

GENERATED BY PYALMANAC



THE NAUTICAL ALMANAC FOR THE SUN

2020

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DIP corrects for height of eye over the surface. This value has to be subtracted from the sextant altitude (H_s). The correction in degrees for height of eye in meters is given by the following formula:

$$d = 0.0293\sqrt{m}$$

This is the first correction (apart from index error) that has to be applied to the measured altitude.

The next correction is for refraction in the earth's atmosphere. As usual this table is correct for 10°C and a pressure of 1010hPa. This correction has to be applied to apparent altitude (H_a). The exact values can be calculated by the following formula.

$$R_0 = \cot \left(H_a + \frac{7.31}{H_a + 4.4} \right)$$

For other than standard conditions calculate a correction factor for R_0 by:

$$f = \frac{0.28P}{T + 273}$$

where P is the pressure in hectopascal and T is the temperature in °C.

Semidiameter has to be added for lower limb sights and subtracted for upper limb sights. The value for semidiameter is tabulated in the daily pages.

To correct your sextant altitude H_s do the following: Calculate H_a by

$$H_a = H_s + I - dip$$

Where I is the sextants index error. Than calculate the observed altitude H_o by

$$H_o = H_a - R + P \pm SD$$

where R is refraction, P is parallax and SD is the semidiameter.

Sight reduction tables can be downloaded for the US governments internet pages. Search for HO-229 or HO-249. These values can also be calculated with to, relatively simple, formulas

$$\sin H_c = \sin L \sin d + \cos L \cos d \cos LHA$$

and

$$\cos A = \frac{\sin d - \sin L \sin H_c}{\cos L \cos H_c}$$

where A is the azimuth angle, L is the latitude, d is the declination and LHA is the local hour angle. The azimuth (Z_n) is given by the following rule:

- if the LHA is greater than 180°, $Z_n = A$
- if the LHA is less than 180°, $Z_n = 360° - A$

2020 January 01 to Jan. 15

01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec	13	GHA	Dec
0	179°13.7	-23°03.5	0	178°52.6	-22°47.7	0	178°32.5	-22°27.8	0	178°13.4	-22°03.8	0	177°55.6	-21°36.1
1	194°13.4	-23°03.3	1	193°52.4	-22°47.4	1	193°32.2	-22°27.5	1	193°13.1	-22°03.5	1	192°55.3	-21°35.7
2	209°13.1	-23°03.1	2	208°52.1	-22°47.2	2	208°31.9	-22°27.1	2	208°12.9	-22°03.1	2	207°55.1	-21°35.2
3	224°12.8	-23°03.0	3	223°51.8	-22°46.9	3	223°31.7	-22°26.8	3	223°12.6	-22°02.8	3	222°54.8	-21°34.8
4	239°12.5	-23°02.8	4	238°51.5	-22°46.7	4	238°31.4	-22°26.5	4	238°12.4	-22°02.4	4	237°54.6	-21°34.4
5	254°12.2	-23°02.6	5	253°51.2	-22°46.4	5	253°31.1	-22°26.2	5	253°12.1	-22°02.0	5	252°54.4	-21°34.0
6	269°11.9	-23°02.4	6	268°50.9	-22°46.2	6	268°30.8	-22°25.9	6	268°11.9	-22°01.7	6	267°54.1	-21°33.6
7	284°11.6	-23°02.2	7	283°50.6	-22°45.9	7	283°30.6	-22°25.6	7	283°11.6	-22°01.3	7	282°53.9	-21°33.2
8	299°11.3	-23°02.0	8	298°50.4	-22°45.7	8	298°30.3	-22°25.3	8	298°11.4	-22°01.0	8	297°53.7	-21°32.7
9	314°11.0	-23°01.8	9	313°50.1	-22°45.4	9	313°30.0	-22°25.0	9	313°11.1	-22°00.6	9	312°53.4	-21°32.3
10	329°10.7	-23°01.6	10	328°49.8	-22°45.2	10	328°29.8	-22°24.7	10	328°10.8	-22°00.2	10	327°53.2	-21°31.9
11	344°10.4	-23°01.4	11	343°49.5	-22°44.9	11	343°29.5	-22°24.4	11	343°10.6	-21°59.9	11	342°53.0	-21°31.5
12	359°10.2	-23°01.2	12	358°49.2	-22°44.6	12	358°29.2	-22°24.0	12	358°10.3	-21°59.5	12	357°52.7	-21°31.1
13	14°09.9	-23°01.0	13	13°48.9	-22°44.4	13	13°28.9	-22°23.7	13	13°10.1	-21°59.1	13	12°52.5	-21°30.6
14	29°09.6	-23°00.8	14	28°48.6	-22°44.1	14	28°28.7	-22°23.4	14	28°09.8	-21°58.7	14	27°52.2	-21°30.2
15	44°09.3	-23°00.6	15	43°48.4	-22°43.9	15	43°28.4	-22°23.1	15	43°09.6	-21°58.4	15	42°52.0	-21°29.8
16	59°09.0	-23°00.4	16	58°48.1	-22°43.6	16	58°28.1	-22°22.8	16	58°09.3	-21°58.0	16	57°51.8	-21°29.4
17	74°08.7	-23°00.2	17	73°47.8	-22°43.3	17	73°27.9	-22°22.5	17	73°09.1	-21°57.6	17	72°51.5	-21°29.0
18	89°08.4	-22°60.0	18	88°47.5	-22°43.1	18	88°27.6	-22°22.2	18	88°08.8	-21°57.3	18	87°51.3	-21°28.5
19	104°08.1	-22°59.7	19	103°47.2	-22°42.8	19	103°27.3	-22°21.8	19	103°08.6	-21°56.9	19	102°51.1	-21°28.1
20	119°07.8	-22°59.5	20	118°46.9	-22°42.6	20	118°27.1	-22°21.5	20	118°08.3	-21°56.5	20	117°50.8	-21°27.7
21	134°07.5	-22°59.3	21	133°46.7	-22°42.3	21	133°26.8	-22°21.2	21	133°08.1	-21°56.1	21	132°50.6	-21°27.2
22	149°07.2	-22°59.1	22	148°46.4	-22°42.0	22	148°26.5	-22°20.9	22	148°07.8	-21°55.8	22	147°50.4	-21°26.8
23	164°06.9	-22°58.9	23	163°46.1	-22°41.8	23	163°26.3	-22°20.5	23	163°07.6	-21°55.4	23	162°50.1	-21°26.4
	SD.=16.3	d=0.2		SD.=16.3	d=0.2		SD.=16.3	d=0.3		SD.=16.3	d=0.4		SD.=16.3	d=0.4
02	GHA	Dec	05	GHA	Dec	08	GHA	Dec	11	GHA	Dec	14	GHA	Dec
0	179°06.6	-22°58.7	0	178°45.8	-22°41.5	0	178°26.0	-22°20.2	0	178°07.3	-21°55.0	0	177°49.9	-21°26.0
1	194°06.3	-22°58.5	1	193°45.5	-22°41.2	1	193°25.7	-22°19.9	1	193°07.1	-21°54.6	1	192°49.7	-21°25.5
2	209°06.0	-22°58.3	2	208°45.2	-22°41.0	2	208°25.5	-22°19.6	2	208°06.8	-21°54.3	2	207°49.4	-21°25.1
3	224°05.7	-22°58.1	3	223°45.0	-22°40.7	3	223°25.2	-22°19.3	3	223°06.6	-21°53.9	3	222°49.2	-21°24.7
4	239°05.4	-22°57.9	4	238°44.7	-22°40.4	4	238°24.9	-22°18.9	4	238°06.3	-21°53.5	4	237°49.0	-21°24.2
5	254°05.1	-22°57.6	5	253°44.4	-22°40.1	5	253°24.7	-22°18.6	5	253°06.1	-21°53.1	5	252°48.8	-21°23.8
6	269°04.8	-22°57.4	6	268°44.1	-22°39.9	6	268°24.4	-22°18.3	6	268°05.8	-21°52.7	6	267°48.5	-21°23.4
7	284°04.5	-22°57.2	7	283°43.8	-22°39.6	7	283°24.1	-22°17.9	7	283°05.6	-21°52.4	7	282°48.3	-21°22.9
8	299°04.3	-22°57.0	8	298°43.6	-22°39.3	8	298°23.9	-22°17.6	8	298°05.3	-21°52.0	8	297°48.1	-21°22.5
9	314°04.0	-22°56.8	9	313°43.3	-22°39.1	9	313°23.6	-22°17.3	9	313°05.1	-21°51.6	9	312°47.8	-21°22.1
10	329°03.7	-22°56.6	10	328°43.0	-22°38.8	10	328°23.3	-22°17.0	10	328°04.8	-21°51.2	10	327°47.6	-21°21.6
11	344°03.4	-22°56.3	11	343°42.7	-22°38.5	11	343°23.1	-22°16.6	11	343°04.6	-21°50.8	11	342°47.4	-21°21.2
12	359°03.1	-22°56.1	12	358°42.4	-22°38.2	12	358°22.8	-22°16.3	12	358°04.3	-21°50.4	12	357°47.1	-21°20.8
13	14°02.8	-22°55.9	13	13°42.2	-22°37.9	13	13°22.5	-22°16.0	13	13°04.1	-21°50.0	13	12°46.9	-21°20.3
14	29°02.5	-22°55.7	14	28°41.9	-22°37.7	14	28°22.3	-22°15.6	14	28°03.8	-21°49.7	14	27°46.7	-21°19.9
15	44°02.2	-22°55.5	15	43°41.6	-22°37.4	15	43°22.0	-22°15.3	15	43°03.6	-21°49.3	15	42°46.5	-21°19.4
16	59°01.9	-22°55.2	16	58°41.3	-22°37.1	16	58°21.7	-22°15.0	16	58°03.3	-21°48.9	16	57°46.2	-21°19.0
17	74°01.6	-22°55.0	17	73°41.0	-22°36.8	17	73°21.5	-22°14.6	17	73°03.1	-21°48.5	17	72°46.0	-21°18.6
18	89°01.3	-22°54.8	18	88°40.8	-22°36.6	18	88°21.2	-22°14.3	18	88°08.2	-21°48.1	18	87°45.8	-21°18.1
19	104°01.0	-22°54.6	19	103°40.5	-22°36.3	19	103°20.9	-22°14.0	19	103°02.6	-21°47.7	19	102°45.5	-21°17.7
20	119°00.7	-22°54.3	20	118°40.2	-22°36.0	20	118°20.7	-22°13.6	20	118°02.3	-21°47.3	20	117°45.3	-21°17.2
21	134°00.5	-22°54.1	21	133°39.9	-22°35.7	21	133°20.4	-22°13.3	21	133°02.1	-21°46.9	21	132°45.1	-21°16.8
22	149°00.2	-22°53.9	22	148°39.6	-22°35.4	22	148°20.2	-22°12.9	22	148°01.9	-21°46.5	22	147°44.9	-21°16.3
23	163°59.9	-22°53.7	23	163°39.4	-22°35.1	23	163°19.9	-22°12.6	23	163°01.6	-21°46.1	23	162°44.6	-21°15.9
	SD.=16.3	d=0.2		SD.=16.3	d=0.3		SD.=16.3	d=0.3		SD.=16.3	d=0.4		SD.=16.3	d=0.4
03	GHA	Dec	06	GHA	Dec	09	GHA	Dec	12	GHA	Dec	15	GHA	Dec
0	178°59.6	-22°53.4	0	178°39.1	-22°34.8	0	178°19.6	-22°12.3	0	178°01.4	-21°45.7	0	177°44.4	-21°15.4
1	193°59.3	-22°53.2	1	193°38.8	-22°34.6	1	193°19.4	-22°11.9	1	193°01.1	-21°45.4	1	192°44.2	-21°15.0
2	208°59.0	-22°53.0	2	208°38.5	-22°34.3	2	208°19.1	-22°11.6	2	208°00.9	-21°45.0	2	207°44.0	-21°14.5
3	223°58.7	-22°52.7	3	223°38.3	-22°34.0	3	223°18.8	-22°11.2	3	223°00.6	-21°44.6	3	222°43.7	-21°14.1
4	238°58.4	-22°52.5	4	238°38.0	-22°33.7	4	238°18.6	-22°10.9	4	238°00.4	-21°44.2	4	237°43.5	-21°13.7
5	253°58.1	-22°52.3	5	253°37.7	-22°33.4	5	253°18.3	-22°10.5	5	253°00.1	-21°43.8	5	252°43.3	-21°13.2
6	268°57.8	-22°52.0	6	268°37.4	-22°33.1	6	268°18.1	-22°10.2	6	267°59.9	-21°43.4	6	267°43.1	-21°12.8
7	283°57.5	-22°51.8	7	283°37.1	-22°32.8	7	283°17.8	-22°09.8	7	282°59.7	-21°43.0	7	282°42.8	-21°12.3
8	298°57.3	-22°51.6	8	298°36.9	-22°32.5	8	298°17.5	-22°09.5	8	297°59.4	-21°42.6	8	297°42.6	-21°11.8
9	313°57.0	-22°51.3	9	313°36.6	-22°32.2	9	313°17.3	-22°09.2	9	312°59.2	-21°42.2	9	312°42.4	-21°11.4
10	328°56.7	-22°51.1	10	328°36.3	-22°31.9	10	328°17.0	-22°08.8	10	327°58.9	-21°41.8	10	327°42.2	-21°10.9
11	343°56.4	-22°50.8	11	343°36.0	-22°31.7	11	343°16.8	-22°08.5	11	342°58.7	-21°41.4	11	342°41.9	-21°10.5
12	358°56.1	-22°50.6	12	358°35.8	-22°31.4	12	358°16.5	-22°08.1	12	357°58.4	-21°41.0	12	357°41.7	-21°10.0
13	13°55.8	-22°50.4	13	13°35.5	-22°31.1	13	13°16.2	-22°07.8	13	12°58.2	-21°40.6	13	12°41.5	-21°09.6
14	28°55.5	-22°50.1	14	28°35.2	-22°30.8	14	28°16.0	-22°07.4	14	27°58.0	-21°40.2	14	27°41.3	-21°09.1
15	43°55.2	-22°49.9	15	43°34.9	-22°30.5	15	43°15.7	-22°07.1	15	42°57.7	-21°39.7	15	42°41.1	

2020 January 16 to Jan. 30

16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec	28	GHA	Dec
0	177°39.1	-21°04.5	0	177°24.1	-20°29.3	0	177°10.6	-19°50.7	0	176°58.9	-19°08.7	0	176°48.9	-18°23.5
1	192°38.9	-21°04.1	1	192°23.9	-20°28.8	1	192°10.5	-19°50.1	1	191°58.7	-19°08.0	1	191°48.8	-18°22.8
2	207°38.6	-21°03.6	2	207°23.7	-20°28.3	2	207°10.3	-19°49.5	2	206°58.6	-19°07.4	2	206°48.7	-18°22.2
3	222°38.4	-21°03.1	3	222°23.5	-20°27.8	3	222°10.1	-19°49.0	3	221°58.4	-19°06.8	3	221°48.5	-18°21.5
4	237°38.2	-21°02.7	4	237°23.3	-20°27.3	4	237°09.9	-19°48.4	4	236°58.3	-19°06.2	4	236°48.4	-18°20.9
5	252°38.0	-21°02.2	5	252°23.1	-20°26.8	5	252°09.8	-19°47.9	5	251°58.1	-19°05.6	5	251°48.3	-18°20.2
6	267°37.8	-21°01.7	6	267°22.9	-20°26.2	6	267°09.6	-19°47.3	6	266°58.0	-19°05.0	6	266°48.2	-18°19.6
7	282°37.6	-21°01.3	7	282°22.7	-20°25.7	7	282°09.4	-19°46.7	7	281°57.8	-19°04.4	7	281°48.0	-18°18.9
8	297°37.3	-21°00.8	8	297°22.5	-20°25.2	8	297°09.2	-19°46.2	8	296°57.7	-19°03.8	8	296°47.9	-18°18.3
9	312°37.1	-21°00.3	9	312°22.3	-20°24.7	9	312°09.1	-19°45.6	9	311°57.5	-19°03.2	9	311°47.8	-18°17.6
10	327°36.9	-20°59.8	10	327°22.1	-20°24.2	10	327°08.9	-19°45.0	10	326°57.4	-19°02.6	10	326°47.7	-18°17.0
11	342°36.7	-20°59.4	11	342°21.9	-20°23.7	11	342°08.7	-19°44.5	11	341°57.2	-19°02.0	11	341°47.5	-18°16.3
12	357°36.5	-20°58.9	12	357°21.7	-20°23.1	12	357°08.5	-19°43.9	12	356°57.1	-19°01.3	12	356°47.4	-18°15.7
13	12°36.3	-20°58.4	13	12°21.5	-20°22.6	13	12°08.4	-19°43.3	13	11°56.9	-19°00.7	13	11°47.3	-18°15.0
14	27°36.0	-20°58.0	14	27°21.3	-20°22.1	14	27°08.2	-19°42.8	14	26°56.8	-19°00.1	14	26°47.2	-18°14.3
15	42°35.8	-20°57.5	15	42°21.1	-20°21.6	15	42°08.0	-19°42.2	15	41°56.7	-18°59.5	15	41°47.1	-18°13.7
16	57°35.6	-20°57.0	16	57°20.9	-20°21.0	16	57°07.9	-19°41.6	16	56°56.5	-18°58.9	16	56°46.9	-18°13.0
17	72°35.4	-20°56.5	17	72°20.7	-20°20.5	17	72°07.7	-19°41.0	17	71°56.4	-18°58.3	17	71°46.8	-18°12.4
18	87°35.2	-20°56.1	18	87°20.6	-20°20.0	18	87°07.5	-19°40.5	18	86°56.2	-18°57.7	18	86°46.7	-18°11.7
19	102°35.0	-20°55.6	19	102°20.4	-20°19.5	19	102°07.4	-19°39.9	19	101°56.1	-18°57.0	19	101°46.6	-18°11.1
20	117°34.8	-20°55.1	20	117°20.2	-20°18.9	20	117°07.2	-19°39.3	20	116°55.9	-18°56.4	20	116°46.5	-18°10.4
21	132°34.5	-20°54.6	21	132°20.0	-20°18.4	21	132°07.0	-19°38.7	21	131°55.8	-18°55.8	21	131°46.3	-18°09.7
22	147°34.3	-20°54.1	22	147°19.8	-20°17.9	22	147°06.9	-19°38.2	22	146°55.6	-18°55.2	22	146°46.2	-18°09.1
23	162°34.1	-20°53.7	23	162°19.6	-20°17.4	23	162°06.7	-19°37.6	23	161°55.5	-18°54.6	23	161°46.1	-18°08.4
	SD.=16.3	d=0.5		SD.=16.3	d=0.5		SD.=16.3	d=0.6		SD.=16.2	d=0.6		SD.=16.2	d=0.7
17	GHA	Dec	20	GHA	Dec	23	GHA	Dec	26	GHA	Dec	29	GHA	Dec
0	177°33.9	-20°53.2	0	177°19.4	-20°16.8	0	177°06.5	-19°37.0	0	176°55.4	-18°53.9	0	176°46.0	-18°07.8
1	192°33.7	-20°52.7	1	192°19.2	-20°16.3	1	192°06.4	-19°36.4	1	191°55.2	-18°53.3	1	191°45.9	-18°07.1
2	207°33.5	-20°52.2	2	207°19.0	-20°15.8	2	207°06.2	-19°35.9	2	206°55.1	-18°52.7	2	206°45.8	-18°06.4
3	222°33.3	-20°51.7	3	222°18.8	-20°15.2	3	222°06.0	-19°35.3	3	221°54.9	-18°52.1	3	221°45.6	-18°05.8
4	237°33.1	-20°51.3	4	237°18.6	-20°14.7	4	237°05.9	-19°34.7	4	236°54.8	-18°51.5	4	236°45.5	-18°05.1
5	252°32.8	-20°50.8	5	252°18.5	-20°14.2	5	252°05.7	-19°34.1	5	251°54.6	-18°50.8	5	251°45.4	-18°04.4
6	267°32.6	-20°50.3	6	267°18.3	-20°13.6	6	267°05.5	-19°33.6	6	266°54.5	-18°50.2	6	266°45.3	-18°03.8
7	282°32.4	-20°49.8	7	282°18.1	-20°13.1	7	282°05.4	-19°33.0	7	281°54.4	-18°49.6	7	281°45.2	-18°03.1
8	297°32.2	-20°49.3	8	297°17.9	-20°12.6	8	297°05.2	-19°32.4	8	296°54.2	-18°49.0	8	296°45.1	-18°02.4
9	312°32.0	-20°48.8	9	312°17.7	-20°12.0	9	312°05.0	-19°31.8	9	311°54.1	-18°48.3	9	311°45.0	-18°01.8
10	327°31.8	-20°48.3	10	327°17.5	-20°11.5	10	327°04.9	-19°31.2	10	326°53.9	-18°47.7	10	326°44.8	-18°01.1
11	342°31.6	-20°47.9	11	342°17.3	-20°11.0	11	342°04.7	-19°30.6	11	341°53.8	-18°47.1	11	341°44.7	-18°00.4
12	357°31.4	-20°47.4	12	357°17.1	-20°10.4	12	357°04.5	-19°30.1	12	356°53.7	-18°46.5	12	356°44.6	-17°59.8
13	12°31.2	-20°46.9	13	12°17.0	-20°09.9	13	12°04.4	-19°29.5	13	11°53.5	-18°45.8	13	11°44.5	-17°59.1
14	27°31.0	-20°46.4	14	27°16.8	-20°09.4	14	27°04.2	-19°28.9	14	26°53.4	-18°45.2	14	26°44.4	-17°58.4
15	42°30.8	-20°45.9	15	42°16.6	-20°08.8	15	42°04.0	-19°28.3	15	41°53.3	-18°44.6	15	41°44.3	-17°57.8
16	57°30.5	-20°45.4	16	57°16.4	-20°08.3	16	57°03.9	-19°27.7	16	56°53.1	-18°43.9	16	56°44.2	-17°57.1
17	72°30.3	-20°44.9	17	72°16.2	-20°07.7	17	72°03.7	-19°27.1	17	71°53.0	-18°43.3	17	71°44.1	-17°56.4
18	87°30.1	-20°44.4	18	87°16.0	-20°07.2	18	87°03.6	-19°26.6	18	86°52.8	-18°42.7	18	86°43.9	-17°55.7
19	102°29.9	-20°43.9	19	102°15.8	-20°06.7	19	102°03.4	-19°26.0	19	101°52.7	-18°42.0	19	101°43.8	-17°55.1
20	117°29.7	-20°43.4	20	117°15.7	-20°06.1	20	117°03.2	-19°25.4	20	116°52.6	-18°41.4	20	116°43.7	-17°54.4
21	132°29.5	-20°42.9	21	132°15.5	-20°05.6	21	132°03.1	-19°24.8	21	131°52.4	-18°40.8	21	131°43.6	-17°53.7
22	147°29.3	-20°42.5	22	147°15.3	-20°05.0	22	147°02.9	-19°24.2	22	146°52.3	-18°40.1	22	146°43.5	-17°53.0
23	162°29.1	-20°42.0	23	162°15.1	-20°04.5	23	162°02.8	-19°23.6	23	161°52.2	-18°39.5	23	161°43.4	-17°52.4
	SD.=16.3	d=0.5		SD.=16.3	d=0.5		SD.=16.3	d=0.6		SD.=16.2	d=0.6		SD.=16.2	d=0.7
18	GHA	Dec	21	GHA	Dec	24	GHA	Dec	27	GHA	Dec	30	GHA	Dec
0	177°28.9	-20°41.5	0	177°14.9	-20°03.9	0	177°02.6	-19°23.0	0	176°52.0	-18°38.9	0	176°43.3	-17°51.7
1	192°28.7	-20°41.0	1	192°14.7	-20°03.4	1	192°02.4	-19°22.4	1	191°51.9	-18°38.2	1	191°43.2	-17°51.0
2	207°28.5	-20°40.5	2	207°14.6	-20°02.8	2	207°02.3	-19°21.8	2	206°51.8	-18°37.6	2	206°43.1	-17°50.3
3	222°28.3	-20°40.0	3	222°14.4	-20°02.3	3	222°02.1	-19°21.2	3	221°51.6	-18°37.0	3	221°43.0	-17°49.7
4	237°28.1	-20°39.5	4	237°14.2	-20°01.7	4	237°02.0	-19°20.6	4	236°51.5	-18°36.3	4	236°42.8	-17°49.0
5	252°27.9	-20°39.0	5	252°14.0	-20°01.2	5	252°01.8	-19°20.1	5	251°51.4	-18°35.7	5	251°42.7	-17°48.3
6	267°27.7	-20°38.5	6	267°13.8	-20°00.7	6	267°01.7	-19°19.5	6	266°51.2	-18°35.1	6	266°42.6	-17°47.6
7	282°27.5	-20°38.0	7	282°13.7	-20°00.1	7	282°01.5	-19°18.9	7	281°51.1	-18°34.4	7	281°42.5	-17°46.9
8	297°27.3	-20°37.5	8	297°13.5	-19°59.6	8	297°01.3	-19°18.3	8	296°51.0	-18°33.8	8	296°42.4	-17°46.3
9	312°27.1	-20°37.0	9	312°13.3	-19°59.0	9	312°01.2	-19°17.7	9	311°50.8	-18°33.1	9	311°42.3	-17°45.6
10	327°26.9	-20°36.5	10	327°13.1	-19°58.4	10	327°01.0	-19°17.1	10	326°50.7	-18°32.5	10	326°42.2	-17°44.9
11	342°26.7	-20°36.0	11	342°12.9	-19°57.9	11	342°00.9	-19°16.5	11	341°50.6	-18°31.9	11	341°42.1	-17°44.2
12	357°26.5	-20°35.4	12	357°12.8	-19°57.3	12	357°00.7	-19°15.9	12	356°50.4	-18°31.2	12	356°42.0	-17°43.5
13	12°26.3	-20°34.9	13	12°12.6	-19°56.8	13	12°00.6	-19°15.3	13	11°50.3	-18°30.6	13	11°41.9	-17°42.9
14	27°26.1	-20°34.4	14	27°12.4	-19°56.2	14	27°00.4	-19°14.7	14	26°50.2	-18°29.9	14	26°41.8	-17°42.2
15	42°25.9	-20°33.9	15	42°12.2	-19°55.7	15	42°00.3	-19°14.1	15	41°50.1	-18°29.3	15	41°41.7	-

2020 January 31 to Feb. 14

31	GHA	Dec	03	GHA	Dec	06	GHA	Dec	09	GHA	Dec	12	GHA	Dec
0	176°40.8	-17°35.3	0	176°34.5	-16°44.3	0	176°30.1	-15°50.7	0	176°27.6	-14°54.7	0	176°26.8	-13°56.4
1	191°40.7	-17°34.6	1	191°34.4	-16°43.6	1	191°30.1	-15°50.0	1	191°27.6	-14°53.9	1	191°26.8	-13°55.6
2	206°40.6	-17°33.9	2	206°34.4	-16°42.9	2	206°30.0	-15°49.2	2	206°27.6	-14°53.1	2	206°26.8	-13°54.8
3	221°40.5	-17°33.2	3	221°34.3	-16°42.2	3	221°30.0	-15°48.4	3	221°27.5	-14°52.3	3	221°26.8	-13°53.9
4	236°40.4	-17°32.6	4	236°34.2	-16°41.4	4	236°30.0	-15°47.7	4	236°27.5	-14°51.5	4	236°26.8	-13°53.1
5	251°40.3	-17°31.9	5	251°34.2	-16°40.7	5	251°29.9	-15°46.9	5	251°27.5	-14°50.7	5	251°26.8	-13°52.3
6	266°40.2	-17°31.2	6	266°34.1	-16°40.0	6	266°29.9	-15°46.2	6	266°27.5	-14°49.9	6	266°26.8	-13°51.5
7	281°40.1	-17°30.5	7	281°34.0	-16°39.2	7	281°29.8	-15°45.4	7	281°27.4	-14°49.1	7	281°26.9	-13°50.6
8	296°40.0	-17°29.8	8	296°33.9	-16°38.5	8	296°29.8	-15°44.6	8	296°27.4	-14°48.3	8	296°26.9	-13°49.8
9	311°39.9	-17°29.1	9	311°33.9	-16°37.8	9	311°29.7	-15°43.9	9	311°27.4	-14°47.5	9	311°26.9	-13°49.0
10	326°39.8	-17°28.4	10	326°33.8	-16°37.0	10	326°29.7	-15°43.1	10	326°27.4	-14°46.7	10	326°26.9	-13°48.1
11	341°39.7	-17°27.7	11	341°33.7	-16°36.3	11	341°29.6	-15°42.3	11	341°27.4	-14°45.9	11	341°26.9	-13°47.3
12	356°39.6	-17°27.0	12	356°33.7	-16°35.6	12	356°29.6	-15°41.6	12	356°27.4	-14°45.1	12	356°26.9	-13°46.5
13	11°39.5	-17°26.3	13	11°33.6	-16°34.8	13	11°29.5	-15°40.8	13	11°27.3	-14°44.3	13	11°26.9	-13°45.7
14	26°39.4	-17°25.6	14	26°33.5	-16°34.1	14	26°29.5	-15°40.0	14	26°27.3	-14°43.5	14	26°26.9	-13°44.8
15	41°39.3	-17°24.9	15	41°33.5	-16°33.4	15	41°29.5	-15°39.3	15	41°27.3	-14°42.7	15	41°26.9	-13°44.0
16	56°39.2	-17°24.2	16	56°33.4	-16°32.6	16	56°29.4	-15°38.5	16	56°27.3	-14°41.9	16	56°26.9	-13°43.2
17	71°39.1	-17°23.5	17	71°33.3	-16°31.9	17	71°29.4	-15°37.7	17	71°27.3	-14°41.1	17	71°26.9	-13°42.3
18	86°39.0	-17°22.8	18	86°33.3	-16°31.2	18	86°29.3	-15°36.9	18	86°27.2	-14°40.3	18	86°26.9	-13°41.5
19	101°38.9	-17°22.1	19	101°33.2	-16°30.4	19	101°29.3	-15°36.2	19	101°27.2	-14°39.5	19	101°26.9	-13°40.7
20	116°38.9	-17°21.4	20	116°33.1	-16°29.7	20	116°29.3	-15°35.4	20	116°27.2	-14°38.7	20	116°26.9	-13°39.8
21	131°38.8	-17°20.7	21	131°33.1	-16°29.0	21	131°29.2	-15°34.6	21	131°27.2	-14°37.9	21	131°26.9	-13°39.0
22	146°38.7	-17°20.0	22	146°33.0	-16°28.2	22	146°29.2	-15°33.9	22	146°27.2	-14°37.1	22	146°26.9	-13°38.2
23	161°38.6	-17°19.3	23	161°32.9	-16°27.5	23	161°29.1	-15°33.1	23	161°27.2	-14°36.3	23	161°26.9	-13°37.3
	SD.=16.2	d=0.7		SD.=16.2	d=0.7		SD.=16.2	d=0.8		SD.=16.2	d=0.8		SD.=16.2	d=0.8

01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec	13	GHA	Dec
0	176°38.5	-17°18.6	0	176°32.9	-16°26.8	0	176°29.1	-15°32.3	0	176°27.2	-14°35.5	0	176°27.0	-13°36.5
1	191°38.4	-17°17.9	1	191°32.8	-16°26.0	1	191°29.1	-15°31.5	1	191°27.1	-14°34.7	1	191°27.0	-13°35.7
2	206°38.3	-17°17.2	2	206°32.7	-16°25.3	2	206°29.0	-15°30.8	2	206°27.1	-14°33.9	2	206°27.0	-13°34.8
3	221°38.2	-17°16.5	3	221°32.7	-16°24.5	3	221°29.0	-15°30.0	3	221°27.1	-14°33.1	3	221°27.0	-13°34.0
4	236°38.1	-17°15.8	4	236°32.6	-16°23.8	4	236°28.9	-15°29.2	4	236°27.1	-14°32.3	4	236°27.0	-13°33.2
5	251°38.0	-17°15.1	5	251°32.5	-16°23.1	5	251°28.9	-15°28.4	5	251°27.1	-14°31.5	5	251°27.0	-13°32.3
6	266°37.9	-17°14.4	6	266°32.5	-16°22.3	6	266°28.9	-15°27.7	6	266°27.1	-14°30.7	6	266°27.0	-13°31.5
7	281°37.9	-17°13.7	7	281°32.4	-16°21.6	7	281°28.8	-15°26.9	7	281°27.1	-14°29.9	7	281°27.0	-13°30.7
8	296°37.8	-17°13.0	8	296°32.3	-16°20.8	8	296°28.8	-15°26.1	8	296°27.0	-14°29.1	8	296°27.0	-13°29.8
9	311°37.7	-17°12.3	9	311°32.3	-16°20.1	9	311°28.8	-15°25.3	9	311°27.0	-14°28.3	9	311°27.1	-13°29.0
10	326°37.6	-17°11.6	10	326°32.2	-16°19.3	10	326°28.7	-15°24.6	10	326°27.0	-14°27.4	10	326°27.1	-13°28.1
11	341°37.5	-17°10.9	11	341°32.2	-16°18.6	11	341°28.7	-15°23.8	11	341°27.0	-14°26.6	11	341°27.1	-13°27.3
12	356°37.4	-17°10.2	12	356°32.1	-16°17.9	12	356°28.6	-15°23.0	12	356°27.0	-14°25.8	12	356°27.1	-13°26.5
13	11°37.3	-17°09.5	13	11°32.0	-16°17.1	13	11°28.6	-15°22.2	13	11°27.0	-14°25.0	13	11°27.1	-13°25.6
14	26°37.2	-17°08.8	14	26°30.2	-16°16.4	14	26°28.6	-15°21.5	14	26°27.0	-14°24.2	14	26°27.1	-13°24.8
15	41°37.2	-17°08.0	15	41°31.9	-16°15.6	15	41°28.5	-15°20.7	15	41°27.0	-14°23.4	15	41°27.1	-13°24.0
16	56°37.1	-17°07.3	16	56°31.9	-16°14.9	16	56°28.5	-15°19.9	16	56°27.0	-14°22.6	16	56°27.1	-13°23.1
17	71°37.0	-17°06.6	17	71°31.8	-16°14.1	17	71°28.5	-15°19.1	17	71°27.0	-14°21.8	17	71°27.2	-13°22.3
18	86°36.9	-17°05.9	18	86°31.7	-16°13.4	18	86°28.4	-15°18.3	18	86°26.9	-14°21.0	18	86°27.2	-13°21.4
19	101°36.8	-17°05.2	19	101°31.7	-16°12.6	19	101°28.4	-15°17.6	19	101°26.9	-14°20.1	19	101°27.2	-13°20.6
20	116°36.7	-17°04.5	20	116°31.6	-16°11.9	20	116°28.4	-15°16.8	20	116°26.9	-14°19.3	20	116°27.2	-13°19.7
21	131°36.6	-17°03.8	21	131°31.6	-16°11.1	21	131°28.3	-15°16.0	21	131°26.9	-14°18.5	21	131°27.2	-13°18.9
22	146°36.6	-17°03.1	22	146°31.5	-16°10.4	22	146°28.3	-15°15.2	22	146°26.9	-14°17.7	22	146°27.2	-13°18.1
23	161°36.5	-17°02.3	23	161°31.5	-16°09.6	23	161°28.3	-15°14.4	23	161°26.9	-14°16.9	23	161°27.2	-13°17.2
	SD.=16.2	d=0.7		SD.=16.2	d=0.7		SD.=16.2	d=0.8		SD.=16.2	d=0.8		SD.=16.2	d=0.8

