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

Mon	GHA	ν	Dec	d	HP	-Venus	-Spica	-Regulus	-Jupiter	+Pollux	+Betelgeuse	+Capella	+Aldebaran
0	266°57.8	9.2'	**N**18°38.3	-12.5'	58.7'	74°27.9	72°48.6	18°45.0	12°59.3	18°36.6	45°16.0	52°21.6	61°35.8
1	281°26.0	9.4'	18°25.8	-12.6'	58.7'	73°51.9	72°13.8	18°10.3	12°24.8	19°10.6	45°46.4	52°53.5	62°09.8
2	295°54.4	9.5'	18°13.1	-12.7'	58.7'	73°16.0	71°39.1	17°35.6	11°50.4	19°44.7	46°16.9	53°25.5	62°43.9
3	310°22.9	9.6'	18°00.4	-12.8'	58.6'	72°40.1	71°04.4	17°00.9	11°16.0	20°18.7	46°47.4	53°57.5	63°17.9
4	324°51.4	9.7'	17°47.6	-12.9'	58.6'	72°04.2	70°29.7	16°26.2	10°41.6	20°52.7	47°18.0	54°29.5	63°51.8
5	339°20.1	9.8'	17°34.8	-13.0'	58.6'	71°28.4	69°55.1	15°51.6	10°07.3	21°26.8	47°48.6	55°01.5	64°25.8
6	353°48.9	9.9'	**N**17°21.8	-13.1'	58.6'	70°52.5	69°20.5	15°17.0	9°32.9	22°00.9	48°19.2	55°33.5	64°59.8
7	8°17.8	10.0'	17°08.7	-13.1'	58.5'	70°16.8	68°45.9	14°42.4	8°58.7	22°34.9	48°49.9	56°05.6	65°33.7
8	22°46.7	10.1'	16°55.6	-13.2'	58.5'	69°41.0	68°11.3	14°07.8	8°24.4	23°09.0	49°20.7	56°37.6	66°07.6
9	37°15.8	10.2'	16°42.4	-13.3'	58.5'	69°05.3	67°36.7	13°33.3	7°50.2	23°43.1	49°51.4	57°09.7	66°41.5
10	51°45.0	10.3'	16°29.1	-13.4'	58.5'	68°29.6	67°02.2	12°58.8	7°16.0	24°17.1	50°22.3	57°41.7	67°15.4
11	66°14.3	10.4'	16°15.7	-13.4'	58.5'	67°53.9	66°27.7	12°24.4	6°41.9	24°51.2	50°53.1	58°13.8	67°49.3
12	80°43.7	10.5'	**N**16°02.3	-13.5'	58.4'	67°18.2	65°53.3	11°49.9	6°07.8	25°25.2	51°24.0	58°45.9	68°23.1
13	95°13.2	10.6'	15°48.8	-13.6'	58.4'	66°42.6	65°18.8	11°15.5	5°33.7	25°59.3	51°54.9	59°18.0	68°56.9
14	109°42.8	10.7'	15°35.2	-13.7'	58.4'	66°07.0	64°44.4	10°41.2	4°59.7	26°33.3	52°25.9	59°50.0	69°30.7
15	124°12.5	10.8'	15°21.5	-13.7'	58.4'	65°31.5	64°10.0	10°06.9	4°25.8	27°07.3	52°56.9	60°22.1	70°04.5
16	138°42.3	10.9'	15°07.8	-13.8'	58.3'	64°55.9	63°35.7	9°32.6	3°51.9	27°41.3	53°27.9	60°54.2	70°38.2
17	153°12.1	11.0'	14°54.0	-13.9'	58.3'	64°20.4	63°01.3	8°58.3	3°18.1	28°15.4	53°58.9	61°26.3	71°12.0
18	167°42.1	11.1'	**N**14°40.1	-13.9'	58.3'	63°45.0	62°27.0	8°24.1	2°44.5	28°49.3	54°30.0	61°58.4	71°45.7
19	182°12.2	11.2'	14°26.2	-14.0'	58.3'	63°09.5	61°52.7	7°49.9	2°11.2	29°23.3	55°01.0	62°30.5	72°19.4
20	196°42.3	11.2'	14°12.2	-14.1'	58.3'	62°34.1	61°18.5	7°15.8	1°38.3	29°57.3	55°32.1	63°02.6	72°53.1
21	211°12.6	11.3'	13°58.1	-14.1'	58.2'	61°58.7	60°44.3	6°41.7		30°31.3	56°03.2	63°34.7	73°26.7
22	225°42.9	11.4'	13°44.0	-14.2'	58.2'	61°23.3	60°10.0	6°07.7		31°05.2	56°34.4	64°06.7	74°00.4
23	240°13.3	11.5'	13°29.8	-14.2'	58.2'	60°48.0	59°35.9	5°33.8		31°39.1	57°05.5	64°38.8	74°34.0
2nd	SD = 16.0′ Mer. pass. 06:26												

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

Tue	GHA	ν	Dec	d	HP	-Sun	-Venus	-Spica	±Regulus	+Jupiter	+Mars	+Pollux	+Aldebaran
0	254°43.8	11.6'	**N**13°15.6	-14.3'	58.2'	75°21.9	60°12.7	59°01.7	5°00.0		5°47.1	32°13.0	75°07.5
1	269°14.4	11.7'	13°01.3	-14.3'	58.1'	74°50.4	59°37.4	58°27.6	4°26.2		6°19.6	32°46.9	75°41.1
2	283°45.1	11.8'	12°47.0	-14.4'	58.1'	74°18.9	59°02.2	57°53.5	3°52.7		6°52.2	33°20.8	76°14.7
3	298°15.9	11.8'	12°32.6	-14.4'	58.1'	73°47.4	58°27.0	57°19.4	3°19.3	2°26.3	7°24.7	33°54.6	76°48.2
4	312°46.7	11.9'	12°18.1	-14.5'	58.1'	73°15.9	57°51.8	56°45.3	2°46.3	2°59.6	7°57.3	34°28.5	77°21.7
5	327°17.6	12.0'	12°03.6	-14.5'	58.1'	72°44.5	57°16.6	56°11.3	2°13.8	3°33.0	8°29.9	35°02.3	77°55.2
6	341°48.6	12.1'	**N**11°49.1	-14.6'	58.0'	72°13.1	56°41.5	55°37.3		4°06.4	9°02.6	35°36.1	78°28.6
7	356°19.7	12.2'	11°34.5	-14.6'	58.0'	71°41.7	56°06.4	55°03.3		4°40.0	9°35.2	36°09.9	79°02.1
8	10°50.9	12.2'	11°19.9	-14.7'	58.0'	71°10.4	55°31.3	54°29.4		5°13.5	10°07.8	36°43.7	79°35.5
9	25°22.1	12.3'	11°05.2	-14.7'	58.0'	70°39.0	54°56.3	53°55.4		5°47.0	10°40.4	37°17.4	80°08.9
10	39°53.4	12.4'	10°50.4	-14.8'	57.9'	70°07.7	54°21.3	53°21.5		6°20.6	11°12.9	37°51.1	80°42.2
11	54°24.8	12.5'	10°35.7	-14.8'	57.9'	69°36.5	53°46.3	52°47.7		6°54.1	11°45.5	38°24.9	81°15.6
12	68°56.3	12.5'	**N**10°20.9	-14.8'	57.9'	69°05.2	53°11.3	52°13.8		7°27.7	12°18.1	38°58.6	81°48.9
13	83°27.8	12.6'	10°06.0	-14.9'	57.9'	68°34.0	52°36.4	51°40.0		8°01.2	12°50.6	39°32.2	82°22.2
14	97°59.4	12.7'	09°51.2	-14.9'	57.9'	68°02.8	52°01.5	51°06.2	3°05.1	8°34.7	13°23.1	40°05.9	82°55.5
15	112°31.1	12.7'	09°36.2	-14.9'	57.8'	67°31.6	51°26.6	50°32.4	3°38.0	9°08.2	13°55.6	40°39.5	83°28.8
16	127°02.8	12.8'	09°21.3	-15.0'	57.8'	67°00.5	50°51.8	49°58.6	4°11.2	9°41.6	14°28.1	41°13.1	84°02.0
17	141°34.6	12.9'	09°06.3	-15.0'	57.8'	66°29.4	50°16.9	49°24.9	4°44.5	10°15.1	15°00.6	41°46.7	84°35.2
18	156°06.5	12.9'	**N**08°51.3	-15.0'	57.8'	65°58.3	49°42.1	48°51.2	5°17.8	10°48.5	15°33.1	42°20.3	85°08.4
19	170°38.4	13.0'	08°36.3	-15.1'	57.7'	65°27.2	49°07.4	48°17.5	5°51.2	11°21.9	16°05.5	42°53.8	85°41.6
20	185°10.4	13.1'	08°21.2	-15.1'	57.7'	64°56.1	48°32.6	47°43.9	6°24.7	11°55.3	16°37.9	43°27.4	86°14.7
21	199°42.5	13.1'	08°06.1	-15.1'	57.7'	64°25.1	47°57.9	47°10.3	6°58.1	12°28.6	17°10.3	44°00.9	86°47.8
22	214°14.6	13.2'	07°51.0	-15.2'	57.7'	63°54.1	47°23.3	46°36.6	7°31.6	13°02.0	17°42.7	44°34.4	87°20.9
23	228°46.8	13.2'	07°35.8	-15.2'	57.7'	63°23.1	46°48.6	46°03.1	8°05.1	13°35.3	18°15.0	45°07.8	87°54.0
3rd	SD = 15.9′ Mer. pass. 07:15					Sun SD = 16.1′							

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

Wed	GHA	ν	Dec	d	HP	-Hadar	-Sun	-Venus	-Spica	+Regulus	+Jupiter	+Pollux	+Aldebaran
0	243°19.0	13.3'	**N**07°20.6	-15.2'	57.6'	78°52.8	62°52.2	46°14.0	45°29.5	8°38.5	14°08.6	45°41.3	88°27.0
1	257°51.3	13.3'	07°05.4	-15.2'	57.6'	78°27.1	62°21.3	45°39.4	44°56.0	9°12.0	14°41.9	46°14.7	89°00.1
2	272°23.6	13.4'	06°50.2	-15.2'	57.6'	78°01.4	61°50.4	45°04.8	44°22.5	9°45.4	15°15.1	46°48.1	89°33.1
3	286°56.0	13.4'	06°35.0	-15.3'	57.6'	77°35.8	61°19.5	44°30.3	43°49.0	10°18.9	15°48.3	47°21.5	90°06.1
4	301°28.4	13.5'	06°19.7	-15.3'	57.5'	77°10.2	60°48.7	43°55.7	43°15.5	10°52.3	16°21.6	47°54.9	90°39.0
5	316°00.9	13.5'	06°04.4	-15.3'	57.5'	76°44.7	60°17.9	43°21.3	42°42.1	11°25.7	16°54.7	48°28.2	91°12.0
6	330°33.5	13.6'	**N**05°49.1	-15.3'	57.5'	76°19.2	59°47.1	42°46.8	42°08.7	11°59.1	17°27.9	49°01.5	91°44.9
7	345°06.1	13.6'	05°33.8	-15.3'	57.5'	75°53.8	59°16.3	42°12.4	41°35.3	12°32.4	18°01.0	49°34.8	92°17.8
8	359°38.7	13.7'	05°18.5	-15.3'	57.5'	75°28.5	58°45.5	41°38.0	41°02.0	13°05.8	18°34.2	50°08.1	92°50.6
9	14°11.4	13.7'	05°03.2	-15.3'	57.4'	75°03.1	58°14.8	41°03.6	40°28.6	13°39.1	19°07.3	50°41.4	93°23.5
10	28°44.1	13.8'	04°47.8	-15.4'	57.4'	74°37.9	57°44.1	40°29.2	39°55.3	14°12.5	19°40.3	51°14.6	93°56.3
11	43°16.9	13.8'	04°32.5	-15.4'	57.4'	74°12.7	57°13.5	39°54.9	39°22.1	14°45.8	20°13.4	51°47.8	94°29.1
12	57°49.7	13.9'	**N**04°17.1	-15.4'	57.4'	73°47.5	56°42.8	39°20.6	38°48.8	15°19.0	20°46.4	52°21.0	95°01.8
13	72°22.6	13.9'	04°01.7	-15.4'	57.3'	73°22.5	56°12.2	38°46.3	38°15.6	15°52.3	21°19.4	52°54.2	95°34.6
14	86°55.5	13.9'	03°46.3	-15.4'	57.3'	72°57.4	55°41.6	38°12.1	37°42.4	16°25.5	21°52.4	53°27.3	96°07.3
15	101°28.4	14.0'	03°30.9	-15.4'	57.3'	72°32.5	55°11.0	37°37.9	37°09.2	16°58.7	22°25.4	54°00.5	96°40.0
16	116°01.4	14.0'	03°15.5	-15.4'	57.3'	72°07.6	54°40.5	37°03.7	36°36.0	17°31.9	22°58.3	54°33.6	97°12.7
17	130°34.4	14.0'	03°00.2	-15.4'	57.3'	71°42.7	54°10.0	36°29.5	36°02.9	18°05.1	23°31.2	55°06.7	97°45.3
18	145°07.4	14.1'	**N**02°44.8	-15.4'	57.2'	71°17.9	53°39.5	35°55.4	35°29.8	18°38.3	24°04.1	55°39.7	98°18.0
19	159°40.5	14.1'	02°29.4	-15.4'	57.2'	70°53.2	53°09.0	35°21.3	34°56.7	19°11.4	24°37.0	56°12.8	98°50.6
20	174°13.6	14.1'	02°14.0	-15.4'	57.2'	70°28.6	52°38.6	34°47.2	34°23.6	19°44.5	25°09.8	56°45.8	99°23.2
21	188°46.7	14.2'	01°58.6	-15.4'	57.2'	70°04.0	52°08.2	34°13.2	33°50.6	20°17.6	25°42.6	57°18.8	99°55.7
22	203°19.8	14.2'	01°43.2	-15.4'	57.1'	69°39.5	51°37.8	33°39.2	33°17.6	20°50.6	26°15.5	57°51.8	100°28.2
23	217°53.0	14.2'	01°27.8	-15.4'	57.1'	69°15.1	51°07.4	33°05.2	32°44.6	21°23.7	26°48.2	58°24.8	101°00.8
4th	SD = 15.7′ Mer. pass. 08:01					Sun SD = 16.1′							

