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Latitude 60° - 69°
Declination CONTRARY name to Latitude

Sight-Reduction Tables for Latitude 60° - 69°

Declination CONTRARY name to Latitude

Revision V1.2 - Apr2017

Warning and Terms of Usage:

The following pages have been generated by a computer program. Complex computer programs usually have bugs and may produce wrong data. The data in these Tables is believed to be accurate but no warranty is given for its correctness.

Use these Tables only for training and exercising!

Compiled by Erik De Man (mail2erik@siranah.de) on Tue Apr 11 09:22:51 2017

Purpose and Scope

The following tables are designed to determine Altitude and Azimuth of a celestial object, given the position of the observer (Latitude - Longitude) and the coordinates of the celestial object (Declination - GHA). Using the Altitude-Intercept Method, the calculated Altitude H_c and Azimuth Z_c may be used to refine the observer's position by comparing the calculated Altitude H_c with the observed Altitude H_o obtained by means of a sextant measurement.

The tables on the following pages were calculated according to:

$$H_c = \text{asin} (\sin(\text{Latitude}) * \sin(\text{Declination}) + \cos(\text{Latitude}) * \cos(\text{Declination}) * \cos(\text{LHA}))$$
$$Z = \text{atan} (\frac{\cos(\text{Declination}) * \sin(\text{LHA})}{\cos(\text{Latitude}) * \sin(\text{Declination}) - \sin(\text{Latitude}) * \cos(\text{Declination}) * \cos(\text{LHA})})$$

The Local Hour Angle (LHA) is the angle measured westward from the observer's Meridian to the Hour Circle of the observed celestial object: $LHA = GHA + Longitude$.

The tables are organized with the Latitude value as primary parameter. The Latitude value is printed on the first line of each page. The particular values for Declination (Dec) and LHA are read from the vertical and horizontal labels of the tables respectively. Notice that each table entry is valid for two different values of LHA related by $LHA_1 = 360^\circ - LHA_2$ (conjugate LHA angles).

The covered range of the Declination values is limited from 0° to 29° , which applies to the Declination of the Sun, the Moon and the planets used for celestial navigation. The LHA range is such that the resulting Altitude is positive (object above the local horizon).

For practical Sight Reduction this manual is used as follows:

1. select the correct part of the manual (Declination "SAME as" / "CONTRARY to" Latitude),
2. select the correct Latitude page,
3. select the correct LHA column from one of the sub-tables,
4. read the H , dH and Z values from the correct Declination (integral value) line.

Further steps include interpolation for the specific (fractional) value of Declination and determination of the true Azimuth value Z_c according to the following rules:

Latitude NORTH	LHA > 180°: $Z_c = Z$
	LHA < 180°: $Z_c = 360^\circ - Z$
Latitude SOUTH	LHA > 180°: $Z_c = 180^\circ - Z$
	LHA < 180°: $Z_c = 180^\circ + Z$

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	30 00.0 -60.0 180.0	29 59.7 -60.0 178.8	29 58.8 -60.0 177.7	29 57.3 -60.0 176.5	29 55.2 -60.0 175.4
1°	29 00.0 -60.0 180.0	28 59.7 -60.0 178.9	28 58.8 -60.0 177.7	28 57.3 -60.0 176.6	28 55.2 -59.9 175.4
2°	28 00.0 -60.0 180.0	27 59.7 -60.0 178.9	27 58.8 -60.0 177.7	27 57.3 -59.9 176.6	27 55.3 -60.0 175.5
3°	27 00.0 -60.0 180.0	26 59.7 -60.0 178.9	26 58.8 -60.0 177.8	26 57.4 -60.0 176.6	26 55.3 -59.9 175.5
4°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 58.8 -60.0 177.8	25 57.4 -60.0 176.7	25 55.4 -60.0 175.6
5°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 58.8 -59.9 177.8	24 57.4 -60.0 176.7	24 55.4 -60.0 175.6
6°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.9 -60.0 177.8	23 57.4 -59.9 176.7	23 55.4 -59.9 175.6
7°	23 00.0 -60.0 180.0	22 59.7 -60.0 178.9	22 58.9 -60.0 177.8	22 57.5 -60.0 176.8	22 55.5 -60.0 175.7
8°	22 00.0 -60.0 180.0	21 59.7 -60.0 178.9	21 58.9 -60.0 177.9	21 57.5 -60.0 176.8	21 55.5 -59.9 175.7
9°	21 00.0 -60.0 180.0	20 59.7 -60.0 178.9	20 58.9 -60.0 177.9	20 57.5 -60.0 176.8	20 55.6 -60.0 175.8
10°	20 00.0 -60.0 180.0	19 59.7 -60.0 179.0	19 58.9 -60.0 177.9	19 57.5 -59.9 176.9	19 55.6 -59.9 175.8
11°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.9 -60.0 177.9	18 57.6 -60.0 176.9	18 55.7 -60.0 175.8
12°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 58.9 -60.0 177.9	17 57.6 -60.0 176.9	17 55.7 -60.0 175.9
13°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 58.9 -60.0 178.0	16 57.6 -60.0 176.9	16 55.7 -59.9 175.9
14°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 58.9 -59.9 178.0	15 57.6 -60.0 177.0	15 55.8 -60.0 176.0
15°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.0	14 59.0 -60.0 178.0	14 57.6 -59.9 177.0	14 55.8 -59.9 176.0
16°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.0	13 59.0 -60.0 178.0	13 57.7 -60.0 177.0	13 55.9 -60.0 176.0
17°	13 00.0 -60.0 180.0	12 59.7 -60.0 179.0	12 59.0 -60.0 178.0	12 57.7 -60.0 177.1	12 55.9 -60.0 176.1
18°	12 00.0 -60.0 180.0	11 59.7 -60.0 179.0	11 59.0 -60.0 178.1	11 57.7 -60.0 177.1	11 55.9 -59.9 176.1
19°	11 00.0 -60.0 180.0	10 59.7 -59.9 179.0	10 59.0 -60.0 178.1	10 57.7 -59.9 177.1	10 56.0 -60.0 176.1
20°	10 00.0 -60.0 180.0	9 59.8 -60.0 179.0	9 59.0 -60.0 178.1	9 57.8 -60.0 177.1	9 56.0 -60.0 176.2
21°	9 00.0 -60.0 180.0	8 59.8 -60.0 179.1	8 59.0 -60.0 178.1	8 57.8 -60.0 177.2	8 56.0 -59.9 176.2
22°	8 00.0 -60.0 180.0	7 59.8 -60.0 179.1	7 59.0 -60.0 178.1	7 57.8 -60.0 177.2	7 56.1 -60.0 176.3
23°	7 00.0 -60.0 180.0	6 59.8 -60.0 179.1	6 59.0 -60.0 178.1	6 57.8 -60.0 177.2	6 56.1 -59.9 176.3
24°	6 00.0 -60.0 180.0	5 59.8 -60.0 179.1	5 59.0 -60.0 178.2	5 57.8 -59.9 177.2	5 56.2 -60.0 176.3
25°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.1	4 59.0 -59.9 178.2	4 57.9 -60.0 177.3	4 56.2 -60.0 176.4
26°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.1	3 59.1 -60.0 178.2	3 57.9 -60.0 177.3	3 56.2 -59.9 176.4
27°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.1	2 59.1 -60.0 178.2	2 57.9 -60.0 177.3	2 56.3 -60.0 176.4
28°	2 00.0 -60.0 180.0	1 59.8 -60.0 179.1	1 59.1 -60.0 178.2	1 57.9 -60.0 177.3	1 56.3 -60.0 176.5
29°	1 00.0 -60.0 180.0	0 59.8 -60.0 179.1	0 59.1 -60.0 178.3	0 57.9 -59.9 177.4	0 56.3 -59.9 176.5

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	29 52.5 -60.0 174.2	29 49.1 -59.9 173.1	29 45.2 -59.8 171.9	29 40.7 -59.8 170.8	29 35.6 -59.7 169.6
1°	28 52.5 -59.9 174.3	28 49.2 -59.8 173.1	28 45.4 -59.9 172.0	28 40.9 -59.8 170.9	28 35.9 -59.8 169.7
2°	27 52.6 -59.9 174.3	27 49.4 -59.9 173.2	27 45.5 -59.8 172.1	27 41.1 -59.8 171.0	27 36.1 -59.8 169.8
3°	26 52.7 -60.0 174.4	26 49.5 -59.9 173.3	26 45.7 -59.9 172.2	26 41.3 -59.8 171.1	26 36.3 -59.7 169.9
4°	25 52.7 -59.9 174.5	25 49.6 -59.9 173.3	25 45.8 -59.9 172.2	25 41.5 -59.9 171.1	25 36.6 -59.8 170.0
5°	24 52.8 -59.9 174.5	24 49.7 -59.9 173.4	24 45.9 -59.8 172.3	24 41.6 -59.8 171.2	24 36.8 -59.8 170.1
6°	23 52.9 -59.9 174.6	23 49.8 -59.9 173.5	23 46.1 -59.9 172.4	23 41.8 -59.8 171.3	23 37.0 -59.8 170.2
7°	22 53.0 -60.0 174.6	22 49.9 -60.0 173.5	22 46.2 -59.9 172.5	22 42.0 -59.8 171.4	22 37.2 -59.8 170.3
8°	21 53.0 -59.9 174.7	21 49.9 -59.9 173.6	21 46.3 -59.8 172.5	21 42.2 -59.9 171.5	21 37.4 -59.8 170.4
9°	20 53.1 -60.0 174.7	20 50.0 -59.9 173.7	20 46.5 -59.9 172.6	20 42.3 -59.8 171.5	20 37.6 -59.8 170.5
10°	19 53.1 -59.9 174.8	19 50.1 -59.9 173.7	19 46.6 -59.9 172.7	19 42.5 -59.9 171.6	19 37.8 -59.7 170.6
11°	18 53.2 -59.9 174.8	18 50.2 -59.9 173.8	18 46.7 -59.9 172.7	18 42.6 -59.8 171.7	18 38.1 -59.8 170.7
12°	17 53.3 -60.0 174.9	17 50.3 -59.9 173.8	17 46.8 -59.8 172.8	17 42.8 -59.8 171.8	17 38.3 -59.8 170.8
13°	16 53.3 -59.9 174.9	16 50.4 -59.9 173.9	16 47.0 -59.9 172.9	16 43.0 -59.9 171.9	16 38.5 -59.8 170.8
14°	15 53.4 -59.9 175.0	15 50.5 -59.9 173.9	15 47.1 -59.9 172.9	15 43.1 -59.8 171.9	15 38.7 -59.8 170.9
15°	14 53.5 -60.0 175.0	14 50.6 -59.9 174.0	14 47.2 -59.9 173.0	14 43.3 -59.9 172.0	14 38.9 -59.8 171.0
16°	13 53.5 -59.9 175.0	13 50.7 -59.9 174.1	13 47.3 -59.9 173.1	13 43.4 -59.8 172.1	13 39.1 -59.9 171.1
17°	12 53.6 -60.0 175.1	12 50.8 -60.0 174.1	12 47.4 -59.9 173.1	12 43.6 -59.9 172.2	12 39.2 -59.8 171.2
18°	11 53.6 -59.9 175.1	11 50.8 -59.9 174.2	11 47.5 -59.8 173.2	11 43.7 -59.8 172.2	11 39.4 -59.8 171.3
19°	10 53.7 -59.9 175.2	10 50.9 -59.9 174.2	10 47.7 -59.9 173.3	10 43.9 -59.9 172.3	10 39.6 -59.8 171.3
20°	9 53.8 -60.0 175.2	9 51.0 -59.9 174.3	9 47.8 -59.9 173.3	9 44.0 -59.8 172.4	9 39.8 -59.8 171.4
21°	8 53.8 -59.9 175.3	8 51.1 -59.9 174.3	8 47.9 -59.9 173.4	8 44.2 -59.9 172.4	8 40.0 -59.8 171.5
22°	7 53.9 -60.0 175.3	7 51.2 -59.9 174.4	7 48.0 -59.9 173.5	7 44.3 -59.8 172.5	7 40.2 -59.8 171.6
23°	6 53.9 -59.9 175.4	6 51.3 -59.9 174.4	6 48.1 -59.9 173.5	6 44.5 -59.9 172.6	6 40.4 -59.8 171.7
24°	5 54.0 -60.0 175.4	5 51.4 -60.0 174.5	5 48.2 -59.9 173.6	5 44.6 -59.8 172.7	5 40.6 -59.8 171.7
25°	4 54.0 -59.9 175.5	4 51.4 -59.9 174.5	4 48.3 -59.8 173.6	4 44.8 -59.9 172.7	4 40.8 -59.9 171.8
26°	3 54.1 -59.9 175.5	3 51.5 -59.9 174.6	3 48.5 -59.9 173.7	3 44.9 -59.8 172.8	3 40.9 -59.8 171.9
27°	2 54.2 -60.0 175.5	2 51.6 -59.9 174.6	2 48.6 -59.9 173.8	2 45.1 -59.9 172.9	2 41.1 -59.8 172.0
28°	1 54.2 -59.9 175.6	1 51.7 -59.9 174.7	1 48.7 -59.9 173.8	1 45.2 -59.8 172.9	1 41.3 -59.8 172.1
29°	0 54.3 -60.0 175.6	0 51.8 -60.0 174.8	0 48.8 -59.9 173.9	0 45.4 -59.9 173.0	0 41.5 -59.8 172.1

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	29 29.9 -59.7 168.5	29 23.6 -59.6 167.3	29 16.8 -59.6 166.2	29 09.3 -59.5 165.1	29 01.3 -59.4 163.9
1°	28 30.2 -59.7 168.6	28 24.0 -59.6 167.5	28 17.2 -59.6 166.3	28 09.8 -59.5 165.2	28 01.9 -59.4 164.1
2°	27 30.5 -59.7 168.7	27 24.4 -59.7 167.6	27 17.6 -59.6 166.5	27 10.3 -59.5 165.4	27 02.5 -59.5 164.2
3°	26 30.8 -59.7 168.8	26 24.7 -59.7 167.7	26 18.0 -59.6 166.6	26 10.8 -59.5 165.5	26 03.0 -59.4 164.4
4°	25 31.1 -59.7 168.9	25 25.0 -59.6 167.8	25 18.4 -59.6 166.7	25 11.3 -59.6 165.6	25 03.6 -59.5 164.5
5°	24 31.4 -59.8 169.0	24 25.4 -59.7 168.0	24 18.8 -59.6 166.9	24 11.7 -59.5 165.8	24 04.1 -59.5 164.7
6°	23 31.6 -59.7 169.1	23 25.7 -59.7 168.1	23 19.2 -59.6 167.0	23 12.2 -59.6 165.9	23 04.6 -59.5 164.8
7°	22 31.9 -59.7 169.2	22 26.0 -59.7 168.2	22 19.6 -59.6 167.1	22 12.6 -59.5 166.0	22 05.1 -59.5 165.0
8°	21 32.2 -59.8 169.3	21 26.3 -59.6 168.3	21 20.0 -59.7 167.2	21 13.1 -59.6 166.2	21 05.6 -59.5 165.1
9°	20 32.4 -59.7 169.4	20 26.7 -59.7 168.4	20 20.3 -59.6 167.3	20 13.5 -59.6 166.3	20 06.1 -59.5 165.3
10°	19 32.7 -59.8 169.5	19 27.0 -59.7 168.5	19 20.7 -59.6 167.5	19 13.9 -59.5 166.4	19 06.6 -59.5 165.4
11°	18 32.9 -59.7 169.6	18 27.3 -59.7 168.6	18 21.1 -59.7 167.6	18 14.4 -59.6 166.6	18 07.1 -59.5 165.5
12°	17 33.2 -59.8 169.7	17 27.6 -59.7 168.7	17 21.4 -59.6 167.7	17 14.8 -59.6 166.7	17 07.6 -59.5 165.7
13°	16 33.4 -59.7 169.8	16 27.9 -59.7 168.8	16 21.8 -59.7 167.8	16 15.2 -59.6 166.8	16 08.1 -59.5 165.8
14°	15 33.7 -59.8 169.9	15 28.2 -59.7 168.9	15 22.1 -59.6 167.9	15 15.6 -59.6 166.9	15 08.6 -59.6 165.9
15°	14 33.9 -59.7 170.0	14 28.5 -59.8 169.0	14 22.5 -59.7 168.0	14 16.0 -59.6 167.0	14 09.0 -59.5 166.1
16°	13 34.2 -59.8 170.1	13 28.7 -59.7 169.1	13 22.8 -59.6 168.1	13 16.4 -59.6 167.2	13 09.5 -59.5 166.2
17°	12 34.4 -59.8 170.2	12 29.0 -59.7 169.2	12 23.2 -59.7 168.3	12 16.8 -59.6 167.3	12 10.0 -59.6 166.3
18°	11 34.6 -59.7 170.3	11 29.3 -59.7 169.3	11 23.5 -59.6 168.4	11 17.2 -59.6 167.4	11 10.4 -59.5 166.4
19°	10 34.9 -59.8 170.4	10 29.6 -59.7 169.4	10 23.9 -59.7 168.5	10 17.6 -59.6 167.5	10 10.9 -59.6 166.6
20°	9 35.1 -59.8 170.5	9 29.9 -59.7 169.5	9 24.2 -59.7 168.6	9 18.0 -59.6 167.6	9 11.3 -59.5 166.7
21°	8 35.3 -59.7 170.6	8 30.2 -59.8 169.6	8 24.5 -59.6 168.7	8 18.4 -59.6 167.7	8 11.8 -59.6 166.8
22°	7 35.6 -59.8 170.7	7 30.4 -59.7 169.7	7 24.9 -59.7 168.8	7 18.8 -59.6 167.9	7 12.2 -59.5 166.9
23°	6 35.8 -59.8 170.7	6 30.7 -59.7 169.8	6 25.2 -59.7 168.9	6 19.2 -59.6 168.0	6 12.7 -59.6 167.1
24°	5 36.0 -59.8 170.8	5 31.0 -59.7 169.9	5 25.5 -59.7 169.0	5 19.6 -59.7 168.1	5 13.1 -59.5 167.2
25°	4 36.2 -59.7 170.9	4 31.3 -59.7 170.0	4 25.8 -59.6 169.1	4 19.9 -59.6 168.2	4 13.6 -59.6 167.3
26°	3 36.5 -59.8 171.0	3 31.6 -59.8 170.1	3 26.2 -59.7 169.2	3 20.3 -59.6 168.3	3 14.0 -59.5 167.4
27°	2 36.7 -59.8 171.1	2 31.8 -59.7 170.2	2 26.5 -59.7 169.3	2 20.7 -59.6 168.4	2 14.5 -59.6 167.5
28°	1 36.9 -59.7 171.2	1 32.1 -59.7 170.3	1 26.8 -59.7 169.4	1 21.1 -59.6 168.5	1 14.9 -59.6 167.7
29°	0 37.2 -59.8 171.3	0 32.4 -59.7 170.4	0 27.1 -59.6 169.5	0 21.5 -59.7 168.7	0 15.3 -59.5 167.8

Dec	LHA 015° / 345°	LHA 016° / 344°	LHA 017° / 343°	LHA 018° / 342°	LHA 019° / 341°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	28 52.7 -59.3 162.8	28 43.6 -59.3 161.7	28 33.9 -59.2 160.6	28 23.6 -59.1 159.4	28 12.8 -59.0 158.3
1°	27 53.4 -59.4 163.0	27 44.3 -59.2 161.9	27 34.7 -59.2 160.7	27 24.5 -59.0 159.6	27 13.8 -59.0 158.5
2°	26 54.0 -59.3 163.1	26 45.1 -59.3 162.0	26 35.5 -59.2 160.9	26 25.5 -59.2 159.8	26 14.8 -59.0 158.7
3°	25 54.7 -59.4 163.3	25 45.8 -59.3 162.2	25 36.3 -59.2 161.1	25 26.3 -59.1 160.0	25 15.8 -59.0 158.9
4°	24 55.3 -59.4 163.5	24 46.5 -59.3 162.4	24 37.1 -59.2 161.3	24 27.2 -59.1 160.2	24 16.8 -59.0 159.1
5°	23 55.9 -59.4 163.6	23 47.2 -59.4 162.5	23 37.9 -59.2 161.5	23 28.1 -59.2 160.4	23 17.8 -59.1 159.3
6°	22 56.5 -59.4 163.8	22 47.8 -59.3 162.7	22 38.7 -59.3 161.6	22 28.9 -59.1 160.6	22 18.7 -59.1 159.5
7°	21 57.1 -59.4 163.9	21 48.5 -59.3 162.9	21 39.4 -59.2 161.8	21 29.8 -59.2 160.8	21 19.6 -59.1 159.7
8°	20 57.7 -59.5 164.1	20 49.2 -59.4 163.0	20 40.2 -59.3 162.0	20 30.6 -59.2 160.9	20 20.5 -59.0 159.9
9°	19 58.2 -59.4 164.2	19 49.8 -59.3 163.2	19 40.9 -59.3 162.1	19 31.4 -59.2 161.1	19 21.5 -59.2 160.1
10°	18 58.8 -59.4 164.4	18 50.5 -59.4 163.3	18 41.6 -59.3 162.3	18 32.2 -59.2 161.3	18 22.3 -59.1 160.3
11°	17 59.4 -59.5 164.5	17 51.1 -59.4 163.5	17 42.3 -59.3 162.5	17 33.0 -59.2 161.4	17 23.2 -59.1 160.4
12°	16 59.9 -59.4 164.6	16 51.7 -59.3 163.6	16 43.0 -59.3 162.6	16 33.8 -59.2 161.6	16 24.1 -59.1 160.6
13°	16 00.5 -59.5 164.8	15 52.4 -59.4 163.8	15 43.7 -59.3 162.8	15 34.6 -59.2 161.8	15 25.0 -59.2 160.8
14°	15 01.0 -59.4 164.9	14 53.0 -59.4 163.9	14 44.4 -59.3 162.9	14 35.4 -59.3 162.0	14 25.8 -59.1 161.0
15°	14 01.6 -59.5 165.1	13 53.6 -59.4 164.1	13 45.1 -59.3 163.1	13 36.1 -59.2 162.1	13 26.7 -59.2 161.1
16°	13 02.1 -59.5 165.2	12 54.2 -59.4 164.2	12 45.8 -59.3 163.3	12 36.9 -59.2 162.3	12 27.5 -59.1 161.3
17°	12 02.6 -59.4 165.3	11 54.8 -59.4 164.4	11 46.5 -59.4 163.4	11 37.7 -59.3 162.4	11 28.4 -59.2 161.5
18°	11 03.2 -59.5 165.5	10 55.4 -59.4 164.5	10 47.1 -59.3 163.6	10 38.4 -59.3 162.6	10 29.2 -59.2 161.6
19°	10 03.7 -59.5 165.6	9 56.0 -59.4 164.7	9 47.8 -59.3 163.7	9 39.1 -59.2 162.8	9 30.0 -59.2 161.8
20°	9 04.2 -59.5 165.7	8 56.6 -59.5 164.8	8 48.5 -59.4 163.9	8 39.9 -59.3 162.9	8 30.8 -59.1 162.0
21°	8 04.7 -59.5 165.9	7 57.1 -59.4 164.9	7 49.1 -59.3 164.0	7 40.6 -59.2 163.1	7 31.7 -59.2 162.1
22°	7 05.2 -59.5 166.0	6 57.7 -59.4 165.1	6 49.8 -59.4 164.2	6 41.4 -59.3 163.2	6 32.5 -59.2 162.3
23°	6 05.7 -59.5 166.1	5 58.3 -59.4 165.2	5 50.4 -59.3 164.3	5 42.1 -59.3 163.4	5 33.3 -59.2 162.5
24°	5 06.2 -59.5 166.3	4 58.9 -59.4 165.4	4 51.1 -59.4 164.5	4 42.8 -59.3 163.5	4 34.1 -59.2 162.6
25°	4 06.7 -59.4 166.4	3 59.5 -59.5 165.5	3 51.7 -59.3 164.6	3 43.5 -59.2 163.7	3 34.9 -59.2 162.8
26°	3 07.3 -59.5 166.5	3 00.0 -59.4 165.6	2 52.4 -59.4 164.7	2 44.3 -59.3 163.9	2 35.7 -59.2 163.0
27°	2 07.8 -59.5 166.7	2 00.6 -59.4 165.8	1 53.0 -59.3 164.9	1 45.0 -59.3 164.0	1 36.5 -59.2 163.1
28°	1 08.3 -59.5 166.8	1 01.2 -59.4 165.9	0 53.7 -59.4 165.0	0 45.7 -59.3 164.2	0 37.3 -59.2 163.3
29°	0 08.8 -59.5 166.9	0 01.8 -59.5 166.0	-0 05.7 -59.3	-0 13.6 -59.3	-0 21.9 -59.2

Dec	LHA 020° / 340°	LHA 021° / 339°	LHA 022° / 338°	LHA 023° / 337°	LHA 024° / 336°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	28 01.5 -58.9 157.2	27 49.6 -58.8 156.1	27 37.1 -58.6 155.0	27 24.2 -58.5 153.9	27 10.7 -58.4 152.8
1°	27 02.6 -58.9 157.4	26 50.8 -58.8 156.3	26 38.5 -58.7 155.2	26 25.7 -58.6 154.1	26 12.3 -58.4 153.0
2°	26 03.7 -58.9 157.6	25 52.0 -58.8 156.5	25 39.8 -58.7 155.5	25 27.1 -58.6 154.4	25 13.9 -58.5 153.3
3°	25 04.8 -58.9 157.8	24 53.2 -58.8 156.8	24 41.1 -58.7 155.7	24 28.5 -58.6 154.6	24 15.4 -58.5 153.5
4°	24 05.9 -59.0 158.1	23 54.4 -58.9 157.0	23 42.4 -58.8 155.9	23 29.9 -58.6 154.8	23 16.9 -58.5 153.8
5°	23 06.9 -59.0 158.3	22 55.5 -58.8 157.2	22 43.6 -58.7 156.1	22 31.3 -58.7 155.1	22 18.4 -58.6 154.0
6°	22 07.9 -58.9 158.5	21 56.7 -58.9 157.4	21 44.9 -58.8 156.4	21 32.6 -58.7 155.3	21 19.8 -58.5 154.3
7°	21 09.0 -59.0 158.7	20 57.8 -58.9 157.6	20 46.1 -58.8 156.6	20 33.9 -58.7 155.5	20 21.3 -58.6 154.5
8°	20 10.0 -59.0 158.9	19 58.9 -58.9 157.8	19 47.3 -58.8 156.8	19 35.2 -58.7 155.8	19 22.7 -58.6 154.7
9°	19 11.0 -59.0 159.0	19 00.0 -58.9 158.0	18 48.5 -58.8 157.0	18 36.5 -58.7 156.0	18 24.1 -58.6 155.0
10°	18 12.0 -59.1 159.2	18 01.1 -59.0 158.2	17 49.7 -58.8 157.2	17 37.8 -58.7 156.2	17 25.5 -58.7 155.2
11°	17 12.9 -59.0 159.4	17 02.1 -58.9 158.4	16 50.9 -58.9 157.4	16 39.1 -58.8 156.4	16 26.8 -58.6 155.4
12°	16 13.9 -59.0 159.6	16 03.2 -58.9 158.6	15 52.0 -58.8 157.6	15 40.3 -58.7 156.6	15 28.2 -58.7 155.6
13°	15 14.9 -59.1 159.8	15 04.3 -59.0 158.8	14 53.2 -58.9 157.8	14 41.6 -58.8 156.8	14 29.5 -58.6 155.8
14°	14 15.8 -59.1 160.0	14 05.3 -59.0 159.0	13 54.3 -58.9 158.0	13 42.8 -58.8 157.0	13 30.9 -58.7 156.1
15°	13 16.7 -59.0 160.2	13 06.3 -59.0 159.2	12 55.4 -58.9 158.2	12 44.0 -58.7 157.2	12 32.2 -58.7 156.3
16°	12 17.7 -59.1 160.3	12 07.3 -59.0 159.4	11 56.5 -58.9 158.4	11 45.3 -58.8 157.4	11 33.5 -58.7 156.5
17°	11 18.6 -59.1 160.5	11 08.3 -58.9 159.6	10 57.6 -58.9 158.6	10 46.5 -58.8 157.6	10 34.8 -58.7 156.7
18°	10 19.5 -59.1 160.7	10 09.4 -59.0 159.7	9 58.7 -58.9 158.8	9 47.7 -58.9 157.8	9 36.1 -58.7 156.9
19°	9 20.4 -59.1 160.9	9 10.4 -59.1 159.9	8 59.8 -58.9 159.0	8 48.8 -58.8 158.0	8 37.4 -58.7 157.1
20°	8 21.3 -59.1 161.0	8 11.3 -59.0 160.1	8 00.9 -58.9 159.2	7 50.0 -58.8 158.2	7 38.7 -58.8 157.3
21°	7 22.2 -59.1 161.2	7 12.3 -59.0 160.3	7 02.0 -58.9 159.4	6 51.2 -58.8 158.4	6 39.9 -58.7 157.5
22°	6 23.1 -59.1 161.4	6 13.3 -59.0 160.5	6 03.1 -59.0 159.6	5 52.4 -58.9 158.6	5 41.2 -58.7 157.7
23°	5 24.0 -59.1 161.6	5 14.3 -59.0 160.7	5 04.1 -58.9 159.7	4 53.5 -58.8 158.8	4 42.5 -58.8 157.9
24°	4 24.9 -59.1 161.7	4 15.3 -59.0 160.8	4 05.2 -58.9 159.9	3 54.7 -58.8 159.0	3 43.7 -58.7 158.1
25°	3 25.8 -59.1 161.9	3 16.3 -59.1 161.0	3 06.3 -59.0 160.1	2 55.9 -58.9 159.2	2 45.0 -58.7 158.3
26°	2 26.7 -59.1 162.1	2 17.2 -59.0 161.2	2 07.3 -58.9 160.3	1 57.0 -58.8 159.4	1 46.3 -58.8 158.5
27°	1 27.6 -59.2 162.3	1 18.2 -59.0 161.4	1 08.4 -58.9 160.5	0 58.2 -58.9 159.6	0 47.5 -58.7 158.7
28°	0 28.4 -59.1 162.4	0 19.2 -59.1 161.6	0 09.5 -59.0 160.7	-0 00.7 -58.8	-0 11.2 -58.8
29°	-0 30.7 -59.1	-0 39.9 -59.0	-0 49.5 -58.9	-0 59.5 -58.9	-1 10.0 -58.7

