.8	59°35.1	11°09.4	43°02.9	77°35.7	79°44.3	103°33.2
22	42°05.3	17.0'	05°28.6	-14.0'	54.3'	106°02.0	56°31.0	59°14.7	10°39.7	43°32.6	78°03.5	80°14.1	104°00.9
23	56°41.3	16.9'	05°42.6	-13.9'	54.4'	105°37.7	56°01.1	58°54.3	10°10.0	44°02.3	78°31.2	80°43.9	104°28.7
15 th	SD	= 14.8'	Mer. pas	s. 19:07									

h		Мооі	ո (16 th Jւ	ın)	Lunar Distance (objects with largest hourly LD delta)								
Sun	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Antares	-Spica	+Regulus	+Procyon	+Pollux	+Bet
0	71°17.2	16.9'	S 05°56.5	-13.9'	54.4'	105°13.4	58°34.1	55°31.3	9°40.4	44°32.1	78°59.0	81°13.8	10

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Sun	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Antares	-Spica	+Regulus	+Procyon	+Pollux	+Betelgeuse
0	71°17.2	16.9'	S 05°56.5	-13.9'	54.4'	105°13.4	58°34.1	55°31.3	9°40.4	44°32.1	78°59.0	81°13.8	104°56.4
1	85°53.2	16.9'	$06^{\circ}10.4$	-13.9'	54.4'	104°49.1	58° 13.8	55°01.4	9°10.7	45°01.9	79°26.8	81°43.6	105°24.1
2	100°29.0	16.8'	$06^{\circ}24.3$	-13.9'	54.4'	104°24.8	57°53.7	54°31.6	8°41.0	45°31.7	79°54.6	82°13.4	105°51.8
3	115°04.9	16.8'	06°38.2	-13.9'	54.4'	104°00.4	57°33.7	54°01.7	8°11.4	46°01.5	80°22.5	82°43.3	106°19.6
4	129°40.7	16.8'	$06^{\circ}52.1$	-13.9'	54.4'	103°36.0	57° 13.7	53°31.8	7°41.8	46°31.3	80°50.3	83°13.2	106°47.3
5	144°16.4	16.7'	$07^{\circ}05.9$	-13.8'	54.4'	103°11.5	56°53.8	53°01.9	7°12.2	47°01.1	81°18.2	83°43.1	107°15.0
6	158°52.2	16.7'	S 07°19.8	-13.8'	54.4'	102°47.0	56°34.0	52°32.0	6°42.6	47°30.9	81°46.1	84°13.0	107°42.8
7	173°27.9	16.6'	$07^{\circ}33.6$	-13.8'	54.4'	102°22.5	56°14.3	52°02.1	6°13.1	48°00.8	82°14.0	84°42.9	108°10.5
8	188°03.5	16.6'	$07^{\circ}47.4$	-13.8'	54.5'	101°58.0	55°54.7	51°32.1	5°43.6	48°30.7	82°41.9	85°12.8	108°38.3
9	202°39.1	16.6'	$08^{\circ}01.2$	-13.8'	54.5'	101°33.4	55°35.1	51°02.2	5°14.2	49°00.6	83°09.9	85°42.8	109°06.0
10	217°14.7	16.5'	$08^{\circ}14.9$	-13.7'	54.5'	101°08.8	55° 15.7	50°32.2	4°44.9	49°30.5	83°37.9	86°12.7	109°33.7
11	231°50.2	16.5'	$08^{\circ}28.6$	-13.7'	54.5'	100°44.2	54° 56.4	50°02.2	4°15.8	50°00.4	84°05.8	86°42.7	110°01.5
12	246°25.6	16.4'	S 08°42.3	-13.7'	54.5'	100°19.5	54°37.1	49°32.2	3°46.8	50°30.3	84°33.8	87°12.7	110°29.2
13	261°01.0	16.4'	$08^{\circ}56.0$	-13.7'	54.5'	99°54.8	54°18.0	49°02.2	3°18.2	51°00.3	85°01.9	87°42.7	110°57.0
14	275°36.4	16.3'	09°09.7	-13.6'	54.5'	99°30.1	53° 58.9	48°32.1	2°50.0	51°30.3	85°29.9	88°12.8	111°24.7
15	290°11.7	16.3'	09°23.3	-13.6'	54.5'	99°05.4	53°40.0	48°02.1	2°22.5	52°00.3	85°58.0	88°42.8	111°52.5
16	304°47.0	16.2'	09°36.9	-13.6'	54.6'	98°40.6	53°21.2	47°32.0		52°30.3	86°26.0	89°12.9	112°20.2
17	319°22.2	16.2'	09°50.5	-13.5'	54.6'	98°15.8	53°02.4	47°01.9		53°00.3	86°54.1	89°42.9	112°48.0
18	333°57.4	16.1'	S 10°04.0	-13.5'	54.6'	97°51.0	52°43.8	46°31.8		53°30.3	87°22.3	90°13.0	113°15.7
19	348°32.5	16.0'	$10^{\circ}17.5$	-13.5'	54.6'	97°26.1	52°25.3	46°01.6		54°00.4	87°50.4	90°43.2	113°43.5
20	3°07.5	16.0'	$10^{\circ}31.0$	-13.5'	54.6'	97°01.2	52°06.9	45°31.5		54°30.5	88°18.6	91°13.3	114°11.2
21	17°42.5	15.9'	$10^{\circ}44.5$	-13.4'	54.6'	96°36.3	51°48.7	45°01.3		55°00.6	88°46.7	91°43.5	114°39.0
22	32°17.4	15.9'	10°57.9	-13.4'	54.7'	96°11.4	51°30.5	44°31.1		55°30.7	89°14.9	92°13.6	115°06.7
23	46°52.3	15.8'	$11^{\circ}11.3$	-13.4'	54.7'	95°46.4	51°12.5	44°00.9		56°00.9	89°43.1	92°43.8	115°34.5
16 th	SD	= 14.8'	Mer. pas	s. 19:47									

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

Mon	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	61°27.1	15.8'	S 11°24.7	-13.3'	54.7'		95°21.4	50°54.6	43°30.7		56°31.1	90°11.4	93°14.0
1	76°01.9	15.7'	11°38.0	-13.3'	54.7'		94°56.4	50°36.8	43°00.5		57°01.3	90°39.6	93°44.3
2	90°36.6	15.6'	11°51.3	-13.3'	54.7'		94°31.4	50°19.2	42°30.2	3°33.8	57°31.5	91°07.9	94°14.5
3	105°11.2	15.6'	12°04.5	-13.2'	54.7'		94°06.3	50°01.7	41°59.9	4°02.9	58°01.7	91°36.2	94°44.8
4	119°45.7	15.5'	12°17.7	-13.2'	54.7'		93°41.3	49°44.4	41°29.6	4°32.2	58°31.9	92°04.5	95°15.1
5	134°20.2	15.4'	12°30.9	-13.1'	54.8'		93°16.2	49°27.1	40°59.3	5°01.8	59°02.2	92°32.8	95°45.4
6	148°54.7	15.4'	S 12°44.0	-13.1'	54.8'		92°51.0	49°10.1	40°28.9	5°31.6	59°32.5	93°01.1	96°15.7
7	163°29.0	15.3'	$12^{\circ}57.1$	-13.1'	54.8'		92°25.9	48°53.1	39°58.6	6°01.4	60°02.8	93°29.5	96°46.1
8	178°03.3	15.2'	13°10.2	-13.0'	54.8'		92°00.7	48°36.4	39°28.2	6°31.4	60°33.2	93°57.9	97°16.5
9	192°37.5	15.1'	13°23.2	-13.0'	54.8'	119°51.6	91°35.5	48°19.7	38°57.7	7°01.4	61°03.5	94°26.3	97°46.9
10	207°11.7	15.1'	13°36.2	-12.9'	54.9'	119°23.1	91°10.3	48°03.3	38°27.3	7°31.5	61°33.9	94°54.7	98°17.3
11	221°45.7	15.0'	13°49.1	-12.9'	54.9'	118°54.6	90°45.1	47°47.0	37°56.8	8°01.7	62°04.3	95°23.1	98°47.8
12	236°19.7	14.9'	S 14°02.0	-12.8'	54.9'	118°26.1	90°19.8	47°30.8	37°26.4	8°31.9	62°34.8	95°51.6	99°18.2
13	250°53.7	14.8'	14°14.8	-12.8'	54.9'	117°57.5	89°54.5	47°14.8	36°55.9	9°02.2	63°05.2	96°20.0	99°48.7
14	265°27.5	14.8'	14°27.6	-12.7'	54.9'	117°28.8	89°29.2	46°59.0	36°25.3	9°32.6	63°35.7	96°48.5	100°19.3
15	280°01.3	14.7'	14°40.3	-12.7'	55.0'	117°00.2	89°03.9	46°43.4	35°54.8	10°02.9	64°06.2	97°17.0	100°49.8
16	294°35.0	14.6'	14°53.0	-12.6'	55.0'	116°31.5	88°38.6	46°27.9	35°24.2	10°33.4	64°36.7	97°45.5	101°20.4
17	309°08.6	14.5'	15°05.7	-12.6'	55.0'	116°02.7	88°13.2	46°12.7	34°53.6	11°03.8	65°07.3	98°14.1	101°51.0
18	323°42.1	14.4'	S 15°18.3	-12.5'	55.0'	115°34.0	87°47.9	45°57.6	34°23.0	11°34.3	65°37.9	98°42.6	102°21.6
19	338°15.5	14.4'	15°30.8	-12.5'	55.0'	115°05.1	87°22.5		33°52.3	12°04.8	66°08.5	99°11.2	102°52.2
20	352°48.9	14.3'	15°43.3	-12.4'	55.1'	114°36.3	86°57.1		33°21.6	12°35.4	66°39.1	99°39.8	103°22.9
21	7°22.2	14.2'	15°55.7	-12.4'	55.1'	114°07.4	86°31.7		32°50.9	13°06.0	67°09.8	100°08.4	103°53.6
22	21°55.4	14.1'	$16^{\circ}08.1$	-12.3'	55.1'	113°38.4	86°06.2		32°20.2	13°36.6	67°40.5	100°37.1	104°24.3
23	36°28.5	14.0'	16°20.4	-12.3'	55.1'	113°09.5	85°40.8		31°49.4	14°07.3	68°11.2	101°05.7	104°55.0
17 th	SD	= 14.9'	Mer. pas	s. 20:30				·					

h		Moor	ո (18 th Ju	ın)			Lunar Dis	tance (o	bjects wi	th larges	t hourly L	.D delta)	
Tue	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	51°01.5	13.9'	S 16°32.7	-12.2'	55.1'		112°40.5	85° 15.3	31°18.7	14°38.0	68°41.9	101°34.4	105°25.8
1	65°34.4	13.8'	16°44.9	-12.1'	55.2'		112°11.4	84°49.8	30°47.8	15°08.7	69°12.7	102°03.1	105°56.6
2	80°07.3	13.8'	16°57.0	-12.1'	55.2'		111°42.3	84°24.3	30°17.0	15°39.5	69°43.5	102°31.8	106°27.4
3	94°40.1	13.7'	$17^{\circ}09.1$	-12.0'	55.2'		111°13.2	83°58.8	29°46.2	16°10.3	70°14.3	103°00.5	106°58.3
4	109°12.7	13.6'	$17^{\circ}21.1$	-12.0'	55.2'		110°44.0	83°33.3	29°15.3	16°41.1	70°45.1	103°29.2	107°29.1
5	123°45.3	13.5'	$17^{\circ}33.0$	-11.9'	55.2'		110°14.8	83°07.8	28°44.3	17°12.0	71°16.0	103°58.0	108°00.0
6	138°17.8	13.4'	S 17°44.9	-11.8'	55.3'		109°45.6	82°42.2	28°13.4	17°42.9	71°46.9	104° 26.7	108°31.0
7	152°50.2	13.3'	$17^{\circ}56.8$	-11.8'	55.3'		109°16.3	82°16.7	27°42.4	18°13.8	72°17.8	104°55.5	109°01.9
8	167°22.5	13.2'	18°08.5	-11.7'	55.3'		108°47.0	81°51.1	27°11.4	18°44.7	72°48.8	105°24.3	109°32.9
9	181°54.7	13.1'	18° 20.2	-11.6'	55.3'		108°17.7	81°25.5	26°40.4	19°15.7	73°19.7	105°53.1	110°03.9
10	196°26.8	13.0'	18°31.8	-11.5'	55.4'		107°48.3	80°59.9	26°09.4	19°46.7	73°50.8	106°21.9	110°34.9
11	210°58.8	12.9'	18°43.4	-11.5'	55.4'		107°18.9	80°34.3	25°38.3	20°17.8	74°21.8	106°50.8	111°06.0
12	225°30.7	12.8'	S 18°54.8	-11.4'	55.4'		106°49.4	80°08.7	25°07.2	20°48.8	74°52.9	107° 19.6	111°37.1
13	240°02.5	12.7'	19°06.2	-11.3'	55.4'		106°19.9	79°43.1	24°36.0	21°19.9	75°24.0	107°48.5	112°08.2
14	254°34.2	12.6'	19° 17.6	-11.3'	55.5'		105°50.4	79° 17.5	24°04.9	21°51.1	75°55.1	108° 17.4	112°39.4
15	269°05.8	12.5'	19°28.8	-11.2'	55.5'		105°20.9	78°51.8	23°33.7	22°22.2	76°26.2	108°46.3	113°10.6
16	283°37.4	12.4'	19°40.0	-11.1'	55.5'		104°51.3	78° 26.2	23°02.5	22°53.4	76°57.4	109°15.2	113°41.8
17	298°08.8	12.3'	$19^{\circ}51.1$	-11.0'	55.5'		104°21.6	78°00.6	22°31.2	23°24.6	77°28.6	109°44.1	114°13.0
18	312°40.1	12.2'	S 20°02.1	-10.9'	55.5'		103°52.0	77°34.9	21°59.9	23°55.9	77°59.9	110° 13.1	114°44.3
19	327°11.3	12.1'	20° 13.0	-10.9'	55.6'		103°22.3	77°09.3	21°28.6	24°27.2	78°31.2	110°42.0	115°15.6
20	341°42.4	12.0'	20°23.9	-10.8'	55.6'	119°58.8	102°52.5	76°43.6	20°57.3	24°58.5	79°02.5	111°11.0	115°46.9
21	356°13.4	11.9'	20°34.7	-10.7'	55.6'	119°27.5	102°22.8	76° 18.0	20°25.9	25°29.8	79°33.8	111°40.0	116°18.3
22	10°44.3	11.8'	20°45.4	-10.6'	55.6'	118°56.1	101°53.0	75°52.3	19°54.5	26°01.2	80°05.2	112°08.9	116°49.7
23	25°15.1	11.7'	$20^{\circ}56.0$	-10.5'	55.7'	118°24.7	101°23.1	75°26.6	19°23.1	26°32.6	80°36.5	112° 37.9	117°21.1
18 th	SD	= 15.0'	Mer. pas	s. 21:16						'			

h	Moon	(10 th	lun)

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

Wed	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Antares	+Spica	+Regulus	+Procyon	+Pollux
0	39°45.8	11.6'	S 21°06.5	-10.4'	55.7'	117°53.3	100°53.3	75°01.0	18°51.6	27°04.1	81°08.0	113°07.0	117°52.5
1	54°16.4	11.5'	$21^{\circ}16.9$	-10.3'	55.7'	117°21.9	100°23.3	74°35.3	18°20.1	27°35.5	81°39.4	113°36.0	118°24.0
2	68°46.9	11.4'	21°27.2	-10.2'	55.7'	116°50.4	99°53.4	74°09.7	17°48.6	28°07.0	82° 10.9	114°05.0	118°55.5
3	83°17.2	11.3'	21°37.4	-10.1'	55.8'	116°18.9	99°23.4	73°44.0	17°17.0	28°38.6	82°42.4	114°34.0	119°27.1
4	97°47.5	11.2'	21°47.6	-10.1'	55.8'	115°47.3	98°53.4	73°18.4	16°45.4	29°10.1	83°14.0	115°03.1	119°58.6
5	112°17.6	11.0'	21°57.6	-10.0'	55.8'	115°15.7	98°23.4	72°52.7	16°13.8	29°41.7	83°45.6	115°32.1	
6	126°47.7	10.9'	S 22°07.6	-9.9'	55.8'	114°44.1	97°53.3	72°27.1	15°42.2	30°13.4	84° 17.2	116°01.2	
7	141°17.6	10.8'	22°17.5	-9.8'	55.9'	114°12.5	97°23.2	72°01.5	15°10.5	30°45.0	84°48.8	116°30.2	
8	155°47.5	10.7'	22°27.2	-9.7'	55.9'	113°40.8	96°53.0	71°35.8	14°38.8	31°16.7	85°20.5	116°59.3	
9	170°17.2	10.6'	22°36.9	-9.6'	55.9'	113°09.1	96°22.8	71°10.2	14°07.1	31°48.5	85°52.2	117°28.4	
10	184°46.8	10.5'	22°46.4	-9.5'	55.9'	112°37.4	95°52.6	70°44.6	13°35.3	32°20.2	86°23.9	117°57.5	
11	199°16.3	10.4'	22°55.9	-9.3'	56.0'	112°05.6	95°22.4	70°19.0	13°03.5	32°52.0	86°55.7	118°26.5	
12	213°45.7	10.3'	S 23°05.2	-9.2'	56.0'	111°33.8	94°52.1	69°53.4	12°31.7	33°23.8	87°27.5	118°55.6	
13	228°15.0	10.2'	23°14.5	-9.1'	56.0'	111°02.0	94°21.8	69°27.8	11°59.8	33°55.7	87°59.3	119°24.7	
14	242°44.2	10.1'	23°23.6	-9.0'	56.1'	110°30.1	93°51.5	69°02.3	11°27.9	34°27.6	88°31.2	119°53.8	
15	257°13.2	10.0'	23°32.6	-8.9'	56.1'	109°58.2	93°21.1	68°36.7	10°56.0	34°59.5	89°03.1		
16	271°42.2	9.8'	23°41.5	-8.8'	56.1'	109°26.3	92°50.7	68°11.2	10°24.0	35°31.5	89°35.0		
17	286°11.0	9.7'	23°50.3	-8.7'	56.1'	108°54.3	92°20.2	67°45.7	9°52.0	36°03.4	90°07.0		
18	300°39.8	9.6'	S 23°59.0	-8.6'	56.2'	108°22.3	91°49.8	67°20.2	9°20.0	36°35.5	90°39.0		
19	315°08.4	9.5'	24°07.6	-8.5'	56.2'	107°50.3	91°19.3	66°54.7	8°48.0	37°07.5	91°11.0		
20	329°36.9	9.4'	24°16.1	-8.3'	56.2'	107°18.2	90°48.7	66°29.3	8°15.9	37°39.6	91°43.1		
21	344°05.3	9.3'	24°24.4	-8.2'	56.2'	106°46.1	90°18.2	66°03.8	7°43.8	38°11.7	92°15.1		
22	358°33.6	9.2'	24°32.6	-8.1'	56.3'	106°14.0	89°47.6	65°38.4	7°11.7	38°43.9	92°47.3		
23	13°01.8	9.1'	24°40.7	-8.0'	56.3'	105°41.9	89°16.9	65°13.0	6°39.5	39°16.1	93°19.4		
19 th	SD	= 15.2'	Mer. pas	s. 22:06									

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

Thu	GHA	ν	Dec	d	HP	-Saturn	-Achernar	-Fomalhaut	-Altair	±Antares	+Spica	+Arcturus	+Regulus
0	27°29.9	9.0'	S 24°48.7	-7.9'	56.3'	105°09.7	92°30.1	88°46.3	64°47.7	6°07.3	39°48.3	51°08.4	93°51.6
1	41°57.8	8.9'	24°56.5	-7.7'	56.3'	104°37.4	92°12.4	88°15.6	64°22.4	5°35.1	40° 20.5	51°32.3	94°23.8
2	56°25.7	8.8'	25°04.3	-7.6'	56.4'	104°05.2	91°54.8	87°44.9	63°57.1	5°02.9	40°52.8	51°56.4	94°56.1
3	70°53.5	8.6'	$25^{\circ}11.9$	-7.5'	56.4'	103°32.9	91°37.1	87°14.1	63°31.8	4°30.6	41°25.1	52°20.5	95°28.4
4	85°21.1	8.5'	$25^{\circ}19.4$	-7.3'	56.4'	103°00.6	91°19.4	86°43.3	63°06.6	3°58.3	41°57.5	52°44.8	96°00.7
5	99°48.6	8.4'	25°26.7	-7.2'	56.5'	102°28.2	91°01.7	86°12.5	62°41.4	3°26.1	42°29.9	53°09.2	96°33.0
6	114°16.1	8.3'	S 25°33.9	-7.1'	56.5'	101°55.8	90°44.0	85°41.7	62°16.2	2°53.8	43°02.3	53°33.8	97°05.4
7	128°43.4	8.2'	25°41.0	-6.9'	56.5'	101°23.4	90°26.2	85°10.8	61°51.1	2°21.6	43°34.7	53° 58.4	97°37.8
8	143°10.6	8.1'	25°47.9	-6.8'	56.5'	100°51.0	90°08.4	84°39.9	61°26.0	1°49.5	44°07.2	54°23.2	98°10.3
9	157°37.8	8.0'	25°54.7	-6.7'	56.6'	100°18.5	89°50.6	84°09.0	61°01.0	1°17.8	44°39.7	54°48.1	98°42.8
10	172°04.8	7.9'	26°01.4	-6.5'	56.6'	99°46.0	89°32.8	83°38.1	60°36.0		45°12.3	55°13.1	99°15.3
11	186°31.7	7.8'	26°08.0	-6.4'	56.6'	99°13.4	89°15.0	83°07.1	60°11.1		45°44.8	55°38.2	99°47.8
12	200°58.5	7.7'	S 26°14.3	-6.3'	56.6'	98°40.8	88°57.2	82°36.1	59°46.2		46° 17.5	56°03.4	100°20.4
13	215°25.2	7.6'	26°20.6	-6.1'	56.7'	98°08.2	88°39.3	82°05.0	59°21.3		46°50.1	56°28.8	100°53.0
14	229°51.8	7.5'	26°26.7	-6.0'	56.7'	97°35.5	88°21.4	81°34.0	58°56.5		47°22.8	56° 54.2	101°25.7
15	244°18.4	7.4'	26°32.7	-5.8'	56.7'	97°02.9	88°03.5	81°02.9	58°31.8	2°02.2	47°55.5	57° 19.8	101°58.4
16	258°44.8	7.3'	26°38.5	-5.7'	56.8'	96°30.1	87°45.7	80°31.8	58°07.1	2°34.6	48°28.2	57°45.4	102°31.1
17	273°11.1	7.2'	26°44.2	-5.5'	56.8'	95°57.4	87°27.8	80°00.7	57°42.5	3°07.2	49°01.0	58°11.2	103°03.8
18	287°37.3	7.1'	S 26°49.7	-5.4'	56.8'	95°24.6	87°09.8	79°29.5	57°17.9	3°39.8	49°33.8	58° 37.0	103°36.6
19	302°03.5	7.0'	$26^{\circ}55.1$	-5.2'	56.8'	94°51.8	86°51.9	78°58.3	56°53.4	4°12.6	50°06.7	59°03.0	104°09.4
20	316°29.5	6.9'	27°00.3	-5.1'	56.9'	94°18.9	86°34.0	78°27.1	56°29.0	4°45.4	50°39.5	59°29.0	104°42.2
21	330°55.4	6.9'	27°05.4	-4.9'	56.9'	93°46.1	86°16.1	77°55.9	56°04.6	5° 18.2	51°12.5	59°55.2	105°15.1
22	345°21.3	6.8'	27°10.3	-4.8'	56.9'	93°13.2	85°58.2	77°24.6	55°40.3	5°51.1	51°45.4	60°21.4	105°48.0
23	359°47.1	6.7'	27°15.1	-4.6'	56.9'	92°40.2	85°40.2	76°53.3	55°16.1	6°24.1	52°18.4	60°47.7	106°20.9
20 th	SD =	= 15.4'	Mer. pas	s. 23:01									

Moon (21st Jun)

Lunar Distance (objects with largest hourly LD delta)

		IVIOUI	n (ZI Ju	111)			Lunari	Distance (0	bjects w	itii largest	nourly i	LD delta)	
Fri	GHA	ν	Dec	d	HP	-Saturn	-Achernar	-Fomalhaut	-Altair	+Antares	+Spica	+Arcturus	+Regulus
0	14° 12.7	6.6'	S 27°19.7	-4.5'	57.0'	92°07.2	85°22.3	76°22.0	54°52.0	6°57.0	52°51.4	61°14.1	106° 53.9
1	28°38.3	6.5'	27°24.2	-4.3'	57.0'	91°34.2	85°04.4	75°50.7	54°27.9	7°30.0	53°24.4	61°40.6	107°26.9
2	43°03.8	6.4'	27°28.5	-4.1'	57.0'	91°01.2	84°46.5	75°19.3	54°04.0	8°03.1	53°57.5	62°07.2	107°59.9
3	57°29.3	6.3'	27°32.6	-4.0'	57.1'	90°28.1	84°28.5	74°47.9	53°40.1	8°36.2	54°30.6	62°33.9	108°33.0
4	71°54.6	6.3'	27°36.6	-3.8'	57.1'	89°55.0	84°10.6	74°16.5	53°16.3	9°09.3	55°03.7	63°00.7	109°06.1
5	86° 19.9	6.2'	27°40.4	-3.7'	57.1'	89°21.9	83°52.7	73°45.1	52°52.6	9°42.5	55°36.9	63°27.5	109°39.2
6	100°45.1	6.1'	S 27°44.0	-3.5'	57.1'	88° 48.7	83°34.8	73°13.7	52°29.0	10°15.6	56°10.1	63°54.4	110°12.4
7	115° 10.2	6.0'	27°47.5	-3.3'	57.2'	88° 15.5	83°16.9	72°42.2	52°05.5	10°48.9	56°43.3	64°21.4	110°45.6
8	129°35.2	6.0'	$27^{\circ}50.9$	-3.2'	57.2'	87°42.2	82°59.0	72°10.8	51°42.1	11°22.1	57°16.6	64°48.5	111°18.8
9	144°00.2	5.9'	27°54.0	-3.0'	57.2'	87°09.0	82°41.2	71°39.3	51°18.8	11°55.4	57°49.9	65°15.7	111°52.0
10	158°25.1	5.8'	27°57.0	-2.8'	57.2'	86° 35.7	82°23.3	71°07.8	50°55.6	12°28.7	58°23.2	65°42.9	112°25.3
11	172°49.9	5.8'	27°59.8	-2.7'	57.3'	86°02.3	82°05.5	70°36.2	50°32.5	13°02.1	58°56.6	66°10.2	112°58.6
12	187°14.6	5.7'	S 28°02.5	-2.5'	57.3'	85°29.0	81°47.6	70°04.7	50°09.6	13°35.5	59°29.9	66°37.6	113°32.0
13	201°39.3	5.6'	28°05.0	-2.3'	57.3'	84°55.6	81°29.8	69°33.1	49°46.7	14°08.9	60°03.4	67°05.0	114°05.4
14	216°04.0	5.6'	28°07.3	-2.1'	57.3'	84°22.2	81°12.0	69°01.5	49°24.0	14°42.3	60°36.8	67°32.5	114°38.8
15	230°28.5	5.5'	28°09.4	-2.0'	57.4'	83°48.7	80°54.2	68°29.9	49°01.5	15° 15.8	61°10.3	68°00.1	115° 12.2
16	244°53.0	5.4'	28°11.4	-1.8'	57.4'	83° 15.2	80°36.5	67°58.3	48°39.0	15°49.3	61°43.8	68°27.8	115° 45.7
17	259° 17.5	5.4'	28°13.2	-1.6'	57.4'	82°41.7	80°18.8	67°26.7	48°16.7	16°22.9	62°17.3	68°55.5	116°19.2
18	273°41.9	5.3'	S 28°14.8	-1.4'	57.4'	82°08.2	80°01.1	66°55.1	47° 54.6	16°56.4	62°50.9	69°23.3	116°52.7
19	288°06.2	5.3'	28°16.3	-1.3'	57.5'	81°34.6	79°43.4	66°23.4	47°32.6	17°30.0	63°24.5	69°51.1	117°26.2
20	302°30.5	5.2'	28°17.6	-1.1'	57.5'	81°01.0	79°25.7	65°51.7	47° 10.7	18°03.7	63°58.2	70°19.0	117°59.8
21	316°54.7	5.2'	28°18.6	-0.9'	57.5'	80°27.3	79°08.1	65°20.1	46°49.0	18°37.3	64°31.8	70°47.0	118°33.4
22	331°18.9	5.2'	28°19.6	-0.7'	57.5	79°53.7	78°50.5	64°48.4	46°27.5	19°11.0	65°05.5	71°15.0	119°07.1
23	345°43.1	5.1'	28°20.3	-0.6'	57.6'	79°20.0	78°33.0	64°16.7	46°06.1	19°44.8	65°39.2	71°43.1	119°40.8
21 st	SD :	= 15.5'	Mer. pas	s. 23:59)								

Sat	GHA	ν	Dec	d	HP	-Mars	-Saturn	-Fomalhaut	-Altair	+Antares	+Hadar	+Spica	+Arcturus
0	0°07.2	5.1'	S 28°20.9	-0.4'	57.6'		78°46.2	63°45.0	45°44.9	20°18.5	50°32.7	66°13.0	72°11.3
1	14°31.3	5.0'	28°21.3	-0.2'	57.6'		78°12.5	63°13.3	45°23.9	20°52.3	50°50.9	66°46.8	72°39.5
2	28°55.3	5.0'	28°21.5	-0.0'	57.6'		77°38.7	62°41.6	45°03.1	21°26.1	51°09.3	67°20.6	73°07.7
3	43°19.3	5.0'	28°21.5	0.2'	57.7'		77°04.9	62°09.8	44°42.4	22°00.0	51°27.9	67°54.4	73°36.0
4	57°43.3	4.9'	28°21.3	0.3'	57.7'		76°31.0	61°38.1	44°22.0	22°33.8	51°46.7	68°28.3	74°04.4
5	72°07.2	4.9'	28°21.0	0.5'	57.7'		75°57.2	61°06.4	44°01.7	23°07.7	52°05.7	69°02.2	74°32.8
6	86°31.1	4.9'	S 28°20.5	0.7'	57.7'		75°23.3	60°34.6	43°41.7	23°41.7	52°24.9	69°36.1	75°01.3
7	100°55.0	4.9'	$28^{\circ}19.8$	0.9'	57.8'		74°49.3	60°02.9	43°21.9	24°15.6	52°44.3	70°10.1	75°29.8
8	115°18.9	4.8'	28°18.9	1.1'	57.8'		74°15.4	59°31.2	43°02.3	24°49.6	53°03.9	70°44.1	75°58.4
9	129°42.7	4.8'	28°17.8	1.2'	57.8'		73°41.4	58° 59.4	42°42.9	25°23.6	53°23.7	71°18.1	76°27.0
10	144°06.6	4.8'	28°16.6	1.4'	57.8'		73°07.4	58° 27.7	42°23.7	25°57.7	53°43.6	71°52.1	76°55.7
11	158°30.4	4.8'	28°15.1	1.6'	57.9'		72°33.3	57°55.9	42°04.8	26°31.7	54°03.8	72°26.2	77°24.4
12	172°54.2	4.8'	S 28°13.5	1.8'	57.9'		71°59.3	57°24.2	41°46.2	27°05.8	54°24.1	73°00.3	77°53.1
13	187°18.0	4.8'	28°11.7	2.0'	57.9'		71°25.2	56° 52.5	41°27.8	27°39.9	54°44.5	73°34.4	78°21.9
14	201°41.8	4.8'	28°09.7	2.2'	57.9'		70°51.0	56° 20.7	41°09.6	28°14.1	55°05.2	74°08.5	78°50.8
15	216°05.5	4.8'	28°07.6	2.3'	58.0'		70°16.9	55°49.0	40°51.7	28°48.3	55°26.0	74°42.7	79°19.6
16	230°29.3	4.8'	28°05.2	2.5'	58.0'		69°42.7	55°17.3	40°34.1	29°22.5	55°47.0	75° 16.9	79°48.6
17	244°53.1	4.8'	28°02.7	2.7'	58.0'	119°33.7	69°08.5	54°45.6	40°16.8	29°56.7	56°08.1	75°51.1	80°17.5
18	259°16.9	4.8'	S 28°00.0	2.9'	58.0'	119°01.3	68°34.3	54°13.9	39°59.7	30°31.0	56° 29.4	76°25.4	80°46.5
19	273°40.6	4.8'	$27^{\circ}57.1$	3.1'	58.0'	118°28.9	68°00.0	53°42.2	39°43.0	31°05.3	56°50.9	76°59.7	81°15.6
20	288°04.4	4.8'	27°54.0	3.3'	58.1'	117°56.5	67°25.7	53° 10.6	39°26.5	31°39.6	57° 12.5	77°34.0	81°44.6
21	302°28.2	4.8'	27°50.8	3.4'	58.1'	117°24.1	66°51.4	52° 38.9	39°10.4	32°13.9	57°34.2	78°08.3	82°13.7
22	316°52.0	4.8'	27°47.3	3.6'	58.1'	116°51.6	66°17.1	52°07.3	38°54.5	32°48.3	57°56.1	78°42.7	82°42.9
23	331°15.9	4.8'	27°43.7	3.8'	58.1'	116°19.1	65°42.7	51°35.7	38°39.1	33°22.6	58°18.2	79°17.1	83°12.1
22 nd	SD	= 15.7	7' Mer. pa	ss:-			·		·		·	·	

h Moon (23rd Jun)

Lunar Distance (objects with largest hourly LD delta)

Sun GHA // Dec d HP -Mars -Achernar -Saturn -Fomalhaut +Antares +Rigil Kent. +Spica

Sun	GHA	ν	Dec	d	HP	-Mars	-Achernar	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Spica	+Arcturus
0	345°39.7	4.9'	S 27°39.9	4.0'	58.2'	115°46.6	71°29.5	65°08.3	51°04.1	33°57.1	54°19.9	79°51.5	83°41.3
1	0°03.6	4.9'	27°35.9	4.2'	58.2'	115°14.0	71°13.4	64°33.9	50°32.5	34°31.5	54°41.9	80°25.9	84°10.5
2	14°27.4	4.9'	27°31.7	4.4'	58.2'	114°41.5	70°57.4	63°59.5	50°00.9	35°05.9	55°04.0	81°00.3	84°39.8
3	28°51.3	4.9'	27°27.4	4.5'	58.2'	114°08.9	70°41.4	63°25.0	49°29.4	35°40.4	55°26.3	81°34.8	85°09.1
4	43°15.3	5.0'	27°22.8	4.7'	58.2'	113°36.2	70°25.6	62°50.6	48°57.9	36° 14.9	55°48.8	82°09.3	85°38.4
5	57°39.2	5.0'	$27^{\circ}18.1$	4.9'	58.3'	113°03.6	70°09.8	62°16.1	48°26.5	36° 49.5	56°11.4	82°43.9	86°07.8
6	72°03.2	5.0'	S 27°13.2	5.1'	58.3'	112°30.9	69°54.1	61°41.5	47°55.0	37°24.0	56°34.1	83°18.4	86°37.2
7	86°27.2	5.0'	27°08.2	5.2'	58.3'	111°58.2	69°38.5	61°07.0	47°23.6	37°58.6	56°57.0	83°53.0	87°06.6
8	100°51.3	5.1'	27°02.9	5.4'	58.3'	111°25.5	69°23.0	60°32.4	46°52.2	38° 33.2	57°20.1	84°27.6	87°36.0
9	115°15.3	5.1'	26° 57.5	5.6'	58.3'	110°52.8	69°07.6	59°57.8	46°20.9	39°07.8	57°43.2	85°02.2	88°05.4
10	129°39.5	5.2'	$26^{\circ}51.9$	5.8'	58.4'	110°20.0	68°52.3	59°23.2	45°49.6	39°42.4	58°06.5	85°36.8	88°34.9
11	144°03.6	5.2'	$26^{\circ}46.1$	6.0'	58.4'	109°47.2	68°37.1	58°48.6	45°18.4	40° 17.1	58°30.0	86°11.5	89°04.4
12	158°27.8	5.2'	S 26°40.2	6.1'	58.4'	109°14.4	68°22.0	58°13.9	44°47.2	40°51.8	58°53.6	86°46.2	89°33.9
13	172°52.1	5.3'	26°34.0	6.3'	58.4'	108°41.6	68°07.0	57°39.2	44°16.0	41°26.5	59°17.3	87°20.9	90°03.5
14	187°16.4	5.3'	26°27.7	6.5'	58.4'	108°08.8		57°04.5	43°44.9	42°01.2	59°41.1	87°55.6	90°33.0
15	201°40.7	5.4'	$26^{\circ}21.3$	6.6'	58.5'	107°35.9		56°29.8	43°13.9	42°36.0	60°05.1	88°30.3	91°02.6
16	216°05.1	5.4'	$26^{\circ}14.6$	6.8'	58.5'	107°03.0		55°55.0	42°42.9	43° 10.8	60°29.1	89°05.1	91°32.2
17	230°29.6	5.5'	26°07.8	7.0'	58.5'	106°30.1		55°20.3	42°12.0	43°45.6	60°53.3	89°39.9	92°01.8
18	244°54.1	5.6'	S 26°00.8	7.2'	58.5'	105°57.2		54°45.5	41°41.1	44°20.4	61°17.6	90°14.7	92°31.4
19	259°18.6	5.6'	25°53.6	7.3'	58.5'	105°24.2		54°10.7	41°10.3	44° 55.2	61°42.1	90°49.5	93°01.0
20	273°43.2	5.7'	25°46.3	7.5'	58.6'	104°51.2		53°35.8	40°39.6	45°30.0	62°06.6	91°24.4	93°30.6
21	288°07.9	5.7'	25°38.8	7.7'	58.6'	104°18.2		53°01.0	40°09.0	46°04.9	62°31.2	91°59.3	94°00.3
22	302°32.6	5.8'	25°31.2	7.8'	58.6'	103°45.2		52°26.1	39°38.4	46°39.8	62°56.0	92°34.1	94°29.9
23	316°57.4	5.8'	25°23.3	8.0'	58.6'	103°12.2		51°51.2	39°07.9	47° 14.7	63°20.8	93°09.0	94°59.6
23 rd	SD =	= 15.9′	Mer. pass	. 01:00)								

h		Моог	า (24 th Jเ	ın)			Lunar [Distance (objects	with large	st hourly LD	delta)	
Mon	GHA	ν	Dec	d	HP	-Jupiter	-Aldebaran	-Mars	-Saturn	+Antares	+Rigil Kent.	+Spica	+Arcturus
0	331°22.2	5.9'	S 25°15.3	8.2'	58.6'			102°39.1	51°16.3	47°49.6	63°45.8	93°44.0	95°29.3
1	345°47.2	6.0'	25°07.2	8.3'	58.6'			102°06.1	50°41.4	48°24.6	64°10.8	94°18.9	95°59.0
2	0°12.1	6.0'	24°58.9	8.5'	58.7'			101°33.0	50°06.5	48°59.6	64°36.0	94°53.9	96°28.6
3	14°37.2	6.1'	24°50.4	8.6'	58.7'			100°59.9	49°31.5	49°34.5	65°01.2	95°28.8	96°58.3
4	29°02.3	6.2'	24°41.8	8.8'	58.7'			100°26.8	48°56.5	50°09.5	65°26.5	96°03.8	97°28.0
5	43°27.5	6.2'	24°33.0	9.0'	58.7'			99°53.6	48°21.5	50°44.6	65°52.0	96°38.9	97°57.7
6	57°52.7	6.3'	S 24°24.0	9.1'	58.7'			99°20.5	47°46.5	51°19.6	66° 17.5	97°13.9	98°27.4
7	72°18.0	6.4'	$24^{\circ}14.9$	9.3'	58.7'			98°47.3	47°11.5	51°54.6	66°43.1	97°48.9	98°57.1
8	86°43.4	6.5'	24°05.6	9.4'	58.8'			98°14.1	46°36.4	52°29.7	67°08.7	98°24.0	99°26.7
9	101°08.9	6.5'	23°56.2	9.6'	58.8'			97°40.9	46°01.4	53°04.8	67°34.5	98°59.1	99°56.4
10	115°34.4	6.6'	23°46.7	9.7'	58.8'			97°07.7	45°26.3	53°39.9	68°00.3	99°34.2	100°26.1
11	130°00.0	6.7'	23°36.9	9.9'	58.8'			96°34.5	44°51.2	54°15.0	68°26.3	100°09.3	100°55.8
12	144°25.7	6.8'	S 23°27.1	10.0'	58.8'			96°01.2	44°16.1	54°50.1	68° 52.3	100°44.4	101°25.4
13	158°51.5	6.8'	$23^{\circ}17.1$	10.2'	58.8'			95°27.9	43°41.0	55°25.3	69°18.3	101°19.5	101°55.1
14	173°17.3	6.9'	23°06.9	10.3'	58.8'			94°54.7	43°05.8	56°00.4	69°44.5	101°54.7	102°24.7
15	187°43.3	7.0'	22°56.6	10.5'	58.9'	119°45.1		94°21.4	42°30.7	56°35.6	70° 10.7	102°29.9	102°54.4
16	202°09.3	7.1'	22°46.1	10.6'	58.9'	119°10.6		93°48.1	41°55.5	57°10.8	70°37.0	103°05.0	103°24.0
17	216°35.3	7.2'	22°35.5	10.7'	58.9'	118°36.1		93°14.7	41°20.3	57°46.0	71°03.3	103°40.2	103°53.6
18	231°01.5	7.2'	S 22°24.8	10.9'	58.9'	118°01.6		92°41.4	40°45.1	58°21.2	71°29.7	104°15.4	104°23.2
19	245°27.7	7.3'	$22^{\circ}13.9$	11.0'	58.9'	117°27.1		92°08.1	40°09.9	58°56.4	71°56.2	104°50.7	104°52.8
20	259°54.1	7.4'	22°02.9	11.1'	58.9'	116°52.6	119°32.9	91°34.7	39°34.7	59°31.7	72°22.7	105°25.9	105°22.3
21	274°20.5	7.5'	$21^{\circ}51.8$	11.3'	58.9'	116°18.0	118°58.4	91°01.3	38°59.5	60°06.9	72°49.3	106°01.2	105°51.9
22	288°47.0	7.6'	$21^{\circ}40.5$	11.4'	58.9'	115°43.4	118°23.8	90°27.9	38°24.2	60°42.2	73° 16.0	106°36.4	106°21.4
23	303°13.5 7.6' 21°29.1 11.5' 59.0					115°08.9	117°49.1	89°54.5	37°49.0	61°17.5	73°42.7	107°11.7	106°50.9
24 th	SD :	= 16.0'	Mer. pas	s. 01:59):				*			•	

h	Moon (25th	1)
h	Moon (25°	lun)

Tue	GHA	ν	Dec	d	HP	-Aldebaran	-Jupiter	-Mars	-Saturn	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	317°40.2	7.7'	S 21°17.5	11.7'	59.0'	117°14.5	114°34.3	89°21.1	37°13.7	61°52.8	74°09.4	107°20.4	107°47.0
1	332°06.9	7.8'	21°05.9	11.8'	59.0'	116°39.8	113°59.7	88°47.7	36°38.4	62°28.1	74°36.3	107°49.8	108°22.3
2	346°33.7	7.9'	20°54.0	11.9'	59.0'	116°05.1	113°25.1	88°14.3	36°03.1	63°03.4	75°03.1	108°19.2	108°57.6
3	1°00.6	8.0'	20°42.1	12.1'	59.0'	115°30.5	112°50.4	87°40.8	35°27.8	63°38.7	75°30.0	108°48.6	109°32.9
4	15°27.6	8.1'	20°30.1	12.2'	59.0'	114°55.7	112°15.8	87°07.4	34°52.5	64°14.0	75°57.0	109°18.0	110°08.2
5	29°54.7	8.1'	20°17.9	12.3'	59.0'	114°21.0	111°41.2	86°33.9	34°17.2	64°49.4	76°24.0	109°47.3	110°43.6
6	44°21.8	8.2'	S 20°05.6	12.4'	59.0'	113°46.3	111°06.5	86°00.4	33°41.8	65°24.7	76°51.1	110°16.6	111°18.9
7	58°49.0	8.3'	19°53.1	12.5'	59.0'	113°11.5	110°31.8	85°26.9	33°06.5	66°00.1	77°18.2	110°45.9	111°54.3
8	73°16.3	8.4'	19°40.6	12.7'	59.1'	112°36.7	109°57.1	84°53.4	32°31.1	66°35.5	77°45.3	111°15.2	112°29.7
9	87°43.7	8.5'	19°27.9	12.8'	59.1'	112°01.9	109°22.4	84°19.9	31°55.8	67° 10.9	78°12.5	111°44.3	113°05.0
10	102°11.2	8.6'	19°15.2	12.9'	59.1'	111°27.1	108°47.7	83°46.4	31°20.4	67°46.3	78°39.7	112°13.5	113°40.4
11	116°38.8	8.6'	$19^{\circ}02.3$	13.0'	59.1'	110°52.3	108°13.0	83°12.9	30°45.0	68°21.7	79°06.9	112°42.6	114°15.8
12	131°06.4	8.7'	S 18°49.3	13.1'	59.1'	110°17.5	107°38.3	82°39.3	30°09.6	68°57.1	79°34.2	113°11.7	114°51.2
13	145°34.1	8.8'	18°36.2	13.2'	59.1'	109°42.6	107°03.6	82°05.8	29°34.2	69°32.5	80°01.6	113°40.7	115°26.7
14	160°01.9	8.9'	18°22.9	13.3'	59.1'	109°07.8	106°28.8	81°32.2	28°58.8	70°07.9	80°28.9	114°09.7	116°02.1
15	174°29.8	9.0'	18°09.6	13.4'	59.1'	108°32.9	105°54.1	80°58.7	28°23.3	70°43.4	80°56.3	114°38.6	116°37.5
16	188°57.8	9.0'	17°56.2	13.5'	59.1'	107°58.0	105°19.3	80°25.1	27°47.9	71° 18.8	81°23.7	115°07.5	117°13.0
17	203°25.8	9.1'	17°42.6	13.6'	59.1'	107°23.1	104°44.5	79°51.6	27°12.5	71°54.3	81°51.2	115°36.4	117°48.4
18	217°54.0	9.2'	S 17°29.0	13.7'	59.1'	106°48.2	104°09.8	79°18.0	26°37.0	72°29.7	82°18.6	116°05.1	118°23.9
19	232°22.2	9.3'	$17^{\circ}15.2$	13.8'	59.2'	106°13.3	103°35.0	78°44.4	26°01.6	73°05.2	82°46.1	116°33.9	118°59.3
20	246°50.4	9.4'	$17^{\circ}01.4$	13.9'	59.2'	105°38.4	103°00.2	78°10.8	25°26.1	73°40.7	83°13.7	117°02.5	119°34.8
21	261°18.8	9.4'	16°47.4	14.0'	59.2'	105°03.5	102°25.4	77°37.2	24°50.7	74°16.2	83°41.2	117°31.1	
22	275°47.2	9.5'	16°33.4	14.1'	59.2'	104°28.5	101°50.6	77°03.6	24°15.2	74°51.7	84°08.8	$117^{\circ}59.7$	
23	290°15.8	9.6'	16°19.3	14.2'	59.2'	103°53.6	101°15.8	76°30.0	23°39.7	75°27.1	84°36.3	118°28.2	
25 th	SD :	= 16.1	Mer. pas	s. 02:56	i								

h Moon (26th Jun)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Capella	-Aldebaran	-Jupiter	-Saturn	+Antares	+Rigil Kent.	+Hadar	+Arcturus
0	304°44.4	9.7'	S 16°05.0	14.3'	59.2'	115°08.1	103°18.6	100°41.0	23°04.2	76°02.6	85°04.0	89°06.8	118° 56.6
1	319°13.0	9.7'	15°50.7	14.4'	59.2'	114°34.8	102°43.7	100°06.1	22°28.7	76°38.2	85°31.6	89°33.7	119°24.9
2	333°41.8	9.8'	15°36.3	14.5'	59.2'	114°01.4	102°08.7	99°31.3	21°53.2	77°13.7	85°59.2	90°00.7	119°53.2
3	348°10.6	9.9'	15°21.8	14.6'	59.2'	113°28.0	101°33.7	98° 56.5	21°17.7	77°49.2	86°26.9	90°27.6	
4	2°39.5	10.0'	15°07.2	14.7'	59.2'	112°54.5	100°58.7	98°21.6	20°42.2	78°24.7	86°54.5	90°54.6	
5	17°08.4	10.0'	14°52.6	14.7'	59.2'	$112^{\circ}21.1$	100°23.7	97°46.8	20°06.7	79°00.2	87°22.2	91°21.6	
6	31°37.5	10.1'	S 14°37.8	14.8'	59.2'	111°47.6	99°48.7	$97^{\circ}11.9$	19°31.2	79°35.8	87°49.9	91°48.5	
7	46°06.6	10.2'	14°23.0	14.9'	59.2'	111° 14.1	99°13.7	96°37.1	18°55.7	80°11.3	88°17.6	92° 15.5	
8	60°35.8	10.2'	14°08.1	15.0'	59.2'	110°40.6	98°38.7	96°02.2	18°20.1	80°46.8	88°45.3	92°42.4	
9	75°05.0	10.3'	13°53.1	15.1'	59.2'	110°07.1	98°03.7	95°27.3	17°44.6	81°22.4	89°13.0	93°09.4	
10	89°34.3	10.4'	13°38.0	15.1'	59.2'	109°33.5	97°28.7	94°52.5	17°09.1	81°57.9	89°40.7	93°36.3	
11	104°03.7	10.5'	13°22.9	15.2'	59.3'	109°00.0	96°53.6	94° 17.6	16°33.5	82°33.5	90°08.4	94°03.2	
12	118°33.2	10.5'	S 13°07.7	15.3'	59.3'	108°26.4	96°18.6	93°42.7	15°58.0	83°09.0	90°36.1	94°30.2	
13	133°02.7	10.6'	12°52.4	15.4'	59.3'	107°52.8	95°43.6	93°07.9	15°22.5	83°44.6	91°03.9	94°57.1	
14	147°32.3	10.6'	12°37.1	15.4'	59.3'	$107^{\circ}19.2$	95°08.5	92°33.0	14°46.9	84°20.1	91°31.6	95°24.0	
15	162°01.9	10.7'	$12^{\circ}21.6$	15.5'	59.3'	106° 45.5	94°33.5	91°58.1	14°11.4	84°55.7	91°59.3	95°50.9	
16	176°31.6	10.8'	$12^{\circ}06.1$	15.6'	59.3'	106° 11.9	93°58.4	91°23.2	13°35.8	85°31.3	92°27.0	96° 17.8	
17	191°01.4	10.8'	$11^{\circ}50.6$	15.6'	59.3'	105°38.2	93°23.4	90°48.3	13°00.3	86°06.8	92°54.7	96°44.6	
18	205°31.2	10.9'	S 11°35.0	15.7'	59.3'	105°04.6	92°48.3	90°13.4	12°24.7	86°42.4	93°22.4	97° 11.5	
19	220°01.1	10.9'	11°19.3	15.7'	59.3'	104°30.9	92°13.3	89°38.5	11°49.2	87°18.0	93°50.1	97°38.3	
20	234°31.0	11.0'	$11^{\circ}03.6$	15.8'	59.3'	103°57.2	91°38.2	89°03.6	11°13.6	87°53.5	94°17.8	98°05.1	
21	249°01.0	11.1'	10°47.8	15.9'	59.3'	103°23.5	91°03.2	88°28.7	10°38.0	88°29.1	94°45.5	98°31.9	
22	263°31.1	11.1'	10°31.9	15.9'	59.3'	102°49.8	90°28.1	87°53.9	10°02.5	89°04.7	95°13.1	98°58.6	
23	278°01.2	11.2'	$10^{\circ}16.0$	16.0'	59.3'	102°16.1	89°53.1	87° 19.0	9°26.9	89°40.2	95°40.8	99°25.4	
26 th	SD	= 16.1'	Mer. pass	. 03:49									

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

									000000		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Thu	GHA	ν	Dec	d	HP	-Capella	-Aldebaran	-Jupiter	±Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar
0	292°31.4	11.2'	$\mathbf{S}10^{\circ}00.0$	16.0'	59.3'	101°42.3	89°18.0	86°44.1	8°51.4	48°41.8	90°15.8	96°08.4	99°52.1
1	307°01.6	11.3'	09°44.0	16.1'	59.3'	101°08.6	88°42.9	86°09.2	8° 15.8	49°05.6	90°51.4	96°36.1	100°18.8
2	321°31.9	11.3'	09°28.0	16.1'	59.3'	100°34.8	88°07.9	85°34.3	7°40.2	49°29.6	91°27.0	97°03.7	100°45.4
3	336°02.2	11.4'	$09^{\circ}11.8$	16.2'	59.3'	100°01.1	87°32.8	84°59.4	7°04.7	49°53.8	92°02.5	97°31.3	101°12.1
4	350°32.6	11.4'	08° 55.7	16.2'	59.3'	99°27.3	86°57.8	84°24.5	6°29.1	50° 18.2	92°38.1	97°58.8	101°38.6
5	5°03.0	11.5'	08°39.5	16.3'	59.3'	98°53.6	86°22.7	83°49.6	5°53.5	50°42.7	93°13.7	98°26.4	102°05.2
6	19°33.5	11.5'	S 08°23.2	16.3'	59.3'	98°19.8	85°47.6	83°14.7	5°18.0	51°07.4	93°49.3	98°53.9	102°31.7
7	34°04.0	11.6'	$08^{\circ}06.9$	16.3'	59.3'	97°46.0	85°12.6	82°39.8	4°42.4	51°32.2	94°24.8	99°21.4	102°58.2
8	48°34.5	11.6'	$07^{\circ}50.6$	16.4'	59.3'	97°12.2	84°37.5	82°04.9	4°06.9	51°57.2	95°00.4	99°48.9	103°24.7
9	63°05.1	11.6'	07°34.2	16.4'	59.3'	96°38.4	84°02.5	81°30.0	3°31.3	52°22.3	95°36.0	100°16.4	103°51.1
10	77°35.8	11.7'	07° 17.8	16.5'	59.3'	96°04.7	83°27.4	80°55.1	2°55.7	52°47.5	96°11.6	100°43.8	104°17.4
11	92°06.4	11.7'	$07^{\circ}01.4$	16.5'	59.3'	95°30.9	82°52.4	80°20.2	2°20.2	53° 12.9	96°47.1	101°11.2	104°43.8
12	106°37.2	11.8'	S 06°44.9	16.5'	59.3'	94°57.1	82°17.3	79°45.3	1°44.7	53°38.5	97°22.7	101°38.6	105°10.0
13	121°07.9	11.8'	06°28.4	16.6'	59.3'	94°23.3	81°42.3	79°10.4	1°09.1	54°04.1	97°58.3	102°05.9	105°36.3
14	135°38.7	11.8'	$06^{\circ}11.8$	16.6'	59.3'	93°49.5	81°07.3	78°35.6	0°33.7	54°29.9	98°33.8	102°33.2	106°02.5
15	150°09.5	11.9'	05°55.2	16.6'	59.3'	93°15.7	80°32.2	78°00.7		54°55.8	99°09.4	103°00.5	106°28.6
16	164°40.4	11.9'	05°38.6	16.6'	59.3'	92°41.9	79°57.2	77°25.8		55°21.8	99°44.9	103°27.7	106°54.7
17	179°11.3	11.9'	05°22.0	16.7'	59.3'	92°08.1	79°22.2	76°50.9		55°48.0	100°20.5	103°54.9	107°20.7
18	193°42.2	12.0'	S 05°05.3	16.7'	59.3'	91°34.3	78°47.2	76°16.1	1°48.8	56° 14.2	100°56.1	104°22.0	107°46.7
19	208°13.2	12.0'	04°48.6	16.7'	59.3'	91°00.5	78°12.1	75°41.2	2°24.3	56°40.6	101°31.6	104°49.1	108°12.6
20	222°44.1	12.0'	$04^{\circ}31.9$	16.7'	59.3'	90°26.7	77°37.1	75°06.3	2°59.9	57°07.1	102°07.2	105°16.2	108°38.4
21	237°15.2	12.0'	$04^{\circ}15.2$	16.8'	59.3'	89°52.9	77°02.1	74°31.5	3°35.4	57°33.6	102°42.7	105°43.2	109°04.2
22	251°46.2	12.1'	03°58.4	16.8'	59.3'	89°19.1	76°27.1	73°56.6	4°10.9	58°00.3	103°18.2	106°10.2	109°30.0
23	266°17.2	12.1'	03°41.7	16.8'	59.3'	88°45.4	75°52.1	73°21.8	4°46.5	58°27.1	103°53.8	106°37.1	109°55.7
27 th	SD	= 16.2'	Mer. pass	. 04:39									

h		Moor	n (28 th Ju	n)			Lunar Di	stance (objects v	vith large	st hourly LD) delta)	
Fri	GHA	ν	Dec	d	HP	-Capella	-Aldebaran	-Jupiter	-Mars	+Saturn	+Fomalhaut	+Altair	+Antares
0	280°48.3	12.1'	S 03°24.9	16.8'	59.3'	88°11.6	75°17.1	72°46.9	49°01.0	5°22.0	28°05.6	58°54.0	104° 29.3
1	295°19.4	12.1'	$03^{\circ}08.1$	16.8'	59.3'	87°37.8	74°42.1	72°12.1	48°27.4	5°57.5	28°32.6	59°20.9	105°04.9
2	309°50.6	12.1'	02°51.2	16.8'	59.3'	87°04.0	74°07.2	71°37.2	47°53.8	6°33.1	28°59.8	59°48.0	105°40.4
3	324°21.7	12.2'	02°34.4	16.8'	59.3'	86°30.3	73°32.2	71°02.4	47°20.3	7°08.6	29°27.2	60°15.1	106°15.9
4	338°52.9	12.2'	02°17.6	16.9'	59.3'	85°56.5	72°57.2	70°27.5	46°46.7	7°44.1	29°55.0	60°42.3	106°51.4
5	353°24.0	12.2'	$02^{\circ}00.7$	16.9'	59.3'	85°22.8	72°22.3	69°52.7	46°13.1	8°19.6	30°22.9	61°09.6	107°27.0

3	324°21.7	12.2'	02°34.4	16.8'	59.3'	86°30.3	73°32.2	71°02.4	47°20.3	7°08.6	29°27.2	60°15.1	106°15.9
4	338°52.9	12.2'	02°17.6	16.9'	59.3'	85°56.5	72°57.2	70°27.5	46°46.7	7°44.1	29°55.0	60°42.3	106°51.4
5	353°24.0	12.2'	02°00.7	16.9'	59.3'	85°22.8	72°22.3	69°52.7	46°13.1	8°19.6	30°22.9	61°09.6	107°27.0
6	7°55.2	12.2'	S 01°43.9	16.9'	59.3'	84°49.0	71°47.3	69°17.9	45°39.5	8°55.1	30°51.1	61°37.0	108°02.5
7	22°26.4	12.2'	$01^{\circ}27.0$	16.9'	59.3'	84°15.3	71°12.4	68°43.1	45°06.0	9°30.6	31°19.6	62°04.4	108°38.0
8	36°57.6	12.2'	$01^{\circ}10.1$	16.9'	59.3'	83°41.6	70°37.5	68°08.3	44°32.4	10°06.1	31°48.2	62°32.0	109°13.5
9	51°28.9	12.2'	00°53.3	16.9'	59.3'	83°07.8	70°02.5	67°33.5	43°58.9	10°41.6	32°17.0	62°59.6	109°49.0
10	66°00.1	12.2'	00°36.4	16.9'	59.3'	82°34.1	69°27.6	66° 58.7	43°25.4	11°17.1	32°46.1	63°27.2	110°24.5
11	80°31.3	12.2'	$00^{\circ}19.5$	16.9'	59.3'	82°00.4	68°52.7	66°23.9	42°51.8	11°52.6	33°15.3	63°55.0	111°00.0
12	95°02.6	12.3'	S 00°02.6	16.9'	59.3'	81°26.7	68°17.8	65°49.1	42°18.3	12°28.1	33°44.6	64°22.8	111°35.5
13	109°33.8	12.3'	N 00°14.2	16.9'	59.3'	80°53.0	67°43.0	65°14.3	41°44.8	13°03.5	34°14.2	64°50.6	112°11.0
14	124°05.1	12.3'	00°31.1	16.9'	59.3'	80°19.4	67°08.1	64°39.5	41°11.3	13°39.0	34°43.9	65°18.6	112°46.4
15	138°36.3	12.3'	00°48.0	16.9'	59.2'	79°45.7	66°33.2	64°04.8	40°37.8	14°14.5	35°13.7	65°46.5	113°21.9
16	153°07.6	12.3'	$01^{\circ}04.8$	16.9'	59.2'	79°12.1	65°58.4	63°30.0	40°04.3	14°49.9	35°43.8	66°14.6	113°57.4
17	167°38.8	12.3'	$01^{\circ}21.7$	16.8'	59.2'	78°38.4	65°23.5	62°55.3	39°30.8	15°25.4	36°13.9	66°42.7	114°32.8
18	182°10.1	12.3'	N01°38.5	16.8'	59.2'	78°04.8	64°48.7	62°20.5	38°57.4	16°00.9	36°44.2	67°10.8	115°08.3
19	196°41.4	12.2'	01°55.4	16.8'	59.2'	77°31.2	64°13.9	61°45.8	38°23.9	16°36.3	37°14.6	67°39.0	115°43.7
20	211°12.6	12.2'	$02^{\circ}12.2$	16.8'	59.2'	76°57.6	63°39.1	61°11.0	37°50.5	17°11.7	37°45.1	68°07.3	116°19.2
21	225°43.8	12.2'	02°29.0	16.8'	59.2'	76°24.0	63°04.3	60°36.3	37°17.1	17°47.2	38°15.7	68°35.6	116°54.6
22	240°15.1	12.2'	02°45.8	16.8'	59.2'	75°50.4	62°29.5	60°01.6	36°43.6	18°22.6	38°46.5	69°04.0	117°30.0
23	254°46.3	12.2'	03°02.5	16.8'	59.2'	75°16.9	61°54.7	59°26.9	36°10.2	18°58.0	39°17.3	69°32.4	118°05.5
28 th	SD	= 16.2'	Mer. pass	. 05:27							-		

Mer. pass. 06:15

 $\mathsf{SD} = \mathsf{16.1'}$

29th

h		Мооі	n (29 th Ju	n)			Lunar Di	stance (objects v	vith large	st hourly LD	O delta)	
Sat	GHA	ν	Dec	d	HP	-Capella	-Aldebaran	-Jupiter	-Mars	+Saturn	+Fomalhaut	+Altair	+Antares
0	269°17.5	12.2'	N 03°19.3	16.7'	59.2'	74°43.3	61°20.0	58°52.2	35°36.8	19°33.4	39°48.3	70°00.8	118°40.9
1	283°48.7	12.2'	03°36.0	16.7'	59.2'	74°09.8	60°45.2	58° 17.5	35°03.4	20°08.8	40°19.3	70°29.3	119° 16.3
2	298°19.9	12.2'	03°52.7	16.7'	59.2'	73°36.3	60°10.5	57°42.8	34°30.1	20°44.2	40°50.4	70°57.8	119°51.7
3	312°51.1	12.2'	04°09.4	16.7'	59.2'	73°02.8	59°35.8	57°08.2	33°56.7	21°19.6	41°21.7	71°26.4	
4	327°22.2	12.1'	04°26.1	16.6'	59.2'	72°29.4	59°01.1	56°33.5	33°23.4	21°55.0	41°53.0	71°55.0	
5	341°53.4	12.1'	04°42.8	16.6'	59.2'	71°55.9	58°26.4	55°58.9	32°50.0	22°30.4	42°24.4	72°23.6	
6	356°24.5	12.1'	N04°59.4	16.6'	59.2'	71°22.5	57°51.8	55°24.2	32°16.7	23°05.8	42°55.8	72°52.3	
7	10°55.6	12.1'	$05^{\circ}16.0$	16.6'	59.2'	70°49.1	57°17.1	54°49.6	31°43.4	23°41.2	43°27.4	73°21.0	
8	25°26.7	12.1'	05°32.5	16.5'	59.2'	70°15.7	56°42.5	54°15.0	31°10.1	24°16.5	43°59.0	73°49.7	
9	39°57.7	12.0'	05°49.0	16.5'	59.1'	69°42.3	56°07.9	53°40.3	30°36.9	24°51.9	44°30.7	74°18.4	
10	54°28.7	12.0'	06°05.5	16.5'	59.1'	69°09.0	55°33.3	53°05.7	30°03.6	25°27.2	45°02.4	74°47.2	
11	68°59.7	12.0'	06°22.0	16.4'	59.1'	68°35.7	54°58.7	52°31.2	29°30.4	26°02.6	45°34.3	75°16.0	
12	83°30.7	12.0'	N 06°38.4	16.4'	59.1'	68°02.4	54°24.1	51°56.6	28°57.2	26°37.9	46°06.1	75°44.9	
13	98°01.7	11.9'	06°54.8	16.3'	59.1'	67°29.1	53°49.6	51°22.0	28°24.0	27°13.2	46°38.1	76°13.8	
14	112°32.6	11.9'	$07^{\circ}11.1$	16.3'	59.1'	66°55.8	53°15.1	50°47.4	27°50.8	27°48.5	47°10.0	76°42.6	
15	127°03.5	11.9'	07°27.5	16.3'	59.1'	66°22.6	52°40.6	50°12.9	27°17.6	28°23.8	47°42.1	77°11.6	
16	141°34.4	11.8'	07°43.7	16.2'	59.1'	65°49.4	52°06.1	49°38.4	26°44.5	28°59.1	48°14.2	77°40.5	
17	156°05.2	11.8'	0.00°80	16.2'	59.1'	65°16.2	51°31.6	49°03.8	26°11.4	29°34.4	48°46.3	78°09.4	
18	170°36.0	11.8'	$N08^{\circ}16.1$	16.1'	59.1'	64°43.1	50°57.2	48°29.3	25°38.3	30°09.7	49°18.5	78°38.4	
19	185°06.7	11.7'	08°32.3	16.1'	59.1'	64°10.0	50°22.8	47°54.8	25°05.3	30°45.0	49°50.7	79°07.4	
20	199°37.5	11.7'	08°48.4	16.0'	59.1'	63°36.9	49°48.4	47°20.4	24°32.2	31°20.2	50°23.0	79°36.4	
21	214°08.1	11.6'	09°04.4	16.0'	59.1'	63°03.8	49°14.0	46°45.9	23°59.2	31°55.5	50°55.3	80°05.4	
22	228°38.8	11.6'	09°20.4	15.9'	59.0'	62°30.8	48°39.7	46°11.4	23°26.2	32°30.7	51°27.6	80°34.4	
23	243°09.4	11.6'	09°36.3	15.9'	59.0'	61°57.8	48°05.4	45°37.0	22°53.3	33°06.0	52°00.0	81°03.5	

h		Moor	n (30 th Ju	n)			Lunar I	Distance (c	bjects w	ith large	st hourly	LD delta)	
Sun	GHA	ν	Dec	d	HP	-Sun	-Capella	-Aldebaran	-Jupiter	-Mars	+Saturn	+Fomalhaut	+Altair
0	257°39.9	11.5'	N09°52.2	15.8'	59.0'	75°43.4	61°24.9	47°31.1	45°02.5	22°20.4	33°41.2	52°32.4	81°32.5
1	272°10.5	11.5'	10°08.0	15.8'	59.0'	75°10.7	60°51.9	46°56.8	44°28.1	21°47.5	34°16.4	53°04.9	82°01.6
2	286°40.9	11.4'	10°23.8	15.7'	59.0'	74°38.0	60°19.0	46°22.6	43°53.7	21°14.6	34°51.6	53°37.4	82°30.6
3	301°11.4	11.4'	10°39.5	15.7'	59.0'	74°05.3	59°46.2	45°48.3	43°19.3	20°41.8	35°26.8	54°09.9	82°59.7
4	315°41.7	11.3'	10°55.2	15.6'	59.0'	73°32.7	59°13.3	45°14.2	42°45.0	20°09.0	36°02.0	54°42.4	83°28.8
5	330°12.1	11.3'	$11^{\circ}10.8$	15.5'	59.0'	73°00.0	58°40.6	44°40.0	42°10.6	19°36.3	36°37.2	55°15.0	83°57.9
6	344°42.4	11.2'	N11°26.3	15.5'	59.0'	72°27.4	58°07.8	44°05.9	41°36.3	19°03.6	37°12.4	55°47.6	84°27.0
7	359°12.6	11.2'	11°41.8	15.4'	59.0'	71°54.7	57°35.1	43°31.8	41°02.0	18°31.0	37°47.6	56°20.2	84°56.1
8	13°42.8	11.1'	11°57.2	15.3'	59.0'	71°22.1	57°02.4	42°57.7	40°27.6	17°58.4	38°22.7	56°52.9	85°25.1
9	28°12.9	11.1'	12°12.6	15.3'	58.9'	70°49.5	56°29.8	42°23.7	39°53.4	17°25.9	38°57.9	57°25.5	85°54.2
10	42°43.0	11.0'	12°27.8	15.2'	58.9'	70°16.9	55°57.2	41°49.7	39°19.1	16°53.4	39°33.0	57°58.2	86°23.3
11	57°13.0	11.0'	12°43.0	15.1'	58.9'	69°44.3	55°24.7	41° 15.8	38°44.8	16°21.0	40°08.1	58°30.9	86°52.4
12	71°43.0	10.9'	N 12°58.2	15.1'	58.9'	69°11.8	54°52.2	40°41.8	38°10.6	15°48.7	40°43.2	59°03.7	87°21.5
13	86°12.9	10.9'	13°13.2	15.0'	58.9'	68°39.2	54°19.7	40°08.0	37°36.4	15°16.4	41°18.3	59°36.4	87°50.6
14	100°42.8	10.8'	13°28.2	14.9'	58.9'	68°06.6	53°47.3	39°34.1	37°02.2	14°44.2	41°53.4	60°09.2	88°19.7
15	115°12.6	10.7'	13°43.2	14.8'	58.9'	67°34.1	53°15.0	39°00.3	36°28.0	14°12.2	42°28.5	60°42.0	88°48.8
16	129°42.3	10.7'	13°58.0	14.8'	58.9'	67°01.6	52°42.7	38°26.6	35°53.8	13°40.2	43°03.6	61°14.8	89°17.8
17	144°12.0	10.6'	14°12.8	14.7'	58.9'	66°29.1	52°10.4	37° 52.9	35°19.7	13°08.3	43°38.7	61°47.6	89°46.9
18	158°41.6	10.6'	N14°27.4	14.6'	58.9'	65°56.6	51°38.2	37° 19.2	34°45.6	12°36.6	44°13.7	62°20.4	90°16.0
19	173°11.2	10.5'	14°42.0	14.5'	58.8'	65°24.1	$51^{\circ}06.1$	36°45.6	34°11.5	12°05.0	44°48.7	62°53.2	90°45.0
20	187°40.7	10.4'	14°56.6	14.4'	58.8'	64°51.6	50°34.0	36° 12.0	33°37.4	11°33.6	45°23.8	63°26.1	91°14.0
21	202°10.1	10.4'	15°11.0	14.4'	58.8'	64°19.1	50°02.0	35° 38.5	33°03.4	11°02.4	45°58.8	63°58.9	91°43.1
22	216°39.5	10.3'	15°25.4	14.3'	58.8'	63°46.7	49°30.0	35°05.0	32°29.4	10°31.4	46°33.8	64°31.8	92°12.1
23	231°08.8	10.2'	15°39.6	14.2'	58.8'	63°14.2	48°58.1	34°31.6	31°55.4	10°00.6	47°08.8	65°04.7	92°41.1
30 th	SD	$= 16.1^{\prime}$	Mer. pass	. 07:03					Sun SE	0 = 15.7'			

$\overline{}$																
h		Mod	n (1 st Jul)		Lunar Distance (objects with largest hourly LD delta) HP -Sun -Capella -Aldebaran -Jupiter +Saturn +Fomalbaut +Achernar +Altair										
Mon	GHA	ν	Dec	d	HP	-Sun	-Capella	-Aldebaran	-Jupiter	+Saturn	+Fomalhaut	+Achernar	+Altair			
0	245°38.0	10.2'	$N15^{\circ}53.8$	14.1'	58.8'	62°41.8	48°26.2	33°58.3	31°21.4	47°43.8	65°37.6	73°24.6	93°10.0			
1	260°07.2	10.1'	$16^{\circ}07.9$	14.0'	58.8'	62°09.4	47°54.5	33°25.0	30°47.4	48°18.7	66°10.4	73°41.7	93°39.0			
2	274°36.3	10.0'	16°21.9	13.9'	58.8'	61°37.0	47°22.7	32°51.7	30°13.5	48°53.7	66°43.3	73°58.8	94°08.0			
3	289°05.3	10.0'	16° 35.8	13.8'	58.7'	61°04.6	46°51.1	32°18.6	29°39.6	49°28.6	67°16.2	74°15.9	94°36.9			
4	303°34.3	9.9'	16°49.6	13.7'	58.7'	60°32.3	46°19.5	31°45.5	29°05.8	50°03.6	67°49.2	74°33.2	95°05.8			
5	318°03.2	9.8'	17°03.3	13.6'	58.7'	59°59.9	45°48.0	31°12.5	28°32.0	50°38.5	68°22.1	74°50.5	95°34.7			
6	332°32.0	9.8'	N17°16.9	13.5'	58.7'	59°27.6	45°16.6	30°39.5	27°58.2	51°13.4	68°55.0	75°07.8	96°03.6			
7	347°00.8	9.7'	17° 30.4 17° 43.8	13.4'	58.7'	58°55.2	44°45.3	30°06.6	27°24.4	51°48.3	69°27.9	75°25.3	96°32.4			
8 9	1°29.4 15°58.1	9.6' 9.5'	17°43.8 17°57.2	13.3' 13.2'	58.7' 58.7'	58°22.9 57°50.6	44°14.0 43°42.8	29°33.8 29°01.1	26°50.7 26°17.0	52°23.2 52°58.1	70°00.8 70°33.8	75°42.8 76°00.3	97°01.2 97°30.0			
10	30°26.6	9.5 9.5'	17 57.2 18° 10.4	13.1'	58.7'	57° 50.6	43°42.8 43°11.7	29 01.1 28°28.5	25°43.4	52 58.1 53°32.9	70 33.8 71°06.7	76 00.3 76°17.9	97°58.8			
11	44°55.1	9.4'	18° 23.5	13.0'	58.6'	56°46.1	43° 11.7	27°56.0	25°09.8	54°07.8	71°39.6	76°35.6	98°27.6			
12	59°23.5	9.3'	N18° 36.5	12.9'	58.6'	56° 13.8	42°09.8	27°23.6	24°36.2	54°42.6	72°12.5	76°53.4	98°56.3			
13	73°51.8	9.2'	18° 49.4	12.8'	58.6'	55°41.6	41°39.0	26°51.2	24°02.7	55°17.4	72°45.5	77°11.1	99°25.0			
14	88°20.0	9.2'	19°02.2	12.7'	58.6'	55°09.4	41°08.3	26°19.0	23°29.2	55°52.2	73°18.4	77°29.0	99°53.6			
15	102°48.2	9.1'	$19^{\circ}14.8$	12.6'	58.6'	54°37.2	40°37.7	25°46.9	22°55.8	56°27.0	73°51.3	77°46.9	100°22.3			
16	$117^{\circ}16.3$	9.0'	19°27.4	12.4'	58.6'	54°05.0	40°07.2	25°15.0	22°22.4	57°01.8	74°24.2	78°04.8	100°50.9			
17	131°44.3	8.9'	19°39.8	12.3'	58.6'	53°32.8	39°36.8	24°43.1	21°49.1	57°36.6	74°57.1	78°22.8	101°19.4			
18	$146^{\circ}12.3$	8.9'	$N19^{\circ}52.2$	12.2'	58.6'	53°00.6	39°06.5	24°11.4	21°15.8	58°11.3	75°30.0	78°40.8	101°48.0			
19	160°40.2	8.8'	20°04.4	12.1'	58.5'	52°28.5	38°36.3	23°39.9	20°42.7	58°46.1	76°03.0	78°58.9	102°16.5			
20	175°08.0	8.7'	20°16.5	12.0'	58.5'	51°56.4	38°06.3	23°08.5	20°09.5	59°20.8	76°35.9	79°17.0	102°44.9			
21	189°35.7	8.6'	20°28.5	11.9'	58.5'	51°24.3	37°36.4	22°37.3	19°36.5	59°55.5	77°08.8	79°35.1	103°13.3			
22	204°03.3	8.6'	20°40.3	11.7'	58.5'	50°52.2 50°20.1	37°06.6	22°06.2	19°03.5	60°30.2	77°41.6	79°53.3	103°41.7			
23							36°36.9	21°35.3	18°30.6	61°04.9	78°14.5	80°11.6	104°10.1			
1 st	SD	= 16.0'	Mer. pass	. 07:54		$Sun\;SD=15.7'$										

h	Moon	(2 nd	Jul)	١

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA ν Dec d I					-Sun	-Capella	-Aldebaran	-Jupiter	+Mars	+Saturn	+Fomalhaut	+Altair
0	232°58.4	8.4'	N21°03.7	11.5'	58.5'	49°48.1	36°07.4	21°04.7	17°57.8		61°39.5	78°47.4	104°38.4
1	247°25.8	8.3'	21°15.2	11.4'	58.5'	49°16.0	35°38.0	20°34.2	17°25.1		62°14.2	79°20.3	105°06.6
2	261°53.2	8.3'	21°26.5	11.2'	58.4'	48°44.0	35°08.8	20°04.0	16°52.5		62°48.8	79°53.1	105°34.8
3	276°20.4	8.2'	21°37.8	11.1'	58.4'	48°12.0	34°39.8	19°34.0	16°20.0	7°13.8	63°23.4	80°26.0	106°03.0
4	290°47.6	8.1'	21°48.9	11.0'	58.4'	47°40.0	34°10.9	19°04.3	15°47.6	7°42.0	63°58.1	80°58.8	106°31.1
5	305°14.7	8.0'	21°59.8	10.8'	58.4'	47°08.1	33°42.1	18°34.9	15° 15.3	8°10.7	64°32.6	81°31.7	106°59.2
6	319°41.8	8.0'	$N22^{\circ}10.7$	10.7'	58.4'	46°36.2	33°13.6	18°05.7	14°43.2	8°39.8	65°07.2	82°04.5	107°27.2
7	334°08.8	7.9'	22°21.4	10.6'	58.4'	46°04.2	32°45.2	17°36.9	14°11.3	9°09.4	65°41.8	82°37.3	107°55.2
8	348°35.7	7.8'	22°32.0	10.4'	58.3'	45°32.3	32°17.1	17°08.5	13°39.6	9°39.3	66°16.3	83°10.1	108°23.1
9	3°02.5	7.7'	22°42.4	10.3'	58.3'	45°00.5	31°49.1	16°40.4	13°08.0	10°09.5	66°50.9	83°42.9	108°51.0
10	17°29.2	7.7'	22°52.7	10.2'	58.3'	44°28.6	31°21.3	16°12.8	12°36.6	10°39.8	67°25.4	84°15.7	109°18.8
11	31°55.9	7.6'	23°02.9	10.0'	58.3'	43°56.8	30°53.8	15°45.6	12°05.6	11°10.4	67°59.9	84°48.5	109°46.6
12	46°22.5	7.5'	N23°12.9	9.9'	58.3'	43°24.9	30°26.4	15° 18.9	11°34.7	11°41.2	68°34.3	85°21.2	110°14.3
13	60°49.0	7.5'	23°22.8	9.7'	58.3'	42°53.2	29°59.3	14°52.7	11°04.2	12°12.1	69°08.8	85°54.0	110°42.0
14	75°15.5	7.4'	23°32.6	9.6'	58.2'	42°21.4	29°32.5	14°27.1	10°34.1	12°43.2	69°43.2	86°26.7	111°09.5
15	89°41.9	7.3'	23°42.2	9.5'	58.2'	41°49.6	29°05.9	14°02.2	10°04.3	13°14.3	70°17.7	86°59.4	111°37.1
16	104°08.2	7.3'	23°51.6	9.3'	58.2'	41°17.9	28°39.6	13°37.9	9°35.1	13°45.6	70°52.1	87°32.1	112°04.5
17	118°34.5	7.2'	24°00.9	9.2'	58.2'	40°46.2	28°13.5	13°14.4	9°06.3	14°16.9	71°26.5	88°04.8	112°31.9
18	133°00.6	7.1'	N24°10.1	9.0'	58.2'	40°14.5	27°47.8	12°51.6	8°38.2	14°48.3	72°00.9	88°37.5	112°59.3
19	147°26.8	7.0'	24°19.1	8.9'	58.2'		27°22.3	12°29.8	8°10.8	15°19.7	72°35.2	89°10.2	113°26.5
20	161°52.8	7.0'	24°28.0	8.7'	58.1'		26°57.2	12°08.9	7°44.3	15°51.3	73°09.6	89°42.8	113°53.7
21	176°18.8	6.9'	24°36.7	8.6'	58.1'		26°32.4			16°22.8	73°43.9	90°15.4	114°20.9
22	190°44.7	6.9'	24°45.2	8.4'	58.1'		26°07.9			16°54.4	74°18.2	90°48.0	114°47.9
23	205°10.6 6.8' 24°53.6 8.3' 58.1					$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							
2 nd	SD	= 15.9	Mer. pas	s. 08:47		SunSD=15.7'							

Lunar Distance (objects with largest hourly LD delta)

h		Моо	n (3 rd Jul)		Lunar Distance (objects with largest hourly LD delta)							
Wed	GHA	ν	Dec	d	HP	-Sirius	-Betelgeuse	-Capella	+Jupiter	+Mars	+Saturn	+Fomalhaut	+Altair
0	219°36.3	6.7'	N 25°01.9	8.1'	58.1'	56°53.8	31°23.5	25°20.1		17°57.7	75°26.8	91°53.2	115°41.8
1	234°02.1	6.7'	25°10.0	7.9'	58.1'	56°35.2	30°58.7	24°56.8		18°29.4	76°01.0	92°25.7	116°08.6
2	248°27.7	6.6'	25°18.0	7.8'	58.0'	56°16.8	30°34.2	24°33.8		19°01.2	76°35.3	92°58.3	116°35.4
3	262°53.3	6.5'	25°25.7	7.6'	58.0'	55°58.5	30°09.9	24°11.3		19°32.9	77°09.5	93°30.8	117°02.1
4	277°18.9	6.5'	25°33.4	7.5'	58.0'	55°40.5	29°46.0	23°49.3		20°04.7	77°43.7	94°03.3	117°28.6
5	291°44.4	6.4'	25°40.8	7.3'	58.0'	55°22.6	29°22.5	23°27.7		20°36.4	78°17.9	94°35.7	117°55.1
6	306°09.8	6.4'	N 25°48.2	7.1'	58.0'	55°04.9	28°59.2	23°06.6		21°08.2	78°52.0	95°08.2	118°21.6
7	320°35.2	6.3'	25°55.3	7.0'	58.0'	54°47.4	28°36.3	22°46.1		21°40.0	79°26.2	95°40.6	118°47.9
8	335°00.5	6.3'	26°02.3	6.8'	57.9'	54°30.0	28° 13.8	22°26.0		22°11.8	80°00.3	96°13.0	119°14.1
9	349°25.8	6.2'	$26^{\circ}09.1$	6.7'	57.9'	54°12.9	27°51.6	22°06.5		22°43.6	80°34.4	96°45.4	119°40.3
10	3°51.0	6.2'	$26^{\circ}15.8$	6.5'	57.9'	53°55.9	27°29.8	21°47.6		23° 15.4	81°08.5	97°17.8	
11	18°16.2	6.1'	26°22.3	6.3'	57.9'	53°39.2	27°08.4	21°29.3		23°47.2	81°42.5	97°50.1	
12	32°41.3	6.1'	N 26°28.6	6.2'	57.9'	53°22.6	26°47.5	21°11.6		24° 19.0	82°16.6	98°22.4	
13	47°06.4	6.0'	26°34.8	6.0'	57.8'	53°06.2	26°26.9	20°54.6		24°50.8	82°50.6	98°54.7	
14	61°31.4	6.0'	26°40.8	5.8'	57.8'	52°50.1	26°06.8	20°38.3		25°22.6	83°24.6	99°27.0	
15	75°56.4	6.0'	26°46.6	5.7'	57.8'	52°34.1	25°47.2	20°22.6		25°54.4	83°58.6	99°59.2	
16	90°21.4	5.9'	26°52.3	5.5'	57.8'	52°18.4	25°28.0			26°26.1	84°32.6	100°31.5	
17	104°46.3	5.9'	26°57.8	5.3'	57.8'	52°02.9	25°09.4			26° 57.9	85°06.5	101°03.7	
18	119°11.2	5.8'	N27°03.1	5.2'	57.7'	51°47.6	24°51.2			27° 29.7	85°40.4	101°35.8	
19	133°36.0	5.8'	27°08.2	5.0'	57.7'	51°32.5	24°33.6		8°27.3	28°01.4	86°14.3	102°08.0	
20	148°00.8	5.8'	27°13.2	4.8'	57.7'		24° 16.6		8°54.7	28°33.2	86°48.2	102°40.1	
21	162°25.6	5.7'	27°18.0	4.6'	57.7'		24°00.1		9°22.8	29°04.9	87°22.1	103°12.1	
22	176°50.4	5.7'	27°22.7	4.5'	57.7'		23°44.2		9°51.3	29°36.7	87°55.9	103°44.2	
23	191°15.1	5.7'	$27^{\circ}27.1$	4.3'	57.6'		23°28.8		10°20.3	30°08.4	88°29.7	104°16.2	
3 rd	SD = 15.8' Mer. pass. 09:44									•	*		

Thu	GHA	ν	Dec	d	HP	+Jupiter	+Aldebaran	+Mars	+Saturn	+Deneb	+Achernar	+Fomalhaut
0	205°39.8	5.7'	N27°31.4	4.1'	57.6'	10°49.7	12°58.7	30°40.1	89°03.5	92°16.4	95°19.2	104°48.2
1	220°04.5	5.6'	27°35.6	3.9'	57.6'	11° 19.5	13°21.3	31°11.8	89°37.3	92°32.0	95°37.4	105°20.2
2	234°29.1	5.6'	27°39.5	3.8'	57.6'	11°49.5	13°44.6	31°43.5	90°11.1	92°47.5	95°55.6	105°52.1
3	248°53.7	5.6'	27°43.3	3.6'	57.6'	12° 19.7	14°08.5	$32^{\circ}15.1$	90°44.8	93°02.9	96°13.7	106°24.0
4	263°18.3	5.6'	27°46.9	3.4'	57.5'	12°50.2	14°33.1	32°46.8	91°18.5	93°18.4	96°31.8	106°55.9
5	277°42.9	5.6'	27°50.3	3.3'	57.5'	13°20.9	14° 58.3	33°18.4	91°52.2	93°33.8	96°49.9	107°27.8
6	292°07.5	5.6'	N 27°53.6	3.1'	57.5'	13°51.7	15°23.9	33°50.0	92°25.9	93°49.2	97°07.9	107°59.6
7	306°32.1	5.6'	27°56.6	2.9'	57.5'	14° 22.7	15° 50.1	34°21.6	92°59.5	94°04.6	97°25.9	108°31.3
8	320°56.7	5.6'	27°59.5	2.7'	57.5'	14°53.8	16° 16.6	34°53.2	93°33.1	94°19.9	97°43.8	109°03.1
9	335°21.2	5.5'	28°02.3	2.5'	57.4'	15°25.0	16°43.6	35°24.8	94°06.7	94°35.2	98°01.7	109°34.8
10	349°45.8	5.5'	28°04.8	2.4'	57.4'	15°56.3	17° 10.9	35°56.3	94°40.3	94°50.5	98°19.6	110°06.5
11	4°10.3	5.5'	28°07.2	2.2'	57.4'	16°27.7	17°38.5	36°27.9	95°13.9	95°05.8	98°37.4	110°38.1
12	18°34.9	5.5'	N28°09.4	2.0'	57.4'	16°59.2	18°06.5	36°59.4	95°47.4	95°21.0	98°55.1	111°09.7
13	32°59.4	5.6'	28°11.4	1.8'	57.4'	17°30.7	18° 34.7	37°30.9	96°20.9	95°36.2	99°12.9	111°41.3
14	47°24.0	5.6'	28°13.2	1.7'	57.3'	18°02.3	19°03.2	38°02.4	96°54.4	95°51.3	99°30.5	112°12.8
15	61°48.5	5.6'	28°14.9	1.5'	57.3'	18° 33.9	19°31.9	38°33.8	97°27.8	96°06.4	99°48.1	112°44.3
16	76°13.1	5.6'	28°16.4	1.3'	57.3'	19°05.6	20°00.8	39°05.3	98°01.3	96°21.5	100°05.7	113°15.8
17	90°37.7	5.6'	28°17.7	1.1'	57.3'	19°37.4	20°29.9	39°36.7	98°34.7	96°36.6	100°23.2	113°47.2
18	105°02.2	5.6'	N 28°18.9	1.0'	57.2'	20°09.1	20°59.2	40°08.1	99°08.1		100°40.6	114°18.6
19	119°26.9	5.6'	$28^{\circ}19.8$	0.8'	57.2'	20°40.9	21°28.7	40°39.5	99°41.4		100°58.0	114°49.9
20	133°51.5	5.6'	28°20.6	0.6'	57.2'	21° 12.8	21°58.3	41°10.8	100°14.8		101°15.3	115°21.2
21	148°16.1	5.7'	$28^{\circ}21.2$	0.4'	57.2'	21°44.6	22°28.1	41°42.2	100°48.1		101°32.6	115°52.5
22	162°40.8	5.7'	$28^{\circ}21.7$	0.3'	57.2'	22°16.5	22°58.0	42°13.5	101°21.4		101°49.8	116°23.7
23	177°05.5	5.7'	28°21.9	0.1'	57.1'	22°48.4	23°28.0	42°44.8	101°54.6		102°06.9	116°54.8
4 th	SD =	= 15.7′	Mer. pass	. 10:43	3							

h	Moon	(5th Jul	1)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	+Capella	+Jupiter	+Aldebaran	+Mars	+Achernar	+Saturn	+Fomalhaut		
0	191°30.2	5.7'	N 28°22.0	-0.1'	57.1'		23°20.2	23°58.1	43°16.0	102°24.0	102°27.9	117°26.0		
1	205°54.9	5.8'	28°22.0	-0.3'	57.1'		23°52.1	24°28.3	43°47.3	102°41.0	103°01.1	117°57.1		
2	220°19.7	5.8'	28°21.7	-0.4'	57.1'	20°39.6	24°24.1	24°58.7	44°18.5	102°57.9	103°34.3	118°28.1		
3	234° 44.5	5.8'	28°21.3	-0.6'	57.0'	20°55.5	24°56.0	25°29.1	44°49.7	103°14.8	104°07.5	118°59.1		
4	249°09.3	5.9'	28°20.7	-0.8'	57.0'	21°12.1	25°27.9	25°59.6	45°20.9	103°31.6	104°40.6	119°30.1		
5	263°34.2	5.9'	$28^{\circ}19.9$	-0.9'	57.0'	21°29.4	25°59.8	26°30.1	45°52.1	103°48.3	105°13.7			
6	277°59.1	6.0'	$N28^{\circ}19.0$	-1.1'	57.0'	'		<u> </u>	New Moo	n ———				
7	292°24.1	6.0'	28° 17.9	-1.3'	57.0'				- New Moo	n ———				
8	306°49.1	6.0'	$28^{\circ}16.6$	-1.5'	56.9'				- New Moo	n ———				
9	321°14.1	6.1'	$28^{\circ}15.1$	-1.6'	56.9'									
10	335°39.2	6.1'	28° 13.5	-1.8'	56.9'				- New Moo	n ———				
11	350°04.3	6.2'	$28^{\circ}11.7$	-2.0'	56.9'				n ———					
12	4°29.5	6.2'	N 28°09.8	-2.1'	56.8'			n ———						
13	18°54.8	6.3'	28°07.6	-2.3'	56.8'				- New Moo	n ———				
14	33°20.1	6.4'	28°05.3	-2.5'	56.8'									
15	47° 45.4	6.4'	28°02.9	-2.6'	56.8'									
16	62°10.8	6.5'	28°00.3	-2.8'	56.7'				- New Moo	n ———				
17	76°36.3	6.5'	27°57.5	-2.9'	56.7'				- New Moo	n ———				
18	91°01.8	6.6'	N27°54.5	-3.1'	56.7'				- New Moo	n ———				
19	105°27.4	6.7'	$27^{\circ}51.4$	-3.3'	56.7'				New Moon					
20	119°53.1	6.7'	27°48.2	-3.4'	56.7'				n ———					
21	134° 18.8	6.8'	27°44.7	-3.6'	56.6'				—- New Moon ———-					
22	148°44.6	6.9'	$27^{\circ}41.2$	-3.7'	56.6'			n ———						
23	163°10.5	6.9'	27°37.4	-3.9'	56.6'				- New Moo	n ———				
5 th	SD :	= 15.6'	Mer. pass	s. 11:41										

Moon (6th Jul)

h

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Rigil Kent.	-Hadar	-Acrux	-Spica	-Arcturus	-Regulus	
0	177°36.5	7.0'	N27°33.5	-4.1'	56.6'	_		— New M	oon ——			
1	192°02.5	7.1'	27°29.5	-4.2'	56.5'	_		New M	oon ——			
2	206°28.6	7.2'	27°25.2	-4.4'	56.5'	_		— New M	oon ——			
3	220°54.8	7.3'	27°20.9	-4.5'	56.5'	_						
4	235°21.0	7.3'	27°16.4	-4.7'	56.5'	_		— New M	oon ——			
5	249°47.4	7.4'	$27^{\circ}11.7$	-4.8'	56.4'	_		— New M	oon ——			
6	264°13.8	7.5'	N 27°06.9	-5.0'	56.4'	_		New M	oon ——			
7	278°40.3	7.6'	$27^{\circ}01.9$	-5.1'	56.4'	_		New M	oon ——			
8	293°06.9	7.7'	26°56.8	-5.3'	56.4'	_		New M	oon ——			
9	307°33.5	7.8'	26°51.5	-5.4'	56.4'	_		— New M	oon ——			
10	322°00.3	7.8'	26°46.1	-5.6'	56.3'							
11	336°27.1	7.9'	26°40.5	-5.7'	56.3'							
12	350°54.1	8.0'	N26°34.8	-5.8'	56.3'	_		New M	oon ——			
13	5°21.1	8.1'	26°29.0	-6.0'	56.3'	_		New M	oon ——			
14	19°48.2	8.2'	26°23.0	-6.1'	56.2'	_		New M	oon ——			
15	34°15.4	8.3'	$26^{\circ}16.9$	-6.3'	56.2'	_		— New M	oon ——			
16	48°42.7	8.4'	$26^{\circ}10.6$	-6.4'	56.2'	_			oon ——			
17	63°10.1	8.5'	26°04.2	-6.5'	56.2'	118°59.6	114°36.4	104°42.9	90°12.0	87°52.4	36°13.6	
18	77°37.6	8.6'	N25°57.7	-6.7'	56.1'	118°37.1	114°13.9	104°23.3	89°39.9	87°25.2	35°41.6	
19	92°05.1	8.7'	25°51.0	-6.8'	56.1'	118°14.6	113°51.4	104°03.7	89°07.8	86°57.9	35°09.6	
20	106°32.8	8.8'	25°44.2	-6.9'	56.1'	117°52.0	113°28.9	103°44.0	88°35.8	86° 30.7	34°37.7	
21	121°00.6	8.9'	25°37.3	-7.1'	56.1'	117°29.3	113°06.3	103°24.4	88°03.8	86°03.5	34°05.8	
22	135°28.5	9.0'	25°30.2	-7.2'	56.0'	117°06.6	112°43.6	103°04.6	87°31.8	85°36.3	33°33.9	
23	149°56.4	9.1'	25°23.1	-7.3'	56.0'	116°43.9	112°20.9	102°44.9	86°59.8	85°09.2	33°02.1	
6 th	SD :	= 15.4	Mer. pas	s. 12:38								

h Moon (7th Jul)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Rigil Kent.	-Hadar	-Acrux	-Spica	-Arcturus	-Regulus	+Pollux	+Procyon
0	164°24.5	9.2'	N 25°15.7	-7.4'	56.0'	116°21.0	111°58.2	102°25.1	86°27.9	84° 42.1	32°30.3	4°44.2	
1	178°52.7	9.3'	25°08.3	-7.6'	56.0'	115°58.1	111°35.4	102°05.4	85°56.0	84°15.0	31°58.5	5°13.9	
2	193°20.9	9.4'	25°00.7	-7.7'	56.0'	115°35.2	111°12.6	101°45.5	85°24.1	83°48.0	31°26.7	5°44.0	
3	207°49.3	9.5'	24°53.0	-7.8'	55.9'	115°12.2	110°49.8	101°25.7	84°52.2	83°21.0	30°55.0	6°14.4	
4	222°17.8	9.6'	24°45.2	-7.9'	55.9'	114°49.2	110°26.9	101°05.9	84°20.4	82°54.0	30°23.3	6°44.9	
5	236°46.3	9.7'	24°37.3	-8.1'	55.9'	114°26.1	110°04.0	100°46.0	83°48.6	82°27.1	29°51.7	7°15.7	
6	251°15.0	9.8'	N 24°29.2	-8.2'	55.9'	114°03.0	109°41.0	100°26.1	83°16.8	82°00.1	29°20.0	7°46.5	
7	265°43.8	9.9'	24°21.0	-8.3'	55.8'	113°39.9	109°18.0	100°06.2	82°45.1	81°33.3	28°48.5	8°17.4	
8	280°12.6	10.0'	$24^{\circ}12.7$	-8.4'	55.8'	113°16.7	108°55.0	99°46.3	82°13.4	81°06.4	28° 16.9	8°48.4	
9	294°41.6	10.1'	24°04.3	-8.5'	55.8'	112°53.4	108°32.0	99°26.4	81°41.7	80°39.6	27°45.4	9°19.5	
10	309°10.7	10.2'	23°55.8	-8.6'	55.8'	112°30.1	108°08.9	99°06.4	81°10.0	80°12.9	27°13.9	9°50.6	
11	323°39.9	10.3'	23°47.2	-8.7'	55.7'	112°06.8	107°45.9	98°46.5	80°38.4	79°46.2	26°42.4	10°21.7	
12	338°09.2	10.4'	N23°38.4	-8.9'	55.7'	111°43.5	107°22.7	98°26.5	80°06.8	79° 19.5	26°11.0	10°52.9	
13	352°38.5	10.5'	23°29.6	-9.0'	55.7'	111°20.1	106°59.6	98°06.5	79°35.2	78° 52.8	25°39.6	11°24.0	
14	7°08.0	10.6'	23°20.6	-9.1'	55.7'	110°56.7	106°36.5	97°46.6	79°03.6	78°26.2	25°08.2	11°55.2	
15	21°37.6	10.7'	23°11.5	-9.2'	55.7'	110°33.3	106°13.3	97°26.6	78°32.1	77°59.6	24°36.9	12°26.4	
16	36°07.3	10.8'	23°02.3	-9.3'	55.6'	110°09.8	105°50.1	97°06.6	78°00.6	77°33.1	24°05.6	12°57.6	
17	50°37.1	10.9'	22°53.1	-9.4'	55.6'	109°46.3	105°26.9	96°46.6	77°29.1	77°06.6	23°34.4	13°28.8	
18	65°07.0	11.0'	N22°43.7	-9.5'	55.6'	109°22.8	105°03.7	96°26.6	76°57.7	76°40.2	23°03.2		
19	79°37.0	11.1'	22°34.2	-9.6'	55.6'	108°59.3	104°40.4	96°06.6	76°26.2	76° 13.8	22°32.0		
20	94°07.1	11.2'	22°24.6	-9.7'	55.5'	108°35.7	104°17.1	95°46.6	75°54.8	75°47.4	22°00.8		
21	108°37.3	11.3'	22°14.9	-9.8'	55.5'	108°12.1	103°53.9	95°26.6	75°23.5	75°21.1	21°29.7		24°05.1
22	123°07.6	11.4'	22°05.1	-9.9'	55.5'	107°48.5	103°30.6	95°06.6	74°52.1	74°54.8	20°58.7		24°20.7
23	137°38.1	11.5'	$21^{\circ}55.2$	-10.0'	55.5'	107°24.9	103°07.3	94°46.5	74°20.8	74°28.6	20°27.6		24°36.7
7 th	SD	= 15.3'	Mer pas	s 13·30									

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

Mon	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Acrux	-Arcturus	-Spica	-Regulus	+Procyon
0	152°08.6	11.6'	N 21°45.2	-10.1'	55.5'	119°43.8	107°01.2	102°44.0	94°26.5	74°02.4	73°49.5	19°56.7	24°53.2
1	166°39.2	11.7'	21°35.2	-10.2'	55.4'	119°12.6	106° 37.5	102°20.7	94°06.5	73°36.3	73°18.3	19°25.7	25°10.1
2	181°09.9	11.8'	21°25.0	-10.3'	55.4'	118°41.3	106° 13.8	101°57.3	93°46.5	73° 10.2	72°47.0	18°54.8	25°27.4
3	195°40.7	11.9'	$21^{\circ}14.7$	-10.3'	55.4'	118°10.1	105°50.1	101°34.0	93°26.6	72°44.2	72°15.8	18°24.0	25°45.1
4	210°11.6	12.0'	21°04.4	-10.4'	55.4'	117°38.9	105°26.4	101°10.7	93°06.6	72°18.2	71°44.6	17°53.1	26°03.2
5	224°42.6	12.1'	20°54.0	-10.5'	55.4'	117°07.8	105°02.7	100°47.3	92°46.6	71°52.3	71°13.5	17°22.4	26°21.6
6	239°13.8	12.2'	N 20°43.4	-10.6'	55.3'	116°36.6	104°39.0	100°24.0	92°26.6	71°26.4	70°42.3	16°51.7	26°40.4
7	253°45.0	12.3'	20°32.8	-10.7'	55.3'	116°05.5	104° 15.2	100°00.6	92°06.7	71°00.5	70°11.2	16°21.0	26°59.6
8	268°16.3	12.4'	$20^{\circ}22.1$	-10.8'	55.3'	115°34.4	103°51.5	99°37.3	91°46.7	70°34.8	69°40.1	15°50.4	27°19.0
9	282°47.7	12.5'	20°11.4	-10.9'	55.3'	115°03.4	103°27.7	99°13.9	91°26.8	70°09.0	69°09.1	15°19.8	27°38.8
10	297°19.2	12.6'	$20^{\circ}00.5$	-10.9'	55.2'	114°32.3	103°03.9	98°50.6	91°06.9	69°43.3	68°38.1	14°49.3	27°58.9
11	311°50.8	12.7'	$19^{\circ}49.6$	-11.0'	55.2'	114°01.3	102°40.1	98°27.2	90°46.9	69° 17.7	68°07.1	14°18.9	28°19.2
12	326°22.5	12.8'	N 19°38.5	-11.1'	55.2'	113°30.3	102°16.3	98°03.9	90°27.0	68°52.1	67°36.1	13°48.5	28°39.9
13	340°54.3	12.9'	19°27.4	-11.2'	55.2'	112°59.4	101°52.5	97°40.5	90°07.2	68°26.6	67°05.1	13°18.2	29°00.7
14	355°26.2	13.0'	$19^{\circ}16.3$	-11.3'	55.2'	112°28.4	101°28.7	97°17.2	89°47.3	68°01.2	66°34.2	12°48.0	29°21.9
15	9°58.2	13.1'	$19^{\circ}05.0$	-11.3'	55.1'	111°57.5	101°04.9	96°53.8	89°27.4	67°35.8	66°03.3	12°17.9	29°43.3
16	24°30.2	13.2'	18°53.7	-11.4'	55.1'	111°26.6	100°41.1	96°30.5	89°07.6	67°10.4	65°32.4	11°47.8	30°04.9
17	39°02.4	13.3'	18°42.3	-11.5'	55.1'	110°55.8	100°17.3	96°07.1	88°47.8	66°45.1	65°01.5	11°17.9	30°26.8
18	53°34.7	13.4'	N 18°30.8	-11.5'	55.1'	110°24.9	99°53.5	95°43.8	88°28.0	66° 19.9	64°30.7	10°48.1	30°48.8
19	68°07.0	13.4'	$18^{\circ}19.3$	-11.6'	55.1'	109°54.1	99°29.6	95°20.4	88°08.2	65°54.7	63°59.9	10°18.3	31°11.1
20	82°39.5	13.5'	18°07.7	-11.7'	55.0'	109°23.3	99°05.8	94°57.1	87°48.4	65°29.6	63°29.1	9°48.7	31°33.6
21	97°12.0	13.6'	17° 56.0	-11.7'	55.0'	108°52.6	98°42.0	94°33.8	87°28.7	65°04.6	62°58.3	9°19.3	31°56.2
22	111°44.6	13.7'	17° 44.2	-11.8'	55.0'	108°21.8	98° 18.2	94°10.5	87°09.0	64°39.6	62°27.6	8°50.0	32°19.1
23	126°17.3	13.8'	17°32.4	-11.9'	55.0'	107°51.1	97°54.4	93°47.2	86°49.3	64°14.7	61°56.9	8°21.0	32°42.1
8 th	SD	= 15.1	Mer. pas	s. 14:19									

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

	Land Distance (especie man langue mean) 12 desta												
Tue	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Arcturus	-Spica	-Regulus	+Procyon	+Sun
0	140°50.1	13.9'	N17°20.5	-11.9'	55.0'	107°20.4	97°30.5	93°23.9	63°49.8	61°26.2	7°52.1	33°05.3	
1	155°23.0	14.0'	17°08.6	-12.0'	55.0'	106°49.7	97°06.7	93°00.6	63°25.0	60°55.5	7°23.5	33°28.6	
2	169°56.0	14.1'	$16^{\circ}56.6$	-12.1'	54.9'	106°19.1	96°42.9	92°37.4	63°00.3	60°24.9	6°55.3	33°52.1	
3	184°29.0	14.1'	$16^{\circ}44.5$	-12.1'	54.9'	105°48.5	96° 19.1	92°14.1	62°35.6	59°54.3	6°27.4	34°15.7	
4	199°02.2	14.2'	16°32.4	-12.2'	54.9'	105°17.9	95°55.3	91°50.9	62°11.1	59°23.7	6°00.0	34°39.5	
5	213°35.4	14.3'	$16^{\circ}20.2$	-12.2'	54.9'	104°47.3	95°31.5	91°27.6	61°46.5	58°53.1	5°33.2	35°03.5	
6	228°08.7	14.4'	N 16°07.9	-12.3'	54.9'	104°16.7	95°07.8	91°04.4	61°22.1	58°22.5	5°07.1	35°27.5	
7	242°42.1	14.5'	15°55.6	-12.4'	54.8'	103°46.2	94°44.0	90°41.2	60°57.7	57°52.0	4°41.9	35°51.7	
8	257°15.5	14.5'	15°43.3	-12.4'	54.8'	103°15.7	94°20.2	90°18.0	60°33.4	57°21.5		36°16.0	
9	271°49.1	14.6'	15°30.9	-12.5'	54.8'	102°45.2	93° 56.5	89°54.9	60°09.2	56°51.0		36°40.4	
10	286°22.7	14.7'	15° 18.4	-12.5'	54.8'	102°14.7	93°32.7	89°31.7	59°45.0	56°20.5		37°04.9	
11	300°56.4	14.8'	$15^{\circ}05.9$	-12.6'	54.8'	101°44.3	93°09.0	89°08.6	59°20.9	55°50.1		37°29.6	40°58.2
12	315°30.2	14.9'	N14°53.3	-12.6'	54.8'	101°13.8	92°45.2	88°45.5	58°56.9	55°19.7		37°54.3	41°26.0
13	330°04.0	14.9'	14°40.7	-12.7'	54.7'	100°43.4	92°21.5	88°22.4	58°33.0	54°49.3		38°19.2	41°53.7
14	344°38.0	15.0'	14°28.0	-12.7'	54.7'	100°13.0	91°57.8	87°59.3	58°09.2	54°18.9		38°44.1	42°21.5
15	359°12.0	15.1'	14° 15.3	-12.8'	54.7'	99°42.7	91°34.1	87°36.2	57°45.4	53°48.5		39°09.1	42°49.2
16	13°46.0	15.1'	14°02.5	-12.8'	54.7'	99°12.3	91°10.4	87°13.2	57°21.7	53°18.2		39°34.2	43°17.0
17	28°20.2	15.2'	13°49.7	-12.9'	54.7'	98°42.0	90°46.8	86°50.1	56°58.1	52°47.8		39°59.4	43°44.7
18	42°54.4	15.3'	N13°36.8	-12.9'	54.7'	98°11.7	90°23.1	86°27.1	56°34.6	52°17.5		40°24.7	44°12.4
19	57°28.7	15.4'	13°23.9	-13.0'	54.6'	97°41.4	89° 59.5	86°04.2	56°11.2	51°47.3		40°50.1	44°40.0
20	72°03.0	15.4'	13°11.0	-13.0'	54.6'	97°11.1	89°35.9	85°41.2	55°47.8	51°17.0		41°15.5	45°07.7
21	86°37.5	15.5'	12°58.0	-13.0'	54.6'	96°40.9	89°12.2	85°18.3	55°24.6	50°46.8		41°41.0	45°35.3
22	101°11.9	15.6'	$12^{\circ}44.9$	-13.1'	54.6'	96°10.6	88°48.6	84°55.4	55°01.4	50°16.5		42°06.6	46°03.0
23	115°46.5	15.6'	12°31.8	-13.1'	54.6'	95°40.4	88°25.1	84°32.5	54°38.3	49°46.3		42°32.2	46°30.6
9 th	SD = 15.0' Mer. pass. $15:03$					SunSD=15.7'							

h Moon	(10 th Jul)	Lunar Distance	(ob	jects	with	largest	hourly	[,] LD	delta)
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Wed	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Arcturus	-Spica	+Regulus	+Procyon	+Venus	+Sun
0	130°21.1	15.7'	$N12^{\circ}18.7$	-13.2'	54.6'	95°10.2	88°01.5	54°15.4	49° 16.1	5°32.3	42°57.9		46°58.2
1	144°55.8	15.7'	12°05.6	-13.2'	54.6'	94°40.1	87°38.0	53°52.5	48°46.0	5°58.7	43°23.7		47°25.8
2	159°30.5	15.8'	11°52.4	-13.2'	54.5'	94°09.9	87°14.4	53°29.7	48° 15.8	6°25.7	43°49.5		47°53.3
3	174°05.3	15.9'	$11^{\circ}39.1$	-13.3'	54.5'	93°39.8	86°50.9	53°07.0	47° 45.7	6°53.1	44°15.4		48°20.9
4	188°40.2	15.9'	11°25.9	-13.3'	54.5'	93°09.6	86°27.4	52°44.4	47° 15.6	7°20.9	44°41.4		48°48.4
5	203°15.1	16.0'	$11^{\circ}12.5$	-13.3'	54.5'	92°39.5	86°04.0	52°21.9	46°45.5	7°48.9	45°07.3		49°16.0
6	217°50.1	16.0'	$N10^{\circ}59.2$	-13.4'	54.5'	92°09.5	85°40.5	51°59.5	46°15.4	8°17.1	45°33.4		49°43.5
7	232°25.2	16.1'	10°45.8	-13.4'	54.5'	91°39.4	85°17.1	51°37.3	45°45.3	8°45.6	45°59.5		50°11.0
8	247°00.3	16.1'	10°32.4	-13.4'	54.5'	91°09.3	84°53.7	51°15.1	45° 15.3	9°14.1	46°25.6		50°38.4
9	261°35.4	16.2'	$10^{\circ}19.0$	-13.5'	54.5'	90°39.3	84°30.3	50°53.0	44°45.2	9°42.9	46°51.8		51°05.9
10	276°10.6	16.3'	$10^{\circ}05.5$	-13.5'	54.4'	90°09.3	84°07.0	50°31.1	44° 15.2	10°11.7	47°18.0		51°33.4
11	290°45.9	16.3'	09°52.0	-13.5'	54.4'	89°39.3	83°43.6	50°09.2	43°45.2	10°40.6	47°44.3		52°00.8
12	305°21.2	16.4'	N09°38.5	-13.6'	54.4'	89°09.3	83°20.3	49°47.5	43° 15.2	11°09.6	48°10.6		52°28.2
13	319°56.5	16.4'	09°24.9	-13.6'	54.4'	88°39.3	82°57.0	49°25.9	42°45.3	11°38.7	48°37.0		52°55.7
14	334°31.9	16.5'	$09^{\circ}11.3$	-13.6'	54.4'	88°09.3	82°33.7	49°04.4	42° 15.3	12°07.8	49°03.4		53°23.1
15	349°07.4	16.5'	08°57.7	-13.6'	54.4'	87°39.4	82°10.5	48°43.0	41°45.4	12°37.0	49°29.8		53°50.4
16	3°42.9	16.5'	08°44.1	-13.7'	54.4'	87°09.5	81°47.3	48°21.8	41° 15.4	13°06.2	49°56.3		54° 17.8
17	18°18.4	16.6'	08°30.4	-13.7'	54.4'	86°39.5	81°24.1	48°00.6	40°45.5	13°35.4	50°22.8		54° 45.2
18	32°54.0	16.6'	N 08°16.7	-13.7'	54.4'	86°09.6	81°00.9	47°39.7	40°15.6	14°04.7	50°49.3		55° 12.5
19	47°29.7	16.7'	08°03.0	-13.7'	54.3'	85°39.7	80°37.8	47° 18.8	39° 45.8	14°34.0	51°15.9		55°39.9
20	62°05.3	16.7'	07°49.3	-13.8'	54.3'	85°09.9	80°14.7	46°58.1	39° 15.9	15°03.4	51°42.5		56°07.2
21	76°41.1	16.8'	07°35.5	-13.8'	54.3'	84°40.0	79°51.6	46° 37.5	38°46.0	15°32.7	52°09.1	46° 36.4	56° 34.5
22	91°16.8	16.8'	07°21.7	-13.8'	54.3'	84°10.2	79°28.5	46° 17.0	38° 16.2	16°02.1	52°35.8	47°03.1	57°01.8
23	105°52.6	16.8'	07°07.9	-13.8'	54.3'	83°40.3	79°05.5	45°56.7	37°46.4	16°31.5	53°02.5	47°29.8	57°29.1
10 th	SD	= 14.9	Mer. pas	s. 15:45					Sun SD =	= 15.7'			