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

Thu	GHA	ν	Dec	d	HP	-Rigil Kent.	-Sun	-Venus	-Spica	+Regulus	+Jupiter	+Pollux	+Aldebaran
0	232°26.3	14.2'	**N**01°12.4	-15.4'	57.1'		50°37.1	32°31.2	32°11.6	21°56.7	27°21.0	58°57.7	101°33.2
1	246°59.5	14.3'	00°57.0	-15.4'	57.1'		50°06.7	31°57.2	31°38.7	22°29.7	27°53.7	59°30.6	102°05.7
2	261°32.8	14.3'	00°41.6	-15.4'	57.1'		49°36.4	31°23.3	31°05.8	23°02.7	28°26.4	60°03.5	102°38.1
3	276°06.0	14.3'	00°26.2	-15.4'	57.0'		49°06.2	30°49.4	30°32.9	23°35.6	28°59.1	60°36.4	103°10.5
4	290°39.3	14.3'	**N**00°10.9	-15.4'	57.0'		48°35.9	30°15.6	30°00.0	24°08.6	29°31.8	61°09.2	103°42.9
5	305°12.7	14.3'	**S**00°04.5	-15.3'	57.0'		48°05.7	29°41.7	29°27.2	24°41.5	30°04.5	61°42.1	104°15.3
6	319°46.0	14.4'	**S**00°19.8	-15.3'	57.0'	69°50.4	47°35.5	29°07.9	28°54.4	25°14.4	30°37.1	62°14.9	104°47.6
7	334°19.4	14.4'	00°35.1	-15.3'	56.9'	69°25.4	47°05.4	28°34.1	28°21.6	25°47.3	31°09.7	62°47.7	105°19.9
8	348°52.8	14.4'	00°50.4	-15.3'	56.9'	69°00.5	46°35.2	28°00.4	27°48.9	26°20.1	31°42.3	63°20.4	105°52.2
9	3°26.2	14.4'	01°05.7	-15.3'	56.9'	68°35.7	46°05.1	27°26.7	27°16.1	26°52.9	32°14.8	63°53.2	106°24.5
10	17°59.6	14.4'	01°21.0	-15.3'	56.9'	68°10.9	45°35.0	26°52.9	26°43.4	27°25.8	32°47.4	64°25.9	106°56.7
11	32°33.0	14.4'	01°36.3	-15.3'	56.9'	67°46.2	45°05.0	26°19.3	26°10.7	27°58.5	33°19.9	64°58.6	107°28.9
12	47°06.4	14.4'	**S**01°51.6	-15.2'	56.8'	67°21.6	44°34.9	25°45.6	25°38.1	28°31.3	33°52.4	65°31.3	108°01.1
13	61°39.9	14.5'	02°06.8	-15.2'	56.8'	66°57.0	44°04.9	25°12.0	25°05.5	29°04.0	34°24.9	66°04.0	108°33.3
14	76°13.4	14.5'	02°22.0	-15.2'	56.8'	66°32.6	43°34.9	24°38.4	24°32.9	29°36.8	34°57.3	66°36.6	109°05.4
15	90°46.8	14.5'	02°37.2	-15.2'	56.8'	66°08.2	43°05.0	24°04.8	24°00.3	30°09.5	35°29.8	67°09.2	109°37.5
16	105°20.3	14.5'	02°52.4	-15.1'	56.8'	65°43.8	42°35.1	23°31.3	23°27.8	30°42.1	36°02.2	67°41.8	110°09.6
17	119°53.8	14.5'	03°07.5	-15.1'	56.7'	65°19.6	42°05.1	22°57.8	22°55.2	31°14.8	36°34.6	68°14.4	110°41.7
18	134°27.3	14.5'	**S**03°22.6	-15.1'	56.7'	64°55.4	41°35.3	22°24.3	22°22.7	31°47.4	37°06.9	68°47.0	111°13.7
19	149°00.8	14.5'	03°37.7	-15.1'	56.7'	64°31.3	41°05.4	21°50.8	21°50.3	32°20.0	37°39.3	69°19.5	111°45.7
20	163°34.3	14.5'	03°52.8	-15.0'	56.7'	64°07.3	40°35.6	21°17.4	21°17.9	32°52.6	38°11.6	69°52.0	112°17.7
21	178°07.7	14.5'	04°07.9	-15.0'	56.6'	63°43.4	40°05.8	20°44.0	20°45.5	33°25.2	38°43.9	70°24.5	112°49.7
22	192°41.2	14.5'	04°22.9	-15.0'	56.6'	63°19.6		20°10.6	20°13.1	33°57.8	39°16.2	70°57.0	113°21.6
23	207°14.7	14.5'	04°37.9	-15.0'	56.6'	62°55.8		19°37.3	19°40.8	34°30.3	39°48.5	71°29.4	113°53.5
5th	SD = 15.6′ Mer. pass. 08:46					Sun SD = 16.1′							

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

Fri	GHA	ν	Dec	d	HP	-Rigil Kent.	-Hadar	-Spica	-Venus	+Regulus	+Jupiter	+Pollux	+Aldebaran
0	221°48.2	14.5'	**S**04°52.8	-14.9'	56.6'	62°32.2	59°31.2	19°08.5	19°03.9	35°02.8	40°20.7	72°01.9	114°25.4
1	236°21.7	14.5'	05°07.8	-14.9'	56.6'	62°08.6	59°09.1	18°36.2	18°30.7	35°35.3	40°52.9	72°34.3	114°57.2
2	250°55.2	14.5'	05°22.7	-14.9'	56.5'	61°45.2	58°47.1	18°04.0	17°57.4	36°07.7	41°25.1	73°06.7	115°29.0
3	265°28.7	14.5'	05°37.5	-14.8'	56.5'	61°21.8	58°25.3	17°31.8	17°24.1	36°40.2	41°57.3	73°39.0	116°00.8
4	280°02.2	14.5'	05°52.3	-14.8'	56.5'	60°58.5	58°03.5	16°59.6	16°50.9	37°12.6	42°29.5	74°11.4	116°32.6
5	294°35.6	14.5'	06°07.1	-14.8'	56.5'	60°35.3	57°41.9	16°27.5	16°17.8	37°45.0	43°01.6	74°43.7	117°04.4
6	309°09.1	14.5'	**S**06°21.9	-14.7'	56.5'	60°12.3	57°20.4	15°55.4	15°44.6	38°17.4	43°33.7	75°16.0	117°36.1
7	323°42.6	14.4'	06°36.6	-14.7'	56.4'	59°49.3	56°59.1	15°23.3	15°11.5	38°49.7	44°05.8	75°48.3	118°07.8
8	338°16.0	14.4'	06°51.3	-14.6'	56.4'	59°26.4	56°37.8	14°51.3	14°38.4	39°22.1	44°37.9	76°20.6	118°39.4
9	352°49.4	14.4'	07°06.0	-14.6'	56.4'	59°03.6	56°16.7	14°19.4	14°05.3	39°54.4	45°09.9	76°52.8	119°11.1
10	7°22.9	14.4'	07°20.6	-14.6'	56.4'	58°41.0	55°55.7	13°47.5	13°32.3	40°26.7	45°41.9	77°25.0	119°42.7
11	21°56.3	14.4'	07°35.1	-14.5'	56.4'	58°18.4	55°34.9	13°15.6	12°59.3	40°59.0	46°14.0	77°57.2	
12	36°29.7	14.4'	**S**07°49.7	-14.5'	56.3'	57°56.0	55°14.1	12°43.8	12°26.3	41°31.2	46°45.9	78°29.4	
13	51°03.1	14.4'	08°04.1	-14.4'	56.3'	57°33.7	54°53.6	12°12.1	11°53.4	42°03.5	47°17.9	79°01.6	
14	65°36.4	14.3'	08°18.6	-14.4'	56.3'	57°11.4	54°33.1	11°40.4	11°20.5	42°35.7	47°49.9	79°33.7	
15	80°09.8	14.3'	08°33.0	-14.3'	56.3'	56°49.4	54°12.8	11°08.8	10°47.6	43°07.9	48°21.8	80°05.8	
16	94°43.1	14.3'	08°47.3	-14.3'	56.3'	56°27.4	53°52.7	10°37.3	10°14.8	43°40.0	48°53.7	80°37.9	
17	109°16.4	14.3'	09°01.6	-14.2'	56.2'	56°05.5	53°32.7	10°05.9	9°42.0	44°12.2	49°25.6	81°10.0	
18	123°49.7	14.3'	**S**09°15.9	-14.2'	56.2'	55°43.8	53°12.8	9°34.6	9°09.3	44°44.3	49°57.4	81°42.1	
19	138°23.0	14.2'	09°30.1	-14.2'	56.2'	55°22.2	52°53.1	9°03.3	8°36.6	45°16.4	50°29.3	82°14.1	
20	152°56.2	14.2'	09°44.2	-14.1'	56.2'	55°00.7	52°33.6	8°32.2	8°04.0	45°48.5	51°01.1	82°46.1	
21	167°29.4	14.2'	09°58.3	-14.0'	56.2'	54°39.4	52°14.2	8°01.3	7°31.4	46°20.6	51°32.9	83°18.1	
22	182°02.6	14.2'	10°12.3	-14.0'	56.1'	54°18.2	51°55.0	7°30.6	6°58.9	46°52.6	52°04.7	83°50.1	
23	196°35.8	14.2'	10°26.3	-13.9'	56.1'	53°57.1	51°35.9	7°00.0	6°26.4	47°24.6	52°36.5	84°22.0	
6th	SD = 15.4′ Mer. pass. 09:30												