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	26 56.8 -58.3 151.7	26 42.3 -58.2 150.6	26 27.3 -58.0 149.5	26 11.9 -58.0 148.5	25 55.9 -57.8 147.4
1°	25 58.5 -58.4 152.0	25 44.1 -58.2 150.9	25 29.3 -58.1 149.8	25 13.9 -57.9 148.7	24 58.1 -57.8 147.7
2°	25 00.1 -58.3 152.2	24 45.9 -58.2 151.2	24 31.2 -58.1 150.1	24 16.0 -58.0 149.0	24 00.3 -57.9 148.0
3°	24 01.8 -58.4 152.5	23 47.7 -58.3 151.4	23 33.1 -58.2 150.4	23 18.0 -58.0 149.3	23 02.4 -57.8 148.3
4°	23 03.4 -58.4 152.7	22 49.4 -58.3 151.7	22 34.9 -58.1 150.6	22 20.0 -58.1 149.6	22 04.6 -58.0 148.5
5°	22 05.0 -58.4 153.0	21 51.1 -58.3 151.9	21 36.8 -58.2 150.9	21 21.9 -58.1 149.9	21 06.6 -57.9 148.8
6°	21 06.6 -58.5 153.2	20 52.8 -58.3 152.2	20 38.6 -58.3 151.2	20 23.8 -58.1 150.1	20 08.7 -58.0 149.1
7°	20 08.1 -58.5 153.5	19 54.5 -58.4 152.4	19 40.3 -58.2 151.4	19 25.7 -58.1 150.4	19 10.7 -58.0 149.4
8°	19 09.6 -58.5 153.7	18 56.1 -58.4 152.7	18 42.1 -58.3 151.7	18 27.6 -58.1 150.7	18 12.7 -58.0 149.6
9°	18 11.1 -58.5 153.9	17 57.7 -58.4 152.9	17 43.8 -58.2 151.9	17 29.5 -58.2 150.9	17 14.7 -58.1 149.9
10°	17 12.6 -58.5 154.2	16 59.3 -58.4 153.2	16 45.6 -58.3 152.2	16 31.3 -58.2 151.2	16 16.6 -58.0 150.2
11°	16 14.1 -58.5 154.4	16 00.9 -58.4 153.4	15 47.3 -58.4 152.4	15 33.1 -58.2 151.4	15 18.6 -58.1 150.4
12°	15 15.6 -58.6 154.6	15 02.5 -58.4 153.6	14 48.9 -58.3 152.7	14 34.9 -58.2 151.7	14 20.5 -58.1 150.7
13°	14 17.0 -58.5 154.9	14 04.1 -58.5 153.9	13 50.6 -58.3 152.9	13 36.7 -58.2 151.9	13 22.4 -58.1 151.0
14°	13 18.5 -58.6 155.1	13 05.6 -58.5 154.1	12 52.3 -58.4 153.1	12 38.5 -58.3 152.2	12 24.3 -58.2 151.2
15°	12 19.9 -58.6 155.3	12 07.1 -58.4 154.3	11 53.9 -58.4 153.4	11 40.2 -58.2 152.4	11 26.1 -58.1 151.5
16°	11 21.3 -58.6 155.5	11 08.7 -58.5 154.6	10 55.5 -58.3 153.6	10 42.0 -58.3 152.7	10 28.0 -58.2 151.7
17°	10 22.7 -58.6 155.7	10 10.2 -58.5 154.8	9 57.2 -58.4 153.8	9 43.7 -58.3 152.9	9 29.8 -58.1 152.0
18°	9 24.1 -58.6 156.0	9 11.7 -58.5 155.0	8 58.8 -58.4 154.1	8 45.4 -58.2 153.1	8 31.7 -58.2 152.2
19°	8 25.5 -58.6 156.2	8 13.2 -58.6 155.2	8 00.4 -58.4 154.3	7 47.2 -58.3 153.4	7 33.5 -58.2 152.5
20°	7 26.9 -58.6 156.4	7 14.6 -58.5 155.5	7 02.0 -58.4 154.5	6 48.9 -58.3 153.6	6 35.3 -58.2 152.7
21°	6 28.3 -58.7 156.6	6 16.1 -58.5 155.7	6 03.6 -58.5 154.8	5 50.6 -58.4 153.9	5 37.1 -58.2 152.9
22°	5 29.6 -58.6 156.8	5 17.6 -58.5 155.9	5 05.1 -58.4 155.0	4 52.2 -58.3 154.1	4 38.9 -58.2 153.2
23°	4 31.0 -58.6 157.0	4 19.1 -58.6 156.1	4 06.7 -58.4 155.2	3 53.9 -58.3 154.3	3 40.7 -58.2 153.4
24°	3 32.4 -58.7 157.2	3 20.5 -58.5 156.3	3 08.3 -58.4 155.5	2 55.6 -58.3 154.6	2 42.5 -58.2 153.7
25°	2 33.7 -58.6 157.5	2 22.0 -58.5 156.6	2 09.9 -58.5 155.7	1 57.3 -58.3 154.8	1 44.3 -58.2 153.9
26°	1 35.1 -58.7 157.7	1 23.5 -58.6 156.8	1 11.4 -58.4 155.9	0 59.0 -58.4 155.0	0 46.1 -58.2 154.2
27°	0 36.4 -58.6 157.9	0 24.9 -58.5 157.0	0 13.0 -58.4 156.1	0 00.6 -58.3 155.3	-0 12.1 -58.2
28°	-0 22.2 -58.7	-0 33.6 -58.6	-0 45.4 -58.5	-0 57.7 -58.3	-1 10.3 -58.2
29°	-1 20.9 -58.6	-1 32.2 -58.5	-1 43.9 -58.4	-1 56.0 -58.3	-2 08.5 -58.2

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	25 39.5 -57.6 146.3	25 22.7 -57.6 145.2	25 05.3 -57.4 144.2	24 47.6 -57.3 143.1	24 29.3 -57.1 142.1
1°	24 41.9 -57.7 146.6	24 25.1 -57.5 145.6	24 07.9 -57.4 144.5	23 50.3 -57.3 143.5	23 32.2 -57.1 142.4
2°	23 44.2 -57.8 146.9	23 27.6 -57.6 145.9	23 10.5 -57.5 144.8	22 53.0 -57.3 143.8	22 35.1 -57.2 142.8
3°	22 46.4 -57.7 147.2	22 30.0 -57.7 146.2	22 13.0 -57.5 145.1	21 55.7 -57.4 144.1	21 37.9 -57.3 143.1
4°	21 48.7 -57.8 147.5	21 32.3 -57.7 146.5	21 15.5 -57.5 145.4	20 58.3 -57.4 144.4	20 40.6 -57.3 143.4
5°	20 50.9 -57.9 147.8	20 34.6 -57.7 146.8	20 18.0 -57.6 145.7	20 00.9 -57.5 144.7	19 43.3 -57.3 143.7
6°	19 53.0 -57.8 148.1	19 36.9 -57.7 147.1	19 20.4 -57.6 146.0	19 03.4 -57.4 145.0	18 46.0 -57.3 144.0
7°	18 55.2 -57.9 148.4	18 39.2 -57.7 147.3	18 22.8 -57.6 146.3	18 06.0 -57.5 145.3	17 48.7 -57.4 144.3
8°	17 57.3 -57.9 148.6	17 41.5 -57.8 147.6	17 25.2 -57.7 146.6	17 08.5 -57.6 145.6	16 51.3 -57.4 144.6
9°	16 59.4 -57.9 148.9	16 43.7 -57.8 147.9	16 27.5 -57.6 146.9	16 10.9 -57.5 145.9	15 53.9 -57.4 145.0
10°	16 01.5 -58.0 149.2	15 45.9 -57.8 148.2	15 29.9 -57.7 147.2	15 13.4 -57.6 146.2	14 56.5 -57.4 145.3
11°	15 03.5 -57.9 149.5	14 48.1 -57.9 148.5	14 32.2 -57.8 147.5	14 15.8 -57.6 146.5	13 59.1 -57.5 145.6
12°	14 05.6 -58.0 149.7	13 50.2 -57.8 148.7	13 34.4 -57.7 147.8	13 18.2 -57.6 146.8	13 01.6 -57.5 145.8
13°	13 07.6 -58.0 150.0	12 52.4 -57.9 149.0	12 36.7 -57.8 148.1	12 20.6 -57.6 147.1	12 04.1 -57.5 146.1
14°	12 09.6 -58.0 150.2	11 54.5 -57.9 149.3	11 38.9 -57.7 148.3	11 23.0 -57.7 147.4	11 06.6 -57.5 146.4
15°	11 11.6 -58.0 150.5	10 56.6 -57.9 149.6	10 41.2 -57.8 148.6	10 25.3 -57.6 147.7	10 09.1 -57.5 146.7
16°	10 13.6 -58.1 150.8	9 58.7 -57.9 149.8	9 43.4 -57.8 148.9	9 27.7 -57.7 147.9	9 11.6 -57.6 147.0
17°	9 15.5 -58.0 151.0	9 00.8 -58.0 150.1	8 45.6 -57.8 149.2	8 30.0 -57.7 148.2	8 14.0 -57.6 147.3
18°	8 17.5 -58.1 151.3	8 02.8 -57.9 150.3	7 47.8 -57.8 149.4	7 32.3 -57.7 148.5	7 16.4 -57.5 147.6
19°	7 19.4 -58.1 151.5	7 04.9 -58.0 150.6	6 50.0 -57.9 149.7	6 34.6 -57.7 148.8	6 18.9 -57.6 147.9
20°	6 21.3 -58.0 151.8	6 06.9 -57.9 150.9	5 52.1 -57.8 150.0	5 36.9 -57.7 149.1	5 21.3 -57.6 148.1
21°	5 23.3 -58.1 152.0	5 09.0 -58.0 151.1	4 54.3 -57.8 150.2	4 39.2 -57.7 149.3	4 23.7 -57.6 148.4
22°	4 25.2 -58.1 152.3	4 11.0 -57.9 151.4	3 56.5 -57.9 150.5	3 41.5 -57.7 149.6	3 26.1 -57.6 148.7
23°	3 27.1 -58.1 152.5	3 13.1 -58.0 151.7	2 58.6 -57.8 150.8	2 43.8 -57.8 149.9	2 28.5 -57.6 149.0
24°	2 29.0 -58.1 152.8	2 15.1 -58.0 151.9	2 00.8 -57.9 151.0	1 46.0 -57.7 150.1	1 30.9 -57.6 149.3
25°	1 30.9 -58.1 153.0	1 17.1 -58.0 152.2	1 02.9 -57.8 151.3	0 48.3 -57.7 150.4	0 33.3 -57.6 149.5
26°	0 32.8 -58.1 153.3	0 19.1 -57.9 152.4	0 05.1 -57.9 151.6	-0 09.4 -57.8	-0 24.3 -57.6
27°	-0 25.3 -58.1	-0 38.8 -58.0	-0 52.8 -57.9	-1 07.2 -57.7	-1 21.9 -57.6
28°	-1 23.4 -58.1	-1 36.8 -58.0	-1 50.7 -57.8	-2 04.9 -57.7	-2 19.5 -57.6
29°	-2 21.5 -58.0	-2 34.8 -58.0	-2 48.5 -57.9	-3 02.6 -57.7	-3 17.1 -57.6

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	24 10.7 -57.0 141.0	23 51.6 -56.8 140.0	23 32.1 -56.7 139.0	23 12.2 -56.5 137.9	22 51.9 -56.4 136.9
1°	23 13.7 -57.0 141.4	22 54.8 -56.9 140.4	22 35.4 -56.7 139.3	22 15.7 -56.6 138.3	21 55.5 -56.4 137.3
2°	22 16.7 -57.1 141.7	21 57.9 -56.9 140.7	21 38.7 -56.8 139.7	21 19.1 -56.7 138.7	20 59.1 -56.6 137.7
3°	21 19.6 -57.1 142.1	21 01.0 -57.0 141.0	20 41.9 -56.8 140.0	20 22.4 -56.7 139.0	20 02.5 -56.5 138.0
4°	20 22.5 -57.1 142.4	20 04.0 -57.0 141.4	19 45.1 -56.9 140.4	19 25.7 -56.7 139.4	19 06.0 -56.6 138.4
5°	19 25.4 -57.2 142.7	19 07.0 -57.1 141.7	18 48.2 -56.9 140.7	18 29.0 -56.8 139.7	18 09.4 -56.6 138.7
6°	18 28.2 -57.2 143.0	18 09.9 -57.0 142.0	17 51.3 -57.0 141.0	17 32.2 -56.8 140.0	17 12.8 -56.7 139.1
7°	17 31.0 -57.2 143.3	17 12.9 -57.1 142.4	16 54.3 -56.9 141.4	16 35.4 -56.8 140.4	16 16.1 -56.7 139.4
8°	16 33.8 -57.3 143.7	16 15.8 -57.2 142.7	15 57.4 -57.0 141.7	15 38.6 -56.9 140.7	15 19.4 -56.7 139.7
9°	15 36.5 -57.3 144.0	15 18.6 -57.1 143.0	15 00.4 -57.0 142.0	14 41.7 -56.9 141.0	14 22.7 -56.8 140.1
10°	14 39.2 -57.3 144.3	14 21.5 -57.2 143.3	14 03.4 -57.1 142.3	13 44.8 -56.9 141.4	13 25.9 -56.8 140.4
11°	13 41.9 -57.4 144.6	13 24.3 -57.2 143.6	13 06.3 -57.1 142.7	12 47.9 -56.9 141.7	12 29.1 -56.8 140.7
12°	12 44.5 -57.3 144.9	12 27.1 -57.2 143.9	12 09.2 -57.1 143.0	11 51.0 -57.0 142.0	11 32.3 -56.8 141.1
13°	11 47.2 -57.4 145.2	11 29.9 -57.3 144.2	11 12.1 -57.1 143.3	10 54.0 -57.0 142.3	10 35.5 -56.9 141.4
14°	10 49.8 -57.4 145.5	10 32.6 -57.3 144.5	10 15.0 -57.1 143.6	9 57.0 -57.0 142.7	9 38.6 -56.9 141.7
15°	9 52.4 -57.4 145.8	9 35.3 -57.2 144.8	9 17.9 -57.2 143.9	9 00.0 -57.0 143.0	8 41.7 -56.8 142.1
16°	8 55.0 -57.4 146.1	8 38.1 -57.3 145.1	8 20.7 -57.1 144.2	8 03.0 -57.0 143.3	7 44.9 -56.9 142.4
17°	7 57.6 -57.4 146.4	7 40.8 -57.3 145.4	7 23.6 -57.2 144.5	7 06.0 -57.1 143.6	6 48.0 -57.0 142.7
18°	7 00.2 -57.5 146.7	6 43.5 -57.4 145.7	6 26.4 -57.2 144.8	6 08.9 -57.1 143.9	5 51.0 -56.9 143.0
19°	6 02.7 -57.4 147.0	5 46.1 -57.3 146.0	5 29.2 -57.2 145.1	5 11.8 -57.0 144.2	4 54.1 -56.9 143.3
20°	5 05.3 -57.5 147.2	4 48.8 -57.3 146.3	4 32.0 -57.2 145.4	4 14.8 -57.1 144.5	3 57.2 -57.0 143.6
21°	4 07.8 -57.5 147.5	3 51.5 -57.4 146.6	3 34.8 -57.2 145.7	3 17.7 -57.1 144.8	3 00.2 -56.9 144.0
22°	3 10.3 -57.5 147.8	2 54.1 -57.3 146.9	2 37.6 -57.2 146.0	2 20.6 -57.1 145.2	2 03.3 -56.9 144.3
23°	2 12.8 -57.4 148.1	1 56.8 -57.3 147.2	1 40.4 -57.3 146.3	1 23.5 -57.0 145.5	1 06.4 -57.0 144.6
24°	1 15.4 -57.5 148.4	0 59.5 -57.4 147.5	0 43.1 -57.2 146.6	0 26.5 -57.1 145.8	0 09.4 -57.0 144.9
25°	0 17.9 -57.5 148.7	0 02.1 -57.3 147.8	-0 14.1 -57.2	-0 30.6 -57.1	-0 47.6 -56.9
26°	-0 39.6 -57.5	-0 55.2 -57.4	-1 11.3 -57.2	-1 27.7 -57.1	-1 44.5 -56.9
27°	-1 37.1 -57.4	-1 52.6 -57.3	-2 08.5 -57.2	-2 24.8 -57.1	-2 41.4 -57.0
28°	-2 34.5 -57.5	-2 49.9 -57.4	-3 05.7 -57.2	-3 21.9 -57.0	-3 38.4 -56.9
29°	-3 32.0 -57.5	-3 47.3 -57.3	-4 02.9 -57.2	-4 18.9 -57.1	-4 35.3 -57.0

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	22 31.3 -56.3 135.9	22 10.2 -56.1 134.9	21 48.8 -56.0 133.9	21 27.0 -55.9 132.9	21 04.8 -55.7 131.9
1°	21 35.0 -56.3 136.3	21 14.1 -56.2 135.3	20 52.8 -56.1 134.3	20 31.1 -55.9 133.3	20 09.1 -55.8 132.3
2°	20 38.7 -56.4 136.6	20 17.9 -56.3 135.6	19 56.7 -56.1 134.7	19 35.2 -56.0 133.7	19 13.3 -55.8 132.7
3°	19 42.3 -56.4 137.0	19 21.6 -56.2 136.0	19 00.6 -56.1 135.0	18 39.2 -56.0 134.0	18 17.5 -55.9 133.1
4°	18 45.9 -56.5 137.4	18 25.4 -56.4 136.4	18 04.5 -56.2 135.4	17 43.2 -56.0 134.4	17 21.6 -55.9 133.4
5°	17 49.4 -56.5 137.7	17 29.0 -56.3 136.7	17 08.3 -56.2 135.8	16 47.2 -56.1 134.8	16 25.7 -55.9 133.8
6°	16 52.9 -56.5 138.1	16 32.7 -56.4 137.1	16 12.1 -56.3 136.1	15 51.1 -56.1 135.2	15 29.8 -56.0 134.2
7°	15 56.4 -56.6 138.4	15 36.3 -56.4 137.5	15 15.8 -56.3 136.5	14 55.0 -56.2 135.5	14 33.8 -56.0 134.6
8°	14 59.8 -56.6 138.8	14 39.9 -56.5 137.8	14 19.5 -56.3 136.9	13 58.8 -56.2 135.9	13 37.8 -56.1 134.9
9°	14 03.2 -56.6 139.1	13 43.4 -56.5 138.2	13 23.2 -56.4 137.2	13 02.6 -56.2 136.3	12 41.7 -56.1 135.3
10°	13 06.6 -56.7 139.5	12 46.9 -56.5 138.5	12 26.8 -56.3 137.6	12 06.4 -56.2 136.6	11 45.6 -56.1 135.7
11°	12 09.9 -56.6 139.8	11 50.4 -56.6 138.9	11 30.5 -56.4 137.9	11 10.2 -56.3 137.0	10 49.5 -56.1 136.0
12°	11 13.3 -56.7 140.1	10 53.8 -56.5 139.2	10 34.1 -56.5 138.3	10 13.9 -56.3 137.3	9 53.4 -56.2 136.4
13°	10 16.6 -56.8 140.5	9 57.3 -56.6 139.5	9 37.6 -56.4 138.6	9 17.6 -56.3 137.7	8 57.2 -56.1 136.7
14°	9 19.8 -56.7 140.8	9 00.7 -56.6 139.9	8 41.2 -56.5 138.9	8 21.3 -56.3 138.0	8 01.1 -56.2 137.1
15°	8 23.1 -56.7 141.1	8 04.1 -56.6 140.2	7 44.7 -56.5 139.3	7 25.0 -56.4 138.4	7 04.9 -56.3 137.5
16°	7 26.4 -56.8 141.5	7 07.5 -56.7 140.5	6 48.2 -56.5 139.6	6 28.6 -56.4 138.7	6 08.6 -56.2 137.8
17°	6 29.6 -56.8 141.8	6 10.8 -56.6 140.9	5 51.7 -56.5 140.0	5 32.2 -56.3 139.1	5 12.4 -56.2 138.2
18°	5 32.8 -56.8 142.1	5 14.2 -56.7 141.2	4 55.2 -56.5 140.3	4 35.9 -56.4 139.4	4 16.2 -56.3 138.5
19°	4 36.0 -56.8 142.4	4 17.5 -56.6 141.5	3 58.7 -56.5 140.6	3 39.5 -56.4 139.7	3 19.9 -56.2 138.9
20°	3 39.2 -56.8 142.8	3 20.9 -56.7 141.9	3 02.2 -56.6 141.0	2 43.1 -56.4 140.1	2 23.7 -56.3 139.2
21°	2 42.4 -56.8 143.1	2 24.2 -56.7 142.2	2 05.6 -56.5 141.3	1 46.7 -56.4 140.4	1 27.4 -56.2 139.6
22°	1 45.6 -56.8 143.4	1 27.5 -56.6 142.5	1 09.1 -56.5 141.6	0 50.3 -56.4 140.8	0 31.2 -56.3 139.9
23°	0 48.8 -56.8 143.7	0 30.9 -56.7 142.8	0 12.6 -56.6 142.0	-0 06.1 -56.4	-0 25.1 -56.3
24°	-0 08.0 -56.8	-0 25.8 -56.7	-0 44.0 -56.5	-1 02.5 -56.4	-1 21.4 -56.2
25°	-1 04.8 -56.9	-1 22.5 -56.7	-1 40.5 -56.6	-1 58.9 -56.4	-2 17.6 -56.3
26°	-2 01.7 -56.8	-2 19.2 -56.7	-2 37.1 -56.5	-2 55.3 -56.4	-3 13.9 -56.2
27°	-2 58.5 -56.8	-3 15.9 -56.6	-3 33.6 -56.5	-3 51.7 -56.4	-4 10.1 -56.3
28°	-3 55.3 -56.8	-4 12.5 -56.7	-4 30.1 -56.5	-4 48.1 -56.4	-5 06.4 -56.2
29°	-4 52.1 -56.8	-5 09.2 -56.6	-5 26.6 -56.5	-5 44.5 -56.3	-6 02.6 -56.2

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	20 42.3 -55.6 130.9	20 19.4 -55.4 129.9	19 56.3 -55.3 128.9	19 32.8 -55.2 127.9	19 09.0 -55.1 127.0
1°	19 46.7 -55.6 131.3	19 24.0 -55.5 130.3	19 01.0 -55.4 129.3	18 37.6 -55.2 128.4	18 13.9 -55.1 127.4
2°	18 51.1 -55.7 131.7	18 28.5 -55.5 130.7	18 05.6 -55.4 129.7	17 42.4 -55.3 128.8	17 18.8 -55.1 127.8
3°	17 55.4 -55.7 132.1	17 33.0 -55.6 131.1	17 10.2 -55.5 130.1	16 47.1 -55.3 129.2	16 23.7 -55.2 128.2
4°	16 59.7 -55.8 132.5	16 37.4 -55.7 131.5	16 14.7 -55.5 130.5	15 51.8 -55.4 129.6	15 28.5 -55.2 128.6
5°	16 03.9 -55.8 132.9	15 41.7 -55.6 131.9	15 19.2 -55.5 130.9	14 56.4 -55.4 130.0	14 33.3 -55.3 129.0
6°	15 08.1 -55.9 133.2	14 46.1 -55.7 132.3	14 23.7 -55.6 131.3	14 01.0 -55.4 130.4	13 38.0 -55.3 129.4
7°	14 12.2 -55.8 133.6	13 50.4 -55.8 132.7	13 28.1 -55.6 131.7	13 05.6 -55.5 130.8	12 42.7 -55.4 129.8
8°	13 16.4 -56.0 134.0	12 54.6 -55.8 133.0	12 32.5 -55.6 132.1	12 10.1 -55.5 131.2	11 47.3 -55.3 130.2
9°	12 20.4 -55.9 134.4	11 58.8 -55.8 133.4	11 36.9 -55.7 132.5	11 14.6 -55.6 131.6	10 52.0 -55.4 130.6
10°	11 24.5 -56.0 134.7	11 03.0 -55.8 133.8	10 41.2 -55.7 132.9	10 19.0 -55.5 131.9	9 56.6 -55.5 131.0
11°	10 28.5 -56.0 135.1	10 07.2 -55.9 134.2	9 45.5 -55.7 133.2	9 23.5 -55.6 132.3	9 01.1 -55.4 131.4
12°	9 32.5 -56.0 135.5	9 11.3 -55.9 134.5	8 49.8 -55.8 133.6	8 27.9 -55.6 132.7	8 05.7 -55.5 131.8
13°	8 36.5 -56.0 135.8	8 15.4 -55.9 134.9	7 54.0 -55.8 134.0	7 32.3 -55.7 133.1	7 10.2 -55.5 132.2
14°	7 40.5 -56.1 136.2	7 19.5 -55.9 135.3	6 58.2 -55.8 134.4	6 36.6 -55.6 133.5	6 14.7 -55.5 132.6
15°	6 44.4 -56.1 136.5	6 23.6 -56.0 135.6	6 02.4 -55.8 134.7	5 41.0 -55.7 133.8	5 19.2 -55.6 132.9
16°	5 48.3 -56.1 136.9	5 27.6 -55.9 136.0	5 06.6 -55.8 135.1	4 45.3 -55.7 134.2	4 23.6 -55.5 133.3
17°	4 52.2 -56.1 137.3	4 31.7 -56.0 136.4	4 10.8 -55.8 135.5	3 49.6 -55.7 134.6	3 28.1 -55.6 133.7
18°	3 56.1 -56.1 137.6	3 35.7 -55.9 136.7	3 15.0 -55.8 135.8	2 53.9 -55.7 135.0	2 32.5 -55.5 134.1
19°	3 00.0 -56.1 138.0	2 39.8 -56.0 137.1	2 19.2 -55.9 136.2	1 58.2 -55.7 135.3	1 37.0 -55.6 134.4
20°	2 03.9 -56.1 138.3	1 43.8 -56.0 137.4	1 23.3 -55.8 136.6	1 02.5 -55.7 135.7	0 41.4 -55.5 134.8
21°	1 07.8 -56.1 138.7	0 47.8 -56.0 137.8	0 27.5 -55.9 136.9	0 06.8 -55.7 136.1	-0 14.1 -55.6
22°	0 11.7 -56.2 139.0	-0 08.2 -56.0	-0 28.4 -55.8	-0 48.9 -55.7	-1 09.7 -55.6
23°	-0 44.5 -56.1	-1 04.2 -56.0	-1 24.2 -55.8	-1 44.6 -55.7	-2 05.3 -55.5
24°	-1 40.6 -56.1	-2 00.2 -55.9	-2 20.0 -55.9	-2 40.3 -55.7	-3 00.8 -55.6
25°	-2 36.7 -56.1	-2 56.1 -56.0	-3 15.9 -55.8	-3 36.0 -55.6	-3 56.4 -55.5
26°	-3 32.8 -56.1	-3 52.1 -56.0	-4 11.7 -55.8	-4 31.6 -55.7	-4 51.9 -55.5
27°	-4 28.9 -56.1	-4 48.1 -55.9	-5 07.5 -55.8	-5 27.3 -55.7	-5 47.4 -55.5
28°	-5 25.0 -56.1	-5 44.0 -55.9	-6 03.3 -55.8	-6 23.0 -55.6	-6 42.9 -55.5
29°	-6 21.1 -56.1	-6 39.9 -56.0	-6 59.1 -55.8	-7 18.6 -55.6	-7 38.4 -55.5

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	18 44.8 -54.9 126.0	18 20.4 -54.8 125.0	17 55.7 -54.6 124.1	17 30.7 -54.5 123.1	17 05.5 -54.4 122.2
1°	17 49.9 -54.9 126.4	17 25.6 -54.8 125.5	17 01.1 -54.7 124.5	16 36.2 -54.6 123.6	16 11.1 -54.5 122.6
2°	16 55.0 -55.0 126.9	16 30.8 -54.9 125.9	16 06.4 -54.8 124.9	15 41.6 -54.6 124.0	15 16.6 -54.5 123.1
3°	16 00.0 -55.1 127.3	15 35.9 -54.9 126.3	15 11.6 -54.8 125.4	14 47.0 -54.6 124.4	14 22.1 -54.5 123.5
4°	15 04.9 -55.1 127.7	14 41.0 -54.9 126.7	14 16.8 -54.8 125.8	13 52.4 -54.8 124.9	13 27.6 -54.6 123.9
5°	14 09.8 -55.1 128.1	13 46.1 -55.1 127.1	13 22.0 -54.9 126.2	12 57.6 -54.7 125.3	12 33.0 -54.6 124.3
6°	13 14.7 -55.2 128.5	12 51.0 -55.0 127.6	12 27.1 -54.9 126.6	12 02.9 -54.8 125.7	11 38.4 -54.7 124.8
7°	12 19.5 -55.2 128.9	11 56.0 -55.1 128.0	11 32.2 -55.0 127.0	11 08.1 -54.8 126.1	10 43.7 -54.7 125.2
8°	11 24.3 -55.3 129.3	11 00.9 -55.1 128.4	10 37.2 -54.9 127.4	10 13.3 -54.9 126.5	9 49.0 -54.7 125.6
9°	10 29.0 -55.2 129.7	10 05.8 -55.1 128.8	9 42.3 -55.0 127.9	9 18.4 -54.9 126.9	8 54.3 -54.7 126.0
10°	9 33.8 -55.3 130.1	9 10.7 -55.2 129.2	8 47.3 -55.1 128.3	8 23.5 -54.9 127.3	7 59.6 -54.8 126.4
11°	8 38.5 -55.4 130.5	8 15.5 -55.2 129.6	7 52.2 -55.0 128.7	7 28.6 -54.9 127.8	7 04.8 -54.8 126.8
12°	7 43.1 -55.3 130.9	7 20.3 -55.2 130.0	6 57.2 -55.1 129.1	6 33.7 -54.9 128.2	6 10.0 -54.8 127.3
13°	6 47.8 -55.4 131.3	6 25.1 -55.2 130.4	6 02.1 -55.1 129.5	5 38.8 -55.0 128.6	5 15.2 -54.9 127.7
14°	5 52.4 -55.4 131.7	5 29.9 -55.3 130.8	5 07.0 -55.1 129.9	4 43.8 -55.0 129.0	4 20.3 -54.8 128.1
15°	4 57.0 -55.4 132.0	4 34.6 -55.3 131.1	4 11.9 -55.2 130.3	3 48.8 -55.0 129.4	3 25.5 -54.9 128.5
16°	4 01.6 -55.4 132.4	3 39.3 -55.2 131.5	3 16.7 -55.1 130.6	2 53.8 -55.0 129.8	2 30.6 -54.8 128.9
17°	3 06.2 -55.4 132.8	2 44.1 -55.3 131.9	2 21.6 -55.1 131.0	1 58.8 -55.0 130.2	1 35.8 -54.9 129.3
18°	2 10.8 -55.4 133.2	1 48.8 -55.3 132.3	1 26.5 -55.2 131.4	1 03.8 -55.0 130.6	0 40.9 -54.9 129.7
19°	1 15.4 -55.4 133.6	0 53.5 -55.3 132.7	0 31.3 -55.1 131.8	0 08.8 -55.0 131.0	-0 14.0 -54.9
20°	0 20.0 -55.4 134.0	-0 01.8 -55.3	-0 23.8 -55.2	-0 46.2 -55.0	-1 08.9 -54.8
21°	-0 35.4 -55.5	-0 57.1 -55.2	-1 19.0 -55.1	-1 41.2 -55.0	-2 03.7 -54.9
22°	-1 30.9 -55.4	-1 52.3 -55.3	-2 14.1 -55.2	-2 36.2 -55.0	-2 58.6 -54.8
23°	-2 26.3 -55.4	-2 47.6 -55.3	-3 09.3 -55.1	-3 31.2 -55.0	-3 53.4 -54.9
24°	-3 21.7 -55.4	-3 42.9 -55.2	-4 04.4 -55.1	-4 26.2 -55.0	-4 48.3 -54.8
25°	-4 17.1 -55.4	-4 38.1 -55.3	-4 59.5 -55.1	-5 21.2 -54.9	-5 43.1 -54.8
26°	-5 12.5 -55.4	-5 33.4 -55.2	-5 54.6 -55.1	-6 16.1 -54.9	-6 37.9 -54.8
27°	-6 07.9 -55.3	-6 28.6 -55.2	-6 49.7 -55.0	-7 11.0 -55.0	-7 32.7 -54.8
28°	-7 03.2 -55.4	-7 23.8 -55.2	-7 44.7 -55.1	-8 06.0 -54.8	-8 27.5 -54.7
29°	-7 58.6 -55.3	-8 19.0 -55.2	-8 39.8 -55.0	-9 00.8 -54.9	-9 22.2 -54.7