Moon (11th Jul)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Venus	+Procyon	+Sun
0	120°28.4	16.9'	N 06°54.1	-13.8'	54.3'		83°10.5	78°42.5	37°16.5	17°00.9	47°56.4	53°29.2	57°56.4
1	135°04.3	16.9'	06°40.2	-13.9'	54.3'		82°40.7	78°19.6	36°46.7	17°30.3	48°23.0	53°56.0	58°23.7
2	149°40.2	16.9'	06°26.4	-13.9'	54.3'		82°10.9	77°56.6	36°16.9	17°59.8	48°49.7	54°22.7	58°51.0
3	164°16.2	17.0'	$06^{\circ}12.5$	-13.9'	54.3'		81°41.1	77°33.7	35°47.1	18°29.2	49°16.3	54°49.5	59°18.2
4	178°52.1	17.0'	05°58.6	-13.9'	54.3'		81°11.3	77°10.8	35°17.4	18°58.6	49°42.9	55°16.3	59°45.5
5	193°28.1	17.0'	05°44.7	-13.9'	54.3'		80°41.5	76°48.0	34°47.6	19°28.1	50°09.5	55°43.2	60°12.7
6	208°04.2	17.1'	N 05°30.8	-13.9'	54.3'		80°11.8	76°25.2	34°17.9	19°57.5	50°36.1	56°10.1	60°39.9
7	222°40.2	17.1'	$05^{\circ}16.8$	-14.0'	54.2'		79°42.0	76°02.4	33°48.1	20°27.0	51°02.7	56°36.9	61°07.2
8	237°16.3	17.1'	05°02.9	-14.0'	54.2'		79°12.3	75°39.7	33°18.4	20°56.5	51°29.3	57°03.9	61°34.4
9	251°52.5	17.1'	04°48.9	-14.0'	54.2'		78°42.5	75°17.0	32°48.7	21°25.9	51°55.8	57°30.8	62°01.6
10	266°28.6	17.2'	04°34.9	-14.0'	54.2'		78°12.8	74°54.3	32°19.0	21°55.4	52°22.4	57°57.7	62°28.8
11	281°04.8	17.2'	04°20.9	-14.0'	54.2'		77°43.1	74°31.7	31°49.3	22°24.9	52°48.9	58°24.7	62°56.0
12	295°41.0	17.2'	N 04°06.9	-14.0'	54.2'		77°13.4	74°09.1	31°19.6	22°54.3	53°15.5	58°51.7	63°23.1
13	310°17.2	17.2'	03°52.9	-14.0'	54.2'		76°43.7	73°46.5	30°49.9	23°23.8	53°42.0	59°18.7	63°50.3
14	324°53.4	17.3'	03°38.8	-14.0'	54.2'		76°14.0	73°24.0	30°20.2	23°53.3	54°08.5	59°45.8	64°17.5
15	339°29.7	17.3'	03°24.8	-14.0'	54.2'		75°44.3	73°01.5	29°50.5	24°22.8	54°35.1	60°12.8	64°44.6
16	354°06.0	17.3'	$03^{\circ}10.8$	-14.1'	54.2'		75°14.7	72°39.0	29°20.9	24°52.2	55°01.6	60°39.9	65°11.8
17	8°42.3	17.3'	02°56.7	-14.1'	54.2'		74°45.0	72°16.6	28°51.2	25°21.7	55°28.1	61°07.0	65°38.9
18	23°18.6	17.3'	N02°42.7	-14.1'	54.2'		74°15.3	71°54.3	28°21.6	25°51.2	55°54.6	61°34.1	66°06.1
19	37°54.9	17.3'	02°28.6	-14.1'	54.2'	119°51.0	73°45.7	71°31.9	27°51.9	26°20.7	56°21.1	62°01.2	66°33.2
20	52°31.3	17.4'	02°14.5	-14.1'	54.2'	119°28.3	73°16.0	71°09.6	27°22.3	26°50.1	56°47.6	62°28.3	67°00.4
21	67°07.6	17.4'	02°00.4	-14.1'	54.2'	119°05.6	72°46.4	70°47.4	26°52.7	27°19.6	57°14.1	62°55.5	67°27.5
22	81°44.0	17.4'	$01^{\circ}46.3$	-14.1'	54.2'	118°42.8	72°16.8	70°25.2	26°23.0	27°49.1	57°40.6	63°22.7	67°54.6
23	96°20.4	17.4'	01°32.3	-14.1'	54.2'	118°19.9	71°47.1	70°03.0	25°53.4	28°18.6	58°07.1	63°49.9	68°21.7
11 th	SD	= 14.8	Mer. pas	s. 16:24					Sun SD	$=15.7^{'}$			

h		Моо	n (12 th Ju	ıl)			Lunar D	istance (ob	jects wit	h largest	hourly L	D delta)	
Fri	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Spica	+Regulus	+Venus	+Procyon	+Sun
0	110°56.8	17.4'	N 01°18.2	-14.1'	54.2'	117°57.0	71°17.5	69°40.9	25°23.8	28°48.0	58°33.5	64°17.1	68°48.8
1	125°33.2	17.4'	01°04.1	-14.1'	54.2'	117°34.0	70°47.9	69°18.8	24°54.2	29°17.5	59°00.0	64°44.3	69°15.9
2	140°09.6	17.4'	00°50.0	-14.1'	54.2'	117°11.0	70°18.2	68°56.8	24°24.6	29°47.0	59°26.5	65°11.5	69°43.1
3	154°46.0	17.4'	00°35.9	-14.1'	54.2'	116°47.9	69°48.6	68°34.8	23°55.0	30°16.5	59°53.0	65°38.8	70°10.2
4	169°22.4	17.4'	$00^{\circ}21.8$	-14.1'	54.2'	116°24.8	69°19.0	68°12.9	23°25.4	30°45.9	60°19.4	66°06.0	70°37.3
5	183°58.9	17.4'	N 00°07.7	-14.1'	54.2'	116°01.6	68°49.4	67°51.0	22°55.8	31°15.4	60°45.9	66°33.3	71°04.4
6	198°35.3	17.4'	S 00°06.4	-14.1'	54.2'	115°38.4	68°19.8	67°29.2	22°26.2	31°44.9	61°12.4	67°00.6	71°31.5
7	213°11.7	17.4'	00°20.5	-14.1'	54.2'	115°15.1	67°50.2	67°07.4	21°56.6	32°14.4	61°38.8	67°27.9	71°58.6
8	227°48.1	17.4'	00°34.6	-14.1'	54.2'	114°51.8	67°20.6	66°45.7	21°27.0	32°43.9	62°05.3	67°55.2	72°25.7
9	242°24.6	17.4'	00°48.7	-14.1'	54.2'	114°28.5	66°51.0	66°24.0	20°57.5	33°13.4	62°31.7	68°22.5	72°52.8
10	257°01.0	17.4'	$01^{\circ}02.8$	-14.1'	54.2'	114°05.1	66°21.4	66°02.4	20°27.9	33°42.8	62°58.2	68°49.9	73°19.9
11	271°37.4	17.4'	$01^{\circ}16.9$	-14.1'	54.2'	113°41.7	65°51.8	65°40.8	19°58.3	34°12.3	63°24.7	69°17.3	73°47.0
12	286°13.8	17.4'	S 01°30.9	-14.1'	54.2'	113°18.2	65°22.2	65°19.3	19°28.7	34°41.8	63°51.1	69°44.6	74°14.0
13	300°50.3	17.4'	01°45.0	-14.1'	54.2'	112°54.7	64°52.6	64°57.8	18°59.2	35°11.3	64°17.6	70°12.0	74°41.1
14	315°26.7	17.4'	$01^{\circ}59.1$	-14.1'	54.2'	112°31.1	64°23.0	64°36.4	18°29.6	35°40.8	64°44.0	70°39.4	75°08.2
15	330°03.1	17.4'	02°13.1	-14.1'	54.2'	112°07.5	63°53.4	64°15.0	18°00.0	36°10.3	65°10.5	71°06.8	75°35.3
16	344°39.5	17.4'	02°27.2	-14.0'	54.2'	111°43.9	63°23.8	63°53.8	17°30.5	36°39.8	65°37.0	71°34.3	76°02.4
17	359°15.8	17.4'	02°41.2	-14.0'	54.2'	111°20.2	62°54.2	63°32.5	17°00.9	37°09.3	66°03.4	72°01.7	76°29.5
18	13°52.2	17.4'	S 02°55.3	-14.0'	54.2'	110°56.5	62°24.6	63°11.3	16°31.3	37°38.8	66°29.9	72°29.2	76°56.6
19	28°28.6	17.3'	03°09.3	-14.0'	54.2'	110°32.8	61°55.0	62°50.2	16°01.7	38°08.4	66°56.4	72°56.6	77°23.7
20	43°04.9	17.3'	03°23.3	-14.0'	54.2'	110°09.0	61°25.4	62°29.2	15°32.2	38°37.9	67°22.9	73°24.1	77°50.9
21	57°41.2	17.3'	03°37.3	-14.0'	54.2'	109°45.2	60°55.7	62°08.2	15°02.6	39°07.4	67°49.3	73°51.6	78°18.0
22	72°17.5	17.3'	03°51.3	-14.0'	54.2'	109°21.4	60°26.1	61°47.3	14°33.0	39°36.9	68°15.8	74°19.1	78°45.1
23	86°53.8	17.3'	04°05.3	-14.0'	54.2'	108°57.5	59°56.5	61°26.4	14°03.5	40°06.5	68°42.3	74°46.6	79°12.2
12 th	SD	= 14.8	Mer. pas	s. 17:03					Sun SD	= 15.7'			

h Moon ((13 th Jul)	Lunar Distance (ob	ojects with larg	est hourly LD delta)
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Sat	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Antares	-Spica	+Regulus	+Venus	+Procyon	+Sun
0	101°30.1	17.3'	S 04°19.3	-14.0'	54.2'	108°33.6	61°05.6	59°26.9	13°33.9	40°36.0	69°08.8	$75^{\circ}14.1$	79°39.3
1	116°06.4	17.2'	04°33.3	-13.9'	54.2'	108°09.6	60°44.9	58°57.3	13°04.3	41°05.5	69°35.3	75°41.7	80°06.4
2	130°42.6	17.2'	04°47.2	-13.9'	54.2'	107°45.6	60°24.3	58°27.6	12°34.8	41°35.1	70°01.8	76°09.2	80°33.6
3	145°18.8	17.2'	$05^{\circ}01.1$	-13.9'	54.2'	107°21.6	60°03.7	57°58.0	12°05.2	42°04.7	70°28.3	76°36.8	81°00.7
4	159°55.0	17.2'	$05^{\circ}15.1$	-13.9'	54.2'	106°57.6	59°43.2	57°28.4	11°35.6	42°34.2	70°54.8	77°04.4	81°27.9
5	174°31.2	17.1'	$05^{\circ}29.0$	-13.9'	54.2'	106°33.5	59°22.8	56°58.7	11°06.0	43°03.8	71°21.3	77°32.0	81°55.0
6	189°07.3	17.1'	S 05°42.9	-13.9'	54.2'	106°09.4	59°02.4	$56^{\circ}29.1$	10°36.5	43°33.4	71°47.8	77°59.6	82°22.2
7	203°43.4	17.1'	05°56.7	-13.9'	54.2'	105°45.3	58°42.1	55°59.4	10°06.9	44°03.0	72°14.4	78°27.2	82°49.3
8	218°19.5	17.1'	$06^{\circ}10.6$	-13.8'	54.2'	105°21.1	58°21.9	55°29.7	9°37.3	44°32.5	72°40.9	78°54.9	83° 16.5
9	232°55.5	17.0'	06°24.4	-13.8'	54.2'	104°56.9	58°01.8	55°00.1	9°07.8	45°02.1	73°07.4	79°22.5	83°43.7
10	247°31.6	17.0'	06°38.2	-13.8'	54.3'	104°32.7	57°41.8	54°30.4	8°38.2	45°31.8	73°34.0	79°50.2	84°10.9
11	262°07.6	17.0'	$06^{\circ}52.0$	-13.8'	54.3'	104°08.4	57°21.8	54°00.7	8°08.7	46°01.4	74°00.6	80°17.9	84°38.0
12	276°43.5	16.9'	S 07°05.8	-13.8'	54.3'	103°44.2	57°02.0	53°31.0	7°39.1	46°31.0	74°27.1	80°45.5	85°05.2
13	291°19.4	16.9'	$07^{\circ}19.5$	-13.7'	54.3'	103°19.8	56° 42.2	53°01.3	7°09.6	47°00.6	74°53.7	81°13.2	85°32.5
14	305°55.3	16.9'	07°33.3	-13.7'	54.3'	102°55.5	56°22.5	52°31.6	6°40.1	47°30.3	75°20.3	81°41.0	85°59.7
15	320°31.2	16.8'	07°47.0	-13.7'	54.3'	102°31.2	56°02.9	52°01.9	6°10.6	48°00.0	75°46.9	82°08.7	86°26.9
16	335°07.0	16.8'	08°00.7	-13.7'	54.3'	102°06.8	55°43.4	51°32.1	5°41.2	48°29.6	76° 13.5	82°36.4	86°54.1
17	349°42.8	16.7'	08°14.3	-13.6'	54.3'	101°42.3	55°24.0	51°02.4	5°11.8	48°59.3	76°40.1	83°04.2	87°21.4
18	4°18.5	16.7'	S 08°28.0	-13.6'	54.3'	101°17.9	55°04.7	50°32.6	4°42.4	49°29.0	77°06.7	83°32.0	87°48.6
19	18°54.2	16.7'	08°41.6	-13.6'	54.3'	100°53.4	54° 45.4	50°02.9	4°13.1	49°58.7	77°33.4	83°59.7	88°15.9
20	33°29.9	16.6'	08°55.2	-13.6'	54.3'	100°28.9	54°26.3	49°33.1	3°44.0	50°28.4	78°00.0	84°27.5	88°43.2
21	48°05.5	16.6'	09°08.7	-13.5'	54.4'	100°04.4	54°07.3	49°03.3	3°15.0	50°58.1	78°26.7	84°55.4	89°10.5
22	62°41.0	16.5'	$09^{\circ}22.3$	-13.5'	54.4'	99°39.9	53°48.4	48°33.5	2°46.3	51°27.9	78°53.4	85°23.2	89°37.8
23	77°16.6	16.5'	09°35.8	-13.5'	54.4'	99°15.3	53°29.5	48°03.7	2°18.1	51°57.6	79°20.0	85°51.0	90°05.1
13 th	SD	= 14.8'	Mer. pas	s. 17:42					Sun SD :	= 15.7'			

h Moon (14th Jul)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Antares	± Spica	+Regulus	+Venus	+Procyon	+Sun
0	91°52.0	16.4'	S 09°49.2	-13.4'	54.4'		98°50.7	47°33.9	1°50.7	52°27.4	79°46.7	86° 18.9	90°32.4
1	106°27.5	16.4'	$10^{\circ}02.7$	-13.4'	54.4'		98°26.1	47°04.0		52°57.2	80°13.5	86°46.7	90°59.8
2	121°02.8	16.3'	$10^{\circ}16.1$	-13.4'	54.4'		98°01.5	46°34.2		53°27.0	80°40.2	87° 14.6	91°27.1
3	135°38.2	16.3'	$10^{\circ}29.5$	-13.3'	54.4'		97°36.8	46°04.3		53°56.8	81°06.9	87° 42.5	91°54.5
4	150°13.4	16.2'	$10^{\circ}42.8$	-13.3'	54.4'		97°12.1	45°34.5		54°26.6	81°33.7	88° 10.4	92°21.9
5	164°48.7	16.2'	$10^{\circ}56.1$	-13.3'	54.4'		96°47.4	45°04.6		54°56.5	82°00.4	88°38.4	92°49.3
6	179°23.8	16.1'	S 11°09.4	-13.2'	54.5'		96°22.7	44°34.7		55°26.3	82°27.2	89°06.3	93°16.7
7	193°58.9	16.1'	$11^{\circ}22.7$	-13.2'	54.5'		95°58.0	44°04.7		55°56.2	82°54.0	89°34.3	93°44.1
8	208°34.0	16.0'	11°35.9	-13.2'	54.5'		95°33.2	43°34.8		56°26.1	83°20.8	90°02.2	94°11.5
9	223°09.0	15.9'	$11^{\circ}49.1$	-13.1'	54.5'		95°08.4	43°04.9	2°56.4	56°56.0	83°47.7	90°30.2	94°39.0
10	237°43.9	15.9'	$12^{\circ}02.2$	-13.1'	54.5'		94°43.6	42°34.9	3°25.4	57°25.9	84°14.5	90°58.2	95°06.5
11	252°18.8	15.8'	$12^{\circ}15.3$	-13.1'	54.5'		94°18.8	42°04.9	3°54.6	57°55.8	84°41.4	91°26.2	95°33.9
12	266°53.6	15.8'	S 12°28.4	-13.0'	54.5'		93°53.9	41°34.9	4°24.0	58°25.8	85°08.3	91°54.3	96°01.5
13	281°28.4	15.7'	12°41.4	-13.0'	54.6'		93°29.0	41°04.9	4°53.6	58°55.7	85°35.2	92°22.3	96°29.0
14	296°03.0	15.6'	12°54.4	-12.9'	54.6'		93°04.2	40°34.8	5°23.3	59°25.7	86°02.1	92°50.4	96°56.5
15	310°37.7	15.6'	13°07.3	-12.9'	54.6'		92°39.2	40°04.8	5°53.0	59°55.7	86°29.0	93°18.4	97°24.1
16	325°12.2	15.5'	13°20.2	-12.9'	54.6'		92°14.3	39°34.7	6°22.8	60°25.8	86°56.0	93°46.5	97°51.7
17	339°46.7	15.4'	13°33.1	-12.8'	54.6'	119°53.2	91°49.4	39°04.6	6°52.7	60°55.8	87°22.9	94°14.6	98°19.2
18	354°21.1	15.4'	S 13°45.9	-12.8'	54.6'	119°25.1	91°24.4	38°34.5	7°22.6	61°25.9	87°49.9	94° 42.7	98°46.9
19	8°55.5	15.3'	$13^{\circ}58.7$	-12.7'	54.7'	118°56.9	90°59.4	38°04.4	7°52.5	61°56.0	88°16.9	95°10.9	99°14.5
20	23°29.8	15.2'	$14^{\circ}11.4$	-12.7'	54.7'	118°28.8	90°34.4	37°34.2	8°22.5	62°26.1	88°44.0	95°39.0	99°42.1
21	38°04.0	15.1'	$14^{\circ}24.1$	-12.6'	54.7'	118°00.5	90°09.4	37°04.1	8°52.6	62°56.2	89°11.0	96°07.2	100°09.8
22	52°38.1	15.1'	$14^{\circ}36.7$	-12.6'	54.7'	117°32.3	89°44.4	36°33.9	9°22.6	63°26.3	89°38.1	96°35.4	100°37.5
23	67°12.2	15.0'	14°49.3	-12.5'	54.7'	117°04.0	89°19.3	36°03.7	9°52.7	63°56.5	90°05.2	97°03.6	101°05.2
14 th	SD	= 14.8'	Mer. pas	s. 18:23					Sun SD	0 = 15.7'			

Moon (15th Jul)

h

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Fomalhaut	-Achernar	-Altair	-Antares	+Spica	+Regulus	+Procyon	+Sun
0	81°46.2	14.9'	S 15°01.8	-12.5'	54.8'	116°35.6		88°54.2	35°33.4	10°22.9	64°26.7	97°31.8	101°33.0
1	96°20.1	14.8'	$15^{\circ}14.3$	-12.4'	54.8'	116°07.3		88°29.1	35°03.2	10°53.1	64°56.9	98°00.0	102°00.7
2	110°53.9	14.8'	15°26.7	-12.4'	54.8'	115°38.9		88°04.0	34°32.9	11°23.2	65°27.1	98°28.3	102°28.5
3	125°27.7	14.7'	15°39.1	-12.3'	54.8'	115°10.4		87°38.9	34°02.6	11°53.5	65°57.4	98°56.5	102°56.3
4	140°01.4	14.6'	15°51.4	-12.3'	54.8'	114°41.9		87°13.8	33°32.3	12°23.7	66°27.7	99°24.8	103°24.1
5	154°35.0	14.5'	16°03.7	-12.2'	54.8'	114°13.4		86°48.6	33°01.9	12°54.0	66°58.0	99°53.1	103°51.9
6	169°08.5	14.4'	S 16°15.9	-12.2'	54.9'	113°44.9		86°23.5	32°31.6	13°24.3	67°28.3	100°21.4	104°19.8
7	183°41.9	14.4'	16°28.0	-12.1'	54.9'	113°16.3		85°58.3	32°01.2	13°54.6	67°58.6	100°49.7	104°47.7
8	198°15.3	14.3'	$16^{\circ}40.1$	-12.0'	54.9'	112°47.7		85°33.1	31°30.8	14°25.0	68°29.0		105°15.6
9	212°48.5	14.2'	$16^{\circ}52.2$	-12.0'	54.9'	112°19.0		85°07.9	31°00.3	14°55.4	68°59.4		105°43.5
10	227°21.7	14.1'	17°04.2	-11.9'	55.0'	111°50.3	105° 10.7	84°42.7	30°29.9	15°25.8	69°29.8		106°11.5
11	241°54.8	14.0'	$17^{\circ}16.1$	-11.9'	55.0'	111°21.6	104°55.6	84° 17.4	29°59.4	15°56.3	70°00.3		106°39.5
12	256°27.8	13.9'	S 17°28.0	-11.8'	55.0'	110°52.8	104°40.4	83°52.2	29°28.9	16°26.7	70°30.8		107°07.5
13	271°00.7	13.8'	17°39.7	-11.7'	55.0'	110°24.0	104°25.2	83°26.9	28°58.3	16°57.2	71°01.3		107°35.5
14	285°33.6	13.7'	$17^{\circ}51.5$	-11.7'	55.0'	109°55.2	104°09.9	83°01.7	28°27.8	17°27.8	71°31.8		108°03.6
15	300°06.3	13.6'	18°03.2	-11.6'	55.1'	109°26.3	103°54.5	82°36.4	27°57.2	17°58.3	72°02.3		108°31.7
16	314°39.0	13.6'	18°14.8	-11.5'	55.1'	108°57.4	103°39.1	82°11.1	27°26.6	18°28.9	72°32.9		108°59.8
17	329°11.5	13.5'	18°26.3	-11.5'	55.1'	108°28.4	103°23.6	81°45.8	26°55.9	18°59.5	73°03.5		109°27.9
18	343°44.0	13.4'	S 18°37.8	-11.4'	55.1'	107°59.5	103°08.0	81°20.5	26°25.2	19°30.2	73°34.1		109°56.1
19	358°16.3	13.3'	18°49.2	-11.3'	55.2'	107°30.4	102°52.4	80°55.2	25°54.6	20°00.8	74°04.8		110°24.3
20	12°48.6	13.2'	$19^{\circ}00.5$	-11.3'	55.2'	107°01.4	102°36.7	80°29.9	25°23.8	20°31.5	74°35.5		110°52.5
21	27°20.8	13.1'	$19^{\circ}11.7$	-11.2'	55.2'	106°32.3	102°20.9	80°04.5	24°53.1	21°02.3	75°06.2		111°20.7
22	41°52.9	13.0'	19°22.9	-11.1'	55.2'	106°03.2	102°05.1	79°39.2	24°22.3	21°33.0	75°37.0		111°49.0
23	56°24.8	12.9'	19°34.0	-11.0'	55.2'	105°34.0	101°49.3	79°13.8	23°51.5	22°03.8	76°07.7		112°17.3
15 th	SD	= 14.9'	Mer. pas	s. 19:07					Sun SD	= 15.7'			

h	Moon	(16 th	Tut)

Tue	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Antares	+Spica	+Regulus	+Venus	+Sun
0	70°56.7	12.8'	S 19°45.1	-11.0'	55.3'		105°04.8	78°48.5	23°20.6	22°34.7	76°38.5	101°30.3	112°45.6
1	85°28.5	12.7'	19°56.0	-10.9'	55.3'		104°35.6	78°23.1	22°49.8	23°05.5	77°09.4	101°58.0	113°14.0
2	100°00.2	12.6'	20°06.9	-10.8'	55.3'		104°06.4	77°57.7	22°18.9	23°36.4	77°40.2	102°25.8	113°42.4
3	114°31.8	12.5'	$20^{\circ}17.7$	-10.7'	55.3'		103°37.1	77°32.3	21°47.9	24°07.3	78°11.1	102°53.6	114°10.8
4	129°03.2	12.4'	20°28.4	-10.6'	55.4'		103°07.7	77°07.0	21°17.0	24°38.2	78°42.0	103°21.5	114°39.2
5	143°34.6	12.3'	$20^{\circ}39.1$	-10.6'	55.4'	119°39.8	102°38.3	76°41.6	20°46.0	25°09.2	79°13.0	103°49.4	115°07.7
6	158°05.9	12.2'	S 20°49.6	-10.5'	55.4'	119°08.7	102°08.9	76°16.2	20°15.0	25°40.2	79°44.0	104° 17.3	115°36.2
7	172°37.1	12.1'	$21^{\circ}00.1$	-10.4'	55.5'	118°37.6	101°39.5	75°50.8	19°43.9	26°11.3	80°15.0	104°45.2	116°04.8
8	187°08.1	12.0'	$21^{\circ}10.5$	-10.3'	55.5'	118°06.4	101°10.0	75°25.4	19°12.8	26°42.3	80°46.0	105°13.2	116°33.3
9	201°39.1	11.9'	21°20.8	-10.2'	55.5'	117°35.3	100°40.5	75°00.0	18°41.7	27°13.4	81°17.1	105°41.2	117°01.9
10	216°09.9	11.7'	21°31.0	-10.1'	55.5'	117°04.0	100°11.0	74°34.6	18°10.6	27°44.6	81°48.2	106°09.2	117°30.5
11	230°40.7	11.6'	$21^{\circ}41.1$	-10.0'	55.6'	116°32.8	99°41.4	74°09.2	17°39.4	28°15.7	82°19.4	106°37.3	117°59.2
12	245°11.3	11.5'	S 21°51.1	-9.9'	55.6'	116°01.5	99°11.8	73°43.8	17°08.2	28°46.9	82°50.6	107°05.4	118°27.9
13	259°41.8	11.4'	22°01.1	-9.8'	55.6'	115°30.2	98°42.1	73°18.4	16°36.9	29°18.2	83°21.8	107°33.5	118°56.6
14	274°12.3	11.3'	22°10.9	-9.8'	55.6'	114°58.9	98°12.4	72°53.0	16°05.7	29°49.4	83°53.0	108°01.7	119°25.3
15	288°42.6	11.2'	22°20.7	-9.7'	55.7'	114°27.5	97°42.7	72°27.6	15°34.3	30°20.7	84°24.3	108° 29.8	119°54.1
16	303°12.8	11.1'	22°30.3	-9.6'	55.7'	113°56.1	97°12.9	72°02.2	15°03.0	30°52.1	84°55.6	108°58.1	
17	317°42.9	11.0'	$22^{\circ}39.9$	-9.5'	55.7'	113°24.6	96°43.1	71°36.9	14°31.6	31°23.4	85°26.9	109°26.3	
18	332°12.8	10.9'	S 22°49.3	-9.4'	55.8'	112°53.1	96°13.3	71°11.5	14°00.2	31°54.8	85°58.3	109°54.6	
19	346°42.7	10.8'	22°58.7	-9.3'	55.8'	112°21.6	95°43.4	70°46.1	13°28.8	32°26.3	86°29.7	110°23.0	
20	1°12.5	10.6'	23°08.0	-9.2'	55.8'	111°50.1	95°13.5	70°20.7	12°57.3	32°57.7	87°01.2	110°51.3	
21	15°42.1	10.5'	23° 17.1	-9.1'	55.8'	111°18.5	94°43.6	69°55.4	12°25.8	33°29.3	87°32.7	111° 19.7	
22	30°11.7	10.4'	23°26.2	-8.9'	55.9'	110°46.8	94°13.6	69°30.0	11°54.2	34°00.8	88°04.2	111°48.2	
23	44°41.1	10.3'	23°35.1	-8.8'	55.9'	110°15.2	93°43.6	69°04.7	11°22.6	34°32.4	88°35.7	112°16.6	
16 th	SD	= 15.1'	Mer. pas	s. 19:55					Sun SD	= 15.7'			

Moon (17th Jul)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Antares	+Spica	+Arcturus	+Regulus	+Venus
0	59°10.4	10.2'	S 23°44.0	-8.7'	55.9'	109°43.5	93° 13.6	68°39.4	10°51.0	35°04.0	47°50.5	89°07.3	112°45.1
1	73°39.6	10.1'	23°52.7	-8.6'	56.0'	109°11.8	92°43.5	68°14.1	10° 19.4	35°35.6	48°12.8	89°38.9	113°13.7
2	88°08.7	10.0'	24°01.3	-8.5'	56.0'	108°40.0	92°13.4	67°48.8	9°47.7	36°07.3	48°35.2	90°10.6	113°42.3
3	102°37.7	9.9'	24°09.8	-8.4'	56.0'	108°08.2	91°43.2	67°23.5	9° 15.9	36°39.1	48°57.8	90°42.3	114°10.9
4	117°06.5	9.8'	24°18.2	-8.3'	56.0'	107°36.4	91°13.0	66°58.2	8°44.2	37°10.8	49°20.6	91°14.0	114°39.5
5	131°35.3	9.6'	24°26.5	-8.2'	56.1'	107°04.5	90°42.8	66°32.9	8° 12.4	37°42.6	49°43.5	91°45.8	115°08.2
6	146°03.9	9.5'	S 24°34.7	-8.1'	56.1'	106°32.6	90°12.5	66°07.7	7°40.6	38°14.4	50°06.5	92°17.6	115°36.9
7	160°32.5	9.4'	24°42.7	-7.9'	56.1'	106°00.6	89°42.2	65°42.5	7°08.7	38°46.3	50°29.7	92°49.4	116°05.7
8	175°00.9	9.3'	24°50.7	-7.8'	56.2'	105°28.6	89°11.9	65°17.3	6°36.8	39° 18.2	50°53.0	93°21.3	116°34.5
9	189°29.2	9.2'	24°58.5	-7.7'	56.2'	104°56.6	88°41.6	64°52.1	6°04.8	39°50.2	51°16.5	93°53.2	117°03.3
10	203°57.4	9.1'	25°06.2	-7.6'	56.2'	104°24.5	88°11.2	64°27.0	5°32.9	40°22.1	51°40.1	94°25.2	117°32.2
11	218°25.4	9.0'	$25^{\circ}13.7$	-7.4'	56.3'	103°52.4	87° 40.7	64°01.8	5°00.9	40°54.2	52°03.8	94°57.2	118°01.1
12	232°53.4	8.9'	S 25°21.2	-7.3'	56.3'	103°20.3	87°10.3	63°36.7	4°28.8	41°26.2	52°27.7	95°29.2	118°30.0
13	247°21.3	8.7'	25°28.5	-7.2'	56.3'	102°48.1	86° 39.7	63°11.7	3°56.7	41°58.3	52°51.7	96°01.3	118°59.0
14	261°49.0	8.6'	25°35.7	-7.1'	56.4'	102°15.9	86°09.2	62°46.6	3°24.6	42°30.5	53°15.8	96°33.4	119°28.0
15	276°16.6	8.5'	25°42.7	-6.9'	56.4'	101°43.7	85° 38.6	62°21.6	2°52.5	43°02.6	53°40.0	97°05.5	119°57.1
16	290°44.2	8.4'	25°49.7	-6.8'	56.4'	101°11.4	85°08.0	61°56.6	2°20.4	43°34.9	54°04.4	97°37.7	
17	305°11.6	8.3'	25°56.5	-6.7'	56.5'	100°39.0	84° 37.4	61°31.7	1°48.3	44°07.1	54°28.9	98°09.9	
18	319°38.9	8.2'	S 26°03.1	-6.5'	56.5'	100°06.7	84°06.7	61°06.8	1°16.2	44°39.4	54°53.5	98°42.2	
19	334°06.1	8.1'	26°09.7	-6.4'	56.5'	99°34.2	83°36.0	60°41.9	0°44.5	45°11.7	55°18.3	99°14.5	
20	348°33.2	8.0'	$26^{\circ}16.1$	-6.3'	56.5'	99°01.8	83°05.3	60°17.1		45°44.1	55°43.1	99°46.8	
21	3°00.1	7.9'	26°22.3	-6.1'	56.6'	98° 29.3	82°34.5	59°52.3		46°16.5	56°08.1	100°19.2	
22	17°27.0	7.8'	26°28.4	-6.0'	56.6'	97°56.8	82°03.7	59°27.5		46°49.0	56°33.2	100°51.6	
23	31°53.8	7.7'	26°34.4	-5.8'	56.6'	97°24.2	81°32.8	59°02.8		47°21.4	56°58.4	101°24.1	
17 th	SD	= 15.3'	Mer. pass	. 20:48				-		-			

h		Мооі	ո (18 th Jւ	ıl)			Lunar I	Distance (o	bjects wi	th largest	hourly I	_D delta)	
Thu	GHA	ν	Dec	d	HP	-Saturn	-Achernar	-Fomalhaut	-Altair	+Antares	+Spica	+Arcturus	+Regulus
0	46°20.4	7.6'	S 26°40.2	-5.7'	56.7'	96°51.6	87°57.8	81°02.0	58°38.2	1°59.8	47°54.0	57°23.7	101°56.6
1	60°47.0	7.5'	26°45.9	-5.5'	56.7'	96°19.0	87°40.1	80°31.0	58°13.6	2°32.2	48°26.5	57°49.1	102°29.1
2	75°13.5	7.4'	$26^{\circ}51.5$	-5.4'	56.7'	95°46.3	87° 22.4	80°00.1	57°49.0	3°04.8	48°59.2	58° 14.6	103°01.7
3	89°39.8	7.2'	26°56.9	-5.3'	56.8'	95°13.5	87°04.7	79°29.1	57°24.5	3°37.4	49°31.8	58°40.3	103°34.3
4	104°06.1	7.1'	$27^{\circ}02.1$	-5.1'	56.8'	94°40.8	86°47.0	78°58.1	57°00.1	4°10.0	50°04.5	59°06.0	104°07.0
5	118°32.2	7.0'	27°07.2	-5.0'	56.8'	94°08.0	86°29.2	78°27.1	56°35.7	4°42.7	50°37.2	59°31.8	104°39.6
6	132°58.3	7.0'	S 27°12.2	-4.8'	56.9'	93°35.1	86°11.5	77°56.0	56°11.4	5°15.5	51°10.0	59°57.8	105°12.4
7	147°24.2	6.9'	$27^{\circ}17.0$	-4.7'	56.9'	93°02.2	85°53.7	77°24.9	55°47.2	5°48.3	51°42.8	60°23.8	105°45.2
8	161°50.1	6.8'	$27^{\circ}21.7$	-4.5'	56.9'	92°29.3	85°36.0	76°53.8	55°23.0	6°21.1	52° 15.7	60°49.9	106°18.0
9	176°15.8	6.7'	27°26.2	-4.3'	57.0'	91°56.3	85° 18.2	76°22.6	54°58.8	6°54.0	52°48.5	61°16.1	106°50.8
10	190°41.5	6.6'	27°30.5	-4.2'	57.0'	91°23.3	85°00.4	75°51.4	54°34.8	7°26.9	53°21.5	61°42.5	107°23.7
11	205°07.1	6.5'	27°34.7	-4.0'	57.0'	90°50.2	84°42.6	75°20.2	54°10.8	7°59.9	53°54.5	62°08.9	107°56.7
12	219°32.5	6.4'	S 27°38.7	-3.9'	57.1'	90°17.1	84°24.9	74°48.9	53°46.9	8°32.9	54°27.5	62°35.4	108°29.6
13	233°57.9	6.3'	27°42.6	-3.7'	57.1'	89°44.0	84°07.1	74° 17.7	53°23.1	9°06.0	55°00.5	63°02.0	109°02.7
14	248°23.2	6.2'	27°46.3	-3.5'	57.1'	89°10.8	83°49.3	73°46.3	52°59.4	9°39.1	55°33.6	63°28.7	109°35.7
15	262°48.4	6.1'	27°49.8	-3.4'	57.2'	88°37.6	83°31.6	73° 15.0	52°35.8	10°12.2	56°06.8	63°55.5	110°08.8
16	277°13.6	6.0'	27°53.2	-3.2'	57.2'	88°04.4	83° 13.8	72°43.6	52°12.2	10°45.4	56°39.9	64°22.3	110°42.0
17	291°38.6	6.0'	27°56.4	-3.1'	57.2'	87°31.1	82°56.0	72°12.2	51°48.8	11°18.6	57°13.2	64°49.3	111°15.1
18	306°03.6	5.9'	S 27°59.5	-2.9'	57.3'	86°57.7	82°38.3	71°40.8	51°25.4	11°51.9	57°46.4	65° 16.3	111°48.4
19	320°28.4	5.8'	28°02.4	-2.7'	57.3'	86°24.3	82°20.5	71°09.3	51°02.2	12°25.2	58° 19.7	65°43.4	112°21.6
20	334°53.2	5.7'	$28^{\circ}05.1$	-2.5'	57.3'	85°50.9	82°02.8	70°37.9	50°39.1	12°58.5	58°53.1	66° 10.6	112°54.9
21	349°18.0	5.6'	28°07.6	-2.4'	57.4'	85°17.4	81°45.1	70°06.4	50°16.0	13°31.9	59°26.4	66° 37.9	113°28.3
22	3°42.6	5.6'	$28^{\circ}10.0$	-2.2'	57.4'	84°43.9	81°27.4	69°34.8	49°53.1	14°05.3	59°59.9	67°05.3	114°01.6
23	18°07.2	5.5'	$28^{\circ}12.2$	-2.0'	57.4'	84°10.4	81°09.7	69°03.3	49°30.3	14°38.8	60°33.3	67°32.7	114°35.1
18 th	SD = 15.5' Mer. pass. 21:45												

Moon (19th Jul)

Fri	GHA	ν	Dec	d	HP	-Saturn	-Achernar	-Fomalhaut	-Altair	+Antares	+Spica	+Arcturus	+Regulus
0	32°31.7	5.4'	S 28°14.2	-1.9'	57.5'	83°36.8	80°52.0	68°31.7	49°07.6	15°12.3	61°06.8	68°00.2	115°08.5
1	46°56.1	5.4'	$28^{\circ}16.1$	-1.7'	57.5'	83°03.2	80°34.3	68°00.1	48°45.1	15°45.8	61°40.4	68° 27.8	115°42.0
2	61°20.5	5.3'	28°17.8	-1.5'	57.5'	82°29.5	80° 16.7	67°28.5	48°22.7	16°19.4	62°14.0	68°55.5	116°15.6
3	75°44.8	5.2'	$28^{\circ}19.3$	-1.3'	57.6'	81°55.8	79°59.1	66° 56.8	48°00.4	16°53.1	62°47.6	69°23.2	116°49.2
4	90°09.0	5.2'	28°20.6	-1.2'	57.6'	81°22.0	79°41.4	66°25.1	47°38.2	17°26.7	63°21.3	69°51.0	117°22.8
5	104°33.2	5.1'	28°21.8	-1.0'	57.6'	80°48.2	79°23.9	65°53.4	47°16.2	18°00.4	63°55.0	70°18.9	117°56.5
6	118°57.3	5.1'	S 28°22.8	-0.8'	57.7'	80°14.4	79°06.3	65°21.7	46°54.4	18°34.2	64°28.7	70°46.9	118°30.2
7	133°21.4	5.0'	28°23.6	-0.6'	57.7'	79°40.5	78° 48.8	64°50.0	46°32.7	19°08.0	65°02.5	71°14.9	119°03.9
8	147°45.4	5.0'	28°24.2	-0.4'	57.7'	79°06.6	78°31.3	64°18.2	46°11.1	19°41.8	65°36.4	71°43.0	119°37.7
9	162°09.3	4.9'	28°24.7	-0.3'	57.8'	78°32.7	78° 13.8	63°46.5	45°49.8	20°15.7	66°10.2	72°11.1	
10	176°33.2	4.9'	28°24.9	-0.1'	57.8'	77°58.7	77°56.3	63°14.7	45°28.6	20°49.6	66°44.1	72°39.4	
11	190°57.1	4.8'	28°25.0	0.1'	57.8'	77°24.6	77°38.9	62°42.9	45°07.6	21°23.6	67°18.1	73°07.7	
12	205°20.9	4.8'	S 28°24.9	0.3'	57.9'	76°50.6	77°21.5	62°11.0	44°46.7	21°57.6	67°52.1	73°36.0	
13	219°44.7	4.7'	28°24.6	0.5'	57.9'	76°16.4	77° 04.2	61°39.2	44°26.1	22°31.6	68°26.1	74°04.5	
14	234°08.4	4.7'	28°24.2	0.6'	57.9'	75°42.3	76°46.9	61°07.3	44°05.6	23°05.7	69°00.2	74°32.9	
15	248°32.1	4.7'	28°23.5	0.8'	58.0'	75°08.1	76° 29.6	60°35.5	43°45.4	23°39.8	69°34.3	75°01.5	
16	262°55.7	4.6'	28°22.7	1.0'	58.0'	74°33.8	76° 12.4	60°03.6	43°25.3	24°14.0	70°08.5	75°30.1	
17	277°19.4	4.6'	28°21.7	1.2'	58.0'	73°59.6	75°55.2	59°31.7	43°05.5	24°48.1	70°42.7	75°58.8	
18	291°42.9	4.6'	S 28°20.5	1.4'	58.1'	73°25.3	75°38.1	58°59.8	42°45.9	25°22.4	71°16.9	76°27.5	
19	306°06.5	4.5'	$28^{\circ}19.1$	1.6'	58.1'	72°50.9	75°21.0	58° 27.9	42°26.5	25°56.7	71°51.2	76°56.3	
20	320°30.0	4.5'	28°17.5	1.8'	58.1'	72°16.5	75°03.9	57° 56.0	42°07.3	26°31.0	72°25.5	77°25.1	
21	334°53.5	4.5'	28°15.7	1.9'	58.2'	71°42.1	74°46.9	57°24.0	41°48.4	27°05.3	72°59.8	77°54.0	
22	349°17.0	4.5'	$28^{\circ}13.8$	2.1'	58.2'	71°07.6	74°30.0	$56^{\circ}52.1$	41°29.7	27°39.7	73°34.2	78°22.9	
23	3°40.5	4.4'	28°11.7	2.3'	58.2'	70°33.1	74°13.1	56°20.2	41°11.3	28°14.1	74°08.6	78°51.9	
19 th	SD :	= 15.7 [′]	Mer. pas	s. 22:45	i								

h Moon (20th Jul)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Achernar	-Saturn	-Fomalhaut	-Altair	+Antares	+Hadar	+Spica	+Arcturus
0	18°03.9	4.4'	S 28°09.3	2.5'	58.2'	73°56.3	69°58.5	55°48.2	40°53.2	28°48.6	55°24.9	74°43.1	79°21.0
1	32°27.4	4.4'	28°06.8	2.7'	58.3'	73°39.5	69°23.9	55° 16.3	40°35.3	29°23.1	55°46.2	75° 17.6	79°50.1
2	46°50.8	4.4'	28°04.1	2.9'	58.3'	73°22.8	68°49.3	54°44.4	40° 17.7	29°57.7	56°07.6	75°52.2	80°19.2
3	61°14.2	4.4'	28°01.2	3.1'	58.3'	73°06.1	68°14.6	54°12.4	40°00.4	30°32.3	56°29.3	76°26.7	80°48.4
4	75°37.6	4.4'	27°58.2	3.3'	58.4'	72°49.5	67°39.9	53°40.5	39°43.4	31°06.9	56°51.0	77°01.4	81°17.7
5	90°01.0	4.4'	27°54.9	3.4'	58.4'	72°33.0	67°05.2	53°08.5	39°26.6	31°41.5	57°13.0	77°36.0	81°47.0
6	104°24.4	4.4'	S 27°51.5	3.6'	58.4'	72°16.6	66°30.4	52°36.6	39° 10.2	32°16.2	57°35.1	78° 10.7	82°16.3
7	118°47.8	4.4'	27°47.8	3.8'	58.5'	72°00.2	65°55.6	52°04.7	38°54.1	32°51.0	57°57.3	78°45.4	82°45.7
8	133°11.2	4.4'	27°44.0	4.0'	58.5'	71°43.9	65°20.8	51°32.8	38°38.4	33°25.7	58°19.7	79°20.2	83°15.1
9	147°34.7	4.4'	27°40.0	4.2'	58.5'	71°27.6	64°45.9	51°00.9	38°23.0	34°00.5	58°42.3	79°55.0	83°44.6
10	161°58.1	4.4'	27°35.8	4.4'	58.6'	71°11.5	64°10.9	50°29.0	38°07.9	34°35.4	59°05.0	80°29.9	84°14.1
11	176°21.5	4.4'	27°31.4	4.6'	58.6'	70°55.4	63°36.0	49°57.1		35°10.3	59°27.9	81°04.7	84°43.7
12	190°45.0	4.5'	S 27°26.8	4.8'	58.6'	70°39.4	63°01.0	49°25.2		35°45.2	59°50.9	81°39.6	85°13.3
13	205°08.4	4.5'	$27^{\circ}22.1$	4.9'	58.6'	70°23.4	62°25.9	48°53.4		36°20.1	60°14.0	82°14.6	85°42.9
14	219°31.9	4.5'	27°17.1	5.1'	58.7'	70°07.6	61°50.9	48°21.6		36°55.1	60°37.3	82°49.6	86°12.5
15	233°55.4	4.5'	27°12.0	5.3'	58.7'	69°51.8	61°15.8	47°49.8		37°30.1	61°00.7	83°24.6	86°42.3
16	248°18.9	4.5'	27°06.7	5.5'	58.7'	69°36.2	60°40.6	47° 18.0		38°05.2	61°24.2	83°59.6	87°12.0
17	262°42.5	4.6'	27°01.2	5.7'	58.8'	69°20.6	60°05.5	46°46.3		38°40.3	61°47.9	84°34.7	87°41.8
18	277°06.0	4.6'	S 26°55.5	5.9'	58.8'	69°05.1	59°30.2	46°14.6		39°15.4	62°11.7	85°09.9	88°11.6
19	291°29.6	4.6'	26°49.7	6.0'	58.8'	68°49.7	58°55.0	45°42.9		39°50.6	62°35.6	85°45.0	88°41.4
20	305°53.3	4.7'	26°43.6	6.2'	58.8'	68°34.5	58°19.7	45°11.3		40°25.8	62°59.6	86°20.2	89°11.3
21	320°16.9	4.7'	26°37.4	6.4'	58.9'	68°19.3	57°44.4	44°39.7		41°01.0	63°23.8	86°55.4	89°41.2
22	334°40.6	4.7'	26°31.0	6.6'	58.9'	68°04.2	57°09.1	44°08.1		41°36.2	63°48.1	87°30.7	90°11.1
23	349°04.4	4.8'	26°24.4	6.8'	58.9'		56°33.7	43°36.6		42°11.5	64°12.5	88°06.0	90°41.0
20 th	SD =	= 15.9'	Mer. pass	s. 23:40	5								

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

		IVIOC	nı (∠ı Jı	ui)			Luna	Distance	(objects w	itti largest i	iourly LL	delta	
Sun	GHA	ν	Dec	d	HP	-Mars	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus
0	3°28.1	4.8'	S 26° 17.6	7.0'	58.9'		55°58.3	43°05.2	42°46.9	60°13.8	64°37.0	88°41.3	91°11.0
1	17°52.0	4.9'	$26^{\circ}10.7$	7.1'	59.0'		55°22.9	42° 33.7	43°22.2	60°38.4	65°01.7	89°16.6	91°41.0
2	32°15.8	4.9'	26°03.5	7.3'	59.0'		54°47.4	42°02.4	43°57.6	61°03.2	65°26.4	89°52.0	92°11.1
3	46°39.7	5.0'	25°56.2	7.5'	59.0'		54°11.9	41°31.1	44°33.0	61°28.0	65°51.2	90°27.4	92°41.1
4	61°03.7	5.0'	25°48.7	7.7'	59.0'		53°36.3	40° 59.9	45°08.5	61°53.0	66°16.2	91°02.9	93°11.2
5	75°27.7	5.1'	$25^{\circ}41.1$	7.8'	59.1'		53°00.8	40°28.7	45°43.9	62°18.1	66°41.2	91°38.4	93°41.3
6	89°51.7	5.1'	S 25°33.2	8.0'	59.1'		52°25.2	39°57.6	46°19.5	62°43.3	67°06.4	92°13.9	94°11.4
7	104° 15.8	5.2'	25°25.2	8.2'	59.1'		51°49.6	39°26.6	46°55.0	63°08.7	67°31.6	92°49.4	94°41.5
8	118°40.0	5.2'	25°17.0	8.4'	59.1'		51°13.9	38° 55.7	47°30.6	63°34.1	67°57.0	93°25.0	95°11.7
9	133°04.2	5.3'	25°08.7	8.5'	59.2'		50°38.2	38°24.9	48°06.2	63°59.7	68°22.4	94°00.6	95°41.8
10	147°28.5	5.3'	25°00.2	8.7'	59.2'		50°02.5	37°54.1	48°41.8	64°25.4	68°48.0	94°36.2	96°12.0
11	161°52.8	5.4'	24°51.5	8.9'	59.2'		49°26.8	37°23.5	49°17.4	64°51.1	69°13.6	95°11.8	96°42.2
12	176° 17.2	5.5'	S 24°42.6	9.0'	59.2'		48°51.0	36°52.9	49°53.1	65°17.0	69°39.3	95°47.5	97°12.4
13	190°41.7	5.5'	24°33.6	9.2'	59.3'	119°31.4	48°15.2	36° 22.5	50°28.8	65°43.0	70°05.1	96°23.2	97°42.6
14	205°06.2	5.6'	24°24.4	9.4'	59.3'	118°57.6	47°39.4	35° 52.2	51°04.6	66°09.1	70°31.0	96°59.0	98°12.8
15	219°30.8	5.6'	24°15.0	9.5'	59.3'	118°23.7	47°03.5	35°22.0	51°40.3	66°35.2	70°56.9	97°34.7	98°43.0
16	233°55.4	5.7'	24°05.5	9.7'	59.3'	117°49.8	46°27.6	34°52.0	52°16.1	67°01.5	71°23.0	98°10.5	99°13.2
17	248°20.1	5.8'	23°55.8	9.8'	59.4'	117°15.8	45°51.7	34°22.0	52°52.0	67°27.9	71°49.1	98°46.3	99°43.5
18	262°44.9	5.9'	S 23°46.0	10.0'	59.4'	116°41.8	45°15.8	33°52.3	53°27.8	67°54.3	72°15.3	99°22.2	100°13.7
19	277°09.7	5.9'	23°36.0	10.2'	59.4'	116°07.8	44°39.8	33°22.6	54°03.7	68°20.9	72°41.6	99°58.0	100°43.9
20	291°34.7	6.0'	23°25.8	10.3'	59.4'	115°33.8	44°03.9	32°53.2	54°39.6	68°47.5	73°07.9	100°33.9	101°14.2
21	305°59.7	6.1'	23° 15.5	10.5'	59.4'	114°59.8	43°27.8	32°23.9	55° 15.5	69°14.2	73°34.3	101°09.9	101°44.4
22	320°24.7	6.1'	23°05.0	10.6'	59.5'	114°25.7	42°51.8	31°54.8	55°51.4	69°41.0	74°00.8	101°45.8	102°14.6
23	334°49.9	6.2'	22°54.4	10.8'	59.5'	113°51.6	42°15.8	31°25.9	56°27.4	70°07.8	74°27.4	102°21.8	102°44.9
21 st	SD	= 16.	1′ Mer. pa	ass:-									

h		Моо	n (22 nd J	ul)			Lunar [Distance (objects	with large	st hourly LD	delta)	
Mon	GHA	ν	Dec	d	HP	-Jupiter	-Aldebaran	-Mars	-Saturn	+Antares	+Rigil Kent.	+Spica	+Arcturus
0	349°15.1	6.3'	S 22°43.6	10.9'	59.5'			113°17.5	41°39.7	57°03.4	70°34.8	102°57.7	103°15.1
1	3°40.4	6.4'	22°32.6	11.1'	59.5'			112°43.3	41°03.6	57°39.4	71°01.8	103°33.8	103°45.3
2	18°05.7	6.4'	22°21.6	11.2'	59.5'			112°09.2	40°27.5	58°15.4	71°28.9	104°09.8	104°15.5
3	32°31.2	6.5'	22°10.3	11.4'	59.6'			111°35.0	39°51.3	58°51.5	71°56.1	104°45.8	104°45.7
4	46°56.7	6.6'	$21^{\circ}59.0$	11.5'	59.6'		119°38.3	111°00.8	39°15.2	59°27.6	72°23.3	105°21.9	105°15.9
5	61°22.3	6.7'	21°47.4	11.7'	59.6'		119°02.9	110°26.5	38°39.0	60°03.6	72°50.6	105°58.0	105°46.1
6	75°48.0	6.8'	S 21°35.8	11.8'	59.6'		118°27.5	109°52.3	38°02.8	60°39.8	73°18.0	106°34.1	106°16.2
7	90°13.7	6.8'	21°24.0	11.9'	59.6'		117°52.0	109°18.0	37°26.5	61°15.9	73°45.4	107°10.2	106°46.4
8	104°39.6	6.9'	21°12.0	12.1'	59.6'		117°16.6	108°43.7	36°50.3	61°52.1	74°12.9	107°46.4	107°16.5
9	119°05.5	7.0'	20°59.9	12.2'	59.7'	119°40.8	116°41.1	108°09.4	36°14.0	62°28.2	74°40.5	108°22.6	107°46.6
10	133°31.5	7.1'	20°47.7	12.4'	59.7'	119°05.3	116°05.5	107°35.0	35°37.7	63°04.4	75°08.1	108°58.8	108°16.6
11	147°57.5	7.2'	20°35.4	12.5'	59.7'	118°29.8	115°30.0	107°00.7	35°01.4	63°40.6	75°35.7	109°35.0	108°46.7
12	162°23.7	7.2'	S 20°22.9	12.6'	59.7'	117°54.2	114°54.4	106°26.3	34°25.1	64°16.9	76°03.5	110°11.2	109°16.7
13	176°49.9	7.3'	20°10.3	12.7'	59.7'	117°18.6	114°18.8	105°51.9	33°48.8	64°53.1	76°31.2	110°47.4	109°46.7
14	191°16.3	7.4'	19°57.5	12.9'	59.7'	116°43.0	113°43.2	105°17.5	33°12.4	65°29.4	76°59.1	111°23.7	110°16.7
15	205°42.7	7.5'	19°44.6	13.0'	59.7'	116°07.4	113°07.6	104°43.1	32°36.1	66°05.7	77°26.9	112°00.0	110°46.6
16	220°09.1	7.6'	19°31.6	13.1'	59.8'	115°31.8	112°31.9	104°08.6	31°59.7	66°42.0	77° 54.9	112°36.3	111°16.5
17	234°35.7	7.6'	$19^{\circ}18.5$	13.2'	59.8'	114°56.1	111°56.2	103°34.2	31°23.3	67°18.3	78°22.8	113°12.6	111°46.4
18	249°02.4	7.7'	S 19°05.3	13.4'	59.8'	114°20.5	111°20.5	102°59.7	30°46.9	67°54.6	78° 50.8	113°48.9	112°16.2
19	263°29.1	7.8'	18°51.9	13.5'	59.8'	113°44.8	110°44.8	102°25.2	30°10.4	68°30.9	79°18.9	114°25.2	112°46.0
20	277°55.9	7.9'	18°38.4	13.6'	59.8'	113°09.1	110°09.0	101°50.7	29°34.0	69°07.3	79°47.0	115°01.6	113°15.7
21	292°22.8	8.0'	$18^{\circ}24.8$	13.7'	59.8'	112°33.4	109°33.3	101°16.2	28°57.5	69°43.7	80° 15.1	115°38.0	113°45.4
22	306°49.8	8.1'	$18^{\circ}11.1$	13.8'	59.8'	111°57.7	108°57.5	100°41.7	28°21.1	70°20.0	80°43.3	116°14.3	114°15.1
23	321°16.8	8.1'	$17^{\circ}57.3$	13.9'	59.8'	111°21.9	108°21.7	100°07.1	27°44.6	70°56.4	81°11.5	116°50.7	114°44.7
22 nd	SD	= 16.2	Mer. pas	s. 00:45	i								

h	Moon	(23 rd	Jul)	١

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Jupiter	-Aldebaran	-Mars	-Saturn	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	335°44.0	8.2'	S 17°43.3	14.1'	59.9'	110°46.2	107°45.9	99°32.6	27°08.1	71°32.8	81°39.7	115°14.2	117°27.1
1	350°11.2	8.3'	$17^{\circ}29.3$	14.2'	59.9'	110°10.4	107°10.1	98°58.0	26°31.6	72°09.3	82°08.0	115°43.7	118°03.5
2	4°38.5	8.4'	$17^{\circ}15.1$	14.3'	59.9'	109°34.6	106°34.3	98°23.4	25°55.1	72°45.7	82°36.3	116°13.2	118°40.0
3	19°05.9	8.5'	$17^{\circ}00.8$	14.4'	59.9'	108°58.8	105°58.4	97°48.8	25° 18.5	73°22.1	83°04.6	116°42.6	119°16.4
4	33°33.3	8.5'	$16^{\circ}46.5$	14.5'	59.9'	108°23.0	105°22.6	97°14.2	24°42.0	73°58.6	83°33.0	117°11.9	119°52.8
5	48°00.9	8.6'	$16^{\circ}32.0$	14.6'	59.9'	107°47.2	104°46.7	96°39.6	24°05.5	74°35.0	84°01.4	117°41.2	
6	62°28.5	8.7'	$$16^{\circ}17.4$	14.7'	59.9'	107°11.4	104°10.8	96°05.0	23°28.9	75°11.5	84°29.8	118°10.4	
7	76°56.2	8.8'	$16^{\circ}02.7$	14.8'	59.9'	106°35.6	103°34.9	95°30.4	22°52.3	75°48.0	84°58.2	118°39.5	
8	91°24.0	8.9'	15°48.0	14.9'	59.9'	105°59.7	102°59.0	94°55.7	22°15.8	76°24.4	85°26.6	119°08.5	
9	105°51.8	8.9'	$15^{\circ}33.1$	15.0'	59.9'	105°23.9	102°23.1	94°21.1	21°39.2	77°00.9	85°55.1	119°37.5	
10	120°19.7	9.0'	$15^{\circ}18.1$	15.0'	59.9'	104°48.0	101°47.1	93°46.4	21°02.6	77°37.4	86°23.6		
11	134°47.7	9.1'	$15^{\circ}03.1$	15.1'	60.0'	104°12.2	101°11.2	93°11.8	20°26.0	78°13.9	86°52.1		
12	149°15.8	9.2'	S 14°48.0	15.2'	60.0'	103°36.3	100°35.2	92°37.1	19°49.4	78°50.4	87°20.6		
13	163°44.0	9.2'	$14^{\circ}32.7$	15.3'	60.0'	103°00.4	99°59.3	92°02.4	19° 12.8	79°27.0	87°49.1		
14	178°12.2	9.3'	$14^{\circ}17.4$	15.4'	60.0'	102°24.5	99°23.3	91°27.8	18° 36.2	80°03.5	88°17.6		
15	192°40.5	9.4'	$14^{\circ}02.0$	15.5'	60.0'	101°48.6	98°47.4	90°53.1	17°59.6	80°40.0	88°46.1		
16	207°08.9	9.4'	13°46.5	15.6'	60.0'	101°12.7	98°11.4	90°18.4	17°23.0	81°16.5	89°14.7		
17	221°37.3	9.5'	13°31.0	15.6'	60.0'	100°36.8	97°35.4	89°43.7	16°46.3	81°53.1	89°43.2		
18	236°05.9	9.6'	S 13°15.4	15.7'	60.0'	100°00.9	96°59.4	89°09.0	16°09.7	82°29.6	90°11.8		
19	250°34.4	9.7'	$12^{\circ}59.6$	15.8'	60.0'	99°25.0	96°23.4	88°34.3	15°33.1	83°06.1	90°40.3		
20	265°03.1	9.7'	12°43.9	15.9'	60.0'	98°49.1	95°47.4	87°59.6	14°56.5	83°42.7	91°08.9		
21	279°31.8	9.8'	12°28.0	15.9'	60.0'	98°13.2	95°11.5	87°24.9	14° 19.8	84°19.2	91°37.5		
22	294°00.6	9.9'	12° 12.1	16.0'	60.0'	97°37.3	94°35.5	86°50.2	13°43.2	84°55.8	92°06.0		
23	308°29.5	9.9'	11°56.1	16.1'	60.0'	97°01.4	93°59.5	86°15.5	13°06.6	85°32.3	92°34.5		
23 rd	SD :	= 16.3'	Mer. pas	s. 01:41									

h Moon (24th Jul)

Lunar Distance (objects with largest hourly LD delta)

										(objects min languet meanly 25 denta)				
Wed	GHA	ν	Dec	d	HP	-Jupiter	-Aldebaran	-Mars	-Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar	
0	322°58.4	10.0'	S 11°40.0	16.1'	60.0'	96°25.5	93°23.5	85°40.8	12°29.9	45°53.0	86°08.9	93°03.1	96°53.3	
1	337°27.4	10.1'	11°23.9	16.2'	60.0'	95°49.6	92°47.5	85°06.1	11°53.3	46°16.1	86°45.4	93°31.6	97°20.9	
2	351°56.5	10.1'	11°07.7	16.3'	60.0'	95°13.6	92°11.5	84°31.4	11°16.7	46°39.4	87°22.0	94°00.1	97°48.5	
3	6°25.6	10.2'	10°51.4	16.3'	60.0'	94°37.7	91°35.5	83°56.7	10°40.1	47°02.9	87°58.5	94°28.7	98°16.2	
4	20°54.8	10.2'	10°35.1	16.4'	60.0'	94°01.8	90°59.5	83°22.0	10°03.4	47°26.7	88°35.1	94°57.1	98°43.7	
5	35°24.0	10.3'	$10^{\circ}18.7$	16.4'	60.0'	93°25.9	90°23.5	82°47.4	9°26.8	47°50.6	89°11.6	95°25.6	99°11.3	
6	49°53.3	10.4'	S 10°02.3	16.5'	60.0'	92°50.0	89°47.5	82°12.7	8°50.2	48°14.7	89°48.1	95°54.1	99°38.8	
7	64°22.7	10.4'	09°45.8	16.5'	60.0'	92°14.1	89° 11.5	81°38.0	8°13.6	48°39.1	90°24.7	96°22.5	100°06.3	
8	78°52.1	10.5'	09°29.3	16.6'	60.0'	91°38.2	88° 35.5	81°03.3	7°37.0	49°03.6	91°01.2	96°51.0	100°33.8	
9	93°21.6	10.5'	09°12.7	16.6'	60.0'	91°02.3	87° 59.5	80°28.6	7°00.4	49°28.3	91°37.7	97°19.4	101°01.2	
10	107°51.1	10.6'	$08^{\circ}56.1$	16.7'	60.0'	90°26.4	87°23.5	79°53.9	6°23.8	49°53.2	92°14.3	97°47.8	101°28.6	
11	122°20.7	10.6'	08°39.4	16.7'	60.0'	89°50.5	86° 47.5	79°19.2	5°47.3	50°18.2	92°50.8	98°16.1	101°56.0	
12	136°50.3	10.7'	S 08°22.7	16.8'	60.0'	89°14.6	86°11.6	78°44.6	5°10.7	50°43.4	93°27.3	98°44.5	102°23.3	
13	151°20.0	10.7'	08°05.9	16.8'	60.0'	88°38.7	85°35.6	78°09.9	4°34.2	51°08.8	94°03.8	99°12.8	102°50.6	
14	165°49.7	10.8'	$07^{\circ}49.1$	16.8'	60.0'	88°02.8	84° 59.6	77°35.3	3°57.7	51°34.4	94°40.3	99°41.1	103°17.8	
15	180°19.5	10.8'	07°32.3	16.9'	60.0'	87°26.9	84°23.7	77°00.6	3°21.3	52°00.0	95° 16.8	100°09.3	103°45.0	
16	194°49.4	10.9'	07°15.4	16.9'	60.0'	86°51.1	83°47.7	76°26.0	2°44.9	52°25.9	95°53.3	100°37.5	104°12.1	
17	209°19.3	10.9'	06°58.5	17.0'	60.0'	86°15.2	83°11.8	75°51.3	2°08.7	52°51.8	96°29.8	101°05.7	104°39.2	
18	223°49.2	11.0'	S 06°41.5	17.0'	60.0'	85°39.3	82° 35.9	75°16.7	1°32.8	53°18.0	97°06.3	101°33.9	105°06.3	
19	238°19.2	11.0'	06°24.5	17.0'	60.0'	85°03.5	81°59.9	74°42.1	0°57.8	53°44.2	97°42.8	102°02.0	105°33.3	
20	252°49.2	11.1'	06°07.5	17.0'	60.0'	84°27.7	81°24.0	74°07.5		54°10.6	98° 19.2	102°30.0	106°00.2	
21	267°19.2	11.1'	05°50.5	17.1'	60.0'	83°51.8	80°48.1	73°32.9		54°37.1	98° 55.7	102°58.1	106°27.1	
22	281°49.3	11.1'	05°33.4	17.1'	60.0'	83°16.0	80°12.2	72°58.3		55°03.7	99°32.1	103°26.1	106°53.9	
23	296°19.5	11.2'	05°16.3	17.1'	60.0'	82°40.2	79°36.4	72°23.7		55°30.5	100°08.6	103°54.0	107°20.7	
24 th	SD	$= 16.4^{\prime}$	Mer. pass	. 02:33										

h Moon (25th Jul)

Thu	GHA	ν	Dec	d	HP	-Pollux	-Capella	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Altair	+Antares
0	310°49.7	11.2'	S 04°59.2	17.1'	60.0'		91°41.0	82°04.4	79°00.5	2°10.5	25°32.3	55°57.3	100°45.0
1	325°19.9	11.3'	04°42.0	17.2'	60.0'		91°06.4	81°28.6	78°24.6	2°46.7	25°57.6	56°24.3	101°21.4
2	339°50.1	11.3'	04°24.9	17.2'	59.9'		90°31.7	80°52.8	77°48.8	3°23.0	26°23.3	56°51.4	101°57.9
3	354°20.4	11.3'	04°07.7	17.2'	59.9'		89°57.1	80°17.1	77°13.0	3°59.3	26°49.4	57° 18.5	102°34.3
4	8°50.7	11.3'	03°50.5	17.2'	59.9'		89°22.5	79°41.3	76°37.1	4°35.7	27°15.9	57°45.8	103°10.6
5	23°21.1	11.4'	03°33.3	17.2'	59.9'	119°26.8	88°47.9	79°05.5	76°01.3	5°12.1	27°42.6	58° 13.2	103°47.0
6	37°51.5	11.4'	S 03°16.0	17.2'	59.9'	118°50.4	88°13.3	78°29.8	75°25.6	5°48.5	28°09.7	58°40.7	104°23.4
7	52°21.9	11.4'	02°58.8	17.2'	59.9'	118° 14.1	87°38.8	77°54.1	74°49.8	6°24.9	28°37.1	59°08.2	104°59.7
8	66°52.3	11.5'	02°41.5	17.3'	59.9'	117°37.8	87°04.2	77°18.4	74°14.0	7°01.3	29°04.9	59°35.9	105°36.1
9	81°22.8	11.5'	02°24.3	17.3'	59.9'	117°01.5	86°29.6	76°42.7	73°38.3	7°37.6	29°32.8	60°03.6	106°12.4
10	95°53.2	11.5'	02°07.0	17.3'	59.9'	116°25.2	85°55.1	76°07.0	73°02.6	8°14.0	30°01.1	60°31.5	106°48.7
11	110°23.8	11.5'	01°49.8	17.3'	59.9'	115°48.9	85°20.6	75°31.3	72°26.8	8°50.4	30°29.6	60°59.4	107°25.0
12	124°54.3	11.6'	S 01°32.5	17.3'	59.9'	115°12.6	84°46.1	74°55.7	71°51.2	9°26.8	30°58.3	61°27.3	108°01.3
13	139°24.8	11.6'	$01^{\circ}15.2$	17.3'	59.9'	114°36.4	84°11.6	74°20.0	71°15.5	10°03.1	31°27.2	61°55.4	108°37.6
14	153°55.4	11.6'	00°57.9	17.3'	59.8'	114°00.1	83°37.1	73°44.4	70°39.8	10°39.5	31°56.4	62°23.5	109°13.9
15	168°26.0	11.6'	00°40.7	17.3'	59.8'	113°23.9	83°02.7	73°08.8	70°04.2	11°15.8	32°25.7	62°51.7	109°50.1
16	182°56.6	11.6'	00°23.4	17.3'	59.8'	112°47.7	82°28.2	72°33.2	69°28.6	11°52.1	32°55.3	63°19.9	110°26.4
17	197°27.2	11.6'	S 00°06.1	17.3'	59.8'	112°11.5	81°53.8	71°57.6	68°53.0	12°28.4	33°25.0	63°48.2	111°02.6
18	211°57.9	11.7'	$N00^{\circ}11.1$	17.2'	59.8'	111°35.3	81°19.4	71°22.1	68°17.4	13°04.7	33°54.9	64°16.6	111°38.8
19	226°28.5	11.7'	00°28.4	17.2'	59.8'	110°59.1	80°45.1	70°46.5	67°41.8	13°41.0	34°25.0	64°45.0	112°15.0
20	240°59.2	11.7'	00°45.6	17.2'	59.8'	110°23.0	80°10.7	70°11.0	67°06.3	14°17.3	34°55.3	65° 13.5	112°51.1
21	255°29.9	11.7'	$01^{\circ}02.8$	17.2'	59.8'	109°46.8	79°36.4	69°35.5	66°30.8	14°53.5	35°25.6	65°42.1	113°27.3
22	270°00.6	11.7'	01°20.1	17.2'	59.8'	109° 10.7	79°02.1	69°00.0	65°55.3	15°29.7	35°56.2	66° 10.7	114°03.4
23	284°31.2	11.7'	01°37.3	17.2'	59.7'	108°34.6	78° 27.8	68°24.5	65°19.8	16°06.0	36°26.8	66°39.3	114°39.5
25 th	SD	$= 16.4^{\prime}$	Mer. pass	. 03:23									

h

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

Fri	GHA	ν	Dec	d	HP	-Pollux	-Capella	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Altair	+Antares
0	299°01.9	11.7'	N 01°54.4	17.2'	59.7'	107°58.5	77°53.5	67°49.0	64°44.4	16°42.2	36°57.6	67°08.0	115°15.7
1	313°32.6	11.7'	$02^{\circ}11.6$	17.1'	59.7'	107°22.5	77° 19.3	67°13.6	64°08.9	17°18.4	37°28.5	67°36.7	115°51.7
2	328°03.3	11.7'	02°28.7	17.1'	59.7'	106°46.4	76°45.1	66°38.2	63°33.5	17°54.5	37°59.5	68°05.5	116°27.8
3	342°34.0	11.7'	02°45.9	17.1'	59.7'	106°10.4	76° 10.9	66°02.8	62°58.2	18°30.7	38°30.7	68°34.3	117°03.9
4	357°04.7	11.7'	03°03.0	17.1'	59.7'	105°34.4	75°36.7	65°27.4	62°22.8	19°06.8	39°01.9	69°03.2	117°39.9
5	11°35.5	11.7'	$03^{\circ}20.1$	17.1'	59.7'	104°58.4	75°02.6	64°52.0	61°47.5	19°42.9	39°33.2	69°32.1	118°15.9
6	26°06.2	11.7'	$N03^{\circ}37.1$	17.0'	59.7'	104°22.4	74°28.5	64°16.7	61°12.2	20°19.0	40°04.6	70°01.0	118°51.9
7	40°36.9	11.7'	03°54.1	17.0'	59.6'	103°46.4	73°54.4	63°41.4	60°36.9	20°55.1	40°36.2	70°30.0	119°27.9
8	55°07.5	11.7'	$04^{\circ}11.1$	17.0'	59.6'	103°10.5	73°20.4	63°06.1	60°01.7	21°31.2	41°07.8	70°59.0	
9	69°38.2	11.7'	04°28.1	16.9'	59.6'	102°34.5	72°46.4	62°30.8	59°26.4	22°07.2	41°39.4	71°28.0	
10	84°08.9	11.7'	04°45.0	16.9'	59.6'	101°58.6	72°12.4	61°55.5	58°51.3	22°43.2	42°11.2	71°57.0	
11	98°39.6	11.7'	$05^{\circ}01.9$	16.9'	59.6'	101°22.8	71°38.4	61°20.3	58°16.1	23°19.2	42°43.0	72°26.1	
12	113°10.3	11.7'	$N05^{\circ}18.8$	16.8'	59.6'	100°46.9	71°04.5	60°45.1	57°41.0	23°55.2	43°14.9	72°55.2	
13	127°40.9	11.6'	05°35.6	16.8'	59.6'	100°11.0	70°30.6	60°09.9	57°05.9	24°31.2	43°46.9	73°24.4	
14	142°11.5	11.6'	05°52.4	16.8'	59.5'	99°35.2	69°56.7	59°34.7	56°30.8	25°07.1	44°18.9	73°53.5	
15	156°42.2	11.6'	06°09.2	16.7'	59.5'	98°59.4	69°22.9	58° 59.5	55°55.7	25°43.1	44°51.0	74°22.7	
16	171°12.8	11.6'	06°25.9	16.7'	59.5'	98°23.6	68°49.1	58°24.4	55°20.7	$26^{\circ}19.0$	45°23.1	74°51.9	
17	185°43.4	11.6'	06°42.6	16.6'	59.5'	97°47.9	68° 15.4	57°49.3	54°45.7	26°54.8	45°55.3	75°21.1	
18	200°13.9	11.6'	$N06^{\circ}59.2$	16.6'	59.5'	97°12.1	67°41.6	57° 14.2	54°10.8	27°30.7	46°27.6	75°50.3	
19	214°44.5	11.5'	07°15.8	16.5'	59.5'	96°36.4	67°07.9	56°39.2	53°35.9	28°06.6	46°59.9	76° 19.5	
20	229°15.0	11.5'	07°32.3	16.5'	59.4'	96°00.7	66°34.3	56°04.1	53°01.0	28°42.4	47°32.2	76°48.8	
21	243°45.5	11.5'	07°48.8	16.4'	59.4'	95°25.0	66°00.7	55°29.1	52°26.1	29°18.2	48°04.6	77°18.0	
22	258°16.0	11.5'	08°05.2	16.4'	59.4'	94°49.3	65°27.1	54°54.1	51°51.3	29°54.0	48°37.0	77°47.3	
23	272°46.5	11.4'	$08^{\circ}21.6$	16.3'	59.4'	94°13.7	64°53.6	54° 19.2	51°16.5	30°29.7	49°09.4	78° 16.6	
26 th	SD	= 16.3'	Mer. pass	. 04:12									

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

Sat	GHA	ν	Dec	d	HP	-Pollux	-Capella	-Jupiter	-Aldebaran	-Mars	+Saturn	+Fomalhaut	+Altair
0	287°16.9	11.4'	N08°38.0	16.3'	59.4'	93°38.1	64°20.1	53°44.2	50°41.8	44°28.7	31°05.5	49°41.9	78°45.8
1	301°47.4	11.4'	08°54.2	16.2'	59.4'	93°02.5	63°46.7	53°09.3	50°07.1	43°55.0	31°41.2	50°14.4	79°15.1
2	316°17.7	11.4'	$09^{\circ}10.5$	16.2'	59.3'	92°26.9	63°13.2	52°34.4	49°32.4	43°21.4	32°16.9	50°47.0	79°44.4
3	330°48.1	11.3'	09°26.6	16.1'	59.3'	91°51.4	62°39.9	51°59.6	48°57.8	42°47.8	32°52.6	51°19.6	80°13.7
4	345°18.4	11.3'	09°42.7	16.0'	59.3'	91°15.8	62°06.6	51°24.7	48°23.2	42°14.2	33°28.2	51°52.2	80°43.0
5	359°48.7	11.3'	09°58.8	16.0'	59.3'	90°40.3	61°33.3	50°49.9	47°48.6	41°40.7	34°03.8	52°24.8	81°12.3
6	14°19.0	11.2'	N10°14.8	15.9'	59.3'	90°04.8	61°00.1	50°15.1	47°14.1	41°07.2	34°39.4	52°57.4	81°41.6
7	28°49.2	11.2'	10°30.7	15.9'	59.3'	89°29.4	60°26.9	49°40.4	46°39.6	40°33.7	35°15.0	53°30.1	82°10.9
8	43°19.4	11.2'	10°46.5	15.8'	59.2'	88°53.9	59°53.7	49°05.7	46°05.2	40°00.3	35°50.6	54°02.8	82°40.2
9	57°49.6	11.1'	11°02.3	15.7'	59.2'	88°18.5	59°20.7	48°31.0	45°30.8	39°26.9	36°26.1	54°35.5	83°09.5
10	72°19.7	11.1'	$11^{\circ}18.1$	15.7'	59.2'	87°43.1	58°47.6	47°56.3	44°56.4	38°53.5	37°01.6	55°08.2	83°38.8
11	86°49.8	11.0'	11°33.7	15.6'	59.2'	87°07.8	58°14.6	47°21.6	44°22.1	38°20.1	37°37.1	55°41.0	84°08.0
12	101°19.8	11.0'	N11°49.3	15.5'	59.2'	86°32.4	57°41.7	46°47.0	43°47.9	37°46.8	38°12.6	56°13.7	84°37.3
13	115°49.9	11.0'	12°04.8	15.4'	59.1'	85°57.1	57°08.8	46°12.4	43°13.6	37°13.5	38°48.1	56°46.5	85°06.6
14	130°19.8	10.9'	12°20.3	15.4'	59.1'	85°21.8	56°36.0	45°37.9	42°39.5	36°40.2	39°23.5	57°19.3	85°35.8
15	144°49.7	10.9'	12°35.6	15.3'	59.1'	84°46.5	56°03.2	45°03.3	42°05.3	36°07.0	39°58.9	57°52.1	86°05.1
16	159°19.6	10.8'	12°50.9	15.2'	59.1'	84°11.3	55° 30.5	44°28.8	41°31.3	35°33.8	40°34.3	58°24.9	86°34.3
17	173°49.5	10.8'	13°06.1	15.1'	59.1'	83°36.0	54°57.8	43°54.3	40°57.3	35°00.6	41°09.6	58°57.7	87°03.5
18	188°19.2	10.7'	$N13^{\circ}21.3$	15.1'	59.0'	83°00.8	54°25.2	43°19.9	40°23.3	34°27.5	41°45.0	59°30.5	87°32.7
19	202°49.0	10.7'	13°36.3	15.0'	59.0'	82°25.6	53°52.7	42°45.5	39°49.4	33°54.4	42°20.3	60°03.3	88°01.9
20	217°18.7	10.6'	13°51.3	14.9'	59.0'	81°50.5	53°20.2	42°11.1	39°15.5	33°21.3	42°55.6	60°36.2	88°31.1
21	231°48.3	10.6'	14°06.2	14.8'	59.0'	81°15.3	52°47.7	41°36.7	38°41.7	32°48.3	43°30.8	61°09.0	89°00.2
22	246°17.9	10.6'	14°21.0	14.7'	59.0'	80°40.2	52°15.4	41°02.4	38°07.9	32°15.3	44°06.1	61°41.8	89°29.4
23	260°47.5	10.5'	14°35.7	14.6'	58.9'	80°05.1	51°43.1	40°28.1	37°34.2	31°42.4	44°41.3	62°14.7	89°58.5
27 th	SD	= 16.2'	Mer. pass.	05:01									

h Moon (28 th Jul)	Lunar Distance (objects with largest hourly LD delta)
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Sun	GHA	ν	Dec	d	HP	-Pollux	-Jupiter	-Aldebaran	-Mars	+Saturn	+Fomalhaut	+Achernar	+Altair
0	275°17.0	10.4'	$N14^{\circ}50.4$	14.5'	58.9'	79°30.1	39°53.9	37°00.6	31°09.4	45°16.5	62°47.5	72°07.9	90°27.6
1	289°46.4	10.4'	15°04.9	14.5'	58.9'	78°55.0	39° 19.6	36°27.1	30°36.6	45°51.6	63°20.3	72°24.5	90°56.7
2	304°15.8	10.3'	15°19.4	14.4'	58.9'	78°20.0	38°45.5	35°53.5	30°03.7	46°26.8	63°53.2	72°41.1	91°25.7
3	318°45.2	10.3'	15°33.7	14.3'	58.9'	77°45.0	38°11.3	35°20.1	29°30.9	47°01.9	64°26.0	72°57.8	91°54.8
4	333°14.5	10.2'	15°48.0	14.2'	58.8'	77°10.1	37°37.2	34°46.7	28°58.1	47°37.0	64°58.8	73°14.6	92°23.8
5	347°43.7	10.2'	$16^{\circ}02.2$	14.1'	58.8'	76°35.1	37°03.1	34°13.4	28°25.4	48°12.1	65°31.7	73°31.5	92°52.7
6	2°12.9	10.1'	$N16^{\circ}16.3$	14.0'	58.8'	76°00.2	36°29.0	33°40.2	27°52.8	48°47.1	66°04.5	73°48.4	93°21.7
7	16°42.0	10.1'	16°30.3	13.9'	58.8'	75°25.3	35°55.0	33°07.0	27°20.1	49°22.1	66°37.3	74°05.4	93°50.6
8	$31^{\circ}11.1$	10.0'	16°44.2	13.8'	58.8'	74°50.4	35°21.0	32°34.0	26°47.5	49°57.1	67°10.1	74°22.5	94°19.5
9	45°40.1	9.9'	16°57.9	13.7'	58.7'	74°15.6	34°47.0	32°01.0	26°15.0	50°32.1	67°43.0	74°39.6	94°48.4
10	60°09.0	9.9'	$17^{\circ}11.6$	13.6'	58.7'	73°40.8	34°13.1	31°28.0	25°42.5	51°07.1	68°15.8	74°56.8	95°17.3
11	74°37.9	9.8'	$17^{\circ}25.2$	13.5'	58.7'	73°06.0	33°39.3	30°55.2	25°10.1	51°42.0	68°48.6	75°14.1	95°46.1
12	89°06.7	9.8'	$N17^{\circ}38.7$	13.4'	58.7'	72°31.2	33°05.4	30°22.5	24°37.7	52°16.9	69°21.3	75°31.4	96°14.9
13	103°35.5	9.7'	$17^{\circ}52.1$	13.3'	58.7'	71°56.4	32°31.6	29°49.8	24°05.3	52°51.8	69°54.1	75°48.7	96°43.6
14	118°04.2	9.6'	18°05.4	13.2'	58.6'	71°21.7	31°57.9	29°17.3	23°33.0	53°26.6	70°26.9	76°06.1	97°12.3
15	132°32.9	9.6'	$18^{\circ}18.5$	13.1'	58.6'	70°47.0	31°24.1	28°44.8	23°00.8	54°01.4	70°59.7	76°23.6	97°41.0
16	$147^{\circ}01.5$	9.5'	18°31.6	12.9'	58.6'	70°12.3	30°50.5	28°12.5	22°28.6	54°36.3	71°32.4	76°41.1	98°09.7
17	161°30.0	9.5'	18°44.5	12.8'	58.6'	69°37.7	30°16.8	27°40.2	21°56.5	55°11.0	72°05.2	76°58.7	98°38.3
18	175°58.4	9.4'	N 18°57.4	12.7'	58.6'	69°03.1	29°43.2	27°08.1	21°24.5	55°45.8	72°37.9	77°16.3	99°06.9
19	190°26.8	9.3'	$19^{\circ}10.1$	12.6'	58.5'	68°28.5	29°09.7	26°36.1	20°52.5	56°20.5	73°10.6	77°34.0	99°35.4
20	204°55.2	9.3'	19°22.7	12.5'	58.5'	67°53.9	28°36.2	26°04.2	20°20.6	56°55.2	73°43.3	77°51.7	100°03.9
21	219°23.4	9.2'	19°35.2	12.4'	58.5'	67°19.3	28°02.7	25°32.5	19°48.8	57°29.9	74°16.0	78°09.5	100°32.4
22	233°51.7	9.1'	19°47.6	12.3'	58.5'	66°44.8	27°29.3	25°00.9	19°17.1	58°04.6	74°48.7	78°27.2	101°00.8
23	248°19.8	9.1'	19°59.9	12.1'	58.4'	66°10.3	26°56.0	24°29.4	18°45.4	58°39.2	75°21.4	78°45.1	101°29.2
28 th	SD	= 16.1'	Mer. pass	. 05:51									

h	Moon	(29 th	Jul)	

Lunar Distance (objects with largest hourly LD delta)
-Procyon -Pollux -Jupiter +Saturn +Fomalhaut +Achernar +Altair

Mon	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Jupiter	+Saturn	+Fomalhaut	+Achernar	+Altair
0	262°47.9	9.0'	N 20°12.0	12.0'	58.4'	78°38.3	70°13.0	65°35.8	26° 22.7	59°13.8	75°54.0	79°02.9	101°57.5
1	277°15.9	9.0'	20°24.0	11.9'	58.4'	78°06.3	69°41.1	65°01.4	25°49.4	59°48.4	76° 26.7	79°20.8	102°25.8
2	291°43.8	8.9'	20°35.9	11.8'	58.4'	77°34.3	69°09.3	64°27.0	25° 16.2	60°23.0	76°59.3	79°38.8	102°54.1
3	306°11.7	8.8'	20°47.7	11.7'	58.4'	77°02.4	68°37.5	63°52.5	24°43.1	60° 57.5	77°31.9	79°56.8	103°22.3
4	320°39.5	8.8'	20°59.3	11.5'	58.3'	76°30.5	68°05.7	63°18.2	24°10.0	61°32.0	78°04.5	80°14.8	103°50.4
5	335°07.3	8.7'	$21^{\circ}10.9$	11.4'	58.3'	75°58.6	67°34.0	62°43.8	23°37.0	62°06.5	78°37.1	80°32.8	104°18.5
6	349°35.0	8.6'	N21°22.3	11.3'	58.3'	75°26.8	67°02.3	62°09.5	23°04.0	62°41.0	79°09.7	80°50.9	104°46.6
7	4°02.6	8.6'	21°33.6	11.1'	58.3'	74°55.0	66°30.6	61°35.2	22°31.1	63° 15.4	79°42.2	81°09.0	105°14.6
8	18°30.2	8.5'	21°44.7	11.0'	58.3'	74°23.2	65°59.0	61°00.9	21°58.3	63°49.8	80° 14.7	81°27.1	105°42.5
9	32°57.7	8.4'	21°55.7	10.9'	58.2'	73°51.4	65°27.5	60°26.6	21°25.6	64°24.2	80°47.3	81°45.2	106°10.4
10	47°25.1	8.4'	22°06.6	10.8'	58.2'	73°19.6	64°56.0	59°52.4	20°52.9	64°58.6	81° 19.8	82°03.4	106°38.3
11	$61^{\circ}52.5$	8.3'	$22^{\circ}17.3$	10.6'	58.2'	72°47.9	64°24.5	59°18.2	20°20.3	65°33.0	81°52.2	82°21.6	107°06.1
12	$76^{\circ}19.8$	8.2'	N22°28.0	10.5'	58.2'	72°16.2	63°53.1	58°44.0	19°47.8	66°07.3	82°24.7	82°39.8	107°33.8
13	90°47.0	8.2'	22°38.4	10.3'	58.1'	71°44.5	63°21.8	58°09.9	19° 15.4	66°41.6	82°57.1	82°58.0	108°01.5
14	105°14.2	8.1'	22°48.8	10.2'	58.1'	71°12.8	62°50.5	57°35.7	18°43.1	67° 15.8	83°29.6	83°16.2	108°29.1
15	119°41.3	8.0'	22°59.0	10.1'	58.1'	70°41.2	62°19.2	57°01.6	18° 10.9	67°50.1	84°02.0	83°34.5	108°56.7
16	134°08.3	8.0'	23°09.1	9.9'	58.1'	70°09.6	61°48.0	56°27.5	17°38.8	68°24.3	84°34.4	83°52.7	109°24.2
17	148°35.3	7.9'	$23^{\circ}19.0$	9.8'	58.1'	69°38.0	61°16.8	55°53.5	17°06.9	68° 58.5	85°06.7	84°11.0	109°51.7
18	163°02.2	7.9'	N23°28.8	9.6'	58.0'	69°06.5	60°45.7	55°19.4	16°35.0	69°32.7	85°39.1	84°29.3	110°19.0
19	$177^{\circ}29.1$	7.8'	23°38.4	9.5'	58.0'	68°34.9	60°14.7	54°45.4	16°03.3	70°06.8	86°11.4	84°47.6	110°46.4
20	191°55.9	7.7'	23°48.0	9.4'	58.0'	68°03.4	59°43.7	54°11.4	15°31.8	70°41.0	86°43.7	85°05.9	111°13.6
21	206°22.6	7.7'	23°57.3	9.2'	58.0'	67°31.9	59°12.7	53°37.5	15°00.4	71°15.1	87°16.0	85°24.2	111°40.8
22	220°49.3	7.6'	24°06.5	9.1'	57.9'	67°00.5	58°41.8	53°03.5	14°29.2	71°49.2	87°48.2	85°42.6	112°07.9
23	235°15.9 7.6' 24°15.6 8.9' 57.9'					9' 66°29.1 58°11.0 52°29.6 13°58.2 72°23.2 88°20.5 86°00.9 112°35.0						112°35.0	
29 th	h SD = 15.9' Mer. pass. 06:43								Sun	SD = 15.7	,		

h

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

Tue	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Jupiter	+Mars	+Saturn	+Fomalhaut	+Altair
0	249°42.4	7.5'	N 24°24.5	8.8'	57.9'	65°57.6	57°40.2	51°55.7	13°27.4		72°57.3	88°52.7	113°02.0
1	264°08.9	7.4'	24°33.3	8.6'	57.9'	65°26.3	57°09.5	51°21.8	12°56.8		73°31.3	89°24.9	113°28.9
2	278°35.4	7.4'	24°41.9	8.5'	57.9'	64°54.9	56°38.8	50°48.0	12°26.5		74°05.2	89°57.1	113°55.7
3	293°01.7	7.3'	24°50.4	8.3'	57.8'	64°23.6	56°08.3	50°14.2	11°56.5		74°39.2	90°29.2	114°22.5
4	307°28.1	7.3'	24°58.8	8.2'	57.8'	63°52.2	55°37.7	49°40.4	11°26.8		75°13.1	91°01.4	114°49.2
5	321°54.3	7.2'	25°06.9	8.0'	57.8'	63°21.0	55°07.3	49°06.6	10°57.5		75°47.1	91°33.5	115° 15.8
6	336°20.5	7.2'	$N25^{\circ}15.0$	7.9'	57.8'	62°49.7	54°36.9	48°32.9	10°28.6		76°21.0	92°05.5	115°42.3
7	350°46.7	7.1'	25°22.8	7.7'	57.7'	62° 18.5	54°06.5	47°59.2	10°00.2		76°54.8	92°37.6	116°08.8
8	5°12.8	7.1'	25°30.5	7.6'	57.7'	61°47.2	53°36.3	47° 25.5	9°32.3		77°28.7	93°09.6	116°35.2
9	19°38.9	7.0'	25°38.1	7.4'	57.7'	61°16.1	53°06.1	46°51.8	9°05.1		78°02.5	93°41.6	117°01.4
10	34°04.9	7.0'	25°45.5	7.2'	57.7'	60°44.9	52°35.9	46°18.1	8°38.5		78°36.3	94°13.6	117°27.7
11	48°30.8	6.9'	25°52.8	7.1'	57.7'	60°13.7	52°05.9	45°44.5	8°12.8		79°10.1	94°45.6	117°53.8
12	62°56.7	6.9'	N 25°59.9	6.9'	57.6'	59°42.6	51°35.9	45° 10.9	7°48.0		79°43.8	95°17.5	118° 19.8
13	77°22.6	6.8'	26°06.8	6.8'	57.6'	59°11.5	51°06.0	44°37.3			80°17.5	95°49.4	118°45.7
14	91°48.4	6.8'	26°13.6	6.6'	57.6'	58° 40.5	50°36.1	44°03.8			80°51.2	96°21.3	119°11.6
15	106°14.2	6.7'	26°20.2	6.5'	57.6'	58°09.4	50°06.4	43°30.3			81°24.9	96°53.2	119°37.4
16	120°39.9	6.7'	26°26.6	6.3'	57.6'	57°38.4	49°36.7	42°56.7			81°58.6	97°25.0	
17	135°05.6	6.6'	26°32.9	6.1'	57.5'	57°07.4	49°07.1	42°23.3			82°32.2	97°56.8	
18	149°31.2	6.6'	N26°39.0	6.0'	57.5'	56° 36.5	48°37.6	41°49.8			83°05.8	98°28.6	
19	163°56.8	6.6'	26°45.0	5.8'	57.5'	56°05.5	48°08.2	41°16.4			83°39.4	99°00.4	
20	178°22.4	6.5'	26°50.8	5.6'	57.5'	55°34.6	47°38.9	40°43.0			84°13.0	99°32.1	
21	192°47.9	6.5'	$26^{\circ}56.5$	5.5'	57.4'	55°03.7	47°09.6	40°09.6		8°13.1	84°46.5	100°03.8	
22	207°13.4					54°32.8	46°40.4	39°36.2		8°38.9	85°20.0	100°35.5	
23	221°38.8 6.4' 27°07.2 5.1' 57.4' 5				' 54°02.0 46°11.4 39°02.9 9°05.2 85°53.5 101°07.1								
30 th	SD = 15.8' Mer. pass. 07:38				$Sun\;SD=15.7'$								

Moon (31st Jul)

Lunar Distance	(objects	with	largest	hourly	ו ח	dolta	١
i iinar i nsiance	CODIECTS	V////////	IATOESI	HOHITIV	1 I J	aena	1

Wed	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Betelgeuse	+Jupiter	+Mars	+Saturn	+Fomalhaut
0	236°04.3	6.4'	N 27°12.4	5.0'	57.4'	53°31.2	45°42.4	38°29.6	24°59.2		9°32.1	86°27.0	101°38.7
1	250°29.7	6.4'	27° 17.4	4.8'	57.4'	53°00.4	45°13.5	37°56.3	24°41.9		9°59.4	87°00.5	102°10.3
2	264°55.0	6.3'	27°22.2	4.6'	57.3'	52°29.6	44°44.8	37°23.0	24°25.1		10°27.1	87°33.9	102°41.8
3	279°20.4	6.3'	27°26.8	4.5'	57.3'	51°58.8	44°16.1	36°49.8	24°08.8		10°55.1	88°07.3	103°13.4
4	293°45.7	6.3'	27°31.3	4.3'	57.3'	51°28.1	43°47.5	36°16.6	23°53.2		11°23.4	88°40.7	103°44.9
5	308°11.0	6.3'	27°35.6	4.1'	57.3'	50°57.4	43°19.1	35°43.4	23°38.0		11°51.9	89°14.0	104°16.3
6	322°36.2	6.2'	N 27°39.7	4.0'	57.2'	50°26.7	42°50.7	35°10.2			12°20.7	89°47.4	104°47.8
7	337°01.5	6.2'	27°43.7	3.8'	57.2'	49°56.1	42°22.5	34°37.1			12°49.7	90°20.7	105°19.2
8	351°26.7	6.2'	27°47.5	3.6'	57.2'	49°25.5	41°54.4	34°03.9			13°18.8	90°54.0	105°50.6
9	5°51.9	6.2'	27°51.2	3.5'	57.2'	48°54.9	41°26.4	33°30.9			13°48.1	91°27.2	106°21.9
10	20°17.1	6.2'	27°54.6	3.3'	57.2'	48°24.3	40°58.5	32°57.8		00 41 0	14°17.5	92°00.5	106°53.2
11	34°42.3	6.2'	27°57.9	3.1'	57.1'	47°53.8	40°30.8	32°24.7		8°41.8	14°47.0	92°33.7	107°24.5
12	49°07.5	6.2'	N 28°01.0	3.0'	57.1'	47°23.2	40°03.2	31°51.7		9°07.9	15°16.6	93°06.9	107°55.7
13	63°32.6	6.2'	28°04.0	2.8'	57.1'	46°52.7	39°35.7	31°18.7		9°34.7	15°46.3	93°40.1	108°27.0
14	77°57.8	6.1'	28°06.8	2.6'	57.1'	46°22.3	39°08.4	30°45.7		10°02.0	16°16.1	94°13.3	108°58.1
15 16	92°22.9 106°48.1	6.1' 6.1'	28°09.4 28°11.8	2.4' 2.3'	57.0' 57.0'	45°51.8 45°21.4	38°41.2 38°14.1	30°12.8 29°39.9		10°29.9 10°58.1	16°46.0 17°15.9	94°46.4 95°19.5	109°29.3 110°00.4
17	100 46.1 121°13.2	6.1	20 11.0 28°14.1	2.3	57.0'	45 21.4 44°51.0	36° 14.1	29 39.9 29°07.0		10 56.1 11°26.7	17 15.9 17°45.9	95°52.6	110 00.4 110°31.5
18 19	135°38.3 150°03.5	6.1' 6.1'	N 28° 16.2 28° 18.1	1.9' 1.8'	57.0' 57.0'	44°20.6 43°50.3	37°20.5 36°53.9	28°34.1 28°01.2		11°55.6 12°24.7	18°15.9 18°46.0	96°25.7 96°58.7	111°02.5 111°33.6
20	164°28.6	6.2'	28°19.9	1.6'	57.0 56.9'	43°19.9	36°27.5	28 01.2 27°28.4		12 24.7 12°54.1	18 46.0 19°16.1	90 58.7 97°31.7	111 33.6 112°04.5
20	178°53.8	6.2'	28°21.5	1.4	56.9'	43 19.9 42°49.6	36°01.3	26°55.6		12 54.1 13°23.7	19 10.1 19°46.2	97 31.7 98°04.7	112 04.5 112°35.5
22	176 55.8 193°19.0	6.2'	28°22.9	1.4	56.9'	42°19.4	35°35.2	26°22.8		13°53.5	20°16.4	98°37.7	112 35.5 113°06.4
23	207°44.1	6.2'	28°24.2	1.1'	56.9'	41°49.1	35°09.3	25°50.1		14°23.5	20°46.6	99°10.6	113°37.2
31 st		= 15.6'	Mer. pass				22 00.0		$In\;SD=15.7'$			11 10.0	
31"	SD =	= 15.6	ivier. pass	. 08:36)			Sı	$\ln SD = 15.7$	at Un; 15.8	at 23h		

Moon (1st Aug)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	+Jupiter	+Aldebaran	+Mars	+Saturn	+Fomalhaut
0	222°09.3	6.2'	N 28°25.2	0.9'	56.9'	41°18.9	34°43.6	25°17.4	14°53.6	20°50.5	21°16.8	99°43.6	114°08.1
1	236°34.5	6.2'	28°26.1	0.7'	56.8'	40°48.7	34°18.1	24°44.7	15°23.9	21°19.3	21°47.0	100°16.5	114°38.9
2	250°59.7	6.2'	28°26.9	0.6'	56.8'	40°18.5	33°52.8	24°12.0	15°54.2	21°48.2	22°17.3	100°49.4	115°09.6
3	265°24.9	6.2'	28°27.5	0.4'	56.8'		33°27.7	23°39.4	16°24.7	22°17.3	22°47.5	101°22.2	115°40.3
4	279°50.2	6.3'	28°27.9	0.2'	56.8'		33°02.8	23°06.7	16°55.2	22°46.5	23°17.8	101°55.1	116°11.0
5	294°15.5	6.3'	$28^{\circ}28.1$	0.1'	56.7'		32°38.2	22°34.1	17°25.8	23°15.9	23°48.1	102°27.9	116°41.7
6	308°40.8	6.3'	N 28°28.1	-0.1'	56.7'		32°13.7	22°01.6	17°56.5	23°45.3	24°18.4	103°00.7	117°12.3
7	323°06.1	6.3'	28°28.0	-0.3'	56.7'		31°49.5	21°29.0	18°27.3	24°14.9	24°48.7	103°33.5	117°42.8
8	337°31.4	6.4'	28°27.8	-0.4'	56.7'		31°25.6	20°56.5	18°58.1	24°44.6	25°19.0	104°06.2	118°13.3
9	351°56.8	6.4'	28°27.3	-0.6'	56.7'		31°01.9	20°24.0	19°28.9	25°14.4	25°49.3	104°39.0	118°43.8
10	6°22.2	6.4'	28°26.7	-0.8'	56.6'		30°38.4	19°51.6	19°59.9	25°44.2	26°19.6	105°11.7	119°14.3
11	20°47.6	6.5'	28°25.9	-0.9'	56.6'		30°15.3	19°19.2	20°30.8	26°14.2	26°49.9	105°44.4	119°44.6
12	35°13.1	6.5'	N 28°25.0	-1.1'	56.6'		29°52.4	18°46.8	21°01.8	26°44.2	27°20.2	106°17.1	
13	49°38.6	6.6'	28°23.9	-1.3'	56.6'		29°29.8	18°14.4	21°32.8	27°14.3	27°50.5	106°49.7	
14	64°04.2	6.6'	28°22.6	-1.4'	56.6'		29°07.5	17°42.1	22°03.8	27°44.4	28°20.8	107°22.3	
15	78°29.8 6.6' 28°21.2 -1.6' 56.5'						28°45.5	17°09.8	22°34.9	28°14.6	28°51.1	107°54.9	
16	92°55.4	6.7'	$28^{\circ}19.6$	-1.8'	56.5'		28°23.8	16°37.5	23°06.0	28°44.9	29°21.3	108°27.5	
17	107°21.1	107°21.1 6.7' 28°17.8 -1.9' 56.5'					28°02.4	16°05.3	23°37.1	29°15.2	29°51.6	109°00.1	
18	121°46.8	6.8'	N 28°15.9	-2.1'	56.5'		27°41.4	15°33.1	24°08.2	29°45.6	30°21.9	109°32.6	
19	136°12.6	6.8'	28°13.8	-2.3'	56.4'		27°20.8	15°00.9	24°39.3	30°16.0	30°52.1	110°05.1	
20	150°38.4	6.9'	$28^{\circ}11.5$	-2.4'	56.4'		27°00.5	14°28.8	25°10.5	30°46.4	31°22.4	110°37.6	
21	165°04.3 6.9' 28°09.1 -2.6' 56.4'						26°40.6	13°56.7	25°41.6	31°16.9	31°52.6	111°10.1	
22							26°21.1	13°24.6	26°12.8	31°47.4	32°22.9	111°42.5	
23	3 193°56.2 7.0' 28°03.8 -2.9' 56.4'					4' 26°02.0 12°52.6 26°43.9 32°18.0 32°53.1 112°15.0							
1 st	SD = $15.5'$ Mer. pass. 09:34								Sun	SD = 15.8'			

h		Моо	n (2 nd Au	g)			Lunar	Distance (o	bjects wit	h largest	hourly LD	delta)	
Fri	GHA	ν	Dec	d	HP	-Procyon	-Pollux	+Betelgeuse	+Capella	+Jupiter	+Aldebaran	+Mars	+Saturn
0	208°22.2	7.1'	N 28°00.9	-3.1'	56.3'	25°43.3	12°20.7	24°16.8	25°35.3	27°15.1	32°48.5	33°23.3	112°47.4
1	222°48.3	7.2'	27°57.8	-3.2'	56.3'	25°25.1	11°48.8	24°32.8	25°58.1	27°46.3	33°19.1	33°53.5	113°19.8
2	237°14.5	7.2'	27°54.6	-3.4'	56.3'	25°07.3	11°16.9	24°49.3	26°21.1	28°17.4	33°49.8	34°23.7	113°52.1
3	251°40.7	7.3'	27°51.2	-3.5'	56.3'	24°50.0	10°45.2	25°06.3	26°44.4	28°48.6	34°20.4	34°53.8	114°24.5
4	266°07.0	7.3'	27°47.7	-3.7'	56.3'	24°33.1	10°13.4	25°23.7	27°07.9	29°19.8	34°51.1	35°24.0	114°56.8
5	280°33.3	7.4'	27°44.0	-3.8'	56.2'	24°16.8	9°41.8	25°41.5	27°31.7	29°50.9	35°21.8	35°54.2	115°29.1
6	294°59.7	7.5'	N 27°40.2	-4.0'	56.2'	24°01.0	9°10.2	25°59.8	27°55.8	30°22.1	35°52.5	36°24.3	116°01.4
7	309°26.2	7.5'	27°36.2	-4.1'	56.2'	23°45.6	8°38.7	26°18.4	28°20.1	30°53.3	36°23.2	36°54.4	116°33.6
8	323°52.7	7.6'	27°32.1	-4.3'	56.2'		8°07.4	26°37.4	28°44.6	31°24.4	36°54.0	37°24.5	117°05.9
9	338° 19.3	7.7'	27°27.8	-4.4'	56.2'		7°36.1	26°56.9	29°09.3	31°55.6	37°24.7	37°54.6	117°38.1
10	352°46.0	7.8'	27°23.4	-4.6'	56.1'		7°05.0	27°16.6	29°34.2	32°26.7	37°55.5	38°24.7	118°10.3
11	7°12.8	7.8'	$27^{\circ}18.8$	-4.7'	56.1'		6°34.1	27°36.7	29°59.3	32°57.8	38°26.2	38°54.8	118°42.5
12	21°39.6	7.9'	N27°14.0	-4.9'	56.1'		6°03.4	27°57.1	30°24.6	33°29.0	38°57.0	39°24.8	119°14.6
13	36°06.5	8.0'	27°09.1	-5.0'	56.1'		5°33.0	28°17.9	30°50.1	34°00.1	39°27.8	39°54.9	119°46.7
14	50°33.5	8.1'	27°04.1	-5.2'	56.1'		5°02.9	28°38.9	31°15.7	34°31.2	39°58.6	40°24.9	
15	65°00.6	8.1'	26°58.9	-5.3'	56.0'		4°33.2	29°00.3	31°41.5	35°02.3	40°29.4	40°54.9	
16	79°27.7	8.2'	26°53.6	-5.5'	56.0'		4°04.2	29°21.9	32°07.4	35°33.4	41°00.2	41°24.9	
17	93°54.9	8.3'	26°48.2	-5.6'	56.0'		3°35.9	29°43.8	32°33.5	36°04.4	41°31.0	41°54.8	
18	108° 22.2	8.4'	N26°42.6	-5.7'	56.0'			30°05.9	32°59.7	36°35.5	42°01.8	42°24.8	
19	122°49.6	8.5'	26°36.8	-5.9'	56.0'			30°28.3	33°26.0	37°06.5	42°32.6	42°54.7	
20	137° 17.1	8.5'	26°30.9	-6.0'	55.9'			30°50.9	33°52.4	37°37.6	43°03.4	43°24.7	
21	151°44.6	8.6'	26°24.9	-6.2'	55.9'			31°13.8	34°19.0	38°08.6	43°34.2	43°54.6	
22	166°12.3	8.7'	$26^{\circ}18.8$	-6.3'	55.9'			31°36.9	34°45.7	38°39.6	44°05.0	44°24.5	
23	180°40.0	8.8'	$26^{\circ}12.5$	-6.4'	55.9'			32°00.1	35°12.5	39°10.6	44°35.8	44°54.3	
2 nd	SD :	= 15.4	Mer. pas	s. 10:30									

Moon (3rd Aug)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	+Pollux	+Betelgeuse	+Capella	+Jupiter	+Aldebaran	+Mars	+Rigel
0	195°07.8	8.9'	N 26°06.0	-6.6'	55.9'		32°23.6	35°39.4	39°41.6	45°06.6	45°24.2	50°22.1
1	209°35.7	9.0'	25°59.5	-6.7'	55.8'		32°47.3	36°06.4	40°12.6	45°37.4	45°54.0	50°42.8
2	224°03.7	9.1'	25°52.8	-6.8'	55.8'		33°11.1	36°33.4	40°43.6	46°08.2	46°23.8	51°03.6
3	238°31.7	9.2'	25°45.9	-7.0'	55.8'		33° 35.2	37°00.6	41°14.5	46°39.0	46°53.6	51°24.6
4	252°59.9	9.3'	25°39.0	-7.1'	55.8'		33°59.4	37°27.9	41°45.4	47°09.8	47°23.4	51°45.6
5	267°28.2	9.3'	25°31.9	-7.2'	55.8'		34°23.7	37°55.2	42°16.4	47°40.6	47°53.2	52°06.8
6	281°56.5	9.4'	N25°24.7	-7.3'	55.7'		34°48.2	38°22.6	42°47.3	48°11.3	48°22.9	52°28.1
7	296°24.9	9.5'	25°17.3	-7.5'	55.7'	4°38.4	35°12.9	38°50.1	43°18.2	48°42.1	48°52.7	52°49.4
8	310°53.5	9.6'	25°09.9	-7.6'	55.7'	5°07.8	35° 37.7	39°17.6	43°49.0	49°12.9	49°22.4	53°10.9
9	325°22.1	9.7'	25°02.3	-7.7'	55.7'	5°37.6	36°02.6	39°45.3	44°19.9	49°43.6	49°52.1	53°32.5
10	339°50.8	9.8'	24°54.6	-7.8'	55.7'	6°07.7	36°27.7	40°12.9	44°50.7	50°14.4	50°21.8	53°54.2
11	354°19.6	9.9'	24°46.7	-8.0'	55.6'	6°37.9	36° 52.9	40°40.7	45°21.6	50°45.1	50°51.4	54°16.0
12	8°48.5	10.0'	N 24°38.8	-8.1'	55.6'	7°08.4	37°18.2	41°08.5	45°52.4	51°15.8	51°21.1	54°37.9
13	23°17.5	10.1'	24°30.7	-8.2'	55.6'	7°38.9	37°43.7	41°36.3	46°23.2	51°46.5	51°50.7	54°59.8
14	37°46.5	10.2'	24°22.5	-8.3'	55.6'	8°09.6	38°09.2	42°04.2	46°53.9	52°17.2	52°20.3	55°21.9
15	52°15.7	10.3'	24°14.2	-8.4'	55.6'	8°40.3	38° 34.9	42°32.2	47°24.7	52°47.9	52°49.9	55°44.0
16	66°45.0	10.4'	24°05.8	-8.5'	55.5'	$9^{\circ}11.1$	39°00.6	43°00.2	47°55.4	53°18.6	53°19.5	56°06.3
17	81°14.4	10.5'	23°57.3	-8.6'	55.5'				New Moon –			
18	95°43.8	10.6'	N23°48.6	-8.8'	55.5'				New Moon –			
19	110°13.4	10.7'	23°39.9	-8.9'	55.5'				New Moon -			į
20	124°43.1	10.8'	23°31.0	-9.0'	55.5'				New Moon -			İ
21	139°12.8	10.8'	23°22.0	-9.1'	55.4'				New Moon –			
22	153°42.6	10.9'	23°12.9	-9.2'	55.4'							
23	168°12.6	11.0'	23°03.7	-9.3'	55.4'				New Moon –			
3 rd	SD	= 15.2'	Mer. pass	. 11:24								

h	Moon	(4 th	Aug))
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Sun	GHA	ν	Dec	d	HP	
0	182°42.6	11.1'	N22°54.4	-9.4'	55.4'	New Moon
1	197°12.8	11.2'	22°45.0	-9.5'	55.4'	New Moon
2	211°43.0	11.3'	22°35.5	-9.6'	55.4'	New Moon
3	226°13.3	11.4'	22°25.9	-9.7'	55.3'	New Moon
4	240°43.7	11.5'	22°16.2	-9.8'	55.3'	New Moon
5	255°14.3	11.6'	22°06.4	-9.9'	55.3'	New Moon
6	269°44.9	11.7'	N 21°56.5	-10.0'	55.3'	New Moon
7	284°15.6	11.8'	21°46.5	-10.1'	55.3'	New Moon
8	298°46.4	11.9'	21°36.4	-10.2'	55.2'	New Moon
9	313°17.3	12.0'	21°26.3	-10.3'	55.2'	New Moon
10	327°48.3	12.1'	$21^{\circ}16.0$	-10.4'	55.2'	New Moon
11	342°19.3	12.2'	$21^{\circ}05.6$	-10.5'	55.2'	New Moon
12	356°50.5	12.3'	N 20°55.2	-10.5'	55.2'	New Moon
13	11°21.8	12.4'	20°44.6	-10.6'	55.2'	New Moon
14	25°53.2	12.5'	20°34.0	-10.7'	55.1'	New Moon
15	40°24.6	12.5'	20°23.3	-10.8'	55.1'	New Moon
16	54°56.2	12.6'	20°12.5	-10.9'	55.1'	New Moon
17	69°27.8	12.7'	$20^{\circ}01.6$	-11.0'	55.1'	New Moon
18	83°59.5	12.8'	N 19°50.6	-11.0'	55.1'	New Moon
19	98°31.3	12.9'	19°39.6	-11.1'	55.1'	New Moon
20	113°03.2	13.0'	19°28.4	-11.2'	55.0'	New Moon
21	127°35.2	13.1'	19°17.2	-11.3'	55.0'	New Moon
22	142°07.3	13.2'	$19^{\circ}06.0$	-11.4'	55.0'	New Moon
23	156°39.5	13.3'	18°54.6	-11.4'	55.0'	New Moon
4 th	SD	= 15.1'	Mer. pass	s. 12:13		