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

Sat	GHA	ν	Dec	d	HP	-Rigil Kent.	-Hadar	±Spica	±Venus	+Regulus	+Jupiter	+Mars	+Pollux
0	211°09.0	14.1'	**S**10°40.3	-13.9'	56.1'	53°36.1	51°17.0	6°29.7	5°54.0	47°56.6	53°08.2	56°38.8	84°54.0
1	225°42.1	14.1'	10°54.2	-13.8'	56.1'	53°15.3	50°58.3	5°59.7	5°21.8	48°28.6	53°39.9	57°09.6	85°25.9
2	240°15.2	14.1'	11°08.0	-13.8'	56.0'	52°54.7	50°39.7	5°30.2	4°49.6	49°00.6	54°11.6	57°40.3	85°57.8
3	254°48.3	14.0'	11°21.8	-13.7'	56.0'	52°34.2	50°21.3	5°01.1	4°17.7	49°32.5	54°43.3	58°11.1	86°29.6
4	269°21.3	14.0'	11°35.5	-13.7'	56.0'	52°13.8	50°03.1	4°32.7	3°46.0	50°04.4	55°15.0	58°41.8	87°01.5
5	283°54.4	14.0'	11°49.1	-13.6'	56.0'	51°53.6	49°45.1	4°05.1	3°14.6	50°36.3	55°46.6	59°12.5	87°33.3
6	298°27.3	14.0'	**S**12°02.7	-13.5'	56.0'	51°33.5	49°27.2		2°43.7	51°08.2	56°18.2	59°43.2	88°05.1
7	313°00.3	13.9'	12°16.3	-13.5'	55.9'	51°13.6	49°09.6		2°13.6	51°40.1	56°49.8	60°13.8	88°36.9
8	327°33.2	13.9'	12°29.8	-13.4'	55.9'	50°53.9	48°52.1			52°11.9	57°21.4	60°44.5	89°08.7
9	342°06.1	13.9'	12°43.2	-13.3'	55.9'	50°34.3	48°34.8			52°43.7	57°52.9	61°15.1	89°40.4
10	356°39.0	13.8'	12°56.5	-13.3'	55.9'	50°14.9	48°17.8			53°15.5	58°24.5	61°45.7	90°12.2
11	11°11.8	13.8'	13°09.8	-13.2'	55.9'	49°55.6	48°00.9			53°47.3	58°56.0	62°16.3	90°43.9
12	25°44.6	13.8'	**S**13°23.0	-13.2'	55.9'	49°36.5	47°44.2			54°19.1	59°27.5	62°46.8	91°15.5
13	40°17.3	13.7'	13°36.2	-13.1'	55.8'	49°17.6	47°27.7			54°50.8	59°59.0	63°17.4	91°47.2
14	54°50.1	13.7'	13°49.2	-13.0'	55.8'	48°58.9	47°11.5			55°22.5	60°30.4	63°47.9	92°18.9
15	69°22.7	13.6'	14°02.3	-12.9'	55.8'	48°40.3	46°55.4			55°54.2	61°01.9	64°18.4	92°50.5
16	83°55.4	13.6'	14°15.2	-12.9'	55.8'	48°21.9	46°39.6			56°25.9	61°33.3	64°48.9	93°22.1
17	98°28.0	13.6'	14°28.1	-12.8'	55.8'	48°03.7	46°23.9		3°31.5	56°57.5	62°04.7	65°19.3	93°53.7
18	113°00.6	13.5'	**S**14°40.9	-12.7'	55.7'	47°45.7	46°08.5		4°02.8	57°29.2	62°36.0	65°49.8	94°25.2
19	127°33.1	13.5'	14°53.6	-12.7'	55.7'	47°27.9	45°53.4		4°34.3	58°00.8	63°07.4	66°20.2	94°56.8
20	142°05.6	13.5'	15°06.3	-12.6'	55.7'	47°10.3		4°58.4	5°05.9	58°32.4	63°38.7	66°50.6	95°28.3
21	156°38.0	13.4'	15°18.9	-12.5'	55.7'	46°52.9		5°27.1	5°37.6	59°04.0	64°10.1	67°21.0	95°59.8
22	171°10.5	13.4'	15°31.4	-12.4'	55.7'	46°35.7		5°56.3	6°09.4	59°35.5	64°41.3	67°51.3	96°31.3
23	185°42.8	13.3'	15°43.8	-12.4'	55.6'	46°18.7		6°25.8	6°41.3	60°07.0	65°12.6	68°21.7	97°02.7
7th	SD = 15.3′ Mer. pass. 10:14												

DUT1 = UT1-UTC = -0.0653 sec ΔT = TT-UT1 = +69.2493 sec

2026 November 08 to Nov. 10 UT

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

h Sun	GHA	ν	Dec	d	HP	-Rigil Kent.	+Spica	+Venus	+Regulus	+Jupiter	+Mars	+Procyon	+Pollux
0	200°15.1	13.3′	S15°56.1	-12.3′	55.6′	46°01.9	6°55.6	7°13.1	60°38.5	65°43.9	68°52.0	93°06.4	97°34.2
1	214°47.4	13.2′	16°08.4	-12.2′	55.6′	45°45.3	7°25.6	7°45.0	61°10.0	66°15.1	69°22.3	93°36.2	98°05.6
2	229°19.7	13.2′	16°20.6	-12.1′	55.6′	45°28.9	7°55.8	8°16.9	61°41.5	66°46.3	69°52.6	94°06.1	98°37.0
3	243°51.9	13.2′	16°32.7	-12.0′	55.6′	45°12.7	8°26.1	8°48.8	62°13.0	67°17.5	70°22.8	94°35.9	99°08.4
4	258°24.0	13.1′	16°44.8	-12.0′	55.5′	44°56.8	8°56.5	9°20.7	62°44.4	67°48.7	70°53.1	95°05.7	99°39.7
5	272°56.1	13.1′	16°56.7	-11.9′	55.5′	44°41.1	9°27.0	9°52.6	63°15.8	68°19.9	71°23.3	95°35.5	100°11.1
6	287°28.2	13.0′	S17°08.6	-11.8′	55.5′	44°25.6	9°57.6	10°24.4	63°47.2	68°51.0	71°53.5	96°05.2	100°42.4
7	302°00.2	13.0′	17°20.4	-11.7′	55.5′	44°10.3	10°28.3	10°56.3	64°18.6	69°22.1	72°23.7	96°35.0	101°13.7
8	316°32.2	12.9′	17°32.1	-11.6′	55.5′	43°55.3	10°59.0	11°28.2	64°49.9	69°53.2	72°53.8	97°04.7	101°45.0
9	331°04.1	12.9′	17°43.7	-11.5′	55.4′		11°29.7	12°00.0	65°21.3	70°24.3	73°24.0	97°34.4	102°16.2
10	345°36.0	12.8′	17°55.2	-11.4′	55.4′		12°00.5	12°31.8	65°52.6	70°55.3	73°54.1	98°04.0	102°47.5
11	0°07.8	12.8′	18°06.7	-11.4′	55.4′		12°31.3	13°03.6	66°23.9	71°26.4	74°24.2	98°33.7	103°18.7
12	14°39.6	12.7′	S18°18.0	-11.3′	55.4′		13°02.1	13°35.4	66°55.1	71°57.4	74°54.3	99°03.3	103°49.9
13	29°11.3	12.7′	18°29.3	-11.2′	55.4′		New Moon						
14	43°43.0	12.6′	18°40.5	-11.1′	55.4′		New Moon						
15	58°14.7	12.6′	18°51.6	-11.0′	55.3′		New Moon						
16	72°46.3	12.5′	19°02.5	-10.9′	55.3′		New Moon						
17	87°17.8	12.5′	19°13.4	-10.8′	55.3′		New Moon						
18	101°49.3	12.4′	S19°24.2	-10.7′	55.3′		New Moon						
19	116°20.8	12.4′	19°35.0	-10.6′	55.3′		New Moon						
20	130°52.2	12.3′	19°45.6	-10.5′	55.2′		New Moon						
21	145°23.5	12.3′	19°56.1	-10.4′	55.2′		New Moon						
22	159°54.8	12.3′	20°06.5	-10.3′	55.2′		New Moon						
23	174°26.1	12.2′	20°16.8	-10.2′	55.2′		New Moon						
8th	SD = 15.2′		Mer. pass. 10:59										

Moon (9th Nov)

h Mon	GHA	ν	Dec	d	HP	
0	188°57.3	12.2′	S20°27.1	-10.1′	55.2′	New Moon
1	203°28.4	12.1′	20°37.2	-10.0′	55.2′	New Moon
2	217°59.5	12.1′	20°47.2	-9.9′	55.1′	New Moon
3	232°30.6	12.0′	20°57.1	-9.8′	55.1′	New Moon
4	247°01.6	12.0′	21°06.9	-9.7′	55.1′	New Moon
5	261°32.5	11.9′	21°16.6	-9.6′	55.1′	New Moon
6	276°03.4	11.9′	S21°26.3	-9.5′	55.1′	New Moon
7	290°34.3	11.8′	21°35.8	-9.4′	55.1′	New Moon
8	305°05.1	11.8′	21°45.2	-9.3′	55.0′	New Moon
9	319°35.8	11.7′	21°54.5	-9.2′	55.0′	New Moon
10	334°06.5	11.7′	22°03.6	-9.1′	55.0′	New Moon
11	348°37.2	11.6′	22°12.7	-9.0′	55.0′	New Moon
12	3°07.8	11.6′	S22°21.7	-8.9′	55.0′	New Moon
13	17°38.3	11.5′	22°30.5	-8.7′	55.0′	New Moon
14	32°08.9	11.5′	22°39.3	-8.6′	54.9′	New Moon
15	46°39.3	11.4′	22°47.9	-8.5′	54.9′	New Moon
16	61°09.7	11.4′	22°56.4	-8.4′	54.9′	New Moon
17	75°40.1	11.3′	23°04.9	-8.3′	54.9′	New Moon
18	90°10.4	11.3′	S23°13.1	-8.2′	54.9′	New Moon
19	104°40.7	11.2′	23°21.3	-8.1′	54.9′	New Moon
20	119°10.9	11.2′	23°29.4	-8.0′	54.8′	New Moon
21	133°41.1	11.1′	23°37.3	-7.8′	54.8′	New Moon
22	148°11.2	11.1′	23°45.2	-7.7′	54.8′	New Moon
23	162°41.3	11.0′	23°52.9	-7.6′	54.8′	New Moon
9th	SD = 15.0′		Mer. pass. 11:47			

Moon (10th Nov) / Lunar Distance

h Tue	GHA	ν	Dec	d	HP	-Deneb	-Fomalhaut	-Altair	-Antares
0	177°11.4	11.0′	S24°00.5	-7.5′	54.8′	New Moon			
1	191°41.4	11.0′	24°08.0	-7.4′	54.8′	New Moon			
2	206°11.3	10.9′	24°15.3	-7.2′	54.8′	98°51.7	95°15.3	71°29.8	13°27.5
3	220°41.2	10.9′	24°22.6	-7.1′	54.7′	98°36.3	94°47.0	71°04.2	12°56.9
4	235°11.1	10.8′	24°29.7	-7.0′	54.7′	98°21.0	94°18.7	70°38.7	12°26.4
5	249°40.9	10.8′	24°36.7	-6.9′	54.7′	98°05.6	93°50.4	70°13.2	11°55.9
6	264°10.7	10.7′	S24°43.6	-6.8′	54.7′	97°50.2	93°22.1	69°47.8	11°25.5
7	278°40.4	10.7′	24°50.3	-6.6′	54.7′	97°34.8	92°53.8	69°22.4	10°55.0
8	293°10.1	10.7′	24°57.0	-6.5′	54.7′	97°19.3	92°25.5	68°57.1	10°24.6
9	307°39.8	10.6′	25°03.5	-6.4′	54.6′	97°03.8	91°57.2	68°31.8	9°54.1
10	322°09.4	10.6′	25°09.8	-6.3′	54.6′	96°48.4	91°29.0	68°06.5	9°23.7
11	336°39.0	10.5′	25°16.1	-6.1′	54.6′	96°32.9	91°00.8	67°41.4	8°53.4
12	351°08.6	10.5′	S25°22.2	-6.0′	54.6′	96°17.4	90°32.6	67°16.2	8°23.0
13	5°38.1	10.5′	25°28.2	-5.9′	54.6′	96°01.9	90°04.4	66°51.1	7°52.6
14	20°07.5	10.4′	25°34.1	-5.8′	54.6′	95°46.3	89°36.2	66°26.1	7°22.3
15	34°37.0	10.4′	25°39.9	-5.6′	54.6′	95°30.8	89°08.0	66°01.1	6°52.0
16	49°06.4	10.4′	25°45.5	-5.5′	54.5′	95°15.2	88°39.9	65°36.1	6°21.7
17	63°35.8	10.3′	25°51.0	-5.4′	54.5′	94°59.7	88°11.7	65°11.2	5°51.5
18	78°05.1	10.3′	S25°56.4	-5.2′	54.5′	94°44.1	87°43.6	64°46.4	5°21.2
19	92°34.4	10.3′	26°01.6	-5.1′	54.5′	94°28.5	87°15.5	64°21.6	4°51.0
20	107°03.7	10.2′	26°06.7	-5.0′	54.5′	94°12.9	86°47.5	63°56.8	4°20.8
21	121°32.9	10.2′	26°11.7	-4.9′	54.5′	93°57.3	86°19.4	63°32.2	3°50.6
22	136°02.1	10.2′	26°16.5	-4.7′	54.5′	93°41.7	85°51.3	63°07.6	3°20.5
23	150°31.3	10.2′	26°21.3	-4.6′	54.5′	93°26.1	85°23.3	62°43.0	2°50.4
10th	SD = 14.9′		Mer. pass. 12:37						