02	GHA	Dec	05	GHA	Dec	08	GHA	Dec	11	GHA	Dec	14	GHA	Dec
0	176°36.4	-17°01.6	0	176°31.4	-16°08.9	0	176°28.2	-15°13.6	0	176°26.9	-14°16.1	0	176°27.3	-13°16.4
1	191°36.3	-17°00.9	1	191°31.3	-16°08.1	1	191°28.2	-15°12.9	1	191°26.9	-14°15.3	1	191°27.3	-13°15.5
2	206°36.2	-17°00.2	2	206°31.3	-16°07.4	2	206°28.2	-15°12.1	2	206°26.9	-14°14.4	2	206°27.3	-13°14.7
3	221°36.2	-16°59.5	3	221°31.2	-16°06.6	3	221°28.2	-15°11.3	3	221°26.9	-14°13.6	3	221°27.3	-13°13.8
4	236°36.1	-16°58.8	4	236°31.2	-16°05.9	4	236°28.1	-15°10.5	4	236°26.9	-14°12.8	4	236°27.3	-13°13.0
5	251°36.0	-16°58.1	5	251°31.1	-16°05.1	5	251°28.1	-15°09.7	5	251°26.9	-14°12.0	5	251°27.4	-13°12.2
6	266°35.9	-16°57.3	6	266°31.1	-16°04.4	6	266°28.1	-15°08.9	6	266°26.9	-14°11.2	6	266°27.4	-13°11.3
7	281°35.8	-16°56.6	7	281°31.0	-16°03.6	7	281°28.0	-15°08.1	7	281°26.9	-14°10.4	7	281°27.4	-13°10.5
8	296°35.8	-16°55.9	8	296°31.0	-16°02.9	8	296°28.0	-15°07.4	8	296°26.9	-14°09.5	8	296°27.4	-13°09.6
9	311°35.7	-16°55.2	9	311°30.9	-16°02.1	9	311°28.0	-15°06.6	9	311°26.9	-14°08.7	9	311°27.4	-13°08.8
10	326°35.6	-16°54.5	10	326°30.8	-16°01.4	10	326°28.0	-15°05.8	10	326°26.8	-14°07.9	10	326°27.4	-13°07.9
11	341°35.5	-16°53.7	11	341°30.8	-16°00.6	11	341°27.9	-15°05.0	11	341°26.8				

2020 February 15 to Feb. 29

15	GHA	Dec	18	GHA	Dec	21	GHA	Dec	24	GHA	Dec	27	GHA	Dec
0	176°27.8	-12°56.0	0	176°30.3	-11°53.8	0	176°34.3	-10°49.8	0	176°39.8	-9°44.3	0	176°46.7	-8°37.4
1	191°27.8	-12°55.2	1	191°30.3	-11°52.9	1	191°34.4	-10°48.9	1	191°39.9	-9°43.4	1	191°46.8	-8°36.5
2	206°27.8	-12°54.3	2	206°30.4	-11°52.0	2	206°34.5	-10°48.0	2	206°40.0	-9°42.4	2	206°46.9	-8°35.6
3	221°27.8	-12°53.5	3	221°30.4	-11°51.1	3	221°34.5	-10°47.1	3	221°40.1	-9°41.5	3	221°47.0	-8°34.6
4	236°27.9	-12°52.6	4	236°30.5	-11°50.3	4	236°34.6	-10°46.2	4	236°40.2	-9°40.6	4	236°47.1	-8°33.7
5	251°27.9	-12°51.8	5	251°30.5	-11°49.4	5	251°34.7	-10°45.3	5	251°40.3	-9°39.7	5	251°47.2	-8°32.8
6	266°27.9	-12°50.9	6	266°30.6	-11°48.5	6	266°34.7	-10°44.4	6	266°40.4	-9°38.8	6	266°47.3	-8°31.8
7	281°27.9	-12°50.1	7	281°30.6	-11°47.6	7	281°34.8	-10°43.5	7	281°40.4	-9°37.8	7	281°47.4	-8°30.9
8	296°28.0	-12°49.2	8	296°30.7	-11°46.7	8	296°34.9	-10°42.6	8	296°40.5	-9°36.9	8	296°47.5	-8°29.9
9	311°28.0	-12°48.4	9	311°30.7	-11°45.9	9	311°34.9	-10°41.7	9	311°40.6	-9°36.0	9	311°47.7	-8°29.0
10	326°28.0	-12°47.5	10	326°30.8	-11°45.0	10	326°35.0	-10°40.8	10	326°40.7	-9°35.1	10	326°47.8	-8°28.1
11	341°28.0	-12°46.6	11	341°30.8	-11°44.1	11	341°35.1	-10°39.9	11	341°40.8	-9°34.1	11	341°47.9	-8°27.1
12	356°28.1	-12°45.8	12	356°30.8	-11°43.2	12	356°35.1	-10°39.0	12	356°40.9	-9°33.2	12	356°48.0	-8°26.2
13	11°28.1	-12°44.9	13	11°30.9	-11°42.3	13	11°35.2	-10°38.1	13	11°41.0	-9°32.3	13	11°48.1	-8°25.2
14	26°28.1	-12°44.1	14	26°30.9	-11°41.5	14	26°35.3	-10°37.2	14	26°41.1	-9°31.4	14	26°48.2	-8°24.3
15	41°28.2	-12°43.2	15	41°31.0	-11°40.6	15	41°35.4	-10°36.3	15	41°41.2	-9°30.5	15	41°48.3	-8°23.4
16	56°28.2	-12°42.4	16	56°31.0	-11°39.7	16	56°35.4	-10°35.4	16	56°41.2	-9°29.5	16	56°48.4	-8°22.4
17	71°28.2	-12°41.5	17	71°31.1	-11°38.8	17	71°35.5	-10°34.4	17	71°41.3	-9°28.6	17	71°48.5	-8°21.5
18	86°28.2	-12°40.6	18	86°31.2	-11°37.9	18	86°35.6	-10°33.5	18	86°41.4	-9°27.7	18	86°48.6	-8°20.5
19	101°28.3	-12°39.8	19	101°31.2	-11°37.0	19	101°35.6	-10°32.6	19	101°41.5	-9°26.8	19	101°48.7	-8°19.6
20	116°28.3	-12°38.9	20	116°31.3	-11°36.2	20	116°35.7	-10°31.7	20	116°41.6	-9°25.8	20	116°48.8	-8°18.7
21	131°28.3	-12°38.1	21	131°31.3	-11°35.3	21	131°35.8	-10°30.8	21	131°41.7	-9°24.9	21	131°48.9	-8°17.7
22	146°28.4	-12°37.2	22	146°31.4	-11°34.4	22	146°35.9	-10°29.9	22	146°41.8	-9°24.0	22	146°49.1	-8°16.8
23	161°28.4	-12°36.3	23	161°31.4	-11°33.5	23	161°35.9	-10°29.0	23	161°41.9	-9°23.1	23	161°49.2	-8°15.8
	SD.=16.2	d=0.9		SD.=16.2	d=0.9		SD.=16.2	d=0.9		SD.=16.2	d=0.9		SD.=16.2	d=0.9

16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec	28	GHA	Dec
0	176°28.4	-12°35.5	0	176°31.5	-11°32.6	0	176°36.0	-10°28.1	0	176°42.0	-9°22.1	0	176°49.3	-8°14.9
1	191°28.5	-12°34.6	1	191°31.5	-11°31.7	1	191°36.1	-10°27.2	1	191°42.1	-9°21.2	1	191°49.4	-8°14.0
2	206°28.5	-12°33.8	2	206°31.6	-11°30.8	2	206°36.2	-10°26.3	2	206°42.2	-9°20.3	2	206°49.5	-8°13.0
3	221°28.5	-12°32.9	3	221°31.6	-11°30.0	3	221°36.2	-10°25.4	3	221°42.2	-9°19.4	3	221°49.6	-8°12.1
4	236°28.6	-12°32.0	4	236°31.7	-11°29.1	4	236°36.3	-10°24.5	4	236°42.3	-9°18.4	4	236°49.7	-8°11.1
5	251°28.6	-12°31.2	5	251°31.7	-11°28.2	5	251°36.4	-10°23.6	5	251°42.4	-9°17.5	5	251°49.8	-8°10.2
6	266°28.6	-12°30.3	6	266°31.8	-11°27.3	6	266°36.4	-10°22.7	6	266°42.5	-9°16.6	6	266°49.9	-8°09.2
7	281°28.6	-12°29.4	7	281°31.8	-11°26.4	7	281°36.5	-10°21.8	7	281°42.6	-9°15.7	7	281°50.1	-8°08.3
8	296°28.7	-12°28.6	8	296°31.9	-11°25.5	8	296°36.6	-10°20.8	8	296°42.7	-9°14.7	8	296°50.2	-8°07.4
9	311°28.7	-12°27.7	9	311°31.9	-11°24.6	9	311°36.7	-10°19.9	9	311°42.8	-9°13.8	9	311°50.3	-8°06.4
10	326°28.8	-12°26.9	10	326°32.0	-11°23.8	10	326°36.7	-10°19.0	10	326°42.9	-9°12.9	10	326°50.4	-8°05.5
11	341°28.8	-12°26.0	11	341°32.1	-11°22.9	11	341°36.8	-10°18.1	11	341°43.0	-9°11.9	11	341°50.5	-8°04.5
12	356°28.8	-12°25.1	12	356°32.1	-11°22.0	12	356°36.9	-10°17.2	12	356°43.1	-9°11.0	12	356°50.6	-8°03.6
13	11°28.9	-12°24.3	13	11°32.2	-11°21.1	13	11°37.0	-10°16.3	13	11°43.2	-9°10.1	13	11°50.7	-8°02.6
14	26°28.9	-12°23.4	14	26°32.2	-11°20.2	14	26°37.1	-10°15.4	14	26°43.3	-9°09.2	14	26°50.8	-8°01.7
15	41°28.9	-12°22.5	15	41°32.3	-11°19.3	15	41°37.1	-10°14.5	15	41°43.4	-9°08.2	15	41°51.0	-8°00.7
16	56°29.0	-12°21.7	16	56°32.3	-11°18.4	16	56°37.2	-10°13.6	16	56°43.5	-9°07.3	16	56°51.1	-7°59.8
17	71°29.0	-12°20.8	17	71°32.4	-11°17.5	17	71°37.3	-10°12.7	17	71°43.6	-9°06.4	17	71°51.2	-7°58.9
18	86°29.0	-12°19.9	18	86°32.5	-11°16.6	18	86°37.4	-10°11.7	18	86°43.7	-9°05.4	18	86°51.3	-7°57.9
19	101°29.1	-12°19.1	19	101°32.5	-11°15.7	19	101°37.4	-10°10.8	19	101°43.8	-9°04.5	19	101°51.4	-7°57.0
20	116°29.1	-12°18.2	20	116°32.6	-11°14.9	20	116°37.5	-10°09.9	20	116°43.9	-9°03.6	20	116°51.5	-7°56.0
21	131°29.1	-12°17.3	21	131°32.6	-11°14.0	21	131°37.6	-10°09.0	21	131°44.0	-9°02.6	21	131°51.6	-7°55.1
22	146°29.2	-12°16.5	22	146°32.7	-11°13.1	22	146°37.7	-10°08.1	22	146°44.1	-9°01.7	22	146°51.8	-7°54.1
23	161°29.2	-12°15.6	23	161°32.8	-11°12.2	23	161°37.8	-10°07.2	23	161°44.2	-9°00.8	23	161°51.9	-7°53.2
	SD.=16.2	d=0.9		SD.=16.2	d=0.9		SD.=16.2	d=0.9		SD.=16.2	d=0.9		SD.=16.1	d=0.9

17	GHA	Dec	20	GHA	Dec	23	GHA	Dec	26	GHA	Dec	29	GHA	Dec
0	176°29.3	-12°14.7	0	176°32.8	-11°11.3	0	176°37.8	-10°06.3	0	176°44.3	-8°59.9	0	176°52.0	-7°52.2
1	191°29.3	-12°13.9	1	191°32.9	-11°10.4	1	191°37.9	-10°05.4	1	191°44.4	-8°58.9	1	191°52.1	-7°51.3
2	206°29.3	-12°13.0	2	206°32.9	-11°09.5	2	206°38.0	-10°04.4	2	206°44.5	-8°58.0	2	206°52.2	-7°50.3
3	221°29.4	-12°12.1	3	221°33.0	-11°08.6	3	221°38.1	-10°03.5	3	221°44.6	-8°57.1	3	221°52.3	-7°49.4
4	236°29.4	-12°11.2	4	236°33.1	-11°07.7	4	236°38.2	-10°02.6	4	236°44.7	-8°56.1	4	236°52.5	-7°48.4
5	251°29.5	-12°10.4	5	251°33.1	-11°06.8	5	251°38.2	-10°01.7	5	251°44.8	-8°55.2	5	251°52.6	-7°47.5
6	266°29.5	-12°09.5	6	266°33.2	-11°05.9	6	266°38.3	-10°00.8	6	266°44.9	-8°54.3	6	266°52.7	-7°46.6
7	281°29.5	-12°08.6	7	281°33.2	-11°05.0	7	281°38.4	-9°59.9	7	281°45.0	-8°53.3	7	281°52.8	-7°45.6
8	296°29.6	-12°07.8	8	296°33.3	-11°04.1	8	296°38.5	-9°59.0	8	296°45.1	-8°52.4	8	296°52.9	-7°44.7
9	311°29.6	-12°06.9	9	311°33.4	-11°03.2	9	311°38.6	-9°58.0	9	311°45.2	-8°51.5	9	311°53.0	-7°43.7
10	326°29.7	-12°06.0	10	326°33.4	-11°02.3	10	326°38.6	-9°57.1	10	326°45.3	-8°50.5	10	326°53.2	-7°42.8
11	341°29.7	-12°05.1	11	341°33.5	-11°01.5	11	341°38.7	-9°56.2	11	341°45.4	-8°49.6	11	341°53.3	-7°41.8
12	356°29.7	-12°04.3	12	356°33.5	-11°00.6	12	356°38.8	-9°55.3	12	356°45.5	-8°48.7			

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01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec	13	GHA	Dec
0	176°54.8	-7°29.5	0	177°04.2	-6°20.5	0	177°14.5	-5°10.8	0	177°25.8	-4°00.5	0	177°37.8	-2°49.7
1	191°55.0	-7°28.5	1	192°04.3	-6°19.6	1	192°14.7	-5°09.8	1	192°25.9	-3°59.5	1	192°37.9	-2°48.7
2	206°55.1	-7°27.6	2	207°04.4	-6°18.6	2	207°14.8	-5°08.9	2	207°26.1	-3°58.5	2	207°38.1	-2°47.8
3	221°55.2	-7°26.6	3	222°04.6	-6°17.6	3	222°15.0	-5°07.9	3	222°26.3	-3°57.5	3	222°38.3	-2°46.8
4	236°55.3	-7°25.7	4	237°04.7	-6°16.7	4	237°15.1	-5°06.9	4	237°26.4	-3°56.6	4	237°38.5	-2°45.8
5	251°55.5	-7°24.7	5	252°04.8	-6°15.7	5	252°15.3	-5°05.9	5	252°26.6	-3°55.6	5	252°38.6	-2°44.8
6	266°55.6	-7°23.7	6	267°05.0	-6°14.7	6	267°15.4	-5°05.0	6	267°26.8	-3°54.6	6	267°38.8	-2°43.8
7	281°55.7	-7°22.8	7	282°05.1	-6°13.8	7	282°15.6	-5°04.0	7	282°26.9	-3°53.6	7	282°39.0	-2°42.8
8	296°55.8	-7°21.8	8	297°05.3	-6°12.8	8	297°15.7	-5°03.0	8	297°27.1	-3°52.6	8	297°39.1	-2°41.8
9	311°55.9	-7°20.9	9	312°05.4	-6°11.8	9	312°15.9	-5°02.0	9	312°27.2	-3°51.7	9	312°39.3	-2°40.9
10	326°56.1	-7°19.9	10	327°05.5	-6°10.9	10	327°16.0	-5°01.1	10	327°27.4	-3°50.7	10	327°39.5	-2°39.9
11	341°56.2	-7°19.0	11	342°05.7	-6°09.9	11	342°16.2	-5°00.1	11	342°27.6	-3°49.7	11	342°39.7	-2°38.9
12	356°56.3	-7°18.0	12	357°05.8	-6°08.9	12	357°16.3	-4°59.1	12	357°27.7	-3°48.7	12	357°39.8	-2°37.9
13	11°56.4	-7°17.1	13	12°06.0	-6°08.0	13	12°16.5	-4°58.1	13	12°27.9	-3°47.7	13	12°40.0	-2°36.9
14	26°56.6	-7°16.1	14	27°06.1	-6°07.0	14	27°16.6	-4°57.2	14	27°28.1	-3°46.8	14	27°40.2	-2°35.9
15	41°56.7	-7°15.2	15	42°06.2	-6°06.1	15	42°16.8	-4°56.2	15	42°28.2	-3°45.8	15	42°40.3	-2°34.9
16	56°56.8	-7°14.2	16	57°06.4	-6°05.1	16	57°16.9	-4°55.2	16	57°28.4	-3°44.8	16	57°40.5	-2°34.0
17	71°56.9	-7°13.3	17	72°06.5	-6°04.1	17	72°17.1	-4°54.2	17	72°28.5	-3°43.8	17	72°40.7	-2°33.0
18	86°57.1	-7°12.3	18	87°06.7	-6°03.2	18	87°17.3	-4°53.3	18	87°28.7	-3°42.8	18	87°40.9	-2°32.0
19	101°57.2	-7°11.4	19	102°06.8	-6°02.2	19	102°17.4	-4°52.3	19	102°28.9	-3°41.8	19	102°41.0	-2°31.0
20	116°57.3	-7°10.4	20	117°06.9	-6°01.2	20	117°17.6	-4°51.3	20	117°29.0	-3°40.9	20	117°41.2	-2°30.0
21	131°57.4	-7°09.4	21	132°07.1	-6°00.3	21	132°17.7	-4°50.3	21	132°29.2	-3°39.9	21	132°41.4	-2°29.0
22	146°57.6	-7°08.5	22	147°07.2	-5°59.3	22	147°17.9	-4°49.4	22	147°29.4	-3°38.9	22	147°41.6	-2°28.0
23	161°57.7	-7°07.5	23	162°07.4	-5°58.3	23	162°18.0	-4°48.4	23	162°29.5	-3°37.9	23	162°41.7	-2°27.1
	SD.=16.1	d=1.0												
02	GHA	Dec	05	GHA	Dec	08	GHA	Dec	11	GHA	Dec	14	GHA	Dec
0	176°57.8	-7°06.6	0	177°07.5	-5°57.4	0	177°18.2	-4°47.4	0	177°29.7	-3°36.9	0	177°41.9	-2°26.1
1	191°58.0	-7°05.6	1	192°07.6	-5°56.4	1	192°18.3	-4°46.4	1	192°29.9	-3°36.0	1	192°42.1	-2°25.1
2	206°58.1	-7°04.7	2	207°07.8	-5°55.4	2	207°18.5	-4°45.5	2	207°30.0	-3°35.0	2	207°42.3	-2°24.1
3	221°58.2	-7°03.7	3	222°07.9	-5°54.5	3	222°18.6	-4°44.5	3	222°30.2	-3°34.0	3	222°42.4	-2°23.1
4	236°58.3	-7°02.8	4	237°08.1	-5°53.5	4	237°18.8	-4°43.5	4	237°30.4	-3°33.0	4	237°42.6	-2°22.1
5	251°58.5	-7°01.8	5	252°08.2	-5°52.5	5	252°19.0	-4°42.5	5	252°30.5	-3°32.0	5	252°42.8	-2°21.1
6	266°58.6	-7°00.8	6	267°08.4	-5°51.6	6	267°19.1	-4°41.6	6	267°30.7	-3°31.0	6	267°42.9	-2°20.1
7	281°58.7	-6°59.9	7	282°08.5	-5°50.6	7	282°19.3	-4°40.6	7	282°30.9	-3°30.1	7	282°43.1	-2°19.2
8	296°58.8	-6°58.9	8	297°08.6	-5°49.6	8	297°19.4	-4°39.6	8	297°31.0	-3°29.1	8	297°43.3	-2°18.2
9	311°59.0	-6°58.0	9	312°08.8	-5°48.6	9	312°19.6	-4°38.6	9	312°31.2	-3°28.1	9	312°43.5	-2°17.2
10	326°59.1	-6°57.0	10	327°08.9	-5°47.7	10	327°19.7	-4°37.7	10	327°31.4	-3°27.1	10	327°43.6	-2°16.2
11	341°59.2	-6°56.1	11	342°09.1	-5°46.7	11	342°19.9	-4°36.7	11	342°31.5	-3°26.1	11	342°43.8	-2°15.2
12	356°59.4	-6°55.1	12	357°09.2	-5°45.7	12	357°20.0	-4°35.7	12	357°31.7	-3°25.1	12	357°44.0	-2°14.2
13	11°59.5	-6°54.1	13	12°09.4	-5°44.8	13	12°20.2	-4°34.7	13	12°31.9	-3°24.2	13	12°44.2	-2°13.2
14	26°59.6	-6°53.2	14	27°09.5	-5°43.8	14	27°20.4	-4°33.8	14	27°32.0	-3°23.2	14	27°44.3	-2°12.3
15	41°59.8	-6°52.2	15	42°09.6	-5°42.8	15	42°20.5	-4°32.8	15	42°32.2	-3°22.2	15	42°44.5	-2°11.3
16	56°59.9	-6°51.3	16	57°09.8	-5°41.9	16	57°20.7	-4°31.8	16	57°32.4	-3°21.2	16	57°44.7	-2°10.3
17	72°00.0	-6°50.3	17	72°09.9	-5°40.9	17	72°20.8	-4°30.8	17	72°32.5	-3°20.2	17	72°44.9	-2°09.3
18	87°00.1	-6°49.3	18	87°10.1	-5°39.9	18	87°21.0	-4°29.8	18	87°32.7	-3°19.2	18	87°45.0	-2°08.3
19	102°00.3	-6°48.4	19	102°10.2	-5°39.0	19	102°21.1	-4°28.9	19	102°32.9	-3°18.3	19	102°45.2	-2°07.3
20	117°00.4	-6°47.4	20	117°10.4	-5°38.0	20	117°21.3	-4°27.9	20	117°33.0	-3°17.3	20	117°45.4	-2°06.3
21	132°00.5	-6°46.5	21	132°10.5	-5°37.0	21	132°21.5	-4°26.9	21	132°33.2	-3°16.3	21	132°45.6	-2°05.3
22	147°00.7	-6°45.5	22	147°10.7	-5°36.1	22	147°21.6	-4°25.9	22	147°33.4	-3°15.3	22	147°45.7	-2°04.4
23	162°00.8	-6°44.6	23	162°10.8	-5°35.1	23	162°21.8	-4°25.0	23	162°33.5	-3°14.3	23	162°45.9	-2°03.4
	SD.=16.1	d=1.0												
03	GHA	Dec	06	GHA	Dec	09	GHA	Dec	12	GHA	Dec	15	GHA	Dec
0	177°00.9	-6°43.6	0	177°11.0	-5°34.1	0	177°21.9	-4°24.0	0	177°33.7	-3°13.3	0	177°46.1	-2°02.4
1	192°01.1	-6°42.6	1	192°11.1	-5°33.1	1	192°22.1	-4°23.0	1	192°33.9	-3°12.4	1	192°46.3	-2°01.4
2	207°01.2	-6°41.7	2	207°11.2	-5°32.2	2	207°22.3	-4°22.0	2	207°34.0	-3°11.4	2	207°46.4	-2°00.4
3	222°01.3	-6°40.7	3	222°11.4	-5°31.2	3	222°22.4	-4°21.0	3	222°34.2	-3°10.4	3	222°46.6	-1°59.4
4	237°01.5	-6°39.8	4	237°11.5	-5°30.2	4	237°22.6	-4°20.1	4	237°34.4	-3°09.4	4	237°46.8	-1°58.4
5	252°01.6	-6°38.8	5	252°11.7	-5°29.3	5	252°22.7	-4°19.1	5	252°34.5	-3°08.4	5	252°47.0	-1°57.4
6	267°01.7	-6°37.8	6	267°11.8	-5°28.3	6	267°22.9	-4°18.1	6	267°34.7	-3°07.4	6	267°47.2	-1°56.5
7	282°01.9	-6°36.9	7	282°12.0	-5°27.3	7	282°23.0	-4°17.1	7	282°34.9	-3°06.5	7	282°47.3	-1°55.5
8	297°02.0	-6°35.9	8	297°12.1	-5°26.4	8	297°23.2	-4°16.2	8	297°35.1	-3°05.5	8	297°47.5	-1°54.5
9	312°02.1	-6°35.0	9	312°12.3	-5°25.4	9	312°23.4	-4°15.2	9	312°35.2	-3°04.5	9	312°47.7	-1°53.5
10	327°02.3	-6°34.0	10	327°12.4	-5°24.4	10	327°23.5	-4°14.2	10	327°35.4	-3°03.5	10	327°47.9	-1°52.5
11	342°02.4	-6°33.0	11	342°12.6	-5°23.4	11	342°23.7	-4°13.2	11	342°35.6	-3°02.5	11	342°48.0	-1°51.5
12	357°02.5	-6°32.1	12	357°12.7	-5°22.5	12	357°23.8	-4°12.2	12	357°35.7	-3°01.5	12	357°48.2	-1°50.5
13	12°02.7	-6°31.1	13	12°12.9	-5°21.5	13	12°24.0	-4°11.3	13	12°35.9	-3°00.6	13	12°48.4	-1°49.5
14	27°02.8	-6°30.1	14	27°13.0	-5°20.5	14	27°24.2	-4°10.3	14	27°36.1	-2°59.6	14	27°48.6	-1°48.6
15	42°02.9	-6°29.2	15	42°13.2	-5°19.6	15	42°24.3	-4°09.3	15	42°36.2	-2°58.6	15	42°48.7	-1°47.6
16	57°03.1	-6°28.2	16	57°13.3	-5°18.6	16	57°24.5	-4°08.3	16	57°36.4	-2°57.6	16	57°48.9	-1°46.6
17	72°03.2	-6°27.3	17	72°13.5	-5°17.6	17	72°24.6	-4°07.3	17	72°36.6	-2°56.6	17	72°49.1	-1°45.6

2020 March 16 to Mar. 30

16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec	28	GHA	Dec
0	177°50.3	-1°38.7	0	178°03.3	-0°27.5	0	178°16.6	0°43.6	0	178°30.1	1°54.5	0	178°43.6	3°05.1
1	192°50.5	-1°37.7	1	193°03.5	-0°26.5	1	193°16.8	0°44.6	1	193°30.3	1°55.5	1	193°43.8	3°06.1
2	207°50.7	-1°36.7	2	208°03.7	-0°25.5	2	208°17.0	0°45.6	2	208°30.5	1°56.5	2	208°44.0	3°07.0
3	222°50.9	-1°35.7	3	223°03.9	-0°24.5	3	223°17.2	0°46.6	3	223°30.7	1°57.5	3	223°44.2	3°08.0
4	237°51.1	-1°34.7	4	238°04.1	-0°23.5	4	238°17.4	0°47.6	4	238°30.9	1°58.5	4	238°44.4	3°09.0
5	252°51.2	-1°33.7	5	253°04.3	-0°22.6	5	253°17.6	0°48.6	5	253°31.0	1°59.5	5	253°44.6	3°10.0
6	267°51.4	-1°32.7	6	268°04.4	-0°21.6	6	268°17.8	0°49.5	6	268°31.2	2°00.4	6	268°44.8	3°10.9
7	282°51.6	-1°31.8	7	283°04.6	-0°20.6	7	283°17.9	0°50.5	7	283°31.4	2°01.4	7	283°45.0	3°11.9
8	297°51.8	-1°30.8	8	298°04.8	-0°19.6	8	298°18.1	0°51.5	8	298°31.6	2°02.4	8	298°45.1	3°12.9
9	312°51.9	-1°29.8	9	313°05.0	-0°18.6	9	313°18.3	0°52.5	9	313°31.8	2°03.4	9	313°45.3	3°13.9
10	327°52.1	-1°28.8	10	328°05.2	-0°17.6	10	328°18.5	0°53.5	10	328°32.0	2°04.4	10	328°45.5	3°14.8
11	342°52.3	-1°27.8	11	343°05.4	-0°16.6	11	343°18.7	0°54.5	11	343°32.2	2°05.3	11	343°45.7	3°15.8
12	357°52.5	-1°26.8	12	358°05.5	-0°15.6	12	358°19.5	0°55.5	12	358°32.4	2°06.3	12	358°45.9	3°16.8
13	12°52.7	-1°25.8	13	13°05.7	-0°14.7	13	13°19.1	0°56.5	13	13°32.6	2°07.3	13	13°46.1	3°17.8
14	27°52.8	-1°24.8	14	28°05.9	-0°13.7	14	28°19.2	0°57.4	14	28°32.7	2°08.3	14	28°46.3	3°18.7
15	42°53.0	-1°23.9	15	43°06.1	-0°12.7	15	43°19.4	0°58.4	15	43°32.9	2°09.3	15	43°46.5	3°19.7
16	57°53.2	-1°22.9	16	58°06.3	-0°11.7	16	58°19.6	0°59.4	16	58°33.1	2°10.3	16	58°46.7	3°20.7
17	72°53.4	-1°21.9	17	73°06.5	-0°10.7	17	73°19.8	1°00.4	17	73°33.3	2°11.2	17	73°46.8	3°21.7
18	87°53.6	-1°20.9	18	88°06.6	-0°09.7	18	88°20.0	1°01.4	18	88°33.5	2°12.2	18	88°47.0	3°22.6
19	102°53.7	-1°19.9	19	103°06.8	-0°08.7	19	103°20.2	1°02.4	19	103°33.7	2°13.2	19	103°47.2	3°23.6
20	117°53.9	-1°18.9	20	118°07.0	-0°07.7	20	118°20.4	1°03.4	20	118°33.9	2°14.2	20	118°47.4	3°24.6
21	132°54.1	-1°17.9	21	133°07.2	-0°06.7	21	133°20.6	1°04.3	21	133°34.1	2°15.2	21	133°47.6	3°25.6
22	147°54.3	-1°16.9	22	148°07.4	-0°05.8	22	148°20.7	1°05.3	22	148°34.2	2°16.1	22	148°47.8	3°26.5
23	162°54.5	-1°15.9	23	163°07.6	-0°04.8	23	163°20.9	1°06.3	23	163°34.4	2°17.1	23	163°48.0	3°27.5
	SD.=16.1	d=1.0		SD.=16.1	d=1.0		SD.=16.1	d=1.0		SD.=16.0	d=1.0		SD.=16.0	d=1.0

17	GHA	Dec	20	GHA	Dec	23	GHA	Dec	26	GHA	Dec	29	GHA	Dec
0	177°54.6	-1°15.0	0	178°07.7	-0°03.8	0	178°21.1	1°07.3	0	178°34.6	2°18.1	0	178°48.2	3°28.5
1	192°54.8	-1°14.0	1	193°07.9	-0°02.8	1	193°21.3	1°08.3	1	193°34.8	2°19.1	1	193°48.3	3°29.5
2	207°55.0	-1°13.0	2	208°08.1	-0°01.8	2	208°21.5	1°09.3	2	208°35.0	2°20.1	2	208°48.5	3°30.4
3	222°55.2	-1°12.0	3	223°08.3	-0°00.8	3	223°21.7	1°10.3	3	223°35.2	2°21.0	3	223°48.7	3°31.4
4	237°55.4	-1°11.0	4	238°08.5	0°00.2	4	238°21.9	1°11.2	4	238°35.4	2°22.0	4	238°48.9	3°32.4
5	252°55.5	-1°10.0	5	253°08.7	0°01.2	5	253°22.0	1°12.2	5	253°35.6	2°23.0	5	253°49.1	3°33.3
6	267°55.7	-1°09.0	6	268°08.8	0°02.1	6	268°22.2	1°13.2	6	268°35.7	2°24.0	6	268°49.3	3°34.3
7	282°55.9	-1°08.0	7	283°09.0	0°03.1	7	283°22.4	1°14.2	7	283°35.9	2°25.0	7	283°49.5	3°35.3
8	297°56.1	-1°07.0	8	298°09.2	0°04.1	8	298°22.6	1°15.2	8	298°36.1	2°26.0	8	298°49.7	3°36.3
9	312°56.3	-1°06.1	9	313°09.4	0°05.1	9	313°22.8	1°16.2	9	313°36.3	2°26.9	9	313°49.8	3°37.2
10	327°56.4	-1°05.1	10	328°09.6	0°06.1	10	328°23.0	1°17.2	10	328°36.5	2°27.9	10	328°50.0	3°38.2
11	342°56.6	-1°04.1	11	343°09.8	0°07.1	11	343°23.2	1°18.1	11	343°36.7	2°28.9	11	343°50.2	3°39.2
12	357°56.8	-1°03.1	12	358°10.0	0°08.1	12	358°23.4	1°19.1	12	358°36.9	2°29.9	12	358°50.4	3°40.2
13	12°57.0	-1°02.1	13	13°10.1	0°09.1	13	13°23.5	1°20.1	13	13°37.1	2°30.8	13	13°50.6	3°41.1
14	27°57.2	-1°01.1	14	28°10.3	0°10.1	14	28°23.7	1°21.1	14	28°37.3	2°31.8	14	28°50.8	3°42.1
15	42°57.3	-1°00.1	15	43°10.5	0°11.0	15	43°23.9	1°22.1	15	43°37.4	2°32.8	15	43°51.0	3°43.1
16	57°57.5	-0°59.1	16	58°10.7	0°12.0	16	58°24.1	1°23.1	16	58°37.6	2°33.8	16	58°51.2	3°44.0
17	72°57.7	-0°58.2	17	73°10.9	0°13.0	17	73°24.3	1°24.0	17	73°37.8	2°34.8	17	73°51.3	3°45.0
18	87°57.9	-0°57.2	18	88°11.1	0°14.0	18	88°24.5	1°25.0	18	88°38.0	2°35.7	18	88°51.5	3°46.0
19	102°58.1	-0°56.2	19	103°11.3	0°15.0	19	103°24.7	1°26.0	19	103°38.2	2°36.7	19	103°51.7	3°47.0
20	117°58.2	-0°55.2	20	118°11.4	0°16.0	20	118°24.9	1°27.0	20	118°38.4	2°37.7	20	118°51.9	3°47.9
21	132°58.4	-0°54.2	21	133°11.6	0°17.0	21	133°25.0	1°28.0	21	133°38.6	2°38.7	21	133°52.1	3°48.9
22	147°58.6	-0°53.2	22	148°11.8	0°18.0	22	148°25.2	1°29.0	22	148°38.8	2°39.7	22	148°52.3	3°49.9
23	162°58.8	-0°52.2	23	163°12.0	0°18.9	23	163°25.4	1°30.0	23	163°38.9	2°40.6	23	163°52.5	3°50.8
	SD.=16.1	d=1.0		SD.=16.1	d=1.0		SD.=16.0	d=1.0		SD.=16.0	d=1.0		SD.=16.0	d=1.0

18	GHA	Dec	21	GHA	Dec	24	GHA	Dec	27	GHA	Dec	30	GHA	Dec
0	177°59.0	-0°51.2	0	178°12.2	0°19.9	0	178°25.6	1°30.9	0	178°39.1	2°41.6	0	178°52.6	3°51.8
1	192°59.1	-0°50.2	1	193°12.4	0°20.9	1	193°25.8	1°31.9	1	193°39.3	2°42.6	1	193°52.8	3°52.8
2	207°59.3	-0°49.3	2	208°12.5	0°21.9	2	208°26.0	1°32.9	2	208°39.5	2°43.6	2	208°53.0	3°53.8
3	222°59.5	-0°48.3	3	223°12.7	0°22.9	3	223°26.2	1°33.9	3	223°39.7	2°44.6	3	223°53.2	3°54.7
4	237°59.7	-0°47.3	4	238°12.9	0°23.9	4	238°26.4	1°34.9	4	238°39.9	2°45.5	4	238°53.4	3°55.7
5	252°59.9	-0°46.3	5	253°13.1	0°24.9	5	253°26.5	1°35.9	5	253°40.1	2°46.5	5	253°53.6	3°56.7
6	268°00.1	-0°45.3	6	268°13.3	0°25.9	6	268°26.7	1°36.8	6	268°40.3	2°47.5	6	268°53.8	3°57.6
7	283°00.2	-0°44.3	7	283°13.5	0°26.8	7	283°26.9	1°37.8	7	283°40.5	2°48.5	7	283°54.0	3°58.6
8	298°00.4	-0°43.3	8	298°13.7	0°27.8	8	298°27.1	1°38.8	8	298°40.6	2°49.4	8	298°54.1	3°59.6
9	313°00.6	-0°42.3	9	313°13.8	0°28.8	9	313°27.3	1°39.8	9	313°40.8	2°50.4	9	313°54.3	4°00.5
10	328°00.8	-0°41.3	10	328°14.0	0°29.8	10	328°27.5	1°40.8	10	328°41.0	2°51.4	10	328°54.5	4°01.5
11	343°01.0	-0°40.4	11	343°14.2	0°30.8	11	343°27.7	1°41.8	11	343°41.2	2°52.4	11	343°54.7	4°02.5
12	358°01.1	-0°39.4	12	358°14.4	0°31.8	12	358°27.9	1°42.7	12	358°41.4	2°53.4	12	358°54.9	4°03.5
13	13°01.3	-0°38.4	13	13°14.6	0°32.8	13	13°28.0	1°43.7	13	13°41.6	2°54.3	13	13°55.1	4