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

Mon	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Acrux	-Arcturus	-Spica	-Regulus	-Venus
0	171°11.8	13.4'	N 18°43.2	-11.5'	55.0'				New M	oon ——			
1	185°44.1	13.4'	18°31.7	-11.6'	54.9'				- New M	oon ———			
2	200°16.6	13.5'	$18^{\circ}20.1$	-11.7'	54.9'				— New M	oon ———			
3	214°49.1	13.6'	18°08.4	-11.7'	54.9'				— New M	oon ———			
4	229°21.7	13.7'	$17^{\circ}56.7$	-11.8'	54.9'				— New M	oon ———			
5	243°54.4	13.8'	17°44.9	-11.9'	54.9'				— New M	oon ———			
6	258°27.2	13.9'	$N17^{\circ}33.1$	-11.9'	54.9'				- New M	oon ———			
7	273°00.0	13.9'	$17^{\circ}21.1$	-12.0'	54.9'	107°34.6	97°38.1	93°31.2	86°34.5	64°04.4	61°40.3	8°03.7	7°47.1
8	287°33.0	14.0'	$17^{\circ}09.1$	-12.1'	54.8'	107°03.9	97°14.3	93°07.8	86°14.8	63°39.7	61°09.6	7°34.8	7°20.1
9	302°06.0	14.1'	$16^{\circ}57.1$	-12.1'	54.8'	106°33.3	96° 50.5	92°44.5	85°55.1	63°15.0	60°39.0	7°06.3	6°53.2
10	316°39.1	14.2'	16°45.0	-12.2'	54.8'	106°02.7	96°26.6	92°21.2	85°35.5	62°50.4	60°08.4	6°38.1	6°26.5
11	331°12.3	14.3'	16°32.8	-12.2'	54.8'	105°32.1	96°02.8	91°57.9	85°15.8	62°25.9	59°37.8	6°10.3	5°59.8
12	345°45.5	14.3'	$N16^{\circ}20.6$	-12.3'	54.8'	105°01.6	95°39.0	91°34.7	84°56.2	62°01.5	59°07.3	5°42.9	5°33.4
13	0°18.9	14.4'	$16^{\circ}08.3$	-12.4'	54.8'	104°31.0	95° 15.1	91°11.4	84°36.6	61°37.1	58° 36.7	5°16.2	5°07.1
14	14°52.3	14.5'	15°55.9	-12.4'	54.7'	104°00.5	94°51.3	90°48.1	84°17.1	61°12.8	58°06.2	4°50.2	4°41.1
15	29°25.8	14.6'	15°43.5	-12.5'	54.7'	103°30.0	94°27.5	90°24.9	83°57.5	60°48.5	57°35.7		4°15.4
16	43°59.4	14.6'	15°31.0	-12.5'	54.7'	102°59.5	94°03.7	90°01.7	83°38.0	60°24.3	57°05.2		3°50.1
17	58°33.0	14.7'	15° 18.5	-12.6'	54.7'	102°29.0	93°39.9	89°38.4	83°18.5	60°00.2	56°34.7		3°25.4
18	73°06.7	14.8'	$N15^{\circ}05.9$	-12.6'	54.7'	101°58.6	93°16.1	89°15.2	82°59.1	59°36.2	56°04.3		3°01.5
19	87°40.5	14.9'	14°53.3	-12.7'	54.7'	101°28.1	92°52.3	88°52.0	82°39.6	59°12.2	55°33.8		
20	102°14.4	14.9'	14°40.6	-12.7'	54.7'	100°57.7	92°28.5	88°28.9	82°20.3	58°48.3	55°03.4		
21	116°48.3	15.0'	14°27.8	-12.8'	54.6'	100°27.3	92°04.7	88°05.7	82°00.9	58°24.5	54°33.0		
22	131°22.4	15.1'	$14^{\circ}15.1$	-12.8'	54.6'	99°56.9	91°40.9	87°42.5	81°41.6	58°00.8	54°02.6		
23	145°56.4	15.2'	14°02.2	-12.9'	54.6'	99°26.6	91°17.2	87°19.4	81°22.3	57°37.2	53°32.3		
5 th	SD	= 15.0	' Mer. pas	s. 12:59									

h Moon (6 th Aug)	Lunar Distance (objects with largest hourly LD delta)
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Tue	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Acrux	-Arcturus	-Spica	+Venus	+Regulus
0	160°30.6	15.2'	N 13°49.3	-12.9'	54.6'	98°56.2	90°53.4	86°56.3	81°03.0	57°13.6	53°01.9		
1	175°04.8	15.3'	13°36.4	-13.0'	54.6'	98°25.9	90°29.7	86°33.2	80°43.8	$56^{\circ}50.1$	52°31.6		
2	189°39.1	15.4'	13°23.4	-13.0'	54.6'	97°55.5	90°06.0	86°10.1	80°24.6	56°26.7	52°01.3		
3	204°13.4	15.4'	13° 10.4	-13.1'	54.6'	97°25.2	89°42.2	85°47.1	80°05.5	56°03.4	51°31.0		
4	218°47.9	15.5'	12°57.3	-13.1'	54.5'	96°55.0	89° 18.5	85°24.1	79°46.4	55°40.1	51°00.7		
5	233°22.3	15.5'	12°44.2	-13.2'	54.5'	96°24.7	88° 54.9	85°01.1	79°27.3	55°17.0	50°30.4		
6	247°56.9	15.6'	$N12^{\circ}31.1$	-13.2'	54.5'	95°54.4	88°31.2	84°38.1	79°08.3	54°53.9	50°00.2		
7	262°31.5	15.7'	12° 17.9	-13.2'	54.5'	95°24.2	88° 07.5	84°15.1	78°49.3	54°31.0	49°29.9	3°40.3	5°16.3
8	277°06.2	15.7'	12°04.6	-13.3'	54.5'	94°54.0	87°43.9	83°52.2	78°30.3	54°08.1	48°59.7	4°05.2	5°42.7
9	291°40.9	15.8'	11°51.3	-13.3'	54.5'	94°23.8	87°20.3	83°29.2	78°11.4	53°45.3	48° 29.5	4°30.4	6°09.7
10	306°15.7	15.8'	11°38.0	-13.4'	54.5'	93°53.6	86° 56.7	83°06.3	77°52.6	53°22.6	47°59.3	4°56.0	6°37.2
11	320°50.5	15.9'	11°24.7	-13.4'	54.5'	93°23.4	86°33.1	82°43.5	77°33.8	$53^{\circ}00.1$	47°29.2	5°21.8	7°05.0
12	335°25.4	16.0'	$N11^{\circ}11.3$	-13.4'	54.4'	92°53.3	86°09.5	82°20.6	77°15.0	52°37.6	46°59.0	5°47.8	7°33.1
13	350°00.4	16.0'	10°57.9	-13.5'	54.4'	92°23.1	85°46.0	81°57.8	76°56.3	52°15.2	46°28.9	6°14.0	8°01.4
14	4°35.4	16.1'	10°44.4	-13.5'	54.4'	91°53.0	85°22.4	81°35.0	76°37.6	51°52.9	45°58.7	6°40.2	8°29.9
15	$19^{\circ}10.5$	16.1'	10°30.9	-13.5'	54.4'	91°22.9	84°58.9	81°12.3	76°18.9	51°30.7	45°28.6	7°06.6	8°58.6
16	33°45.6	16.2'	$10^{\circ}17.4$	-13.6'	54.4'	90°52.8	84°35.4	80°49.5	76°00.4	$51^{\circ}08.7$	44°58.5	7°33.0	9°27.4
17	48°20.8	16.2'	10°03.8	-13.6'	54.4'	90°22.7	84°12.0	80°26.8	75°41.8	50°46.7	44°28.5	7°59.4	9°56.4
18	62°56.0	16.3'	N09°50.3	-13.6'	54.4'	89°52.6	83°48.5	80°04.2	75°23.4	50°24.9	43°58.4	8°25.9	10°25.4
19	77°31.3	16.3'	09°36.6	-13.6'	54.4'	89°22.6	83°25.1	79°41.5	75°04.9	50°03.2	43°28.3	8°52.5	10°54.5
20	92°06.6	16.4'	09°23.0	-13.7'	54.3'	88°52.5	83°01.7	79°18.9	74°46.5	49°41.5	42°58.3	9°19.1	11°23.6
21	106°42.0	16.4'	$09^{\circ}09.3$	-13.7'	54.3'	88°22.5	82°38.3	78°56.3	74°28.2	49°20.1	42°28.3	9°45.6	11°52.9
22	121°17.4	16.5'	08°55.6	-13.7'	54.3'	87°52.5	82°14.9	78°33.8	74°09.9	48°58.7	41°58.3	10°12.3	12°22.1
23	135°52.9	16.5'	08°41.9	-13.8'	54.3'	87°22.5	81°51.6	78°11.3	73°51.7	48°37.4	41°28.3	10°38.9	12°51.5
6 th	SD	= 14.9	Mer. pas	s. 13:41									

h Moon (7th Aug)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Antares	-Rigil Kent.	-Hadar	-Acrux	-Arcturus	-Spica	+Venus	+Regulus
0	150°28.4	16.6'	N 08°28.1	-13.8'	54.3'	86°52.5	81°28.3	77°48.8	73°33.6	48°16.3	40°58.3	11°05.5	13°20.8
1	165°04.0	16.6'	08°14.4	-13.8'	54.3'	86°22.5	81°05.0	77°26.3	73° 15.5	47°55.3	40°28.3	11°32.2	13°50.2
2	179°39.6	16.6'	08°00.6	-13.8'	54.3'	85°52.6	80°41.8	77°03.9	72°57.4	47°34.4	39°58.4	11°58.8	14°19.6
3	194°15.3	16.7'	07°46.7	-13.8'	54.3'	85°22.6	80°18.5	76°41.6	72°39.4	47°13.7	39°28.4	12°25.5	14°49.0
4	208°50.9	16.7'	07°32.9	-13.9'	54.3'	84°52.7	79°55.3	76°19.2	72°21.5	46°53.1	38°58.5	12°52.1	15°18.5
5	223°26.7	16.8'	$07^{\circ}19.0$	-13.9'	54.3'	84°22.8	79°32.2	75°56.9	72°03.6	46°32.6	38°28.6	13° 18.8	15°47.9
6	238°02.4	16.8'	$N07^{\circ}05.1$	-13.9'	54.2'	83°52.9	79°09.0	75°34.7	71°45.8	46°12.3	37°58.7	13° 45.4	16°17.4
7	252°38.3	16.8'	06°51.2	-13.9'	54.2'	83°23.0	78°45.9	75°12.5	71°28.1	45°52.2	37°28.8	14° 12.1	16°46.9
8	267°14.1	16.9'	06°37.3	-13.9'	54.2'	82°53.1	78°22.8	74°50.3	71°10.4	45°32.1	36°58.9	14°38.8	17°16.4
9	281°50.0	16.9'	06°23.4	-14.0'	54.2'	82°23.2	77°59.8	74°28.1	70°52.8	45°12.2	36°29.1	15°05.4	17°45.9
10	296°25.9	16.9'	06°09.4	-14.0'	54.2'	81°53.4	77°36.8	74°06.0	70°35.2	44°52.5	35°59.2	15°32.1	18°15.5
11	311°01.8	17.0'	05°55.4	-14.0'	54.2'	81°23.5	77°13.8	73°44.0	70°17.8	44°32.9	35°29.4	15°58.7	18°45.0
12	325°37.8	17.0'	N05°41.4	-14.0'	54.2'	80°53.7	76°50.8	73°22.0	70°00.3	44°13.5	34°59.6	16°25.4	19°14.5
13	340°13.8	17.0'	05°27.4	-14.0'	54.2'	80°23.9	76°27.9	73°00.0	69°43.0	43°54.3	34°29.7	16°52.0	19°44.0
14	354°49.9	17.1'	05°13.4	-14.0'	54.2'	79°54.1	76°05.0	72°38.1	69°25.7	43°35.2	33°59.9	17° 18.6	20°13.6
15	9°26.0	17.1'	04°59.3	-14.1'	54.2'	79°24.3	75°42.1	72°16.2	69°08.5	43°16.3	33°30.1	17°45.3	20°43.1
16	24°02.1	17.1'	04°45.3	-14.1'	54.2'	78° 54.5	75°19.3	71°54.3	68°51.4	42°57.5	33°00.4	18° 11.9	21°12.7
17	38°38.2	17.2'	04°31.2	-14.1'	54.2'	78°24.7	74°56.5	71°32.5	68°34.3	42°39.0	32°30.6	18° 38.5	21°42.2
18	53°14.3	17.2'	N 04°17.2	-14.1'	54.1'	77°54.9	74°33.8	71°10.8	68° 17.3	42°20.6	32°00.8	19°05.1	22°11.7
19	67°50.5	17.2'	04°03.1	-14.1'	54.1'	77°25.2	74°11.1	70°49.1	68°00.4	42°02.4	31°31.1	19°31.7	22°41.3
20	82°26.7	17.2'	03°49.0	-14.1'	54.1'	76°55.4	73°48.4	70°27.5	67°43.6	41°44.3	31°01.3	19°58.3	23°10.8
21	97°03.0	17.3'	03°34.9	-14.1'	54.1'	76°25.7	73°25.8	70°05.9	67°26.8	41°26.5	30°31.6	20°24.9	23°40.3
22	111°39.2	17.3'	03°20.8	-14.1'	54.1'	75°56.0	73°03.2	69°44.3	67° 10.1	41°08.9	30°01.9	20°51.5	24°09.9
23	126°15.5	17.3'	03°06.6	-14.1'	54.1'	75°26.2	72°40.6	69°22.8	66°53.5	40°51.4	29°32.2	21° 18.1	24°39.4
7 th	SD	= 14.8	' Mer. pas	s. 14:21									

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

Thu	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.		-Spica	+Venus	+Regulus	+Sun
0	140°51.8	17.3'	N02°52.5	-14.1'	54.1'		74°56.5	72°18.1	69°01.4	29°02.5	21°44.6	25°08.9	
1	155°28.1	17.3'	02°38.4	-14.1'	54.1'		74°26.8	71°55.6	68°40.0	28°32.8	22°11.2	25°38.5	
2	170°04.4	17.3'	$02^{\circ}24.3$	-14.1'	54.1'		73°57.1	71°33.2	68° 18.7	28°03.1	22°37.8	26°08.0	
3	184°40.7	17.4'	$02^{\circ}10.1$	-14.1'	54.1'	119°44.4	73°27.5	71°10.8	67° 57.4	27°33.4	23°04.3	26°37.5	
4	199°17.1	17.4'	$01^{\circ}56.0$	-14.1'	54.1'	119°21.6	72°57.8	70°48.5	67°36.2	27°03.7	23°30.9	27°07.0	41°10.6
5	213°53.5	17.4'	$01^{\circ}41.8$	-14.2'	54.1'	118°58.8	72°28.1	70°26.2	67° 15.0	26°34.1	23°57.4	27°36.6	41°37.7
6	228°29.9	17.4'	N01°27.7	-14.2'	54.1'	118°36.0	71°58.4	70°03.9	66°53.9	26°04.4	24°24.0	28°06.1	42°04.8
7	243°06.3	17.4'	$01^{\circ}13.5$	-14.2'	54.1'	118°13.1	71°28.8	69°41.7	66°32.8	25°34.8	24°50.5	28°35.6	42°31.9
8	257°42.7	17.4'	00°59.4	-14.2'	54.1'	117°50.1	70°59.1	69°19.6	66°11.9	25°05.1	25°17.0	29°05.1	42°59.0
9	272°19.1	17.4'	00°45.2	-14.2'	54.1'	117°27.1	70°29.5	68°57.4	65°50.9	24°35.5	25°43.6	29°34.6	43°26.1
10	286°55.5	17.4'	00°31.0	-14.2'	54.1'	117°04.0	69°59.9	68°35.4	65°30.1	24°05.9	26°10.1	30°04.1	43°53.2
11	301°32.0	17.4'	$00^{\circ}16.9$	-14.2'	54.1'	116°40.9	69°30.3	68°13.4	65°09.3	23°36.3	26°36.6	30°33.6	44°20.3
12	316°08.4	17.4'	N00°02.7	-14.1'	54.1'	116°17.8	69°00.6	67°51.4	64°48.5	23°06.6	27°03.1	31°03.1	44°47.4
13	330°44.9	17.5'	S 00°11.4	-14.1'	54.0'	115°54.6	68°31.0	67°29.5	64°27.9	22°37.0	27°29.6	31°32.6	45°14.4
14	345°21.3	17.5'	00°25.5	-14.1'	54.0'	115°31.4	68°01.4	67°07.6	64°07.3	22°07.4	27°56.1	32°02.1	45°41.5
15	359°57.8	17.5'	00°39.7	-14.1'	54.0'	115°08.1	67°31.8	66°45.8	63°46.7	21°37.9	28°22.6	32°31.6	46°08.6
16	14°34.2	17.5'	00°53.8	-14.1'	54.0'	114°44.8	67°02.2	66°24.1	63°26.3	21°08.3	28°49.1	33°01.1	46°35.6
17	29°10.7	17.5'	$01^{\circ}08.0$	-14.1'	54.0'	114°21.4	66°32.6	66°02.4	63°05.9	20°38.7	29°15.6	33°30.5	47°02.7
18	43°47.1	17.5'	S 01°22.1	-14.1'	54.0'	113°58.0	66°03.0	65°40.7	62°45.5	20°09.1	29°42.1	34°00.0	47°29.7
19	58°23.6	17.5'	01°36.2	-14.1'	54.0'	113°34.6	65°33.4	65°19.1	62°25.3	19°39.5	30°08.6	34°29.5	47°56.8
20	73°00.1	17.5'	$01^{\circ}50.3$	-14.1'	54.0'	113°11.1	65°03.9	64°57.6	62°05.1	19° 10.0	30°35.1	34°59.0	48°23.8
21	87°36.5	17.4'	02°04.4	-14.1'	54.0'	112°47.6	64°34.3	64°36.1	61°45.0	18°40.4	31°01.5	35°28.5	48°50.9
22	102°13.0	17.4'	02° 18.5	-14.1'	54.0'	112°24.1	64°04.7	64°14.7	61°25.0	18° 10.9	31°28.0	35°57.9	49°17.9
23	116°49.4	17.4'	02°32.6	-14.1'	54.0'	112°00.5	63°35.2	63°53.4	61°05.0	17°41.3	31°54.5	36°27.4	49°45.0
8 th	SD	= 14.8	Mer. pas	s. 15:00					Sun SD =	15.8'			

h Moon (9 th Aug)	Lunar Distance (objects with largest hourly LD delta)
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Fri	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Antares	-Hadar	-Spica	+Venus	+Regulus	+Sun
0	131°25.8	17.4'	S 02°46.7	-14.1'	54.0'	111°36.9	63°32.1	63°05.6	60°45.1	17°11.8	32°20.9	36°56.9	50°12.0
1	146°02.3	17.4'	03°00.7	-14.1'	54.0'	111°13.3	63°10.9	62°36.0	60°25.3	16°42.2	32°47.4	37° 26.4	50°39.1
2	160°38.7	17.4'	03°14.8	-14.0'	54.0'	110°49.6	62°49.7	62°06.5	60°05.6	16°12.7	33°13.9	37° 55.8	51°06.1
3	175° 15.1	17.4'	03°28.8	-14.0'	54.0'	110°25.9	62°28.6	61°36.9	59°46.0	15°43.1	33°40.3	38°25.3	51°33.2
4	189°51.5	17.4'	03°42.9	-14.0'	54.0'	110°02.1	62°07.6	$61^{\circ}07.4$	59°26.4	15°13.6	34°06.8	38°54.8	52°00.2
5	204°27.9	17.4'	03°56.9	-14.0'	54.0'	109°38.3	61°46.6	60°37.8	59°07.0	14°44.1	34°33.3	39°24.3	52°27.2
6	219°04.3	17.4'	S 04°10.9	-14.0'	54.0'	109°14.5	61°25.7	60°08.3	58°47.6	14°14.6	34°59.7	39°53.7	52°54.3
7	233°40.6	17.3'	04°24.9	-14.0'	54.0'	108°50.7	61°04.9	59°38.7	58°28.3	13°45.0	35°26.2	40°23.2	53°21.3
8	248°17.0	17.3'	04°38.8	-14.0'	54.0'	108°26.8	60°44.2	59°09.2	58°09.1	13°15.5	35°52.6	40° 52.7	53°48.4
9	262°53.3	17.3'	04°52.8	-13.9'	54.0'	108°02.9	60°23.5	58°39.6	57°50.0	12°46.0	36°19.1	41°22.2	54°15.4
10	277°29.6	17.3'	05°06.7	-13.9'	54.0'	107°39.0	60°02.9	$58^{\circ}10.1$	57°31.0	12°16.5	36°45.6	41°51.6	54°42.5
11	292°05.9	17.3'	$05^{\circ}20.6$	-13.9'	54.0'	107°15.1	59°42.3	57°40.5	57°12.1	11°47.0	37°12.0	42°21.1	55°09.5
12	306°42.2	17.3'	S 05°34.5	-13.9'	54.0'	106°51.1	59°21.9	$57^{\circ}11.0$	56°53.3	11°17.5	37°38.5	42°50.6	55°36.5
13	321°18.4	17.2'	05°48.4	-13.9'	54.0'	106°27.1	59°01.5	56°41.4	56°34.6	10°48.0	38°05.0	43°20.1	56°03.6
14	335°54.7	17.2'	$06^{\circ}02.3$	-13.8'	54.0'	106°03.0	58°41.2	$56^{\circ}11.9$	56°16.0	10°18.5	38°31.4	43°49.5	56°30.6
15	350°30.9	17.2'	$06^{\circ}16.1$	-13.8'	54.1'	105°39.0	58°21.0	55°42.3	55°57.4	9°49.0	38°57.9	44°19.0	56°57.7
16	5°07.0	17.2'	06°30.0	-13.8'	54.1'	105°14.9	58°00.9	55°12.8	55°39.0	9°19.5	39°24.4	44°48.5	57°24.7
17	19°43.2	17.1'	06°43.8	-13.8'	54.1'	104°50.8	57°40.8	54°43.2	55°20.7	8°50.0	39°50.8	45°18.0	57°51.8
18	34° 19.3	17.1'	S 06°57.5	-13.8'	54.1'	104°26.7	57°20.9	54°13.7	55°02.5	8°20.5	40°17.3	45° 47.5	58° 18.9
19	48°55.4	17.1'	$07^{\circ}11.3$	-13.7'	54.1'	104°02.5	57°01.0	53°44.1	54°44.4	7°51.0	40°43.8	46° 17.0	58°45.9
20	63°31.5	17.0'	$07^{\circ}25.0$	-13.7'	54.1'	103°38.4	56°41.2	53°14.5	54°26.5	7°21.5	41°10.3	46° 46.5	59°13.0
21	78°07.5	17.0'	07°38.7	-13.7'	54.1'	103°14.2	56°21.5	52°45.0	54°08.6	6°52.1	41°36.7	47° 16.0	59°40.1
22	92°43.6	17.0'	07°52.4	-13.7'	54.1'	102°49.9	56°01.9	52°15.4	53°50.8	6°22.6	42°03.2	47° 45.5	60°07.1
23	107° 19.5	16.9'	08°06.1	-13.6'	54.1'	102°25.7	55°42.4	51°45.8	53°33.2	5°53.2	42°29.7	48°15.0	60°34.2
9 th	SD	= 14.7'	Mer. pas	s. 15:39					Sun SD =	15.8			

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

Sat	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Hadar	-Antares	±Spica	+Venus	+Regulus	+Sun
0	121°55.5	16.9'	S 08°19.7	-13.6'	54.1'	102°01.4	55°23.0	53°15.7	51°16.3	5°23.8	42°56.2	48°44.5	61°01.3
1	136°31.4	16.9'	08°33.3	-13.6'	54.1'	101°37.1	55°03.7	52°58.3	50°46.7	4°54.4	43°22.7	49° 14.1	61°28.4
2	151°07.3	16.8'	08°46.9	-13.5'	54.1'	101°12.8	54° 44.5	52°41.0	50°17.1	4°25.0	43°49.2	49°43.6	61°55.5
3	165°43.1	16.8'	09°00.4	-13.5'	54.1'	100°48.5	54°25.3	52°23.9	49°47.5	3°55.7	44°15.7	50° 13.1	62°22.6
4	180°18.9	16.8'	$09^{\circ}13.9$	-13.5'	54.1'	100°24.2	54°06.3	52°06.9	49°17.9	3°26.5	44°42.2	50°42.7	62°49.7
5	194°54.7	16.7'	09°27.4	-13.5'	54.1'	99°59.8	53°47.4	51°50.0	48°48.3	2°57.4	45°08.7	51°12.2	63°16.8
6	209°30.4	16.7'	S 09°40.9	-13.4'	54.1'	99°35.4	53°28.6	51°33.2	48°18.7	2°28.5	45°35.3	51°41.8	63°43.9
7	224°06.1	16.6'	09°54.3	-13.4'	54.1'	99°11.0	53°09.9	51°16.6	47°49.1	2°00.0	46°01.8	52° 11.3	64°11.1
8	238°41.7	16.6'	$10^{\circ}07.7$	-13.4'	54.1'	98°46.6	52°51.4	51°00.1	47°19.5	1°32.0	46°28.3	52°40.9	64°38.2
9	253°17.3	16.6'	$10^{\circ}21.0$	-13.3'	54.2'	98°22.1	52°32.9	50°43.8	46°49.9		46°54.9	53° 10.4	65°05.3
10	267°52.9	16.5'	10°34.4	-13.3'	54.2'	97°57.7	52° 14.5	50°27.6	46°20.2		47°21.4	53°40.0	65°32.5
11	282°28.4	16.5'	$10^{\circ}47.7$	-13.3'	54.2'	97°33.2	51°56.3	50°11.5	45°50.6		47°48.0	54°09.6	65°59.6
12	297°03.8	16.4'	S 11°00.9	-13.2'	54.2'	97°08.7	51°38.2	49°55.6	45°21.0		48°14.6	54°39.2	66°26.8
13	311°39.2	16.4'	$11^{\circ}14.1$	-13.2'	54.2'	96°44.2	51°20.2	49°39.8	44°51.3		48°41.2	55°08.8	66°54.0
14	326°14.6	16.3'	11°27.3	-13.1'	54.2'	96°19.7	51°02.3	49°24.2	44°21.6		49°07.7	55°38.4	67°21.2
15	340°49.9	16.3'	$11^{\circ}40.5$	-13.1'	54.2'	95°55.1	50°44.6	49°08.8	43°52.0		49°34.3	56°08.1	67°48.4
16	355°25.2	16.2'	$11^{\circ}53.6$	-13.1'	54.2'	95°30.6	50°27.0	48°53.5	43°22.3	2°36.1	50°00.9	56°37.7	68°15.6
17	10°00.4	16.2'	$12^{\circ}06.6$	-13.0'	54.2'	95°06.0	50°09.5	48°38.3	42°52.6	3°05.2	50°27.6	57°07.3	68°42.8
18	24°35.5	16.1'	S 12° 19.7	-13.0'	54.2'	94°41.4	49°52.2		42°22.9	3°34.4	50°54.2	57° 37.0	69°10.0
19	39°10.6	16.0'	12°32.6	-12.9'	54.3'	94°16.8	49°35.0		41°53.2	4°03.7	51°20.8	58°06.6	69°37.2
20	53°45.7	16.0'	12°45.6	-12.9'	54.3'	93°52.2	49° 17.9		41°23.5	4°33.2	51°47.5	58° 36.3	70°04.5
21	68°20.7	15.9'	$12^{\circ}58.5$	-12.9'	54.3'	93°27.6	49°01.0		40°53.7	5°02.7	52°14.1	59°06.0	70°31.7
22	82°55.6	15.9'	13°11.3	-12.8'	54.3'	93°02.9	48°44.2		40°24.0	5°32.3	52°40.8	59°35.7	70°59.0
23	97°30.5	15.8'	13°24.2	-12.8'	54.3'	92°38.3	48°27.6		39°54.2	6°01.9	53°07.5	60°05.4	71°26.3
10 th	SD	= 14.8'	Mer. pas	s. 16:19					Sun SD =	15.8'			

Moon (11th Aug)

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Sun	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Antares	+Spica	+Venus	+Regulus	+Sun
0	112°05.3	15.8'	S 13°36.9	-12.7'	54.3'		92°13.6	48°11.1	39°24.5	6°31.5	53°34.2	60°35.1	71°53.6
1	126°40.0	15.7'	13°49.6	-12.7'	54.3'	119°39.2	91°48.9	47° 54.8	38°54.7	7°01.2	54°00.9	61°04.9	72°20.9
2	141°14.7	15.6'	14°02.3	-12.6'	54.3'	119°11.4	91°24.2	47° 38.6	38°24.9	7°30.8	54°27.6	61°34.6	72°48.2
3	155°49.3	15.6'	14° 15.0	-12.6'	54.4'	118°43.6	90°59.5	47° 22.6	37°55.1	8°00.6	54°54.3	62°04.4	73°15.5
4	170°23.9	15.5'	14°27.5	-12.5'	54.4'	118°15.8	90°34.8	47°06.8	37°25.3	8°30.3	55°21.1	62°34.2	73°42.9
5	184°58.4	15.4'	14°40.1	-12.5'	54.4'	117°47.9	90°10.0	46°51.1	36°55.5	9°00.1	55°47.8	63°03.9	74°10.2
6	199°32.8	15.4'	S 14°52.5	-12.4'	54.4'	117°19.9	89°45.3	46°35.6	36°25.6	9°29.8	56°14.6	63°33.7	74°37.6
7	214°07.2	15.3'	15°05.0	-12.4'	54.4'	116°52.0	89°20.5	46°20.2	35°55.8	9°59.7	56°41.4	64°03.6	75°05.0
8	228°41.5	15.2'	15° 17.4	-12.3'	54.4'	116°24.0	88°55.8	46°05.1	35°25.9	10°29.5	57°08.2	64°33.4	75°32.4
9	243°15.7	15.2'	15°29.7	-12.3'	54.4'	115°56.0	88°31.0		34°56.0	10°59.3	57°35.0	65°03.2	75°59.8
10	257°49.9	15.1'	15°42.0	-12.2'	54.5'	115°27.9	88°06.2		34°26.1	11°29.2	58°01.8	65°33.1	76°27.2
11	272°24.0	15.0'	15°54.2	-12.2'	54.5'	114°59.9	87°41.4		33°56.2	11°59.1	58°28.7	66°03.0	76°54.7
12	286°58.0	14.9'	S 16°06.3	-12.1'	54.5'	114°31.8	87°16.6		33°26.3	12°29.0	58°55.5	66°32.9	77°22.2
13	301°31.9	14.9'	16° 18.4	-12.1'	54.5'	114°03.6	86°51.8		32°56.3	12°58.9	59°22.4	67° 02.8	77°49.6
14	316°05.8	14.8'	16°30.5	-12.0'	54.5'	113°35.5	86°26.9		32°26.3	13°28.8	59°49.3	67° 32.7	78°17.1
15	330°39.5	14.7'	16° 42.5	-11.9'	54.5'	113°07.3	86°02.1		31°56.3	13°58.8	60°16.2	68°02.7	78°44.7
16	345°13.3	14.6'	16°54.4	-11.9'	54.5'	112°39.1	85°37.2		31°26.3	14°28.7	60°43.1	68°32.6	79°12.2
17	359°46.9	14.6'	$17^{\circ}06.3$	-11.8'	54.6'	112°10.8	85°12.4		30°56.3	14°58.7	61°10.1	69°02.6	79°39.7
18	14°20.4	14.5'	$$17^{\circ}18.1$	-11.8'	54.6'	111°42.6	84°47.5		30°26.3	15°28.8	61°37.1	69°32.6	80°07.3
19	28°53.9	14.4'	17°29.9	-11.7'	54.6'	111°14.2	84°22.6		29°56.2	15°58.8	62°04.1	70°02.6	80°34.9
20	43°27.3	14.3'	$17^{\circ}41.5$	-11.6'	54.6'	110°45.9	83°57.8		29°26.2	16°28.8	62°31.1	70°32.7	81°02.5
21	58°00.6	14.2'	17°53.2	-11.6'	54.6'	110°17.5	83°32.9		28°56.1	16°58.9	62°58.1	71°02.7	81°30.1
22	72°33.8	14.1'	$18^{\circ}04.7$	-11.5'	54.7'	109°49.1	83°08.0		28°26.0	17°29.0	63°25.1	71°32.8	81°57.8
23	87°07.0	14.1'	18° 16.2	-11.4'	54.7'	109°20.7	82°43.1		27°55.8	17°59.1	63°52.2	72°02.9	82°25.5
11 th	SD	= 14.8'	Mer. pas	s. 17:01					$Sun\;SD =$	15.8′			

h	Moon	(12 th	Διισ)

Lunar Distance	(objects with	largest hourly	[,] LD delta)	
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Mon	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Antares	+Spica	+Venus	+Regulus	+Sun
0	101°40.1	14.0'	S 18°27.6	-11.4'	54.7'		108°52.3	82°18.2	27°25.7	18° 29.3	64°19.3	72°33.0	82°53.2
1	116°13.0	13.9'	18°39.0	-11.3'	54.7'		108°23.8	81°53.3	26°55.5	18°59.4	64°46.4	73°03.2	83°20.9
2	130°45.9	13.8'	18°50.3	-11.2'	54.7'		107°55.3	81°28.3	26°25.3	19°29.6	65°13.5	73°33.3	83°48.6
3	145°18.7	13.7'	$19^{\circ}01.5$	-11.1'	54.8'		107° 26.7	81°03.4	25°55.1	19°59.8	65°40.7	74°03.5	84°16.3
4	159°51.4	13.6'	$19^{\circ}12.7$	-11.1'	54.8'		106°58.2	80°38.5	25°24.8	20°30.0	66°07.8	74°33.7	84°44.1
5	174°24.1	13.5'	19°23.7	-11.0'	54.8'		106° 29.6	80°13.6	24°54.6	21°00.3	66°35.0	75°03.9	85°11.9
6	188°56.6	13.4'	S 19°34.7	-10.9'	54.8'		106°00.9	79°48.6	24°24.3	21°30.6	67°02.2	75°34.2	85°39.7
7	203°29.0	13.4'	19°45.7	-10.9'	54.8'		105°32.3	79°23.7	23°54.0	22°00.9	67°29.5	76°04.5	86°07.6
8	218°01.4	13.3'	19°56.5	-10.8'	54.9'		105°03.6	78°58.7	23°23.6	22°31.2	67°56.8	76°34.7	86°35.5
9	232°33.6	13.2'	20°07.3	-10.7'	54.9'		104°34.9	78°33.8	22°53.3	23°01.5	68°24.0	77°05.1	87°03.3
10	247°05.8	13.1'	20°18.0	-10.6'	54.9'		104°06.1	78°08.9	22°22.9	23°31.9	68°51.3		87°31.3
11	261°37.9	13.0'	20°28.6	-10.5'	54.9'	119°30.9	103°37.3	77°43.9	21°52.5	24°02.3	69°18.7		87°59.2
12	276°09.9	12.9'	S 20°39.2	-10.5'	54.9'	119°00.3	103°08.5	77°19.0	21°22.1	24°32.7	69°46.0		88°27.2
13	290°41.8	12.8'	20°49.6	-10.4'	55.0'	118°29.7	102°39.7	76°54.0	20°51.6	25°03.1	70°13.4		88°55.2
14	305°13.5	12.7'	21°00.0	-10.3'	55.0'	117°59.0	102°10.8	76°29.1	20°21.2	25°33.6	70°40.8		89°23.2
15	319°45.2	12.6'	21°10.3	-10.2'	55.0'	117°28.4	101°41.9	76°04.1	19°50.7	26°04.1	71°08.3		89°51.2
16	334°16.8	12.5'	21°20.5	-10.1'	55.0'	116°57.7	101°13.0	75°39.2	19°20.1	26°34.6	71°35.7		90°19.3
17	348°48.3	12.4'	$21^{\circ}30.6$	-10.0'	55.1'	116°27.0	100°44.0	75°14.2	18°49.6	27°05.2	72°03.2		90°47.4
18	3°19.7	12.3'	S 21°40.7	-10.0'	55.1'	115°56.2	100° 15.0	74°49.3	18° 19.0	27°35.8	72°30.7		91°15.5
19	17°51.0	12.2'	21°50.6	-9.9'	55.1'	115°25.5	99°46.0	74°24.3	17°48.4	28°06.4	72°58.3		91°43.6
20	32°22.2	12.1'	22°00.5	-9.8'	55.1'	114°54.7	99° 16.9	73°59.4	17°17.7	28° 37.0	73°25.9		92°11.8
21	46°53.3	12.0'	22°10.3	-9.7'	55.2'	114°23.9	98°47.8	73°34.5	16°47.1	29°07.6	73°53.5		92°40.0
22	61°24.3	11.9'	$22^{\circ}19.9$	-9.6'	55.2'	113°53.0	98° 18.7	73°09.5	16°16.4	29°38.3	74°21.1		93°08.2
23	75°55.2	11.8'	22°29.5	-9.5'	55.2'	113°22.1	97°49.6	72°44.6	15°45.7	30°09.0	74°48.7		93°36.5
12 th	SD	= 14.9'	Mer. pas	s. 17:46					Sun SD =	15.8'			

h

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

Tue	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Antares	+Spica	+Arcturus	+Venus	+Sun
0	90°26.0	11.7'	S 22°39.0	-9.4'	55.2'	112°51.2	97°20.4	72°19.7	15°14.9	30°39.8	45°00.0	75°16.4	94°04.8
1	104°56.7	11.6'	22°48.4	-9.3'	55.3'	112°20.3	96°51.2	71°54.8	14°44.1	31°10.6	45°20.4	75°44.1	94°33.1
2	119°27.2	11.5'	22°57.7	-9.2'	55.3'	111°49.3	96°21.9	71°29.9	14°13.3	31°41.4	45°40.9	76°11.9	95°01.5
3	133°57.7	11.4'	23°06.9	-9.1'	55.3'	111°18.3	95°52.7	71°05.0	13°42.5	32°12.2	46°01.7	76°39.7	95°29.8
4	148°28.1	11.3'	23°16.0	-9.0'	55.3'	110°47.3	95°23.4	70°40.1	13°11.6	32°43.1	46°22.6	77°07.5	95°58.3
5	162°58.4	11.2'	23°25.0	-8.9'	55.4'	110°16.2	94°54.0	70°15.2	12°40.7	33°14.0	46°43.6	77°35.3	96°26.7
6	177°28.5	11.1'	S 23°33.9	-8.8'	55.4'	109°45.1	94°24.7	69°50.3	12°09.8	33°44.9	47°04.8	78°03.2	96°55.2
7	191°58.6	11.0'	23°42.7	-8.7'	55.4'	109°14.0	93°55.3	69°25.5	11°38.8	34°15.9	47°26.2	78°31.1	97°23.7
8	206°28.5	10.8'	23°51.4	-8.6'	55.5'	108°42.9	93°25.8	69°00.6	11°07.8	34°46.8	47°47.8	78°59.0	97°52.2
9	220°58.4	10.7'	24°00.0	-8.5'	55.5'	108°11.7	92°56.4	68°35.8	10°36.8	35°17.9	48°09.4	79°27.0	98°20.8
10	235°28.1	10.6'	24°08.5	-8.4'	55.5'	107°40.5	92°26.9	68°11.0	10°05.7	35°48.9	48°31.3	79°55.0	98°49.4
11	249°57.8	10.5'	$24^{\circ}16.9$	-8.3'	55.5'	107°09.2	91°57.3	67°46.2	9°34.6	36°20.0	48°53.3	80°23.0	99°18.0
12	264°27.3	10.4'	S 24°25.2	-8.2'	55.6'	106°37.9	91°27.8	67°21.4	9°03.5	36°51.1	49°15.4	80°51.0	99°46.7
13	278°56.7	10.3'	24°33.3	-8.0'	55.6'	106°06.6	90°58.2	66°56.6	8°32.3	37°22.3	49°37.7	81°19.1	100°15.4
14	293°26.0	10.2'	24°41.4	-7.9'	55.6'	105°35.3	90°28.6	66°31.8	8°01.2	37°53.5	50°00.1	81°47.3	100°44.1
15	307°55.2	10.1'	24°49.3	-7.8'	55.7'	105°03.9	89°58.9	66°07.1	7°29.9	38°24.7	50°22.6	82° 15.4	101°12.8
16	322°24.3	10.0'	24°57.1	-7.7'	55.7'	104°32.5	89°29.2	65°42.4	6°58.7	38°56.0	50°45.3	82°43.6	101°41.6
17	336°53.3	9.9'	25°04.8	-7.6'	55.7'	104°01.0	88°59.5	65°17.7	6°27.4	39°27.2	51°08.2	83°11.9	102°10.5
18	351°22.2	9.8'	S 25°12.4	-7.5'	55.7'	103°29.5	88°29.7	64°53.0	5°56.0	39°58.6	51°31.1	83°40.1	102°39.3
19	5°51.0	9.7'	$25^{\circ}19.9$	-7.3'	55.8'	102°58.0	87°59.9	64°28.4	5°24.7	40°29.9	51°54.2	84°08.4	103°08.2
20	20°19.6	9.6'	25°27.2	-7.2'	55.8'	102°26.4	87°30.1	64°03.7	4°53.3	41°01.3	52°17.4	84°36.8	103°37.2
21	34°48.2	9.5'	25°34.5	-7.1'	55.8'	101°54.8	87°00.3	63°39.1	4°21.8	41°32.8	52°40.8	85°05.1	104°06.2
22	49°16.7	9.3'	$25^{\circ}41.6$	-7.0'	55.9'	101°23.2	86°30.4	63°14.6	3°50.4	42°04.2	53°04.2	85°33.5	104°35.2
23	63°45.0	9.2'	25°48.6	-6.9'	55.9'	100°51.5	86°00.5	62°50.0	3°18.9	42°35.7	53°27.8	86°02.0	105°04.2
13 th	SD	= 15.1'	Mer. pass	. 18:36					Sun SD	= 15.8'			

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

Wed	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	±Antares	+Spica	+Arcturus	+Venus	+Sun
-										-			
0	78°13.3	9.1'	S 25°55.4	-6.7'	55.9'	100°19.8	85°30.5	62°25.5	2°47.3	43°07.3	53°51.5	86°30.5	105°33.3
1	92°41.4	9.0'	26°02.1	-6.6'	56.0'	99°48.1	85°00.5	62°01.0	2°15.7	43°38.9	54°15.4	86°59.0	106°02.4
2	107°09.4	8.9'	26°08.7	-6.5	56.0'	99°16.3	84°30.5	61°36.5	1°44.1	44°10.5	54°39.3	87°27.6	106°31.6
3	121°37.3	8.8'	26°15.2	-6.3	56.0'	98°44.5	84°00.4	61°12.1	1°12.4	44°42.1	55°03.4	87°56.2	107°00.8
4	136°05.2	8.7'	26°21.6	-6.2'	56.1'	98°12.6	83°30.3	60°47.7	0°40.7	45°13.8	55°27.6	88°24.8	107°30.0
5	150°32.9	8.6'	26°27.8	-6.1'	56.1'	97°40.7	83°00.2	60°23.4	0°09.0	45°45.6	55°51.9	88° 53.5	107°59.3
6	165°00.5	8.5'	S 26°33.8	-5.9'	56.1'	97°08.8	82°30.1	59°59.1		46°17.3	56°16.3	89°22.2	108°28.6
7	179°28.0	8.4'	26°39.8	-5.8'	56.2'	96°36.8	81°59.9	59°34.8		46°49.2	56°40.8	89°50.9	108°57.9
8	193°55.4	8.3'	26°45.6	-5.7'	56.2'	96°04.8	81°29.7	59° 10.6	1°26.4	47°21.0	57°05.4	90° 19.7	109°27.3
9	208°22.7	8.2'	$26^{\circ}51.3$	-5.5'	56.2'	95°32.7	80°59.4	58°46.4	1°58.3	47°52.9	57°30.2	90°48.5	109°56.8
10	222°49.9	8.1'	26°56.8	-5.4'	56.3'	95°00.6	80°29.1	58° 22.3	2°30.3	48°24.8	57°55.0	91°17.4	110°26.2
11	237°17.0	8.0'	27°02.2	-5.3'	56.3'	94°28.5	79°58.8	57°58.2	3°02.2	48°56.8	58°19.9	91°46.3	110°55.7
12	251°44.0	7.9'	S 27°07.4	-5.1'	56.3'	93°56.3	79°28.5	57°34.2	3°34.3	49°28.8	58°45.0	92°15.3	111°25.3
13	266°10.9	7.8'	$27^{\circ}12.6$	-5.0'	56.4'	93°24.1	78°58.1	57° 10.2	4°06.3	50°00.9	59°10.1	92°44.3	111°54.9
14	280°37.7	7.7'	$27^{\circ}17.5$	-4.8'	56.4'	92°51.9	78°27.7	56°46.3	4°38.4	50°32.9	59°35.4	93°13.3	112°24.5
15	295°04.4	7.6'	27°22.3	-4.7'	56.4'	92°19.6	77°57.2	56°22.4	5° 10.5	51°05.1	60°00.7	93°42.4	112°54.1
16	309°31.0	7.5'	27°27.0	-4.5'	56.5'	91°47.2	77°26.7	55°58.6	5°42.7	51°37.3	60°26.2	94°11.5	113°23.9
17	323°57.5	7.4'	$27^{\circ}31.5$	-4.4'	56.5'	91°14.9	76°56.2	55°34.9	6° 14.9	52°09.5	60°51.7	94°40.6	113°53.6
18	338°23.9	7.3'	S 27°35.9	-4.2'	56.5'	90°42.4	76°25.7	55° 11.2	6°47.2	52°41.7	61°17.3	95°09.8	114°23.4
19	352°50.2	7.2'	27°40.1	-4.1'	56.6'	90°10.0	75°55.1	54°47.6	7° 19.5	53°14.0	61°43.1	95°39.1	114°53.2
20	7°16.4	7.1'	27°44.2	-3.9'	56.6'	89°37.5	75°24.5	54°24.0	7°51.8	53°46.4	62°08.9	96°08.4	115°23.1
21	21°42.6	7.0'	27°48.1	-3.8'	56.6'	89°04.9	74°53.8	54°00.5	8° 24.2	54°18.8	62°34.8	96°37.7	115°53.0
22	36°08.6	6.9'	$27^{\circ}51.9$	-3.6'	56.7'	88°32.3	74°23.2	53°37.1	8° 56.7	54°51.2	63°00.8	97°07.1	116°23.0
23	50°34.6	6.9'	27°55.5	-3.5'	56.7'	87°59.7	73°52.5	53° 13.8	9°29.1	55°23.7	63°26.9	97°36.5	116°53.0
14 th	SD :	= 15.3'	Mer. pas	s. 19:30)				Sun SD =	= 15.8′			

	h Moon (15 th Aug)	Lunar Distance	(objects with la	rgest hourly LD d	elta)
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Thu	GHA	ν	Dec	d	HP	-Saturn	-Achernar	-Fomalhaut	-Altair	+Antares	+Spica	+Venus	+Sun
0	65°00.4	6.8'	S 27°59.0	-3.3'	56.8'	87°27.0	83°28.6	73°21.7	52°50.6	10°01.7	55°56.2	98°05.9	117°23.0
1	79°26.2	6.7'	28°02.3	-3.1'	56.8'	86°54.3	83°11.2	72°50.9	52°27.4	10°34.2	56°28.7	98°35.4	117°53.1
2	93°51.9	6.6'	28°05.4	-3.0'	56.8'	86°21.5	82°53.9	72°20.1	52°04.3	11°06.8	57°01.3	99°05.0	118°23.2
3	108°17.5	6.5'	28°08.4	-2.8'	56.9'	85°48.7	82°36.5	71°49.3	51°41.4	11°39.5	57°34.0	99°34.6	118°53.4
4	122°43.0	6.4'	28°11.2	-2.7'	56.9'	85°15.8	82°19.1	71° 18.5	51°18.5	12°12.2	58°06.7	100°04.2	119°23.6
5	137°08.4	6.4'	28°13.9	-2.5'	56.9'	84°42.9	82°01.8	70°47.6	50°55.7	12°44.9	58°39.4	100°33.9	119°53.9
6	151°33.8	6.3'	S 28°16.4	-2.3'	57.0'	84°10.0	81°44.4	70°16.6	50°33.0	13°17.7	59° 12.2	101°03.6	
7	165°59.1	6.2'	28°18.7	-2.2'	57.0'	83°37.0	81°27.1	69°45.7	50°10.4	13°50.5	59°45.0	101°33.3	
8	180°24.3	6.1'	28°20.9	-2.0'	57.0'	83°04.0	81°09.7	69° 14.7	49°47.9	14°23.4	60°17.9	102°03.1	
9	194°49.4	6.1'	28°22.9	-1.8'	57.1'	82°30.9	80°52.4	68°43.7	49°25.6	14°56.3	60°50.8	102°33.0	
10	209°14.5	6.0'	28°24.7	-1.7'	57.1'	81°57.8	80°35.1	68° 12.7	49°03.3	15°29.3	61°23.7	103°02.9	
11	223°39.4	5.9'	28°26.4	-1.5'	57.2'	81°24.6	80°17.8	67°41.6	48°41.2	16°02.3	61°56.8	103°32.8	
12	238°04.3	5.8'	S 28°27.9	-1.3'	57.2'	80°51.4	80°00.5	67° 10.5	48°19.2	16°35.3	62°29.8	104°02.8	
13	252°29.2	5.8'	28°29.2	-1.2'	57.2'	80°18.1	79°43.3	66°39.4	47°57.3	17°08.4	63°02.9	104°32.9	
14	266°54.0	5.7'	28°30.3	-1.0'	57.3'	79°44.8	79°26.0	66°08.2	47°35.5	17°41.6	63°36.0	105°03.0	
15	281°18.7	5.6'	28°31.3	-0.8'	57.3'	79°11.5	79°08.8	65°37.0	47°13.9	18°14.7	64°09.2	105°33.1	
16	295°43.3	5.6'	28°32.1	-0.6'	57.3'	78°38.1	78°51.6	65°05.8	46°52.5	18°48.0	64°42.5	106°03.3	
17	310°07.9	5.5'	28°32.7	-0.5'	57.4'	78°04.6	78°34.5	64°34.6	46°31.1	19°21.3	65° 15.7	106°33.5	
18	324°32.4	5.5'	S 28°33.2	-0.3'	57.4'	77°31.1	78° 17.3	64°03.4	46°10.0	19°54.6	65°49.1	107°03.7	
19	338°56.9	5.4'	28°33.5	-0.1'	57.5'	76°57.6	78°00.2	63°32.1	45°49.0	20°28.0	66°22.4	107°34.1	
20	353°21.3	5.4'	28°33.6	0.1'	57.5'	76°24.0	77°43.1	63°00.8	45°28.1	21°01.4	66°55.9	108°04.4	
21	7°45.7	5.3'	28°33.5	0.3'	57.5'	75°50.4	77°26.0	62°29.5	45°07.4	21°34.8	67°29.3	108°34.8	
22	22°10.0	5.3'	28°33.3	0.4'	57.6'	75°16.7	77°09.0	61°58.1	44°46.9	22°08.4	68°02.8	109°05.3	
23	36°34.2	5.2'	28°32.8	0.6'	57.6'	74°43.0	76°52.0	61°26.8	44°26.6	22°41.9	68°36.4	109°35.8	
15 th	SD =	= 15.5′	Mer. pas	s. 20:28					Sun SD :	= 15.8	<u> </u>		

h Moon (16th Aug)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Achernar	-Saturn	-Fomalhaut	-Altair	+Antares	+Spica	+Arcturus	+Venus
0	50°58.5	5.2'	S 28°32.2	0.8'	57.7'	76°35.0	74°09.2	60°55.4	44°06.4	23°15.5	69°10.0	74°45.7	110°06.3
1	65°22.6	5.1'	28°31.4	1.0'	57.7'	76°18.0	73°35.4	60°24.0	43°46.5	23°49.2	69°43.7	75°13.9	110°36.9
2	79°46.7	5.1'	28°30.5	1.2'	57.7'	76°01.1	73°01.5	59° 52.5	43°26.7	24°22.9	70°17.4	75°42.0	111°07.6
3	94°10.8	5.0'	28°29.3	1.3'	57.8'	75°44.3	72°27.6	59°21.1	43°07.2	24°56.6	70°51.1	76°10.3	111°38.3
4	108°34.9	5.0'	28°28.0	1.5'	57.8'	75°27.4	71°53.7	58° 49.6	42°47.8	25°30.4	71°24.9	76°38.6	112°09.0
5	122°58.9	5.0'	28°26.5	1.7'	57.8'	75°10.7	71°19.6	58° 18.1	42°28.7	26°04.3	71°58.7	77°06.9	112°39.8
6	137°22.9	4.9'	S 28°24.8	1.9'	57.9'	74°53.9	70°45.6	57° 46.6	42°09.8	26°38.2	72°32.6	77°35.3	113°10.6
7	151°46.8	4.9'	28°22.9	2.1'	57.9'	74°37.2	70°11.5	57° 15.1	41°51.1	27°12.1	73°06.6	78°03.8	113°41.5
8	166°10.7	4.9'	28°20.8	2.2'	58.0'	74°20.6	69°37.3	56°43.6	41°32.7	27°46.1	73°40.5	78°32.4	114°12.4
9	180°34.6	4.9'	28°18.6	2.4'	58.0'	74°04.0	69°03.1	56° 12.0	41° 14.5	28°20.1	74°14.6	79°01.0	114°43.4
10	194°58.5	4.8'	$28^{\circ}16.2$	2.6'	58.0'	73°47.4	68°28.9	55° 40.5	40° 56.5	28°54.2	74°48.7	79°29.6	115°14.4
11	209°22.3	4.8'	$28^{\circ}13.5$	2.8'	58.1'	73°30.9	67°54.6	55°08.9	40°38.8	29°28.3	75°22.8	79°58.4	115°45.5
12	223°46.1	4.8'	S 28°10.7	3.0'	58.1'	73°14.5	67°20.3	54°37.4	40°21.4	30°02.5	75°57.0	80°27.1	116°16.6
13	238°09.9	4.8'	28°07.7	3.2'	58.1'	72°58.1	66°45.9	54°05.8	40°04.3	30°36.7	76°31.2	80°56.0	116°47.7
14	252°33.7	4.8'	28°04.6	3.4'	58.2'	72°41.8	66°11.4	53°34.2	39°47.4	31°11.0	77°05.4	81°24.9	117°19.0
15	266°57.5	4.8'	$28^{\circ}01.2$	3.5'	58.2'	72°25.5	65°36.9	53°02.6	39°30.8	31°45.3	77°39.8	81°53.8	117°50.2
16	281°21.2	4.7'	27°57.7	3.7'	58.3'	72°09.3	65°02.4	52°31.0	39° 14.5	32°19.7	78°14.1	82°22.8	118°21.5
17	295°45.0	4.7'	27°53.9	3.9'	58.3'	71°53.2	64°27.8	51°59.4	38°58.6	32°54.1	78°48.5	82°51.9	118°52.9
18	310°08.7	4.7'	S 27°50.0	4.1'	58.3'	71°37.1	63°53.2	51°27.8	38°42.9	33°28.6	79°23.0	83°21.0	119°24.3
19	324°32.4	4.7'	27°45.9	4.3'	58.4'	71°21.1	63°18.5	50° 56.2	38° 27.6	34°03.1	79°57.5	83°50.1	119°55.7
20	338°56.1	4.7'	$27^{\circ}41.6$	4.5'	58.4'	71°05.1	62°43.8	50°24.6	38° 12.6	34°37.6	80°32.1	84°19.3	
21	353°19.9	4.7'	27°37.2	4.7'	58.4'	70°49.3	62°09.1	49°53.0		35°12.2	81°06.7	84°48.6	
22	7°43.6	4.7'	27°32.5	4.8'	58.5'	70°33.5	61°34.2	49°21.4		35°46.9	81°41.3	85°17.9	
23	22°07.3	4.7'	27°27.7	5.0'	58.5'	70°17.8	60°59.4	48°49.9		36°21.6	82°16.0	85°47.2	
16 th	SD =	= 15.7′	Mer. pass	s. 21:28	3								

Moon (17th Aug)

h

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Achernar	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus
0	36°31.1	4.7'	S 27°22.6	5.2'	58.6'	70°02.1	60°24.5	48° 18.3	36°56.3	56°11.9	60°33.9	82°50.7	86° 16.6
1	50°54.8	4.8'	$27^{\circ}17.4$	5.4'	58.6'	69°46.6	59°49.5	47° 46.7	37°31.1	56°35.0	60°57.2	83°25.5	86°46.1
2	65°18.6	4.8'	$27^{\circ}12.0$	5.6'	58.6'	69°31.1	59°14.5	47° 15.2	38°05.9	56°58.3	61°20.7	84°00.4	87° 15.6
3	79°42.3	4.8'	27°06.4	5.8'	58.7'	69°15.7	58°39.5	46°43.7	38°40.8	57°21.8	61°44.4	84°35.2	87°45.1
4	94°06.1	4.8'	27°00.7	6.0'	58.7'	69°00.5	58°04.4	46°12.2	39°15.7	57°45.4	62°08.1	85°10.2	88° 14.7
5	108°29.9	4.8'	26°54.7	6.1'	58.7'	68°45.2	57°29.2	45°40.7	39°50.7	58°09.2	62°32.0	85°45.1	88°44.3
6	122°53.7	4.8'	S 26°48.6	6.3'	58.8'	68°30.1	56°54.1	45°09.3	40°25.7	58°33.1	62°56.1	86°20.1	89°14.0
7	137°17.6	4.9'	26°42.3	6.5'	58.8'	68°15.1	56°18.8	44°37.8	41°00.8	58°57.2	63°20.2	86°55.2	89°43.7
8	151°41.4	4.9'	26°35.7	6.7'	58.9'		55°43.5	44°06.5	41°35.9	59°21.4	63°44.5	87°30.3	90°13.4
9	166°05.3	4.9'	$26^{\circ}29.1$	6.9'	58.9'		55°08.2	43°35.1	42°11.1	59°45.7	64°08.9	88°05.5	90°43.2
10	180°29.2	4.9'	26°22.2	7.0'	58.9'		54°32.9	43°03.8	42°46.3	60°10.2	64°33.4	88°40.7	91°13.0
11	194°53.2	5.0'	$26^{\circ}15.1$	7.2'	59.0'		53°57.4	42°32.5	43°21.5	60°34.9	64°58.1	89° 15.9	91°42.8
12	209°17.1	5.0'	S 26°07.9	7.4'	59.0'		53°22.0	42°01.3	43°56.8	60°59.6	65°22.8	89°51.2	92°12.7
13	223°41.1	5.0'	26°00.5	7.6'	59.0'		52°46.5	41°30.1	44°32.1	61°24.5	65°47.7	90° 26.5	92°42.6
14	238°05.2	5.1'	25°52.9	7.8'	59.1'		52°10.9	40°59.0	45°07.5	61°49.5	66°12.7	91°01.9	93°12.6
15	252°29.2	5.1'	25°45.2	7.9'	59.1'		51°35.3	40°27.9	45°42.9	62°14.7	66°37.8	91°37.3	93°42.6
16	266°53.3	5.1'	25°37.2	8.1'	59.1'		50°59.7	39°56.9	46°18.4	62°40.0	67°03.0	92°12.8	94°12.6
17	281°17.5	5.2'	$25^{\circ}29.1$	8.3'	59.2'		50°24.0	39°25.9	46°53.9	63°05.4	67°28.3	92°48.3	94°42.6
18	295°41.7	5.2'	S 25°20.8	8.5'	59.2'		49°48.3	38°55.0	47°29.5	63°30.9	67°53.8	93°23.9	95°12.7
19	310°05.9	5.3'	$25^{\circ}12.3$	8.6'	59.2'		49°12.5	38°24.2	48°05.1	63°56.6	68°19.3	93°59.5	95°42.8
20	324°30.2	5.3'	25°03.7	8.8'	59.3'		48°36.7	37°53.5	48°40.7	64°22.4	68°44.9	94°35.1	96°12.9
21	338°54.5	5.4'	24°54.9	9.0'	59.3'		48°00.9	37°22.9	49°16.4	64°48.2	69°10.7	95°10.8	96°43.1
22	353°18.9	5.4'	24°45.9	9.2'	59.3'		47°25.0	36°52.4	49°52.1	65°14.2	69°36.5	95°46.5	97°13.2
23	7°43.3	5.5'	24°36.7	9.3'	59.4'		46°49.0	36°21.9	50°27.9	65°40.3	70°02.4	96°22.3	97°43.4
17 th	SD =	= 16.0′	Mer. pass	s. 22:28	3								

h Moon (18th Aug)

Sun	GHA	ν	Dec	d	HP	-Rigel	-Aldebaran	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Spica	+Arcturus
0	22°07.7	5.5'	S 24°27.4	9.5'	59.4'			46°13.1	35°51.6	51°03.7	66°06.6	96°58.1	98°13.6
1	36°32.2	5.6'	24°17.9	9.7'	59.4'			45°37.0	35°21.4	51°39.6	66°32.9	97°34.0	98°43.9
2	50°56.8	5.6'	24°08.2	9.8'	59.5'			45°01.0	34°51.3	52° 15.5	66°59.3	98°09.8	99°14.1
3	65°21.4	5.7'	23°58.4	10.0'	59.5'			44°24.9	34°21.3	52°51.4	67°25.9	98°45.8	99°44.4
4	79°46.1	5.7'	23°48.4	10.2'	59.5'			43°48.7	33°51.5	53°27.4	67°52.5	99°21.8	100° 14.7
5	94°10.8	5.8'	23°38.2	10.3'	59.6'			43°12.6	33°21.8	54°03.4	68°19.2	99°57.8	100°45.0
6	108°35.6	5.8'	S 23°27.9	10.5'	59.6'			42°36.3	32°52.2	54°39.5	68°46.1	100°33.8	101°15.3
7	123°00.4	5.9'	23°17.4	10.7'	59.6'			42°00.1	32°22.9	55° 15.5	69°13.0	101°09.9	101°45.6
8	137°25.3	6.0'	23°06.7	10.8'	59.7'			41°23.8	31°53.7	55°51.7	69°40.0	101°46.0	102° 15.9
9	151°50.3	6.0'	22°55.9	11.0'	59.7'			40°47.4	31°24.7	56°27.9	70°07.1	102°22.2	102°46.2
10	166°15.3	6.1'	22°44.9	11.1'	59.7'			40°11.0	30°55.8	57°04.1	70°34.3	102°58.4	103°16.6
11	180°40.4	6.1'	22°33.8	11.3'	59.8'	119°57.5		39°34.6	30°27.2	57°40.3	71°01.6	103°34.7	103°46.9
12	195°05.5	6.2'	S 22°22.5	11.4'	59.8'	119°30.8		38°58.2	29°58.8	58° 16.6	71°29.0	104°11.0	104° 17.3
13	209°30.7	6.3'	22°11.1	11.6'	59.8'	119°03.9		38°21.7	29° 30.7	58° 52.9	71°56.4	104°47.3	104°47.6
14	223°56.0	6.3'	21°59.5	11.7'	59.8'	118° 36.9	119°36.6	37°45.2	29°02.7	59°29.3	72°24.0	105°23.6	105°18.0
15	238°21.3	6.4'	21°47.7	11.9'	59.9'	118°09.8	119°01.0	37°08.6	28°35.1	60°05.7	72°51.6	106°00.0	105°48.3
16	252°46.8	6.5'	21°35.8	12.0'	59.9'	117°42.6	118°25.3	36°32.0	28°07.7	60°42.1	73°19.3	106°36.5	106° 18.7
17	267°12.2	6.5'	21°23.8	12.2'	59.9'	117° 15.3	117°49.5	35°55.4	27°40.6	61°18.6	73°47.0	107°12.9	106°49.0
18	281°37.8	6.6'	S 21°11.6	12.3'	60.0'	116°47.8	117° 13.7	35°18.7	27°13.9	61°55.1	74°14.9	107°49.4	107° 19.3
19	296°03.4	6.7'	20°59.3	12.5'	60.0'	116°20.2	116°37.9	34°42.0	26° 47.4	62°31.6	74°42.8	108°26.0	107°49.7
20	310°29.0	6.7'	20°46.8	12.6'	60.0'	115°52.6	116°02.1	34°05.3	26°21.3	63°08.2	75°10.8	109°02.5	108° 20.0
21	324°54.8	6.8'	20°34.2	12.8'	60.0'	115°24.8	115°26.1	33°28.5	25°55.6	63°44.8	75°38.8	109°39.1	108°50.3
22	339°20.6	6.9'	20°21.4	12.9'	60.1'	114°56.9	114°50.2	32°51.7	25°30.3	64°21.4	76°06.9	110°15.8	109°20.6
23	353°46.5	6.9'	20°08.5	13.0'	60.1'	114°28.9	114°14.2	32°14.8	25°05.3	64°58.1	76°35.1	110°52.4	109°50.8
18 th	SD :	SD = 16.2' Mer. pass. 23:26											

h Moon (19th Aug)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Mars	-Jupiter	-Aldebaran	-Saturn	+Antares	+Rigil Kent.	+Arcturus	+Spica
0	8°12.4	7.0'	S 19°55.5	13.2'	60.1'			113°38.2	31°38.0	65°34.8	77°03.4	110°21.1	111°29.1
1	22°38.4	7.1'	19°42.3	13.3'	60.1'			113°02.1	31°01.1	66°11.5	77°31.7	110°51.3	112°05.9
2	37°04.5	7.2'	19°29.0	13.4'	60.2'			112°26.0	30°24.1	66°48.3	78°00.1	111°21.5	112°42.6
3	51°30.7	7.2'	19° 15.6	13.6'	60.2'		119°28.6	111°49.9	29°47.2	67°25.1	78°28.5	111°51.7	113°19.4
4	65°56.9	7.3'	19°02.0	13.7'	60.2'		118°52.4	111°13.7	29°10.2	68°01.9	78°57.0	112°21.8	113°56.2
5	80°23.2	7.4'	18°48.3	13.8'	60.2'		118°16.1	110°37.5	28°33.2	68°38.8	79°25.5	112°51.9	114°33.1
6	94°49.6	7.4'	S 18°34.5	13.9'	60.3'	119°58.7	117°39.8	110°01.3	27°56.1	69°15.6	79°54.1	113°22.0	115°10.0
7	109°16.0	7.5'	18°20.5	14.1'	60.3'	119°23.6	117°03.5	109°25.0	27°19.0	69°52.5	80°22.7	113°52.1	115°46.9
8	123°42.5	7.6'	$18^{\circ}06.4$	14.2'	60.3'	118°48.5	116°27.1	108°48.7	26°41.9	70°29.5	80°51.4	114°22.1	116°23.8
9	138°09.1	7.6'	$17^{\circ}52.3$	14.3'	60.3'	118°13.3	115°50.8	108°12.4	26°04.8	71°06.4	81°20.1	114°52.1	117°00.8
10	152°35.7	7.7'	17°37.9	14.4'	60.3'	117°38.1	115°14.3	107°36.0	25°27.7	71°43.4	81°48.9	115°22.0	117°37.8
11	167°02.5	7.8'	$17^{\circ}23.5$	14.5'	60.4	117°02.9	114°37.9	106°59.6	24°50.5	72°20.5	82°17.7	115°51.9	118°14.8
12	181°29.3	7.9'	S 17°09.0	14.7'	60.4'	116°27.7	114°01.4	106°23.2	24°13.3	72°57.5	82°46.6	116°21.7	118°51.8
13	195°56.1	7.9'	16°54.3	14.8'	60.4'	115°52.4	113°24.9	105°46.8	23°36.0	73°34.6	83° 15.5	116°51.5	119°28.9
14	210°23.0	8.0'	$16^{\circ}39.5$	14.9'	60.4'	115°17.1	112°48.4	105°10.3	22°58.8	74°11.7	83°44.4	117°21.3	
15	224°50.0	8.1'	16°24.6	15.0'	60.4'	114°41.8	112°11.8	104°33.8	22°21.5	74°48.8	84°13.4	117°51.0	
16	239°17.1	8.1'	16°09.6	15.1'	60.5'	114°06.4	111°35.3	103°57.3	21°44.2	75°25.9	84°42.4	118°20.6	
17	253°44.2	8.2'	15°54.5	15.2'	60.5'	113°31.1	110°58.7	103°20.7	21°06.9	76°03.1	85°11.5	118°50.2	
18	268°11.4	8.3'	S 15°39.3	15.3'	60.5'	112°55.7	110°22.0	102°44.1	20°29.5	76°40.2	85° 40.5	119° 19.7	i i
19	282°38.7	8.3'	15°24.0	15.4'	60.5'	112°20.3	109°45.4	102°07.5	19°52.1	77°17.5	86°09.6	119°49.1	
20	297°06.1	8.4'	15°08.6	15.5'	60.5'	111°44.8	109°08.7	101°30.9	19°14.8	77°54.7	86°38.8		
21	311°33.5	8.5'	14°53.1	15.6'	60.5'	111°09.3	108°32.0	100°54.3	18°37.3	78°31.9	87°07.9		
22	326°00.9	8.5'	14°37.5	15.7'	60.6'	110°33.9	107°55.3	100°17.6	17°59.9	79°09.2	87°37.1		
23	340°28.5	8.6'	14°21.8	15.8'	60.6'	109°58.4	107°18.6	99°40.9	17°22.5	79°46.5	88°06.3		
19 th	SD	= 16.	4′ Mer. pa	ass:-									

h Moon (20th Aug)

Lunar Distance (objects with largest hourly LD delta)

	1					1			_				
Tue	GHA	ν	Dec	d	HP	-Mars	-Jupiter	-Aldebaran	-Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar
0	354°56.1	8.7'	S 14°06.0	15.9'	60.6'	109°22.8	106°41.8	99°04.2	16°45.0	42°24.4	80°23.8	88° 35.5	92°33.5
1	9°23.7	8.7'	13°50.1	16.0'	60.6'	108°47.3	106°05.1	98° 27.5	16°07.5	42°45.4	81°01.1	89°04.7	93°01.9
2	23°51.5	8.8'	13°34.2	16.1'	60.6'	108°11.7	105°28.3	97°50.7	15°30.0	43°06.8	81°38.4	89°34.0	93°30.4
3	38°19.3	8.9'	13°18.1	16.1'	60.6'	107°36.2	104°51.5	97°14.0	14°52.5	43°28.4	82°15.8	90°03.2	93°58.8
4	52°47.1	8.9'	13°02.0	16.2'	60.6'	107°00.6	104°14.6	96°37.2	14°15.0	43°50.3	82°53.1	90°32.5	94°27.3
5	67°15.0	9.0'	12°45.7	16.3'	60.7'	106°25.0	103°37.8	96°00.4	13°37.5	44°12.6	83°30.5	91°01.8	94°55.7
6	81°43.0	9.0'	S 12°29.4	16.4'	60.7'	105°49.3	103°01.0	95°23.6	12°59.9	44°35.1	84°07.9	91°31.1	95°24.2
7	96°11.0	9.1'	12°13.0	16.5'	60.7'	105°13.7	102°24.1	94°46.7	12°22.4	44°57.9	84°45.3	92°00.4	95°52.6
8	110°39.1	9.2'	$11^{\circ}56.6$	16.5'	60.7'	104°38.0	101°47.2	94°09.9	11°44.8	45°20.9	85°22.7	92°29.7	96°21.1
9	125°07.3	9.2'	$11^{\circ}40.0$	16.6'	60.7'	104°02.4	101°10.3	93°33.0	11°07.2	45°44.2	86°00.2	92°59.0	96°49.5
10	139°35.5	9.3'	11°23.4	16.7'	60.7'	103°26.7	100°33.4	92°56.2	10°29.6	46°07.7	86°37.6	93°28.3	97°17.9
11	154°03.8	9.3'	$11^{\circ}06.7$	16.8'	60.7'	102°51.0	99°56.5	92° 19.3	9°52.0	46°31.5	87°15.1	93°57.6	97°46.3
12	168°32.1	9.4'	S 10°50.0	16.8'	60.7'	102°15.3	99°19.6	91°42.4	9°14.4	46°55.5	87°52.6	94°26.9	98°14.7
13	183°00.5	9.4'	10°33.2	16.9'	60.7'	101°39.6	98°42.6	91°05.5	8°36.8	47°19.8	88°30.0	94° 56.2	98°43.1
14	197°28.9	9.5'	10°16.3	16.9'	60.7'	101°03.9	98°05.7	90°28.6	7°59.2	47°44.2	89°07.5	95° 25.5	99°11.4
15	211°57.4	9.5'	09°59.3	17.0'	60.8'	100°28.1	97°28.7	89°51.7	7°21.6	48°08.9	89°45.0	95°54.8	99°39.8
16	226°26.0	9.6'	09°42.3	17.1'	60.8'	99°52.4	96°51.7	89° 14.8	6°43.9	48°33.8	90°22.5	96°24.1	100°08.1
17	240°54.6	9.6'	09°25.3	17.1'	60.8'	99°16.6	96°14.8	88°37.8	6°06.3	48°58.9	91°00.0	96°53.4	100°36.4
18	255°23.2	9.7'	S 09°08.1	17.2'	60.8'	98°40.9	95°37.8	88°00.9	5°28.7	49°24.2	91°37.5	97°22.6	101°04.6
19	269°51.9	9.7'	$08^{\circ}51.0$	17.2'	60.8'	98°05.1	95°00.8	87°23.9	4°51.2	49°49.7	92°15.1	97°51.8	101°32.8
20	284°20.6	9.8'	08°33.7	17.3'	60.8'	97°29.3	94°23.8	86°47.0	4°13.6	50°15.4	92°52.6	98°21.1	102°01.0
21	298°49.4	9.8'	08°16.4	17.3'	60.8'	96°53.6	93°46.8	86°10.1	3°36.1	50°41.3	93°30.1	98° 50.2	102°29.2
22	313°18.3	9.9'	$07^{\circ}59.1$	17.4'	60.8'	96°17.8	93°09.8	85°33.1	2°58.7	51°07.3	94°07.6	99° 19.4	102°57.3
23	327°47.1	9.9'	07°41.7	17.4'	60.8'	95°42.0	92°32.8	84°56.1	2°21.4	51°33.5	94°45.2	99°48.6	103°25.4
20 th	SD	= 16.5	Mer. pas	s. 00:21									

h Moon (21st Aug)

Wed	GHA	ν	Dec	d	HP	-Pollux	-Jupiter	-Aldebaran	±Saturn	+Fomalhaut	+Altair	+Antares	+Rigil Kent.
0	342°16.1	10.0'	S 07°24.3	17.5'	60.8'		91°55.8	84°19.2	1°44.5	22°14.3	51°59.9	95°22.7	100°17.7
1	356°45.0	10.0'	07°06.8	17.5'	60.8'		91°18.8	83°42.2	1°08.4	22°35.7	52°26.5	96°00.3	100°46.8
2	11°14.0	10.0'	06°49.3	17.5'	60.8'		90°41.8	83°05.3		22°57.8	52°53.2	96°37.8	101°15.9
3	25°43.1	10.1'	06°31.8	17.6'	60.8'		90°04.7	82°28.3		23°20.4	53°20.0	97° 15.4	101°44.9
4	40°12.2	10.1'	06°14.2	17.6'	60.8'		89°27.7	81°51.4		23°43.7	53°47.0	97°52.9	102°13.9
5	54°41.3	10.2'	05°56.6	17.7'	60.8'		88°50.7	81°14.4		24°07.5	54°14.2	98°30.4	102°42.8
6	69°10.5	10.2'	S 05°38.9	17.7'	60.8'		88°13.7	80°37.5		24°31.9	54°41.5	99°08.0	103°11.8
7	83°39.7	10.2'	05°21.2	17.7'	60.8'		87°36.7	80°00.6	2°44.2	24°56.8	55°08.9	99°45.5	103°40.6
8	98°08.9	10.3'	05°03.5	17.7'	60.8'		86°59.7	79°23.6	3°21.6	25°22.1	55°36.4	100°23.0	104°09.5
9	112°38.2	10.3'	04°45.8	17.8'	60.8'		86°22.7	78°46.7	3°59.1	25°48.0	56°04.1	101°00.6	104°38.3
10	127°07.5	10.3'	04°28.0	17.8'	60.8		85°45.7	78°09.8	4°36.6	26°14.2	56°31.9	101°38.1	105°07.0
11	141°36.8	10.4'	04°10.2	17.8'	60.8'		85°08.7	77°32.8	5°14.2	26°40.9	56°59.8	102°15.6	105°35.7
12	156°06.1	10.4'	S 03°52.4	17.8'	60.8'		84°31.7	76°55.9	5°51.8	27°07.9	57° 27.9	102°53.1	106°04.4
13	170°35.5	10.4'	03°34.6	17.8'	60.8	119°43.1	83°54.7	76°19.0	6°29.4	27°35.4	57°56.0	103°30.7	106°33.0
14	185°05.0	10.4'	03°16.8	17.9'	60.8	119°05.6	83°17.8	75°42.2	7°07.0	28°03.2	58°24.3	104°08.2	107°01.5
15	199°34.4	10.5'	02°58.9	17.9'	60.8'	118°28.1	82°40.8	75°05.3	7°44.6	28°31.3	58°52.6	104°45.6	107°30.0
16 17	214°03.9 228°33.4	10.5' 10.5'	02°41.1 02°23.2	17.9' 17.9'	60.8' 60.8'	117°50.7 117°13.2	82°03.8 81°26.9	74°28.4 73°51.6	8°22.2 8°59.8	28°59.7 29°28.5	59°21.1 59°49.6	105°23.1 106°00.6	107°58.4 108°26.7
18	243°02.9	10.5'	S 02°05.3	17.9'	60.8	116°35.7	80°49.9	73°14.7	9°37.4	29°57.5	60°18.2	106°38.1	108°55.0
19 20	257°32.4 272°02.0	10.6'	01°47.4	17.9'	60.8'	115°58.3	80°13.0	72°37.9	10°15.0	30°26.8	60°47.0	107°15.5 107°53.0	109°23.2
1	272°02.0 286°31.5	10.6' 10.6'	01°29.5 01°11.6	17.9'	60.7'	115°20.9 114°43.5	79°36.1 78°59.2	72°01.1 71°24.3	10°52.6 11°30.2	30°56.4 31°26.2	61°15.8 61°44.7	107°53.0 108°30.4	109°51.4 110°19.5
21 22	280 31.5 301°01.1	10.6	01 11.6 00°53.7	17.9' 17.9'	60.7' 60.7'	114 43.5 114°06.1	78°22.3	71 24.3 70°47.5	11 30.2 12°07.8	31 26.2 31°56.2	61 44.7 62°13.6	108 30.4 109°07.9	110 19.5 110°47.5
23	315°30.7	10.6'	00°35.8	17.9'	60.7	114 00.1 113°28.7	77°45.4	70°47.3	12°45.4	31° 30.2 32° 26.5	62°42.7	109°07.9	110 47.5 111°15.4
21 st		= 16.6'	Mer. pass		00.1	113 20.7	11 13.1	7.5 10.7	12 43.4	32 20.3	02 42.1	103 43.3	111 15.4
		20.0	c puss	. 02.20		l							

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

Thu	GHA	ν	Dec	d	HP	-Pollux	-Mars	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Altair	+Antares
0	330°00.4	10.6'	S 00°17.9	17.9'	60.7'	112°51.3	80°48.4	77°08.5	69°34.0	13°22.9	32°57.0	63°11.8	110°22.7
1	344°30.0	10.6'	N00°00.0	17.9'	60.7'	112°13.9	80° 12.7	76°31.7	68°57.3	14°00.5	33°27.6	63°41.0	111°00.1
2	358°59.6	10.7'	00°17.9	17.9'	60.7'	111°36.6	79°37.1	75°54.9	68°20.6	14°38.0	33°58.5	64°10.2	111°37.4
3	13°29.3	10.7'	00°35.8	17.9'	60.7'	110°59.2	79°01.5	75°18.0	67°43.9	15°15.5	34°29.5	64°39.6	112°14.8
4	27°59.0	10.7'	00°53.7	17.9'	60.7'	110°21.9	78°25.9	74°41.2	67°07.2	15°53.0	35°00.7	65°08.9	112°52.2
5	42°28.7	10.7'	$01^{\circ}11.5$	17.8'	60.7'	109°44.6	77°50.3	74°04.4	66°30.6	16°30.5	35°32.1	65°38.4	113°29.5
6	56°58.3	10.7'	$N01^{\circ}29.4$	17.8'	60.7'	109°07.3	77° 14.8	73°27.7	65°54.0	17°08.0	36°03.6	66°07.9	114°06.8
7	71°28.0	10.7'	01°47.2	17.8'	60.6'	108°30.0	76°39.2	72°50.9	65°17.4	17°45.5	36°35.2	66°37.4	114°44.1
8	85°57.7	10.7'	02°05.0	17.8'	60.6'	107°52.7	76°03.7	72°14.2	64°40.8	18°22.9	37°07.0	67°07.0	115°21.4
9	100°27.4	10.7'	02°22.8	17.8'	60.6'	107°15.5	75°28.2	71°37.4	64°04.2	19°00.4	37°38.9	67°36.7	115°58.6
10	114°57.1	10.7'	02°40.6	17.7'	60.6'	106°38.3	74°52.7	71°00.7	63°27.7	19°37.8	38°11.0	68°06.4	116°35.9
11	129°26.8	10.7'	02°58.3	17.7'	60.6'	106°01.1	74° 17.3	70°24.1	62°51.2	20°15.2	38°43.1	68°36.1	117°13.1
12	143°56.5	10.7'	$N03^{\circ}16.1$	17.7'	60.6'	105°23.9	73°41.8	69°47.4	62°14.7	20°52.5	39°15.4	69°05.9	117°50.3
13	158°26.2	10.7'	03°33.7	17.7'	60.6'	104°46.7	73°06.4	69°10.8	61°38.3	21°29.9	39°47.7	69°35.7	118°27.5
14	172°55.9	10.7'	03°51.4	17.6'	60.5'	104°09.6	72°31.0	68°34.1	61°01.9	22°07.2	40°20.2	70°05.6	119°04.6
15	187°25.6	10.7'	04°09.0	17.6'	60.5'	103°32.4	71°55.6	67°57.6	60°25.5	22°44.5	40°52.8	70°35.5	119°41.8
16	201°55.3	10.7'	04°26.7	17.6'	60.5'	102°55.3	71°20.2	67°21.0	59°49.1	23°21.8	41°25.4	71°05.4	
17	216°25.0	10.7'	04°44.2	17.5'	60.5'	102°18.3	70°44.9	66°44.4	59°12.8	23°59.1	41°58.1	71°35.3	
18	230°54.7	10.7'	$N05^{\circ}01.8$	17.5'	60.5'	101°41.2	70°09.6	66°07.9	58°36.5	24°36.4	42°30.9	72°05.3	
19	245°24.4	10.7'	$05^{\circ}19.2$	17.5'	60.5'	101°04.2	69°34.3	65°31.4	58°00.3	25°13.6	43°03.8	72°35.3	
20	259°54.0	10.6'	05°36.7	17.4'	60.4'	100°27.1	68°59.0	64°54.9	57°24.0	25°50.8	43°36.8	73°05.4	
21	274°23.7	10.6'	$05^{\circ}54.1$	17.4'	60.4'	99°50.2	68°23.8	64°18.5	56°47.8	26°28.0	44°09.8	73°35.4	
22	288°53.3	10.6'	06°11.5	17.3'	60.4'	99°13.2	67°48.6	63°42.1	56°11.7	27°05.1	44°42.9	74°05.5	
23	303°22.9	10.6'	06°28.8	17.3'	60.4'	98°36.2	67°13.4	63°05.7	55°35.6	27°42.3	45°16.0	74°35.6	
22 nd	SD	$= 16.6^{\prime}$	Mer. pass	. 02:04									

Moon (23rd Aug)

Lunar Distance (objects with largest hourly LD delta)

h		Moon	(23 rd Au	g)			Lunar I	Distance	(objects	with large	st hourly	LD delta)	
Fri	GHA	ν	Dec	d	HP	-Pollux	-Capella	-Mars	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Altair
0	317°52.5	10.6'	N 06°46.1	17.2'	60.4'	97°59.3	68°23.2	66°38.2	62°29.3	54°59.5	28° 19.4	45° 49.2	75°05.7
1	332°22.1	10.6'	07°03.3	17.2'	60.4'	97°22.4	67°48.3	66°03.1	61°53.0	54°23.4	28°56.4	46°22.4	75°35.8
2	346°51.7	10.5'	$07^{\circ}20.5$	17.1'	60.3'	96°45.6	67° 13.5	65°28.0	61°16.7	53°47.4	29°33.5	46°55.7	76°06.0
3	1°21.2	10.5'	07°37.6	17.1'	60.3'	96°08.7	66°38.8	64°52.9	60°40.4	53°11.5	30° 10.5	47° 29.0	76°36.1
4	15°50.7	10.5'	07°54.7	17.0'	60.3'	95°31.9	66°04.1	64°17.8	60°04.1	52°35.5	30°47.5	48°02.4	77°06.3
5	30°20.2	10.5'	$08^{\circ}11.7$	17.0'	60.3'	94°55.1	65°29.4	63°42.8	59°27.9	51°59.6	31°24.5	48° 35.8	77°36.4
6	44°49.7	10.5'	N08°28.7	16.9'	60.3'	94°18.4	64°54.8	63°07.8	58°51.7	51°23.8	32°01.5	49°09.2	78°06.6
7	59°19.2	10.4'	08°45.6	16.8'	60.2'	93°41.7	64°20.2	62°32.9	58°15.5	50°48.0	32°38.4	49°42.7	78°36.8
8	73°48.6	10.4'	09°02.4	16.8'	60.2'	93°05.0	63°45.7	61°57.9	57°39.4	50°12.2	33° 15.3	50°16.2	79°06.9
9	88°18.0	10.4'	$09^{\circ}19.2$	16.7'	60.2'	92°28.3	63°11.2	61°23.0	57°03.3	49°36.5	33°52.1	50°49.8	79°37.1
10	102°47.4	10.4'	09°35.9	16.6'	60.2'	91°51.6	62°36.8	60°48.1	56°27.2	49°00.9	34°29.0	51°23.3	80°07.3
11	117°16.8	10.3'	09°52.6	16.6'	60.2'	91°15.0	62°02.4	60°13.3	55°51.2	48°25.2	35°05.8	51°56.9	80°37.4
12	131°46.1	10.3'	$N10^{\circ}09.1$	16.5'	60.1'	90°38.4	61°28.1	59°38.5	55°15.2	47°49.7	35°42.6	52° 30.5	81°07.6
13	146°15.4	10.3'	10°25.7	16.4'	60.1'	90°01.9	60°53.8	59°03.7	54°39.2	47°14.2	36° 19.3	53°04.1	81°37.8
14	160°44.7	10.2'	$10^{\circ}42.1$	16.4'	60.1'	89°25.4	60° 19.6	58° 29.0	54°03.3	46°38.7	36°56.0	53° 37.8	82°07.9
15	175°13.9	10.2'	10°58.5	16.3'	60.1'	88°48.9	59°45.5	57°54.2	53°27.4	46°03.3	37°32.7	54°11.4	82°38.1
16	189°43.1	10.2'	11° 14.8	16.2'	60.0'	88°12.4	59°11.4	57° 19.6	52°51.5	45°27.9	38°09.4	54°45.1	83°08.2
17	204°12.3	10.1'	11°31.0	16.1'	60.0'	87°36.0	58° 37.3	56°44.9	52°15.7	44°52.6	38°46.0	55° 18.8	83°38.3
18	218°41.4	10.1'	$N11^{\circ}47.1$	16.1'	60.0'	86°59.6	58°03.4	56° 10.3	51°39.9	44°17.3	39°22.6	55° 52.5	84°08.5
19	233°10.5	10.1'	12°03.2	16.0'	60.0'	86°23.2	57°29.4	55°35.7	51°04.1	43°42.1	39°59.1	56°26.2	84°38.6
20	247°39.6	10.0'	$12^{\circ}19.2$	15.9'	59.9'	85°46.9	56°55.6	55°01.2	50°28.4	43°07.0	40°35.7	56°59.9	85°08.6
21	262°08.6	10.0'	12°35.1	15.8'	59.9'	85°10.6	56°21.8	54°26.7	49°52.7	42°31.9	41°12.2	57°33.6	85° 38.7
22	276°37.6	9.9'	12°50.9	15.7'	59.9'	84°34.3	55°48.1	53°52.2	49°17.0	41°56.8	41°48.6	58° 07.3	86°08.8
23	291°06.6	9.9'	13°06.7	15.6'	59.9'	83°58.1	55° 14.4	53° 17.8	48°41.4	41°21.9	42°25.1	58°41.0	86°38.8
23 rd	SD	$= 16.5^{\prime}$	Mer. pass	02:54									

Moon (24th Aug)

Sat	GHA	ν	Dec	d	HP	-Pollux	-Mars	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Achernar	+Altair
0	305°35.5	9.9'	$N13^{\circ}22.3$	15.6'	59.8'	83°21.8	52°43.4	48°05.9	40°47.0	$43^{\circ}01.5$	59°14.7	70°30.5	87°08.8
1	320°04.3	9.8'	13°37.9	15.5'	59.8'	82°45.7	52°09.0	47°30.3	40°12.1	43°37.8	59°48.4	70°47.0	87°38.8
2	334°33.2	9.8'	13°53.3	15.4'	59.8'	82°09.5	51°34.7	46°54.8	39°37.4	44°14.2	60°22.1	71°03.6	88°08.7
3	349°01.9	9.7'	14°08.7	15.3'	59.8'	81°33.4	51°00.4	46°19.4	39°02.6	44°50.5	60°55.9	71°20.2	88°38.7
4	3°30.7	9.7'	14°24.0	15.2'	59.7'	80°57.4	50°26.1	45°44.0	38°28.0	45°26.7	61°29.6	71°36.9	89°08.6
5	17°59.4	9.6'	14°39.2	15.1'	59.7'	80°21.3	49°51.9	45°08.6	37°53.4	46°02.9	62°03.3	71°53.8	89°38.5
6	32°28.0	9.6'	$N14^{\circ}54.3$	15.0'	59.7'	79°45.3	49°17.7	44°33.3	37°18.9	46°39.1	62°36.9	72°10.7	90°08.3
7	46°56.6	9.6'	15°09.3	14.9'	59.7'	79°09.4	48°43.6	43°58.0	36°44.5	$47^{\circ}15.3$	63°10.6	72°27.6	90°38.2
8	61°25.2	9.5'	15°24.2	14.8'	59.6'	78°33.4	48°09.5	43°22.7	36°10.2	47°51.4	63°44.3	72°44.7	91°08.0
9	75°53.7	9.5'	15°39.0	14.7'	59.6'	77°57.5	47°35.4	42°47.5	35°35.9	48°27.5	64°18.0	73°01.8	91°37.7
10	90°22.1	9.4'	15°53.7	14.6'	59.6'	77°21.7	47°01.4	42°12.3	35°01.7	49°03.6	64°51.6	73°19.0	92°07.5
11	104°50.5	9.4'	16°08.3	14.5'	59.5'	76°45.9	46°27.4	41°37.2	34°27.6	49°39.6	65°25.2	73°36.3	92°37.2
12	119°18.9	9.3'	$N16^{\circ}22.8$	14.4'	59.5'	76°10.1	45°53.5	41°02.1	33°53.6	50°15.6	65°58.9	73°53.6	93°06.9
13	133°47.2	9.3'	16°37.2	14.3'	59.5'	75°34.3	45°19.6	40°27.1	33°19.7	50°51.5	66°32.5	74°11.0	93°36.5
14	148°15.5	9.2'	16°51.4	14.2'	59.5'	74°58.6	44°45.7	39°52.1	32°45.8	51°27.4	67°06.1	74°28.4	94°06.1
15	162°43.7	9.2'	17°05.6	14.1'	59.4'	74°22.9	44°11.9	39°17.2	32°12.1	52°03.3	67°39.7	74°46.0	94°35.6
16	177°11.8	9.1'	$17^{\circ}19.7$	13.9'	59.4'	73°47.3	43°38.1	38°42.3	31°38.5	52°39.2	68°13.2	75°03.5	95°05.2
17	191°39.9	9.0'	17°33.6	13.8'	59.4'	73°11.7	43°04.4	38°07.4	31°04.9	53°15.0	68°46.8	75°21.2	95°34.6
18	206°08.0	9.0'	N17°47.5	13.7'	59.3'	72°36.1	42°30.7	37°32.6	30°31.5	53°50.7	69°20.3	75°38.9	96°04.1
19	220°36.0	8.9'	18°01.2	13.6'	59.3'	72°00.6	41°57.0	36°57.9	29°58.2	54°26.5	69°53.8	75°56.6	96°33.5
20	235°03.9	8.9'	18°14.8	13.5'	59.3'	71°25.1	41°23.4	36°23.2	29°24.9	55°02.2	70°27.3	76°14.4	97°02.8
21	249°31.8	8.8'	$18^{\circ}28.3$	13.4'	59.3'	70°49.6	40°49.9	35°48.5	28°51.8	55°37.8	71°00.8	76°32.2	97°32.1
22	263°59.6	8.8'	18°41.6	13.2'	59.2'	70°14.2	40°16.4	35°13.9	28°18.9	56°13.4	71°34.2	76°50.1	98°01.4
23	278°27.4	8.7'	18°54.9	13.1'	59.2'	69°38.8	39°42.9	34°39.4	27°46.0	56°49.0	72°07.7	77°08.1	98°30.6
24 th	SD = 16.3' Mer. pass. 03:45												

h	Moon	(25 th	Aug)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Sun	-Pollux	-Mars	-Jupiter	+Saturn	+Fomalhaut	+Achernar	+Altair	
0	292°55.1	8.7'	N 19°08.0	13.0'	59.2'	107°59.0	69°03.4	39°09.4	34°04.8	57°24.6	72°41.1	77°26.0	98°59.7	
1	307°22.8	8.6'	19°21.0	12.9'	59.1'	107°26.1	68°28.1	38°36.1	33°30.4	58°00.1	73°14.4	77°44.1	99°28.9	
2	321°50.4	8.6'	19°33.9	12.8'	59.1'	106°53.3	67°52.8	38°02.7	32°56.0	58°35.6	73°47.8	78°02.1	99°57.9	
3	336°18.0	8.5'	19°46.7	12.6'	59.1'	106°20.5	67° 17.6	37°29.4	32°21.7	59°11.0	74°21.1	78°20.2	100°26.9	
4	350°45.5	8.4'	19°59.3	12.5'	59.0'	105°47.7	66°42.4	36°56.2	31°47.4	59°46.4	74°54.4	78°38.3	100°55.9	
5	5°12.9	8.4'	20°11.8	12.4'	59.0'	105°15.0	66°07.2	36°23.0	31°13.1	60°21.8	75°27.7	78°56.5	101°24.8	
6	19°40.3	8.3'	N 20°24.2	12.2'	59.0'	104°42.3	65°32.1	35°49.8	30°39.0	$60^{\circ}57.1$	76°01.0	79°14.7	101°53.7	
7	34°07.7	8.3'	20°36.4	12.1'	59.0'	104°09.6	64°57.0	35°16.7	30°04.8	61°32.4	76°34.2	79°32.9	102°22.5	
8	48°34.9	8.2'	20°48.5	12.0'	58.9'	103°37.0	64°22.0	34°43.7	29°30.8	62°07.6	77°07.4	79°51.2	102°51.2	
9	63°02.2	8.2'	$21^{\circ}00.5$	11.8'	58.9'	103°04.4	63°47.0	34°10.7	28°56.8	62°42.8	77°40.6	80°09.5	103°19.9	
10	77°29.3	8.1'	21°12.4	11.7'	58.9'	102°31.9	63°12.0	33°37.7	28°22.9	63°18.0	78°13.8	80°27.8	103°48.5	
11	91°56.4	8.1'	21°24.1	11.6'	58.8'	101°59.4	62°37.0	33°04.8	27°49.0	63°53.2	78°46.9	80°46.1	104°17.1	
12	106°23.5	8.0'	N21°35.6	11.4'	58.8'	101°26.9	62°02.1	32°31.9	27°15.2	64°28.3	79°20.0	81°04.5	104°45.6	
13	120°50.5	7.9'	21°47.1	11.3'	58.8'	100°54.5	61°27.3	31°59.1	26°41.5	65°03.3	79°53.1	81°22.8	105°14.0	
14	135°17.4	7.9'	21°58.4	11.2'	58.7'	100°22.1	60°52.4	31°26.4	26°07.8	65°38.3	80°26.1	81°41.2	105°42.4	
15	149°44.3	7.8'	22°09.5	11.0'	58.7'	99°49.7	60° 17.7	30°53.7	25°34.2	66°13.3	80°59.1	81°59.6	106°10.7	
16	164°11.1	7.8'	22°20.6	10.9'	58.7'	99°17.4	59°42.9	30°21.0	25°00.7	66°48.3	81°32.1	82°18.1	106°39.0	
17	178°37.9	7.7'	22°31.4	10.7'	58.6'	98°45.1	59°08.2	29°48.4	24°27.2	67°23.2	82°05.0	82°36.5	107°07.1	
18	193°04.6	7.7'	N22°42.2	10.6'	58.6'	98°12.9	58° 33.5	29°15.9	23°53.9	67°58.1	82°38.0	82°55.0	107°35.3	
19	207°31.3	7.6'	22°52.8	10.4'	58.6'	97°40.7	57°58.9	28°43.4	23°20.6	68°32.9	83°10.9	83°13.4	108°03.3	
20	221°57.9	7.6'	23°03.2	10.3'	58.6'	97°08.5	57°24.3	28°11.0	22°47.4	69°07.7	83°43.7	83°31.9	108°31.3	
21	236°24.5	7.5'	23°13.5	10.2'	58.5'	96°36.4	56°49.7	27°38.6	22°14.3	69°42.5	84°16.5	83°50.4	108°59.2	
22	250°51.0	7.5'	23°23.6	10.0'	58.5'	96°04.3	56° 15.2	27°06.3	21°41.2	70°17.2	84°49.3	84°08.9	109°27.0	
23	265°17.4	7.4'	23°33.7	9.9'	58.5'	95°32.2	55°40.7	26°34.1	21°08.3	70°51.9	85°22.1	84°27.4	109°54.8	
25 th	SD	= 16.1	' Mer. pas	s. 04:38		$Sun\;SD=15.8'$								

Moon (26th Aug)

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lunar	Distance	(ohiects	with	largest	hourly	, I D	delta	١
 Lunai	Distance	loblects	WILLI	iaigest	HOULIN	LU	uerta	1

Mon	GHA	ν	Dec	d	HP	-Sun	-Pollux	-Mars	-Jupiter	+Saturn	+Achernar	+Fomalhaut	+Altair
0	279°43.8	7.4'	N23°43.5	9.7'	58.4'	95°00.2	55°06.2	26°01.9	20°35.5	71°26.6	84° 45.9	85°54.8	110°22.5
1	294°10.2	7.3'	23°53.2	9.6'	58.4'	94°28.2	54°31.8	25°29.8	20°02.8	72°01.2	85°04.4	86°27.5	110°50.1
2	308°36.5	7.2'	24°02.8	9.4'	58.4'	93°56.3	53°57.5	24°57.7	19°30.2	72°35.8	85°22.9	87°00.2	111°17.7
3	323°02.7	7.2'	24°12.2	9.2'	58.3'	93°24.4	53°23.1	24°25.7	18°57.7	73° 10.3	85°41.4	87°32.8	111°45.1
4	337°28.9	7.2'	24°21.4	9.1'	58.3'	92°52.5	52°48.8	23°53.8	18°25.3	73°44.8	85°59.9	88°05.4	112°12.5
5	351°55.1	7.1'	24°30.5	8.9'	58.3'	92°20.6	52°14.5	23°22.0	17°53.1	74° 19.3	86° 18.4	88°38.0	112°39.8
6	6°21.2	7.1'	N24°39.5	8.8'	58.2'	91°48.8	51°40.3	22°50.2	17°21.0	74°53.7	86°36.9	89° 10.5	113°07.0
7	20°47.2	7.0'	24°48.2	8.6'	58.2'	91°17.1	51°06.1	22°18.5	16°49.0	75°28.1	86°55.4	89°43.0	113°34.2
8	35°13.3	7.0'	24°56.9	8.5'	58.2'	90°45.3	50°32.0	21°46.9	16°17.3	76°02.5	87° 13.9	90° 15.5	114°01.2
9	49°39.2	6.9'	25°05.3	8.3'	58.2'	90°13.6	49°57.9	21°15.4	15°45.7	76°36.8	87°32.4	90°47.9	114°28.2
10	64°05.1	6.9'	$25^{\circ}13.7$	8.2'	58.1'	89°42.0	49°23.8	20°43.9	15°14.2	77°11.1	87°50.8	91°20.3	114°55.1
11	78°31.0	6.8'	$25^{\circ}21.8$	8.0'	58.1'	89°10.4	48°49.7	20°12.6	14°43.0	77°45.4	88°09.3	91°52.6	115°21.8
12	92°56.8	6.8'	N25°29.8	7.8'	58.1'	88°38.8	48°15.7	19°41.3	14°12.0	78° 19.6	88° 27.7	92°25.0	115°48.5
13	107°22.6	6.8'	25°37.6	7.7'	58.0'	88°07.2	47°41.7	19°10.1	13°41.3	78° 53.8	88°46.2	92°57.3	116°15.2
14	121°48.4	6.7'	25°45.3	7.5'	58.0'	87°35.7	47°07.8	18°39.1	13° 10.8	79°27.9	89°04.6	93°29.5	116°41.7
15	136°14.1	6.7'	25°52.8	7.4'	58.0'	87°04.2	46°33.9	18°08.1	12°40.6	80°02.0	89°23.0	94°01.7	117°08.1
16	150°39.8	6.6'	26°00.2	7.2'	57.9'	86°32.8	46°00.0	17°37.3	12° 10.7	80°36.1	89°41.4	94°33.9	117°34.4
17	165°05.4	6.6'	26°07.4	7.0'	57.9'	86°01.4	45°26.2	17°06.6	11°41.2	81°10.1	89°59.7	95°06.0	118°00.7
18	179°31.0	6.6'	N 26°14.4	6.9'	57.9'	85°30.0	44°52.4	16°36.0	11°12.1	81°44.1	90°18.1	95°38.1	118°26.8
19	193°56.6	6.5'	26°21.3	6.7'	57.8'	84°58.7	44°18.7	16°05.5	10°43.5	82° 18.1	90°36.4	96°10.2	118°52.8
20	208°22.1	6.5'	26°27.9	6.5'	57.8'	84°27.4	43°45.0	15°35.2	10° 15.3	82°52.0	90°54.7	96°42.2	119°18.8
21	222°47.6	6.5'	$26^{\circ}34.5$	6.4'	57.8'	83°56.1	43°11.3	15°05.1	9°47.8	83°25.9	91°13.0	97°14.2	119°44.6
22	237°13.1	6.4'	26°40.8	6.2'	57.8'	83°24.9	42°37.6	14°35.1	9°20.8	83°59.8	91°31.2	97°46.2	
23	251°38.5	6.4'	26°47.0	6.0'	57.7'	82°53.7	42°04.0	14°05.3	8°54.7	84°33.6	91°49.5	98°18.1	
26 th	SD =	= 15.9 [']	Mer. pass	. 05:34	4	$Sun\;SD=15.8'$							

h Moon (27th Aug)

Lunar Distance	(objects with	largest hourly	/ LD delta))
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Tue	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	-Mars	+Aldebaran	+Saturn	+Achernar	+Fomalhaut	
0	266°03.9	6.4'	$N26^{\circ}53.1$	5.9'	57.7'	82°22.5	48°26.1	41°30.4	13°35.7		85°07.4	92°07.7	98°50.0	
1 1	280°29.3	6.4'	26°58.9	5.7'	57.7'	81°51.4	47°56.7	40°56.9	13°06.4		85°41.2	92°25.9	99°21.8	
2	294°54.7	6.3'	27°04.6	5.5'	57.6'	81°20.3	47°27.3	40°23.4	12°37.2		86°14.9	92°44.0	99°53.6	
3	309°20.0	6.3'	$27^{\circ}10.2$	5.4'	57.6'	80°49.2	46°58.0	39°49.9	12°08.4		86°48.6	93°02.1	100°25.4	
4	323°45.3	6.3'	$27^{\circ}15.5$	5.2'	57.6'	80°18.2	46°28.9	39° 16.5	11°39.8		87°22.2	93°20.2	100°57.1	
5	338°10.6	6.3'	27°20.7	5.0'	57.5'	79°47.2	45°59.8	38°43.1	11°11.6		87°55.9	93°38.3	101°28.8	
6	352°35.9	6.3'	$N27^{\circ}25.7$	4.9'	57.5'	79°16.3	45°30.9	38°09.7	10°43.7		88°29.4	93°56.3	102°00.5	
7	7°01.1	6.2'	27°30.6	4.7'	57.5'	78°45.3	45°02.0	37°36.4	10°16.2		89°03.0	94°14.3	102°32.1	
8	21°26.3	6.2'	27°35.3	4.5'	57.5'	78°14.4	44°33.3	37°03.1	9°49.2		89°36.5	94°32.3	103°03.7	
9	35°51.6	6.2'	27°39.8	4.3'	57.4'	77°43.6	44°04.7	36° 29.8	9°22.7		90°10.0	94°50.2	103°35.2	
10	50°16.8	6.2'	$27^{\circ}44.1$	4.2'	57.4'	77°12.8	43°36.2	35°56.6	8°56.8		90°43.5	95°08.1	104°06.7	
11	64°42.0	6.2'	27°48.3	4.0'	57.4'	76°42.0	43°07.8	35°23.4	8°31.6	13°02.2	91°16.9	95°25.9	104°38.1	
12	79°07.2	6.2'	$N27^{\circ}52.3$	3.8'	57.3'	76°11.2	42°39.5	34°50.2	8°07.1	13°23.5	91°50.3	95°43.7	105°09.6	
13	93°32.3	6.2'	$27^{\circ}56.1$	3.7'	57.3'	75°40.5	42°11.4	34° 17.1	7°43.6	13°45.5	92°23.6	96°01.5	105°40.9	
14	107°57.5	6.2'	27°59.8	3.5'	57.3'	75°09.8	41°43.4	33°44.0		14°08.2	92°57.0	96°19.2	106°12.3	
15	122°22.7	6.2'	28°03.2	3.3'	57.2'	74°39.1	$41^{\circ}15.5$	33°10.9		14°31.6	93°30.2	96°36.9	106°43.6	
16	136°47.8	6.2'	28°06.6	3.1'	57.2'	74°08.5	40°47.8	32°37.9		14°55.5	94°03.5	96°54.5	107°14.8	
17	151°13.0	6.2'	28°09.7	3.0'	57.2'	73°37.9	40°20.2	32°04.9		15°20.0	94°36.7	97°12.1	107°46.0	
18	165°38.2	6.2'	$N28^{\circ}12.7$	2.8'	57.2'	73°07.3	39°52.7	31°32.0		15°44.9	95°09.9	97°29.7	108°17.2	
19	180°03.3	6.2'	$28^{\circ}15.5$	2.6'	57.1'	72°36.8	39°25.4	30°59.0		16°10.3	95°43.1	97°47.2	108°48.3	
20	194°28.5	6.2'	$28^{\circ}18.1$	2.5'	57.1'	72°06.3	38°58.2	30°26.1		16°36.1	96°16.2	98°04.6	109°19.4	
21	208°53.7	6.2'	28°20.6	2.3'	57.1'	71°35.8	38°31.2	29°53.3		17°02.3	96°49.3	98°22.0	109°50.4	
22	223°18.9	6.2'	28°22.8	2.1'	57.0'	71°05.4	38°04.3	29°20.5		17°28.8	97°22.4	98°39.4	110°21.5	
23	237°44.0	6.2'	28°25.0	1.9'	57.0'	70°35.0	37°37.6	28° 47.7		17°55.7	97°55.4	98°56.7	110°52.4	
27 th	SD =	= 15.7'	Mer. pass	. 06:31		$Sun\;SD=15.8'$								

h Moon (28th Aug)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	+Mars	+Jupiter	+Aldebaran	+Saturn	+Fomalhaut
0	252°09.3	6.2'	N 28°26.9	1.8'	57.0'	70°04.6	37°11.1	28° 14.9		8°49.0	18°22.8	98°28.4	111°23.3
1	266°34.5	6.2'	28°28.7	1.6'	57.0'	69°34.3	36°44.7	27°42.2		9°14.4	18°50.2	99°01.4	111°54.2
2	280°59.7	6.2'	28°30.3	1.4'	56.9'	69°03.9	36° 18.5	27°09.5		9°40.4	19°17.8	99°34.4	112°25.0
3	295°24.9	6.3'	28°31.7	1.3'	56.9'	68°33.7	35°52.5	26°36.8		10°07.0	19°45.7	100°07.3	112°55.8
4	309°50.2	6.3'	28°33.0	1.1'	56.9'	68°03.4	35°26.7	26°04.2		10°34.1	20°13.7	100°40.2	113°26.6
5	324°15.5	6.3'	28°34.1	0.9'	56.9'	67°33.2	35°01.0	25°31.6		11°01.6	20°42.0	101°13.0	113°57.3
6	338°40.8	6.3'	N 28°35.0	0.8'	56.8'	67°03.0	34°35.6	24°59.0		11°29.6	21°10.4	101°45.8	114°27.9
7	353°06.1	6.4'	28°35.7	0.6'	56.8'	66°32.8	34°10.3	24°26.5		11°57.8	21°39.0	102°18.6	114° 58.5
8	7°31.5	6.4'	28°36.3	0.4'	56.8'	66°02.7	33°45.3	23°54.0		12°26.4	22°07.8	102°51.4	115°29.1
9	21°56.9	6.4'	28°36.7	0.2'	56.7'	65°32.6	33°20.5	23°21.5		12°55.2	22°36.7	103°24.1	115°59.6
10	36°22.3	6.4'	28°37.0	0.1'	56.7'	65°02.5	32°55.9	22°49.1		13°24.3	23°05.7	103°56.9	116°30.1
11	50°47.8	6.5'	28°37.1	-0.1'	56.7'	64°32.5	32°31.5	22°16.7		13°53.6	23°34.8	104°29.5	117°00.5
12	65°13.2	6.5'	N28°37.0	-0.3'	56.7'	64°02.4	32°07.3	21°44.3	8°12.7	14°23.0	24°04.0	105°02.2	117° 30.9
13	79°38.8	6.6'	28°36.7	-0.4'	56.6'	63°32.4	31°43.4	21°12.0	8°36.7	14°52.6	24°33.4	105°34.8	118°01.3
14	94°04.3	6.6'	28°36.3	-0.6'	56.6'	63°02.5	31°19.8	20°39.7	9°01.4	15°22.3	25°02.8	106°07.4	118°31.6
15	108°29.9	6.6'	28°35.7	-0.8'	56.6'	62°32.6	30°56.4	20°07.4	9°26.7	15°52.2	25°32.3	106°40.0	119°01.8
16	122°55.5	6.7'	28°34.9	-0.9'	56.6'	62°02.6	30°33.3	19°35.2	9°52.4	16°22.2	26°02.0	107°12.5	119°32.0
17	137°21.2	6.7'	28°34.0	-1.1'	56.5'	61°32.8	30°10.4	19°03.0	10°18.6	16°52.2	26°31.6	107°45.0	
18	151°46.9	6.8'	N 28°32.9	-1.2'	56.5'	61°02.9	29°47.8	18° 30.9	10°45.2	17°22.4	27°01.4	108° 17.5	
19	166°12.7	6.8'	28°31.7	-1.4'	56.5'	60°33.1	29°25.5	17°58.7	11°12.1	17°52.6	27°31.2	108°49.9	
20	180°38.5	6.9'	28°30.3	-1.6'	56.5'	60°03.3	29°03.6	17°26.6	11°39.3	18°22.9	28°01.1	109°22.4	
21	195°04.3	6.9'	28°28.7	-1.7'	56.4'	59° 33.5	28°41.9	16°54.6	12°06.8	18°53.3	28°31.0	109°54.8	
22	209°30.2	7.0'	28°27.0	-1.9'	56.4'	59°03.8	28°20.6	16°22.6	12°34.4	19°23.7	29°00.9	110°27.1	
23	223°56.2	7.0'	28°25.1	-2.1'	56.4'	58°34.1	27°59.6	15°50.6	13°02.3	19°54.2	29°31.0	110°59.5	
28 th	8 th SD = 15.5' Mer. pass. 07:29 Sun SD = 15.8'												