DUT1 = UT1-UTC = -0.0686 sec ΔT = TT-UT1 = +69.2526 sec

2026 November 11 to Nov. 13 UT

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

h Wed	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	±Antares
0	165°00.5	10.1′	S26°25.9	-4.5′	54.4′		93°10.5	84°55.3	62°18.5	2°20.4
1	179°29.6	10.1′	26°30.3	-4.3′	54.4′	119°59.0	92°54.9	84°27.3	61°54.0	1°50.5
2	193°58.7	10.1′	26°34.6	-4.2′	54.4′	119°29.0	92°39.3	83°59.3	61°29.7	1°20.8
3	208°27.8	10.1′	26°38.8	-4.1′	54.4′	118°58.9	92°23.6	83°31.4	61°05.3	0°51.6
4	222°56.9	10.0′	26°42.9	-3.9′	54.4′	118°28.9	92°08.0	83°03.4	60°41.1	
5	237°25.9	10.0′	26°46.8	-3.8′	54.4′	117°58.9	91°52.4	82°35.5	60°16.9	
6	251°54.9	10.0′	S26°50.6	-3.7′	54.4′	117°28.9	91°36.8	82°07.6	59°52.8	
7	266°23.9	10.0′	26°54.3	-3.5′	54.4′	116°58.9	91°21.2	81°39.7	59°28.7	
8	280°52.9	10.0′	26°57.8	-3.4′	54.3′	116°28.9	91°05.6	81°11.9	59°04.7	1°42.7
9	295°21.9	9.9′	27°01.2	-3.3′	54.3′	115°59.0	90°49.9	80°44.0	58°40.8	2°12.5
10	309°50.8	9.9′	27°04.4	-3.1′	54.3′	115°29.0	90°34.3	80°16.2	58°16.9	2°42.3
11	324°19.7	9.9′	27°07.6	-3.0′	54.3′	114°59.1	90°18.7	79°48.4	57°53.2	3°12.2
12	338°48.6	9.9′	S27°10.6	-2.9′	54.3′	114°29.2	90°03.2	79°20.6	57°29.4	3°42.1
13	353°17.5	9.9′	27°13.4	-2.7′	54.3′	113°59.3	89°47.6	78°52.9	57°05.8	4°12.1
14	7°46.4	9.9′	27°16.1	-2.6′	54.3′	113°29.4	89°32.0	78°25.1	56°42.3	4°42.0
15	22°15.3	9.9′	27°18.7	-2.4′	54.3′	112°59.5	89°16.4	77°57.4	56°18.8	5°11.9
16	36°44.2	9.9′	27°21.2	-2.3′	54.3′	112°29.6	89°00.9	77°29.7	55°55.4	5°41.8
17	51°13.0	9.8′	27°23.5	-2.2′	54.2′	111°59.7	88°45.3	77°02.0	55°32.0	6°11.7
18	65°41.9	9.8′	S27°25.7	-2.0′	54.2′	111°29.9	88°29.8	76°34.4	55°08.8	6°41.6
19	80°10.7	9.8′	27°27.7	-1.9′	54.2′	111°00.0	88°14.2	76°06.7	54°45.6	7°11.5
20	94°39.5	9.8′	27°29.6	-1.8′	54.2′	110°30.2	87°58.7	75°39.1	54°22.5	7°41.4
21	109°08.4	9.8′	27°31.4	-1.6′	54.2′	110°00.4	87°43.2	75°11.5	53°59.5	8°11.2
22	123°37.2	9.8′	27°33.0	-1.5′	54.2′	109°30.6	87°27.7	74°43.9	53°36.6	8°41.1
23	138°06.0	9.8′	27°34.5	-1.4′	54.2′	109°00.8	87°12.2	74°16.4	53°13.8	9°10.9
11th	SD = 14.8′		Mer. pass. 13:28							

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

h Thu	GHA	ν	Dec	d	HP	-Saturn	-Deneb	-Fomalhaut	-Altair	+Antares
0	152°34.8	9.8′	S27°35.9	-1.2′	54.2′	108°31.0	86°56.8	73°48.8	52°51.1	9°40.8
1	167°03.7	9.8′	27°37.1	-1.1′	54.2′	108°01.3	86°41.3	73°21.3	52°28.4	10°10.6
2	181°32.5	9.8′	27°38.2	-1.0′	54.2′	107°31.5	86°25.9	72°53.9	52°05.9	10°40.4
3	196°01.3	9.8′	27°39.1	-0.8′	54.2′	107°01.7	86°10.5	72°26.4	51°43.4	11°10.2
4	210°30.1	9.8′	27°40.0	-0.7′	54.1′	106°32.0	85°55.1	71°59.0	51°21.1	11°40.0
5	224°59.0	9.8′	27°40.6	-0.5′	54.1′	106°02.3	85°39.7	71°31.6	50°58.8	12°09.8
6	239°27.8	9.9′	S27°41.2	-0.4′	54.1′	105°32.6	85°24.4	71°04.2	50°36.7	12°39.6
7	253°56.7	9.9′	27°41.6	-0.3′	54.1′	105°02.9	85°09.0	70°36.8	50°14.6	13°09.3
8	268°25.5	9.9′	27°41.9	-0.1′	54.1′	104°33.2	84°53.7	70°09.5	49°52.7	13°39.1
9	282°54.4	9.9′	27°42.0	-0.0′	54.1′	104°03.5	84°38.4	69°42.1	49°30.8	14°08.8
10	297°23.3	9.9′	27°42.0	0.1′	54.1′	103°33.8	84°23.2	69°14.8	49°09.1	14°38.5
11	311°52.2	9.9′	27°41.9	0.3′	54.1′	103°04.1	84°07.9	68°47.6	48°47.5	15°08.3
12	326°21.1	9.9′	S27°41.6	0.4′	54.1′	102°34.5	83°52.7	68°20.3	48°26.0	15°38.0
13	340°50.0	9.9′	27°41.2	0.5′	54.1′	102°04.8	83°37.5	67°53.1	48°04.6	16°07.7
14	355°18.9	10.0′	27°40.7	0.7′	54.1′	101°35.2	83°22.3	67°25.9	47°43.3	16°37.4
15	9°47.9	10.0′	27°40.0	0.8′	54.1′	101°05.5	83°07.2	66°58.8	47°22.2	17°07.0
16	24°16.9	10.0′	27°39.2	0.9′	54.1′	100°35.9	82°52.1	66°31.6	47°01.2	17°36.7
17	38°45.9	10.0′	27°38.3	1.1′	54.1′	100°06.3	82°37.0	66°04.5	46°40.2	18°06.4
18	53°14.9	10.0′	S27°37.2	1.2′	54.1′	99°36.7	82°21.9	65°37.4	46°19.5	18°36.0
19	67°43.9	10.1′	27°36.0	1.3′	54.0′	99°07.1	82°06.9	65°10.4	45°58.8	19°05.7
20	82°13.0	10.1′	27°34.6	1.5′	54.0′	98°37.5		64°43.3	45°38.3	19°35.3
21	96°42.0	10.1′	27°33.2	1.6′	54.0′	98°07.9		64°16.3	45°18.0	20°04.9
22	111°11.1	10.1′	27°31.6	1.7′	54.0′	97°38.4		63°49.4	44°57.7	20°34.6
23	125°40.3	10.2′	27°29.8	1.9′	54.0′	97°08.8		63°22.4	44°37.6	21°04.2
12th	SD = 14.8′		Mer. pass. 14:19							

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

h Fri	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	-Altair	+Antares	+Sun
0	140°09.4	10.2′	S27°27.9	2.0′	54.0′	96°39.2	62°55.5	44°17.7	21°33.8	41°17.9
1	154°38.6	10.2′	27°25.9	2.1′	54.0′	96°09.7	62°28.6	43°57.9	22°03.4	41°44.8
2	169°07.8	10.2′	27°23.8	2.3′	54.0′	95°40.1	62°01.7	43°38.2	22°33.0	42°11.6
3	183°37.0	10.3′	27°21.5	2.4′	54.0′	95°10.6	61°34.9	43°18.7	23°02.6	42°38.4
4	198°06.3	10.3′	27°19.1	2.5′	54.0′	94°41.1	61°08.1	42°59.4	23°32.2	43°05.3
5	212°35.6	10.3′	27°16.6	2.7′	54.0′	94°11.5	60°41.3	42°40.2	24°01.7	43°32.1
6	227°04.9	10.4′	S27°13.9	2.8′	54.0′	93°42.0	60°14.6	42°21.2	24°31.3	43°58.9
7	241°34.3	10.4′	27°11.2	2.9′	54.0′	93°12.5	59°47.9	42°02.4	25°00.9	44°25.8
8	256°03.7	10.4′	27°08.2	3.0′	54.0′	92°43.0	59°21.2	41°43.7	25°30.4	44°52.6
9	270°33.2	10.5′	27°05.2	3.2′	54.0′	92°13.5	58°54.6	41°25.2	26°00.0	45°19.4
10	285°02.6	10.5′	27°02.0	3.3′	54.0′	91°44.0	58°28.0	41°06.9	26°29.5	45°46.2
11	299°32.1	10.5′	26°58.7	3.4′	54.0′	91°14.5	58°01.4	40°48.8	26°59.1	46°13.1
12	314°01.7	10.6′	S26°55.3	3.6′	54.0′	90°45.0	57°34.9	40°30.8	27°28.6	46°39.9
13	328°31.3	10.6′	26°51.7	3.7′	54.0′	90°15.5	57°08.4	40°13.1	27°58.1	47°06.7
14	343°00.9	10.7′	26°48.1	3.8′	54.0′	89°46.0	56°41.9	39°55.5	28°27.7	47°33.5
15	357°30.6	10.7′	26°44.2	3.9′	54.0′	89°16.6	56°15.5	39°38.2	28°57.2	48°00.3
16	12°00.3	10.7′	26°40.3	4.1′	54.0′	88°47.1	55°49.1	39°21.0	29°26.7	48°27.2
17	26°30.0	10.8′	26°36.3	4.2′	54.0′	88°17.6	55°22.8	39°04.0	29°56.2	48°54.0
18	40°59.8	10.8′	S26°32.1	4.3′	54.0′	87°48.1	54°56.4	38°47.3	30°25.8	49°20.8
19	55°29.7	10.9′	26°27.8	4.4′	54.0′	87°18.7	54°30.2	38°30.8	30°55.3	49°47.6
20	69°59.5	10.9′	26°23.3	4.6′	54.0′	86°49.2	54°03.9	38°14.5	31°24.8	50°14.4
21	84°29.5	11.0′	26°18.8	4.7′	54.0′	86°19.8	53°37.7	37°58.4	31°54.3	50°41.2
22	98°59.4	11.0′	26°14.1	4.8′	54.0′	85°50.3	53°11.6	37°42.6	32°23.8	51°08.0
23	113°29.4	11.1′	26°09.3	4.9′	54.0′	85°20.8	52°45.5	37°27.0	32°53.3	51°34.9
13th	SD = 14.7′		Mer. pass. 15:10					Sun SD = 16.2′		