Dec	LHA 055° / 305°	LHA 056° / 304°	LHA 057° / 303°	LHA 058° / 302°	LHA 059° / 301°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	16 39.9 -54.2 121.2	16 14.2 -54.2 120.3	15 48.1 -54.0 119.4	15 21.9 -53.9 118.4	14 55.4 -53.8 117.5
1°	15 45.7 -54.3 121.7	15 20.0 -54.2 120.7	14 54.1 -54.1 119.8	14 28.0 -54.0 118.9	14 01.6 -53.9 117.9
2°	14 51.4 -54.4 122.1	14 25.8 -54.2 121.2	14 00.0 -54.1 120.3	13 34.0 -54.0 119.3	13 07.7 -53.9 118.4
3°	13 57.0 -54.4 122.6	13 31.6 -54.3 121.6	13 05.9 -54.2 120.7	12 40.0 -54.1 119.8	12 13.8 -53.9 118.9
4°	13 02.6 -54.5 123.0	12 37.3 -54.4 122.1	12 11.7 -54.2 121.1	11 45.9 -54.1 120.2	11 19.9 -54.0 119.3
5°	12 08.1 -54.5 123.4	11 42.9 -54.3 122.5	11 17.5 -54.3 121.6	10 51.8 -54.1 120.7	10 25.9 -54.0 119.7
6°	11 13.6 -54.5 123.8	10 48.6 -54.5 122.9	10 23.2 -54.2 122.0	9 57.7 -54.2 121.1	9 31.9 -54.1 120.2
7°	10 19.1 -54.6 124.3	9 54.1 -54.4 123.4	9 29.0 -54.4 122.4	9 03.5 -54.2 121.5	8 37.8 -54.1 120.6
8°	9 24.5 -54.6 124.7	8 59.7 -54.5 123.8	8 34.6 -54.3 122.9	8 09.3 -54.2 122.0	7 43.7 -54.1 121.1
9°	8 29.9 -54.6 125.1	8 05.2 -54.5 124.2	7 40.3 -54.4 123.3	7 15.1 -54.3 122.4	6 49.6 -54.1 121.5
10°	7 35.3 -54.7 125.5	7 10.7 -54.5 124.6	6 45.9 -54.4 123.7	6 20.8 -54.3 122.8	5 55.5 -54.2 121.9
11°	6 40.6 -54.6 125.9	6 16.2 -54.5 125.0	5 51.5 -54.4 124.1	5 26.5 -54.2 123.3	5 01.3 -54.1 122.4
12°	5 46.0 -54.7 126.4	5 21.7 -54.6 125.5	4 57.1 -54.4 124.6	4 32.3 -54.4 123.7	4 07.2 -54.2 122.8
13°	4 51.3 -54.7 126.8	4 27.1 -54.6 125.9	4 02.7 -54.5 125.0	3 37.9 -54.3 124.1	3 13.0 -54.2 123.2
14°	3 56.6 -54.8 127.2	3 32.5 -54.6 126.3	3 08.2 -54.4 125.4	2 43.6 -54.3 124.5	2 18.8 -54.2 123.7
15°	3 01.8 -54.7 127.6	2 37.9 -54.6 126.7	2 13.8 -54.5 125.8	1 49.3 -54.3 125.0	1 24.6 -54.2 124.1
16°	2 07.1 -54.7 128.0	1 43.3 -54.6 127.1	1 19.3 -54.5 126.3	0 55.0 -54.4 125.4	0 30.4 -54.2 124.5
17°	1 12.4 -54.7 128.4	0 48.7 -54.6 127.5	0 24.8 -54.5 126.7	0 00.6 -54.3 125.8	-0 23.8 -54.2
18°	0 17.7 -54.8 128.8	-0 05.9 -54.6	-0 29.7 -54.4	-0 53.7 -54.4	-1 18.0 -54.3
19°	-0 37.1 -54.7	-1 00.5 -54.6	-1 24.1 -54.5	-1 48.1 -54.3	-2 12.3 -54.1
20°	-1 31.8 -54.7	-1 55.1 -54.6	-2 18.6 -54.4	-2 42.4 -54.3	-3 06.4 -54.2
21°	-2 26.5 -54.8	-2 49.7 -54.5	-3 13.0 -54.5	-3 36.7 -54.3	-4 00.6 -54.2
22°	-3 21.3 -54.7	-3 44.2 -54.6	-4 07.5 -54.4	-4 31.0 -54.3	-4 54.8 -54.2
23°	-4 16.0 -54.7	-4 38.8 -54.6	-5 01.9 -54.4	-5 25.3 -54.3	-5 49.0 -54.1
24°	-5 10.7 -54.7	-5 33.4 -54.5	-5 56.3 -54.4	-6 19.6 -54.2	-6 43.1 -54.1
25°	-6 05.4 -54.6	-6 27.9 -54.5	-6 50.7 -54.4	-7 13.8 -54.3	-7 37.2 -54.1
26°	-7 00.0 -54.7	-7 22.4 -54.5	-7 45.1 -54.4	-8 08.1 -54.2	-8 31.3 -54.1
27°	-7 54.7 -54.6	-8 16.9 -54.5	-8 39.5 -54.3	-9 02.3 -54.1	-9 25.4 -54.0
28°	-8 49.3 -54.6	-9 11.4 -54.4	-9 33.8 -54.3	-9 56.4 -54.2	
29°	-9 43.9 -54.5				

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	14 28.7 -53.7 116.6	14 01.7 -53.6 115.6	13 34.6 -53.5 114.7	13 07.2 -53.4 113.8	12 39.7 -53.3 112.9
1°	13 35.0 -53.8 117.0	13 08.1 -53.6 116.1	12 41.1 -53.5 115.2	12 13.8 -53.4 114.3	11 46.4 -53.3 113.4
2°	12 41.2 -53.8 117.5	12 14.5 -53.7 116.6	11 47.6 -53.6 115.7	11 20.4 -53.5 114.7	10 53.1 -53.4 113.8
3°	11 47.4 -53.8 117.9	11 20.8 -53.7 117.0	10 54.0 -53.6 116.1	10 26.9 -53.5 115.2	9 59.7 -53.4 114.3
4°	10 53.6 -53.9 118.4	10 27.1 -53.8 117.5	10 00.4 -53.7 116.6	9 33.4 -53.5 115.7	9 06.3 -53.5 114.8
5°	9 59.7 -53.9 118.8	9 33.3 -53.8 117.9	9 06.7 -53.7 117.0	8 39.9 -53.6 116.1	8 12.8 -53.4 115.2
6°	9 05.8 -53.9 119.3	8 39.5 -53.8 118.4	8 13.0 -53.7 117.5	7 46.3 -53.6 116.6	7 19.4 -53.5 115.7
7°	8 11.9 -54.0 119.7	7 45.7 -53.8 118.8	7 19.3 -53.7 117.9	6 52.7 -53.6 117.0	6 25.9 -53.6 116.1
8°	7 17.9 -54.0 120.2	6 51.9 -53.9 119.3	6 25.6 -53.8 118.4	5 59.1 -53.7 117.5	5 32.3 -53.5 116.6
9°	6 23.9 -54.0 120.6	5 58.0 -53.9 119.7	5 31.8 -53.8 118.8	5 05.4 -53.7 117.9	4 38.8 -53.6 117.0
10°	5 29.9 -54.0 121.0	5 04.1 -53.9 120.2	4 38.0 -53.8 119.3	4 11.7 -53.6 118.4	3 45.2 -53.5 117.5
11°	4 35.9 -54.1 121.5	4 10.2 -54.0 120.6	3 44.2 -53.8 119.7	3 18.1 -53.7 118.8	2 51.7 -53.6 117.9
12°	3 41.8 -54.0 121.9	3 16.2 -53.9 121.0	2 50.4 -53.8 120.1	2 24.4 -53.8 119.3	1 58.1 -53.6 118.4
13°	2 47.8 -54.1 122.3	2 22.3 -54.0 121.5	1 56.6 -53.8 120.6	1 30.6 -53.7 119.7	1 04.5 -53.6 118.8
14°	1 53.7 -54.1 122.8	1 28.3 -53.9 121.9	1 02.8 -53.9 121.0	0 36.9 -53.7 120.2	0 10.9 -53.6 119.3
15°	0 59.6 -54.1 123.2	0 34.4 -54.0 122.3	0 08.9 -53.8 121.5	-0 16.8 -53.7	-0 42.7 -53.6
16°	0 05.5 -54.1 123.6	-0 19.6 -53.9	-0 44.9 -53.9	-1 10.5 -53.7	-1 36.3 -53.6
17°	-0 48.6 -54.0	-1 13.5 -54.0	-1 38.8 -53.8	-2 04.2 -53.7	-2 29.9 -53.6
18°	-1 42.6 -54.1	-2 07.5 -53.9	-2 32.6 -53.8	-2 57.9 -53.7	-3 23.5 -53.6
19°	-2 36.7 -54.1	-3 01.4 -54.0	-3 26.4 -53.8	-3 51.6 -53.7	-4 17.1 -53.5
20°	-3 30.8 -54.0	-3 55.4 -53.9	-4 20.2 -53.8	-4 45.3 -53.7	-5 10.6 -53.5
21°	-4 24.8 -54.1	-4 49.3 -53.9	-5 14.0 -53.8	-5 39.0 -53.6	-6 04.1 -53.6
22°	-5 18.9 -54.0	-5 43.2 -53.9	-6 07.8 -53.7	-6 32.6 -53.6	-6 57.7 -53.4
23°	-6 12.9 -54.0	-6 37.1 -53.8	-7 01.5 -53.7	-7 26.2 -53.6	-7 51.1 -53.5
24°	-7 06.9 -54.0	-7 30.9 -53.9	-7 55.2 -53.7	-8 19.8 -53.6	-8 44.6 -53.4
25°	-8 00.9 -53.9	-8 24.8 -53.8	-8 48.9 -53.7	-9 13.4 -53.5	-9 38.0 -53.4
26°	-8 54.8 -53.9	-9 18.6 -53.7	-9 42.6 -53.6		
27°	-9 48.7 -53.9				
28°					
29°					

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	12 11.9 -53.1 112.0	11 44.0 -53.1 111.1	11 16.0 -53.0 110.2	10 47.7 -52.9 109.3	10 19.3 -52.8 108.4
1°	11 18.8 -53.3 112.5	10 50.9 -53.1 111.6	10 23.0 -53.1 110.7	9 54.8 -53.0 109.8	9 26.5 -52.9 108.9
2°	10 25.5 -53.2 112.9	9 57.8 -53.2 112.0	9 29.9 -53.1 111.1	9 01.8 -52.9 110.2	8 33.6 -52.9 109.3
3°	9 32.3 -53.4 113.4	9 04.6 -53.2 112.5	8 36.8 -53.1 111.6	8 08.9 -53.1 110.7	7 40.7 -52.9 109.8
4°	8 38.9 -53.3 113.9	8 11.4 -53.2 113.0	7 43.7 -53.1 112.1	7 15.8 -53.0 111.2	6 47.8 -53.0 110.3
5°	7 45.6 -53.4 114.3	7 18.2 -53.3 113.4	6 50.6 -53.2 112.5	6 22.8 -53.1 111.7	5 54.8 -53.0 110.8
6°	6 52.2 -53.4 114.8	6 24.9 -53.3 113.9	5 57.4 -53.2 113.0	5 29.7 -53.1 112.1	5 01.8 -53.0 111.2
7°	5 58.8 -53.4 115.2	5 31.6 -53.3 114.4	5 04.2 -53.2 113.5	4 36.6 -53.2 112.6	4 08.8 -53.0 111.7
8°	5 05.4 -53.4 115.7	4 38.3 -53.4 114.8	4 11.0 -53.3 113.9	3 43.4 -53.1 113.1	3 15.8 -53.1 112.2
9°	4 12.0 -53.5 116.2	3 44.9 -53.3 115.3	3 17.7 -53.2 114.4	2 50.3 -53.1 113.5	2 22.7 -53.0 112.6
10°	3 18.5 -53.4 116.6	2 51.6 -53.4 115.7	2 24.5 -53.3 114.9	1 57.2 -53.2 114.0	1 29.7 -53.1 113.1
11°	2 25.1 -53.5 117.1	1 58.2 -53.3 116.2	1 31.2 -53.2 115.3	1 04.0 -53.2 114.5	0 36.6 -53.1 113.6
12°	1 31.6 -53.5 117.5	1 04.9 -53.4 116.7	0 38.0 -53.3 115.8	0 10.8 -53.1 114.9	-0 16.5 -53.0
13°	0 38.1 -53.5 118.0	0 11.5 -53.4 117.1	-0 15.3 -53.3	-0 42.3 -53.2	-1 09.5 -53.1
14°	-0 15.4 -53.5	-0 41.9 -53.4	-1 08.6 -53.2	-1 35.5 -53.1	-2 02.6 -53.0
15°	-1 08.9 -53.5	-1 35.3 -53.3	-2 01.8 -53.3	-2 28.6 -53.2	-2 55.6 -53.1
16°	-2 02.4 -53.4	-2 28.6 -53.4	-2 55.1 -53.2	-3 21.8 -53.1	-3 48.7 -53.0
17°	-2 55.8 -53.5	-3 22.0 -53.3	-3 48.3 -53.3	-4 14.9 -53.1	-4 41.7 -53.0
18°	-3 49.3 -53.4	-4 15.3 -53.3	-4 41.6 -53.2	-5 08.0 -53.1	-5 34.7 -53.0
19°	-4 42.7 -53.5	-5 08.6 -53.4	-5 34.8 -53.2	-6 01.1 -53.1	-6 27.7 -52.9
20°	-5 36.2 -53.4	-6 02.0 -53.2	-6 28.0 -53.1	-6 54.2 -53.0	-7 20.6 -52.9
21°	-6 29.6 -53.4	-6 55.2 -53.3	-7 21.1 -53.2	-7 47.2 -53.0	-8 13.5 -52.9
22°	-7 23.0 -53.3	-7 48.5 -53.2	-8 14.3 -53.1	-8 40.2 -53.0	-9 06.4 -52.9
23°	-8 16.3 -53.3	-8 41.7 -53.2	-9 07.4 -53.0	-9 33.2 -52.9	-9 59.3 -52.8
24°	-9 09.6 -53.3	-9 34.9 -53.2			
25°					
26°					
27°					
28°					
29°					

Dec	LHA 070° / 290°	LHA 071° / 289°	LHA 072° / 288°	LHA 073° / 287°	LHA 074° / 286°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	9 50.8 -52.8 107.5	9 22.1 -52.7 106.6	8 53.3 -52.6 105.7	8 24.4 -52.6 104.8	7 55.3 -52.5 103.9
1°	8 58.0 -52.8 108.0	8 29.4 -52.7 107.1	8 00.7 -52.7 106.2	7 31.8 -52.6 105.3	7 02.8 -52.5 104.4
2°	8 05.2 -52.8 108.5	7 36.7 -52.7 107.6	7 08.0 -52.6 106.7	6 39.2 -52.6 105.8	6 10.3 -52.5 104.9
3°	7 12.4 -52.8 108.9	6 44.0 -52.8 108.1	6 15.4 -52.7 107.2	5 46.6 -52.6 106.3	5 17.8 -52.6 105.4
4°	6 19.6 -52.9 109.4	5 51.2 -52.8 108.5	5 22.7 -52.8 107.6	4 54.0 -52.6 106.8	4 25.2 -52.6 105.9
5°	5 26.7 -52.9 109.9	4 58.4 -52.8 109.0	4 29.9 -52.7 108.1	4 01.4 -52.7 107.3	3 32.6 -52.6 106.4
6°	4 33.8 -53.0 110.4	4 05.6 -52.9 109.5	3 37.2 -52.8 108.6	3 08.7 -52.7 107.7	2 40.0 -52.6 106.9
7°	3 40.8 -52.9 110.8	3 12.7 -52.8 110.0	2 44.4 -52.7 109.1	2 16.0 -52.7 108.2	1 47.4 -52.6 107.3
8°	2 47.9 -53.0 111.3	2 19.9 -52.9 110.4	1 51.7 -52.8 109.6	1 23.3 -52.7 108.7	0 54.8 -52.6 107.8
9°	1 54.9 -52.9 111.8	1 27.0 -52.9 110.9	0 58.9 -52.8 110.0	0 30.6 -52.7 109.2	0 02.2 -52.6 108.3
10°	1 02.0 -53.0 112.2	0 34.1 -52.8 111.4	0 06.1 -52.8 110.5	-0 22.1 -52.7	-0 50.4 -52.6
11°	0 09.0 -52.9 112.7	-0 18.7 -52.9	-0 46.7 -52.7	-1 14.8 -52.7	-1 43.0 -52.6
12°	-0 43.9 -53.0	-1 11.6 -52.9	-1 39.4 -52.8	-2 07.5 -52.6	-2 35.6 -52.6
13°	-1 36.9 -53.0	-2 04.5 -52.8	-2 32.2 -52.8	-3 00.1 -52.7	-3 28.2 -52.6
14°	-2 29.9 -52.9	-2 57.3 -52.9	-3 25.0 -52.7	-3 52.8 -52.7	-4 20.8 -52.5
15°	-3 22.8 -52.9	-3 50.2 -52.8	-4 17.7 -52.8	-4 45.5 -52.6	-5 13.3 -52.6
16°	-4 15.7 -53.0	-4 43.0 -52.8	-5 10.5 -52.7	-5 38.1 -52.6	-6 05.9 -52.5
17°	-5 08.7 -52.8	-5 35.8 -52.8	-6 03.2 -52.6	-6 30.7 -52.6	-6 58.4 -52.5
18°	-6 01.5 -52.9	-6 28.6 -52.8	-6 55.8 -52.7	-7 23.3 -52.5	-7 50.9 -52.4
19°	-6 54.4 -52.9	-7 21.4 -52.7	-7 48.5 -52.6	-8 15.8 -52.5	-8 43.3 -52.4
20°	-7 47.3 -52.8	-8 14.1 -52.7	-8 41.1 -52.6	-9 08.3 -52.5	-9 35.7 -52.4
21°	-8 40.1 -52.7	-9 06.8 -52.6	-9 33.7 -52.5		
22°	-9 32.8 -52.8	-9 59.4 -52.7			
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 075° / 285°	LHA 076° / 284°	LHA 077° / 283°	LHA 078° / 282°	LHA 079° / 281°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	7 26.1 -52.4 103.1	6 56.9 -52.4 102.2	6 27.5 -52.3 101.3	5 58.0 -52.2 100.4	5 28.5 -52.2 99.6
1°	6 33.7 -52.4 103.6	6 04.5 -52.4 102.7	5 35.2 -52.4 101.8	5 05.8 -52.3 100.9	4 36.3 -52.3 100.1
2°	5 41.3 -52.5 104.0	5 12.1 -52.4 103.2	4 42.8 -52.3 102.3	4 13.5 -52.3 101.4	3 44.0 -52.2 100.5
3°	4 48.8 -52.5 104.5	4 19.7 -52.4 103.7	3 50.5 -52.4 102.8	3 21.2 -52.3 101.9	2 51.8 -52.3 101.0
4°	3 56.3 -52.5 105.0	3 27.3 -52.5 104.1	2 58.1 -52.4 103.3	2 28.9 -52.4 102.4	1 59.5 -52.2 101.5
5°	3 03.8 -52.5 105.5	2 34.8 -52.4 104.6	2 05.7 -52.3 103.8	1 36.5 -52.3 102.9	1 07.3 -52.3 102.0
6°	2 11.3 -52.6 106.0	1 42.4 -52.5 105.1	1 13.4 -52.4 104.2	0 44.2 -52.3 103.4	0 15.0 -52.3 102.5
7°	1 18.7 -52.5 106.5	0 49.9 -52.5 105.6	0 21.0 -52.4 104.7	-0 08.1 -52.4	-0 37.3 -52.3
8°	0 26.2 -52.5 107.0	-0 02.6 -52.4	-0 31.4 -52.4	-1 00.5 -52.3	-1 29.6 -52.2
9°	-0 26.3 -52.6	-0 55.0 -52.5	-1 23.8 -52.4	-1 52.8 -52.3	-2 21.8 -52.3
10°	-1 18.9 -52.5	-1 47.5 -52.4	-2 16.2 -52.4	-2 45.1 -52.3	-3 14.1 -52.2
11°	-2 11.4 -52.5	-2 39.9 -52.5	-3 08.6 -52.4	-3 37.4 -52.3	-4 06.3 -52.3
12°	-3 03.9 -52.5	-3 32.4 -52.4	-4 01.0 -52.3	-4 29.7 -52.3	-4 58.6 -52.2
13°	-3 56.4 -52.5	-4 24.8 -52.4	-4 53.3 -52.3	-5 22.0 -52.2	-5 50.8 -52.1
14°	-4 48.9 -52.5	-5 17.2 -52.4	-5 45.6 -52.4	-6 14.2 -52.2	-6 42.9 -52.2
15°	-5 41.4 -52.4	-6 09.6 -52.4	-6 38.0 -52.2	-7 06.4 -52.2	-7 35.1 -52.1
16°	-6 33.8 -52.5	-7 02.0 -52.3	-7 30.2 -52.3	-7 58.6 -52.2	-8 27.2 -52.1
17°	-7 26.3 -52.3	-7 54.3 -52.3	-8 22.5 -52.2	-8 50.8 -52.1	-9 19.3 -52.0
18°	-8 18.6 -52.4	-8 46.6 -52.2	-9 14.7 -52.1	-9 42.9 -52.1	
19°	-9 11.0 -52.3	-9 38.8 -52.2			
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 080° / 280°	LHA 081° / 279°	LHA 082° / 278°	LHA 083° / 277°	LHA 084° / 276°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	4 58.9 -52.2 98.7	4 29.2 -52.2 97.8	3 59.4 -52.1 96.9	3 29.6 -52.1 96.1	2 59.8 -52.1 95.2
1°	4 06.7 -52.2 99.2	3 37.0 -52.1 98.3	3 07.3 -52.1 97.4	2 37.5 -52.0 96.6	2 07.7 -52.0 95.7
2°	3 14.5 -52.2 99.7	2 44.9 -52.2 98.8	2 15.2 -52.1 97.9	1 45.5 -52.1 97.1	1 15.7 -52.1 96.2
3°	2 22.3 -52.2 100.2	1 52.7 -52.1 99.3	1 23.1 -52.1 98.4	0 53.4 -52.1 97.6	0 23.6 -52.0 96.7
4°	1 30.1 -52.2 100.7	1 00.6 -52.2 99.8	0 31.0 -52.2 98.9	0 01.3 -52.1 98.1	-0 28.4 -52.1
5°	0 37.9 -52.3 101.2	0 08.4 -52.2 100.3	-0 21.2 -52.1	-0 50.8 -52.1	-1 20.5 -52.0
6°	-0 14.4 -52.2	-0 43.8 -52.2	-1 13.3 -52.1	-1 42.9 -52.1	-2 12.5 -52.1
7°	-1 06.6 -52.2	-1 36.0 -52.1	-2 05.4 -52.1	-2 35.0 -52.0	-3 04.6 -52.0
8°	-1 58.8 -52.2	-2 28.1 -52.2	-2 57.5 -52.1	-3 27.0 -52.1	-3 56.6 -52.0
9°	-2 51.0 -52.2	-3 20.3 -52.1	-3 49.6 -52.1	-4 19.1 -52.0	-4 48.6 -52.0
10°	-3 43.2 -52.2	-4 12.4 -52.1	-4 41.7 -52.1	-5 11.1 -52.0	-5 40.6 -52.0
11°	-4 35.4 -52.1	-5 04.5 -52.1	-5 33.8 -52.0	-6 03.1 -52.0	-6 32.6 -51.9
12°	-5 27.5 -52.2	-5 56.6 -52.1	-6 25.8 -52.0	-6 55.1 -51.9	-7 24.5 -51.9
13°	-6 19.7 -52.1	-6 48.7 -52.0	-7 17.8 -52.0	-7 47.0 -52.0	-8 16.4 -51.8
14°	-7 11.8 -52.0	-7 40.7 -52.0	-8 09.8 -51.9	-8 39.0 -51.8	-9 08.2 -51.8
15°	-8 03.8 -52.1	-8 32.7 -52.0	-9 01.7 -51.9	-9 30.8 -51.9	
16°	-8 55.9 -52.0	-9 24.7 -51.9	-9 53.6 -51.9		
17°	-9 47.9 -51.9				
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 085° / 275°	LHA 086° / 274°	LHA 087° / 273°	LHA 088° / 272°	LHA 089° / 271°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	2 29.9 -52.1 94.3	1 59.9 -52.0 93.5	1 30.0 -52.0 92.6	1 00.0 -52.0 91.7	0 30.0 -52.0 90.9
1°	1 37.8 -52.0 94.8	1 07.9 -52.0 94.0	0 38.0 -52.0 93.1	0 08.0 -52.0 92.2	-0 22.0 -51.9
2°	0 45.8 -52.0 95.3	0 15.9 -52.0 94.5	-0 14.0 -52.0	-0 44.0 -51.9	-1 13.9 -52.0
3°	-0 06.2 -52.0	-0 36.1 -52.0	-1 06.0 -52.0	-1 35.9 -52.0	-2 05.9 -51.9
4°	-0 58.2 -52.1	-1 28.1 -52.0	-1 58.0 -51.9	-2 27.9 -51.9	-2 57.8 -52.0
5°	-1 50.3 -52.0	-2 20.1 -52.0	-2 49.9 -52.0	-3 19.8 -52.0	-3 49.8 -51.9
6°	-2 42.3 -52.0	-3 12.1 -51.9	-3 41.9 -51.9	-4 11.8 -51.9	-4 41.7 -51.9
7°	-3 34.3 -52.0	-4 04.0 -52.0	-4 33.8 -51.9	-5 03.7 -51.9	-5 33.6 -51.8
8°	-4 26.3 -51.9	-4 56.0 -51.9	-5 25.7 -51.9	-5 55.6 -51.8	-6 25.4 -51.9
9°	-5 18.2 -52.0	-5 47.9 -51.9	-6 17.6 -51.9	-6 47.4 -51.9	-7 17.3 -51.8
10°	-6 10.2 -51.9	-6 39.8 -51.9	-7 09.5 -51.8	-7 39.3 -51.8	-8 09.1 -51.8
11°	-7 02.1 -51.9	-7 31.7 -51.8	-8 01.3 -51.8	-8 31.1 -51.7	-9 00.9 -51.7
12°	-7 54.0 -51.8	-8 23.5 -51.8	-8 53.1 -51.8	-9 22.8 -51.7	-9 52.6 -51.7
13°	-8 45.8 -51.8	-9 15.3 -51.8	-9 44.9 -51.7		
14°	-9 37.6 -51.8				
15°					
16°					
17°					
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Latitude 60°

Declination CONTRARY name to Latitude

Dec	LHA 090° / 270°	LHA 091° / 269°	LHA 092° / 268°	LHA 093° / 267°	LHA 094° / 266°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	0 00.0 -52.0 90.0	-0 30.0 -52.0			
1°	-0 52.0 -51.9	-1 22.0 -51.9			
2°	-1 43.9 -52.0	-2 13.9 -52.0			
3°	-2 35.9 -51.9	-3 05.9 -51.9			
4°	-3 27.8 -51.9	-3 57.8 -51.9			
5°	-4 19.7 -51.9	-4 49.7 -51.9			
6°	-5 11.6 -51.9	-5 41.6 -51.9			
7°	-6 03.5 -51.9	-6 33.5 -51.8			
8°	-6 55.4 -51.8	-7 25.3 -51.8			
9°	-7 47.2 -51.7	-8 17.1 -51.8			
10°	-8 38.9 -51.8	-9 08.9 -51.7			
11°	-9 30.7 -51.7				
12°					
13°					
14°					
15°					
16°					
17°					
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 095° / 265°	LHA 096° / 264°	LHA 097° / 263°	LHA 098° / 262°	LHA 099° / 261°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°					
1°					
2°					
3°					
4°					
5°					
6°					
7°					
8°					
9°					
10°					
11°					
12°					
13°					
14°					
15°					
16°					
17°					
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

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 The data on this page is believed to be accurate but no warranty is given for it's correctness. Use it only for training and exercising!