31	GHA	Dec	03	GHA	Dec	06	GHA	Dec	09	GHA	Dec	12	GHA	Dec
0	178°57.1	4°15.1	0	179°10.4	5°24.4	0	179°23.4	6°32.8	0	179°36.0	7°40.1	0	179°48.0	8°46.4
1	193°57.3	4°16.0	1	194°10.6	5°25.3	1	194°23.6	6°33.7	1	194°36.2	7°41.1	1	194°48.2	8°47.3
2	208°57.5	4°17.0	2	209°10.8	5°26.3	2	209°23.8	6°34.6	2	209°36.4	7°42.0	2	209°48.3	8°48.2
3	223°57.7	4°18.0	3	224°11.0	5°27.2	3	224°24.0	6°35.6	3	224°36.5	7°42.9	3	224°48.5	8°49.1
4	238°57.9	4°18.9	4	239°11.2	5°28.2	4	239°24.2	6°36.5	4	239°36.7	7°43.8	4	239°48.6	8°50.0
5	253°58.1	4°19.9	5	254°11.4	5°29.1	5	254°24.3	6°37.5	5	254°36.9	7°44.8	5	254°48.8	8°50.9
6	268°58.2	4°20.9	6	269°11.5	5°30.1	6	269°24.5	6°38.4	6	269°37.0	7°45.7	6	269°49.0	8°51.8
7	283°58.4	4°21.8	7	284°11.7	5°31.0	7	284°24.7	6°39.4	7	284°37.2	7°46.6	7	284°49.1	8°52.7
8	298°58.6	4°22.8	8	299°11.9	5°32.0	8	299°24.9	6°40.3	8	299°37.4	7°47.6	8	299°49.3	8°53.6
9	313°58.8	4°23.8	9	314°12.1	5°33.0	9	314°25.0	6°41.2	9	314°37.5	7°48.5	9	314°49.4	8°54.5
10	328°59.0	4°24.7	10	329°12.3	5°33.9	10	329°25.2	6°42.2	10	329°37.7	7°49.4	10	329°49.6	8°55.5
11	343°59.2	4°25.7	11	344°12.4	5°34.9	11	344°25.4	6°43.1	11	344°37.9	7°50.3	11	344°49.8	8°56.4
12	358°59.4	4°26.7	12	359°12.6	5°35.8	12	359°25.6	6°44.1	12	359°38.1	7°51.3	12	359°49.9	8°57.3
13	13°59.5	4°27.6	13	14°12.8	5°36.8	13	14°25.8	6°45.0	13	14°38.2	7°52.2	13	14°50.1	8°58.2
14	28°59.7	4°28.6	14	29°13.0	5°37.7	14	29°25.9	6°45.9	14	29°38.4	7°53.1	14	29°50.2	8°59.1
15	43°59.9	4°29.6	15	44°13.2	5°38.7	15	44°26.1	6°46.9	15	44°38.6	7°54.0	15	44°50.4	8°60.0
16	59°00.1	4°30.5	16	59°13.4	5°39.6	16	59°26.3	6°47.8	16	59°38.7	7°55.0	16	59°50.6	9°00.9
17	74°00.3	4°31.5	17	74°13.5	5°40.6	17	74°26.5	6°48.8	17	74°38.9	7°55.9	17	74°50.7	9°01.8
18	89°00.5	4°32.5	18	89°13.7	5°41.5	18	89°26.6	6°49.7	18	89°39.1	7°56.8	18	89°50.9	9°02.7
19	104°00.7	4°33.4	19	104°13.9	5°42.5	19	104°26.8	6°50.6	19	104°39.2	7°57.7	19	104°51.0	9°03.6
20	119°00.8	4°34.4	20	119°14.1	5°43.4	20	119°27.0	6°51.6	20	119°39.4	7°58.7	20	119°51.2	9°04.5
21	134°01.0	4°35.4	21	134°14.3	5°44.4	21	134°27.2	6°52.5	21	134°39.6	7°59.6	21	134°51.4	9°05.4
22	149°01.2	4°36.3	22	149°14.5	5°45.4	22	149°27.3	6°53.5	22	149°39.7	8°00.5	22	149°51.5	9°06.3
23	164°01.4	4°37.3	23	164°14.6	5°46.3	23	164°27.5	6°54.4	23	164°39.9	8°01.4	23	164°51.7	9°07.2
	SD.=16.0	d=1.0		SD.=16.0	d=1.0		SD.=16.0	d=0.9		SD.=16.0	d=0.9		SD.=16.0	d=0.9

01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec	13	GHA	Dec
0	179°01.6	4°38.3	0	179°14.8	5°47.3	0	179°27.7	6°55.3	0	179°40.1	8°02.3	0	179°51.8	9°08.1
1	194°01.8	4°39.2	1	194°15.0	5°48.2	1	194°27.9	6°56.3	1	194°40.2	8°03.3	1	194°52.0	9°09.1
2	209°02.0	4°40.2	2	209°15.2	5°49.2	2	209°28.0	6°57.2	2	209°40.4	8°04.2	2	209°52.1	9°10.0
3	224°02.1	4°41.1	3	224°15.4	5°50.1	3	224°28.2	6°58.2	3	224°40.6	8°05.1	3	224°52.3	9°10.9
4	239°02.3	4°42.1	4	239°15.5	5°51.1	4	239°28.4	6°59.1	4	239°40.7	8°06.0	4	239°52.5	9°11.8
5	254°02.5	4°43.1	5	254°15.7	5°52.0	5	254°28.6	7°00.0	5	254°40.9	8°07.0	5	254°52.6	9°12.7
6	269°02.7	4°44.0	6	269°15.9	5°53.0	6	269°28.7	7°01.0	6	269°41.1	8°07.9	6	269°52.8	9°13.6
7	284°02.9	4°45.0	7	284°16.1	5°53.9	7	284°28.9	7°01.9	7	284°41.3	8°08.8	7	284°52.9	9°14.5
8	299°03.1	4°46.0	8	299°16.3	5°54.9	8	299°29.1	7°02.8	8	299°41.4	8°09.7	8	299°53.1	9°15.4
9	314°03.3	4°46.9	9	314°16.4	5°55.8	9	314°29.3	7°03.8	9	314°41.6	8°10.6	9	314°53.2	9°16.3
10	329°03.4	4°47.9	10	329°16.6	5°56.8	10	329°29.4	7°04.7	10	329°41.8	8°11.6	10	329°53.4	9°17.2
11	344°03.6	4°48.9	11	344°16.8	5°57.7	11	344°29.6	7°05.6	11	344°41.9	8°12.5	11	344°53.6	9°18.1
12	359°03.8	4°49.8	12	359°17.0	5°58.7	12	359°29.8	7°06.6	12	359°42.1	8°13.4	12	359°53.7	9°19.0
13	14°04.0	4°50.8	13	14°17.2	5°59.6	13	14°30.0	7°07.5	13	14°42.3	8°14.3	13	14°53.9	9°19.9
14	29°04.2	4°51.7	14	29°17.4	6°00.6	14	29°30.1	7°08.5	14	29°42.4	8°15.2	14	29°54.0	9°20.8
15	44°04.4	4°52.7	15	44°17.5	6°01.5	15	44°30.3	7°09.4	15	44°42.6	8°16.2	15	44°54.2	9°21.7
16	59°04.6	4°53.7	16	59°17.7	6°02.5	16	59°30.5	7°10.3	16	59°42.7	8°17.1	16	59°54.3	9°22.6
17	74°04.7	4°54.6	17	74°17.9	6°03.4	17	74°30.7	7°11.3	17	74°42.9	8°18.0	17	74°54.5	9°23.5
18	89°04.9	4°55.6	18	89°18.1	6°04.4	18	89°30.8	7°12.2	18	89°43.1	8°18.9	18	89°54.6	9°24.4
19	104°05.1	4°56.5	19	104°18.3	6°05.3	19	104°31.0	7°13.1	19	104°43.2	8°19.8	19	104°54.8	9°25.3
20	119°05.3	4°57.5	20	119°18.4	6°06.3	20	119°31.2	7°14.1	20	119°43.4	8°20.8	20	119°55.0	9°26.2
21	134°05.5	4°58.5	21	134°18.6	6°07.2	21	134°31.4	7°15.0	21	134°43.6	8°21.7	21	134°55.1	9°27.1
22	149°05.7	4°59.4	22	149°18.8	6°08.2	22	149°31.5	7°15.9	22	149°43.7	8°22.6	22	149°55.3	9°28.0
23	164°05.8	5°00.4	23	164°19.0	6°09.1	23	164°31.7	7°16.9	23	164°43.9	8°23.5	23	164°55.4	9°28.9
	SD.=16.0	d=1.0		SD.=16.0	d=1.0		SD.=16.0	d=0.9		SD.=16.0	d=0.9		SD.=16.0	d=0.9

02	GHA	Dec	05	GHA	Dec	08	GHA	Dec	11	GHA	Dec	14	GHA	Dec
0	179°06.0	5°01.3	0	179°19.2	6°10.1	0	179°31.9	7°17.8	0	179°44.1	8°24.4	0	179°55.6	9°29.8
1	194°06.2	5°02.3	1	194°19.3	6°11.0	1	194°32.1	7°18.7	1	194°44.2	8°25.3	1	194°55.7	9°30.7
2	209°06.4	5°03.2	2	209°19.5	6°12.0	2	209°32.2	7°19.7	2	209°44.4	8°26.3	2	209°55.9	9°31.6
3	224°06.6	5°04.2	3	224°19.7	6°12.9	3	224°32.4	7°20.6	3	224°44.6	8°27.2	3	224°56.0	9°32.5
4	239°06.8	5°05.2	4	239°19.9	6°13.9	4	239°32.6	7°21.5	4	239°44.7	8°28.1	4	239°56.2	9°33.4
5	254°06.9	5°06.2	5	254°20.1	6°14.8	5	254°32.8	7°22.5	5	254°44.9	8°29.0	5	254°56.3	9°34.3
6	269°07.1	5°07.1	6	269°20.2	6°15.7	6	269°32.9	7°23.4	6	269°45.1	8°29.9	6	269°56.5	9°35.2
7	284°07.3	5°08.1	7	284°20.4	6°16.7	7	284°33.1	7°24.3	7	284°45.2	8°30.8	7	284°56.7	9°36.1
8	299°07.5	5°09.0	8	299°20.6	6°17.6	8	299°33.3	7°25.3	8	299°45.4	8°31.7	8	299°56.8	9°37.0
9	314°07.7	5°10.0	9	314°20.8	6°18.6	9	314°33.4	7°26.2	9	314°45.6	8°32.7	9	314°57.0	9°37.9
10	329°07.9	5°10.9	10	329°20.9	6°19.5	10	329°33.6	7°27.1	10	329°45.7	8°33.6	10	329°57.1	9°38.8
11	344°08.1	5°11.9	11	344°21.1	6°20.5	11	344°33.8	7°28.1	11	344°45.9	8°34.5	11	344°57.3	9°39.7
12	359°08.2	5°12.9	12	359°21.3	6°21.4	12	359°34.0	7°29.0	12	359°46.0	8°35.4	12	359°57.4	9°40.5
13	14°08.4	5°13.8	13	14°21.5	6°22.4	13	14°34.1	7°29.9	13					

15	GHA	Dec	18	GHA	Dec	21	GHA	Dec	24	GHA	Dec	27	GHA	Dec
0	179°59.2	9°51.3	0	180°09.6	10°54.7	0	180°19.1	11°56.6	0	180°27.6	12°56.7	0	180°35.0	13°54.9
1	194°59.4	9°52.2	1	195°09.8	10°55.6	1	195°19.3	11°57.4	1	195°27.7	12°57.5	1	195°35.1	13°55.7
2	209°59.5	9°53.1	2	210°09.9	10°56.5	2	210°19.4	11°58.3	2	210°27.8	12°58.3	2	210°35.2	13°56.4
3	224°59.7	9°53.9	3	225°10.1	10°57.3	3	225°19.5	11°59.1	3	225°27.9	12°59.1	3	225°35.3	13°57.2
4	239°59.8	9°54.8	4	240°10.2	10°58.2	4	240°19.6	11°60.0	4	240°28.0	12°60.0	4	240°35.4	13°58.0
5	254°60.0	9°55.7	5	255°10.3	10°59.1	5	255°19.7	12°00.8	5	255°28.2	13°00.8	5	255°35.5	13°58.8
6	270°00.1	9°56.6	6	270°10.5	10°60.0	6	270°19.9	12°01.7	6	270°28.3	13°01.6	6	270°35.6	13°59.6
7	285°00.3	9°57.5	7	285°10.6	11°00.8	7	285°20.0	12°02.5	7	285°28.4	13°02.4	7	285°35.7	14°00.4
8	300°00.4	9°58.4	8	300°10.7	11°01.7	8	300°20.1	12°03.4	8	300°28.5	13°03.2	8	300°35.8	14°01.2
9	315°00.6	9°59.3	9	315°10.9	11°02.6	9	315°20.2	12°04.2	9	315°28.6	13°04.1	9	315°35.9	14°02.0
10	330°00.7	10°00.2	10	330°11.0	11°03.4	10	330°20.4	12°05.0	10	330°28.7	13°04.9	10	330°36.0	14°02.8
11	345°00.9	10°01.1	11	345°11.2	11°04.3	11	345°20.5	12°05.9	11	345°28.8	13°05.7	11	345°36.1	14°03.6
12	0°01.0	10°02.0	12	0°11.3	11°05.2	12	0°20.6	12°06.7	12	0°28.9	13°06.5	12	0°36.2	14°04.4
13	15°01.2	10°02.8	13	15°11.4	11°06.0	13	15°20.7	12°07.6	13	15°29.0	13°07.3	13	15°36.2	14°05.1
14	30°01.3	10°03.7	14	30°11.6	11°06.9	14	30°20.9	12°08.4	14	30°29.1	13°08.1	14	30°36.3	14°05.9
15	45°01.5	10°04.6	15	45°11.7	11°07.8	15	45°21.0	12°09.3	15	45°29.2	13°09.0	15	45°36.4	14°06.7
16	60°01.6	10°05.5	16	60°11.8	11°08.6	16	60°21.1	12°10.1	16	60°29.3	13°09.8	16	60°36.5	14°07.5
17	75°01.8	10°06.4	17	75°12.0	11°09.5	17	75°21.2	12°10.9	17	75°29.5	13°10.6	17	75°36.6	14°08.3
18	90°01.9	10°07.3	18	90°12.1	11°10.4	18	90°21.3	12°11.8	18	90°29.6	13°11.4	18	90°36.7	14°09.1
19	105°02.1	10°08.2	19	105°12.2	11°11.2	19	105°21.5	12°12.6	19	105°29.7	13°12.2	19	105°36.8	14°09.9
20	120°02.2	10°09.1	20	120°12.4	11°12.1	20	120°21.6	12°13.5	20	120°29.8	13°13.0	20	120°36.9	14°10.7
21	135°02.4	10°09.9	21	135°12.5	11°12.9	21	135°21.7	12°14.3	21	135°29.9	13°13.9	21	135°37.0	14°11.4
22	150°02.5	10°10.8	22	150°12.6	11°13.8	22	150°21.8	12°15.1	22	150°30.0	13°14.7	22	150°37.1	14°12.2
23	165°02.7	10°11.7	23	165°12.8	11°14.7	23	165°21.9	12°16.0	23	165°30.1	13°15.5	23	165°37.2	14°13.0
	SD.=15.9	d=0.9		SD.=15.9	d=0.9		SD.=15.9	d=0.8		SD.=15.9	d=0.8		SD.=15.9	d=0.8
16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec	28	GHA	Dec
0	180°02.8	10°12.6	0	180°12.9	11°15.5	0	180°22.1	12°16.8	0	180°30.2	13°16.3	0	180°37.3	14°13.8
1	195°03.0	10°13.5	1	195°13.0	11°16.4	1	195°22.2	12°17.7	1	195°30.3	13°17.1	1	195°37.3	14°14.6
2	210°03.1	10°14.4	2	210°13.2	11°17.3	2	210°22.3	12°18.5	2	210°30.4	13°17.9	2	210°37.4	14°15.4
3	225°03.2	10°15.2	3	225°13.3	11°18.1	3	225°22.4	12°19.3	3	225°30.5	13°18.7	3	225°37.5	14°16.1
4	240°03.4	10°16.1	4	240°13.4	11°19.0	4	240°22.5	12°20.2	4	240°30.6	13°19.5	4	240°37.6	14°16.9
5	255°03.5	10°17.0	5	255°13.6	11°19.9	5	255°22.7	12°21.0	5	255°30.7	13°20.4	5	255°37.7	14°17.7
6	270°03.7	10°17.9	6	270°13.7	11°20.7	6	270°22.8	12°21.9	6	270°30.8	13°21.2	6	270°37.8	14°18.5
7	285°03.8	10°18.8	7	285°13.8	11°21.6	7	285°22.9	12°22.7	7	285°30.9	13°22.0	7	285°37.9	14°19.3
8	300°04.0	10°19.7	8	300°14.0	11°22.4	8	300°23.0	12°23.5	8	300°31.0	13°22.8	8	300°38.0	14°20.1
9	315°04.1	10°20.5	9	315°14.1	11°23.3	9	315°23.1	12°24.4	9	315°31.1	13°23.6	9	315°38.1	14°20.8
10	330°04.3	10°21.4	10	330°14.2	11°24.2	10	330°23.3	12°25.2	10	330°31.2	13°24.4	10	330°38.1	14°21.6
11	345°04.4	10°22.3	11	345°14.4	11°25.0	11	345°23.4	12°26.0	11	345°31.3	13°25.2	11	345°38.2	14°22.4
12	0°04.6	10°23.2	12	0°14.5	11°25.9	12	0°23.5	12°26.9	12	0°31.5	13°26.0	12	0°38.3	14°23.2
13	15°04.7	10°24.1	13	15°14.6	11°26.7	13	15°23.6	12°27.7	13	15°31.6	13°26.8	13	15°38.4	14°24.0
14	30°04.8	10°25.0	14	30°14.8	11°27.6	14	30°23.7	12°28.5	14	30°31.7	13°27.6	14	30°38.5	14°24.7
15	45°05.0	10°25.8	15	45°14.9	11°28.4	15	45°23.8	12°29.4	15	45°31.8	13°28.4	15	45°38.6	14°25.5
16	60°05.1	10°26.7	16	60°15.0	11°29.3	16	60°24.0	12°30.2	16	60°31.9	13°29.2	16	60°38.7	14°26.3
17	75°05.3	10°27.6	17	75°15.2	11°30.2	17	75°24.1	12°31.0	17	75°32.0	13°30.1	17	75°38.8	14°27.1
18	90°05.4	10°28.5	18	90°15.3	11°31.0	18	90°24.2	12°31.9	18	90°32.1	13°30.9	18	90°38.8	14°27.8
19	105°05.6	10°29.4	19	105°15.4	11°31.9	19	105°24.3	12°32.7	19	105°32.2	13°31.7	19	105°38.9	14°28.6
20	120°05.7	10°30.2	20	120°15.6	11°32.7	20	120°24.4	12°33.5	20	120°32.3	13°32.5	20	120°39.0	14°29.4
21	135°05.8	10°31.1	21	135°15.7	11°33.6	21	135°24.5	12°34.4	21	135°32.4	13°33.3	21	135°39.1	14°30.2
22	150°06.0	10°32.0	22	150°15.8	11°34.4	22	150°24.7	12°35.2	22	150°32.5	13°34.1	22	150°39.2	14°31.0
23	165°06.1	10°32.9	23	165°15.9	11°35.3	23	165°24.8	12°36.0	23	165°32.6	13°34.9	23	165°39.3	14°31.7
	SD.=15.9	d=0.9		SD.=15.9	d=0.9		SD.=15.9	d=0.8		SD.=15.9	d=0.8		SD.=15.9	d=0.8
17	GHA	Dec	20	GHA	Dec	23	GHA	Dec	26	GHA	Dec	29	GHA	Dec
0	180°06.3	10°33.8	0	180°16.1	11°36.2	0	180°24.9	12°36.9	0	180°32.7	13°35.7	0	180°39.4	14°32.5
1	195°06.4	10°34.6	1	195°16.2	11°37.0	1	195°25.0	12°37.7	1	195°32.8	13°36.5	1	195°39.4	14°33.3
2	210°06.6	10°35.5	2	210°16.3	11°37.9	2	210°25.1	12°38.5	2	210°32.9	13°37.3	2	210°39.5	14°34.0
3	225°06.7	10°36.4	3	225°16.5	11°38.7	3	225°25.2	12°39.3	3	225°33.0	13°38.1	3	225°39.6	14°34.8
4	240°06.8	10°37.3	4	240°16.6	11°39.6	4	240°25.4	12°40.2	4	240°33.1	13°38.9	4	240°39.7	14°35.6
5	255°07.0	10°38.1	5	255°16.7	11°40.4	5	255°25.5	12°41.0	5	255°33.2	13°39.7	5	255°39.8	14°36.4
6	270°07.1	10°39.0	6	270°16.8	11°41.3	6	270°25.6	12°41.8	6	270°33.3	13°40.5	6	270°39.9	14°37.1
7	285°07.3	10°39.9	7	285°17.0	11°42.1	7	285°25.7	12°42.7	7	285°33.4	13°41.3	7	285°39.9	14°37.9
8	300°07.4	10°40.8	8	300°17.1	11°43.0	8	300°25.8	12°43.5	8	300°33.5	13°42.1	8	300°40.0	14°38.7
9	315°07.6	10°41.6	9	315°17.2	11°43.8	9	315°25.9	12°44.3	9	315°33.6	13°42.9	9	315°40.1	14°39.5
10	330°07.7	10°42.5	10	330°17.4	11°44.7	10	330°26.0	12°45.1	10	330°33.7	13°43.7	10	330°40.2	14°40.2
11	345°07.8	10°43.4	11	345°17.5	11°45.5	11	345°26.2	12°46.0	11	345°33.8	13°44.5	11	345°40.3	14°41.0
12	0°08.0	10°44.3	12	0°17.6	11°46.4	12	0°26.3	12°46.8	12	0°33.9	13°45.3	12	0°40.4	14°41.8
13	15°08.1	10°45.1	13	15°17.7	11°47.2	13	15°26.4	12°47.6	13	15°34.0	13°46.1	13	15°40.4	14°42.5
14	30°08.3	10°46.0	14	30°17.9	11°48.1	14	30°26.5	12°48.4	14	30°34.1	13°46.9	14	30°40.5	14°43.3
15	45°08.4	10°46.9	15	45°18.0	11°49.0	15	45°26.6	12°49.3	15	45°34.2	13°47.7	15	45°40.6	14°44.1
16	60°08.5	10°47.8												

30	GHA	Dec	03	GHA	Dec	06	GHA	Dec	09	GHA	Dec	12	GHA	Dec
0	180°41.3	14°51.0	0	180°46.5	15°44.8	0	180°50.5	16°36.4	0	180°53.2	17°25.4	0	180°54.6	18°11.8
1	195°41.4	14°51.7	1	195°46.6	15°45.6	1	195°50.5	16°37.1	1	195°53.2	17°26.0	1	195°54.6	18°12.4
2	210°41.5	14°52.5	2	210°46.6	15°46.3	2	210°50.5	16°37.8	2	210°53.2	17°26.7	2	210°54.6	18°13.0
3	225°41.6	14°53.3	3	225°46.7	15°47.0	3	225°50.6	16°38.5	3	225°53.2	17°27.4	3	225°54.6	18°13.7
4	240°41.7	14°54.0	4	240°46.7	15°47.8	4	240°50.6	16°39.2	4	240°53.3	17°28.0	4	240°54.6	18°14.3
5	255°41.7	14°54.8	5	255°46.8	15°48.5	5	255°50.7	16°39.8	5	255°53.3	17°28.7	5	255°54.6	18°14.9
6	270°41.8	14°55.5	6	270°46.9	15°49.2	6	270°50.7	16°40.5	6	270°53.3	17°29.3	6	270°54.6	18°15.5
7	285°41.9	14°56.3	7	285°46.9	15°50.0	7	285°50.8	16°41.2	7	285°53.4	17°30.0	7	285°54.6	18°16.2
8	300°42.0	14°57.1	8	300°47.0	15°50.7	8	300°50.8	16°41.9	8	300°53.4	17°30.7	8	300°54.6	18°16.8
9	315°42.0	14°57.8	9	315°47.1	15°51.4	9	315°50.9	16°42.6	9	315°53.4	17°31.3	9	315°54.7	18°17.4
10	330°42.1	14°58.6	10	330°47.1	15°52.1	10	330°50.9	16°43.3	10	330°53.4	17°32.0	10	330°54.7	18°18.0
11	345°42.2	14°59.3	11	345°47.2	15°52.9	11	345°50.9	16°44.0	11	345°53.5	17°32.6	11	345°54.7	18°18.6
12	0°42.3	15°00.1	12	0°47.2	15°53.6	12	0°51.0	16°44.7	12	0°53.5	17°33.3	12	0°54.7	18°19.3
13	15°42.4	15°00.9	13	15°47.3	15°54.3	13	15°51.0	16°45.4	13	15°53.5	17°34.0	13	15°54.7	18°19.9
14	30°42.4	15°01.6	14	30°47.4	15°55.1	14	30°51.1	16°46.1	14	30°53.5	17°34.6	14	30°54.7	18°20.5
15	45°42.5	15°02.4	15	45°47.4	15°55.8	15	45°51.1	16°46.8	15	45°53.6	17°35.3	15	45°54.7	18°21.1
16	60°42.6	15°03.1	16	60°47.5	15°56.5	16	60°51.2	16°47.5	16	60°53.6	17°35.9	16	60°54.7	18°21.7
17	75°42.7	15°03.9	17	75°47.5	15°57.2	17	75°51.2	16°48.2	17	75°53.6	17°36.6	17	75°54.7	18°22.3
18	90°42.7	15°04.6	18	90°47.6	15°58.0	18	90°51.2	16°48.9	18	90°53.6	17°37.2	18	90°54.7	18°23.0
19	105°42.8	15°05.4	19	105°47.7	15°58.7	19	105°51.3	16°49.5	19	105°53.7	17°37.9	19	105°54.7	18°23.6
20	120°42.9	15°06.2	20	120°47.7	15°59.4	20	120°51.3	16°50.2	20	120°53.7	17°38.5	20	120°54.7	18°24.2
21	135°43.0	15°06.9	21	135°47.8	16°00.1	21	135°51.4	16°50.9	21	135°53.7	17°39.2	21	135°54.7	18°24.8
22	150°43.0	15°07.7	22	150°47.8	16°00.8	22	150°51.4	16°51.6	22	150°53.7	17°39.8	22	150°54.7	18°25.4
23	165°43.1	15°08.4	23	165°47.9	16°01.6	23	165°51.5	16°52.3	23	165°53.8	17°40.5	23	165°54.7	18°26.0
	SD.=15.9	d=0.8		SD.=15.9	d=0.7		SD.=15.9	d=0.7		SD.=15.8	d=0.7		SD.=15.8	d=0.6

01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec	13	GHA	Dec
0	180°43.2	15°09.2	0	180°47.9	16°02.3	0	180°51.5	16°53.0	0	180°53.8	17°41.1	0	180°54.7	18°26.6
1	195°43.3	15°09.9	1	195°48.0	16°03.0	1	195°51.5	16°53.7	1	195°53.8	17°41.8	1	195°54.7	18°27.3
2	210°43.3	15°10.7	2	210°48.1	16°03.7	2	210°51.6	16°54.4	2	210°53.8	17°42.4	2	210°54.8	18°27.9
3	225°43.4	15°11.4	3	225°48.1	16°04.4	3	225°51.6	16°55.0	3	225°53.8	17°43.1	3	225°54.8	18°28.5
4	240°43.5	15°12.2	4	240°48.2	16°05.2	4	240°51.7	16°55.7	4	240°53.9	17°43.7	4	240°54.8	18°29.1
5	255°43.6	15°12.9	5	255°48.2	16°05.9	5	255°51.7	16°56.4	5	255°53.9	17°44.4	5	255°54.8	18°29.7
6	270°43.6	15°13.7	6	270°48.3	16°06.6	6	270°51.7	16°57.1	6	270°53.9	17°45.0	6	270°54.8	18°30.3
7	285°43.7	15°14.4	7	285°48.3	16°07.3	7	285°51.8	16°57.8	7	285°53.9	17°45.7	7	285°54.8	18°30.9
8	300°43.8	15°15.2	8	300°48.4	16°08.0	8	300°51.8	16°58.5	8	300°53.9	17°46.3	8	300°54.8	18°31.5
9	315°43.8	15°15.9	9	315°48.5	16°08.8	9	315°51.9	16°59.1	9	315°54.0	17°47.0	9	315°54.8	18°32.1
10	330°43.9	15°16.7	10	330°48.5	16°09.5	10	330°51.9	16°59.8	10	330°54.0	17°47.6	10	330°54.8	18°32.8
11	345°44.0	15°17.4	11	345°48.6	16°10.2	11	345°51.9	17°00.5	11	345°54.0	17°48.3	11	345°54.8	18°33.4
12	0°44.1	15°18.2	12	0°48.6	16°10.9	12	0°52.0	17°01.2	12	0°54.0	17°48.9	12	0°54.8	18°34.0
13	15°44.1	15°18.9	13	15°48.7	16°11.6	13	15°52.0	17°01.9	13	15°54.0	17°49.6	13	15°54.8	18°34.6
14	30°44.2	15°19.7	14	30°48.7	16°12.3	14	30°52.0	17°02.6	14	30°54.1	17°50.2	14	30°54.8	18°35.2
15	45°44.3	15°20.4	15	45°48.8	16°13.1	15	45°52.1	17°03.2	15	45°54.1	17°50.8	15	45°54.8	18°35.8
16	60°44.3	15°21.2	16	60°48.8	16°13.8	16	60°52.1	17°03.9	16	60°54.1	17°51.5	16	60°54.8	18°36.4
17	75°44.4	15°21.9	17	75°48.9	16°14.5	17	75°52.2	17°04.6	17	75°54.1	17°52.1	17	75°54.8	18°37.0
18	90°44.5	15°22.7	18	90°49.0	16°15.2	18	90°52.2	17°05.3	18	90°54.1	17°52.8	18	90°54.8	18°37.6
19	105°44.6	15°23.4	19	105°49.0	16°15.9	19	105°52.2	17°05.9	19	105°54.2	17°53.4	19	105°54.8	18°38.2
20	120°44.6	15°24.2	20	120°49.1	16°16.6	20	120°52.3	17°06.6	20	120°54.2	17°54.1	20	120°54.8	18°38.8
21	135°44.7	15°24.9	21	135°49.1	16°17.3	21	135°52.3	17°07.3	21	135°54.2	17°54.7	21	135°54.8	18°39.4
22	150°44.8	15°25.7	22	150°49.2	16°18.0	22	150°52.3	17°08.0	22	150°54.2	17°55.3	22	150°54.8	18°40.0
23	165°44.8	15°26.4	23	165°49.2	16°18.8	23	165°52.4	17°08.7	23	165°54.2	17°56.0	23	165°54.8	18°40.6
	SD.=15.9	d=0.8		SD.=15.9	d=0.7		SD.=15.9	d=0.7		SD.=15.8	d=0.7		SD.=15.8	d=0.6

02	GHA	Dec	05	GHA	Dec	08	GHA	Dec	11	GHA	Dec	14	GHA	Dec
0	180°44.9	15°27.1	0	180°49.3	16°19.5	0	180°52.4	17°09.3	0	180°54.2	17°56.6	0	180°54.8	18°41.2
1	195°45.0	15°27.9	1	195°49.3	16°20.2	1	195°52.4	17°10.0	1	195°54.3	17°57.3	1	195°54.8	18°41.8
2	210°45.0	15°28.6	2	210°49.4	16°20.9	2	210°52.5	17°10.7	2	210°54.3	17°57.9	2	210°54.8	18°42.4
3	225°45.1	15°29.4	3	225°49.4	16°21.6	3	225°52.5	17°11.3	3	225°54.3	17°58.5	3	225°54.8	18°43.0
4	240°45.2	15°30.1	4	240°49.5	16°22.3	4	240°52.5	17°12.0	4	240°54.3	17°59.2	4	240°54.8	18°43.6
5	255°45.2	15°30.9	5	255°49.5	16°23.0	5	255°52.6	17°12.7	5	255°54.3	17°59.8	5	255°54.8	18°44.2
6	270°45.3	15°31.6	6	270°49.6	16°23.7	6	270°52.6	17°13.4	6	270°54.3	18°00.4	6	270°54.8	18°44.8
7	285°45.4	15°32.3	7	285°49.6	16°24.4	7	285°52.6	17°14.0	7	285°54.4	18°01.1	7	285°54.8	18°45.4
8	300°45.4	15°33.1	8	300°49.7	16°25.1	8	300°52.7	17°14.7	8	300°54.4	18°01.7	8	300°54.8	18°46.0
9	315°45.5	15°33.8	9	315°49.7	16°25.8	9	315°52.7	17°15.4	9	315°54.4	18°02.3	9	315°54.7	18°46.6
10	330°45.6	15°34.6	10	330°49.8	16°26.5	10	330°52.7	17°16.1	10	330°54.4	18°03.0	10	330°54.7	18°47.2
11	345°45.6	15°35.3	11	345°49.8	16°27.2	11	345°52.8	17°16.7	11	345°54.4	18°03.6	11	345°	

2020 May 15 to May. 29

15	GHA	Dec	18	GHA	Dec	21	GHA	Dec	24	GHA	Dec	27	GHA	Dec
0	180°54.7	18°55.4	0	180°53.4	19°36.2	0	180°50.9	20°14.0	0	180°47.2	20°48.7	0	180°42.4	21°20.2
1	195°54.6	18°56.0	1	195°53.4	19°36.8	1	195°50.9	20°14.5	1	195°47.2	20°49.2	1	195°42.3	21°20.6
2	210°54.6	18°56.6	2	210°53.4	19°37.3	2	210°50.9	20°15.0	2	210°47.1	20°49.6	2	210°42.3	21°21.0
3	225°54.6	18°57.2	3	225°53.4	19°37.9	3	225°50.8	20°15.5	3	225°47.1	20°50.1	3	225°42.2	21°21.4
4	240°54.6	18°57.8	4	240°53.3	19°38.4	4	240°50.8	20°16.0	4	240°47.0	20°50.6	4	240°42.1	21°21.8
5	255°54.6	18°58.4	5	255°53.3	19°39.0	5	255°50.7	20°16.5	5	255°46.9	20°51.0	5	255°42.0	21°22.2
6	270°54.6	18°59.0	6	270°53.3	19°39.5	6	270°50.7	20°17.0	6	270°46.9	20°51.5	6	270°42.0	21°22.7
7	285°54.6	18°59.5	7	285°53.2	19°40.0	7	285°50.6	20°17.5	7	285°46.8	20°51.9	7	285°41.9	21°23.1
8	300°54.6	19°00.1	8	300°53.2	19°40.6	8	300°50.6	20°18.0	8	300°46.8	20°52.4	8	300°41.8	21°23.5
9	315°54.6	19°00.7	9	315°53.2	19°41.1	9	315°50.5	20°18.5	9	315°46.7	20°52.8	9	315°41.7	21°23.9
10	330°54.6	19°01.3	10	330°53.2	19°41.7	10	330°50.5	20°19.0	10	330°46.6	20°53.3	10	330°41.7	21°24.3
11	345°54.6	19°01.9	11	345°53.1	19°42.2	11	345°50.5	20°19.5	11	345°46.6	20°53.7	11	345°41.6	21°24.7
12	0°54.5	19°02.4	12	0°53.1	19°42.7	12	0°50.4	20°20.0	12	0°46.5	20°54.2	12	0°41.5	21°25.1
13	15°54.5	19°03.0	13	15°53.1	19°43.3	13	15°50.4	20°20.5	13	15°46.5	20°54.6	13	15°41.4	21°25.5
14	30°54.5	19°03.6	14	30°53.0	19°43.8	14	30°50.3	20°21.0	14	30°46.4	20°55.1	14	30°41.4	21°25.9
15	45°54.5	19°04.2	15	45°53.0	19°44.4	15	45°50.3	20°21.5	15	45°46.3	20°55.5	15	45°41.3	21°26.3
16	60°54.5	19°04.8	16	60°53.0	19°44.9	16	60°50.2	20°22.0	16	60°46.3	20°56.0	16	60°41.2	21°26.7
17	75°54.5	19°05.3	17	75°53.0	19°45.4	17	75°50.2	20°22.5	17	75°46.2	20°56.4	17	75°41.1	21°27.1
18	90°54.5	19°05.9	18	90°52.9	19°46.0	18	90°50.1	20°23.0	18	90°46.1	20°56.9	18	90°41.1	21°27.5
19	105°54.5	19°06.5	19	105°52.9	19°46.5	19	105°50.1	20°23.5	19	105°46.1	20°57.3	19	105°41.0	21°27.9
20	120°54.4	19°07.1	20	120°52.9	19°47.0	20	120°50.0	20°24.0	20	120°46.0	20°57.8	20	120°40.9	21°28.3
21	135°54.4	19°07.6	21	135°52.8	19°47.6	21	135°50.0	20°24.5	21	135°45.9	20°58.2	21	135°40.8	21°28.7
22	150°54.4	19°08.2	22	150°52.8	19°48.1	22	150°49.9	20°25.0	22	150°45.9	20°58.7	22	150°40.7	21°29.1
23	165°54.4	19°08.8	23	165°52.8	19°48.6	23	165°49.9	20°25.5	23	165°45.8	20°59.1	23	165°40.7	21°29.5
	SD.=15.8	d=0.6		SD.=15.8	d=0.5		SD.=15.8	d=0.5		SD.=15.8	d=0.5		SD.=15.8	d=0.4