DUT1 = UT1-UTC = -0.0707 sec ΔT = TT-UT1 = +69.2547 sec

2026 November 14 to Nov. 16 UT

h — Moon (14th Nov) — Lunar Distance

Sat	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Antares	+Sun
0	127°59.5	11.1′	S26°04.4	5.0′	54.0′	84°51.4	52°19.4	33°22.8	52°01.7
1	142°29.6	11.2′	25°59.4	5.2′	54.0′	84°21.9	51°53.4	33°52.3	52°28.5
2	156°59.8	11.2′	25°54.2	5.3′	54.0′	83°52.5	51°27.4	34°21.8	52°55.3
3	171°30.0	11.3′	25°48.9	5.4′	54.0′	83°23.0	51°01.5	34°51.3	53°22.1
4	186°00.2	11.3′	25°43.5	5.5′	54.0′	82°53.6	50°35.6	35°20.8	53°48.9
5	200°30.5	11.4′	25°38.0	5.6′	54.0′	82°24.1	50°09.8	35°50.4	54°15.8
6	215°00.9	11.4′	S25°32.4	5.7′	54.0′	81°54.7	49°44.0	36°19.9	54°42.6
7	229°31.3	11.5′	25°26.6	5.9′	54.0′	81°25.2	49°18.2	36°49.4	55°09.4
8	244°01.7	11.5′	25°20.8	6.0′	54.0′	80°55.8	48°52.6	37°18.9	55°36.2
9	258°32.2	11.6′	25°14.8	6.1′	54.0′	80°26.3	48°26.9	37°48.4	56°03.1
10	273°02.8	11.6′	25°08.7	6.2′	54.0′	79°56.9	48°01.3	38°17.9	56°29.9
11	287°33.4	11.7′	25°02.5	6.3′	54.0′	79°27.4	47°35.8	38°47.4	56°56.7
12	302°04.1	11.7′	S24°56.2	6.4′	54.0′	78°58.0	47°10.4	39°16.9	57°23.6
13	316°34.8	11.8′	24°49.7	6.5′	54.0′	78°28.5	46°45.0	39°46.4	57°50.4
14	331°05.5	11.8′	24°43.2	6.7′	54.0′	77°59.0	46°19.6	40°15.9	58°17.3
15	345°36.3	11.9′	24°36.5	6.8′	54.0′	77°29.6	45°54.3	40°45.5	58°44.1
16	0°07.2	11.9′	24°29.7	6.9′	54.0′	77°00.1	45°29.1	41°15.0	59°11.0
17	14°38.1	12.0′	24°22.8	7.0′	54.1′	76°30.7	45°03.9	41°44.5	59°37.9
18	29°09.1	12.0′	S24°15.9	7.1′	54.1′	76°01.2	44°38.9	42°14.1	60°04.7
19	43°40.1	12.1′	24°08.8	7.2′	54.1′	75°31.7	44°13.8	42°43.6	60°31.6
20	58°11.2	12.1′	24°01.5	7.3′	54.1′	75°02.2	43°48.9	43°13.1	60°58.5
21	72°42.3	12.2′	23°54.2	7.4′	54.1′	74°32.8	43°24.0	43°42.7	61°25.4
22	87°13.5	12.2′	23°46.8	7.5′	54.1′	74°03.3	42°59.2	44°12.2	61°52.3
23	101°44.8	12.3′	23°39.3	7.6′	54.1′	73°33.8	42°34.5	44°41.8	62°19.2
14th	SD = 14.7′		Mer. pass. 16:00			Sun SD = 16.2′			

h — Moon (15th Nov) — Lunar Distance

Sun	GHA	ν	Dec	d	HP	-Saturn	-Fomalhaut	+Antares	+Sun
0	116°16.1	12.4′	S23°31.6	7.7′	54.1′	73°04.3	42°09.8	45°11.4	62°46.1
1	130°47.4	12.4′	23°23.9	7.8′	54.1′	72°34.8	41°45.2	45°40.9	63°13.0
2	145°18.8	12.5′	23°16.0	8.0′	54.1′	72°05.3	41°20.8	46°10.5	63°39.9
3	159°50.3	12.5′	23°08.1	8.1′	54.1′	71°35.8	40°56.4	46°40.1	64°06.8
4	174°21.8	12.6′	23°00.0	8.2′	54.1′	71°06.2	40°32.1	47°09.7	64°33.8
5	188°53.4	12.6′	22°51.9	8.3′	54.1′	70°36.7	40°07.8	47°39.3	65°00.7
6	203°25.0	12.7′	S22°43.6	8.4′	54.2′	70°07.2	39°43.7	48°08.9	65°27.7
7	217°56.7	12.7′	22°35.3	8.5′	54.2′	69°37.7	39°19.7	48°38.5	65°54.6
8	232°28.4	12.8′	22°26.8	8.6′	54.2′	69°08.1	38°55.8	49°08.2	66°21.6
9	247°00.2	12.8′	22°18.2	8.7′	54.2′	68°38.6	38°31.9	49°37.8	66°48.6
10	261°32.0	12.9′	22°09.6	8.8′	54.2′	68°09.0	38°08.2	50°07.4	67°15.6
11	276°03.9	12.9′	22°00.8	8.9′	54.2′	67°39.4	37°44.6	50°37.1	67°42.6
12	290°35.8	13.0′	S21°52.0	9.0′	54.2′	67°09.8	37°21.1	51°06.8	68°09.6
13	305°07.8	13.0′	21°43.0	9.0′	54.2′	66°40.3	36°57.8	51°36.4	68°36.6
14	319°39.9	13.1′	21°34.0	9.1′	54.2′	66°10.7	36°34.5	52°06.1	69°03.7
15	334°12.0	13.1′	21°24.8	9.2′	54.3′	65°41.1	36°11.4	52°35.8	69°30.7
16	348°44.1	13.2′	21°15.6	9.3′	54.3′	65°11.4	35°48.4	53°05.5	69°57.8
17	3°16.3	13.3′	21°06.3	9.4′	54.3′	64°41.8	35°25.5	53°35.2	70°24.9
18	17°48.6	13.3′	S20°56.8	9.5′	54.3′	64°12.2	35°02.8	54°05.0	70°52.0
19	32°20.9	13.4′	20°47.3	9.6′	54.3′	63°42.5	34°40.2	54°34.7	71°19.1
20	46°53.2	13.4′	20°37.7	9.7′	54.3′	63°12.9	34°17.8	55°04.5	71°46.2
21	61°25.6	13.5′	20°28.0	9.8′	54.3′	62°43.2	33°55.5	55°34.2	72°13.3
22	75°58.1	13.5′	20°18.2	9.9′	54.3′	62°13.5	33°33.4	56°04.0	72°40.4
23	90°30.6	13.6′	20°08.3	10.0′	54.4′	61°43.8	33°11.5	56°33.8	73°07.6
15th	SD = 14.8′		Mer. pass. 16:46			Sun SD = 16.2′			

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

Mon	GHA	ν	Dec	d	HP	-Rigel	-Aldebaran	-Saturn	-Fomalhaut	+Antares	+Sun
0	105°03.1	13.6′	S19°58.4	10.1′	54.4′			61°14.1	32°49.7	57°03.6	73°34.8
1	119°35.7	13.6′	19°48.3	10.1′	54.4′			60°44.4	32°28.1	57°33.5	74°02.0
2	134°08.4	13.7′	19°38.2	10.2′	54.4′			60°14.7	32°06.7	58°03.3	74°29.2
3	148°41.1	13.7′	19°27.9	10.3′	54.4′			59°45.0	31°45.5	58°33.2	74°56.4
4	163°13.8	13.8′	19°17.6	10.4′	54.4′			59°15.2	31°24.5	59°03.0	75°23.6
5	177°46.6	13.8′	19°07.2	10.5′	54.5′			58°45.4	31°03.7	59°32.9	75°50.9
6	192°19.5	13.9′	S18°56.7	10.6′	54.5′		119°41.0	58°15.7	30°43.1	60°02.8	76°18.1
7	206°52.3	13.9′	18°46.1	10.7′	54.5′	119°52.3	119°11.7	57°45.9	30°22.7	60°32.8	76°45.4
8	221°25.3	14.0′	18°35.5	10.7′	54.5′	119°30.2	118°42.4	57°16.1	30°02.6	61°02.7	77°12.7
9	235°58.2	14.0′	18°24.7	10.8′	54.5′	119°08.0	118°13.1	56°46.2	29°42.7	61°32.7	77°40.0
10	250°31.3	14.1′	18°13.9	10.9′	54.5′	118°45.6	117°43.7	56°16.4	29°23.0	62°02.6	78°07.4
11	265°04.3	14.1′	18°03.0	11.0′	54.6′	118°23.3	117°14.3	55°46.5	29°03.6	62°32.6	78°34.7
12	279°37.4	14.1′	S17°52.0	11.1′	54.6′	118°00.8	116°44.9	55°16.7	28°44.4	63°02.6	79°02.1
13	294°10.6	14.2′	17°41.0	11.1′	54.6′	117°38.3	116°15.5	54°46.8	28°25.6	63°32.7	79°29.5
14	308°43.8	14.2′	17°29.8	11.2′	54.6′	117°15.6	115°46.1	54°16.9	28°07.0	64°02.7	79°56.9
15	323°17.0	14.3′	17°18.6	11.3′	54.6′	116°53.0	115°16.6	53°47.0	27°48.7	64°32.8	80°24.3
16	337°50.3	14.3′	17°07.3	11.4′	54.6′	116°30.2	114°47.1	53°17.0	27°30.7	65°02.9	80°51.8
17	352°23.6	14.3′	16°55.9	11.5′	54.7′	116°07.4	114°17.6	52°47.1	27°13.1	65°33.0	81°19.3
18	6°56.9	14.4′	S16°44.4	11.5′	54.7′	115°44.5	113°48.0	52°17.1	26°55.7	66°03.1	81°46.8
19	21°30.3	14.4′	16°32.9	11.6′	54.7′	115°21.5	113°18.5	51°47.1	26°38.7	66°33.3	82°14.3
20	36°03.7	14.5′	16°21.3	11.7′	54.7′	114°58.5	112°48.9	51°17.1	26°22.1	67°03.5	82°41.8
21	50°37.2	14.5′	16°09.6	11.8′	54.7′	114°35.4	112°19.2	50°47.1	26°05.8	67°33.7	83°09.4
22	65°10.7	14.5′	15°57.9	11.8′	54.8′	114°12.2	111°49.6	50°17.1	25°49.9	68°03.9	83°37.0
23	79°44.2	14.6′	15°46.0	11.9′	54.8′	113°48.9	111°19.9	49°47.0	25°34.4	68°34.1	84°04.6
16th	SD = 14.8′		Mer. pass. 17:31			Sun SD = 16.2′					

DUT1 = UT1-UTC = -0.0735 sec ΔT = TT-UT1 = +69.2575 sec

2026 November 17 to Nov. 19 UT

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

Tue	GHA	ν	Dec	d	HP	-Capella	-Betelgeuse	-Rigel	-Aldebaran	-Saturn	+Altair	+Antares	+Sun
0	94°17.8	14.6′	S15°34.1	12.0′	54.8′			113°25.6	110°50.2	49°16.9		69°04.4	84°32.2
1	108°51.3	14.6′	15°22.2	12.0′	54.8′	119°56.4		113°02.3	110°20.5	48°46.8		69°34.7	84°59.8
2	123°25.0	14.7′	15°10.1	12.1′	54.9′	119°28.2		112°38.8	109°50.7	48°16.7		70°05.0	85°27.5
3	137°58.6	14.7′	14°58.0	12.2′	54.9′	118°59.9		112°15.3	109°20.9	47°46.6		70°35.3	85°55.2
4	152°32.3	14.7′	14°45.8	12.3′	54.9′	118°31.6		111°51.8	108°51.1	47°16.4		71°05.7	86°22.9
5	167°06.1	14.8′	14°33.5	12.3′	54.9′	118°03.2		111°28.2	108°21.3	46°46.3		71°36.1	86°50.7
6	181°39.8	14.8′	S14°21.2	12.4′	54.9′	117°34.8		111°04.5	107°51.4	46°16.1		72°06.5	87°18.5
7	196°13.6	14.8′	14°08.8	12.5′	55.0′	117°06.3		110°40.7	107°21.5	45°45.9		72°36.9	87°46.3
8	210°47.4	14.8′	13°56.4	12.5′	55.0′	116°37.8		110°16.9	106°51.6	45°15.6		73°07.4	88°14.1
9	225°21.2	14.9′	13°43.8	12.6′	55.0′	116°09.2		109°53.0	106°21.7	44°45.4		73°37.9	88°41.9
10	239°55.1	14.9′	13°31.2	12.7′	55.0′	115°40.7		109°29.1	105°51.7	44°15.1		74°08.4	89°09.8
11	254°29.0	14.9′	13°18.6	12.7′	55.1′	115°12.0		109°05.1	105°21.7	43°44.8		74°39.0	89°37.7
12	269°02.9	14.9′	S13°05.9	12.8′	55.1′	114°43.4		108°41.1	104°51.6	43°14.5	36°39.3	75°09.5	90°05.7
13	283°36.8	15.0′	12°53.1	12.9′	55.1′	114°14.7		108°17.0	104°21.6	42°44.2	36°54.7	75°40.1	90°33.6
14	298°10.8	15.0′	12°40.2	12.9′	55.1′	113°45.9		107°52.8	103°51.5	42°13.8	37°10.3	76°10.8	91°01.6
15	312°44.7	15.0′	12°27.3	13.0′	55.2′	113°17.1		107°28.6	103°21.3	41°43.5	37°26.3	76°41.4	91°29.6
16	327°18.7	15.0′	12°14.3	13.0′	55.2′	112°48.3		107°04.4	102°51.2	41°13.1	37°42.5	77°12.1	91°57.7
17	341°52.8	15.0′	12°01.3	13.1′	55.2′	112°19.4		106°40.1	102°21.0	40°42.7	37°59.0	77°42.8	92°25.8
18	356°26.8	15.1′	S11°48.2	13.2′	55.2′	111°50.5	119°36.4	106°15.7	101°50.7	40°12.2	38°15.8	78°13.6	92°53.9
19	11°00.8	15.1′	11°35.0	13.2′	55.3′	111°21.5	119°08.1	105°51.3	101°20.5	39°41.8	38°32.8	78°44.3	93°22.0
20	25°34.9	15.1′	11°21.8	13.3′	55.3′	110°52.5	118°39.8	105°26.8	100°50.2	39°11.3	38°50.1	79°15.1	93°50.2
21	40°09.0	15.1′	11°08.6	13.3′	55.3′	110°23.5	118°11.4	105°02.2	100°19.9	38°40.8	39°07.6	79°46.0	94°18.4
22	54°43.1	15.1′	10°55.2	13.4′	55.4′	109°54.4	117°43.0	104°37.7	99°49.5	38°10.3	39°25.4	80°16.8	94°46.6
23	69°17.2	15.1′	10°41.8	13.4′	55.4′	109°25.3	117°14.5	104°13.0	99°19.1	37°39.8	39°43.4	80°47.7	95°14.9
17th	SD = 14.9′		Mer. pass. 18:15			Sun SD = 16.2′							