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	29 00.0 -60.0 180.0	28 59.7 -60.0 178.9	28 58.8 -59.9 177.7	28 57.4 -60.0 176.6	28 55.4 -60.0 175.4
1°	28 00.0 -60.0 180.0	27 59.7 -60.0 178.9	27 58.9 -60.0 177.7	27 57.4 -60.0 176.6	27 55.4 -60.0 175.5
2°	27 00.0 -60.0 180.0	26 59.7 -60.0 178.9	26 58.9 -60.0 177.8	26 57.4 -59.9 176.6	26 55.4 -59.9 175.5
3°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 58.9 -60.0 177.8	25 57.5 -60.0 176.7	25 55.5 -60.0 175.6
4°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 58.9 -60.0 177.8	24 57.5 -60.0 176.7	24 55.5 -59.9 175.6
5°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.9 -60.0 177.8	23 57.5 -60.0 176.7	23 55.6 -60.0 175.6
6°	23 00.0 -60.0 180.0	22 59.7 -60.0 178.9	22 58.9 -60.0 177.8	22 57.5 -59.9 176.8	22 55.6 -59.9 175.7
7°	22 00.0 -60.0 180.0	21 59.7 -60.0 178.9	21 58.9 -60.0 177.9	21 57.6 -60.0 176.8	21 55.7 -60.0 175.7
8°	21 00.0 -60.0 180.0	20 59.7 -60.0 178.9	20 58.9 -60.0 177.9	20 57.6 -60.0 176.8	20 55.7 -60.0 175.8
9°	20 00.0 -60.0 180.0	19 59.7 -60.0 178.9	19 58.9 -60.0 177.9	19 57.6 -60.0 176.8	19 55.7 -59.9 175.8
10°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.9 -59.9 177.9	18 57.6 -60.0 176.9	18 55.8 -60.0 175.8
11°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 59.0 -60.0 177.9	17 57.6 -59.9 176.9	17 55.8 -60.0 175.9
12°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 59.0 -60.0 178.0	16 57.7 -60.0 176.9	16 55.8 -59.9 175.9
13°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 59.0 -60.0 178.0	15 57.7 -60.0 177.0	15 55.9 -60.0 175.9
14°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.0	14 59.0 -60.0 178.0	14 57.7 -60.0 177.0	14 55.9 -59.9 176.0
15°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.0	13 59.0 -60.0 178.0	13 57.7 -60.0 177.0	13 56.0 -60.0 176.0
16°	13 00.0 -60.0 180.0	12 59.7 -59.9 179.0	12 59.0 -60.0 178.0	12 57.7 -59.9 177.0	12 56.0 -60.0 176.1
17°	12 00.0 -60.0 180.0	11 59.8 -60.0 179.0	11 59.0 -60.0 178.0	11 57.8 -60.0 177.1	11 56.0 -59.9 176.1
18°	11 00.0 -60.0 180.0	10 59.8 -60.0 179.0	10 59.0 -60.0 178.1	10 57.8 -60.0 177.1	10 56.1 -60.0 176.1
19°	10 00.0 -60.0 180.0	9 59.8 -60.0 179.0	9 59.0 -60.0 178.1	9 57.8 -60.0 177.1	9 56.1 -60.0 176.2
20°	9 00.0 -60.0 180.0	8 59.8 -60.0 179.0	8 59.0 -60.0 178.1	8 57.8 -60.0 177.1	8 56.1 -59.9 176.2
21°	8 00.0 -60.0 180.0	7 59.8 -60.0 179.1	7 59.0 -59.9 178.1	7 57.8 -59.9 177.2	7 56.2 -60.0 176.2
22°	7 00.0 -60.0 180.0	6 59.8 -60.0 179.1	6 59.1 -60.0 178.1	6 57.9 -60.0 177.2	6 56.2 -60.0 176.3
23°	6 00.0 -60.0 180.0	5 59.8 -60.0 179.1	5 59.1 -60.0 178.1	5 57.9 -60.0 177.2	5 56.2 -59.9 176.3
24°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.1	4 59.1 -60.0 178.2	4 57.9 -60.0 177.2	4 56.3 -60.0 176.3
25°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.1	3 59.1 -60.0 178.2	3 57.9 -60.0 177.3	3 56.3 -60.0 176.4
26°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.1	2 59.1 -60.0 178.2	2 57.9 -59.9 177.3	2 56.3 -59.9 176.4
27°	2 00.0 -60.0 180.0	1 59.8 -60.0 179.1	1 59.1 -60.0 178.2	1 58.0 -60.0 177.3	1 56.4 -60.0 176.4
28°	1 00.0 -60.0 180.0	0 59.8 -60.0 179.1	0 59.1 -60.0 178.2	0 58.0 -60.0 177.4	0 56.4 -60.0 176.5
29°	0 00.0 -60.0 180.0	-0 00.2 -60.0	-0 00.9 -60.0	-0 02.0 -60.0	-0 03.6 -59.9

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	28 52.8 -60.0 174.3	28 49.6 -59.9 173.1	28 45.8 -59.9 172.0	28 41.5 -59.8 170.9	28 36.6 -59.8 169.7
1°	27 52.8 -59.9 174.3	27 49.7 -59.9 173.2	27 45.9 -59.8 172.1	27 41.7 -59.9 171.0	27 36.8 -59.8 169.8
2°	26 52.9 -59.9 174.4	26 49.8 -59.9 173.3	26 46.1 -59.9 172.2	26 41.8 -59.8 171.0	26 37.0 -59.8 169.9
3°	25 53.0 -60.0 174.4	25 49.9 -59.9 173.3	25 46.2 -59.9 172.2	25 42.0 -59.8 171.1	25 37.2 -59.8 170.0
4°	24 53.0 -59.9 174.5	24 50.0 -59.9 173.4	24 46.3 -59.8 172.3	24 42.2 -59.9 171.2	24 37.4 -59.7 170.1
5°	23 53.1 -59.9 174.6	23 50.1 -60.0 173.5	23 46.5 -59.9 172.4	23 42.3 -59.8 171.3	23 37.7 -59.8 170.2
6°	22 53.2 -60.0 174.6	22 50.1 -59.9 173.5	22 46.6 -59.9 172.4	22 42.5 -59.8 171.4	22 37.9 -59.8 170.3
7°	21 53.2 -59.9 174.7	21 50.2 -59.9 173.6	21 46.7 -59.9 172.5	21 42.7 -59.9 171.4	21 38.1 -59.8 170.4
8°	20 53.3 -60.0 174.7	20 50.3 -59.9 173.6	20 46.8 -59.8 172.6	20 42.8 -59.8 171.5	20 38.3 -59.8 170.5
9°	19 53.3 -59.9 174.7	19 50.4 -59.9 173.7	19 47.0 -59.9 172.7	19 43.0 -59.9 171.6	19 38.5 -59.8 170.6
10°	18 53.4 -59.9 174.8	18 50.5 -59.9 173.8	18 47.1 -59.9 172.7	18 43.1 -59.8 171.7	18 38.7 -59.9 170.6
11°	17 53.5 -60.0 174.8	17 50.6 -59.9 173.8	17 47.2 -59.9 172.8	17 43.3 -59.9 171.8	17 38.8 -59.8 170.7
12°	16 53.5 -59.9 174.9	16 50.7 -60.0 173.9	16 47.3 -59.9 172.8	16 43.4 -59.8 171.8	16 39.0 -59.8 170.8
13°	15 53.6 -60.0 174.9	15 50.7 -59.9 173.9	15 47.4 -59.9 172.9	15 43.6 -59.9 171.9	15 39.2 -59.8 170.9
14°	14 53.6 -59.9 175.0	14 50.8 -59.9 174.0	14 47.5 -59.9 173.0	14 43.7 -59.8 172.0	14 39.4 -59.8 171.0
15°	13 53.7 -60.0 175.0	13 50.9 -59.9 174.0	13 47.6 -59.9 173.0	13 43.9 -59.9 172.0	13 39.6 -59.8 171.1
16°	12 53.7 -59.9 175.1	12 51.0 -59.9 174.1	12 47.7 -59.8 173.1	12 44.0 -59.8 172.1	12 39.8 -59.8 171.1
17°	11 53.8 -59.9 175.1	11 51.1 -59.9 174.1	11 47.9 -59.9 173.2	11 44.2 -59.9 172.2	11 40.0 -59.9 171.2
18°	10 53.9 -60.0 175.2	10 51.2 -60.0 174.2	10 48.0 -59.9 173.2	10 44.3 -59.9 172.3	10 40.1 -59.8 171.3
19°	9 53.9 -59.9 175.2	9 51.2 -59.9 174.2	9 48.1 -59.9 173.3	9 44.4 -59.8 172.3	9 40.3 -59.8 171.4
20°	8 54.0 -60.0 175.2	8 51.3 -59.9 174.3	8 48.2 -59.9 173.3	8 44.6 -59.9 172.4	8 40.5 -59.8 171.4
21°	7 54.0 -59.9 175.3	7 51.4 -59.9 174.3	7 48.3 -59.9 173.4	7 44.7 -59.8 172.5	7 40.7 -59.9 171.5
22°	6 54.1 -60.0 175.3	6 51.5 -59.9 174.4	6 48.4 -59.9 173.5	6 44.9 -59.9 172.5	6 40.8 -59.8 171.6
23°	5 54.1 -59.9 175.4	5 51.6 -60.0 174.4	5 48.5 -59.9 173.5	5 45.0 -59.9 172.6	5 41.0 -59.8 171.7
24°	4 54.2 -60.0 175.4	4 51.6 -59.9 174.5	4 48.6 -59.9 173.6	4 45.1 -59.8 172.7	4 41.2 -59.8 171.8
25°	3 54.2 -59.9 175.5	3 51.7 -59.9 174.6	3 48.7 -59.9 173.6	3 45.3 -59.9 172.7	3 41.4 -59.9 171.8
26°	2 54.3 -60.0 175.5	2 51.8 -59.9 174.6	2 48.8 -59.9 173.7	2 45.4 -59.9 172.8	2 41.5 -59.8 171.9
27°	1 54.3 -59.9 175.5	1 51.9 -60.0 174.7	1 48.9 -59.9 173.8	1 45.5 -59.8 172.9	1 41.7 -59.8 172.0
28°	0 54.4 -59.9 175.6	0 51.9 -59.9 174.7	0 49.0 -59.9 173.8	0 45.7 -59.9 172.9	0 41.9 -59.8 172.1
29°	-0 05.5 -60.0	-0 08.0 -59.9	-0 10.9 -59.9	-0 14.2 -59.8	-0 17.9 -59.9

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	28 31.1 -59.7 168.6	28 25.1 -59.7 167.5	28 18.5 -59.6 166.3	28 11.3 -59.5 165.2	28 03.6 -59.4 164.1
1°	27 31.4 -59.7 168.7	27 25.4 -59.7 167.6	27 18.9 -59.6 166.5	27 11.8 -59.5 165.4	27 04.2 -59.5 164.2
2°	26 31.7 -59.8 168.8	26 25.7 -59.6 167.7	26 19.3 -59.7 166.6	26 12.3 -59.6 165.5	26 04.7 -59.5 164.4
3°	25 31.9 -59.7 168.9	25 26.1 -59.7 167.8	25 19.6 -59.6 166.7	25 12.7 -59.6 165.6	25 05.2 -59.5 164.5
4°	24 32.2 -59.8 169.0	24 26.4 -59.7 167.9	24 20.0 -59.6 166.8	24 13.1 -59.5 165.8	24 05.7 -59.5 164.7
5°	23 32.4 -59.7 169.1	23 26.7 -59.7 168.0	23 20.4 -59.7 167.0	23 13.6 -59.6 165.9	23 06.2 -59.5 164.8
6°	22 32.7 -59.8 169.2	22 27.0 -59.7 168.2	22 20.7 -59.6 167.1	22 14.0 -59.6 166.0	22 06.7 -59.5 164.9
7°	21 32.9 -59.7 169.3	21 27.3 -59.7 168.3	21 21.1 -59.6 167.2	21 14.4 -59.6 166.1	21 07.2 -59.6 165.1
8°	20 33.2 -59.8 169.4	20 27.6 -59.7 168.4	20 21.5 -59.7 167.3	20 14.8 -59.6 166.3	20 07.6 -59.5 165.2
9°	19 33.4 -59.7 169.5	19 27.9 -59.7 168.5	19 21.8 -59.7 167.4	19 15.2 -59.6 166.4	19 08.1 -59.5 165.3
10°	18 33.7 -59.8 169.6	18 28.2 -59.8 168.6	18 22.1 -59.6 167.5	18 15.6 -59.6 166.5	18 08.6 -59.6 165.5
11°	17 33.9 -59.8 169.7	17 28.4 -59.7 168.7	17 22.5 -59.7 167.7	17 16.0 -59.6 166.6	17 09.0 -59.5 165.6
12°	16 34.1 -59.7 169.8	16 28.7 -59.7 168.8	16 22.8 -59.7 167.8	16 16.4 -59.6 166.7	16 09.5 -59.6 165.7
13°	15 34.4 -59.8 169.9	15 29.0 -59.7 168.9	15 23.1 -59.6 167.9	15 16.8 -59.6 166.9	15 09.9 -59.5 165.9
14°	14 34.6 -59.8 170.0	14 29.3 -59.7 169.0	14 23.5 -59.7 168.0	14 17.2 -59.7 167.0	14 10.4 -59.6 166.0
15°	13 34.8 -59.8 170.1	13 29.6 -59.8 169.1	13 23.8 -59.7 168.1	13 17.5 -59.6 167.1	13 10.8 -59.6 166.1
16°	12 35.0 -59.7 170.2	12 29.8 -59.7 169.2	12 24.1 -59.7 168.2	12 17.9 -59.6 167.2	12 11.2 -59.5 166.2
17°	11 35.3 -59.8 170.2	11 30.1 -59.7 169.3	11 24.4 -59.7 168.3	11 18.3 -59.6 167.3	11 11.7 -59.6 166.4
18°	10 35.5 -59.8 170.3	10 30.4 -59.8 169.4	10 24.7 -59.6 168.4	10 18.7 -59.7 167.4	10 12.1 -59.6 166.5
19°	9 35.7 -59.8 170.4	9 30.6 -59.7 169.5	9 25.1 -59.7 168.5	9 19.0 -59.6 167.6	9 12.5 -59.6 166.6
20°	8 35.9 -59.8 170.5	8 30.9 -59.8 169.6	8 25.4 -59.7 168.6	8 19.4 -59.6 167.7	8 12.9 -59.5 166.7
21°	7 36.1 -59.7 170.6	7 31.1 -59.7 169.6	7 25.7 -59.7 168.7	7 19.8 -59.7 167.8	7 13.4 -59.6 166.8
22°	6 36.4 -59.8 170.7	6 31.4 -59.7 169.7	6 26.0 -59.7 168.8	6 20.1 -59.6 167.9	6 13.8 -59.6 167.0
23°	5 36.6 -59.8 170.8	5 31.7 -59.8 169.8	5 26.3 -59.7 168.9	5 20.5 -59.7 168.0	5 14.2 -59.6 167.1
24°	4 36.8 -59.8 170.8	4 31.9 -59.7 169.9	4 26.6 -59.7 169.0	4 20.8 -59.6 168.1	4 14.6 -59.6 167.2
25°	3 37.0 -59.8 170.9	3 32.2 -59.8 170.0	3 26.9 -59.7 169.1	3 21.2 -59.6 168.2	3 15.0 -59.5 167.3
26°	2 37.2 -59.8 171.0	2 32.4 -59.7 170.1	2 27.2 -59.7 169.2	2 21.6 -59.7 168.3	2 15.5 -59.6 167.4
27°	1 37.4 -59.8 171.1	1 32.7 -59.7 170.2	1 27.5 -59.7 169.3	1 21.9 -59.6 168.4	1 15.9 -59.6 167.5
28°	0 37.6 -59.7 171.2	0 33.0 -59.8 170.3	0 27.8 -59.7 169.4	0 22.3 -59.7 168.5	0 16.3 -59.6 167.7
29°	-0 22.1 -59.8	-0 26.8 -59.7	-0 31.9 -59.6	-0 37.4 -59.6	-0 43.3 -59.6

Dec	LHA 015° / 345°	LHA 016° / 344°	LHA 017° / 343°	LHA 018° / 342°	LHA 019° / 341°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	27 55.4 -59.4 163.0	27 46.6 -59.3 161.8	27 37.3 -59.3 160.7	27 27.4 -59.1 159.6	27 17.0 -59.0 158.5
1°	26 56.0 -59.4 163.1	26 47.3 -59.3 162.0	26 38.0 -59.2 160.9	26 28.3 -59.2 159.8	26 18.0 -59.1 158.7
2°	25 56.6 -59.4 163.3	25 48.0 -59.4 162.2	25 38.8 -59.3 161.1	25 29.1 -59.2 160.0	25 18.9 -59.1 158.9
3°	24 57.2 -59.4 163.4	24 48.6 -59.3 162.3	24 39.5 -59.2 161.3	24 29.9 -59.2 160.2	24 19.8 -59.1 159.1
4°	23 57.8 -59.5 163.6	23 49.3 -59.4 162.5	23 40.3 -59.3 161.4	23 30.7 -59.2 160.4	23 20.7 -59.1 159.3
5°	22 58.3 -59.4 163.7	22 49.9 -59.4 162.7	22 41.0 -59.3 161.6	22 31.5 -59.2 160.5	22 21.6 -59.1 159.5
6°	21 58.9 -59.5 163.9	21 50.5 -59.3 162.8	21 41.7 -59.3 161.8	21 32.3 -59.2 160.7	21 22.5 -59.2 159.7
7°	20 59.4 -59.4 164.0	20 51.2 -59.4 163.0	20 42.4 -59.3 161.9	20 33.1 -59.2 160.9	20 23.3 -59.1 159.8
8°	20 00.0 -59.5 164.2	19 51.8 -59.4 163.1	19 43.1 -59.3 162.1	19 33.9 -59.3 161.0	19 24.2 -59.2 160.0
9°	19 00.5 -59.5 164.3	18 52.4 -59.4 163.3	18 43.8 -59.4 162.2	18 34.6 -59.2 161.2	18 25.0 -59.1 160.2
10°	18 01.0 -59.5 164.5	17 53.0 -59.4 163.4	17 44.4 -59.3 162.4	17 35.4 -59.3 161.4	17 25.9 -59.2 160.4
11°	17 01.5 -59.4 164.6	16 53.6 -59.4 163.6	16 45.1 -59.3 162.6	16 36.1 -59.2 161.5	16 26.7 -59.2 160.5
12°	16 02.1 -59.5 164.7	15 54.2 -59.5 163.7	15 45.8 -59.4 162.7	15 36.9 -59.3 161.7	15 27.5 -59.2 160.7
13°	15 02.6 -59.5 164.9	14 54.7 -59.4 163.9	14 46.4 -59.4 162.9	14 37.6 -59.3 161.9	14 28.3 -59.2 160.9
14°	14 03.1 -59.5 165.0	13 55.3 -59.4 164.0	13 47.0 -59.3 163.0	13 38.3 -59.3 162.0	13 29.1 -59.2 161.0
15°	13 03.6 -59.5 165.1	12 55.9 -59.5 164.1	12 47.7 -59.4 163.2	12 39.0 -59.3 162.2	12 29.9 -59.2 161.2
16°	12 04.1 -59.5 165.3	11 56.4 -59.4 164.3	11 48.3 -59.3 163.3	11 39.7 -59.3 162.3	11 30.7 -59.2 161.4
17°	11 04.6 -59.5 165.4	10 57.0 -59.4 164.4	10 49.0 -59.4 163.5	10 40.4 -59.3 162.5	10 31.5 -59.3 161.5
18°	10 05.1 -59.6 165.5	9 57.6 -59.5 164.6	9 49.6 -59.4 163.6	9 41.1 -59.3 162.7	9 32.2 -59.2 161.7
19°	9 05.5 -59.5 165.7	8 58.1 -59.4 164.7	8 50.2 -59.4 163.8	8 41.8 -59.3 162.8	8 33.0 -59.2 161.9
20°	8 06.0 -59.5 165.8	7 58.7 -59.5 164.8	7 50.8 -59.4 163.9	7 42.5 -59.3 163.0	7 33.8 -59.3 162.0
21°	7 06.5 -59.5 165.9	6 59.2 -59.4 165.0	6 51.4 -59.4 164.0	6 43.2 -59.3 163.1	6 34.5 -59.2 162.2
22°	6 07.0 -59.5 166.0	5 59.8 -59.5 165.1	5 52.0 -59.3 164.2	5 43.9 -59.3 163.3	5 35.3 -59.2 162.3
23°	5 07.5 -59.5 166.2	5 00.3 -59.5 165.2	4 52.7 -59.4 164.3	4 44.6 -59.3 163.4	4 36.1 -59.3 162.5
24°	4 08.0 -59.6 166.3	4 00.8 -59.4 165.4	3 53.3 -59.4 164.5	3 45.3 -59.4 163.6	3 36.8 -59.2 162.7
25°	3 08.4 -59.5 166.4	3 01.4 -59.5 165.5	2 53.9 -59.4 164.6	2 45.9 -59.3 163.7	2 37.6 -59.3 162.8
26°	2 08.9 -59.5 166.5	2 01.9 -59.4 165.6	1 54.5 -59.4 164.8	1 46.6 -59.3 163.9	1 38.3 -59.2 163.0
27°	1 09.4 -59.5 166.7	1 02.5 -59.5 165.8	0 55.1 -59.4 164.9	0 47.3 -59.3 164.0	0 39.1 -59.3 163.1
28°	0 09.9 -59.6 166.8	0 03.0 -59.5 165.9	-0 04.3 -59.4	-0 12.0 -59.3	-0 20.2 -59.2
29°	-0 49.7 -59.5	-0 56.5 -59.4	-1 03.7 -59.4	-1 11.3 -59.4	-1 19.4 -59.3

Dec	LHA 020° / 340°	LHA 021° / 339°	LHA 022° / 338°	LHA 023° / 337°	LHA 024° / 336°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	27 06.1 -59.0 157.4	26 54.7 -58.9 156.3	26 42.7 -58.7 155.2	26 30.3 -58.7 154.1	26 17.3 -58.5 153.0
1°	26 07.1 -58.9 157.6	25 55.8 -58.9 156.5	25 44.0 -58.8 155.4	25 31.6 -58.6 154.3	25 18.8 -58.6 153.3
2°	25 08.2 -59.0 157.8	24 56.9 -58.9 156.7	24 45.2 -58.8 155.7	24 33.0 -58.7 154.6	24 20.2 -58.6 153.5
3°	24 09.2 -59.0 158.0	23 58.0 -58.9 156.9	23 46.4 -58.8 155.9	23 34.3 -58.8 154.8	23 21.6 -58.6 153.7
4°	23 10.2 -59.1 158.2	22 59.1 -58.9 157.1	22 47.6 -58.9 156.1	22 35.5 -58.7 155.0	22 23.0 -58.6 154.0
5°	22 11.1 -59.0 158.4	22 00.2 -59.0 157.4	21 48.7 -58.8 156.3	21 36.8 -58.7 155.2	21 24.4 -58.7 154.2
6°	21 12.1 -59.0 158.6	21 01.2 -58.9 157.6	20 49.9 -58.9 156.5	20 38.1 -58.8 155.5	20 25.7 -58.6 154.4
7°	20 13.1 -59.1 158.8	20 02.3 -59.0 157.8	19 51.0 -58.8 156.7	19 39.3 -58.8 155.7	19 27.1 -58.7 154.7
8°	19 14.0 -59.1 159.0	19 03.3 -59.0 157.9	18 52.2 -58.9 156.9	18 40.5 -58.8 155.9	18 28.4 -58.7 154.9
9°	18 14.9 -59.1 159.2	18 04.3 -59.0 158.1	17 53.3 -58.9 157.1	17 41.7 -58.8 156.1	17 29.7 -58.7 155.1
10°	17 15.8 -59.1 159.3	17 05.3 -59.0 158.3	16 54.4 -59.0 157.3	16 42.9 -58.8 156.3	16 31.0 -58.7 155.3
11°	16 16.7 -59.1 159.5	16 06.3 -59.0 158.5	15 55.4 -58.9 157.5	15 44.1 -58.8 156.5	15 32.3 -58.8 155.5
12°	15 17.6 -59.1 159.7	15 07.3 -59.0 158.7	14 56.5 -58.9 157.7	14 45.3 -58.9 156.7	14 33.5 -58.7 155.7
13°	14 18.5 -59.1 159.9	14 08.3 -59.0 158.9	13 57.6 -59.0 157.9	13 46.4 -58.8 156.9	13 34.8 -58.8 155.9
14°	13 19.4 -59.1 160.1	13 09.3 -59.1 159.1	12 58.6 -58.9 158.1	12 47.6 -58.9 157.1	12 36.0 -58.7 156.1
15°	12 20.3 -59.1 160.2	12 10.2 -59.0 159.3	11 59.7 -59.0 158.3	11 48.7 -58.9 157.3	11 37.3 -58.8 156.4
16°	11 21.2 -59.2 160.4	11 11.2 -59.1 159.4	11 00.7 -58.9 158.5	10 49.8 -58.8 157.5	10 38.5 -58.8 156.6
17°	10 22.0 -59.1 160.6	10 12.1 -59.0 159.6	10 01.8 -59.0 158.7	9 51.0 -58.9 157.7	9 39.7 -58.8 156.8
18°	9 22.9 -59.2 160.8	9 13.1 -59.1 159.8	9 02.8 -59.0 158.9	8 52.1 -58.9 157.9	8 40.9 -58.8 157.0
19°	8 23.7 -59.1 160.9	8 14.0 -59.1 160.0	8 03.8 -59.0 159.0	7 53.2 -58.9 158.1	7 42.1 -58.8 157.2
20°	7 24.6 -59.2 161.1	7 14.9 -59.1 160.2	7 04.8 -59.0 159.2	6 54.3 -58.9 158.3	6 43.3 -58.8 157.4
21°	6 25.4 -59.1 161.3	6 15.8 -59.0 160.3	6 05.8 -59.0 159.4	5 55.4 -58.9 158.5	5 44.5 -58.8 157.6
22°	5 26.3 -59.2 161.4	5 16.8 -59.1 160.5	5 06.8 -59.0 159.6	4 56.5 -58.9 158.7	4 45.7 -58.8 157.8
23°	4 27.1 -59.2 161.6	4 17.7 -59.1 160.7	4 07.8 -59.0 159.8	3 57.6 -58.9 158.9	3 46.9 -58.8 158.0
24°	3 27.9 -59.1 161.8	3 18.6 -59.1 160.9	3 08.8 -59.0 160.0	2 58.7 -58.9 159.1	2 48.1 -58.9 158.2
25°	2 28.8 -59.2 161.9	2 19.5 -59.1 161.0	2 09.8 -59.0 160.1	1 59.8 -59.0 159.2	1 49.2 -58.8 158.4
26°	1 29.6 -59.2 162.1	1 20.4 -59.1 161.2	1 10.8 -59.0 160.3	1 00.8 -58.9 159.4	0 50.4 -58.8 158.6
27°	0 30.4 -59.1 162.3	0 21.3 -59.0 161.4	0 11.8 -59.0 160.5	0 01.9 -58.9 159.6	-0 08.4 -58.8
28°	-0 28.7 -59.2	-0 37.7 -59.1	-0 47.2 -59.0	-0 57.0 -58.9	-1 07.2 -58.9
29°	-1 27.9 -59.2	-1 36.8 -59.1	-1 46.2 -59.0	-1 55.9 -58.9	-2 06.1 -58.8

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	26 03.9 -58.4 151.9	25 50.0 -58.4 150.9	25 35.6 -58.2 149.8	25 20.7 -58.1 148.7	25 05.3 -57.9 147.6
1°	25 05.5 -58.5 152.2	24 51.6 -58.3 151.1	24 37.4 -58.3 150.0	24 22.6 -58.1 149.0	24 07.4 -58.0 147.9
2°	24 07.0 -58.5 152.4	23 53.3 -58.4 151.4	23 39.1 -58.2 150.3	23 24.5 -58.2 149.3	23 09.4 -58.0 148.2
3°	23 08.5 -58.5 152.7	22 54.9 -58.4 151.6	22 40.9 -58.3 150.6	22 26.3 -58.1 149.5	22 11.4 -58.1 148.5
4°	22 10.0 -58.5 152.9	21 56.5 -58.4 151.9	21 42.6 -58.3 150.8	21 28.2 -58.2 149.8	21 13.3 -58.1 148.7
5°	21 11.5 -58.6 153.2	20 58.1 -58.4 152.1	20 44.3 -58.3 151.1	20 30.0 -58.2 150.0	20 15.2 -58.1 149.0
6°	20 12.9 -58.5 153.4	19 59.7 -58.5 152.4	19 46.0 -58.4 151.3	19 31.8 -58.3 150.3	19 17.1 -58.1 149.3
7°	19 14.4 -58.6 153.6	19 01.2 -58.4 152.6	18 47.6 -58.4 151.6	18 33.5 -58.2 150.6	18 19.0 -58.1 149.5
8°	18 15.8 -58.6 153.9	18 02.8 -58.5 152.8	17 49.2 -58.3 151.8	17 35.3 -58.3 150.8	17 20.9 -58.2 149.8
9°	17 17.2 -58.6 154.1	17 04.3 -58.5 153.1	16 50.9 -58.4 152.1	16 37.0 -58.3 151.1	16 22.7 -58.2 150.1
10°	16 18.6 -58.6 154.3	16 05.8 -58.6 153.3	15 52.5 -58.5 152.3	15 38.7 -58.3 151.3	15 24.5 -58.2 150.3
11°	15 20.0 -58.7 154.5	15 07.2 -58.5 153.5	14 54.0 -58.4 152.5	14 40.4 -58.3 151.6	14 26.3 -58.2 150.6
12°	14 21.3 -58.6 154.7	14 08.7 -58.5 153.8	13 55.6 -58.4 152.8	13 42.1 -58.3 151.8	13 28.1 -58.2 150.8
13°	13 22.7 -58.7 155.0	13 10.2 -58.6 154.0	12 57.2 -58.5 153.0	12 43.8 -58.4 152.0	12 29.9 -58.2 151.1
14°	12 24.0 -58.6 155.2	12 11.6 -58.6 154.2	11 58.7 -58.4 153.2	11 45.4 -58.4 152.3	11 31.7 -58.3 151.3
15°	11 25.4 -58.7 155.4	11 13.0 -58.5 154.4	11 00.3 -58.5 153.5	10 47.0 -58.3 152.5	10 33.4 -58.3 151.6
16°	10 26.7 -58.7 155.6	10 14.5 -58.6 154.6	10 01.8 -58.5 153.7	9 48.7 -58.4 152.7	9 35.1 -58.2 151.8
17°	9 28.0 -58.7 155.8	9 15.9 -58.6 154.9	9 03.3 -58.5 153.9	8 50.3 -58.4 153.0	8 36.9 -58.3 152.0
18°	8 29.3 -58.7 156.0	8 17.3 -58.6 155.1	8 04.8 -58.5 154.1	7 51.9 -58.4 153.2	7 38.6 -58.3 152.3
19°	7 30.6 -58.7 156.2	7 18.7 -58.6 155.3	7 06.3 -58.5 154.4	6 53.5 -58.4 153.4	6 40.3 -58.3 152.5
20°	6 31.9 -58.7 156.4	6 20.1 -58.7 155.5	6 07.8 -58.5 154.6	5 55.1 -58.4 153.7	5 42.0 -58.3 152.8
21°	5 33.2 -58.7 156.6	5 21.4 -58.6 155.7	5 09.3 -58.5 154.8	4 56.7 -58.4 153.9	4 43.7 -58.3 153.0
22°	4 34.5 -58.8 156.9	4 22.8 -58.6 155.9	4 10.8 -58.6 155.0	3 58.3 -58.5 154.1	3 45.4 -58.3 153.2
23°	3 35.7 -58.7 157.1	3 24.2 -58.6 156.2	3 12.2 -58.5 155.3	2 59.8 -58.4 154.4	2 47.1 -58.4 153.5
24°	2 37.0 -58.7 157.3	2 25.6 -58.7 156.4	2 13.7 -58.5 155.5	2 01.4 -58.4 154.6	1 48.7 -58.3 153.7
25°	1 38.3 -58.7 157.5	1 26.9 -58.6 156.6	1 15.2 -58.6 155.7	1 03.0 -58.4 154.8	0 50.4 -58.3 153.9
26°	0 39.6 -58.8 157.7	0 28.3 -58.6 156.8	0 16.6 -58.5 155.9	0 04.6 -58.4 155.0	-0 07.9 -58.3
27°	-0 19.2 -58.7	-0 30.3 -58.6	-0 41.9 -58.5	-0 53.8 -58.5	-1 06.2 -58.3
28°	-1 17.9 -58.7	-1 28.9 -58.7	-1 40.4 -58.5	-1 52.3 -58.4	-2 04.5 -58.4
29°	-2 16.6 -58.7	-2 27.6 -58.6	-2 38.9 -58.6	-2 50.7 -58.4	-3 02.9 -58.3