16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec	28	GHA	Dec
0	180°54.4	19°09.4	0	180°52.7	19°49.2	0	180°49.8	20°25.9	0	180°45.8	20°59.6	0	180°40.6	21°29.9
1	195°54.4	19°09.9	1	195°52.7	19°49.7	1	195°49.8	20°26.4	1	195°45.7	21°00.0	1	195°40.5	21°30.3
2	210°54.4	19°10.5	2	210°52.7	19°50.2	2	210°49.7	20°26.9	2	210°45.6	21°00.5	2	210°40.4	21°30.7
3	225°54.3	19°11.1	3	225°52.6	19°50.8	3	225°49.7	20°27.4	3	225°45.6	21°00.9	3	225°40.3	21°31.1
4	240°54.3	19°11.7	4	240°52.6	19°51.3	4	240°49.6	20°27.9	4	240°45.5	21°01.3	4	240°40.3	21°31.5
5	255°54.3	19°12.2	5	255°52.6	19°51.8	5	255°49.6	20°28.4	5	255°45.4	21°01.8	5	255°40.2	21°31.9
6	270°54.3	19°12.8	6	270°52.5	19°52.4	6	270°49.5	20°28.9	6	270°45.4	21°02.2	6	270°40.1	21°32.3
7	285°54.3	19°13.4	7	285°52.5	19°52.9	7	285°49.5	20°29.4	7	285°45.3	21°02.7	7	285°40.0	21°32.7
8	300°54.3	19°13.9	8	300°52.5	19°53.4	8	300°49.4	20°29.8	8	300°45.2	21°03.1	8	300°39.9	21°33.1
9	315°54.3	19°14.5	9	315°52.4	19°53.9	9	315°49.4	20°30.3	9	315°45.2	21°03.6	9	315°39.9	21°33.5
10	330°54.2	19°15.1	10	330°52.4	19°54.5	10	330°49.3	20°30.8	10	330°45.1	21°04.0	10	330°39.8	21°33.9
11	345°54.2	19°15.6	11	345°52.4	19°55.0	11	345°49.3	20°31.3	11	345°45.0	21°04.4	11	345°39.7	21°34.3
12	0°54.2	19°16.2	12	0°52.3	19°55.5	12	0°49.2	20°31.8	12	0°45.0	21°04.9	12	0°39.6	21°34.7
13	15°54.2	19°16.8	13	15°52.3	19°56.0	13	15°49.2	20°32.3	13	15°44.9	21°05.3	13	15°39.5	21°35.1
14	30°54.2	19°17.3	14	30°52.3	19°56.6	14	30°49.1	20°32.7	14	30°44.8	21°05.7	14	30°39.5	21°35.5
15	45°54.2	19°17.9	15	45°52.2	19°57.1	15	45°49.1	20°33.2	15	45°44.8	21°06.2	15	45°39.4	21°35.8
16	60°54.1	19°18.5	16	60°52.2	19°57.6	16	60°49.0	20°33.7	16	60°44.7	21°06.6	16	60°39.3	21°36.2
17	75°54.1	19°19.0	17	75°52.2	19°58.1	17	75°49.0	20°34.2	17	75°44.6	21°07.0	17	75°39.2	21°36.6
18	90°54.1	19°19.6	18	90°52.1	19°58.7	18	90°48.9	20°34.7	18	90°44.6	21°07.5	18	90°39.1	21°37.0
19	105°54.1	19°20.2	19	105°52.1	19°59.2	19	105°48.9	20°35.1	19	105°44.5	21°07.9	19	105°39.1	21°37.4
20	120°54.1	19°20.7	20	120°52.1	19°59.7	20	120°48.8	20°35.6	20	120°44.4	21°08.3	20	120°39.0	21°37.8
21	135°54.0	19°21.3	21	135°52.0	20°00.2	21	135°48.8	20°36.1	21	135°44.4	21°08.8	21	135°38.9	21°38.2
22	150°54.0	19°21.8	22	150°52.0	20°00.7	22	150°48.7	20°36.6	22	150°44.3	21°09.2	22	150°38.8	21°38.6
23	165°54.0	19°22.4	23	165°51.9	20°01.3	23	165°48.7	20°37.0	23	165°44.2	21°09.6	23	165°38.7	21°38.9
	SD.=15.8	d=0.6		SD.=15.8	d=0.5		SD.=15.8	d=0.5		SD.=15.8	d=0.4		SD.=15.8	d=0.4

17	GHA	Dec	20	GHA	Dec	23	GHA	Dec	26	GHA	Dec	29	GHA	Dec
0	180°54.0	19°23.0	0	180°51.9	20°01.8	0	180°48.6	20°37.5	0	180°44.1	21°10.1	0	180°38.6	21°39.3
1	195°54.0	19°23.5	1	195°51.9	20°02.3	1	195°48.5	20°38.0	1	195°44.1	21°10.5	1	195°38.6	21°39.7
2	210°53.9	19°24.1	2	210°51.8	20°02.8	2	210°48.5	20°38.5	2	210°44.0	21°10.9	2	210°38.5	21°40.1
3	225°53.9	19°24.6	3	225°51.8	20°03.3	3	225°48.4	20°38.9	3	225°43.9	21°11.3	3	225°38.4	21°40.5
4	240°53.9	19°25.2	4	240°51.8	20°03.8	4	240°48.4	20°39.4	4	240°43.9	21°11.8	4	240°38.3	21°40.8
5	255°53.9	19°25.8	5	255°51.7	20°04.4	5	255°48.3	20°39.9	5	255°43.8	21°12.2	5	255°38.2	21°41.2
6	270°53.9	19°26.3	6	270°51.7	20°04.9	6	270°48.3	20°40.3	6	270°43.7	21°12.6	6	270°38.1	21°41.6
7	285°53.8	19°26.9	7	285°51.6	20°05.4	7	285°48.2	20°40.8	7	285°43.7	21°13.1	7	285°38.1	21°42.0
8	300°53.8	19°27.4	8	300°51.6	20°05.9	8	300°48.2	20°41.3	8	300°43.6	21°13.5	8	300°38.0	21°42.4
9	315°53.8	19°28.0	9	315°51.6	20°06.4	9	315°48.1	20°41.8	9	315°43.5	21°13.9	9	315°37.9	21°42.7
10	330°53.8	19°28.5	10	330°51.5	20°06.9	10	330°48.1	20°42.2	10	330°43.4	21°14.3	10	330°37.8	21°43.1
11	345°53.7	19°29.1	11	345°51.5	20°07.4	11	345°48.0	20°42.7	11	345°43.4	21°14.7	11	345°37.7	21°43.5
12	0°53.7	19°2												

30	GHA	Dec	02	GHA	Dec	05	GHA	Dec	08	GHA	Dec	11	GHA	Dec
0	180°36.6	21°48.3	0	180°29.9	22°13.0	0	180°22.3	22°34.2	0	180°14.0	22°51.9	0	180°05.2	23°05.9
1	195°36.5	21°48.7	1	195°29.8	22°13.3	1	195°22.2	22°34.5	1	195°13.9	22°52.1	1	195°05.1	23°06.1
2	210°36.4	21°49.1	2	210°29.7	22°13.7	2	210°22.1	22°34.8	2	210°13.8	22°52.3	2	210°04.9	23°06.3
3	225°36.3	21°49.4	3	225°29.6	22°14.0	3	225°22.0	22°35.0	3	225°13.7	22°52.6	3	225°04.8	23°06.4
4	240°36.2	21°49.8	4	240°29.5	22°14.3	4	240°21.9	22°35.3	4	240°13.6	22°52.8	4	240°04.7	23°06.6
5	255°36.1	21°50.1	5	255°29.4	22°14.6	5	255°21.8	22°35.6	5	255°13.5	22°53.0	5	255°04.5	23°06.8
6	270°36.1	21°50.5	6	270°29.3	22°14.9	6	270°21.6	22°35.8	6	270°13.3	22°53.2	6	270°04.4	23°06.9
7	285°36.0	21°50.9	7	285°29.2	22°15.2	7	285°21.5	22°36.1	7	285°13.2	22°53.4	7	285°04.3	23°07.1
8	300°35.9	21°51.2	8	300°29.1	22°15.6	8	300°21.4	22°36.4	8	300°13.1	22°53.6	8	300°04.2	23°07.3
9	315°35.8	21°51.6	9	315°29.0	22°15.9	9	315°21.3	22°36.6	9	315°13.0	22°53.8	9	315°04.0	23°07.4
10	330°35.7	21°52.0	10	330°28.8	22°16.2	10	330°21.2	22°36.9	10	330°12.9	22°54.1	10	330°03.9	23°07.6
11	345°35.6	21°52.3	11	345°28.7	22°16.5	11	345°21.1	22°37.2	11	345°12.7	22°54.3	11	345°03.8	23°07.8
12	0°35.5	21°52.7	12	0°28.6	22°16.8	12	0°21.0	22°37.4	12	0°12.6	22°54.5	12	0°03.7	23°07.9
13	15°35.4	21°53.0	13	15°28.5	22°17.1	13	15°20.9	22°37.7	13	15°12.5	22°54.7	13	15°03.5	23°08.1
14	30°35.3	21°53.4	14	30°28.4	22°17.4	14	30°20.8	22°38.0	14	30°12.4	22°54.9	14	30°03.4	23°08.2
15	45°35.3	21°53.8	15	45°28.3	22°17.7	15	45°20.6	22°38.2	15	45°12.2	22°55.1	15	45°03.3	23°08.4
16	60°35.2	21°54.1	16	60°28.2	22°18.0	16	60°20.5	22°38.5	16	60°12.1	22°55.3	16	60°03.1	23°08.6
17	75°35.1	21°54.5	17	75°28.1	22°18.4	17	75°20.4	22°38.7	17	75°12.0	22°55.5	17	75°03.0	23°08.7
18	90°35.0	21°54.8	18	90°28.0	22°18.7	18	90°20.3	22°39.0	18	90°11.9	22°55.7	18	90°02.9	23°08.9
19	105°34.9	21°55.2	19	105°27.9	22°19.0	19	105°20.2	22°39.2	19	105°11.8	22°56.0	19	105°02.8	23°09.0
20	120°34.8	21°55.5	20	120°27.8	22°19.3	20	120°20.1	22°39.5	20	120°11.6	22°56.2	20	120°02.6	23°09.2
21	135°34.7	21°55.9	21	135°27.7	22°19.6	21	135°20.0	22°39.8	21	135°11.5	22°56.4	21	135°02.5	23°09.3
22	150°34.6	21°56.2	22	150°27.6	22°19.9	22	150°19.9	22°40.0	22	150°11.4	22°56.6	22	150°02.4	23°09.5
23	165°34.5	21°56.6	23	165°27.5	22°20.2	23	165°19.7	22°40.3	23	165°11.3	22°56.8	23	165°02.2	23°09.7
	SD.=15.8	d=0.4		SD.=15.8	d=0.3		SD.=15.8	d=0.3		SD.=15.8	d=0.3		SD.=15.8	d=0.2

31	GHA	Dec	03	GHA	Dec	06	GHA	Dec	09	GHA	Dec	12	GHA	Dec
0	180°34.4	21°56.9	0	180°27.4	22°20.5	0	180°19.6	22°40.5	0	180°11.2	22°57.0	0	180°02.1	23°09.8
1	195°34.3	21°57.3	1	195°27.3	22°20.8	1	195°19.5	22°40.8	1	195°11.0	22°57.2	1	195°02.0	23°10.0
2	210°34.3	21°57.6	2	210°27.2	22°21.1	2	210°19.4	22°41.0	2	210°10.9	22°57.4	2	210°01.9	23°10.1
3	225°34.2	21°58.0	3	225°27.1	22°21.4	3	225°19.3	22°41.3	3	225°10.8	22°57.6	3	225°01.7	23°10.3
4	240°34.1	21°58.3	4	240°27.0	22°21.7	4	240°19.2	22°41.5	4	240°10.7	22°57.8	4	240°01.6	23°10.4
5	255°34.0	21°58.7	5	255°26.9	22°22.0	5	255°19.1	22°41.8	5	255°10.5	22°58.0	5	255°01.5	23°10.6
6	270°33.9	21°59.0	6	270°26.8	22°22.3	6	270°18.9	22°42.0	6	270°10.4	22°58.2	6	270°01.3	23°10.7
7	285°33.8	21°59.4	7	285°26.7	22°22.6	7	285°18.8	22°42.3	7	285°10.3	22°58.4	7	285°01.2	23°10.9
8	300°33.7	21°59.7	8	300°26.6	22°22.9	8	300°18.7	22°42.5	8	300°10.2	22°58.6	8	300°01.1	23°11.0
9	315°33.6	22°00.1	9	315°26.5	22°23.2	9	315°18.6	22°42.8	9	315°10.1	22°58.8	9	315°01.0	23°11.2
10	330°33.5	22°00.4	10	330°26.4	22°23.5	10	330°18.5	22°43.0	10	330°09.9	22°59.0	10	330°00.8	23°11.3
11	345°33.4	22°00.8	11	345°26.3	22°23.8	11	345°18.4	22°43.3	11	345°09.8	22°59.2	11	345°00.7	23°11.4
12	0°33.3	22°01.1	12	0°26.2	22°24.1	12	0°18.3	22°43.5	12	0°09.7	22°59.4	12	0°00.6	23°11.6
13	15°33.2	22°01.5	13	15°26.1	22°24.4	13	15°18.1	22°43.8	13	15°09.6	22°59.6	13	15°00.4	23°11.7
14	30°33.1	22°01.8	14	30°26.0	22°24.7	14	30°18.0	22°44.0	14	30°09.4	22°59.8	14	30°00.3	23°11.9
15	45°33.0	22°02.1	15	45°25.9	22°25.0	15	45°17.9	22°44.2	15	45°09.3	22°60.0	15	45°00.2	23°12.0
16	60°33.0	22°02.5	16	60°25.8	22°25.3	16	60°17.8	22°44.5	16	60°09.2	23°00.1	16	60°00.0	23°12.2
17	75°32.9	22°02.8	17	75°25.6	22°25.5	17	75°17.7	22°44.7	17	75°09.1	23°00.3	17	74°59.9	23°12.3
18	90°32.8	22°03.2	18	90°25.5	22°25.8	18	90°17.6	22°45.0	18	90°08.9	23°00.5	18	89°59.8	23°12.4
19	105°32.7	22°03.5	19	105°25.4	22°26.1	19	105°17.5	22°45.2	19	105°08.8	23°00.7	19	104°59.6	23°12.6
20	120°32.6	22°03.8	20	120°25.3	22°26.4	20	120°17.3	22°45.5	20	120°08.7	23°00.9	20	119°59.5	23°12.7
21	135°32.5	22°04.2	21	135°25.2	22°26.7	21	135°17.2	22°45.7	21	135°08.6	23°01.1	21	134°59.4	23°12.9
22	150°32.4	22°04.5	22	150°25.1	22°27.0	22	150°17.1	22°45.9	22	150°08.4	23°01.3	22	149°59.3	23°13.0
23	165°32.3	22°04.8	23	165°25.0	22°27.3	23	165°17.0	22°46.2	23	165°08.3	23°01.5	23	164°59.1	23°13.1
	SD.=15.8	d=0.4		SD.=15.8	d=0.3		SD.=15.8	d=0.3		SD.=15.8	d=0.2		SD.=15.7	d=0.2

01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec	13	GHA	Dec
0	180°32.2	22°05.2	0	180°24.9	22°27.6	0	180°16.9	22°46.4	0	180°08.2	23°01.7	0	179°59.0	23°13.3
1	195°32.1	22°05.5	1	195°24.8	22°27.9	1	195°16.8	22°46.6	1	195°08.1	23°01.8	1	194°58.9	23°13.4
2	210°32.0	22°05.8	2	210°24.7	22°28.1	2	210°16.6	22°46.9	2	210°07.9	23°02.0	2	209°58.7	23°13.5
3	225°31.9	22°06.2	3	225°24.6	22°28.4	3	225°16.5	22°47.1	3	225°07.8	23°02.2	3	224°58.6	23°13.7
4	240°31.8	22°06.5	4	240°24.5	22°28.7	4	240°16.4	22°47.4	4	240°07.7	23°02.4	4	239°58.5	23°13.8
5	255°31.7	22°06.8	5	255°24.4	22°29.0	5	255°16.3	22°47.6	5	255°07.6	23°02.6	5	254°58.3	23°13.9
6	270°31.6	22°07.2	6	270°24.3	22°29.3	6	270°16.2	22°47.8	6	270°07.4	23°02.8	6	269°58.2	23°14.1
7	285°31.5	22°07.5	7	285°24.2	22°29.6	7	285°16.1	22°48.1	7	285°07.3	23°03.0	7	284°58.1	23°14.2
8	300°31.4	22°07.8	8	300°24.0	22°29.8	8	300°15.9	22°48.3	8	300°07.2	23°03.1	8	299°57.9	23°14.3
9	315°31.3	22°08.2	9	315°23.9	22°30.1	9	315°15.8	22°48.5	9	315°07.1	23°03.3	9	314°57.8	23°14.5
10	330°31.2	22°08.5	10	330°23.8	22°30.4	10	330°15.7	22°48.7	10	330°06.9	23°03.5	10	329°57.7	23°14.6
11	345°31.1	22°08.8	11	345°23.7	22°30.7	11	345°15.6	22°49.0	11	345°06.8	23°03.7	11	344°	

14	GHA	Dec	17	GHA	Dec	20	GHA	Dec	23	GHA	Dec	26	GHA	Dec
0	179°55.8	23°16.3	0	179°46.2	23°23.0	0	179°36.3	23°26.0	0	179°26.5	23°25.3	0	179°16.8	23°20.8
1	194°55.7	23°16.4	1	194°46.0	23°23.1	1	194°36.2	23°26.0	1	194°26.3	23°25.3	1	194°16.7	23°20.8
2	209°55.6	23°16.6	2	209°45.9	23°23.2	2	209°36.0	23°26.0	2	209°26.2	23°25.2	2	209°16.6	23°20.7
3	224°55.4	23°16.7	3	224°45.7	23°23.2	3	224°35.9	23°26.1	3	224°26.1	23°25.2	3	224°16.4	23°20.6
4	239°55.3	23°16.8	4	239°45.6	23°23.3	4	239°35.8	23°26.1	4	239°25.9	23°25.1	4	239°16.3	23°20.5
5	254°55.2	23°16.9	5	254°45.5	23°23.4	5	254°35.6	23°26.1	5	254°25.8	23°25.1	5	254°16.2	23°20.4
6	269°55.0	23°17.0	6	269°45.3	23°23.4	6	269°35.5	23°26.1	6	269°25.7	23°25.1	6	269°16.1	23°20.3
7	284°54.9	23°17.1	7	284°45.2	23°23.5	7	284°35.3	23°26.1	7	284°25.5	23°25.0	7	284°15.9	23°20.2
8	299°54.8	23°17.3	8	299°45.1	23°23.5	8	299°35.2	23°26.1	8	299°25.4	23°25.0	8	299°15.8	23°20.1
9	314°54.6	23°17.4	9	314°44.9	23°23.6	9	314°35.1	23°26.1	9	314°25.3	23°24.9	9	314°15.7	23°20.0
10	329°54.5	23°17.5	10	329°44.8	23°23.7	10	329°34.9	23°26.1	10	329°25.1	23°24.9	10	329°15.5	23°19.9
11	344°54.4	23°17.6	11	344°44.7	23°23.7	11	344°34.8	23°26.1	11	344°25.0	23°24.8	11	344°15.4	23°19.8
12	359°54.2	23°17.7	12	359°44.5	23°23.8	12	359°34.7	23°26.2	12	359°24.8	23°24.8	12	359°15.3	23°19.7
13	14°54.1	23°17.8	13	14°44.4	23°23.8	13	14°34.5	23°26.2	13	14°24.7	23°24.8	13	14°15.1	23°19.6
14	29°54.0	23°17.9	14	29°44.2	23°23.9	14	29°34.4	23°26.2	14	29°24.6	23°24.7	14	29°15.0	23°19.5
15	44°53.8	23°18.0	15	44°44.1	23°24.0	15	44°34.3	23°26.2	15	44°24.4	23°24.7	15	44°14.9	23°19.4
16	59°53.7	23°18.1	16	59°44.0	23°24.0	16	59°34.1	23°26.2	16	59°24.3	23°24.6	16	59°14.7	23°19.4
17	74°53.6	23°18.2	17	74°43.8	23°24.1	17	74°34.0	23°26.2	17	74°24.2	23°24.6	17	74°14.6	23°19.3
18	89°53.4	23°18.4	18	89°43.7	23°24.1	18	89°33.8	23°26.2	18	89°24.0	23°24.5	18	89°14.5	23°19.2
19	104°53.3	23°18.5	19	104°43.6	23°24.2	19	104°33.7	23°26.2	19	104°23.9	23°24.5	19	104°14.4	23°19.1
20	119°53.2	23°18.6	20	119°43.4	23°24.2	20	119°33.6	23°26.2	20	119°23.8	23°24.4	20	119°14.2	23°18.9
21	134°53.0	23°18.7	21	134°43.3	23°24.3	21	134°33.4	23°26.2	21	134°23.6	23°24.4	21	134°14.1	23°18.8
22	149°52.9	23°18.8	22	149°43.2	23°24.3	22	149°33.3	23°26.2	22	149°23.5	23°24.3	22	149°14.0	23°18.7
23	164°52.8	23°18.9	23	164°43.0	23°24.4	23	164°33.2	23°26.2	23	164°23.4	23°24.3	23	164°13.8	23°18.6
	SD.=15.7	d=0.1		SD.=15.7	d=0.1		SD.=15.7	d=0.0		SD.=15.7	d=0.0		SD.=15.7	d=0.1

15	GHA	Dec	18	GHA	Dec	21	GHA	Dec	24	GHA	Dec	27	GHA	Dec
0	179°52.6	23°19.0	0	179°42.9	23°24.4	0	179°33.0	23°26.2	0	179°23.2	23°24.2	0	179°13.7	23°18.5
1	194°52.5	23°19.1	1	194°42.7	23°24.5	1	194°32.9	23°26.2	1	194°23.1	23°24.2	1	194°13.6	23°18.4
2	209°52.4	23°19.2	2	209°42.6	23°24.5	2	209°32.7	23°26.2	2	209°23.0	23°24.1	2	209°13.4	23°18.3
3	224°52.2	23°19.3	3	224°42.5	23°24.6	3	224°32.6	23°26.2	3	224°22.8	23°24.1	3	224°13.3	23°18.2
4	239°52.1	23°19.4	4	239°42.3	23°24.6	4	239°32.5	23°26.2	4	239°22.7	23°24.0	4	239°13.2	23°18.1
5	254°52.0	23°19.5	5	254°42.2	23°24.7	5	254°32.3	23°26.2	5	254°22.6	23°23.9	5	254°13.1	23°18.0
6	269°51.8	23°19.6	6	269°42.1	23°24.7	6	269°32.2	23°26.2	6	269°22.4	23°23.9	6	269°12.9	23°17.9
7	284°51.7	23°19.7	7	284°41.9	23°24.8	7	284°32.1	23°26.2	7	284°22.3	23°23.8	7	284°12.8	23°17.8
8	299°51.6	23°19.8	8	299°41.8	23°24.8	8	299°31.9	23°26.2	8	299°22.2	23°23.8	8	299°12.7	23°17.7
9	314°51.4	23°19.9	9	314°41.7	23°24.9	9	314°31.8	23°26.1	9	314°22.0	23°23.7	9	314°12.5	23°17.6
10	329°51.3	23°20.0	10	329°41.5	23°24.9	10	329°31.7	23°26.1	10	329°21.9	23°23.7	10	329°12.4	23°17.5
11	344°51.2	23°20.0	11	344°41.4	23°24.9	11	344°31.5	23°26.1	11	344°21.8	23°23.6	11	344°12.3	23°17.3
12	359°51.0	23°20.1	12	359°41.2	23°25.0	12	359°31.4	23°26.1	12	359°21.6	23°23.5	12	359°12.2	23°17.2
13	14°50.9	23°20.2	13	14°41.1	23°25.0	13	14°31.2	23°26.1	13	14°21.5	23°23.5	13	14°12.0	23°17.1
14	29°50.8	23°20.3	14	29°41.0	23°25.1	14	29°31.1	23°26.1	14	29°21.4	23°23.4	14	29°11.9	23°17.0
15	44°50.6	23°20.4	15	44°40.8	23°25.1	15	44°31.0	23°26.1	15	44°21.2	23°23.3	15	44°11.8	23°16.9
16	59°50.5	23°20.5	16	59°40.7	23°25.1	16	59°30.8	23°26.1	16	59°21.1	23°23.3	16	59°11.6	23°16.8
17	74°50.4	23°20.6	17	74°40.6	23°25.2	17	74°30.7	23°26.1	17	74°21.0	23°23.2	17	74°11.5	23°16.7
18	89°50.2	23°20.7	18	89°40.4	23°25.2	18	89°30.6	23°26.0	18	89°20.8	23°23.1	18	89°11.4	23°16.5
19	104°50.1	23°20.8	19	104°40.3	23°25.3	19	104°30.4	23°26.0	19	104°20.7	23°23.1	19	104°11.3	23°16.4
20	119°50.0	23°20.9	20	119°40.1	23°25.3	20	119°30.3	23°26.0	20	119°20.6	23°23.0	20	119°11.1	23°16.3
21	134°49.8	23°21.0	21	134°40.0	23°25.3	21	134°30.1	23°26.0	21	134°20.4	23°22.9	21	134°11.0	23°16.2
22	149°49.7	23°21.0	22	149°39.9	23°25.4	22	149°30.0	23°26.0	22	149°20.3	23°22.9	22	149°10.9	23°16.1
23	164°49.5	23°21.1	23	164°39.7	23°25.4	23	164°29.9	23°26.0	23	164°20.2	23°22.8	23	164°10.7	23°15.9
	SD.=15.7	d=0.1		SD.=15.7	d=0.0		SD.=15.7	d=-0.0		SD.=15.7	d=-0.1		SD.=15.7	d=-0.1

16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec	28	GHA	Dec
0	179°49.4	23°21.2	0	179°39.6	23°25.4	0	179°29.7	23°25.9	0	179°20.0	23°22.7	0	179°10.6	23°15.8
1	194°49.3	23°21.3	1	194°39.5	23°25.5	1	194°29.6	23°25.9	1	194°19.9	23°22.7	1	194°10.5	23°15.7
2	209°49.1	23°21.4	2	209°39.3	23°25.5	2	209°29.5	23°25.9	2	209°19.8	23°22.6	2	209°10.4	23°15.6
3	224°49.0	23°21.5	3	224°39.2	23°25.5	3	224°29.3	23°25.9	3	224°19.6	23°22.5	3	224°10.2	23°15.5
4	239°48.9	23°21.5	4	239°39.1	23°25.6	4	239°29.2	23°25.9	4	239°19.5	23°22.4	4	239°10.1	23°15.3
5	254°48.7	23°21.6	5	254°38.9	23°25.6	5	254°29.1	23°25.8	5	254°19.4	23°22.4	5	254°10.0	23°15.2
6	269°48.6	23°21.7	6	269°38.8	23°25.6	6	269°28.9	23°25.8	6	269°19.2	23°22.3	6	269°09.9	23°15.1
7	284°48.5	23°21.8	7	284°38.6	23°25.6	7	284°28.8	23°25.8	7	284°19.1	23°22.2	7	284°09.7	23°15.0
8	299°48.3	23°21.9	8	299°38.5	23°25.7	8	299°28.6	23°25.8	8	299°19.0	23°22.2	8	299°09.6	23°14.8
9	314°48.2	23°21.9	9	314°38.4	23°25.7	9	314°28.5	23°25.7	9	314°18.8	23°22.1	9	314°09.5	23°14.7
10	329°48.1	23°22.0	10	329°38.2	23°25.7	10	329°28.4	23°25.7	10	329°18.7	23°22.0	10	329°09.3	23°14.6
11	344°47.9	23°22.1	11	344°38.1	23°25.8	11	344°28.2	23°25.7	11	344°18.6	23°21.9	11	344°09.2	23°14.4
12														

29	GHA	Dec	02	GHA	Dec	05	GHA	Dec	08	GHA	Dec	11	GHA	Dec
0	179°07.6	23°12.7	0	178°58.9	23°00.9	0	178°50.8	22°45.5	0	178°43.6	22°26.5	0	178°37.2	22°04.0
1	194°07.5	23°12.6	1	193°58.8	23°00.7	1	193°50.7	22°45.2	1	193°43.5	22°26.2	1	193°37.1	22°03.7
2	209°07.3	23°12.4	2	208°58.6	23°00.5	2	208°50.6	22°45.0	2	208°43.4	22°25.9	2	208°37.0	22°03.4
3	224°07.2	23°12.3	3	223°58.5	23°00.3	3	223°50.5	22°44.8	3	223°43.3	22°25.6	3	223°37.0	22°03.0
4	239°07.1	23°12.1	4	238°58.4	23°00.1	4	238°50.4	22°44.5	4	238°43.2	22°25.3	4	238°36.9	22°02.7
5	254°07.0	23°12.0	5	253°58.3	22°59.9	5	253°50.3	22°44.3	5	253°43.1	22°25.1	5	253°36.8	22°02.4
6	269°06.8	23°11.9	6	268°58.2	22°59.7	6	268°50.2	22°44.0	6	268°43.0	22°24.8	6	268°36.7	22°02.0
7	284°06.7	23°11.7	7	283°58.1	22°59.5	7	283°50.1	22°43.8	7	283°42.9	22°24.5	7	283°36.6	22°01.7
8	299°06.6	23°11.6	8	298°58.0	22°59.4	8	298°50.0	22°43.5	8	298°42.8	22°24.2	8	298°36.5	22°01.3
9	314°06.5	23°11.4	9	313°57.8	22°59.2	9	313°49.9	22°43.3	9	313°42.7	22°23.9	9	313°36.5	22°01.0
10	329°06.3	23°11.3	10	328°57.7	22°59.0	10	328°49.8	22°43.0	10	328°42.6	22°23.6	10	328°36.4	22°00.7
11	344°06.2	23°11.1	11	343°57.6	22°58.8	11	343°49.7	22°42.8	11	343°42.5	22°23.3	11	343°36.3	22°00.3
12	359°06.1	23°11.0	12	358°57.5	22°58.6	12	358°49.6	22°42.6	12	358°42.5	22°23.0	12	358°36.2	21°60.0
13	14°06.0	23°10.8	13	13°57.4	22°58.4	13	13°49.5	22°42.3	13	13°42.4	22°22.7	13	13°36.1	21°59.6
14	29°05.8	23°10.7	14	28°57.3	22°58.2	14	28°49.4	22°42.1	14	28°42.3	22°22.4	14	28°36.1	21°59.3
15	44°05.7	23°10.5	15	43°57.1	22°58.0	15	43°49.3	22°41.8	15	43°42.2	22°22.1	15	43°36.0	21°58.9
16	59°05.6	23°10.4	16	58°57.0	22°57.8	16	58°49.2	22°41.6	16	58°42.1	22°21.8	16	58°35.9	21°58.6
17	74°05.5	23°10.2	17	73°56.9	22°57.6	17	73°49.1	22°41.3	17	73°42.0	22°21.5	17	73°35.8	21°58.2
18	89°05.4	23°10.1	18	88°56.8	22°57.4	18	88°49.0	22°41.1	18	88°41.9	22°21.2	18	88°35.7	21°57.9
19	104°05.2	23°09.9	19	103°56.7	22°57.2	19	103°48.8	22°40.8	19	103°41.8	22°20.9	19	103°35.7	21°57.6
20	119°05.1	23°09.8	20	118°56.6	22°57.0	20	118°48.7	22°40.6	20	118°41.7	22°20.6	20	118°35.6	21°57.2
21	134°05.0	23°09.6	21	133°56.5	22°56.8	21	133°48.6	22°40.3	21	133°41.6	22°20.3	21	133°35.5	21°56.9
22	149°04.9	23°09.5	22	148°56.3	22°56.6	22	148°48.5	22°40.0	22	148°41.5	22°20.0	22	148°35.4	21°56.5
23	164°04.7	23°09.3	23	163°56.2	22°56.4	23	163°48.4	22°39.8	23	163°41.4	22°19.7	23	163°35.4	21°56.2
	SD.=15.7	d=-0.1		SD.=15.7	d=-0.2		SD.=15.7	d=-0.2		SD.=15.7	d=-0.3		SD.=15.7	d=-0.3