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

Wed	GHA	ν	Dec	d	HP	-Betelgeuse	-Capella	-Rigel	-Aldebaran	-Saturn	+Altair	+Antares	+Sun
0	83°51.3	15.1′	S10°28.4	13.5′	55.4′	116°46.0	108°56.1	103°48.3	98°48.7	37°09.2	40°01.7	81°18.7	95°43.2
1	98°25.5	15.1′	10°14.9	13.6′	55.4′	116°17.5	108°26.9	103°23.6	98°18.3	36°38.6	40°20.2	81°49.6	96°11.5
2	112°59.6	15.2′	10°01.3	13.6′	55.5′	115°48.8	107°57.7	102°58.8	97°47.8	36°08.0	40°38.9	82°20.6	96°39.8
3	127°33.8	15.2′	09°47.7	13.7′	55.5′	115°20.2	107°28.4	102°34.0	97°17.3	35°37.4	40°57.8	82°51.7	97°08.2
4	142°07.9	15.2′	09°34.0	13.7′	55.5′	114°51.4	106°59.1	102°09.1	96°46.7	35°06.8	41°17.0	83°22.7	97°36.6
5	156°42.1	15.2′	09°20.3	13.8′	55.6′	114°22.7	106°29.7	101°44.1	96°16.1	34°36.1	41°36.4	83°53.8	98°05.1
6	171°16.3	15.2′	S09°06.6	13.8′	55.6′	113°53.9	106°00.3	101°19.2	95°45.5	34°05.4	41°56.0	84°25.0	98°33.6
7	185°50.5	15.2′	08°52.7	13.9′	55.6′	113°25.0	105°30.9	100°54.1	95°14.9	33°34.7	42°15.8	84°56.1	99°02.1
8	200°24.7	15.2′	08°38.9	13.9′	55.6′	112°56.1	105°01.4	100°29.0	94°44.2	33°04.0	42°35.8	85°27.3	99°30.7
9	214°58.9	15.2′	08°24.9	14.0′	55.7′	112°27.1	104°31.8	100°03.9	94°13.4	32°33.3	42°56.1	85°58.6	99°59.2
10	229°33.0	15.2′	08°11.0	14.0′	55.7′	111°58.1	104°02.3	99°38.7	93°42.7	32°02.5	43°16.5	86°29.8	100°27.9
11	244°07.2	15.2′	07°57.0	14.1′	55.7′	111°29.0	103°32.6	99°13.5	93°11.9	31°31.8	43°37.1	87°01.1	100°56.5
12	258°41.4	15.2′	S07°42.9	14.1′	55.8′	110°59.9	103°03.0	98°48.3	92°41.1	31°01.0	43°57.9	87°32.5	101°25.2
13	273°15.6	15.2′	07°28.8	14.2′	55.8′	110°30.7	102°33.3	98°23.0	92°10.2	30°30.2	44°18.9	88°03.9	101°54.0
14	287°49.8	15.2′	07°14.6	14.2′	55.8′	110°01.5	102°03.6	97°57.6	91°39.3	29°59.4	44°40.1	88°35.3	102°22.7
15	302°24.0	15.2′	07°00.4	14.3′	55.9′	109°32.3	101°33.8	97°32.2	91°08.3	29°28.6	45°01.4	89°06.7	102°51.5
16	316°58.2	15.2′	06°46.1	14.3′	55.9′	109°02.9	101°04.0	97°06.8	90°37.4	28°57.7	45°23.0	89°38.2	103°20.4
17	331°32.4	15.2′	06°31.9	14.3′	55.9′	108°33.6	100°34.1	96°41.3	90°06.3	28°26.9	45°44.7	90°09.7	103°49.2
18	346°06.5	15.2′	S06°17.5	14.4′	56.0′	108°04.2	100°04.2	96°15.8	89°35.3	27°56.0	46°06.6	90°41.3	104°18.2
19	0°40.7	15.1′	06°03.1	14.4′	56.0′	107°34.7	99°34.2	95°50.2	89°04.2	27°25.2	46°28.7	91°12.9	104°47.1
20	15°14.8	15.1′	05°48.7	14.5′	56.0′	107°05.2	99°04.3	95°24.6	88°33.1	26°54.3	46°50.9	91°44.5	105°16.1
21	29°49.0	15.1′	05°34.2	14.5′	56.1′	106°35.7	98°34.2	94°58.9	88°01.9	26°23.4	47°13.3	92°16.2	105°45.1
22	44°23.1	15.1′	05°19.7	14.5′	56.1′	106°06.1	98°04.2	94°33.2	87°30.7	25°52.5	47°35.9	92°47.9	106°14.2
23	58°57.2	15.1′	05°05.2	14.6′	56.1′	105°36.4	97°34.0	94°07.5	86°59.5	25°21.6	47°58.6	93°19.7	106°43.3
18th	SD = 15.1′		Mer. pass. 18:57			Sun SD = 16.2′							

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

Thu	GHA	ν	Dec	d	HP	-Pollux	-Capella	-Aldebaran	-Saturn	+Fomalhaut	+Altair	+Antares	+Sun
0	73°31.3	15.1′	S04°50.6	14.6′	56.2′		97°03.9	86°28.2	24°50.7		48°21.5	93°51.5	107°12.4
1	88°05.4	15.1′	04°36.0	14.7′	56.2′		96°33.7	85°56.9	24°19.8		48°44.5	94°23.3	107°41.6
2	102°39.5	15.0′	04°21.3	14.7′	56.2′		96°03.5	85°25.5	23°49.0	25°08.0	49°07.7	94°55.2	108°10.9
3	117°13.5	15.0′	04°06.6	14.7′	56.3′		95°33.2	84°54.1	23°18.1	25°23.6	49°31.0	95°27.1	108°40.1
4	131°47.5	15.0′	03°51.9	14.8′	56.3′		95°02.9	84°22.7	22°47.2	25°39.7	49°54.5	95°59.1	109°09.4
5	146°21.6	15.0′	03°37.1	14.8′	56.3′		94°32.5	83°51.2	22°16.4	25°56.3	50°18.2	96°31.1	109°38.8
6	160°55.5	15.0′	S03°22.3	14.8′	56.4′		94°02.1	83°19.7	21°45.5	26°13.3	50°41.9	97°03.2	110°08.2
7	175°29.5	14.9′	03°07.5	14.9′	56.4′		93°31.7	82°48.1	21°14.7	26°30.8	51°05.8	97°35.2	110°37.6
8	190°03.5	14.9′	02°52.6	14.9′	56.4′		93°01.2	82°16.5	20°43.9	26°48.8	51°29.9	98°07.4	111°07.0
9	204°37.4	14.9′	02°37.7	14.9′	56.5′		92°30.6	81°44.9	20°13.2	27°07.2	51°54.1	98°39.5	111°36.6
10	219°11.3	14.9′	02°22.8	15.0′	56.5′		92°00.1	81°13.2	19°42.4	27°25.9	52°18.4	99°11.8	112°06.1
11	233°45.1	14.8′	02°07.8	15.0′	56.6′		91°29.5	80°41.5	19°11.8	27°45.1	52°42.8	99°44.0	112°35.7
12	248°19.0	14.8′	S01°52.9	15.0′	56.6′		90°58.8	80°09.7	18°41.1	28°04.7	53°07.4	100°16.3	113°05.3
13	262°52.8	14.8′	01°37.8	15.0′	56.6′		90°28.1	79°37.9	18°10.6	28°24.7	53°32.1	100°48.7	113°35.0
14	277°26.5	14.7′	01°22.8	15.1′	56.7′		89°57.4	79°06.0	17°40.0	28°45.0	53°57.0	101°21.0	114°04.7
15	292°00.3	14.7′	01°07.7	15.1′	56.7′		89°26.6	78°34.2	17°09.6	29°05.7	54°22.0	101°53.5	114°34.5
16	306°34.0	14.7′	00°52.6	15.1′	56.7′		88°55.8	78°02.2	16°39.3	29°26.8	54°47.0	102°25.9	115°04.3
17	321°07.6	14.6′	00°37.5	15.1′	56.8′		88°24.9	77°30.3	16°09.0	29°48.2	55°12.3	102°58.5	115°34.1
18	335°41.3	14.6′	S00°22.4	15.2′	56.8′	119°30.4	87°54.0	76°58.3	15°38.9	30°09.9	55°37.6	103°31.0	116°04.0
19	350°14.9	14.6′	S00°07.2	15.2′	56.8′	118°57.9	87°23.0	76°26.2	15°08.9	30°32.0	56°03.0	104°03.6	116°34.0
20	4°48.4	14.5′	N00°08.0	15.2′	56.9′	118°25.3	86°52.1	75°54.1	14°39.0	30°54.3	56°28.6	104°36.3	117°03.9
21	19°21.9	14.5′	00°23.2	15.2′	56.9′	117°52.7	86°21.0	75°22.0	14°09.3	31°17.0	56°54.3	105°09.0	117°33.9
22	33°55.4	14.4′	00°38.4	15.2′	57.0′	117°20.1	85°50.0	74°49.8	13°39.8	31°39.9	57°20.1	105°41.7	118°04.0
23	48°28.8	14.4′	00°53.6	15.3′	57.0′	116°47.4	85°18.9	74°17.6	13°10.6	32°03.2	57°46.0	106°14.5	118°34.1
19th	SD = 15.3′		Mer. pass. 19:40			Sun SD = 16.2′							