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	24 49.5 -57.8 146.6	24 33.3 -57.7 145.5	24 16.6 -57.6 144.5	23 59.5 -57.5 143.4	23 41.9 -57.3 142.4
1°	23 51.7 -57.9 146.9	23 35.6 -57.8 145.8	23 19.0 -57.6 144.8	23 02.0 -57.5 143.7	22 44.6 -57.4 142.7
2°	22 53.8 -57.9 147.2	22 37.8 -57.8 146.1	22 21.4 -57.7 145.1	22 04.5 -57.5 144.0	21 47.2 -57.4 143.0
3°	21 55.9 -57.9 147.4	21 40.0 -57.8 146.4	21 23.7 -57.7 145.4	21 07.0 -57.6 144.3	20 49.8 -57.4 143.3
4°	20 58.0 -58.0 147.7	20 42.2 -57.8 146.7	20 26.0 -57.7 145.7	20 09.4 -57.6 144.6	19 52.4 -57.5 143.6
5°	20 00.0 -57.9 148.0	19 44.4 -57.9 147.0	19 28.3 -57.7 145.9	19 11.8 -57.6 144.9	18 54.9 -57.5 143.9
6°	19 02.1 -58.0 148.3	18 46.5 -57.8 147.2	18 30.6 -57.8 146.2	18 14.2 -57.6 145.2	17 57.4 -57.5 144.2
7°	18 04.1 -58.1 148.5	17 48.7 -58.0 147.5	17 32.8 -57.8 146.5	17 16.6 -57.7 145.5	16 59.9 -57.6 144.5
8°	17 06.0 -58.0 148.8	16 50.7 -57.9 147.8	16 35.0 -57.8 146.8	16 18.9 -57.7 145.8	16 02.3 -57.5 144.8
9°	16 08.0 -58.1 149.1	15 52.8 -57.9 148.1	15 37.2 -57.8 147.1	15 21.2 -57.7 146.1	15 04.8 -57.6 145.1
10°	15 09.9 -58.1 149.3	14 54.9 -58.0 148.3	14 39.4 -57.9 147.4	14 23.5 -57.8 146.4	14 07.2 -57.7 145.4
11°	14 11.8 -58.1 149.6	13 56.9 -58.0 148.6	13 41.5 -57.9 147.6	13 25.7 -57.7 146.7	13 09.5 -57.6 145.7
12°	13 13.7 -58.1 149.8	12 58.9 -58.0 148.9	12 43.6 -57.8 147.9	12 28.0 -57.8 146.9	12 11.9 -57.6 146.0
13°	12 15.6 -58.1 150.1	12 00.9 -58.0 149.1	11 45.8 -57.9 148.2	11 30.2 -57.8 147.2	11 14.3 -57.7 146.3
14°	11 17.5 -58.2 150.3	11 02.9 -58.1 149.4	10 47.9 -58.0 148.4	10 32.4 -57.8 147.5	10 16.6 -57.7 146.5
15°	10 19.3 -58.1 150.6	10 04.8 -58.0 149.6	9 49.9 -57.9 148.7	9 34.6 -57.8 147.8	9 18.9 -57.7 146.8
16°	9 21.2 -58.2 150.8	9 06.8 -58.1 149.9	8 52.0 -57.9 149.0	8 36.8 -57.8 148.0	8 21.2 -57.7 147.1
17°	8 23.0 -58.2 151.1	8 08.7 -58.0 150.2	7 54.1 -58.0 149.2	7 39.0 -57.9 148.3	7 23.5 -57.7 147.4
18°	7 24.8 -58.2 151.3	7 10.7 -58.1 150.4	6 56.1 -57.9 149.5	6 41.1 -57.8 148.6	6 25.8 -57.8 147.6
19°	6 26.6 -58.1 151.6	6 12.6 -58.1 150.7	5 58.2 -58.0 149.7	5 43.3 -57.9 148.8	5 28.0 -57.7 147.9
20°	5 28.5 -58.2 151.8	5 14.5 -58.1 150.9	5 00.2 -58.0 150.0	4 45.4 -57.8 149.1	4 30.3 -57.7 148.2
21°	4 30.3 -58.2 152.1	4 16.4 -58.1 151.2	4 02.2 -58.0 150.3	3 47.6 -57.9 149.4	3 32.6 -57.8 148.5
22°	3 32.1 -58.2 152.3	3 18.3 -58.0 151.4	3 04.2 -57.9 150.5	2 49.7 -57.8 149.6	2 34.8 -57.7 148.7
23°	2 33.9 -58.3 152.6	2 20.3 -58.1 151.7	2 06.3 -58.0 150.8	1 51.9 -57.9 149.9	1 37.1 -57.8 149.0
24°	1 35.6 -58.2 152.8	1 22.2 -58.1 151.9	1 08.3 -58.0 151.0	0 54.0 -57.9 150.2	0 39.3 -57.7 149.3
25°	0 37.4 -58.2 153.1	0 24.1 -58.1 152.2	0 10.3 -58.0 151.3	-0 03.9 -57.9	-0 18.4 -57.8
26°	-0 20.8 -58.2	-0 34.0 -58.1	-0 47.7 -58.0	-1 01.8 -57.8	-1 16.2 -57.7
27°	-1 19.0 -58.2	-1 32.1 -58.1	-1 45.7 -58.0	-1 59.6 -57.9	-2 13.9 -57.8
28°	-2 17.2 -58.2	-2 30.2 -58.1	-2 43.7 -58.0	-2 57.5 -57.9	-3 11.7 -57.7
29°	-3 15.4 -58.2	-3 28.3 -58.1	-3 41.7 -57.9	-3 55.4 -57.8	-4 09.4 -57.8

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	23 23.9 -57.2 141.3	23 05.6 -57.1 140.3	22 46.8 -57.0 139.3	22 27.6 -56.8 138.2	22 08.0 -56.7 137.2
1°	22 26.7 -57.2 141.6	22 08.5 -57.1 140.6	21 49.8 -56.9 139.6	21 30.8 -56.9 138.6	21 11.3 -56.7 137.6
2°	21 29.5 -57.3 142.0	21 11.4 -57.2 140.9	20 52.9 -57.1 139.9	20 33.9 -56.9 138.9	20 14.6 -56.7 137.9
3°	20 32.2 -57.3 142.3	20 14.2 -57.2 141.3	19 55.8 -57.0 140.3	19 37.0 -56.9 139.3	19 17.9 -56.8 138.3
4°	19 34.9 -57.3 142.6	19 17.0 -57.2 141.6	18 58.8 -57.1 140.6	18 40.1 -56.9 139.6	18 21.1 -56.9 138.6
5°	18 37.6 -57.4 142.9	18 19.8 -57.2 141.9	18 01.7 -57.1 140.9	17 43.2 -57.0 139.9	17 24.2 -56.8 138.9
6°	17 40.2 -57.4 143.2	17 22.6 -57.3 142.2	17 04.6 -57.2 141.2	16 46.2 -57.1 140.2	16 27.4 -56.9 139.3
7°	16 42.8 -57.4 143.5	16 25.3 -57.3 142.5	16 07.4 -57.2 141.6	15 49.1 -57.0 140.6	15 30.5 -57.0 139.6
8°	15 45.4 -57.5 143.8	15 28.0 -57.3 142.8	15 10.2 -57.2 141.9	14 52.1 -57.1 140.9	14 33.5 -56.9 139.9
9°	14 47.9 -57.5 144.1	14 30.7 -57.4 143.2	14 13.0 -57.2 142.2	13 55.0 -57.1 141.2	13 36.6 -57.0 140.2
10°	13 50.4 -57.5 144.4	13 33.3 -57.4 143.5	13 15.8 -57.2 142.5	12 57.9 -57.1 141.5	12 39.6 -57.0 140.6
11°	12 52.9 -57.5 144.7	12 35.9 -57.3 143.8	12 18.6 -57.3 142.8	12 00.8 -57.2 141.8	11 42.6 -57.0 140.9
12°	11 55.4 -57.5 145.0	11 38.6 -57.5 144.1	11 21.3 -57.3 143.1	11 03.6 -57.1 142.1	10 45.6 -57.1 141.2
13°	10 57.9 -57.6 145.3	10 41.1 -57.4 144.4	10 24.0 -57.3 143.4	10 06.5 -57.2 142.5	9 48.5 -57.0 141.5
14°	10 00.3 -57.5 145.6	9 43.7 -57.4 144.6	9 26.7 -57.3 143.7	9 09.3 -57.2 142.8	8 51.5 -57.1 141.8
15°	9 02.8 -57.6 145.9	8 46.3 -57.5 144.9	8 29.4 -57.4 144.0	8 12.1 -57.2 143.1	7 54.4 -57.1 142.1
16°	8 05.2 -57.6 146.2	7 48.8 -57.5 145.2	7 32.0 -57.3 144.3	7 14.9 -57.3 143.4	6 57.3 -57.1 142.5
17°	7 07.6 -57.6 146.4	6 51.3 -57.4 145.5	6 34.7 -57.4 144.6	6 17.6 -57.2 143.7	6 00.2 -57.1 142.8
18°	6 10.0 -57.6 146.7	5 53.9 -57.5 145.8	5 37.3 -57.4 144.9	5 20.4 -57.2 144.0	5 03.1 -57.1 143.1
19°	5 12.4 -57.6 147.0	4 56.4 -57.5 146.1	4 39.9 -57.3 145.2	4 23.2 -57.3 144.3	4 06.0 -57.1 143.4
20°	4 14.8 -57.6 147.3	3 58.9 -57.5 146.4	3 42.6 -57.4 145.5	3 25.9 -57.3 144.6	3 08.9 -57.2 143.7
21°	3 17.2 -57.7 147.6	3 01.4 -57.5 146.7	2 45.2 -57.4 145.8	2 28.6 -57.2 144.9	2 11.7 -57.1 144.0
22°	2 19.5 -57.6 147.8	2 03.9 -57.6 147.0	1 47.8 -57.4 146.1	1 31.4 -57.3 145.2	1 14.6 -57.2 144.3
23°	1 21.9 -57.6 148.1	1 06.3 -57.5 147.2	0 50.4 -57.4 146.4	0 34.1 -57.2 145.5	0 17.4 -57.1 144.6
24°	0 24.3 -57.7 148.4	0 08.8 -57.5 147.5	-0 07.0 -57.4	-0 23.1 -57.3	-0 39.7 -57.1
25°	-0 33.4 -57.6	-0 48.7 -57.5	-1 04.4 -57.3	-1 20.4 -57.3	-1 36.8 -57.2
26°	-1 31.0 -57.6	-1 46.2 -57.5	-2 01.7 -57.4	-2 17.7 -57.2	-2 34.0 -57.1
27°	-2 28.6 -57.7	-2 43.7 -57.5	-2 59.1 -57.4	-3 14.9 -57.3	-3 31.1 -57.1
28°	-3 26.3 -57.6	-3 41.2 -57.5	-3 56.5 -57.4	-4 12.2 -57.2	-4 28.2 -57.1
29°	-4 23.9 -57.6	-4 38.7 -57.5	-4 53.9 -57.3	-5 09.4 -57.3	-5 25.3 -57.1

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	21 48.1 -56.6 136.2	21 27.7 -56.4 135.2	21 07.1 -56.3 134.2	20 46.0 -56.1 133.2	20 24.6 -56.0 132.2
1°	20 51.5 -56.6 136.5	20 31.3 -56.4 135.5	20 10.8 -56.3 134.5	19 49.9 -56.2 133.5	19 28.6 -56.1 132.5
2°	19 54.9 -56.6 136.9	19 34.9 -56.5 135.9	19 14.5 -56.4 134.9	18 53.7 -56.3 133.9	18 32.5 -56.1 132.9
3°	18 58.3 -56.7 137.3	18 38.4 -56.6 136.3	18 18.1 -56.4 135.3	17 57.4 -56.2 134.3	17 36.4 -56.1 133.3
4°	18 01.6 -56.7 137.6	17 41.8 -56.5 136.6	17 21.7 -56.5 135.6	17 01.2 -56.4 134.6	16 40.3 -56.2 133.7
5°	17 04.9 -56.7 137.9	16 45.3 -56.6 137.0	16 25.2 -56.5 136.0	16 04.8 -56.3 135.0	15 44.1 -56.2 134.0
6°	16 08.2 -56.8 138.3	15 48.7 -56.7 137.3	15 28.7 -56.5 136.3	15 08.5 -56.4 135.4	14 47.9 -56.3 134.4
7°	15 11.4 -56.8 138.6	14 52.0 -56.7 137.6	14 32.2 -56.5 136.7	14 12.1 -56.4 135.7	13 51.6 -56.3 134.8
8°	14 14.6 -56.8 138.9	13 55.3 -56.7 138.0	13 35.7 -56.6 137.0	13 15.7 -56.5 136.1	12 55.3 -56.3 135.1
9°	13 17.8 -56.9 139.3	12 58.6 -56.7 138.3	12 39.1 -56.6 137.4	12 19.2 -56.4 136.4	11 59.0 -56.3 135.5
10°	12 20.9 -56.8 139.6	12 01.9 -56.7 138.7	11 42.5 -56.6 137.7	11 22.8 -56.5 136.8	11 02.7 -56.4 135.8
11°	11 24.1 -56.9 139.9	11 05.2 -56.8 139.0	10 45.9 -56.7 138.0	10 26.3 -56.6 137.1	10 06.3 -56.4 136.2
12°	10 27.2 -56.9 140.3	10 08.4 -56.8 139.3	9 49.2 -56.6 138.4	9 29.7 -56.5 137.4	9 09.9 -56.4 136.5
13°	9 30.3 -57.0 140.6	9 11.6 -56.8 139.6	8 52.6 -56.7 138.7	8 33.2 -56.5 137.8	8 13.5 -56.4 136.9
14°	8 33.3 -56.9 140.9	8 14.8 -56.8 140.0	7 55.9 -56.7 139.0	7 36.7 -56.6 138.1	7 17.1 -56.5 137.2
15°	7 36.4 -57.0 141.2	7 18.0 -56.9 140.3	6 59.2 -56.7 139.4	6 40.1 -56.6 138.5	6 20.6 -56.4 137.5
16°	6 39.4 -57.0 141.5	6 21.1 -56.8 140.6	6 02.5 -56.7 139.7	5 43.5 -56.6 138.8	5 24.7 -56.5 137.9
17°	5 42.4 -57.0 141.8	5 24.3 -56.9 140.9	5 05.8 -56.8 140.0	4 46.9 -56.6 139.1	4 27.7 -56.5 138.2
18°	4 45.4 -57.0 142.2	4 27.4 -56.9 141.3	4 09.0 -56.7 140.4	3 50.3 -56.6 139.5	3 31.2 -56.5 138.6
19°	3 48.4 -57.0 142.5	3 30.5 -56.8 141.6	3 12.3 -56.8 140.7	2 53.7 -56.6 139.8	2 34.7 -56.5 138.9
20°	2 51.4 -57.0 142.8	2 33.7 -56.9 141.9	2 15.5 -56.7 141.0	1 57.1 -56.7 140.1	1 38.2 -56.5 139.2
21°	1 54.4 -57.0 143.1	1 36.8 -56.9 142.2	1 18.8 -56.8 141.3	1 00.4 -56.6 140.4	0 41.7 -56.4 139.6
22°	0 57.4 -57.0 143.4	0 39.9 -56.9 142.5	0 22.0 -56.7 141.7	0 03.8 -56.6 140.8	-0 14.7 -56.5
23°	0 00.4 -57.0 143.7	-0 17.0 -56.9	-0 34.7 -56.8	-0 52.8 -56.6	-1 11.2 -56.5
24°	-0 56.6 -57.0	-1 13.9 -56.8	-1 31.5 -56.7	-1 49.4 -56.6	-2 07.7 -56.5
25°	-1 53.6 -57.0	-2 10.7 -56.9	-2 28.2 -56.8	-2 46.0 -56.7	-3 04.2 -56.5
26°	-2 50.6 -57.0	-3 07.6 -56.9	-3 25.0 -56.7	-3 42.7 -56.6	-4 00.7 -56.5
27°	-3 47.6 -57.0	-4 04.5 -56.9	-4 21.7 -56.7	-4 39.3 -56.6	-4 57.2 -56.4
28°	-4 44.6 -57.0	-5 01.4 -56.8	-5 18.4 -56.8	-5 35.9 -56.6	-5 53.6 -56.5
29°	-5 41.6 -57.0	-5 58.2 -56.8	-6 15.2 -56.7	-6 32.5 -56.5	-6 50.1 -56.4

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	20 02.9 -55.9 131.2	19 40.8 -55.7 130.2	19 18.5 -55.7 129.2	18 55.8 -55.5 128.2	18 32.8 -55.4 127.2
1°	19 07.0 -55.9 131.6	18 45.1 -55.8 130.6	18 22.8 -55.7 129.6	18 00.3 -55.6 128.6	17 37.4 -55.5 127.7
2°	18 11.1 -56.0 131.9	17 49.3 -55.9 131.0	17 27.1 -55.7 130.0	17 04.7 -55.6 129.0	16 41.9 -55.4 128.1
3°	17 15.1 -56.0 132.3	16 53.4 -55.9 131.3	16 31.4 -55.7 130.4	16 09.1 -55.6 129.4	15 46.5 -55.5 128.4
4°	16 19.1 -56.1 132.7	15 57.5 -55.9 131.7	15 35.7 -55.8 130.8	15 13.5 -55.7 129.8	14 51.0 -55.6 128.8
5°	15 23.0 -56.1 133.1	15 01.6 -56.0 132.1	14 39.9 -55.9 131.1	14 17.8 -55.7 130.2	13 55.4 -55.6 129.2
6°	14 26.9 -56.1 133.4	14 05.6 -56.0 132.5	13 44.0 -55.9 131.5	13 22.1 -55.8 130.6	12 59.8 -55.6 129.6
7°	13 30.8 -56.2 133.8	13 09.6 -56.0 132.8	12 48.1 -55.9 131.9	12 26.3 -55.8 130.9	12 04.2 -55.7 130.0
8°	12 34.6 -56.2 134.2	12 13.6 -56.1 133.2	11 52.2 -55.9 132.3	11 30.5 -55.8 131.3	11 08.5 -55.7 130.4
9°	11 38.4 -56.2 134.5	11 17.5 -56.1 133.6	10 56.3 -56.0 132.6	10 34.7 -55.8 131.7	10 12.8 -55.7 130.8
10°	10 42.2 -56.2 134.9	10 21.4 -56.1 133.9	10 00.3 -56.0 133.0	9 38.9 -55.9 132.1	9 17.1 -55.7 131.1
11°	9 46.0 -56.3 135.2	9 25.3 -56.1 134.3	9 04.3 -56.0 133.4	8 43.0 -55.9 132.4	8 21.4 -55.8 131.5
12°	8 49.7 -56.3 135.6	8 29.2 -56.2 134.7	8 08.3 -56.0 133.7	7 47.1 -55.9 132.8	7 25.6 -55.7 131.9
13°	7 53.4 -56.3 135.9	7 33.0 -56.1 135.0	7 12.3 -56.1 134.1	6 51.2 -55.9 133.2	6 29.9 -55.8 132.3
14°	6 57.1 -56.3 136.3	6 36.9 -56.2 135.4	6 16.2 -56.0 134.4	5 55.3 -55.9 133.5	5 34.1 -55.8 132.6
15°	6 00.8 -56.3 136.6	5 40.7 -56.2 135.7	5 20.2 -56.1 134.8	4 59.4 -56.0 133.9	4 38.3 -55.8 133.0
16°	5 04.5 -56.4 137.0	4 44.5 -56.2 136.1	4 24.1 -56.1 135.2	4 03.4 -55.9 134.3	3 42.5 -55.9 133.4
17°	4 08.1 -56.3 137.3	3 48.3 -56.3 136.4	3 28.0 -56.1 135.5	3 07.5 -56.0 134.6	2 46.6 -55.8 133.7
18°	3 11.8 -56.4 137.7	2 52.0 -56.2 136.8	2 31.9 -56.1 135.9	2 11.5 -55.9 135.0	1 50.8 -55.8 134.1
19°	2 15.4 -56.3 138.0	1 55.8 -56.2 137.1	1 35.8 -56.1 136.2	1 15.6 -56.0 135.3	0 55.0 -55.9 134.5
20°	1 19.1 -56.4 138.3	0 59.6 -56.3 137.5	0 39.7 -56.1 136.6	0 19.6 -56.0 135.7	-0 00.9 -55.8
21°	0 22.7 -56.4 138.7	0 03.3 -56.2 137.8	-0 16.4 -56.1	-0 36.4 -55.9	-0 56.7 -55.9
22°	-0 33.7 -56.3	-0 52.9 -56.2	-1 12.5 -56.1	-1 32.3 -56.0	-1 52.6 -55.8
23°	-1 30.0 -56.4	-1 49.1 -56.2	-2 08.6 -56.0	-2 28.3 -56.0	-2 48.4 -55.8
24°	-2 26.4 -56.3	-2 45.3 -56.3	-3 04.6 -56.1	-3 24.3 -55.9	-3 44.2 -55.8
25°	-3 22.7 -56.4	-3 41.6 -56.2	-4 00.7 -56.1	-4 20.2 -56.0	-4 40.0 -55.8
26°	-4 19.1 -56.3	-4 37.8 -56.2	-4 56.8 -56.1	-5 16.2 -55.9	-5 35.8 -55.8
27°	-5 15.4 -56.3	-5 34.0 -56.2	-5 52.9 -56.0	-6 12.1 -55.9	-6 31.6 -55.8
28°	-6 11.7 -56.4	-6 30.2 -56.1	-6 48.9 -56.1	-7 08.0 -55.9	-7 27.4 -55.8
29°	-7 08.1 -56.2	-7 26.3 -56.2	-7 45.0 -56.0	-8 03.9 -55.9	-8 23.2 -55.7

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	18 09.4 -55.2 126.3	17 45.9 -55.2 125.3	17 22.0 -55.0 124.3	16 57.8 -54.9 123.4	16 33.4 -54.8 122.4
1°	17 14.2 -55.3 126.7	16 50.7 -55.2 125.7	16 27.0 -55.1 124.8	16 02.9 -54.9 123.8	15 38.6 -54.8 122.9
2°	16 18.9 -55.4 127.1	15 55.5 -55.2 126.1	15 31.9 -55.1 125.2	15 08.0 -55.0 124.2	14 43.8 -54.9 123.3
3°	15 23.5 -55.3 127.5	15 00.3 -55.3 126.5	14 36.8 -55.1 125.6	14 13.0 -55.0 124.6	13 48.9 -54.9 123.7
4°	14 28.2 -55.5 127.9	14 05.0 -55.3 126.9	13 41.7 -55.2 126.0	13 18.0 -55.1 125.1	12 54.0 -54.9 124.1
5°	13 32.7 -55.4 128.3	13 09.7 -55.3 127.3	12 46.5 -55.3 126.4	12 22.9 -55.1 125.5	11 59.1 -55.0 124.5
6°	12 37.3 -55.5 128.7	12 14.4 -55.4 127.7	11 51.2 -55.2 126.8	11 27.8 -55.1 125.9	11 04.1 -55.0 124.9
7°	11 41.8 -55.6 129.1	11 19.0 -55.4 128.1	10 56.0 -55.3 127.2	10 32.7 -55.2 126.3	10 09.1 -55.1 125.3
8°	10 46.2 -55.5 129.4	10 23.6 -55.4 128.5	10 00.7 -55.3 127.6	9 37.5 -55.2 126.7	9 14.0 -55.0 125.7
9°	9 50.7 -55.6 129.8	9 28.2 -55.5 128.9	9 05.4 -55.3 128.0	8 42.3 -55.2 127.1	8 19.0 -55.1 126.1
10°	8 55.1 -55.6 130.2	8 32.7 -55.5 129.3	8 10.1 -55.4 128.4	7 47.1 -55.2 127.5	7 23.9 -55.1 126.5
11°	7 59.5 -55.7 130.6	7 37.2 -55.5 129.7	7 14.7 -55.4 128.8	6 51.9 -55.3 127.8	6 28.8 -55.2 126.9
12°	7 03.8 -55.6 131.0	6 41.7 -55.5 130.1	6 19.3 -55.4 129.1	5 56.6 -55.3 128.2	5 33.6 -55.1 127.3
13°	6 08.2 -55.7 131.3	5 46.2 -55.5 130.4	5 23.9 -55.4 129.5	5 01.3 -55.3 128.6	4 38.5 -55.2 127.7
14°	5 12.5 -55.7 131.7	4 50.7 -55.6 130.8	4 28.5 -55.4 129.9	4 06.0 -55.3 129.0	3 43.3 -55.2 128.1
15°	4 16.8 -55.6 132.1	3 55.1 -55.6 131.2	3 33.1 -55.5 130.3	3 10.7 -55.3 129.4	2 48.1 -55.2 128.5
16°	3 21.2 -55.7 132.5	2 59.5 -55.5 131.6	2 37.6 -55.4 130.7	2 15.4 -55.3 129.8	1 52.9 -55.1 128.9
17°	2 25.5 -55.7 132.8	2 04.0 -55.6 132.0	1 42.2 -55.5 131.1	1 20.1 -55.3 130.2	0 57.8 -55.2 129.3
18°	1 29.8 -55.8 133.2	1 08.4 -55.6 132.3	0 46.7 -55.4 131.5	0 24.8 -55.3 130.6	0 02.6 -55.2 129.7
19°	0 34.0 -55.7 133.6	0 12.8 -55.6 132.7	-0 08.7 -55.5	-0 30.5 -55.3	-0 52.6 -55.2
20°	-0 21.7 -55.7	-0 42.8 -55.5	-1 04.2 -55.4	-1 25.8 -55.4	-1 47.8 -55.2
21°	-1 17.4 -55.7	-1 38.3 -55.6	-1 59.6 -55.4	-2 21.2 -55.3	-2 43.0 -55.2
22°	-2 13.1 -55.7	-2 33.9 -55.6	-2 55.0 -55.5	-3 16.5 -55.3	-3 38.2 -55.1
23°	-3 08.8 -55.7	-3 29.5 -55.5	-3 50.5 -55.4	-4 11.8 -55.3	-4 33.3 -55.2
24°	-4 04.5 -55.6	-4 25.0 -55.6	-4 45.9 -55.4	-5 07.1 -55.2	-5 28.5 -55.1
25°	-5 00.1 -55.7	-5 20.6 -55.5	-5 41.3 -55.4	-6 02.3 -55.3	-6 23.6 -55.2
26°	-5 55.8 -55.7	-6 16.1 -55.5	-6 36.7 -55.4	-6 57.6 -55.2	-7 18.8 -55.1
27°	-6 51.5 -55.6	-7 11.6 -55.5	-7 32.1 -55.3	-7 52.8 -55.2	-8 13.9 -55.0
28°	-7 47.1 -55.6	-8 07.1 -55.5	-8 27.4 -55.4	-8 48.0 -55.2	-9 08.9 -55.1
29°	-8 42.7 -55.6	-9 02.6 -55.4	-9 22.8 -55.3	-9 43.2 -55.2	

Dec	LHA 055° / 305°	LHA 056° / 304°	LHA 057° / 303°	LHA 058° / 302°	LHA 059° / 301°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	16 08.7 -54.6 121.5	15 43.8 -54.6 120.5	15 18.6 -54.4 119.6	14 53.2 -54.3 118.7	14 27.6 -54.2 117.7
1°	15 14.1 -54.7 121.9	14 49.2 -54.5 121.0	14 24.2 -54.5 120.0	13 58.9 -54.4 119.1	13 33.4 -54.3 118.2
2°	14 19.4 -54.8 122.3	13 54.7 -54.7 121.4	13 29.7 -54.5 120.5	13 04.5 -54.4 119.5	12 39.1 -54.3 118.6
3°	13 24.6 -54.8 122.8	13 00.0 -54.7 121.8	12 35.2 -54.6 120.9	12 10.1 -54.5 120.0	11 44.8 -54.4 119.0
4°	12 29.8 -54.8 123.2	12 05.3 -54.7 122.2	11 40.6 -54.6 121.3	11 15.6 -54.4 120.4	10 50.4 -54.3 119.5
5°	11 35.0 -54.9 123.6	11 10.6 -54.7 122.7	10 46.0 -54.6 121.7	10 21.2 -54.6 120.8	9 56.1 -54.5 119.9
6°	10 40.1 -54.9 124.0	10 15.9 -54.8 123.1	9 51.4 -54.7 122.2	9 26.6 -54.5 121.2	9 01.6 -54.4 120.3
7°	9 45.2 -54.9 124.4	9 21.1 -54.8 123.5	8 56.7 -54.7 122.6	8 32.1 -54.6 121.7	8 07.2 -54.5 120.8
8°	8 50.3 -55.0 124.8	8 26.3 -54.9 123.9	8 02.0 -54.7 123.0	7 37.5 -54.6 122.1	7 12.7 -54.5 121.2
9°	7 55.3 -54.9 125.2	7 31.4 -54.8 124.3	7 07.3 -54.7 123.4	6 42.9 -54.6 122.5	6 18.2 -54.5 121.6
10°	7 00.4 -55.0 125.6	6 36.6 -54.9 124.7	6 12.6 -54.8 123.8	5 48.3 -54.7 122.9	5 23.7 -54.5 122.0
11°	6 05.4 -55.0 126.0	5 41.7 -54.9 125.1	5 17.8 -54.8 124.2	4 53.6 -54.6 123.3	4 29.2 -54.6 122.4
12°	5 10.4 -55.1 126.4	4 46.8 -54.9 125.5	4 23.0 -54.8 124.6	3 59.0 -54.7 123.7	3 34.6 -54.5 122.9
13°	4 15.3 -55.0 126.8	3 51.9 -54.9 125.9	3 28.2 -54.8 125.0	3 04.3 -54.7 124.2	2 40.1 -54.6 123.3
14°	3 20.3 -55.1 127.2	2 57.0 -54.9 126.3	2 33.4 -54.8 125.5	2 09.6 -54.7 124.6	1 45.5 -54.6 123.7
15°	2 25.2 -55.0 127.6	2 02.1 -55.0 126.7	1 38.6 -54.8 125.9	1 14.9 -54.7 125.0	0 50.9 -54.5 124.1
16°	1 30.2 -55.1 128.0	1 07.1 -54.9 127.1	0 43.8 -54.8 126.3	0 20.2 -54.7 125.4	-0 03.6 -54.6
17°	0 35.1 -55.1 128.4	0 12.2 -55.0 127.6	-0 11.0 -54.8	-0 34.5 -54.7	-0 58.2 -54.6
18°	-0 20.0 -55.0	-0 42.8 -54.9	-1 05.8 -54.8	-1 29.2 -54.7	-1 52.8 -54.5
19°	-1 15.0 -55.1	-1 37.7 -54.9	-2 00.6 -54.9	-2 23.9 -54.6	-2 47.3 -54.6
20°	-2 10.1 -55.0	-2 32.6 -55.0	-2 55.5 -54.8	-3 18.5 -54.7	-3 41.9 -54.5
21°	-3 05.1 -55.1	-3 27.6 -54.9	-3 50.3 -54.7	-4 13.2 -54.7	-4 36.4 -54.6
22°	-4 00.2 -55.0	-4 22.5 -54.9	-4 45.0 -54.8	-5 07.9 -54.6	-5 31.0 -54.5
23°	-4 55.2 -55.0	-5 17.4 -54.9	-5 39.8 -54.8	-6 02.5 -54.6	-6 25.5 -54.5
24°	-5 50.2 -55.0	-6 12.3 -54.8	-6 34.6 -54.7	-6 57.1 -54.6	-7 20.0 -54.4
25°	-6 45.2 -55.0	-7 07.1 -54.9	-7 29.3 -54.7	-7 51.7 -54.6	-8 14.4 -54.5
26°	-7 40.2 -55.0	-8 02.0 -54.8	-8 24.0 -54.7	-8 46.3 -54.6	-9 08.9 -54.4
27°	-8 35.2 -54.9	-8 56.8 -54.8	-9 18.7 -54.6	-9 40.9 -54.5	
28°	-9 30.1 -54.9	-9 51.6 -54.8			
29°					