Moon (29th Aug)

h

Lunar Distance (objects with largest hourly LD delta)

					,								
Thu	GHA	ν	Dec	d	HP	-Sun	-Procyon	-Pollux	+Mars	+Jupiter	+Capella	+Aldebaran	+Saturn
0	238°22.2	7.1'	N 28°23.0	-2.2'	56.4'	58°04.4	27°38.9	15°18.6	13°30.3	20°24.7	23°28.4	30°01.0	111°31.8
1	252°48.3	7.1'	28°20.8	-2.4'	56.3'	57°34.8	27° 18.6	14°46.7	13°58.5	20°55.2	23°49.2	30°31.1	112°04.1
2	267°14.4	7.2'	28°18.4	-2.5'	56.3'	57°05.1	26°58.6	14°14.9	14°26.8	21°25.8	24°10.3	31°01.3	112°36.4
3	281°40.5	7.2'	28°15.9	-2.7'	56.3'	56°35.5	26°39.1	13°43.1	14°55.2	21°56.4	24°31.8	31°31.4	113°08.6
4	296°06.8	7.3'	28°13.2	-2.8'	56.3'	56°05.9	26°19.9	13°11.3	15°23.7	22°27.0	24°53.6	32°01.6	113°40.8
5	310°33.1	7.4'	28°10.3	-3.0'	56.2'	55°36.4	26°01.2	12°39.6	15°52.3	22°57.7	25° 15.7	32°31.8	114°13.0
6	324°59.4	7.4'	N28°07.3	-3.2'	56.2'	55°06.9	25°42.8	12°07.9	16°21.1	23°28.4	25°38.2	33°02.1	114°45.2
7	339°25.9	7.5'	28°04.2	-3.3'	56.2'	54°37.4	25°24.9	11°36.3	16°49.8	23°59.0	26°00.9	33°32.4	115°17.3
8	353°52.3	7.6'	28°00.9	-3.5'	56.2'	54°07.9	25°07.5	11°04.7	17°18.7	24°29.7	26°23.9	34°02.7	115°49.4
9	8°18.9	7.6'	27°57.4	-3.6'	56.1'	53°38.4	24°50.5	10°33.2	17°47.6	25°00.5	26°47.2	34°33.0	116°21.5
10	22°45.5	7.7'	27°53.8	-3.8'	56.1'	53°09.0	24°34.0	10°01.8	18°16.5	25°31.2	27° 10.8	35°03.3	116°53.6
11	37°12.2	7.8'	27°50.0	-3.9'	56.1'	52°39.6	24°17.9	9°30.4	18°45.5	26°01.9	27°34.5	35°33.7	117°25.6
12	51°39.0	7.8'	N 27°46.1	-4.1'	56.1'	52°10.3	24°02.4	8°59.1	19°14.6	26°32.6	27°58.5	36°04.0	117°57.6
13	66°05.8	7.9'	27°42.0	-4.2'	56.0'	51°40.9	23°47.4	8°27.9	19°43.7	27°03.4	28° 22.8	36°34.4	118°29.6
14	80°32.7	8.0'	27°37.8	-4.4'	56.0'	51°11.6		7°56.8	20°12.8	27°34.1	28° 47.2	37°04.8	119°01.6
15	94°59.7	8.0'	27°33.4	-4.5'	56.0'	50°42.3		7°25.8	20°41.9	28°04.9	29°11.8	37°35.2	119°33.5
16	109°26.7	8.1'	27°28.9	-4.7'	56.0'	50°13.0		6°55.0	21°11.1	28°35.6	29°36.6	38°05.6	
17	123°53.8	8.2'	27°24.2	-4.8'	55.9'	49°43.8		6°24.3	21°40.3	29°06.4	30°01.6	38°36.0	
18	138°21.0	8.3'	N 27°19.4	-4.9'	55.9'	49°14.5		5°53.9	22°09.5	29°37.1	30°26.8	39°06.4	
19	152°48.3	8.4'	27°14.5	-5.1'	55.9'	48°45.3		5°23.7	22°38.7	30°07.9	30°52.1	39°36.8	
20	167°15.7	8.4'	27°09.4	-5.2'	55.9'	48°16.1		4°53.8	23°07.9	30°38.6	31° 17.6	40°07.3	
21	181°43.1	8.5'	$27^{\circ}04.1$	-5.4'	55.8'	47°47.0		4°24.3	23°37.1	31°09.3	31°43.2	40°37.7	
22	196°10.6	8.6'	26°58.8	-5.5'	55.8'	47°17.9		3°55.5	24°06.4	31°40.0	32°09.0	41°08.1	
23	210°38.2	8.7'	26°53.3	-5.7'	55.8'	46°48.8		3°27.4	24°35.7	32°10.8	32°34.9	41°38.6	
29 th	SD:	= 15.4'	Mer. pas	s. 08:25	j	SunSD = 15.8'							

h Moon (30th Aug)

Fri	GHA	ν	Dec	d	HP	-Sun	+Pollux	+Mars	+Betelgeuse	+Jupiter	+Capella	+Aldebaran	+Rigel
0	225°05.9	8.8'	N 26°47.6	-5.8'	55.8'	46°19.7		25°04.9	30°14.4	32°41.5	33°00.9	42°09.0	48°29.2
1	239°33.7	8.8'	26°41.8	-5.9'	55.8'	45°50.6		25°34.2	30°36.5	33°12.2	33°27.1	42°39.4	48°48.8
2	254°01.5	8.9'	26°35.9	-6.1'	55.7'	45°21.6		26°03.5	30°58.8	33°42.9	33°53.3	43°09.9	49°08.5
3	268°29.5	9.0'	26°29.8	-6.2'	55.7'	44°52.6		26°32.7	31°21.3	34°13.6	34° 19.7	43°40.3	49°28.4
4	282°57.5	9.1'	26°23.6	-6.3'	55.7'	44°23.6		27°02.0	31°44.1	34°44.3	34°46.2	44° 10.7	49°48.4
5	297°25.6	9.2'	26°17.3	-6.5'	55.7'	43°54.6		27°31.3	32°07.0	35°14.9	35°12.8	44°41.2	50°08.5
6	311°53.8	9.3'	N26°10.8	-6.6'	55.6'	43°25.6		28°00.6	32°30.2	35°45.6	35°39.5	45° 11.6	50°28.8
7	326°22.1	9.4'	26°04.3	-6.7'	55.6'	42°56.7		28°29.8	32°53.5	36°16.3	36°06.2	45° 42.0	50°49.2
8	340°50.4	9.5'	25°57.5	-6.8'	55.6'	42°27.8		28°59.1	33°17.0	36°46.9	36°33.1	46° 12.4	51°09.7
9	355°18.9	9.5'	25°50.7	-7.0'	55.6'	41°58.9		29°28.4	33°40.7	37°17.5	37°00.0	46° 42.9	51°30.4
10	9°47.4	9.6'	25°43.7	-7.1'	55.6'	41°30.1		29°57.6	34°04.6	37°48.1	37°27.1	47° 13.3	51°51.1
11	24°16.1	9.7'	25°36.6	-7.2'	55.5'	41°01.2		30°26.9	34°28.6	38°18.8	37°54.2	47°43.7	52°12.0
12	38°44.8	9.8'	N 25°29.4	-7.3'	55.5'	40°32.4	4°08.8	30°56.1	34°52.7	38°49.4	38°21.3	48°14.1	52°32.9
13	53°13.6	9.9'	25°22.0	-7.5'	55.5'	40°03.6	4°37.7	31°25.4	35°17.0	39°19.9	38°48.6	48° 44.5	52°54.0
14	67°42.5	10.0'	25°14.6	-7.6'	55.5'		5°07.0	31°54.6	35°41.5	39°50.5	39° 15.9	49° 14.8	53°15.2
15	82°11.5	10.1'	25°07.0	-7.7'	55.5'		5°36.6	32°23.8	36°06.1	40°21.1	39°43.3	49°45.2	53°36.5
16	96°40.6	10.2'	24°59.3	-7.8'	55.4'		6°06.5	32°53.1	36°30.8	40°51.6	40°10.7	50° 15.6	53°57.8
17	111°09.8	10.3'	24°51.4	-8.0'	55.4'		6°36.5	33°22.3	36°55.6	41°22.2	40°38.2	50°46.0	54°19.3
18	125°39.1	10.4'	N24°43.5	-8.1'	55.4'		7°06.7	33°51.5	37°20.6	41°52.7	41°05.8	51° 16.3	54°40.8
19	140°08.4	10.5'	24°35.4	-8.2'	55.4'		7°37.0	34°20.7	37°45.7	42°23.2	41°33.4	51°46.7	55°02.5
20	154°37.9	10.5'	24°27.2	-8.3'	55.4'		8°07.4	34°49.8	38°10.9	42°53.7	42°01.0	52° 17.0	55°24.2
21	169°07.4	10.6'	24°18.9	-8.4'	55.3'		8° 37.9	35°19.0	38°36.2	43°24.2	42°28.7	52° 47.4	55°46.1
22	183°37.1	10.7'	24°10.5	-8.5'	55.3'		9°08.4	35°48.2	39°01.6	43°54.7	42°56.4	53° 17.7	56°08.0
23	198°06.8	10.8'	24°02.0	-8.6'	55.3'		9°39.0	36°17.3	39°27.1	44°25.1	43°24.2	53°48.0	56°29.9
30 th	SD	$=15.2^{\prime}$	Mer. pass	. 09:19					Sun SD	0 = 15.8'			

h Moon (31st Aug)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	+Pollux	+Procyon	+Mars	+Betelgeuse	+Capella	+Jupiter	+Aldebaran	+Rigel
0	212°36.6	10.9'	N 23°53.4	-8.7'	55.3'	10°09.6		36°46.5	39°52.6	43°52.1	44°55.6	54°18.3	56°52.0
1	227°06.5	11.0'	23°44.6	-8.8'	55.3'	10°40.2		37°15.6	40°18.3	44°19.9	45°26.0	54°48.6	57°14.1
2	241°36.6	11.1'	23°35.8	-9.0'	55.2'	11°10.8		37°44.8	40°44.1	44°47.8	45°56.4	55°18.9	57°36.4
3	256°06.7	11.2'	23°26.8	-9.1'	55.2'	11°41.5		38°13.9	41°09.9	45°15.8	46°26.9	55°49.2	57°58.7
4	270°36.9	11.3'	23°17.8	-9.2'	55.2'	12°12.1		38°43.0	41°35.9	45°43.8	46°57.3	56°19.4	58°21.0
5	285°07.2	11.4'	23°08.6	-9.3'	55.2'	12°42.8		39°12.1	42°01.9	46°11.8	47°27.6	56°49.7	58°43.4
6	299°37.5	11.5'	N22°59.3	-9.4'	55.2'	13°13.4		39°41.1	42°28.0	46°39.8	47°58.0	57°20.0	59°05.9
7	314°08.0	11.6'	22°50.0	-9.5'	55.2'	13°44.1		40°10.2	42°54.1	47°07.9	48°28.4	57°50.2	59°28.5
8	328°38.6	11.7'	22°40.5	-9.6'	55.1'	14°14.8		40°39.3	43°20.4	47°36.0	48°58.7	58°20.4	59°51.1
9	343°09.3	11.8'	22°30.9	-9.7'	55.1'	14°45.5		41°08.3	43°46.6	48°04.1	49°29.0	58°50.6	60°13.8
10	357°40.0	11.8'	22°21.2	-9.8'	55.1'	15°16.1		41°37.3	44°13.0	48°32.3	49°59.3	59°20.9	60°36.5
11	12°10.9	11.9'	22°11.5	-9.9'	55.1'	15°46.8		42°06.4	44°39.4	49°00.5	50°29.6	59°51.1	60°59.3
12	26°41.8	12.0'	N 22°01.6	-10.0'	55.1'	16°17.4	24°27.8	42°35.4	45°05.9	49°28.7	50°59.9	60°21.2	61°22.2
13	41°12.8	12.1'	21°51.7	-10.1'	55.0'	16°48.1	24°43.6	43°04.4	45°32.4	49°56.9	51°30.2	60°51.4	61°45.1
14	55°43.9	12.2'	21°41.6	-10.1'	55.0'	17°18.7	24°59.8	43°33.4	45°59.0	50°25.1	52°00.5	61°21.6	62°08.1
15	70° 15.1	12.3'	21°31.5	-10.2'	55.0'	17°49.3	25°16.5	44°02.3	46°25.7	50°53.4	52°30.7	61°51.7	62°31.1
16	84°46.5	12.4'	21°21.2	-10.3'	55.0'	18°20.0	25°33.5	44°31.3	46°52.3	51°21.7	53°01.0	62°21.9	62°54.1
17	99°17.8	12.5'	21°10.9	-10.4'	55.0'	18°50.6	25°50.9	45°00.2	47°19.1	51°50.0	53°31.2	62°52.0	63°17.3
18	113°49.3	12.6'	N 21°00.5	-10.5'	55.0'	19°21.2	26°08.7	45°29.2	47°45.9	52°18.3	54°01.4	63°22.1	63°40.4
19	128°20.9	12.7'	20°50.0	-10.6'	54.9'	19°51.8	26°26.8	45°58.1	48°12.7	52°46.7	54°31.6	63°52.3	64°03.6
20	142°52.5	12.7'	20°39.4	-10.7'	54.9'	20°22.4	26°45.3	46°27.0	48°39.6	53°15.0	55°01.8	64°22.4	64°26.9
21	157°24.3	12.8'	20°28.7	-10.8'	54.9'	20°52.9	27°04.1	46°55.9	49°06.5	53°43.4	55°31.9	64°52.5	64°50.2
22	171°56.1	12.9'	20°18.0	-10.8'	54.9'	21°23.5	27°23.3	47°24.8	49°33.4	54°11.8	56°02.1	65°22.5	65°13.5
23	186°28.0	13.0'	20°07.1	-10.9'	54.9'	21°54.0	27°42.7	47°53.7	50°00.4	54°40.2	56°32.2	65°52.6	65°36.9
31 st	SD	= 15.1'	Mer. pas	s. 10:10									

Moon (1st Sep)

Lunar Distance (objects with largest hourly LD delta)

- 11		IVIOC	nı (ı. 5e)	P)			Lullai	Distance	(objects wi	ın largesi	nourly L	D della)	
Sun	GHA	ν	Dec	d	HP	+Pollux	+Procyon	+Mars	+Betelgeuse	+Capella	+Jupiter	+Rigel	+Aldebaran
0	201°00.1	13.1'	N19°56.2	-11.0'	54.9'	22°24.6	28°02.5	48°22.5	50°27.5	55°08.6	57°02.3	66°00.3	66°22.7
1	215°32.2	13.2'	19°45.2	-11.1'	54.8'	22°55.1	28°22.5	48°51.4	50°54.5	55°37.0	57°32.5	66°23.8	66°52.7
2	230°04.3	13.3'	19°34.1	-11.2'	54.8'	23°25.6	28°42.8	49°20.2	51°21.6	56°05.4	58°02.6	66°47.2	67°22.7
3	244°36.6	13.3'	19°23.0	-11.2'	54.8'	23°56.1	29°03.4	49°49.1	51°48.7	56°33.9	58°32.6	67°10.8	67°52.8
4	259°08.9	13.4'	$19^{\circ}11.7$	-11.3'	54.8'	24°26.6	29°24.2	50°17.9	52°15.9	57°02.3	59°02.7	67°34.3	68°22.8
5	273°41.4	13.5'	$19^{\circ}00.4$	-11.4'	54.8'	24°57.0	29°45.3	50°46.7	52°43.1	57°30.8	59°32.8	67°57.9	68°52.8
6	288°13.9	13.6'	N 18°49.0	-11.5'	54.8'	25°27.5	30°06.6	51°15.5	53°10.3	57°59.2	60°02.8	68°21.6	69°22.8
7	302°46.5	13.7'	18°37.5	-11.5'	54.8'	25°58.0	30°28.1	51°44.2	53°37.6	58° 27.7	60°32.9	68°45.2	69°52.7
8	317°19.2	13.8'	18°26.0	-11.6'	54.7'	26°28.4	30°49.9	52°13.0	54°04.8	58° 56.2	61°02.9	69°08.9	70°22.7
9	331°51.9	13.8'	18°14.4	-11.7'	54.7'	26°58.8	31°11.8	52°41.8	54°32.1	59°24.7	61°32.9	69°32.6	70°52.7
10	346°24.8	13.9'	18°02.7	-11.7'	54.7'	27°29.2	31°34.0	53°10.5	54°59.5	59°53.2	62°02.9	69°56.4	71°22.6
11	0°57.7	14.0'	$17^{\circ}51.0$	-11.8'	54.7'	27°59.6	31°56.3	53°39.2	55°26.8	60°21.7	62°32.9	70°20.1	71°52.5
12	15°30.7	14.1'	N17°39.2	-11.9'	54.7'	28°30.0	32° 18.9	54°07.9	55°54.2	60°50.2	63°02.8	70°43.9	72°22.4
13	30°03.8	14.2'	17°27.3	-11.9'	54.7'	29°00.4	32°41.6	54°36.6	56°21.6	61° 18.7	63°32.8	71°07.7	72°52.4
14	44°37.0	14.2'	$17^{\circ}15.3$	-12.0'	54.7'	29°30.7	33°04.5	55°05.3	56°49.0	61°47.2	64°02.8	71°31.6	73°22.3
15	59°10.2	14.3'	17°03.3	-12.1'	54.6'	30°01.1	33°27.5	55°34.0	57°16.4	62° 15.7	64°32.7	71°55.5	73°52.1
16	73°43.5	14.4'	16°51.2	-12.1'	54.6'	30°31.4	33°50.8	56°02.7	57°43.9	62°44.3	65°02.6	72°19.4	74°22.0
17	88°16.9	14.5'	16°39.1	-12.2'	54.6'	31°01.7	34°14.1	56°31.3	58°11.4	63°12.8	65°32.5	72°43.3	74°51.9
18	102°50.4	14.5'	N16°26.9	-12.3'	54.6'	31°32.1	34°37.6	57°00.0	58°38.8	63°41.3	66°02.4	73°07.2	75°21.7
19	117°23.9	14.6'	16°14.6	-12.3'	54.6'	32°02.4	35°01.3	57°28.6	59°06.3	64°09.9	66°32.3	73°31.2	75°51.6
20	131°57.5	14.7'	16°02.3	-12.4'	54.6'	32°32.6	35°25.1	57°57.3	59°33.9	64°38.4	67°02.2	73°55.1	76°21.4
21	146°31.2	14.8'	$15^{\circ}49.9$	-12.4'	54.6'	33°02.9	35°49.0	58°25.9	60°01.4	65°06.9	67°32.0	74°19.1	76°51.2
22	161°05.0	14.8'	15°37.5	-12.5'	54.5'	33°33.2	36°13.1	58°54.5	60°28.9	65° 35.5	68°01.9	74°43.1	77°21.0
23	175°38.8	14.9'	15°25.0	-12.6'	54.5'	34°03.4	36°37.3	59°23.0	60°56.5	66°04.0	68°31.7	75°07.1	77°50.8
1 st	SD	= 15.0'	Mer. pas	s. 10:56									

h		Моо	n (2 nd Se	p)			Lunar	Distance	(objects wi	th largest	hourly L	D delta)			
Mon	GHA	ν	Dec	d	HP	+Pollux	+Procyon	+Mars	+Betelgeuse	+Capella	+Jupiter	+Rigel	+Aldebaran		
0	190°12.7	15.0'	N 15°12.4	-12.6'	54.5'	34°33.6	37°01.6	59°51.6	61°24.1	66°32.5	69°01.5	75°31.2	78°20.6		
1	204°46.7	15.0'	14°59.8	-12.7'	54.5'	35°03.9	37°26.0	60°20.2	61°51.7	67°01.1	69°31.3	75°55.2	78°50.4		
2	219°20.7	15.1'	14°47.2	-12.7'	54.5'	35°34.1	37° 50.5	60°48.7	62°19.3	67°29.6	70°01.1	76°19.3	79°20.1		
3	233°54.8	15.2'	14°34.4	-12.8'	54.5'	36°04.3	38° 15.2	61°17.3	62°46.9	67°58.2	70°30.9	76°43.4	79°49.9		
4	248°29.0	15.2'	14°21.7	-12.8'	54.5'	36°34.5	38°39.9	61°45.8	63°14.5	68° 26.7	71°00.7	77°07.5	80°19.6		
5	263°03.2	15.3'	14°08.9	-12.9'	54.5'	37°04.6	39°04.7	62°14.3	63°42.1	68°55.2	71°30.5	77°31.6	80°49.3		
6	277°37.5	15.4'	N 13°56.0	-12.9'	54.4'					Moon ———		<u> </u>			
7	292°11.9	15.4'	13°43.1	-13.0'	54.4'				New I						
8	306°46.3	15.5'	13°30.1	-13.0'	54.4'										
9	321°20.8	15.6'	13° 17.1	-13.1'	54.4'										
10	335°55.4	15.6'	13°04.1	-13.1'	54.4'										
11	350°30.0	15.7'	12°51.0	-13.1'	54.4'				New I						
12	5°04.7	15.7'	N12°37.8	-13.2'	54.4'				New I	Иооп ———					
13	19°39.4	15.8'	12°24.6	-13.2'	54.4'				New I						
14	34°14.2	15.8'	12°11.4	-13.3'	54.3'				New I						
15	48°49.0	15.9'	11°58.1	-13.3'	54.3'				New I						
16	63°23.9	16.0'	11°44.8	-13.3'	54.3'				New I						
17	77°58.9	16.0'	11°31.5	-13.4'	54.3'				New I	Иооп ———					
18	92°33.9	16.1'	N 11°18.1	-13.4'	54.3'				New I						
19	107°09.0	16.1'	11°04.7	-13.5'	54.3'										
20	121°44.1	16.2'	10°51.2	-13.5'	54.3'										
21	136°19.3	16.2'	10°37.7	-13.5'	54.3'				New I						
22	150°54.5	16.3'	10°24.2	-13.6'	54.3'				New I						
23	165°29.8	16.3'	10°10.6	-13.6'	54.3'				New I	Moon ———					
2 nd	SD	= 14.9	Mer. pass	s. 11:39											

h	Moon	(3 rd	Sep)	
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Tue	GHA	ν	Dec	d	HP	
0	180°05.1	16.4'	N 09°57.0	-13.6'	54.2'	New Moon
1	194°40.5	16.4'	09°43.4	-13.7'	54.2'	New Moon
2	209°15.9	16.5'	09°29.8	-13.7'	54.2'	New Moon
3	223°51.3	16.5'	$09^{\circ}16.1$	-13.7'	54.2'	New Moon
4	238°26.8	16.5'	09°02.4	-13.7'	54.2'	New Moon
5	253°02.4	16.6'	08°48.6	-13.8'	54.2'	New Moon
6	267°38.0	16.6'	N 08°34.9	-13.8'	54.2'	New Moon
7	282°13.6	16.7'	$08^{\circ}21.1$	-13.8'	54.2'	New Moon
8	296°49.3	16.7'	08°07.2	-13.8'	54.2'	New Moon
9	311°25.0	16.8'	07°53.4	-13.9'	54.2'	New Moon
10	326°00.8	16.8'	$07^{\circ}39.5$	-13.9'	54.1'	New Moon
11	340°36.5	16.8'	$07^{\circ}25.6$	-13.9'	54.1'	New Moon
12	355°12.4	16.9'	$N07^{\circ}11.7$	-13.9'	54.1'	New Moon
13	9°48.2	16.9'	06°57.8	-14.0'	54.1'	New Moon
14	24°24.1	16.9'	06°43.8	-14.0'	54.1'	New Moon
15	39°00.1	17.0'	$06^{\circ}29.8$	-14.0'	54.1'	New Moon
16	53°36.0	17.0'	$06^{\circ}15.8$	-14.0'	54.1'	New Moon
17	68°12.0	17.0'	$06^{\circ}01.8$	-14.0'	54.1'	New Moon
18	82°48.0	17.1'	N 05°47.8	-14.0'	54.1'	New Moon
19	97°24.1	17.1'	05°33.7	-14.1'	54.1'	New Moon
20	112°00.2	17.1'	$05^{\circ}19.7$	-14.1'	54.1'	New Moon
21	126°36.3	17.1'	$05^{\circ}05.6$	-14.1'	54.1'	New Moon
22	141°12.4	17.2'	$04^{\circ}51.5$	-14.1'	54.1'	New Moon
23	155°48.6	17.2'	04°37.4	-14.1'	54.0'	New Moon
3 rd	SD	= 14.8'	Mer. pas	s. 12:20		

h Moon (4th Sep) Lunar Distance (obie

h		Моо	on (4 th Se _l	p)		Lunar Distance (objects with largest hourly LD delta						delta)	
Wed	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Hadar	-Acrux	-Arcturus	-Spica	-Venus
0	170°24.8	17.2'	N 04°23.3	-14.1'	54.0'		78°14.4	74°46.3	71°22.5	68°25.4	42°35.3	32°20.2	14°39.0
1	185°01.0	17.2'	$04^{\circ}09.1$	-14.1'	54.0'		77°44.6	74°23.5	71°00.8	68°08.4	42°17.0	31°50.5	14°12.3
2	199°37.2	17.3'	03°55.0	-14.2'	54.0'		77°14.9	74°00.8	70°39.0	67°51.5	41°59.0	31°20.7	13°45.7
3	214°13.5	17.3'	03°40.9	-14.2'	54.0'		76°45.1	73°38.1	70°17.4	67°34.6	41°41.1	30°51.0	13°19.1
4	228°49.8	17.3'	03°26.7	-14.2'	54.0'		76°15.4	73° 15.4	69°55.7	67°17.8	41°23.4	30°21.3	12°52.5
5	243°26.1	17.3'	$03^{\circ}12.5$	-14.2'	54.0'		75°45.7	72°52.8	69°34.2	67°01.1	41°05.9	29°51.6	12°26.0
6	258°02.4	17.3'	N 02°58.3	-14.2'	54.0'		75°16.0	72°30.2	69°12.6	66°44.5	40°48.6	29°21.8	11°59.4
7	272°38.7	17.4'	02°44.2	-14.2'	54.0'		74°46.3	72°07.7	68°51.2	66°27.9	40°31.5	28°52.1	11°32.9
8	287°15.1	17.4'	02°30.0	-14.2'	54.0'		74°16.6	71°45.2	68°29.8	66°11.5	40° 14.6	28° 22.5	11°06.3
9	301°51.4	17.4'	02°15.8	-14.2'	54.0'		73°46.9	71°22.7	68°08.4	65°55.1	39°57.9	27°52.8	10°39.8
10	316°27.8	17.4'	$02^{\circ}01.6$	-14.2'	54.0'	119°39.3	73°17.2	71°00.3	67°47.1	65°38.8	39°41.5	27°23.1	10°13.3
11	331°04.2	17.4'	$01^{\circ}47.4$	-14.2'	54.0'	119°16.5	72°47.5	70°37.9	67°25.8	65°22.5	39°25.2	26°53.4	9°46.8
12	345°40.6	17.4'	N01°33.2	-14.2'	54.0'	118°53.7	72°17.9	70° 15.6	67°04.6	65°06.4	39°09.2	26°23.8	9°20.4
13	0°17.0	17.4'	$01^{\circ}19.0$	-14.2'	54.0'	118°30.9	71°48.2	69°53.3	66°43.5	64°50.3	38° 53.4	25°54.1	8°53.9
14	14°53.5	17.4'	01°04.7	-14.2'	54.0'	118°08.0	71°18.6	69°31.1	66°22.4	64°34.4	38° 37.8	25°24.5	8°27.5
15	29°29.9	17.4'	00°50.5	-14.2'	54.0'	117°45.0	70°48.9	69°08.9	66°01.4	64°18.5	38° 22.5	24°54.8	8°01.1
16	44°06.4	17.5'	00°36.3	-14.2'	54.0'	117°22.0	70°19.3	68°46.7	65°40.4	64°02.7	38°07.4	24°25.2	7°34.8
17	58°42.8	17.5'	$00^{\circ}22.1$	-14.2'	54.0'	116°59.0	69°49.6	68°24.6	65°19.5	63°47.0		23°55.5	7°08.5
18	73°19.3	17.5'	N 00°07.9	-14.2'	54.0'	116°35.9	69°20.0	68°02.6	64°58.7	63°31.4		23°25.9	6°42.2
19	87°55.7	17.5'	S 00°06.3	-14.2'	53.9'	116° 12.8	68°50.4	67°40.6	64°37.9	63°15.9		22°56.3	6°15.9
20	102°32.2	17.5'	00°20.5	-14.2'	53.9'	115°49.6	68°20.7	67°18.6	64°17.2	63°00.5		22°26.7	5°49.8
21	117°08.7	17.5'	00°34.7	-14.2'	53.9'	115°26.4	67°51.1	66° 56.7	63°56.6	62°45.2		21°57.1	5°23.7
22	131°45.2	17.5'	00°48.9	-14.2'	53.9'	115°03.1	67°21.5	66°34.9	63°36.0	62°30.0		21°27.5	4°57.6
23	146°21.6	17.5'	01°03.1	-14.2'	53.9'	114°39.8	66°51.9	66°13.1	63°15.5	62°14.9		20°57.9	4°31.7
4 th	SD	= 14.7'	Mer. pas	s. 12:59									

h Moon (5 th Sep)	Lunar Distance (d	objects with largest hourly	y LD delta)
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Thu	GHA	ν	Dec	d	HP	-Altair	-Antares	-Rigil Kent.	-Hadar	-Spica	±Venus
0	160°58.1	17.5'	S 01°17.3	-14.2'	53.9'	114°16.4	66°22.3	65°51.3	62°55.0	20°28.3	4°06.0
1	175°34.6	17.5'	01°31.5	-14.2'	53.9'	113°53.1	65°52.7	65°29.6	62°34.7	19°58.7	3°40.4
2	190°11.1	17.5'	01°45.7	-14.2'	53.9'	113°29.6	65°23.1	65°08.0	62°14.4	19°29.1	3° 15.0
3	204°47.6	17.5'	$01^{\circ}59.8$	-14.2'	53.9'	113°06.2	64°53.5	64°46.4	61°54.2	18°59.5	2°50.1
4	219°24.0	17.5'	$02^{\circ}14.0$	-14.1'	53.9'	112°42.7	64°23.9	64°24.9	61°34.0	18°29.9	2°25.7
5	234°00.5	17.5'	02°28.1	-14.1'	53.9'	112°19.1	63°54.4	64°03.5	61°14.0	18°00.4	2°02.2
6	248°36.9	17.5'	S 02°42.3	-14.1'	53.9'	111°55.5	63°24.8	63°42.1	60°54.0	17°30.8	
7	263°13.4	17.4'	02°56.4	-14.1'	53.9'	111°31.9	62°55.2	63°20.8	60°34.1	17°01.3	
8	277°49.8	17.4'	$03^{\circ}10.5$	-14.1'	53.9'	111°08.3	62°25.7	62° 59.5	60°14.2	16°31.7	
9	292°26.3	17.4'	03°24.6	-14.1'	53.9'	110°44.6	$61^{\circ}56.1$	62°38.3	59° 54.5	16°02.1	
10	307°02.7	17.4'	03°38.7	-14.1'	53.9'	110°20.9	$61^{\circ}26.5$	62°17.2	59°34.8	15°32.6	
11	321°39.1	17.4'	03°52.8	-14.1'	53.9'	109°57.2	60°57.0	61°56.1	59°15.3	15°03.1	
12	336° 15.5	17.4'	S 04°06.8	-14.0'	53.9'	109°33.4	60°27.4	61°35.2	58° 55.8	14°33.5	
13	350°51.9	17.4'	04°20.9	-14.0'	53.9'	109°09.6	59°57.9	61°14.2	58°36.4	14°04.0	
14	5°28.3	17.4'	04°34.9	-14.0'	53.9'	108°45.8	59°28.3	60°53.4	58° 17.1	13°34.4	
15	20°04.7	17.3'	04°48.9	-14.0'	53.9'	108°21.9	58°58.8	60°32.6	57°57.9	13°04.9	2°51.2
16	34°41.0	17.3'	05°02.9	-14.0'	53.9'	107°58.1	58°29.2	60°11.9	57°38.7	12°35.4	3°16.2
17	49°17.3	17.3'	$05^{\circ}16.9$	-14.0'	53.9'	107°34.2	57°59.7	59°51.3	57° 19.7	12°05.9	3°41.5
18	63°53.6	17.3'	S 05°30.9	-13.9'	53.9'	107°10.2	57°30.1	59°30.7	57°00.8	11°36.3	4°07.0
19	78°29.9	17.3'	05°44.8	-13.9'	53.9'	106°46.3	57°00.6	59° 10.3	56°41.9	11°06.8	4°32.7
20	93°06.2	17.3'	05°58.7	-13.9'	53.9'	106°22.3	56°31.0	58° 49.9	56°23.2	10°37.3	4°58.6
21	107°42.5	17.2'	06°12.6	-13.9'	53.9'	105°58.3	56°01.5	58° 29.6	56°04.6	10°07.8	5°24.5
22	122°18.7	17.2'	06°26.5	-13.9'	53.9'	105°34.2	55°32.0	58°09.3	55°46.0	9°38.3	5°50.6
23	136°54.9	17.2'	06°40.3	-13.8'	53.9'	105°10.2	55°02.4	57°49.2	55°27.6	9°08.8	6° 16.7
5 th	SD	$=14.7^{\prime}$	Mer. pas	s. 13:38							

	Fri	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Hadar	-Antares	±Spica	+Venus	+Sun
	0	151°31.1	17.2'	S 06°54.2	-13.8'	53.9'	104°46.1	57°29.1	55°09.3	54°32.9	8°39.3	6°42.8	
	1	166°07.2	17.1'	07°08.0	-13.8'	53.9'	104°22.0	57°09.1	54°51.1	54°03.4	8°09.8	7°09.0	
	2	180°43.4	17.1'	$07^{\circ}21.8$	-13.8'	53.9'	103°57.9	56°49.3	54°33.0	53°33.8	7°40.3	7°35.2	
ı	3	195°19.5	17.1'	$07^{\circ}35.5$	-13.7'	53.9'	103°33.7	56°29.5	54° 15.0	53°04.3	7°10.8	8°01.5	
	4	209°55.5	17.0'	07°49.2	-13.7'	53.9'	103°09.6	56°09.8	53°57.2	52°34.7	6°41.4	8°27.8	
	5	224°31.6	17.0'	08°02.9	-13.7'	53.9'	102°45.4	55°50.2	53°39.4	52°05.2	6°11.9	8°54.0	
	6	239°07.6	17.0'	S 08°16.6	-13.6'	53.9'	102°21.2	55°30.7	53°21.8	51°35.7	5°42.5	9°20.4	
ı	7	253°43.6	17.0'	08°30.3	-13.6'	53.9'	101°57.0	55°11.3	53°04.3	51°06.1	5°13.0	9°46.7	
	8	268° 19.5	16.9'	08°43.9	-13.6'	53.9'	101°32.7	54°52.0	52°46.9	50°36.6	4°43.6	10°13.0	
ı	9	282°55.5	16.9'	08°57.5	-13.6'	53.9'	101°08.5	54°32.8	52°29.6	50°07.1	4°14.3	10°39.4	
	10	297°31.3	16.8'	$09^{\circ}11.0$	-13.5'	53.9'	100°44.2	54°13.6	52°12.5	49°37.5	3°44.9	11°05.7	
	11	312°07.2	16.8'	09°24.6	-13.5'	53.9'	100°19.9	53°54.7	51°55.5	49°08.0	3°15.6	11°32.1	
	12	326°43.0	16.8'	S 09°38.0	-13.5'	54.0'	99°55.6	53°35.8	51°38.6	48°38.4	2°46.5	11°58.5	
ı	13	341°18.8	16.7'	$09^{\circ}51.5$	-13.4'	54.0'	99°31.3	53°17.0	51°21.9	48°08.9	2°17.4	12°24.9	
	14	355°54.5	16.7'	$10^{\circ}04.9$	-13.4'	54.0'	99°07.0	52°58.3	51°05.3	47°39.3	1°48.7	12°51.3	
	15	10°30.2	16.7'	$10^{\circ}18.3$	-13.4'	54.0'	98°42.6	52°39.8	50°48.8	47°09.8	1°20.5	13°17.7	
	16	25°05.9	16.6'	$10^{\circ}31.7$	-13.3'	54.0'	98°18.2	52°21.3	50°32.5	46°40.2		13°44.2	
	17	39°41.5	16.6'	$10^{\circ}45.0$	-13.3'	54.0'	97°53.9	52°03.0	50°16.3	46°10.7		14°10.6	
	18	54° 17.1	16.5'	S 10°58.3	-13.2'	54.0'	97°29.5	51°44.8	50°00.3	45°41.1		14°37.0	
ı	19	68°52.6	16.5'	$11^{\circ}11.5$	-13.2'	54.0'	97°05.0	51°26.7	49°44.4	45°11.5		15°03.5	40°17.5
	20	83°28.1	16.4'	$11^{\circ}24.7$	-13.2'	54.0'	96°40.6	51°08.8	49°28.7	44°42.0		15°29.9	40°44.6
	21	98°03.5	16.4'	$11^{\circ}37.9$	-13.1'	54.0'	96°16.2	50°51.0	49°13.1	44°12.4		15°56.4	41°11.7
	22	112°38.9	16.3'	11°51.0	-13.1'	54.0'	95°51.7	50°33.3	48° 57.7	43°42.8	2°14.5	16°22.8	41°38.8
Į	23	127°14.3	16.3'	12°04.1	-13.0'	54.0'	95°27.3	50°15.7	48°42.5	43°13.2	2°43.5	16°49.3	42°06.0
	6 th	SD	= 14.7'	Mer. pas	s. 14:17				Sun	SD = 15.9'			

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

Sat	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Antares	+Spica	+Venus	+Sun
0	141°49.6	16.2'	S 12°17.2	-13.0'	54.0'		95°02.8	49° 58.3	42°43.7	3°12.7	17°15.8	42°33.1
1	156°24.8	16.2'	12°30.2	-13.0'	54.0'		94°38.3	49°41.0	42°14.1	3°42.0	17°42.3	43°00.2
2	171°00.0	16.1'	12°43.1	-12.9'	54.0'		94°13.8	49°23.8	41°44.5	4°11.4	18°08.8	43°27.3
3	185°35.2	16.1'	$12^{\circ}56.0$	-12.9'	54.0'		93°49.3	49°06.8	41°14.9	4°40.9	18°35.3	43°54.5
4	200°10.2	16.0'	13°08.9	-12.8'	54.0'		93°24.8	48°50.0	40°45.3	5°10.3	19°01.8	44°21.6
5	214°45.3	16.0'	$13^{\circ}21.7$	-12.8'	54.1'		93°00.3	48°33.3	40°15.7	5°39.8	19°28.3	44°48.8
6	229°20.3	15.9'	S 13°34.5	-12.7'	54.1'		92°35.8	48°16.7	39°46.0	6°09.4	19°54.8	45°15.9
7	243°55.2	15.9'	13°47.2	-12.7'	54.1'	119° 56.9	92°11.2	48°00.3	39°16.4	6°38.9	20°21.4	45°43.1
8	258°30.1	15.8'	13°59.9	-12.6'	54.1'	119°29.2	91°46.7	47° 44.0	38°46.8	7°08.5	20°47.9	46°10.3
9	273°04.9	15.8'	$14^{\circ}12.5$	-12.6'	54.1'	119°01.6	91°22.1	47°27.9	38°17.1	7°38.0	21°14.5	46°37.5
10	287°39.7	15.7'	$14^{\circ}25.1$	-12.5'	54.1'	118°33.9	90°57.6	47°12.0	37°47.5	8°07.6	21°41.0	47°04.7
11	302°14.4	15.6'	14°37.7	-12.5'	54.1'	118°06.2	90°33.0	46°56.2	37°17.9	8°37.2	22°07.6	47°31.9
12	316°49.0	15.6'	S 14°50.1	-12.4'	54.1'	117°38.4	90°08.4	46°40.6	36°48.2	9°06.9	22°34.2	47°59.1
13	331°23.6	15.5'	$15^{\circ}02.6$	-12.4'	54.1'	117° 10.7	89°43.8	46°25.2	36°18.5	9°36.5	23°00.8	48°26.3
14	345°58.1	15.5'	$15^{\circ}14.9$	-12.3'	54.1'	116°42.9	89°19.2	46°10.0	35°48.9	10°06.1	23°27.3	48°53.5
15	0°32.6	15.4'	$15^{\circ}27.3$	-12.3'	54.1'	116° 15.1	88°54.6	45°54.9	35°19.2	10°35.8	23°53.9	49°20.7
16	15°07.0	15.3'	15°39.5	-12.2'	54.2'	115° 47.2	88°30.0		34°49.5	11°05.4	24°20.6	49°48.0
17	29°41.3	15.3'	15°51.7	-12.2'	54.2'	115° 19.4	88°05.4		34°19.8	11°35.1	24°47.2	50°15.2
18	44°15.6	15.2'	S 16°03.9	-12.1'	54.2'	114°51.5	87°40.8		33°50.1	12°04.8	25°13.8	50°42.5
19	58°49.8	15.1'	$16^{\circ}16.0$	-12.0'	54.2'	114°23.6	87°16.2		33°20.3	12°34.5	25°40.5	51°09.8
20	73°23.9	15.1'	$16^{\circ}28.0$	-12.0'	54.2'	113° 55.7	86°51.6		32°50.6	13°04.2	26°07.1	51°37.0
21	87°58.0	15.0'	16°40.0	-11.9'	54.2'	113°27.7	86°26.9		32°20.9	13°33.9	26°33.8	52°04.3
22	102°32.0	14.9'	$16^{\circ}51.9$	-11.9'	54.2'	112°59.8	86°02.3		31°51.1	14°03.7	27°00.5	52°31.6
23	117°05.9	14.9'	17°03.8	-11.8'	54.2'	112°31.8	85°37.7		31°21.4	14°33.4	27°27.1	52°58.9
7 th	SD	= 14.7'	Mer. pas	s. 14:58				Sun S	D = 15.9'			

1.	Moon (8 th Sen)	Lunar Distance (objects with largest hourly LD delta)
n	MOOD IX" Sent	I linar i listance i oniects with largest nollriv i i li delta i

Sun	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Antares	+Spica	+Venus	+Arcturus	+Sun
0	131°39.7	14.8'	S 17°15.6	-11.7'	54.2'		112°03.8	85°13.0	30°51.6	15°03.2	27°53.8		53°26.3
1	146°13.5	14.7'	17°27.3	-11.7'	54.3'		111°35.7	84°48.4	30°21.8	15°33.0	28°20.5		53°53.6
2	160°47.2	14.6'	17°39.0	-11.6'	54.3'		111°07.7	84°23.8	29°52.0	16°02.7	28°47.3		54°21.0
3	175°20.9	14.6'	$17^{\circ}50.6$	-11.5'	54.3'		110°39.6	83°59.1	29°22.2	16°32.5	29°14.0		54°48.3
4	189°54.4	14.5'	18°02.1	-11.5'	54.3'		110°11.5	83°34.5	28°52.4	17°02.3	29°40.7		55°15.7
5	204°27.9	14.4'	18°13.6	-11.4'	54.3'		109°43.3	83°09.8	28°22.6	17°32.2	30°07.5		55°43.1
6	219°01.3	14.3'	S 18°25.0	-11.3'	54.3'		109° 15.2	82°45.2	27°52.7	18°02.0	30°34.3		56°10.5
7	233°34.7	14.3'	$18^{\circ}36.3$	-11.3'	54.3'		108°47.0	82°20.5	27°22.9	18°31.8	31°01.1		56°37.9
8	248°07.9	14.2'	18°47.6	-11.2'	54.4'		108° 18.8	81°55.9	26°53.0	19°01.7	31°27.9	38°14.4	57°05.3
9	262°41.1	14.1'	18°58.8	-11.1'	54.4'		107°50.6	81°31.3	26°23.1	19°31.6	31°54.7	38°29.7	57°32.7
10	277°14.2	14.0'	19°09.9	-11.0'	54.4'		107° 22.4	81°06.6	25°53.2	20°01.5	32°21.5	38°45.3	58°00.2
11	291°47.2	13.9'	19°20.9	-11.0'	54.4'		106°54.1	80°42.0	25°23.3	20°31.4	32°48.3	39°01.1	58°27.7
12	306°20.2	13.9'	S 19°31.9	-10.9'	54.4'		106°25.8	80°17.3	24°53.4	21°01.3	33°15.2	39°17.1	58°55.1
13	320°53.0	13.8'	19°42.8	-10.8'	54.4'		105°57.5	79°52.7	24°23.4	21°31.2	33°42.1	39°33.4	59°22.6
14	335°25.8	13.7'	19°53.6	-10.7'	54.4'	119°34.9	105°29.2	79°28.1	23°53.5	22°01.2	34°09.0	39°49.9	59°50.2
15	349°58.5	13.6'	20°04.4	-10.7'	54.5'	119°04.8	105°00.8	79°03.4	23°23.5	22°31.1	34°35.9	40°06.7	60°17.7
16	4°31.1	13.5'	20°15.0	-10.6'	54.5'	118°34.6	104°32.5	78° 38.8	22°53.5	23°01.1	35°02.8	40°23.6	60°45.2
17	19°03.6	13.4'	20°25.6	-10.5'	54.5'	118°04.4	104°04.1	78° 14.2	22°23.5	23°31.1	35°29.7	40°40.8	61°12.8
18	33°36.1	13.4'	S 20°36.1	-10.4'	54.5'	117°34.2	103°35.7	77°49.6	21°53.5	24°01.1	35°56.7	40°58.2	61°40.4
19	48°08.4	13.3'	20°46.6	-10.3'	54.5'	117°04.0	103°07.2	77°25.0	21°23.5	24°31.1	36°23.6	41°15.8	62°07.9
20	62°40.7	13.2'	20°56.9	-10.3'	54.5'	116°33.7	102°38.8	77°00.3	20°53.4	25°01.2	36°50.6	41°33.6	62°35.6
21	77°12.9	13.1'	21°07.2	-10.2'	54.6'	116°03.5	102°10.3	76°35.7	20°23.3	25°31.2	37°17.6	41°51.6	63°03.2
22	91°45.0	13.0'	21°17.4	-10.1'	54.6'	115°33.2	101°41.8	76°11.2	19°53.3	26°01.3	37°44.6	42°09.8	63°30.8
23	106°17.0	12.9'	21°27.4	-10.0'	54.6'	115°02.9	101°13.3	75°46.6	19°23.2	26°31.4	38°11.7	42°28.2	63°58.5
8 th	SD	= 14.8'	Mer. pas	s. 15:41					Sun SD =	= 15.9′			

Moon (9th Sep)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Antares	+Spica	+Venus	+Arcturus	+Sun
0	120°48.9	12.8'	S 21°37.5	-9.9'	54.6'	114°32.6	100°44.7	75°22.0	18°53.0	27°01.5	38°38.7	42°46.8	64°26.2
1	135°20.7	12.7'	21°47.4	-9.8'	54.6'	114°02.3	100°16.1	74°57.4	18°22.9	27°31.7	39°05.8	43°05.5	64°53.9
2	149°52.5	12.7'	21°57.2	-9.7'	54.7'	113°31.9	99°47.5	74°32.8	17°52.7	28°01.8	39°32.9	43°24.5	65°21.6
3	164°24.1	12.6'	22°07.0	-9.7'	54.7'	113°01.5	99°18.9	74°08.3	17°22.6	28°32.0	40°00.0	43°43.6	65°49.3
4	178°55.7	12.5'	$22^{\circ}16.6$	-9.6'	54.7'	112°31.2	98°50.3	73°43.7	16°52.4	29°02.2	40°27.1	44°02.9	66°17.1
5	193°27.2	12.4'	22°26.2	-9.5'	54.7'	112°00.8	98°21.6	73°19.2	16°22.1	29°32.4	40°54.3	44°22.4	66°44.9
6	207°58.5	12.3'	S 22°35.7	-9.4'	54.7'	111°30.3	97°52.9	72°54.7	15°51.9	30°02.6	41°21.5	44°42.1	67°12.7
7	222°29.8	12.2'	22°45.0	-9.3'	54.8'	110°59.9	97°24.2	72°30.2	15°21.7	30°32.9	41°48.7	45°01.9	67°40.5
8	237°01.0	12.1'	22°54.3	-9.2'	54.8'	110°29.4	96°55.5	72°05.7	14°51.4	31°03.2	42°15.9	45°21.9	68°08.3
9	251°32.1	12.0'	23°03.5	-9.1'	54.8'	109°58.9	96°26.7	71°41.2	14°21.1	31°33.5	42°43.1	45°42.1	68°36.2
10	266°03.1	11.9'	23°12.6	-9.0'	54.8'	109°28.4	95°58.0	71°16.7	13°50.8	32°03.8	43°10.4	46°02.4	69°04.1
11	280°34.0	11.8'	23°21.6	-8.9'	54.8'	108°57.9	95°29.2	70°52.3	13°20.4	32°34.1	43°37.7	46°22.8	69°32.0
12	295°04.9	11.7'	S 23°30.5	-8.8'	54.9'	108°27.3	95°00.3	70°27.8	12°50.1	33°04.5	44°05.0	46°43.5	69°59.9
13	309°35.6	11.6'	23°39.3	-8.7'	54.9'	107°56.7	94°31.5	70°03.4	12°19.7	33°34.9	44°32.3	47°04.2	70°27.8
14	324°06.2	11.5'	23°48.0	-8.6'	54.9'	107°26.1	94°02.6	69°39.0	11°49.3	34°05.3	44°59.6	47°25.1	70°55.8
15	338°36.8	11.4'	23°56.5	-8.5'	54.9'	106°55.5	93°33.7	69°14.6	11°18.8	34°35.7	45°27.0	47°46.2	71°23.8
16	353°07.2	11.3'	24°05.0	-8.4'	54.9'	106°24.9	93°04.8	68°50.2	10°48.4	35°06.2	45°54.4	48°07.4	71°51.8
17	7°37.5	11.3'	24°13.4	-8.3'	55.0'	105°54.2	92°35.8	68°25.8	10°17.9	35°36.6	46°21.8	48°28.8	72°19.9
18	22°07.8	11.2'	S 24°21.7	-8.2'	55.0'	105°23.5	92°06.9	68°01.5	9°47.4	36°07.1	46°49.2	48°50.3	72°47.9
19	36°38.0	11.1'	24°29.9	-8.1'	55.0'	104°52.8	91°37.9	67°37.2	9°16.9	36°37.7	47°16.7	49°11.9	73°16.0
20	51°08.0	11.0'	24°37.9	-7.9'	55.0'	104°22.0	91°08.9	67° 12.9	8°46.3	37°08.2	47°44.2	49°33.6	73°44.1
21	65°38.0	10.9'	24°45.9	-7.8'	55.1'	103°51.3	90°39.8	66°48.6	8°15.8	37°38.8	48°11.7	49°55.5	74°12.3
22	80°07.8	10.8'	24°53.7	-7.7'	55.1'	103°20.5	90°10.8	66°24.4	7°45.2	38°09.4	48°39.3	50°17.5	74°40.5
23	94°37.6	10.7'	25°01.4	-7.6'	55.1'	102°49.7	89°41.7	66°00.1	7°14.5	38°40.0	49°06.8	50°39.7	75°08.6
9 th	9^{th} SD = 14.9' Mer. pass. 16:28 Sun SD = 15.9'												

h		Moon	(10 th Se	p)		Lunar Distance (objects with largest hourly LD delta)							
Tue	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	± Antares	+Spica	+Venus	+Arcturus	+Sun
0	109°07.3	10.6'	S 25°09.0	-7.5'	55.1'	102°18.8	89°12.6	65°35.9	6°43.9	39° 10.7	49°34.4	51°02.0	75°36.9
1	123°36.9	10.5'	$25^{\circ}16.5$	-7.4'	55.2'	101°47.9	88°43.4	65°11.8	6°13.2	39°41.4	50°02.0	51°24.4	76°05.1
2	138°06.4	10.4'	$25^{\circ}23.9$	-7.3'	55.2'	101°17.0	88°14.2	64°47.6	5°42.5	40°12.1	50°29.7	51°46.9	76°33.4
3	152°35.8	10.3'	$25^{\circ}31.2$	-7.2'	55.2'	100°46.1	87°45.1	64°23.5	5°11.8	40°42.8	50°57.3	52°09.5	77°01.7
4	167°05.0	10.2'	25°38.3	-7.0'	55.2'	100°15.2	87°15.8	63°59.4	4°41.0	41°13.6	51°25.0	52°32.3	77°30.0
5	181°34.2	10.1'	25° 45.4	-6.9'	55.3'	99°44.2	86°46.6	63°35.3	4°10.3	41°44.3	51°52.8	52°55.1	77°58.4
6	196°03.3	10.0'	S 25°52.3	-6.8'	55.3'	99°13.2	86°17.3	63°11.3	3°39.5	42° 15.2	52°20.5	53°18.1	78°26.7
7	210°32.3	9.9'	$25^{\circ}59.1$	-6.7'	55.3'	98°42.1	85°48.1	62°47.3	3°08.6	42°46.0	52°48.3	53°41.2	78°55.2
8	225°01.3	9.8'	$26^{\circ}05.7$	-6.5'	55.3'	98°11.1	85°18.7	62°23.3	2°37.8	43° 16.9	53°16.1	54°04.4	79°23.6
9	239°30.1	9.7'	$26^{\circ}12.3$	-6.4'	55.4'	97°40.0	84°49.4	61°59.4	2°07.0	43°47.8	53°44.0	54°27.7	79°52.1
10	253°58.8	9.6'	$26^{\circ}18.7$	-6.3'	55.4'	97°08.9	84°20.0	61°35.5	1°36.1	44° 18.7	54°11.8	54°51.1	80°20.6
11	268°27.4	9.5'	26°25.0	-6.2'	55.4'	96°37.7	83°50.6	61°11.7	1°05.3	44°49.7	54°39.7	55°14.7	80°49.1
12	282°56.0	9.4'	S 26°31.2	-6.0'	55.5'	96°06.5	83°21.2	60°47.9	0°34.9	45°20.7	55°07.7	55°38.3	81°17.7
13	297°24.4	9.3'	26°37.2	-5.9'	55.5'	95°35.3	82°51.8	60°24.1		45°51.7	55°35.6	56°02.0	81°46.2
14	311°52.7	9.3'	$26^{\circ}43.1$	-5.8'	55.5'	95°04.1	82°22.3	60°00.4		46°22.7	56°03.6	56°25.9	82°14.9
15	326°21.0	9.2'	26°48.9	-5.6'	55.5'	94°32.8	81°52.8	59°36.7		46°53.8	56°31.7	56°49.8	82°43.5
16	340°49.2	9.1'	26°54.5	-5.5'	55.6'	94°01.5	81°23.3	59°13.0	1°30.9	47°24.9	56°59.7	57°13.8	83°12.2
17	355°17.2	9.0'	$27^{\circ}00.1$	-5.4'	55.6'	93°30.1	80°53.8	58°49.4	2°02.0	47°56.1	57°27.8	57°38.0	83°40.9
18	9°45.2	8.9'	S 27°05.4	-5.2'	55.6'	92°58.8	80°24.2	58°25.9	2°33.1	48°27.3	57°55.9	58°02.2	84°09.7
19	24°13.1	8.8'	$27^{\circ}10.7$	-5.1'	55.7'	92°27.4	79°54.6	58°02.4	3°04.3	48°58.5	58°24.1	58°26.5	84°38.4
20	38°40.9	8.7'	$27^{\circ}15.8$	-5.0'	55.7'	91°55.9	79°25.0	57°39.0	3°35.5	49°29.7	58°52.3	58°50.9	85°07.2
21	53°08.6	8.6'	$27^{\circ}20.8$	-4.8'	55.7'	91°24.4	78°55.3	57°15.6	4°06.7	50°01.0	59°20.5	59°15.4	85°36.1
22	67°36.2	8.5'	$27^{\circ}25.6$	-4.7'	55.7'	90°52.9	78°25.6	56°52.3	4°38.0	50°32.3	59°48.7	59°40.0	86°05.0
23	82°03.8	8.4'	27°30.3	-4.6'	55.8'	90°21.4	77°55.9	56°29.0	5°09.4	51°03.7	60°17.0	60°04.7	86°33.9
10 th	SD	= 15.0'	Mer. pass	. 17:20					Sun SD =	15.9'			

h Moon (11 th Sep)) Lunar Distance (o	objects with larg	gest hourly LD delta`)
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Wed	GHA	ν	Dec	d	HP	-Saturn	-Achernar	-Fomalhaut	-Altair	+Antares	+Spica	+Venus	+Sun
0	96°31.2	8.4'	S 27°34.9	-4.4'	55.8'	89°49.8	85°41.9	77°26.2	56°05.8	5°40.7	51°35.0	60°45.3	87°02.8
1	110°58.6	8.3'	27°39.3	-4.3'	55.8'	89° 18.2	85°25.0	76°56.5	55°42.6	6°12.2	52°06.5	61°13.7	87°31.8
2	125°25.8	8.2'	27°43.5	-4.1'	55.9'	88°46.6	85°08.1	76° 26.7	55° 19.5	6°43.6	52°37.9	61°42.1	88°00.8
3	139°53.0	8.1'	27°47.7	-4.0'	55.9'	88° 14.9	84°51.2	75°56.9	54° 56.5	$7^{\circ}15.1$	53°09.4	62°10.5	88°29.9
4	154°20.1	8.0'	$27^{\circ}51.6$	-3.8'	55.9'	87°43.2	84°34.2	75°27.0	54°33.6	7°46.6	53°40.9	62°39.0	88°59.0
5	168°47.2	7.9'	$27^{\circ}55.5$	-3.7'	56.0'	87° 11.5	84°17.3	74°57.2	54°10.7	8°18.1	54°12.5	63°07.5	89°28.1
6	183°14.1	7.9'	S 27°59.2	-3.5'	56.0'	86°39.7	84°00.4	74°27.3	53°47.9	8°49.7	54°44.1	63°36.0	89°57.2
7	197°41.0	7.8'	28°02.7	-3.4'	56.0'	86°07.9	83°43.5	73°57.4	53°25.2	9°21.4	55°15.7	64°04.6	90°26.4
8	212°07.7	7.7'	28°06.1	-3.2'	56.1'	85°36.0	83°26.6	73°27.4	53°02.5	9°53.0	55°47.3	64°33.2	90°55.7
9	226°34.4	7.6'	28°09.3	-3.1'	56.1'	85°04.1	83°09.6	72°57.5	52°39.9	10°24.7	56°19.0	65°01.8	91°24.9
10	241°01.1	7.5'	28°12.4	-2.9'	56.1'	84°32.2	82°52.7	72° 27.5	52° 17.5	10°56.5	56°50.8	65°30.5	91°54.2
11	255°27.6	7.5'	$28^{\circ}15.3$	-2.8'	56.2'	84°00.2	82°35.8	71°57.5	51°55.1	11°28.2	57°22.6	65°59.2	92°23.6
12	269°54.1	7.4'	S 28°18.1	-2.6'	56.2'	83°28.2	82°18.9	71°27.5	51°32.8	12°00.0	57°54.4	66°27.9	92°53.0
13	284°20.5	7.3'	28°20.8	-2.5'	56.2'	82°56.2	82°02.1	70°57.4	51°10.5	12°31.9	58°26.2	66°56.7	93°22.4
14	298°46.8	7.3'	28°23.2	-2.3'	56.3'	82°24.1	81°45.2	70°27.3	50°48.4	13°03.8	58°58.1	67°25.6	93°51.9
15	313°13.1	7.2'	28°25.5	-2.2'	56.3'	81°51.9	81°28.3	69° 57.2	50°26.4	13°35.7	59°30.1	67°54.4	94°21.4
16	327°39.3	7.1'	28°27.7	-2.0'	56.3'	81° 19.8	81°11.5	69°27.0	50°04.5	14°07.7	60°02.0	68°23.4	94°50.9
17	342°05.4	7.1'	28°29.7	-1.8'	56.4'	80°47.6	80°54.6	68°56.9	49°42.7	14°39.7	60°34.0	68°52.3	95°20.5
18	356°31.4	7.0'	S 28°31.5	-1.7'	56.4'	80° 15.3	80°37.8	68°26.7	49°21.0	15°11.7	61°06.1	69°21.3	95°50.1
19	10°57.4	6.9'	28°33.2	-1.5'	56.4'	79°43.1	80°21.0	67° 56.5	48°59.4	15°43.8	61°38.2	69°50.3	96°19.7
20	25°23.3	6.9'	28°34.7	-1.4'	56.5'	79° 10.7	80°04.2	67°26.2	48°37.9	16°16.0	62°10.3	70°19.4	96°49.4
21	39°49.2	6.8'	$28^{\circ}36.1$	-1.2'	56.5'	78°38.4	79°47.4	66°56.0	48°16.6	16°48.1	62°42.5	70°48.5	97°19.2
22	54°15.0	6.7'	28°37.3	-1.0'	56.5'	78°06.0	79°30.7	66° 25.7	47°55.3	17°20.3	63°14.7	71°17.7	97°49.0
23	68°40.7	6.7'	28°38.3	-0.9'	56.6'	77° 33.5	79°13.9	65°55.4	47°34.2	17°52.6	63°46.9	71°46.8	98°18.8
11 th	SD =	= 15.2 [']	Mer. pas	s. 18:14	1	$Sun\;SD=15.9'$							

h Moon (12th Sep)

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Achernar	-Saturn	-Fomalhaut	-Altair	+Antares	+Spica	+Venus	+Sun
0	83°06.4	6.6'	S 28°39.2	-0.7'	56.6'	78°57.2	77°01.1	65°25.1	47°13.3	18°24.9	64°19.2	72°16.1	98°48.6
1	97°32.0	6.6'	28°39.9	-0.5'	56.6'	78°40.5	76°28.5	64°54.7	46°52.4	18°57.2	64°51.6	72°45.4	99° 18.5
2	111°57.6	6.5'	28°40.4	-0.4'	56.7'	78°23.8	75°56.0	64°24.3	46°31.7	19°29.6	65°23.9	73°14.7	99°48.5
3	126°23.1	6.5'	28°40.8	-0.2'	56.7'	78°07.2	75°23.3	63°53.9	46°11.2	20°02.0	65° 56.4	73°44.0	100°18.5
4	140°48.6	6.4'	28°41.0	-0.0'	56.8'	77°50.5	74°50.7	63°23.5	45°50.8	20°34.5	66°28.8	74°13.4	100°48.5
5	155°14.0	6.4'	28°41.0	0.1'	56.8'	77°33.9	74°18.0	62°53.1	45°30.6	21°07.0	67°01.3	74°42.9	101°18.6
6	169°39.3	6.3'	S 28°40.9	0.3'	56.8'	77°17.4	73°45.2	62°22.6	45°10.5	21°39.6	67°33.9	75°12.4	101°48.7
7	184°04.6	6.3'	28°40.6	0.5'	56.9'	77°00.8	73°12.5	61°52.1	44°50.6	22°12.2	68°06.5	75°41.9	102°18.9
8	198°29.9	6.2'	28°40.1	0.6'	56.9'	76°44.3	72°39.6	61°21.6	44°30.8	22°44.8	68°39.1	$76^{\circ}11.5$	102°49.1
9	212°55.1	6.2'	28°39.5	0.8'	56.9'	76°27.8	72°06.8	60°51.1	44°11.3	23°17.5	69°11.8	76°41.1	103°19.3
10	227°20.3	6.1'	28°38.7	1.0'	57.0'	76°11.4	71°33.8	60°20.6	43°51.9	23°50.2	69°44.5	77°10.8	103°49.6
11	241°45.5	6.1'	28°37.7	1.2'	57.0'	75°55.0	71°00.9	59° 50.0	43°32.7	24°23.0	70°17.3	77°40.5	104°19.9
12	256°10.6	6.1'	S 28°36.6	1.3'	57.1'	75°38.6	70°27.9	59° 19.4	43°13.6	24°55.8	70°50.1	78°10.2	104°50.3
13	270°35.6	6.0'	28°35.2	1.5'	57.1'	75°22.3	69°54.8	58° 48.8	42°54.8	25°28.6	71°23.0	78°40.0	105°20.8
14	285°00.7	6.0'	28°33.7	1.7'	57.1'	75°06.0	69°21.7	58° 18.2	42°36.2	26°01.5	71°55.9	79°09.9	105°51.2
15	299°25.7	6.0'	28°32.0	1.8'	57.2'	74°49.7	68°48.6	57° 47.6	42°17.8	26°34.5	72°28.8	79°39.8	106°21.7
16	313°50.6	5.9'	28°30.2	2.0'	57.2'	74°33.5	68°15.4	57° 16.9	41°59.6	27°07.5	73°01.8	80°09.7	106°52.3
17	328°15.6	5.9'	28°28.2	2.2'	57.2'	74°17.3	67°42.2	56° 46.3	41°41.6	27°40.5	73°34.9	80°39.7	107°22.9
18	342°40.5	5.9'	S 28°26.0	2.4'	57.3'	74°01.2	67°08.9	56° 15.6	41°23.9	28°13.6	74°07.9	81°09.7	107°53.6
19	357°05.4	5.9'	28°23.6	2.5'	57.3'	73°45.1	66°35.6	55°44.9	41°06.4	28°46.8	74°41.1	81°39.8	108°24.3
20	11°30.2	5.8'	$28^{\circ}21.1$	2.7'	57.4'	73°29.1	66°02.2	55° 14.2	40°49.1	29°19.9	75°14.3	82°09.9	108°55.0
21	25°55.1	5.8'	$28^{\circ}18.3$	2.9'	57.4'	73°13.1	65°28.8	54° 43.5	40°32.1	29°53.2	75°47.5	82°40.1	109°25.8
22	40°19.9	5.8'	28° 15.4	3.1'	57.4'	72°57.2	64°55.3	54° 12.8	40°15.3	30°26.4	76°20.8	83°10.3	109°56.7
23	54°44.7	5.8'	28°12.4	3.3'	57.5'	72°41.3	64°21.8	53°42.1	39°58.8	30°59.8	76°54.1	83°40.5	110°27.6
12 th	SD =	= 15.4'	Mer. pass	s. 19:12	2				Sun SD =	= 15.9′			

Moon (13th Sep)

h

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Achernar	-Saturn	-Fomalhaut	-Altair	+Antares	+Spica	+Venus	+Sun
0	69°09.5	5.8'	S 28°09.1	3.4'	57.5'	72°25.5	63°48.2	53°11.4	39°42.6	31°33.1	77°27.5	84°10.8	110°58.5
1	83°34.3	5.8'	28°05.7	3.6'	57.6'	72°09.8	63°14.6	52°40.6	39°26.7	32°06.6	78°00.9	84°41.2	111°29.5
2	97°59.0	5.7'	28°02.1	3.8'	57.6'	71°54.1	62°41.0	52°09.9	39°11.0	32°40.0	78°34.3	85°11.6	112°00.5
3	112°23.8	5.7'	27°58.3	4.0'	57.6'	71°38.4	62°07.3	51°39.1	38° 55.6	33°13.5	79°07.9	85°42.0	112°31.6
4	126°48.5	5.7'	27°54.3	4.1'	57.7'	71°22.9	61°33.5	51°08.4	38°40.5	33°47.1	79°41.4	86°12.5	113°02.7
5	141°13.2	5.7'	27°50.2	4.3'	57.7'	71°07.4	60°59.7	50°37.6		34°20.7	80°15.0	86°43.1	113°33.9
6	155°38.0	5.7'	S 27°45.9	4.5'	57.8'	70°51.9	60°25.9	50°06.9		34°54.4	80°48.7	87°13.7	114°05.1
7	170°02.7	5.7'	27°41.4	4.7'	57.8'	70°36.5	59°52.0	49°36.1		35°28.1	81°22.4	87°44.3	114°36.4
8	184°27.4	5.7'	27°36.7	4.8'	57.8'	70°21.2	59°18.1	49°05.4		36°01.8	81°56.1	88°15.0	115°07.7
9	198°52.1	5.7'	27°31.9	5.0'	57.9'	70°06.0	58°44.1	48°34.6		36°35.6	82°29.9	88°45.8	115°39.1
10	213°16.9	5.7'	27°26.8	5.2'	57.9'	69°50.8	58°10.0	48°03.9		37°09.5	83°03.8	89°16.5	116°10.5
11	227°41.6	5.7'	$27^{\circ}21.6$	5.4'	58.0'	69°35.8	57°35.9	47°33.2		37°43.4	83°37.7	89°47.4	116°42.0
12	242°06.3	5.7'	S 27°16.3	5.6'	58.0'	69°20.8	57°01.8	47°02.5		38°17.3	84°11.6	90°18.3	117°13.5
13	256°31.1	5.8'	$27^{\circ}10.7$	5.7'	58.0'		56°27.6	46°31.7		38°51.3	84°45.6	90°49.2	117°45.0
14	270°55.8	5.8'	27°05.0	5.9'	58.1'		55°53.4	46°01.1		39°25.4	85°19.7	91°20.2	118°16.7
15	285°20.6	5.8'	$26^{\circ}59.1$	6.1'	58.1'		55°19.1	45°30.4		39°59.5	85°53.8	91°51.2	118°48.3
16	299°45.4	5.8'	26°53.0	6.3'	58.2'		54°44.7	44° 59.7		40°33.6	86°27.9	92°22.3	119°20.0
17	314°10.2	5.8'	26°46.7	6.4'	58.2'		54°10.4	44°29.1		41°07.8	87°02.1	92°53.4	119°51.8
18	328°35.0	5.8'	S 26°40.3	6.6'	58.2'		53°35.9	43°58.5		41°42.1	87°36.4	93°24.6	
19	342°59.8	5.8'	26°33.7	6.8'	58.3'		53°01.4	43°27.9		42°16.4	88°10.7	93°55.9	
20	357°24.6	5.9'	$26^{\circ}26.9$	7.0'	58.3'		52°26.9	42° 57.4		42°50.7	88°45.0	94°27.1	
21	11°49.5	5.9'	26°20.0	7.1'	58.4'		51°52.3	42°26.9		43°25.1	89°19.4	94°58.5	
22	26°14.4	5.9'	$26^{\circ}12.8$	7.3'	58.4'		51°17.7	41°56.4		43°59.6	89°53.9	95°29.9	
23	40°39.3	5.9'	26°05.5	7.5'	58.4'		50°43.0	41°25.9		44°34.1	90°28.3	96°01.3	
13 th	SD =	= 15.7′	Mer. pass	s. 20:1	1				Sun SD =	= 15.9			

h Moon (14th Sep)

				<u> </u>				\					
Sat	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Hadar	+Spica	+Arcturus	+Venus
0	55°04.2	6.0'	S 25°58.0	7.6'	58.5'	50°08.3	40°55.6	45°08.6	61°46.5	66°09.6	91°02.9	93°16.4	96°32.8
1	69°29.1	6.0'	25°50.4	7.8'	58.5'	49°33.5	40°25.2	45°43.2	62°11.1	66°34.2	91°37.5	93°45.6	97°04.3
2	83°54.1	6.0'	25°42.6	8.0'	58.6'	48°58.6	39°54.9	46° 17.8	62°35.9	66°58.9	92°12.1	94°14.9	97°35.9
3	98°19.1	6.0'	25°34.6	8.2'	58.6'	48°23.7	39°24.7	46°52.5	63°00.8	67°23.7	92°46.8	94°44.2	98°07.5
4	112°44.2	6.1'	25°26.4	8.3'	58.6'	47°48.8	38°54.5	47°27.3	63°25.8	67°48.6	93°21.6	95°13.6	98°39.2
5	127°09.3	6.1'	$25^{\circ}18.1$	8.5'	58.7'	47°13.8	38°24.4	48°02.1	63°50.9	68°13.6	93°56.4	95°43.0	99°10.9
6	141°34.4	6.1'	S 25°09.6	8.7'	58.7'	46°38.8	37°54.3	48° 36.9	64°16.1	68°38.7	94°31.2	96°12.4	99°42.7
7	155°59.5	6.2'	25°00.9	8.8'	58.8'	46°03.7	37°24.4	49°11.8	64°41.5	69°03.9	95°06.1	96°41.9	100°14.5
8	170°24.7	6.2'	24°52.1	9.0'	58.8'	45°28.6	36°54.5	49°46.8	65°06.9	69°29.2	95°41.1	97°11.3	100°46.4
9	184°49.9	6.2'	24°43.1	9.2'	58.8'	44°53.4	36°24.7	50°21.8	65°32.5	69°54.6	96°16.1	97°40.9	101°18.3
10	199°15.1	6.3'	24°33.9	9.3'	58.9'	44°18.2	35°55.0	50°56.8	65°58.2	70°20.1	96°51.1	98°10.4	101°50.3
11	213°40.4	6.3'	24°24.6	9.5'	58.9'	43°42.9	35°25.4	51°31.9	66°24.0	70°45.7	97°26.2	98°40.0	102°22.4
12	228°05.8	6.4'	S 24°15.1	9.7'	59.0'	43°07.5	34°55.9	52°07.1	66°50.0	71°11.4	98°01.3	99°09.6	102°54.4
13	242°31.1	6.4'	24°05.4	9.8'	59.0'	42°32.2	34°26.5	52°42.3	67°16.0	71°37.2	98°36.5	99°39.2	103°26.6
14	256°56.5	6.5'	23°55.6	10.0'	59.0'	41°56.7	33°57.2	53° 17.5	67°42.1	72°03.1	99°11.8	100°08.8	103°58.7
15	271°22.0	6.5'	23°45.6	10.1'	59.1'	41°21.2	33°28.1	53°52.8	68°08.3	72°29.1	99°47.1	100°38.5	104°31.0
16	285°47.5	6.5'	23°35.4	10.3'	59.1'	40°45.7	32°59.1	54°28.1	68°34.7	72°55.1	100°22.4	101°08.2	105°03.2
17	300°13.0	6.6'	23°25.1	10.5'	59.2'	40°10.1	32°30.2	55°03.5	69°01.1	73°21.3	100°57.8	101°37.9	105°35.6
18	314°38.6	6.6'	S 23°14.7	10.6'	59.2'	39°34.5	32°01.5	55° 39.0	69°27.6	73°47.5	101°33.2	102°07.6	106°07.9
19	329°04.2	6.7'	23°04.0	10.8'	59.2'	38°58.8	31°32.9	56° 14.5	69°54.3	74°13.8	102°08.7	102°37.3	106°40.4
20	343°29.9	6.7'	22°53.3	10.9'	59.3'	38°23.1	31°04.6	56° 50.0	70°21.0	74°40.2	102°44.3	103°07.1	107°12.8
21	357°55.7	6.8'	22°42.3	11.1'	59.3'	37°47.3	30°36.4	57° 25.6	70°47.8	75°06.7	103°19.9	103°36.9	107°45.4
22	12°21.4	6.8'	22°31.2	11.2'	59.4'	37°11.5	30°08.4	58°01.2	71°14.7	75°33.3	103°55.5	104°06.7	108° 17.9
23	26°47.3	6.9'	22°20.0	11.4'	59.4'	36°35.6	29°40.6	58° 36.9	71°41.7	75°59.9	104°31.2	104°36.5	108°50.5
14 th	SD	= 15.9	Mer. pas	s. 21:09									

h Moon (15th Sep)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Jupiter	-Aldebaran	-Capella	-Saturn	+Antares	+Arcturus	+Spica	+Venus
0	41°13.1	6.9'	S 22°08.6	11.6'	59.4'		119°52.4		35°59.7	59°12.7	105°06.3	105°06.9	109°23.2
1	55°39.1	7.0'	21°57.0	11.7'	59.5'		119°17.4		35°23.7	59°48.4	105°36.1	105°42.7	109°55.9
2	70°05.0	7.0'	21°45.3	11.8'	59.5'		118°42.3		34°47.7	60°24.3	106°05.9	106° 18.5	110°28.7
3	84°31.1	7.1'	21°33.5	12.0'	59.5'		118°07.2		34°11.6	61°00.1	106°35.7	106°54.4	111°01.5
4	98°57.1	7.1'	$21^{\circ}21.5$	12.1'	59.6'		117°32.0		33°35.5	61°36.1	107°05.6	107°30.3	111°34.3
5	113°23.3	7.2'	$21^{\circ}09.4$	12.3'	59.6'		116°56.7		32°59.4	62°12.0	107°35.4	108°06.3	112°07.2
6	127°49.5	7.2'	S 20°57.1	12.4'	59.6'		116°21.4		32°23.2	62°48.1	108°05.3	108°42.3	112°40.2
7	142°15.7	7.3'	20°44.6	12.6'	59.7'		115°46.1		31°46.9	63°24.1	108°35.1	109°18.4	113°13.2
8	156°42.0	7.3'	20°32.1	12.7'	59.7'		115°10.7		31°10.6	64°00.2	109°04.9	109°54.5	113°46.2
9	171°08.3	7.4'	$20^{\circ}19.3$	12.9'	59.8'		114°35.2		30°34.3	64°36.4	109°34.8	110°30.6	114°19.3
10	185°34.7	7.5'	20°06.5	13.0'	59.8'		113°59.7		29°57.9	65°12.6	110°04.6	111°06.8	114°52.4
11	200°01.2	7.5'	19°53.5	13.1'	59.8'		113°24.1		29°21.5	65°48.8	110°34.4	111°43.1	115°25.6
12	214°27.7	7.6'	S 19°40.4	13.3'	59.9'		112°48.5		28°45.0	66°25.1	111°04.3	112°19.4	115°58.8
13	228°54.3	7.6'	$19^{\circ}27.1$	13.4'	59.9'		112°12.8		28°08.5	67°01.5	111°34.1	112°55.7	116°32.1
14	243°20.9	7.7'	19°13.7	13.5'	59.9'		111°37.1		27°31.9	67°37.8	112°03.8	113°32.1	117°05.4
15	257°47.5	7.7'	19°00.2	13.7'	60.0'		111°01.3		26°55.3	68°14.3	112°33.6	114°08.5	117°38.8
16	272°14.3	7.8'	18°46.5	13.8'	60.0'		110°25.5		26°18.6	68°50.7	113°03.4	114°45.0	118°12.2
17	286°41.1	7.8'	18°32.7	13.9'	60.0'		109°49.7		25°41.9	69°27.3	113°33.1	115°21.5	118°45.6
18	301°07.9	7.9'	S 18°18.8	14.0'	60.1'	119°55.3	109°13.8		25°05.2	70°03.8	114°02.8	115°58.1	119°19.1
19	315°34.8	7.9'	18°04.7	14.2'	60.1'	119° 19.1	108°37.8		24°28.4	70°40.4	114°32.5	116°34.7	119°52.6
20	330°01.7	8.0'	$17^{\circ}50.6$	14.3'	60.1'	118°42.9	108°01.8	119°33.9	23°51.6	71°17.1	115°02.2	117°11.3	
21	344°28.7	8.0'	17°36.3	14.4'	60.2'	118°06.6	107°25.8	118°59.5	23°14.7	71°53.7	115°31.8	117°48.0	
22	358°55.8	8.1'	17°21.9	14.5'	60.2'	117°30.3	106°49.7	118°25.1	22°37.8	72°30.5	116°01.4	118°24.7	
23	13°22.9	8.2'	17°07.3	14.7'	60.2'	116°54.0	106°13.5	117°50.6	22°00.8	73°07.2	116°31.0	119°01.5	
15 th	SD	= 16.2	Mer. pas	s. 22:04									

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

			. (20 0	· · ·							7	,	
Mon	GHA	ν	Dec	d	HP	-Capella	-Jupiter	-Aldebaran	-Saturn	+Antares	+Rigil Kent.	+Hadar	+Arcturus
0	27°50.0	8.2'	S 16°52.7	14.8'	60.3'	117°16.0	116°17.6	105°37.4	21°23.8	73°44.0	83°21.5	87°27.1	117°00.5
1	42°17.2	8.3'	16°37.9	14.9'	60.3'	116°41.4	115°41.2	105°01.1	20°46.8	74°20.9	83°50.3	87°55.2	117°30.0
2	56°44.5	8.3'	$16^{\circ}23.0$	15.0'	60.3'	116°06.7	115°04.7	104°24.9	20°09.7	74°57.8	84° 19.2	88°23.4	117°59.4
3	71°11.8	8.4'	$16^{\circ}08.0$	15.1'	60.4'	115°32.0	114°28.2	103°48.6	19°32.6	75°34.7	84°48.0	88°51.6	118°28.8
4	85°39.2	8.4'	15°52.9	15.2'	60.4'	114°57.2	113°51.6	103°12.2	18°55.5	76°11.7	85°17.0	89°19.9	118°58.2
5	100°06.6	8.5'	15°37.7	15.3'	60.4'	114°22.3	113°15.0	102°35.8	18°18.3	76°48.7	85°46.0	89°48.2	119°27.5
6	114°34.1	8.5'	S 15°22.4	15.4'	60.4'	113°47.4	112°38.4	101°59.4	17°41.1	77°25.7	86°15.0	90°16.5	119°56.7
7	129°01.6	8.6'	$15^{\circ}06.9$	15.5'	60.5'	113°12.4	112°01.7	101°22.9	17°03.8	78°02.8	86°44.0	90°44.8	
8	143°29.2	8.6'	14°51.4	15.6'	60.5'	112°37.4	111°25.0	100°46.4	16°26.5	78°39.9	87°13.1	91°13.2	
9	157°56.8	8.7'	14°35.7	15.7'	60.5'	112°02.3	110°48.3	100°09.9	15°49.2	79°17.1	87°42.3	91°41.6	
10	172°24.4	8.7'	$14^{\circ}20.0$	15.8'	60.6'	111°27.2	110°11.5	99°33.3	15°11.8	79°54.3	88°11.5	92°10.0	
11	186°52.2	8.8'	$14^{\circ}04.1$	15.9'	60.6'	110°52.0	109°34.6	98°56.7	14°34.4	80°31.5	88°40.7	92°38.4	
12	201°19.9	8.8'	S 13°48.2	16.0'	60.6'	110°16.8	108°57.8	98°20.0	13°56.9	81°08.7	89°09.9	93°06.9	
13	215°47.7	8.9'	13°32.2	16.1'	60.6'	109°41.5	108°20.9	97°43.3	13°19.5	81°46.0	89°39.1	93°35.3	
14	230°15.6	8.9'	$13^{\circ}16.0$	16.2'	60.7'	109°06.2	107°43.9	97°06.6	12°42.0	82°23.4	90°08.4	94°03.8	
15	244°43.5	9.0'	12°59.8	16.3'	60.7'	108°30.8	107°07.0	96°29.8	12°04.4	83°00.7	90°37.8	94°32.3	
16	259°11.5	9.0'	12°43.5	16.4'	60.7'	107°55.4	106°30.0	95°53.0	11°26.9	83°38.1	91°07.1	95°00.8	
17	273°39.5	9.0'	$12^{\circ}27.1$	16.5'	60.7'	107°19.9	105°52.9	95°16.2	10°49.3	84°15.5	91°36.5	95°29.3	
18	288°07.5	9.1'	S 12°10.6	16.6'	60.8'	106°44.4	105°15.8	94°39.3	10°11.6	84°53.0	92°05.8	95°57.9	
19	302°35.6	9.1'	$11^{\circ}54.0$	16.7'	60.8'	106°08.9	104°38.7	94°02.4	9°34.0	85°30.5	92°35.2	96°26.4	
20	317°03.7	9.2'	11°37.4	16.7'	60.8'	105°33.3	104°01.6	93°25.5	8°56.3	86°08.0	93°04.7	96°54.9	
21	331°31.9	9.2'	$11^{\circ}20.6$	16.8'	60.8'	104°57.7	103°24.4	92°48.5	8°18.6	86°45.6	93°34.1	97°23.5	
22	346°00.1	9.2'	$11^{\circ}03.8$	16.9'	60.9'	104°22.0	102°47.2	92°11.6	7°40.8	87°23.1	94°03.5	97°52.0	
23	0°28.3	9.3'	10°46.9	17.0'	60.9'	103°46.3	102°10.0	91°34.5	7°03.0	88°00.7	94°33.0	98°20.6	
16 th	SD :	= 16.4'	Mer. pas	s. 22:58	3			-			-		

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

Tue	GHA	ν	Dec	d	HP	-Mars	-Jupiter	-Aldebaran	±Saturn	+Altair	+Antares	+Rigil Kent.	+Hadar
0	14°56.6	9.3'	S 10°29.9	17.0'	60.9'	118° 12.6	101°32.8	90°57.5	6°25.3	47°25.6	88°38.4	95°02.5	98°49.1
1 1	29°24.9	9.4'	10°12.9	17.1'	60.9'	117°36.6	100°55.5	90°20.4	5°47.4	47°50.2	89°16.0	95°31.9	99°17.6
2	43°53.3	9.4'	09°55.8	17.2'	60.9'	117°00.5	100°18.2	89°43.4	5°09.6	48°15.0	89°53.7	96°01.4	99°46.1
3	58°21.7	9.4'	09°38.6	17.3'	61.0'	116°24.4	99°40.8	89°06.2	4°31.8	48°40.0	90°31.4	96°30.9	100°14.6
4	72°50.1	9.5'	09°21.3	17.3'	61.0'	115°48.3	99°03.5	88°29.1	3°53.9	49°05.3	91°09.2	97°00.4	100°43.1
5	87°18.6	9.5'	09°04.0	17.4'	61.0'	115°12.1	98°26.1	87°51.9	3°16.1	49°30.7	91°46.9	97°29.9	101°11.6
6	101°47.1	9.5'	S 08°46.6	17.4'	61.0'	114°35.9	97°48.7	87° 14.7	2°38.3	49°56.4	92°24.7	97°59.3	101°40.1
7	116°15.6	9.6'	08°29.2	17.5'	61.0'	113°59.7	97°11.2	86° 37.5	2°00.6	50°22.3	93°02.5	98°28.8	102°08.5
8	130°44.2	9.6'	$08^{\circ}11.7$	17.6'	61.0'	113°23.5	96°33.8	86°00.3	1°23.0	50°48.3	93°40.4	98°58.3	102°36.9
9	145°12.8	9.6'	07°54.2	17.6'	61.1'	112°47.2	95°56.3	85°23.0	0°46.3	51° 14.6	94°18.2	99°27.7	103°05.3
10	159°41.4	9.7'	07°36.5	17.7'	61.1'	112°11.0	95°18.8	84°45.8		51°41.1	94°56.1	99°57.2	103°33.7
11	$174^{\circ}10.1$	9.7'	$07^{\circ}18.9$	17.7'	61.1'	111°34.7	94°41.2	84°08.5		52°07.7	95°34.0	100°26.6	104°02.0
12	188°38.7	9.7'	S 07°01.2	17.8'	61.1'	110°58.3	94°03.7	83°31.2		52°34.5	96°11.9	100°56.0	104°30.3
13	203°07.5	9.7'	06°43.4	17.8'	61.1'	110°22.0	93°26.1	82°53.8		53°01.5	96°49.8	101°25.5	104°58.6
14	217°36.2	9.8'	06°25.6	17.9'	61.1'	109°45.6	92°48.6	82° 16.5	2°28.0	53°28.6	97°27.8	101°54.8	105°26.8
15	232°04.9	9.8'	06°07.7	17.9'	61.1'	109°09.3	92°11.0	81°39.1	3°06.0	53°55.9	98°05.8	102°24.2	105°55.0
16	246°33.7	9.8'	05°49.8 17.9' 61.2'			108°32.9	91°33.3	81°01.8	3°44.0	54°23.4	98°43.7	102°53.5	106°23.2
17	261°02.5	9.8'	05°31.9	18.0'	61.2'	107°56.5	90°55.7	80°24.4	4°22.1	54°51.0	99°21.7	103°22.8	106°51.3
18	275°31.3	9.8' \$ 05°13.9 18.0' 61.2'			107°20.0	90°18.0	79°47.0	5°00.3	55° 18.8	99°59.8	103°52.1	107°19.4	
19	290°00.2	9.9'	04°55.9	18.1'	61.2'	106°43.6	89°40.4	79°09.6	5°38.4	55° 46.7	100°37.8	104°21.4	107°47.4
20	304°29.0	9.9'	.9' 04°37.8 18.1' 61.2'			106°07.1	89°02.7	78°32.1	6°16.6	56° 14.8	101°15.8	104°50.6	108°15.3
21	318°57.9	9.9' 04°19.7 18.1' 61.2'			105°30.6	88°25.0	77° 54.7	6°54.8	56°43.0	101°53.9	105°19.8	108°43.3	
22	333°26.8					104°54.2	87°47.3	77° 17.3	7°33.1	57° 11.3	102°32.0	105°48.9	109°11.1
23	347°55.7	55.7 9.9' 03°43.5 18.2' 61.2'				104°17.7	87°09.6	76°39.8	8°11.3	57° 39.8	103°10.0	106°18.0	109°38.9
17 th	SD :	= 16.6'	Mer. pas	s. 23:50								·	

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

Wed	GHA	ν	Dec	d	HP	-Pollux	-Mars	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Altair	+Antares
0	2°24.6	9.9'	S 03°25.3	18.2'	61.2'	119°25.8	103°41.1	86°31.9	76°02.4	8°49.6	27°49.0	58°08.4	103°48.1
1	16°53.6	9.9'	$03^{\circ}07.1$	18.2'	61.2'	118°47.8	103°04.6	85°54.1	75°24.9	9°27.8	28° 17.5	58°37.1	104°26.2
2	31°22.5	10.0'	02°48.9	18.2'	61.3'	118°09.7	102°28.1	85°16.4	74°47.5	10°06.1	28°46.2	59°05.9	105°04.3
3	45°51.5	10.0'	02°30.7	18.3'	61.3'	117°31.6	101°51.5	84°38.6	74°10.0	10°44.4	29° 15.4	59°34.9	105°42.5
4	60°20.4	10.0'	02°12.4	18.3'	61.3'	116°53.5	101°15.0	84°00.9	73°32.5	11°22.7	29°44.8	60°03.9	106°20.6
5	74°49.4	10.0'	$01^{\circ}54.1$	18.3'	61.3'	116°15.3	100°38.4	83°23.1	72°55.0	12°01.0	30°14.5	60°33.1	106°58.7
6	89°18.4	10.0'	S 01°35.9	18.3'	61.3'	115°37.2	100°01.9	82°45.3	72°17.6	12°39.3	30°44.5	61°02.3	107°36.9
7	103°47.4	10.0'	$01^{\circ}17.6$	18.3'	61.3'	114°59.1	99°25.3	82°07.6	71°40.1	13° 17.7	31°14.8	61°31.7	108°15.0
8	118°16.3	10.0'	00°59.3	18.3'	61.3'	114°21.0	98°48.7	81°29.8	71°02.6	13°56.0	31°45.4	62°01.1	108°53.2
9	132°45.3	10.0'	00°40.9	18.3'	61.3'	113°42.8	98°12.1	80°52.0	70°25.1	14°34.3	32°16.2	62°30.7	109°31.3
10	147°14.3	10.0'	00°22.6	18.3'	61.3'	113°04.7	97°35.5	80°14.2	69°47.6	15° 12.6	32°47.2	63°00.3	110°09.5
11	161°43.3	10.0'	S 00°04.3	18.3'	61.3'	112°26.6	96°59.0	79°36.4	69°10.2	15°51.0	33°18.4	63°30.0	110°47.6
12	176°12.3	10.0'	N 00°14.0	18.3'	61.3'	111°48.4	96°22.4	78°58.6	68°32.7	16°29.3	33°49.9	63°59.9	111°25.8
13	190°41.3	10.0'	00°32.3	18.3'	61.3'	111°10.3	95°45.8	78°20.8	67°55.3	17°07.7	34°21.5	64°29.7	112°03.9
14	205°10.3	10.0'	00°50.7	18.3'	61.3'	110°32.1	95°09.2	77°43.0	67° 17.8	17°46.0	34°53.4	64°59.7	112°42.1
15	219°39.3	10.0'	$01^{\circ}09.0$	18.3'	61.3'	109°54.0	94°32.6	77°05.3	66°40.4	18°24.3	35°25.4	65°29.8	113°20.3
16	234°08.3	10.0'	01°27.3	18.3'	61.3'	109°15.9	93°56.0	76°27.5	66°02.9	19°02.7	35°57.6	65°59.9	113°58.4
17	248°37.2	10.0'	01°45.6	18.3'	61.3'	108°37.7	93°19.4	75°49.7	65°25.5	19°41.0	36°30.0	66°30.0	114°36.6
18	263°06.2	10.0'	N02°03.9	18.3'	61.3'	107°59.6	92°42.8	75°11.9	64°48.1	20°19.3	37°02.5	67°00.3	115°14.7
19	277°35.1	9.9'	$02^{\circ}22.1$	18.3'	61.3'	107°21.5	92°06.2	74°34.1	64°10.7	20°57.7	37°35.1	67°30.6	115°52.9
20	292°04.1	9.9'	02°40.4	18.2'	61.3'	106°43.3	91°29.6	73°56.4	63°33.3	21°36.0	38° 07.9	68°01.0	116°31.0
21	306°33.0	9.9'	02°58.6	18.2'	61.3'	106°05.2 105°27.1	90°53.1	73°18.6	62°55.9	22°14.3	38°40.9	68°31.4	117°09.1
22	321°01.9						90°16.5	72°40.9	62°18.5	22°52.6	39°13.9	69°01.9	117°47.3
23	335°30.8	335°30.8 9.9' 03°35.0 18.2' 61.3'					89°39.9	72°03.1	61°41.2	23°30.9	39°47.1	69°32.4	118°25.4
18 th	SE	0 = 16.7	7' Mer. pas	ss:-									

Moon (19th Sen)

n		IVIOO	u (19 26	ep)			Lunar	Distanc	e (objects	with larg	est nourly L	D deita)	
Thu	GHA	ν	Dec	d	HP	-Pollux	-Mars	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Altair	+Rigil Kent.
0	349°59.7	9.9'	N 03°53.2	18.1'	61.3'	104°10.9	89°03.4	71°25.4	61°03.9	24°09.2	40°20.4	70°03.0	118°04.4
1	4°28.6	9.9'	$04^{\circ}11.4$	18.1'	61.3'	103°32.8	88°26.8	70°47.7	60°26.5	24°47.5	40°53.8	70°33.7	118°31.5
2	18°57.5	9.8'	04°29.5	18.1'	61.2'	102°54.7	87°50.3	70°10.0	59°49.3	25°25.8	41°27.4	71°04.3	118°58.4
3	33°26.3	9.8'	04°47.6	18.1'	61.2'	102°16.7	87°13.8	69°32.3	59°12.0	26°04.1	42°01.0	71°35.1	119°25.2
4	47°55.1	9.8'	05°05.6	18.0'	61.2'	101°38.6	86°37.3	68°54.6	58°34.7	26°42.3	42°34.7	72°05.8	119°51.9
5	62°23.9	9.8'	05°23.6	18.0'	61.2'	101°00.6	86°00.8	68° 16.9	57°57.5	27°20.6	43°08.5	72°36.6	
6	76°52.7	9.8'	N 05°41.6	17.9'	61.2'	100°22.5	85°24.3	67° 39.2	57°20.3	27°58.8	43°42.3	73°07.4	
7	91°21.4	9.7'	05°59.6	17.9'	61.2'	99°44.5	84°47.8	67°01.6	56°43.1	28°37.0	44°16.3	73°38.3	
8	105°50.2	9.7'	06°17.5	17.9'	61.2'	99°06.5	84°11.3	66°24.0	56°06.0	29°15.2	44°50.3	74°09.2	
9	120°18.9	9.7'	06°35.3	17.8'	61.2'	98°28.5	83°34.9	65°46.3	55°28.8	29°53.4	45°24.4	74°40.1	
10	134°47.5	9.6'	$06^{\circ}53.1$	17.8'	61.2'	97°50.5	82°58.4	65°08.7	54°51.7	30°31.6	45°58.6	75°11.1	
11	149°16.2	9.6'	$07^{\circ}10.9$	17.7'	61.2'	97°12.6	82°22.0	64°31.2	54°14.7	31°09.7	46°32.8	75°42.1	
12	163°44.8	9.6'	N 07°28.6	17.7'	61.1'	96°34.6	81°45.6	63°53.6	53°37.6	31°47.9	47°07.1	76°13.1	
13	178°13.4	9.6'	07°46.3	17.6'	61.1'	95°56.7	81°09.2	63°16.1	53°00.6	32°26.0	47°41.4	76°44.1	
14	192°41.9	9.5'	08°03.9	17.6'	61.1'	95°18.8	80°32.9	62°38.5	52°23.7	33°04.1	48°15.8	77° 15.1	
15	207°10.5	9.5'	08°21.5	17.5'	61.1'	94°40.9	79°56.5	62°01.1	51°46.7	33°42.2	48°50.3	77°46.2	
16	221°39.0	9.5'	08°39.0	17.4'	61.1'	94°03.1	79°20.2	61°23.6	51°09.8	34°20.3	49°24.8	78° 17.2	
17	236°07.4	9.4'	08°56.4	17.4'	61.1'	93°25.2	78°43.9	60°46.1	50°32.9	34°58.3	49°59.3	78°48.3	
18	250°35.8	9.4'	N 09°13.8	17.3'	61.1'	92°47.4	78°07.6	60°08.7	49°56.1	35°36.3	50°33.8	79°19.4	
19	265°04.2	9.3'	09°31.1	17.3'	61.0'	92°09.6	77°31.3	59°31.3	49°19.3	36°14.3	51°08.5	79°50.5	
20	279°32.6	9.3'	09°48.4	17.2'	61.0'	91°31.8	76°55.1	58°53.9	48°42.6	36°52.3	51°43.1	80°21.6	
21	294°00.9	9.3'	10°05.5	17.1'	61.0'	90°54.0	76° 18.9	58° 16.6	48°05.9	37°30.3	52°17.8	80°52.7	
22	308°29.2	9.2'	10°22.7	17.0'	61.0'	90°16.3	75°42.7	57°39.2	47°29.2	38°08.2	52°52.5	81°23.8	
23	322°57.4	9.2'	10°39.7	17.0'	61.0'	89°38.6	75°06.5	57°01.9	46°52.6	38°46.1	53°27.2	81°54.9	
19 th	SD	= 16.7	Mer. pas	s. 00:41					-		-	-	

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h	Moon (20th Sen)	Lunar Distance (objects with largest hourly LD delta)
n	Moon (20% Sen)	I linar i listance i oniects with largest nollriv i i li delta

Fri	GHA	ν	Dec	d	HP	-Regulus	-Pollux	-Mars	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Altair
0	337°25.6	9.1'	N 10°56.7	16.9'	61.0'		89°00.9	74°30.4	56°24.7	46°16.1	39°24.0	54°01.9	82°26.0
1	351°53.7	9.1'	$11^{\circ}13.6$	16.8'	60.9'		88°23.2	73°54.3	55°47.4	45°39.5	40°01.9	54°36.7	82°57.1
2	6°21.8	9.1'	11°30.4	16.7'	60.9'		87°45.6	73° 18.2	55°10.2	45°03.1	40°39.7	55° 11.5	83°28.2
3	20°49.9	9.0'	$11^{\circ}47.1$	16.7'	60.9'		87°08.0	72°42.1	54°33.0	44°26.7	41°17.5	55°46.3	83°59.3
4	35°17.9	9.0'	12°03.8	16.6'	60.9'		86°30.4	72°06.1	53°55.9	43°50.3	41°55.3	56°21.1	84°30.4
5	49°45.9	8.9'	12°20.4	16.5'	60.9'		85°52.8	71°30.1	53°18.8	43°14.0	42°33.0	56°55.9	85°01.4
6	64°13.8	8.9'	$N12^{\circ}36.9$	16.4'	60.8'		85° 15.3	70°54.1	52°41.7	42°37.7	43°10.8	57°30.8	85°32.5
7	78°41.7	8.8'	12°53.3	16.3'	60.8'		84°37.8	70°18.1	52°04.6	42°01.5	43°48.5	58°05.6	86°03.5
8	93°09.5	8.8'	13°09.6	16.2'	60.8'		84°00.4	69°42.2	51°27.6	41°25.4	44°26.1	58° 40.5	86°34.5
9	107°37.3	8.7'	13°25.8	16.1'	60.8'		83°22.9	69°06.3	50°50.6	40°49.3	45°03.8	59° 15.3	87°05.6
10	122°05.0	8.7'	13°41.9	16.0'	60.7'	119°31.7	82°45.5	68°30.5	50°13.7	40°13.3	45°41.4	59°50.2	87°36.5
11	136°32.7	8.6'	13°58.0	15.9'	60.7'	118°54.3	82°08.1	67°54.6	49°36.8	39°37.4	46° 18.9	60°25.1	88°07.5
12	151°00.3	8.6'	$N14^{\circ}13.9$	15.8'	60.7'	118°17.0	81°30.8	67° 18.8	48°59.9	39°01.5	46°56.5	61°00.0	88°38.5
13	165°27.9	8.5'	14°29.8	15.7'	60.7'	117°39.7	80°53.5	66°43.1	48°23.1	38°25.7	47°34.0	61°34.8	89°09.4
14	179°55.4	8.5'	14°45.5	15.6'	60.6'	117°02.5	80°16.2	66°07.4	47°46.3	37°50.0	48°11.4	62°09.7	89°40.3
15	194°22.9	8.4'	$15^{\circ}01.1$	15.5'	60.6'	116°25.3	79°39.0	65°31.7	47°09.5	37°14.4	48° 48.9	62°44.5	90°11.1
16	208°50.3	8.4'	$15^{\circ}16.7$	15.4'	60.6'	115°48.1	79°01.8	64°56.0	46°32.8	36°38.8	49°26.3	63°19.4	90°42.0
17	223°17.7	8.3'	15°32.1	15.3'	60.6'	115°11.0	78°24.6	64°20.4	45°56.1	36°03.3	50°03.7	63°54.2	91°12.8
18	237°45.0	8.3'	N15°47.4	15.2'	60.5'	114°33.9	77° 47.5	63°44.8	45°19.5	35°27.9	50°41.0	64°29.1	91°43.6
19	252°12.3	8.2'	$16^{\circ}02.7$	15.1'	60.5'	113°56.8	77° 10.3	63°09.3	44°42.9	34°52.6	51° 18.3	65°03.9	92°14.3
20	266°39.5	8.1'	$16^{\circ}17.8$	15.0'	60.5'	113°19.8	76°33.3	62°33.7	44°06.4	34°17.3	51°55.6	65°38.7	92°45.0
21	281°06.6	8.1'	16°32.8	14.9'	60.5'	112°42.8	75°56.2	61°58.3	43°29.9	33°42.2	52° 32.8	66°13.5	93°15.7
22	295°33.7	8.0'	16°47.6	14.8'	60.4'	112°05.8	75° 19.3	61°22.8	42°53.4	33°07.1	53°10.0	66°48.3	93°46.3
23	310°00.7	8.0'	17°02.4	14.6'	60.4'	111°28.9	74°42.3	60°47.4	42°17.0	32°32.2	53°47.2	67°23.1	94°16.9
20 th	SD	= 16.6	′ Mer. pas	s. 01:34									

Moon (21st Sep)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Regulus	-Pollux	-Mars	-Jupiter	+Saturn	+Fomalhaut	+Achernar	+Altair
0	324°27.7	7.9'	$N17^{\circ}17.1$	14.5'	60.4'	110°52.0	74°05.4	60°12.1	41°40.6	54°24.3	67° 57.9	74°58.9	94°47.5
1	338°54.6	7.9'	17°31.6	14.4'	60.3'	110°15.1	73°28.5	59°36.8	41°04.3	55°01.4	68°32.6	75° 17.2	95°18.0
2	353°21.5	7.8'	17°46.0	14.3'	60.3'	109°38.3	72°51.7	59°01.5	40°28.0	55°38.4	69°07.3	75° 35.5	95°48.5
3	7°48.3	7.7'	18°00.3	14.2'	60.3'	109°01.5	72°14.8	58°26.2	39°51.8	56° 15.4	69°42.0	75°53.8	96°18.9
4	22° 15.0	7.7'	18° 14.4	14.0'	60.3'	108°24.8	71°38.1	57°51.0	39° 15.6	56°52.4	70° 16.7	76° 12.3	96°49.3
5	36°41.7	7.6'	$18^{\circ}28.5$	13.9'	60.2'	107°48.1	71°01.4	57°15.9	38° 39.5	57°29.3	70°51.4	76°30.7	97°19.6
6	51°08.4	7.6'	N 18°42.4	13.8'	60.2'	107°11.5	70°24.7	56°40.8	38°03.5	58°06.2	71°26.0	76°49.2	97°49.9
7	65°34.9	7.5'	18°56.2	13.7'	60.2'	106°34.8	69°48.0	56°05.7	37°27.5	58°43.0	72°00.6	77°07.8	98°20.1
8	80°01.4	7.5'	19°09.8	13.5'	60.1'	105°58.3	69°11.4	55°30.7	36°51.5	59° 19.8	72° 35.2	77°26.4	98°50.3
9	94°27.9	7.4'	19°23.3	13.4'	60.1'	105°21.7	68°34.9	54°55.7	$36^{\circ}15.6$	59° 56.6	73°09.8	77°45.1	99°20.5
10	108°54.3	7.3'	19°36.7	13.2'	60.1'	104°45.2	67°58.3	54°20.7	35°39.7	60°33.3	73°44.3	78°03.8	99°50.5
11	123°20.6	7.3'	19°50.0	13.1'	60.0'	104°08.8	67°21.9	53°45.8	35°03.9	61°10.0	74° 18.8	78°22.5	100°20.5
12	137°46.9	7.2'	N 20°03.1	13.0'	60.0'	103°32.4	66°45.4	53°11.0	34°28.2	$61^{\circ}46.6$	74°53.3	78°41.3	100°50.5
13	152° 13.1	7.2'	$20^{\circ}16.1$	12.8'	60.0'	102°56.0	66°09.0	52°36.2	33°52.5	62°23.2	75° 27.7	79°00.1	101°20.4
14	166°39.3	7.1'	20°28.9	12.7'	59.9'	102°19.7	65°32.7	52°01.4	33°16.9	62°59.8	76°02.2	79° 18.9	101°50.3
15	181°05.4	7.0'	$20^{\circ}41.6$	12.6'	59.9'	101°43.4	64°56.4	51°26.7	32°41.4	63°36.3	76° 36.6	79°37.8	102°20.0
16	195°31.4	7.0'	20°54.1	12.4'	59.9'	101°07.1	64°20.1	50°52.0	32°05.9	64°12.7	77° 10.9	79°56.7	102°49.8
17	209°57.4	6.9'	$21^{\circ}06.6$	12.3'	59.8'	100°30.9	63°43.9	50°17.4	31°30.4	64°49.2	77° 45.2	80° 15.6	103°19.4
18	224°23.4	6.9'	N 21°18.8	12.1'	59.8'	99°54.8	63°07.7	49°42.8	30°55.1	65°25.5	78° 19.5	80°34.6	103°49.0
19	238°49.2	6.8'	21°30.9	12.0'	59.8'	99°18.6	62°31.5	49°08.3	30°19.8	66°01.9	78°53.8	80°53.6	104°18.5
20	253°15.0	6.8'	21°42.9	11.8'	59.7'	98°42.6	61°55.4	48°33.8	29°44.6	66°38.2	79°28.0	81° 12.6	104°48.0
21	267°40.8	6.7'	21°54.7	11.7'	59.7'	98°06.5	61°19.4	47°59.3	29°09.4	67° 14.4	80°02.2	81°31.6	105°17.4
22	282°06.5	6.7'	22°06.4	11.5'	59.7'	97°30.6	60°43.4	47°24.9	28°34.3	67°50.6	80°36.4	81°50.6	105°46.7
23	296°32.2	6.6'	$22^{\circ}17.9$	11.4'	59.6'	96°54.6	60°07.4	46°50.6	27°59.3	68°26.8	81° 10.5	82°09.7	106°15.9
21 st	SD	= 16.5'	Mer. pas	s. 02:28				-					

h		Мооі	n (22 nd Se	ep)			Lunar	Distance	(objects	with lar	gest hourly	LD delta)	
Sun	GHA	ν	Dec	d	HP	-Regulus	-Pollux	-Mars	-Jupiter	+Saturn	+Fomalhaut	+Achernar	+Altair
0	310°57.8	6.5'	N22°29.3	11.2'	59.6'	96°18.7	59°31.5	46°16.3	27°24.4	69°02.9	81°44.6	82°28.7	106°45.1
1	325°23.3	6.5'	22°40.5	11.1'	59.6'	95°42.9	58°55.7	45°42.0	26°49.5	69°39.0	82°18.7	82°47.8	107°14.2
2	339°48.8	6.4'	22°51.6	10.9'	59.5'	95°07.1	58° 19.8	45°07.8	26°14.8	70°15.0	82°52.7	83°06.9	107°43.2
3	354°14.2	6.4'	23°02.5	10.7'	59.5'	94°31.3	57°44.1	44°33.7	25°40.1	70°51.0	83°26.6	83°26.0	108°12.1
4	8°39.6	6.3'	23°13.2	10.6'	59.5'	93°55.6	57°08.3	43°59.6	25°05.5	71°26.9	84°00.6	83°45.1	108°41.0
5	23°04.9	6.3'	23°23.8	10.4'	59.4'	93°19.9	56°32.6	43°25.5	24°30.9	72°02.8	84°34.5	84°04.2	109°09.8
6	37°30.2	6.2'	N23°34.2	10.3'	59.4'	92°44.3	55°57.0	42°51.5	23°56.5	72°38.6	85°08.3	84°23.3	109°38.5
7	51°55.4	6.2'	23°44.5	10.1'	59.4'	92°08.7	55°21.4	42°17.6	23°22.2	73°14.4	85°42.1	84°42.4	110°07.1
8	66°20.6	6.1'	23°54.6	9.9'	59.3'	91°33.2	54°45.9	41°43.7	22°48.0	73°50.2	86°15.9	85°01.5	110°35.6
9	80°45.8	6.1'	24°04.5	9.8'	59.3'	90°57.7	54° 10.4	41°09.8	22°13.8	74°25.9	86°49.6	85°20.6	111°04.0
10	95°10.8	6.0'	24°14.3	9.6'	59.2'	90°22.3	53°34.9	40°36.1	21°39.8	75°01.5	87°23.3	85°39.7	111°32.4
11	109°35.9	6.0'	24°23.9	9.4'	59.2'	89°46.9	52°59.5	40°02.3	21°05.9	75°37.2	87°57.0	85°58.8	112°00.7
12	124°00.9	6.0'	N24°33.3	9.3'	59.2'	89°11.6	52°24.1	39°28.6	20°32.1	76°12.7	88°30.6	86°17.9	112°28.8
13	138°25.8	5.9'	24°42.6	9.1'	59.1'	88°36.3	51°48.8	38°55.0	19°58.4	76°48.2	89°04.2	86°37.0	112°56.9
14	152°50.7	5.9'	24°51.7	8.9'	59.1'	88°01.0	51°13.5	38°21.4	19°24.9	77°23.7	89°37.7	86°56.1	113°24.9
15	167°15.6	5.8'	25°00.7	8.8'	59.1'	87°25.8	50°38.3	37°47.9	18°51.5	77°59.1	90°11.1	87°15.1	113°52.8
16	181°40.4	5.8'	25°09.4	8.6'	59.0'	86°50.6	50°03.1	37°14.4	18°18.3	78°34.5	90°44.6	87°34.2	114°20.6
17	196°05.2	5.7'	$25^{\circ}18.0$	8.4'	59.0'	86°15.5	49°28.0	36°41.0	17°45.2	79°09.8	91°18.0	87°53.2	114°48.3
18	210°30.0	5.7'	N25°26.5	8.3'	58.9'	85°40.4	48°52.9	36°07.6	17°12.3	79°45.1	91°51.3	88°12.2	115°15.9
19	224°54.7	5.7'	25°34.7	8.1'	58.9'	85°05.4	48° 17.9	35°34.3	16°39.5	80°20.4	92°24.6	88°31.2	115°43.4
20	239°19.4	5.6'	25°42.8	7.9'	58.9'	84°30.5	47°42.9	35°01.0	16°07.0	80°55.6	92°57.9	88°50.2	116°10.8
21	253°44.0	5.6'	$25^{\circ}50.7$	7.7'	58.8'	83°55.5	47°08.0	34°27.8	15°34.6	81°30.7	93°31.1	89°09.2	116°38.0
22	268°08.6	5.6'	25°58.5	7.6'	58.8'	83°20.6	46°33.1	33°54.7	15°02.5	82°05.8	94°04.2	89°28.1	117°05.2
23	282°33.2	5.5'	26°06.0	7.4'	58.8'	82°45.8	45°58.2	33°21.6	14°30.6	82°40.9	94°37.3	89°47.0	117°32.3
22 nd	SD	= 16.3	Mer. pass	s. 03:24									