30	GHA	Dec	03	GHA	Dec	06	GHA	Dec	09	GHA	Dec	12	GHA	Dec
0	179°04.6	23°09.2	0	178°56.1	22°56.1	0	178°48.3	22°39.5	0	178°41.4	22°19.4	0	178°35.3	21°55.8
1	194°04.5	23°09.0	1	193°56.0	22°55.9	1	193°48.2	22°39.3	1	193°41.3	22°19.1	1	193°35.2	21°55.4
2	209°04.4	23°08.9	2	208°55.9	22°55.7	2	208°48.1	22°39.0	2	208°41.2	22°18.8	2	208°35.1	21°55.1
3	224°04.3	23°08.7	3	223°55.8	22°55.5	3	223°48.0	22°38.8	3	223°41.1	22°18.5	3	223°35.0	21°54.7
4	239°04.1	23°08.5	4	238°55.7	22°55.3	4	238°47.9	22°38.5	4	238°41.0	22°18.2	4	238°35.0	21°54.4
5	254°04.0	23°08.4	5	253°55.6	22°55.1	5	253°47.8	22°38.3	5	253°40.9	22°17.9	5	253°34.9	21°54.0
6	269°03.9	23°08.2	6	268°55.4	22°54.9	6	268°47.7	22°38.0	6	268°40.8	22°17.6	6	268°34.8	21°53.7
7	284°03.8	23°08.1	7	283°55.3	22°54.7	7	283°47.6	22°37.7	7	283°40.7	22°17.3	7	283°34.7	21°53.3
8	299°03.6	23°07.9	8	298°55.2	22°54.5	8	298°47.5	22°37.5	8	298°40.6	22°16.9	8	298°34.7	21°53.0
9	314°03.5	23°07.7	9	313°55.1	22°54.3	9	313°47.4	22°37.2	9	313°40.5	22°16.6	9	313°34.6	21°52.6
10	329°03.4	23°07.6	10	328°55.0	22°54.1	10	328°47.3	22°37.0	10	328°40.5	22°16.3	10	328°34.5	21°52.3
11	344°03.3	23°07.4	11	343°54.9	22°53.8	11	343°47.2	22°36.7	11	343°40.4	22°16.0	11	343°34.4	21°51.9
12	359°03.2	23°07.2	12	358°54.8	22°53.6	12	358°47.1	22°36.4	12	358°40.3	22°15.7	12	358°34.4	21°51.5
13	14°03.0	23°07.1	13	13°54.7	22°53.4	13	13°47.0	22°36.2	13	13°40.2	22°15.4	13	13°34.3	21°51.2
14	29°02.9	23°06.9	14	28°54.5	22°53.2	14	28°46.9	22°35.9	14	28°40.1	22°15.1	14	28°34.2	21°50.8
15	44°02.8	23°06.8	15	43°54.4	22°53.0	15	43°46.8	22°35.6	15	43°40.0	22°14.8	15	43°34.1	21°50.5
16	59°02.7	23°06.6	16	58°54.3	22°52.8	16	58°46.7	22°35.4	16	58°39.9	22°14.5	16	58°34.1	21°50.1
17	74°02.6	23°06.4	17	73°54.2	22°52.5	17	73°46.6	22°35.1	17	73°39.8	22°14.1	17	73°34.0	21°49.7
18	89°02.4	23°06.3	18	88°54.1	22°52.3	18	88°46.5	22°34.8	18	88°39.7	22°13.8	18	88°33.9	21°49.4
19	104°02.3	23°06.1	19	103°54.0	22°52.1	19	103°46.4	22°34.6	19	103°39.7	22°13.5	19	103°33.8	21°49.0
20	119°02.2	23°05.9	20	118°53.9	22°51.9	20	118°46.3	22°34.3	20	118°39.6	22°13.2	20	118°33.8	21°48.6
21	134°02.1	23°05.7	21	133°53.8	22°51.7	21	133°46.2	22°34.0	21	133°39.5	22°12.9	21	133°33.7	21°48.3
22	149°02.0	23°05.6	22	148°53.7	22°51.5	22	148°46.1	22°33.8	22	148°39.4	22°12.6	22	148°33.6	21°47.9
23	164°01.8	23°05.4	23	163°53.6	22°51.2	23	163°46.0	22°33.5	23	163°39.3	22°12.2	23	163°33.5	21°47.5
	SD.=15.7	d=-0.2		SD.=15.7	d=-0.2		SD.=15.7	d=-0.3		SD.=15.7	d=-0.3		SD.=15.7	d=-0.4

01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec	13	GHA	Dec
0	179°01.7	23°05.2	0	178°53.4	22°51.0	0	178°45.9	22°33.2	0	178°39.2	22°11.9	0	178°33.5	21°47.2
1	194°01.6	23°05.1	1	193°53.3	22°50.8	1	193°45.8	22°32.9	1	193°39.1	22°11.6	1	193°33.4	21°46.8
2	209°01.5	23°04.9	2	208°53.2	22°50.6	2	208°45.7	22°32.7	2	208°39.0	22°11.3	2	208°33.3	21°46.4
3	224°01.4	23°04.7	3	223°53.1	22°50.3	3	223°45.6	22°32.4	3	223°39.0	22°11.0	3	223°33.3	21°46.1
4	239°01.2	23°04.5	4	238°53.0	22°50.1	4	238°45.5	22°32.1	4	238°38.9	22°10.6	4	238°33.2	21°45.7
5	254°01.1	23°04.4	5	253°52.9	22°49.9	5	253°45.4	22°31.8	5	253°38.8	22°10.3	5	253°33.1	21°45.3
6	269°01.0	23°04.2	6	268°52.8	22°49.7	6	268°45.3	22°31.6	6	268°38.7	22°10.0	6	268°33.0	21°45.0
7	284°00.9	23°04.0	7	283°52.7	22°49.4	7	283°45.2	22°31.3	7	283°38.6	22°09.7	7	283°33.0	21°44.6
8	299°00.8	23°03.8	8	298°52.6	22°49.2	8	298°45.1	22°31.0	8	298°38.5	22°09.3	8	298°32.9	21°44.2
9	314°00.6	23°03.7	9	313°52.5	22°49.0	9	313°45.0	22°30.7	9	313°38.4	22°09.0	9	313°32.8	21°43.8
10	329°00.5	23°03.5	10	328°52.3	22°48.7	10	328°44.9	22°30.5	10	328°38.4	22°08.7	10	328°32.8	21°43.5
11	344°00.4	23°03.3	11	343°52.2	22°48.5	11	343°44.8	22°30.2	11	343°38.3	22°			

14	GHA	Dec	17	GHA	Dec	20	GHA	Dec	23	GHA	Dec	26	GHA	Dec
0	178°31.8	21°38.2	0	178°27.4	21°09.0	0	178°24.3	20°36.6	0	178°22.3	20°01.0	0	178°21.7	19°22.5
1	193°31.7	21°37.8	1	193°27.4	21°08.6	1	193°24.2	20°36.1	1	193°22.3	20°00.5	1	193°21.7	19°22.0
2	208°31.6	21°37.4	2	208°27.3	21°08.1	2	208°24.2	20°35.6	2	208°22.3	20°00.0	2	208°21.7	19°21.4
3	223°31.6	21°37.0	3	223°27.3	21°07.7	3	223°24.2	20°35.2	3	223°22.3	19°59.5	3	223°21.7	19°20.8
4	238°31.5	21°36.6	4	238°27.2	21°07.3	4	238°24.1	20°34.7	4	238°22.3	19°59.0	4	238°21.8	19°20.3
5	253°31.4	21°36.3	5	253°27.2	21°06.8	5	253°24.1	20°34.2	5	253°22.2	19°58.5	5	253°21.8	19°19.7
6	268°31.4	21°35.9	6	268°27.1	21°06.4	6	268°24.1	20°33.7	6	268°22.2	19°57.9	6	268°21.8	19°19.2
7	283°31.3	21°35.5	7	283°27.1	21°06.0	7	283°24.0	20°33.3	7	283°22.2	19°57.4	7	283°21.8	19°18.6
8	298°31.2	21°35.1	8	298°27.0	21°05.6	8	298°24.0	20°32.8	8	298°22.2	19°56.9	8	298°21.8	19°18.0
9	313°31.2	21°34.7	9	313°27.0	21°05.1	9	313°24.0	20°32.3	9	313°22.2	19°56.4	9	313°21.8	19°17.5
10	328°31.1	21°34.3	10	328°26.9	21°04.7	10	328°23.9	20°31.8	10	328°22.2	19°55.9	10	328°21.8	19°16.9
11	343°31.0	21°33.9	11	343°26.9	21°04.2	11	343°23.9	20°31.3	11	343°22.2	19°55.3	11	343°21.8	19°16.4
12	358°31.0	21°33.5	12	358°26.8	21°03.8	12	358°23.9	20°30.9	12	358°22.1	19°54.8	12	358°21.8	19°15.8
13	13°30.9	21°33.2	13	13°26.8	21°03.4	13	13°23.8	20°30.4	13	13°22.1	19°54.3	13	13°21.8	19°15.2
14	28°30.9	21°32.8	14	28°26.7	21°02.9	14	28°23.8	20°29.9	14	28°22.1	19°53.8	14	28°21.8	19°14.7
15	43°30.8	21°32.4	15	43°26.7	21°02.5	15	43°23.8	20°29.4	15	43°22.1	19°53.3	15	43°21.8	19°14.1
16	58°30.7	21°32.0	16	58°26.6	21°02.1	16	58°23.7	20°28.9	16	58°22.1	19°52.7	16	58°21.8	19°13.5
17	73°30.7	21°31.6	17	73°26.6	21°01.6	17	73°23.7	20°28.5	17	73°22.1	19°52.2	17	73°21.8	19°13.0
18	88°30.6	21°31.2	18	88°26.5	21°01.2	18	88°23.7	20°28.0	18	88°22.1	19°51.7	18	88°21.8	19°12.4
19	103°30.5	21°30.8	19	103°26.5	21°00.7	19	103°23.6	20°27.5	19	103°22.0	19°51.2	19	103°21.8	19°11.9
20	118°30.5	21°30.4	20	118°26.4	21°00.3	20	118°23.6	20°27.0	20	118°22.0	19°50.6	20	118°21.8	19°11.3
21	133°30.4	21°30.0	21	133°26.4	20°59.9	21	133°23.6	20°26.5	21	133°22.0	19°50.1	21	133°21.8	19°10.7
22	148°30.3	21°29.6	22	148°26.3	20°59.4	22	148°23.5	20°26.0	22	148°22.0	19°49.6	22	148°21.8	19°10.2
23	163°30.3	21°29.2	23	163°26.3	20°59.0	23	163°23.5	20°25.6	23	163°22.0	19°49.1	23	163°21.8	19°09.6
	SD.=15.7	d=-0.4		SD.=15.7	d=-0.4		SD.=15.7	d=-0.5		SD.=15.7	d=-0.5		SD.=15.7	d=-0.6
15	GHA	Dec	18	GHA	Dec	21	GHA	Dec	24	GHA	Dec	27	GHA	Dec
0	178°30.2	21°28.8	0	178°26.2	20°58.5	0	178°23.5	20°25.1	0	178°22.0	19°48.5	0	178°21.9	19°09.0
1	193°30.2	21°28.4	1	193°26.2	20°58.1	1	193°23.4	20°24.6	1	193°22.0	19°48.0	1	193°21.9	19°08.4
2	208°30.1	21°28.0	2	208°26.2	20°57.7	2	208°23.4	20°24.1	2	208°22.0	19°47.5	2	208°21.9	19°07.9
3	223°30.0	21°27.6	3	223°26.1	20°57.2	3	223°23.4	20°23.6	3	223°22.0	19°46.9	3	223°21.9	19°07.3
4	238°30.0	21°27.2	4	238°26.1	20°56.8	4	238°23.4	20°23.1	4	238°21.9	19°46.4	4	238°21.9	19°06.7
5	253°29.9	21°26.8	5	253°26.0	20°56.3	5	253°23.3	20°22.6	5	253°21.9	19°45.9	5	253°21.9	19°06.2
6	268°29.8	21°26.4	6	268°26.0	20°55.9	6	268°23.3	20°22.1	6	268°21.9	19°45.3	6	268°21.9	19°05.6
7	283°29.8	21°26.0	7	283°25.9	20°55.4	7	283°23.3	20°21.7	7	283°21.9	19°44.8	7	283°21.9	19°05.0
8	298°29.7	21°25.6	8	298°25.9	20°55.0	8	298°23.2	20°21.2	8	298°21.9	19°44.3	8	298°21.9	19°04.4
9	313°29.7	21°25.2	9	313°25.8	20°54.5	9	313°23.2	20°20.7	9	313°21.9	19°43.7	9	313°21.9	19°03.9
10	328°29.6	21°24.8	10	328°25.8	20°54.1	10	328°23.2	20°20.2	10	328°21.9	19°43.2	10	328°21.9	19°03.3
11	343°29.5	21°24.4	11	343°25.7	20°53.6	11	343°23.2	20°19.7	11	343°21.9	19°42.7	11	343°22.0	19°02.7
12	358°29.5	21°24.0	12	358°25.7	20°53.2	12	358°23.1	20°19.2	12	358°21.9	19°42.1	12	358°22.0	19°02.1
13	13°29.4	21°23.6	13	13°25.7	20°52.7	13	13°23.1	20°18.7	13	13°21.9	19°41.6	13	13°22.0	19°01.6
14	28°29.4	21°23.2	14	28°25.6	20°52.3	14	28°23.1	20°18.2	14	28°21.9	19°41.1	14	28°22.0	19°01.0
15	43°29.3	21°22.8	15	43°25.6	20°51.8	15	43°23.1	20°17.7	15	43°21.8	19°40.5	15	43°22.0	19°00.4
16	58°29.2	21°22.4	16	58°25.5	20°51.4	16	58°23.0	20°17.2	16	58°21.8	19°40.0	16	58°22.0	18°59.8
17	73°29.2	21°22.0	17	73°25.5	20°50.9	17	73°23.0	20°16.7	17	73°21.8	19°39.5	17	73°22.0	18°59.3
18	88°29.1	21°21.6	18	88°25.4	20°50.5	18	88°23.0	20°16.2	18	88°21.8	19°38.9	18	88°22.0	18°58.7
19	103°29.1	21°21.1	19	103°25.4	20°50.0	19	103°23.0	20°15.7	19	103°21.8	19°38.4	19	103°22.1	18°58.1
20	118°29.0	21°20.7	20	118°25.4	20°49.6	20	118°22.9	20°15.2	20	118°21.8	19°37.8	20	118°22.1	18°57.5
21	133°28.9	21°20.3	21	133°25.3	20°49.1	21	133°22.9	20°14.7	21	133°21.8	19°37.3	21	133°22.1	18°56.9
22	148°28.9	21°19.9	22	148°25.3	20°48.7	22	148°22.9	20°14.2	22	148°21.8	19°36.8	22	148°22.1	18°56.4
23	163°28.8	21°19.5	23	163°25.2	20°48.2	23	163°22.9	20°13.7	23	163°21.8	19°36.2	23	163°22.1	18°55.8
	SD.=15.7	d=-0.4		SD.=15.7	d=-0.4		SD.=15.7	d=-0.5		SD.=15.7	d=-0.5		SD.=15.7	d=-0.6
16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec	28	GHA	Dec
0	178°28.8	21°19.1	0	178°25.2	20°47.7	0	178°22.8	20°13.2	0	178°21.8	19°35.7	0	178°22.1	18°55.2
1	193°28.7	21°18.7	1	193°25.1	20°47.3	1	193°22.8	20°12.7	1	193°21.8	19°35.1	1	193°22.1	18°54.6
2	208°28.6	21°18.3	2	208°25.1	20°46.8	2	208°22.8	20°12.2	2	208°21.8	19°34.6	2	208°22.2	18°54.0
3	223°28.6	21°17.8	3	223°25.1	20°46.4	3	223°22.8	20°11.7	3	223°21.8	19°34.1	3	223°22.2	18°53.5
4	238°28.5	21°17.4	4	238°25.0	20°45.9	4	238°22.7	20°11.2	4	238°21.8	19°33.5	4	238°22.2	18°52.9
5	253°28.5	21°17.0	5	253°25.0	20°45.4	5	253°22.7	20°10.7	5	253°21.8	19°33.0	5	253°22.2	18°52.3
6	268°28.4	21°16.6	6	268°24.9	20°45.0	6	268°22.7	20°10.2	6	268°21.8	19°32.4	6	268°22.2	18°51.7
7	283°28.4	21°16.2	7	283°24.9	20°44.5	7	283°22.7	20°09.7	7	283°21.8	19°31.9	7	283°22.2	18°51.1
8	298°28.3	21°15.8	8	298°24.9	20°44.1	8	298°22.7	20°09.2	8	298°21.8	19°31.3	8	298°22.2	18°50.5
9	313°28.3	21°15.3	9	313°24.8	20°43.6	9	313°22.6	20°08.7	9	313°21.8	19°30.8	9	313°22.3	18°49.9
10	328°28.2	21°14.9	10	328°24.8	20°43.1	10	328°22.6	20°08.2	10	328°21.8	19°30.2	10	328°22.3	18°49.4
11	343°28.1	21°14.5	11	343°24.7	20°42.7	11	343°22.6	20°07.7	11	343°21.7	19°29.7	11	343°22.3	18°48.8
12	358°28.1	21°14.1	12	358°24.7	20°42.2	12	358°22.6	20°07.2	12	358°21.7	19°29.1	12	358°22.3	18°48.2
13	13°28.0	21°13.7	13	13°24.7	20°41.7	13	13°22.5	20°06.7	13	13°21.7	19°28.6	13	13°22.3	18°47.6
14	28°28.0	21°13.2	14	28°24.6	20°41.3	14	28°22.5	20°06.2	14	28°21.7	19°28.0	14	28°22.3	18°47.0
15	43°27.9	21°12.8	15	43°24.6	20°40.8	15	43°22.5	20°05.7	15	43°21.7	19°27.5	15	43°22.4	18°46.

2020 July 29 to Aug. 12

29	GHA	Dec	01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec
0	178°22.5	18°41.1	0	178°24.8	17°56.9	0	178°28.3	17°10.1	0	178°33.3	16°20.8	0	178°39.5	15°29.2
1	193°22.6	18°40.5	1	193°24.8	17°56.3	1	193°28.4	17°09.4	1	193°33.4	16°20.1	1	193°39.6	15°28.4
2	208°22.6	18°39.9	2	208°24.8	17°55.6	2	208°28.5	17°08.8	2	208°33.5	16°19.4	2	208°39.7	15°27.7
3	223°22.6	18°39.3	3	223°24.9	17°55.0	3	223°28.5	17°08.1	3	223°33.5	16°18.7	3	223°39.8	15°27.0
4	238°22.6	18°38.7	4	238°24.9	17°54.4	4	238°28.6	17°07.4	4	238°33.6	16°18.0	4	238°39.9	15°26.2
5	253°22.7	18°38.1	5	253°25.0	17°53.7	5	253°28.6	17°06.8	5	253°33.7	16°17.3	5	253°40.0	15°25.5
6	268°22.7	18°37.5	6	268°25.0	17°53.1	6	268°28.7	17°06.1	6	268°33.8	16°16.6	6	268°40.1	15°24.8
7	283°22.7	18°36.9	7	283°25.0	17°52.5	7	283°28.8	17°05.4	7	283°33.8	16°15.9	7	283°40.2	15°24.0
8	298°22.7	18°36.3	8	298°25.1	17°51.8	8	298°28.8	17°04.8	8	298°33.9	16°15.2	8	298°40.3	15°23.3
9	313°22.7	18°35.7	9	313°25.1	17°51.2	9	313°28.9	17°04.1	9	313°34.0	16°14.5	9	313°40.4	15°22.5
10	328°22.8	18°35.1	10	328°25.2	17°50.6	10	328°29.0	17°03.4	10	328°34.1	16°13.8	10	328°40.5	15°21.8
11	343°22.8	18°34.5	11	343°25.2	17°49.9	11	343°29.0	17°02.7	11	343°34.2	16°13.1	11	343°40.6	15°21.1
12	358°22.8	18°33.9	12	358°25.3	17°49.3	12	358°29.1	17°02.1	12	358°34.2	16°12.4	12	358°40.7	15°20.3
13	13°22.8	18°33.3	13	13°25.3	17°48.7	13	13°29.1	17°01.4	13	13°34.3	16°11.7	13	13°40.8	15°19.6
14	28°22.9	18°32.7	14	28°25.3	17°48.0	14	28°29.2	17°00.7	14	28°34.4	16°11.0	14	28°40.9	15°18.9
15	43°22.9	18°32.1	15	43°25.4	17°47.4	15	43°29.3	17°00.0	15	43°34.5	16°10.3	15	43°41.0	15°18.1
16	58°22.9	18°31.5	16	58°25.4	17°46.7	16	58°29.3	16°59.4	16	58°34.6	16°09.5	16	58°41.1	15°17.4
17	73°22.9	18°30.9	17	73°25.5	17°46.1	17	73°29.4	16°58.7	17	73°34.7	16°08.8	17	73°41.2	15°16.6
18	88°23.0	18°30.3	18	88°25.5	17°45.5	18	88°29.5	16°58.0	18	88°34.7	16°08.1	18	88°41.3	15°15.9
19	103°23.0	18°29.7	19	103°25.6	17°44.8	19	103°29.5	16°57.3	19	103°34.8	16°07.4	19	103°41.4	15°15.2
20	118°23.0	18°29.1	20	118°25.6	17°44.2	20	118°29.6	16°56.7	20	118°34.9	16°06.7	20	118°41.5	15°14.4
21	133°23.0	18°28.5	21	133°25.7	17°43.5	21	133°29.7	16°56.0	21	133°35.0	16°06.0	21	133°41.6	15°13.7
22	148°23.1	18°27.9	22	148°25.7	17°42.9	22	148°29.7	16°55.3	22	148°35.1	16°05.3	22	148°41.7	15°12.9
23	163°23.1	18°27.3	23	163°25.8	17°42.2	23	163°29.8	16°54.6	23	163°35.2	16°04.6	23	163°41.8	15°12.2
	SD.=15.8	d=−0.6		SD.=15.8	d=−0.6		SD.=15.8	d=−0.7		SD.=15.8	d=−0.7		SD.=15.8	d=−0.7

30	GHA	Dec	02	GHA	Dec	05	GHA	Dec	08	GHA	Dec	11	GHA	Dec
0	178°23.1	18°26.7	0	178°25.8	17°41.6	0	178°29.8	16°54.0	0	178°35.2	16°03.9	0	178°41.9	15°11.4
1	193°23.2	18°26.1	1	193°25.8	17°41.0	1	193°29.9	16°53.3	1	193°35.3	16°03.2	1	193°42.0	15°10.7
2	208°23.2	18°25.4	2	208°25.9	17°40.3	2	208°30.0	16°52.6	2	208°35.4	16°02.4	2	208°42.1	15°10.0
3	223°23.2	18°24.8	3	223°25.9	17°39.7	3	223°30.0	16°51.9	3	223°35.5	16°01.7	3	223°42.2	15°09.2
4	238°23.2	18°24.2	4	238°26.0	17°39.0	4	238°30.1	16°51.2	4	238°35.6	16°01.0	4	238°42.3	15°08.5
5	253°23.3	18°23.6	5	253°26.0	17°38.4	5	253°30.2	16°50.6	5	253°35.7	16°00.3	5	253°42.4	15°07.7
6	268°23.3	18°23.0	6	268°26.1	17°37.7	6	268°30.2	16°49.9	6	268°35.7	15°59.6	6	268°42.5	15°07.0
7	283°23.3	18°22.4	7	283°26.1	17°37.1	7	283°30.3	16°49.2	7	283°35.8	15°58.9	7	283°42.6	15°06.2
8	298°23.4	18°21.8	8	298°26.2	17°36.4	8	298°30.4	16°48.5	8	298°35.9	15°58.2	8	298°42.7	15°05.5
9	313°23.4	18°21.2	9	313°26.2	17°35.8	9	313°30.5	16°47.8	9	313°36.0	15°57.4	9	313°42.8	15°04.7
10	328°23.4	18°20.6	10	328°26.3	17°35.1	10	328°30.5	16°47.1	10	328°36.1	15°56.7	10	328°42.9	15°04.0
11	343°23.4	18°19.9	11	343°26.3	17°34.5	11	343°30.6	16°46.5	11	343°36.2	15°56.0	11	343°43.0	15°03.2
12	358°23.5	18°19.3	12	358°26.4	17°33.8	12	358°30.7	16°45.8	12	358°36.3	15°55.3	12	358°43.1	15°02.5
13	13°23.5	18°18.7	13	13°26.4	17°33.2	13	13°30.7	16°45.1	13	13°36.3	15°54.6	13	13°43.2	15°01.7
14	28°23.5	18°18.1	14	28°26.5	17°32.5	14	28°30.8	16°44.4	14	28°36.4	15°53.8	14	28°43.3	15°01.0
15	43°23.6	18°17.5	15	43°26.5	17°31.9	15	43°30.9	16°43.7	15	43°36.5	15°53.1	15	43°43.4	15°00.2
16	58°23.6	18°16.9	16	58°26.6	17°31.2	16	58°30.9	16°43.0	16	58°36.6	15°52.4	16	58°43.6	14°59.5
17	73°23.6	18°16.3	17	73°26.6	17°30.6	17	73°31.0	16°42.3	17	73°36.7	15°51.7	17	73°43.7	14°58.7
18	88°23.7	18°15.6	18	88°26.7	17°29.9	18	88°31.1	16°41.7	18	88°36.8	15°51.0	18	88°43.8	14°58.0
19	103°23.7	18°15.0	19	103°26.7	17°29.3	19	103°31.1	16°41.0	19	103°36.9	15°50.3	19	103°43.9	14°57.2
20	118°23.7	18°14.4	20	118°26.8	17°28.6	20	118°31.2	16°40.3	20	118°37.0	15°49.5	20	118°44.0	14°56.5
21	133°23.8	18°13.8	21	133°26.8	17°28.0	21	133°31.3	16°39.6	21	133°37.0	15°48.8	21	133°44.1	14°55.7
22	148°23.8	18°13.2	22	148°26.9	17°27.3	22	148°31.4	16°38.9	22	148°37.1	15°48.1	22	148°44.2	14°55.0
23	163°23.8	18°12.6	23	163°26.9	17°26.7	23	163°31.4	16°38.2	23	163°37.2	15°47.4	23	163°44.3	14°54.2
	SD.=15.8	d=−0.6		SD.=15.8	d=−0.6		SD.=15.8	d=−0.7		SD.=15.8	d=−0.7		SD.=15.8	d=−0.7

31	GHA	Dec	03	GHA	Dec	06	GHA	Dec	09	GHA	Dec	12	GHA	Dec
0	178°23.9	18°11.9	0	178°27.0	17°26.0	0	178°31.5	16°37.5	0	178°37.3	15°46.6	0	178°44.4	14°53.5
1	193°23.9	18°11.3	1	193°27.1	17°25.3	1	193°31.6	16°36.8	1	193°37.4	15°45.9	1	193°44.5	14°52.7
2	208°23.9	18°10.7	2	208°27.1	17°24.7	2	208°31.6	16°36.1	2	208°37.5	15°45.2	2	208°44.6	14°52.0
3	223°24.0	18°10.1	3	223°27.2	17°24.0	3	223°31.7	16°35.5	3	223°37.6	15°44.5	3	223°44.7	14°51.2
4	238°24.0	18°09.5	4	238°27.2	17°23.4	4	238°31.8	16°34.8	4	238°37.7	15°43.7	4	238°44.8	14°50.5
5	253°24.0	18°08.8	5	253°27.3	17°22.7	5	253°31.9	16°34.1	5	253°37.8	15°43.0	5	253°44.9	14°49.7
6	268°24.1	18°08.2	6	268°27.3	17°22.1	6	268°31.9	16°33.4	6	268°37.9	15°42.3	6	268°45.0	14°48.9
7	283°24.1	18°07.6	7	283°27.4	17°21.4	7	283°32.0	16°32.7	7	283°38.0	15°41.6	7	283°45.2	14°48.2
8	298°24.1	18°07.0	8	298°27.4	17°20.7	8	298°32.1	16°32.0	8	298°38.0	15°40.8	8	298°45.3	14°47.4
9	313°24.2	18°06.3	9	313°27.5	17°20.1	9	313°32.2	16°31.3	9	313°38.1	15°40.1	9	313°45.4	14°46.7
10	328°24.2	18°05.7	10	328°27.5	17°19.4	10	328°32.2	16°30.6	10	328°38.2	15°39.4	10	328°45.5	14°45.9
11	343°24.3	18°05.1	11	343°27.6	17°18.8	11	343°32.3	16°29.9	11	343°38.3	15°38.7	11	343°45.6	14°45.2</td

2020 August 13 to Aug. 27

13	GHA	Dec	16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec
0	178°47.0	14°35.3	0	178°55.7	13°39.3	0	179°05.6	12°41.3	0	179°16.5	11°41.6	0	179°28.4	10°40.1
1	193°47.1	14°34.5	1	193°55.9	13°38.5	1	194°05.7	12°40.5	1	194°16.6	11°40.7	1	194°28.6	10°39.3
2	208°47.3	14°33.7	2	208°56.0	13°37.7	2	209°05.8	12°39.7	2	209°16.8	11°39.9	2	209°28.8	10°38.4
3	223°47.4	14°33.0	3	223°56.1	13°36.9	3	224°06.0	12°38.9	3	224°17.0	11°39.0	3	224°29.0	10°37.5
4	238°47.5	14°32.2	4	238°56.2	13°36.1	4	239°06.1	12°38.0	4	239°17.1	11°38.2	4	239°29.1	10°36.7
5	253°47.6	14°31.4	5	253°56.4	13°35.3	5	254°06.3	12°37.2	5	254°17.3	11°37.3	5	254°29.3	10°35.8
6	268°47.7	14°30.7	6	268°56.5	13°34.5	6	269°06.4	12°36.4	6	269°17.4	11°36.5	6	269°29.5	10°34.9
7	283°47.8	14°29.9	7	283°56.6	13°33.7	7	284°06.6	12°35.6	7	284°17.6	11°35.7	7	284°29.7	10°34.1
8	298°47.9	14°29.2	8	298°56.8	13°32.9	8	299°06.7	12°34.8	8	299°17.8	11°34.8	8	299°29.8	10°33.2
9	313°48.1	14°28.4	9	313°56.9	13°32.1	9	314°06.9	12°33.9	9	314°17.9	11°34.0	9	314°30.0	10°32.3
10	328°48.2	14°27.6	10	328°57.0	13°31.3	10	329°07.0	12°33.1	10	329°18.1	11°33.1	10	329°30.2	10°31.5
11	343°48.3	14°26.8	11	343°57.2	13°30.5	11	344°07.2	12°32.3	11	344°18.2	11°32.3	11	344°30.4	10°30.6
12	358°48.4	14°26.1	12	358°57.3	13°29.7	12	359°07.3	12°31.5	12	359°18.4	11°31.4	12	359°30.5	10°29.7
13	13°48.5	14°25.3	13	13°57.4	13°29.0	13	14°07.5	12°30.7	13	14°18.6	11°30.6	13	14°30.7	10°28.9
14	28°48.6	14°24.5	14	28°57.6	13°28.2	14	29°07.6	12°29.8	14	29°18.7	11°29.7	14	29°30.9	10°28.0
15	43°48.8	14°23.8	15	43°57.7	13°27.4	15	44°07.7	12°29.0	15	44°18.9	11°28.9	15	44°31.1	10°27.1
16	58°48.9	14°23.0	16	58°57.8	13°26.6	16	59°07.9	12°28.2	16	59°19.1	11°28.0	16	59°31.2	10°26.3
17	73°49.0	14°22.2	17	73°57.9	13°25.8	17	74°08.0	12°27.4	17	74°19.2	11°27.2	17	74°31.4	10°25.4
18	88°49.1	14°21.5	18	88°58.1	13°25.0	18	89°08.2	12°26.5	18	89°19.4	11°26.3	18	89°31.6	10°24.5
19	103°49.2	14°20.7	19	103°58.2	13°24.2	19	104°08.3	12°25.7	19	104°19.5	11°25.5	19	104°31.8	10°23.7
20	118°49.3	14°19.9	20	118°58.3	13°23.4	20	119°08.5	12°24.9	20	119°19.7	11°24.7	20	119°31.9	10°22.8
21	133°49.5	14°19.1	21	133°58.5	13°22.6	21	134°08.6	12°24.1	21	134°19.9	11°23.8	21	134°32.1	10°21.9
22	148°49.6	14°18.4	22	148°58.6	13°21.8	22	149°08.8	12°23.2	22	149°20.0	11°23.0	22	149°32.3	10°21.1
23	163°49.7	14°17.6	23	163°58.7	13°21.0	23	164°08.9	12°22.4	23	164°20.2	11°22.1	23	164°32.5	10°20.2
	SD.=15.8	d=-0.8		SD.=15.8	d=-0.9									

14	GHA	Dec	17	GHA	Dec	20	GHA	Dec	23	GHA	Dec	26	GHA	Dec
0	178°49.8	14°16.8	0	178°58.9	13°20.2	0	179°09.1	12°21.6	0	179°20.4	11°21.3	0	179°32.7	10°19.3
1	193°49.9	14°16.1	1	193°59.0	13°19.4	1	194°09.2	12°20.8	1	194°20.5	11°20.4	1	194°32.8	10°18.4
2	208°50.0	14°15.3	2	208°59.1	13°18.6	2	209°09.4	12°19.9	2	209°20.7	11°19.6	2	209°33.0	10°17.6
3	223°50.2	14°14.5	3	223°59.3	13°17.8	3	224°09.5	12°19.1	3	224°20.9	11°18.7	3	224°33.2	10°16.7
4	238°50.3	14°13.7	4	238°59.4	13°17.0	4	239°09.7	12°18.3	4	239°21.0	11°17.9	4	239°33.4	10°15.8
5	253°50.4	14°13.0	5	253°59.6	13°16.2	5	254°09.8	12°17.5	5	254°21.2	11°17.0	5	254°33.5	10°15.0
6	268°50.5	14°12.2	6	268°59.7	13°15.4	6	269°10.0	12°16.6	6	269°21.3	11°16.2	6	269°33.7	10°14.1
7	283°50.6	14°11.4	7	283°59.8	13°14.6	7	284°10.1	12°15.8	7	284°21.5	11°15.3	7	284°33.9	10°13.2
8	298°50.8	14°10.6	8	298°60.0	13°13.7	8	299°10.3	12°15.0	8	299°21.7	11°14.5	8	299°34.1	10°12.3
9	313°50.9	14°09.9	9	314°00.1	13°12.9	9	314°10.4	12°14.1	9	314°21.8	11°13.6	9	314°34.3	10°11.5
10	328°51.0	14°09.1	10	329°00.2	13°12.1	10	329°10.6	12°13.3	10	329°22.0	11°12.7	10	329°34.4	10°10.6
11	343°51.1	14°08.3	11	344°00.4	13°11.3	11	344°10.7	12°12.5	11	344°22.2	11°11.9	11	344°34.6	10°09.7
12	358°51.2	14°07.5	12	359°00.5	13°10.5	12	359°10.9	12°11.7	12	359°22.3	11°11.0	12	359°34.8	10°08.8
13	13°51.4	14°06.7	13	14°00.6	13°09.7	13	14°11.0	12°10.8	13	14°22.5	11°10.2	13	14°35.0	10°08.0
14	28°51.5	14°06.0	14	29°00.8	13°08.9	14	29°11.2	12°10.0	14	29°22.7	11°09.3	14	29°35.2	10°07.1
15	43°51.6	14°05.2	15	44°00.9	13°08.1	15	44°11.3	12°09.2	15	44°22.8	11°08.5	15	44°35.3	10°06.2
16	58°51.7	14°04.4	16	59°01.1	13°07.3	16	59°11.5	12°08.3	16	59°23.0	11°07.6	16	59°35.5	10°05.3
17	73°51.8	14°03.6	17	74°01.2	13°06.5	17	74°11.6	12°07.5	17	74°23.2	11°06.8	17	74°35.7	10°04.5
18	88°52.0	14°02.9	18	89°01.3	13°05.7	18	89°11.8	12°06.7	18	89°23.3	11°05.9	18	89°35.9	10°03.6
19	103°52.1	14°02.1	19	104°01.5	13°04.9	19	104°12.0	12°05.8	19	104°23.5	11°05.1	19	104°36.1	10°02.7
20	118°52.2	14°01.3	20	119°01.6	13°04.1	20	119°12.1	12°05.0	20	119°23.7	11°04.2	20	119°36.2	10°01.8
21	133°52.3	14°00.5	21	134°01.7	13°03.3	21	134°12.3	12°04.2	21	134°23.8	11°03.3	21	134°36.4	10°01.0
22	148°52.5	13°59.7	22	149°01.9	13°02.5	22	149°12.4	12°03.3	22	149°24.0	11°02.5	22	149°36.6	10°00.1
23	163°52.6	13°58.9	23	164°02.0	13°01.7	23	164°12.6	12°02.5	23	164°24.2	11°01.6	23	164°36.8	9°59.2
	SD.=15.8	d=-0.8		SD.=15.8	d=-0.9									