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	14 01.7 -54.1 116.8	13 35.6 -54.0 115.9	13 09.4 -54.0 114.9	12 42.9 -53.8 114.0	12 16.2 -53.7 113.1
1°	13 07.6 -54.2 117.2	12 41.6 -54.0 116.3	12 15.4 -53.9 115.4	11 49.1 -53.9 114.5	11 22.5 -53.8 113.6
2°	12 13.4 -54.2 117.7	11 47.6 -54.1 116.8	11 21.5 -54.0 115.8	10 55.2 -53.9 114.9	10 28.7 -53.8 114.0
3°	11 19.2 -54.2 118.1	10 53.5 -54.2 117.2	10 27.5 -54.0 116.3	10 01.3 -53.9 115.4	9 34.9 -53.8 114.5
4°	10 25.0 -54.3 118.6	9 59.3 -54.1 117.6	9 33.5 -54.1 116.7	9 07.4 -54.0 115.8	8 41.1 -53.9 114.9
5°	9 30.7 -54.3 119.0	9 05.2 -54.2 118.1	8 39.4 -54.1 117.2	8 13.4 -54.0 116.3	7 47.2 -53.9 115.4
6°	8 36.4 -54.3 119.4	8 11.0 -54.3 118.5	7 45.3 -54.1 117.6	7 19.4 -54.0 116.7	6 53.3 -53.9 115.8
7°	7 42.1 -54.4 119.8	7 16.7 -54.2 118.9	6 51.2 -54.2 118.0	6 25.4 -54.1 117.1	5 59.4 -54.0 116.2
8°	6 47.7 -54.4 120.3	6 22.5 -54.3 119.4	5 57.0 -54.2 118.5	5 31.3 -54.0 117.6	5 05.4 -53.9 116.7
9°	5 53.3 -54.4 120.7	5 28.2 -54.3 119.8	5 02.8 -54.1 118.9	4 37.3 -54.1 118.0	4 11.5 -54.0 117.1
10°	4 58.9 -54.4 121.1	4 33.9 -54.3 120.2	4 08.7 -54.2 119.3	3 43.2 -54.1 118.4	3 17.5 -54.0 117.6
11°	4 04.5 -54.4 121.5	3 39.6 -54.3 120.6	3 14.5 -54.2 119.8	2 49.1 -54.1 118.9	2 23.5 -54.0 118.0
12°	3 10.1 -54.5 122.0	2 45.3 -54.3 121.1	2 20.3 -54.3 120.2	1 55.0 -54.1 119.3	1 29.5 -54.0 118.4
13°	2 15.6 -54.4 122.4	1 51.0 -54.4 121.5	1 26.0 -54.2 120.6	1 00.9 -54.1 119.7	0 35.5 -54.0 118.9
14°	1 21.2 -54.5 122.8	0 56.6 -54.3 121.9	0 31.8 -54.2 121.0	0 06.8 -54.1 120.2	-0 18.5 -54.0
15°	0 26.7 -54.4 123.2	0 02.3 -54.4 122.3	-0 22.4 -54.2	-0 47.3 -54.1	-1 12.5 -54.0
16°	-0 27.7 -54.5	-0 52.1 -54.3	-1 16.6 -54.3	-1 41.4 -54.2	-2 06.5 -54.0
17°	-1 22.2 -54.4	-1 46.4 -54.3	-2 10.9 -54.2	-2 35.6 -54.0	-3 00.5 -54.0
18°	-2 16.6 -54.5	-2 40.7 -54.3	-3 05.1 -54.2	-3 29.6 -54.1	-3 54.5 -53.9
19°	-3 11.1 -54.4	-3 35.0 -54.4	-3 59.3 -54.2	-4 23.7 -54.1	-4 48.4 -54.0
20°	-4 05.5 -54.4	-4 29.4 -54.2	-4 53.5 -54.1	-5 17.8 -54.0	-5 42.4 -53.9
21°	-4 59.9 -54.4	-5 23.6 -54.3	-5 47.6 -54.2	-6 11.8 -54.1	-6 36.3 -53.9
22°	-5 54.3 -54.4	-6 17.9 -54.3	-6 41.8 -54.1	-7 05.9 -54.0	-7 30.2 -53.9
23°	-6 48.7 -54.4	-7 12.2 -54.2	-7 35.9 -54.1	-7 59.9 -54.0	-8 24.1 -53.8
24°	-7 43.1 -54.3	-8 06.4 -54.2	-8 30.0 -54.1	-8 53.9 -53.9	-9 17.9 -53.9
25°	-8 37.4 -54.3	-9 00.6 -54.2	-9 24.1 -54.0	-9 47.8 -53.9	
26°	-9 31.7 -54.3	-9 54.8 -54.1			
27°					
28°					
29°					

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	11 49.4 -53.7 112.2	11 22.4 -53.6 111.3	10 55.2 -53.5 110.4	10 27.8 -53.4 109.5	10 00.3 -53.3 108.6
1°	10 55.7 -53.6 112.6	10 28.8 -53.6 111.7	10 01.7 -53.5 110.8	9 34.4 -53.4 109.9	9 07.0 -53.3 109.0
2°	10 02.1 -53.7 113.1	9 35.2 -53.6 112.2	9 08.2 -53.5 111.3	8 41.0 -53.4 110.4	8 13.7 -53.4 109.5
3°	9 08.4 -53.8 113.6	8 41.6 -53.7 112.6	8 14.7 -53.6 111.7	7 47.6 -53.5 110.8	7 20.3 -53.4 109.9
4°	8 14.6 -53.8 114.0	7 47.9 -53.6 113.1	7 21.1 -53.6 112.2	6 54.1 -53.5 111.3	6 26.9 -53.4 110.4
5°	7 20.8 -53.8 114.4	6 54.3 -53.8 113.5	6 27.5 -53.6 112.7	6 00.6 -53.6 111.8	5 33.5 -53.5 110.9
6°	6 27.0 -53.8 114.9	6 00.5 -53.7 114.0	5 33.9 -53.7 113.1	5 07.0 -53.5 112.2	4 40.0 -53.4 111.3
7°	5 33.2 -53.8 115.3	5 06.8 -53.7 114.4	4 40.2 -53.6 113.6	4 13.5 -53.6 112.7	3 46.6 -53.5 111.8
8°	4 39.4 -53.9 115.8	4 13.1 -53.8 114.9	3 46.6 -53.7 114.0	3 19.9 -53.6 113.1	2 53.1 -53.5 112.2
9°	3 45.5 -53.9 116.2	3 19.3 -53.8 115.3	2 52.9 -53.7 114.4	2 26.3 -53.5 113.6	1 59.6 -53.5 112.7
10°	2 51.6 -53.9 116.7	2 25.5 -53.8 115.8	1 59.2 -53.7 114.9	1 32.8 -53.6 114.0	1 06.1 -53.5 113.1
11°	1 57.7 -53.9 117.1	1 31.7 -53.8 116.2	1 05.5 -53.6 115.3	0 39.2 -53.6 114.5	0 12.6 -53.5 113.6
12°	1 03.8 -53.9 117.5	0 37.9 -53.8 116.7	0 11.9 -53.7 115.8	-0 14.4 -53.6	-0 40.9 -53.5
13°	0 09.9 -53.9 118.0	-0 15.9 -53.7	-0 41.8 -53.7	-1 08.0 -53.6	-1 34.4 -53.5
14°	-0 44.0 -53.9	-1 09.6 -53.8	-1 35.5 -53.7	-2 01.6 -53.6	-2 27.9 -53.5
15°	-1 37.9 -53.8	-2 03.4 -53.8	-2 29.2 -53.7	-2 55.2 -53.6	-3 21.4 -53.5
16°	-2 31.7 -53.9	-2 57.2 -53.8	-3 22.9 -53.7	-3 48.8 -53.5	-4 14.9 -53.4
17°	-3 25.6 -53.9	-3 51.0 -53.7	-4 16.6 -53.6	-4 42.3 -53.6	-5 08.3 -53.5
18°	-4 19.5 -53.8	-4 44.7 -53.8	-5 10.2 -53.6	-5 35.9 -53.5	-6 01.8 -53.4
19°	-5 13.3 -53.9	-5 38.5 -53.7	-6 03.8 -53.6	-6 29.4 -53.5	-6 55.2 -53.4
20°	-6 07.2 -53.8	-6 32.2 -53.7	-6 57.4 -53.6	-7 22.9 -53.5	-7 48.6 -53.3
21°	-7 01.0 -53.8	-7 25.9 -53.7	-7 51.0 -53.6	-8 16.4 -53.4	-8 41.9 -53.3
22°	-7 54.8 -53.7	-8 19.6 -53.6	-8 44.6 -53.5	-9 09.8 -53.4	-9 35.2 -53.3
23°	-8 48.5 -53.8	-9 13.2 -53.6	-9 38.1 -53.5		
24°	-9 42.3 -53.7				
25°					
26°					
27°					
28°					
29°					

Dec	LHA 070° / 290°	LHA 071° / 289°	LHA 072° / 288°	LHA 073° / 287°	LHA 074° / 286°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	9 32.7 -53.3 107.7	9 04.9 -53.2 106.8	8 37.0 -53.1 105.9	8 08.9 -53.0 105.0	7 40.8 -53.0 104.1
1°	8 39.4 -53.2 108.1	8 11.7 -53.2 107.2	7 43.9 -53.1 106.3	7 15.9 -53.1 105.4	6 47.8 -53.0 104.6
2°	7 46.2 -53.3 108.6	7 18.5 -53.2 107.7	6 50.8 -53.2 106.8	6 22.8 -53.0 105.9	5 54.8 -53.0 105.0
3°	6 52.9 -53.3 109.1	6 25.3 -53.2 108.2	5 57.6 -53.2 107.3	5 29.8 -53.1 106.4	5 01.8 -53.0 105.5
4°	5 59.6 -53.4 109.5	5 32.1 -53.3 108.6	5 04.4 -53.2 107.7	4 36.7 -53.2 106.8	4 08.8 -53.1 106.0
5°	5 06.2 -53.4 110.0	4 38.8 -53.3 109.1	4 11.2 -53.2 108.2	3 43.5 -53.1 107.3	3 15.7 -53.1 106.4
6°	4 12.8 -53.3 110.4	3 45.5 -53.3 109.5	3 18.0 -53.2 108.7	2 50.4 -53.2 107.8	2 22.6 -53.0 106.9
7°	3 19.5 -53.4 110.9	2 52.2 -53.3 110.0	2 24.8 -53.2 109.1	1 57.2 -53.1 108.2	1 29.6 -53.1 107.4
8°	2 26.1 -53.4 111.3	1 58.9 -53.3 110.5	1 31.6 -53.3 109.6	1 04.1 -53.2 108.7	0 36.5 -53.1 107.8
9°	1 32.7 -53.4 111.8	1 05.6 -53.3 110.9	0 38.3 -53.2 110.0	0 10.9 -53.1 109.2	-0 16.6 -53.1
10°	0 39.3 -53.5 112.3	0 12.3 -53.4 111.4	-0 14.9 -53.3	-0 42.2 -53.2	-1 09.7 -53.1
11°	-0 14.2 -53.4	-0 41.1 -53.3	-1 08.2 -53.2	-1 35.4 -53.1	-2 02.8 -53.1
12°	-1 07.6 -53.4	-1 34.4 -53.3	-2 01.4 -53.2	-2 28.5 -53.2	-2 55.9 -53.0
13°	-2 01.0 -53.4	-2 27.7 -53.3	-2 54.6 -53.2	-3 21.7 -53.1	-3 48.9 -53.1
14°	-2 54.4 -53.4	-3 21.0 -53.3	-3 47.8 -53.2	-4 14.8 -53.1	-4 42.0 -53.0
15°	-3 47.8 -53.3	-4 14.3 -53.3	-4 41.0 -53.2	-5 07.9 -53.1	-5 35.0 -53.0
16°	-4 41.1 -53.4	-5 07.6 -53.2	-5 34.2 -53.2	-6 01.0 -53.1	-6 28.0 -53.0
17°	-5 34.5 -53.3	-6 00.8 -53.3	-6 27.4 -53.1	-6 54.1 -53.0	-7 21.0 -52.9
18°	-6 27.8 -53.3	-6 54.1 -53.2	-7 20.5 -53.1	-7 47.1 -53.0	-8 13.9 -52.9
19°	-7 21.1 -53.3	-7 47.3 -53.2	-8 13.6 -53.1	-8 40.1 -53.0	-9 06.8 -52.9
20°	-8 14.4 -53.3	-8 40.5 -53.1	-9 06.7 -53.0	-9 33.1 -53.0	-9 59.7 -52.8
21°	-9 07.7 -53.2	-9 33.6 -53.1	-9 59.7 -53.0		
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 075° / 285°	LHA 076° / 284°	LHA 077° / 283°	LHA 078° / 282°	LHA 079° / 281°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	7 12.5 -52.9 103.2	6 44.1 -52.8 102.3	6 15.7 -52.8 101.4	5 47.1 -52.8 100.5	5 18.5 -52.7 99.6
1°	6 19.6 -52.9 103.7	5 51.3 -52.9 102.8	5 22.9 -52.9 101.9	4 54.3 -52.7 101.0	4 25.8 -52.8 100.1
2°	5 26.7 -53.0 104.1	4 58.4 -52.9 103.3	4 30.0 -52.8 102.4	4 01.6 -52.8 101.5	3 33.0 -52.7 100.6
3°	4 33.7 -53.0 104.6	4 05.5 -52.9 103.7	3 37.2 -52.9 102.8	3 08.8 -52.8 102.0	2 40.3 -52.8 101.1
4°	3 40.7 -53.0 105.1	3 12.6 -52.9 104.2	2 44.3 -52.8 103.3	2 16.0 -52.8 102.4	1 47.5 -52.7 101.6
5°	2 47.7 -53.0 105.6	2 19.7 -53.0 104.7	1 51.5 -52.9 103.8	1 23.2 -52.9 102.9	0 54.8 -52.8 102.0
6°	1 54.7 -53.0 106.0	1 26.7 -52.9 105.1	0 58.6 -52.9 104.3	0 30.3 -52.8 103.4	0 02.0 -52.8 102.5
7°	1 01.7 -53.0 106.5	0 33.8 -53.0 105.6	0 05.7 -52.9 104.7	-0 22.5 -52.8	-0 50.8 -52.8
8°	0 08.7 -53.0 107.0	-0 19.2 -52.9	-0 47.2 -52.9	-1 15.3 -52.8	-1 43.6 -52.7
9°	-0 44.3 -53.0	-1 12.1 -53.0	-1 40.1 -52.8	-2 08.1 -52.8	-2 36.3 -52.8
10°	-1 37.3 -53.0	-2 05.1 -52.9	-2 32.9 -52.9	-3 00.9 -52.8	-3 29.1 -52.7
11°	-2 30.3 -53.0	-2 58.0 -52.9	-3 25.8 -52.9	-3 53.7 -52.8	-4 21.8 -52.7
12°	-3 23.3 -53.0	-3 50.9 -52.9	-4 18.7 -52.8	-4 46.5 -52.8	-5 14.5 -52.7
13°	-4 16.3 -53.0	-4 43.8 -52.9	-5 11.5 -52.8	-5 39.3 -52.7	-6 07.2 -52.7
14°	-5 09.3 -52.9	-5 36.7 -52.9	-6 04.3 -52.8	-6 32.0 -52.7	-6 59.9 -52.6
15°	-6 02.2 -52.9	-6 29.6 -52.8	-6 57.1 -52.7	-7 24.7 -52.7	-7 52.5 -52.6
16°	-6 55.1 -52.9	-7 22.4 -52.8	-7 49.8 -52.8	-8 17.4 -52.6	-8 45.1 -52.6
17°	-7 48.0 -52.9	-8 15.2 -52.8	-8 42.6 -52.6	-9 10.0 -52.7	-9 37.7 -52.5
18°	-8 40.9 -52.8	-9 08.0 -52.7	-9 35.2 -52.7		
19°	-9 33.7 -52.8				
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 080° / 280°	LHA 081° / 279°	LHA 082° / 278°	LHA 083° / 277°	LHA 084° / 276°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	4 49.8 -52.7 98.8	4 21.0 -52.7 97.9	3 52.1 -52.6 97.0	3 23.2 -52.5 96.1	2 54.3 -52.6 95.3
1°	3 57.1 -52.7 99.2	3 28.3 -52.6 98.4	2 59.5 -52.6 97.5	2 30.7 -52.6 96.6	2 01.7 -52.5 95.7
2°	3 04.4 -52.7 99.7	2 35.7 -52.7 98.8	2 06.9 -52.6 98.0	1 38.1 -52.6 97.1	1 09.2 -52.6 96.2
3°	2 11.7 -52.7 100.2	1 43.0 -52.6 99.3	1 14.3 -52.6 98.5	0 45.5 -52.6 97.6	0 16.6 -52.6 96.7
4°	1 19.0 -52.7 100.7	0 50.4 -52.7 99.8	0 21.7 -52.7 98.9	-0 07.1 -52.6	-0 36.0 -52.5
5°	0 26.3 -52.8 101.2	-0 02.3 -52.7	-0 31.0 -52.6	-0 59.7 -52.6	-1 28.5 -52.6
6°	-0 26.5 -52.7	-0 55.0 -52.7	-1 23.6 -52.6	-1 52.3 -52.6	-2 21.1 -52.5
7°	-1 19.2 -52.7	-1 47.7 -52.6	-2 16.2 -52.7	-2 44.9 -52.6	-3 13.6 -52.5
8°	-2 11.9 -52.7	-2 40.3 -52.7	-3 08.9 -52.6	-3 37.5 -52.5	-4 06.1 -52.6
9°	-3 04.6 -52.7	-3 33.0 -52.6	-4 01.5 -52.5	-4 30.0 -52.6	-4 58.7 -52.5
10°	-3 57.3 -52.7	-4 25.6 -52.6	-4 54.0 -52.6	-5 22.6 -52.5	-5 51.2 -52.4
11°	-4 50.0 -52.6	-5 18.2 -52.6	-5 46.6 -52.5	-6 15.1 -52.5	-6 43.6 -52.5
12°	-5 42.6 -52.6	-6 10.8 -52.6	-6 39.1 -52.6	-7 07.6 -52.4	-7 36.1 -52.4
13°	-6 35.2 -52.6	-7 03.4 -52.5	-7 31.7 -52.4	-8 00.0 -52.4	-8 28.5 -52.3
14°	-7 27.8 -52.6	-7 55.9 -52.5	-8 24.1 -52.5	-8 52.4 -52.4	-9 20.8 -52.4
15°	-8 20.4 -52.5	-8 48.4 -52.5	-9 16.6 -52.4	-9 44.8 -52.4	
16°	-9 12.9 -52.5	-9 40.9 -52.4			
17°					
18°					
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27°					
28°					
29°					

Dec	LHA 085° / 275°	LHA 086° / 274°	LHA 087° / 273°	LHA 088° / 272°	LHA 089° / 271°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	2 25.3 -52.5 94.4	1 56.3 -52.5 93.5	1 27.2 -52.5 92.6	0 58.2 -52.5 91.7	0 29.1 -52.5 90.9
1°	1 32.8 -52.6 94.9	1 03.8 -52.5 94.0	0 34.7 -52.5 93.1	0 05.7 -52.5 92.2	-0 23.4 -52.5
2°	0 40.2 -52.5 95.3	0 11.3 -52.6 94.5	-0 17.8 -52.5	-0 46.8 -52.5	-1 15.9 -52.4
3°	-0 12.3 -52.5	-0 41.3 -52.5	-1 10.3 -52.5	-1 39.3 -52.5	-2 08.3 -52.5
4°	-1 04.8 -52.6	-1 33.8 -52.5	-2 02.8 -52.4	-2 31.8 -52.4	-3 00.8 -52.5
5°	-1 57.4 -52.5	-2 26.3 -52.5	-2 55.2 -52.5	-3 24.2 -52.5	-3 53.3 -52.4
6°	-2 49.9 -52.5	-3 18.8 -52.5	-3 47.7 -52.5	-4 16.7 -52.4	-4 45.7 -52.4
7°	-3 42.4 -52.5	-4 11.3 -52.4	-4 40.2 -52.4	-5 09.1 -52.4	-5 38.1 -52.4
8°	-4 34.9 -52.5	-5 03.7 -52.5	-5 32.6 -52.4	-6 01.5 -52.4	-6 30.5 -52.3
9°	-5 27.4 -52.4	-5 56.2 -52.4	-6 25.0 -52.4	-6 53.9 -52.4	-7 22.8 -52.4
10°	-6 19.8 -52.5	-6 48.6 -52.4	-7 17.4 -52.3	-7 46.3 -52.3	-8 15.2 -52.3
11°	-7 12.3 -52.4	-7 41.0 -52.3	-8 09.7 -52.4	-8 38.6 -52.3	-9 07.5 -52.2
12°	-8 04.7 -52.3	-8 33.3 -52.3	-9 02.1 -52.2	-9 30.9 -52.2	-9 59.7 -52.2
13°	-8 57.0 -52.3	-9 25.6 -52.3	-9 54.3 -52.3		
14°	-9 49.3 -52.3				
15°					
16°					
17°					
18°					
19°					
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21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Latitude 61°

Declination CONTRARY name to Latitude

Dec	LHA 090° / 270°	LHA 091° / 269°	LHA 092° / 268°	LHA 093° / 267°	LHA 094° / 266°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	0 00.0 -52.5 90.0	-0 29.1 -52.5			
1°	-0 52.5 -52.4	-1 21.6 -52.4			
2°	-1 44.9 -52.5	-2 14.0 -52.5			
3°	-2 37.4 -52.5	-3 06.5 -52.4			
4°	-3 29.9 -52.4	-3 58.9 -52.5			
5°	-4 22.3 -52.4	-4 51.4 -52.4			
6°	-5 14.7 -52.4	-5 43.8 -52.4			
7°	-6 07.1 -52.4	-6 36.2 -52.3			
8°	-6 59.5 -52.3	-7 28.5 -52.4			
9°	-7 51.8 -52.3	-8 20.9 -52.2			
10°	-8 44.1 -52.3	-9 13.1 -52.3			
11°	-9 36.4 -52.2				
12°					
13°					
14°					
15°					
16°					
17°					
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 095° / 265°	LHA 096° / 264°	LHA 097° / 263°	LHA 098° / 262°	LHA 099° / 261°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°					
1°					
2°					
3°					
4°					
5°					
6°					
7°					
8°					
9°					
10°					
11°					
12°					
13°					
14°					
15°					
16°					
17°					
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

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 The data on this page is believed to be accurate but no warranty is given for it's correctness. Use it only for training and exercising!

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	28 00.0 -60.0 180.0	27 59.7 -60.0 178.9	27 58.9 -60.0 177.7	27 57.5 -60.0 176.6	27 55.5 -59.9 175.5
1°	27 00.0 -60.0 180.0	26 59.7 -60.0 178.9	26 58.9 -60.0 177.8	26 57.5 -60.0 176.6	26 55.6 -60.0 175.5
2°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 58.9 -60.0 177.8	25 57.5 -59.9 176.7	25 55.6 -59.9 175.6
3°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 58.9 -60.0 177.8	24 57.6 -60.0 176.7	24 55.7 -60.0 175.6
4°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.9 -60.0 177.8	23 57.6 -60.0 176.7	23 55.7 -60.0 175.6
5°	23 00.0 -60.0 180.0	22 59.7 -60.0 178.9	22 58.9 -60.0 177.8	22 57.6 -60.0 176.8	22 55.7 -59.9 175.7
6°	22 00.0 -60.0 180.0	21 59.7 -60.0 178.9	21 58.9 -59.9 177.9	21 57.6 -60.0 176.8	21 55.8 -60.0 175.7
7°	21 00.0 -60.0 180.0	20 59.7 -60.0 178.9	20 59.0 -60.0 177.9	20 57.6 -59.9 176.8	20 55.8 -59.9 175.7
8°	20 00.0 -60.0 180.0	19 59.7 -60.0 178.9	19 59.0 -60.0 177.9	19 57.7 -60.0 176.8	19 55.9 -60.0 175.8
9°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 59.0 -60.0 177.9	18 57.7 -60.0 176.9	18 55.9 -60.0 175.8
10°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 59.0 -60.0 177.9	17 57.7 -60.0 176.9	17 55.9 -59.9 175.9
11°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 59.0 -60.0 177.9	16 57.7 -60.0 176.9	16 56.0 -60.0 175.9
12°	16 00.0 -60.0 180.0	15 59.7 -59.9 179.0	15 59.0 -60.0 178.0	15 57.7 -59.9 176.9	15 56.0 -60.0 175.9
13°	15 00.0 -60.0 180.0	14 59.8 -60.0 179.0	14 59.0 -60.0 178.0	14 57.8 -60.0 177.0	14 56.0 -59.9 176.0
14°	14 00.0 -60.0 180.0	13 59.8 -60.0 179.0	13 59.0 -60.0 178.0	13 57.8 -60.0 177.0	13 56.1 -60.0 176.0
15°	13 00.0 -60.0 180.0	12 59.8 -60.0 179.0	12 59.0 -60.0 178.0	12 57.8 -60.0 177.0	12 56.1 -60.0 176.0
16°	12 00.0 -60.0 180.0	11 59.8 -60.0 179.0	11 59.0 -60.0 178.0	11 57.8 -60.0 177.1	11 56.1 -59.9 176.1
17°	11 00.0 -60.0 180.0	10 59.8 -60.0 179.0	10 59.0 -59.9 178.1	10 57.8 -59.9 177.1	10 56.2 -60.0 176.1
18°	10 00.0 -60.0 180.0	9 59.8 -60.0 179.0	9 59.1 -60.0 178.1	9 57.9 -60.0 177.1	9 56.2 -60.0 176.1
19°	9 00.0 -60.0 180.0	8 59.8 -60.0 179.0	8 59.1 -60.0 178.1	8 57.9 -60.0 177.1	8 56.2 -59.9 176.2
20°	8 00.0 -60.0 180.0	7 59.8 -60.0 179.1	7 59.1 -60.0 178.1	7 57.9 -60.0 177.2	7 56.3 -60.0 176.2
21°	7 00.0 -60.0 180.0	6 59.8 -60.0 179.1	6 59.1 -60.0 178.1	6 57.9 -60.0 177.2	6 56.3 -60.0 176.2
22°	6 00.0 -60.0 180.0	5 59.8 -60.0 179.1	5 59.1 -60.0 178.1	5 57.9 -59.9 177.2	5 56.3 -59.9 176.3
23°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.1	4 59.1 -60.0 178.2	4 58.0 -60.0 177.2	4 56.4 -60.0 176.3
24°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.1	3 59.1 -60.0 178.2	3 58.0 -60.0 177.3	3 56.4 -60.0 176.3
25°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.1	2 59.1 -60.0 178.2	2 58.0 -60.0 177.3	2 56.4 -59.9 176.4
26°	2 00.0 -60.0 180.0	1 59.8 -60.0 179.1	1 59.1 -60.0 178.2	1 58.0 -60.0 177.3	1 56.5 -60.0 176.4
27°	1 00.0 -60.0 180.0	0 59.8 -60.0 179.1	0 59.1 -60.0 178.2	0 58.0 -60.0 177.3	0 56.5 -60.0 176.4
28°	0 00.0 -60.0 180.0	-0 00.2 -60.0	-0 00.9 -60.0	-0 02.0 -59.9	-0 03.5 -59.9
29°	-1 00.0 -60.0	-1 00.2 -60.0	-1 00.9 -60.0	-1 01.9 -60.0	-1 03.4 -60.0