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

Mon	GHA	ν	Dec	d	HP	-Sun	-Regulus	-Pollux	-Mars	+Aldebaran	+Saturn	+Fomalhaut	+Altair
0	296°57.7	5.5'	$N26^{\circ}13.4$	7.2'	58.7'	112°24.6	82°11.0	45°23.4	32°48.6		83°15.9	95°10.4	117°59.3
1	311°22.2	5.5'	$26^{\circ}20.6$	7.0'	58.7'	111°52.2	81°36.3	44°48.7	32° 15.6		83°50.8	95°43.4	118°26.1
2	325°46.7	5.5'	26°27.7	6.9'	58.6'	111°20.0	81°01.6	$44^{\circ}14.0$	31°42.7		84°25.7	96°16.4	118°52.9
3	340°11.2	5.4'	26°34.5	6.7'	58.6'	110°47.7	80°26.9	43°39.3	31°09.8		85°00.6	96°49.3	119°19.5
4	354°35.6	5.4'	26°41.2	6.5'	58.6'	110°15.5	79°52.3	43°04.7	30°37.0		85°35.4	97°22.2	119°46.0
5	9°00.1	5.4'	26°47.7	6.3'	58.5'	109°43.4	79°17.8	42°30.1	30°04.3		$86^{\circ}10.2$	97°55.0	
6	23°24.5	5.4'	$N26^{\circ}54.1$	6.1'	58.5'	109°11.2	78°43.3	$41^{\circ}55.6$	29°31.6		86°44.9	98°27.8	
7	37°48.8	5.4'	27°00.2	6.0'	58.5'	108°39.2	78°08.8	41°21.2	28°59.0		$87^{\circ}19.6$	99°00.5	
8	52°13.2	5.3'	27°06.2	5.8'	58.4'	108°07.2	77°34.4	40°46.7	28°26.5		87°54.2	99°33.2	
9	66°37.5	5.3'	27°12.0	5.6'	58.4'	107°35.2	77°00.0	40°12.4	27°54.0		88°28.8	100°05.8	
10	81°01.9	5.3'	27°17.6	5.4'	58.3'	107°03.3	76°25.7	39°38.0	27°21.6		89°03.4	100°38.4	
11	95°26.2	5.3'	27°23.0	5.3'	58.3'	106°31.4	75°51.4	39°03.8	26°49.2		89°37.9	101°10.9	
12	109°50.5	5.3'	$N27^{\circ}28.3$	5.1'	58.3'	105°59.6	75°17.2	$38^{\circ}29.5$	26°16.9		90°12.3	101°43.4	
13	124°14.8	5.3'	27°33.3	4.9'	58.2'	105°27.8	74°43.0	37°55.3	25°44.7		90°46.7	102°15.8	
14	138°39.1	5.3'	27°38.2	4.7'	58.2'	104°56.0	74°08.9	$37^{\circ}21.2$	25°12.6		$91^{\circ}21.1$	102°48.2	
15	153°03.4	5.3'	27°42.9	4.5'	58.2'	104°24.3	73°34.8	36°47.1	24°40.5		91°55.4	103°20.5	
16	167°27.7	5.3'	27°47.5	4.3'	58.1'	103°52.7	73°00.8	36°13.0	24°08.5		92°29.6	103°52.8	
17	181°52.0	5.3'	27°51.8	4.2'	58.1'	103°21.1	72°26.8	35°39.0	23°36.6		93°03.9	104°25.0	
18	196°16.3	5.3'	N 27°56.0	4.0'	58.0'	102°49.5	71°52.8	$35^{\circ}05.1$	23°04.7	13° 17.9	93°38.0	104°57.2	
19	210°40.5	5.3'	28°00.0	3.8'	58.0'	102°18.0	71°18.9	34°31.2	22°32.9	13°40.0	94°12.2	105°29.3	
20	225°04.8	5.3'	28°03.8	3.6'	58.0'	101°46.6	70°45.0	33°57.3	22°01.2	14°02.8	94°46.2	106°01.3	
21	239°29.1	5.3'	28°07.4	3.4'	57.9'	101°15.1	70°11.2	33°23.5	21°29.6	14°26.3	95°20.3	106°33.3	
22	253°53.5	5.3'	28°10.9	3.3'	57.9'	100°43.8	69°37.4	32°49.7	20°58.1	14°50.5	95°54.3	107°05.3	
23	268°17.8	5.3'	28°14.1	3.1'	57.9'	100°12.4	69°03.7	32°16.0	20°26.6	15° 15.2	96°28.2	107°37.2	
23 rd	SD =	= 16.0'	Mer. pass	. 04:23	}				Sun	SD = 15.9'			

h	Moon	(24 th	Sen)	١

Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Sun	-Regulus	-Pollux	-Mars	+Jupiter	+Aldebaran	+Saturn	+Fomalhaut
0	282°42.1	5.3'	$N28^{\circ}17.2$	2.9'	57.8'	99°41.1	68°30.0	31°42.3	19°55.3		15°40.4	97°02.1	108°09.1
1	297°06.5	5.4'	28°20.1	2.7'	57.8'	99°09.9	67°56.4	31°08.7	19°24.0		16°06.1	97°36.0	108°40.9
2	311°30.8	5.4'	28°22.8	2.5'	57.7'	98°38.7	67°22.8	30°35.1	18°52.9		16°32.2	98°09.8	109°12.6
3	325°55.2	5.4'	28°25.4	2.4'	57.7'	98°07.5	66°49.2	30°01.6	18°21.8		16°58.7	98°43.6	109°44.3
4	340°19.6	5.4'	28°27.7	2.2'	57.7'	97°36.4	66° 15.7	29°28.1	17°50.9		17°25.6	99°17.3	110°15.9
5	354°44.0	5.4'	28°29.9	2.0'	57.6'	97°05.4	65°42.3	28°54.6	17°20.0		17°52.8	99°51.0	110°47.5
6	9°08.5	5.5'	N 28°31.9	1.8'	57.6'	96°34.3	65°08.8	28°21.2	16°49.3		18°20.3	100°24.6	111°19.0
7	23°32.9	5.5'	28°33.8	1.6'	57.6'	96°03.4	64°35.5	27°47.8	16°18.7		18°48.0	100°58.2	111°50.5
8	37°57.4	5.5'	28°35.4	1.5'	57.5'	95°32.4	64°02.1	27°14.5	15°48.3		19°16.1	101°31.8	112°21.9
9	52°22.0	5.6'	28°36.9	1.3'	57.5'	95°01.5	63°28.8	26°41.3	15°18.0		19°44.3	102°05.3	112°53.3
10	66°46.5	5.6'	28°38.2	1.1'	57.4'	94°30.7	62°55.6	26°08.0	14°47.8		20°12.8	102°38.8	113°24.6
11	81°11.1	5.6'	28°39.3	0.9'	57.4'	93°59.9	62°22.4	25°34.9	14°17.8	9°06.1	20°41.5	103°12.2	113°55.9
12	95°35.8	5.7'	N 28°40.2	0.8'	57.4'	93°29.1	61°49.2	25°01.7	13°48.0	9°31.9	21°10.3	103°45.6	114°27.0
13	110°00.4	5.7'	28°41.0	0.6'	57.3'	92°58.4	61°16.1	24°28.6	13°18.4	9°58.4	21°39.3	104°18.9	114°58.2
14	124°25.2	5.8'	28°41.6	0.4'	57.3'	92°27.7	60°43.0	23°55.6	12°48.9	10°25.5	22°08.5	104°52.2	115°29.3
15	138°49.9	5.8'	28°42.0	0.2'	57.3'	91°57.0	60°10.0	23°22.6	12°19.7	10°53.1	22°37.8	105°25.5	116°00.3
16	153°14.7	5.8'	28°42.2	0.1'	57.2'	91°26.4	59°37.0	22°49.6	11°50.8	11°21.1	23°07.2	105°58.7	116°31.2
17	167°39.5	5.9'	28°42.3	-0.1'	57.2'	90°55.9	59°04.0	22°16.7	11°22.1	11°49.5	23°36.7	106°31.9	117°02.2
18	182°04.4	5.9'	N 28°42.2	-0.3'	57.2'	90°25.3	58°31.1	21°43.8	10°53.8	12°18.2	24°06.4	107°05.0	117°33.0
19	196°29.4	6.0'	28°41.9	-0.5'	57.1'	89°54.9	57° 58.3	21°11.0	10°25.7	12°47.2	24°36.1	107°38.1	118°03.8
20	210°54.3	6.0'	28°41.4	-0.6'	57.1'	89°24.4	57°25.4	20°38.2	9°58.1	13°16.5	25°05.9	108°11.2	118°34.5
21	225°19.4	6.1'	28°40.8	-0.8'	57.1'	88°54.0	56° 52.7	20°05.5	9°30.9	13°46.0	25°35.8	108°44.2	119°05.2
22	239°44.5	6.1'	28°40.0	-1.0'	57.0'	88°23.7	56° 19.9	19°32.8	9°04.1	14°15.7	26°05.8	109°17.2	119°35.8
23	254°09.6	6.2'	28°39.1	-1.1'	57.0'	87°53.3	55°47.2	19°00.2	8°38.0	14°45.5	26°35.8	109°50.1	
24 th	SD :	= 15.8'	Mer. pass	s. 05:22					Su	n SD = 15.9	′		

Moon (25th Sep)

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Lunar Distance	(abjects with	larget h	aurly I D	1 401+0)
Lunar Distance	roblects with	i largest n	OUTIV LL	, della i

Wed	GHA	ν	Dec	d	HP	-Sun	-Regulus	-Pollux	-Mars	+Jupiter	+Capella	+Aldebaran	+Saturn
0	268°34.8	6.3'	N 28°37.9	-1.3'	57.0'	87°23.1	55° 14.5	18° 27.6	8°12.4	15° 15.5	21°30.1	27°05.9	110°23.0
1	283°00.1	6.3'	28°36.6	-1.5'	56.9'	86°52.8	54°41.9	17°55.1	7°47.6	15°45.7	21°48.5	27°36.1	110°55.9
2	297°25.4	6.4'	28°35.2	-1.6'	56.9'	86°22.6	54°09.3	17°22.6	7°23.7	16° 15.9	22°07.5	28°06.3	111°28.7
3	311°50.8	6.5'	28°33.5	-1.8'	56.8'	85°52.5	53°36.8	16°50.1		16°46.3	22°26.9	28°36.5	112°01.5
4	326°16.3	6.5'	28°31.7	-2.0'	56.8'	85°22.3	53°04.3	16°17.7		17° 16.7	22°46.8	29°06.8	112°34.2
5	340°41.8	6.6'	28°29.8	-2.1'	56.8'	84°52.2	52°31.8	15°45.3		17°47.3	23°07.1	29°37.2	113°06.9
6	355°07.4	6.7'	N 28°27.6	-2.3'	56.7'	84°22.2	51°59.4	15°13.0		18° 17.9	23°27.8	30°07.5	113°39.6
7	9°33.0	6.7'	28°25.3	-2.5'	56.7'	83°52.2	51°27.0	14°40.8		18° 48.5	23°48.9	30°37.9	114°12.2
8	23°58.7	6.8'	28°22.9	-2.6'	56.7'	83°22.2	50°54.6	14°08.6		19° 19.2	24°10.4	31°08.3	114°44.8
9	38°24.5	6.9'	28°20.3	-2.8'	56.6'	82°52.3	50°22.3	13°36.4		19°50.0	24°32.2	31°38.8	115°17.3
10	52°50.4	6.9'	28° 17.5	-2.9'	56.6'	82°22.4	49°50.0	13°04.3		20°20.8	24°54.4	32°09.3	115°49.9
11	67°16.3	7.0'	28°14.5	-3.1'	56.6'	81°52.5	49°17.8	12°32.3		20°51.6	25°16.9	32°39.7	116°22.3
12	81°42.3	7.1'	$N28^{\circ}11.5$	-3.3'	56.6'	81°22.7	48°45.6	12°00.3		21°22.5	25°39.7	33°10.2	116°54.8
13	96°08.4	7.2'	28°08.2	-3.4'	56.5'	80°52.9	48° 13.4	11°28.4		21°53.3	26°02.7	33°40.8	117°27.2
14	110°34.6	7.2'	28°04.8	-3.6'	56.5'	80°23.2	47°41.3	10°56.5		22°24.2	26°26.1	34°11.3	117°59.6
15	125°00.9	7.3'	28°01.2	-3.7'	56.5'	79°53.4	47°09.2	10°24.8		22°55.2	26°49.7	34°41.8	118°31.9
16	139°27.2	7.4'	27°57.5	-3.9'	56.4'	79°23.8	46°37.1	9°53.0		23°26.1	27°13.5	35°12.4	119°04.2
17	153°53.6	7.5'	27°53.7	-4.0'	56.4'	78°54.1	46°05.1	9°21.4		23°57.0	27°37.6	35°43.0	119°36.4
18	168°20.1	7.6'	N 27°49.6	-4.2'	56.4'	78°24.5	45°33.1	8°49.9		24°28.0	28°01.9	36°13.5	
19	182°46.7	7.7'	27°45.5	-4.3'	56.3'	77°54.9	45°01.2	8° 18.4		24°59.0	28°26.4	36°44.1	
20	197°13.3	7.7'	27°41.1	-4.5'	56.3'	77°25.4	44°29.3	7°47.1		25°29.9	28°51.1	37°14.6	
21	211°40.1	7.8'	27°36.7	-4.6'	56.3'	76°55.9	43°57.4	7° 15.9		26°00.9	29°16.0	37°45.2	
22	226°06.9	7.9'	$27^{\circ}32.1$	-4.8'	56.2'	76°26.4	43°25.5	6°44.9		26°31.8	29°41.1	38°15.8	
23	240°33.8	8.0'	27°27.3	-4.9'	56.2'	75°56.9	42°53.7	6°14.0		27°02.8	30°06.3	38°46.4	
25 th	SD	= 15.5'	Mer. pas	s. 06:20	1				Sun	SD = 15.9'			

h Moon (26th Sep)

Lunar Distance	(objects with	largest hourly	· LD delta)	
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Thu	GHA	ν	Dec	d	HP	-Sun	-Regulus	±Pollux	+Mars	+Jupiter	+Betelgeuse	+Capella	+Aldebaran
0	255°00.8	8.1'	N27°22.4	-5.0'	56.2'	75°27.5	42°22.0	5°43.3		27°33.8	28°17.0	30°31.7	39° 16.9
1	269°28.0	8.2'	27°17.3	-5.2'	56.1'	74°58.2	41°50.2	5°13.0	7°55.0	28°04.7	28°37.6	30°57.3	39° 47.5
2	283°55.1	8.3'	27°12.2	-5.3'	56.1'	74°28.8	41°18.5	4°42.9	8° 19.3	28°35.7	28° 58.5	31°23.0	40°18.0
3	298°22.4	8.4'	27°06.8	-5.5'	56.1'	73°59.5	40°46.8	4°13.3	8°44.3	29°06.6	29° 19.7	31°48.8	40°48.6
4	312°49.8	8.5'	$27^{\circ}01.3$	-5.6'	56.1'	73°30.2	40°15.2	3°44.3	9°09.7	29°37.5	29°41.1	32°14.8	41°19.1
5	327°17.3	8.6'	26°55.7	-5.8'	56.0'	73°01.0	39°43.6	3°16.3	9°35.6	30°08.5	30°02.9	32°40.9	41°49.7
6	341°44.8	8.7'	N26°50.0	-5.9'	56.0'	72°31.8	39°12.0		10°01.8	30°39.4	30°24.8	33°07.1	42°20.2
7	356°12.5	8.8'	26°44.1	-6.0'	56.0'	72°02.6	38°40.5		10°28.4	31°10.3	30°47.0	33°33.4	42°50.7
8	10°40.2	8.8'	26°38.1	-6.2'	55.9'	71°33.4	38°09.0		10°55.3	31°41.2	31°09.4	33°59.8	43°21.2
9	25°08.1	8.9'	26°31.9	-6.3'	55.9'	71°04.3	37°37.5		11°22.5	32°12.0	31°32.0	34°26.4	43°51.8
10	39°36.0	9.0'	26°25.6	-6.4'	55.9'	70°35.2	37°06.1		11°49.8	32°42.9	31°54.8	34°53.0	44°22.3
11	54°04.1	9.1'	$26^{\circ}19.2$	-6.6'	55.9'	70°06.1	36°34.7		12°17.4	33° 13.8	32°17.9	35°19.7	44°52.7
12	68°32.2	9.2'	$N26^{\circ}12.6$	-6.7'	55.8'	69°37.1	36°03.3		12°45.1	33°44.6	32°41.1	35°46.6	45°23.2
13	83°00.4	9.3'	26°06.0	-6.8'	55.8'	69°08.1	35°31.9		13° 12.9	34° 15.4	33°04.5	36°13.5	45°53.7
14	97°28.8	9.4'	25°59.2	-6.9'	55.8'	68°39.1	35°00.6		13°40.9	34°46.2	33°28.0	36°40.4	46°24.1
15	111°57.2	9.5'	25°52.2	-7.1'	55.7'	68°10.2	34°29.3		14°09.0	35° 17.0	33°51.8	37°07.5	46°54.6
16	126°25.7	9.6'	25°45.2	-7.2'	55.7'	67°41.3	33°58.1		14°37.2	35°47.8	34° 15.7	37°34.6	47°25.0
17	140°54.3	9.7'	25°38.0	-7.3'	55.7'	67°12.4	33°26.9		15°05.5	36° 18.5	34°39.7	38°01.8	47°55.4
18	155°23.1	9.8'	N25°30.7	-7.4'	55.7'	66°43.5	32°55.7	4°17.5	15°33.8	36°49.3	35°03.9	38°29.0	48° 25.8
19	169°51.9	9.9'	25°23.2	-7.6'	55.6'	66°14.7	32°24.5	4°46.7	16°02.3	37°20.0	35°28.2	38°56.4	48° 56.2
20	184°20.8	10.0'	25°15.7	-7.7'	55.6'	65°45.9	31°53.4	5°16.3	16°30.8	37°50.7	35°52.7	39°23.7	49°26.6
21	198°49.8	10.1'	25°08.0	-7.8'	55.6'	65°17.1	31°22.3	$5^{\circ}46.1$	16°59.3	38°21.4	36° 17.3	39°51.2	49°57.0
22	213°18.9	10.2'	25°00.2	-7.9'	55.6'	64°48.3	30°51.2	6°16.2	17°27.9	38°52.1	36°42.0	40°18.7	50°27.3
23	227°48.2	10.3'	24°52.3	-8.0'	55.5'	64°19.6	30°20.2	6°46.4	17°56.5	39°22.8	37°06.8	40°46.2	50°57.7
26 th	SD	= 15.3'	Mer. pass	. 07:16					Su	n SD = 15.9	·		

h Moon (27th Sep)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Sun	-Regulus	+Pollux	+Mars	+Betelgeuse	+Jupiter	+Capella	+Aldebaran
0	242°17.5	10.4'	N 24°44.3	-8.1'	55.5'	63°50.9	29°49.2	7°16.6	18°25.2	37°31.8	39°53.4	41°13.8	51°28.0
1	256°46.9	10.5'	24°36.2	-8.2'	55.5'	63°22.2	29°18.2	7°47.0	18°53.9	37°56.8	40°24.0	41°41.4	51°58.3
2	271°16.4	10.6'	24°27.9	-8.4'	55.5'	62°53.6	28°47.3	8°17.5	19°22.6	38°22.0	40°54.6	42°09.1	52°28.6
3	285°46.0	10.7'	$24^{\circ}19.5$	-8.5'	55.4'	62°25.0	28°16.4	8°48.0	19°51.3	38°47.3	41°25.2	42°36.8	52°58.9
4	300°15.7	10.8'	$24^{\circ}11.1$	-8.6'	55.4'	61°56.4	27°45.5	9°18.5	20°20.1	39°12.6	41°55.8	43°04.5	53°29.2
5	314°45.5	10.9'	24°02.5	-8.7'	55.4'	61°27.8	27°14.6	9°49.1	20°48.9	39°38.1	42°26.4	43°32.3	53°59.4
6	329°15.5	11.0'	N23°53.8	-8.8'	55.4'	60°59.3	26°43.8	10°19.6	21°17.7	40°03.6	42°56.9	44°00.1	54°29.6
7	343°45.5	11.1'	23°45.0	-8.9'	55.3'	60°30.8	26°13.0	10°50.2	21°46.5	40°29.3	43°27.4	44°28.0	54°59.9
8	358°15.6	11.2'	23°36.1	-9.0'	55.3'	60°02.3	25°42.3	11°20.8	22°15.3	40°55.0	43°57.9	44°55.9	55°30.1
9	12°45.8	11.3'	$23^{\circ}27.1$	-9.1'	55.3'	59°33.8	25°11.5	11°51.5	22°44.1	41°20.7	44°28.4	45°23.8	56°00.3
10	27°16.1	11.4'	23°18.0	-9.2'	55.3'	59°05.3	24°40.8	12°22.1	23°13.0	41°46.6	44°58.9	45°51.7	56°30.5
11	41°46.5	11.5'	23°08.8	-9.3'	55.2'	58° 36.9	24°10.2	12°52.7	23°41.8	42°12.5	45°29.4	46°19.7	57°00.6
12	56°17.0	11.6'	N22°59.5	-9.4'	55.2'	58°08.5	23°39.5	13°23.3	24°10.7	42°38.6	45°59.8	46°47.7	57°30.8
13	70°47.6	11.7'	22°50.1	-9.5'	55.2'	57°40.1	23°08.9	13°53.9	24°39.5	43°04.6	46°30.2	47°15.7	58°00.9
14	85°18.3	11.8'	22°40.6	-9.6'	55.2'	57° 11.8	22°38.4	14°24.5	25°08.4	43°30.8	47°00.6	47°43.8	58°31.0
15	99°49.1	11.9'	22°30.9	-9.7'	55.2'	56°43.4	22°07.8	14°55.1	25°37.2	43°57.0	47°31.0	48°11.9	59°01.1
16	114°20.0	12.0'	22°21.2	-9.8'	55.1'	56° 15.1	21°37.3	15°25.6	26°06.1	44°23.2	48°01.4	48°40.0	59°31.2
17	128°51.0	12.1'	22°11.4	-9.9'	55.1'	55°46.8	21°06.8	15°56.2	26°34.9	44°49.5	48°31.7	49°08.1	60°01.3
18	143°22.1	12.2'	$N22^{\circ}01.6$	-10.0'	55.1'	55° 18.6	20°36.4	16°26.7	27°03.7	45°15.9	49°02.1	49°36.2	60°31.4
19	157°53.3	12.3'	21°51.6	-10.1'	55.1'	54°50.3	20°06.0	16°57.3	27°32.6	45°42.3	49°32.4	50°04.3	61°01.4
20	172°24.5	12.4'	21°41.5	-10.2'	55.1'	54°22.1	19°35.6	17°27.8	28°01.4	46°08.8	50°02.7	50°32.5	61°31.5
21	186°55.9	12.5'	21°31.3	-10.3'	55.0'	53°53.9	19°05.3	17°58.3	28°30.2	46°35.3	50°33.0	51°00.7	62°01.5
22	201°27.4	12.6'	21°21.1	-10.3'	55.0'	53°25.7	18°35.0	18°28.8	28°59.1	47°01.9	51°03.2	51°28.9	62°31.5
23	215°58.9	12.6'	21°10.7	-10.4'	55.0'	52°57.6	18°04.7	18°59.3	29°27.9	47°28.5	51°33.5	51°57.1	63°01.5
27 th	SD	= 15.1'	Mer. pas	s. 08:07				S	un $SD = 1$	5.9' at $0h; 16.0'$	at 23h		

h Moon (28th Sep)

Lunar Distance (objects with largest hourly LD delta)

			,	1/		zana zietane (esjetis min iargest nearly zz denta)							
Sat	GHA	ν	Dec	d	HP	-Sun	-Regulus	+Pollux	+Mars	+Betelgeuse	+Jupiter	+Capella	+Aldebaran
0	230°30.6	12.7'	N 21°00.3	-10.5'	55.0'	52°29.4	17°34.5	19°29.8	29°56.7	47°55.1	52°03.7	52°25.3	63°31.5
1	245°02.3	12.8'	20°49.8	-10.6'	54.9'	52°01.3	17°04.3	20°00.2	30°25.5	48°21.8	52°33.9	52°53.5	64°01.4
2	259°34.1	12.9'	20°39.2	-10.7'	54.9'	51°33.2	16°34.1	20°30.7	30°54.3	48°48.6	53°04.2	53°21.8	64°31.4
3	274°06.0	13.0'	20°28.5	-10.8'	54.9'	51°05.1	16°04.0	21°01.1	31°23.1	49°15.3	53°34.3	53°50.0	65°01.3
4	288°38.1	13.1'	$20^{\circ}17.8$	-10.8'	54.9'	50°37.0	15°34.0	21°31.5	31°51.9	49°42.1	54°04.5	54°18.3	65°31.2
5	303°10.1	13.2'	20°06.9	-10.9'	54.9'	50°09.0	15°04.0	22°01.9	32°20.6	50°09.0	54°34.7	54°46.6	66°01.2
6	317°42.3	13.3'	N 19°56.0	-11.0'	54.9'	49°41.0	14°34.0	22°32.3	32°49.4	50°35.9	55°04.8	55°14.9	66°31.0
7	332°14.6	13.4'	19°45.0	-11.1'	54.8'	49°13.0	14°04.1	23°02.7	33°18.2	51°02.8	55°35.0	55°43.2	67°00.9
8	346°47.0	13.5'	19°33.9	-11.2'	54.8'	48°45.0	13°34.3	23°33.0	33°46.9	51°29.7	56°05.1	56°11.5	67°30.8
9	1°19.4	13.5'	19°22.7	-11.2'	54.8'	48° 17.0	13°04.5	24°03.4	34°15.7	51°56.7	56°35.2	56°39.8	68°00.6
10	15°52.0	13.6'	$19^{\circ}11.5$	-11.3'	54.8'	47°49.1	12°34.8	24°33.7	34°44.4	52°23.7	57°05.3	57°08.1	68°30.5
11	30°24.6	13.7'	19°00.2	-11.4'	54.8'	47°21.1	12°05.1	25°04.0	35°13.1	52°50.7	57°35.3	57°36.4	69°00.3
12	44°57.3	13.8'	N 18°48.8	-11.5'	54.7'	46°53.2	11°35.6	25°34.3	35°41.8	53°17.8	58°05.4	58°04.8	69°30.1
13	59°30.1	13.9'	18°37.4	-11.5'	54.7'	46°25.3	11°06.1	26°04.6	36°10.5	53°44.9	58°35.4	58°33.1	69°59.9
14	74°03.0	14.0'	18°25.9	-11.6'	54.7'	45°57.4	10°36.7	26°34.9	36°39.2	54°12.0	59°05.4	59°01.4	70°29.7
15	88°35.9	14.0'	18°14.3	-11.7'	54.7'	45°29.5	10°07.4	27°05.1	37°07.9	54°39.1	59°35.5	59°29.8	70°59.5
16	103°09.0	14.1'	$18^{\circ}02.6$	-11.7'	54.7'	45°01.7	9°38.3	27°35.4	37°36.6	55°06.2	60°05.5	59°58.1	71°29.3
17	117°42.1	14.2'	17°50.9	-11.8'	54.7'	44°33.9	9°09.3	28°05.6	38°05.3	55°33.4	60°35.4	60°26.5	71°59.0
18	132°15.3	14.3'	$N17^{\circ}39.1$	-11.9'	54.6'	44°06.0	8°40.4	28°35.8	38°33.9	56°00.6	61°05.4	60°54.9	72°28.7
19	146°48.6	14.4'	17°27.2	-11.9'	54.6'	43°38.2	8°11.8	29°06.0	39°02.6	56°27.8	61°35.4	61°23.2	72°58.5
20	161°21.9	14.4'	17°15.3	-12.0'	54.6'	43° 10.4	7°43.3	29°36.2	39°31.2	56°55.1	62°05.3	61°51.6	73°28.2
21	175°55.3	14.5'	17°03.3	-12.1'	54.6'	42°42.7	7°15.1	30°06.4	39°59.8	57°22.3	62°35.3	62°20.0	73°57.9
22	190°28.8	14.6'	$16^{\circ}51.3$	-12.1'	54.6'	42°14.9	6°47.2	30°36.5	40°28.5	57°49.6	63°05.2	62°48.3	74°27.6
23	205°02.4	14.7'	16°39.2	-12.2'	54.6'	5' 41°47.2 6°19.7 31°06.7 40°57.1 58°16.9 63°35.1 63°16.7 74°57.3							
28 th	SD	= 15.0	Mer. pas	s. 08:55		$Sun\;SD=16.0'$							

h Moon (29th Sep)

Sun

GHA

Lunar Distance (objects with largest hourly LD delta)

HP -Sun ±Regulus +Pollux +Mars +Betelgeuse +Capella +Jupiter +Aldebaran

0	219°36.1	14.7'	N16°27.0	10.0	- 4 - 1	440404	-0						
		± 1.1	M10 27.0	-12.2'	54.5'	41°19.4	5°52.6	31°36.8	41°25.7	58°44.2	63°45.1	64°05.0	75°26.9
1	234°09.8	14.8'	16°14.7	-12.3'	54.5'	40°51.7	5°26.0	32°06.9	41°54.3	59°11.5	64°13.5	64°34.9	75° 56.6
2	248°43.6	14.9'	$16^{\circ}02.5$	-12.3'	54.5'	40°24.0	5°00.2	32°37.0	42°22.9	59°38.9	64°41.8	65°04.8	76°26.2
3	263°17.5	15.0'	$15^{\circ}50.1$	-12.4'	54.5'		4°35.2	33°07.1	42°51.4	60°06.2	65°10.2	65°34.6	76° 55.8
4	277°51.5	15.0'	15°37.7	-12.5'	54.5'			33°37.2	43°20.0	60°33.6	65°38.6	66°04.5	77°25.5
5	292°25.5	15.1'	15°25.2	-12.5'	54.5'			34°07.2	43°48.5	61°01.0	66°07.0	66°34.3	77°55.1
6	306°59.6	15.2'	N15°12.7	-12.6'	54.5'			34°37.3	44°17.1	61°28.4	66°35.4	67°04.1	78°24.7
7	321°33.7	15.2'	15°00.2	-12.6'	54.4'			35°07.3	44°45.6	61°55.8	67°03.7	67°33.9	78° 54.2
8	336°08.0	15.3'	14°47.5	-12.7'	54.4'			35° 37.4	45° 14.2	62°23.2	67°32.1	68°03.7	79°23.8
9	350°42.3	15.4'	14°34.9	-12.7'	54.4'			36°07.4	45°42.7	62°50.6	68°00.5	68°33.5	79°53.4
10	$5^{\circ}16.6$	15.4'	14°22.1	-12.8'	54.4'			36° 37.4	46°11.2	63°18.1	68°28.9	69°03.3	80°22.9
11	$19^{\circ}51.0$	15.5'	14°09.4	-12.8'	54.4'			37°07.4	46°39.7	63°45.5	68° 57.3	69°33.1	80°52.5
12	34°25.5	15.6'	N13°56.5	-12.9'	54.4'			37°37.4	47°08.2	64°13.0	69°25.6	70°02.8	81°22.0
13	49°00.1	15.6'	13°43.7	-12.9'	54.4'			38°07.4	47°36.7	64°40.4	69°54.0	70°32.6	81°51.5
14	63°34.7	15.7'	13°30.7	-13.0'	54.3'			38° 37.3	48°05.2	65°07.9	70°22.4	71°02.3	82°21.0
15	78°09.4	15.7'	13°17.8	-13.0'	54.3'			39°07.3	48°33.6	65°35.4	70°50.8	71°32.1	82°50.5
16	92°44.1	15.8'	13°04.8	-13.1'	54.3'			39°37.2	49°02.1	66°02.9	$71^{\circ}19.1$	72°01.8	83°20.0
17	$107^{\circ}18.9$	15.9'	$12^{\circ}51.7$	-13.1'	54.3'			40°07.1	49° 30.6	66°30.4	71°47.5	72°31.5	83°49.5
18	121°53.7	15.9'	N 12°38.6	-13.1'	54.3'			40°37.1	49°59.0	66°57.9	$72^{\circ}15.9$	73°01.2	84°19.0
19	136°28.6	16.0'	12°25.5	-13.2'	54.3'			41°07.0	50°27.5	67°25.5	72°44.3	73°30.9	84° 48.4
20	151°03.6	16.0'	12°12.3	-13.2'	54.3'		5°28.9	41°36.9	50°55.9	67°53.0	73°12.6	74°00.6	85° 17.9
21	165°38.6	16.1'	$11^{\circ}59.1$	-13.3'	54.3'		5°55.2	42°06.8	51°24.3	68°20.5	73°41.0	74°30.2	85°47.3
22	180°13.7	16.1'	11°45.8	-13.3'	54.3'		6°22.1	42°36.6	51°52.7	68°48.1	74°09.4	74°59.9	86° 16.8
23	194°48.8	16.2'	11°32.5	-13.3'	54.2'		6°49.4	43°06.5	52°21.1	69°15.6	74°37.7	75°29.6	86°46.2
29 th	SD	= 14.9'	Mer. pas	s. 09:38					Sur	SD = 16.0'			

h	Moon	(30 th	Sep))

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Acrux	+Regulus	+Pollux	+Mars	+Betelgeuse	+Capella	+Jupiter	+Aldebaran
0	209°24.0	16.2'	N 11°19.2	-13.4'	54.2'		7°17.1	43°36.4	52°49.5	69°43.2	75°06.1	75°59.2	87°15.6
1	223°59.2	16.3'	11°05.8	-13.4'	54.2'		7°45.0	44°06.2	53°17.9	70°10.7	75°34.4	76°28.9	87°45.0
2	238°34.5	16.3'	10°52.4	-13.5'	54.2'		8°13.1	44°36.1	53°46.3	70°38.3	76°02.8	76°58.5	88°14.4
3	253°09.8	16.4'	10°38.9	-13.5'	54.2'		8°41.4	45°05.9	54°14.7	71°05.9	76°31.2	77°28.1	88°43.8
4	267°45.2	16.4'	10°25.4	-13.5'	54.2'		9°09.8	45°35.7	54°43.1	71°33.4	76°59.5	77°57.7	89°13.2
5	282°20.6	16.5'	$10^{\circ}11.9$	-13.6'	54.2'		9°38.4	46°05.6	55°11.5	72°01.0	77°27.9	78°27.3	89°42.5
6	296°56.1	16.5'	N09°58.4	-13.6'	54.2'		10°07.1	46°35.4	55°39.8	72°28.6	77°56.2	78°56.9	90°11.9
7	311°31.6	16.6'	09°44.8	-13.6'	54.2'	75° 15.9	10°35.9	47°05.2	56°08.2	72°56.2	78°24.6	79°26.5	90°41.2
8	326°07.2	16.6'	09°31.2	-13.6'	54.1'	74° 57.5	11°04.8	47°35.0	56°36.5	73°23.8	78°52.9	79°56.1	91°10.6
9	340°42.8	16.6'	09° 17.5	-13.7'	54.1'	74°39.2	11°33.8	48°04.7	57°04.9	73°51.4	79°21.2	80°25.7	91°39.9
10	355°18.4	16.7'	09°03.8	-13.7'	54.1'	74°21.0	12°02.8	48°34.5	57°33.2	74°19.0	79°49.6	80°55.2	92°09.3
11	9°54.1	16.7'	$08^{\circ}50.1$	-13.7'	54.1'	74°02.8	12°31.8	49°04.3	58°01.5	74°46.6	80°17.9	81°24.8	92°38.6
12	24°29.8	16.8'	N08°36.4	-13.8'	54.1'	73°44.6	13°00.9	49°34.1	58°29.9	75°14.2	80°46.2	81°54.3	93°07.9
13	39°05.6	16.8'	08°22.6	-13.8'	54.1'	73°26.5	13°30.1	50°03.8	58°58.2	75°41.8	81°14.6	82°23.9	93°37.2
14	53°41.4	16.8'	08°08.9	-13.8'	54.1'	73°08.4	13°59.3	50°33.6	59°26.5	76°09.4	81°42.9	82°53.4	94°06.5
15	68°17.2	16.9'	07°55.0	-13.8'	54.1'	72°50.4	14°28.5	51°03.3	59°54.8	76°37.0	82°11.2	83°23.0	94°35.8
16	82°53.1	16.9'	07°41.2	-13.9'	54.1'	72°32.5	14°57.7	51°33.0	60°23.1	77°04.6	82°39.5	83°52.5	95°05.1
17	97°29.0	16.9'	07°27.3	-13.9'	54.1'	72°14.6	15°27.0	52°02.8	60°51.4	77°32.2	83°07.8	84°22.0	95°34.3
18	112°05.0	17.0'	$N07^{\circ}13.5$	-13.9'	54.1'	71°56.8	15°56.3	52°32.5	61°19.7	77°59.8	83°36.1	84°51.5	96°03.6
19	126°41.0	17.0'	06°59.6	-13.9'	54.1'	71°39.0	16°25.6	53°02.2	61°48.0	78°27.5	84°04.4	85°21.0	96°32.9
20	141°17.0	17.0'	06°45.6	-13.9'	54.0'	71°21.3	16°54.9	53°31.9	62°16.3	78°55.1	84°32.7	85°50.5	97°02.1
21	155°53.0	17.1'	06°31.7	-14.0'	54.0'	71°03.7	17°24.3	54°01.6	62°44.6	79°22.7	85°01.0	86°20.0	97°31.3
22	170°29.1	17.1'	06° 17.7	-14.0'	54.0'	70°46.1	17°53.6	54°31.3	63°12.8	79°50.3	85°29.3	86°49.5	98°00.6
23	185°05.2	17.1'	06°03.7	-14.0'	54.0'	70°28.5	18°23.0	55°01.0	63°41.1	80°17.9	85°57.6	87°19.0	98°29.8
30 th	SD	= 14.8	Mer. pass	s. 10:19									

Moon (1st Oct)

Lunar Distance	(abiaata	ما دن ب	10,000	براسيمط	ו ח ז	(میل	١
Lunar Distance	Lobiects	with	largest	hourly	1 I) d	eltal	

h		IVIOC	on (1st Oc	t)			Lunar	Distance	(object:	s with larges	t hourly L	.D delta)	
Tue	GHA	ν	Dec	d	HP	-Acrux	+Regulus	+Pollux	+Mars	+Betelgeuse	+Capella	+Jupiter	+Aldebaran
0	199°41.3	17.2'	N 05°49.7	-14.0'	54.0'	70°11.1	18°52.4	55°30.7	64°09.4	80°45.6	86°25.9	87°48.5	98°59.0
1	214°17.5	17.2'	05°35.7	-14.0'	54.0'	69°53.7	19°21.8	56°00.4	64°37.6	81°13.2	86°54.2	88° 18.0	99°28.2
2	228°53.7	17.2'	$05^{\circ}21.7$	-14.1'	54.0'	69°36.3	19°51.2	56°30.0	65°05.9	81°40.8	87°22.5	88°47.4	99°57.5
3	243°29.9	17.2'	05°07.6	-14.1'	54.0'	$69^{\circ}19.1$	20°20.6	56°59.7	65°34.1	82°08.4	87°50.7	89° 16.9	100°26.7
4	258°06.1	17.3'	04°53.5	-14.1'	54.0'	69°01.8	20°50.0	57°29.4	66°02.4	82°36.0	$88^{\circ}19.0$	89°46.4	100°55.8
5	272°42.3	17.3'	04°39.4	-14.1'	54.0'	68°44.7	21°19.4	57°59.0	66°30.6	83°03.7	88°47.3	90°15.8	101°25.0
6	287°18.6	17.3'	N04°25.3	-14.1'	54.0'	68°27.6	21°48.9	58°28.7	66°58.9	83°31.3	$89^{\circ}15.5$	90°45.3	101°54.2
7	301°54.9	17.3'	$04^{\circ}11.2$	-14.1'	54.0'	68° 10.6	22°18.3	58°58.3	67°27.1	83°58.9	89°43.8	91°14.7	102°23.4
8	316°31.2	17.3'	$03^{\circ}57.1$	-14.1'	54.0'	67°53.7	22°47.7	59°28.0	67°55.3	84°26.5	90°12.0	91°44.2	102°52.6
9	331°07.6	17.4'	03°43.0	-14.1'	54.0'	67°36.9	23°17.2	59°57.6	68°23.6	84°54.1	90°40.3	92°13.6	103°21.7
10	345°43.9	17.4'	03°28.8	-14.2'	54.0'	67°20.1	23°46.6	60°27.2	68°51.8	85°21.8	$91^{\circ}08.5$	92°43.0	103°50.9
11	0°20.3	17.4'	03°14.7	-14.2'	54.0'	67°03.4	24°16.1	60°56.9	69°20.0	85°49.4	91°36.8	93°12.5	104°20.0
12	14°56.7	17.4'	N03°00.5	-14.2'	53.9'	66°46.8	24°45.5	61°26.5	69°48.3	86°17.0	92°05.0	93°41.9	104°49.2
13	29°33.1	17.4'	02°46.3	-14.2'	53.9'	66°30.2							
14	44°09.5	17.4'	$02^{\circ}32.1$	-14.2'	53.9'	66°13.7	25°44.5	62°25.8	70°44.7	87°12.2	93°01.5	94°40.7	105°47.4
15	58°45.9	17.4'	$02^{\circ}18.0$	-14.2'	53.9'	65°57.4	26°13.9	62°55.4	71°12.9	87°39.8	93°29.7	95°10.1	106°16.6
16	73°22.4	17.5'	02°03.8	-14.2'	53.9'	65°41.1	26°43.4	63°25.0	$71^{\circ}41.1$	88°07.4	93°57.9	95°39.5	106°45.7
17	87°58.8	17.5'	$01^{\circ}49.6$	-14.2'	53.9'	65°24.8	27°12.9	63°54.6	72°09.3	88°35.0	94°26.1	96°09.0	107°14.8
18	102°35.3	17.5'	N01°35.3	-14.2'	53.9'	65°08.7	27°42.3	64°24.2	72°37.5	89°02.6	94°54.3	96°38.4	107°43.9
19	117°11.7	17.5'	$01^{\circ}21.1$	-14.2'	53.9'	64°52.6	28°11.8	64°53.8	73°05.7	89°30.2	95°22.5	97°07.8	108°13.0
20	131°48.2	17.5'	$01^{\circ}06.9$	-14.2'	53.9'	64°36.7	28°41.3	65°23.4	73°33.9	89°57.8	95°50.7	97° 37.2	108°42.1
21	146°24.7	17.5'	00°52.7	-14.2'	53.9'	'				New Moon ——		· '	·
22	161°01.2	17.5'	00°38.5	-14.2'	53.9'					New Moon ——			
23	175°37.7	17.5'	00°24.3	-14.2'	53.9'					New Moon ——			
1 st	SD	= 14.7	Mer. pas	s. 10:59									

n Moon (2nd Oct)

Wed	GHA	ν	Dec	d	HP	
0	190°14.2	17.5'	N00°10.1	-14.2'	53.9'	New Moon
1	204°50.7	17.5'	S 00°04.2	-14.2'	53.9'	New Moon
2	219°27.2	17.5'	00°18.4	-14.2'	53.9'	New Moon
3	234°03.7	17.5'	00°10.4	-14.2'	53.9'	New Moon
4	248°40.2	17.5'	00°46.8	-14.2'	53.9'	New Moon
5	263°16.7	17.5'	01°01.0	-14.2'	53.9'	New Moon
1						
6	277°53.2	17.5'	S 01°15.2	-14.2'	53.9'	New Moon
	292°29.7	17.5'	01°29.4	-14.2'	53.9'	New Moon
8	307°06.2	17.5'	01°43.6	-14.2'	53.9'	New Moon
9	321°42.7	17.5'	01°57.8	-14.2'	53.9'	New Moon
10	336°19.2	17.5'	02°12.0	-14.2'	53.9'	New Moon
11	350°55.6	17.5'	$02^{\circ}26.1$	-14.2'	53.9'	New Moon
12	5°32.1	17.5'	S 02°40.3	-14.2'	53.9'	New Moon
13	20°08.6	17.4'	02°54.4	-14.1'	53.9'	New Moon
14	34°45.0	17.4'	03°08.6	-14.1'	53.9'	New Moon
15	49°21.4	17.4'	03°22.7	-14.1'	53.9'	New Moon
16	63°57.9	17.4'	03°36.8	-14.1'	53.9'	New Moon
17	78°34.3	17.4'	03°50.9	-14.1'	53.9'	New Moon
18	93°10.7	17.4'	S 04°05.0	-14.1'	53.9'	New Moon
19	107°47.0	17.4'	04°19.1	-14.1'	53.9'	New Moon
20	122°23.4	17.3'	04°33.2	-14.0'	53.9'	New Moon
21	136°59.8	17.3'	04°47.2	-14.0'	53.9'	New Moon
22	151°36.1	17.3'	$05^{\circ}01.2$	-14.0'	53.9'	New Moon
23	166°12.4	17.3'	$05^{\circ}15.2$	-14.0'	53.9'	New Moon
2 nd	SD	= 14.7'	Mer. pas	s. 11:37		

-13.3'

 $10^{\circ}44.3$

Mer. pass. 12:16

23

3rd

 $156^{\circ}35.7$

16.5'

SD = 14.7'

53.9'

h		Мос	on (3 rd Oc	t)		Lunar D	istance (ob	jects wit	h largest	hourly L	D delta)
Thu	GHA	ν	Dec	d	HP	-Altair	-Rigil Kent.	-Hadar	-Antares	-Venus	-Spica
0	180°48.7	17.3'	S 05°29.2	-14.0'	53.9'			New M	100n ———		_
1	195°25.0	17.2'	05°43.2	-14.0'	53.9'				100n ———		-
2	210°01.2	17.2'	05°57.2	-13.9'	53.9'			— New N	100n		-
3	224°37.4	17.2'	$06^{\circ}11.1$	-13.9'	53.9'			— New N	100n		-
4	239°13.6	17.2'	06°25.0	-13.9'	53.9'				100n		-
5	253°49.8	17.2'	06°38.9	-13.9'	53.9'			New M	100n		-
6	268°26.0	17.1'	S 06°52.8	-13.8'	53.9'			New N	100n		_
7	283°02.1	17.1'	07°06.6	-13.8'	53.9'			New N	100n		_
8	297°38.2	17.1'	07°20.5	-13.8'	53.9'			New N	100n ———		-
9	312°14.3	17.0'	07°34.2	-13.8'	53.9'			— New N	100n		-
10	326°50.3	17.0'	07°48.0	-13.7'	53.9'			— New N	100n		-
11	341°26.3	17.0'	$08^{\circ}01.8$	-13.7'	53.9'			— New N	100n		-
12	356°02.3	16.9'	S 08°15.5	-13.7'	53.9'			New M	100n		-
13	10°38.2	16.9'	08°29.2	-13.7'	53.9'			New N	100n ———		-
14	25°14.1	16.9'	08°42.8	-13.6'	53.9'			New N	100n ———		-
15	39°50.0	16.8'	08°56.5	-13.6'	53.9'			— New N	100n ———		-
16	54°25.8	16.8'	$09^{\circ}10.1$	-13.6'	53.9'			New M	100n		_
17	69°01.6	16.8'	09°23.6	-13.5'	53.9'	100°22.6	53°56.1	51°56.7	49°10.9	21°57.6	3°18.5
18	83°37.4	16.7'	S 09°37.2	-13.5'	53.9'	99°58.2	53°37.1	51°39.8	48°41.3	21°31.3	2°49.2
19	98°13.1	16.7'	09°50.7	-13.5'	53.9'	99°33.9	53°18.3	51°23.0	48°11.7	21°05.0	2°20.1
20	112°48.8	16.7'	$10^{\circ}04.1$	-13.4'	53.9'	99°09.5	52°59.5	51°06.3	47°42.0	20°38.7	1°51.2
21	127°24.5	16.6'	$10^{\circ}17.6$	-13.4'	53.9'	98°45.1	52°40.9	50°49.8	47° 12.4	20°12.3	1°22.8
22	142°00.1	16.6'	10°31.0	-13.4'	53.9'	98°20.7	52°22.4	50°33.4	46°42.8	19°46.0	
22	1560257	16 E'	100112	12 2'	E2 0'	070 56 2	E20040	E00170	160122	100107	

98°45.1 98°20.7 97°56.3

 $52^{\circ}04.0$

 $50^{\circ}17.2$

46°13.2

 $19^{\circ}19.7$

h		Моо	n (4 th Oc	t)		Lunar	Distanc	e (objects v	with larg	est hourly	y LD del	ta)
Fri	GHA	ν	Dec	d	HP	-Fomalhaut	-Altair	-Rigil Kent.	-Hadar	-Antares	-Venus	+Spica
0	171°11.2	16.5'	S 10°57.7	-13.3'	53.9'		97°31.8	51°45.8	50°01.1	45°43.6	18°53.5	
1	185°46.7	16.4'	$11^{\circ}11.0$	-13.3'	53.9'		97°07.4	51°27.6	49°45.1	45°13.9	18°27.2	
2	200°22.1	16.4'	11°24.2	-13.2'	53.9'		96°42.9	51°09.6	49°29.4	44°44.3	18°00.9	
3	214°57.5	16.3'	11°37.4	-13.2'	53.9'		96°18.4	50°51.7	49° 13.7	44°14.7	17°34.7	_
4	229°32.8	16.3'	$11^{\circ}50.6$	-13.1'	54.0'		95°53.9	50°34.0	48°58.3	43°45.0	17°08.4	2°12.1
5	244°08.1	16.2'	$12^{\circ}03.7$	-13.1'	54.0'		95°29.4	50°16.4	48°42.9	43°15.4	16°42.2	2°41.2
6	258°43.4	16.2'	S 12°16.8	-13.0'	54.0'		95°04.9	49°58.9	48°27.8	42°45.7	16°16.0	3° 10.5
7	273°18.6	16.1'	12°29.9	-13.0'	54.0'		94°40.4	49°41.5		42°16.1	15°49.8	3°39.9
8	287°53.7	16.1'	12°42.9	-13.0'	54.0'		94° 15.8	49°24.3		41°46.4	15°23.6	4°09.3
9	302°28.8	16.0'	12°55.8	-12.9'	54.0'		93°51.3	49°07.3		41°16.8	14°57.5	4°38.8
10	317°03.9	16.0'	13°08.7	-12.9'	54.0'		93°26.7	48°50.3		40°47.1	14°31.4	5°08.4
11	331°38.9	15.9'	13°21.6	-12.8'	54.0'		93°02.2	48°33.6		40°17.4	14°05.3	5°37.9
12	346°13.8	15.9'	S 13°34.4	-12.8'	54.0'		92°37.6	48°17.0		39°47.8	13°39.2	6°07.5
13	0°48.7	15.8'	13°47.2	-12.7'	54.0'	119°58.2	92°13.0	48°00.5		39°18.1	13°13.1	6°37.1
14	15°23.5	15.8'	13°59.9	-12.7'	54.0'	119°30.5	91°48.4	47°44.2		38°48.4	12°47.1	7°06.7
15	29°58.3	15.7'	14°12.6	-12.6'	54.0'	119°02.8	91°23.8	47°28.1		38°18.7	12°21.2	7°36.4
16	44°33.0	15.7'	14°25.2	-12.6'	54.0'	118°35.0	90°59.2	47°12.1		37°49.0	11°55.2	8°06.0
17	59°07.7	15.6'	$14^{\circ}37.7$	-12.5'	54.0'	118°07.3	90°34.6	46°56.3		37°19.3	11°29.4	8°35.7
18	73°42.3	15.5'	S 14°50.3	-12.5'	54.0'	117° 39.5	90°10.0	46°40.6		36°49.6	11°03.5	9°05.4
19	88°16.8	15.5'	15°02.7	-12.4'	54.0'	117° 11.7	89°45.4	46°25.1		36°19.9	10°37.8	9°35.0
20	102°51.3	15.4'	$15^{\circ}15.1$	-12.4'	54.0'	116° 43.9	89° 20.8	46°09.8		35°50.1	10°12.1	10°04.7
21	117°25.7	15.4'	$15^{\circ}27.5$	-12.3'	54.1'	116° 16.0	88°56.1	45°54.7		35°20.4	9°46.5	10°34.4
22	132°00.1	15.3'	15°39.8	-12.2'	54.1'	115°48.1	88°31.5			34°50.7	9°21.0	11°04.1
23	146°34.4	15.2'	15°52.0	-12.2'	54.1'	115° 20.2	88°06.9			34°20.9	8°55.6	11°33.9
4 th	SD	= 14.7	Mer. pas	s. 12:57								

h		Моо	on (5 th Oc	t)			Lunar Dist	ance (obj	ects with	largest	hourly L	.D delta)	
Sat	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Achernar	-Altair	-Antares	-Venus	+Spica	+Arcturus
0	161°08.6	15.2'	S 16°04.2	-12.1'	54.1'		114°52.3		87°42.2	33°51.2	8°30.3	12°03.6	
1	175°42.8	15.1'	$16^{\circ}16.3$	-12.1'	54.1'		114°24.4		87°17.6	33°21.4	8°05.2	12°33.3	
2	190°16.9	15.0'	16°28.4	-12.0'	54.1'		113°56.4		86°52.9	32°51.7	7°40.2	13°03.1	
3	204°50.9	15.0'	16°40.4	-11.9'	54.1'		113°28.5		86°28.3	32°21.9	7°15.4	13°32.8	
4	219°24.9	14.9'	$16^{\circ}52.3$	-11.9'	54.1'		113°00.5		86°03.6	31°52.1	6°50.9	14°02.6	
5	233°58.8	14.8'	17°04.2	-11.8'	54.1'		112°32.4		85°39.0	31°22.3	6°26.7	14°32.3	
6	248°32.6	14.8'	S 17°16.0	-11.7'	54.1'		112°04.4		85°14.3	30°52.5	6°02.8	15°02.1	
7	263°06.4	14.7'	17°27.7	-11.7'	54.1'		111°36.3		84°49.7	30°22.7	5°39.3	15°31.9	
8	277°40.1	14.6'	17°39.4	-11.6'	54.2'		111°08.3		84°25.0	29°52.9	5°16.3	16°01.7	
9	292°13.7	14.6'	17°51.0	-11.5'	54.2'		110°40.2		84°00.4	29°23.1	4°54.0	16°31.5	
10	306°47.3	14.5'	18°02.6	-11.5'	54.2'		110°12.1		83°35.7	28°53.3	4°32.5	17°01.3	
11	321°20.8	14.4'	$18^{\circ}14.1$	-11.4'	54.2'		109°43.9		83°11.1	28°23.4		17°31.2	
12	335°54.2	14.3'	S 18°25.5	-11.3'	54.2'		109°15.8		82°46.5	27°53.6		18°01.0	
13	350°27.5	14.3'	18°36.8	-11.3'	54.2'		108°47.6	103°18.1	82°21.8	27°23.7		18° 30.8	
14	5°00.8	14.2'	18°48.1	-11.2'	54.2'		108°19.4	103°03.0	81°57.2	26°53.9		19°00.7	38° 14.7
15	19°34.0	14.1'	18°59.3	-11.1'	54.2'		107°51.2	102°47.9	81°32.5	26°24.0		19°30.6	38°30.0
16	34°07.1	14.0'	19°10.4	-11.0'	54.2'	119°39.9	107°23.0	102°32.7	81°07.9	25°54.1		20°00.4	38° 45.5
17	48°40.1	14.0'	19°21.4	-11.0'	54.2'	119°09.9	106°54.7	102° 17.4	80°43.3	25°24.2		20°30.3	39°01.3
18	63°13.1	13.9'	S 19°32.4	-10.9'	54.3'	118°39.8	106°26.5	102°02.1	80°18.7	24°54.3		21°00.2	39° 17.3
19	77°46.0	13.8'	19°43.3	-10.8'	54.3'	118°09.8	105°58.2	101°46.8	79°54.1	24°24.4		21°30.1	39°33.6
20	92°18.8	13.7'	$19^{\circ}54.1$	-10.7'	54.3'	117°39.7	105°29.9	101°31.4	79°29.5	23°54.5		22°00.0	39°50.1
21	106°51.5	13.7'	20°04.9	-10.7'	54.3'	117°09.6	105°01.6	101°16.0	79°04.9	23°24.6		22°30.0	40°06.8
22	121°24.2	13.6'	20°15.5	-10.6'	54.3'	116°39.5	104°33.3	101°00.5	78°40.3	22°54.6		22°59.9	40°23.7
23	135°56.8	13.5'	$20^{\circ}26.1$	-10.5'	54.3'	116°09.4	104°04.9	100°45.0	78°15.7	22°24.7		23°29.8	40°40.8
5 th	SD	= 14.7'	Mer. pas	s. 13:39									

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	-Antares	+Venus	+Spica	+Arcturus	+Sun
0	150°29.3	13.4'	S 20°36.6	-10.4'	54.3'	115°39.3	103°36.5	77°51.1	21°54.7		23°59.8	40°58.2	
1	165°01.7	13.3'	20°47.0	-10.3'	54.3'	115°09.2	103°08.2	77°26.6	21°24.7		24°29.8	41°15.7	
2	179°34.0	13.3'	20°57.4	-10.2'	54.4'	114°39.0	102°39.8	77°02.0	20°54.7		24°59.8	41°33.5	
3	194°06.3	13.2'	$21^{\circ}07.6$	-10.2'	54.4'	114°08.9	102°11.3	76°37.5	20°24.7		25°29.8	41°51.4	
4	208°38.4	13.1'	$21^{\circ}17.8$	-10.1'	54.4'	113°38.7	101°42.9	76°12.9	19°54.7	5°17.3	25°59.8	42°09.6	
5	223°10.5	13.0'	$21^{\circ}27.9$	-10.0'	54.4'	113°08.5	101°14.5	75°48.4	19°24.7	5°40.5	26°29.8	42°27.9	
6	237°42.5	12.9'	S 21°37.8	-9.9'	54.4'	112°38.3	100°46.0	75°23.9	18°54.7	6°04.2	26°59.8	42°46.4	
7	252°14.5	12.8'	21°47.7	-9.8'	54.4'	112°08.1	100° 17.5	74°59.4	18°24.6	6°28.4	27°29.9	43°05.1	
8	266°46.3	12.8'	21°57.6	-9.7'	54.4'	111°37.9	99°49.0	74°34.9	17°54.6	6°52.9	27°59.9	43°24.0	
9	281°18.1	12.7'	22°07.3	-9.6'	54.4'	111°07.7	99°20.5	74° 10.4	17°24.5	7°17.7	28°30.0	43°43.1	
10	295°49.7	12.6'	22°16.9	-9.5'	54.5'	110°37.5	98°52.0	73°46.0	16°54.4	7°42.8	29°00.1	44°02.3	
11	310°21.3	12.5'	22°26.4	-9.4'	54.5'	110°07.2	98°23.4	73°21.6	16°24.3	8°08.1	29°30.2	44°21.7	
12	324°52.9	12.4'	S 22°35.9	-9.3'	54.5'	109°36.9	97°54.8	72°57.1	15°54.2	8°33.6	30°00.3	44°41.3	
13	339°24.3	12.3'	22°45.2	-9.3'	54.5'	109°06.7	97°26.2	72°32.7	15°24.1	8°59.2	30°30.4	45°01.0	41°03.8
14	353°55.6	12.3'	22°54.5	-9.2'	54.5'	108°36.4	96° 57.6	72°08.3	14°53.9	9°25.0	31°00.5	45°20.9	41°31.4
15	8°26.9	12.2'	23°03.6	-9.1'	54.5'	108°06.1	96°29.0	71°44.0	14°23.8	9°50.9	31°30.7	45°40.9	41°59.1
16	22°58.0	12.1'	$23^{\circ}12.7$	-9.0'	54.6'	107°35.7	96°00.4	$71^{\circ}19.6$	13°53.6	10°17.0	32°00.8	46°01.1	42°26.9
17	37°29.1	12.0'	$23^{\circ}21.6$	-8.9'	54.6'	107°05.4	95°31.7	70°55.3	13°23.4	10°43.1	32°31.0	46°21.5	42°54.6
18	52°00.1	11.9'	S 23°30.5	-8.8'	54.6'	106°35.1	95°03.1	70°31.0	12°53.2	11°09.4	33°01.2	46°41.9	43°22.3
19	66°31.0	11.8'	23°39.3	-8.7'	54.6'	106°04.7	94°34.4	70°06.7	12°23.0	11°35.7	33°31.4	47°02.6	43°50.1
20	81°01.9	11.7'	23°47.9	-8.5'	54.6'	105°34.3	94°05.7	69°42.4	11°52.8	12°02.1	34°01.7	47°23.4	44°17.8
21	95°32.6	11.7'	23°56.5	-8.4'	54.6'	105°03.9	93°37.0	69°18.2	11°22.6	12°28.6	34°31.9	47°44.3	44°45.6
22	110°03.2	11.6'	24°04.9	-8.3'	54.6'	104°33.5	93°08.2	68°53.9	10°52.3	12°55.1	35°02.2	48°05.3	45°13.4
23	124°33.8	11.5'	24°13.2	-8.2'	54.7'	104°03.1	92°39.5	68°29.7	10°22.0	13°21.7	35°32.4	48°26.5	45°41.3
6 th	SD	= 14.8'	Mer. pas	s. 14:25					Sun SD =	= 16.0′			

h		Моог	n (7 th Oc	t)			Lunar Dist	ance (ol	ojects with	largest	hourly L	.D delta)	
Mon	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	± Antares	+Venus	+Spica	+Sun	+Arcturus
0	139°04.3	11.4'	S 24°21.5	-8.1'	54.7'	103°32.6	92°10.7	68°05.6	9°51.7	13°48.4	36°02.7	46°09.1	48° 47.8
1	153°34.7	11.3'	24°29.6	-8.0'	54.7'	103°02.2	91°41.9	67°41.4	9°21.4	14°15.1	36°33.0	46°36.9	49°09.3
2	168°05.0	11.2'	24°37.6	-7.9'	54.7'	102°31.7	91°13.1	67° 17.3	8°51.1	14°41.8	37°03.4	47°04.8	49°30.8
3	182°35.2	11.1'	24°45.5	-7.8'	54.7'	102°01.2	90°44.3	66°53.2	8°20.8	15°08.6	37°33.7	47°32.7	49°52.5
4	197°05.4	11.0'	24°53.3	-7.7'	54.8'	101°30.7	90°15.5	66°29.1	7°50.4	15°35.5	38°04.1	48°00.6	50° 14.4
5	211°35.4	11.0'	25°01.0	-7.6'	54.8'	101°00.2	89°46.6	66°05.1	7°20.0	16°02.4		48°28.5	50° 36.3
6	226°05.4	10.9'	S 25°08.6	-7.5'	54.8'	100°29.6	89°17.8	65°41.1	6°49.7	16°29.3		48°56.4	50°58.4
7	240°35.2	10.8'	25°16.0	-7.3'	54.8'	99°59.1	88°48.9	65°17.1	6° 19.3	16°56.3		49°24.4	51°20.5
8	255°05.0	10.7'	25°23.4	-7.2'	54.8'	99°28.5	88°20.0	64°53.2	5°48.8	17°23.3		49°52.4	51°42.8
9	269°34.7	10.6'	25°30.6	-7.1'	54.8'	98°57.9	87°51.1	64°29.3	5° 18.4	17°50.3		50°20.4	52°05.2
10	284°04.4	10.5'	25°37.7	-7.0'	54.9'	98°27.3	87°22.1	64°05.4	4°47.9	18°17.4		50°48.4	52° 27.7
11	298°33.9	10.5'	25°44.7	-6.9'	54.9'	97°56.6	86°53.2	63°41.6	4° 17.5	18°44.5		51°16.4	52°50.3
12	313°03.4	10.4'	S 25°51.6	-6.7'	54.9'	97°26.0	86°24.2	63° 17.8	3°47.0	19°11.7		51°44.4	53° 13.1
13	327°32.7	10.3'	25°58.3	-6.6'	54.9'	96°55.3	85°55.2	62°54.0	3° 16.5	19°38.9		52° 12.5	53°35.9
14	342°02.0	10.2'	26°04.9	-6.5'	54.9'	96°24.6	85°26.2	62°30.3	2°46.0	20°06.1		52°40.6	53°58.8
15	356°31.2	10.1'	26°11.4	-6.4'	55.0'	95°53.9	84°57.2	62°06.6	2° 15.5	20°33.3		53°08.7	54°21.8
16	11°00.3	10.0'	26°17.8	-6.3'	55.0'	95°23.2	84°28.2	61°43.0	1°45.0	21°00.6		53°36.8	54°45.0
17	25°29.4	10.0'	26°24.1	-6.1'	55.0'	94°52.4	83°59.2	61°19.4	1°14.6	21°27.9		54°05.0	55°08.2
18	39°58.3	9.9'	S 26°30.2	-6.0'	55.0'	94°21.7	83°30.1	60°55.9	0°44.4	21°55.3		54°33.1	55°31.5
19	54°27.2	9.8'	26°36.2	-5.9'	55.0'	93°50.9	83°01.0	60°32.4		22°22.6		55°01.3	55°54.9
20	68°56.0	9.7'	$26^{\circ}42.1$	-5.7'	55.1'	93°20.1	82°31.9	60°08.9		22°50.0		55°29.5	56°18.4
21	83°24.7	9.6'	26°47.8	-5.6'	55.1'	92°49.2	82°02.8	59°45.5		23°17.5		55°57.7	56°42.0
22	97°53.3	9.5'	26°53.5	-5.5'	55.1'	92°18.4	81°33.7	59°22.1		23°44.9		56° 26.0	57°05.7
23	112°21.9	9.5'	26°58.9	-5.4'	55.1'	91°47.5	81°04.5	58° 58.8	1°50.5	24°12.4		56°54.3	57° 29.5
7 th	SD	= 14.9'	Mer. pass	. 15:14					Sun SD =	16.0'			

	h	Moon (8 th Oct)	Lunar Distance (objects with largest hourly LD delta)
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Tue	GHA	ν	Dec	d	HP	-Saturn	-Achernar	-Fomalhaut	-Altair	+Antares	+Venus	+Sun	+Arcturus
0	126°50.3	9.4'	S 27°04.3	-5.2'	55.2'	91°16.6	87°29.1	80°35.3	58°35.6	2°21.2	24°39.9	57°22.5	57°53.3
1	141°18.7	9.3'	27°09.5	-5.1'	55.2'	90°45.7	87° 12.4	80°06.2	58°12.4	2°51.9	25°07.5	57°50.9	58°17.3
2	155°47.0	9.2'	$27^{\circ}14.6$	-5.0'	55.2'	90°14.7	86°55.8	79°37.0	57°49.3	3°22.6	25°35.0	58°19.2	58°41.3
3	170°15.3	9.2'	$27^{\circ}19.6$	-4.8'	55.2'	89°43.8	86°39.1	79°07.8	57°26.2	3°53.4	26°02.6	58°47.6	59°05.4
4	184°43.4	9.1'	27°24.4	-4.7'	55.2'	89°12.8	86°22.5	78°38.5	57°03.2	4°24.2	26°30.3	59°15.9	59°29.6
5	199°11.5	9.0'	$27^{\circ}29.1$	-4.5'	55.3'	88°41.8	86°05.8	78°09.3	56°40.2	4°55.1	26°57.9	59°44.3	59°53.9
6	213°39.5	8.9'	S 27°33.6	-4.4'	55.3'	88°10.7	85°49.2	77°40.0	56°17.3	5°26.0	27°25.6	60°12.8	60°18.3
7	228°07.5	8.9'	27°38.0	-4.3'	55.3'	87°39.7	85°32.5	77°10.7	55°54.5	5°56.9	27°53.3	60°41.2	60°42.7
8	242°35.3	8.8'	27°42.3	-4.1'	55.3'	87°08.6	85° 15.9	76°41.4	55°31.8	6°27.8	28°21.1	61°09.7	61°07.2
9	257°03.1	8.7'	27°46.4	-4.0'	55.4'	86°37.5	84°59.2	76°12.1	55°09.1	6°58.7	28°48.8	61°38.2	61°31.8
10	271°30.8	8.7'	27°50.4	-3.8'	55.4'	86°06.3	84°42.6	75°42.8	54°46.5	7°29.7	29°16.7	62°06.7	61°56.5
11	285°58.5	8.6'	27°54.2	-3.7'	55.4'	85°35.2	84°26.0	75°13.5	54°23.9	8°00.7	29°44.5	62°35.3	62°21.2
12	300°26.1	8.5'	S 27°57.9	-3.6'	55.4'	85°04.0	84°09.3	74°44.1	54°01.5	8°31.8	30°12.3	63°03.9	62°46.0
13	314°53.6	8.4'	28°01.5	-3.4'	55.5'	84°32.8	83°52.7	74°14.7	53°39.1	9°02.8	30°40.2	63°32.5	63°10.9
14	329°21.0	8.4'	28°04.9	-3.3'	55.5'	84°01.6	83°36.1	73°45.3	53°16.8	9°33.9	31°08.2	64°01.1	63°35.9
15	343°48.4	8.3'	28°08.2	-3.1'	55.5'	83°30.3	83° 19.5	73°15.9	52°54.6	10°05.0	31°36.1	64°29.7	64°00.9
16	358°15.8	8.3'	28°11.3	-3.0'	55.5'	82°59.0	83°02.9	72°46.5	52°32.5	10°36.1	32°04.1	64°58.4	64°26.0
17	12°43.0	8.2'	28°14.3	-2.8'	55.6'	82°27.7	82°46.3	72°17.1	52°10.4	11°07.3	32°32.1	65°27.1	64°51.2
18	27°10.2	8.1'	S 28°17.1	-2.7'	55.6'	81°56.4	82° 29.7	71°47.6	51°48.5	11°38.5	33°00.1	65°55.9	65°16.4
19	41°37.3	8.1'	$28^{\circ}19.7$	-2.5'	55.6'	81°25.0	82° 13.2	71°18.1	51°26.6	12°09.7	33°28.2	66°24.6	65°41.7
20	56°04.4	8.0'	28°22.3	-2.4'	55.6'	80°53.6	81°56.6	70°48.6	51°04.9	12°41.0	33°56.3	66°53.4	66°07.1
21	70°31.4	8.0'	28°24.6	-2.2'	55.7'	80°22.2	81°40.1	70°19.1	50°43.2	13°12.2	34°24.4	67°22.2	66°32.5
22	84°58.4	7.9'	28°26.9	-2.1'	55.7'	79°50.7	81°23.6	69°49.6	50°21.6	13°43.5	34°52.6	67°51.1	66°58.0
23	99°25.3	7.8'	28°28.9	-1.9'	55.7'	79°19.3	81°07.1	69°20.1	50°00.2	14°14.9	35°20.8	68°19.9	67°23.5
8 th	SD =	= 15.0′	Mer. pas	s. 16:07	,				Sun SD	= 16.0			

Moon (9th Oct)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Achernar	-Saturn	-Fomalhaut	-Altair	+Antares	+Venus	+Arcturus	+Sun
0	113°52.1	7.8'	S 28°30.9	-1.8'	55.7'	80°50.6	78°47.7	68°50.5	49°38.8	14°46.2	35°49.0	67°49.2	68°48.8
1	128°18.9	7.7'	28°32.6	-1.6'	55.8'	80°34.1	78°16.2	68°21.0	49° 17.6	15°17.6	36° 17.2	68°14.8	69°17.8
2	142°45.7	7.7'	28°34.2	-1.5'	55.8'	80°17.7	77°44.6	67°51.4	48° 56.5	15°49.0	36° 45.5	68°40.6	69°46.7
3	157°12.3	7.6'	28°35.7	-1.3'	55.8'	80°01.2	77°13.1	67°21.8	48° 35.5	16°20.5	37°13.8	69°06.4	70°15.7
4	171°39.0	7.6'	28°37.0	-1.1'	55.9'	79°44.8	76°41.4	66°52.2	48°14.6	16°52.0	37°42.2	69°32.3	70°44.7
5	186°05.6	7.5'	28°38.1	-1.0'	55.9'	79°28.4	76°09.8	66°22.6	47°53.9	17°23.5	38° 10.6	69°58.2	71°13.8
6	200°32.1	7.5'	S 28°39.1	-0.8'	55.9'	79°12.1	75°38.1	65°53.0	47° 33.2	17°55.0	38° 39.0	70°24.2	71°42.8
7	214°58.6	7.5'	28°40.0	-0.7'	55.9'	78°55.7	75°06.4	65°23.3	47° 12.8	18°26.6	39°07.4	70°50.2	72°12.0
8	229°25.1	7.4'	28°40.6	-0.5'	56.0'	78°39.4	74°34.6	64°53.6	46°52.4	18°58.2	39°35.9	71°16.3	72°41.1
9	243°51.5	7.4'	28°41.1	-0.4'	56.0'	78°23.2	74°02.9	64°24.0	46°32.2	19°29.8	40°04.4	71°42.5	73°10.3
10	258°17.9	7.3'	28°41.5	-0.2'	56.0'	78°06.9	73°31.1	63°54.3	46°12.1	20°01.5	40°32.9	72°08.7	73°39.5
11	272°44.2	7.3'	28°41.7	-0.0'	56.1'	77°50.7	72°59.2	63°24.6	45°52.2	20°33.2	41°01.5	72°35.0	74°08.7
12	287°10.5	7.3'	S 28°41.7	0.1'	56.1'	77°34.5	72°27.3	62°54.9	45°32.4	21°04.9	41°30.1	73°01.3	74°38.0
13	301°36.7	7.2'	28°41.6	0.3'	56.1'	77°18.3	71°55.4	62°25.2	45°12.8	21°36.6	41°58.8	73°27.7	75°07.3
14	316°03.0	7.2'	28°41.3	0.4'	56.1'	77°02.2	71°23.5	61°55.4	44°53.4	22°08.4	42°27.4	73°54.1	75°36.6
15	330°29.2	7.2'	28°40.9	0.6'	56.2'	76°46.1	70°51.5	61°25.7	44°34.1	22°40.3	42°56.1	74°20.6	76°05.9
16	344°55.3	7.1'	28°40.3	0.8'	56.2'	76°30.0	70°19.5	60°55.9	44°15.0	23°12.1	43°24.9	74°47.1	76°35.3
17	359°21.4	7.1'	28°39.5	0.9'	56.2'	76°14.0	69°47.5	60°26.2	43°56.0	23°44.0	43°53.7	75° 13.7	77°04.8
18	13°47.5	7.1'	S 28°38.6	1.1'	56.3'	75°58.0	69°15.4	59°56.4	43°37.3	24°15.9	44°22.5	75°40.4	77°34.2
19	28°13.6	7.0'	28°37.5	1.3'	56.3'	75°42.1	68°43.3	59°26.6	43° 18.7	24°47.9	44°51.3	76°07.1	78°03.7
20	42°39.7	7.0'	28°36.2	1.4'	56.3'	75°26.1	68°11.2	58° 56.8	43°00.3	25°19.9	45°20.2	76°33.8	78°33.2
21	57°05.7	7.0'	28°34.8	1.6'	56.4'	75°10.3	67°39.0	58°27.0	42°42.2	25°51.9	45°49.1	77°00.6	79°02.8
22	71°31.7	7.0'	28°33.2	1.8'	56.4'	74°54.4	67°06.8	57° 57.2	42°24.2	26°24.0	46° 18.1	77°27.5	79°32.4
23	85°57.7	7.0'	28°31.4	1.9'	56.4'	74°38.7	66°34.6	57° 27.4	42°06.4	26°56.1	46°47.1	77°54.4	80°02.0
9 th	SD :	= 15.2 [']	Mer. pass	s. 17:03	1				Sun SD	= 16.0'			

h		Moon	n (10 th Oc	ct)			Lunar D	oistance (ob	jects wi	th largest	hourly L	D delta)	
Thu	GHA	ν	Dec	d	HP	-Achernar	-Saturn	-Fomalhaut	-Altair	+Antares	+Venus	+Arcturus	+Sun
0	100°23.6	6.9'	S 28°29.5	2.1'	56.5'	74°22.9	66°02.3	56° 57.6	41°48.8	27°28.2	47°16.1	78°21.3	80°31.7
1	114°49.6	6.9'	28°27.4	2.2'	56.5'	74°07.2	65°30.0	56°27.8	41°31.5	28°00.4	47° 45.2	78°48.3	81°01.4
2	129°15.5	6.9'	28°25.2	2.4'	56.5'	73°51.6	64°57.7	55° 57.9	41°14.3	28°32.6	48° 14.3	79° 15.4	81°31.2
3	143°41.4	6.9'	28°22.8	2.6'	56.6'	73°36.0	64°25.3	55°28.1	40°57.5	29°04.8	48°43.4	79°42.4	82°00.9
4	158°07.3	6.9'	28°20.2	2.7'	56.6'	73°20.5	63°52.9	54°58.2	40°40.8	29°37.1	49°12.6	80°09.6	82°30.7
5	172°33.2	6.9'	28°17.5	2.9'	56.6'	73°05.0	63°20.4	54° 28.4	40°24.4	30°09.4	49°41.8	80°36.8	83°00.6
6	186°59.1	6.9'	S 28°14.6	3.1'	56.7'	72°49.5	62°47.9	53°58.6	40°08.2	30°41.8	50°11.0	81°04.0	83°30.5
7	201°25.0	6.9'	28°11.5	3.2'	56.7'	72°34.1	62°15.4	53°28.7	39°52.3	31°14.1	50°40.3	81°31.3	84°00.4
8	215°50.8	6.9'	28°08.2	3.4'	56.7'	72°18.8	61°42.8	52°58.9	39°36.6	31°46.6	51°09.6	81°58.6	84°30.4
9	230°16.7	6.9'	28°04.8	3.6'	56.8'	72°03.6	61°10.2	52°29.0	39°21.2	32°19.0	51°39.0	82°25.9	85°00.4
10	244°42.6	6.9'	28°01.3	3.7'	56.8'	71°48.3	60°37.6	51°59.2	39°06.1	32°51.5	52°08.4	82°53.3	85°30.4
11	259°08.4	6.9'	27°57.5	3.9'	56.8'	71°33.2	60°04.9	51°29.3		33°24.1	52°37.8	83°20.8	86°00.5
12	273°34.3	6.9'	S 27°53.6	4.1'	56.9'	71°18.1	59°32.2	50°59.5		33°56.7	53°07.3	83°48.3	86°30.6
13	288°00.1	6.9'	27°49.6	4.2'	56.9'	71°03.1	58°59.4	50°29.7		34°29.3	53°36.9	84° 15.8	87°00.7
14	302°26.0	6.9'	27°45.3	4.4'	56.9'		58°26.6	49°59.9		35°01.9	54°06.4	84°43.4	87°30.9
15	316°51.9	6.9'	27°40.9	4.6'	57.0'		57°53.8	49°30.0		35°34.6	54°36.0	85°11.0	88°01.1
16	331°17.7	6.9'	27°36.4	4.7'	57.0'		57°20.9	49°00.2		36°07.4	55°05.7	85°38.7	88°31.4
17	345°43.6	6.9'	27°31.6	4.9'	57.0'		56°48.0	48°30.4		36°40.1	55°35.3	86°06.4	89°01.7
18	0°09.5	6.9'	S 27°26.7	5.1'	57.1'		56°15.0	48°00.7		37°12.9	56°05.1	86°34.1	89°32.1
19	14°35.4	6.9'	27°21.7	5.2'	57.1'		55°42.1	47°30.9		37°45.8	56° 34.8	87°01.9	90°02.5
20	29°01.3	6.9'	27°16.4	5.4'	57.1'		55°09.0	47°01.1		38°18.7	57°04.6	87° 29.7	90°32.9
21	43°27.2	6.9'	$27^{\circ}11.0$	5.6'	57.2'		54°35.9	46°31.4		38°51.6	57°34.5	87° 57.6	91°03.4
22	57°53.2	7.0'	$27^{\circ}05.5$	5.7'	57.2'		54°02.8	46°01.7		39°24.6	58°04.4	88°25.5	91°33.9
23	72°19.1	7.0'	26°59.8	5.9'	57.2'		53°29.7	45°32.0		39°57.6	58°34.3	88°53.4	92°04.4
10 th	SD =	= 15.4′	Mer. pass	s. 17:5	9				Sun SD	= 16.0'			

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

Fri	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Antares	+Rigil Kent.	+Venus	+Hadar	+Arcturus	+Sun				
0	86°45.1	7.0'	S 26°53.9	6.0'	57.3'	52°56.5	45°02.3	40°30.7	58° 32.0	59°04.3	62°54.9	89°21.4	92°35.0				
1	101°11.1	7.0'	26°47.8	6.2'	57.3'	52°23.2	44°32.6	41°03.8	58° 54.8	59°34.3	63° 17.8	89°49.4	93°05.6				
2	115°37.1	7.0'	26°41.6	6.4'	57.3'	51°49.9	44°03.0	41°36.9	59° 17.7	60°04.3	63°40.8	90°17.4	93°36.3				
3	130°03.1	7.1'	26°35.2	6.5'	57.4'	51°16.6	43°33.4	42°10.1	59° 40.7	60°34.4	64°03.9	90°45.5	94°07.0				
4	144°29.2	7.1'	26°28.7	6.7'	57.4'	50°43.3	43°03.8	42°43.3	60°03.9	61°04.6	64°27.1	91°13.6	94°37.8				
5	158°55.2	7.1'	26°22.0	6.9'	57.5'	50°09.9	42°34.3	43°16.6	60°27.2	61°34.7	64°50.4	91°41.7	95°08.6				
6	173°21.3	7.1'	S 26°15.1	7.0'	57.5'	49°36.4	42°04.8	43°49.9	60°50.6	62°05.0	65° 13.8	92°09.9	95°39.4				
7	187°47.5	7.2'	$26^{\circ}08.1$	7.2'	57.5'	49°02.9	41°35.4	44°23.3	61°14.2	62°35.2	65°37.4	92°38.1	96°10.3				
8	202°13.6	7.2'	26°00.9	7.3'	57.6'	48°29.4	41°06.0	44°56.7	61°37.8	63°05.6	66°01.0	93°06.4	96°41.3				
9	216°39.8	7.2'	25°53.6	7.5'	57.6'	47°55.8	40°36.6	45°30.1	62°01.6	63°35.9	66°24.7	93°34.6	97°12.2				
10	231°06.0	7.2'	25°46.1	7.7'	57.6'	47°22.2	40°07.3	46°03.6	62°25.5	64°06.3	66°48.6	94°02.9	97°43.3				
11	245°32.2	7.3'	25°38.4	7.8'	57.7'	46°48.5	39°38.0	46°37.1	62°49.5	64°36.8	67° 12.5	94°31.3	98°14.3				
12	259°58.5	7.3'	S 25°30.6	8.0'	57.7'	46°14.8	39°08.8	47°10.7	63°13.7	65°07.2	67°36.5	94°59.6	98°45.4				
13	274°24.8	7.3'	25°22.6	8.1'	57.8'	45°41.0	38°39.7	47°44.3	63°37.9	65°37.8	68°00.7	95°28.0	99°16.6				
14	288°51.1	7.4'	$25^{\circ}14.5$	8.3'	57.8'	45°07.2	38°10.6	48°18.0	64°02.2	66°08.4	68° 24.9	95°56.5	99°47.8				
15	303°17.5	7.4'	25°06.2	8.5'	57.8'	44°33.4	37°41.6	48°51.7	64°26.7	66°39.0	68°49.2		100°19.0				
16	317°43.9	7.4'	24°57.7	8.6'	57.9'	43°59.5	37°12.7	49°25.5	64°51.3	67°09.6	69°13.6		100°50.3				
17	332°10.3	7.5'	24°49.1	8.8'	57.9'	43°25.6	36°43.8	49°59.3	65°15.9	67°40.4	69°38.1	97°21.9	101°21.6				
18	346°36.8	7.5'	S 24°40.3	8.9'	57.9'	42°51.6	36°15.1	50°33.1	65°40.7	68°11.1	70°02.7	97°50.4	101°53.0				
19	1°03.3	7.5'	24°31.4	9.1'	58.0'	42°17.6	35°46.4	51°07.0	66°05.6	68°41.9	70°27.4	98° 19.0	102°24.4				
20	15°29.9	7.6'	24°22.3	9.2'	58.0'	41°43.5	35°17.8	51°40.9	66°30.6	69°12.8	70°52.2	98°47.6	102°55.9				
21	29°56.5	7.6'	24°13.1	9.4'	58.1'	41°09.4	34°49.3	52°14.9	66°55.6	69°43.7	71° 17.1	99°16.2	103°27.4				
22	44°23.1	7.7'	24°03.7	9.5'	58.1'	40°35.2	34°20.9	52°48.9	67°20.8	70°14.6	71°42.0	99°44.8	103°58.9				
23	58°49.7	7.7'	23°54.2	9.7'	58.1'	40°01.0	33°52.7	53°23.0	67°46.1	70°45.6	72°07.0	100°13.4	104°30.5				
11 th	SD =	= 15.6′	Mer. pass	s. 18:50	5				$Sun\;SD =$	16.0′		4 92°38.1 96°1 0 93°06.4 96°4 7 93°34.6 97°1 6 94°02.9 97°4 5 94°31.3 98°1 5 94°59.6 98°4 7 95°28.0 99°1 9 95°56.5 99°4 2 96°24.9 100°1 6 96°53.4 100°5 1 97°21.9 101°2 7 97°50.4 101°5 4 98°19.0 102°2 2 98°47.6 102°5 1 99°16.2 103°2 0 99°44.8 103°5					

Moon (12th Oct)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Aldebaran	-Rigel	-Saturn	-Fomalhaut	+Antares	+Venus	+Arcturus	+Sun			
0	73°16.5	7.7'	S 23°44.5	9.8'	58.2'			39°26.8	33°24.5	53°57.1	71°16.6	100°42.1	105°02.2			
1	87°43.2	7.8'	23°34.7	10.0'	58.2'			38°52.5	32° 56.5	54°31.3	71°47.7	101°10.8	105°33.8			
2	102°10.0	7.8'	23°24.7	10.1'	58.2'			$38^{\circ}18.1$	32°28.6	55°05.5	72°18.8	101°39.5	106°05.6			
3	116°36.8	7.9'	23°14.6	10.3'	58.3'			37°43.7	32°00.9	55°39.7	72°50.0	102°08.2	106°37.4			
4	131°03.7	7.9'	23°04.3	10.4'	58.3'			37°09.3	31°33.3	56° 14.0	73°21.2		107°09.2			
5	145°30.6	8.0'	22°53.9	10.6'	58.4'			36°34.8	31°05.9	56°48.4	73°52.5	103°05.7	107°41.1			
6	159°57.6	8.0'	S 22°43.3	10.7'	58.4'			$36^{\circ}00.3$	30°38.7	57°22.8	74°23.8	103°34.5	108°13.0			
7	174°24.6	8.0'	22°32.6	10.9'	58.4'		119°42.8	35°25.7	30°11.6	57° 57.2	74°55.1	104°03.3	108°44.9			
8	188°51.6	8.1'	22°21.7	11.0'	58.5'		119°17.4	34°51.1	29°44.7	58°31.7	75°26.5	104°32.0	109°17.0			
9	203°18.7	8.1'	22°10.7	11.1'	58.5'	119°59.0	118°51.9	34°16.4	29°18.1	59°06.2	75°58.0		109°49.0			
10	217°45.9	8.2'	$21^{\circ}59.6$	11.3'	58.5'	119°25.2	118°26.2	33°41.7	28°51.6	59° 40.8	76°29.5		110°21.1			
11	232°13.0	8.2'	21°48.3	11.4'	58.6'	118°51.3	118°00.5	33°07.0	28°25.4	60° 15.4	77°01.0	105°58.5	110°53.3			
12	246°40.3	8.3'	S 21°36.9	11.6'	58.6'	118°17.3	117°34.6	32°32.2	27°59.4	60°50.1	77°32.6	106°27.3	111°25.5			
13	261°07.5	8.3'	$21^{\circ}25.3$	11.7'	58.7'	117°43.3	117°08.6	31°57.3	27°33.7	61°24.8	78°04.3	106°56.2	111°57.7			
14	275°34.9	8.4'	21°13.6	11.8'	58.7'	117°09.2	116°42.5	31°22.4	27°08.3	61°59.6	78°35.9	107°25.0	112°30.0			
15	290°02.2	8.4'	$21^{\circ}01.8$	12.0'	58.7'	116°35.1	116°16.3	30°47.5	26°43.1	62°34.4	79°07.7		113°02.3			
16	304°29.6	8.5'	20°49.8	12.1'	58.8'	116°00.9	115°50.0	$30^{\circ}12.5$	26°18.3	63°09.2	79°39.5	108°22.7	113°34.7			
17	318°57.1	8.5'	20°37.7	12.2'	58.8'	115°26.7	115°23.6	29°37.4	25°53.8	63°44.1	80°11.3	108°51.6	114°07.2			
18	333°24.6	8.6'	S 20°25.5	12.4'	58.8'	114°52.4	114°57.0	29°02.4	25°29.6	64° 19.1	80°43.2	109°20.5	114°39.6			
19	347°52.2	8.6'	$20^{\circ}13.1$	12.5'	58.9'	114°18.1	114°30.4	28°27.2	25°05.8	64°54.1	81°15.1	109°49.3	115°12.2			
20	2°19.8	8.6'	20°00.6	12.6'	58.9'	113°43.7	114°03.6	27°52.0	24°42.4	65°29.1	81°47.0	110°18.2	115°44.7			
21	16°47.4	8.7'	19°47.9	12.8'	59.0'	113°09.3	113°36.8	27°16.8	24° 19.3	66°04.2	82°19.1	110°47.0	116°17.3			
22	31°15.1	8.7'	19°35.2	12.9'	59.0'	112°34.8	113°09.8	26°41.5	23°56.7	66°39.4	82°51.1	111°15.9	116°50.0			
23	45°42.8	8.8'	19°22.3	13.0'	59.0'	112°00.2	112°42.8	26°06.2	23°34.6	67° 14.6	83°23.2	111°44.7	117°22.7			
12 th	SD	= 15.9'	Mer. pas	s. 19:50					Sun SD =	= 16.0′		1.2 102°36.9 107′ 1.2 103°05.7 107′ 1.3 104°03.3 108′ 1.5 104°32.0 109′ 1.5 105°29.7 110′ 1.0 105°58.5 110′ 1.0 105°58.5 110′ 1.0 105°58.5 110′ 1.0 105°58.5 110′ 1.0 105°58.5 110′ 1.0 105°58.5 110′ 1.1 10°55.0 112′ 1.7 107°53.9 113′ 1.3 108°51.6 114′ 1.3 109°49.3 115′ 1.0 110°47.0 116′ 1.1 111°15.9 116′ 1.1 111°15.9 116′				

h		Моо	n (13 th O	ct)			Lunar D	oistance (ol	bjects wi	th largest	hourly L	D delta)	
Sun	GHA	ν	Dec	d	HP	-Jupiter	-Capella	-Aldebaran	-Saturn	+Antares	+Venus	+Arcturus	+Sun
0	60°10.6	8.8'	S 19°09.3	13.1'	59.1'			111°25.7	25°30.9	67°49.8	83°55.4	112° 13.5	117°55.5
1	74°38.4	8.9'	$18^{\circ}56.1$	13.3'	59.1'			110°51.0	24°55.4	68°25.1	84°27.6	112°42.4	118°28.3
2	89°06.3	8.9'	18°42.8	13.4'	59.2'			110° 16.3	24°20.0	69°00.4	84°59.8	113°11.2	119°01.1
3	103°34.2	9.0'	18°29.5	13.5'	59.2'			109°41.6	23°44.5	69°35.8	85°32.1	113°40.0	119°34.0
4	118°02.2	9.0'	$18^{\circ}15.9$	13.6'	59.2'			109°06.8	23°08.9	70°11.2	86°04.5	114°08.7	
5	132°30.2	9.1'	18°02.3	13.8'	59.3'			108°31.9	22°33.3	70°46.7	86°36.9	114°37.5	
6	146°58.2	9.1'	S 17°48.5	13.9'	59.3'	119°30.0	119°29.4	107°57.1	21°57.7	71°22.2	87°09.3	115°06.2	
7	161°26.3	9.1'	17°34.7	14.0'	59.3'	118°54.6	118°56.0	107°22.1	21°22.0	71°57.8	87°41.8	115°34.9	
8	175°54.5	9.2'	17°20.7	14.1'	59.4'	118° 19.2	118°22.6	106°47.1	20°46.2	72°33.4	88°14.3	116°03.6	
9	190°22.6	9.2'	$17^{\circ}06.6$	14.2'	59.4'	117°43.8	117°49.2	106° 12.1	20° 10.5	73°09.0	88°46.9	116°32.3	
10	204°50.9	9.3'	16°52.4	14.3'	59.4'	117°08.3	117°15.7	105°37.0	19°34.6	73°44.7	89° 19.5	117°00.9	
11	219°19.1	9.3'	16°38.0	14.4'	59.5'	116°32.7	116°42.1	105°01.8	18°58.7	74°20.5	89°52.2	117°29.5	
12	233°47.4	9.3'	S 16°23.6	14.6'	59.5'	115°57.1	116°08.4	104°26.7	18°22.8	74°56.3	90°24.9	117°58.1	
13	248°15.8	9.4'	$16^{\circ}09.0$	14.7'	59.6'	115°21.5	115°34.7	103°51.4	17°46.9	75°32.1	90°57.6	118°26.7	
14	262°44.2	9.4'	15°54.4	14.8'	59.6'	114°45.8	115°00.9	103° 16.1	17°10.8	76°08.0	91°30.4	118°55.2	
15	277°12.6	9.5'	15°39.6	14.9'	59.6'	$114^{\circ}10.0$	114°27.0	102°40.8	16°34.8	76°43.9	92°03.3	119°23.6	
16	291°41.1	9.5'	15°24.7	15.0'	59.7'	113°34.2	113°53.1	102°05.4	15°58.7	77°19.9	92°36.2	119°52.0	
17	306°09.6	9.5'	$15^{\circ}09.7$	15.1'	59.7'	112°58.4	113°19.2	101°30.0	15°22.5	77°55.9	93°09.1		
18	320°38.1	9.6'	S 14°54.6	15.2'	59.7'	112°22.5	112°45.1	100°54.5	14°46.3	78°32.0	93°42.1		
19	335°06.7	9.6'	14°39.4	15.3'	59.8'	111°46.6	112°11.1	100°19.0	14°10.1	79°08.1	94°15.1		
20	349°35.3	9.7'	14°24.2	15.4'	59.8'	111°10.6	111°36.9	99°43.4	13°33.8	79°44.2	94°48.2		
21	4°04.0	9.7'	14°08.8	15.5'	59.8'	110°34.6	111°02.7	99°07.8	12°57.5	80°20.4	95°21.3		
22	18°32.7	9.7'	13°53.3	15.6'	59.9'	109°58.5	110°28.4	98° 32.2	12°21.1	80°56.7	95°54.5		
23	33°01.4	9.8'	13°37.7	15.7'	59.9'	109°22.4	109°54.1	97° 56.5	11°44.7	81°32.9	96°27.7		
13 th	SD	= 16.1	Mer. pas	s. 20:43					Sun SD	= 16.0'			

Moon (14th Oct)

Mon	GHA	ν	Dec	d	HP	-Capella	-Jupiter	-Aldebaran	±Saturn	+Antares	+Rigil Kent.	+Hadar	+Venus
0	47°30.2	9.8'	S 13°22.0	15.8'	59.9'	109°19.7	108°46.2	97°20.7	11°08.3	82°09.3	89°57.5	93°53.2	97°00.9
1	61°59.0	9.8'	13°06.3	15.9'	60.0'	108°45.3	108°10.0	96°44.9	10°31.8	82°45.7	90°26.0	94°20.9	97°34.2
2	76°27.8	9.9'	12°50.4	15.9'	60.0'	108°10.8	107°33.8	96°09.1	9°55.2	83°22.1	90°54.6	94°48.7	98°07.6
3	90°56.7	9.9'	12°34.5	16.0'	60.0'	107°36.3	106°57.5	95°33.2	9°18.6	83°58.5	91°23.2	95°16.5	98°40.9
4	105°25.5	9.9'	12°18.4	16.1'	60.1'	107°01.7	106°21.2	94°57.3	8°42.0	84°35.0	91°51.9	95°44.3	99°14.3
5	119°54.5	9.9'	12°02.3	16.2'	60.1'	106°27.1	105°44.8	94°21.4	8°05.3	85°11.6	92°20.5	96°12.1	99°47.8
6	134°23.4	10.0'	S 11°46.1	16.3'	60.1'	105°52.4	105°08.4	93°45.4	7°28.6	85°48.1	92°49.2	96°40.0	100°21.3
7	148°52.4	10.0'	11°29.8	16.4'	60.2'	105°17.6	104°31.9	93°09.3	6°51.9	86°24.8	93° 17.9	97°07.8	100°54.8
8	163°21.4	10.0'	11°13.4	16.5'	60.2'	104°42.8	103°55.4	92°33.2	6°15.1	87°01.4	93°46.7	97°35.7	101°28.4
9	177°50.4	10.1'	10°57.0	16.5'	60.2'	104°08.0	103°18.9	91°57.1	5°38.3	87°38.1	94°15.4	98°03.5	102°02.0
10	192°19.5	10.1'	10°40.4	16.6'	60.3'	103°33.1	102°42.3	91°20.9	5°01.4	88°14.9	94°44.2	98°31.4	102°35.7
11	206°48.5	10.1'	10°23.8	16.7'	60.3'	102°58.2	102°05.6	90°44.7	4°24.5	88°51.7	95°13.0	98°59.3	103°09.4
12	221°17.6	10.1'	S 10°07.2	16.8'	60.3'	102°23.2	101°29.0	90°08.5	3°47.6	89°28.5	95°41.8	99°27.2	103°43.2
13	235°46.8	10.1'	09°50.4	16.8'	60.3'	101°48.2	100°52.3	89°32.2	3°10.6	90°05.4	96°10.6	99°55.1	104°16.9
14	250°15.9	10.2'	09°33.6	16.9'	60.4'	101°13.1	100°15.5	88°55.9	2°33.6	90°42.3	96° 39.5	100°22.9	104°50.8
15	264°45.1	10.2'	09°16.7	17.0'	60.4'	100°38.0	99°38.7	88°19.5	1°56.5	91°19.2	97°08.3	100°50.8	105°24.6
16	279°14.3	10.2'	08°59.7	17.0'	60.4'	100°02.8	99°01.9	87°43.1	1°19.5	91°56.2	97°37.2	101°18.7	105°58.5
17	293°43.5	10.2'	08°42.7	17.1'	60.5'	99°27.6	98°25.0	87°06.7	0°42.6	92°33.2	98°06.1	101°46.6	106°32.4
18	308°12.7	10.2'	S 08°25.6	17.2'	60.5'	98°52.4	97°48.1	86°30.2		93°10.3	98°35.0	102°14.4	107°06.4
19	322°41.9	10.3'	08°08.4	17.2'	60.5'	98°17.1	97°11.2	85°53.7		93°47.3	99°03.8	102°42.3	107°40.4
20	337°11.2	10.3'	$07^{\circ}51.2$	17.3'	60.5'	97°41.7	96°34.2	85°17.2		94°24.5	99°32.7	103°10.1	108°14.4
21	351°40.4	10.3'	07°33.9	17.3'	60.6'	97°06.4	95°57.2	84°40.6	1°47.0	95°01.6	100°01.6	103°38.0	108°48.5
22	6°09.7	10.3'	$07^{\circ}16.5$	17.4'	60.6'	96°31.0	95°20.1	84°04.0	2°24.3	95°38.8	100°30.5	104°05.8	109°22.6
23	20°39.0	10.3'	06°59.1	17.5'	60.6'	95°55.5	94°43.0	83°27.4	3°01.6	96°16.1	100°59.4	104°33.6	109°56.8
14 th	SD	$= 16.3^{\prime}$	Mer. pass	s. 21:34									

Moon (15th Oct) Lunar Distance (objects with largest hourly LD delta)

Tue	GHA	ν	Dec	d	HP	-Mars	-Pollux	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Antares	+Venus
0	35°08.3	10.3'	S 06°41.7	17.5'	60.6'			94°05.9	82°50.7	3°39.0	23°07.5	96°53.3	110°31.0
1	49°37.6	10.3'	$06^{\circ}24.2$	17.6'	60.7'			93°28.7	82°14.0	4°16.4	23°30.3	97°30.6	111°05.2
2	64°06.9	10.3'	06°06.6	17.6'	60.7'			92°51.6	81°37.3	4°53.8	23°53.7	98°08.0	111°39.4
3	78°36.3	10.3'	05°49.0	17.7'	60.7'			92°14.3	81°00.5	5°31.3	24°17.7	98°45.3	112°13.7
4	93°05.6	10.3'	05°31.3	17.7'	60.7'			91°37.1	80°23.7	6°08.8	24°42.2	99°22.7	112°48.0
5	107°34.9	10.3'	05°13.6	17.7'	60.8'			90°59.8	79°46.9	6°46.4	25°07.2	100°00.2	113°22.3
6	122°04.3	10.3'	S 04°55.9	17.8'	60.8'			90°22.5	79°10.0	7°24.0	25°32.8	100°37.6	113°56.7
7	136°33.6	10.3'	04°38.1	17.8'	60.8'			89°45.1	78°33.1	8°01.6	25°58.8	101°15.1	114°31.1
8	151°03.0	10.3'	04°20.3	17.9'	60.8'	119°49.1		89°07.7	77°56.2	8°39.2	26°25.2	101°52.7	115°05.5
9	165°32.3	10.3'	04°02.4	17.9'	60.9'	119°12.8		88°30.3	77°19.3	9°16.9	26°52.1	102°30.2	115°40.0
10	180°01.6	10.3'	03°44.5	17.9'	60.9'	118°36.5		87°52.9	76°42.3	9°54.6	27°19.4	103°07.8	116°14.5
11	194°31.0	10.3'	03°26.6	18.0'	60.9'	118°00.2	119°28.9	87°15.4	76°05.4	10°32.4	27°47.1	103°45.4	116°49.0
12	209°00.3	10.3'	S 03°08.6	18.0'	60.9'	117°23.9	118°51.2	86°37.9	75°28.3	11°10.1	28°15.1	104°23.0	117°23.6
13	223°29.7	10.3'	02°50.6	18.0'	60.9'	116° 47.5	118°13.6	86°00.4	74°51.3	11°47.9	28°43.5	105°00.7	117°58.1
14	237°59.0	10.3'	02°32.6	18.1'	61.0'	$116^{\circ}11.1$	117°35.9	85°22.8	74°14.3	12°25.7	29°12.3	105°38.4	118°32.7
15	252°28.3	10.3'	02°14.5	18.1'	61.0'	115°34.6	116°58.2	84°45.3	73°37.2	13°03.6	29°41.4	106°16.1	119°07.3
16	266°57.6	10.3'	$01^{\circ}56.5$	18.1'	61.0'	114°58.1	116°20.5	84°07.7	73°00.1	13°41.4	30°10.7	106°53.9	119°42.0
17	281°26.9	10.3'	01°38.4	18.1'	61.0'	114°21.6	115°42.7	83°30.0	72°23.0	14°19.3	30°40.4	107°31.6	
18	295°56.2	10.3'	S 01°20.2	18.1'	61.0'	113°45.1	115°05.0	82°52.4	71°45.8	14°57.2	31°10.4	108°09.4	
19	310°25.5	10.3'	$01^{\circ}02.1$	18.2'	61.1'	113°08.6	114°27.2	82°14.7	71°08.7	15°35.2	31°40.6	108°47.2	
20	324°54.7	10.2'	00°43.9	18.2'	61.1'	112°32.0	113°49.3	81°37.0	70°31.5	16°13.1	32°11.1	109°25.1	
21	339°24.0	10.2'	$00^{\circ}25.8$	18.2'	61.1'	111°55.4	113°11.5	80°59.3	69°54.3	16°51.1	32°41.9	110°02.9	
22	353°53.2	10.2'	S 00°07.6	18.2'	61.1'	111°18.8	112°33.6	80°21.6	69°17.1	17°29.1	33°12.8	110°40.8	
23	8°22.4	10.2'	N 00°10.6	18.2'	61.1'	110°42.2	111°55.8	79°43.8	68°39.9	18°07.2	33°44.0	111°18.7	
15 th	SD	= 16.5'	Mer. pass	. 22:25							·		

h Moon (16 th Oct)	Lunar Distance (objects with largest hourly LD delta)
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Wed	GHA	ν	Dec	d	HP	-Pollux	-Mars	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Altair	+Antares
0	22°51.6	10.2'	N00°28.8	18.2'	61.1'	111°17.9	110°05.5	79°06.0	68°02.7	18°45.2	34° 15.5	64°24.1	111°56.7
1	37°20.8	10.2'	00°47.0	18.2'	61.1'	110°39.9	109°28.8	78°28.2	67°25.4	19°23.3	34°47.1	64°53.9	112°34.6
2	51°49.9	10.1'	$01^{\circ}05.2$	18.2'	61.2'	110°02.0	108°52.1	77°50.4	66°48.2	20°01.3	35° 18.9	65°23.7	113°12.6
3	66°19.1	10.1'	01°23.4	18.2'	61.2'	109°24.0	108°15.4	77°12.6	66°10.9	20°39.4	35°50.9	65°53.7	113°50.5
4	80°48.2	10.1'	$01^{\circ}41.7$	18.2'	61.2'	108°46.1	107°38.7	76°34.7	65°33.6	21°17.6	36°23.1	66°23.8	114°28.5
5	95°17.3	10.1'	$01^{\circ}59.9$	18.2'	61.2'	108°08.1	107°01.9	75°56.9	64°56.4	21°55.7	36° 55.5	66°53.9	115°06.5
6	109°46.3	10.0'	N02°18.1	18.2'	61.2'	107°30.0	106°25.1	75°19.0	64°19.1	22°33.8	37°28.0	67°24.1	115°44.6
7	124°15.3	10.0'	02°36.3	18.2'	61.2'	106°52.0	105°48.3	74°41.1	63°41.8	23°12.0	38°00.7	67°54.4	116°22.6
8	138°44.3	10.0'	02°54.5	18.2'	61.2'	106°14.0	105°11.5	74°03.2	63°04.5	23°50.2	38° 33.5	68°24.7	117°00.7
9	153°13.3	9.9'	03°12.7	18.2'	61.2'	105°35.9	104°34.7	73°25.3	62°27.1	24°28.4	39°06.5	68°55.2	117°38.7
10	167°42.2	9.9'	03°30.8	18.2'	61.2'	104°57.9	103°57.9	72°47.3	61°49.8	25°06.6	39°39.6	69°25.7	118°16.8
11	182°11.1	9.9'	03°49.0	18.1'	61.3'	104°19.8	103°21.0	72°09.4	61°12.5	25°44.8	40°12.9	69°56.2	118°54.9
12	196°40.0	9.8'	N 04°07.1	18.1'	61.3'	103°41.7	102°44.1	71°31.4	60°35.2	26°23.0	40°46.2	70°26.9	119°33.0
13	211°08.9	9.8'	04°25.3	18.1'	61.3'	103°03.6	102°07.3	70°53.5	59°57.9	27°01.3	41°19.8	70°57.6	
14	225°37.7	9.8'	04°43.4	18.1'	61.3'	102°25.5	101°30.4	70°15.5	59° 20.5	27°39.5	41°53.4	71°28.3	
15	240°06.4	9.7'	05°01.4	18.1'	61.3'	101°47.4	100°53.5	69°37.5	58°43.2	28° 17.8	42°27.1	71°59.1	
16	254°35.1	9.7'	$05^{\circ}19.5$	18.0'	61.3'	101°09.2	100°16.6	68°59.5	58°05.9	28°56.0	43°00.9	72°30.0	
17	269°03.8	9.6'	05°37.5	18.0'	61.3'	100°31.1	99°39.7	68°21.6	57°28.6	29°34.3	43°34.9	73°00.9	
18	283°32.5	9.6'	N05°55.5	18.0'	61.3'	99°52.9	99°02.8	67°43.6	56°51.3	30°12.6	44°08.9	73°31.9	
19	298°01.1	9.6'	$06^{\circ}13.5$	17.9'	61.3'	99°14.8	98°25.8	67°05.6	56°14.0	30°50.9	44°43.1	74°02.9	
20	312°29.6	9.5'	06°31.4	17.9'	61.3'	98°36.6	97°48.9	66°27.6	55°36.7	31°29.2	45° 17.3	74°33.9	
21	326°58.2	9.5'	06°49.3	17.9'	61.3'	97°58.5	97°12.0	65°49.6	54°59.4	32°07.5	45°51.6	75°05.0	
22	341°26.6	9.4'	$07^{\circ}07.2$	17.8'	61.3'	97°20.3	96°35.0	65°11.6	54°22.1	32°45.8	46° 26.0	75°36.2	
23	355°55.0	9.4'	07°25.0	17.8'	61.3'	96°42.2	95°58.1	64°33.5	53°44.9	33°24.1	47°00.4	76°07.3	
16 th	SD	= 16.7'	Mer. pass	. 23:17									

h Moon (17 th Oct)	Lunar Distance (objects with	largest hourly	· LD delta)
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Thu	GHA	ν	Dec	d	HP	-Regulus	-Pollux	-Mars	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Altair
0	10°23.4	9.3'	N 07°42.8	17.7'	61.3'		96°04.0	95°21.1	63°55.5	53°07.6	34°02.4	47°35.0	76°38.6
1	24°51.7	9.3'	08°00.5	17.7'	61.3'		95°25.8	94°44.2	63°17.5	52°30.4	34°40.7	48°09.6	77°09.8
2	39°20.0	9.2'	08°18.2	17.6'	61.3'		94°47.7	94°07.2	62°39.5	51°53.2	35° 19.0	48° 44.3	77°41.1
3	53°48.2	9.2'	08°35.8	17.6'	61.3'		94°09.5	93°30.3	62°01.5	51°16.0	35° 57.3	49° 19.0	78°12.4
4	68°16.4	9.1'	08°53.4	17.5'	61.3'		93°31.3	92°53.3	61°23.5	50°38.8	36°35.6	49°53.8	78°43.8
5	82°44.5	9.1'	$09^{\circ}10.9$	17.5'	61.3'		92°53.2	92°16.4	60°45.5	50°01.6	37°13.9	50°28.7	79°15.1
6	97°12.6	9.0'	N09°28.4	17.4'	61.3'		92°15.0	91°39.4	60°07.6	49°24.5	37°52.2	51°03.6	79°46.5
7	111°40.6	9.0'	09°45.8	17.4'	61.3'		91°36.8	91°02.5	59°29.6	48°47.4	38° 30.5	51°38.6	80°17.9
8	126°08.6	8.9'	10°03.2	17.3'	61.3'		90°58.7	90°25.5	58°51.6	48°10.3	39°08.8	52° 13.6	80°49.4
9	140°36.5	8.8'	10°20.5	17.2'	61.3'		90°20.5	89°48.6	58°13.6	47°33.2	39°47.0	52°48.7	81°20.8
10	155°04.3	8.8'	10°37.7	17.2'	61.3'		89°42.4	89°11.6	57°35.7	46°56.2	40°25.3	53°23.8	81°52.3
11	169°32.1	8.7'	10°54.9	17.1'	61.3'		89°04.2	88°34.7	56°57.7	46°19.2	41°03.6	53°58.9	82°23.8
12	183°59.8	8.7'	$N11^{\circ}12.0$	17.0'	61.3'		88°26.1	87°57.8	56°19.8	45°42.2	41°41.9	54°34.1	82°55.2
13	198°27.5	8.6'	11°29.0	17.0'	61.3'		87°48.0	87° 20.9	55°41.9	45°05.3	42°20.1	55°09.4	83°26.8
14	212°55.0	8.5'	11°46.0	16.9'	61.3'		87°09.9	86°44.0	55°04.0	44°28.3	42°58.4	55° 44.6	83°58.3
15	227°22.6	8.5'	12°02.8	16.8'	61.3'		86°31.8	86°07.1	54°26.1	43°51.5	43°36.6	56° 19.9	84°29.8
16	241°50.1	8.4'	$12^{\circ}19.6$	16.7'	61.2'		85°53.7	85°30.2	53°48.2	43°14.6	44°14.8	56°55.2	85°01.3
17	256°17.5	8.3'	12°36.4	16.6'	61.2'		85° 15.6	84°53.3	53°10.3	42°37.8	44°53.0	57°30.6	85°32.8
18	270°44.8	8.3'	$N12^{\circ}53.0$	16.6'	61.2'		84°37.5	84°16.4	52°32.5	42°01.1	45°31.2	58°06.0	86°04.3
19	285°12.1	8.2'	13°09.6	16.5'	61.2'		83°59.5	83°39.6	51°54.6	41°24.4	46°09.4	58°41.4	86°35.9
20	299°39.3	8.1'	13°26.0	16.4'	61.2'		83°21.4	83°02.8	51°16.8	40°47.7	46° 47.6	59°16.8	87°07.4
21	314°06.4	8.1'	13°42.4	16.3'	61.2'	119°29.4	82°43.4	82°25.9	50°39.0	40°11.1	47°25.8	59°52.2	87°38.9
22	328°33.5	8.0'	13°58.7	16.2'	61.2'	118°51.5	82°05.4	81°49.1	50°01.3	39°34.6	48°03.9	60°27.7	88°10.4
23	343°00.5	7.9'	14°14.9	16.1'	61.2'	118°13.5	81°27.4	81°12.3	49°23.5	38°58.1	48°42.0	61°03.2	88°41.9
17 th	SD	= 16.	7′ Mer. pa	ss:-									