15	GHA	Dec	18	GHA	Dec	21	GHA	Dec	24	GHA	Dec	27	GHA	Dec
0	178°52.7	13°58.2	0	179°02.2	13°00.8	0	179°12.7	12°01.7	0	179°24.3	11°00.8	0	179°37.0	9°58.3
1	193°52.8	13°57.4	1	194°02.3	13°00.0	1	194°12.9	12°00.8	1	194°24.5	10°59.9	1	194°37.1	9°57.5
2	208°52.9	13°56.6	2	209°02.4	12°59.2	2	209°13.0	11°60.0	2	209°24.7	10°59.1	2	209°37.3	9°56.6
3	223°53.1	13°55.8	3	224°02.6	12°58.4	3	224°13.2	11°59.2	3	224°24.9	10°58.2	3	224°37.5	9°55.7
4	238°53.2	13°55.0	4	239°02.7	12°57.6	4	239°13.3	11°58.3	4	239°25.0	10°57.4	4	239°37.7	9°54.8
5	253°53.3	13°54.2	5	254°02.9	12°56.8	5	254°13.5	11°57.5	5	254°25.2	10°56.5	5	254°37.9	9°53.9
6	268°53.4	13°53.5	6	269°03.0	12°56.0	6	269°13.7	11°56.7	6	269°25.4	10°55.6	6	269°38.1	9°53.1
7	283°53.6	13°52.7	7	284°03.1	12°55.2	7	284°13.8	11°55.8	7	284°25.5	10°54.8	7	284°38.2	9°52.2
8	298°53.7	13°51.9	8	299°03.3	12°54.4	8	299°14.0	11°55.0	8	299°25.7	10°53.9	8	299°38.4	9°51.3
9	313°53.8	13°51.1	9	314°03.4	12°53.5	9	314°14.1	11°54.1	9	314°25.9	10°53.1	9	314°38.6	9°50.4
10	328°53.9	13°50.3	10	329°03.6	12°52.7	10	329°14.3	11°53.3	10	329°26.0	10°52.2	10	329°38.8	9°49.5
11	343°54.1	13°49.5	11	344°03.7	12°51.9	11	344°14.4	11°52.5	11	344°26.2	10°51.3	11	344°39.0	9°48.7
12	358°5													

28	GHA	Dec	31	GHA	Dec	03	GHA	Dec	06	GHA	Dec	09	GHA	Dec
0	179°41.4	9°37.2	0	179°55.1	8°32.9	0	180°09.6	7°27.4	0	180°24.7	6°20.8	0	180°40.1	5°13.3
1	194°41.6	9°36.3	1	194°55.3	8°32.0	1	195°09.8	7°26.5	1	195°24.9	6°19.9	1	195°40.4	5°12.3
2	209°41.7	9°35.4	2	209°55.5	8°31.1	2	210°10.0	7°25.6	2	210°25.1	6°18.9	2	210°40.6	5°11.4
3	224°41.9	9°34.5	3	224°55.7	8°30.2	3	225°10.2	7°24.6	3	225°25.3	6°18.0	3	225°40.8	5°10.4
4	239°42.1	9°33.7	4	239°55.9	8°29.3	4	240°10.4	7°23.7	4	240°25.5	6°17.1	4	240°41.0	5°09.5
5	254°42.3	9°32.8	5	254°56.1	8°28.4	5	255°10.6	7°22.8	5	255°25.7	6°16.1	5	255°41.2	5°08.5
6	269°42.5	9°31.9	6	269°56.3	8°27.5	6	270°10.8	7°21.9	6	270°25.9	6°15.2	6	270°41.5	5°07.6
7	284°42.7	9°31.0	7	284°56.5	8°26.6	7	285°11.0	7°21.0	7	285°26.1	6°14.3	7	285°41.7	5°06.6
8	299°42.9	9°30.1	8	299°56.7	8°25.7	8	300°11.2	7°20.0	8	300°26.4	6°13.3	8	300°41.9	5°05.7
9	314°43.0	9°29.2	9	314°56.9	8°24.8	9	315°11.5	7°19.1	9	315°26.6	6°12.4	9	315°42.1	5°04.7
10	329°43.2	9°28.3	10	329°57.1	8°23.9	10	330°11.7	7°18.2	10	330°26.8	6°11.5	10	330°42.3	5°03.8
11	344°43.4	9°27.5	11	344°57.3	8°23.0	11	345°11.9	7°17.3	11	345°27.0	6°10.5	11	345°42.5	5°02.9
12	359°43.6	9°26.6	12	359°57.5	8°22.1	12	0°12.1	7°16.4	12	0°27.2	6°09.6	12	0°42.8	5°01.9
13	14°43.8	9°25.7	13	14°57.7	8°21.2	13	15°12.3	7°15.4	13	15°27.4	6°08.7	13	15°43.0	5°01.0
14	29°44.0	9°24.8	14	29°57.9	8°20.3	14	30°12.5	7°14.5	14	30°27.6	6°07.7	14	30°43.2	5°00.0
15	44°44.2	9°23.9	15	44°58.1	8°19.4	15	45°12.7	7°13.6	15	45°27.9	6°06.8	15	45°43.4	4°59.1
16	59°44.4	9°23.0	16	59°58.3	8°18.4	16	60°12.9	7°12.7	16	60°28.1	6°05.9	16	60°43.6	4°58.1
17	74°44.5	9°22.1	17	74°58.5	8°17.5	17	75°13.1	7°11.8	17	75°28.3	6°04.9	17	75°43.9	4°57.2
18	89°44.7	9°21.2	18	89°58.7	8°16.6	18	90°13.3	7°10.8	18	90°28.5	6°04.0	18	90°44.1	4°56.2
19	104°44.9	9°20.4	19	104°58.9	8°15.7	19	105°13.5	7°09.9	19	105°28.7	6°03.1	19	105°44.3	4°55.3
20	119°45.1	9°19.5	20	119°59.1	8°14.8	20	120°13.7	7°09.0	20	120°28.9	6°02.1	20	120°44.5	4°54.3
21	134°45.3	9°18.6	21	134°59.3	8°13.9	21	135°13.9	7°08.1	21	135°29.1	6°01.2	21	135°44.7	4°53.4
22	149°45.5	9°17.7	22	149°59.5	8°13.0	22	150°14.1	7°07.2	22	150°29.3	6°00.3	22	150°44.9	4°52.4
23	164°45.7	9°16.8	23	164°59.7	8°12.1	23	165°14.4	7°06.2	23	165°29.6	5°59.3	23	165°45.2	4°51.5
	SD.=15.8	d=-0.9		SD.=15.8	d=-0.9		SD.=15.9	d=-0.9		SD.=15.9	d=-0.9		SD.=15.9	d=-0.9

29	GHA	Dec	01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec
0	179°45.9	9°15.9	0	179°59.9	8°11.2	0	180°14.6	7°05.3	0	180°29.8	5°58.4	0	180°45.4	4°50.6
1	194°46.1	9°15.0	1	195°00.1	8°10.3	1	195°14.8	7°04.4	1	195°30.0	5°57.4	1	195°45.6	4°49.6
2	209°46.2	9°14.1	2	210°00.3	8°09.4	2	210°15.0	7°03.5	2	210°30.2	5°56.5	2	210°45.8	4°48.7
3	224°46.4	9°13.2	3	225°00.5	8°08.5	3	225°15.2	7°02.5	3	225°30.4	5°55.6	3	225°46.0	4°47.7
4	239°46.6	9°12.3	4	240°00.7	8°07.6	4	240°15.4	7°01.6	4	240°30.6	5°54.6	4	240°46.3	4°46.8
5	254°46.8	9°11.5	5	255°00.9	8°06.7	5	255°15.6	7°00.7	5	255°30.8	5°53.7	5	255°45.6	4°45.8
6	269°47.0	9°10.6	6	270°01.1	8°05.7	6	270°15.8	6°59.8	6	270°31.1	5°52.8	6	270°46.7	4°44.9
7	284°47.2	9°09.7	7	285°01.3	8°04.8	7	285°16.0	6°58.8	7	285°31.3	5°51.8	7	285°46.9	4°43.9
8	299°47.4	9°08.8	8	300°01.5	8°03.9	8	300°16.2	6°57.9	8	300°31.5	5°50.9	8	300°47.1	4°43.0
9	314°47.6	9°07.9	9	315°01.7	8°03.0	9	315°16.4	6°57.0	9	315°31.7	5°49.9	9	315°47.4	4°42.0
10	329°47.8	9°07.0	10	330°01.9	8°02.1	10	330°16.6	6°56.1	10	330°31.9	5°49.0	10	330°47.6	4°41.1
11	344°48.0	9°06.1	11	345°02.1	8°01.2	11	345°16.9	6°55.1	11	345°32.1	5°48.1	11	345°47.8	4°40.1
12	359°48.1	9°05.2	12	0°02.3	8°00.3	12	0°17.1	6°54.2	12	0°32.4	5°47.1	12	0°48.0	4°39.2
13	14°48.3	9°04.3	13	15°02.5	7°59.4	13	15°17.3	6°53.3	13	15°32.6	5°46.2	13	15°48.2	4°38.2
14	29°48.5	9°03.4	14	30°02.7	7°58.5	14	30°17.5	6°52.4	14	30°32.8	5°45.3	14	30°48.5	4°37.3
15	44°48.7	9°02.5	15	45°02.9	7°57.6	15	45°17.7	6°51.4	15	45°33.0	5°44.3	15	45°48.7	4°36.3
16	59°48.9	9°01.6	16	60°03.1	7°56.6	16	60°17.9	6°50.5	16	60°33.2	5°43.4	16	60°48.9	4°35.4
17	74°49.1	9°00.7	17	75°03.3	7°55.7	17	75°18.1	6°49.6	17	75°33.4	5°42.4	17	75°49.1	4°34.4
18	89°49.3	8°59.8	18	90°03.5	7°54.8	18	90°18.3	6°48.7	18	90°33.6	5°41.5	18	90°49.3	4°33.5
19	104°49.5	8°59.0	19	105°03.7	7°53.9	19	105°18.5	6°47.7	19	105°33.9	5°40.6	19	105°49.5	4°32.5
20	119°49.7	8°58.1	20	120°03.9	7°53.0	20	120°18.7	6°46.8	20	120°34.1	5°39.6	20	120°49.8	4°31.6
21	134°49.9	8°57.2	21	135°04.1	7°52.1	21	135°19.0	6°45.9	21	135°34.3	5°38.7	21	135°50.0	4°30.6
22	149°50.1	8°56.3	22	150°04.3	7°51.2	22	150°19.2	6°45.0	22	150°34.5	5°37.7	22	150°50.2	4°29.7
23	164°50.3	8°55.4	23	165°04.5	7°50.3	23	165°19.4	6°44.0	23	165°34.7	5°36.8	23	165°50.4	4°28.7
	SD.=15.8	d=-0.9		SD.=15.8	d=-0.9		SD.=15.9	d=-0.9		SD.=15.9	d=-0.9		SD.=15.9	d=-0.9

30	GHA	Dec	02	GHA	Dec	05	GHA	Dec	08	GHA	Dec	11	GHA	Dec
0	179°50.5	8°54.5	0	180°04.7	7°49.4	0	180°19.6	6°43.1	0	180°34.9	5°35.9	0	180°50.6	4°27.8
1	194°50.6	8°53.6	1	195°04.9	7°48.4	1	195°19.8	6°42.2	1	195°35.2	5°34.9	1	195°50.9	4°26.8
2	209°50.8	8°52.7	2	210°05.1	7°47.5	2	210°20.0	6°41.3	2	210°35.4	5°34.0	2	210°51.1	4°25.9
3	224°51.0	8°51.8	3	225°05.3	7°46.6	3	225°20.2	6°40.3	3	225°35.6	5°33.0	3	225°51.3	4°24.9
4	239°51.2	8°50.9	4	240°05.5	7°45.7	4	240°20.4	6°39.4	4	240°35.8	5°32.1	4	240°51.5	4°24.0
5	254°51.4	8°50.0	5	255°05.7	7°44.8	5	255°20.6	6°38.5	5	255°36.0	5°31.2	5	255°51.7	4°23.0
6	269°51.6	8°49.1	6	270°05.9	7°43.9	6	270°20.8	6°37.5	6	270°36.2	5°30.2	6	270°52.0	4°22.1
7	284°51.8	8°48.2	7	285°06.1	7°43.0	7	285°21.1	6°36.6	7	285°36.5	5°29.3	7	285°52.2	4°21.1
8	299°52.0	8°47.3	8	300°06.3	7°42.0	8	300°21.3	6°35.7	8	300°36.7	5°28.3	8	300°52.4	4°20.2
9	314°52.2	8°46.4	9	315°06.5	7°41.1	9	315°21.5	6°34.8	9	315°36.9	5°27.4	9	315°52.6	4°19.2
10	329°52.4	8°45.5	10	330°06.7	7°40.2	10	330°21.7	6°33.8	10	330°37.1	5°26.5	10	330°52.8	4°18.2
11	344°52.6	8°44.6	11	345°06.9	7°39.3	11	345°21.9	6°32.9	11	345°37.3	5°25.5	11	345°53.1	4°17.3
12	359°52.8	8°43.7	12	0°07.1	7°38.4	12	0°22.1	6°32.0	12	0°37.5	5°24.6	12	0°53.3	4°16.3
13	14°53.0	8°42.8	13	15°07.4	7°37.5	13	15°22.3	6°31.0	13	15°37.8	5°23.6</td			

12	GHA	Dec	15	GHA	Dec	18	GHA	Dec	21	GHA	Dec	24	GHA	Dec
0	180°55.9	4°04.9	0	181°11.9	2°55.9	0	181°27.9	1°46.4	0	181°43.9	0°36.5	0	181°59.7	-0°33.6
1	195°56.2	4°03.9	1	196°12.1	2°54.9	1	196°28.1	1°45.4	1	196°44.1	0°35.5	1	196°59.9	-0°34.6
2	210°56.4	4°03.0	2	211°12.3	2°54.0	2	211°28.4	1°44.4	2	211°44.3	0°34.5	2	212°00.1	-0°35.5
3	225°56.6	4°02.0	3	226°12.6	2°53.0	3	226°28.6	1°43.5	3	226°44.5	0°33.6	3	227°00.3	-0°36.5
4	240°56.8	4°01.1	4	241°12.8	2°52.0	4	241°28.8	1°42.5	4	241°44.8	0°32.6	4	242°00.5	-0°37.5
5	255°57.0	4°00.1	5	256°13.0	2°51.1	5	256°29.0	1°41.5	5	256°45.0	0°31.6	5	257°00.8	-0°38.4
6	270°57.3	3°59.2	6	271°13.2	2°50.1	6	271°29.2	1°40.5	6	271°45.2	0°30.7	6	272°01.0	-0°39.4
7	285°57.5	3°58.2	7	286°13.5	2°49.1	7	286°29.5	1°39.6	7	286°45.4	0°29.7	7	287°01.2	-0°40.4
8	300°57.7	3°57.3	8	301°13.7	2°48.2	8	301°29.7	1°38.6	8	301°45.6	0°28.7	8	302°01.4	-0°41.4
9	315°57.9	3°56.3	9	316°13.9	2°47.2	9	316°29.9	1°37.6	9	316°45.9	0°27.7	9	317°01.6	-0°42.3
10	330°58.1	3°55.3	10	331°14.1	2°46.3	10	331°30.1	1°36.7	10	331°46.1	0°26.8	10	332°01.8	-0°43.3
11	345°58.4	3°54.4	11	346°14.3	2°45.3	11	346°30.4	1°35.7	11	346°46.3	0°25.8	11	347°02.1	-0°44.3
12	0°58.6	3°53.4	12	1°14.6	2°44.3	12	1°30.6	1°34.7	12	1°46.5	0°24.8	12	2°02.3	-0°45.3
13	15°58.8	3°52.5	13	16°14.8	2°43.4	13	16°30.8	1°33.8	13	16°46.7	0°23.8	13	17°02.5	-0°46.2
14	30°59.0	3°51.5	14	31°15.0	2°42.4	14	31°31.0	1°32.8	14	31°47.0	0°22.9	14	32°02.7	-0°47.2
15	45°59.3	3°50.6	15	46°15.2	2°41.4	15	46°31.2	1°31.8	15	46°47.2	0°21.9	15	47°02.9	-0°48.2
16	60°59.5	3°49.6	16	61°15.5	2°40.5	16	61°31.5	1°30.9	16	61°47.4	0°20.9	16	62°03.1	-0°49.2
17	75°59.7	3°48.7	17	76°15.7	2°39.5	17	76°31.7	1°29.9	17	76°47.6	0°20.0	17	77°03.4	-0°50.1
18	90°59.9	3°47.7	18	91°15.9	2°38.5	18	91°31.9	1°28.9	18	91°47.8	0°19.0	18	92°03.6	-0°51.1
19	106°00.1	3°46.7	19	106°16.1	2°37.6	19	106°32.1	1°27.9	19	106°48.1	0°18.0	19	107°03.8	-0°52.1
20	121°00.4	3°45.8	20	121°16.3	2°36.6	20	121°32.4	1°27.0	20	121°48.3	0°17.0	20	122°04.0	-0°53.1
21	136°00.6	3°44.8	21	136°16.6	2°35.7	21	136°32.6	1°26.0	21	136°48.5	0°16.1	21	137°04.2	-0°54.0
22	151°00.8	3°43.9	22	151°16.8	2°34.7	22	151°32.8	1°25.0	22	151°48.7	0°15.1	22	152°04.4	-0°55.0
23	166°01.0	3°42.9	23	166°17.0	2°33.7	23	166°33.0	1°24.1	23	166°48.9	0°14.1	23	167°04.7	-0°56.0
	SD.=15.9	d=-1.0		SD.=15.9	d=-1.0									
13	GHA	Dec	16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec
0	181°01.2	3°42.0	0	181°17.2	2°32.8	0	181°33.2	1°23.1	0	181°49.2	0°13.1	0	182°04.9	-0°56.9
1	196°01.5	3°41.0	1	196°17.5	2°31.8	1	196°33.5	1°22.1	1	196°49.4	0°12.2	1	197°05.1	-0°57.9
2	211°01.7	3°40.0	2	211°17.7	2°30.8	2	211°33.7	1°21.2	2	211°49.6	0°11.2	2	212°05.3	-0°58.9
3	226°01.9	3°39.1	3	226°17.9	2°29.9	3	226°33.9	1°20.2	3	226°49.8	0°10.2	3	227°05.5	-0°59.9
4	241°02.1	3°38.1	4	241°18.1	2°28.9	4	241°34.1	1°19.2	4	241°50.0	0°09.3	4	242°05.7	-1°00.8
5	256°02.4	3°37.2	5	256°18.3	2°27.9	5	256°34.4	1°18.2	5	256°50.3	0°08.3	5	257°06.0	-1°01.8
6	271°02.6	3°36.2	6	271°18.6	2°27.0	6	271°34.6	1°17.3	6	271°50.5	0°07.3	6	272°06.2	-1°02.8
7	286°02.8	3°35.3	7	286°18.8	2°26.0	7	286°34.8	1°16.3	7	286°50.7	0°06.3	7	287°06.4	-1°03.8
8	301°03.0	3°34.3	8	301°19.0	2°25.0	8	301°35.0	1°15.3	8	301°50.9	0°05.4	8	302°06.6	-1°04.7
9	316°03.2	3°33.3	9	316°19.2	2°24.1	9	316°35.2	1°14.4	9	316°51.1	0°04.4	9	317°06.8	-1°05.7
10	331°03.5	3°32.4	10	331°19.5	2°23.1	10	331°35.5	1°13.4	10	331°51.4	0°03.4	10	332°07.0	-1°06.7
11	346°03.7	3°31.4	11	346°19.7	2°22.1	11	346°35.7	1°12.4	11	346°51.6	0°02.4	11	347°07.2	-1°07.7
12	1°03.9	3°30.5	12	1°19.9	2°21.2	12	1°35.9	1°11.5	12	1°51.8	0°01.5	12	2°07.5	-1°08.6
13	16°04.1	3°29.5	13	16°20.1	2°20.2	13	16°36.1	1°10.5	13	16°52.0	0°00.5	13	17°07.7	-1°09.6
14	31°04.3	3°28.5	14	31°20.3	2°19.2	14	31°36.3	1°09.5	14	31°52.2	0°00.5	14	32°07.9	-1°10.6
15	46°04.6	3°27.6	15	46°20.6	2°18.3	15	46°36.6	1°08.5	15	46°52.5	0°01.5	15	47°08.1	-1°11.5
16	61°04.8	3°26.6	16	61°20.8	2°17.3	16	61°36.8	1°07.6	16	61°52.7	0°02.4	16	62°08.3	-1°12.5
17	76°05.0	3°25.7	17	76°21.0	2°16.3	17	76°37.0	1°06.6	17	76°52.9	0°03.4	17	77°08.5	-1°13.5
18	91°05.2	3°24.7	18	91°21.2	2°15.4	18	91°37.2	1°05.6	18	91°53.1	0°04.4	18	92°08.8	-1°14.5
19	106°05.5	3°23.8	19	106°21.5	2°14.4	19	106°37.5	1°04.7	19	106°53.3	0°05.3	19	107°09.0	-1°15.4
20	121°05.7	3°22.8	20	121°21.7	2°13.4	20	121°37.7	1°03.7	20	121°53.6	0°06.3	20	122°09.2	-1°16.4
21	136°05.9	3°21.8	21	136°21.9	2°12.5	21	136°37.9	1°02.7	21	136°53.8	0°07.3	21	137°09.4	-1°17.4
22	151°06.1	3°20.9	22	151°22.1	2°11.5	22	151°38.1	1°01.7	22	151°54.0	0°08.3	22	152°09.6	-1°18.4
23	166°06.3	3°19.9	23	166°22.4	2°10.5	23	166°38.3	1°00.8	23	166°54.2	0°09.2	23	167°09.8	-1°19.3
	SD.=15.9	d=-1.0		SD.=15.9	d=-1.0									
14	GHA	Dec	17	GHA	Dec	20	GHA	Dec	23	GHA	Dec	26	GHA	Dec
0	181°06.6	3°19.0	0	181°22.6	2°09.6	0	181°38.6	0°59.8	0	181°54.4	-0°10.2	0	182°10.0	-1°20.3
1	196°06.8	3°18.0	1	196°22.8	2°08.6	1	196°38.8	0°58.8	1	196°54.6	-0°11.2	1	197°10.3	-1°21.3
2	211°07.0	3°17.0	2	211°23.0	2°07.6	2	211°39.0	0°57.9	2	211°54.9	-0°12.2	2	212°10.5	-1°22.3
3	226°07.2	3°16.1	3	226°23.2	2°06.7	3	226°39.2	0°56.9	3	226°55.1	-0°13.1	3	227°10.7	-1°23.2
4	241°07.5	3°15.1	4	241°23.5	2°05.7	4	241°39.4	0°55.9	4	241°55.3	-0°14.1	4	242°10.9	-1°24.2
5	256°07.7	3°14.2	5	256°23.7	2°04.7	5	256°39.7	0°54.9	5	256°55.5	-0°15.1	5	257°11.1	-1°25.2
6	271°07.9	3°13.2	6	271°23.9	2°03.8	6	271°39.9	0°54.0	6	271°55.7	-0°16.1	6	272°11.3	-1°26.2
7	286°08.1	3°12.2	7	286°24.1	2°02.8	7	286°40.1	0°53.0	7	286°56.0	-0°17.0	7	287°11.5	-1°27.1
8	301°08.3	3°11.3	8	301°24.4	2°01.8	8	301°40.3	0°52.0	8	301°56.2	-0°18.0	8	302°11.8	-1°28.1
9	316°08.6	3°10.3	9	316°24.6	2°00.9	9	316°40.6	0°51.1	9	316°56.4	-0°19.0	9	317°12.0	-1°29.1
10	331°08.8	3°09.3	10	331°24.8	1°59.9	10	331°40.8	0°50.1	10	331°56.6	-0°19.9	10	332°12.2	-1°30.0
11	346°09.0	3°08.4	11	346°25.0	1°58.9	11	346°41.0	0°49.1	11	346°56.8	-0°20.9	11	347°12.4	-1°31.0
12	1°09.2	3°07.4	12	1°25.2	1°58.0	12	1°41.2	0°48.1	12	1°57.1	-0°21.9	12	2°12.6	-1°32.0
13	16°09.5	3°06.5	13	16°25.5	1°57.0	13	16°41.4	0°47.2	13	16°57.3	-0°22.9	13	17°12.8	-1°33.0
14	31°09.7	3°05.5	14	31°25.7	1°56.0	14	31°41.7	0°46.2	14	31°57.5	-0°23.8	14	32°13.0	-1°33.9
15	46°09.9	3°04.5	15	46°25.9	1°55.1	15	46°41.9	0°45.2	15	46°57.7	-0°24.8	15	47°13.2	-1°34.9
16	61°10.1	3°03.6	16	61°26.1	1°54.1	16	61°42.1	0°44.3	16	61°57.9	-0°25.8	16	62°13.5	-1°35.9
17	76°10.3	3°02.6	17	76°26.4	1°53.1	17	76°42.3	0°43.3	17	76°58.1	-0°26.8	17	77°13.7	-1°36.9
18	91°10.6	3°01.7	18											

2020 September 27 to Oct. 11

27	GHA	Dec	30	GHA	Dec	03	GHA	Dec	06	GHA	Dec	09	GHA	Dec
0	182°15.2	-1°43.7	0	182°30.2	-2°53.6	0	182°44.7	-4°03.3	0	182°58.4	-5°12.6	0	183°11.2	-6°21.2
1	197°15.4	-1°44.6	1	197°30.4	-2°54.6	1	197°44.9	-4°04.3	1	197°58.6	-5°13.5	1	198°11.3	-6°22.2
2	212°15.6	-1°45.6	2	212°30.6	-2°55.6	2	212°45.1	-4°05.2	2	212°58.7	-5°14.5	2	213°11.5	-6°23.1
3	227°15.8	-1°46.6	3	227°30.8	-2°56.5	3	227°45.3	-4°06.2	3	227°58.9	-5°15.4	3	228°11.7	-6°24.1
4	242°16.0	-1°47.6	4	242°31.0	-2°57.5	4	242°45.5	-4°07.2	4	242°59.1	-5°16.4	4	243°11.8	-6°25.0
5	257°16.2	-1°48.5	5	257°31.2	-2°58.5	5	257°45.7	-4°08.1	5	257°59.3	-5°17.3	5	258°12.0	-6°26.0
6	272°16.4	-1°49.5	6	272°31.5	-2°59.4	6	272°45.8	-4°09.1	6	272°59.5	-5°18.3	6	273°12.2	-6°26.9
7	287°16.7	-1°50.5	7	287°31.7	-3°00.4	7	287°46.0	-4°10.1	7	287°59.7	-5°19.3	7	288°12.3	-6°27.9
8	302°16.9	-1°51.4	8	302°31.9	-3°01.4	8	302°46.2	-4°11.0	8	302°59.8	-5°20.2	8	303°12.5	-6°28.8
9	317°17.1	-1°52.4	9	317°32.1	-3°02.4	9	317°46.4	-4°12.0	9	318°00.0	-5°21.2	9	318°12.7	-6°29.8
10	332°17.3	-1°53.4	10	332°32.3	-3°03.3	10	332°46.6	-4°13.0	10	333°00.2	-5°22.1	10	333°12.9	-6°30.7
11	347°17.5	-1°54.4	11	347°32.5	-3°04.3	11	347°46.8	-4°13.9	11	348°00.4	-5°23.1	11	348°13.0	-6°31.7
12	2°17.7	-1°55.3	12	2°32.7	-3°05.3	12	2°47.0	-4°14.9	12	3°00.6	-5°24.0	12	3°13.2	-6°32.6
13	17°17.9	-1°56.3	13	17°32.9	-3°06.2	13	17°47.2	-4°15.8	13	18°00.7	-5°25.0	13	18°13.4	-6°33.6
14	32°18.1	-1°57.3	14	32°33.1	-3°07.2	14	32°47.4	-4°16.8	14	33°00.9	-5°26.0	14	33°13.5	-6°34.5
15	47°18.3	-1°58.3	15	47°33.3	-3°08.2	15	47°47.6	-4°17.8	15	48°01.1	-5°26.9	15	48°13.7	-6°35.4
16	62°18.6	-1°59.2	16	62°33.5	-3°09.1	16	62°47.8	-4°18.7	16	63°01.3	-5°27.9	16	63°13.9	-6°36.4
17	77°18.8	-2°00.2	17	77°33.7	-3°10.1	17	77°48.0	-4°19.7	17	78°01.5	-5°28.8	17	78°14.0	-6°37.3
18	92°19.0	-2°01.2	18	92°33.9	-3°11.1	18	92°48.2	-4°20.7	18	93°01.7	-5°29.8	18	93°14.2	-6°38.3
19	107°19.2	-2°02.1	19	107°34.1	-3°12.0	19	107°48.4	-4°21.6	19	108°01.8	-5°30.7	19	108°14.4	-6°39.2
20	122°19.4	-2°03.1	20	122°34.3	-3°13.0	20	122°48.6	-4°22.6	20	123°02.0	-5°31.7	20	123°14.5	-6°40.2
21	137°19.6	-2°04.1	21	137°34.5	-3°14.0	21	137°48.8	-4°23.6	21	138°02.2	-5°32.7	21	138°14.7	-6°41.1
22	152°19.8	-2°05.1	22	152°34.7	-3°15.0	22	152°48.9	-4°24.5	22	153°02.4	-5°33.6	22	153°14.9	-6°42.1
23	167°20.0	-2°06.0	23	167°34.9	-3°15.9	23	167°49.1	-4°25.5	23	168°02.6	-5°34.6	23	168°15.0	-6°43.0
	SD.=16.0	d=-1.0		SD.=16.0	d=-0.9									
28	GHA	Dec	01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec
0	182°20.2	-2°07.0	0	182°35.1	-3°16.9	0	182°49.3	-4°26.4	0	183°02.7	-5°35.5	0	183°15.2	-6°44.0
1	197°20.5	-2°08.0	1	197°35.3	-3°17.9	1	197°49.5	-4°27.4	1	198°02.9	-5°36.5	1	198°15.4	-6°44.9
2	212°20.7	-2°09.0	2	212°35.5	-3°18.8	2	212°49.7	-4°28.4	2	213°03.1	-5°37.4	2	213°15.5	-6°45.9
3	227°20.9	-2°09.9	3	227°35.7	-3°19.8	3	227°49.9	-4°29.3	3	228°03.3	-5°38.4	3	228°15.7	-6°46.8
4	242°21.1	-2°10.9	4	242°35.9	-3°20.8	4	242°50.1	-4°30.3	4	243°03.5	-5°39.3	4	243°15.9	-6°47.7
5	257°21.3	-2°11.9	5	257°36.1	-3°21.7	5	257°50.3	-4°31.3	5	258°03.6	-5°40.3	5	258°16.0	-6°48.7
6	272°21.5	-2°12.8	6	272°36.3	-3°22.7	6	272°50.5	-4°32.2	6	273°03.8	-5°41.2	6	273°16.2	-6°49.6
7	287°21.7	-2°13.8	7	287°36.5	-3°23.7	7	287°50.7	-4°33.2	7	288°04.0	-5°42.2	7	288°16.3	-6°50.6
8	302°21.9	-2°14.8	8	302°36.7	-3°24.6	8	302°50.9	-4°34.1	8	303°04.2	-5°43.2	8	303°16.5	-6°51.5
9	317°22.1	-2°15.8	9	317°36.9	-3°25.6	9	317°51.1	-4°35.1	9	318°04.4	-5°44.1	9	318°16.7	-6°52.5
10	332°22.3	-2°16.7	10	332°37.1	-3°26.6	10	332°51.2	-4°36.1	10	333°04.5	-5°45.1	10	333°16.8	-6°53.4
11	347°22.5	-2°17.7	11	347°37.3	-3°27.5	11	347°51.4	-4°37.0	11	348°04.7	-5°46.0	11	348°17.0	-6°54.4
12	2°22.8	-2°18.7	12	2°37.5	-3°28.5	12	2°51.6	-4°38.0	12	3°04.9	-5°47.0	12	3°17.2	-6°55.3
13	17°23.0	-2°19.6	13	17°37.7	-3°29.5	13	17°51.8	-4°39.0	13	18°05.1	-5°47.9	13	18°17.3	-6°56.2
14	32°23.2	-2°20.6	14	32°37.9	-3°30.4	14	32°52.0	-4°39.9	14	33°05.2	-5°48.9	14	33°17.5	-6°57.2
15	47°23.4	-2°21.6	15	47°38.1	-3°31.4	15	47°52.2	-4°40.9	15	48°05.4	-5°49.8	15	48°17.6	-6°58.1
16	62°23.6	-2°22.6	16	62°38.3	-3°32.4	16	62°52.4	-4°41.8	16	63°05.6	-5°50.8	16	63°17.8	-6°59.1
17	77°23.8	-2°23.5	17	77°38.5	-3°33.3	17	77°52.6	-4°42.8	17	78°05.8	-5°51.7	17	78°18.0	-7°00.0
18	92°24.0	-2°24.5	18	92°38.7	-3°34.3	18	92°52.8	-4°43.8	18	93°05.9	-5°52.7	18	93°18.1	-7°01.0
19	107°24.2	-2°25.5	19	107°38.9	-3°35.3	19	107°53.0	-4°44.7	19	108°06.1	-5°53.6	19	108°18.3	-7°01.9
20	122°24.4	-2°26.4	20	122°39.1	-3°36.2	20	122°53.1	-4°45.7	20	123°06.3	-5°54.6	20	123°18.5	-7°02.8
21	137°24.6	-2°27.4	21	137°39.3	-3°37.2	21	137°53.3	-4°46.6	21	138°06.5	-5°55.6	21	138°18.6	-7°03.8
22	152°24.8	-2°28.4	22	152°39.5	-3°38.2	22	152°53.5	-4°47.6	22	153°06.7	-5°56.5	22	153°18.8	-7°04.7
23	167°25.1	-2°29.4	23	167°39.7	-3°39.1	23	167°53.7	-4°48.6	23	168°06.8	-5°57.5	23	168°18.9	-7°05.7
	SD.=16.0	d=-1.0		SD.=16.0	d=-0.9									
29	GHA	Dec	02	GHA	Dec	05	GHA	Dec	08	GHA	Dec	11	GHA	Dec
0	182°25.3	-2°30.3	0	182°39.9	-3°40.1	0	182°53.9	-4°49.5	0	183°07.0	-5°58.4	0	183°19.1	-7°06.6
1	197°25.5	-2°31.3	1	197°40.1	-3°41.1	1	197°54.1	-4°50.5	1	198°07.2	-5°59.4	1	198°19.3	-7°07.6
2	212°25.7	-2°32.3	2	212°40.3	-3°42.1	2	212°54.3	-4°51.4	2	213°07.4	-6°00.3	2	213°19.4	-7°08.5
3	227°25.9	-2°33.2	3	227°40.5	-3°43.0	3	227°54.5	-4°52.4	3	228°07.5	-6°01.3	3	228°19.6	-7°09.4
4	242°26.1	-2°34.2	4	242°40.7	-3°44.0	4	242°54.6	-4°53.4	4	243°07.7	-6°02.2	4	243°19.7	-7°10.4
5	257°26.3	-2°35.2	5	257°40.9	-3°45.0	5	257°54.8	-4°54.3	5	258°07.9	-6°03.2	5	258°19.9	-7°11.3
6	272°26.5	-2°36.2	6	272°41.1	-3°45.9	6	272°55.0	-4°55.3	6	273°08.1	-6°04.1	6	273°20.1	-7°12.3
7	287°26.7	-2°37.1	7	287°41.3	-3°46.9	7	287°55.2	-4°56.3	7	288°08.2	-6°05.1	7	288°20.2	-7°13.2
8	302°26.9	-2°38.1	8	302°41.5	-3°47.9	8	302°55.4	-4°57.2	8	303°08.4	-6°06.0	8	303°20.4	-7°14.1
9	317°27.1	-2°39.1	9	317°41.7	-3°48.8	9	317°55.6	-4°58.2	9	318°08.6	-6°07.0	9	318°20.5	-7°15.1
10	332°27.3	-2°40.0	10	332°41.9	-3°49.8	10	332°55.8	-4°59.1	10	333°08.7	-6°07.9	10	333°20.7	-7°16.0
11	347°27.5	-2°41.0	11	347°42.1	-3°50.7	11	347°56.0	-5°00.1	11	348°08.9	-6°08.9	11	348°20.9	-7°17.0
12	2°27.7	-2°42.0	12	2°42.3	-3°51.7	12	2°56.1	-5°01.0	12	3°09.1	-6°09.8	12	3°21.0	-7°17.9
13	17°28.0	-2°43.0	13	17°42.5	-3°52.7	13	17°56.3	-5°02.0	13	18°09.3	-6°10.8	13	18°21.2	-7°18.8
14	32°28.2	-2°43.9	14	32°42.7	-3°53.6	14	32°56.5	-5°03.0	14	33°09.4	-6°11.7	14	33°21.3	-7°19.8
15	47°28.4	-2°44.9	15	47°42.9	-3°54.6	15	47°56.7	-5°03.9	15	48°09.6	-6°12.7	15	48°21.5	-7°20.7
16	62°28.6	-2°45.9	16	62°43.1	-3°55.6	16	62°56.9	-5°04.9	16	63°09.8	-6°13.6	16	63°21.6	-7°21.7
17	77°28.8	-2°46.8	17	77°43.3	-3°56.5	17	77°57.1	-5°05.8	17	78°10.0	-6°14.6	17	78°21.8	-7°22.6
18	92°29.0	-2°47.												