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	27 53.0 -59.9 174.3	27 50.0 -59.9 173.2	27 46.4 -59.9 172.1	27 42.2 -59.8 171.0	27 37.5 -59.8 169.8
1°	26 53.1 -59.9 174.4	26 50.1 -59.9 173.3	26 46.5 -59.9 172.2	26 42.4 -59.8 171.0	26 37.7 -59.8 169.9
2°	25 53.2 -60.0 174.4	25 50.2 -59.9 173.3	25 46.6 -59.8 172.2	25 42.6 -59.9 171.1	25 37.9 -59.8 170.0
3°	24 53.2 -59.9 174.5	24 50.3 -59.9 173.4	24 46.8 -59.9 172.3	24 42.7 -59.8 171.2	24 38.1 -59.8 170.1
4°	23 53.3 -59.9 174.5	23 50.4 -60.0 173.5	23 46.9 -59.9 172.4	23 42.9 -59.9 171.3	23 38.3 -59.8 170.2
5°	22 53.4 -60.0 174.6	22 50.4 -59.9 173.5	22 47.0 -59.9 172.4	22 43.0 -59.8 171.4	22 38.5 -59.8 170.3
6°	21 53.4 -59.9 174.6	21 50.5 -59.9 173.6	21 47.1 -59.9 172.5	21 43.2 -59.9 171.4	21 38.7 -59.8 170.4
7°	20 53.5 -60.0 174.7	20 50.6 -59.9 173.6	20 47.2 -59.9 172.6	20 43.3 -59.8 171.5	20 38.9 -59.8 170.4
8°	19 53.5 -59.9 174.7	19 50.7 -59.9 173.7	19 47.3 -59.9 172.6	19 43.5 -59.9 171.6	19 39.1 -59.8 170.5
9°	18 53.6 -60.0 174.8	18 50.8 -60.0 173.7	18 47.4 -59.8 172.7	18 43.6 -59.9 171.7	18 39.3 -59.9 170.6
10°	17 53.6 -59.9 174.8	17 50.8 -59.9 173.8	17 47.6 -59.9 172.8	17 43.7 -59.8 171.7	17 39.4 -59.8 170.7
11°	16 53.7 -59.9 174.9	16 50.9 -59.9 173.8	16 47.7 -59.9 172.8	16 43.9 -59.9 171.8	16 39.6 -59.8 170.8
12°	15 53.8 -60.0 174.9	15 51.0 -59.9 173.9	15 47.8 -59.9 172.9	15 44.0 -59.8 171.9	15 39.8 -59.8 170.9
13°	14 53.8 -59.9 175.0	14 51.1 -59.9 174.0	14 47.9 -59.9 172.9	14 44.2 -59.9 171.9	14 40.0 -59.9 170.9
14°	13 53.9 -60.0 175.0	13 51.2 -60.0 174.0	13 48.0 -59.9 173.0	13 44.3 -59.9 172.0	13 40.1 -59.8 171.0
15°	12 53.9 -59.9 175.0	12 51.2 -59.9 174.1	12 48.1 -59.9 173.1	12 44.4 -59.8 172.1	12 40.3 -59.8 171.1
16°	11 54.0 -60.0 175.1	11 51.3 -59.9 174.1	11 48.2 -59.9 173.1	11 44.6 -59.9 172.1	11 40.5 -59.8 171.2
17°	10 54.0 -59.9 175.1	10 51.4 -59.9 174.2	10 48.3 -59.9 173.2	10 44.7 -59.9 172.2	10 40.7 -59.9 171.2
18°	9 54.1 -60.0 175.2	9 51.5 -60.0 174.2	9 48.4 -59.9 173.2	9 44.8 -59.8 172.3	9 40.8 -59.8 171.3
19°	8 54.1 -59.9 175.2	8 51.5 -59.9 174.3	8 48.5 -59.9 173.3	8 45.0 -59.9 172.3	8 41.0 -59.8 171.4
20°	7 54.2 -60.0 175.3	7 51.6 -59.9 174.3	7 48.6 -59.9 173.4	7 45.1 -59.9 172.4	7 41.2 -59.9 171.5
21°	6 54.2 -59.9 175.3	6 51.7 -59.9 174.4	6 48.7 -59.9 173.4	6 45.2 -59.8 172.5	6 41.3 -59.8 171.5
22°	5 54.3 -60.0 175.3	5 51.8 -60.0 174.4	5 48.8 -59.9 173.5	5 45.4 -59.9 172.5	5 41.5 -59.9 171.6
23°	4 54.3 -59.9 175.4	4 51.8 -59.9 174.5	4 48.9 -59.9 173.5	4 45.5 -59.9 172.6	4 41.6 -59.8 171.7
24°	3 54.4 -60.0 175.4	3 51.9 -59.9 174.5	3 49.0 -59.9 173.6	3 45.6 -59.9 172.7	3 41.8 -59.8 171.8
25°	2 54.4 -59.9 175.5	2 52.0 -60.0 174.6	2 49.1 -59.9 173.7	2 45.7 -59.8 172.7	2 42.0 -59.9 171.8
26°	1 54.5 -60.0 175.5	1 52.0 -59.9 174.6	1 49.2 -59.9 173.7	1 45.9 -59.9 172.8	1 42.1 -59.8 171.9
27°	0 54.5 -59.9 175.5	0 52.1 -59.9 174.7	0 49.3 -59.9 173.8	0 46.0 -59.9 172.9	0 42.3 -59.8 172.0
28°	-0 05.4 -60.0	-0 07.8 -59.9	-0 10.6 -59.9	-0 13.9 -59.8	-0 17.5 -59.9
29°	-1 05.4 -59.9	-1 07.7 -60.0	-1 10.5 -59.9	-1 13.7 -59.9	-1 17.4 -59.8

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	27 32.3 -59.8 168.7	27 26.5 -59.7 167.6	27 20.2 -59.7 166.5	27 13.3 -59.6 165.3	27 05.9 -59.5 164.2
1°	26 32.5 -59.7 168.8	26 26.8 -59.7 167.7	26 20.5 -59.6 166.6	26 13.7 -59.5 165.5	26 06.4 -59.5 164.4
2°	25 32.8 -59.8 168.9	25 27.1 -59.7 167.8	25 20.9 -59.7 166.7	25 14.2 -59.6 165.6	25 06.9 -59.5 164.5
3°	24 33.0 -59.7 169.0	24 27.4 -59.7 167.9	24 21.2 -59.6 166.8	24 14.6 -59.6 165.7	24 07.4 -59.6 164.7
4°	23 33.3 -59.8 169.1	23 27.7 -59.7 168.0	23 21.6 -59.7 166.9	23 15.0 -59.6 165.9	23 07.8 -59.5 164.8
5°	22 33.5 -59.8 169.2	22 28.0 -59.7 168.1	22 21.9 -59.6 167.1	22 15.4 -59.7 166.0	22 08.3 -59.6 164.9
6°	21 33.7 -59.7 169.3	21 28.3 -59.8 168.2	21 22.3 -59.7 167.2	21 15.7 -59.6 166.1	21 08.7 -59.5 165.1
7°	20 34.0 -59.8 169.4	20 28.5 -59.7 168.3	20 22.6 -59.7 167.3	20 16.1 -59.6 166.2	20 09.2 -59.6 165.2
8°	19 34.2 -59.8 169.5	19 28.8 -59.7 168.4	19 22.9 -59.7 167.4	19 16.5 -59.6 166.3	19 09.6 -59.6 165.3
9°	18 34.4 -59.8 169.6	18 29.1 -59.8 168.5	18 23.2 -59.7 167.5	18 16.9 -59.6 166.5	18 10.0 -59.5 165.4
10°	17 34.6 -59.7 169.7	17 29.3 -59.7 168.6	17 23.5 -59.6 167.6	17 17.3 -59.7 166.6	17 10.5 -59.6 165.6
11°	16 34.9 -59.8 169.8	16 29.6 -59.7 168.7	16 23.9 -59.7 167.7	16 17.6 -59.6 166.7	16 10.9 -59.6 165.7
12°	15 35.1 -59.8 169.8	15 29.9 -59.8 168.8	15 24.2 -59.7 167.8	15 18.0 -59.7 166.8	15 11.3 -59.6 165.8
13°	14 35.3 -59.8 169.9	14 30.1 -59.7 168.9	14 24.5 -59.7 167.9	14 18.3 -59.6 166.9	14 11.7 -59.6 165.9
14°	13 35.5 -59.8 170.0	13 30.4 -59.8 169.0	13 24.8 -59.7 168.0	13 18.7 -59.7 167.0	13 12.1 -59.6 166.0
15°	12 35.7 -59.8 170.1	12 30.6 -59.7 169.1	12 25.1 -59.7 168.1	12 19.0 -59.6 167.1	12 12.5 -59.5 166.2
16°	11 35.9 -59.8 170.2	11 30.9 -59.8 169.2	11 25.4 -59.7 168.2	11 19.4 -59.7 167.3	11 13.0 -59.6 166.3
17°	10 36.1 -59.8 170.3	10 31.1 -59.7 169.3	10 25.7 -59.7 168.3	10 19.7 -59.6 167.4	10 13.4 -59.6 166.4
18°	9 36.3 -59.8 170.4	9 31.4 -59.8 169.4	9 26.0 -59.7 168.4	9 20.1 -59.7 167.5	9 13.8 -59.6 166.5
19°	8 36.5 -59.8 170.4	8 31.6 -59.7 169.5	8 26.3 -59.7 168.5	8 20.4 -59.6 167.6	8 14.2 -59.7 166.6
20°	7 36.7 -59.8 170.5	7 31.9 -59.8 169.6	7 26.6 -59.8 168.6	7 20.8 -59.7 167.7	7 14.5 -59.6 166.8
21°	6 36.9 -59.8 170.6	6 32.1 -59.7 169.7	6 26.8 -59.7 168.7	6 21.1 -59.6 167.8	6 14.9 -59.6 166.9
22°	5 37.1 -59.7 170.7	5 32.4 -59.8 169.8	5 27.1 -59.7 168.8	5 21.5 -59.7 167.9	5 15.3 -59.6 167.0
23°	4 37.4 -59.8 170.8	4 32.6 -59.7 169.9	4 27.4 -59.7 168.9	4 21.8 -59.7 168.0	4 15.7 -59.6 167.1
24°	3 37.6 -59.8 170.9	3 32.9 -59.8 169.9	3 27.7 -59.7 169.0	3 22.1 -59.6 168.1	3 16.1 -59.6 167.2
25°	2 37.8 -59.8 170.9	2 33.1 -59.8 170.0	2 28.0 -59.7 169.1	2 22.5 -59.7 168.2	2 16.5 -59.6 167.3
26°	1 38.0 -59.8 171.0	1 33.3 -59.7 170.1	1 28.3 -59.7 169.2	1 22.8 -59.7 168.3	1 16.9 -59.6 167.4
27°	0 38.2 -59.8 171.1	0 33.6 -59.8 170.2	0 28.6 -59.7 169.3	0 23.1 -59.6 168.4	0 17.3 -59.6 167.6
28°	-0 21.6 -59.8	-0 26.2 -59.7	-0 31.1 -59.8	-0 36.5 -59.7	-0 42.3 -59.6
29°	-1 21.4 -59.8	-1 25.9 -59.8	-1 30.9 -59.7	-1 36.2 -59.7	-1 41.9 -59.7

Dec	LHA 015° / 345°	LHA 016° / 344°	LHA 017° / 343°	LHA 018° / 342°	LHA 019° / 341°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	26 58.0 -59.4 163.1	26 49.6 -59.4 162.0	26 40.6 -59.3 160.9	26 31.1 -59.2 159.8	26 21.2 -59.2 158.7
1°	25 58.6 -59.5 163.3	25 50.2 -59.4 162.2	25 41.3 -59.3 161.1	25 31.9 -59.2 160.0	25 22.0 -59.1 158.9
2°	24 59.1 -59.5 163.4	24 50.8 -59.4 162.3	24 42.0 -59.3 161.2	24 32.7 -59.2 160.2	24 22.9 -59.2 159.1
3°	23 59.6 -59.4 163.6	23 51.4 -59.4 162.5	23 42.7 -59.3 161.4	23 33.5 -59.3 160.3	23 23.7 -59.1 159.3
4°	23 00.2 -59.5 163.7	22 52.0 -59.4 162.6	22 43.4 -59.4 161.6	22 34.2 -59.2 160.5	22 24.6 -59.2 159.4
5°	22 00.7 -59.5 163.9	21 52.6 -59.4 162.8	21 44.0 -59.3 161.7	21 35.0 -59.3 160.7	21 25.4 -59.2 159.6
6°	21 01.2 -59.5 164.0	20 53.2 -59.4 162.9	20 44.7 -59.4 161.9	20 35.7 -59.3 160.8	20 26.2 -59.2 159.8
7°	20 01.7 -59.5 164.1	19 53.8 -59.5 163.1	19 45.3 -59.3 162.0	19 36.4 -59.3 161.0	19 27.0 -59.2 160.0
8°	19 02.2 -59.5 164.3	18 54.3 -59.4 163.2	18 46.0 -59.4 162.2	18 37.1 -59.3 161.2	18 27.8 -59.2 160.1
9°	18 02.7 -59.5 164.4	17 54.9 -59.4 163.4	17 46.6 -59.4 162.3	17 37.8 -59.3 161.3	17 28.6 -59.3 160.3
10°	17 03.2 -59.5 164.5	16 55.5 -59.5 163.5	16 47.2 -59.4 162.5	16 38.5 -59.3 161.5	16 29.3 -59.2 160.5
11°	16 03.7 -59.5 164.7	15 56.0 -59.5 163.7	15 47.8 -59.4 162.6	15 39.2 -59.3 161.6	15 30.1 -59.3 160.6
12°	15 04.2 -59.6 164.8	14 56.5 -59.4 163.8	14 48.4 -59.3 162.8	14 39.9 -59.3 161.8	14 30.8 -59.2 160.8
13°	14 04.6 -59.5 164.9	13 57.1 -59.5 163.9	13 49.1 -59.4 162.9	13 40.6 -59.4 161.9	13 31.6 -59.3 161.0
14°	13 05.1 -59.5 165.1	12 57.6 -59.5 164.1	12 49.7 -59.5 163.1	12 41.2 -59.3 162.1	12 32.3 -59.2 161.1
15°	12 05.6 -59.6 165.2	11 58.1 -59.4 164.2	11 50.2 -59.4 163.2	11 41.9 -59.3 162.3	11 33.1 -59.3 161.3
16°	11 06.0 -59.5 165.3	10 58.7 -59.5 164.3	10 50.8 -59.4 163.4	10 42.6 -59.4 162.4	10 33.8 -59.3 161.4
17°	10 06.5 -59.5 165.4	9 59.2 -59.5 164.5	9 51.4 -59.4 163.5	9 43.2 -59.3 162.6	9 34.5 -59.2 161.6
18°	9 07.0 -59.6 165.6	8 59.7 -59.5 164.6	8 52.0 -59.4 163.7	8 43.9 -59.4 162.7	8 35.3 -59.3 161.8
19°	8 07.4 -59.5 165.7	8 00.2 -59.5 164.7	7 52.6 -59.4 163.8	7 44.5 -59.3 162.9	7 36.0 -59.3 161.9
20°	7 07.9 -59.6 165.8	7 00.7 -59.4 164.9	6 53.2 -59.5 163.9	6 45.2 -59.4 163.0	6 36.7 -59.3 162.1
21°	6 08.3 -59.5 165.9	6 01.3 -59.5 165.0	5 53.7 -59.4 164.1	5 45.8 -59.4 163.1	5 37.4 -59.3 162.2
22°	5 08.8 -59.6 166.1	5 01.8 -59.5 165.1	4 54.3 -59.4 164.2	4 46.4 -59.3 163.3	4 38.1 -59.3 162.4
23°	4 09.2 -59.5 166.2	4 02.3 -59.5 165.3	3 54.9 -59.4 164.4	3 47.1 -59.4 163.4	3 38.8 -59.3 162.5
24°	3 09.7 -59.6 166.3	3 02.8 -59.5 165.4	2 55.5 -59.5 164.5	2 47.7 -59.4 163.6	2 39.5 -59.3 162.7
25°	2 10.1 -59.5 166.4	2 03.3 -59.5 165.5	1 56.0 -59.4 164.6	1 48.3 -59.3 163.7	1 40.2 -59.3 162.8
26°	1 10.6 -59.6 166.5	1 03.8 -59.5 165.7	0 56.6 -59.4 164.8	0 49.0 -59.4 163.9	0 40.9 -59.2 163.0
27°	0 11.0 -59.6 166.7	0 04.3 -59.5 165.8	-0 02.8 -59.5	-0 10.4 -59.3	-0 18.3 -59.3
28°	-0 48.6 -59.5	-0 55.2 -59.5	-1 02.3 -59.4	-1 09.7 -59.4	-1 17.6 -59.3
29°	-1 48.1 -59.6	-1 54.7 -59.5	-2 01.7 -59.4	-2 09.1 -59.4	-2 16.9 -59.3

Dec	LHA 020° / 340°	LHA 021° / 339°	LHA 022° / 338°	LHA 023° / 337°	LHA 024° / 336°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	26 10.7 -59.1 157.6	25 59.7 -59.0 156.5	25 48.2 -58.8 155.4	25 36.2 -58.7 154.3	25 23.8 -58.7 153.2
1°	25 11.6 -59.0 157.8	25 00.7 -58.9 156.7	24 49.4 -58.9 155.6	24 37.5 -58.8 154.5	24 25.1 -58.6 153.5
2°	24 12.6 -59.1 158.0	24 01.8 -59.0 156.9	23 50.5 -58.9 155.8	23 38.7 -58.8 154.8	23 26.5 -58.7 153.7
3°	23 13.5 -59.1 158.2	23 02.8 -59.0 157.1	22 51.6 -58.9 156.0	22 39.9 -58.8 155.0	22 27.8 -58.7 153.9
4°	22 14.4 -59.1 158.4	22 03.8 -59.0 157.3	21 52.7 -58.9 156.3	21 41.1 -58.8 155.2	21 29.1 -58.8 154.1
5°	21 15.3 -59.1 158.6	21 04.8 -59.0 157.5	20 53.8 -59.0 156.5	20 42.3 -58.9 155.4	20 30.3 -58.7 154.4
6°	20 16.2 -59.1 158.7	20 05.8 -59.1 157.7	19 54.8 -58.9 156.7	19 43.4 -58.8 155.6	19 31.6 -58.8 154.6
7°	19 17.1 -59.1 158.9	19 06.7 -59.0 157.9	18 55.9 -59.0 156.9	18 44.6 -58.9 155.8	18 32.8 -58.8 154.8
8°	18 18.0 -59.2 159.1	18 07.7 -59.1 158.1	17 56.9 -58.9 157.0	17 45.7 -58.9 156.0	17 34.0 -58.7 155.0
9°	17 18.8 -59.1 159.3	17 08.6 -59.0 158.3	16 58.0 -59.0 157.2	16 46.8 -58.9 156.2	16 35.3 -58.9 155.2
10°	16 19.7 -59.2 159.5	16 09.6 -59.1 158.4	15 59.0 -59.0 157.4	15 47.9 -58.9 156.4	15 36.4 -58.8 155.4
11°	15 20.5 -59.1 159.6	15 10.5 -59.1 158.6	15 00.0 -59.0 157.6	14 49.0 -58.9 156.6	14 37.6 -58.8 155.6
12°	14 21.4 -59.2 159.8	14 11.4 -59.1 158.8	14 01.0 -59.0 157.8	13 50.1 -58.9 156.8	13 38.8 -58.8 155.8
13°	13 22.2 -59.2 160.0	13 12.3 -59.1 159.0	13 02.0 -59.0 158.0	12 51.2 -58.9 157.0	12 40.0 -58.9 156.0
14°	12 23.0 -59.2 160.1	12 13.2 -59.1 159.2	12 03.0 -59.1 158.2	11 52.3 -59.0 157.2	11 41.1 -58.8 156.2
15°	11 23.8 -59.2 160.3	11 14.1 -59.1 159.3	11 03.9 -59.0 158.4	10 53.3 -58.9 157.4	10 42.3 -58.9 156.4
16°	10 24.6 -59.2 160.5	10 15.0 -59.1 159.5	10 04.9 -59.0 158.5	9 54.4 -59.0 157.6	9 43.4 -58.8 156.6
17°	9 25.4 -59.2 160.6	9 15.9 -59.2 159.7	9 05.9 -59.1 158.7	8 55.4 -58.9 157.8	8 44.6 -58.9 156.8
18°	8 26.2 -59.2 160.8	8 16.7 -59.1 159.9	8 06.8 -59.0 158.9	7 56.5 -59.0 158.0	7 45.7 -58.9 157.0
19°	7 27.0 -59.2 161.0	7 17.6 -59.1 160.0	7 07.8 -59.1 159.1	6 57.5 -59.0 158.1	6 46.8 -58.9 157.2
20°	6 27.8 -59.2 161.1	6 18.5 -59.2 160.2	6 08.7 -59.0 159.3	5 58.5 -58.9 158.3	5 47.9 -58.9 157.4
21°	5 28.6 -59.2 161.3	5 19.3 -59.1 160.4	5 09.7 -59.1 159.4	4 59.6 -59.0 158.5	4 49.0 -58.9 157.6
22°	4 29.4 -59.2 161.5	4 20.2 -59.1 160.5	4 10.6 -59.1 159.6	4 00.6 -59.0 158.7	3 50.1 -58.8 157.8
23°	3 30.2 -59.3 161.6	3 21.1 -59.2 160.7	3 11.5 -59.0 159.8	3 01.6 -59.0 158.9	2 51.3 -58.9 158.0
24°	2 30.9 -59.2 161.8	2 21.9 -59.1 160.9	2 12.5 -59.1 160.0	2 02.6 -59.0 159.1	1 52.4 -58.9 158.2
25°	1 31.7 -59.2 161.9	1 22.8 -59.2 161.0	1 13.4 -59.1 160.1	1 03.6 -58.9 159.3	0 53.5 -58.9 158.4
26°	0 32.5 -59.2 162.1	0 23.6 -59.1 161.2	0 14.3 -59.0 160.3	0 04.7 -59.0 159.4	-0 05.4 -58.9
27°	-0 26.7 -59.2	-0 35.5 -59.2	-0 44.7 -59.1	-0 54.3 -59.0	-1 04.3 -58.9
28°	-1 25.9 -59.3	-1 34.7 -59.1	-1 43.8 -59.0	-1 53.3 -59.0	-2 03.2 -58.9
29°	-2 25.2 -59.2	-2 33.8 -59.1	-2 42.8 -59.1	-2 52.3 -59.0	-3 02.1 -58.9

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	25 10.9 -58.6 152.2	24 57.5 -58.4 151.1	24 43.6 -58.3 150.0	24 29.3 -58.2 148.9	24 14.6 -58.1 147.9
1°	24 12.3 -58.5 152.4	23 59.1 -58.5 151.3	23 45.3 -58.4 150.3	23 31.1 -58.2 149.2	23 16.5 -58.2 148.2
2°	23 13.8 -58.6 152.6	23 00.6 -58.5 151.6	22 46.9 -58.3 150.5	22 32.9 -58.3 149.5	22 18.3 -58.1 148.4
3°	22 15.2 -58.7 152.9	22 02.1 -58.5 151.8	21 48.6 -58.4 150.8	21 34.6 -58.3 149.7	21 20.2 -58.2 148.7
4°	21 16.5 -58.6 153.1	21 03.6 -58.6 152.1	20 50.2 -58.5 151.0	20 36.3 -58.3 150.0	20 22.0 -58.2 148.9
5°	20 17.9 -58.6 153.3	20 05.0 -58.5 152.3	19 51.7 -58.4 151.3	19 38.0 -58.4 150.2	19 23.8 -58.3 149.2
6°	19 19.3 -58.7 153.6	19 06.5 -58.6 152.5	18 53.3 -58.5 151.5	18 39.6 -58.4 150.5	18 25.5 -58.2 149.5
7°	18 20.6 -58.7 153.8	18 07.9 -58.6 152.8	17 54.8 -58.5 151.7	17 41.2 -58.3 150.7	17 27.3 -58.3 149.7
8°	17 21.9 -58.7 154.0	17 09.3 -58.6 153.0	16 56.3 -58.5 152.0	16 42.9 -58.4 151.0	16 29.0 -58.3 150.0
9°	16 23.2 -58.7 154.2	16 10.7 -58.6 153.2	15 57.8 -58.5 152.2	15 44.5 -58.4 151.2	15 30.7 -58.3 150.2
10°	15 24.5 -58.7 154.4	15 12.1 -58.6 153.4	14 59.3 -58.5 152.4	14 46.1 -58.5 151.4	14 32.4 -58.4 150.4
11°	14 25.8 -58.7 154.6	14 13.5 -58.6 153.6	14 00.8 -58.6 152.7	13 47.6 -58.4 151.7	13 34.0 -58.3 150.7
12°	13 27.1 -58.8 154.8	13 14.9 -58.7 153.9	13 02.2 -58.5 152.9	12 49.2 -58.5 151.9	12 35.7 -58.3 150.9
13°	12 28.3 -58.7 155.1	12 16.2 -58.6 154.1	12 03.7 -58.6 153.1	11 50.7 -58.4 152.1	11 37.4 -58.4 151.2
14°	11 29.6 -58.8 155.3	11 17.6 -58.7 154.3	11 05.1 -58.5 153.3	10 52.3 -58.5 152.4	10 39.0 -58.4 151.4
15°	10 30.8 -58.8 155.5	10 18.9 -58.7 154.5	10 06.6 -58.6 153.5	9 53.8 -58.5 152.6	9 40.6 -58.4 151.6
16°	9 32.0 -58.7 155.7	9 20.2 -58.7 154.7	9 08.0 -58.6 153.8	8 55.3 -58.5 152.8	8 42.2 -58.4 151.9
17°	8 33.3 -58.8 155.9	8 21.5 -58.7 154.9	8 09.4 -58.6 154.0	7 56.8 -58.5 153.0	7 43.8 -58.4 152.1
18°	7 34.5 -58.8 156.1	7 22.8 -58.7 155.1	7 10.8 -58.6 154.2	6 58.3 -58.5 153.3	6 45.4 -58.4 152.3
19°	6 35.7 -58.8 156.3	6 24.1 -58.7 155.3	6 12.2 -58.6 154.4	5 59.8 -58.5 153.5	5 47.0 -58.4 152.6
20°	5 36.9 -58.8 156.5	5 25.4 -58.7 155.6	5 13.6 -58.6 154.6	5 01.3 -58.5 153.7	4 48.6 -58.4 152.8
21°	4 38.1 -58.8 156.7	4 26.7 -58.7 155.8	4 15.0 -58.6 154.8	4 02.8 -58.5 153.9	3 50.2 -58.4 153.0
22°	3 39.3 -58.8 156.9	3 28.0 -58.7 156.0	3 16.4 -58.7 155.1	3 04.3 -58.5 154.2	2 51.8 -58.4 153.3
23°	2 40.5 -58.8 157.1	2 29.3 -58.7 156.2	2 17.7 -58.6 155.3	2 05.8 -58.6 154.4	1 53.4 -58.5 153.5
24°	1 41.7 -58.8 157.3	1 30.6 -58.7 156.4	1 19.1 -58.6 155.5	1 07.2 -58.5 154.6	0 54.9 -58.4 153.7
25°	0 42.9 -58.8 157.5	0 31.9 -58.7 156.6	0 20.5 -58.6 155.7	0 08.7 -58.5 154.8	-0 03.5 -58.4
26°	-0 15.9 -58.8	-0 26.8 -58.7	-0 38.1 -58.7	-0 49.8 -58.5	-1 01.9 -58.4
27°	-1 14.7 -58.8	-1 25.5 -58.8	-1 36.8 -58.6	-1 48.3 -58.6	-2 00.3 -58.4
28°	-2 13.5 -58.9	-2 24.3 -58.7	-2 35.4 -58.6	-2 46.9 -58.5	-2 58.7 -58.5
29°	-3 12.4 -58.8	-3 23.0 -58.7	-3 34.0 -58.6	-3 45.4 -58.5	-3 57.2 -58.4

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	23 59.4 -58.0 146.8	23 43.8 -57.9 145.8	23 27.7 -57.8 144.7	23 11.2 -57.6 143.7	22 54.3 -57.5 142.6
1°	23 01.4 -58.0 147.1	22 45.9 -57.9 146.1	22 29.9 -57.8 145.0	22 13.6 -57.7 144.0	21 56.8 -57.6 142.9
2°	22 03.4 -58.1 147.4	21 48.0 -58.0 146.3	21 32.1 -57.8 145.3	21 15.9 -57.7 144.3	20 59.2 -57.6 143.2
3°	21 05.3 -58.1 147.6	20 50.0 -58.0 146.6	20 34.3 -57.9 145.6	20 18.2 -57.8 144.6	20 01.6 -57.6 143.5
4°	20 07.2 -58.1 147.9	19 52.0 -58.0 146.9	19 36.4 -57.8 145.9	19 20.4 -57.7 144.8	19 04.0 -57.6 143.8
5°	19 09.1 -58.1 148.2	18 54.0 -58.0 147.2	18 38.6 -57.9 146.1	18 22.7 -57.8 145.1	18 06.4 -57.7 144.1
6°	18 11.0 -58.2 148.4	17 56.0 -58.0 147.4	17 40.7 -58.0 146.4	17 24.9 -57.8 145.4	17 08.7 -57.7 144.4
7°	17 12.8 -58.1 148.7	16 58.0 -58.1 147.7	16 42.7 -57.9 146.7	16 27.1 -57.9 145.7	16 11.0 -57.8 144.7
8°	16 14.7 -58.2 149.0	15 59.9 -58.1 148.0	15 44.8 -58.0 147.0	15 29.2 -57.8 146.0	15 13.2 -57.7 145.0
9°	15 16.5 -58.2 149.2	15 01.8 -58.1 148.2	14 46.8 -58.0 147.2	14 31.4 -57.9 146.2	14 15.5 -57.8 145.3
10°	14 18.3 -58.2 149.5	14 03.7 -58.1 148.5	13 48.8 -58.0 147.5	13 33.5 -57.9 146.5	13 17.7 -57.8 145.5
11°	13 20.1 -58.3 149.7	13 05.6 -58.1 148.7	12 50.8 -58.0 147.8	12 35.6 -57.9 146.8	12 19.9 -57.8 145.8
12°	12 21.8 -58.2 150.0	12 07.5 -58.1 149.0	11 52.8 -58.0 148.0	11 37.7 -58.0 147.1	11 22.1 -57.8 146.1
13°	11 23.6 -58.3 150.2	11 09.4 -58.2 149.2	10 54.8 -58.1 148.3	10 39.7 -57.9 147.3	10 24.3 -57.8 146.4
14°	10 25.3 -58.3 150.4	10 11.2 -58.2 149.5	9 56.7 -58.1 148.5	9 41.8 -58.0 147.6	9 26.5 -57.8 146.6
15°	9 27.0 -58.2 150.7	9 13.0 -58.1 149.7	8 58.6 -58.0 148.8	8 43.8 -57.9 147.8	8 28.7 -57.9 146.9
16°	8 28.8 -58.3 150.9	8 14.9 -58.2 150.0	8 00.6 -58.1 149.0	7 45.9 -58.0 148.1	7 30.8 -57.9 147.2
17°	7 30.5 -58.3 151.2	7 16.7 -58.2 150.2	7 02.5 -58.1 149.3	6 47.9 -58.0 148.4	6 32.9 -57.8 147.4
18°	6 32.2 -58.3 151.4	6 18.5 -58.2 150.5	6 04.4 -58.1 149.5	5 49.9 -58.0 148.6	5 35.1 -57.9 147.7
19°	5 33.9 -58.3 151.6	5 20.3 -58.2 150.7	5 06.3 -58.1 149.8	4 51.9 -57.9 148.9	4 37.2 -57.9 148.0
20°	4 35.6 -58.4 151.9	4 22.1 -58.2 151.0	4 08.2 -58.1 150.0	3 54.0 -58.0 149.1	3 39.3 -57.9 148.2
21°	3 37.2 -58.3 152.1	3 23.9 -58.2 151.2	3 10.1 -58.1 150.3	2 56.0 -58.0 149.4	2 41.4 -57.9 148.5
22°	2 38.9 -58.3 152.3	2 25.7 -58.3 151.4	2 12.0 -58.1 150.5	1 58.0 -58.1 149.7	1 43.5 -57.9 148.8
23°	1 40.6 -58.3 152.6	1 27.4 -58.2 151.7	1 13.9 -58.1 150.8	0 59.9 -58.0 149.9	0 45.6 -57.9 149.0
24°	0 42.3 -58.3 152.8	0 29.2 -58.2 151.9	0 15.8 -58.1 151.0	0 01.9 -58.0 150.2	-0 12.3 -57.9
25°	-0 16.0 -58.4	-0 29.0 -58.2	-0 42.3 -58.2	-0 56.1 -58.0	-1 10.2 -57.8
26°	-1 14.4 -58.3	-1 27.2 -58.2	-1 40.5 -58.1	-1 54.1 -58.0	-2 08.0 -57.9
27°	-2 12.7 -58.3	-2 25.4 -58.3	-2 38.6 -58.1	-2 52.1 -58.0	-3 05.9 -57.9
28°	-3 11.0 -58.3	-3 23.7 -58.2	-3 36.7 -58.1	-3 50.1 -58.0	-4 03.8 -57.9
29°	-4 09.3 -58.3	-4 21.9 -58.2	-4 34.8 -58.1	-4 48.1 -57.9	-5 01.7 -57.9