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

Fri	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran	+Fomalhaut	+Altair	+Antares
0	63°02.2	14.3′	**N**01°08.9	15.3′	57.0′	118°56.3	116°14.7	92°59.9	84°47.7	73°45.3	32°26.7	58°12.0	106°47.4
1	77°35.5	14.3′	01°24.2	15.3′	57.1′	118°25.6	115°41.9	92°29.0	84°16.5	73°13.0	32°50.5	58°38.1	107°20.3
2	92°08.8	14.2′	01°39.5	15.3′	57.1′	117°54.9	115°09.1	91°58.1	83°45.3	72°40.7	33°14.6	59°04.3	107°53.2
3	106°42.1	14.2′	01°54.8	15.3′	57.1′	117°24.1	114°36.2	91°27.2	83°14.0	72°08.3	33°38.9	59°30.7	108°26.2
4	121°15.3	14.1′	02°10.1	15.3′	57.2′	116°53.2	114°03.3	90°56.2	82°42.7	71°35.8	34°03.5	59°57.1	108°59.2
5	135°48.4	14.1′	02°25.4	15.3′	57.2′	116°22.3	113°30.3	90°25.1	82°11.3	71°03.4	34°28.3	60°23.7	109°32.3
6	150°21.5	14.0′	**N**02°40.7	15.4′	57.3′	115°51.3	112°57.3	89°54.1	81°39.9	70°30.9	34°53.3	60°50.3	110°05.4
7	164°54.5	14.0′	02°56.1	15.4′	57.3′	115°20.2	112°24.2	89°22.9	81°08.5	69°58.3	35°18.6	61°17.1	110°38.5
8	179°27.5	13.9′	03°11.5	15.4′	57.3′	114°49.1	111°51.1	88°51.8	80°37.0	69°25.7	35°44.1	61°43.9	111°11.7
9	194°00.4	13.9′	03°26.8	15.4′	57.4′	114°17.9	111°17.9	88°20.5	80°05.5	68°53.1	36°09.8	62°10.9	111°45.0
10	208°33.3	13.8′	03°42.2	15.4′	57.4′	113°46.6	110°44.7	87°49.3	79°34.0	68°20.4	36°35.7	62°37.9	112°18.3
11	223°06.1	13.7′	03°57.6	15.4′	57.5′	113°15.3	110°11.5	87°18.0	79°02.4	67°47.6	37°01.9	63°05.1	112°51.7
12	237°38.8	13.7′	**N**04°13.0	15.4′	57.5′	112°43.9	109°38.1	86°46.6	78°30.7	67°14.9	37°28.2	63°32.3	113°25.1
13	252°11.5	13.6′	04°28.3	15.4′	57.5′	112°12.5	109°04.8	86°15.2	77°59.1	66°42.1	37°54.7	63°59.6	113°58.5
14	266°44.1	13.5′	04°43.7	15.4′	57.6′	111°41.0	108°31.4	85°43.8	77°27.4	66°09.2	38°21.4	64°27.0	114°32.0
15	281°16.6	13.5′	04°59.1	15.4′	57.6′	111°09.4	107°57.9	85°12.3	76°55.6	65°36.3	38°48.4	64°54.5	115°05.6
16	295°49.1	13.4′	05°14.5	15.4′	57.7′	110°37.8	107°24.4	84°40.8	76°23.8	65°03.4	39°15.5	65°22.1	115°39.2
17	310°21.5	13.3′	05°29.9	15.4′	57.7′	110°06.1	106°50.9	84°09.2	75°52.0	64°30.4	39°42.7	65°49.8	116°12.8
18	324°53.9	13.3′	**N**05°45.3	15.4′	57.7′	109°34.4	106°17.3	83°37.6	75°20.2	63°57.4	40°10.2	66°17.6	116°46.5
19	339°26.1	13.2′	06°00.6	15.4′	57.8′	109°02.6	105°43.6	83°06.0	74°48.3	63°24.3	40°37.8	66°45.5	117°20.2
20	353°58.3	13.1′	06°16.0	15.4′	57.8′	108°30.7	105°09.9	82°34.3	74°16.3	62°51.2	41°05.6	67°13.4	117°54.0
21	8°30.5	13.1′	06°31.4	15.4′	57.9′	107°58.8	104°36.2	82°02.6	73°44.4	62°18.1	41°33.5	67°41.5	118°27.9
22	23°02.5	13.0′	06°46.7	15.3′	57.9′	107°26.8	104°02.4	81°30.8	73°12.4	61°44.9	42°01.6	68°09.6	119°01.8
23	37°34.5	12.9′	07°02.1	15.3′	57.9′	106°54.8	103°28.5	80°59.0	72°40.3	61°11.7	42°29.9	68°37.8	119°35.7
20th	SD = 15.6′		Mer. pass. 20:25										

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

Sat	GHA	ν	Dec	d	HP	-Procyon	-Pollux	-Betelgeuse	-Capella	-Aldebaran	+Saturn	+Fomalhaut	+Altair
0	52°06.4	12.8′	**N**07°17.4	15.3′	58.0′	106°22.7	102°54.6	80°27.1	72°08.2	60°38.4		42°58.3	69°06.1
1	66°38.2	12.7′	07°32.7	15.3′	58.0′	105°50.6	102°20.7	79°55.3	71°36.1	60°05.1		43°26.9	69°34.4
2	81°09.9	12.7′	07°48.1	15.3′	58.1′	105°18.4	101°46.7	79°23.3	71°04.0	59°31.7		43°55.6	70°02.9
3	95°41.6	12.6′	08°03.4	15.3′	58.1′	104°46.1	101°12.6	78°51.4	70°31.8	58°58.4		44°24.4	70°31.4
4	110°13.2	12.5′	08°18.6	15.3′	58.1′	104°13.8	100°38.6	78°19.4	69°59.6	58°24.9		44°53.4	71°00.0
5	124°44.6	12.4′	08°33.9	15.2′	58.2′	103°41.4	100°04.4	77°47.3	69°27.4	57°51.5		45°22.5	71°28.7
6	139°16.0	12.3′	**N**08°49.1	15.2′	58.2′	103°09.0	99°30.2	77°15.3	68°55.1	57°18.0		45°51.8	71°57.4
7	153°47.4	12.2′	09°04.3	15.2′	58.2′	102°36.5	98°56.0	76°43.1	68°22.8	56°44.4		46°21.2	72°26.2
8	168°18.6	12.1′	09°19.5	15.2′	58.3′	102°04.0	98°21.7	76°11.0	67°50.5	56°10.8		46°50.7	72°55.1
9	182°49.7	12.0′	09°34.7	15.1′	58.3′	101°31.4	97°47.3	75°38.8	67°18.1	55°37.2		47°20.3	73°24.1
10	197°20.8	11.9′	09°49.9	15.1′	58.4′	100°58.7	97°13.0	75°06.6	66°45.7	55°03.6	9°59.5	47°50.1	73°53.1
11	211°51.7	11.9′	10°05.0	15.1′	58.4′	100°26.0	96°38.5	74°34.3	66°13.3	54°29.9	10°27.3	48°20.0	74°22.3
12	226°22.6	11.8′	**N**10°20.1	15.1′	58.4′	99°53.3	96°04.0	74°02.1	65°40.9	53°56.2	10°55.8	48°50.0	74°51.4
13	240°53.3	11.7′	10°35.1	15.0′	58.5′	99°20.5	95°29.5	73°29.7	65°08.4	53°22.4	11°24.9	49°20.1	75°20.7
14	255°24.0	11.6′	10°50.2	15.0′	58.5′	98°47.6	94°54.9	72°57.4	64°35.9	52°48.6	11°54.5	49°50.4	75°50.0
15	269°54.6	11.5′	11°05.1	15.0′	58.6′	98°14.7	94°20.3	72°25.0	64°03.4	52°14.8	12°24.6	50°20.7	76°19.4
16	284°25.0	11.4′	11°20.1	14.9′	58.6′	97°41.8	93°45.6	71°52.6	63°30.8	51°40.9	12°55.2	50°51.2	76°48.8
17	298°55.4	11.3′	11°35.0	14.9′	58.6′	97°08.8	93°10.9	71°20.2	62°58.2	51°07.0	13°26.1	51°21.8	77°18.3
18	313°25.6	11.2′	**N**11°49.9	14.8′	58.7′	96°35.7	92°36.1	70°47.7	62°25.6	50°33.1	13°57.4	51°52.4	77°47.9
19	327°55.8	11.1′	12°04.8	14.8′	58.7′	96°02.6	92°01.3	70°15.2	61°53.0	49°59.1	14°29.0	52°23.2	78°17.6
20	342°25.9	10.9′	12°19.6	14.8′	58.8′	95°29.4	91°26.4	69°42.6	61°20.4	49°25.2	15°00.9	52°54.1	78°47.3
21	356°55.8	10.8′	12°34.3	14.7′	58.8′	94°56.2	90°51.5	69°10.1	60°47.7	48°51.1	15°33.0	53°25.1	79°17.0
22	11°25.7	10.7′	12°49.0	14.7′	58.8′	94°23.0	90°16.5	68°37.5	60°15.1	48°17.1	16°05.4	53°56.2	79°46.8
23	25°55.4	10.6′	13°03.7	14.6′	58.9′	93°49.6	89°41.5	68°04.9	59°42.4	47°43.0	16°38.1	54°27.4	80°16.7
21st	SD = 15.8′		Mer. pass. 21:13										

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

Sun	GHA	ν	Dec	d	HP	-Jupiter	-Regulus	-Mars	-Pollux	+Saturn	+Fomalhaut	+Deneb	+Altair
0	40°25.0	10.5′	**N**13°18.3	14.6′	58.9′				89°06.4	17°10.9	54°58.7		80°46.7
1	54°54.5	10.4′	13°32.9	14.5′	58.9′				88°31.3	17°43.9	55°30.0		81°16.7
2	69°23.9	10.3′	13°47.4	14.5′	59.0′				87°56.1	18°17.1	56°01.5		81°46.7
3	83°53.2	10.2′	14°01.8	14.4′	59.0′				87°20.9	18°50.5	56°33.1		82°16.8
4	98°22.4	10.1′	14°16.2	14.3′	59.1′	119°48.7			86°45.7	19°24.0	57°04.7		82°47.0
5	112°51.5	9.9′	14°30.6	14.3′	59.1′	119°13.5			86°10.4	19°57.7	57°36.5		83°17.2
6	127°20.4	9.8′	**N**14°44.8	14.2′	59.1′	118°38.2			85°35.0	20°31.5	58°08.3		83°47.5
7	141°49.2	9.7′	14°59.0	14.2′	59.2′	118°02.9			84°59.6	21°05.5	58°40.2		84°17.8
8	156°17.9	9.6′	15°13.2	14.1′	59.2′	117°27.6		119°29.0	84°24.2	21°39.6	59°12.2		84°48.1
9	170°46.5	9.5′	15°27.3	14.0′	59.2′	116°52.2		118°54.5	83°48.7	22°13.8	59°44.2		85°18.5
10	185°15.0	9.3′	15°41.3	13.9′	59.3′	116°16.7		118°19.9	83°13.2	22°48.1	60°16.4		85°49.0
11	199°43.3	9.2′	15°55.2	13.9′	59.3′	115°41.2	119°33.5	117°45.3	82°37.6	23°22.5	60°48.6		86°19.5
12	214°11.6	9.1′	**N**16°09.1	13.8′	59.3′	115°05.7	118°57.8	117°10.7	82°02.0	23°57.0	61°21.0		86°50.1
13	228°39.7	9.0′	16°22.9	13.7′	59.4′	114°30.1	118°22.0	116°36.0	81°26.3	24°31.7	61°53.3		87°20.6
14	243°07.6	8.9′	16°36.6	13.6′	59.4′	113°54.4	117°46.2	116°01.3	80°50.6	25°06.4	62°25.8		87°51.3
15	257°35.5	8.7′	16°50.3	13.6′	59.4′	113°18.7	117°10.4	115°26.5	80°14.9	25°41.2	62°58.3		88°22.0
16	272°03.2	8.6′	17°03.8	13.5′	59.5′	112°43.0	116°34.5	114°51.7	79°39.1	26°16.1	63°31.0	70°19.1	88°52.7
17	286°30.8	8.5′	17°17.3	13.4′	59.5′	112°07.3	115°58.6	114°16.8	79°03.2	26°51.1	64°03.6	70°34.3	89°23.4
18	300°58.3	8.3′	**N**17°30.7	13.3′	59.6′	111°31.4	115°22.6	113°41.9	78°27.3	27°26.2	64°36.4	70°49.7	89°54.2
19	315°25.7	8.2′	17°44.0	13.2′	59.6′	110°55.6	114°46.6	113°06.9	77°51.4	28°01.3	65°09.2	71°05.1	90°25.1
20	329°52.9	8.1′	17°57.2	13.1′	59.6′	110°19.7	114°10.6	112°31.9	77°15.5	28°36.6	65°42.1	71°20.7	90°55.9
21	344°20.0	8.0′	18°10.4	13.0′	59.7′	109°43.8	113°34.5	111°56.9	76°39.5	29°11.9	66°15.1	71°36.4	91°26.8
22	358°46.9	7.8′	18°23.4	12.9′	59.7′	109°07.8	112°58.3	111°21.8	76°03.4	29°47.3	66°48.1	71°52.3	91°57.8
23	13°13.7	7.7′	18°36.3	12.8′	59.7′	108°31.7	112°22.1	110°46.7	75°27.3	30°22.7	67°21.2	72°08.2	92°28.8
22nd	SD = 16.1′		Mer. pass. 22:05										