Moon (18th Oct)

Lunar Distance (objects with largest hourly LD delta)

Fri	GHA	ν	Dec	d	HP	-Regulus	-Pollux	-Mars	-Jupiter	+Saturn	+Fomalhaut	+Achernar	+Altair
0	357°27.4	7.9'	N 14°31.0	16.0'	61.2'	117°35.6	80°49.4	80°35.5	48°45.8	49°20.1	61°38.7	71°44.4	89°13.4
1	11°54.3	7.8'	14°47.0	15.9'	61.1'	116°57.6	80° 11.5	79°58.8	48°08.1	49°58.2	62°14.2	72°02.1	89°44.9
2	26°21.1	7.7'	15°02.9	15.8'	61.1'	116°19.7	79°33.5	79°22.0	47°30.4	50°36.3	62°49.7	72°20.0	90°16.3
3	40°47.8	7.7'	15°18.7	15.7'	61.1'	115°41.8	78°55.6	78°45.3	46°52.8	51°14.4	63°25.2	72°37.9	90°47.8
4	55°14.5	7.6'	15°34.4	15.6'	61.1'	115°04.0	78° 17.7	78°08.6	46°15.1	51°52.4	64°00.8	72°56.0	91°19.2
5	69°41.1	7.5'	15°50.0	15.5'	61.1'	114°26.1	77°39.8	77°31.9	45°37.5	52°30.4	64°36.3	73°14.1	91°50.6
6	84°07.6	7.4'	N 16°05.5	15.4'	61.1'	113°48.3	77°01.9	76°55.3	45°00.0	53°08.4	65°11.8	73°32.3	92°22.0
7	98°34.0	7.4'	16°20.9	15.3'	61.0'	113°10.5	76°24.1	76° 18.6	44°22.4	53°46.4	65°47.4	73°50.6	92°53.4
8	113°00.4	7.3'	16°36.2	15.2'	61.0'	112°32.7	75°46.3	75°42.0	43°44.9	54°24.3	66°22.9	74°09.0	93°24.7
9	127°26.7	7.2'	$16^{\circ}51.3$	15.0'	61.0'	111°54.9	75°08.5	75°05.4	43°07.4	55°02.3	66°58.5	74°27.4	93°56.0
10	141°52.9	7.1'	17°06.4	14.9'	61.0'	111°17.2	74°30.7	74°28.8	42°30.0	55°40.2	67°34.0	74°46.0	94°27.3
11	156°19.0	7.1'	$17^{\circ}21.3$	14.8'	61.0'	110°39.5	73°53.0	73°52.3	41°52.6	56°18.1	68°09.5	75°04.6	94°58.5
12	170°45.1	7.0'	$N17^{\circ}36.1$	14.7'	61.0'	110°01.8	73° 15.2	73° 15.7	41°15.2	56°55.9	68°45.1	75°23.2	95°29.8
13	185°11.1	6.9'	17°50.8	14.6'	60.9'	109°24.1	72°37.5	72°39.2	40°37.8	57°33.7	69°20.6	75°42.0	96°00.9
14	199°37.0	6.8'	18°05.3	14.4'	60.9'	108°46.5	71°59.9	72°02.8	40°00.5	58°11.5	69°56.1	76°00.8	96°32.1
15	214°02.8	6.8'	$18^{\circ}19.8$	14.3'	60.9'	108°08.8	71°22.2	71°26.3	39°23.3	58°49.3	70°31.6	76°19.7	97°03.2
16	228°28.6	6.7'	18°34.1	14.2'	60.9'	107°31.2	70°44.6	70°49.9	38°46.1	59°27.1	71°07.1	76°38.6	97°34.3
17	242°54.3	6.6'	18°48.3	14.0'	60.9'	106°53.7	70°07.0	70°13.5	38°08.9	60°04.8	71°42.6	76°57.6	98°05.3
18	257°19.9	6.5'	$N19^{\circ}02.3$	13.9'	60.8'	106°16.2	69°29.5	69°37.2	37°31.7	60°42.5	72°18.1	77°16.6	98°36.3
19	271°45.5	6.5'	19°16.2	13.8'	60.8'	105°38.7	68°51.9	69°00.8	36°54.6	61°20.1	72°53.6	77°35.7	99°07.2
20	286°11.0	6.4'	19°30.0	13.6'	60.8'	105°01.2	68° 14.4	68° 24.5	36°17.6	61°57.7	73°29.0	77°54.9	99°38.1
21	300°36.4	6.3'	19°43.6	13.5'	60.8'	104°23.7	67°37.0	67°48.3	35°40.6	62°35.3	74°04.4	78°14.1	100°09.0
22	315°01.7	6.3'	19°57.1	13.4'	60.7'	103°46.3	66°59.5	67°12.0	35°03.6	63°12.9	74°39.9	78°33.3	100°39.8
23	329°26.9	6.2'	20°10.5	13.2'	60.7'	103°09.0	66°22.1	66°35.8	34°26.7	63°50.4	75°15.3	78°52.6	101°10.5
18 th	SD	= 16.7	′ Mer. pas	s. 00:11									

Moon (19th Oct)

		IVIOOI	u (19. O	(1)			Lunar	Distance	(objects	with lar	gest nouny i	LD delta)	
Sat	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Pollux	-Jupiter	+Saturn	+Fomalhaut	+Achernar	+Altair
0	343°52.1	6.1'	N20°23.7	13.1'	60.7'	102°31.6	65°59.6	65°44.8	33°49.9	64°27.9	75°50.6	79°12.0	101°41.2
1	358°17.2	6.0'	20°36.8	12.9'	60.7'	101°54.3	65°23.5	65°07.4	33°13.0	65°05.4	76°26.0	79°31.3	102°11.9
2	12°42.3	6.0'	20°49.7	12.8'	60.6'	101°17.0	64°47.4	64°30.1	32°36.3	65°42.8	77°01.3	79°50.7	102°42.5
3	27°07.2	5.9'	$21^{\circ}02.5$	12.6'	60.6'	100°39.8	64°11.3	63°52.9	31°59.6	66°20.2	77°36.6	80°10.2	103°13.0
4	41°32.1	5.8'	$21^{\circ}15.1$	12.5'	60.6'	100°02.6	63°35.3	63°15.7	31°23.0	66°57.6	78°11.9	80°29.7	103°43.4
5	55°56.9	5.8'	$21^{\circ}27.6$	12.3'	60.6'	99°25.4	62°59.3	62°38.5	30°46.4	67°34.9	78°47.2	80°49.2	104°13.8
6	70°21.7	5.7'	N 21°39.9	12.2'	60.5'	98°48.3	62°23.3	62°01.3	30°09.9	68°12.2	79°22.4	81°08.7	104°44.2
7	84°46.4	5.6'	$21^{\circ}52.1$	12.0'	60.5'	98°11.2	61°47.4	61°24.2	29°33.4	68°49.5	79°57.6	81°28.3	105°14.5
8	99°11.0	5.5'	22°04.1	11.9'	60.5'	97°34.1	61°11.5	60°47.1	28°57.0	69°26.7	80°32.8	81°47.8	105°44.7
9	113°35.5	5.5'	22°16.0	11.7'	60.4'	96°57.1	60°35.7	60°10.1	28°20.7	70°03.8	81°07.9	82°07.5	106°14.8
10	128°00.0	5.4'	22°27.7	11.5'	60.4'	96°20.1	59°59.9	59°33.0	27°44.5	70°41.0	81°43.1	82°27.1	106°44.9
11	142°24.4	5.3'	22°39.2	11.4'	60.4'	95°43.2	59°24.1	58°56.1	27°08.3	71°18.1	82°18.1	82°46.7	107°14.9
12	156°48.8	5.3'	N 22°50.6	11.2'	60.3'	95°06.2	58°48.4	58°19.2	26°32.2	71°55.1	82°53.2	83°06.4	107°44.8
13	171°13.0	5.2'	23°01.8	11.0'	60.3'	94°29.4	58° 12.7	57°42.3	25°56.2	72°32.2	83°28.2	83°26.0	108°14.6
14	185°37.3	5.2'	23°12.9	10.9'	60.3'	93°52.5	57°37.0	57°05.4	25°20.2	73°09.1	84°03.2	83°45.7	108°44.4
15	200°01.4	5.1'	23°23.7	10.7'	60.3'	93°15.8	57°01.4	56°28.6	24°44.4	73°46.1	84°38.2	84°05.4	109°14.1
16	214°25.5	5.0'	23°34.4	10.5'	60.2'	92°39.0	56°25.8	55°51.8	24°08.6	74°23.0	85°13.1	84°25.1	109°43.7
17	228°49.5	5.0'	23°45.0	10.4'	60.2'	92°02.3	55°50.3	55°15.1	23°32.9	74°59.8	85°48.0	84°44.8	110°13.2
18	243°13.5	4.9'	N23°55.4	10.2'	60.2'	91°25.6	55°14.8	54°38.4	22°57.4	75°36.6	86°22.8	85°04.5	110°42.7
19	257°37.4	4.9'	24°05.6	10.0'	60.1'	90°49.0	54°39.4	54°01.8	22°21.9	76°13.4	86°57.6	85°24.2	111°12.0
20	272°01.3	4.8'	24°15.6	9.9'	60.1'	90°12.4	54°04.0	53°25.2	21°46.5	76°50.1	87°32.4	85°43.9	111°41.3
21	286°25.1	4.7'	24°25.4	9.7'	60.1'	89°35.9	53°28.7	52°48.7	21°11.3	77°26.8	88°07.1	86°03.6	112°10.5
22	300°48.8	4.7'	24°35.1	9.5'	60.0'	88°59.4	52°53.3	52°12.1	20°36.2	78°03.5	88°41.8	86°23.3	112°39.6
23	315°12.5	4.6'	24°44.6	9.3'	60.0'	88°23.0	52°18.1	51°35.7	20°01.2	78°40.1	89°16.5	86°43.0	113°08.6
19 th	SD	= 16.6'	Mer. pas	s. 01:07									

h Moon ((20 th	Oct))
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Sun	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Pollux	-Jupiter	+Saturn	+Achernar	+Fomalhaut	+Altair
0	329°36.2	4.6'	N 24°53.9	9.1'	60.0'	87°46.6	51°42.9	50°59.3	19°26.3	79°16.6	87°02.7	89°51.1	113°37.4
1	343°59.8	4.5'	25°03.1	9.0'	59.9'	87°10.2	51°07.7	50°22.9	18°51.6	79°53.1	87°22.4	90°25.6	114°06.2
2	358°23.3	4.5'	25°12.1	8.8'	59.9'	86°33.9	50°32.6	49°46.6	18°17.0	80°29.6	87°42.0	91°00.2	114°34.9
3	12°46.8	4.5'	25°20.8	8.6'	59.9'	85°57.6	49°57.5	49° 10.3	17°42.6	81°06.0	88°01.7	91°34.6	115°03.5
4	27°10.3	4.4'	25°29.4	8.4'	59.8'	85°21.4	49°22.5	48°34.0	17°08.4	81°42.4	88°21.3	92°09.1	115°32.0
5	41°33.7	4.4'	25°37.9	8.2'	59.8'	84°45.2	48°47.5	47°57.8	16°34.3	82°18.7	88°40.9	92°43.5	116°00.4
6	55°57.1	4.3'	N25°46.1	8.0'	59.7'	84°09.1	48° 12.5	47°21.7	16°00.5	82°55.0	89°00.5	93°17.8	116°28.7
7	70°20.4	4.3'	25°54.1	7.9'	59.7'	83°33.0	47° 37.7	46° 45.6	15°26.9	83°31.2	89°20.1	93°52.1	116°56.8
8	84°43.7	4.3'	26°02.0	7.7'	59.7'	82°56.9	47°02.8	46°09.6	14°53.5	84°07.4	89°39.7	94°26.4	117°24.9
9	99°07.0	4.2'	26°09.7	7.5'	59.6'	82°20.9	46°28.0	45°33.5	14°20.4	84°43.6	89°59.2	95°00.6	117°52.8
10	113°30.2	4.2'	26°17.2	7.3'	59.6'	81°45.0	45°53.3	44°57.6	13°47.5	85°19.7	90°18.7	95°34.7	118°20.7
11	127°53.4	4.2'	26°24.5	7.1'	59.6'	81°09.1	45°18.6	44°21.7	13°15.0	85°55.7	90°38.2	96°08.8	118°48.4
12	142°16.6	4.1'	$N26^{\circ}31.6$	6.9'	59.5'	80°33.2	44°44.0	43°45.8	12°42.9	86°31.7	90°57.6	96°42.9	119° 15.9
13	156°39.7	4.1'	26°38.5	6.7'	59.5'	79°57.4	44°09.4	43° 10.0	12°11.1	87°07.6	91°17.0	97°16.9	119°43.4
14	171°02.8	4.1'	26°45.2	6.5'	59.4'	79°21.7	43°34.8	42°34.2	11°39.8	87°43.5	91°36.4	97°50.8	
15	185°25.9	4.1'	26°51.8	6.4'	59.4'	78°46.0	43°00.3	41°58.5	11°08.9	88°19.4	91°55.8	98°24.8	
16	199°49.0	4.0'	26°58.1	6.2'	59.4'	78°10.3	42°25.9	41°22.9	10°38.7	88°55.2	92°15.1	98°58.6	
17	214°12.0	4.0'	27°04.3	6.0'	59.3'	77°34.7	41°51.5	40°47.3	10°09.0	89°31.0	92°34.4	99°32.4	
18	228°35.0	4.0'	$N27^{\circ}10.3$	5.8'	59.3'	76°59.1	41°17.2	40°11.7	9°40.1	90°06.7	92°53.6	100°06.2	
19	242°58.1	4.0'	$27^{\circ}16.0$	5.6'	59.3'	76°23.6	40°42.9	39°36.2	9°12.0	90°42.3	93°12.8	100°39.9	
20	257°21.1	4.0'	$27^{\circ}21.6$	5.4'	59.2'	75°48.2	40°08.7	39°00.7	8°44.8	91°17.9	93°32.0	101°13.5	
21	271°44.1	4.0'	27°27.0	5.2'	59.2'	75°12.8	39°34.5	38° 25.3		91°53.5	93°51.1	101°47.1	
22	286°07.0	4.0'	27°32.2	5.0'	59.1'	74°37.4	39°00.4	37°49.9		92°29.0	94°10.2	102°20.6	
23	300°30.0	4.0'	27°37.2	4.8'	59.1'	74°02.1	38°26.3	37° 14.6		93°04.5	94°29.2	102°54.1	
20 th	SD =	= 16.4'	Mer. pass	. 02:07	7								

Moon (21st Oct)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Sun	-Regulus	-Mars	-Pollux	+Jupiter	+Aldebaran	+Saturn	+Fomalhaut
0	314°53.0	4.0'	N27°42.1	4.6'	59.1'		73°26.8	37°52.3	36°39.4			93°39.9	103°27.5
1	329°16.0	4.0'	27°46.7	4.4'	59.0'		72°51.6	37°18.3	36°04.1			94°15.2	104°00.9
2	343°38.9	4.0'	27°51.1	4.2'	59.0'		72°16.4	36°44.4	35°29.0			94°50.5	104°34.2
3	358°01.9	4.0'	27°55.3	4.0'	58.9'		71°41.3	36°10.5	34°53.9		13°23.7	95°25.8	105°07.5
4	12°24.9	4.0'	27°59.4	3.8'	58.9'		71°06.3	35°36.7	34°18.8		13°46.8	96°01.0	105°40.7
5	26°47.9	4.0'	28°03.2	3.7'	58.9'		70°31.3	35°03.0	33°43.8		14° 10.7	96°36.2	106°13.8
6	41°10.9	4.0'	N28°06.9	3.5'	58.8'		69°56.3	34°29.3	33°08.9		14°35.4	97°11.3	106°46.9
7	55°33.9	4.0'	28°10.3	3.3'	58.8'		69°21.4	33°55.7	32°33.9		15°00.6	97°46.3	107°19.9
8	69°57.0	4.1'	28°13.6	3.1'	58.7'		68°46.5	33°22.1	31°59.1		15° 26.4	98°21.3	107°52.9
9	84°20.0	4.1'	28°16.7	2.9'	58.7'		68°11.7	32°48.6	31°24.3		15°52.8	98°56.3	108°25.8
10	98°43.1	4.1'	$28^{\circ}19.5$	2.7'	58.7'		67°37.0	32°15.1	30°49.5		16° 19.6	99°31.2	108°58.6
11	113°06.2	4.1'	28°22.2	2.5'	58.6'		67°02.2	31°41.7	30°14.9		16°46.9	100°06.1	109°31.4
12	127°29.3	4.1'	N 28°24.7	2.3'	58.6'		66°27.6	31°08.4	29°40.2		17° 14.6	100°40.9	110°04.1
13	141°52.4	4.2'	28°27.0	2.1'	58.5'		65°53.0	30°35.1	29°05.6		17°42.6	101°15.6	110°36.8
14	156°15.6	4.2'	28°29.1	1.9'	58.5'		65°18.4	30°01.8	28°31.1		18° 11.0	101°50.3	111°09.4
15	170°38.8	4.2'	28°31.1	1.7'	58.5'		64°43.9	29°28.7	27°56.6		18°39.6	102°25.0	111°41.9
16	185°02.1	4.3'	28°32.8	1.5'	58.4'		64°09.5	28°55.6	27°22.2		19°08.6	102°59.6	112°14.4
17	199°25.3	4.3'	28°34.3	1.4'	58.4'		63°35.0	28°22.5	26°47.8		19°37.7	103°34.1	112°46.8
18	213°48.7	4.4'	N 28°35.7	1.2'	58.3'		63°00.7	27°49.5	26°13.4		20°07.1	104°08.6	113°19.1
19	228°12.0	4.4'	28°36.8	1.0'	58.3'		62°26.4	27°16.6	25°39.2		20°36.7	104°43.1	113°51.4
20	242°35.4	4.5'	28°37.8	0.8'	58.3'		61°52.1	26°43.7	25°04.9	9°23.8	21°06.5	105°17.5	114°23.6
21	256°58.9	4.5'	28°38.6	0.6'	58.2'	119°51.7	61°17.9	26°10.9	24°30.8	9°51.2	21°36.5	105°51.9	114°55.7
22	271°22.4	4.5'	28°39.2	0.4'	58.2'	119°20.0	60°43.8	25°38.2	23°56.7	10° 19.3	22°06.6	106°26.2	115°27.8
23	285°45.9	4.6'	28°39.6	0.2'	58.1'	118°48.4	60°09.7	25°05.5	23°22.6	10°47.9	22°36.8	107°00.4	115°59.8
21 st	SD =	= 16.1'	Mer. pass	. 03:08	3				Sur	SD = 16.1'	•		

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

									(5000	,	
Tue	GHA	ν	Dec	d	HP	-Sun	-Regulus	-Mars	-Pollux	+Jupiter	+Aldebaran	+Saturn	+Fomalhaut
0	300°09.5	4.7'	N 28°39.8	0.0'	58.1'	118°16.8	59°35.6	24°32.9	22°48.6	11°17.0	23°07.2	107°34.6	116°31.8
1	314°33.2	4.7'	28°39.9	-0.1'	58.1'	117°45.3	59°01.6	24°00.3	22°14.7	11°46.5	23°37.7	108°08.8	117°03.7
2	328°56.9	4.8'	28°39.7	-0.3'	58.0'	117°13.8	58°27.7	23°27.9	21°40.8	12°16.3	24°08.3	108°42.9	117°35.5
3	343°20.7	4.8'	28°39.4	-0.5'	58.0'	116°42.3	57°53.8	22°55.5	21°06.9	12°46.5	24°39.0	109°16.9	118°07.2
4	357°44.5	4.9'	28°38.9	-0.7'	57.9'	116°10.9	57°19.9	22°23.1	20°33.1	13°16.9	25°09.8	109°50.9	118°38.9
5	12°08.4	5.0'	28°38.2	-0.9'	57.9'	115°39.5	56°46.1	21°50.8	19°59.4	13°47.6	25°40.6	110°24.9	119°10.5
6	26°32.4	5.0'	N 28°37.3	-1.1'	57.9'	115°08.2	56°12.4	21°18.6	19°25.7	14°18.4	26°11.6	110°58.8	119°42.0
7	40°56.4	5.1'	28°36.3	-1.2'	57.8'	114°37.0	55°38.7	20°46.5	18°52.1	14°49.4	26°42.5	111°32.6	
8	55°20.5	5.2'	28°35.1	-1.4'	57.8'	114°05.8	55°05.0	20°14.5	18°18.5	15°20.6	27°13.6	112°06.4	
9	69°44.7	5.2'	28°33.7	-1.6'	57.7'	113°34.6	54°31.4	19°42.5	17°45.0	15°51.9	27°44.7	112°40.2	
10	84°08.9	5.3'	28°32.1	-1.8'	57.7'	113°03.5	53°57.9	19°10.6	$17^{\circ}11.6$	16°23.3	28°15.8	113°13.9	
11	98°33.2	5.4'	28°30.3	-1.9'	57.7'	112°32.5	53°24.4	18°38.8	16°38.2	16°54.8	28°47.0	113°47.6	
12	112°57.6	5.5'	N 28°28.4	-2.1'	57.6'	112°01.4	52°50.9	18°07.1	16°04.8	17°26.4	29°18.2	114°21.2	
13	127°22.1	5.6'	28°26.3	-2.3'	57.6'	111°30.5	52°17.5	17°35.5	15°31.6	17°58.1	29°49.5	114°54.7	
14	141°46.7	5.6'	28°24.0	-2.5'	57.5'	110°59.6	51°44.1	17°04.0	14°58.3	18°29.9	30°20.7	115°28.3	
15	156°11.3	5.7'	28°21.5	-2.6'	57.5'	110°28.7	51°10.8	16°32.5	14°25.2	19°01.7	30°52.0	116°01.7	
16	170°36.0	5.8'	28°18.9	-2.8'	57.5'	109°57.9	50°37.6	16°01.2	13°52.1	19°33.5	31°23.4	116°35.1	
17	185°00.9	5.9'	$28^{\circ}16.1$	-3.0'	57.4'	109°27.1	50°04.3	15°30.0	13°19.1	20°05.4	31°54.7	117°08.5	
18	199°25.8	6.0'	N 28°13.2	-3.1'	57.4'	108°56.4	49°31.2	14°58.8	12°46.1	20°37.3	32°26.0	117°41.8	
19	213°50.7	6.1'	28°10.0	-3.3'	57.3'	108°25.7	48°58.1	14°27.8	12°13.3	21°09.2	32°57.4	118°15.1	
20	228°15.8	6.2'	28°06.8	-3.5'	57.3'	107°55.1	48°25.0	13°57.0	11°40.5	21°41.2	33°28.8	118°48.3	
21	242°41.0	6.3'	28°03.3	-3.6'	57.3'	107°24.5	47°52.0	13°26.2	11°07.7	22°13.1	34°00.1	119°21.5	
22	257°06.2	6.4'	27°59.7	-3.8'	57.2'	106°54.0	47°19.0	12°55.6	10°35.1	22°45.1	34°31.5	119°54.7	
23	271°31.6	6.5'	27°55.9	-3.9'	57.2'	106°23.5	46°46.1	12°25.2	10°02.5	23°17.1	35°02.9		
22 nd	SD :	= 15.8'	Mer. pas	s. 04:09	1				Sur	SD = 16.1	'		

h		Moo	n (23 rd Oo	ct)			Lunar	Distance	(object	s with lar	gest hourly	LD delta)	
Wed	GHA	ν	Dec	d	HP	-Sun	-Regulus	-Mars	-Pollux	+Jupiter	+Betelgeuse	+Capella	+Aldebaran
0	285°57.1	6.5'	N 27°52.0	-4.1'	57.1'	105°53.0	46°13.2	11°55.0	9°30.1	23°49.1	25°54.8	27° 33.1	35°34.2
1	300°22.6	6.6'	27°47.9	-4.3'	57.1'	105°22.6	45°40.4	11°24.9	8°57.7	24°21.1	26°13.5	27°58.0	36°05.6
2	314°48.3	6.7'	27°43.6	-4.4'	57.1'	104°52.3	45°07.6	10°55.0	8°25.5	24°53.1	26°32.5	28°23.1	36°37.0
3	329°14.0	6.8'	27°39.2	-4.6'	57.0'	104°22.0	44°34.8	10°25.4	7°53.4	25°25.1	26°51.9	28°48.3	37°08.3
4	343°39.8	6.9'	27°34.7	-4.7'	57.0'	103°51.7	44°02.1	9°56.0	7°21.4	25°57.0	27°11.7	29° 13.8	37° 39.7
5	358°05.8	7.1'	27°29.9	-4.9'	57.0'	103°21.5	43°29.5	9°26.9	6°49.6	26°29.0	27°31.9	29°39.5	38°11.0
6	12°31.8	7.2'	$N27^{\circ}25.1$	-5.0'	56.9'	102°51.3	42°56.9	8°58.2	6°18.0	27°01.0	27°52.4	30°05.3	38°42.3
7	26°58.0	7.3'	27°20.0	-5.2'	56.9'	102°21.2	42°24.3	8°29.8	5°46.6	27°32.9	28°13.2	30°31.3	39° 13.7
8	41°24.3	7.4'	27° 14.9	-5.3'	56.8'	101°51.1	41°51.8	8°01.9	$5^{\circ}15.6$	28°04.8	28°34.3	30°57.4	39°45.0
9	55°50.6	7.5'	27°09.6	-5.5'	56.8'	101°21.0	41°19.4	7°34.4	4°44.9	28°36.8	28°55.7	31°23.7	40° 16.3
10	70°17.1	7.6'	27°04.1	-5.6'	56.8'	100°51.0	40°46.9	7°07.6	$4^{\circ}14.7$	29°08.7	29°17.4	31°50.2	40°47.5
11	84°43.7	7.7'	26°58.5	-5.8'	56.7'	100°21.1	40°14.6	6°41.4	3°45.2	29°40.5	29°39.4	32°16.7	41° 18.8
12	99°10.3	7.8'	N 26°52.7	-5.9'	56.7'	99°51.2	39°42.2	6°16.1		30°12.4	30°01.6	32°43.4	41°50.1
13	113°37.1	7.9'	26°46.8	-6.0'	56.7'	99°21.3	39°09.9			30°44.3	30°24.1	33° 10.2	42°21.3
14	128°04.0	8.0'	26°40.8	-6.2'	56.6'	98°51.5	38°37.7			31°16.1	30°46.8	33°37.1	42° 52.5
15	142°31.0	8.1'	26°34.6	-6.3'	56.6'	98°21.7	38°05.5			31°47.9	31°09.7	34°04.1	43°23.7
16	156°58.2	8.2'	26°28.3	-6.4'	56.5'	97°51.9	37°33.3			32°19.7	31°32.9	34°31.2	43°54.9
17	171°25.4	8.3'	26°21.9	-6.6'	56.5'	97°22.2	37°01.2			32°51.4	31°56.3	34°58.4	44°26.0
18	185°52.7	8.5'	$N26^{\circ}15.3$	-6.7'	56.5'	96°52.6	36°29.2			33°23.1	32°19.8	35°25.7	44°57.2
19	200°20.2	8.6'	26°08.6	-6.8'	56.4'	96°23.0	35°57.1			33°54.8	32°43.6	35°53.1	45°28.3
20	214°47.8	8.7'	26°01.7	-7.0'	56.4'	95°53.4	35°25.1			34°26.5	33°07.5	36°20.5	45°59.4
21	229°15.4	8.8'	25°54.8	-7.1'	56.4'	95°23.8	34°53.2			34°58.2	33°31.6	36°48.1	46°30.4
22	243°43.2	8.9'	25°47.6	-7.2'	56.3'	94°54.3	34°21.3			35°29.8	33°55.8	37° 15.7	47°01.5
23	258°11.1	9.0'	25°40.4	-7.4'	56.3'	94°24.9	33°49.5			36°01.4	34°20.3	37°43.3	47°32.5
23 rd	SD :	= 15.6	Mer. pas	s. 05:08					Su	n SD = 16.1	/		

h	Moon	(24th	Oct)	
11	IVIOUII	124	OCLI	

Lunar Distance (objects with largest hourly LD delta)

Thu	GHA	ν	Dec	d	HP	-Acrux	-Sun	-Regulus	+Pollux	+Mars	+Jupiter	+Capella	+Aldebaran
0	272°39.1	9.1'	N 25°33.0	-7.5'	56.3'	102°59.0	93°55.5	33°17.6			36°33.0	38°11.0	48°03.5
1	287°07.3	9.2'	25°25.6	-7.6'	56.2'	102°39.1	93°26.1	32°45.9	4°27.4		37°04.5	38°38.8	48° 34.5
2	301°35.5	9.4'	25°18.0	-7.7'	56.2'	102°19.2	92°56.7	32°14.1	4°57.2		37°36.1	39°06.6	49°05.4
3	316°03.9	9.5'	25°10.2	-7.9'	56.2'	101°59.3	92°27.4	31°42.5	5°27.3		38°07.6	39°34.5	49°36.4
4	330°32.3	9.6'	25°02.4	-8.0'	56.1'	101°39.3	91°58.2	31°10.8	5°57.7		38°39.0	40°02.4	50°07.3
5	345°00.9	9.7'	24°54.4	-8.1'	56.1'	101°19.4	91°29.0	30°39.2	6°28.3		39° 10.5	40°30.4	50°38.2
6	359°29.6	9.8'	N 24°46.3	-8.2'	56.1'	100°59.4	90°59.8	30°07.6	6°59.0		39°41.9	40°58.4	51°09.0
7	13°58.4	9.9'	24°38.1	-8.3'	56.0'	100°39.4	90°30.6	29°36.1	7°29.8		40° 13.3	41°26.5	51°39.9
8	28°27.4	10.0'	24°29.8	-8.4'	56.0'	100°19.4	90°01.5	29°04.6	8°00.7	6°33.7	40°44.6	41°54.6	52° 10.7
9	42°56.4	10.1'	24°21.3	-8.5'	56.0'	99°59.4	89°32.4	28°33.2	8°31.6	6°58.9	41°16.0	42°22.7	52°41.5
10	57°25.5	10.3'	24°12.8	-8.7'	55.9'	99°39.4	89°03.4	28°01.8	9°02.6	7°24.7	41°47.3	42°50.9	53°12.2
11	71°54.8	10.4'	24°04.1	-8.8'	55.9'	99°19.4	88°34.4	27°30.4	9°33.6	7°51.1	42°18.6	43°19.1	53°43.0
12	86°24.2	10.5'	N 23°55.4	-8.9'	55.9'	98°59.3	88°05.4	26°59.1	10°04.6	8° 17.9	42°49.8	43°47.3	54° 13.7
13	100°53.7	10.6'	23°46.5	-9.0'	55.8'	98°39.3	87°36.5	26°27.9	10°35.6	8°45.1	43°21.0	44°15.6	54°44.4
14	115°23.3	10.7'	23°37.5	-9.1'	55.8'	98°19.3	87°07.6	25°56.6	11°06.7	9°12.5	43°52.2	44°43.8	55° 15.1
15	129°53.0	10.8'	23°28.4	-9.2'	55.8'	97°59.2	86°38.7	25°25.4	11°37.7	9°40.3	44°23.4	45°12.1	55° 45.7
16	144°22.8	10.9'	23°19.3	-9.3'	55.8'	97°39.2	86°09.9	24°54.3	12°08.7	10°08.2	44°54.5	45°40.4	56° 16.3
17	158°52.7	11.0'	23°10.0	-9.4'	55.7'	97°19.2	85°41.1	24°23.2	12°39.7	10°36.3	45°25.7	46°08.8	56°46.9
18	173°22.7	11.1'	N 23°00.6	-9.5'	55.7'	96°59.1	85°12.3	23°52.1	13° 10.7	11°04.6	45°56.7	46°37.1	57° 17.5
19	187°52.9	11.3'	22°51.1	-9.6'	55.7'	96°39.1	84°43.6	23°21.1	13°41.7	11°33.0	46°27.8	47°05.5	57°48.0
20	202°23.2	11.4'	22°41.5	-9.7'	55.6'	96°19.1	84°14.9	22°50.1	14° 12.7	12°01.6	46° 58.8	47°33.9	58° 18.6
21	216°53.5	11.5'	22°31.8	-9.8'	55.6'	95°59.0	83°46.2	22°19.1	14°43.7	12°30.2	47°29.8	48°02.3	58°49.0
22	231°24.0	11.6'	22°22.0	-9.9'	55.6'	95°39.0	83°17.6	21°48.2	15° 14.6	12°58.9	48°00.8	48°30.7	59° 19.5
23	245°54.6	11.7'	22°12.1	-10.0'	55.5'	95°19.0	82°49.0	21°17.3	15°45.5	13°27.7	48°31.8	48°59.2	59°50.0
24 th	SD	= 15.3'	Mer. pas	s. 06:02					Sun S	D = 16.1'			

h Moon (25th Oct)

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Fri	GHA	ν	Dec	d	HP	-Acrux	-Sun	-Regulus	+Mars	+Pollux	+Jupiter	+Capella	+Aldebaran
0	260°25.3	11.8'	N 22°02.2	-10.1'	55.5'	94°58.9	82°20.4	20°46.5	13°56.5	16°16.4	49°02.7	49°27.6	60°20.4
1	274°56.1	11.9'	21°52.1	-10.2'	55.5'	94°38.9	81°51.9	20° 15.8	14°25.4	16°47.3	49°33.6	49°56.1	60°50.8
2	289°27.0	12.0'	21°42.0	-10.2'	55.5'	94°18.9	81°23.4	19°45.0	14°54.3	17°18.2	50°04.5	50°24.5	61°21.2
3	303°58.0	12.1'	21°31.7	-10.3'	55.4'	93°58.9	80°54.9	19° 14.3	15°23.3	17°49.0	50°35.3	50°53.0	61°51.5
4	318°29.1	12.2'	21°21.4	-10.4'	55.4'	93°38.9	80°26.5	18°43.7	15°52.3	18°19.8	51°06.1	51°21.5	62°21.9
5	333°00.3	12.3'	$21^{\circ}11.0$	-10.5'	55.4'	93°18.9	79°58.0	18° 13.1	16°21.4	18°50.6	51°36.9	51°50.0	62°52.2
6	347°31.6	12.4'	N 21°00.5	-10.6'	55.4'	92°59.0	79°29.7	17°42.5	16°50.4	19°21.4	52°07.7	52°18.4	63°22.4
7	2°03.1	12.5'	20°49.9	-10.7'	55.3'	92°39.0	79°01.3	17° 12.0	17°19.5	19°52.2	52°38.5	52°46.9	63°52.7
8	16°34.6	12.6'	20°39.2	-10.7'	55.3'	92°19.0	78°33.0	16°41.6	17°48.6	20°22.9	53°09.2	53°15.4	64°22.9
9	31°06.2	12.7'	20°28.5	-10.8'	55.3'	91°59.1	78°04.7	16° 11.2	18°17.7	20°53.6	53°39.9	53°43.9	64°53.2
10	45°37.9	12.8'	20°17.6	-10.9'	55.2'	91°39.2	77°36.4	15°40.8	18°46.8	21°24.3	54°10.6	54°12.5	65°23.4
11	60°09.8	12.9'	20°06.7	-11.0'	55.2'	91°19.3	77°08.2	15° 10.6	19°15.9	21°54.9	54°41.2	54°41.0	65°53.5
12	74°41.7	13.0'	N 19°55.7	-11.1'	55.2'	90°59.3	76°40.0	14°40.3	19°45.0	22°25.6	55°11.8	55°09.5	66°23.7
13	89°13.7	13.1'	19°44.7	-11.1'	55.2'	90°39.5	76°11.8	14° 10.2	20°14.1	22°56.2	55°42.4	55°38.0	66°53.8
14	103°45.8	13.2'	19°33.5	-11.2'	55.1'	90°19.6	75°43.6	13°40.0	20°43.2	23°26.8	56°13.0	56°06.5	67°23.9
15	118°18.0	13.3'	19°22.3	-11.3'	55.1'	89°59.7	75° 15.5	13° 10.0	21°12.3	23°57.3	56°43.6	56°35.0	67°54.0
16	132°50.3	13.4'	$19^{\circ}11.0$	-11.4'	55.1'	89°39.9	74°47.4	12°40.0	21°41.4	24°27.9	57°14.1	57°03.5	68°24.0
17	147°22.8	13.5'	18°59.7	-11.4'	55.1'	89°20.1	74°19.3	12°10.2	22°10.6	24°58.4	57°44.6	57°32.0	68°54.1
18	161°55.2	13.6'	N 18°48.2	-11.5'	55.0'	89°00.3	73°51.2	11°40.4	22°39.7	25°28.9	58°15.1	58°00.5	69°24.1
19	176°27.8	13.7'	18°36.7	-11.6'	55.0'	88°40.5	73°23.2	11° 10.6	23°08.8	25°59.4	58°45.6	58°29.1	69°54.1
20	191°00.5	13.8'	18°25.2	-11.6'	55.0'	88°20.7	72°55.2	10°41.0	23°37.8	26°29.8	59°16.0	58°57.6	70°24.1
21	205°33.3	13.9'	18°13.5	-11.7'	55.0'	88°01.0	72°27.2	10° 11.5	24°06.9	27°00.3	59°46.4	59°26.1	70°54.0
22	220°06.2	13.9'	$18^{\circ}01.8$	-11.8'	55.0'	87°41.3	71°59.3	9°42.2	24°36.0	27°30.7	60°16.8	59°54.6	71°24.0
23	234°39.1	14.0'	17°50.1	-11.8'	54.9'	87°21.6	71°31.3	9°12.9	25°05.1	28°01.1	60°47.2	60°23.1	71°53.9
25 th	SD = 15.1' Mer. pass. 06:52				SunSD = 16.1'								

h Moon	(26 th Oct)) Lunar [
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Lunar Distance	(objects v	with largest	hourly	LD delta)	
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Sat	GHA	ν	Dec	d	HP	-Hadar	-Acrux	-Sun	-Regulus	+Mars	+Pollux	+Jupiter	+Aldebaran
0	249°12.1	14.1'	$N17^{\circ}38.2$	-11.9'	54.9'		87°01.9	71°03.4	8°43.9	25°34.1	28°31.4	61°17.6	72°23.8
1	263°45.3	14.2'	17°26.3	-12.0'	54.9'		86°42.2	70°35.5	8°15.0	26°03.2	29°01.8	61°47.9	72°53.7
2	278°18.5	14.3'	$17^{\circ}14.4$	-12.0'	54.9'		86°22.6	70°07.7	7°46.3	26°32.2	29°32.1	62° 18.3	73°23.5
3	292°51.8	14.4'	17°02.3	-12.1'	54.8'		86°03.0	69°39.8	7°17.9	27°01.3	30°02.4	62°48.6	73°53.4
4	307°25.1	14.5'	$16^{\circ}50.3$	-12.1'	54.8'		85°43.4	69°12.0	6°49.8	27°30.3	30°32.7	63° 18.8	74°23.2
5	321°58.6	14.5'	$16^{\circ}38.1$	-12.2'	54.8'		85°23.8	68°44.2	6°22.0	27°59.3	31°03.0	63°49.1	74°53.0
6	336°32.1	14.6'	N 16°25.9	-12.3'	54.8'		85°04.3	68°16.4	5°54.7	28°28.3	31°33.2	64° 19.3	75°22.8
7	351°05.8	14.7'	$16^{\circ}13.7$	-12.3'	54.8'		84°44.8	67°48.7	5°27.9	28°57.3	32°03.4	64°49.6	75°52.5
8	5°39.5	14.8'	$16^{\circ}01.3$	-12.4'	54.7'		84°25.3	67°20.9	5°01.7	29°26.2	32°33.6	65° 19.8	76°22.3
9	20°13.2	14.9'	15°49.0	-12.4'	54.7'		84°05.9	66°53.2	4°36.4	29°55.2	33°03.8	65°50.0	76°52.0
10	34°47.1	14.9'	15°36.5	-12.5'	54.7'		83°46.5	66°25.5		30°24.2	33°34.0	66°20.1	77°21.7
11	49°21.0	15.0'	$15^{\circ}24.1$	-12.5'	54.7'		83°27.1	65°57.9		30°53.1	34°04.1	66°50.3	77°51.4
12	63°55.0	15.1'	$N15^{\circ}11.5$	-12.6'	54.7'		83°07.7	65°30.2		31°22.0	34°34.3	67°20.4	78°21.1
13	78°29.1	15.2'	14°59.0	-12.6'	54.6'		82°48.4	65°02.6		31°51.0	35°04.4	67° 50.5	78°50.8
14	93°03.3	15.2'	14°46.3	-12.7'	54.6'	88°39.6	82°29.1	64°35.0		32°19.9	35°34.5	68° 20.6	79°20.4
15	107°37.5	15.3'	14°33.6	-12.7'	54.6'	88° 16.6	82°09.8	64°07.4		32°48.8	36°04.6	68°50.7	79°50.0
16	122°11.8	15.4'	14°20.9	-12.8'	54.6'	87°53.6	81°50.6	63°39.8		33°17.6	36°34.6	69°20.8	80° 19.6
17	136°46.2	15.4'	14°08.1	-12.8'	54.6'	87°30.6	81°31.4	63°12.2		33°46.5	37°04.7	69°50.8	80°49.2
18	151°20.6	15.5'	$N13^{\circ}55.3$	-12.9'	54.6'	87°07.7	81°12.2	62°44.7		34°15.4	37°34.7	70°20.9	81° 18.8
19	165°55.1	15.6'	13°42.4	-12.9'	54.5'	86°44.7	80°53.1	62°17.2		34°44.2	38°04.7	70°50.9	81°48.4
20	180°29.7	15.6'	13°29.5	-13.0'	54.5'	86°21.8	80°34.0	61°49.7		35°13.1	38°34.7	71°20.9	82°17.9
21	195°04.3	15.7'	$13^{\circ}16.6$	-13.0'	54.5'	85°58.9	80°14.9	61°22.2		35°41.9	39°04.7	71°50.9	82°47.5
22	209°39.0	15.8'	13°03.6	-13.0'	54.5'	85°36.0	79°55.9	60°54.7		36°10.7	39°34.7	72°20.8	83° 17.0
23	224°13.8	15.8'	12°50.5	-13.1'	54.5'	85°13.2	79°36.9	60°27.3		36°39.5	40°04.6	72°50.8	83°46.5
26 th	SD	= 15.0'	Mer. pas	s. 07:37					Sun S	D = 16.1'			

h		Moor	า (27 th Oo	ct)			Lunar [Distance	(objects	with large	est hourl	y LD delt	a)
Sun	GHA	ν	Dec	d	HP	-Hadar	-Acrux	-Sun	-Spica	+Regulus	+Pollux	+Jupiter	+
Λ	238°48 6	15 0'	N12°374	_13 1'	54 5'	840503	70°18 0	50°50 8	50°17 0		40°34.5	73°20.8	

		IVIOUI	1(27)	-1)			Lullal L	ristance	(objects	with large	est noun	y LD deit	a)
Sun	GHA	ν	Dec	d	HP	-Hadar	-Acrux	-Sun	-Spica	+Regulus	+Pollux	+Jupiter	+Aldebaran
0	238°48.6	15.9'	N12°37.4	-13.1'	54.5'	84°50.3	79°18.0	59°59.8	50°17.9		40°34.5	73°20.8	84°16.0
1	253°23.5	15.9'	12°24.3	-13.2'	54.4'	84°27.5	78°59.1	59°32.4	49°48.0		41°04.5	73°50.7	84°45.4
2	267°58.4	16.0'	$12^{\circ}11.1$	-13.2'	54.4'	84°04.7	78°40.2	59°05.0	49°18.0	5°25.4	41°34.4	74°20.6	85°14.9
3	282°33.5	16.1'	11°57.9	-13.2'	54.4'	83°41.9	78°21.4	58°37.6	48°48.1	5°51.8	42°04.3	74°50.5	85°44.4
4	297°08.5	16.1'	11°44.7	-13.3'	54.4'	83°19.2	78°02.6	58°10.2	48°18.2	6°18.8	42°34.1	75°20.4	86°13.8
5	311°43.6	16.2'	11°31.4	-13.3'	54.4'	82°56.5	77°43.9	57°42.8	47°48.3	6°46.1	43°04.0	75°50.3	86°43.2
6	326°18.8	16.2'	N 11°18.1	-13.4'	54.4'	82°33.8	77°25.2	57°15.5	47°18.5	7°13.8	43°33.9	76°20.2	87°12.6
7	340°54.0	16.3'	11°04.7	-13.4'	54.3'	82°11.1	77°06.5	56°48.2	46°48.6	7°41.7	44°03.7	76°50.0	87°42.0
8	355°29.3	16.3'	10°51.3	-13.4'	54.3'	81°48.4	76°47.9	56°20.8	46°18.7	8°09.8	44°33.5	77°19.9	88°11.4
9	10°04.7	16.4'	10°37.9	-13.5'	54.3'	81°25.8	76°29.4	55°53.5	45°48.9	8°38.2	45°03.3	77°49.7	88°40.8
10	24°40.0	16.4'	10°24.5	-13.5'	54.3'	81°03.2	76°10.8	55°26.2	45°19.1	9°06.6	45°33.1	78°19.5	89°10.1
11	39°15.5	16.5'	$10^{\circ}11.0$	-13.5'	54.3'	80°40.6	75°52.4	54°58.9	44°49.3	9°35.2	46°02.9	78°49.3	89°39.5
12	53°51.0	16.5'	N09°57.5	-13.5'	54.3'	80°18.1	75°34.0	54°31.7	44°19.4	10°03.9	46°32.7	79°19.1	90°08.8
13	68°26.5	16.6'	09°43.9	-13.6'	54.3'	79°55.6	75° 15.6	54°04.4	43°49.7	10°32.7	47°02.5	79°48.9	90°38.2
14	83°02.1	16.6'	09°30.3	-13.6'	54.3'	79°33.1	74°57.3	53°37.2	43°19.9	11°01.6	47°32.2	80°18.7	91°07.5
15	97°37.7	16.7'	09°16.7	-13.6'	54.2'	79°10.6	74°39.0	53°09.9	42°50.1	11°30.5	48°02.0	80°48.4	91°36.8
16	112°13.4	16.7'	09°03.1	-13.7'	54.2'	78°48.2	74°20.8	52°42.7	42°20.3	11°59.5	48°31.7	81°18.2	92°06.1
17	126°49.1	16.8'	08°49.4	-13.7'	54.2'	78°25.8	74°02.6	52°15.5	41°50.6	12°28.6	49°01.5	81°48.0	92°35.4
18	141°24.8	16.8'	N08°35.7	-13.7'	54.2'	78°03.4	73°44.5	51°48.3	41°20.9	12°57.6	49°31.2	82°17.7	93°04.6
19	156°00.6	16.8'	08°22.0	-13.7'	54.2'	77°41.1	73°26.4	51°21.1	40°51.1	13°26.8	50°00.9	82°47.4	93°33.9
20	170°36.5	16.9'	08°08.3	-13.8'	54.2'	77° 18.8	73°08.4	50°53.9	40°21.4	13°55.9	50°30.6	83°17.1	94°03.1
21	185°12.3	16.9'	07°54.5	-13.8'	54.2'	76°56.5	72°50.4	50°26.8	39°51.7	14°25.1	51°00.3	83°46.9	94°32.4
22	199°48.3	16.9'	07°40.7	-13.8'	54.2'	76°34.2	72°32.5	49°59.6	39°22.0	14°54.3	51°30.0	84°16.6	95°01.6
23	214°24.2	17.0'	07°26.9	-13.8'	54.2'	76°12.0	72°14.7	49°32.4	38°52.3	15°23.5	51°59.6	84°46.3	95°30.8
27 th	SD = 14.9' Mer. pass. 08:19					SunSD=16.1'							

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

									(,	· ,
Mon	GHA	ν	Dec	d	HP	-Hadar	-Acrux	-Sun	-Spica	+Regulus	+Pollux	+Jupiter	+Aldebaran
0	229°00.2	17.0'	$N07^{\circ}13.1$	-13.9'	54.1'	75°49.8	71°56.9	49°05.3	38°22.6	15°52.8	52°29.3	85° 15.9	96°00.1
1	243°36.2	17.1'	06°59.2	-13.9'	54.1'	75°27.7	71°39.2	48°38.2	37°53.0	16°22.0	52°59.0	85°45.6	96°29.3
2	258°12.3	17.1'	06°45.3	-13.9'	54.1'	75°05.6	71°21.5	48°11.0	37°23.3	16°51.3	53°28.6	86° 15.3	96°58.5
3	272°48.3	17.1'	06°31.4	-13.9'	54.1'	74°43.5	71°03.9	47°43.9	36°53.6	17°20.6	53°58.2	86°45.0	97°27.6
4	287°24.4	17.1'	$06^{\circ}17.5$	-13.9'	54.1'	74°21.5	70°46.3	47°16.8	36°24.0	17°49.9	54°27.9	87° 14.6	97°56.8
5	302°00.6	17.2'	06°03.6	-14.0'	54.1'	73°59.5	70°28.9	46°49.7	35°54.3	18°19.2	54° 57.5	87°44.3	98°26.0
6	316°36.8	17.2'	N 05°49.6	-14.0'	54.1'	73°37.5	70°11.4	46°22.6	35°24.7	18°48.6	55°27.1	88° 13.9	98°55.2
7	331°13.0	17.2'	05°35.7	-14.0'	54.1'	73° 15.6	69°54.1	45°55.5	34°55.1	19°17.9	55° 56.7	88°43.6	99°24.3
8	345°49.2	17.3'	$05^{\circ}21.7$	-14.0'	54.1'	72°53.7	69°36.8	45°28.5	34°25.4	19°47.3	56° 26.4	89° 13.2	99°53.5
9	0°25.4	17.3'	05° 07.7	-14.0'	54.1'	72°31.9	69°19.6	45°01.4	33°55.8	20°16.6	56° 56.0	89°42.8	100°22.6
10	15°01.7	17.3'	04°53.7	-14.0'	54.1'	72°10.1	69°02.4	44°34.3	33°26.2	20°46.0	57°25.6	90°12.4	100°51.8
11	29°38.0	17.3'	04°39.6	-14.0'	54.1'	71°48.3	68°45.3	44°07.3	32°56.6	21°15.3	57°55.1	90°42.1	101°20.9
12	44°14.3	17.3'	N 04°25.6	-14.1'	54.0'	71°26.6	68°28.3	43°40.2	32°27.0	21°44.7	58°24.7	91°11.7	101°50.0
13	58°50.7	17.4'	$04^{\circ}11.5$	-14.1'	54.0'	71°05.0	68°11.4	43°13.2	31°57.4	22°14.1	58°54.3	91°41.3	102°19.1
14	73°27.0	17.4'	03°57.5	-14.1'	54.0'	70°43.3	67°54.5	42°46.2	31°27.8	22°43.5	59°23.9	92°10.9	102°48.2
15	88°03.4	17.4'	03°43.4	-14.1'	54.0'	70°21.7	67°37.7	42°19.1	30°58.2	23°12.9	59°53.5	92°40.5	103°17.3
16	102°39.8	17.4'	03°29.3	-14.1'	54.0'	70°00.2	67°20.9	41°52.1	30°28.6	23°42.2	60°23.0	93° 10.1	103°46.4
17	117°16.2	17.4'	03° 15.2	-14.1'	54.0'	69°38.7	67°04.3	41°25.1	29°59.1	24°11.6	60°52.6	93°39.7	104° 15.5
18	131°52.7	17.4'	$N03^{\circ}01.1$	-14.1'	54.0'	69° 17.3	66°47.7	40°58.1	29°29.5	24°41.0	61°22.2	94°09.3	104°44.6
19	146°29.1	17.5'	02°47.0	-14.1'	54.0'	68° 55.9	66°31.2	40°31.1	28°59.9	25°10.4	61°51.7	94°38.8	105° 13.7
20	161°05.6	17.5'	02°32.9	-14.1'	54.0'	68°34.6	66°14.8	40°04.1	28°30.4	25°39.8	62°21.3	95°08.4	105°42.7
21	175°42.0	17.5'	02° 18.7	-14.1'	54.0'	68° 13.3	65°58.4		28°00.8	26°09.2	62°50.8	95°38.0	106° 11.8
22	190°18.5	17.5'	02°04.6	-14.1'	54.0'	67°52.0	65°42.2		27°31.2	26°38.6	63°20.4	96°07.6	106°40.9
23	204°55.0	17.5'	01°50.4	-14.1'	54.0'	67°30.8	65°26.0		27°01.7	27°08.0	63°49.9	96°37.2	107°09.9
28 th	SD = 14.8' Mer. pass. 08:58								Sun	SD = 16.1'			

h		Moon	(29 th Oct	()		Lunar	Distance	(objects v	vith larg	est hourl	y LD delt	a)
Tuo	CHV		Doc	<i></i> L	ID Hadau	Λ	Spica	1 Dogudus	I Marc	L Delland	Liveiter	

Tue	GHA	ν	Dec	d	HP	-Hadar	-Acrux	-Spica	+Regulus	+Mars	+Pollux	+Jupiter	+Aldebaran
0	219°31.5	17.5'	N 01°36.3	-14.2'	54.0'	67°09.7	65°09.9	26°32.1	27°37.4	60°01.9	64°19.5	97°06.7	107°39.0
1	234°08.0	17.5'	$01^{\circ}22.1$	-14.2'	54.0'	66°48.6	64°53.9	26°02.6	28°06.9	60°30.4	64°49.0	97°36.3	108°08.0
2	248°44.5	17.5'	$01^{\circ}08.0$	-14.2'	54.0'	66°27.6	64°37.9	25°33.0	28° 36.3	60°58.9	65°18.5	98°05.9	108°37.1
3	263°21.0	17.5'	00°53.8	-14.2'	54.0'	66°06.6	64°22.1	25°03.5	29°05.7	61°27.4	65°48.1	98°35.4	109°06.1
4	277°57.6	17.5'	00°39.7	-14.2'	54.0'	65°45.7	64°06.3	24°33.9	29°35.1	61°55.9	66°17.6	99°05.0	109°35.1
5	292°34.1	17.5'	00°25.5	-14.2'	54.0'	65°24.9	63°50.7	24°04.4	30°04.5	62°24.5	66°47.1	99°34.5	110°04.1
6	307°10.6	17.5'	N00°11.3	-14.2'	53.9'	65°04.1	63°35.1	23°34.8	30°34.0	62°53.0	67°16.7	100°04.1	110°33.2
7	321°47.2	17.5'	S 00°02.8	-14.2'	53.9'	64°43.3	63° 19.6	23°05.3	31°03.4	63°21.5	67°46.2	100°33.7	111°02.2
8	336°23.7	17.5'	00°17.0	-14.2'	53.9'	64°22.7	63°04.2	22°35.8	31° 32.8	63°50.0	68°15.7	101°03.2	111°31.2
9	351°00.2	17.5'	00°31.2	-14.2'	53.9'	64°02.1	62°48.9	22°06.2	32°02.3	64°18.5	68°45.3	101°32.8	112°00.2
10	5°36.8	17.5'	00°45.3	-14.2'	53.9'	63°41.5	62°33.7	21°36.7	32°31.7	64°47.1	69°14.8	102°02.3	112°29.2
11	20°13.3	17.5'	00°59.5	-14.2'	53.9'	63°21.0	62°18.6	$21^{\circ}07.1$	33°01.1	65°15.6	69°44.3	102°31.9	112°58.2
12	34°49.8	17.5'	S 01°13.6	-14.1'	53.9'	63°00.6	62°03.6	20°37.6	33°30.6	65°44.1	70°13.9	103°01.4	113°27.2
13	49°26.3	17.5'	01°27.8	-14.1'	53.9'	62°40.3		20°08.1	34°00.0	66°12.6	70°43.4	103°31.0	113°56.2
14	64°02.8	17.5'	$01^{\circ}41.9$	-14.1'	53.9'	62°20.0		19°38.5	34°29.5	66°41.2	71°12.9	104°00.5	114°25.2
15	78°39.3	17.5'	$01^{\circ}56.1$	-14.1'	53.9'	61°59.8		19°09.0	34°58.9	67°09.7	71°42.5	104°30.1	114°54.2
16	93°15.8	17.5'	$02^{\circ}10.2$	-14.1'	53.9'	61°39.7		18°39.5	35°28.4	67°38.2	72°12.0	104°59.7	115°23.2
17	107°52.3	17.5'	02°24.3	-14.1'	53.9'	61°19.6		18°09.9	35° 57.8	68°06.7	72°41.5	105°29.2	115°52.1
18	122°28.8	17.5'	S 02°38.4	-14.1'	53.9'	60°59.6		17°40.4	36°27.3	68°35.3	73°11.1	105°58.8	116°21.1
19	137°05.3	17.5'	02°52.5	-14.1'	53.9'	60°39.7		17°10.8	36° 56.7	69°03.8	73°40.6	106°28.3	116°50.1
20	151°41.7	17.4'	03°06.6	-14.1'	53.9'	60° 19.9		16°41.3	37° 26.2	69°32.4	74°10.1	106°57.9	117°19.1
21	166°18.2	17.4'	03°20.7	-14.1'	53.9'	60°00.1		$16^{\circ}11.8$	37°55.7	70°00.9	74°39.7	107°27.5	117°48.0
22	180°54.6	17.4'	03°34.8	-14.1'	53.9'	59°40.4		15°42.2	38°25.2	70°29.4	75°09.2	107°57.0	118°17.0
23	195°31.0	17.4'	03°48.9	-14.1'	53.9'	59°20.8		15°12.7	38° 54.6	70°58.0	75°38.8	108°26.6	118°45.9
29 th	SD	= 14.7'	Mer. pas	s. 09:37									

h	Moon (30 th Oct)	Lunar [Distance (objects w	ith largest	hourly l	LD delta)	

Wed	GHA	ν	Dec	d	HP	-Hadar	-Spica	+Regulus	+Mars	+Procyon	+Pollux	+Capella	+Jupiter
0	210°07.4	17.4'	S 04°02.9	-14.0'	53.9'	59°01.3	14°43.1	39°24.1	71°26.6	74°01.1	76°08.3	106°04.2	108°56.1
1	224°43.8	17.4'	04°17.0	-14.0'	53.9'	58°41.9	14° 13.6	39°53.6	71°55.1	74°28.6	76° 37.9	106°32.2	109°25.7
2	239°20.2	17.3'	04°31.0	-14.0'	53.9'	58°22.6	13°44.0	40°23.1	72°23.7	74°56.0	77°07.4	107°00.2	109°55.3
3	253°56.5	17.3'	04°45.0	-14.0'	53.9'	58°03.3	13° 14.5	40°52.6	72°52.2	75°23.5	77°37.0	107°28.2	110°24.8
4	268°32.8	17.3'	04°59.0	-14.0'	53.9'	57°44.2	12°44.9	41°22.1	73°20.8	75°51.0	78°06.5	107°56.2	110°54.4
5	283°09.1	17.3'	$05^{\circ}13.0$	-14.0'	53.9'	57°25.1	12° 15.4	41°51.6	73°49.4	76°18.5	78°36.1	108°24.2	111°24.0
6	297°45.4	17.3'	S 05°27.0	-13.9'	53.9'	57°06.1	11°45.8	42°21.1	74° 18.0	76°46.0	79°05.6	108°52.2	111°53.6
7	312°21.7	17.2'	05°40.9	-13.9'	53.9'	56°47.3	11°16.3	42°50.6	74°46.5	77°13.5	79°35.2	109°20.2	112°23.2
8	326°57.9	17.2'	05°54.8	-13.9'	53.9'	56°28.5	10°46.7	43°20.1	75° 15.1	77°41.0	80°04.8	109°48.2	112°52.7
9	341°34.1	17.2'	06°08.7	-13.9'	53.9'	56°09.8	10° 17.1	43°49.7	75°43.7	78°08.6	80°34.4	110°16.2	113°22.3
10	356°10.3	17.2'	06°22.6	-13.9'	53.9'	55°51.2	9°47.6	44°19.2	76°12.3	78°36.1	81°03.9	110°44.2	113°51.9
11	10°46.4	17.1'	$06^{\circ}36.5$	-13.8'	53.9'	55°32.7	9°18.0	44°48.7	76°40.9	79°03.7	81°33.5	111°12.1	114°21.5
12	25°22.5	17.1'	S 06°50.4	-13.8'	53.9'	55° 14.4	8°48.5	45°18.3	77°09.5	79°31.3	82°03.1	111°40.1	114°51.1
13	39°58.6	17.1'	07°04.2	-13.8'	53.9'	54°56.1	8° 18.9	45°47.8	77°38.1	79°58.9	82°32.7	112°08.0	115°20.7
14	54°34.7	17.0'	$07^{\circ}18.0$	-13.8'	53.9'	54°37.9	7°49.3	46°17.3	78°06.7	80°26.5	83°02.3	112°36.0	115°50.3
15	69°10.7	17.0'	07°31.8	-13.8'	53.9'	54°19.9	7° 19.8	46°46.9	78°35.4	80°54.1	83°31.9	113°03.9	116°19.9
16	83°46.7	17.0'	07°45.5	-13.7'	53.9'	54°01.9	6°50.2	47°16.5	79°04.0	81°21.7	84°01.5	113°31.9	116°49.5
17	98°22.7	16.9'	07°59.3	-13.7'	54.0'	53°44.1	6°20.7	47°46.0	79°32.6	81°49.3	84°31.1	113°59.8	117°19.1
18	112°58.6	16.9'	S 08°13.0	-13.7'	54.0'	53°26.4	5°51.1	48°15.6	80°01.3	82°16.9	85°00.7	114°27.7	117°48.7
19	127°34.5	16.9'	08°26.6	-13.7'	54.0'	53°08.8	5°21.6	48°45.2	80°29.9	82°44.6	85°30.4	114°55.6	118°18.4
20	142°10.4	16.8'	08°40.3	-13.6'	54.0'	52°51.4	4°52.1	49°14.8	80°58.6	83°12.2	86°00.0	115°23.5	118°48.0
21	156°46.2	16.8'	08°53.9	-13.6'	54.0'	52°34.0	4°22.6	49°44.4	81°27.2	83°39.9	86°29.6	115°51.4	119°17.6
22	171°22.0	16.7'	09°07.5	-13.6'	54.0'	52°16.8	3°53.1	50°14.0	81°55.9	84°07.6	86° 59.3	116°19.3	119°47.2
23	185°57.7	16.7'	09°21.1	-13.5'	54.0'	51°59.7	3°23.7	50°43.6	82°24.6	84°35.3	87°28.9	116°47.1	
30 th	SD	= 14.7	Mer. pas	s. 10:16									

h	Moon (31 st Oct)	Lunar Distance (objects with largest hourly LD delta)
11	MOOH (31 OCL)	Luliai Distance (Objects With largest nounly LD delta)

		IVIOUI	1 (31 0	(1)			Luliai	Distance	(ODJects	with large	st noung	y LD deita)	
Thu	GHA	ν	Dec	d	HP	-Hadar	±Spica	+Regulus	+Mars	+Procyon	+Pollux	+Betelgeuse	+Capella
0	200°33.4	16.7'	S 09°34.6	-13.5'	54.0'	51°42.8	2°54.4	51°13.2	82°53.3	85°02.9	87°58.5	110°56.8	117°15.0
1	215°09.1	16.6'	09°48.1	-13.5'	54.0'	51°26.0	2°25.2	51°42.8	83°22.0	85°30.6	88°28.2	111°24.1	117°42.9
2	229°44.7	16.6'	$10^{\circ}01.6$	-13.4'	54.0'	51°09.3	1°56.2	52° 12.4	83°50.7	85°58.3	88°57.9	111°51.5	118°10.7
3	244°20.3	16.5'	$10^{\circ}15.0$	-13.4'	54.0'	50°52.7	1°27.6	52°42.1	84°19.4	86°26.1	89°27.5	112°18.8	118°38.5
4	258°55.8	16.5'	10°28.4	-13.4'	54.0'	50°36.3		53°11.7	84°48.1	86°53.8	89°57.2	112°46.1	119°06.4
5	273°31.3	16.4'	10°41.8	-13.3'	54.0'	50°20.1		53°41.3	85°16.8	87°21.5	90°26.9	113°13.4	119°34.2
6	288°06.7	16.4'	S 10°55.1	-13.3'	54.0'	50°03.9		54°11.0	85°45.5	87°49.3	90°56.6	113°40.7	
7	302°42.1	16.3'	11°08.4	-13.3'	54.0'	49°48.0		54°40.7	86°14.3	88° 17.0	91°26.3	114°08.0	İ
8	317°17.5	16.3'	$11^{\circ}21.7$	-13.2'	54.0'	49°32.2		55° 10.3	86°43.0	88° 44.8	91°56.0	114°35.3	
9	331°52.8	16.2'	11°34.9	-13.2'	54.0'	49°16.5		55°40.0	87°11.8	89° 12.5	92°25.7	115°02.6	
10	346°28.0	16.2'	11°48.1	-13.1'	54.0'	49°01.0	2°07.9	56°09.7	87°40.5	89°40.3	92°55.4	115°29.8	
11	1°03.2	16.1'	$12^{\circ}01.2$	-13.1'	54.0'	48°45.6	2°37.1	56°39.4	88°09.3	90°08.1	93°25.1	115°57.1	
12	15°38.4	16.1'	S 12°14.3	-13.1'	54.0'	48°30.5	3°06.5	57°09.1	88°38.1	90°35.9	93°54.9	116°24.3	
13	30°13.5	16.0'	12°27.3	-13.0'	54.0'	48°15.4	3°35.9	57° 38.8	89°06.8	91°03.7	94°24.6	116°51.5	i i
14	44°48.5	16.0'	12°40.4	-13.0'	54.1'		4°05.5	58°08.5	89°35.6	91°31.5	94°54.4	117°18.7	
15	59°23.5	15.9'	12°53.3	-12.9'	54.1'		4°35.1	58°38.3	90°04.4		95°24.1		
16	73°58.4	15.9'	13°06.3	-12.9'	54.1'					ew Moon —			
17	88°33.3	15.8'	$13^{\circ}19.1$	-12.8'	54.1'				N	ew Moon —			
18	103°08.1	15.8'	S 13°32.0	-12.8'	54.1'		_			ew Moon			
19	117°42.9	15.7'	13°44.8	-12.7'	54.1'					ew Moon —			
20	132°17.6	15.6'	13°57.5	-12.7'	54.1'					ew Moon —			
21	146°52.2	15.6'	$14^{\circ}10.2$	-12.6'	54.1'					ew Moon —			
22	161°26.8	15.5'	14°22.8	-12.6'	54.1'		_			ew Moon —			
23	176°01.3	15.5'	14°35.4	-12.5'	54.1'				N	ew Moon —			
31 st	SD	= 14.7'	Mer. pas	s. 10:56									

h Moon (1st Nov)

Fri	GHA	ν	Dec	d	HP	
0	190°35.8	15.4'	S 14°47.9	-12.5'	54.1'	New Moon
1	205°10.2	15.3'	15°00.4	-12.4'	54.1'	New Moon
2	219°44.5	15.3'	15°12.8	-12.4'	54.1'	New Moon
3	234°18.8	15.2'	15°25.2	-12.3'	54.1'	New Moon
4	248°53.0	15.1'	15°37.5	-12.3'	54.2'	New Moon
5	263°27.1	15.1'	15°49.8	-12.2'	54.2'	New Moon
6	278°01.2	15.0'	S 16°02.0	-12.1'	54.2'	New Moon
7	292°35.2	14.9'	$16^{\circ}14.1$	-12.1'	54.2'	New Moon
8	307°09.1	14.9'	$16^{\circ}26.2$	-12.0'	54.2'	New Moon
9	321°43.0	14.8'	16°38.3	-12.0'	54.2'	New Moon
10	336°16.8	14.7'	$16^{\circ}50.2$	-11.9'	54.2'	New Moon
11	350°50.5	14.7'	$17^{\circ}02.1$	-11.8'	54.2'	New Moon
12	5°24.2	14.6'	S 17°14.0	-11.8'	54.2'	New Moon
13	19°57.8	14.5'	17°25.7	-11.7'	54.2'	New Moon
14	34°31.3	14.4'	17°37.4	-11.6'	54.2'	New Moon
15	49°04.7	14.4'	$17^{\circ}49.1$	-11.6'	54.3'	New Moon
16	63°38.1	14.3'	$18^{\circ}00.6$	-11.5'	54.3'	New Moon
17	78°11.4	14.2'	18°12.2	-11.4'	54.3'	New Moon
18	92°44.6	14.1'	S 18°23.6	-11.4'	54.3'	New Moon
19	107°17.8	14.1'	18°34.9	-11.3'	54.3'	New Moon
20	121°50.8	14.0'	18°46.2	-11.2'	54.3'	New Moon
21	136°23.8	13.9'	18°57.5	-11.1'	54.3'	New Moon
22	150°56.7	13.8'	19°08.6	-11.1'	54.3'	New Moon
23	165°29.6	13.8'	19°19.7	-11.0'	54.3'	New Moon
1 st	SD	= 14.8'	Mer. pas	s. 11:38		

h		Моо	n (2 nd No	v)		Lunar D	istance (ob	jects with	largest	hourly LI	D delta)
Sat	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Achernar	-Altair	-Venus	-Antares
0	180°02.3	13.7'	S 19°30.7	-10.9'	54.3'			New Mo	on ———		
1	194°35.0	13.6'	$19^{\circ}41.6$	-10.8'	54.4'			New Mo	on ———		
2	209°07.6	13.5'	19°52.4	-10.8'	54.4'			New Mo	on ———		
3	223°40.1	13.4'	20°03.2	-10.7'	54.4'			New Mo	on ———		
4	238°12.6	13.4'	20°13.9	-10.6'	54.4'			New Mo	on ———		
5	252°44.9	13.3'	20°24.5	-10.5'	54.4'		· · · · · · · · · · · · · · · · · · ·	New Mo	on ———		
6	267°17.2	13.2'	S 20°35.0	-10.4'	54.4'			New Mo	on ———		
7	281°49.4	13.1'	20°45.4	-10.3'	54.4'			New Mo	on ———		
8	296°21.5	13.0'	20°55.7	-10.3'	54.4'			New Mo	on ———		
9	310°53.6	13.0'	21°06.0	-10.2'	54.4'			New Mo			
10	325°25.5	12.9'	$21^{\circ}16.2$	-10.1'	54.5'	112°24.9	101°40.6	99°27.4	76°08.4	28°36.4	19°51.3
11	339°57.4	12.8'	21°26.3	-10.0'	54.5'	111°54.6	101°11.9	99°11.6	75°43.7	28°09.3	19°21.1
12	354°29.2	12.7'	S 21°36.3	-9.9'	54.5'	111°24.3	100°43.3	98°55.8	75°19.0	27°42.3	18°50.8
13	9°00.9	12.6'	21°46.2	-9.8'	54.5'	110°54.0	100°14.6	98°39.9	74°54.3	27°15.2	18°20.6
14	23°32.5	12.5'	21°56.0	-9.7'	54.5'	110°23.7	99°45.9	98°23.9	74°29.6	26°48.2	17°50.3
15	38°04.0	12.5'	22°05.7	-9.6'	54.5'	109°53.3	99°17.2	98°08.0	74°05.0	26°21.1	17°20.0
16	52°35.5	12.4'	22°15.3	-9.5'	54.5'	109°23.0	98°48.5	97°52.0	73°40.3	25°54.0	16°49.7
17	67°06.9	12.3'	22°24.9	-9.4'	54.5'	108°52.6	98°19.8	97°35.9	73°15.7	25°26.9	16°19.4
18	81°38.1	12.2'	S 22°34.3	-9.3'	54.6'	108°22.2	97°51.1	97° 19.9	72°51.1	24°59.8	15°49.1
19	96°09.3	12.1'	22°43.7	-9.2'	54.6'	107°51.9	97°22.3	97°03.8	72°26.5	24°32.7	15°18.8
20	110°40.4	12.0'	22°52.9	-9.1'	54.6'	107°21.5	96°53.5	96°47.6	72°01.9	24°05.6	14°48.4
21	125°11.5	11.9'	23°02.1	-9.0'	54.6'	106°51.1	96°24.7	96°31.5	71°37.3	23°38.5	14°18.1
22	139°42.4	11.9'	23°11.1	-8.9'	54.6'	106°20.6	95°55.9	96° 15.3	71°12.8	23°11.4	13°47.7
23	154°13.3	11.8'	$23^{\circ}20.1$	-8.8'	54.6'	105°50.2	95°27.1	95°59.1	70°48.3	22°44.3	13°17.3
2 nd	SD	= 14.8'	Mer. pas	s. 12:23							

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h		Moor	n (3 rd No	v)		Lunar D	istance (o	bjects with	largest	hourly LI	D delta)
Sun	GHA	ν	Dec	d	HP	-Saturn	-Achernar	-Fomalhaut	-Altair	-Venus	-Antares
0	168°44.0	11.7'	S 23°28.9	-8.7'	54.6'	105°19.7	95°42.8	94° 58.2	70°23.8	22°17.2	12°46.9
1	183°14.7	11.6'	23°37.6	-8.6'	54.7'	104°49.3	95°26.6	94°29.4	69°59.3	21°50.1	12°16.5
2	197°45.3	11.5'	23°46.3	-8.5'	54.7'	104°18.8	95°10.3	94°00.5	69°34.8	21°22.9	11°46.1
3	212°15.8	11.4'	23°54.8	-8.4'	54.7'	103°48.3	94°54.0	93°31.6	69° 10.4	20°55.8	11°15.7
4	226°46.3	11.3'	24°03.2	-8.3'	54.7'	103°17.8	94°37.6	93°02.7	68°46.0	20°28.7	10°45.2
5	241°16.6	11.3'	$24^{\circ}11.6$	-8.2'	54.7'	102°47.3	94°21.2	92°33.8	68°21.6	20°01.6	10°14.7
6	255°46.9	11.2'	S 24°19.8	-8.1'	54.7'	102°16.7	94°04.9	92°04.8	67°57.3	19°34.4	9°44.2
7	270°17.1	11.1'	24°27.9	-8.0'	54.7'	101°46.2	93°48.4	91°35.9	67°32.9	19°07.3	9°13.7
8	284°47.2	11.0'	24°35.8	-7.9'	54.8'	101°15.6	93°32.0	91°06.9	67°08.6	18°40.2	8°43.2
9	299°17.2	10.9'	24°43.7	-7.8'	54.8'	100°45.0	93°15.6	90°37.9	66°44.4	18°13.1	8°12.7
10	313°47.1	10.8'	$24^{\circ}51.5$	-7.6'	54.8'	100°14.4	92°59.1	90°09.0	66°20.1	17°45.9	7°42.2
11	328°16.9	10.8'	$24^{\circ}59.1$	-7.5'	54.8'	99°43.8	92°42.6	89°39.9	65°55.9	17°18.8	7°11.6
12	342°46.7	10.7'	S 25°06.7	-7.4'	54.8'	99°13.2	92°26.1	89°10.9	65°31.8	16°51.7	6°41.0
13	357°16.4	10.6'	$25^{\circ}14.1$	-7.3'	54.8'	98°42.6	92°09.6	88°41.9	65°07.6	16°24.6	6°10.5
14	11°45.9	10.5'	25°21.4	-7.2'	54.8'	98°11.9	91°53.1	88° 12.8	64°43.5	15°57.6	5°39.9
15	26°15.5	10.4'	25°28.6	-7.1'	54.9'	97°41.2	91°36.5	87°43.8	64° 19.5	15°30.5	5°09.2
16	40°44.9	10.3'	25°35.6	-6.9'	54.9'	97°10.5	91°19.9	87°14.7	63°55.4	15°03.5	4°38.6
17	55°14.2	10.3'	25°42.6	-6.8'	54.9'	96°39.8	91°03.4	86°45.6	63°31.5	14°36.4	4°08.0
18	69°43.5	10.2'	S 25°49.4	-6.7'	54.9'	96°09.1	90°46.8	86° 16.5	63°07.5	14°09.4	3°37.3
19	84°12.7	10.1'	$25^{\circ}56.1$	-6.6'	54.9'	95°38.4	90°30.2	85°47.4	62°43.6	13°42.5	3°06.6
20	98°41.8	10.0'	$26^{\circ}02.6$	-6.4'	54.9'	95°07.7	90°13.6	85° 18.3	62°19.8	13°15.5	2°36.0
21	113°10.8	9.9'	$26^{\circ}09.1$	-6.3'	55.0'	94°36.9	89°57.0	84°49.1	61°55.9	12°48.6	2°05.3
22	127°39.8	9.9'	$26^{\circ}15.4$	-6.2'	55.0'	94°06.1	89°40.3	84°20.0	61°32.2	12°21.8	1°34.6
23	142°08.6	9.8'	$26^{\circ}21.6$	-6.1'	55.0'	93°35.3	89°23.7	83°50.8	61°08.5	11°54.9	1°03.9
3rd	SD	- 14 Q'	Mor pass	12.11							

h		Moo	n (4 th No	v)		Lunar [Distance (objects with	n largest	hourly L	.D delta)
Mon	GHA	ν	Dec	d	HP	-Saturn	-Achernar	-Fomalhaut	-Altair	-Venus	± Antares
0	156°37.4	9.7'	S 26°27.7	-5.9'	55.0'	93°04.5	89°07.1	83°21.6	60°44.8	11°28.2	0°33.3
1	171°06.1	9.6'	26°33.6	-5.8'	55.0'	92°33.7	88°50.4	82°52.4	60°21.2	11°01.5	
2	185°34.8	9.6'	26°39.4	-5.7'	55.0'	92°02.8	88° 33.8	82°23.2	59°57.6	10°34.9	
3	200°03.3	9.5'	26°45.1	-5.5'	55.1'	91°32.0	88° 17.1	81°54.0	59°34.1	10°08.3	
4	214°31.8	9.4'	26°50.6	-5.4'	55.1'	91°01.1	88°00.5	81°24.8	59°10.6	9°41.9	1°30.4
5	229°00.3	9.3'	26°56.0	-5.3'	55.1'	90°30.2	87°43.8	80°55.6	58°47.2	9°15.6	2°01.2
6	243°28.6	9.3'	S 27°01.3	-5.1'	55.1'	89°59.3	87°27.1	80°26.3	58°23.9	8°49.4	2°32.1
7	257°56.9	9.2'	27°06.5	-5.0'	55.1'	89°28.4	87° 10.5	79°57.0	58°00.6	8°23.4	3°02.9
8	272°25.1	9.1'	$27^{\circ}11.5$	-4.9'	55.1'	88°57.4	86°53.8	79°27.8	57°37.3	7°57.6	3°33.8
9	286°53.2	9.1'	$27^{\circ}16.3$	-4.7'	55.2'	88°26.5	86° 37.2	78°58.5	57°14.2	7°32.1	4°04.7
10	301°21.3	9.0'	$27^{\circ}21.1$	-4.6'	55.2'	87°55.5	86°20.5	78°29.2	56°51.1	7°06.7	4°35.7
11	315°49.3	8.9'	$27^{\circ}25.7$	-4.5'	55.2'	87°24.5	86°03.8	77°59.9	56°28.1	6°41.8	5°06.6
12	330°17.2	8.9'	S 27°30.1	-4.3'	55.2'	86°53.5	85°47.2	77°30.6	56°05.1	6°17.2	5°37.6
13	344°45.0	8.8'	27°34.4	-4.2'	55.2'	86°22.4	85° 30.6	77°01.2	55°42.2	5°53.1	6°08.5
14	359°12.8	8.7'	27°38.6	-4.0'	55.3'	85°51.4	85° 13.9	76°31.9	55°19.4	5°29.6	6°39.5
15	13°40.6	8.7'	27°42.6	-3.9'	55.3'	85°20.3	84°57.3	76°02.5	54°56.7	5°06.9	7°10.6
16	28°08.2	8.6'	27°46.5	-3.7'	55.3'	84°49.2	84°40.7	75°33.2	54°34.0	4°45.0	7°41.6
17	42°35.8	8.5'	$27^{\circ}50.3$	-3.6'	55.3'	84°18.1	84°24.0	75°03.8	54°11.4		8°12.7
18	57°03.4	8.5'	S 27°53.9	-3.5'	55.3'	83°47.0	84°07.4	74°34.4	53°48.9		8°43.7
19	71°30.9	8.4'	27°57.3	-3.3'	55.3'	83°15.9	83°50.9	74°05.1	53°26.5		9°14.8
20	85°58.3	8.4'	28°00.6	-3.2'	55.4'	82°44.7	83°34.3	73°35.7	53°04.2		9°45.9
21	100°25.7	8.3'	28°03.8	-3.0'	55.4'	82°13.5	83° 17.7	73°06.3	52°42.0		$10^{\circ}17.1$
22	114°53.0	8.3'	28°06.8	-2.9'	55.4'	81°42.3	83°01.2	72°36.8	52°19.8		10°48.2
23	129°20.3	8.2'	28°09.7	-2.7'	55.4'	81°11.1	82°44.6	72°07.4	51°57.8		11°19.4
4 th	SD =	= 15.0'	Mer. pas	s. 14:03	3				<u> </u>	<u>'</u>	

h Moon (5 th Nov)	Lunar Distance (objects with largest hourly LD delta)
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	Tue	GHA	ν	Dec	d	HP	-Achernar	-Saturn	-Fomalhaut	-Altair	+Venus	+Antares	+Sun	
	0	143°47.5	8.2'	S 28°12.4	-2.6'	55.4'	82°28.1	80°39.9	71°38.0	51°35.8		11°50.6		
	1	158°14.6	8.1'	28°15.0	-2.4'	55.5'	82°11.6	80°08.6	71°08.6	51°14.0		12°21.8		
	2	172°41.8	8.1'	28°17.4	-2.3'	55.5'	81°55.1	79°37.3	70°39.1	50°52.2		12°53.0		
	3	187°08.8	8.0'	$28^{\circ}19.7$	-2.1'	55.5'	81°38.6	79°06.0	70°09.7	50°30.6		13°24.3	i i	
	4	201°35.8	8.0'	$28^{\circ}21.8$	-2.0'	55.5'	81°22.2	78°34.7	69°40.2	50°09.0		13°55.5	41°05.9	
	5	216°02.8	7.9'	28°23.8	-1.8'	55.5'	81°05.7	78°03.4	69°10.7	49°47.6		14°26.8	41°34.6	
	6	230°29.7	7.9'	S 28°25.6	-1.7'	55.6'	80°49.3	77°32.0	68°41.3	49°26.3		14°58.1	42°03.3	
	7	244°56.6	7.8'	28°27.2	-1.5'	55.6'	80°32.9	77°00.7	68°11.8	49°05.1		15°29.5	42°32.0	
	8	259°23.5	7.8'	28°28.8	-1.4'	55.6'	80°16.6	76°29.3	67°42.3	48°44.0		16°00.8	43°00.8	
	9	273°50.3	7.8'	28°30.1	-1.2'	55.6'	80°00.3	75°57.8	67°12.8	48°23.1		16°32.2	43°29.6	
	10	288°17.0	7.7'	28°31.3	-1.0'	55.6'	79°43.9	75°26.4	66°43.3	48°02.3	5°45.2	17°03.6	43°58.4	
	11	302°43.8	7.7'	28°32.4	-0.9'	55.7'	79°27.7	74°55.0	66°13.8	47°41.6	6°09.5	17°35.0	44°27.2	
	12	317°10.4	7.7'	S 28°33.2	-0.7'	55.7'	79°11.4	74°23.5	65°44.3	47°21.0	6°34.3	18°06.4	44°56.1	
	13	331°37.1	7.6'	28°34.0	-0.6'	55.7'	78°55.2	73°52.0	65°14.8	47°00.6	6°59.6	18°37.9	45°24.9	
	14	346°03.7	7.6'	28°34.6	-0.4'	55.7'	78°39.0	73°20.5	64°45.3	46°40.3	7°25.3	19°09.4	45°53.8	
	15	0°30.3	7.6'	28°35.0	-0.3'	55.8'	78°22.8	72°48.9	64°15.7	46°20.2	7°51.4	19°40.9	46°22.7	
	16	14°56.9	7.5'	28°35.2	-0.1'	55.8'	78°06.7	72°17.4	63°46.2	46°00.2	8° 17.7	20°12.4	46°51.7	
	17	29°23.4	7.5'	28°35.3	0.1'	55.8'	77°50.6	71°45.8	63°16.7	45°40.4	8°44.3	20°43.9	47°20.7	
	18	43°50.0	7.5'	S 28°35.3	0.2'	55.8'	77°34.5	71° 14.2	62°47.2	45°20.8	9°11.1	21°15.5	47°49.6	
	19	58°16.4	7.5'	28°35.1	0.4'	55.8'	77° 18.5	70°42.5	62°17.6	45°01.3	9°38.1	21°47.1	48°18.6	
	20	72°42.9	7.4'	28°34.7	0.5'	55.9'	77°02.5	70°10.9	61°48.1	44°41.9	10°05.2	22°18.7	48°47.7	
	21	87°09.4	7.4'	28°34.2	0.7'	55.9'	76°46.6	69°39.2	61°18.6	44°22.8	10°32.5	22°50.3	49°16.7	
	22	101°35.8	7.4'	28°33.5	0.8'	55.9'	76°30.7	69°07.5	60°49.0	44°03.8	11°00.0	23°22.0	49°45.8	
	23	116°02.2	7.4'	28°32.6	1.0'	55.9'	76°14.8	68°35.8	60°19.5	43°45.0	11°27.5	23°53.7	50°14.9	
ĺ	5 th	SD :	= 15.1'	Mer. pas	s. 14:58	3			Sun	SD = 16.1	,			

h Moon (6 th Nov) Lunar Distance (objects with largest hourly

Wed	GHA	ν	Dec	d	HP	-Achernar	-Saturn	-Fomalhaut	-Altair	+Venus	+Antares	+Sun
0	130°28.6	7.4'	S 28°31.6	1.2'	56.0'	75°59.0	68°04.0	59°50.0	43°26.3	11°55.2	24°25.4	50°44.1
1	144°55.0	7.4'	28°30.5	1.3'	56.0'	75°43.2	67°32.3	59°20.4	43°07.9	12°23.0	24°57.1	51°13.2
2	159°21.4	7.4'	$28^{\circ}29.1$	1.5'	56.0'	75° 27.5	67°00.5	58°50.9	42°49.7	12°50.8	25°28.8	51°42.4
3	173°47.7	7.4'	28°27.6	1.6'	56.0'	75°11.8	66°28.7	58°21.4	42°31.6	13°18.8	26°00.6	52°11.6
4	188°14.1	7.3'	28°26.0	1.8'	56.0'	74°56.1	65°56.8	57°51.8	42°13.8	13°46.8	26°32.4	52°40.8
5	202°40.4	7.3'	28°24.2	2.0'	56.1'	74°40.5	65°25.0	57°22.3	41°56.2	14°14.9	27°04.2	53°10.1
6	217°06.8	7.3'	S 28°22.2	2.1'	56.1'	74°25.0	64°53.1	56°52.8	41°38.8	14°43.1	27°36.1	53°39.3
7	231°33.1	7.3'	$28^{\circ}20.1$	2.3'	56.1'	74°09.5	64°21.2	56°23.3	41°21.6	15°11.3	28°07.9	54°08.6
8	245°59.4	7.3'	28°17.8	2.5'	56.1'	73°54.1	63°49.3	55°53.8	41°04.6	15°39.6	28°39.8	54°38.0
9	260°25.7	7.3'	28°15.4	2.6'	56.2'	73°38.7	63°17.3	55°24.3	40°47.9	16°07.9	29°11.7	55°07.3
10	274°52.1	7.3'	$28^{\circ}12.7$	2.8'	56.2'	73°23.3	62°45.3	54°54.8	40°31.4	16°36.4	29°43.7	55°36.7
11	289°18.4	7.3'	$28^{\circ}10.0$	2.9'	56.2'	73°08.1	62°13.3	54°25.3	40°15.2	17°04.8	30°15.6	56°06.1
12	303°44.7	7.3'	S 28°07.0	3.1'	56.2'	72°52.9	61°41.3	53°55.8	39°59.2	17°33.3	30°47.6	56° 35.5
13	318°11.1	7.3'	28°03.9	3.3'	56.3'	72°37.7	61°09.2	53°26.3	39°43.4	18°01.9	31°19.7	57°04.9
14	332°37.4	7.4'	28°00.7	3.4'	56.3'	72°22.6	60°37.1	52°56.9	39°27.9	18°30.5	31°51.7	57°34.4
15	347°03.8	7.4'	27°57.3	3.6'	56.3'	72°07.6	60°05.0	52°27.4	39° 12.7	18°59.2	32°23.8	58°03.9
16	1°30.2	7.4'	27°53.7	3.7'	56.3'		59°32.9	51°58.0		19°27.9	32°55.9	58° 33.5
17	15°56.5	7.4'	27°50.0	3.9'	56.4'		59°00.7	51°28.6		19°56.6	33°28.0	59°03.0
18	30°22.9	7.4'	S 27°46.1	4.1'	56.4'		58°28.6	50°59.2		20°25.4	34°00.1	59°32.6
19	44°49.3	7.4'	27°42.0	4.2'	56.4'		57°56.3	50°29.8		20°54.2	34°32.3	60°02.2
20	59°15.7	7.4'	27°37.8	4.4'	56.4'		57°24.1	50°00.4		21°23.1	35°04.5	60°31.8
21	73°42.2	7.5'	27°33.5	4.5'	56.5'		56°51.8	49°31.1		21°52.0	35°36.7	61°01.5
22	88°08.6	7.5'	27°28.9	4.7'	56.5'		56°19.6	49°01.7		22°21.0	36°09.0	61°31.2
23	102°35.1	7.5'	27°24.2	4.8'	56.5'		55°47.2	48°32.4		22°50.0	36°41.3	62°00.9
6 th	SD = 15.3' Mer. pass. 15:54							Sun	SD = 16.1	,		

h Moon (7 ^t	th Nov) L	₋unar Distance (objects with I	largest hourly	/ LD delta)
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Thu	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Venus	+Antares	+Sun
0	117°01.6	7.5'	S 27°19.4	5.0'	56.5'	55°14.9	48°03.1	23°19.0	37°13.6	62°30.6
1	131°28.1	7.5'	27° 14.4	5.2'	56.6'	54°42.5	47°33.9	23°48.1	37°45.9	63°00.4
2	145°54.7	7.6'	27°09.2	5.3'	56.6'	54°10.1	47°04.6	24°17.2	38°18.3	63°30.2
3	160°21.2	7.6'	27°03.9	5.5'	56.6'	53°37.7	46°35.4	24°46.3	38°50.7	64°00.0
4	174°47.8	7.6'	26°58.4	5.6'	56.6'	53°05.2	46°06.2	25°15.5	39°23.1	64°29.9
5	189°14.5	7.7'	$26^{\circ}52.8$	5.8'	56.7'	52°32.8	45°37.1	25°44.7	39°55.5	64°59.8
6	203°41.1	7.7'	S 26°47.0	5.9'	56.7'	52°00.2	45°07.9	26°14.0	40°28.0	65°29.7
7	218°07.8	7.7'	$26^{\circ}41.1$	6.1'	56.7'	51°27.7	44°38.9	26°43.3	41°00.5	65°59.6
8	232°34.5	7.7'	26°35.0	6.2'	56.7'	50°55.1	44°09.8	27°12.6	41°33.0	66°29.6
9	247°01.3	7.8'	26°28.7	6.4'	56.8'	50°22.5	43°40.8	27°42.0	42°05.6	66°59.6
10	261°28.0	7.8'	26°22.3	6.6'	56.8'	49°49.9	43°11.8	28°11.4	42°38.2	67°29.6
11	275°54.9	7.9'	$26^{\circ}15.8$	6.7'	56.8'	49°17.3	42°42.9	28°40.8	43°10.8	67°59.7
12	290°21.7	7.9'	S 26°09.1	6.9'	56.9'	48°44.6	42°14.0	29°10.3	43°43.5	68°29.8
13	304°48.6	7.9'	$26^{\circ}02.2$	7.0'	56.9'	48°11.9	41°45.2	29°39.8	44°16.1	68°59.9
14	319°15.5	8.0'	25°55.2	7.2'	56.9'	47°39.1	41°16.4	30°09.3	44°48.8	69°30.1
15	333°42.5	8.0'	25°48.0	7.3'	56.9'	47°06.3	40°47.7	30°38.9	45°21.6	70°00.2
16	348°09.5	8.0'	25°40.7	7.5'	57.0'	46°33.5	40°19.0	31°08.5	45°54.4	70°30.4
17	2°36.5	8.1'	25°33.3	7.6'	57.0'	46°00.7	39°50.4	31°38.1	46°27.2	71°00.7
18	17°03.6	8.1'	S 25°25.7	7.8'	57.0'	45°27.8	39°21.9	32°07.8	47°00.0	71°30.9
19	31°30.7	8.2'	$25^{\circ}17.9$	7.9'	57.1'	44°55.0	38°53.4	32°37.5	47°32.8	72°01.2
20	45°57.9	8.2'	$25^{\circ}10.0$	8.1'	57.1'	44°22.0	38°25.0	33°07.3	48°05.7	72°31.6
21	60°25.1	8.3'	25°01.9	8.2'	57.1'	43°49.1	37°56.7	33°37.1	48°38.7	73°01.9
22	74°52.4	8.3'	24°53.7	8.3'	57.1'	43°16.1	37°28.5	34°06.9	49°11.6	73°32.3
23	89°19.7	8.3'	24°45.4	8.5'	57.2'	42°43.1	37°00.3	34°36.7	49°44.6	74°02.8
7 th	7 th SD = 15.4′ Mer. pass. 16:49						·	Sun SD	$=16.1^{\prime}$	

L	Mary (Oth NI)	Land District (all and the land Land LD Late)
n	Moon (8 th Nov)	Lunar Distance (objects with largest hourly LD delta)

							1					
Fri	GHA	ν	Dec	d	HP	-Aldebaran	-Rigel	-Saturn	-Fomalhaut	+Venus	+Antares	+Sun
0	103°47.0	8.4'	S 24°36.9	8.6'	57.2'			42°10.0	36°32.2	35°06.6	50°17.6	74°33.2
1	118°14.4	8.4'	24°28.3	8.8'	57.2'			41°36.9	36°04.2	35°36.6	50°50.7	75°03.7
2	132°41.9	8.5'	$24^{\circ}19.5$	8.9'	57.3'			41°03.8	35°36.4	36°06.5	51°23.7	75°34.2
3	147°09.3	8.5'	24°10.6	9.1'	57.3'			40°30.7	35°08.6	36°36.5	51°56.9	76°04.8
4	161°36.9	8.6'	$24^{\circ}01.5$	9.2'	57.3'			39°57.5	34°40.9	37°06.5	52°30.0	76°35.4
5	176°04.5	8.6'	23°52.3	9.3'	57.3'			39°24.3	34°13.4	37°36.6	53°03.2	77°06.0
6	190°32.1	8.7'	S 23°42.9	9.5'	57.4'			38°51.0	33°45.9	38°06.7	53°36.4	77°36.6
7	204°59.8	8.7'	23°33.5	9.6'	57.4'			38°17.8	33°18.6	38° 36.8	54°09.6	78°07.3
8	219°27.5	8.8'	23°23.8	9.8'	57.4'			37°44.5	32°51.5	39°07.0	54°42.9	78°38.0
9	233°55.3	8.8'	23°14.1	9.9'	57.5'			37°11.1	32°24.4	39°37.2	55°16.2	79°08.8
10	248°23.1	8.9'	23°04.2	10.0'	57.5'			36°37.7	31°57.5	40°07.5	55°49.6	79°39.6
11	262°51.0	8.9'	22°54.2	10.2'	57.5'			36°04.3	31°30.8	40°37.7	56°22.9	80°10.4
12	277°19.0	9.0'	S 22°44.0	10.3'	57.5'			35°30.9	31°04.3	41°08.1	56°56.4	80°41.2
13	291°46.9	9.0'	22°33.7	10.4'	57.6'			34°57.4	30°37.9	41°38.4	57°29.8	81°12.1
14	306° 15.0	9.1'	22°23.3	10.6'	57.6'		119°43.7	34°23.9	30°11.7	42°08.8	58°03.3	81°43.0
15	320°43.1	9.1'	22°12.7	10.7'	57.6'		119°19.0	33°50.4	29°45.7	42°39.2	58°36.8	82°14.0
16	335°11.2	9.2'	22°02.0	10.8'	57.7'	119°56.7	118°54.2	33°16.8	29°19.9	43°09.7	59°10.3	82°44.9
17	349°39.4	9.2'	$21^{\circ}51.2$	11.0'	57.7'	119°23.8	118°29.3	32°43.2	28°54.3	43°40.2	59°43.9	83°16.0
18	4°07.6	9.3'	S 21°40.2	11.1'	57.7'	118°50.9	118°04.2	32°09.5	28°28.9	44°10.7	60°17.5	83°47.0
19	18°35.9	9.3'	$21^{\circ}29.1$	11.2'	57.8'	118°18.0	117°39.1	31°35.9	28°03.8	44°41.3	60°51.2	84°18.1
20	33°04.3	9.4'	$21^{\circ}17.9$	11.3'	57.8'	117°44.9	117°13.9	31°02.1	27°38.9	45°11.9	61°24.9	84°49.2
21	47°32.7	9.5'	$21^{\circ}06.6$	11.5'	57.8'	117°11.9	116°48.5	30°28.4	27°14.3	45° 42.5	61°58.6	85°20.4
22	62°01.1	9.5'	20°55.1	11.6'	57.8'	116°38.8	116°23.1	29°54.6	26°50.0	46°13.2	62°32.4	85°51.6
23	76°29.6	9.6'	20°43.6	11.7'	57.9'	116°05.7	115°57.6	29°20.8	26°26.0	46°43.9	63°06.1	86°22.8
8 th	SD	= 15.6	Mer. pas	s. 17:43	3			Sı	un SD = $16.1'$			

TI WOOTI 19 INOVI ED GET	th largest hourly LD delta)	Lunar Distance (objects with la	h Moon (9 th Nov)
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Sat	GHA	ν	Dec	d	HP	-Jupiter	-Capella	-Aldebaran	-Saturn	+Altair	+Venus	+Antares	+Sun		
0	90°58.2	9.6'	S 20°31.8	11.8'	57.9'			115°32.5	28°46.9		47°14.7	63°40.0	86°54.1		
1	105°26.8	9.7'	20°20.0	12.0'	57.9'			114°59.3	28°13.0		47°45.5	64°13.8	87°25.4		
2	119°55.5	9.7'	20°08.1	12.1'	58.0'			114°26.0	27°39.1		48°16.3	64°47.7	87°56.7		
3	134°24.2	9.8'	19°56.0	12.2'	58.0'			113°52.7	27°05.2		48°47.1	65°21.7	88°28.1		
4	148°52.9	9.8'	19°43.8	12.3'	58.0'			113° 19.4	26°31.2		49°18.0	65°55.6	88°59.5		
5	163°21.7	9.9'	19°31.5	12.4'	58.1'			112°46.0	25°57.1		49°49.0	66°29.6	89°30.9		
6	177°50.6	9.9'	S 19°19.1	12.5'	58.1'			$112^{\circ}12.6$	25°23.1		50°19.9	67°03.7	90°02.4		
7	192°19.5	10.0'	$19^{\circ}06.5$	12.7'	58.1'			111°39.1	24°49.0		50°51.0	67°37.8	90°33.9		
8	206°48.5	10.0'	18°53.9	12.8'	58.2'			111°05.6	24°14.8		51°22.0	68°11.9	91°05.4		
9	221°17.5	10.1'	18°41.1	12.9'	58.2'			110°32.1	23°40.6		51°53.1	68°46.0	91°37.0		
10	235°46.5	10.1'	18°28.2	13.0'	58.2'	119°59.2		109°58.5	23°06.4		52°24.2	69°20.2	92°08.6		
11	250°15.6	10.2'	18°15.2	13.1'	58.2'	119°25.0		109°24.9	22°32.2		52°55.4	69°54.4	92°40.3		
12	264°44.8	10.2'	S 18°02.1	13.2'	58.3'	118°50.7		108°51.2	21°57.9		53°26.6	70°28.7	93°12.0		
13	279°14.0	10.2'	$17^{\circ}48.9$	13.3'	58.3'	118°16.4	119°44.8	$108^{\circ}17.5$	21°23.6		53°57.8	71°03.0	93°43.7		
14	293°43.2	10.3'	17°35.6	13.4'	58.3'	117°42.0	119°12.7	107°43.8	20°49.2		54°29.1	71°37.3	94°15.5		
15	308°12.5	10.3'	17°22.2	13.5'	58.4'	117°07.6	118°40.5	107° 10.0	20°14.8	_	55°00.4	72°11.7	94°47.3		
16	322°41.8	10.4'	17°08.7	13.6'	58.4'	116°33.2	118°08.2	106° 36.2	19°40.4	38°28.8	55°31.8	72°46.1	95°19.1		
17	337°11.2	10.4'	16°55.0	13.7'	58.4'	115°58.7	117°35.9	106°02.3	19°05.9	38°44.3	56°03.1	73°20.5	95°51.0		
18	351°40.7	10.5'	S 16°41.3	13.8'	58.5'	115°24.2	117°03.5	105°28.4	18°31.4	39°00.0	56°34.6	73°55.0	96°22.9		
19	6°10.1	10.5'	16°27.4	13.9'	58.5'	114°49.6	116°31.1	104°54.5	17°56.9	39°16.2	57°06.0	74°29.5	96°54.9		
20	20°39.6	10.6'	16°13.5	14.0'	58.5'	114° 15.0	115°58.6	104°20.5	17°22.3	39°32.7	57°37.5	75°04.1	97°26.8		
21	35°09.2	10.6'	15°59.5	14.1'	58.6'	113°40.4	115°26.1	103°46.5	16°47.7	39°49.5	58°09.1	75°38.7	97°58.9		
22	49°38.8	10.6'	15°45.3	14.2'	58.6'	113°05.7	114°53.5	103°12.4	16°13.0	40°06.6	58°40.7	76°13.3	98°30.9		
23	64°08.4	10.7'	15°31.1	14.3'	58.6'	112°31.0	114°20.9	102°38.3	15°38.3	40°24.1	59°12.3	76°48.0	99°03.0		
9 th	SD	= 15.8'	Mer. pass	s. 18:34		$Sun\;SD=16.1'$									

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

Sun	GHA	ν	Dec	d	HP	-Capella	-Jupiter	-Aldebaran	-Saturn	+Altair	+Venus	+Antares	+Sun
0	78°38.1	10.7'	S 15°16.7	14.4'	58.7'	113°48.2	111°56.2	102°04.2	15°03.6	40°41.9	59°43.9	77°22.7	99°35.1
1	93°07.8	10.8'	15°02.3	14.5'	58.7'	113°15.4	111°21.5	101°30.0	14°28.8	41°00.1	60°15.6	77°57.5	100°07.3
2	107°37.6	10.8'	14°47.8	14.6'	58.7'	112°42.6	110°46.6	100°55.8	13°54.0	41°18.5	60°47.4	78°32.2	100°39.5
3	122°07.4	10.8'	14°33.2	14.7'	58.7'	112°09.8	110°11.7	100°21.5	13°19.2	41°37.3	61°19.1	79°07.1	101°11.8
4	136°37.2	10.9'	$14^{\circ}18.5$	14.8'	58.8'	111°36.9	109°36.8	99°47.2	12°44.3	41°56.3	61°51.0	79°41.9	101°44.1
5	151°07.1	10.9'	$14^{\circ}03.7$	14.9'	58.8'	111°03.9	109°01.9	99°12.9	12°09.4	42°15.6	62°22.8	80°16.8	102°16.4
6	165°37.0	10.9'	S 13°48.8	15.0'	58.8'	110°30.9	108°26.9	98°38.5	11°34.4	42°35.3	62°54.7	80°51.7	102°48.7
7	180°06.9	11.0'	13°33.8	15.1'	58.9'	109°57.8	107°51.9	98°04.1	10°59.4	42°55.2	63°26.6	81°26.7	103°21.1
8	194°36.9	11.0'	13° 18.8	15.1'	58.9'	109°24.7	107°16.8	97°29.6	10°24.4	43°15.4	63°58.6	82°01.7	103°53.6
9	209°06.9	11.0'	13°03.6	15.2'	58.9'	108°51.6	106°41.7	96°55.1	9°49.3	43°35.9	64°30.6	82°36.8	104°26.0
10	223°36.9	11.1'	12°48.4	15.3'	59.0'	108°18.4	106°06.5	96°20.6	9°14.2	43°56.6	65°02.6	83°11.9	104°58.5
11	238°07.0	11.1'	$12^{\circ}33.1$	15.4'	59.0'	107°45.1	105°31.4	95°46.0	8°39.1	44°17.6	65°34.7	83°47.0	105°31.1
12	252°37.1	11.1'	S 12°17.7	15.5'	59.0'	107°11.8	104°56.1	95°11.4	8°03.9	44°38.9	66°06.8	84°22.1	106°03.6
13	267°07.2	11.2'	12°02.2	15.5'	59.1'	106°38.5	104°20.9	94°36.8	7°28.7	45°00.4	66°39.0	84°57.3	106°36.3
14	281°37.3	11.2'	11°46.7	15.6'	59.1'	106°05.1	103°45.6	94°02.1	6°53.4	45°22.1	67°11.2	85°32.6	107°08.9
15	296°07.5	11.2'	11°31.1	15.7'	59.1'	105°31.7	103°10.2	93°27.4	6°18.1	45°44.1	67°43.4	86°07.8	107°41.6
16	310°37.7	11.2'	11° 15.3	15.8'	59.1'	104°58.2	102°34.9	92°52.6	5°42.8	46°06.4	68°15.7	86°43.1	108°14.3
17	325°08.0	11.3'	$10^{\circ}59.6$	15.8'	59.2'	104°24.6	101°59.4	92°17.8	5°07.4	46°28.8	68°48.0	87°18.5	108°47.1
18	339°38.2	11.3'	S 10°43.7	15.9'	59.2'	103°51.1	101°24.0	91°43.0	4°32.0	46°51.5	69°20.3	87°53.9	109°19.9
19	354°08.5	11.3'	10°27.8	16.0'	59.2'	103°17.4	100°48.5	91°08.1	3°56.6	47°14.5	69°52.7	88°29.3	109°52.7
20	8°38.8	11.3'	$10^{\circ}11.8$	16.1'	59.3'	102°43.8	100°13.0	90°33.2	3°21.1	47°37.6	70°25.1	89°04.7	110°25.6
21	23°09.1	11.3'	09°55.8	16.1'	59.3'	102°10.1	99°37.4	89°58.3	2°45.6	48°01.0	70°57.6	89°40.2	110°58.5
22	37°39.4	11.4'	09°39.6	16.2'	59.3'	101°36.3	99°01.8	89°23.3	2°10.1	48°24.6	71°30.1	90°15.8	111°31.4
23	52°09.8	11.4'	09°23.4	16.3'	59.3'	101°02.5	98°26.2	88°48.3	1°34.5	48°48.3	72°02.6	90°51.3	112°04.4
10 th	SD	= 16.0'	Mer. pass	s. 19:24					Sun SD =	= 16.1'			

h Moon (11th Nov)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Pollux	-Jupiter	-Aldebaran	±Saturn	+Altair	+Venus	+Antares	+Sun
0	66°40.1	11.4'	S 09°07.2	16.3'	59.4'		97°50.5	88°13.2	0°59.0	49°12.3	72°35.2	91°27.0	112°37.4
1	81°10.5	11.4'	08°50.8	16.4'	59.4'		97°14.8	87°38.2	0°23.6	49°36.5	73°07.8	92°02.6	113°10.5
2	95°40.9	11.4'	08°34.5	16.4'	59.4'		96°39.0	87°03.0		50°00.9	73°40.4	92°38.3	113°43.6
3	$110^{\circ}11.3$	11.4'	08°18.0	16.5'	59.5'		96°03.2	86°27.9		50°25.4	74° 13.1	93°14.0	114°16.7
4	124°41.8	11.4'	$08^{\circ}01.5$	16.6'	59.5'		95°27.4	85°52.7	1°24.2	50°50.2	74°45.8	93°49.7	114°49.9
5	139°12.2	11.4'	07°45.0	16.6'	59.5'		94°51.5	85°17.5	2°00.0	51°15.1	75° 18.6	94°25.5	115°23.0
6	153°42.6	11.5'	S 07°28.3	16.7'	59.5'		94°15.6	84°42.2	2°35.8	51°40.2	75°51.4	95°01.4	115°56.3
7	168°13.1	11.5'	$07^{\circ}11.7$	16.7'	59.6'		93°39.7	84°06.9	3°11.7	52°05.5	76°24.2	95°37.2	116°29.5
8	182°43.6	11.5'	06°54.9	16.8'	59.6'		93°03.7	83°31.6	3°47.6	52°30.9	76°57.0	96°13.1	117°02.8
9	197°14.0	11.5'	06°38.2	16.8'	59.6'		92°27.7	82°56.2	4°23.5	52°56.6	77°29.9	96°49.0	117°36.2
10	211°44.5	11.5'	06°21.3	16.9'	59.7'		91°51.6	82°20.8	4°59.5	53°22.3	78°02.9	97°25.0	118°09.5
11	226°15.0	11.5'	06°04.4	16.9'	59.7'		91°15.6	81°45.4	5°35.5	53°48.3	78°35.8	98°01.0	118°42.9
12	240°45.5	11.5'	S 05°47.5	17.0'	59.7'		90°39.4	81°09.9	6°11.6	54°14.4	79°08.8	98°37.1	119°16.4
13	255°15.9	11.5'	05°30.5	17.0'	59.7'		90°03.3	80°34.4	6°47.6	54°40.7	79°41.9	99°13.1	119°49.8
14	269°46.4	11.5'	05°13.5	17.1'	59.8'		89°27.1	79°58.9	7°23.8	55°07.1	80°15.0	99°49.2	
15	284°16.9	11.5'	04°56.5	17.1'	59.8'		88°50.9	79°23.3	7°59.9	55°33.6	80°48.1	100°25.4	
16	298°47.4	11.5'	04°39.4	17.1'	59.8'		88°14.6	78°47.7	8°36.1	56°00.3	81°21.2	101°01.6	
17	313°17.8	11.5'	04°22.2	17.2'	59.8'		87°38.3	78°12.1	9°12.3	56°27.2	81°54.4	101°37.8	
18	327°48.3	11.5'	S 04°05.0	17.2'	59.9'		87°02.0	77°36.4	9°48.6	56°54.1	82°27.6	102°14.0	
19	342°18.8	11.4'	03°47.8	17.3'	59.9'		86°25.6	77°00.8	10°24.9	57°21.3	83°00.9	102°50.3	
20	356°49.2	11.4'	03°30.6	17.3'	59.9'	119°47.7	85°49.3	76°25.0	11°01.2	57°48.5	83°34.1	103°26.6	
21	$11^{\circ}19.6$	11.4'	03°13.3	17.3'	59.9'	119°11.4	85°12.8	75°49.3	11°37.6	58°15.9	84°07.4	104°02.9	
22	25°50.1	11.4'	$02^{\circ}56.0$	17.3'	60.0'	118°35.0	84°36.4	75°13.5	12°14.0	58°43.4	84°40.8	104°39.3	
23	40°20.5	11.4'	02°38.6	17.4'	60.0'	117°58.6	83°59.9	74°37.7	12°50.4	59°11.0	85° 14.2	105°15.7	
11 th	SD	$=16.2^{\prime}$	Mer. pass	s. 20:13					Sun SD =	= 16.1'			