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12	GHA	Dec	15	GHA	Dec	18	GHA	Dec	21	GHA	Dec	24	GHA	Dec
0	183°22.9	-7°29.2	0	183°33.4	-8°36.2	0	183°42.7	-9°42.1	0	183°50.6	-10°46.8	0	183°57.1	-11°50.0
1	198°23.0	-7°30.1	1	198°33.6	-8°37.1	1	198°42.8	-9°43.0	1	198°50.7	-10°47.7	1	198°57.1	-11°50.9
2	213°23.2	-7°31.0	2	213°33.7	-8°38.0	2	213°42.9	-9°44.0	2	213°50.8	-10°48.6	2	213°57.2	-11°51.8
3	228°23.4	-7°32.0	3	228°33.9	-8°39.0	3	228°43.1	-9°44.9	3	228°50.9	-10°49.5	3	228°57.3	-11°52.6
4	243°23.5	-7°32.9	4	243°34.0	-8°39.9	4	243°43.2	-9°45.8	4	243°51.0	-10°50.4	4	243°57.4	-11°53.5
5	258°23.7	-7°33.9	5	258°34.1	-8°40.8	5	258°43.3	-9°46.7	5	258°51.1	-10°51.3	5	258°57.4	-11°54.4
6	273°23.8	-7°34.8	6	273°34.3	-8°41.7	6	273°43.4	-9°47.6	6	273°51.2	-10°52.1	6	273°57.5	-11°55.2
7	288°24.0	-7°35.7	7	288°34.4	-8°42.7	7	288°43.5	-9°48.5	7	288°51.3	-10°53.0	7	288°57.6	-11°56.1
8	303°24.1	-7°36.7	8	303°34.5	-8°43.6	8	303°43.7	-9°49.4	8	303°51.4	-10°53.9	8	303°57.7	-11°57.0
9	318°24.3	-7°37.6	9	318°34.7	-8°44.5	9	318°43.8	-9°50.3	9	318°51.5	-10°54.8	9	318°57.8	-11°57.8
10	333°24.4	-7°38.5	10	333°34.8	-8°45.4	10	333°43.9	-9°51.2	10	333°51.6	-10°55.7	10	333°57.8	-11°58.7
11	348°24.6	-7°39.5	11	348°34.9	-8°46.3	11	348°44.0	-9°52.1	11	348°51.7	-10°56.6	11	348°57.9	-11°59.6
12	3°24.7	-7°40.4	12	3°35.1	-8°47.3	12	3°44.1	-9°53.0	12	3°51.8	-10°57.5	12	3°58.0	-12°00.4
13	18°24.9	-7°41.3	13	18°35.2	-8°48.2	13	18°44.2	-9°53.9	13	18°51.9	-10°58.4	13	18°58.1	-12°01.3
14	33°25.0	-7°42.3	14	33°35.3	-8°49.1	14	33°44.4	-9°54.8	14	33°52.0	-10°59.2	14	33°58.1	-12°02.2
15	48°25.2	-7°43.2	15	48°35.5	-8°50.0	15	48°44.5	-9°55.7	15	48°52.1	-11°00.1	15	48°58.2	-12°03.0
16	63°25.3	-7°44.1	16	63°35.6	-8°50.9	16	63°44.6	-9°56.6	16	63°52.2	-11°01.0	16	63°58.3	-12°03.9
17	78°25.5	-7°45.1	17	78°35.7	-8°51.9	17	78°44.7	-9°57.5	17	78°52.3	-11°01.9	17	78°58.4	-12°04.7
18	93°25.6	-7°46.0	18	93°35.9	-8°52.8	18	93°44.8	-9°58.4	18	93°52.4	-11°02.8	18	93°58.4	-12°05.6
19	108°25.8	-7°46.9	19	108°36.0	-8°53.7	19	108°44.9	-9°59.3	19	108°52.5	-11°03.7	19	108°58.5	-12°06.5
20	123°25.9	-7°47.9	20	123°36.1	-8°54.6	20	123°45.0	-10°00.2	20	123°52.6	-11°04.5	20	123°58.6	-12°07.3
21	138°26.1	-7°48.8	21	138°36.3	-8°55.5	21	138°45.2	-10°01.1	21	138°52.6	-11°05.4	21	138°58.6	-12°08.2
22	153°26.2	-7°49.8	22	153°36.4	-8°56.5	22	153°45.3	-10°02.0	22	153°52.7	-11°06.3	22	153°58.7	-12°09.0
23	168°26.4	-7°50.7	23	168°36.5	-8°57.4	23	168°45.4	-10°02.9	23	168°52.8	-11°07.2	23	168°58.8	-12°09.9
	SD.=16.0	d=-0.9		SD.=16.0	d=-0.9		SD.=16.1	d=-0.9		SD.=16.1	d=-0.9		SD.=16.1	d=-0.9
13	GHA	Dec	16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec
0	183°26.5	-7°51.6	0	183°36.7	-8°58.3	0	183°45.5	-10°03.9	0	183°52.9	-11°08.1	0	183°58.9	-12°10.8
1	198°26.7	-7°52.6	1	198°36.8	-8°59.2	1	198°45.6	-10°04.8	1	198°53.0	-11°09.0	1	198°58.9	-12°11.6
2	213°26.8	-7°53.5	2	213°36.9	-9°00.1	2	213°45.7	-10°05.7	2	213°53.1	-11°09.8	2	213°59.0	-12°12.5
3	228°27.0	-7°54.4	3	228°37.1	-9°01.1	3	228°45.8	-10°06.6	3	228°53.2	-11°10.7	3	228°59.1	-12°13.3
4	243°27.1	-7°55.3	4	243°37.2	-9°02.0	4	243°46.0	-10°07.5	4	243°53.3	-11°11.6	4	243°59.2	-12°14.2
5	258°27.3	-7°56.3	5	258°37.3	-9°02.9	5	258°46.1	-10°08.4	5	258°53.4	-11°12.5	5	258°59.2	-12°15.1
6	273°27.4	-7°57.2	6	273°37.5	-9°03.8	6	273°46.2	-10°09.3	6	273°53.5	-11°13.4	6	273°59.3	-12°15.9
7	288°27.6	-7°58.1	7	288°37.6	-9°04.7	7	288°46.3	-10°10.2	7	288°53.6	-11°14.2	7	288°59.4	-12°16.8
8	303°27.7	-7°59.1	8	303°37.7	-9°05.6	8	303°46.4	-10°11.1	8	303°53.7	-11°15.1	8	303°59.4	-12°17.6
9	318°27.9	-8°00.0	9	318°37.9	-9°06.6	9	318°46.5	-10°12.0	9	318°53.8	-11°16.0	9	318°59.5	-12°18.5
10	333°28.0	-8°00.9	10	333°38.0	-9°07.5	10	333°46.6	-10°12.9	10	333°53.8	-11°16.9	10	333°59.6	-12°19.3
11	348°28.2	-8°01.9	11	348°38.1	-9°08.4	11	348°46.7	-10°13.8	11	348°53.9	-11°17.8	11	348°59.6	-12°20.2
12	3°28.3	-8°02.8	12	3°38.2	-9°09.3	12	3°46.8	-10°14.7	12	3°54.0	-11°18.6	12	3°59.7	-12°21.1
13	18°28.5	-8°03.7	13	18°38.4	-9°10.2	13	18°46.9	-10°15.6	13	18°54.1	-11°19.5	13	18°59.8	-12°21.9
14	33°28.6	-8°04.7	14	33°38.5	-9°11.1	14	33°47.1	-10°16.4	14	33°54.2	-11°20.4	14	33°59.8	-12°22.8
15	48°28.8	-8°05.6	15	48°38.6	-9°12.1	15	48°47.2	-10°17.3	15	48°54.3	-11°21.3	15	48°59.9	-12°23.6
16	63°28.9	-8°06.5	16	63°38.8	-9°13.0	16	63°47.3	-10°18.2	16	63°54.4	-11°22.1	16	63°60.0	-12°24.5
17	78°29.0	-8°07.5	17	78°38.9	-9°13.9	17	78°47.4	-10°19.1	17	78°54.5	-11°23.0	17	79°00.0	-12°25.3
18	93°29.2	-8°08.4	18	93°39.0	-9°14.8	18	93°47.5	-10°20.0	18	93°54.6	-11°23.9	18	94°00.1	-12°26.2
19	108°29.3	-8°09.3	19	108°39.1	-9°15.7	19	108°47.6	-10°20.9	19	108°54.6	-11°24.8	19	109°00.2	-12°27.0
20	123°29.5	-8°10.2	20	123°39.3	-9°16.6	20	123°47.7	-10°21.8	20	123°54.7	-11°25.6	20	124°00.2	-12°27.9
21	138°29.6	-8°11.2	21	138°39.4	-9°17.5	21	138°47.8	-10°22.7	21	138°54.8	-11°26.5	21	139°00.3	-12°28.7
22	153°29.8	-8°12.1	22	153°39.5	-9°18.5	22	153°47.9	-10°23.6	22	153°54.9	-11°27.4	22	154°00.4	-12°29.6
23	168°29.9	-8°13.0	23	168°39.6	-9°19.4	23	168°48.0	-10°24.5	23	168°55.0	-11°28.3	23	169°00.4	-12°30.4
	SD.=16.0	d=-0.9		SD.=16.0	d=-0.9		SD.=16.1	d=-0.9		SD.=16.1	d=-0.9		SD.=16.1	d=-0.9
14	GHA	Dec	17	GHA	Dec	20	GHA	Dec	23	GHA	Dec	26	GHA	Dec
0	183°30.1	-8°14.0	0	183°39.8	-9°20.3	0	183°48.1	-10°25.4	0	183°55.1	-11°29.1	0	184°00.5	-12°31.3
1	198°30.2	-8°14.9	1	198°39.9	-9°21.2	1	198°48.2	-10°26.3	1	198°55.2	-11°30.0	1	199°00.6	-12°32.2
2	213°30.3	-8°15.8	2	213°40.0	-9°22.1	2	213°48.3	-10°27.2	2	213°55.2	-11°30.9	2	214°00.6	-12°33.0
3	228°30.5	-8°16.7	3	228°40.1	-9°23.0	3	228°48.5	-10°28.1	3	228°55.3	-11°31.8	3	229°00.7	-12°33.9
4	243°30.6	-8°17.7	4	243°40.3	-9°23.9	4	243°48.6	-10°29.0	4	243°55.4	-11°32.6	4	244°00.8	-12°34.7
5	258°30.8	-8°18.6	5	258°40.4	-9°24.9	5	258°48.7	-10°29.9	5	258°55.5	-11°33.5	5	259°00.8	-12°35.6
6	273°30.9	-8°19.5	6	273°40.5	-9°25.8	6	273°48.8	-10°30.8	6	273°55.6	-11°34.4	6	274°00.9	-12°36.4
7	288°31.1	-8°20.5	7	288°40.6	-9°26.7	7	288°48.9	-10°31.7	7	288°55.7	-11°35.3	7	289°00.9	-12°37.3
8	303°31.2	-8°21.4	8	303°40.8	-9°27.6	8	303°49.0	-10°32.6	8	303°55.8	-11°36.1	8	304°01.0	-12°38.1
9	318°31.3	-8°22.3	9	318°40.9	-9°28.5	9	318°49.1	-10°33.5	9	318°55.8	-11°37.0	9	319°01.1	-12°39.0
10	333°31.5	-8°23.2	10	333°41.0	-9°29.4	10	333°49.2	-10°34.4	10	333°55.9	-11°37.9	10	334°01.1	-12°39.8
11	348°31.6	-8°24.2	11	348°41.1	-9°30.3	11	348°49.3	-10°35.2	11	348°56.0	-11°38.7	11	349°01.2	-12°40.6
12	3°31.8	-8°25.1	12	3°41.3	-9°31.2	12	3°49.4	-10°36.1	12	3°56.1	-11°39.6	12	4°01.2	-12°41.5
13	18°31.9	-8°26.0	13	18°41.4	-9°32.1	13	18°49.5	-10°37.0	13	18°56.2	-11°40.5	13	19°01.3	-12°42.3
14	33°32.1	-8°26.9	14	33°41.5	-9°33.1	14	33°49.6	-10°37.9	14	33°56.3	-11°41.4	14	34°01.4	-12°43.2
15	48°32.2	-8°27.9	15	48°41.6	-9°34.0	15	48°49.7	-10°38.8	15	48°56.3	-11°42.2	15	49°01.4	-12°44.0
16	63°32.3	-8°28.8	16	63°41.7	-9°34.9	16	63°49.8	-10°39.7	16	63°56.4	-11°43.1	16	64°01.5	-12°44.9
17														

27	GHA	Dec	30	GHA	Dec	02	GHA	Dec	05	GHA	Dec	08	GHA	Dec
0	184°02.0	-12°51.6	0	184°05.2	-13°51.4	0	184°06.7	-14°49.2	0	184°06.4	-15°44.8	0	184°04.1	-16°38.1
1	199°02.0	-12°52.5	1	199°05.2	-13°52.2	1	199°06.7	-14°50.0	1	199°06.4	-15°45.6	1	199°04.1	-16°38.9
2	214°02.1	-12°53.3	2	214°05.3	-13°53.0	2	214°06.7	-14°50.8	2	214°06.3	-15°46.3	2	214°04.1	-16°39.6
3	229°02.1	-12°54.2	3	229°05.3	-13°53.9	3	229°06.7	-14°51.6	3	229°06.3	-15°47.1	3	229°04.0	-16°40.3
4	244°02.2	-12°55.0	4	244°05.3	-13°54.7	4	244°06.7	-14°52.3	4	244°06.3	-15°47.9	4	244°04.0	-16°41.0
5	259°02.2	-12°55.8	5	259°05.4	-13°55.5	5	259°06.7	-14°53.1	5	259°06.3	-15°48.6	5	259°03.9	-16°41.7
6	274°02.3	-12°56.7	6	274°05.4	-13°56.3	6	274°06.7	-14°53.9	6	274°06.3	-15°49.4	6	274°03.9	-16°42.5
7	289°02.3	-12°57.5	7	289°05.4	-13°57.1	7	289°06.8	-14°54.7	7	289°06.2	-15°50.1	7	289°03.8	-16°43.2
8	304°02.4	-12°58.4	8	304°05.5	-13°57.9	8	304°06.8	-14°55.5	8	304°06.2	-15°50.9	8	304°03.8	-16°43.9
9	319°02.5	-12°59.2	9	319°05.5	-13°58.7	9	319°06.8	-14°56.3	9	319°06.2	-15°51.6	9	319°03.7	-16°44.6
10	334°02.5	-13°00.1	10	334°05.5	-13°59.6	10	334°06.8	-14°57.1	10	334°06.2	-15°52.4	10	334°03.7	-16°45.3
11	349°02.6	-13°00.9	11	349°05.5	-14°00.4	11	349°06.8	-14°57.8	11	349°06.2	-15°53.1	11	349°03.6	-16°46.1
12	4°02.6	-13°01.7	12	4°05.6	-14°01.2	12	4°06.8	-14°58.6	12	4°06.1	-15°53.9	12	4°03.6	-16°46.8
13	19°02.7	-13°02.6	13	19°05.6	-14°02.0	13	19°06.8	-14°59.4	13	19°06.1	-15°54.6	13	19°03.5	-16°47.5
14	34°02.7	-13°03.4	14	34°05.6	-14°02.8	14	34°06.8	-15°00.2	14	34°06.1	-15°55.4	14	34°03.5	-16°48.2
15	49°02.8	-13°04.2	15	49°05.7	-14°03.6	15	49°06.8	-15°01.0	15	49°06.1	-15°56.1	15	49°03.4	-16°48.9
16	64°02.8	-13°05.1	16	64°05.7	-14°04.4	16	64°06.8	-15°01.8	16	64°06.0	-15°56.9	16	64°03.4	-16°49.6
17	79°02.9	-13°05.9	17	79°05.7	-14°05.2	17	79°06.8	-15°02.5	17	79°06.0	-15°57.6	17	79°03.3	-16°50.4
18	94°02.9	-13°06.8	18	94°05.7	-14°06.1	18	94°06.8	-15°03.3	18	94°06.0	-15°58.4	18	94°03.3	-16°51.1
19	109°03.0	-13°07.6	19	109°05.8	-14°06.9	19	109°06.8	-15°04.1	19	109°06.0	-15°59.1	19	109°03.2	-16°51.8
20	124°03.0	-13°08.4	20	124°05.8	-14°07.7	20	124°06.8	-15°04.9	20	124°05.9	-15°59.9	20	124°03.2	-16°52.5
21	139°03.1	-13°09.3	21	139°05.8	-14°08.5	21	139°06.8	-15°05.7	21	139°05.9	-16°00.6	21	139°03.1	-16°53.2
22	154°03.1	-13°10.1	22	154°05.8	-14°09.3	22	154°06.8	-15°06.4	22	154°05.9	-16°01.4	22	154°03.1	-16°53.9
23	169°03.2	-13°10.9	23	169°05.9	-14°10.1	23	169°06.8	-15°07.2	23	169°05.9	-16°02.1	23	169°03.0	-16°54.6
	SD.=16.1	d=-0.8		SD.=16.1	d=-0.7									
28	GHA	Dec	31	GHA	Dec	03	GHA	Dec	06	GHA	Dec	09	GHA	Dec
0	184°03.2	-13°11.8	0	184°05.9	-14°10.9	0	184°06.8	-15°08.0	0	184°05.8	-16°02.9	0	184°03.0	-16°55.3
1	199°03.3	-13°12.6	1	199°05.9	-14°11.7	1	199°06.8	-15°08.8	1	199°05.8	-16°03.6	1	199°02.9	-16°56.1
2	214°03.3	-13°13.4	2	214°05.9	-14°12.5	2	214°06.8	-15°09.5	2	214°05.8	-16°04.4	2	214°02.9	-16°56.8
3	229°03.4	-13°14.3	3	229°06.0	-14°13.3	3	229°06.8	-15°10.3	3	229°05.8	-16°05.1	3	229°02.8	-16°57.5
4	244°03.4	-13°15.1	4	244°06.0	-14°14.1	4	244°06.8	-15°11.1	4	244°05.7	-16°05.8	4	244°02.8	-16°58.2
5	259°03.5	-13°15.9	5	259°06.0	-14°14.9	5	259°06.8	-15°11.9	5	259°05.7	-16°06.6	5	259°02.7	-16°58.9
6	274°03.5	-13°16.8	6	274°06.0	-14°15.7	6	274°06.8	-15°12.7	6	274°05.7	-16°07.3	6	274°02.7	-16°59.6
7	289°03.6	-13°17.6	7	289°06.1	-14°16.5	7	289°06.8	-15°13.4	7	289°05.7	-16°08.1	7	289°02.6	-17°00.3
8	304°03.6	-13°18.4	8	304°06.1	-14°17.4	8	304°06.8	-15°14.2	8	304°05.6	-16°08.8	8	304°02.5	-17°01.0
9	319°03.7	-13°19.3	9	319°06.1	-14°18.2	9	319°06.8	-15°15.0	9	319°05.6	-16°09.6	9	319°02.5	-17°01.7
10	334°03.7	-13°20.1	10	334°06.1	-14°19.0	10	334°06.8	-15°15.7	10	334°05.6	-16°10.3	10	334°02.4	-17°02.4
11	349°03.7	-13°20.9	11	349°06.2	-14°19.8	11	349°06.8	-15°16.5	11	349°05.5	-16°11.0	11	349°02.4	-17°03.1
12	4°03.8	-13°21.8	12	4°06.2	-14°20.6	12	4°06.8	-15°17.3	12	4°05.5	-16°11.8	12	4°02.3	-17°03.8
13	19°03.8	-13°22.6	13	19°06.2	-14°21.4	13	19°06.8	-15°18.1	13	19°05.5	-16°12.5	13	19°02.3	-17°04.6
14	34°03.9	-13°23.4	14	34°06.2	-14°22.2	14	34°06.8	-15°18.8	14	34°05.4	-16°13.3	14	34°02.2	-17°05.3
15	49°03.9	-13°24.3	15	49°06.2	-14°23.0	15	49°06.8	-15°19.6	15	49°05.4	-16°14.0	15	49°02.1	-17°06.0
16	64°04.0	-13°25.1	16	64°06.3	-14°23.8	16	64°06.7	-15°20.4	16	64°05.4	-16°14.7	16	64°02.1	-17°06.7
17	79°04.0	-13°25.9	17	79°06.3	-14°24.6	17	79°06.7	-15°21.2	17	79°05.3	-16°15.5	17	79°02.0	-17°07.4
18	94°04.1	-13°26.7	18	94°06.3	-14°25.4	18	94°06.7	-15°21.9	18	94°05.3	-16°16.2	18	94°02.0	-17°08.1
19	109°04.1	-13°27.6	19	109°06.3	-14°26.2	19	109°06.7	-15°22.7	19	109°05.3	-16°17.0	19	109°01.9	-17°08.8
20	124°04.1	-13°28.4	20	124°06.3	-14°27.0	20	124°06.7	-15°23.5	20	124°05.2	-16°17.7	20	124°01.8	-17°09.5
21	139°04.2	-13°29.2	21	139°06.3	-14°27.8	21	139°06.7	-15°24.2	21	139°05.2	-16°18.4	21	139°01.8	-17°10.2
22	154°04.2	-13°30.0	22	154°06.4	-14°28.6	22	154°06.7	-15°25.0	22	154°05.2	-16°19.2	22	154°01.7	-17°10.9
23	169°04.3	-13°30.9	23	169°06.4	-14°29.4	23	169°06.7	-15°25.8	23	169°05.1	-16°19.9	23	169°01.7	-17°11.6
	SD.=16.1	d=-0.8		SD.=16.1	d=-0.8		SD.=16.1	d=-0.8		SD.=16.1	d=-0.7		SD.=16.1	d=-0.7
29	GHA	Dec	01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec
0	184°04.3	-13°31.7	0	184°06.4	-14°30.2	0	184°06.7	-15°26.5	0	184°05.1	-16°20.6	0	184°01.6	-17°12.3
1	199°04.3	-13°32.5	1	199°06.4	-14°31.0	1	199°06.7	-15°27.3	1	199°05.1	-16°21.4	1	199°01.5	-17°13.0
2	214°04.4	-13°33.4	2	214°06.4	-14°31.8	2	214°06.7	-15°28.1	2	214°05.0	-16°22.1	2	214°01.5	-17°13.7
3	229°04.4	-13°34.2	3	229°06.4	-14°32.6	3	229°06.7	-15°28.8	3	229°05.0	-16°22.8	3	229°01.4	-17°14.4
4	244°04.5	-13°35.0	4	244°06.5	-14°33.4	4	244°06.7	-15°29.6	4	244°05.0	-16°23.6	4	244°01.3	-17°15.1
5	259°04.5	-13°35.8	5	259°06.5	-14°34.2	5	259°06.6	-15°30.4	5	259°04.9	-16°24.3	5	259°01.3	-17°15.8
6	274°04.5	-13°36.6	6	274°06.5	-14°34.9	6	274°06.6	-15°31.1	6	274°04.9	-16°25.0	6	274°01.2	-17°16.5
7	289°04.6	-13°37.5	7	289°06.5	-14°35.7	7	289°06.6	-15°31.9	7	289°04.8	-16°25.8	7	289°01.1	-17°17.2
8	304°04.6	-13°38.3	8	304°06.5	-14°36.5	8	304°06.6	-15°32.7	8	304°04.8	-16°26.5	8	304°01.1	-17°17.9
9	319°04.7	-13°39.1	9	319°06.5	-14°37.3	9	319°06.6	-15°33.4	9	319°04.8	-16°27.2	9	319°01.0	-17°18.6
10	334°04.7	-13°39.9	10	334°06.5	-14°38.1	10	334°06.6	-15°34.2	10	334°04.7	-16°28.0	10	334°00.9	-17°19.2
11	349°04.7	-13°40.8	11	349°06.6	-14°38.9	11	349°06.6	-15°35.0	11	349°04.7	-16°28.7	11	349°00.9	-17°19.9
12	4°04.8	-13°41.6	12	4°06.6	-14°39.7	12	4°06.6	-15°35.7	12	4°04.7	-16°29.4	12	4°00.8	-17°20.6
13	19°04.8	-13°42.4	13	19°06.6	-14°40.5	13	19°06.5	-15°36.5	13	19°04.6	-16°30.1	13	19°00.7	-17°21.3
14	34°04.9	-13°43.2	14	34°06.6	-14°41.3	14	34°06.5	-15°37.2	14	34°04.6	-16°30.9	14	34°00.7	-17°22.0
15	49°04.9	-13°44.0	15	49°06.6	-14°42.1	15	49°06.5	-15°38.0	15	49°04.5	-16°31.6	15	49°00.6	-17°22.7
16	64°04.9	-1												

11	GHA	Dec	14	GHA	Dec	17	GHA	Dec	20	GHA	Dec	23	GHA	Dec
0	183° 60.0	-17° 28.9	0	183° 53.9	-18° 17.0	0	183° 45.8	-19° 02.2	0	183° 36.0	-19° 44.4	0	183° 24.3	-20° 23.3
1	198° 59.9	-17° 29.6	1	198° 53.8	-18° 17.7	1	198° 45.7	-19° 02.8	1	198° 35.8	-19° 44.9	1	198° 24.1	-20° 23.8
2	213° 59.8	-17° 30.3	2	213° 53.7	-18° 18.3	2	213° 45.6	-19° 03.4	2	213° 35.7	-19° 45.5	2	213° 23.9	-20° 24.3
3	228° 59.8	-17° 31.0	3	228° 53.6	-18° 19.0	3	228° 45.5	-19° 04.0	3	228° 35.5	-19° 46.1	3	228° 23.8	-20° 24.9
4	243° 59.7	-17° 31.7	4	243° 53.5	-18° 19.6	4	243° 45.3	-19° 04.7	4	243° 35.4	-19° 46.6	4	243° 23.6	-20° 25.4
5	258° 59.6	-17° 32.3	5	258° 53.4	-18° 20.2	5	258° 45.2	-19° 05.3	5	258° 35.2	-19° 47.2	5	258° 23.4	-20° 25.9
6	273° 59.6	-17° 33.0	6	273° 53.3	-18° 20.9	6	273° 45.1	-19° 05.9	6	273° 35.0	-19° 47.8	6	273° 23.2	-20° 26.4
7	288° 59.5	-17° 33.7	7	288° 53.2	-18° 21.5	7	288° 45.0	-19° 06.5	7	288° 34.9	-19° 48.3	7	288° 23.1	-20° 26.9
8	303° 59.4	-17° 34.4	8	303° 53.1	-18° 22.2	8	303° 44.8	-19° 07.1	8	303° 34.7	-19° 48.9	8	303° 22.9	-20° 27.4
9	318° 59.3	-17° 35.1	9	318° 53.0	-18° 22.8	9	318° 44.7	-19° 07.7	9	318° 34.6	-19° 49.4	9	318° 22.7	-20° 27.9
10	333° 59.3	-17° 35.8	10	333° 52.9	-18° 23.5	10	333° 44.6	-19° 08.3	10	333° 34.4	-19° 50.0	10	333° 22.5	-20° 28.4
11	348° 59.2	-17° 36.4	11	348° 52.8	-18° 24.1	11	348° 44.5	-19° 08.9	11	348° 34.3	-19° 50.5	11	348° 22.3	-20° 29.0
12	3° 59.1	-17° 37.1	12	3° 52.7	-18° 24.8	12	3° 44.3	-19° 09.5	12	3° 34.1	-19° 51.1	12	3° 22.2	-20° 29.5
13	18° 59.0	-17° 37.8	13	18° 52.6	-18° 25.4	13	18° 44.2	-19° 10.1	13	18° 34.0	-19° 51.7	13	18° 22.0	-20° 30.0
14	33° 59.0	-17° 38.5	14	33° 52.5	-18° 26.0	14	33° 44.1	-19° 10.7	14	33° 33.8	-19° 52.2	14	33° 21.8	-20° 30.5
15	48° 58.9	-17° 39.2	15	48° 52.4	-18° 26.7	15	48° 43.9	-19° 11.3	15	48° 33.7	-19° 52.8	15	48° 21.6	-20° 31.0
16	63° 58.8	-17° 39.8	16	63° 52.3	-18° 27.3	16	63° 43.8	-19° 11.9	16	63° 33.5	-19° 53.3	16	63° 21.5	-20° 31.5
17	78° 58.7	-17° 40.5	17	78° 52.1	-18° 28.0	17	78° 43.7	-19° 12.5	17	78° 33.4	-19° 53.9	17	78° 21.3	-20° 32.0
18	93° 58.6	-17° 41.2	18	93° 52.0	-18° 28.6	18	93° 43.5	-19° 13.1	18	93° 33.2	-19° 54.4	18	93° 21.1	-20° 32.5
19	108° 58.6	-17° 41.9	19	108° 51.9	-18° 29.2	19	108° 43.4	-19° 13.7	19	108° 33.0	-19° 55.0	19	108° 20.9	-20° 33.0
20	123° 58.5	-17° 42.6	20	123° 51.8	-18° 29.9	20	123° 43.3	-19° 14.3	20	123° 32.9	-19° 55.5	20	123° 20.7	-20° 33.5
21	138° 58.4	-17° 43.2	21	138° 51.7	-18° 30.5	21	138° 43.1	-19° 14.8	21	138° 32.7	-19° 56.1	21	138° 20.6	-20° 34.0
22	153° 58.3	-17° 43.9	22	153° 51.6	-18° 31.1	22	153° 43.0	-19° 15.4	22	153° 32.6	-19° 56.6	22	153° 20.4	-20° 34.5
23	168° 58.2	-17° 44.6	23	168° 51.5	-18° 31.8	23	168° 42.9	-19° 16.0	23	168° 32.4	-19° 57.2	23	168° 20.2	-20° 35.0
	SD.=16.2	d=-0.7		SD.=16.2	d=-0.6		SD.=16.2	d=-0.6		SD.=16.2	d=-0.6		SD.=16.2	d=-0.5

12	GHA	Dec	15	GHA	Dec	18	GHA	Dec	21	GHA	Dec	24	GHA	Dec
0	183° 58.2	-17° 45.3	0	183° 51.4	-18° 32.4	0	183° 42.7	-19° 16.6	0	183° 32.3	-19° 57.7	0	183° 20.0	-20° 35.5
1	198° 58.1	-17° 45.9	1	198° 51.3	-18° 33.0	1	198° 42.6	-19° 17.2	1	198° 32.1	-19° 58.3	1	198° 19.8	-20° 36.0
2	213° 58.0	-17° 46.6	2	213° 51.2	-18° 33.7	2	213° 42.5	-19° 17.8	2	213° 31.9	-19° 58.8	2	213° 19.6	-20° 36.5
3	228° 57.9	-17° 47.3	3	228° 51.1	-18° 34.3	3	228° 42.3	-19° 18.4	3	228° 31.8	-19° 59.4	3	228° 19.5	-20° 37.0
4	243° 57.8	-17° 48.0	4	243° 51.0	-18° 34.9	4	243° 42.2	-19° 19.0	4	243° 31.6	-19° 59.9	4	243° 19.3	-20° 37.5
5	258° 57.8	-17° 48.6	5	258° 50.9	-18° 35.6	5	258° 42.1	-19° 19.6	5	258° 31.5	-20° 00.5	5	258° 19.1	-20° 38.0
6	273° 57.7	-17° 49.3	6	273° 50.8	-18° 36.2	6	273° 41.9	-19° 20.2	6	273° 31.3	-20° 01.0	6	273° 18.9	-20° 38.5
7	288° 57.6	-17° 50.0	7	288° 50.6	-18° 36.8	7	288° 41.8	-19° 20.8	7	288° 31.1	-20° 01.5	7	288° 18.7	-20° 39.0
8	303° 57.5	-17° 50.6	8	303° 50.5	-18° 37.5	8	303° 41.7	-19° 21.4	8	303° 31.0	-20° 02.1	8	303° 18.5	-20° 39.5
9	318° 57.4	-17° 51.3	9	318° 50.4	-18° 38.1	9	318° 41.5	-19° 21.9	9	318° 30.8	-20° 02.6	9	318° 18.4	-20° 40.0
10	333° 57.3	-17° 52.0	10	333° 50.3	-18° 38.7	10	333° 41.4	-19° 22.5	10	333° 30.7	-20° 03.2	10	333° 18.2	-20° 40.5
11	348° 57.3	-17° 52.6	11	348° 50.2	-18° 39.4	11	348° 41.3	-19° 23.1	11	348° 30.5	-20° 03.7	11	348° 18.0	-20° 41.0
12	3° 57.2	-17° 53.3	12	3° 50.1	-18° 40.0	12	3° 41.1	-19° 23.7	12	3° 30.3	-20° 04.3	12	3° 17.8	-20° 41.5
13	18° 57.1	-17° 54.0	13	18° 50.0	-18° 40.6	13	18° 41.0	-19° 24.3	13	18° 30.2	-20° 04.8	13	18° 17.6	-20° 42.0
14	33° 57.0	-17° 54.6	14	33° 49.9	-18° 41.2	14	33° 40.9	-19° 24.9	14	33° 30.0	-20° 05.3	14	33° 17.4	-20° 42.5
15	48° 56.9	-17° 55.3	15	48° 49.8	-18° 41.9	15	48° 40.7	-19° 25.5	15	48° 29.8	-20° 05.9	15	48° 17.2	-20° 43.0
16	63° 56.8	-17° 56.0	16	63° 49.6	-18° 42.5	16	63° 40.6	-19° 26.0	16	63° 29.7	-20° 06.4	16	63° 17.1	-20° 43.5
17	78° 56.7	-17° 56.6	17	78° 49.5	-18° 43.1	17	78° 40.4	-19° 26.6	17	78° 29.5	-20° 07.0	17	78° 16.9	-20° 44.0
18	93° 56.7	-17° 57.3	18	93° 49.4	-18° 43.7	18	93° 40.3	-19° 27.2	18	93° 29.4	-20° 07.5	18	93° 16.7	-20° 44.4
19	108° 56.6	-17° 58.0	19	108° 49.3	-18° 44.4	19	108° 40.2	-19° 27.8	19	108° 29.2	-20° 08.0	19	108° 16.5	-20° 44.9
20	123° 56.5	-17° 58.6	20	123° 49.2	-18° 45.0	20	123° 40.0	-19° 28.4	20	123° 29.0	-20° 08.6	20	123° 16.3	-20° 45.4
21	138° 56.4	-17° 59.3	21	138° 49.1	-18° 45.6	21	138° 39.9	-19° 28.9	21	138° 28.9	-20° 09.1	21	138° 16.1	-20° 45.9
22	153° 56.3	-17° 60.0	22	153° 49.0	-18° 46.2	22	153° 39.7	-19° 29.5	22	153° 28.7	-20° 09.6	22	153° 15.9	-20° 46.4
23	168° 56.2	-18° 00.6	23	168° 48.8	-18° 46.9	23	168° 39.6	-19° 30.1	23	168° 28.5	-20° 10.2	23	168° 15.7	-20° 46.9
	SD.=16.2	d=-0.7		SD.=16.2	d=-0.6		SD.=16.2	d=-0.6		SD.=16.2	d=-0.5		SD.=16.2	d=-0.5

13	GHA	Dec	16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec
0	183° 56.1	-18° 01.3	0	183° 48.7	-18° 47.5	0	183° 39.5	-19° 30.7	0	183° 28.4	-20° 10.7	0	183° 15.5	-20° 47.4
1	198° 56.0	-18° 02.0	1	198° 48.6	-18° 48.1	1	198° 39.3	-19° 31.3	1	198° 28.2	-20° 11.2	1	198° 15.4	-20° 47.9
2	213° 55.9	-18° 02.6	2	213° 48.5	-18° 48.7	2	213° 39.2	-19° 31.8	2	213° 28.0	-20° 11.8	2	213° 15.2	-20° 48.3
3	228° 55.9	-18° 03.3	3	228° 48.4	-18° 49.3	3	228° 39.0	-19° 32.4	3	228° 27.9	-20° 12.3	3	228° 15.0	-20° 48.8
4	243° 55.8	-18° 03.9	4	243° 48.3	-18° 50.0	4	243° 38.9	-19° 33.0	4	243° 27.7	-20° 12.8	4	243° 14.8	-20° 49.3
5	258° 55.7	-18° 04.6	5	258° 48.1	-18° 50.6	5	258° 38.7	-19° 33.6	5	258° 27.5	-20° 13.4	5	258° 14.6	-20° 49.8
6	273° 55.6	-18° 05.3	6	273° 48.0	-18° 51.2	6	273° 38.6	-19° 34.1	6	273° 27.4	-20° 13.9	6	273° 14.4	-20° 50.3
7	288° 55.5	-18° 05.9	7	288° 47.9	-18° 51.8	7	288° 38.5	-19° 34.7	7	288° 27.2	-20° 14.4	7	288° 14.2	-20° 50.8
8	303° 55.4	-18° 06.6	8	303° 47.8	-18° 52.4	8	303° 38.3	-19° 35.3	8	303° 27.				