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

Mon	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Jupiter	-Pollux	+Saturn	+Fomalhaut	+Deneb	+Altair
0	27°40.4	7.6′	**N**18°49.2	12.7′	59.7′	111°45.9	110°11.5	107°55.7	74°51.2	30°58.2	67°54.4	72°24.3	92°59.8
1	42°07.0	7.4′	19°01.9	12.6′	59.8′	111°09.7	109°36.3	107°19.6	74°15.0	31°33.8	68°27.6	72°40.5	93°30.8
2	56°33.4	7.3′	19°14.6	12.5′	59.8′	110°33.4	109°01.1	106°43.4	73°38.8	32°09.5	69°00.8	72°56.8	94°01.8
3	70°59.8	7.2′	19°27.1	12.4′	59.8′	109°57.0	108°25.8	106°07.2	73°02.6	32°45.2	69°34.2	73°13.2	94°32.9
4	85°25.9	7.0′	19°39.5	12.3′	59.9′	109°20.6	107°50.5	105°31.0	72°26.3	33°21.0	70°07.6	73°29.8	95°04.0
5	99°52.0	6.9′	19°51.8	12.2′	59.9′	108°44.2	107°15.1	104°54.7	71°50.0	33°56.8	70°41.0	73°46.4	95°35.2
6	114°17.9	6.8′	**N**20°04.1	12.1′	59.9′	108°07.8	106°39.7	104°18.4	71°13.6	34°32.7	71°14.5	74°03.1	96°06.3
7	128°43.6	6.6′	20°16.1	12.0′	60.0′	107°31.3	106°04.2	103°42.1	70°37.2	35°08.6	71°48.1	74°20.0	96°37.5
8	143°09.3	6.5′	20°28.1	11.9′	60.0′	106°54.7	105°28.7	103°05.7	70°00.8	35°44.6	72°21.7	74°36.9	97°08.7
9	157°34.8	6.4′	20°40.0	11.7′	60.0′	106°18.1	104°53.2	102°29.3	69°24.3	36°20.7	72°55.4	74°54.0	97°39.9
10	172°00.2	6.2′	20°51.7	11.6′	60.1′	105°41.5	104°17.7	101°52.8	68°47.8	36°56.8	73°29.1	75°11.1	98°11.2
11	186°25.4	6.1′	21°03.3	11.5′	60.1′	105°04.9	103°42.1	101°16.3	68°11.2	37°33.0	74°02.9	75°28.4	98°42.4
12	200°50.5	6.0′	**N**21°14.8	11.4′	60.1′	104°28.2	103°06.4	100°39.8	67°34.7	38°09.2	74°36.7	75°45.7	99°13.7
13	215°15.5	5.8′	21°26.2	11.2′	60.1′	103°51.5	102°30.8	100°03.2	66°58.0	38°45.5	75°10.6	76°03.2	99°45.0
14	229°40.3	5.7′	21°37.4	11.1′	60.2′	103°14.7	101°55.1	99°26.6	66°21.4	39°21.8	75°44.5	76°20.7	100°16.3
15	244°05.0	5.6′	21°48.5	11.0′	60.2′	102°38.0	101°19.3	98°50.0	65°44.7	39°58.1	76°18.5	76°38.3	100°47.6
16	258°29.6	5.4′	21°59.5	10.8′	60.2′	102°01.1	100°43.5	98°13.3	65°08.0	40°34.5	76°52.5	76°56.1	101°18.9
17	272°54.0	5.3′	22°10.3	10.7′	60.2′	101°24.3	100°07.7	97°36.6	64°31.3	41°11.0	77°26.6	77°13.9	101°50.2
18	287°18.4	5.2′	**N**22°21.0	10.6′	60.3′	100°47.4	99°31.9	96°59.9	63°54.5	41°47.5	78°00.7	77°31.7	102°21.5
19	301°42.5	5.1′	22°31.6	10.4′	60.3′	100°10.5	98°56.0	96°23.1	63°17.7	42°24.0	78°34.8	77°49.7	102°52.9
20	316°06.6	4.9′	22°42.0	10.3′	60.3′	99°33.5	98°20.1	95°46.3	62°40.8	43°00.6	79°09.0	78°07.8	103°24.2
21	330°30.5	4.8′	22°52.3	10.1′	60.3′	98°56.5	97°44.2	95°09.5	62°04.0	43°37.2	79°43.2	78°25.9	103°55.5
22	344°54.3	4.7′	23°02.4	10.0′	60.4′	98°19.5	97°08.2	94°32.6	61°27.1	44°13.9	80°17.5	78°44.1	104°26.8
23	359°18.0	4.5′	23°12.4	9.8′	60.4′	97°42.5	96°32.2	93°55.7	60°50.1	44°50.6	80°51.8	79°02.4	104°58.2
23rd	SD = 16.3′		Mer. pass. 23:03										

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

Tue	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Jupiter	-Pollux	+Saturn	+Deneb	+Fomalhaut	+Altair
0	13°41.5	4.4′	**N**23°22.2	9.7′	60.4′	97°05.4	95°56.2	93°18.8	60°13.2	45°27.3	79°20.7	81°26.1	105°29.5
1	28°04.9	4.3′	23°31.8	9.5′	60.4′	96°28.3	95°20.1	92°41.9	59°36.2	46°04.1	79°39.2	82°00.5	106°00.8
2	42°28.2	4.2′	23°41.4	9.4′	60.5′	95°51.2	94°44.0	92°04.9	58°59.2	46°40.9	79°57.7	82°34.9	106°32.1
3	56°51.4	4.0′	23°50.7	9.2′	60.5′	95°14.0	94°07.9	91°27.9	58°22.2	47°17.7	80°16.2	83°09.3	107°03.4
4	71°14.4	3.9′	23°59.9	9.0′	60.5′	94°36.8	93°31.8	90°50.8	57°45.1	47°54.6	80°34.8	83°43.8	107°34.7
5	85°37.3	3.8′	24°08.9	8.9′	60.5′	93°59.6	92°55.6	90°13.8	57°08.0	48°31.5	80°53.5	84°18.3	108°05.9
6	100°00.1	3.7′	**N**24°17.8	8.7′	60.5′	93°22.4	92°19.4	89°36.7	56°30.9	49°08.5	81°12.3	84°52.8	108°37.2
7	114°22.8	3.6′	24°26.5	8.5′	60.6′	92°45.1	91°43.2	88°59.6	55°53.8	49°45.4	81°31.1	85°27.3	109°08.4
8	128°45.4	3.4′	24°35.0	8.4′	60.6′	92°07.9	91°07.0	88°22.4	55°16.7	50°22.5	81°50.0	86°01.9	109°39.6
9	143°07.8	3.3′	24°43.4	8.2′	60.6′	91°30.5	90°30.7	87°45.3	54°39.5	50°59.5	82°08.9	86°36.5	110°10.8
10	157°30.2	3.2′	24°51.6	8.0′	60.6′	90°53.2	89°54.4	87°08.1	54°02.3	51°36.6	82°27.9	87°11.2	110°41.9
11	171°52.4	3.1′	24°59.6	7.8′	60.6′	90°15.9	89°18.1	86°30.9	53°25.1	52°13.7	82°46.9	87°45.8	111°13.1
12	186°14.5	3.0′	**N**25°07.4	7.7′	60.7′	89°38.5	88°41.7	85°53.6	52°47.8	52°50.8	83°06.0	88°20.5	111°44.2
13	200°36.5	2.9′	25°15.1	7.5′	60.7′	89°01.1	88°05.4	85°16.4	52°10.6	53°27.9	83°25.1	88°55.2	112°15.2
14	214°58.4	2.8′	25°22.5	7.3′	60.7′	88°23.7	87°29.0	84°39.1	51°33.3	54°05.1	83°44.3	89°29.9	112°46.3
15	229°20.2	2.7′	25°29.8	7.1′	60.7′	87°46.2	86°52.6	84°01.8	50°56.0	54°42.3	84°03.5	90°04.7	113°17.2
16	243°41.9	2.6′	25°36.9	6.9′	60.7′	87°08.8	86°16.2	83°24.5	50°18.7	55°19.5	84°22.8	90°39.4	113°48.2
17	258°03.5	2.5′	25°43.9	6.7′	60.7′	86°31.3	85°39.7	82°47.2	49°41.4	55°56.8	84°42.1	91°14.2	114°19.1
18	272°25.0	2.4′	**N**25°50.6	6.5′	60.7′	85°53.8	85°03.3	82°09.8	49°04.1	56°34.0	85°01.4	91°49.0	114°50.0
19	286°46.4	2.3′	25°57.1	6.4′	60.8′	85°16.3	84°26.8	81°32.4	48°26.7	57°11.3	85°20.8	92°23.8	115°20.8
20	301°07.7	2.2′	26°03.5	6.2′	60.8′	84°38.7	83°50.3	80°55.1	47°49.4	57°48.6	85°40.2	92°58.6	115°51.6
21	315°28.9	2.1′	26°09.6	6.0′	60.8′	84°01.2	83°13.8	80°17.6	47°12.0	58°26.0	85°59.6	93°33.4	116°22.3
22	329°50.0	2.0′	26°15.6	5.8′	60.8′	83°23.6	82°37.3	79°40.2	46°34.6	59°03.3	86°19.1	94°08.3	116°53.0
23	344°11.0	2.0′	26°21.4	5.6′	60.8′	82°46.1	82°00.7	79°02.8	45°57.2	59°40.7	86°38.6	94°43.1	117°23.6
24th	SD = 16.5′		Mer. pass. –:–										

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

Wed	GHA	ν	Dec	d	HP	-Regulus	-Mars	-Jupiter	-Pollux	+Aldebaran	+Saturn	+Fomalhaut	+Altair
0	358°32.0	1.9′	**N**26°27.0	5.4′	60.8′	82°08.5	81°24.2	78°25.3	45°19.8		60°18.1	95°18.0	117°54.1
1	12°52.9	1.8′	26°32.3	5.2′	60.8′	81°30.9	80°47.6	77°47.9	44°42.4		60°55.5	95°52.9	118°24.6
2	27°13.7	1.7′	26°37.5	5.0′	60.8′	80°53.3	80°11.0	77°10.4	44°05.0		61°32.9	96°27.7	118°55.0
3	41°34.4	1.6′	26°42.5	4.8′	60.9′	80°15.6	79°34.4	76°32.9	43°27.5		62°10.3	97°02.6	119°25.4
4	55°55.0	1.6′	26°47.2	4.6′	60.9′	79°38.0	78°57.8	75°55.4	42°50.1		62°47.7	97°37.5	119°55.7
5	70°15.6	1.5′	26°51.8	4.4′	60.9′	79°00.3	78°21.2	75°17.9	42°12.7		63°25.2	98°12.3	
6	84°36.1	1.5′	**N**26°56.2	4.2′	60.9′	78°22.7	77°44.6	74°40.4	41°35.2		64°02.7	98°47.2	
7	98°56.6	1.4′	27°00.3	3.9′	60.9′	77°45.0	77°08.0	74°02.9	40°57.8		64°40.2	99°22.1	
8	113°17.0	1.3′	27°04.3	3.7′	60.9′	77°07.3	76°31.3	73°25.3	40°20.3		65°17.6	99°57.0	
9	127°37.3	1.3′	27°08.0	3.5′	60.9′	76°29.7	75°54.7	72°47.8	39°42.9		65°55.1	100°31.8	
10	141°57.6	1.2′	27°11.5	3.3′	60.9′	75°52.0	75°18.0	72°10.2	39°05.4		66°32.7	101°06.7	
11	156°17.8	1.2′	27°14.9	3.1′	60.9′	75°14.3	74°41.4	71°32.7	38°28.0		67°10.2	101°41.6	
12	170°38.0	1.1′	**N**27°18.0	2.9′	60.9′	74°36.6	74°04.7	70°55.1	37°50.5		67°47.7	102°16.4	
13	184°58.1	1.1′	27°20.9	2.7′	60.9′	73°58.9	73°28.0	70°17.5	37°13.1		68°25.2	102°51.3	
14	199°18.2	1.1′	27°23.5	2.5′	60.9′	73°21.1	72°51.3	69°40.0	36°35.6		69°02.8	103°26.1	
15	213°38.3	1.0′	27°26.0	2.3′	60.9′	72°43.4	72°14.7	69°02.4	35°58.2		69°40.3	104°00.9	
16	227°58.3	1.0′	27°28.3	2.0′	60.9′	72°05.7	71°38.0	68°24.8	35°20.7		70°17.9	104°35.7	
17	242°18.3	1.0′	27°30.3	1.8′	60.9′	71°28.0	71°01.3	67°47.2	34°43.3		70°55.4	105°10.5	
18	256°38.3	1.0′	**N**27°32.1	1.6′	60.9′	70°50.3	70°24.6	67°09.7	34°05.9		71°33.0	105°45.3	
19	270°58.3	0.9′	27°33.7	1.4′	60.9′	70°12.6	69°47.9	66°32.1	33°28.5		72°10.5	106°20.1	
20	285°18.2	0.9′	27°35.1	1.2′	60.9′	69°34.8	69°11.2	65°54.5	32°51.1	14°26.6	72°48.1	106°54.8	
21	299°38.1	0.9′	27°36.3	1.0′	60.9′	68°57.1	68°34.5	65°16.9	32°13.7	14°53.3	73°25.7	107°29.5	
22	313°58.0	0.9′	27°37.2	0.7′	60.9′	68°19.4	67°57.9	64°39.3	31°36.3	15°20.8	74°03.2	108°04.2	
23	328°17.9	0.9′	27°38.0	0.5′	60.9′	67°41.7	67°21.2	64°01.7	30°58.9	15°49.0	74°40.8	108°38.9	
25th	SD = 16.6′		Mer. pass. 00:06										