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

		1010011	(12 140	•)			= 44.	Distance	ice (objects with largest hourly LD delta)					
Tue	GHA	ν	Dec	d	HP	-Mars	-Pollux	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Venus	+Antares	
0	54°50.9	11.4'	S 02°21.2	17.4'	60.0'		117°22.2	83°23.4	74°01.9	13°26.8	29°26.4	85°47.6	105°52.2	
1	69°21.3	11.4'	02°03.8	17.4'	60.0'		116°45.8	82°46.8	73°26.0	14°03.3	29°54.5	86°21.0	106°28.6	
2	83°51.7	11.4'	01°46.4	17.5'	60.1'		116°09.3	82°10.2	72°50.2	14°39.9	30°23.0	86° 54.5	107°05.1	
3	98°22.0	11.3'	01°28.9	17.5'	60.1'		115°32.8	81°33.6	72°14.3	15°16.4	30°51.7	87°28.0	107°41.7	
4	112°52.3	11.3'	$01^{\circ}11.5$	17.5'	60.1'		114°56.2	80°57.0	71°38.3	15°53.0	31°20.6	88°01.5	108°18.2	
5	127°22.7	11.3'	00°54.0	17.5'	60.1'		114°19.6	80°20.3	71°02.4	16°29.6	31°49.9	88°35.1	108°54.8	
6	141°53.0	11.3'	S 00°36.4	17.5'	60.2'		113°43.0	79°43.6	70°26.4	17°06.2	32°19.3	89°08.7	109°31.5	
7	156°23.2	11.2'	$00^{\circ}18.9$	17.6'	60.2'		113°06.4	79°06.9	69°50.4	17°42.9	32°49.1	89°42.3	110°08.1	
8	170°53.5	11.2'	S 00°01.4	17.6'	60.2'		112°29.7	78°30.1	69°14.3	18°19.6	33°19.0	90°16.0	110°44.8	
9	185°23.7	11.2'	N 00°16.2	17.6'	60.2'		111°53.0	77°53.3	68°38.3	18°56.3	33°49.2	90°49.7	111°21.5	
10	199°53.9	11.2'	00°33.8	17.6'	60.3'		111°16.3	77°16.5	68°02.2	19°33.1	34°19.5	91°23.4	111°58.3	
11	214°24.1	11.1'	00°51.4	17.6'	60.3'	119°45.9	110°39.6	76°39.6	67°26.1	20°09.9	34°50.1	91°57.2	112°35.0	
12	228°54.2	11.1'	N 01°09.0	17.6'	60.3'	119°09.8	110°02.8	76°02.8	66°49.9	20°46.7	35°20.9	92°30.9	113°11.8	
13	243°24.3	11.1'	$01^{\circ}26.6$	17.6'	60.3'	118°33.7	109°26.0	75°25.9	66°13.8	21°23.5	35°51.9	93°04.7	113°48.7	
14	257°54.4	11.0'	$01^{\circ}44.2$	17.6'	60.3'	117°57.6	108°49.1	74°48.9	65°37.6	22°00.4	36°23.0	93°38.6	114°25.5	
15	272°24.4	11.0'	02°01.8	17.6'	60.4'	117°21.5	108°12.3	74°12.0	65°01.4	22°37.3	36°54.3	94° 12.4	115°02.4	
16	286°54.4	11.0'	02°19.4	17.6'	60.4'	116°45.3	107°35.4	73°35.0	64°25.2	23°14.2	37°25.8	94°46.3	115°39.3	
17	301°24.4	10.9'	02°37.0	17.6'	60.4'	116°09.1	106°58.5	72°58.0	63°49.0	23°51.2	37°57.5	95°20.2	116°16.3	
18	315°54.3	10.9'	N 02°54.6	17.6'	60.4'	115°32.9	106°21.5	72°21.0	63°12.7	24°28.2	38°29.3	95°54.1	116°53.2	
19	330°24.2	10.8'	03°12.2	17.6'	60.4'	114°56.6	105°44.5	71°43.9	62°36.5	25°05.2	39°01.2	96°28.1	117°30.2	
20	344°54.0	10.8'	03°29.8	17.6'	60.4'	114°20.3	105°07.6	71°06.9	62°00.2	25°42.2	39°33.3	97°02.1	118°07.2	
21	359°23.9	10.8'	03°47.4	17.6'	60.5'	113°44.0	104°30.5	70°29.8	61°23.9	26°19.2	40°05.6	97°36.1	118°44.3	
22	13°53.6	10.7'	04°05.0	17.6'	60.5'	113°07.7	103°53.5	69°52.6	60°47.6	26°56.3	40°38.0	98°10.1	119°21.3	
23	28°23.3	10.7'	04°22.6	17.6'	60.5'	112°31.3	103°16.4	69°15.5	60°11.3	27°33.4	41°10.5	98°44.2	119°58.4	
12 th	SD	= 16.4'	Mer. pass	. 21:02			•							

h		Moon	(13 th No	v)			Lunar Distance (objects with largest hourly LD delta)									
Wed	GHA	ν	Dec	d	HP	-Mars	-Pollux	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Altair	+Venus			
0	42°53.0	10.6'	N 04°40.2	17.5'	60.5'	111°54.9	102°39.3	68°38.3	59°35.0	28° 10.5	41°43.1	71°15.1	99°18.3			
1	57°22.6	10.6'	04°57.7	17.5'	60.5'	111°18.5	102°02.2	68°01.1	58° 58.6	28° 47.7	42° 15.8	71°45.1	99°52.4			
2	71°52.2	10.5'	$05^{\circ}15.2$	17.5'	60.5'	110°42.1	101°25.1	67°23.9	58° 22.2	29°24.8	42°48.7	72°15.2	100°26.5			
3	86°21.7	10.5'	05°32.7	17.5'	60.6'	110°05.6	100°47.9	66°46.7	57° 45.9	30°02.0	43°21.7	72°45.3	101°00.6			
4	100°51.2	10.4'	05°50.2	17.5'	60.6'	109°29.2	100°10.8	66°09.5	57°09.5	30°39.2	43°54.8	73°15.6	101°34.8			
5	115°20.6	10.4'	06°07.7	17.4'	60.6'	108°52.7	99°33.6	65°32.2	56°33.1	31°16.4	44°28.0	73°45.8	102°09.0			
6	129°50.0	10.3'	N06°25.1	17.4'	60.6'	108°16.1	98°56.4	64°54.9	55°56.7	31°53.7	45°01.3	74°16.2	102°43.2			
7	144°19.3	10.3'	06°42.5	17.4'	60.6'	107°39.6	98°19.1	64°17.6	55°20.3	32°30.9	45°34.6	74°46.5	103°17.4			
8	158°48.6	10.2'	06°59.9	17.4'	60.6'	107°03.0	97°41.9	63°40.3	54°43.9	33°08.2	46°08.1	75°17.0	103°51.7			
9	173°17.8	10.1'	$07^{\circ}17.3$	17.3'	60.6'	106°26.5	97°04.6	63°03.0	54°07.5	33°45.5	46°41.7	75°47.5	104°25.9			
10	187°46.9	10.1'	07°34.6	17.3'	60.7'	105°49.9	96°27.3	62°25.6	53°31.1	34°22.8	47° 15.4	76°18.0	105°00.2			
11	202°16.0	10.0'	07°51.9	17.3'	60.7'	105°13.2	95°50.0	61°48.3	52°54.6	35°00.2	47°49.1	76°48.6	105°34.5			
12	216°45.0	10.0'	N 08°09.2	17.2'	60.7'	104°36.6	95°12.7	61°10.9	52° 18.2	35° 37.5	48° 22.9	77°19.2	106°08.8			
13	231°14.0	9.9'	08°26.4	17.2'	60.7'	103°59.9	94°35.3	60°33.5	51°41.8	36°14.9	48° 56.8	77°49.9	106°43.2			
14	245°42.9	9.8'	08°43.5	17.1'	60.7'	103°23.3	93°58.0	59°56.1	51°05.4	36°52.3	49°30.8	78°20.6	107°17.5			
15	260°11.7	9.8'	09°00.7	17.1'	60.7'	102°46.6	93°20.6	59°18.7	50°29.0	37°29.7	50°04.9	78°51.3	107°51.9			
16	274°40.4	9.7'	09°17.8	17.0'	60.7'	102°09.9	92°43.2	58°41.2	49°52.5	38°07.1	50°39.0	79°22.1	108°26.3			
17	289°09.1	9.6'	09°34.8	17.0'	60.7'	101°33.2	92°05.8	58°03.8	49°16.1	38°44.5	51°13.2	79°52.9	109°00.6			
18	303°37.8	9.6'	N09°51.8	16.9'	60.7'	100°56.4	91°28.4	57°26.4	48°39.7	39°22.0	51°47.5	80°23.8	109°35.0			
19	318°06.3	9.5'	10°08.7	16.9'	60.7'	100°19.7	90°51.0	56°48.9	48°03.3	39°59.4	52°21.8	80°54.7	110°09.5			
20	332°34.8	9.4'	10°25.6	16.8'	60.8'	99°42.9	90°13.5	56°11.4	47° 26.9	40°36.9	52° 56.2	81°25.6	110°43.9			
21	347°03.2	9.3'	10°42.4	16.8'	60.8'	99°06.2	89°36.1	55°34.0	46°50.6	41°14.4	53°30.6	81°56.6	111°18.3			
22	1°31.5	9.3'	10°59.2	16.7'	60.8'	98°29.4	88°58.6	54°56.5	46°14.2	41°51.8	54°05.1	82°27.5	111°52.8			
23	15°59.8	9.2'	11°15.9	16.7'	60.8'	97°52.6	88°21.1	54°19.0	45°37.8	42°29.3	54°39.7	82°58.5	112°27.2			
13 th	SD	$=16.5^{\prime}$	Mer. pass	. 21:54												

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

Thu	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Pollux	-Jupiter	+Saturn	+Fomalhaut	+Altair	+Venus
0	30°28.0	9.1'	N 11°32.6	16.6'	60.8'		97° 15.8	87°43.7	53°41.5	43°06.8	55°14.3	83°29.6	113°01.7
1	44°56.1	9.0'	11°49.2	16.5'	60.8'		96°38.9	87°06.2	53°04.0	43°44.4	55°48.9	84°00.6	113°36.2
2	59°24.1	9.0'	12°05.7	16.5'	60.8'		96°02.1	86°28.7	52°26.5	44°21.9	56°23.6	84°31.7	114°10.7
3	73°52.1	8.9'	12°22.2	16.4'	60.8'		95°25.3	85°51.2	51°49.0	44°59.4	56°58.4	85°02.8	114°45.2
4	88°20.0	8.8'	12°38.5	16.3'	60.8'		94°48.4	85°13.7	51°11.5	45°36.9	57°33.2	85°33.9	115°19.7
5	102°47.8	8.7'	12°54.9	16.2'	60.8'		94°11.6	84°36.1	50°34.0	46°14.5	58°08.0	86°05.0	115°54.2
6	117°15.5	8.6'	N13°11.1	16.2'	60.8'		93°34.7	83°58.6	49°56.5	46°52.0	58°42.9	86°36.2	116°28.7
7	131°43.1	8.6'	13°27.3	16.1'	60.8'		92°57.9	83°21.1	49°19.0	47°29.6	59°17.8	87°07.3	117°03.2
8	146°10.7	8.5'	13°43.4	16.0'	60.8'	119°29.7	92°21.0	82°43.5	48°41.5	48°07.2	59°52.8	87°38.5	117°37.7
9	160°38.2	8.4'	13°59.4	15.9'	60.8'	118°52.2	91°44.1	82°06.0	48°04.0	48°44.7	60°27.7	88°09.6	118°12.3
10	175°05.5	8.3'	14°15.3	15.8'	60.8'	118°14.6	91°07.2	81°28.5	47°26.5	49°22.3	61°02.8	88°40.8	118°46.8
11	189°32.8	8.2'	14°31.1	15.8'	60.8'	117°37.1	90°30.3	80°50.9	46°49.0	49°59.8	61°37.8	89°12.0	119°21.3
12	204°00.1	8.1'	N 14°46.9	15.7'	60.8'	116°59.6	89°53.5	80°13.4	46°11.5	50°37.4	62°12.9	89°43.2	119°55.8
13	218°27.2	8.0'	15°02.5	15.6'	60.8'	116°22.1	89° 16.6	79°35.8	45°34.0	51°15.0	62°48.0	90°14.4	
14	232°54.2	8.0'	$15^{\circ}18.1$	15.5'	60.8'	115°44.6	88°39.7	78°58.3	44°56.5	51°52.6	63°23.1	90°45.6	
15	247°21.2	7.9'	15°33.6	15.4'	60.8'	115°07.0	88°02.8	78°20.7	44°19.0	52°30.1	63°58.3	91°16.7	
16	261°48.0	7.8'	15°49.0	15.3'	60.8'	114°29.5	87°25.9	77°43.2	43°41.6	53°07.7	64°33.5	91°47.9	
17	276°14.8	7.7'	16°04.3	15.2'	60.8'	113°52.0	86°49.0	77°05.6	43°04.1	53°45.3	65°08.7	92°19.1	
18	290°41.5	7.6'	$N16^{\circ}19.4$	15.1'	60.8'	113°14.5	86°12.1	76°28.1	42°26.7	54°22.8	65°43.9	92°50.3	İ
19	305°08.1	7.5'	16°34.5	15.0'	60.8'	112°37.0	85°35.2	75° 50.6	41°49.2	55°00.4	66°19.2	93°21.4	
20	319°34.6	7.4'	$16^{\circ}49.5$	14.9'	60.8'	111°59.4	84°58.3	75°13.0	41°11.8	55°38.0	66°54.5	93°52.6	
21	334°01.0	7.3'	17°04.4	14.8'	60.8'	111°21.9	84°21.4	74°35.5	40°34.4	56°15.5	67°29.7	94°23.7	
22	348°27.4	7.2'	$17^{\circ}19.1$	14.7'	60.8'	110°44.4	83°44.6	73°58.0	39°57.0	56°53.1	68°05.0	94°54.8	
23	2°53.6	7.1'	17°33.8	14.5'	60.8'	110°06.9	83°07.7	73°20.4	39°19.7	57°30.6	68°40.3	95°26.0	
14 th	SD	= 16.6	′ Mer. pas	s. 22:48									

Moon (15th Nov) Lunar Distance (objects with largest hourly LD delta)

$\overline{}$. (20			D D L M D H L M L M L M L M L M L M L M L M L M L							
Fri	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Pollux	-Jupiter	+Saturn	+Fomalhaut	+Achernar	+Altair
0	17°19.7	7.1'	N 17°48.3	14.4'	60.8'	109°29.4	82°30.8	72°42.9	38°42.3	58°08.1	69°15.7	75°39.1	95°57.0
1	31°45.8	7.0'	18°02.8	14.3'	60.8'	108°52.0	81°54.0	72°05.4	38°05.0	58°45.7	69°51.0	75°57.8	96°28.1
2	46°11.7	6.9'	18°17.1	14.2'	60.8'	108°14.5	81°17.1	71°27.9	37°27.7	59°23.2	70°26.4	76°16.5	96°59.2
3	60°37.6	6.8'	18°31.2	14.1'	60.7'	107°37.0	80°40.3	70°50.4	36°50.4	60°00.7	71°01.7	76°35.2	97°30.2
4	75°03.4	6.7'	18°45.3	13.9'	60.7'	106°59.5	80°03.4	70°12.9	36°13.1	60°38.2	71°37.1	76°54.1	98°01.2
5	89°29.1	6.6'	$18^{\circ}59.3$	13.8'	60.7'	106°22.1	79°26.6	69°35.5	35°35.9	61°15.7	72°12.4	77°13.0	98°32.2
6	103°54.7	6.5'	N 19°13.1	13.7'	60.7'	105°44.6	78°49.8	68°58.0	34°58.7	61°53.2	72°47.8	77°32.0	99°03.1
7	118°20.1	6.4'	19°26.8	13.6'	60.7'	105°07.2	78° 12.9	68°20.6	34°21.5	62°30.7	73°23.2	77°51.0	99°34.1
8	132°45.6	6.3'	19°40.3	13.4'	60.7'	104°29.8	77°36.1	67°43.1	33°44.3	63°08.1	73°58.6	78°10.1	100°05.0
9	147°10.9	6.2'	19°53.8	13.3'	60.7'	103°52.4	76°59.3	67°05.7	33°07.2	63°45.6	74°34.0	78°29.3	100°35.8
10	161°36.1	6.1'	20°07.0	13.2'	60.7'	103°15.0	76°22.6	66°28.3	32°30.1	64°23.0	75°09.3	78°48.5	101°06.6
11	176°01.2	6.0'	20°20.2	13.0'	60.7'	102°37.6	75°45.8	65°50.9	31°53.0	65°00.4	75°44.7	79°07.7	101°37.4
12	190°26.3	5.9'	N20°33.2	12.9'	60.7'	102°00.2	75°09.0	65° 13.5	31°16.0	65°37.9	76°20.1	79°27.1	102°08.2
13	204°51.2	5.9'	20°46.1	12.7'	60.6'	101°22.9	74°32.3	64°36.1	30°39.0	66°15.2	76°55.5	79°46.4	102°38.9
14	219°16.1	5.8'	20°58.9	12.6'	60.6'	100°45.5	73°55.6	63°58.8	30°02.1	66°52.6	77°30.8	80°05.8	103°09.5
15	233°40.8	5.7'	21°11.4	12.5'	60.6'	100°08.2	73° 18.9	63°21.4	29°25.2	67°30.0	78°06.2	80°25.3	103°40.2
16	248°05.5	5.6'	21°23.9	12.3'	60.6'	99°30.9	72°42.2	62°44.1	28°48.3	68°07.3	78°41.5	80°44.7	104°10.7
17	262°30.1	5.5'	21°36.2	12.2'	60.6'	98°53.6	72°05.5	62°06.8	28°11.5	68°44.7	79°16.9	81°04.3	104°41.3
18	276°54.6	5.4'	N21°48.4	12.0'	60.6'	98°16.3	71°28.8	61°29.5	27°34.7	69°22.0	79°52.2	81°23.8	105°11.7
19	291°19.0	5.3'	22°00.4	11.8'	60.6'	97°39.1	70°52.2	60°52.2	26°58.0	69°59.3	80°27.5	81°43.4	105°42.2
20	305°43.3	5.2'	22°12.2	11.7'	60.5'	97°01.8	70° 15.6	60° 15.0	26°21.4	70°36.5	81°02.8	82°03.1	106°12.5
21	320°07.6	5.2'	22°23.9	11.5'	60.5'	96°24.6	69°39.0	59° 37.8	25°44.8	71°13.8	81°38.1	82°22.7	106°42.9
22	334°31.7	5.1'	22°35.4	11.4'	60.5'	95°47.4	69°02.4	59°00.6	25°08.3	71°51.0	82°13.4	82°42.4	107°13.1
23	348°55.8	5.0'	22°46.8	11.2'	60.5'	95°10.3	68°25.8	58°23.4	24°31.8	72°28.2	82°48.7	83°02.1	107°43.3
15 th	SD :	= 16.6	['] Mer. pas	s. 23:46							-	-	

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

Sat	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Pollux	-Jupiter	+Saturn	+Achernar	+Fomalhaut	+Altair
0	3°19.8	4.9'	N 22°58.0	11.1'	60.5'	94°33.1	67°49.3	57°46.2	23°55.4	73°05.4	83°21.9	83°24.0	108°13.5
1	17°43.7	4.8'	23°09.1	10.9'	60.5'	93°56.0	67°12.8	57°09.1	23°19.1	73°42.5	83°41.6	83°59.2	108°43.5
2	32°07.5	4.7'	23°20.0	10.7'	60.4'	93° 18.9	66°36.3	56°32.0	22°42.9	74°19.7	84°01.4	84°34.4	109°13.5
3	46°31.2	4.7'	23°30.7	10.6'	60.4'	92°41.8	65°59.8	55°54.9	22°06.7	74°56.8	84°21.2	85°09.6	109°43.5
4	60°54.9	4.6'	23°41.3	10.4'	60.4'	92°04.7	65°23.3	55°17.8	21°30.7	75°33.9	84°41.0	85°44.8	110°13.3
5	75°18.5	4.5'	23°51.6	10.2'	60.4'	91°27.7	64°46.9	54°40.8	20°54.7	76°10.9	85°00.8	86°20.0	110°43.1
6	89°42.0	4.4'	N24°01.9	10.0'	60.4'	90°50.7	64°10.5	54°03.8	20°18.9	76°48.0	85°20.6	86°55.1	111°12.9
7	104°05.4	4.4'	24°11.9	9.9'	60.3'	90°13.7	63°34.1	53°26.8	19°43.1	77°25.0	85°40.5	87°30.2	111°42.5
8	118°28.8	4.3'	24°21.8	9.7'	60.3'	89°36.8	62°57.8	52°49.8	19°07.5	78°02.0	86°00.3	88°05.3	112°12.1
9	132°52.1	4.2'	24°31.5	9.5'	60.3'	88° 59.9	62°21.5	52°12.9	18°32.0	78°38.9	86°20.2	88° 40.4	112°41.6
10	147°15.3	4.1'	24°41.0	9.3'	60.3'	88°23.0	61°45.2	51°36.0	17°56.7	79°15.9	86°40.0	89° 15.4	113°11.0
11	161°38.4	4.1'	24°50.4	9.2'	60.2'	87°46.1	61°08.9	50°59.1	17°21.5	79°52.8	86°59.9	89°50.4	113°40.3
12	176°01.5	4.0'	N24°59.5	9.0'	60.2'	87°09.3	60°32.7	50°22.3	16°46.4	80°29.6	87° 19.7	90°25.4	114°09.5
13	190°24.5	4.0'	25°08.5	8.8'	60.2'	86° 32.4	59°56.5	49°45.5	16°11.6	81°06.5	87°39.6	91°00.4	114°38.7
14	204°47.5	3.9'	25°17.3	8.6'	60.2'	85° 55.7	59°20.3	49°08.7	15°36.9	81°43.3	87°59.4	91°35.3	115°07.7
15	219°10.4	3.8'	25°25.9	8.4'	60.1'	85° 18.9	58°44.1	48°31.9	15°02.5	82°20.1	88° 19.2	92°10.2	115°36.7
16	233°33.2	3.8'	25°34.4	8.2'	60.1'	84°42.2	58°08.0	47°55.2	14°28.3	82°56.8	88°39.1	92°45.1	116°05.5
17	247°56.0	3.7'	25°42.6	8.1'	60.1'	84°05.5	57°31.9	47°18.5	13°54.3	83°33.5	88° 58.9	93° 19.9	116°34.3
18	262°18.7	3.7'	N25°50.7	7.9'	60.1'	83°28.9	56°55.9	46°41.9	13°20.7	84°10.2	89° 18.7	93°54.7	117°03.0
19	276°41.4	3.6'	25°58.5	7.7'	60.0'	82°52.3	56°19.8	46°05.3	12°47.4	84°46.8	89°38.5	94° 29.5	117°31.5
20	291°04.0	3.6'	26°06.2	7.5'	60.0'	82° 15.7	55°43.9	45°28.7	12°14.5	85°23.5	89°58.3	95°04.2	118°00.0
21	305°26.5	3.5'	26°13.7	7.3'	60.0'	81°39.1	55°07.9	44°52.1	11°41.9	86°00.0	90°18.0	95°38.9	118°28.3
22	319°49.1	3.5'	$26^{\circ}21.0$	7.1'	60.0'	81°02.6	54°32.0	44°15.6	11°09.9	86°36.6	90°37.7	96° 13.5	118°56.5
23	334°11.5	3.4'	26°28.1	6.9'	59.9'	80°26.1	53°56.1	43°39.1	10°38.4	87°13.1	90°57.5	96°48.2	119°24.7
16 th	SD	= 16.	5' Mer. pa	ss:-									

Moon (17th Nov)

Lunar Distance (objects with largest hourly LD delta)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Procyon	-Pollux	+Aldebaran	+Saturn	+Achernar	+Fomalhaut
0	348°34.0	3.4'	N 26°35.0	6.7'	59.9'	79°49.7	53°20.2	49°46.9	43°02.7		87°49.6	91°17.1	97°22.8
1	2°56.3	3.4'	26°41.8	6.5'	59.9'	79°13.3	52°44.4	49°14.7	42°26.3		88°26.0	91°36.8	97° 57.3
2	17°18.7	3.3'	26°48.3	6.3'	59.9'	78°36.9	52°08.6	48°42.5	41°49.9		89°02.4	91°56.4	98°31.8
3	31°41.0	3.3'	26°54.6	6.1'	59.8'	78°00.6	51°32.9	48°10.5	41°13.6		89°38.8	92°16.0	99°06.3
4	46°03.3	3.3'	27°00.8	5.9'	59.8'	77°24.3	50°57.2	47°38.6	40°37.3		90°15.1	92°35.6	99°40.7
5	60°25.5	3.2'	27°06.7	5.7'	59.8'	76°48.0	50°21.5	47°06.8	40°01.0		90°51.4	92°55.2	100°15.1
6	74°47.8	3.2'	$N27^{\circ}12.5$	5.5'	59.7'	76°11.8	49°45.9	46°35.2	39°24.8		91°27.7	93° 14.7	100°49.4
7	89°10.0	3.2'	27°18.0	5.3'	59.7'	75°35.6	49°10.3	46°03.6	38°48.7		92°03.9	93°34.1	101°23.7
8	103°32.1	3.2'	27°23.3	5.1'	59.7'	74°59.4	48°34.7	45°32.2	38° 12.5		92°40.0	93°53.6	101°57.9
9	117°54.3	3.1'	27°28.5	4.9'	59.6'	74°23.3	47°59.2	45°00.9	37°36.4		93°16.2	94°13.0	102°32.1
10	132°16.4	3.1'	27°33.4	4.7'	59.6'	73°47.3	47°23.7	44°29.7	37°00.4		93°52.3	94°32.3	103°06.3
11	146°38.6	3.1'	27°38.2	4.5'	59.6'	73°11.2	46°48.3	43°58.7	36°24.4		94°28.3	94°51.6	103°40.4
12	161°00.7	3.1'	N27°42.7	4.3'	59.5'	72°35.2	46°12.9	43°27.8	35°48.4		95°04.3	95°10.9	104°14.5
13	175°22.8	3.1'	27°47.1	4.1'	59.5'	71°59.3	45°37.5	42°57.0	35° 12.5		95°40.3	95°30.1	104°48.5
14	189°44.9	3.1'	27°51.2	3.9'	59.5'	71°23.4	45°02.2	42°26.4	34°36.6	13°30.6	96°16.2	95°49.3	105°22.4
15	204°07.0	3.1'	27°55.2	3.7'	59.4'	70°47.5	44°27.0	41°55.9	34°00.7	13°54.8	96°52.1	96°08.4	105°56.3
16	218°29.1	3.1'	27°58.9	3.5'	59.4'	70°11.7	43°51.7	41°25.6	33°24.9	14°19.7	97°28.0	96°27.4	106°30.2
17	232°51.2	3.1'	$28^{\circ}02.5$	3.3'	59.4'	69°35.9	43°16.5	40°55.4	32°49.2	14°45.4	98°03.8	96°46.5	107°04.0
18	247°13.3	3.1'	$N28^{\circ}05.8$	3.1'	59.3'	69°00.2	42°41.4	40°25.4	32°13.5	15°11.7	98°39.6	97°05.4	107°37.8
19	261°35.4	3.1'	28°09.0	2.9'	59.3'	68°24.5	42°06.3	39°55.6	31°37.8	15°38.6	99°15.3	97°24.3	108° 11.5
20	275°57.5	3.1'	$28^{\circ}11.9$	2.7'	59.3'	67°48.9	41°31.2	39°25.9	31°02.2	16°06.0	99°51.0	97°43.2	108°45.1
21	290°19.6	3.1'	28°14.6	2.5'	59.2'	67°13.3	40°56.2	38°56.5	30°26.6	16°33.9	100°26.6	98°01.9	109° 18.7
22	304°41.8	3.2'	28°17.2	2.3'	59.2'	66°37.7	40°21.2	38°27.2	29°51.1	17°02.2	101°02.2	98° 20.7	109°52.2
23	319°03.9	3.2'	$28^{\circ}19.5$	2.1'	59.2'	66°02.2	39°46.3	37°58.0	29° 15.6	17°30.9	101°37.7	98°39.3	110°25.7
17 th	SD =	= 16.3′	Mer. pass	. 00:48	1								

h		Moor	n (18 th No	ov)			Lunar	Distance	(objects	with lar	gest hourly	LD delta))
Mon	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Pollux	+Jupiter	+Aldebaran	+Saturn	+Fomalhaut
0	333°26.1	3.2'	N 28°21.7	1.9'	59.1'	119°27.5	65°26.7	39°11.4	28°40.2		18°00.0	102°13.2	110°59.1
1	347°48.3	3.2'	28°23.6	1.7'	59.1'	118°52.1	64°51.3	38°36.6	28°04.8		18°29.4	102°48.7	111°32.5
2	2°10.6	3.3'	28°25.3	1.5'	59.1'	118°16.7	64°15.9	38°01.8	27°29.4		18°59.0	103°24.1	112°05.8
3	16°32.8	3.3'	28°26.9	1.3'	59.0'	117°41.3	63°40.6	37°27.0	26°54.1	9°38.6	19°29.0	103°59.5	112°39.1
4	30°55.1	3.3'	28°28.2	1.1'	59.0'	117°06.0	63°05.3	36°52.3	26°18.9	10°07.8	19°59.2	104°34.8	113°12.2
5	45°17.5	3.4'	28°29.4	0.9'	59.0'	116°30.7	62°30.0	36°17.7	25°43.7	10°37.7	20°29.6	105°10.1	113°45.4
6	59°39.9	3.4'	N28°30.3	0.7'	58.9'	115°55.4	61°54.8	35°43.1	25°08.6	11°08.1	21°00.3	105°45.3	114°18.4
7	74°02.3	3.5'	28°31.0	0.6'	58.9'	115°20.2	61°19.7	35°08.5	24°33.5	11°39.0	21°31.1	106°20.5	114°51.4
8	88°24.7	3.5'	28°31.6	0.4'	58.9'	114°45.1	60°44.6	34°34.0	23°58.4	12° 10.2	22°02.1	106°55.6	115°24.4
9	102°47.3	3.6'	28°32.0	0.2'	58.8'	114°10.0	60°09.5	33°59.5	23°23.4	12°41.7	22°33.2	107°30.7	115°57.2
10	117°09.8	3.6'	28°32.1	-0.0'	58.8'	113°34.9	59°34.5	33°25.1	22°48.5	13°13.5	23°04.5	108°05.7	116°30.0
11	131°32.4	3.7'	28°32.1	-0.2'	58.7'	112°59.9	58°59.5	32°50.8	22°13.6	13°45.6	23°35.9	108°40.7	117°02.8
12	145°55.1	3.7'	N28°31.9	-0.4'	58.7'	112°24.9	58°24.6	32°16.4	21°38.8	14° 17.8	24°07.4	109°15.7	117°35.5
13	160°17.8	3.8'	28°31.4	-0.6'	58.7'	111°50.0	57°49.7	31°42.2	21°04.0	14°50.3	24°39.0	109°50.6	118°08.1
14	174°40.6	3.8'	28°30.8	-0.8'	58.6'	111°15.2	57°14.9	31°07.9	20°29.2	15°22.9	25°10.7	110°25.5	118°40.6
15	189°03.5	3.9'	28°30.0	-1.0'	58.6'	110°40.3	56°40.1	30°33.8	19°54.6	15°55.6	25°42.5	111°00.3	119°13.1
16	203°26.4	4.0'	28°29.0	-1.2'	58.6'	110°05.6	56°05.4	29°59.6	19°19.9	16°28.5	26°14.4	111°35.0	119°45.5
17	217°49.3	4.0'	28°27.8	-1.4'	58.5'	109°30.8	55°30.7	29°25.6	18°45.4	17°01.4	26°46.3	112°09.7	
18	232°12.4	4.1'	N 28°26.5	-1.6'	58.5'	108°56.2	54°56.1	28°51.5	18°10.9	17°34.4	27°18.3	112°44.4	
19	246°35.5	4.2'	28°24.9	-1.7'	58.4'	108°21.5	54°21.5	28° 17.6	17°36.4	18°07.5	27°50.4	113°19.0	
20	260°58.7	4.3'	28°23.2	-1.9'	58.4'	107°46.9	53°47.0	27°43.7	17°02.0	18°40.7	28°22.5	113°53.6	
21	275°22.0	4.4'	$28^{\circ}21.2$	-2.1'	58.4'	107°12.4	53°12.5	27°09.8	16°27.7	19°13.9	28°54.6	114°28.1	
22	289°45.3	4.4'	$28^{\circ}19.1$	-2.3'	58.3'	106°37.9	52°38.1	26°36.0	15°53.5	19°47.2	29°26.8	115°02.6	
23	304°08.8	4.5'	28°16.8	-2.5'	58.3'	106°03.5	52°03.7	26°02.2	15°19.3	20°20.5	29°59.0	115°37.0	
18 th	SD :	= 16.1'	Mer. pass	s. 01:51									

Tue	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Pollux	+Jupiter	+Capella	+Aldebaran	+Saturn
0	318°32.3	4.6'	N28°14.3	-2.7'	58.3'	105°29.1	51°29.3	25°28.5	14°45.1	20°53.8	23°55.5	30°31.3	116°11.4
1	332°55.9	4.7'	28°11.7	-2.8'	58.2'	104°54.7	50°55.0	24°54.8	14°11.1	21°27.2	24°18.1	31°03.6	116°45.7
2	347°19.6	4.8'	28°08.8	-3.0'	58.2'	104°20.4	50°20.8	24°21.2	13°37.1	22°00.5	24°41.2	31°35.8	117°20.0
3	1°43.4	4.9'	28°05.8	-3.2'	58.1'	103°46.2	49°46.6	23°47.7	13°03.2	22°33.9	25°04.6	32°08.2	117°54.2
4	16°07.2	5.0'	28°02.6	-3.4'	58.1'	103°12.0	49°12.4	23°14.2	12°29.3	23°07.3	25°28.4	32°40.5	118°28.4
5	30°31.2	5.1'	27°59.3	-3.5'	58.1'	102°37.8	48°38.3	22°40.7	11°55.5	23°40.7	25°52.5	33°12.8	119°02.6
6	44°55.3	5.2'	N 27°55.7	-3.7'	58.0'	102°03.7	48°04.3	22°07.3	11°21.9	24°14.1	26°16.9	33°45.1	119°36.7
7	59°19.4	5.3'	27°52.0	-3.9'	58.0'	101°29.7	47°30.3	21°34.0	10°48.3	24°47.5	26°41.6	34°17.5	
8	73°43.7	5.4'	27°48.1	-4.1'	57.9'	100°55.7	46°56.3	21°00.7	10°14.8	25°20.8	27°06.6	34°49.8	
9	88°08.0	5.5'	$27^{\circ}44.1$	-4.2'	57.9'	100°21.7	46°22.4	20°27.5	9°41.4	25°54.2	27°31.9	35°22.2	
10	102°32.5	5.6'	27°39.9	-4.4'	57.9'	99°47.8	45°48.6	19°54.4	9°08.2	26°27.6	27°57.4	35°54.5	
11	116°57.1	5.7'	27°35.5	-4.6'	57.8'	99°13.9	45°14.8	19°21.3	8°35.0	27°00.9	28°23.1	36°26.9	
12	131°21.7	5.8'	N27°30.9	-4.7'	57.8'	98°40.1	44°41.0	18°48.2	8°02.1	27°34.3	28°49.0	36°59.2	
13	145°46.5	5.9'	27°26.2	-4.9'	57.8'	98°06.4	44°07.3	18°15.2	7°29.2	28°07.6	29°15.2	37°31.5	
14	160°11.4	6.0'	$27^{\circ}21.3$	-5.0'	57.7'	97°32.6	43°33.7	17°42.3	6°56.6	28°40.9	29°41.6	38°03.8	
15	174°36.4	6.1'	$27^{\circ}16.3$	-5.2'	57.7'	96°59.0	43°00.1	17°09.5	6°24.3	29°14.1	30°08.1	38°36.1	
16	189°01.5	6.2'	$27^{\circ}11.1$	-5.4'	57.6'	96°25.3	42°26.5	16°36.7	5°52.2	29°47.4	30°34.8	39°08.4	
17	203°26.7	6.3'	27°05.7	-5.5'	57.6'	95°51.8	41°53.0	16°04.0	5°20.4	30°20.6	31°01.7	39°40.7	
18	217°52.0	6.4'	N 27°00.2	-5.7'	57.6'	95°18.2	41°19.5	15°31.3	4°49.2	30°53.8	31°28.7	40°12.9	
19	232°17.5	6.6'	26°54.6	-5.8'	57.5'	94°44.8	40°46.1	14°58.7	4°18.5	31°27.0	31°55.9	40°45.2	
20	246°43.0	6.7'	26°48.7	-6.0'	57.5'	94°11.3	40°12.8	14°26.2	3°48.7	32°00.1	32°23.2	41°17.4	
21	261°08.7	6.8'	26°42.8	-6.1'	57.4'	93°37.9	39°39.5	13°53.8		32°33.3	32°50.7	41°49.6	
22	275°34.5	6.9'	26°36.7	-6.3'	57.4'	93°04.6	39°06.2	13°21.5		33°06.3	33°18.2	42°21.8	
23	290°00.4	7.0'	26°30.4	-6.4'	57.4'	92°31.3	38°33.0	12°49.2		33°39.4	33°45.9	42°53.9	

SD = 15.9'

Mer. pass. 02:53

Moon (19th Nov)

h

19th

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

Wed	GHA	ν	Dec	d	HP	-Sun	-Spica	-Regulus	-Mars	+Pollux	+Jupiter	+Capella	+Aldebaran	
0	304°26.4	7.1'	N 26°24.0	-6.6'	57.3'		91°58.1	37°59.8	12°17.1		34°12.4	34°13.7	43°26.1	
1	318°52.6	7.3'	$26^{\circ}17.4$	-6.7'	57.3'		91°24.9	37°26.7	11°45.0		34°45.4	34°41.6	43°58.2	
2	333°18.8	7.4'	26°10.7	-6.8'	57.3'		90°51.7	36°53.6	11°13.0		35°18.4	35°09.6	44°30.3	
3	347°45.2	7.5'	26°03.9	-7.0'	57.2'		90°18.6	36°20.6	10°41.2		35°51.3	35°37.7	45°02.3	
4	2°11.7	7.6'	25°56.9	-7.1'	57.2'		89°45.5	35°47.6	10°09.5		36°24.2	36°05.8	45°34.4	
5	16°38.4	7.8'	25°49.8	-7.3'	57.1'		89°12.5	35°14.7	9°37.9		36°57.1	36°34.1	46°06.4	
6	31°05.1	7.9'	N25°42.5	-7.4'	57.1'		88°39.6	34°41.8	9°06.5		37°29.9	37°02.4	46°38.4	
7	45°32.0	8.0'	25°35.2	-7.5'	57.1'		88°06.6	34°09.0	8°35.2		38°02.7	37°30.8	47°10.3	
8	59°59.0	8.1'	25°27.6	-7.7'	57.0'		87°33.8	33°36.2	8°04.1		38°35.5	37°59.2	47°42.2	
9	74°26.1	8.2'	25°20.0	-7.8'	57.0'		87°00.9	33°03.5	7°33.3		39°08.2	38°27.7	48°14.2	
10	88°53.4	8.4'	25°12.2	-7.9'	57.0'		86°28.2	32°30.8	7°02.7	4°44.5	39°40.9	38°56.3	48°46.0	
11	103°20.7	8.5'	25°04.3	-8.0'	56.9'		85°55.4	31°58.2	6°32.4	5°14.9	40°13.6	39°24.9	49°17.9	
12	117°48.2	8.6'	N 24°56.3	-8.2'	56.9'	119°33.3	85°22.7	31°25.6	6°02.5	5°45.8	40°46.2	39°53.6	49°49.7	
13	132°15.8	8.7'	24°48.1	-8.3'	56.8'	119°03.3	84°50.1	30°53.1	5°33.1	6°16.9	41°18.8	40°22.3	50°21.5	
14	146°43.6	8.9'	24°39.8	-8.4'	56.8'	118°33.3	84° 17.5	30°20.6	5°04.2	6°48.2	41°51.3	40°51.0	50°53.2	
15	161°11.4	9.0'	24°31.4	-8.5'	56.8'	118°03.4	83°44.9	29°48.2	4°36.2	7°19.6	42°23.8	41°19.8	51°24.9	
16	175°39.4	9.1'	24°22.9	-8.6'	56.7'	117°33.5	83°12.4	29°15.8		7°51.2	42°56.3	41°48.6	51°56.6	
17	190°07.6	9.2'	24°14.3	-8.8'	56.7'	117°03.6	82°39.9	28°43.4		8°22.8	43°28.7	42°17.5	52°28.3	
18	204°35.8	9.4'	N 24°05.5	-8.9'	56.7'	116°33.8	82°07.5	28°11.1		8°54.5	44°01.2	42°46.4	52°59.9	
19	219°04.2	9.5'	23°56.6	-9.0'	56.6'	116°04.0	81°35.1	27°38.9		9°26.2	44°33.5	43°15.3	53°31.5	
20	233°32.7	9.6'	23°47.7	-9.1'	56.6'	115°34.3	81°02.8	27°06.7		9°58.0	45°05.9	43°44.3	54°03.1	
21	248°01.3	9.7'	23°38.6	-9.2'	56.6'	115°04.6	80°30.5	26°34.5		10°29.7	45°38.1	44°13.3	54°34.6	
22	262°30.0	9.9'	23°29.3	-9.3'	56.5'	114°35.0	79°58.2	26°02.4		11°01.5	46°10.4	44° 42.3	55°06.1	
23	276°58.9	10.0'	23°20.0	-9.4'	56.5'	114°05.4	79°26.0	25°30.4		11°33.3	46°42.6	45°11.3	55°37.6	
20 th	SD	$=15.6^{\prime}$	Mer. pass	. 03:51		$Sun\;SD=16.2'$								

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

Thu	GHA	ν	Dec	d	HP	-Sun	-Spica	-Arcturus	-Regulus	+Mars	+Pollux	+Jupiter	+Aldebaran
0	291°27.9	10.1'	N23°10.6	-9.5'	56.4'	113°35.8	78°53.8	78°22.1	24°58.4		12°05.1	47°14.8	56°09.0
1	305°57.0	10.2'	23°01.1	-9.6'	56.4'	113°06.3	78°21.7	77°55.2	24°26.4		12°36.8	47°47.0	56° 40.5
2	320°26.2	10.4'	22°51.5	-9.7'	56.4'	112°36.9	77°49.6	77°28.3	23°54.5		13°08.6	48°19.1	57°11.8
3	334°55.5	10.5'	22°41.7	-9.8'	56.3'	112°07.4	77°17.6	77°01.5	23°22.6		13°40.3	48°51.1	57°43.2
4	349°25.0	10.6'	22°31.9	-9.9'	56.3'	111°38.0	76°45.6	76°34.7	22°50.8		14°12.1	49°23.2	58° 14.5
5	3°54.6	10.7'	22°22.0	-10.0'	56.3'	111°08.7	76°13.6	76°08.0	22°19.1		14°43.8	49°55.2	58° 45.8
6	18°24.3	10.8'	N 22°11.9	-10.1'	56.2'	110°39.4	75°41.7	75°41.4	21°47.3		15°15.4	50°27.2	59° 17.0
7	32°54.1	11.0'	22°01.8	-10.2'	56.2'	110°10.1	75°09.8	75°14.8	21° 15.7	5°03.4	15°47.1	50°59.1	59°48.2
8	47°24.1	11.1'	21°51.6	-10.3'	56.2'	109°40.9	74°38.0	74°48.3	20°44.1	5°31.6	16°18.7	51°31.0	60°19.4
9	61°54.2	11.2'	21°41.3	-10.4'	56.1'	109°11.7	74°06.2	74°21.8	20°12.5	6°00.2	16°50.3	52°02.8	60°50.6
10	76°24.4	11.3'	21°30.9	-10.5'	56.1'	108°42.5	73°34.4	73°55.4	19°41.0	6°29.2	17°21.9	52°34.7	61°21.7
11	90°54.7	11.4'	21°20.4	-10.6'	56.1'	108°13.4	73°02.7	73°29.1	19°09.5	6°58.5	17°53.5	53°06.5	61°52.8
12	105°25.1	11.5'	N 21°09.8	-10.7'	56.0'	107°44.3	72°31.0	73°02.8	18°38.1	7°28.1	18°25.0	53°38.2	62°23.8
13	119°55.6	11.7'	$20^{\circ}59.1$	-10.8'	56.0'	107°15.3	71°59.4	72°36.6	18°06.8	7°57.8	18°56.5	54°09.9	62°54.8
14	134°26.3	11.8'	20°48.3	-10.8'	56.0'	106°46.3	71°27.8	72°10.4	17°35.5	8°27.6	19°27.9	54°41.6	63°25.8
15	148°57.0	11.9'	20°37.5	-10.9'	55.9'	106°17.4	70°56.2	71°44.3	17°04.2	8°57.6	19°59.3	55°13.3	63° 56.8
16	163°27.9	12.0'	20°26.6	-11.0'	55.9'	105°48.4	70°24.7	71°18.2	16°33.1	9°27.6	20°30.7	55°44.9	64°27.7
17	177°58.9	12.1'	20°15.6	-11.1'	55.9'	105°19.6	69°53.2	70°52.2	16°01.9	9°57.8	21°02.1	56°16.5	64°58.6
18	192°30.0	12.2'	N 20°04.5	-11.2'	55.8'	104°50.7	69°21.7	70°26.3	15°30.9	10°27.9	21°33.4	56°48.0	65° 29.5
19	207°01.2	12.3'	19°53.3	-11.2'	55.8'	104°21.9	68°50.3	70°00.5	14°59.9	10°58.1	22°04.7	57°19.5	66°00.3
20	221°32.6	12.4'	19°42.1	-11.3'	55.8'	103°53.1	68°18.9	69°34.7	14°28.9	11°28.4	22°36.0	57°51.0	66°31.1
21	236°04.0	12.5'	19°30.7	-11.4'	55.8'	103°24.4	67°47.6	69°08.9	13°58.1	11°58.7	23°07.3	58°22.4	67°01.9
22	250°35.5	12.6'	19°19.3	-11.5'	55.7'	102°55.7	67°16.3	68°43.3	13°27.3	12°28.9	23°38.5	58°53.9	67°32.6
23	265°07.2	12.8'	19°07.9	-11.5'	55.7'	102°27.0	66°45.0	68°17.7	12°56.6	12°59.2	24°09.6	59°25.2	68°03.3
21 st	SD	= 15.4	Mer. pas	s. 04:44					Sun SD	0 = 16.2'			

h	Moon (22 ^{na} Nov)	Lunar Distance (objects with largest hourly LD delta)
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Fri	GHA	ν	Dec	d	HP	-Sun	-Arcturus	-Spica	-Regulus	+Mars	+Pollux	+Jupiter	+Aldebaran
0	279°38.9	12.9'	N 18°56.3	-11.6'	55.7'	101°58.4	67°52.1	66°13.7	12°25.9	13°29.5	24°40.8	59° 56.6	68°34.0
1	294°10.8	13.0'	18°44.7	-11.7'	55.6'	101°29.8	67°26.7	65°42.5	11°55.4	13°59.8	25°11.9	60°27.9	69°04.6
2	308°42.8	13.1'	18°33.0	-11.8'	55.6'	101°01.2	67°01.3	65°11.4	11°24.9	14°30.1	25°43.0	60°59.2	69°35.3
3	323°14.8	13.2'	18°21.3	-11.8'	55.6'	100°32.7	66°35.9	64°40.2	10°54.6	15°00.4	26°14.0	61°30.4	70°05.8
4	337°47.0	13.3'	$18^{\circ}09.5$	-11.9'	55.5'	100°04.2	66°10.7	64°09.1	10°24.3	15°30.7	26°45.1	62°01.6	70°36.4
5	352°19.3	13.4'	17°57.6	-11.9'	55.5'	99°35.7	65°45.5	63°38.1	9°54.2	16°01.0	27°16.1	62°32.8	71°06.9
6	6°51.6	13.5'	$N17^{\circ}45.6$	-12.0'	55.5'	99°07.3	65°20.4	63°07.0	9°24.2	16°31.3	27°47.0	63°04.0	71°37.4
7	21°24.1	13.6'	17°33.6	-12.1'	55.5'	98°38.9	64°55.3	62°36.0	8°54.3	17°01.5	28°18.0	63°35.1	72°07.9
8	35°56.7	13.7'	$17^{\circ}21.5$	-12.1'	55.4'	98° 10.5	64°30.3	62°05.0	8°24.6	17°31.8	28°48.9	64°06.2	72°38.3
9	50°29.3	13.8'	17°09.4	-12.2'	55.4'	97°42.2	64°05.4	61°34.1	7°55.1	18°02.0	29°19.7	64°37.3	73°08.8
10	65°02.1	13.9'	16°57.2	-12.3'	55.4'	97°13.9	63°40.6	61°03.2	7°25.9	18°32.2	29°50.6	65°08.3	73°39.1
11	79°34.9	13.9'	$16^{\circ}45.0$	-12.3'	55.3'	96° 45.6	63°15.8	60°32.3	6°56.9	19°02.4	30°21.4	65°39.3	74°09.5
12	94°07.9	14.0'	$N16^{\circ}32.6$	-12.4'	55.3'	96° 17.4	62°51.1	60°01.5	6°28.2	19°32.6	30°52.2	66° 10.3	74°39.8
13	108°40.9	14.1'	16°20.3	-12.4'	55.3'	95°49.2	62°26.5	59°30.7	5°59.9	20°02.7	31°22.9	66°41.3	75°10.1
14	123°14.1	14.2'	$16^{\circ}07.8$	-12.5'	55.3'	95°21.0	62°02.0	58°59.9	5°32.0	20°32.9	31°53.7	67° 12.2	75°40.4
15	137°47.3	14.3'	15°55.4	-12.5'	55.2'	94°52.9	61°37.5	58°29.1	5°04.8	21°03.0	32°24.4	67°43.1	76°10.6
16	152°20.6	14.4'	15°42.8	-12.6'	55.2'	94°24.7	61°13.2	57°58.4	4°38.3	21°33.1	32°55.0	68° 13.9	76°40.9
17	166°54.0	14.5'	15°30.2	-12.6'	55.2'	93°56.7	60°48.9	57°27.7		22°03.2	33°25.7	68°44.8	77°11.1
18	181°27.5	14.6'	N 15°17.6	-12.7'	55.2'	93°28.6	60°24.6	56°57.1		22°33.2	33°56.3	69° 15.6	77°41.2
19	196°01.0	14.7'	15°04.9	-12.7'	55.1'	93°00.6	60°00.5	56°26.4		23°03.3	34°26.9	69°46.4	78°11.4
20	210°34.7	14.7'	14°52.2	-12.8'	55.1'	92°32.6	59°36.5	55°55.8		23°33.3	34°57.4	70° 17.1	78°41.5
21	225°08.4	14.8'	14°39.4	-12.8'	55.1'	92°04.6	59°12.5	55°25.2		24°03.3	35°28.0	70°47.8	79°11.6
22	239°42.2	14.9'	14°26.6	-12.9'	55.1'	91°36.6	58°48.6	54°54.7		24°33.3	35°58.5	71° 18.5	79°41.6
23	254°16.1	15.0'	14°13.7	-12.9'	55.0'	91°08.7	58°24.8	54°24.2		25°03.2	36°29.0	71°49.2	80°11.7
22 nd	SD	= 15.2	Mer. pas	s. 05:32					Sun SE	0 = 16.2'			

h Moon (23rd Nov)

Lunar Distance (objects with largest hourly LD delta)

Sat	GHA	ν	Dec	d	HP	-Rigil Kent.	-Sun	-Arcturus	-Spica	+Mars	+Pollux	+Jupiter	+Aldebaran
0	268°50.1	15.1'	N 14°00.8	-13.0'	55.0'	91°26.4	90°40.8	58°01.1	53°53.7	25°33.2	36°59.4	72° 19.9	80°41.7
1	283°24.2	15.1'	13°47.8	-13.0'	55.0'	91°02.5	90°13.0	57° 37.5	53°23.2	26°03.1	37°29.8	72°50.5	81°11.7
2	297°58.3	15.2'	13°34.8	-13.1'	55.0'	90°38.7	89°45.1	57° 13.9	52°52.7	26°33.0	38°00.2	73°21.1	81°41.6
3	312°32.5	15.3'	$13^{\circ}21.7$	-13.1'	54.9'	90°14.8	89°17.3	56° 50.5	52°22.3	27°02.9	38°30.6	73°51.7	82°11.6
4	327°06.8	15.4'	13°08.6	-13.1'	54.9'	89°51.0	88°49.5	56°27.1	51°51.9	27°32.7	39°01.0	74°22.2	82°41.5
5	341°41.1	15.4'	$12^{\circ}55.5$	-13.2'	54.9'	89°27.2	88°21.8	56°03.8	51°21.5	28°02.6	39°31.3	74°52.8	83°11.4
6	356°15.6	15.5'	$N12^{\circ}42.3$	-13.2'	54.9'	89°03.4	87°54.0	55°40.7	50°51.2	28°32.4	40°01.6	75°23.3	83°41.2
7	10°50.1	15.6'	$12^{\circ}29.1$	-13.2'	54.9'	88°39.6	87°26.3	55° 17.6	50°20.9	29°02.2	40°31.9	75°53.7	84°11.1
8	25°24.6	15.6'	$12^{\circ}15.9$	-13.3'	54.8'	88°15.8	86°58.6	54° 54.6	49°50.6	29°32.0	41°02.2	76°24.2	84°40.9
9	39°59.3	15.7'	$12^{\circ}02.6$	-13.3'	54.8'	87°52.1	86°30.9	54°31.7	49°20.3	30°01.7	41°32.4	76°54.6	85° 10.7
10	54°34.0	15.8'	$11^{\circ}49.3$	-13.4'	54.8'	87°28.4	86°03.3	54°08.9	48°50.1	30°31.5	42°02.6	77°25.1	85°40.5
11	69°08.7	15.8'	$11^{\circ}35.9$	-13.4'	54.8'	87°04.7	85°35.7	53°46.3	48°19.8	31°01.2	42°32.8	77°55.5	86° 10.3
12	83°43.6	15.9'	$N11^{\circ}22.5$	-13.4'	54.7'	86°41.0	85°08.1	53°23.7	47°49.6	31°30.9	43°03.0	78°25.8	86°40.0
13	98°18.5	16.0'	$11^{\circ}09.1$	-13.5'	54.7'	86°17.4	84°40.5	53°01.2	47°19.4	32°00.6	43°33.2	78°56.2	87°09.7
14	112°53.4	16.0'	$10^{\circ}55.6$	-13.5'	54.7'	85°53.8	84°12.9	52° 38.8	46°49.3	32°30.3	44°03.3	79°26.5	87°39.4
15	127°28.4	16.1'	$10^{\circ}42.1$	-13.5'	54.7'	85°30.2	83°45.4	52° 16.6	46°19.1	32°59.9	44°33.4	79°56.8	88°09.1
16	142°03.5	16.1'	$10^{\circ}28.6$	-13.5'	54.7'	85°06.6	83°17.9	51°54.4	45°49.0	33°29.6	45°03.5	80°27.1	88° 38.7
17	156°38.7	16.2'	$10^{\circ}15.1$	-13.6'	54.7'	84°43.0	82°50.4	51°32.4	45°18.9	33°59.2	45°33.6	80°57.4	89°08.4
18	171°13.9	16.2'	$N10^{\circ}01.5$	-13.6'	54.6'	84°19.5	82°22.9	51°10.4	44°48.8	34°28.8	46°03.6	81°27.6	89°38.0
19	185°49.1	16.3'	09°47.9	-13.6'	54.6'	83°56.0	81°55.5	50°48.6	44°18.8	34°58.4	46°33.7	81°57.9	90°07.6
20	200°24.4	16.4'	09°34.3	-13.7'	54.6'	83°32.5	81°28.1	50°26.9	43°48.7	35°27.9	47°03.7	82°28.1	90°37.2
21	214°59.8	16.4'	09°20.6	-13.7'	54.6'	83°09.1	81°00.6	50°05.3	43°18.7	35°57.5	47°33.7	82°58.3	91°06.7
22	229°35.2	16.5'	09°06.9	-13.7'	54.6'	82°45.7	80°33.2	49°43.8	42°48.7	36°27.0	48°03.6	83°28.4	91°36.3
23	244°10.6	16.5'	08°53.2	-13.7'	54.5'	82°22.3	80°05.9	49°22.5	42°18.7	36°56.6	48°33.6	83°58.6	92°05.8
23 rd	SD	= 15.0'	Mer. pas	s. 06:15					Sun SD	= 16.2'			

h Moon (24th Nov)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Rigil Kent.	-Sun	-Hadar	-Spica	+Mars	+Pollux	+Jupiter	+Aldebaran
0	258°46.1	16.6'	N 08°39.5	-13.8'	54.5'	81°58.9	79°38.5	78°17.6	41°48.7	37°26.1	49°03.5	84°28.7	92°35.3
1	273°21.7	16.6'	08°25.7	-13.8'	54.5'	81°35.6	79°11.2	77°55.1	41°18.8	37°55.6	49°33.5	84°58.9	93°04.8
2	287°57.3	16.7'	$08^{\circ}11.9$	-13.8'	54.5'	81°12.3	78°43.9	77°32.6	40°48.9	38°25.0	50°03.4	85°29.0	93°34.2
3	302°33.0	16.7'	07°58.1	-13.8'	54.5'	80°49.0	78°16.6	77°10.2	40°18.9	38°54.5	50°33.3	85°59.1	94°03.7
4	317°08.7	16.7'	07°44.3	-13.8'	54.5'	80°25.8	77°49.3	76°47.8	39°49.0	39°24.0	51°03.2	86°29.2	94°33.1
5	331°44.4	16.8'	07°30.5	-13.9'	54.4'	80°02.5	77°22.0	76°25.4	39°19.1	39°53.4	51°33.0	86°59.2	95°02.5
6	346°20.2	16.8'	N 07°16.6	-13.9'	54.4'	79°39.4	76°54.7	76°03.1	38°49.3	40°22.8	52°02.9	87°29.3	95°31.9
7	0°56.0	16.9'	07°02.7	-13.9'	54.4'	79°16.2	76°27.5	75°40.8	38° 19.4	40°52.2	52°32.7	87°59.3	96°01.3
8	15°31.9	16.9'	06°48.8	-13.9'	54.4'	78°53.1	76°00.3	75°18.5	37°49.6	41°21.6	53°02.5	88°29.3	96°30.7
9	30°07.8	16.9'	06°34.9	-13.9'	54.4'	78°30.0	75°33.1	74°56.3	37°19.8	41°51.0	53°32.3	88°59.3	97°00.1
10	44°43.7	17.0'	$06^{\circ}21.0$	-13.9'	54.4'	78°06.9	75°05.9	74°34.2	36°49.9	42°20.4	54°02.1	89°29.3	97°29.4
11	59°19.7	17.0'	06°07.0	-14.0'	54.4'	77°43.9	74°38.7	74°12.0	36°20.2	42°49.8	54°31.9	89°59.3	97°58.7
12	73°55.7	17.0'	N05°53.1	-14.0'	54.3'	77°20.9	74°11.5	73°50.0	35°50.4	43° 19.1	55°01.6	90°29.2	98°28.0
13	88°31.7	17.1'	05°39.1	-14.0'	54.3'	76°57.9	73°44.4	73°27.9	35°20.6	43°48.5	55°31.4	90°59.2	98°57.3
14	103°07.8	17.1'	05°25.1	-14.0'	54.3'	76°35.0	73°17.2	73°05.9	34°50.8	44°17.8	56°01.1	91°29.1	99°26.6
15	117°43.9	17.1'	$05^{\circ}11.1$	-14.0'	54.3'	76°12.1	72°50.1	72°44.0	34°21.1	44°47.1	56°30.8	91°59.0	99°55.9
16	132°20.1	17.2'	04°57.1	-14.0'	54.3'	75°49.2	72°23.0	72°22.1	33°51.4	45° 16.4	57°00.6	92°29.0	100°25.2
17	146°56.2	17.2'	04°43.0	-14.0'	54.3'	75°26.4	71°55.9	72°00.2	33°21.6	45°45.7	57°30.3	92°58.9	100°54.4
18	161°32.4	17.2'	N04°29.0	-14.1'	54.3'	75°03.6	71°28.8	71°38.4	32°51.9	46° 15.0	58°00.0	93°28.7	101°23.6
19	176°08.6	17.2'	04°15.0	-14.1'	54.3'	74°40.9	71°01.7	71°16.6	32°22.2	46°44.3	58°29.6	93°58.6	101°52.9
20	190°44.9	17.3'	04°00.9	-14.1'	54.2'	74°18.2	70°34.7	70°54.9	31°52.5	47°13.6	58°59.3	94°28.5	102°22.1
21	205°21.2	17.3'	03°46.8	-14.1'	54.2'	73°55.5	70°07.6	70°33.3	31°22.9	47°42.8	59°29.0	94°58.3	102°51.3
22	219°57.4	17.3'	03°32.7	-14.1'	54.2'	73°32.9	69°40.6	70°11.6	30°53.2	48°12.1	59°58.6	95°28.2	103°20.5
23	234°33.8	17.3'	03°18.7	-14.1'	54.2'	73°10.3	69°13.5	69°50.1	30°23.5	48°41.3	60°28.3	95°58.0	103°49.6
24 th	SD	= 14.9'	Mer. pas	s. 06:56					Sun SE	0 = 16.2'			

h Moon (25th Nov)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Rigil Kent.	-Hadar	-Sun	-Spica	+Regulus	+Mars	+Pollux	+Jupiter
0	249°10.1	17.4'	N 03°04.6	-14.1'	54.2'	72°47.7	69°28.6	68°46.5	29°53.9	24°15.5	49° 10.6	60°57.9	96°27.9
1	263°46.4	17.4'	02°50.5	-14.1'	54.2'	72°25.2	69°07.1	68° 19.5	29°24.3	24°45.0	49°39.8	61°27.5	96°57.7
2	278°22.8	17.4'	02°36.4	-14.1'	54.2'	72°02.7	68°45.7	67°52.5	28°54.6	25°14.5	50°09.1	61°57.1	97°27.5
3	292°59.2	17.4'	02°22.3	-14.1'	54.2'	71°40.3	68°24.3	67°25.5	28°25.0	25°44.0	50°38.3	62°26.7	97°57.3
4	307°35.6	17.4'	$02^{\circ}08.1$	-14.1'	54.2'	71°17.9	68°03.0	66°58.5	27°55.4	26°13.5	51°07.5	62°56.3	98°27.1
5	$322^{\circ}12.0$	17.4'	$01^{\circ}54.0$	-14.1'	54.2'	70°55.5	67°41.8	66°31.5	27°25.8	26°42.9	51°36.7	63°25.9	98°56.9
6	336°48.5	17.4'	N01°39.9	-14.1'	54.2'	70°33.2	67°20.6	66°04.5	26°56.2	27°12.4	52°05.9	63°55.5	99°26.7
7	351°24.9	17.5'	01°25.8	-14.1'	54.1'	70°10.9	66°59.5	65°37.6	26°26.6	27°41.9	52°35.1	64°25.1	99°56.4
8	6°01.4	17.5'	$01^{\circ}11.7$	-14.1'	54.1'	69°48.7	66°38.4	65° 10.6	25°57.0	28°11.3	53°04.3	64°54.7	100°26.2
9	20°37.8	17.5'	00°57.5	-14.1'	54.1'	69°26.6	66°17.4	64°43.6	25°27.4	28°40.8	53°33.5	65°24.2	100°56.0
10	35°14.3	17.5'	00°43.4	-14.1'	54.1'	69°04.4	65°56.4	64° 16.7	24°57.8	29°10.3	54°02.7	65°53.8	101°25.7
11	49°50.8	17.5'	$00^{\circ}29.3$	-14.1'	54.1'	68°42.3	65°35.5	63°49.8	24°28.3	29°39.7	54°31.9	66°23.3	101°55.5
12	64°27.3	17.5'	N00°15.2	-14.1'	54.1'	68°20.3	65°14.7	63°22.8	23°58.7	30°09.2	55°01.1	66°52.9	102°25.2
13	79°03.8	17.5'	N00°01.0	-14.1'	54.1'	67°58.3	64°53.9	62°55.9	23°29.1	30°38.7	55°30.2	67°22.4	102°55.0
14	93°40.3	17.5'	S 00° 13.1	-14.1'	54.1'	67°36.4	64°33.2	62°29.0	22°59.6	31°08.1	55°59.4	67°52.0	103°24.7
15	108°16.7	17.5'	00°27.2	-14.1'	54.1'	67°14.5	64°12.6	62°02.1	22°30.0	31°37.6	56°28.6	68°21.5	103°54.4
16	122°53.2	17.5'	00°41.3	-14.1'	54.1'	66°52.7	63°52.0	61°35.2	22°00.5	32°07.0	56° 57.8	68°51.1	104°24.1
17	137°29.7	17.5'	00°55.4	-14.1'	54.1'	66°30.9	63°31.5	61°08.2	21°30.9	32°36.5	57°26.9	69°20.6	104°53.9
18	152°06.2	17.5'	S 01°09.5	-14.1'	54.1'	66°09.2	63°11.0	60°41.3	21°01.4	33°05.9	57°56.1	69°50.1	105°23.6
19	166°42.7	17.5'	01°23.6	-14.1'	54.1'	65°47.5	62°50.6	60°14.4	20°31.9	33°35.4	58°25.3	70°19.6	105°53.3
20	181°19.2	17.5'	01°37.7	-14.1'	54.1'	65°25.9	62°30.3	59°47.5	20°02.3	34°04.8	58°54.4	70°49.2	106°23.0
21	195°55.7	17.5'	01°51.8	-14.1'	54.1'	65°04.3	62°10.1	59°20.7	19°32.8	34°34.3	59°23.6	71°18.7	106°52.7
22	210°32.2	17.5'	$02^{\circ}05.9$	-14.1'	54.1'	64°42.8	61°50.0	58° 53.8	19°03.3	35°03.7	59°52.8	71°48.2	107°22.4
23	225°08.7	17.5'	02°20.0	-14.1'	54.1'	64°21.4	61°29.9	58°26.9	18°33.7	35°33.2	60°21.9	72°17.7	107°52.1
25 th	SD	= 14.8	Mer. pas	s. 07:35					Sun SD	= 16.2'			

h	Moon (26th Nov)	Lu

h		Moor	n (26 th No	ov)		Lunar Distance (objects with largest hourly LD delta)							
Tue	GHA	ν	Dec	d	HP	-Rigil Kent.	-Hadar	-Sun	-Spica	+Regulus	+Mars	+Pollux	+Jupiter
0	239°45.2	17.5'	S 02°34.0	-14.1'	54.1'	64°00.0	61°09.9	58°00.0	18°04.2	36°02.6	60°51.1	72°47.2	108°21.8
1	254°21.6	17.5'	02°48.1	-14.0'	54.1'	63°38.6	60°49.9	57°33.1	17°34.7	36°32.1	61°20.3	73°16.8	108°51.5
2	268°58.1	17.4'	03°02.1	-14.0'	54.0'	63°17.4	60°30.1	57°06.2	17°05.2	37°01.6	61°49.4	73°46.3	109°21.2
3	283°34.5	17.4'	03° 16.2	-14.0'	54.0'	62°56.2	60°10.3	56° 39.4	16°35.6	37°31.0	62° 18.6	74°15.8	109°50.9
4	298°10.9	17.4'	03°30.2	-14.0'	54.0'	62°35.0	59°50.6	56° 12.5	16°06.1	38°00.5	62°47.8	74°45.3	110°20.6
5	312°47.4	17.4'	03°44.2	-14.0'	54.0'	62°13.9	59°31.0	55°45.6	15°36.6	38°29.9	63°16.9	75°14.8	110°50.3
6	327°23.8	17.4'	S 03°58.2	-14.0'	54.0'	61°52.9	59°11.5	55° 18.7	15°07.1	38°59.4	63°46.1	75°44.3	111°20.0
7	342°00.1	17.4'	$04^{\circ}12.2$	-14.0'	54.0'	61°32.0	58°52.0	54°51.9	14°37.5	39°28.9	64°15.3	76°13.8	111°49.7
8	356°36.5	17.3'	04°26.1	-14.0'	54.0'	61°11.1	58°32.6	54°25.0	14°08.0	39°58.3	64°44.5	76°43.4	112°19.4
9	11°12.9	17.3'	$04^{\circ}40.1$	-13.9'	54.0'	60°50.3	58°13.4	53°58.1	13°38.5	40°27.8	65° 13.7	77°12.9	112°49.1
10	25°49.2	17.3'	04°54.0	-13.9'	54.0'	60°29.6	57°54.2	53°31.2	13°09.0	40°57.3	65°42.8	77°42.4	113° 18.8
11	40°25.5	17.3'	05°08.0	-13.9'	54.0'	60°08.9	57°35.1	53°04.4	12°39.4	41°26.8	66°12.0	78°11.9	113°48.5
12	55°01.8	17.3'	S 05°21.9	-13.9'	54.0'	59°48.3	57°16.1	52°37.5	12°09.9	41°56.2	66°41.2	78°41.5	114°18.2
13	69°38.0	17.2'	05°35.8	-13.9'	54.0'	59°27.8	56°57.2	52° 10.6	11°40.4	42°25.7	67° 10.4	79°11.0	114°47.9
14	84°14.3	17.2'	05°49.6	-13.9'	54.0'	59°07.3	56°38.4	51°43.7	11° 10.8	42°55.2	67°39.6	79°40.5	115° 17.6
15	98°50.5	17.2'	06°03.5	-13.8'	54.0'	58°47.0	56°19.7	51°16.9	10°41.3	43°24.7	68°08.8	80°10.1	115°47.3
16	113°26.7	17.2'	06°17.3	-13.8'	54.0'	58°26.7	56°01.1	50°50.0	10°11.8	43°54.2	68°38.0	80°39.6	116°17.0
17	128°02.9	17.1'	$06^{\circ}31.1$	-13.8'	54.0'	58°06.5	55°42.6	50°23.1	9°42.2	44°23.7	69°07.3	81°09.1	116°46.7
18	142°39.0	17.1'	S 06°44.9	-13.8'	54.0'	57°46.3	55°24.2	49°56.2	9°12.7	44°53.2	69°36.5	81°38.7	117° 16.5
19	$157^{\circ}15.1$	17.1'	$06^{\circ}58.7$	-13.7'	54.0'	57°26.3	55°05.9	49°29.3	8°43.1	45°22.7	70°05.7	82°08.2	117°46.2
20	171°51.2	17.0'	07° 12.4	-13.7'	54.0'	57°06.3	54°47.7	49°02.4	8° 13.6	45°52.3	70°34.9	82°37.8	118° 15.9
21	186°27.2	17.0'	07°26.1	-13.7'	54.0'	56°46.5	54°29.6	48° 35.5	7°44.1	46°21.8	71°04.2	83°07.4	118° 45.6
22	201°03.3	17.0'	07°39.8	-13.7'	54.0'	56°26.7	54°11.6	48°08.6	7°14.5	46°51.3	71°33.4	83°36.9	119°15.3
23	215°39.2	16.9'	07°53.5	-13.6'	54.1'	56°07.0	53°53.8	47°41.7	6°45.0	47°20.8	72°02.7	84°06.5	119°45.1
26 th	SD	= 14.7'	Mer. pas	s. 08:14					Sun SD	= 16.2'			

h Moon (27 th Nov)	Lunar Distance (objects with largest hourly LD delta)
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Wed	GHA	ν	Dec	d	HP	-Rigil Kent.	-Hadar	-Sun	±Spica	+Regulus	+Mars	+Pollux	+Capella
0	230°15.2	16.9'	S 08°07.2	-13.6'	54.1'	55°47.4	53°36.0	47°14.8	6°15.4	47°50.4	72°31.9	84°36.1	114°06.4
1	244°51.1	16.9'	08°20.8	-13.6'	54.1'	55°27.9	53°18.4	46°47.9	5°45.9	48°19.9	73°01.2	85°05.7	114°34.3
2	259°27.0	16.8'	08°34.4	-13.6'	54.1'	55°08.5	53°00.9	46°21.0	5°16.4	48°49.5	73°30.5	85°35.2	115°02.2
3	274°02.8	16.8'	08°47.9	-13.5'	54.1'	54°49.2	52°43.5	45°54.1	4°46.8	49°19.1	73°59.8	86°04.8	115°30.0
4	288°38.6	16.8'	$09^{\circ}01.5$	-13.5'	54.1'	54°30.0	52°26.3	45°27.2	4°17.3	49°48.6	74°29.1	86°34.4	115°57.8
5	303°14.4	16.7'	$09^{\circ}15.0$	-13.5'	54.1'	54°10.8	52°09.1	45°00.3	3°47.8	50°18.2	74°58.4	87°04.0	116°25.7
6	317°50.1	16.7'	S 09°28.5	-13.4'	54.1'	53°51.8	51°52.1	44°33.4	3°18.3	50°47.8	75°27.7	87°33.7	116°53.5
7	332°25.8	16.6'	09°41.9	-13.4'	54.1'	53°32.9	51°35.3	44°06.4	2°48.9	51°17.4	75°57.0	88°03.3	117°21.3
8	347°01.4	16.6'	09°55.3	-13.4'	54.1'	53°14.1	51°18.5	43°39.5	2°19.6	51°47.0	76°26.3	88°32.9	117°49.1
9	1°37.0	16.5'	10°08.7	-13.4'	54.1'	52°55.5	51°01.9	43°12.6	1°50.4	52°16.6	76°55.7	89°02.6	118°16.9
10	16°12.5	16.5'	10°22.1	-13.3'	54.1'	52°36.9	50°45.4	42°45.6	1°21.6	52°46.2	77°25.0	89°32.2	118°44.7
11	30°48.0	16.5'	10°35.4	-13.3'	54.1'	52°18.4	50°29.1	42°18.7	0°53.7	53°15.9	77°54.4	90°01.9	119°12.5
12	45°23.5	16.4'	S 10°48.7	-13.2'	54.1'	52°00.1	50°12.9	41°51.7		53°45.5	78°23.7	90°31.5	119°40.3
13	59°58.9	16.4'	$11^{\circ}01.9$	-13.2'	54.1'	51°41.9	49°56.9	41°24.8		54°15.1	78°53.1	91°01.2	
14	74°34.3	16.3'	$11^{\circ}15.1$	-13.2'	54.1'	51°23.8	49°41.0	40°57.8		54°44.8	79°22.5	91°30.9	
15	89°09.6	16.3'	11°28.3	-13.1'	54.1'	51°05.8	49°25.3	40°30.8		55°14.5	79°51.9	92°00.6	
16	103°44.8	16.2'	$11^{\circ}41.5$	-13.1'	54.1'	50°47.9	49°09.7	40°03.9		55°44.1	80°21.3	92°30.3	
17	118°20.0	16.1'	11°54.6	-13.1'	54.1'	50°30.2	48°54.3		2°11.4	56°13.8	80°50.7	93°00.0	
18	132°55.2	16.1'	S 12°07.6	-13.0'	54.1'	50°12.6	48°39.0		2°40.8	56°43.5	81°20.1	93°29.7	
19	147°30.3	16.0'	12°20.6	-13.0'	54.1'	49°55.2	48°23.9		3°10.3	57°13.2	81°49.6	93°59.4	
20	162°05.3	16.0'	12°33.6	-12.9'	54.2'	49°37.9			3°39.8	57°43.0	82°19.0	94°29.2	
21	176°40.3	15.9'	12°46.5	-12.9'	54.2'	49°20.7			4°09.5	58°12.7	82°48.5	94°58.9	
22	191°15.2	15.9'	$12^{\circ}59.4$	-12.8'	54.2'	49°03.7			4°39.1	58°42.4	83°18.0	95°28.7	
23	205°50.1	15.8'	13°12.3	-12.8'	54.2'	48°46.8			5°08.8	59°12.2	83°47.5	95°58.5	
27 th	SD	= 14.7'	Mer. pas	s. 08:53		Sun SD = 16.2'							

h Moon ((28 th Nov)	Lunar Distance (o	objects with larg	est hourly LD delta	a)
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Thu	GHA	ν	Dec	d	HP	-Rigil Kent.	+Spica	+Regulus	+Mars	+Procyon	+Pollux	+Sirius	+Betelgeuse
0	220°24.9	15.7'	S 13°25.1	-12.8'	54.2'	48°30.0	5°38.6	59°42.0	84°17.0	92°57.5	96°28.3	100°24.2	118°42.5
1	234°59.6	15.7'	13°37.8	-12.7'	54.2'	48°13.4	6°08.3	60°11.7	84°46.5	93°25.4	96°58.1	100°45.1	119°09.7
2	249°34.3	15.6'	13°50.6	-12.7'	54.2'	47°57.0	6°38.1	60°41.5	85°16.0	93°53.2	97°27.9	101°05.9	119°36.9
3	264°08.9	15.6'	14°03.2	-12.6'	54.2'	47°40.7	7°07.9	61°11.3	85°45.6	94°21.1	97°57.7	101°26.7	
4	278°43.5	15.5'	14° 15.8	-12.6'	54.2'	47°24.6	7°37.7	61°41.1	86°15.1	94°49.0	98°27.5	101°47.5	
5	293°18.0	15.4'	$14^{\circ}28.4$	-12.5'	54.2'	47°08.6	8°07.5	62°11.0	86°44.7	95° 16.9	98°57.4	102°08.3	
6	307°52.4	15.4'	S 14°40.9	-12.5'	54.2'	46°52.8	8°37.4	62°40.8	87°14.3	95°44.9	99°27.2	102°29.1	
7	322°26.8	15.3'	14°53.4	-12.4'	54.2'	46°37.2	9°07.2	63°10.7	87°43.9	96° 12.8	99°57.1	102°49.8	
8	337°01.1	15.2'	15°05.8	-12.4'	54.3'	46°21.8	9°37.1	63°40.5	88°13.5	96°40.7	100°27.0	103°10.6	
9	351°35.4	15.2'	$15^{\circ}18.1$	-12.3'	54.3'	46°06.5	10°07.0	64°10.4	88°43.1	97°08.7	100°56.9	103°31.3	
10	6°09.5	15.1'	15°30.4	-12.2'	54.3'	45°51.4	10°36.9	64°40.3	89°12.7	97°36.6	101°26.8	103°51.9	
11	20°43.6	15.0'	$15^{\circ}42.7$	-12.2'	54.3'		11°06.8	65°10.2	89°42.4	98°04.6	101°56.7	104°12.6	
12	35°17.7	15.0'	S 15°54.9	-12.1'	54.3'		11°36.7	65°40.1	90°12.1	98°32.5	102°26.6	104°33.2	
13	49°51.6	14.9'	$16^{\circ}07.0$	-12.1'	54.3'		12°06.7	66°10.0	90°41.7	99°00.5	102°56.6	104°53.8	
14	64°25.5	14.8'	$16^{\circ}19.1$	-12.0'	54.3'		12°36.7	66°40.0	91°11.4	99°28.5	103°26.5	105°14.4	
15	78°59.3	14.7'	$16^{\circ}31.1$	-12.0'	54.3'		13°06.6	67°10.0	91°41.1	99° 56.5	103°56.5	105°35.0	
16	93°33.1	14.7'	16°43.1	-11.9'	54.3'		13°36.6	67°39.9	92°10.9	100°24.5	104°26.5	105°55.5	
17	108°06.7	14.6'	$16^{\circ}55.0$	-11.8'	54.3'		14°06.6	68°09.9	92°40.6	100°52.5	104°56.5	106°16.0	
18	122°40.3	14.5'	S 17°06.8	-11.8'	54.4'		14°36.7	68°39.9	93°10.4	101°20.5	105°26.5	106°36.4	
19	137°13.9	14.4'	$17^{\circ}18.6$	-11.7'	54.4'		15°06.7	69°09.9	93°40.2	101°48.5	105°56.6	106°56.9	
20	151°47.3	14.4'	17°30.3	-11.6'	54.4'		15°36.8	69°40.0	94°10.0	102° 16.5	106°26.6	107°17.3	
21	166°20.7	14.3'	$17^{\circ}41.9$	-11.6'	54.4'		16°06.8	70°10.0	94°39.8	102°44.6	106°56.7	107°37.6	
22	180°53.9	14.2'	$17^{\circ}53.5$	-11.5'	54.4'		16°36.9	70°40.1	95°09.6	103° 12.6	107°26.8	107°57.9	
23	195°27.2	14.1'	18°05.0	-11.4'	54.4'		17°07.0	71°10.2	95°39.4	103°40.7	107°56.9	108°18.2	
28 th	SD	= 14.8'	Mer. pas	s. 09:35									

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

Fri	GHA	ν	Dec	d	HP	+Spica	+Arcturus	+Regulus	+Mars	+Adhara	+Procyon	+Pollux	+Sirius
0	210°00.3	14.1'	S 18°16.5	-11.4'	54.4'	17°37.2		71°40.3	96°09.3	100°17.3	104°08.7	108°27.0	108°38.5
1	224°33.3	14.0'	$18^{\circ}27.9$	-11.3'	54.4'	18°07.3		72°10.4	96°39.2	100°33.5	104°36.8	108°57.1	108°58.7
2	239°06.3	13.9'	18° 39.2	-11.2'	54.5'	18°37.4		72°40.5	97°09.1	100°49.6	105°04.8	109°27.2	109°18.9
3	253°39.2	13.8'	$18^{\circ}50.4$	-11.2'	54.5'	19°07.6	$38^{\circ}17.7$	73°10.7	97°39.0	101°05.6	105°32.9	109°57.4	109°39.0
4	268°12.0	13.7'	$19^{\circ}01.6$	-11.1'	54.5'	19°37.8	38°33.1	73°40.8	98°08.9	101°21.7	106°01.0	110°27.5	109°59.1
5	282°44.7	13.6'	$19^{\circ}12.6$	-11.0'	54.5'	20°08.0	38°48.8	74°11.0	98°38.9	101°37.7	106°29.0	110°57.7	110°19.1
6	297°17.4	13.6'	S 19°23.7	-10.9'	54.5'	20°38.2	39°04.7	74°41.2	99°08.8	101°53.7	106°57.1	111°27.9	110°39.1
7	311°49.9	13.5'	19°34.6	-10.9'	54.5'	21°08.4	39°20.8	75°11.4	99°38.8	102°09.6	107°25.2	111°58.2	110°59.1
8	326°22.4	13.4'	19°45.5	-10.8'	54.5'	21°38.7	39° 37.2	75°41.6	100°08.8	102°25.5	107°53.3	112°28.4	111°19.0
9	340°54.8	13.3'	$19^{\circ}56.2$	-10.7'	54.5'	22°09.0	39°53.9	76°11.9	100°38.8	102°41.4	108°21.4	112°58.6	111°38.9
10	355°27.1	13.2'	$20^{\circ}06.9$	-10.6'	54.6'	22°39.2	$40^{\circ}10.7$	76°42.1	101°08.8	102°57.3	108°49.5	113°28.9	111°58.7
11	9°59.3	13.1'	$20^{\circ}17.6$	-10.5'	54.6'	23°09.5	40°27.8	77°12.4	101°38.9	103°13.1	109°17.6	113°59.2	112°18.5
12	24°31.5	13.0'	S 20°28.1	-10.5'	54.6'	23°39.9	40°45.1	77°42.7	102°09.0	103°28.9	109°45.7	114°29.5	112°38.2
13	39°03.5	13.0'	20°38.6	-10.4'	54.6'	24°10.2	41°02.6	78°13.0	102°39.1	103°44.6	110°13.8	114°59.8	112°57.9
14	53°35.5	12.9'	20°48.9	-10.3'	54.6'	24°40.6	41°20.3	78°43.3	103°09.2	104°00.3	110°41.9	115°30.2	113°17.5
15	68°07.3	12.8'	$20^{\circ}59.2$	-10.2'	54.6'	25°10.9	41°38.3	79°13.7	103°39.3	104°16.0	111°10.0	116°00.5	113°37.0
16	82°39.1	12.7'	$21^{\circ}09.4$	-10.1'	54.6'	25°41.3	41°56.4	79°44.1	104°09.4	104°31.6	111°38.1	116°30.9	113°56.5
17	97°10.8	12.6'	$21^{\circ}19.6$	-10.0'	54.7'	26°11.7	$42^{\circ}14.8$	80°14.4	104°39.6	104°47.2	112°06.2	117°01.3	114°15.9
18	111°42.4	12.5'	S 21°29.6	-9.9'	54.7'	26°42.1	42°33.3	80°44.8	105°09.8	105°02.7	112°34.3	117°31.7	114°35.3
19	126°14.0	12.4'	$21^{\circ}39.5$	-9.9'	54.7'	27°12.6	42°52.1	81°15.2	105°40.0	105°18.2	113°02.5	118°02.1	114°54.6
20	140°45.4	12.3'	21°49.4	-9.8'	54.7'	27°43.0	43°11.0	81°45.7	106°10.2	105°33.7	113°30.6	118°32.5	115°13.9
21	155°16.7	12.3'	$21^{\circ}59.1$	-9.7'	54.7'	28°13.5	43°30.1	82°16.1	106°40.4	105°49.1	113°58.7	119°03.0	115°33.1
22	169°48.0	12.2'	22°08.8	-9.6'	54.7'	28°44.0	43°49.4	82°46.6	107°10.7	106°04.4	114°26.8	119°33.5	115°52.2
23	184°19.1	12.1'	22°18.4	-9.5'	54.7'	29°14.5	44°08.9	83°17.1	107°41.0	106°19.7	114°54.9		116°11.2
29 th	SD	= 14.8'	Mer. pas	s. 10:19									

Moon (30th Nov) h

Lunar Distance (objects with largest hourly LD delta)

		IVIOOII	(30 140	Lunar Distance (objects with largest hourly LD derta)								
Sat	GHA	ν	Dec	d	HP	+Spica	+Arcturus	+Regulus	+Adhara	+Mars	+Procyon	+Sirius
0	198°50.2	12.0'	S 22°27.8	-9.4'	54.8'	29°45.1	44°28.6	83°47.6	106°35.0	108°11.3	115°23.0	116°30.2
1	213°21.2	11.9'	22°37.2	-9.3'	54.8'	30°15.6	44°48.4	84°18.1	106°50.2	108°41.6	115°51.1	116°49.1
2	227°52.1	11.8'	22°46.5	-9.2'	54.8'	30°46.2	45°08.4	84°48.7	107°05.3	109°11.9	116° 19.2	117°08.0
3	242°22.9	11.7'	22°55.7	-9.1'	54.8'	31°16.8	45°28.6	85°19.2	107°20.4	109°42.3	116°47.3	117°26.7
4	256°53.6	11.6'	23°04.8	-9.0'	54.8'	31°47.4	45°48.9	85°49.8	107°35.5	110°12.7	117° 15.4	117°45.4
5	271°24.2	11.5'	$23^{\circ}13.8$	-8.9'	54.8'	32°18.0	46°09.4	86°20.4		110°43.1	117°43.5	118°04.0
6	285°54.7	11.4'	S 23°22.6	-8.8'	54.9'	32°48.6	46°30.0	86°51.0		111°13.5	118° 11.6	118°22.5
7	300°25.2	11.3'	23°31.4	-8.7'	54.9'	33°19.3	46°50.8	87°21.7		111°43.9	118°39.6	118°41.0
8	314°55.5	11.3'	23°40.1	-8.6'	54.9'	33°50.0	47°11.7	87°52.3		112°14.4	119°07.7	118°59.3
9	329°25.8	11.2'	23°48.7	-8.5'	54.9'	34°20.7	47°32.8	88°23.0		112°44.9	119°35.8	119°17.6
10	343°55.9	11.1'	23°57.1	-8.4'	54.9'	34°51.4	47°54.1	88°53.7		113°15.4		119°35.8
11	358°26.0	11.0'	$24^{\circ}05.5$	-8.2'	54.9'	35°22.1	48°15.5	89°24.4		113°45.9		119°53.9
12	12°56.0	10.9'	S 24°13.7	-8.1'	54.9'				New Moon		<u>'</u>	'
13	27°25.9	10.8'	$24^{\circ}21.9$	-8.0'	55.0'				New Moon			
14	41°55.7	10.7'	24°29.9	-7.9'	55.0'				New Moon			
15	56°25.4	10.6'	24°37.8	-7.8'	55.0'							
16	70°55.0	10.5'	24°45.6	-7.7'	55.0'							
17	85°24.6	10.4'	24°53.3	-7.6'	55.0'				New Moon			
18	99°54.0	10.4'	S 25°00.8	-7.4'	55.0'							
19	114°23.4	10.3'	25°08.3	-7.3'	55.1'							
20	128°52.7	10.2'	$25^{\circ}15.6$	-7.2'	55.1'							
21	143°21.8	10.1'	25°22.8	-7.1'	55.1'							
22	157°50.9	10.0'	$25^{\circ}29.9$	-7.0'	55.1'				New Moon			
23	172°19.9	9.9'	25°36.9	-6.8'	55.1'				New Moon			
30 th	SD	= 14.9'	Mer. pass	s. 11:06								

Moon (1st Dec)

Sun	GHA	ν	Dec	d	HP	
0	186°48.9	9.8'	S 25°43.7	-6.7'	55.2'	New Moon
1	201°17.7	9.8'	25°50.4	-6.6'	55.2'	New Moon
2	215°46.5	9.7'	25°57.0	-6.5'	55.2'	New Moon
3	230°15.1	9.6'	26°03.5	-6.3'	55.2'	New Moon
4	244°43.7	9.5'	26°09.8	-6.2'	55.2'	New Moon
5	259°12.2	9.4'	$26^{\circ}16.0$	-6.1'	55.2'	New Moon
6	273°40.6	9.3'	S 26°22.1	-5.9'	55.3'	New Moon
7	288°09.0	9.3'	26°28.0	-5.8'	55.3'	New Moon
8	302°37.2	9.2'	26°33.9	-5.7'	55.3'	New Moon
9	317°05.4	9.1'	26°39.5	-5.5'	55.3'	New Moon
10	331°33.5	9.0'	$26^{\circ}45.1$	-5.4'	55.3'	New Moon
11	346°01.5	8.9'	26°50.5	-5.3'	55.3'	New Moon
12	0°29.5	8.9'	S 26°55.8	-5.1'	55.4'	New Moon
13	14°57.4	8.8'	27°00.9	-5.0'	55.4'	New Moon
14	29°25.2	8.7'	27°05.9	-4.9'	55.4'	New Moon
15	43°52.9	8.7'	$27^{\circ}10.8$	-4.7'	55.4'	New Moon
16	58°20.5	8.6'	$27^{\circ}15.5$	-4.6'	55.4'	New Moon
17	72°48.1	8.5'	$27^{\circ}20.1$	-4.4'	55.5'	New Moon
18	87°15.6	8.4'	S 27°24.5	-4.3'	55.5'	New Moon
19	101°43.1	8.4'	27°28.8	-4.2'	55.5'	New Moon
20	116°10.4	8.3'	27°33.0	-4.0'	55.5'	New Moon
21	130°37.7	8.2'	27°37.0	-3.9'	55.5'	New Moon
22	145°05.0	8.2'	27°40.8	-3.7'	55.5'	New Moon
23	159°32.2	8.1'	27°44.5	-3.6'	55.6'	New Moon
1 st	SD :	= 15.0′	Mer. pas	s. 11:58	3	

h	Moon (2 nd	Dec)	Lunar Di	stance (objects with	ı largest	hourly LD	delta)

Mon	GHA	ν	Dec	d	HP	-Achernar	-Saturn	-Fomalhaut	-Altair	-Venus
0	173°59.3	8.1'	S 27°48.1	-3.4'	55.6'			New M	oon ——	
1	188°26.3	8.0'	$27^{\circ}51.5$	-3.3'	55.6'	83°57.5	83°28.4	74°10.6	53°25.6	34°38.4
2	202°53.3	7.9'	27°54.8	-3.1'	55.6'	83°40.7	82°56.9	73°40.8	53°02.9	34°09.9
3	217°20.3	7.9'	27°57.9	-3.0'	55.6'	83°24.0	82°25.5	73°11.1	52°40.3	33°41.3
4	231°47.1	7.8'	28°00.9	-2.8'	55.7'	83°07.4	81°54.0	72°41.3	52°17.7	33°12.7
5	246°14.0	7.8'	28°03.7	-2.7'	55.7'	82°50.7	81°22.5	72°11.5	51°55.3	32°44.1
6	260°40.7	7.7'	S 28°06.4	-2.5'	55.7'	82°34.0	80°50.9	71°41.8	51°32.9	32°15.5
7	275°07.4	7.7'	28°08.9	-2.4'	55.7'	82°17.4	80° 19.4	71°12.0	51°10.7	31°46.9
8	289°34.1	7.6'	28°11.2	-2.2'	55.7'	82°00.8	79°47.8	70°42.2	50°48.5	31°18.2
9	304°00.7	7.6'	28° 13.4	-2.0'	55.8'	81°44.2	79°16.2	70°12.4	50°26.5	30°49.6
10	318°27.3	7.5'	$28^{\circ}15.5$	-1.9'	55.8'	81°27.6	78°44.6	69°42.6	50°04.6	30°20.9
11	332°53.8	7.5'	$28^{\circ}17.4$	-1.7'	55.8'	81°11.1	78°13.0	69°12.7	49°42.8	29°52.2
12	347°20.3	7.4'	S 28°19.1	-1.6'	55.8'	80°54.5	77°41.3	68°42.9	49°21.1	29°23.4
13	1°46.8	7.4'	28°20.7	-1.4'	55.8'	80°38.0	77°09.7	68°13.1	48°59.5	28°54.7
14	16°13.2	7.4'	$28^{\circ}22.1$	-1.3'	55.9'	80°21.5	76°38.0	67°43.2	48°38.1	28°25.9
15	30°39.5	7.3'	28°23.4	-1.1'	55.9'	80°05.1	76°06.3	67°13.4	48°16.8	27°57.2
16	45°05.8	7.3'	28°24.5	-0.9'	55.9'	79°48.6	75°34.5	66°43.6	47°55.6	27°28.4
17	59°32.1	7.3'	28°25.4	-0.8'	55.9'	79°32.2	75°02.8	66°13.7	47°34.5	26°59.5
18	73°58.4	7.2'	S 28°26.2	-0.6'	55.9'	79°15.9	74°31.0	65°43.9	47°13.6	26°30.7
19	88°24.6	7.2'	28° 26.8	-0.5'	56.0'	78°59.5	73°59.2	65°14.0	46°52.8	26°01.9
20	102°50.8	7.2'	28°27.3	-0.3'	56.0'	78°43.2	73°27.4	64°44.1	46°32.2	25°33.0
21	117°17.0	7.1'	28°27.6	-0.1'	56.0'	78°26.9	72°55.5	64°14.3	46°11.7	25°04.1
22	131°43.1	7.1'	28°27.7	0.0'	56.0'	78° 10.7	72°23.7	63°44.4	45°51.4	24°35.2
23	146°09.2	7.1'	28°27.7	0.2'	56.0'	77°54.5	71°51.8	63°14.6	45°31.3	24°06.3
2 nd	SD =	= 15.2'	Mer. pas	s. 12:53	3					

h	Moon (3 rd Dec)	Lunar Distance (objects with largest hourly LD delta	1)
11	MOOII (5 DCC)	Edital Distance (Objects With largest nounly ED dente	

Tue	GHA	ν	Dec	d	HP	-Achernar	-Saturn	-Fomalhaut	-Altair	-Venus
0	160°35.3	7.1'	S 28°27.5	0.3'	56.0'	77°38.3	71°19.9	62°44.7	45°11.3	23°37.4
1	175°01.4	7.1'	28°27.2	0.5'	56.1'	77°22.2	70°48.0	62°14.8	44°51.4	23°08.4
2	189°27.5	7.0'	28°26.7	0.7'	56.1'	77°06.1	70°16.1	61°45.0	44°31.8	22°39.5
3	203°53.5	7.0'	28°26.0	0.8'	56.1'	76°50.0	69°44.1	61°15.1	44°12.3	22°10.5
4	218°19.5	7.0'	28°25.2	1.0'	56.1'	76°34.0	69°12.1	60°45.3	43°53.0	21°41.5
5	232°45.5	7.0'	28°24.2	1.2'	56.1'	76°18.1	68°40.1	60°15.4	43°33.9	21°12.5
6	247°11.5	7.0'	S 28°23.1	1.3'	56.2'	76°02.1	68°08.1	59° 45.6	43°15.0	20°43.5
7	261°37.5	7.0'	28°21.8	1.5'	56.2'	75°46.3	67°36.1	59° 15.7	42°56.2	20°14.4
8	276°03.5	7.0'	28°20.3	1.6'	56.2'	75°30.5	67°04.0	58° 45.9	42°37.7	19°45.4
9	290°29.5	7.0'	28°18.6	1.8'	56.2'	75°14.7	66°31.9	58° 16.1	42°19.4	19°16.3
10	304°55.5	7.0'	$28^{\circ}16.8$	2.0'	56.2'	74°59.0	65°59.8	57°46.2	42°01.3	18°47.3
11	319°21.4	7.0'	$28^{\circ}14.9$	2.1'	56.3'	74°43.3	65°27.7	57°16.4	41°43.4	18° 18.2
12	333°47.4	7.0'	S 28°12.7	2.3'	56.3'	74°27.7	64°55.6	56° 46.6	41°25.8	17° 49.1
13	348°13.4	7.0'	28°10.4	2.5'	56.3'	74°12.1	64°23.4	56° 16.8	41°08.3	17°20.0
14	2°39.4	7.0'	28°08.0	2.6'	56.3'	73°56.6	63°51.2	55°47.0	40°51.1	16°50.9
15	17°05.3	7.0'	28°05.4	2.8'	56.3'	73°41.1	63°19.0	55° 17.2	40°34.2	16°21.8
16	31°31.3	7.0'	28°02.6	2.9'	56.4'	73°25.7	62°46.8	54°47.5	40°17.5	15°52.7
17	45°57.3	7.0'	27°59.6	3.1'	56.4'	73°10.4	62°14.5	54° 17.7	40°01.0	15°23.5
18	60°23.3	7.0'	S 27°56.5	3.3'	56.4'	72°55.1	61°42.3	53°48.0	39°44.8	14°54.4
19	74°49.4	7.0'	27°53.3	3.4'	56.4'	72°39.9	61°10.0	53° 18.3	39°28.9	14°25.3
20	89°15.4	7.1'	27°49.8	3.6'	56.4'	72°24.8	60°37.7	52°48.6	39°13.2	13°56.2
21	103°41.5	7.1'	27°46.2	3.8'	56.5'	72°09.7	60°05.3	52°18.9	38°57.8	13°27.1
22	118°07.5	7.1'	27°42.5	3.9'	56.5'	71°54.7	59°33.0	51°49.2	38°42.8	12°58.0
23	132°33.6	7.1'	27°38.5	4.1'	56.5'		59°00.6	51°19.6		12°28.9
3 rd	SD =	= 15.3′	Mer. pass	s. 13:49	•					

h	Moon (4 th Dec)	c) Lunar Dist	ance

Wed	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Venus	+Sun	
0	146°59.7	7.1'	S 27°34.5	4.2'	56.5'	58°28.2	50°50.0	11°59.8		
1	161°25.9	7.2'	27°30.2	4.4'	56.5'	57°55.8	50°20.4	11°30.7		
2	175°52.0	7.2'	27°25.8	4.6'	56.6'	57°23.4	49°50.8	11°01.7		
3	190°18.2	7.2'	$27^{\circ}21.3$	4.7'	56.6'	56°51.0	49°21.2	10°32.7		
4	204°44.4	7.2'	$27^{\circ}16.5$	4.9'	56.6'	56° 18.5	48°51.7	10°03.7		
5	219°10.7	7.3'	$27^{\circ}11.7$	5.0'	56.6'	55°46.0	48°22.2	9°34.8		
6	233°36.9	7.3'	S 27°06.6	5.2'	56.6'	55° 13.5	47°52.8	9°06.0		
7	248°03.2	7.3'	27°01.4	5.4'	56.7'	54°40.9	47°23.4	8°37.2		
8	262°29.6	7.4'	$26^{\circ}56.1$	5.5'	56.7'	54°08.4	46°54.0	8°08.5		
9	276°56.0	7.4'	26°50.6	5.7'	56.7'	53°35.8	46°24.6	7°39.9		
10	291°22.4	7.4'	26°44.9	5.8'	56.7'	53°03.2	45°55.3	7°11.5		
11	305°48.8	7.5'	$26^{\circ}39.1$	6.0'	56.7'	52°30.6	45°26.0	6°43.2		
12	320°15.3	7.5'	S 26°33.1	6.1'	56.8'	51°58.0	44°56.8	6°15.2		
13	334°41.8	7.6'	26°27.0	6.3'	56.8'	51°25.3	44°27.6	5°47.4		
14	349°08.4	7.6'	26°20.7	6.4'	56.8'	50°52.6	43°58.5	5°20.0		
15	3°35.0	7.7'	26°14.3	6.6'	56.8'	50° 19.9	43°29.4	4°53.0		
16	18°01.7	7.7'	26°07.7	6.7'	56.9'	49°47.2	43°00.4	4°26.6		
17	32°28.4	7.7'	26°00.9	6.9'	56.9'	49°14.5	42°31.4	4°01.1		
18	46°55.1	7.8'	S 25°54.0	7.0'	56.9'	48°41.7	42°02.5		41°26.1	
19	61°21.9	7.8'	25°47.0	7.2'	56.9'	48°08.9	41°33.6		41°56.2	
20	75°48.8	7.9'	25°39.8	7.3'	56.9'	47°36.1	41°04.8		42°26.3	
21	90°15.7	7.9'	25°32.4	7.5'	57.0'	47°03.3	40°36.1		42°56.5	
22	104°42.6	8.0'	25°25.0	7.6'	57.0'	46°30.5	40°07.4		43°26.6	
23	119°09.6	8.0'	25°17.3	7.8'	57.0'	45°57.6	39°38.8		43°56.8	
4 th	SD =	= 15.4′	Mer. pass	s. 14:4	5	$Sun\;SD=16.2'$				

h		Мос	on (5 th De	ec)		Lunar D	hourly LD delta)			
Thu	GHA	ν	Dec	d	HP	-Rigel	-Saturn	-Fomalhaut	+Venus	+Sun
0	133°36.6	8.1'	S 25°09.5	7.9'	57.0'		45°24.7	39°10.3		44°27.1
1	148°03.8	8.2'	25°01.6	8.1'	57.0'		44°51.8	38°41.9		44°57.3
2	162°30.9	8.2'	24°53.5	8.2'	57.1'		44°18.9	38°13.5		45°27.6
3	176°58.1	8.3'	24°45.3	8.4'	57.1'		43°46.0	37°45.3		45°57.9
4	191°25.4	8.3'	24°36.9	8.5'	57.1'		43°13.0	37°17.1		46°28.2
5	205°52.7	8.4'	24°28.4	8.6'	57.1'		42°40.0	36°49.1		46°58.5
6	220°20.1	8.4'	S 24° 19.8	8.8'	57.1'		42°07.0	36°21.1		47°28.9
7	234°47.5	8.5'	24°11.0	8.9'	57.2'		41°34.0	35°53.3		47°59.3
8	249°15.0	8.6'	24°02.1	9.1'	57.2'		41°00.9	35°25.5		48°29.7
9	263°42.6	8.6'	23°53.0	9.2'	57.2'		40°27.8	34°57.9	5°08.9	49°00.1
10	278°10.2	8.7'	23°43.8	9.3'	57.2'		39°54.7	34°30.4	5°36.5	49°30.6
11	292°37.9	8.7'	23°34.5	9.5'	57.2'		39°21.6	34°03.0	6°04.6	50°01.0
12	307°05.6	8.8'	S 23°25.0	9.6'	57.3'		38°48.5	33°35.8	6°33.0	50°31.6
13	321°33.4	8.9'	23° 15.4	9.7'	57.3'		38°15.3	33°08.7	7°01.8	51°02.1
14	336°01.3	8.9'	23°05.7	9.9'	57.3'		37°42.2	32°41.8	7°30.7	51°32.6
15	350°29.2	9.0'	22°55.8	10.0'	57.3'		37°09.0	32°15.0	7°59.8	52°03.2
16	4°57.2	9.0'	22°45.8	10.1'	57.3'		36°35.7	31°48.4	8°29.2	52°33.8
17	19°25.3	9.1'	22°35.7	10.3'	57.4'		36°02.5	31°22.0	8°58.6	53°04.4
18	33°53.4	9.2'	S 22°25.4	10.4'	57.4'		35°29.2	30°55.7	9°28.2	53°35.1
19	48°21.5	9.2'	22° 15.0	10.5'	57.4'		34°55.9	30°29.6	9°57.9	54°05.8
20	62°49.8	9.3'	22°04.5	10.6'	57.4'	119°37.3	34°22.6	30°03.8	10°27.6	54°36.4
21	77°18.1	9.4'	21°53.9	10.8'	57.4'	119°12.6	33°49.3	29°38.1	10°57.5	55°07.2
22	91°46.4	9.4'	21°43.1	10.9'	57.5'	118°47.8	33°16.0	29°12.7 28°47.5	11°27.4	55°37.9
23	106°14.9	9.5'	21°32.2	11.0'	57.5'	118°23.0	56°08.7			
5 th	SD	= 15.5	['] Mer. pas	s. 15:39	l .			Sun SD :	= 16.2'	

h		Moo	n (6 th De	c)			Lunar Distance (objects with largest hourly LD delta)						
Fri	GHA	ν	Dec	d	HP	-Capella	-Jupiter	-Aldebaran	-Rigel	-Saturn	-Fomalhaut	+Venus	+Sun
0	120°43.4	9.6'	S 21°21.2	11.1'	57.5'			118°33.9	117°58.0	32°09.2	28° 22.5	12°27.5	56°39.4
1	135°11.9	9.6'	21°10.1	11.2'	57.5'			118°01.1	117°32.9	31°35.8	27° 57.8	12°57.7	57°10.3
2	149°40.5	9.7'	20°58.8	11.4'	57.6'			117° 28.2	117°07.8	31°02.4	27°33.4	13°27.9	57°41.1
3	164°09.2	9.7'	20°47.5	11.5'	57.6'			116°55.3	116°42.5	30°28.9	27°09.3	13°58.1	58°11.9
4	178°38.0	9.8'	20°36.0	11.6'	57.6'			116°22.4	116°17.2	29°55.4	26°45.4	14°28.4	58°42.8
5	193°06.8	9.9'	20°24.4	11.7'	57.6'			115°49.5	115°51.7	29°21.9	26°21.9	14°58.8	59°13.7
6	207°35.7	9.9'	S 20°12.7	11.8'	57.6'			115° 16.5	115°26.2	28°48.4	25° 58.7	15°29.2	59°44.6
7	222°04.6	10.0'	20°00.8	11.9'	57.7'			114°43.5	115°00.6	28°14.9	25°35.8	15°59.6	60°15.6
8	236°33.6	10.1'	19°48.9	12.1'	57.7'			114° 10.5	114°35.0	27°41.3	25° 13.3	16°30.1	60°46.6
9	251°02.6	10.1'	19°36.8	12.2'	57.7'			113°37.4	114°09.2	27°07.7	24°51.2	17°00.6	61°17.6
10	265°31.8	10.2'	19°24.7	12.3'	57.7'		119°48.7	113°04.3	113°43.4	26°34.1	24°29.4	17°31.1	61°48.6
11	280°01.0	10.2'	19°12.4	12.4'	57.7'		119°14.8	112°31.2	113°17.5	26°00.5	24°08.1	18°01.7	62°19.6
12	294°30.2	10.3'	S 19°00.0	12.5'	57.8'		118°41.0	111°58.1	112°51.5	25°26.8	23°47.2	18°32.3	62°50.7
13	308°59.5	10.4'	18°47.5	12.6'	57.8'		118°07.1	111°24.9	112°25.5	24°53.2	23°26.8	19°03.0	63°21.8
14	323°28.9	10.4'	18°34.9	12.7'	57.8'		117°33.1	110°51.7	111°59.3	24°19.5	23°06.9	19°33.7	63°52.9
15	337°58.3	10.5'	18°22.2	12.8'	57.8'		116°59.2	110° 18.5	111°33.1	23°45.7	22°47.4	20°04.4	64°24.0
16	352°27.8	10.5'	18°09.4	12.9'	57.8'		116°25.2	109°45.3	111°06.9	23°12.0	22°28.5	20°35.2	64°55.2
17	6°57.3	10.6'	$17^{\circ}56.5$	13.0'	57.9'		115°51.2	109°12.0	110°40.5	22°38.2	22°10.1	21°05.9	65°26.3
18	21°26.9	10.7'	S 17°43.5	13.1'	57.9'	119°57.7	115°17.2	108°38.7	110°14.1	22°04.5	21°52.3	21°36.8	65°57.5
19	35°56.6	10.7'	17°30.4	13.2'	57.9'	119°26.0	114°43.1	108°05.4	109°47.7	21°30.7	21°35.1	22°07.6	66°28.8
20	50°26.3	10.8'	$17^{\circ}17.2$	13.3'	57.9'	118°54.3	114°09.0	107°32.1	109°21.1	20°56.8	21° 18.5	22°38.5	67°00.0
21	64°56.1	10.8'	$17^{\circ}03.9$	13.4'	57.9'	118°22.5	113°35.0	106°58.7	108°54.5	20°23.0	21°02.6	23°09.4	67°31.3
22	79°25.9	10.9'	16°50.5	13.5'	58.0'	117°50.7	113°00.8	106°25.3	108°27.9	19°49.1	20°47.4	23°40.3	68°02.6
23	93°55.8	10.9'	16°37.0	13.6'	58.0'	117°18.8	112°26.7	105°51.9	108°01.2	19°15.2		24°11.3	68°33.9
6 th	SD	= 15.7'	Mer. pass	s. 16:31					Sun SD =	= 16.2			

h		Moo	n (7 th De	c)		L	unar Dist	ance (obj	ects with I	argest h	ourly LD	delta)	
Sat	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Jupiter	-Aldebaran	-Saturn	+Venus	+Altair	+Sun
0	108°25.8	11.0'	S 16°23.4	13.7'	58.0'		116°46.9	111°52.5	105°18.4	18°41.3	24°42.3	38°53.7	69°05.2
1	122°55.8	11.1'	$16^{\circ}09.7$	13.8'	58.0'		116°14.9	111°18.3	104°45.0	18°07.4	25°13.3	39°09.8	69°36.6
2	137°25.8	11.1'	15°55.9	13.9'	58.1'		115°42.9	110°44.1	104°11.5	17°33.4	25°44.3	39°26.2	70°08.0
3	151°55.9	11.2'	15°42.1	14.0'	58.1'		115°10.8	110°09.9	103°38.0	16°59.4	26°15.4	39°42.9	70°39.4
4	166°26.1	11.2'	15°28.1	14.0'	58.1'	119°59.7	114°38.8	109°35.6	103°04.4	16°25.4	26°46.5	40°00.0	71°10.8
5	180°56.3	11.3'	$15^{\circ}14.1$	14.1'	58.1'	119°28.6	114°06.6	109°01.3	102°30.8	15°51.4	27°17.6	40°17.3	71°42.3
6	195°26.5	11.3'	S 15°00.0	14.2'	58.1'	118° 57.5	113°34.5	108°27.0	101°57.3	15°17.3	27°48.8	40°35.0	72°13.8
7	209°56.8	11.4'	14°45.8	14.3'	58.2'	118°26.3	113°02.3	107°52.7	101°23.6	14°43.3	28°20.0	40°53.0	72°45.3
8	224°27.2	11.4'	14°31.5	14.4'	58.2'	117°55.1	112°30.0	107°18.3	100°50.0	14°09.2	28°51.2	41°11.2	73°16.8
9	238°57.6	11.5'	$14^{\circ}17.1$	14.5'	58.2'	117°23.8	111°57.8	106°43.9	100°16.3	13°35.1	29°22.4	41°29.8	73°48.4
10	253°28.1	11.5'	14°02.6	14.5'	58.2'	116°52.5	111°25.5	106°09.5	99°42.6	13°00.9	29°53.7	41°48.6	74°19.9
11	267°58.6	11.5'	13°48.1	14.6'	58.2'	116°21.1	110°53.1	105°35.1	99°08.9	12°26.8	30°24.9	42°07.7	74°51.5
12	282°29.1	11.6'	S 13°33.5	14.7'	58.3'	115°49.7	110°20.7	105°00.6	98°35.2	11°52.6	30°56.2	42°27.1	75°23.2
13	296°59.7	11.6'	13°18.8	14.8'	58.3'	115° 18.2	109°48.3	104°26.1	98°01.4	11°18.4	31°27.6	42°46.8	75°54.8
14	311°30.3	11.7'	13°04.0	14.8'	58.3'	114°46.7	109°15.9	103°51.6	97°27.6	10°44.2	31°58.9	43°06.7	76°26.5
15	326°01.0	11.7'	12°49.2	14.9'	58.3'	114° 15.1	108°43.4	103°17.1	96°53.8	10°09.9	32°30.3	43°26.9	76°58.2
16	340°31.7	11.8'	12°34.3	15.0'	58.3'	113°43.5	108°10.8	102°42.6	96°20.0	9°35.6	33°01.7	43°47.3	77°29.9
17	355°02.5	11.8'	12°19.3	15.1'	58.4'	113°11.9	107°38.3	102°08.0	95°46.1	9°01.4	33°33.2	44°07.9	78°01.6
18	9°33.3	11.8'	S 12°04.2	15.1'	58.4'	112°40.2	107°05.7	101°33.4	95°12.2	8°27.0	34°04.6	44°28.8	78°33.4
19	24°04.1	11.9'	$11^{\circ}49.1$	15.2'	58.4'	112°08.5	106°33.1	100°58.8	94°38.3	7°52.7	34°36.1	44°50.0	79°05.1
20	38°35.0	11.9'	11°33.9	15.3'	58.4'	111°36.7	106°00.4	100°24.1	94°04.4	7°18.4	35°07.7	45°11.3	79°36.9
21	53°05.9	11.9'	$11^{\circ}18.6$	15.3'	58.4'	111°04.9	105°27.7	99°49.4	93°30.4	6°44.0	35°39.2	45°32.9	80°08.8
22	67°36.8	12.0'	11°03.3	15.4'	58.5'	110°33.0	104°55.0	99° 14.7	92°56.4	6°09.6	36°10.8	45°54.7	80°40.6
23	82°07.8	12.0'	10°47.9	15.5'	58.5'	110°01.1	104°22.3	98°40.0	92°22.4	5°35.2	36°42.3	46°16.7	81°12.5
7 th	SD	$= 15.8^{\prime}$	Mer. pass	s. 17:21					$Sun\;SD=1$	6.2'	<u>'</u>		

h Moon (8th Dec)