2020 November 26 to Dec. 10

26	GHA	Dec	29	GHA	Dec	02	GHA	Dec	05	GHA	Dec	08	GHA	Dec
0	183°10.9	-20°58.8	0	182°55.9	-21°30.8	0	182°39.4	-21°59.1	0	182°21.4	-22°23.6	0	182°02.2	-22°44.2
1	198°10.7	-20°59.3	1	197°55.7	-21°31.2	1	197°39.1	-21°59.5	1	197°21.2	-22°23.9	1	197°01.9	-22°44.5
2	213°10.5	-20°59.8	2	212°55.5	-21°31.6	2	212°38.9	-21°59.8	2	212°20.9	-22°24.2	2	212°01.7	-22°44.7
3	228°10.3	-21°00.2	3	227°55.2	-21°32.1	3	227°38.6	-22°00.2	3	227°20.6	-22°24.5	3	227°01.4	-22°45.0
4	243°10.1	-21°00.7	4	242°55.0	-21°32.5	4	242°38.4	-22°00.6	4	242°20.4	-22°24.9	4	242°01.1	-22°45.2
5	258°09.9	-21°01.2	5	257°54.8	-21°32.9	5	257°38.2	-22°00.9	5	257°20.1	-22°25.2	5	257°00.8	-22°45.5
6	273°09.7	-21°01.6	6	272°54.6	-21°33.3	6	272°37.9	-22°01.3	6	272°19.9	-22°25.5	6	272°00.6	-22°45.7
7	288°09.5	-21°02.1	7	287°54.4	-21°33.7	7	287°37.7	-22°01.7	7	287°19.6	-22°25.8	7	287°00.3	-22°46.0
8	303°09.3	-21°02.6	8	302°54.1	-21°34.1	8	302°37.4	-22°02.0	8	302°19.4	-22°26.1	8	302°00.0	-22°46.3
9	318°09.1	-21°03.0	9	317°53.9	-21°34.5	9	317°37.2	-22°02.4	9	317°19.1	-22°26.4	9	316°59.7	-22°46.5
10	333°08.9	-21°03.5	10	332°53.7	-21°35.0	10	332°37.0	-22°02.7	10	332°18.8	-22°26.7	10	331°59.5	-22°46.8
11	348°08.7	-21°03.9	11	347°53.5	-21°35.4	11	347°36.7	-22°03.1	11	347°18.6	-22°27.0	11	346°59.2	-22°47.0
12	3°08.5	-21°04.4	12	2°53.2	-21°35.8	12	2°36.5	-22°03.5	12	2°18.3	-22°27.3	12	1°58.9	-22°47.3
13	18°08.3	-21°04.9	13	17°53.0	-21°36.2	13	17°36.2	-22°03.8	13	17°18.0	-22°27.6	13	16°58.6	-22°47.5
14	33°08.1	-21°05.3	14	32°52.8	-21°36.6	14	32°36.0	-22°04.2	14	32°17.8	-22°27.9	14	31°58.4	-22°47.8
15	48°07.9	-21°05.8	15	47°52.6	-21°37.0	15	47°35.7	-22°04.5	15	47°17.5	-22°28.2	15	46°58.1	-22°48.0
16	63°07.7	-21°06.2	16	62°52.3	-21°37.4	16	62°35.5	-22°04.9	16	62°17.3	-22°28.5	16	61°57.8	-22°48.2
17	78°07.5	-21°06.7	17	77°52.1	-21°37.8	17	77°35.2	-22°05.2	17	77°17.0	-22°28.8	17	76°57.5	-22°48.5
18	93°07.3	-21°07.2	18	92°51.9	-21°38.2	18	92°35.0	-22°05.6	18	92°16.7	-22°29.1	18	91°57.2	-22°48.7
19	108°07.1	-21°07.6	19	107°51.7	-21°38.6	19	107°34.8	-22°05.9	19	107°16.5	-22°29.4	19	106°57.0	-22°49.0
20	123°06.9	-21°08.1	20	122°51.4	-21°39.0	20	122°34.5	-22°06.3	20	122°16.2	-22°29.7	20	121°56.7	-22°49.2
21	138°06.7	-21°08.5	21	137°51.2	-21°39.4	21	137°34.3	-22°06.6	21	137°15.9	-22°30.0	21	136°56.4	-22°49.5
22	153°06.5	-21°09.0	22	152°51.0	-21°39.8	22	152°34.0	-22°07.0	22	152°15.7	-22°30.3	22	151°56.1	-22°49.7
23	168°06.3	-21°09.4	23	167°50.8	-21°40.2	23	167°33.8	-22°07.4	23	167°15.4	-22°30.6	23	166°55.8	-22°50.0
	SD.=16.2	d=-0.5		SD.=16.2	d=-0.4		SD.=16.2	d=-0.4		SD.=16.2	d=-0.3		SD.=16.2	d=-0.3

27	GHA	Dec	30	GHA	Dec	03	GHA	Dec	06	GHA	Dec	09	GHA	Dec
0	183°06.1	-21°09.9	0	182°50.5	-21°40.6	0	182°33.5	-22°07.7	0	182°15.2	-22°30.9	0	181°55.6	-22°50.2
1	198°05.9	-21°10.3	1	197°50.3	-21°41.1	1	197°33.3	-22°08.0	1	197°14.9	-22°31.2	1	196°55.3	-22°50.4
2	213°05.7	-21°10.8	2	212°50.1	-21°41.5	2	212°33.0	-22°08.4	2	212°14.6	-22°31.5	2	211°55.0	-22°50.7
3	228°05.5	-21°11.2	3	227°49.9	-21°41.9	3	227°32.8	-22°08.7	3	227°14.4	-22°31.8	3	226°54.7	-22°50.9
4	243°05.3	-21°11.7	4	242°49.6	-21°42.3	4	242°32.5	-22°09.1	4	242°14.1	-22°32.1	4	241°54.4	-22°51.1
5	258°05.0	-21°12.1	5	257°49.4	-21°42.6	5	257°32.3	-22°09.4	5	257°13.8	-22°32.4	5	256°54.2	-22°51.4
6	273°04.8	-21°12.6	6	272°49.2	-21°43.0	6	272°32.1	-22°09.8	6	272°13.6	-22°32.7	6	271°53.9	-22°51.6
7	288°04.6	-21°13.0	7	287°49.0	-21°43.4	7	287°31.8	-22°10.1	7	287°13.3	-22°33.0	7	286°53.6	-22°51.9
8	303°04.4	-21°13.5	8	302°48.7	-21°43.8	8	302°31.6	-22°10.5	8	302°13.0	-22°33.3	8	301°53.3	-22°52.1
9	318°04.2	-21°13.9	9	317°48.5	-21°44.2	9	317°31.3	-22°10.8	9	317°12.8	-22°33.5	9	316°53.0	-22°52.3
10	333°04.0	-21°14.4	10	332°48.3	-21°44.6	10	332°31.1	-22°11.2	10	332°12.5	-22°33.8	10	331°52.8	-22°52.5
11	348°03.8	-21°14.8	11	347°48.0	-21°45.0	11	347°30.8	-22°11.5	11	347°12.2	-22°34.1	11	346°52.5	-22°52.8
12	3°03.6	-21°15.3	12	2°47.8	-21°45.4	12	2°30.6	-22°11.8	12	2°12.0	-22°34.4	12	1°52.2	-22°53.0
13	18°03.4	-21°15.7	13	17°47.6	-21°45.8	13	17°30.3	-22°12.2	13	17°11.7	-22°34.7	13	16°51.9	-22°53.2
14	33°03.2	-21°16.2	14	32°47.4	-21°46.2	14	32°30.1	-22°12.5	14	32°11.4	-22°35.0	14	31°51.6	-22°53.5
15	48°03.0	-21°16.6	15	47°47.1	-21°46.6	15	47°29.8	-22°12.9	15	47°11.2	-22°35.3	15	46°51.4	-22°53.7
16	63°02.8	-21°17.0	16	62°46.9	-21°47.0	16	62°29.6	-22°13.2	16	62°10.9	-22°35.5	16	61°51.1	-22°53.9
17	78°02.5	-21°17.5	17	77°46.7	-21°47.4	17	77°29.3	-22°13.5	17	77°10.6	-22°35.8	17	76°50.8	-22°54.2
18	93°02.3	-21°17.9	18	92°46.4	-21°47.8	18	92°29.1	-22°13.9	18	92°10.4	-22°36.1	18	91°50.5	-22°54.4
19	108°02.1	-21°18.4	19	107°46.2	-21°48.2	19	107°28.8	-22°14.2	19	107°10.1	-22°36.4	19	106°50.2	-22°54.6
20	123°01.9	-21°18.8	20	122°46.0	-21°48.5	20	122°28.6	-22°14.5	20	122°09.8	-22°36.7	20	121°49.9	-22°54.8
21	138°01.7	-21°19.2	21	137°45.7	-21°48.9	21	137°28.3	-22°14.9	21	137°09.6	-22°36.9	21	136°49.7	-22°55.1
22	153°01.5	-21°19.7	22	152°45.5	-21°49.3	22	152°28.1	-22°15.2	22	152°09.3	-22°37.2	22	151°49.4	-22°55.3
23	168°01.3	-21°20.1	23	167°45.3	-21°49.7	23	167°27.8	-22°15.5	23	167°09.0	-22°37.5	23	166°49.1	-22°55.5
	SD.=16.2	d=-0.5		SD.=16.2	d=-0.4		SD.=16.2	d=-0.4		SD.=16.2	d=-0.3		SD.=16.2	d=-0.2

28	GHA	Dec	01	GHA	Dec	04	GHA	Dec	07	GHA	Dec	10	GHA	Dec
0	183°01.1	-21°20.5	0	182°45.0	-21°50.1	0	182°27.6	-22°15.9	0	182°08.8	-22°37.8	0	181°48.8	-22°55.7
1	198°00.9	-21°21.0	1	197°44.8	-21°50.5	1	197°27.3	-22°16.2	1	197°08.5	-22°38.1	1	196°48.5	-22°55.9
2	213°00.6	-21°21.4	2	212°44.6	-21°50.9	2	212°27.0	-22°16.5	2	212°08.2	-22°38.3	2	211°48.2	-22°56.2
3	228°00.4	-21°21.8	3	227°44.3	-21°51.2	3	227°26.8	-22°16.9	3	227°07.9	-22°38.6	3	226°47.9	-22°56.4
4	243°00.2	-21°22.3	4	242°44.1	-21°51.6	4	242°26.5	-22°17.2	4	242°07.7	-22°38.9	4	241°47.7	-22°56.6
5	258°00.0	-21°22.7	5	257°43.9	-21°52.0	5	257°26.3	-22°17.5	5	257°07.4	-22°39.2	5	256°47.4	-22°56.8
6	272°59.8	-21°23.1	6	272°43.6	-21°52.4	6	272°26.0	-22°17.8	6	272°07.1	-22°39.4	6	271°47.1	-22°57.0
7	287°59.6	-21°23.6	7	287°43.4	-21°52.8	7	287°25.8	-22°18.2	7	287°06.9	-22°39.7	7	286°46.8	-22°57.2
8	302°59.4	-21°24.0	8	302°43.2	-21°53.1	8	302°25.5	-22°18.5	8	302°06.6	-22°40.0	8	301°46.5	-22°57.5
9	317°59.1	-21°24.4	9	317°42.9	-21°53.5	9	317°25.3	-22°18.8	9	317°06.3	-22°40.2	9	316°46.2	-22°57.7
10	332°58.9	-21°24.9	10	332°42.7	-21°53.9	10	332°25.0	-22°19.1	10	332°06.0	-22°40.5	10	331°45.9	-22°57.9
11	347°58.7	-21°25.3	11	347°42.5	-21°54.3	11	347°24.8	-22°19.5	11	347°05.8	-22°40.8	11	346°45.7	-22°58.1
12	2°58.5	-2												

11	GHA	Dec	14	GHA	Dec	17	GHA	Dec	20	GHA	Dec	23	GHA	Dec
0	181°41.9	-23°00.8	0	181°20.7	-23°13.3	0	180°58.9	-23°21.6	0	180°36.6	-23°25.8	0	180°14.3	-23°25.6
1	196°41.6	-23°01.0	1	196°20.4	-23°13.4	1	195°58.6	-23°21.7	1	195°36.3	-23°25.8	1	195°14.0	-23°25.6
2	211°41.3	-23°01.2	2	211°20.1	-23°13.6	2	210°58.3	-23°21.8	2	210°36.0	-23°25.8	2	210°13.6	-23°25.6
3	226°41.1	-23°01.4	3	226°19.8	-23°13.7	3	225°58.0	-23°21.9	3	225°35.7	-23°25.8	3	225°13.3	-23°25.5
4	241°40.8	-23°01.6	4	241°19.5	-23°13.9	4	240°57.7	-23°22.0	4	240°35.4	-23°25.9	4	240°13.0	-23°25.5
5	256°40.5	-23°01.8	5	256°19.2	-23°14.0	5	255°57.4	-23°22.1	5	255°35.1	-23°25.9	5	255°12.7	-23°25.5
6	271°40.2	-23°02.0	6	271°18.9	-23°14.1	6	270°57.0	-23°22.1	6	270°34.8	-23°25.9	6	270°12.4	-23°25.4
7	286°39.9	-23°02.2	7	286°18.6	-23°14.3	7	285°56.7	-23°22.2	7	285°34.5	-23°25.9	7	285°12.1	-23°25.4
8	301°39.6	-23°02.4	8	301°18.3	-23°14.4	8	300°56.4	-23°22.3	8	300°34.2	-23°26.0	8	300°11.8	-23°25.4
9	316°39.3	-23°02.6	9	316°18.0	-23°14.6	9	315°56.1	-23°22.4	9	315°33.9	-23°26.0	9	315°11.5	-23°25.3
10	331°39.0	-23°02.8	10	331°17.7	-23°14.7	10	330°55.8	-23°22.5	10	330°33.5	-23°26.0	10	330°11.2	-23°25.3
11	346°38.7	-23°03.0	11	346°17.4	-23°14.8	11	345°55.5	-23°22.5	11	345°33.2	-23°26.0	11	345°10.8	-23°25.2
12	1°38.4	-23°03.2	12	1°17.1	-23°15.0	12	0°55.2	-23°22.6	12	0°32.9	-23°26.0	12	0°10.5	-23°25.2
13	16°38.2	-23°03.4	13	16°16.8	-23°15.1	13	15°54.9	-23°22.7	13	15°32.6	-23°26.0	13	15°10.2	-23°25.2
14	31°37.9	-23°03.6	14	31°16.5	-23°15.2	14	30°54.6	-23°22.8	14	30°32.3	-23°26.1	14	30°09.9	-23°25.1
15	46°37.6	-23°03.7	15	46°16.2	-23°15.4	15	45°54.3	-23°22.8	15	45°32.0	-23°26.1	15	45°09.6	-23°25.1
16	61°37.3	-23°03.9	16	61°15.9	-23°15.5	16	60°54.0	-23°22.9	16	60°31.7	-23°26.1	16	60°09.3	-23°25.0
17	76°37.0	-23°04.1	17	76°15.6	-23°15.6	17	75°53.7	-23°23.0	17	75°31.4	-23°26.1	17	75°09.0	-23°25.0
18	91°36.7	-23°04.3	18	91°15.3	-23°15.8	18	90°53.4	-23°23.1	18	90°31.1	-23°26.1	18	90°08.7	-23°24.9
19	106°36.4	-23°04.5	19	106°15.0	-23°15.9	19	105°53.0	-23°23.1	19	105°30.7	-23°26.1	19	105°08.4	-23°24.9
20	121°36.1	-23°04.7	20	121°14.7	-23°16.0	20	120°52.7	-23°23.2	20	120°30.4	-23°26.1	20	120°08.1	-23°24.9
21	136°35.8	-23°04.9	21	136°14.4	-23°16.2	21	135°52.4	-23°23.3	21	135°30.1	-23°26.2	21	135°07.7	-23°24.8
22	151°35.5	-23°05.1	22	151°14.1	-23°16.3	22	150°52.1	-23°23.3	22	150°29.8	-23°26.2	22	150°07.4	-23°24.8
23	166°35.2	-23°05.2	23	166°13.8	-23°16.4	23	165°51.8	-23°23.4	23	165°29.5	-23°26.2	23	165°07.1	-23°24.7
	SD.=16.2	d=-0.2		SD.=16.2	d=-0.1		SD.=16.3	d=-0.1		SD.=16.3	d=-0.0		SD.=16.3	d=0.0

12	GHA	Dec	15	GHA	Dec	18	GHA	Dec	21	GHA	Dec	24	GHA	Dec
0	181°34.9	-23°05.4	0	181°13.5	-23°16.5	0	180°51.5	-23°23.5	0	180°29.2	-23°26.2	0	180°06.8	-23°24.7
1	196°34.7	-23°05.6	1	196°13.2	-23°16.7	1	195°51.2	-23°23.5	1	195°28.9	-23°26.2	1	195°06.5	-23°24.6
2	211°34.4	-23°05.8	2	211°12.9	-23°16.8	2	210°50.9	-23°23.6	2	210°28.6	-23°26.2	2	210°06.2	-23°24.6
3	226°34.1	-23°06.0	3	226°12.6	-23°16.9	3	225°50.6	-23°23.7	3	225°28.3	-23°26.2	3	225°05.9	-23°24.5
4	241°33.8	-23°06.2	4	241°12.3	-23°17.0	4	240°50.3	-23°23.7	4	240°27.9	-23°26.2	4	240°05.6	-23°24.4
5	256°33.5	-23°06.3	5	256°12.0	-23°17.2	5	255°50.0	-23°23.8	5	255°27.6	-23°26.2	5	255°05.3	-23°24.4
6	271°33.2	-23°06.5	6	271°11.7	-23°17.3	6	270°49.7	-23°23.9	6	270°27.3	-23°26.2	6	270°05.0	-23°24.3
7	286°32.9	-23°06.7	7	286°11.4	-23°17.4	7	285°49.3	-23°23.9	7	285°27.0	-23°26.2	7	285°04.6	-23°24.3
8	301°32.6	-23°06.9	8	301°11.1	-23°17.5	8	300°49.0	-23°24.0	8	300°26.7	-23°26.2	8	300°04.3	-23°24.2
9	316°32.3	-23°07.0	9	316°10.8	-23°17.6	9	315°48.7	-23°24.0	9	315°26.4	-23°26.2	9	315°04.0	-23°24.2
10	331°32.0	-23°07.2	10	331°10.5	-23°17.8	10	330°48.4	-23°24.1	10	330°26.1	-23°26.2	10	330°03.7	-23°24.1
11	346°31.7	-23°07.4	11	346°10.2	-23°17.9	11	345°48.1	-23°24.2	11	345°25.8	-23°26.2	11	345°03.4	-23°24.0
12	1°31.4	-23°07.6	12	1°09.9	-23°18.0	12	0°47.8	-23°24.2	12	0°25.5	-23°26.2	12	0°03.1	-23°24.0
13	16°31.1	-23°07.7	13	16°09.6	-23°18.1	13	15°47.5	-23°24.3	13	15°25.2	-23°26.2	13	15°02.8	-23°23.9
14	31°30.8	-23°07.9	14	31°09.3	-23°18.2	14	30°47.2	-23°24.3	14	30°24.8	-23°26.2	14	30°02.5	-23°23.9
15	46°30.5	-23°08.1	15	46°09.0	-23°18.3	15	45°46.9	-23°24.4	15	45°24.5	-23°26.2	15	45°02.2	-23°23.8
16	61°30.2	-23°08.3	16	61°08.7	-23°18.4	16	60°46.6	-23°24.4	16	60°24.2	-23°26.2	16	60°01.9	-23°23.7
17	76°29.9	-23°08.4	17	76°08.4	-23°18.6	17	75°46.3	-23°24.5	17	75°23.9	-23°26.2	17	75°01.5	-23°23.7
18	91°29.7	-23°08.6	18	91°08.1	-23°18.7	18	90°45.9	-23°24.5	18	90°23.6	-23°26.2	18	90°01.2	-23°23.6
19	106°29.4	-23°08.8	19	106°07.7	-23°18.8	19	105°45.6	-23°24.6	19	105°23.3	-23°26.2	19	105°00.9	-23°23.5
20	121°29.1	-23°08.9	20	121°07.4	-23°18.9	20	120°45.3	-23°24.7	20	120°23.0	-23°26.2	20	120°00.6	-23°23.5
21	136°28.8	-23°09.1	21	136°07.1	-23°19.0	21	135°45.0	-23°24.7	21	135°22.7	-23°26.2	21	135°00.3	-23°23.4
22	151°28.5	-23°09.3	22	151°06.8	-23°19.1	22	150°44.7	-23°24.8	22	150°22.4	-23°26.2	22	149°60.0	-23°23.3
23	166°28.2	-23°09.4	23	166°06.5	-23°19.2	23	165°44.4	-23°24.8	23	165°22.0	-23°26.2	23	164°59.7	-23°23.3
	SD.=16.2	d=-0.2		SD.=16.2	d=-0.1		SD.=16.3	d=-0.1		SD.=16.3	d=-0.0		SD.=16.3	d=0.1

13	GHA	Dec	16	GHA	Dec	19	GHA	Dec	22	GHA	Dec	25	GHA	Dec
0	181°27.9	-23°09.6	0	181°06.2	-23°19.3	0	180°44.1	-23°24.8	0	180°21.7	-23°26.1	0	179°59.4	-23°23.2
1	196°27.6	-23°09.8	1	196°05.9	-23°19.4	1	195°43.8	-23°24.9	1	195°21.4	-23°26.1	1	194°59.1	-23°23.1
2	211°27.3	-23°09.9	2	211°05.6	-23°19.5	2	210°43.5	-23°24.9	2	210°21.1	-23°26.1	2	209°58.8	-23°23.1
3	226°27.0	-23°10.1	3	226°05.3	-23°19.6	3	225°43.2	-23°25.0	3	225°20.8	-23°26.1	3	224°58.4	-23°23.0
4	241°26.7	-23°10.2	4	241°05.0	-23°19.7	4	240°42.9	-23°25.0	4	240°20.5	-23°26.1	4	239°58.1	-23°22.9
5	256°26.4	-23°10.4	5	256°04.7	-23°19.8	5	255°42.5	-23°25.1	5	255°20.2	-23°26.1	5	254°57.8	-23°22.8
6	271°26.1	-23°10.6	6	271°04.4	-23°19.9	6	270°42.2	-23°25.1	6	270°19.9	-23°26.1	6	269°57.5	-23°22.8
7	286°25.8	-23°10.7	7	286°04.1	-23°20.0	7	285°41.9	-23°25.2	7	285°19.6	-23°26.0	7	284°57.2	-23°22.7
8	301°25.5	-23°10.9	8	301°03.8	-23°20.1	8	300°41.6	-23°25.2	8	300°19.2	-23°26.0	8	299°56.9	-23°22.6
9	316°25.2	-23°11.0	9	316°03.5	-23°20.2	9	315°41.3	-23°25.2	9	315°18.9	-23°26.0	9	314°56.6	-23°22.5
10	331°24.9	-23°11.2	10	331°03.2	-23°20.3	10	330°41.0	-23°25.3	10	330°18.6	-23°26.0	10	329°56.3	-23°22.5
11	346°24.6	-23°11.3	11	346°02.9	-23°20.4	11	345°40.7	-23°25.3	11	345°18.3	-23°26.0	11	344°56.0	-23°22.4
12	1°24.3	-23°11.5</td												

26	GHA	Dec	29	GHA	Dec	01	GHA	Dec	04	GHA	Dec	07	GHA	Dec
0	179°52.0	-23°21.3	0	179°30.0	-23°12.7	0	179°08.5	-22°60.0	0	178°47.7	-22°43.1	0	178°27.7	-22°22.1
1	194°51.7	-23°21.2	1	194°29.7	-23°12.6	1	194°08.2	-22°59.7	1	193°47.4	-22°42.8	1	193°27.5	-22°21.8
2	209°51.3	-23°21.1	2	209°29.4	-23°12.4	2	209°07.9	-22°59.5	2	208°47.1	-22°42.6	2	208°27.2	-22°21.5
3	224°51.0	-23°21.0	3	224°29.1	-23°12.3	3	224°07.6	-22°59.3	3	223°46.8	-22°42.3	3	223°26.9	-22°21.2
4	239°50.7	-23°20.9	4	239°28.8	-23°12.1	4	239°07.3	-22°59.1	4	238°46.5	-22°42.0	4	238°26.7	-22°20.9
5	254°50.4	-23°20.8	5	254°28.5	-23°12.0	5	254°07.0	-22°58.9	5	253°46.3	-22°41.8	5	253°26.4	-22°20.5
6	269°50.1	-23°20.7	6	269°28.2	-23°11.8	6	269°06.7	-22°58.7	6	268°46.0	-22°41.5	6	268°26.1	-22°20.2
7	284°49.8	-23°20.6	7	284°27.9	-23°11.7	7	284°06.4	-22°58.5	7	283°45.7	-22°41.2	7	283°25.9	-22°19.9
8	299°49.5	-23°20.5	8	299°27.5	-23°11.5	8	299°06.1	-22°58.3	8	298°45.4	-22°41.0	8	298°25.6	-22°19.6
9	314°49.2	-23°20.4	9	314°27.2	-23°11.3	9	314°05.8	-22°58.1	9	313°45.1	-22°40.7	9	313°25.3	-22°19.3
10	329°48.9	-23°20.3	10	329°26.9	-23°11.2	10	329°05.5	-22°57.9	10	328°44.8	-22°40.4	10	328°25.1	-22°18.9
11	344°48.6	-23°20.2	11	344°26.6	-23°11.0	11	344°05.2	-22°57.6	11	343°44.6	-22°40.1	11	343°24.8	-22°18.6
12	359°48.3	-23°20.1	12	359°26.3	-23°10.9	12	359°05.0	-22°57.4	12	358°44.3	-22°39.9	12	358°24.5	-22°18.3
13	14°48.0	-23°20.0	13	14°26.0	-23°10.7	13	14°04.7	-22°57.2	13	13°44.0	-22°39.6	13	13°24.2	-22°17.9
14	29°47.7	-23°19.9	14	29°25.7	-23°10.6	14	29°04.4	-22°57.0	14	28°43.7	-22°39.3	14	28°24.0	-22°17.6
15	44°47.4	-23°19.8	15	44°25.4	-23°10.4	15	44°04.1	-22°56.8	15	43°43.4	-22°39.0	15	43°23.7	-22°17.3
16	59°47.0	-23°19.7	16	59°25.1	-23°10.2	16	59°03.8	-22°56.6	16	58°43.2	-22°38.8	16	58°23.4	-22°17.0
17	74°46.7	-23°19.6	17	74°24.8	-23°10.1	17	74°03.5	-22°56.3	17	73°42.9	-22°38.5	17	73°23.2	-22°16.6
18	89°46.4	-23°19.5	18	89°24.5	-23°09.9	18	89°03.2	-22°56.1	18	88°42.6	-22°38.2	18	88°22.9	-22°16.3
19	104°46.1	-23°19.4	19	104°24.2	-23°09.7	19	104°02.9	-22°55.9	19	103°42.3	-22°37.9	19	103°22.6	-22°16.0
20	119°45.8	-23°19.3	20	119°23.9	-23°09.6	20	119°02.6	-22°55.7	20	118°42.0	-22°37.7	20	118°22.4	-22°15.6
21	134°45.5	-23°19.2	21	134°23.6	-23°09.4	21	134°02.3	-22°55.5	21	133°41.8	-22°37.4	21	133°22.1	-22°15.3
22	149°45.2	-23°19.1	22	149°23.3	-23°09.3	22	149°02.0	-22°55.2	22	148°41.5	-22°37.1	22	148°21.9	-22°15.0
23	164°44.9	-23°19.0	23	164°23.0	-23°09.1	23	164°01.7	-22°55.0	23	163°41.2	-22°36.8	23	163°21.6	-22°14.6
	SD.=16.3	d=0.1		SD.=16.3	d=0.1		SD.=16.3	d=0.2		SD.=16.3	d=0.3		SD.=16.3	d=0.3

27	GHA	Dec	30	GHA	Dec	02	GHA	Dec	05	GHA	Dec	08	GHA	Dec
0	179°44.6	-23°18.9	0	179°22.7	-23°08.9	0	179°01.5	-22°54.8	0	178°40.9	-22°36.5	0	178°21.3	-22°14.3
1	194°44.3	-23°18.8	1	194°22.4	-23°08.8	1	194°01.2	-22°54.6	1	193°40.6	-22°36.3	1	193°21.1	-22°13.9
2	209°44.0	-23°18.7	2	209°22.1	-23°08.6	2	209°00.9	-22°54.3	2	208°40.4	-22°36.0	2	208°20.8	-22°13.6
3	224°43.7	-23°18.6	3	224°21.8	-23°08.4	3	224°00.6	-22°54.1	3	223°40.1	-22°35.7	3	223°20.5	-22°13.3
4	239°43.4	-23°18.4	4	239°21.5	-23°08.2	4	239°00.3	-22°53.9	4	238°39.8	-22°35.4	4	238°20.3	-22°12.9
5	254°43.1	-23°18.3	5	254°21.2	-23°08.1	5	253°60.0	-22°53.6	5	253°39.5	-22°35.1	5	253°20.0	-22°12.6
6	269°42.7	-23°18.2	6	269°20.9	-23°07.9	6	268°59.7	-22°53.4	6	268°39.2	-22°34.8	6	268°19.7	-22°12.3
7	284°42.4	-23°18.1	7	284°20.6	-23°07.7	7	283°59.4	-22°53.2	7	283°39.0	-22°34.6	7	283°19.5	-22°11.9
8	299°42.1	-23°18.0	8	299°20.3	-23°07.6	8	298°59.1	-22°53.0	8	298°38.7	-22°34.3	8	298°19.2	-22°11.6
9	314°41.8	-23°17.9	9	314°20.0	-23°07.4	9	313°58.8	-22°52.7	9	313°38.4	-22°34.0	9	313°18.9	-22°11.2
10	329°41.5	-23°17.8	10	329°19.7	-23°07.2	10	328°58.6	-22°52.5	10	328°38.1	-22°33.7	10	328°18.7	-22°10.9
11	344°41.2	-23°17.6	11	344°19.4	-23°07.0	11	343°58.3	-22°52.3	11	343°37.9	-22°33.4	11	343°18.4	-22°10.5
12	359°40.9	-23°17.5	12	359°19.1	-23°06.8	12	358°58.0	-22°52.0	12	358°37.6	-22°33.1	12	358°18.2	-22°10.2
13	14°40.6	-23°17.4	13	14°18.8	-23°06.7	13	13°57.7	-22°51.8	13	13°37.3	-22°32.8	13	13°17.9	-22°09.8
14	29°40.3	-23°17.3	14	29°18.5	-23°06.5	14	28°57.4	-22°51.6	14	28°37.0	-22°32.5	14	28°17.6	-22°09.5
15	44°40.0	-23°17.2	15	44°18.2	-23°06.3	15	43°57.1	-22°51.3	15	43°36.8	-22°32.2	15	43°17.4	-22°09.1
16	59°39.7	-23°17.0	16	59°17.9	-23°06.1	16	58°56.8	-22°51.1	16	58°36.5	-22°31.9	16	58°17.1	-22°08.8
17	74°39.4	-23°16.9	17	74°17.7	-23°06.0	17	73°56.5	-22°50.8	17	73°36.2	-22°31.7	17	73°16.9	-22°08.5
18	89°39.1	-23°16.8	18	89°17.4	-23°05.8	18	88°56.2	-22°50.6	18	88°35.9	-22°31.4	18	88°16.6	-22°08.1
19	104°38.8	-23°16.7	19	104°17.1	-23°05.6	19	103°56.0	-22°50.4	19	103°35.7	-22°31.1	19	103°16.3	-22°07.7
20	119°38.5	-23°16.5	20	119°16.8	-23°05.4	20	118°55.7	-22°50.1	20	118°35.4	-22°30.8	20	118°16.1	-22°07.4
21	134°38.2	-23°16.4	21	134°16.5	-23°05.2	21	133°55.4	-22°49.9	21	133°35.1	-22°30.5	21	133°15.8	-22°07.0
22	149°37.9	-23°16.3	22	149°16.2	-23°05.0	22	148°55.1	-22°49.6	22	148°34.8	-22°30.2	22	148°15.5	-22°06.7
23	164°37.6	-23°16.2	23	164°15.9	-23°04.9	23	163°54.8	-22°49.4	23	163°34.6	-22°29.9	23	163°15.3	-22°06.3
	SD.=16.3	d=0.1		SD.=16.3	d=0.2		SD.=16.3	d=0.2		SD.=16.3	d=0.3		SD.=16.3	d=0.3

28	GHA	Dec	31	GHA	Dec	03	GHA	Dec	06	GHA	Dec	09	GHA	Dec
0	179°37.3	-23°16.0	0	179°15.6	-23°04.7	0	178°54.5	-22°49.2	0	178°34.3	-22°29.6	0	178°15.0	-22°06.0
1	194°36.9	-23°15.9	1	194°15.3	-23°04.5	1	193°54.2	-22°48.9	1	193°34.0	-22°29.3	1	193°14.8	-22°05.6
2	209°36.6	-23°15.8	2	209°15.0	-23°04.3	2	208°53.9	-22°48.7	2	208°33.7	-22°29.0	2	208°14.5	-22°05.3
3	224°36.3	-23°15.6	3	224°14.7	-23°04.1	3	223°53.7	-22°48.4	3	223°33.5	-22°28.7	3	223°14.2	-22°04.9
4	239°36.0	-23°15.5	4	239°14.4	-23°03.9	4	238°53.4	-22°48.2	4	238°33.2	-22°28.4	4	238°14.0	-22°04.6
5	254°35.7	-23°15.4	5	254°14.1	-23°03.7	5	253°53.1	-22°47.9	5	253°32.9	-22°28.1	5	253°13.7	-22°04.2
6	269°35.4	-23°15.2	6	269°13.8	-23°03.5	6	268°52.8	-22°47.7	6	268°32.6	-22°27.8	6	268°13.5	-22°03.8
7	284°35.1	-23°15.1	7	284°13.5	-23°03.3	7	283°52.5	-22°47.4	7	283°32.4	-22°27.5	7	283°13.2	-22°03.5
8	299°34.8	-23°15.0	8	299°13.2	-23°03.1	8	298°52.2	-22°47.2	8	298°32.1	-22°27.1	8	298°13.0	-22°03.1
9	314°34.5	-23°14.8	9	314°12.9	-23°03.0	9	313°51.9	-22°46.9	9	313°31.8	-22°26.8	9	313°12.7	-22°02.8
10	329°34.2	-23°14.7	10	329°12.6	-23°02.8	10	328°51.7	-22°46.7	10	328°31.5	-22°26.5	10	328°12.4	-22°02.4
11	344°33.9	-23°14.6	11	344°12.3	-23°02.6	11	343°51.4	-22°46.4	11	343°31.3	-22°26.2	11	343°12.2	-22°02.0
12														