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Capella	-Jupiter	-Aldebaran	±Saturn	+Fomalhaut	+Venus	+Altair	+Sun
0	96°38.8	12.0'	S 10°32.4	15.5'	58.5'	103°49.5	98°05.3	91°48.4	5°00.8		37°14.0	46°39.0	81°44.4
1	111°09.8	12.1'	$10^{\circ}16.9$	15.6'	58.5'	103°16.7	97°30.5	91° 14.4	4°26.4		37°45.6	47°01.4	82°16.3
2	125°40.9	12.1'	$10^{\circ}01.3$	15.6'	58.5'	102°43.8	96°55.7	90°40.3	3°51.9		38°17.3	47°24.1	82°48.3
3	140°12.0	12.1'	09°45.7	15.7'	58.6'	102°11.0	96°20.9	90°06.2	3° 17.5		38°49.0	47°46.9	83°20.2
4	154°43.1	12.2'	09°30.0	15.8'	58.6'	101°38.1	95°46.1	89°32.1	2°43.1		39°20.7	48°09.9	83°52.2
5	169°14.3	12.2'	09°14.2	15.8'	58.6'	101°05.1	95°11.2	88° 57.9	2°08.7		39°52.4	48°33.2	84°24.3
6	183°45.5	12.2'	S 08°58.4	15.9'	58.6'	100°32.2	94°36.4	88°23.8	1°34.5		40°24.2	48° 56.6	84°56.3
7	198°16.7	12.2'	08°42.6	15.9'	58.6'	99°59.2	94°01.4	87°49.6	1°00.7		40°56.0	49°20.1	85°28.4
8	212°47.9	12.3'	08°26.6	16.0'	58.7'	99°26.2	93°26.5	87° 15.4		21°02.9	41°27.8	49°43.9	86°00.4
9	227°19.2	12.3'	$08^{\circ}10.7$	16.0'	58.7'	98°53.1	92°51.6	86°41.2		21°19.3	41°59.6	50°07.9	86°32.5
10	241°50.4	12.3'	07°54.6	16.1'	58.7'	98°20.1	92°16.6	86°06.9		21°36.3	42°31.5	50°32.0	87°04.7
11	256°21.7	12.3'	07°38.6	16.1'	58.7'	97°47.0	91°41.6	85°32.6		21°54.0	43°03.4	50°56.2	87°36.8
12	270°53.0	12.3'	S 07°22.5	16.2'	58.7'	97°13.8	91°06.6	84°58.3	1°56.2	22°12.4	43°35.3	51°20.7	88°09.0
13	285°24.4	12.3'	$07^{\circ}06.3$	16.2'	58.8'	96°40.7	90°31.5	84°24.0	2°30.7	22°31.4	44°07.2	51°45.3	88°41.2
14	299°55.7	12.4'	$06^{\circ}50.1$	16.3'	58.8'	96°07.5	89°56.5	83°49.7	3°05.3	22°51.0	44°39.2	52°10.0	89°13.4
15	314°27.1	12.4'	06°33.8	16.3'	58.8'	95°34.3	89°21.4	83° 15.3	3°40.0	23°11.2	45°11.1	52°34.9	89°45.7
16	328°58.4	12.4'	$06^{\circ}17.5$	16.3'	58.8'	95°01.1	88°46.3	82°40.9	4°14.7	23°31.9	45°43.1	53°00.0	90°18.0
17	343°29.8	12.4'	$06^{\circ}01.2$	16.4'	58.8'	94°27.8	88°11.1	82°06.5	4°49.5	23°53.2	46°15.2	53°25.2	90°50.2
18	358°01.2	12.4'	S 05°44.8	16.4'	58.9'	93°54.6	87°36.0	81°32.1	5°24.4	24°15.0	46°47.2	53°50.5	91°22.6
19	12°32.6	12.4'	05°28.4	16.5'	58.9'	93°21.3	87°00.8	80° 57.7	5°59.2	24° 37.2	47°19.3	54° 16.0	91°54.9
20	27°04.0	12.4'	$05^{\circ}11.9$	16.5'	58.9'	92°47.9	86°25.6	80°23.2	6°34.1	25°00.0	47°51.4	54°41.6	92°27.3
21	41°35.4	12.4'	04°55.4	16.5'	58.9'	92°14.6	85°50.4	79°48.7	7°09.0	25°23.2	48°23.5	55°07.4	92°59.6
22	56°06.9	12.4'	04°38.9	16.6'	58.9'	91°41.2	85°15.1	79° 14.2	7°44.0	25°46.8	48°55.7	55°33.2	93°32.1
23	70°38.3	12.4'	04°22.3	16.6'	59.0'	91°07.8	84°39.8	78°39.7	8° 19.0	26°10.9	49°27.9	55°59.3	94°04.5
8 th	SD	= 16.0'	Mer. pass	. 18:08					Sun SD	= 16.2'			

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

	zana: zistanes (szjeste min laigest nean) zz dena)												
Mon	GHA	ν	Dec	d	HP	-Pollux	-Capella	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Venus	+Sun
0	85°09.7	12.4'	S 04°05.8	16.6'	59.0'		90°34.4	84°04.5	78°05.1	8°54.0	26°35.3	50°00.1	94°36.9
1	99°41.1	12.4'	03°49.1	16.7'	59.0'		90°01.0	83°29.2	77° 30.5	9°29.0	27° 00.2	50°32.3	95°09.4
2	114°12.6	12.4'	03°32.5	16.7'	59.0'		89°27.5	82°53.9	76°55.9	10°04.0	27°25.4	51°04.5	95°41.9
3	128°44.0	12.4'	03° 15.8	16.7'	59.0'	119°41.1	88°54.0	82°18.5	76°21.3	10°39.1	27° 50.9	51°36.8	96°14.4
4	143°15.4	12.4'	$02^{\circ}59.1$	16.7'	59.0'	119°05.9	88°20.5	81°43.1	75°46.7	11°14.2	28° 16.8	52°09.1	96°47.0
5	157°46.9	12.4'	02°42.4	16.8'	59.1'	118°30.7	87°47.0	81°07.7	75° 12.1	11°49.3	28°43.0	52°41.4	97°19.5
6	172°18.3	12.4'	S 02°25.6	16.8'	59.1'	117°55.5	$87^{\circ}13.5$	80°32.3	74°37.4	12°24.4	29°09.5	53°13.8	97°52.1
7	186°49.7	12.4'	02°08.8	16.8'	59.1'	117°20.2	86°39.9	79°56.9	74°02.7	12°59.6	29°36.3	53°46.1	98°24.7
8	201°21.1	12.4'	$01^{\circ}52.0$	16.8'	59.1'	116°44.9	86°06.3	79°21.4	73°28.0	13°34.8	30°03.4	54°18.5	98° 57.3
9	215°52.5	12.4'	01°35.2	16.8'	59.1'	116°09.7	85°32.7	78°45.9	72°53.3	14°10.0	30° 30.7	54°50.9	99°30.0
10	230°23.9	12.4'	01°18.4	16.9'	59.2'	115°34.3	84°59.1	78°10.4	72° 18.5	14°45.2	30°58.3	55°23.4	100°02.7
11	244°55.2	12.4'	$01^{\circ}01.5$	16.9'	59.2'	114°59.0	84°25.5	77°34.8	71°43.8	15°20.5	31°26.2	55°55.8	100°35.4
12	259°26.6	12.3'	S 00°44.6	16.9'	59.2'	114°23.6	$83^{\circ}51.8$	76°59.3	71°09.0	15°55.8	31°54.3	56°28.3	101°08.1
13	273°57.9	12.3'	00°27.7	16.9'	59.2'	113°48.2	83°18.1	76°23.7	70°34.2	16°31.1	32°22.6	57°00.8	101°40.8
14	288°29.2	12.3'	S 00°10.9	16.9'	59.2'	113°12.8	82°44.4	75°48.1	69°59.4	17°06.4	32°51.2	57°33.3	102°13.6
15	303°00.5	12.3'	N 00°06.1	16.9'	59.2'	112°37.4	82°10.7	75°12.5	69°24.6	17°41.7	33°20.0	58°05.9	102°46.3
16	317°31.8	12.3'	00°23.0	16.9'	59.3'	112°02.0	81°37.0	74°36.8	68°49.7	18° 17.1	33°48.9	58°38.4	103°19.1
17	332°03.1	12.2'	00°39.9	16.9'	59.3'	111°26.5	81°03.3	74°01.2	68° 14.9	18°52.5	34°18.1	59°11.0	103°52.0
18	346°34.3	12.2'	N 00°56.8	16.9'	59.3'	110°51.0	80°29.5	73°25.5	67°40.0	19°27.9	34° 47.5	59°43.6	104°24.8
19	$1^{\circ}05.5$	12.2'	$01^{\circ}13.8$	16.9'	59.3'	110°15.5	79°55.8	72°49.8	67°05.1	20°03.3	35° 17.0	60°16.3	104°57.7
20	15°36.7	12.2'	01°30.7	16.9'	59.3'	109°39.9	79°22.0	72°14.1	66°30.2	20°38.8	35°46.7	60°48.9	105°30.5
21	30°07.9	12.1'	01°47.7	16.9'	59.3'	109°04.4	78°48.2	71°38.3	65°55.3	21°14.2	36° 16.6	61°21.6	106°03.4
22	44°39.0	12.1'	02°04.6	16.9'	59.4'	108°28.8	78°14.4	71°02.6	65°20.4	21°49.7	36° 46.7	61°54.3	106°36.4
23	59°10.1	12.1'	$02^{\circ}21.6$	16.9'	59.4'	107°53.2	77°40.6	70°26.8	64°45.4	22°25.3	37° 16.9	62°27.0	107°09.3
9 th	SD	= 16.1'	Mer. pass	. 18:55					Sun SE	0 = 16.2'			

h Moon (10 th Dec)	Lunar Distance (objects with largest hourly LD delta)
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Tue	GHA	ν	Dec	d	HP	-Mars	-Pollux	-Jupiter	-Aldebaran	+Saturn	+Fomalhaut	+Venus	+Sun
0	73°41.2	12.0'	N 02°38.5	16.9'	59.4'	119°55.9	107°17.6	69°51.0	64°10.4	23°00.8	37°47.3	62°59.7	107°42.3
1	88°12.3	12.0'	02°55.4	16.9'	59.4'	119°20.1	106°42.0	69°15.2	63°35.5	23°36.3	38°17.8	63°32.5	108°15.2
2	102°43.3	12.0'	03°12.4	16.9'	59.4'	118°44.3	106°06.3	68°39.4	63°00.5	24°11.9	38°48.4	64°05.3	108°48.2
3	117°14.3	11.9'	03°29.3	16.9'	59.4'	118°08.5	105°30.6	68°03.5	62°25.5	24°47.5	39°19.2	64°38.1	109°21.3
4	131°45.2	11.9'	03°46.2	16.9'	59.5'	117°32.7	104°54.9	67°27.6	61°50.5	25°23.1	39°50.1	65° 10.9	109°54.3
5	146°16.1	11.9'	04°03.1	16.9'	59.5'	116°56.8	104°19.2	66°51.7	61°15.4	25°58.8	40°21.2	65°43.8	110°27.4
6	160°46.9	11.8'	N04°20.0	16.9'	59.5'	116°21.0	103°43.4	66°15.8	60°40.4	26°34.4	40°52.4	66° 16.6	111°00.4
7	175°17.8	11.8'	04°36.9	16.9'	59.5'	115°45.1	103°07.7	65°39.9	60°05.4	27°10.1	41°23.7	66°49.5	111°33.5
8	189°48.5	11.7'	04°53.8	16.9'	59.5'	115°09.2	102°31.9	65°04.0	59°30.3	27°45.8	41°55.1	67°22.4	112°06.6
9	204°19.3	11.7'	$05^{\circ}10.6$	16.8'	59.5'	114°33.3	101°56.1	64°28.0	58°55.2	28°21.5	42°26.6	67°55.4	112°39.8
10	218°50.0	11.6'	05°27.5	16.8'	59.5'	113°57.3	101°20.3	63°52.0	58°20.1	28°57.2	42°58.2	68°28.3	113°12.9
11	233°20.6	11.6'	05°44.3	16.8'	59.6'	113°21.3	100°44.4	63°16.0	57°45.1	29°33.0	43°29.9	69°01.3	113°46.1
12	247°51.2	11.5'	N06°01.1	16.8'	59.6'	112°45.3	100°08.6	62°40.0	57°10.0	30°08.8	44°01.8	69°34.2	114°19.3
13	262°21.7	11.5'	06°17.9	16.8'	59.6'	112°09.3	99°32.7	62°04.0	56°34.9	30°44.5	44°33.7	70°07.3	114°52.5
14	276°52.2	11.4'	06°34.6	16.7'	59.6'	111°33.3	98°56.8	61°27.9	55°59.8	31°20.3	45°05.7	70°40.3	115°25.7
15	291°22.7	11.4'	06°51.3	16.7'	59.6'	110°57.3	98°20.9	60°51.9	55°24.6	31°56.2	45°37.8	71°13.3	115°58.9
16	305°53.1	11.3'	07°08.0	16.7'	59.6'	110°21.2	97°45.0	60°15.8	54°49.5	32°32.0	46°10.1	71°46.4	116°32.2
17	320°23.4	11.3'	07°24.7	16.6'	59.6'	109°45.1	97°09.0	59°39.7	54°14.4	33°07.9	46°42.3	72° 19.4	117°05.4
18	334°53.7	11.2'	N07°41.4	16.6'	59.6'	109°09.0	96°33.1	59°03.6	53°39.3	33°43.7	47°14.7	72°52.5	117°38.7
19	349°23.9	11.2'	07°58.0	16.6'	59.7'	108°32.9	95°57.1	58°27.5	53°04.1	34°19.6	47°47.2	73°25.7	118°12.0
20	3°54.1	11.1'	08°14.5	16.5'	59.7'	107°56.7	95°21.1	57°51.4	52°29.0	34°55.5	48°19.7	73°58.8	118°45.3
21	18°24.2	11.0'	08°31.1	16.5'	59.7'	107°20.6	94°45.1	57°15.2	51°53.9	35°31.5	48°52.3	74°31.9	119°18.6
22	32°54.2	11.0'	08°47.6	16.5'	59.7'	106° 44.4	94°09.0	56°39.0	51°18.7	36°07.4	49°25.0	75°05.1	119°52.0
23	47°24.2	10.9'	09°04.0	16.4'	59.7'	106°08.2	93°33.0	56°02.9	50°43.6	36°43.4	49°57.8	75°38.3	
10 th	SD	$= 16.2^{\prime}$	Mer. pass	. 19:44					Sun SD	= 16.2'			

Moon (11th Dec)

Lunar Distance (objects with largest hourly LD delta)

Wed	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Pollux	-Jupiter	+Saturn	+Fomalhaut	+Venus	+Altair
0	61°54.1	10.8'	N 09°20.5	16.4'	59.7'		105°32.0	92°56.9	55°26.7	37°19.3	50° 30.6	76°11.5	79°05.0
1	76°23.9	10.8'	09°36.8	16.3'	59.7'		104°55.7	92°20.8	54°50.5	37°55.3	51°03.5	76°44.7	79°34.8
2	90°53.7	10.7'	09°53.2	16.3'	59.7'		104°19.5	91°44.7	54°14.3	38°31.3	51°36.5	77°17.9	80°04.7
3	105°23.4	10.6'	$10^{\circ}09.5$	16.2'	59.7'		103°43.2	91°08.6	53°38.1	39°07.4	52°09.5	77°51.2	80°34.5
4	119°53.1	10.6'	10°25.7	16.2'	59.8'		103°06.9	90°32.5	53°01.8	39°43.4	52°42.6	78°24.4	81°04.4
5	134°22.6	10.5'	10°41.9	16.1'	59.8'		102°30.6	89°56.4	52°25.6	40°19.5	53° 15.7	78°57.7	81°34.4
6	148°52.1	10.4'	N 10°58.0	16.1'	59.8'		101°54.3	89°20.2	51°49.3	40° 55.5	53° 48.9	79°31.0	82°04.3
7	163°21.6	10.4'	$11^{\circ}14.1$	16.0'	59.8'		101°18.0	88°44.0	51°13.1	41°31.6	54°22.2	80°04.3	82°34.3
8	177°50.9	10.3'	11°30.1	16.0'	59.8'		100°41.6	88°07.9	50°36.8	42°07.7	54°55.5	80°37.6	83°04.3
9	192°20.2	10.2'	$11^{\circ}46.1$	15.9'	59.8'		100°05.3	87°31.7	50°00.5	42°43.8	55°28.9	81°10.9	83°34.4
10	206°49.4	10.1'	$12^{\circ}02.0$	15.9'	59.8'		99°28.9	86°55.4	49°24.3	43° 19.9	56°02.3	81°44.3	84°04.4
11	221°18.5	10.0'	12°17.9	15.8'	59.8'		98°52.5	86°19.2	48°48.0	43°56.0	56° 35.8	82°17.6	84°34.5
12	235°47.5	10.0'	N12°33.7	15.7'	59.8'		98°16.1	85°43.0	48°11.7	44°32.2	57°09.3	82°51.0	85°04.6
13	250°16.5	9.9'	12°49.4	15.7'	59.8'		97°39.7	85°06.7	47°35.3	45°08.3	57° 42.9	83°24.4	85°34.7
14	264°45.4	9.8'	13°05.1	15.6'	59.8'		97°03.2	84°30.5	46°59.0	45°44.5	58° 16.5	83°57.8	86°04.9
15	279°14.2	9.7'	13°20.7	15.5'	59.9'		96°26.8	83°54.2	46°22.7	46°20.7	58° 50.1	84°31.2	86°35.1
16	293°42.9	9.6'	13°36.2	15.5'	59.9'		95°50.3	83°17.9	45°46.4	46° 56.9	59°23.8	85°04.6	87°05.2
17	308°11.6	9.6'	$13^{\circ}51.6$	15.4'	59.9'	119°28.5	95°13.9	82°41.6	45°10.1	47°33.1	59° 57.6	85°38.0	87°35.4
18	322°40.1	9.5'	$N14^{\circ}07.0$	15.3'	59.9'	118°52.2	94°37.4	82°05.3	44°33.7	48°09.3	60°31.4	86°11.5	88°05.7
19	337°08.6	9.4'	14°22.3	15.2'	59.9'	118°15.9	94°00.9	81°29.0	43°57.4	48° 45.5	61°05.2	86°44.9	88°35.9
20	351°36.9	9.3'	14°37.6	15.1'	59.9'	117°39.6	93°24.4	80°52.7	43°21.1	49°21.7	61°39.0	87°18.4	89°06.1
21	6°05.2	9.2'	14°52.7	15.1'	59.9'	117°03.3	92°47.9	80°16.4	42°44.7	49°58.0	62°12.9	87°51.9	89°36.4
22	20°33.4	9.1'	15°07.8	15.0'	59.9'	116°26.9	92°11.3	79°40.0	42°08.4	50°34.2	62°46.9	88°25.4	90°06.6
23	35°01.5	9.0'	15°22.8	14.9'	59.9'	115°50.6	91°34.8	79°03.7	41°32.0	51°10.5	63°20.8	88°58.8	90°36.9
11 th	SD	= 16.3'	Mer. pass	. 20:35									

h		Моо	n (12 th De	ec)		Lunar Distance (objects with largest hourly LD delta)							
Thu	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Pollux	-Jupiter	+Saturn	+Fomalhaut	+Venus	+Altair
0	49°29.6	8.9'	N 15°37.7	14.8'	59.9'	115°14.3	90°58.2	78°27.3	40°55.7	51°46.8	63°54.8	89°32.4	91°07.2
1	63°57.5	8.8'	15°52.5	14.7'	59.9'	114°37.9	90°21.7	77°50.9	40°19.4	52°23.0	64°28.8	90°05.9	91°37.4
2	78°25.3	8.7'	16°07.2	14.6'	59.9'	114°01.5	89°45.1	77°14.6	39°43.0	52°59.3	65°02.9	90°39.4	92°07.7
3	92°53.1	8.7'	$16^{\circ}21.8$	14.5'	59.9'	113°25.2	89°08.5	76°38.2	39°06.7	53°35.6	65°37.0	91°12.9	92°38.0
4	107°20.7	8.6'	16°36.4	14.4'	59.9'	112°48.8	88°32.0	76°01.8	38°30.4	54°11.9	66°11.1	91°46.4	93°08.3
5	121°48.3	8.5'	16°50.8	14.4'	59.9'	112°12.4	87°55.4	75°25.4	37°54.1	54°48.2	66°45.2	92°20.0	93°38.5
6	136°15.8	8.4'	$N17^{\circ}05.2$	14.3'	59.9'	111°36.0	87° 18.8	74°49.0	37°17.7	55°24.5	67°19.4	92°53.5	94°08.8
7	150°43.1	8.3'	$17^{\circ}19.4$	14.2'	59.9'	110°59.6	86°42.2	74°12.6	36°41.4	56°00.8	67°53.6	93°27.1	94°39.1
8	165°10.4	8.2'	17°33.6	14.0'	59.9'	110°23.2	86°05.5	73°36.2	36°05.1	56°37.1	68°27.8	94°00.6	95°09.4
9	179°37.6	8.1'	17°47.6	13.9'	59.9'	109°46.8	85°28.9	72°59.8	35°28.8	57°13.5	69°02.0	94°34.2	95°39.6
10	194°04.6	8.0'	$18^{\circ}01.6$	13.8'	59.9'	109°10.4	84°52.3	72°23.4	34°52.6	57°49.8	69°36.3	95°07.7	96°09.9
11	208°31.6	7.9'	$18^{\circ}15.4$	13.7'	59.9'	108°34.0	84° 15.7	71°46.9	34°16.3	58°26.1	70°10.5	95°41.3	96°40.1
12	222°58.5	7.8'	$N18^{\circ}29.1$	13.6'	59.9'	107°57.6	83°39.0	71°10.5	33°40.0	59°02.4	70°44.8	96°14.9	97°10.3
13	237°25.3	7.7'	18°42.7	13.5'	59.9'	107°21.2	83°02.4	70°34.1	33°03.8	59°38.8	71°19.2	96°48.5	97°40.6
14	251°52.0	7.6'	18°56.3	13.4'	59.9'	106°44.7	82°25.7	69°57.6	32°27.6	60°15.1	71°53.5	97°22.1	98°10.8
15	266°18.6	7.5'	$19^{\circ}09.6$	13.3'	59.9'	106°08.3	81°49.1	69°21.2	31°51.4	60°51.5	72°27.8	97°55.6	98°41.0
16	280°45.1	7.4'	19°22.9	13.2'	59.9'	105°31.9	81°12.4	68°44.8	31°15.2	61°27.8	73°02.2	98°29.2	99°11.1
17	295°11.5	7.3'	19°36.1	13.0'	59.9'	104°55.4	80°35.8	68°08.3	30°39.0	62°04.2	73°36.6	99°02.8	99°41.3
18	309°37.7	7.2'	$N19^{\circ}49.1$	12.9'	59.9'	104°19.0	79°59.1	67°31.9	30°02.8	62°40.5	74°11.0	99°36.4	100°11.4
19	324°03.9	7.1'	20°02.0	12.8'	59.9'	103°42.6	79°22.5	66°55.4	29°26.7	63°16.9	74°45.4	100°10.0	100°41.5
20	338°30.0	7.0'	20°14.8	12.7'	59.9'	103°06.1	78°45.8	66° 19.0	28°50.6	63°53.2	75°19.8	100°43.6	101°11.6
21	352°56.0	6.9'	20°27.5	12.5'	59.9'	102°29.7	78°09.1	65°42.6	28°14.5	64°29.5	75°54.2	101°17.2	101°41.7
22	7°21.9	6.8'	20°40.0	12.4'	59.9'	101°53.3	77°32.5	65°06.1	27°38.5	65°05.9	76°28.6	101°50.8	102°11.7
23	21°47.7	6.7'	20°52.5	12.3'	59.9'	101°16.8	76°55.8	64°29.7	27°02.5	65°42.2	77°03.1	102°24.3	102°41.7
12 th	SD	= 16.3	′ Mer. pas	s. 21:29									

h		Моо	n (13 th D	ec)		Lunar Distance (objects with largest hourly LD delta)							
Fri	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Pollux	-Jupiter	+Saturn	+Fomalhaut	+Venus	+Altair
0	36°13.4	6.6'	N 21°04.7	12.1'	59.9'	100°40.4	76° 19.2	63°53.3	26°26.5	66°18.6	77°37.5	102°57.9	103°11.7
1	50°39.0	6.5'	$21^{\circ}16.9$	12.0'	59.9'	100°04.0	75°42.5	63° 16.8	25°50.6	66°54.9	78°12.0	103°31.5	103°41.7
2	65°04.5	6.4'	21°28.9	11.9'	59.9'	99°27.6	75°05.8	62°40.4	25°14.7	67°31.3	78°46.5	104°05.1	104°11.6
2	70°20 0	63'	21 0 40 8	11 7'	50 Q'	080511	740202	62°04 0	24°38 8	68°07 6	70°20 0	104°38.7	1040415

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0	36°13.4	6.6'	N21°04.7	12.1'	59.9'	100°40.4	76°19.2	63°53.3	26°26.5	66°18.6	77°37.5	102°57.9	103°11.7
1	50°39.0	6.5'	21°16.9	12.0'	59.9'	100°04.0	75°42.5	63°16.8	25°50.6	66°54.9	78°12.0	103°31.5	103°41.7
2	65°04.5	6.4'	21°28.9	11.9'	59.9'	99°27.6	75°05.8	62°40.4	25°14.7	67°31.3	78°46.5	104°05.1	104°11.6
3	79°29.9	6.3'	21°40.8	11.7'	59.9'	98°51.1	74°29.2	62°04.0	24°38.8	68°07.6	79°20.9	104°38.7	104°41.5
4	93°55.2	6.2'	21°52.5	11.6'	59.9'	98°14.7	73°52.5	61°27.6	24°03.0	68°43.9	79°55.4	105°12.3	105°11.3
5	108°20.4	6.1'	22°04.1	11.5'	59.9'	97°38.3	73°15.9	60°51.1	23°27.3	69°20.3	80°29.9	105°45.8	105°41.2
6	122°45.5	6.0'	$N22^{\circ}15.5$	11.3'	59.9'	97°01.9	72°39.2	60°14.7	22°51.6	69°56.6	81°04.4	106°19.4	106°10.9
7	137°10.5	5.9'	22°26.9	11.2'	59.9'	96°25.5	72°02.6	59°38.3	22°15.9	70°32.9	81°38.8	106°53.0	106°40.7
8	151°35.4	5.8'	22°38.0	11.0'	59.9'	95°49.1	71°25.9	59°01.9	21°40.3	71°09.2	82°13.3	107°26.5	107°10.3
9	166°00.3	5.7'	22°49.0	10.9'	59.9'	95°12.7	70°49.3	58° 25.5	21°04.8	71°45.5	82°47.8	108°00.1	107°40.0
10	180°25.0	5.6'	22°59.9	10.7'	59.9'	94°36.3	70°12.6	57°49.1	20°29.4	72°21.8	83°22.3	108°33.6	108°09.6
11	194°49.6	5.5'	$23^{\circ}10.6$	10.6'	59.9'	93°59.9	69°36.0	57°12.7	19°54.1	72°58.1	83°56.8	109°07.2	108°39.1
12	209°14.2	5.4'	$N23^{\circ}21.2$	10.4'	59.8'	93°23.5	68°59.4	56°36.4	19°18.8	73°34.4	84°31.2	109°40.7	109°08.6
13	223°38.6	5.4'	23°31.6	10.2'	59.8'	92°47.2	68°22.8	56°00.0	18°43.7	74°10.7	85°05.7	110°14.2	109°38.1
14	238°03.0	5.3'	23°41.8	10.1'	59.8'	92°10.8	67°46.1	55°23.6	18°08.6	74°46.9	85°40.2	110°47.8	110°07.5
15	252°27.2	5.2'	23°51.9	9.9'	59.8'	91°34.4	67°09.5	54°47.3	17°33.7	75°23.2	86°14.6	111°21.3	110°36.8
16	266°51.4	5.1'	24°01.8	9.8'	59.8'	90°58.1	66°32.9	54°11.0	16°58.9	75°59.4	86°49.1	111°54.8	111°06.1
17	281°15.5	5.0'	$24^{\circ}11.6$	9.6'	59.8'	90°21.8	65°56.3	53°34.6	16°24.2	76°35.7	87°23.5	112°28.3	111°35.3
18	295°39.5	4.9'	N24°21.2	9.4'	59.8'	89°45.4	65° 19.8	52°58.3	15°49.8	77°11.9	87°58.0	113°01.7	112°04.5
19	310°03.4	4.8'	24°30.6	9.3'	59.8'	89°09.1	64°43.2	52°22.0	15°15.4	77°48.1	88°32.4	113°35.2	112°33.6
20	324°27.3	4.8'	24°39.9	9.1'	59.8'	88°32.8	64°06.6	51°45.7	14°41.3	78°24.3	89°06.8	114°08.7	113°02.6
21	338°51.0	4.7'	24°49.0	8.9'	59.8'	87°56.5	63°30.1	51°09.4	14°07.4	79°00.5	89°41.3	114°42.1	113°31.6
22	353°14.7	4.6'	24°57.9	8.8'	59.7'	87°20.3	62°53.5	50°33.2	13°33.8	79°36.7	90°15.7	115°15.6	114°00.4
23	7°38.3	4.5'	25°06.7	8.6'	59.7'	86°44.0	62°17.0	49°56.9	13°00.4	80°12.9	90°50.0	115°49.0	114°29.3
13 th	SD	= 16.3'	Mer. pas	s. 22:28									

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

Sat	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Pollux	-Jupiter	+Saturn	+Fomalhaut	+Altair	+Venus
0	22°01.8	4.4'	$N25^{\circ}15.2$	8.4'	59.7'	86°07.7	61°40.5	49°20.7	12°27.3	80°49.0	91°24.4	114°58.0	116°22.4
1	36°25.2	4.4'	25°23.7	8.2'	59.7'	85°31.5	61°04.0	48°44.4	11°54.6	81°25.2	91°58.8	115° 26.7	116°55.8
2	50°48.6	4.3'	25°31.9	8.1'	59.7'	84°55.3	60°27.5	48°08.2	11°22.3	82°01.3	92°33.1	115°55.3	117°29.2
3	65°11.9	4.2'	25°40.0	7.9'	59.7'	84°19.1	59°51.0	47°32.0	10°50.4	82°37.4	93°07.5	116°23.8	118°02.6
4	79°35.1	4.1'	25°47.8	7.7'	59.7'	83°42.9	59° 14.6	46°55.8	10°19.1	83°13.5	93°41.8	116°52.2	118°35.9
5	93°58.2	4.1'	25°55.5	7.5'	59.7'	83°06.7	58°38.1	46° 19.7	9°48.3	83°49.6	94°16.1	117°20.5	119°09.3
6	108°21.3	4.0'	$N26^{\circ}03.1$	7.3'	59.6'	82°30.5	58°01.7	45°43.5	9°18.3	84°25.7	94°50.4	117°48.7	119°42.6
7	122°44.3	3.9'	26°10.4	7.2'	59.6'	81°54.4	57°25.2	45°07.4	8°49.1	85°01.7	95°24.6	118° 16.9	
8	137°07.3	3.9'	$26^{\circ}17.5$	7.0'	59.6'	81°18.3	56°48.8	44°31.3		85°37.8	95°58.9	118°45.0	
9	151°30.1	3.8'	26°24.5	6.8'	59.6'	80°42.1	56° 12.4	43°55.2		86°13.8	96°33.1	119° 12.9	
10	165°53.0	3.8'	26°31.3	6.6'	59.6'	80°06.0	55°36.1	43° 19.1		86°49.8	97°07.3	119°40.8	
11	180°15.7	3.7'	26°37.9	6.4'	59.6'	79°30.0	54° 59.7	42°43.0		87°25.8	97°41.5		
12	194°38.5	3.7'	N 26°44.3	6.2'	59.5'	78°53.9	54°23.4	42°07.0		88°01.7	98°15.6		
13	209°01.1	3.6'	26°50.5	6.0'	59.5'	78°17.9	53°47.0	41°31.0		88°37.7	98°49.7		
14	223°23.7	3.6'	26°56.6	5.8'	59.5'	77°41.9	53°10.7	40°55.0		89°13.6	99°23.8		
15	237°46.3	3.5'	27°02.4	5.6'	59.5'	77°05.9	52°34.5	40° 19.0		89°49.5	99°57.9		
16	252°08.8	3.5'	27°08.0	5.5'	59.5'	76°29.9	51°58.2	39°43.0		90°25.4	100°32.0		
17	266°31.3	3.4'	$27^{\circ}13.5$	5.3'	59.5'	75°53.9	51°21.9	39°07.1		91°01.3	101°06.0		
18	280°53.8	3.4'	$N27^{\circ}18.8$	5.1'	59.4'	75°18.0	50°45.7	38°31.2		91°37.1	101°40.0		
19	295°16.2	3.4'	27°23.8	4.9'	59.4'	74°42.1	50°09.5	37°55.3		92°12.9	102°13.9		
20	309°38.5	3.3'	27°28.7	4.7'	59.4'	74°06.2	49°33.3	37° 19.5		92°48.7	102°47.9		
21	324°00.9	3.3'	27°33.4	4.5'	59.4'	73°30.3	48° 57.2	36°43.6		93°24.5	103°21.8		
22	338°23.2	3.3'	27°37.9	4.3'	59.4'	72°54.5	48°21.0	36° 07.8		94°00.2	103°55.7		
23	352°45.4	3.3'	27°42.2	4.1'	59.3'	72°18.7	47°44.9	35°32.0		94°35.9	104°29.5		
14 th	SD =	= 16.3′	Mer. pass	. 23:30)								

Moon (15th Dec)

h

Lunar Distance (objects with largest hourly LD delta)

Sun	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Pollux	+Jupiter	+Aldebaran	+Saturn	+Fomalhaut
0	7°07.7	3.2'	N27°46.3	3.9'	59.3'		71°42.9	47°08.8	34°56.3			95°11.6	105°03.3
1	21°29.9	3.2'	$27^{\circ}50.1$	3.7'	59.3'		71°07.1	46°32.7	34°20.5		13°39.4	95°47.3	105°37.1
2	35°52.1	3.2'	27°53.8	3.5'	59.3'		70°31.3	45°56.7	33°44.8		14°03.8	96°23.0	106°10.8
3	50°14.3	3.2'	27°57.3	3.3'	59.3'		69°55.6	45°20.7	33°09.1		14°29.0	96°58.6	106°44.5
4	64°36.5	3.2'	28°00.6	3.1'	59.2'		69°19.9	44°44.7	32°33.5		14°54.8	97°34.2	107°18.2
5	78°58.7	3.2'	28°03.7	2.9'	59.2'		68°44.3	44°08.7	31°57.9		15°21.3	98°09.8	107°51.8
6	93°20.8	3.2'	N 28°06.6	2.7'	59.2'		68°08.6	43°32.7	31°22.3		15°48.4	98°45.3	108°25.4
7	107°43.0	3.2'	28°09.4	2.5'	59.2'		67°33.0	42°56.8	30°46.7	9°16.6	16°16.0	99°20.8	108°59.0
8	122°05.2	3.2'	$28^{\circ}11.9$	2.3'	59.1'		66°57.4	42°20.9	30°11.2	9°46.1	16°44.0	99°56.3	109°32.5
9	136°27.3	3.2'	28°14.2	2.1'	59.1'		66°21.9	41°45.0	29°35.7	10°16.3	17° 12.5	100°31.8	110°05.9
10	150°49.5	3.2'	28°16.3	1.9'	59.1'	119°47.3	65°46.3	41°09.2	29°00.2	10°47.0	17°41.4	101°07.2	110°39.3
11	165°11.6	3.2'	28°18.2	1.7'	59.1'	119°11.8	65°10.8	40°33.4	28°24.8	11°18.2	18° 10.6	101°42.6	111°12.7
12	179°33.8	3.2'	$N28^{\circ}19.9$	1.5'	59.1'	118°36.3	64°35.4	39°57.6	27°49.4	11°49.8	18°40.2	102°18.0	111°46.1
13	193°56.0	3.2'	28°21.4	1.3'	59.0'	118°00.8	63°59.9	39°21.8	27°14.0	12°21.7	19° 10.0	102°53.3	112°19.4
14	208°18.2	3.2'	28°22.7	1.1'	59.0'	117°25.4	63°24.5	38°46.1	26°38.6	12°54.0	19°40.2	103°28.6	112°52.6
15	222°40.5	3.3'	28°23.8	0.9'	59.0'	116°50.0	62°49.1	38°10.4	26°03.3	13°26.5	20° 10.6	104°03.9	113°25.8
16	237°02.7	3.3'	28°24.7	0.7'	59.0'	116°14.6	62°13.8	37°34.7	25°28.1	13°59.3	20°41.2	104°39.2	113°58.9
17	251°25.0	3.3'	28°25.4	0.5'	58.9'	115°39.2	61°38.5	36°59.1	24°52.8	14°32.2	21°12.0	105°14.4	114°32.0
18	265°47.3	3.3'	N 28°26.0	0.3'	58.9'	115°03.9	61°03.2	36°23.5	24°17.6	15°05.4	21°43.0	105°49.6	115°05.1
19	280°09.6	3.4'	28°26.3	0.1'	58.9'	114°28.6	60°27.9	35°47.9	23°42.5	15°38.6	22°14.2	106°24.8	115°38.1
20	294°32.0	3.4'	28°26.4	-0.1'	58.8'	113°53.4	59°52.7	35°12.3	23°07.4	16°12.0	22°45.5	106°59.9	116°11.0
21	308°54.4	3.4'	28°26.3	-0.3'	58.8'	113°18.1	59°17.5	34°36.8	22°32.3	16°45.6	23° 17.0	107°35.0	116°43.9
22	323°16.8	3.5'	$28^{\circ}26.1$	-0.5'	58.8'	112°42.9	58°42.4	34°01.3	21°57.2	17°19.2	23°48.7	108°10.0	117°16.8
23	337°39.3	3.5'	28°25.6	-0.7'	58.8'	112°07.8	58°07.2	33°25.9	21°22.2	17°52.9	24°20.4	108°45.1	117°49.6
15 th	SD	= 16.	2' Mer. pa	ss:-									

h	Moon	(16 th	Decl	

h Moon (16th Dec)

Lunar Distance (objects with largest hourly LD delta)

Mon	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	-Pollux	+Jupiter	+Aldebaran	+Saturn	+Fomalhaut
0	352°01.9	3.6'	N 28°25.0	-0.9'	58.7'	111°32.7	57°32.2	32°50.4	20°47.3	18°26.7	24°52.3	109°20.1	118°22.3
1	6°24.4	3.6'	$28^{\circ}24.1$	-1.0'	58.7'	110°57.6	56°57.1	32°15.0	20°12.4	19°00.5	25°24.3	109°55.0	118°55.0
2	20°47.1	3.7'	28°23.1	-1.2'	58.7'	110°22.5	56°22.1	31°39.7	19°37.5	19°34.4	25°56.4	110°30.0	119°27.6
3	35°09.8	3.7'	$28^{\circ}21.8$	-1.4'	58.7'	109°47.5	55°47.1	31°04.4	19°02.7	20°08.4	26°28.5	111°04.8	
4	49°32.5	3.8'	28°20.4	-1.6'	58.6'	109°12.5	55°12.2	30°29.1	18°27.9	20°42.4	27°00.7	111°39.7	
5	63°55.3	3.9'	28°18.8	-1.8'	58.6'	108°37.5	54°37.2	29°53.8	17°53.1	21°16.4	27°33.0	112°14.5	
6	78°18.1	3.9'	N 28°17.0	-2.0'	58.6'	108°02.6	54°02.4	29° 18.6	17°18.5	21°50.5	28°05.4	112°49.3	
7	92°41.1	4.0'	$28^{\circ}15.0$	-2.2'	58.5'	107°27.7	53°27.5	28°43.4	16°43.8	22°24.6	28°37.8	113°24.1	
8	107°04.1	4.1'	$28^{\circ}12.8$	-2.4'	58.5'	106°52.9	52°52.7	28°08.2	16°09.2	22°58.7	29°10.3	113°58.8	
9	121°27.1	4.1'	$28^{\circ}10.4$	-2.6'	58.5'	106°18.1	52°17.9	27°33.1	15°34.7	23°32.8	29°42.8	114°33.5	
10	135°50.2	4.2'	28°07.9	-2.7'	58.5'	105°43.3	51°43.2	26°58.0	15°00.2	24°06.9	30°15.4	115°08.1	
11	150°13.4	4.3'	28°05.1	-2.9'	58.4'	105°08.6	51°08.5	26°23.0	14°25.8	24°41.1	30°48.0	115°42.7	
12	164°36.7	4.4'	$N28^{\circ}02.2$	-3.1'	58.4'	104°33.9	50°33.8	25°48.0	13°51.5	25° 15.2	31°20.7	116°17.3	
13	179°00.1	4.4'	$27^{\circ}59.1$	-3.3'	58.4'	103°59.2	49°59.2	25°13.0	13°17.2	25°49.4	31°53.4	116°51.8	
14	193°23.5	4.5'	27°55.8	-3.5'	58.3'	103°24.6	49°24.6	24°38.1	12°43.0	26°23.5	32°26.1	117°26.3	
15	207°47.0	4.6'	27°52.4	-3.6'	58.3'	102°50.0	48°50.1	24°03.2	12°08.9	26° 57.7	32°58.8	118°00.8	
16	222°10.6	4.7'	27°48.7	-3.8'	58.3'	102°15.4	48°15.6	23°28.3	11°34.8	27°31.8	33°31.5	118°35.2	
17	236°34.3	4.8'	27°44.9	-4.0'	58.2'	101°40.9	47°41.1	22°53.5	11°00.9	28°05.9	34°04.3	119°09.6	
18	250°58.1	4.9'	N27°40.9	-4.2'	58.2'	101°06.4	47°06.7	22°18.7	10°27.0	28°40.0	34°37.1	119°43.9	
19	265°22.0	5.0'	27°36.7	-4.3'	58.2'	100°32.0	46°32.3	21°43.9	9°53.2	29° 14.1	35°09.8		
20	279°45.9	5.1'	27°32.4	-4.5'	58.2'	99°57.6	45°57.9	21°09.2	$9^{\circ}19.6$	29°48.2	35°42.6		
21	294°10.0	5.2'	27°27.9	-4.7'	58.1'	99°23.2	45°23.6	20°34.5	8°46.1	30°22.3	36°15.4		
22	308°34.2	5.3'	$27^{\circ}23.2$	-4.9'	58.1'	98°48.9	44°49.4	19°59.9	8°12.7	30°56.3	36°48.2		
23	322°58.4	5.4'	27°18.3	-5.0'	58.1'	98°14.6	44°15.1	19°25.3	7°39.6	31°30.4	37°21.0		
16 th	SD :	= 16.0'	Mer. pas	s. 00:33									

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

Tue	GHA	ν	Dec	d	HP	-Spica	-Regulus	-Mars	±Pollux	+Betelgeuse	+Capella	+Jupiter	+Aldebaran
0	337°22.8	5.5'	$N27^{\circ}13.3$	-5.2'	58.0'	97°40.4	43°40.9	18°50.7	7°06.6	27°09.6	29°41.3	32°04.4	37°53.9
1	351°47.2	5.6'	$27^{\circ}08.1$	-5.4'	58.0'	97°06.2	43°06.8	18°16.2	6°33.9	27°30.9	30°08.2	32°38.4	38°26.7
2	6°11.8	5.7'	27°02.7	-5.5'	58.0'	96°32.0	42°32.7	17°41.7	6°01.6	27° 52.7	30°35.3	33°12.3	38°59.5
3	20°36.4	5.8'	26°57.2	-5.7'	57.9'	95°57.9	41°58.6	17°07.3	5°29.6	28°14.7	31°02.6	33°46.3	39°32.2
4	35°01.2	5.9'	$26^{\circ}51.5$	-5.8'	57.9'	95°23.8	41°24.6	16°32.9	4°58.1	28°37.1	31°30.0	34°20.2	40°05.0
5	49°26.1	6.0'	26°45.7	-6.0'	57.9'	94°49.7	40°50.6	15°58.6	4°27.3	28°59.9	31°57.6	34°54.1	40°37.8
6	63°51.1	6.1'	N 26°39.7	-6.2'	57.8'	94°15.7	40°16.6	15°24.2	3°57.5	29°22.9	32°25.4	35°28.0	41°10.6
7	78°16.2	6.2'	26°33.6	-6.3'	57.8'	93°41.8	39°42.7	14°50.0		29°46.2	32°53.3	36°01.8	41°43.3
8	92°41.4	6.3'	26°27.2	-6.5'	57.8'	93°07.8	39°08.9	14°15.8		30°09.8	33°21.3	36°35.6	42°16.1
9	107°06.7	6.4'	26°20.8	-6.6'	57.7'	92°33.9	38°35.0	13°41.6		30°33.7	33°49.4	37°09.4	42°48.8
10	121°32.2	6.6'	26°14.2	-6.8'	57.7'	92°00.1	38°01.3	13°07.4		30°57.8	34°17.7	37°43.2	43°21.5
11	135°57.7	6.7'	26°07.4	-6.9'	57.7'	91°26.3	37°27.5	12°33.3		31°22.2	34°46.1	38°16.9	43°54.2
12	150°23.4	6.8'	$N26^{\circ}00.5$	-7.1'	57.6'	90°52.5	36°53.8	11°59.3		31°46.8	35°14.6	38°50.6	44°26.9
13	164°49.2	6.9'	25°53.4	-7.2'	57.6'	90°18.8	36°20.2	11°25.3		32°11.6	35°43.2	39°24.3	44°59.6
14	$179^{\circ}15.1$	7.0'	25°46.2	-7.3'	57.6'	89°45.1	35°46.6	10°51.4		32°36.6	36°11.9	39°57.9	45°32.2
15	193°41.1	7.1'	25°38.9	-7.5'	57.5'	89°11.5	35°13.0	10°17.5		33°01.8	36°40.6	40°31.5	46°04.8
16	208°07.3	7.3'	25°31.4	-7.6'	57.5'	88°37.9	34°39.5	9°43.6		33°27.2	37°09.5	41°05.1	46°37.4
17	222°33.5	7.4'	25°23.8	-7.8'	57.5'	88°04.3	34°06.0	9°09.8		33°52.8	37°38.4	41°38.6	47°10.0
18	236°59.9	7.5'	$N25^{\circ}16.0$	-7.9'	57.4'	87°30.8	33°32.5	8°36.1		34° 18.6	38°07.4	42°12.1	47°42.6
19	251°26.4	7.6'	$25^{\circ}08.1$	-8.0'	57.4'	86°57.3	32°59.2	8°02.4		34°44.5	38°36.5	42°45.6	48°15.1
20	265°53.1	7.8'	$25^{\circ}00.1$	-8.2'	57.4'	86°23.9	32°25.8	7°28.8	4°52.9	35° 10.5	39°05.6	43°19.0	48°47.6
21	280°19.8	7.9'	24°51.9	-8.3'	57.3'	85°50.5	31°52.5	6°55.3	5°23.7	35°36.7	39°34.8	43°52.4	49°20.1
22	294°46.7	8.0'	24°43.6	-8.4'	57.3'	85°17.1	31° 19.2	6°21.9	5°54.8	36°03.1	40°04.1	44°25.8	49°52.5
23	309°13.7	8.1'	24°35.2	-8.6'	57.3'	84°43.8	30°46.0	5°48.5	6°26.3	36°29.6	40°33.4	44°59.1	50°25.0
17 th	SD :	= 15.8'	Mer. pas	s. 01:34									

Moon (18th Dec) h

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Lunar Dist	tance (obiect	s with larges	t hourly l	_D delta)

		IVIOOI	II (10. DE	= C)			Lullar D	istance (objects	With larg	est noung	y LD deit	a)
Wed	GHA	ν	Dec	d	HP	-Antares	-Spica	-Regulus	± Mars	+Pollux	+Capella	+Jupiter	+Aldebaran
0	323°40.8	8.2'	N 24°26.6	-8.7'	57.2'		84°10.5	30°12.8	5°15.3	6°58.1	41°02.7	45°32.4	50°57.4
1	338°08.1	8.4'	$24^{\circ}17.9$	-8.8'	57.2'		83°37.3	29°39.7	4°42.2	7°30.0	41°32.1	46°05.7	51°29.8
2	352°35.4	8.5'	24°09.1	-8.9'	57.2'		83°04.1	29°06.6	4°09.3	8°02.1	42°01.6	46°38.9	52°02.1
3	7°02.9	8.6'	24°00.2	-9.1'	57.1'		82°31.0	28°33.6	3°36.6	8°34.2	42°31.0	47° 12.1	52°34.4
4	21°30.6	8.7'	$23^{\circ}51.1$	-9.2'	57.1'		81°57.9	28°00.6	3°04.2	9°06.4	43°00.5	47°45.3	53°06.7
5	35°58.3	8.9'	23°42.0	-9.3'	57.1'		81°24.8	27°27.6	2°32.4	9°38.7	43°30.1	48°18.4	53°39.0
6	50°26.2	9.0'	N23°32.7	-9.4'	57.0'		80°51.8	26° 54.7	2°01.6	10°11.1	43°59.7	48°51.5	54°11.2
7	64°54.2	9.1'	23°23.3	-9.5'	57.0'		80°18.8	26°21.9		10°43.4	44°29.3	49°24.5	54°43.4
8	79°22.3	9.2'	23°13.7	-9.6'	57.0'		79°45.9	25°49.0		11°15.8	44°58.9	49°57.6	55°15.6
9	93°50.6	9.4'	23°04.1	-9.7'	56.9'		79°13.0	25°16.3		11°48.2	45°28.5	50°30.5	55°47.8
10	108°18.9	9.5'	22°54.4	-9.9'	56.9'		78°40.1	24°43.5		12°20.6	45°58.2	51°03.5	56°19.9
11	122°47.4	9.6'	22°44.5	-10.0'	56.9'		78°07.3	24°10.9		12°53.0	46°27.9	51°36.4	56°52.0
12	137°16.0	9.7'	N22°34.6	-10.1'	56.8'		77°34.5	23°38.2		13°25.4	46°57.6	52°09.2	57°24.0
13	151°44.8	9.9'	22°24.5	-10.2'	56.8'		77°01.8	23°05.6		13°57.8	47°27.3	52°42.1	57°56.0
14	166°13.7	10.0'	22°14.3	-10.3'	56.8'		76°29.1	22°33.1		14°30.1	47°57.1	53°14.8	58°28.0
15	180°42.7	10.1'	22°04.1	-10.4'	56.7'		75°56.4	22°00.6	3°16.1	15°02.5	48°26.8	53°47.6	59°00.0
16	195°11.8	10.2'	21°53.7	-10.5'	56.7'		75°23.8	21°28.2	3°48.1	15°34.8	48°56.6	54°20.3	59°31.9
17	209°41.0	10.4'	21°43.2	-10.6'	56.7'		74°51.2	20°55.8	4°20.4	16°07.1	49°26.3	54°53.0	60°03.8
18	224°10.4	10.5'	$N21^{\circ}32.7$	-10.7'	56.6'		74°18.7	20°23.4	4°52.7	16°39.4	49°56.1	55°25.6	60°35.7
19	238°39.9	10.6'	21°22.0	-10.8'	56.6'	119°40.3	73°46.2	19°51.2	5°25.1	17°11.7	50°25.9	55°58.2	61°07.5
20	253°09.5	10.7'	$21^{\circ}11.2$	-10.8'	56.6'	119°07.8	73°13.7	19° 18.9	5°57.6	17°43.9	50°55.6	56°30.8	61°39.3
21	267°39.2	10.8'	21°00.4	-10.9'	56.5'	118°35.4	72°41.3	18°46.7	6°30.1	18°16.1	51°25.4	57°03.3	62°11.1
22	282°09.0	11.0'	20°49.5	-11.0'	56.5'	118°03.0	72°08.9	18° 14.6	7°02.7	18°48.3	51°55.2	57°35.8	62°42.8
23	296°39.0	11.1'	20°38.4	-11.1'	56.5'	117°30.7	71°36.6	17°42.5	7°35.2	19°20.5	52°25.0	58°08.3	63°14.5
18 th	SD	= 15.6	Mer. pas	s. 02:31								-	

h Moon (19 th Dec)	Lunar Distance (ob	ojects with largest hourly I	LD delta)
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Thu	GHA	ν	Dec	d	HP	-Antares	-Arcturus	-Spica	-Regulus	+Mars	+Pollux	+Jupiter	+Aldebaran
0	311°09.1	11.2'	N 20°27.3	-11.2'	56.5'	116°58.4	71°58.8	71°04.3	17°10.5	8°07.7	19°52.6	58°40.7	63°46.2
1	325°39.3	11.3'	20°16.1	-11.3'	56.4'	116°26.1	71°32.2	70°32.0	16°38.5	8°40.2	20°24.7	59°13.1	64°17.8
2	340°09.6	11.4'	20°04.8	-11.4'	56.4'	115°53.9	71°05.7	69°59.8	16°06.6	9°12.7	20°56.7	59°45.4	64°49.4
3	354°40.0	11.5'	19°53.4	-11.5'	56.4'	115°21.7	70°39.2	69°27.6	15°34.7	9°45.1	21°28.8	60°17.7	65°21.0
4	9°10.6	11.7'	19°42.0	-11.5'	56.3'	114°49.6	70°12.8	68°55.5	15°02.9	10° 17.6	22°00.7	60°50.0	65°52.5
5	23°41.2	11.8'	19°30.5	-11.6'	56.3'	114°17.5	69°46.5	68°23.4	14°31.2	10°50.0	22°32.7	61°22.2	66°24.0
6	38°12.0	11.9'	N 19°18.8	-11.7'	56.3'	113°45.4	69°20.2	67°51.3	13°59.5	11°22.4	23°04.6	61°54.4	66°55.5
7	52°42.9	12.0'	19°07.2	-11.8'	56.2'	113°13.4	68°54.0	67°19.3	13°27.9	11°54.7	23°36.5	62°26.6	67°26.9
8	67°13.9	12.1'	18°55.4	-11.8'	56.2'	112°41.4	68°27.9	66°47.3	12°56.4	12°27.1	24°08.4	62°58.7	67°58.3
9	81°45.0	12.2'	18°43.6	-11.9'	56.2'	112°09.5	68°01.9	66°15.4	12°24.9	12°59.4	24°40.2	63°30.8	68°29.7
10	96°16.2	12.3'	18°31.6	-12.0'	56.1'	111°37.6	67°35.9	65°43.5	11°53.6	13°31.6	25°12.0	64°02.9	69°01.1
11	110°47.6	12.4'	$18^{\circ}19.7$	-12.1'	56.1'	111°05.7	67°10.0	65°11.6	11°22.3	14°03.9	25°43.8	64°34.9	69°32.4
12	125°19.0	12.6'	N 18°07.6	-12.1'	56.1'	110°33.9	66°44.1	64°39.8	10°51.1	14°36.1	26°15.5	65°06.9	70°03.6
13	139°50.6	12.7'	17°55.5	-12.2'	56.0'	110°02.1	66°18.4	64°08.0	10°20.0	15°08.3	26°47.2	65°38.8	70°34.9
14	154°22.2	12.8'	17°43.3	-12.3'	56.0'	109°30.3	65°52.7	63°36.2	9°49.0	15°40.4	27°18.9	66°10.7	71°06.1
15	168°54.0	12.9'	$17^{\circ}31.1$	-12.3'	56.0'	108°58.6	65°27.1	63°04.5	9°18.2	$16^{\circ}12.5$	27°50.5	66°42.6	71°37.2
16	183°25.9	13.0'	17°18.7	-12.4'	56.0'	108°26.9	65°01.5	62°32.8	8°47.4	16°44.6	28°22.1	67°14.4	72°08.4
17	197°57.8	13.1'	17°06.4	-12.4'	55.9'	107°55.3	64°36.1	62°01.2	8°16.9	$17^{\circ}16.6$	28°53.7	67°46.2	72°39.5
18	212°29.9	13.2'	N 16°53.9	-12.5'	55.9'	107°23.6	64°10.7	61°29.6	7°46.5	17°48.7	29°25.2	68°18.0	73°10.6
19	227°02.1	13.3'	16°41.4	-12.6'	55.9'	106°52.1	63°45.4	60°58.0	7°16.3	18°20.6	29°56.7	68°49.7	73°41.6
20	241°34.4	13.4'	16°28.8	-12.6'	55.8'	106°20.5	63°20.2	60°26.4	6°46.3	18° 52.6	30°28.2	69°21.4	74°12.6
21	256°06.7	13.5'	$16^{\circ}16.2$	-12.7'	55.8'	105°49.0	62°55.0	59°54.9	6°16.7	19°24.5	30°59.6	69°53.1	74°43.6
22	270°39.2	13.6'	$16^{\circ}03.5$	-12.7'	55.8'	105°17.6	62°30.0	59°23.5	5°47.4	19°56.4	31°31.0	70°24.7	75°14.5
23	285°11.8	13.7'	15°50.8	-12.8'	55.7'	104°46.1	62°05.0	58°52.0	5°18.6	20°28.3	32°02.4	70°56.3	75°45.4
19 th	SD	= 15.4	Mer. pas	s. 03:22									

SD = 15.2'

Mer. pass. 04:09

20th

h		Моо	n (20 th De	ec)			Lunar D	istance (objects w	ith large	st hourly	LD delta	1)
Fri	GHA	ν	Dec	d	HP	-Sun	-Antares	-Spica	± Regulus	+Mars	+Pollux	+Jupiter	+Aldebaran
0	299°44.5	13.8'	N 15°38.0	-12.8'	55.7'		104°14.7	58°20.6	4°50.3	21°00.1	32°33.7	71°27.9	76°16.3
1	314°17.2	13.9'	15°25.2	-12.9'	55.7'		103°43.4	57°49.3	4°22.7	21°31.9	33°05.0	71°59.4	76°47.2
2	328°50.1	14.0'	15°12.3	-12.9'	55.7'		103°12.0	57° 18.0		22°03.6	33°36.3	72°30.9	77°18.0
3	343°23.0	14.0'	14°59.4	-13.0'	55.6'		102°40.7	56°46.7		22°35.4	34°07.5	73°02.4	77°48.8
4	357°56.1	14.1'	14°46.4	-13.0'	55.6'		102°09.5	56° 15.4		23°07.0	34°38.7	73°33.8	78°19.5
5	12°29.2	14.2'	14°33.3	-13.1'	55.6'		101°38.2	55°44.2		23°38.7	35°09.9	74°05.2	78°50.2
6	27°02.4	14.3'	$N14^{\circ}20.2$	-13.1'	55.6'	119°38.4	101°07.1	55° 13.0		24°10.3	35°41.0	74°36.5	79°20.9
7	41°35.7	14.4'	$14^{\circ}07.1$	-13.2'	55.5'	119°09.9	100°35.9	54°41.8		24°41.9	36°12.1	75°07.9	79°51.6
8	56°09.1	14.5'	13°53.9	-13.2'	55.5'	118°41.5	100°04.8	54° 10.7		25°13.5	36°43.2	75°39.2	80°22.2
9	70°42.6	14.6'	13°40.7	-13.3'	55.5'	118°13.1	99°33.7	53°39.6		25°45.1	37°14.2	76°10.4	80°52.8
10	85°16.2	14.7'	13°27.5	-13.3'	55.4'	117°44.7	99°02.6	53°08.5		26°16.6	37°45.3	76°41.7	81°23.4
11	99°49.8	14.7'	13°14.2	-13.3'	55.4'	117°16.4	98°31.6	52°37.5		26°48.1	38°16.2	77°12.9	81°53.9
12	114°23.6	14.8'	N 13°00.8	-13.4'	55.4'	116°48.1	98°00.6	52°06.5		27°19.5	38°47.2	77°44.0	82°24.4
13	128°57.4	14.9'	12°47.4	-13.4'	55.4'	116°19.8	97°29.6	51°35.5		27°50.9	39°18.1	78°15.2	82°54.9
14	143°31.3	15.0'	12°34.0	-13.5'	55.3'	115°51.5	96°58.7	51°04.6		28°22.3	39°49.0	78°46.3	83°25.3
15	158°05.2	15.0'	12°20.5	-13.5'	55.3'	115°23.3	96°27.8	50°33.7		28°53.7	40°19.9	79°17.4	83°55.8
16	172°39.3	15.1'	$12^{\circ}07.1$	-13.5'	55.3'	114°55.1	95°56.9	50°02.8		29°25.0	40°50.7	79°48.4	84°26.2
17	187°13.4	15.2'	$11^{\circ}53.5$	-13.6'	55.3'	114°27.0	95°26.0	49°32.0	5°00.6	29°56.3	41°21.5	80°19.4	84°56.5
18	201°47.6	15.3'	N 11°40.0	-13.6'	55.2'	113°58.9	94°55.2	49°01.1	5°28.5	30°27.6	41°52.3	80°50.4	85°26.8
19	216°21.9	15.3'	11°26.4	-13.6'	55.2'	113°30.8	94°24.4	48° 30.4	5°56.9	30°58.9	42°23.0	81°21.4	85°57.1
20	230°56.2	15.4'	$11^{\circ}12.7$	-13.7'	55.2'	113°02.7	93°53.7	47°59.6	6°25.6	31°30.1	42°53.7	81°52.3	86°27.4
21	245°30.6	15.5'	$10^{\circ}59.1$	-13.7'	55.2'	112°34.6	93°23.0	47° 28.9	6°54.6	32°01.3	43°24.4	82°23.2	86°57.7
22	260°05.1	15.6'	10°45.4	-13.7'	55.1'	112°06.6	92°52.3	46°58.2	7°23.8	32°32.5	43°55.1	82°54.1	87°27.9
23	274°39.7	15.6'	10°31.7	-13.7'	55.1'	111°38.6	92°21.6	46°27.5	7°53.2	33°03.6	44°25.7	83°24.9	87°58.1
aath			,							/			

h		Моо	n (21 st De	ec)			Lunar [Distance (ol	ojects wi	th larges	t hourly	LD delta)
Sat	GHA	ν	Dec	d	HP	-Sun	-Antares	-Rigil Kent.	-Spica	+Mars	+Pollux	+Jupiter	+Aldebaran
0	289°14.3	15.7'	N 10°17.9	-13.8'	55.1'	111°10.7	91°50.9	85°02.9	45°56.9	33°34.7	44°56.3	83°55.8	88°28.2
1	303°49.0	15.7'	10°04.1	-13.8'	55.1'	110°42.7	91°20.3	84°38.9	45°26.3	34°05.8	45°26.9	84°26.6	88° 58.4
2	318°23.7	15.8'	09°50.3	-13.8'	55.1'	110°14.8	90°49.7	84°15.0	44°55.7	34°36.9	45°57.4	84°57.3	89° 28.5
3	332°58.6	15.9'	09°36.5	-13.9'	55.0'	109°46.9	90°19.2	83°51.1	44°25.1	35°07.9	46°28.0	85°28.1	89° 58.6
4	347°33.4	15.9'	09°22.7	-13.9'	55.0'	109°19.1	89°48.7	83°27.2	43°54.6	35°38.9	46°58.5	85°58.8	90°28.6
5	2°08.4	16.0'	09°08.8	-13.9'	55.0'	108°51.3	89°18.1	83°03.3	43°24.1	36°09.9	47°28.9	86°29.5	90°58.7
6	16°43.4	16.1'	N 08°54.9	-13.9'	55.0'	108°23.4	88°47.7	82°39.5	42°53.6	36°40.9	47°59.4	87°00.1	91°28.7
7	31°18.4	16.1'	$08^{\circ}41.0$	-13.9'	54.9'	107°55.7	88°17.2	82°15.8	42°23.1	37°11.8	48°29.8	87°30.8	91°58.6
8	45°53.5	16.2'	08°27.0	-14.0'	54.9'	107°27.9	87°46.8	81°52.0	41°52.7	37°42.8	49°00.2	88°01.4	92°28.6
9	60°28.7	16.2'	$08^{\circ}13.1$	-14.0'	54.9'	107°00.2	87°16.4	81°28.3	41°22.3	38°13.6	49°30.6	88°31.9	92°58.5
10	75°03.9	16.3'	$07^{\circ}59.1$	-14.0'	54.9'	106°32.5	86°46.0	81°04.7	40°51.9	38°44.5	50°00.9	89°02.5	93°28.4
11	89°39.2	16.3'	$07^{\circ}45.1$	-14.0'	54.9'	106°04.8	86°15.6	80°41.0	40°21.6	39°15.4	50°31.2	89°33.0	93°58.3
12	104°14.5	16.4'	N07°31.1	-14.0'	54.8'	105°37.1	85°45.3	80°17.4	39°51.2	39°46.2	51°01.6	90°03.5	94°28.2
13	118°49.9	16.4'	$07^{\circ}17.1$	-14.0'	54.8'	105°09.5	85°15.0	79°53.9	39°20.9	40°17.0	51°31.8	90°34.0	94°58.0
14	133°25.3	16.5'	07°03.0	-14.1'	54.8'	104°41.9	84°44.7	79°30.3	38°50.6	40°47.8	52°02.1	91°04.5	95°27.8
15	148°00.8	16.5'	06°48.9	-14.1'	54.8'	104°14.3	84°14.5	79°06.8	38°20.4	41°18.5	52°32.3	91°34.9	95°57.6
16	162°36.3	16.6'	06°34.9	-14.1'	54.8'	103°46.7	83°44.2	78°43.4	37°50.1	41°49.3	53°02.5	92°05.4	96°27.3
17	177°11.9	16.6'	06°20.8	-14.1'	54.7'	103°19.2	83°14.0	78°20.0	37°19.9	42°20.0	53°32.7	92°35.8	96° 57.1
18	191°47.5	16.7'	N06°06.7	-14.1'	54.7'	102°51.6	82°43.8	77°56.6	36°49.7	42°50.7	54°02.9	93°06.1	97°26.8
19	206°23.1	16.7'	05°52.6	-14.1'	54.7'	102°24.1	82°13.6	77°33.3	36° 19.6	43°21.4	54°33.0	93°36.5	97° 56.5
20	220°58.8	16.7'	05°38.4	-14.1'	54.7'	101°56.7	81°43.5	77° 10.0	35°49.4	43°52.0	55°03.2	94°06.8	98° 26.2
21	235°34.5	16.8'	05°24.3	-14.1'	54.7'	101°29.2	81°13.4	76°46.7	35° 19.3	44°22.7	55°33.3	94°37.1	98° 55.8
22	250°10.3	16.8'	$05^{\circ}10.1$	-14.2'	54.6'	101°01.7	80°43.2	76°23.5	34°49.2	44°53.3	56°03.3	95°07.4	99°25.4
23	264°46.1	16.8'	04°56.0	-14.2'	54.6'	100°34.3	80°13.2	76°00.3	34°19.1	45°23.9	56°33.4	95°37.7	99°55.0
21 st	SD	= 15.0	Mer. pas	s. 04:51					Sun SD	= 16.3'			

Sun SD = 16.3'

h		Moor	n (22 nd De	ec)	·	Lunar Distance (objects with largest hourly LD delta)							
Sun	GHA	ν	Dec	d	HP	-Sun	-Antares	-Rigil Kent.	-Spica	+Regulus	+Mars	+Pollux	+Jupiter
0	279°22.0	16.9'	N 04°41.8	-14.2'	54.6'	100°06.9	79°43.1	75°37.2	33°49.0	20° 19.9	45°54.5	57°03.4	96°07.9
1	293°57.8	16.9'	04°27.6	-14.2'	54.6'	99°39.5	79°13.0	75° 14.1	33°19.0	20°49.8	46°25.1	57°33.5	96°38.1
2	308°33.8	16.9'	04°13.5	-14.2'	54.6'	99°12.2	78°43.0	74°51.1	32°48.9	21° 19.6	46°55.6	58°03.5	97°08.4
3	323°09.7	17.0'	03°59.3	-14.2'	54.6'	98° 44.8	78°13.0	74°28.1	32°18.9	21°49.5	47°26.1	58°33.5	97°38.5
4	337°45.7	17.0'	03°45.1	-14.2'	54.5	98° 17.5	77°43.0	74°05.1	31°48.9	22°19.3	47°56.7	59°03.4	98°08.7
5	352°21.7	17.0'	03°30.9	-14.2'	54.5'	97°50.2	77°13.0	73°42.2	31°18.9	22°49.1	48° 27.2	59°33.4	98°38.9
6	6°57.7	17.1'	N 03°16.7	-14.2'	54.5'	97°22.9	76°43.1	73° 19.3	30°49.0	23° 18.9	48°57.6	60°03.3	99°09.0
7	21°33.8	17.1'	03°02.5	-14.2'	54.5'	96° 55.6	76°13.1	72°56.5	30°19.0	23°48.7	49°28.1	60°33.2	99°39.1
8	36°09.9	17.1'	02°48.3	-14.2'	54.5'	96°28.3	75°43.2	72°33.8	29°49.1	24° 18.5	49°58.6	61°03.1	100°09.2
9	50°46.0	17.1'	02°34.1	-14.2'	54.5	96°01.1	75°13.3	72°11.0	29°19.2	24°48.3	50°29.0	61°33.0	100°39.3
10	65°22.2	17.2'	02°19.8	-14.2'	54.5'	95°33.9	74°43.4	71°48.3	28°49.3	25° 18.1	50°59.4	62°02.9	101°09.4
11	79°58.3	17.2'	02°05.6	-14.2'	54.4'	95°06.6	74°13.5	71°25.7	28°19.4	25°47.9	51°29.8	62°32.8	101°39.4
12	94°34.5	17.2'	N 01°51.4	-14.2'	54.4'	94° 39.4	73°43.6	71°03.1	27°49.6	26° 17.6	52°00.2	63°02.6	102°09.4
13	109°10.7	17.2'	01°37.2	-14.2'	54.4'	94°12.3	73°13.8	70°40.6	27°19.7	26°47.3	52°30.6	63°32.4	102°39.5
14	123°46.9	17.2'	01°23.0	-14.2'	54.4'	93°45.1	72°44.0	70°18.1	26°49.9	27° 17.1	53°01.0	64°02.2	103°09.5
15	138°23.2	17.3'	01°08.8	-14.2'	54.4	93°17.9	72°14.1	69°55.7	26°20.1	27°46.8	53°31.3	64°32.0	103°39.5
16	152°59.4	17.3'	00°54.6	-14.2'	54.4'	92°50.8	71°44.3	69°33.3	25°50.3	28° 16.5	54°01.7	65°01.8	104°09.4
17	167°35.7	17.3'	00°40.4	-14.2'	54.4'	92°23.7	71°14.5	69°11.0	25°20.5	28°46.2	54°32.0	65°31.6	104°39.4
18	182°12.0	17.3'	N00°26.2	-14.2'	54.4'	91°56.5	70°44.8	68°48.7	24°50.7	29° 15.9	55°02.3	66°01.3	105°09.3
19	196°48.3	17.3'	N00°12.0	-14.2'	54.3'	91°29.4	70°15.0	68°26.5	24°20.9	29°45.5	55°32.6	66°31.1	105°39.3
20	211°24.6	17.3'	S 00°02.2	-14.2'	54.3'	91°02.4	69°45.3	68°04.3	23°51.2	30° 15.2	56°02.9	67°00.8	106°09.2
21 22	226°00.9 240°37.3	17.3' 17.3'	00°16.4 00°30.6	-14.2' -14.2'	54.3' 54.3'	90° 35.3 90° 08.2	69°15.5 68°45.8	67° 42.2 67° 20.1	23°21.5 22°51.7	30°44.9 31°14.5	56°33.2 57°03.5	67°30.5 68°00.2	106°39.1 107°09.0
22	240°37.3 255°13.6	17.3' 17.3'	00°30.6 00°44.7	-14.2' -14.2'	54.3°	89°41.1	68° 45.8	66° 58.1	22°51.7 22°22.0	31° 14.5 31° 44.1	57° 03.5 57° 33.8	68°00.2	107°09.0 107°38.9
22 nd		= 14.9			34.3	Sun SD = 16.3'							
	30	- 14.9	ivier. pas	5. 05.51					Juli JD -	- 10.5			

h		Moor	n (23 rd De	ec)		Lunar Distance (objects with largest hourly LD delt.						D delta)	
Mon	GHA	ν	Dec	d	HP	-Sun	-Antares	-Rigil Kent.	-Spica	+Regulus	+Mars	+Pollux	+Jupiter
0	269°49.9	17.4'	S 00°58.9	-14.2'	54.3'	89°14.1	67°46.4	66°36.2	21°52.3	32°13.8	58°04.0	68°59.6	108°08.7
1	284°26.3	17.4'	$01^{\circ}13.1$	-14.1'	54.3'	88°47.1	67°16.7	66°14.3	21°22.6	32°43.4	58°34.3	69°29.3	108°38.6
2	299°02.7	17.4'	01°27.2	-14.1'	54.3'	88°20.0	66°47.0	65°52.5	20°52.9	33°13.0	59°04.5	69°59.0	109°08.5
3	313°39.0	17.4'	01°41.3	-14.1'	54.3'	87°53.0	66°17.3	65°30.7	20°23.2	33°42.6	59°34.7	70°28.6	109°38.3
4	328°15.4	17.4'	01°55.5	-14.1'	54.3'	87°26.0	65°47.6	65°09.0	19°53.6	34°12.2	60°05.0	70°58.3	110°08.1
5	342°51.7	17.4'	$02^{\circ}09.6$	-14.1'	54.3'	86°59.0	65°18.0	64°47.4	19°23.9	34°41.8	60°35.2	71°27.9	110°37.9
6	357°28.1	17.4'	S 02°23.7	-14.1'	54.2'	86°32.0	64°48.3	64°25.8	18°54.3	35°11.4	61°05.4	71°57.5	111°07.7
7	12°04.5	17.4'	02°37.8	-14.1'	54.2'	86°05.0	64°18.7	64°04.3	18°24.6	35°41.0	61°35.6	72°27.2	111°37.5
8	26°40.8	17.4'	02°51.9	-14.1'	54.2'	85°38.1	63°49.0	63°42.8	17°55.0	36°10.5	62°05.8	72°56.8	112°07.3
9	41°17.2	17.3'	03°05.9	-14.1'	54.2'	85°11.1	63°19.4	63°21.4	17°25.4	36°40.1	62°36.0	73°26.4	112°37.1
10	55°53.5	17.3'	03°20.0	-14.0'	54.2'	84°44.2	62°49.8	63°00.1	16°55.7	37°09.7	63°06.2	73°56.0	113°06.9
11	70°29.9	17.3'	03°34.0	-14.0'	54.2'	84°17.2	62°20.2	62°38.9	16°26.1	37°39.2	63°36.3	74°25.6	113°36.6
12	85°06.2	17.3'	S 03°48.0	-14.0'	54.2'	83°50.3	61°50.6	62°17.7	15°56.5	38°08.8	64°06.5	74°55.2	114°06.4
13	99°42.5	17.3'	04°02.0	-14.0'	54.2'	83°23.3	61°21.0	61°56.6	15°26.9	38°38.3	64°36.7	75°24.8	114°36.2
14	114°18.8	17.3'	$04^{\circ}16.0$	-14.0'	54.2'	82°56.4	60°51.4	61°35.5	14°57.3	39°07.8	65°06.9	75°54.3	115°05.9
15	128°55.1	17.3'	04°30.0	-14.0'	54.2'	82°29.5	60°21.8	61°14.5	14°27.7	39°37.4	65°37.0	76°23.9	115°35.6
16	143°31.4	17.3'	04°43.9	-13.9'	54.2'	82°02.5	59°52.2	60°53.6	13°58.2	40°06.9	66°07.2	76°53.5	116°05.4
17	158°07.7	17.3'	04°57.9	-13.9'	54.2'	81°35.6	59°22.6	60°32.8	13°28.6	40°36.4	66°37.3	77°23.0	116°35.1
18	172°44.0	17.2'	S 05°11.8	-13.9'	54.2'	81°08.7	58°53.0	60°12.1	12°59.0	41°06.0	67°07.5	77°52.6	117°04.8
19	187°20.2	17.2'	05°25.7	-13.9'	54.2'	80°41.8	58° 23.5	59°51.4	12°29.4	41°35.5	67°37.6	78° 22.2	117°34.5
20	201°56.4	17.2'	05°39.6	-13.9'	54.2'	80°14.9	57°53.9	59°30.8	11°59.9	42°05.0	68°07.8	78°51.7	118°04.2
21	216°32.6	17.2'	05°53.4	-13.8'	54.2'	79°48.0	57°24.3	59°10.3	11°30.3	42°34.5	68°37.9	79°21.3	118°33.9
22	231°08.8	17.2'	06°07.3	-13.8'	54.2'	79°21.1	56°54.7	58°49.9	11°00.7	43°04.1	69°08.1	79°50.8	119°03.6
23	245°45.0	17.1'	$06^{\circ}21.1$	-13.8'	54.2'	78°54.2	56°25.2	58°29.5	10°31.2	43°33.6	69°38.2	80°20.4	119°33.3
23 rd	SD	- 14 8'	Mer nas	s 06·10					Sun SD	- 16 3 [']			

h		Moor	n (24 th De	ec)		Lunar Distance (objects with largest hourly LD delta)							
Tue	GHA	ν	Dec	d	HP	-Sun	-Rigil Kent.	-Antares	±Spica	+Regulus	+Mars	+Pollux	+Capella
0	260°21.1	17.1'	S 06°34.9	-13.8'	54.2'	78° 27.3	58°09.2	55°55.6	10°01.6	44°03.1	70°08.4	80°49.9	110°37.4
1	274°57.3	17.1'	06°48.6	-13.7'	54.2'	78°00.4	57°49.1	55°26.1	9°32.1	44°32.6	70°38.5	81°19.4	111°05.3
2	289°33.4	17.1'	07°02.4	-13.7'	54.2'	77°33.5	57°29.0	54°56.5	9°02.5	45°02.1	71°08.7	81°49.0	111°33.2
3	304°09.4	17.0'	$07^{\circ}16.1$	-13.7'	54.2'	77°06.6	57°09.0	54°26.9	8°32.9	45°31.6	71°38.8	82°18.5	112°01.1
4	318°45.5	17.0'	07°29.8	-13.7'	54.2'	76°39.7	56°49.0	53°57.4	8°03.4	46°01.2	72°09.0	82°48.1	112°29.0
5	333°21.5	17.0'	07°43.4	-13.6'	54.1'	76°12.8	56°29.2	53°27.8	7°33.8	46°30.7	72°39.1	83°17.6	112°56.8
6	347°57.5	17.0'	S 07°57.1	-13.6'	54.1'	75°45.9	56°09.5	52°58.3	7°04.3	47°00.2	73°09.3	83°47.2	113°24.7
7	2°33.4	16.9'	08° 10.7	-13.6'	54.1'	75° 19.0	55°49.8	52°28.7	6°34.7	47° 29.7	73°39.4	84°16.7	113°52.6
8	17°09.4	16.9'	08°24.2	-13.6'	54.1'	74°52.1	55°30.3	51°59.1	6°05.2	47°59.2	74°09.6	84°46.2	114°20.4
9	31°45.3	16.9'	08°37.8	-13.5'	54.1'	74°25.2	55°10.9	51°29.6	5°35.6	48°28.8	74°39.8	85°15.8	114°48.2
10	46°21.1	16.8'	08°51.3	-13.5'	54.1'	73°58.3	54°51.5	51°00.0	5°06.1	48°58.3	75°09.9	85°45.3	115°16.0
11	60°57.0	16.8'	09°04.8	-13.5'	54.2'	73°31.4	54°32.3	50°30.4	4°36.5	49°27.8	75°40.1	86°14.9	115°43.8
12	75°32.7	16.8'	S 09° 18.3	-13.4'	54.2'	73°04.5	54°13.1	50°00.9	4°07.0	49° 57.4	76°10.3	86°44.4	116°11.6
13	90°08.5	16.7'	09°31.7	-13.4'	54.2'	72°37.6	53°54.1	49°31.3	3°37.4	50°26.9	76°40.4	87°14.0	116°39.4
14	104°44.2	16.7'	09°45.1	-13.4'	54.2'	72°10.7	53°35.2	49°01.7	3°07.9	50°56.4	77°10.6	87°43.6	117°07.2
15	119°19.9	16.6'	09°58.4	-13.3'	54.2'	71°43.8	53°16.3	48°32.1	2°38.3	51°26.0	77°40.8	88°13.1	117°34.9
16	133°55.5	16.6'	$10^{\circ}11.8$	-13.3'	54.2'	71°16.9	52°57.6	48°02.6	2°08.8	51°55.5	78°11.0	88°42.7	118°02.7
17	148°31.1	16.6'	$10^{\circ}25.1$	-13.3'	54.2'	70°50.0	52°39.0	47°33.0	1°39.3	52°25.1	78°41.2	89°12.3	118°30.4
18	163°06.7	16.5'	S 10°38.3	-13.2'	54.2'	70°23.1	52°20.5	47°03.4	1°09.9	52° 54.6	79°11.4	89°41.8	118°58.1
19	177°42.2	16.5'	10°51.5	-13.2'	54.2'	69°56.2	52°02.2	46°33.8	0°40.7	53°24.2	79°41.6	90°11.4	119°25.8
20	192°17.6	16.4'	$11^{\circ}04.7$	-13.1'	54.2'	69°29.2	51°43.9	46°04.2		53°53.8	80°11.8	90°41.0	119°53.5
21	206°53.1	16.4'	$11^{\circ}17.9$	-13.1'	54.2'	69°02.3	51°25.8	45°34.6		54°23.4	80°42.0	91°10.6	
22	221°28.4	16.3'	11°31.0	-13.1'	54.2'	68°35.4	51°07.8	45°04.9		54°52.9	81°12.3	91°40.2	
23	236°03.8	16.3'	$11^{\circ}44.1$	-13.0'	54.2'	68°08.4	50°49.9	44°35.3	1°19.3	55°22.5	81°42.5	92°09.8	
24 th	SD	= 14.8	Mer. pas	s. 06:49					Sun SD	= 16.3'			

h		Moor	n (25 th De	ec)		Lunar Distance (objects with largest hourly LD delta)							
Wed	GHA	ν	Dec	d	HP	-Sun	-Rigil Kent.	-Hadar	-Antares	+Spica	+Regulus	+Mars	+Pollux
0	250°39.0	16.2'	S 11°57.1	-13.0'	54.2'	67°41.5	50°32.2	48°53.9	44°05.7	1°48.8	55°52.1	82°12.8	92°39.4
1	265°14.3	16.2'	$12^{\circ}10.1$	-12.9'	54.2'	67° 14.5	50°14.6	48°38.6	43°36.1	2°18.3	56°21.7	82°43.0	93°09.0
2	279°49.4	16.1'	12°23.0	-12.9'	54.2'	66° 47.5	49°57.1	48°23.5	43°06.4	2°47.9	56°51.3	83°13.3	93°38.7
3	294°24.5	16.1'	12°35.9	-12.9'	54.2'	66°20.6	49°39.8		42°36.8	3°17.5	57°21.0	83°43.6	94°08.3
4	308°59.6	16.0'	12°48.8	-12.8'	54.2'	65°53.6	49°22.6		42°07.1	3°47.2	57°50.6	84°13.8	94°37.9
5	323°34.6	16.0'	$13^{\circ}01.6$	-12.8'	54.2'	65°26.6	49°05.5		41°37.4	4°16.8	58° 20.2	84°44.1	95°07.6
6	338°09.6	15.9'	S 13°14.4	-12.7'	54.2'	64°59.6	48°48.6		41°07.7	4°46.5	58° 49.9	85°14.4	95°37.2
7	352°44.5	15.8'	$13^{\circ}27.1$	-12.7'	54.2'	64°32.6	48°31.8		40°38.1	5°16.2	59° 19.5	85°44.8	96°06.9
8	7°19.3	15.8'	13°39.8	-12.6'	54.2'	64°05.6	48°15.2		40°08.4	5°45.8	59°49.2	86°15.1	96°36.6
9	21°54.1	15.7'	13°52.4	-12.6'	54.2'	63°38.6	47°58.7		39°38.7	6°15.5	60°18.9	86°45.4	97°06.3
10	36°28.8	15.7'	14°05.0	-12.5'	54.3'	63°11.5	47°42.4		39°08.9	6°45.2	60°48.6	87°15.8	97°36.0
11	51°03.5	15.6'	14°17.6	-12.5'	54.3'	62°44.5	47°26.3		38°39.2	7°15.0	61°18.3	87°46.1	98°05.7
12	65°38.1	15.5'	S 14°30.0	-12.4'	54.3'	62°17.4	47°10.3		38°09.5	7°44.7	61°48.0	88°16.5	98°35.4
13	80°12.6	15.5'	14°42.5	-12.4'	54.3'	61°50.4	46°54.4		37°39.7	8°14.4	62° 17.7	88°46.9	99°05.1
14	94°47.1	15.4'	$14^{\circ}54.9$	-12.3'	54.3'	61°23.3	46°38.8		37°10.0	8°44.2	62°47.4	89°17.3	99°34.9
15	109°21.5	15.3'	$15^{\circ}07.2$	-12.3'	54.3'	60°56.2	46°23.3		36°40.2	9°14.0	63°17.2	89°47.7	100°04.6
16	123°55.8	15.3'	$15^{\circ}19.5$	-12.2'	54.3'	60°29.1	46°08.0		36°10.4	9°43.8	63°46.9	90°18.1	100°34.4
17	138°30.1	15.2'	15°31.7	-12.2'	54.3'	60°02.0	45°52.8		35°40.6	10°13.5	64°16.7	90°48.6	101°04.2
18	153°04.3	15.1'	S 15°43.9	-12.1'	54.3'	59°34.9			35°10.8	10°43.4	64°46.5	91°19.0	101°34.0
19	167°38.5	15.1'	$15^{\circ}56.0$	-12.1'	54.3'	59°07.8			34°41.0	11°13.2	65°16.3	91°49.5	102°03.8
20	182°12.5	15.0'	$16^{\circ}08.1$	-12.0'	54.3'	58° 40.7			34°11.1	11°43.0	65°46.1	92°20.0	102°33.6
21	196°46.5	14.9'	$16^{\circ}20.1$	-11.9'	54.3'	58° 13.5			33°41.3	12°12.9	66° 15.9	92°50.5	103°03.4
22	211°20.5	14.9'	16°32.0	-11.9'	54.4'	57°46.4			33°11.4	12°42.7	66° 45.8	93°21.0	103°33.3
23	225°54.3	14.8'	16°43.9	-11.8'	54.4'	57°19.2			32°41.5	13°12.6	67° 15.6	93°51.5	104°03.1
25 th	SD	= 14.8'	Mer. pas	s. 07:30		SunSD = 16.3'							

h		Moor	n (26 th De	ec)			Lunar Distance (objects with largest hourly LD delta)							
Thu	GHA	ν	Dec	d	HP	-Sun	-Antares	+Spica	+Regulus	+Mars	+Procyon	+Pollux	+Sirius	ĺ

Thu	GHA	ν	Dec	d	HP	-Sun	-Antares	+Spica	+Regulus	+Mars	+Procyon	+Pollux	+Sirius
0	240°28.1	14.7'	S 16°55.7	-11.8'	54.4'	56°52.0	$32^{\circ}11.6$	13°42.5	67°45.5	94°22.0	100°26.2	104°33.0	105°51.6
1	255°01.8	14.6'	17°07.5	-11.7'	54.4'	56°24.8	31°41.7	14°12.4	68°15.4	94°52.6	100°54.1	105°02.9	106°12.0
2	269°35.4	14.6'	$17^{\circ}19.2$	-11.6'	54.4'	55°57.6	31°11.8	14°42.3	68°45.3	95°23.2	101°22.1	105°32.8	106°32.5
3	284°09.0	14.5'	17°30.8	-11.6'	54.4'	55°30.4	30°41.9	15° 12.3	69°15.2	95°53.8	101°50.0	106°02.7	106°52.9
4	298°42.5	14.4'	17°42.4	-11.5'	54.4'	55°03.1	$30^{\circ}11.9$	15°42.2	69°45.1	96°24.4	102°18.0	106°32.7	107°13.2
5	313°15.9	14.3'	17°53.9	-11.4'	54.4'	54°35.9	29°41.9	16° 12.2	70°15.1	96°55.0	102°45.9	107°02.6	107°33.6
6	327°49.2	14.2'	S 18°05.4	-11.4'	54.5'	54°08.6	29°12.0	16°42.2	70°45.0	97°25.7	103°13.9	107°32.6	107°53.9
7	342°22.4	14.2'	18° 16.7	-11.3'	54.5'	53°41.3	28°42.0	17° 12.2	71°15.0	97°56.3	103°41.8	108°02.6	108°14.1
8	356°55.6	14.1'	18°28.0	-11.2'	54.5'	53°14.0	28°11.9	17°42.2	71°45.0	98°27.0	104°09.8	108°32.6	108°34.4
9	11°28.7	14.0'	18° 39.3	-11.2'	54.5'	52°46.7	27°41.9	18° 12.2	72°15.0	98° 57.7	104°37.8	109°02.6	108°54.5
10	26°01.7	13.9'	18°50.5	-11.1'	54.5'	52°19.3	$27^{\circ}11.8$	18°42.3	72°45.1	99°28.4	105°05.8	109°32.6	109°14.7
11	40°34.6	13.8'	$19^{\circ}01.6$	-11.0'	54.5'	51°52.0	26°41.8	19°12.4	73°15.1	99°59.1	105°33.8	110°02.7	109°34.8
12	55°07.4	13.7'	S 19°12.6	-11.0'	54.5'	51°24.6	$26^{\circ}11.7$	19°42.4	73°45.2	100°29.9	106°01.8	110°32.7	109°54.9
13	69°40.1	13.7'	19°23.5	-10.9'	54.5'	50°57.3	25°41.6	20° 12.5	74°15.3	101°00.7	106°29.8	111°02.8	110°14.9
14	84°12.8	13.6'	19°34.4	-10.8'	54.6'	50°29.9	25°11.4	20°42.7	74°45.4	101°31.5	106°57.9	111°32.9	110°34.9
15	98°45.4	13.5'	19°45.2	-10.7'	54.6'	50°02.5	24°41.3	21°12.8	75°15.5	102°02.3	107°25.9	112°03.1	110°54.9
16	113°17.9	13.4'	19°55.9	-10.6'	54.6'	49°35.0	24°11.1	21°43.0	75°45.6	102°33.1	107°53.9	112°33.2	111°14.8
17	127°50.3	13.3'	20°06.6	-10.6'	54.6'	49°07.6	23°40.9	22°13.2	76°15.8	103°04.0	108°22.0	113°03.4	111°34.7
18	142°22.6	13.2'	S 20°17.2	-10.5'	54.6'	48°40.1	23°10.7	22°43.4	76°46.0	103°34.9	108°50.0	113°33.5	111°54.5
19	156°54.8	13.1'	20°27.7	-10.4'	54.6'	48°12.6	22°40.5	23° 13.6	77°16.2	104°05.8	109°18.1	114°03.7	112°14.2
20	171°27.0	13.0'	20°38.1	-10.3'	54.7'	47°45.1	22°10.3	23°43.8	77°46.4	104°36.7	109°46.1	114°34.0	112°34.0
21	185°59.0	13.0'	20°48.4	-10.2'	54.7'	47°17.6	21°40.0	24°14.1	78°16.6	105°07.6	110°14.2	115°04.2	112°53.6
22	200°31.0	12.9'	20°58.6	-10.2'	54.7'	46°50.1	21°09.7	24°44.4	78°46.9	105°38.6	110°42.2	115°34.5	113°13.2
23	215°02.8	12.8'	21°08.8	-10.1'	54.7'	46°22.6	20°39.4	25°14.7	79°17.2	106°09.6	111°10.3	116°04.8	113°32.8
26 th	SD	= 14.8'	Mer. pas	s. 08:13		$Sun\;SD=16.3'$							

h Moon (27 th Dec) Lunar Distance (objects with largest hou	hourly LD delta)
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Fri	GHA	ν	Dec	d	HP	-Sun	-Antares	+Spica	+Arcturus	+Regulus	+Mars	+Procyon	+Pollux
0	229°34.6	12.7'	S 21°18.9	-10.0'	54.7'	45°55.0	20°09.1	25°45.0	42°05.6	79°47.5	106°40.6	111°38.4	116°35.1
1	244°06.3	12.6'	21°28.9	-9.9'	54.7'	45°27.4	19°38.7	26° 15.4	42°23.8	80°17.8	107°11.6	112°06.5	117°05.4
2	258°37.9	12.5'	21°38.8	-9.8'	54.8'	44°59.8	19°08.4	26°45.7	42°42.2	80°48.1	107°42.7	112°34.6	117°35.7
3	273°09.4	12.4'	21°48.6	-9.7'	54.8'	44°32.2	18°38.0	27°16.1	43°00.8	81°18.5	108° 13.7	113°02.7	118°06.1
4	287°40.8	12.3'	21°58.3	-9.6'	54.8'	44°04.6	18°07.6	27°46.5	43° 19.6	81°48.9	108°44.8	113°30.8	118°36.5
5	302°12.1	12.2'	22°07.9	-9.5'	54.8'	43°36.9	17°37.1	28°17.0	43°38.6	82°19.3	109°16.0	113°58.9	119°06.9
6	316°43.3	12.1'	S 22°17.5	-9.4'	54.8'	43°09.2	17°06.7	28°47.4	43°57.7	82°49.7	109°47.1	114°27.0	119°37.3
7	331°14.5	12.0'	22°26.9	-9.4'	54.8'	42°41.5	16°36.2	29°17.9	44°17.1	83°20.2	110°18.3	114°55.1	į į
8	345°45.5	11.9'	22°36.3	-9.3'	54.9'	42°13.8	16°05.7	29°48.4	44°36.6	83°50.7	110°49.5	115°23.2	
9	0°16.5	11.8'	22°45.5	-9.2'	54.9'	41°46.1	15°35.2	30°18.9	44° 56.3	84°21.2	111°20.7	115°51.3	
10	14°47.3	11.7'	22°54.7	-9.1'	54.9'	41°18.3	15°04.6	30°49.5	45° 16.2	84°51.7	111°51.9	116°19.4	
11	29°18.0	11.7'	23°03.8	-9.0'	54.9'	40°50.6	14°34.1	31°20.0	45°36.2	85°22.3	112°23.2	116°47.5	
12	43°48.7	11.6'	S 23°12.7	-8.9'	54.9'	40°22.8	14°03.5	31°50.6	45°56.4	85°52.8	112°54.5	117°15.6	
13	58°19.3	11.5'	$23^{\circ}21.6$	-8.8'	54.9'		13°32.9	32°21.3	46° 16.8	86°23.4	113°25.8	117°43.7	i i
14	72°49.7	11.4'	23°30.4	-8.7'	55.0'		13°02.2	32°51.9	46° 37.4	86°54.0	113°57.1	118°11.8	
15	87°20.1	11.3'	23°39.0	-8.6'	55.0'		12°31.6	33°22.6	46°58.1	87°24.7	114°28.5	118°39.9	
16	101°50.4	11.2'	23°47.6	-8.4'	55.0'		12°00.9	33°53.2	47° 18.9	87°55.4	114°59.9	119°08.0	
17	116°20.5	11.1'	23°56.0	-8.3'	55.0'		11°30.1	34°24.0	47°39.9	88°26.1	115°31.3	119°36.1	
18	130°50.6	11.0'	S 24°04.4	-8.2'	55.0'		10°59.4	34°54.7	48°01.1	88°56.8	116°02.7		
19	145°20.6	10.9'	$24^{\circ}12.6$	-8.1'	55.1'		10°28.6	35°25.5	48°22.4	89°27.5	116°34.2		i i
20	159°50.5	10.8'	24°20.7	-8.0'	55.1'		9°57.9	35°56.3	48°43.8	89°58.3	117°05.7		
21	174°20.3	10.7'	24°28.7	-7.9'	55.1'		9°27.0	36°27.1	49°05.4	90°29.1	117°37.2		
22	188°50.0	10.6'	24°36.6	-7.8'	55.1'		8°56.2	36°57.9	49°27.1	90°59.9	118°08.8		
23	203°19.6	10.5'	24°44.4	-7.7'	55.1'		8°25.3	37°28.8	49°48.9	91°30.7	118°40.3		
27 th	SD	= 14.9'	Mer. pass	. 08:59					Sun SI	0 = 16.3'			

I_	Moon (28 th Dec)	Lunar Distance
n	MOOD 178 LIECT	I linar i listance

Sat	GHA	ν	Dec	d	HP	± Antares	+Spica	+Arcturus	+Regulus
0	217°49.1	10.4'	S 24°52.1	-7.6'	55.2'	7°54.5	37°59.7	50° 10.9	92°01.6
1	232°18.5	10.3'	24°59.7	-7.4'	55.2'	7°23.5	38°30.6	50°33.1	92°32.5
2	246°47.8	10.2'	$25^{\circ}07.1$	-7.3'	55.2'	6°52.6	39°01.5	50°55.3	93°03.4
3	261°17.0	10.1'	$25^{\circ}14.5$	-7.2'	55.2'	6°21.6	39°32.5	51° 17.7	93°34.4
4	275°46.1	10.0'	25°21.7	-7.1'	55.2'	5°50.7	40°03.5	51°40.2	94°05.3
5	290°15.2	9.9'	25°28.8	-7.0'	55.3'	5°19.6	40°34.5	52°02.8	94°36.3
6	304°44.1	9.8'	S 25°35.7	-6.8'	55.3'	4°48.6	41°05.5	52°25.6	95°07.3
7	319°12.9	9.7'	25°42.6	-6.7'	55.3'	4°17.5	41°36.6	52°48.4	95°38.4
8	333°41.7	9.7'	25°49.3	-6.6'	55.3'	3°46.4	42°07.7	53°11.4	96°09.5
9	348°10.3	9.6'	25°55.9	-6.5'	55.4'	3°15.3	42°38.8	53° 34.5	96°40.6
10	2°38.9	9.5'	26°02.4	-6.3'	55.4'	2°44.2	43°10.0	53° 57.7	97°11.7
11	17°07.4	9.4'	$26^{\circ}08.7$	-6.2'	55.4'	2°13.0	43°41.2	54°21.0	97°42.9
12	31°35.8	9.3'	S 26°14.9	-6.1'	55.4'	1°41.8	44°12.4	54°44.5	98°14.0
13	46°04.0	9.2'	$26^{\circ}21.0$	-6.0'	55.4'	1°10.7	44°43.6	55°08.0	98°45.3
14	60°32.2	9.1'	26°27.0	-5.8'	55.5'	0°39.6	45°14.9	55°31.6	99°16.5
15	75°00.4	9.0'	26°32.8	-5.7'	55.5'		45°46.2	55°55.4	99°47.8
16	89°28.4	8.9'	$26^{\circ}38.5$	-5.6'	55.5'		46°17.5	56° 19.2	100°19.1
17	103°56.3	8.9'	$26^{\circ}44.1$	-5.4'	55.5'		46°48.8	56°43.2	100°50.4
18	118°24.2	8.8'	S 26°49.5	-5.3'	55.6'	1°26.3	47°20.2	57°07.2	101°21.7
19	132°51.9	8.7'	26°54.8	-5.2'	55.6'	1°57.6	47°51.6	57°31.4	101°53.1
20	147°19.6	8.6'	$26^{\circ}59.9$	-5.0'	55.6'	2°29.0	48°23.0	57°55.6	102°24.5
21	161°47.2	8.5'	27°05.0	-4.9'	55.6'	3°00.5	48°54.5	58° 19.9	102°55.9
22	176°14.7	8.4'	27°09.8	-4.7'	55.6'	3°31.9	49°25.9	58° 44.4	103°27.4
23	190°42.2	8.4'	27° 14.6	-4.6'	55.7'	4°03.4	49°57.5	59°08.9	103°58.9
28 th	SD	= 15.0'	Mer. pass	. 09:49					

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

Sun	GHA	ν	Dec	d	HP	+Antares	+Hadar	+Spica	+Acrux	+Arcturus	+Regulus
0	205°09.5	8.3'	S 27°19.2	-4.4'	55.7'	4°35.0		50°29.0		59°33.5	104°30.4
1	219°36.8	8.2'	27°23.6	-4.3'	55.7'	5°06.5		51°00.6		59°58.2	105°01.9
2	234°04.0	8.1'	27°27.9	-4.2'	55.7'	5°38.1		51°32.2		60°23.0	105°33.5
3	248°31.1	8.0'	$27^{\circ}32.1$	-4.0'	55.8'	6°09.7		52°03.8		60°47.8	106°05.1
4	262°58.2	8.0'	$27^{\circ}36.1$	-3.9'	55.8'	6°41.4		52°35.4		61°12.8	106°36.7
5	277°25.1	7.9'	$27^{\circ}39.9$	-3.7'	55.8'	7°13.1		53°07.1		61°37.8	107°08.4
6	291°52.0	7.8'	S 27°43.7	-3.6'	55.8'	7°44.8		53°38.8		62°02.9	107°40.1
7	306°18.9	7.8'	27°47.2	-3.4'	55.9'	8°16.5		54°10.6		62°28.1	108°11.8
8	320°45.6	7.7'	27°50.6	-3.3'	55.9'	8°48.3		54°42.3		62°53.4	108°43.5
9	335°12.3	7.6'	27°53.9	-3.1'	55.9'	9°20.1		55°14.1		63°18.7	109°15.3
10	349°38.9	7.6'	27°57.0	-3.0'	55.9'	9°51.9		55°45.9		63°44.2	109°47.1
11	4°05.5	7.5'	28°00.0	-2.8'	56.0'	10°23.7		56° 17.8		64°09.7	110°18.9
12	18°32.0	7.4'	S 28°02.8	-2.7'	56.0'	10°55.6		56°49.7		64°35.3	110°50.8
13	32°58.4	7.4'	28°05.4	-2.5'	56.0'	11°27.5		57°21.6		65°00.9	111°22.7
14	47°24.8	7.3'	28°07.9	-2.3'	56.0'	11°59.5		57°53.5		65°26.6	111°54.6
15	61°51.1	7.2'	28°10.3	-2.2'	56.0'	12°31.4		58°25.5		65°52.4	112°26.5
16	76°17.3	7.2'	28°12.5	-2.0'	56.1'	13°03.4		58° 57.5		66°18.3	112°58.5
17	90°43.5	7.1'	28°14.5	-1.9'	56.1'	13°35.4	47°00.9	59°29.5		66°44.2	113°30.5
18	105°09.7	7.1'	S 28°16.4	-1.7'	56.1'	14°07.5	47°16.2	60°01.6		67°10.2	114°02.5
19	119°35.7	7.0'	$28^{\circ}18.1$	-1.6'	56.1'	14°39.6	47°31.7	60°33.6		67°36.3	114°34.6
20	134°01.8	7.0'	$28^{\circ}19.6$	-1.4'	56.2'	15°11.7	47°47.5	61°05.8	59°28.7	68°02.4	115°06.7
21	148°27.8	6.9'	$28^{\circ}21.0$	-1.2'	56.2'	15°43.8	48°03.5	61°37.9	59°43.9	68°28.6	115°38.8
22	162°53.7	6.9'	28°22.3	-1.1'	56.2'	16°16.0	48°19.7	62°10.1	59°59.3	68°54.8	116°10.9
23	177°19.6	6.8'	28°23.3	-0.9'	56.2'	16°48.2	48°36.1	62°42.3	60°14.8	69°21.1	116°43.1
29 th	SD =	= 15.2	Mer. pas	s. 10:43	3						

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

			(/									
Mon	GHA	ν	Dec	d	HP	+Antares	+Rigil Kent.	+Hadar	+Acrux	+Spica	+Arcturus	+Regulus	
0	191°45.4	6.8'	S 28°24.2	-0.7'	56.3'	17°20.4	44°55.5	48°52.7	60°30.4	63°14.5	69°47.5	117°15.3	
1	$206^{\circ}11.2$	6.8'	28°25.0	-0.6'	56.3'	17°52.7	45°11.1	49°09.5	60°46.2	63°46.7	70°13.9	117°47.5	
2	220°37.0	6.7'	28° 25.5	-0.4'	56.3'	18°24.9	45°26.9	49°26.6	61°02.2	64°19.0	70°40.4	118°19.8	
3	235°02.7	6.7'	28°26.0	-0.2'	56.3'	18°57.3	45°43.0	49°43.8	61°18.2	64°51.3	71°07.0	118°52.0	
4	249°28.4	6.7'	28°26.2	-0.1'	56.4'	19°29.6	45°59.3	50°01.3		65°23.7	71°33.6	119°24.3	
5	263°54.1	6.6'	$28^{\circ}26.3$	0.1'	56.4'	20°02.0	46°15.8	50°18.9	61°50.8	65°56.0	72°00.3	119°56.7	
6	$278^{\circ}19.7$	6.6'	S 28°26.2	0.2'	56.4'			<u>'</u>	lew Moon -	·	<u></u>	'	
7	292°45.3	6.6'	28° 26.0	0.4'	56.4'			r	New Moon -				
8	$307^{\circ}10.8$	6.5'	28° 25.5	0.6'	56.5'								
9	321°36.4	6.5'	28°25.0	0.7'	56.5'								
10	$336^{\circ}01.9$	6.5'	28° 24.2	0.9'	56.5'				New Moon -				
11	350°27.4	6.5'	28°23.3	1.1'	56.5'				New Moon -				
12	4°52.9	6.5'	S 28°22.2	1.3'	56.5'								
13	$19^{\circ}18.3$	6.4'	$28^{\circ}21.0$	1.4'	56.6'								
14	33°43.8	6.4'	$28^{\circ}19.5$	1.6'	56.6'				New Moon -				
15	48°09.2	6.4'	$28^{\circ}17.9$	1.8'	56.6'								
16	62°34.6	6.4'	$28^{\circ}16.2$	1.9'	56.6'								
17	77°00.0	6.4'	28° 14.3	2.1'	56.7'				New Moon -				
18	91°25.4	6.4'	S 28°12.2	2.3'	56.7'			r	New Moon -				
19	105°50.8	6.4'	28°09.9	2.4'	56.7'								
20	$120^{\circ}16.1$	6.4'	28°07.5	2.6'	56.7'								
21	134°41.5	6.4'	28°04.9	2.8'	56.8'			r	New Moon -				
22	149°06.9	6.4'	$28^{\circ}02.1$	2.9'	56.8'								
23	163°32.3	6.4'	27°59.2	3.1'	56.8'				New Moon -				
30 th	SD =	= 15.3′	Mer. pas	s. 11:40)								

h	Moon (31st Dec)	Lunar Distance
11	IVIOON LATERIAL	I IIIIAL I ASIANCE

Tue	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Venus
0	177°57.7	6.4'	S 27°56.1	3.3'	56.8'		– New Moon –	
1	192°23.1	6.4'	27°52.8	3.4'	56.9'		– New Moon –	
2	206°48.5	6.4'	27°49.3	3.6'	56.9'		– New Moon –	
3	221°13.9	6.4'	27°45.7	3.8'	56.9'		– New Moon –	
4	235°39.3	6.4'	$27^{\circ}41.9$	3.9'	56.9'		– New Moon –	
5	250°04.8	6.5'	27°38.0	4.1'	56.9'		– New Moon –	
6	264°30.2	6.5'	S 27°33.9	4.3'	57.0'		– New Moon –	
7	278°55.7	6.5'	27°29.6	4.5'	57.0'		– New Moon –	
8	293°21.2	6.5'	$27^{\circ}25.1$	4.6'	57.0'		– New Moon –	
9	307°46.7	6.5'	$27^{\circ}20.5$	4.8'	57.0'		– New Moon –	
10	322°12.2	6.6'	$27^{\circ}15.7$	4.9'	57.1'		– New Moon –	
11	336°37.8	6.6'	$27^{\circ}10.8$	5.1'	57.1'		– New Moon –	
12	351°03.4	6.6'	S 27°05.7	5.3'	57.1'		– New Moon –	
13	5°29.0	6.6'	27°00.4	5.4'	57.1'		– New Moon –	
14	19°54.6	6.7'	26°55.0	5.6'	57.1'		– New Moon –	
15	34°20.3	6.7'	26°49.3	5.8'	57.2'		– New Moon –	
16	48° 46.0	6.7'	26°43.6	5.9'	57.2'	55°01.0	46°23.1	37°59.5
17	63°11.8	6.8'	26°37.6	6.1'	57.2'	54°27.8	45°53.3	37°28.9
18	77° 37.6	6.8'	S 26°31.6	6.3'	57.2'	53°54.6	45° 23.6	36°58.3
19	92°03.4	6.9'	$26^{\circ}25.3$	6.4'	57.3'	53°21.4	44°53.8	36°27.6
20	106°29.3	6.9'	$26^{\circ}18.9$	6.6'	57.3'	52°48.2	44°24.1	35°56.9
21	120°55.2	7.0'	$26^{\circ}12.3$	6.7'	57.3'	52°15.0	43°54.5	35°26.2
22	135°21.1	7.0'	26°05.6	6.9'	57.3'	51°41.7	43° 24.9	34°55.4
23	149°47.1	7.0'	25°58.7	7.1'	57.3'	51°08.4	42°55.4	34°24.7
31 st	SD =	= 15.5′	Mer. pass	s. 12:3	7			