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	22 37.0 -57.4 141.6	22 19.3 -57.3 140.6	22 01.2 -57.1 139.5	21 42.7 -57.0 138.5	21 23.9 -56.9 137.5
1°	21 39.6 -57.4 141.9	21 22.0 -57.3 140.9	21 04.1 -57.2 139.8	20 45.7 -57.1 138.8	20 27.0 -57.0 137.8
2°	20 42.2 -57.5 142.2	20 24.7 -57.4 141.2	20 06.9 -57.3 140.2	19 48.6 -57.1 139.2	19 30.0 -57.0 138.1
3°	19 44.7 -57.5 142.5	19 27.3 -57.3 141.5	19 09.6 -57.2 140.5	18 51.5 -57.1 139.5	18 33.0 -57.0 138.5
4°	18 47.2 -57.6 142.8	18 30.0 -57.5 141.8	18 12.4 -57.3 140.8	17 54.4 -57.2 139.8	17 36.0 -57.1 138.8
5°	17 49.6 -57.5 143.1	17 32.5 -57.4 142.1	17 15.1 -57.4 141.1	16 57.2 -57.2 140.1	16 38.9 -57.1 139.1
6°	16 52.1 -57.6 143.4	16 35.1 -57.5 142.4	16 17.7 -57.3 141.4	16 00.0 -57.3 140.4	15 41.8 -57.1 139.4
7°	15 54.5 -57.6 143.7	15 37.6 -57.5 142.7	15 20.4 -57.4 141.7	15 02.7 -57.2 140.7	14 44.7 -57.1 139.8
8°	14 56.9 -57.6 144.0	14 40.1 -57.5 143.0	14 23.0 -57.4 142.0	14 05.5 -57.3 141.1	13 47.6 -57.2 140.1
9°	13 59.3 -57.7 144.3	13 42.6 -57.5 143.3	13 25.6 -57.4 142.3	13 08.2 -57.3 141.4	12 50.4 -57.2 140.4
10°	13 01.6 -57.7 144.6	12 45.1 -57.6 143.6	12 28.2 -57.5 142.6	12 10.9 -57.3 141.7	11 53.2 -57.2 140.7
11°	12 03.9 -57.7 144.8	11 47.5 -57.6 143.9	11 30.7 -57.4 142.9	11 13.6 -57.4 142.0	10 56.0 -57.2 141.0
12°	11 06.2 -57.7 145.1	10 49.9 -57.6 144.2	10 33.3 -57.5 143.2	10 16.2 -57.4 142.3	9 58.8 -57.3 141.3
13°	10 08.5 -57.7 145.4	9 52.3 -57.6 144.5	9 35.8 -57.5 143.5	9 18.8 -57.3 142.6	9 01.5 -57.2 141.6
14°	9 10.8 -57.7 145.7	8 54.7 -57.6 144.7	8 38.3 -57.5 143.8	8 21.5 -57.4 142.9	8 04.3 -57.3 141.9
15°	8 13.1 -57.8 146.0	7 57.1 -57.6 145.0	7 40.8 -57.5 144.1	7 24.1 -57.4 143.2	7 07.0 -57.3 142.2
16°	7 15.3 -57.7 146.2	6 59.5 -57.6 145.3	6 43.3 -57.6 144.4	6 26.7 -57.4 143.4	6 09.7 -57.3 142.5
17°	6 17.6 -57.8 146.5	6 01.9 -57.7 145.6	5 45.7 -57.5 144.7	5 29.3 -57.4 143.7	5 12.4 -57.3 142.8
18°	5 19.8 -57.7 146.8	5 04.2 -57.6 145.9	4 48.2 -57.5 144.9	4 31.9 -57.5 144.0	4 15.1 -57.3 143.1
19°	4 22.1 -57.8 147.1	4 06.6 -57.7 146.1	3 50.7 -57.6 145.2	3 34.4 -57.4 144.3	3 17.8 -57.3 143.4
20°	3 24.3 -57.8 147.3	3 08.9 -57.7 146.4	2 53.1 -57.5 145.5	2 37.0 -57.4 144.6	2 20.5 -57.3 143.7
21°	2 26.5 -57.8 147.6	2 11.2 -57.6 146.7	1 55.6 -57.6 145.8	1 39.6 -57.5 144.9	1 23.2 -57.3 144.0
22°	1 28.7 -57.8 147.9	1 13.6 -57.7 147.0	0 58.0 -57.5 146.1	0 42.1 -57.4 145.2	0 25.9 -57.4 144.3
23°	0 30.9 -57.7 148.1	0 15.9 -57.7 147.2	0 00.5 -57.6 146.4	-0 15.3 -57.5	-0 31.5 -57.3
24°	-0 26.8 -57.8	-0 41.8 -57.6	-0 57.1 -57.5	-1 12.8 -57.4	-1 28.8 -57.3
25°	-1 24.6 -57.8	-1 39.4 -57.7	-1 54.6 -57.6	-2 10.2 -57.4	-2 26.1 -57.3
26°	-2 22.4 -57.8	-2 37.1 -57.7	-2 52.2 -57.5	-3 07.6 -57.5	-3 23.4 -57.3
27°	-3 20.2 -57.8	-3 34.8 -57.6	-3 49.7 -57.6	-4 05.1 -57.4	-4 20.7 -57.3
28°	-4 18.0 -57.7	-4 32.4 -57.7	-4 47.3 -57.5	-5 02.5 -57.4	-5 18.0 -57.3
29°	-5 15.7 -57.8	-5 30.1 -57.6	-5 44.8 -57.5	-5 59.9 -57.4	-6 15.3 -57.3

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	21 04.7 -56.8 136.5	20 45.1 -56.7 135.4	20 25.1 -56.5 134.4	20 04.9 -56.5 133.4	19 44.2 -56.3 132.4
1°	20 07.9 -56.9 136.8	19 48.4 -56.7 135.8	19 28.6 -56.6 134.8	19 08.4 -56.4 133.8	18 47.9 -56.3 132.8
2°	19 11.0 -56.8 137.1	18 51.7 -56.8 136.1	18 32.0 -56.6 135.1	18 12.0 -56.5 134.2	17 51.6 -56.4 133.2
3°	18 14.2 -56.9 137.5	17 54.9 -56.7 136.5	17 35.4 -56.7 135.5	17 15.5 -56.6 134.5	16 55.2 -56.4 133.5
4°	17 17.3 -57.0 137.8	16 58.2 -56.9 136.8	16 38.7 -56.7 135.8	16 18.9 -56.6 134.9	15 58.8 -56.5 133.9
5°	16 20.3 -57.0 138.1	16 01.3 -56.8 137.2	15 42.0 -56.7 136.2	15 22.3 -56.6 135.2	15 02.3 -56.5 134.2
6°	15 23.3 -57.0 138.5	15 04.5 -56.9 137.5	14 45.3 -56.8 136.5	14 25.7 -56.6 135.5	14 05.8 -56.5 134.6
7°	14 26.3 -57.0 138.8	14 07.6 -56.9 137.8	13 48.5 -56.8 136.9	13 29.1 -56.7 135.9	13 09.3 -56.5 134.9
8°	13 29.3 -57.0 139.1	13 10.7 -56.9 138.1	12 51.7 -56.8 137.2	12 32.4 -56.7 136.2	12 12.8 -56.6 135.3
9°	12 32.3 -57.1 139.4	12 13.8 -57.0 138.5	11 54.9 -56.8 137.5	11 35.7 -56.7 136.6	11 16.2 -56.6 135.6
10°	11 35.2 -57.1 139.7	11 16.8 -57.0 138.8	10 58.1 -56.9 137.8	10 39.0 -56.7 136.9	10 19.6 -56.6 135.9
11°	10 38.1 -57.1 140.1	10 19.8 -56.9 139.1	10 01.2 -56.8 138.2	9 42.3 -56.8 137.2	9 23.0 -56.7 136.3
12°	9 41.0 -57.1 140.4	9 22.9 -57.1 139.4	9 04.4 -56.9 138.5	8 45.5 -56.8 137.5	8 26.3 -56.6 136.6
13°	8 43.9 -57.2 140.7	8 25.8 -57.0 139.7	8 07.5 -56.9 138.8	7 48.7 -56.7 137.9	7 29.7 -56.7 136.9
14°	7 46.7 -57.1 141.0	7 28.8 -57.0 140.1	7 10.6 -57.0 139.1	6 52.0 -56.8 138.2	6 33.0 -56.7 137.3
15°	6 49.6 -57.2 141.3	6 31.8 -57.1 140.4	6 13.6 -56.9 139.4	5 55.2 -56.9 138.5	5 36.3 -56.7 137.6
16°	5 52.4 -57.2 141.6	5 34.7 -57.0 140.7	5 16.7 -56.9 139.8	4 58.3 -56.8 138.8	4 39.6 -56.7 137.9
17°	4 55.2 -57.2 141.9	4 37.7 -57.1 141.0	4 19.8 -57.0 140.1	4 01.5 -56.8 139.2	3 42.9 -56.7 138.3
18°	3 58.0 -57.1 142.2	3 40.6 -57.1 141.3	3 22.8 -56.9 140.4	3 04.7 -56.8 139.5	2 46.2 -56.7 138.6
19°	3 00.9 -57.2 142.5	2 43.5 -57.0 141.6	2 25.9 -57.0 140.7	2 07.9 -56.9 139.8	1 49.5 -56.7 138.9
20°	2 03.7 -57.2 142.8	1 46.5 -57.1 141.9	1 28.9 -57.0 141.0	1 11.0 -56.8 140.1	0 52.8 -56.7 139.2
21°	1 06.5 -57.2 143.1	0 49.4 -57.1 142.2	0 31.9 -56.9 141.3	0 14.2 -56.9 140.5	-0 03.9 -56.7
22°	0 09.3 -57.3 143.4	-0 07.7 -57.1	-0 25.0 -57.0	-0 42.7 -56.8	-1 00.6 -56.8
23°	-0 48.0 -57.2	-1 04.8 -57.1	-1 22.0 -56.9	-1 39.5 -56.8	-1 57.4 -56.7
24°	-1 45.2 -57.2	-2 01.9 -57.1	-2 18.9 -57.0	-2 36.3 -56.9	-2 54.1 -56.7
25°	-2 42.4 -57.1	-2 59.0 -57.0	-3 15.9 -56.9	-3 33.2 -56.8	-3 50.8 -56.7
26°	-3 39.5 -57.2	-3 56.0 -57.1	-4 12.8 -57.0	-4 30.0 -56.8	-4 47.5 -56.7
27°	-4 36.7 -57.2	-4 53.1 -57.0	-5 09.8 -56.9	-5 26.8 -56.8	-5 44.2 -56.7
28°	-5 33.9 -57.2	-5 50.1 -57.1	-6 06.7 -56.9	-6 23.6 -56.8	-6 40.9 -56.6
29°	-6 31.1 -57.1	-6 47.2 -57.0	-7 03.6 -56.9	-7 20.4 -56.8	-7 37.5 -56.7

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	19 23.3 -56.2 131.4	19 02.0 -56.0 130.5	18 40.4 -55.9 129.5	18 18.5 -55.8 128.5	17 56.3 -55.7 127.5
1°	18 27.1 -56.2 131.8	18 06.0 -56.2 130.8	17 44.5 -56.0 129.8	17 22.7 -55.9 128.9	17 00.6 -55.7 127.9
2°	17 30.9 -56.3 132.2	17 09.8 -56.1 131.2	16 48.5 -56.0 130.2	16 26.8 -55.9 129.3	16 04.9 -55.8 128.3
3°	16 34.6 -56.3 132.5	16 13.7 -56.2 131.6	15 52.5 -56.1 130.6	15 30.9 -55.9 129.6	15 09.1 -55.9 128.7
4°	15 38.3 -56.3 132.9	15 17.5 -56.2 131.9	14 56.4 -56.1 131.0	14 35.0 -56.0 130.0	14 13.2 -55.8 129.0
5°	14 42.0 -56.4 133.3	14 21.3 -56.3 132.3	14 00.3 -56.1 131.3	13 39.0 -56.0 130.4	13 17.4 -55.9 129.4
6°	13 45.6 -56.4 133.6	13 25.0 -56.2 132.7	13 04.2 -56.2 131.7	12 43.0 -56.1 130.7	12 21.5 -55.9 129.8
7°	12 49.2 -56.4 134.0	12 28.8 -56.4 133.0	12 08.0 -56.2 132.1	11 46.9 -56.0 131.1	11 25.6 -56.0 130.2
8°	11 52.8 -56.5 134.3	11 32.4 -56.3 133.4	11 11.8 -56.2 132.4	10 50.9 -56.1 131.5	10 29.6 -56.0 130.5
9°	10 56.3 -56.5 134.7	10 36.1 -56.3 133.7	10 15.6 -56.2 132.8	9 54.8 -56.2 131.8	9 33.6 -56.0 130.9
10°	9 59.8 -56.5 135.0	9 39.8 -56.4 134.1	9 19.4 -56.3 133.1	8 58.6 -56.1 132.2	8 37.6 -56.0 131.3
11°	9 03.3 -56.5 135.3	8 43.4 -56.4 134.4	8 23.1 -56.3 133.5	8 02.5 -56.2 132.5	7 41.6 -56.1 131.6
12°	8 06.8 -56.5 135.7	7 47.0 -56.4 134.8	7 26.8 -56.3 133.8	7 06.3 -56.1 132.9	6 45.5 -56.0 132.0
13°	7 10.3 -56.6 136.0	6 50.6 -56.5 135.1	6 30.5 -56.3 134.2	6 10.2 -56.2 133.3	5 49.5 -56.1 132.3
14°	6 13.7 -56.5 136.4	5 54.1 -56.4 135.4	5 34.2 -56.3 134.5	5 14.0 -56.2 133.6	4 53.4 -56.1 132.7
15°	5 17.2 -56.6 136.7	4 57.7 -56.5 135.8	4 37.9 -56.3 134.9	4 17.8 -56.2 134.0	3 57.3 -56.1 133.1
16°	4 20.6 -56.6 137.0	4 01.2 -56.4 136.1	3 41.6 -56.4 135.2	3 21.6 -56.3 134.3	3 01.2 -56.1 133.4
17°	3 24.0 -56.6 137.4	3 04.8 -56.5 136.5	2 45.2 -56.3 135.6	2 25.3 -56.2 134.7	2 05.1 -56.1 133.8
18°	2 27.4 -56.6 137.7	2 08.3 -56.5 136.8	1 48.9 -56.4 135.9	1 29.1 -56.2 135.0	1 09.0 -56.1 134.1
19°	1 30.8 -56.6 138.0	1 11.8 -56.4 137.1	0 52.5 -56.3 136.2	0 32.9 -56.3 135.4	0 12.9 -56.1 134.5
20°	0 34.2 -56.6 138.4	0 15.4 -56.5 137.5	-0 03.8 -56.4	-0 23.4 -56.2	-0 43.2 -56.1
21°	-0 22.4 -56.6	-0 41.1 -56.5	-1 00.2 -56.3	-1 19.6 -56.2	-1 39.3 -56.1
22°	-1 19.0 -56.5	-1 37.6 -56.5	-1 56.5 -56.4	-2 15.8 -56.2	-2 35.4 -56.1
23°	-2 15.5 -56.6	-2 34.1 -56.4	-2 52.9 -56.3	-3 12.0 -56.2	-3 31.5 -56.1
24°	-3 12.1 -56.6	-3 30.5 -56.5	-3 49.2 -56.4	-4 08.2 -56.2	-4 27.6 -56.0
25°	-4 08.7 -56.6	-4 27.0 -56.4	-4 45.6 -56.3	-5 04.4 -56.2	-5 23.6 -56.1
26°	-5 05.3 -56.6	-5 23.4 -56.5	-5 41.9 -56.3	-6 00.6 -56.2	-6 19.7 -56.1
27°	-6 01.9 -56.5	-6 19.9 -56.4	-6 38.2 -56.3	-6 56.8 -56.2	-7 15.8 -56.0
28°	-6 58.4 -56.5	-7 16.3 -56.4	-7 34.5 -56.3	-7 53.0 -56.1	-8 11.8 -56.0
29°	-7 54.9 -56.6	-8 12.7 -56.4	-8 30.8 -56.2	-8 49.1 -56.2	-9 07.8 -56.0

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	17 33.8 -55.6 126.5	17 11.1 -55.5 125.6	16 48.0 -55.3 124.6	16 24.7 -55.3 123.6	16 01.1 -55.1 122.7
1°	16 38.2 -55.6 126.9	16 15.6 -55.5 126.0	15 52.7 -55.5 125.0	15 29.4 -55.3 124.0	15 06.0 -55.2 123.1
2°	15 42.6 -55.7 127.3	15 20.1 -55.6 126.4	14 57.2 -55.4 125.4	14 34.1 -55.3 124.4	14 10.8 -55.2 123.5
3°	14 46.9 -55.7 127.7	14 24.5 -55.6 126.7	14 01.8 -55.5 125.8	13 38.8 -55.4 124.8	13 15.6 -55.3 123.9
4°	13 51.2 -55.7 128.1	13 28.9 -55.6 127.1	13 06.3 -55.5 126.2	12 43.4 -55.4 125.2	12 20.3 -55.3 124.3
5°	12 55.5 -55.8 128.5	12 33.3 -55.7 127.5	12 10.8 -55.6 126.6	11 48.0 -55.4 125.6	11 25.0 -55.3 124.7
6°	11 59.7 -55.8 128.8	11 37.6 -55.7 127.9	11 15.2 -55.5 127.0	10 52.6 -55.5 126.0	10 29.7 -55.4 125.1
7°	11 03.9 -55.9 129.2	10 41.9 -55.7 128.3	10 19.7 -55.7 127.3	9 57.1 -55.5 126.4	9 34.3 -55.4 125.5
8°	10 08.0 -55.8 129.6	9 46.2 -55.8 128.7	9 24.0 -55.6 127.7	9 01.6 -55.5 126.8	8 38.9 -55.4 125.9
9°	9 12.2 -55.9 130.0	8 50.4 -55.7 129.0	8 28.4 -55.6 128.1	8 06.1 -55.5 127.2	7 43.5 -55.4 126.3
10°	8 16.3 -55.9 130.3	7 54.7 -55.8 129.4	7 32.8 -55.7 128.5	7 10.6 -55.6 127.6	6 48.1 -55.4 126.6
11°	7 20.4 -55.9 130.7	6 58.9 -55.8 129.8	6 37.1 -55.7 128.9	6 15.0 -55.6 127.9	5 52.7 -55.5 127.0
12°	6 24.5 -56.0 131.1	6 03.1 -55.9 130.1	5 41.4 -55.7 129.2	5 19.4 -55.6 128.3	4 57.2 -55.5 127.4
13°	5 28.5 -55.9 131.4	5 07.2 -55.8 130.5	4 45.7 -55.7 129.6	4 23.8 -55.6 128.7	4 01.7 -55.5 127.8
14°	4 32.6 -56.0 131.8	4 11.4 -55.8 130.9	3 50.0 -55.8 130.0	3 28.2 -55.6 129.1	3 06.2 -55.5 128.2
15°	3 36.6 -56.0 132.1	3 15.6 -55.9 131.2	2 54.2 -55.7 130.3	2 32.6 -55.6 129.4	2 10.7 -55.5 128.6
16°	2 40.6 -56.0 132.5	2 19.7 -55.8 131.6	1 58.5 -55.7 130.7	1 37.0 -55.6 129.8	1 15.2 -55.5 128.9
17°	1 44.6 -55.9 132.9	1 23.9 -55.9 132.0	1 02.8 -55.8 131.1	0 41.4 -55.6 130.2	0 19.7 -55.5 129.3
18°	0 48.7 -56.0 133.2	0 28.0 -55.9 132.3	0 07.0 -55.7 131.5	-0 14.2 -55.7	-0 35.8 -55.5
19°	-0 07.3 -56.0	-0 27.9 -55.8	-0 48.7 -55.8	-1 09.9 -55.6	-1 31.3 -55.5
20°	-1 03.3 -56.0	-1 23.7 -55.9	-1 44.5 -55.7	-2 05.5 -55.6	-2 26.8 -55.5
21°	-1 59.3 -56.0	-2 19.6 -55.8	-2 40.2 -55.7	-3 01.1 -55.6	-3 22.3 -55.4
22°	-2 55.3 -55.9	-3 15.4 -55.9	-3 35.9 -55.7	-3 56.7 -55.6	-4 17.7 -55.5
23°	-3 51.2 -56.0	-4 11.3 -55.8	-4 31.6 -55.8	-4 52.3 -55.6	-5 13.2 -55.5
24°	-4 47.2 -56.0	-5 07.1 -55.9	-5 27.4 -55.7	-5 47.9 -55.5	-6 08.7 -55.4
25°	-5 43.2 -55.9	-6 03.0 -55.8	-6 23.1 -55.6	-6 43.4 -55.6	-7 04.1 -55.4
26°	-6 39.1 -55.9	-6 58.8 -55.8	-7 18.7 -55.7	-7 39.0 -55.5	-7 59.5 -55.4
27°	-7 35.0 -55.9	-7 54.6 -55.7	-8 14.4 -55.6	-8 34.5 -55.5	-8 54.9 -55.4
28°	-8 30.9 -55.9	-8 50.3 -55.8	-9 10.0 -55.6	-9 30.0 -55.5	-9 50.3 -55.4
29°	-9 26.8 -55.8	-9 46.1 -55.7			

Dec	LHA 055° / 305°	LHA 056° / 304°	LHA 057° / 303°	LHA 058° / 302°	LHA 059° / 301°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	15 37.3 -55.1 121.7	15 13.2 -54.9 120.8	14 48.9 -54.8 119.8	14 24.3 -54.7 118.9	13 59.6 -54.7 117.9
1°	14 42.2 -55.0 122.1	14 18.3 -55.0 121.2	13 54.1 -54.9 120.2	13 29.6 -54.8 119.3	13 04.9 -54.6 118.4
2°	13 47.2 -55.1 122.5	13 23.3 -55.0 121.6	12 59.2 -54.9 120.7	12 34.8 -54.8 119.7	12 10.3 -54.7 118.8
3°	12 52.1 -55.2 123.0	12 28.3 -55.0 122.0	12 04.3 -54.9 121.1	11 40.0 -54.8 120.1	11 15.6 -54.8 119.2
4°	11 56.9 -55.2 123.4	11 33.3 -55.1 122.4	11 09.4 -55.0 121.5	10 45.2 -54.9 120.6	10 20.8 -54.7 119.6
5°	11 01.7 -55.2 123.8	10 38.2 -55.1 122.8	10 14.4 -55.0 121.9	9 50.3 -54.9 121.0	9 26.1 -54.8 120.0
6°	10 06.5 -55.2 124.2	9 43.1 -55.2 123.2	9 19.4 -55.1 122.3	8 55.4 -54.9 121.4	8 31.3 -54.8 120.5
7°	9 11.3 -55.3 124.6	8 47.9 -55.1 123.6	8 24.3 -55.0 122.7	8 00.5 -54.9 121.8	7 36.5 -54.9 120.9
8°	8 16.0 -55.3 124.9	7 52.8 -55.2 124.0	7 29.3 -55.1 123.1	7 05.6 -55.0 122.2	6 41.6 -54.8 121.3
9°	7 20.7 -55.3 125.3	6 57.6 -55.2 124.4	6 34.2 -55.1 123.5	6 10.6 -55.0 122.6	5 46.8 -54.9 121.7
10°	6 25.4 -55.4 125.7	6 02.4 -55.2 124.8	5 39.1 -55.1 123.9	5 15.6 -55.0 123.0	4 51.9 -54.9 122.1
11°	5 30.0 -55.3 126.1	5 07.2 -55.3 125.2	4 44.0 -55.1 124.3	4 20.6 -55.0 123.4	3 57.0 -54.9 122.5
12°	4 34.7 -55.4 126.5	4 11.9 -55.2 125.6	3 48.9 -55.2 124.7	3 25.6 -55.0 123.8	3 02.1 -54.9 122.9
13°	3 39.3 -55.3 126.9	3 16.7 -55.3 126.0	2 53.7 -55.1 125.1	2 30.6 -55.1 124.2	2 07.2 -55.0 123.3
14°	2 44.0 -55.4 127.3	2 21.4 -55.3 126.4	1 58.6 -55.1 125.5	1 35.5 -55.0 124.6	1 12.2 -54.9 123.7
15°	1 48.6 -55.4 127.7	1 26.1 -55.2 126.8	1 03.5 -55.2 125.9	0 40.5 -55.0 125.0	0 17.3 -54.9 124.1
16°	0 53.2 -55.4 128.0	0 30.9 -55.3 127.2	0 08.3 -55.2 126.3	-0 14.5 -55.1	-0 37.6 -55.0
17°	-0 02.2 -55.4	-0 24.4 -55.3	-0 46.9 -55.1	-1 09.6 -55.0	-1 32.6 -54.9
18°	-0 57.6 -55.4	-1 19.7 -55.2	-1 42.0 -55.2	-2 04.6 -55.0	-2 27.5 -54.9
19°	-1 53.0 -55.3	-2 14.9 -55.3	-2 37.2 -55.1	-2 59.6 -55.1	-3 22.4 -54.9
20°	-2 48.3 -55.4	-3 10.2 -55.2	-3 32.3 -55.1	-3 54.7 -55.0	-4 17.3 -54.9
21°	-3 43.7 -55.4	-4 05.4 -55.3	-4 27.4 -55.1	-4 49.7 -55.0	-5 12.2 -54.9
22°	-4 39.1 -55.3	-5 00.7 -55.2	-5 22.5 -55.1	-5 44.7 -54.9	-6 07.1 -54.8
23°	-5 34.4 -55.3	-5 55.9 -55.2	-6 17.6 -55.1	-6 39.6 -55.0	-7 01.9 -54.8
24°	-6 29.7 -55.4	-6 51.1 -55.2	-7 12.7 -55.1	-7 34.6 -54.9	-7 56.7 -54.9
25°	-7 25.1 -55.3	-7 46.3 -55.2	-8 07.8 -55.0	-8 29.5 -54.9	-8 51.6 -54.7
26°	-8 20.4 -55.2	-8 41.5 -55.1	-9 02.8 -55.0	-9 24.4 -54.9	-9 46.3 -54.8
27°	-9 15.6 -55.3	-9 36.6 -55.1	-9 57.8 -55.0		

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	13 34.6 -54.6 117.0	13 09.4 -54.5 116.1	12 44.0 -54.4 115.1	12 18.4 -54.3 114.2	11 52.6 -54.2 113.3
1°	12 40.0 -54.5 117.4	12 14.9 -54.4 116.5	11 49.6 -54.3 115.6	11 24.1 -54.3 114.7	10 58.4 -54.2 113.7
2°	11 45.5 -54.6 117.9	11 20.5 -54.5 116.9	10 55.3 -54.5 116.0	10 29.8 -54.3 115.1	10 04.2 -54.2 114.2
3°	10 50.9 -54.7 118.3	10 26.0 -54.6 117.4	10 00.8 -54.4 116.4	9 35.5 -54.3 115.5	9 10.0 -54.2 114.6
4°	9 56.2 -54.6 118.7	9 31.4 -54.5 117.8	9 06.4 -54.5 116.9	8 41.2 -54.4 116.0	8 15.8 -54.3 115.0
5°	9 01.6 -54.7 119.1	8 36.9 -54.6 118.2	8 11.9 -54.5 117.3	7 46.8 -54.4 116.4	7 21.5 -54.3 115.5
6°	8 06.9 -54.7 119.5	7 42.3 -54.6 118.6	7 17.4 -54.5 117.7	6 52.4 -54.4 116.8	6 27.2 -54.4 115.9
7°	7 12.2 -54.8 120.0	6 47.7 -54.7 119.0	6 22.9 -54.5 118.1	5 58.0 -54.5 117.2	5 32.8 -54.3 116.3
8°	6 17.4 -54.7 120.4	5 53.0 -54.6 119.5	5 28.4 -54.6 118.6	5 03.5 -54.4 117.7	4 38.5 -54.4 116.8
9°	5 22.7 -54.8 120.8	4 58.4 -54.7 119.9	4 33.8 -54.6 119.0	4 09.1 -54.5 118.1	3 44.1 -54.4 117.2
10°	4 27.9 -54.8 121.2	4 03.7 -54.7 120.3	3 39.2 -54.5 119.4	3 14.6 -54.5 118.5	2 49.7 -54.4 117.6
11°	3 33.1 -54.8 121.6	3 09.0 -54.7 120.7	2 44.7 -54.6 119.8	2 20.1 -54.5 118.9	1 55.3 -54.3 118.0
12°	2 38.3 -54.8 122.0	2 14.3 -54.7 121.1	1 50.1 -54.6 120.2	1 25.6 -54.5 119.3	1 01.0 -54.4 118.4
13°	1 43.5 -54.8 122.4	1 19.6 -54.7 121.5	0 55.5 -54.6 120.6	0 31.1 -54.5 119.7	0 06.6 -54.4 118.9
14°	0 48.7 -54.8 122.8	0 24.9 -54.7 121.9	0 00.9 -54.6 121.0	-0 23.4 -54.5	-0 47.8 -54.4
15°	-0 06.1 -54.9	-0 29.8 -54.7	-0 53.7 -54.6	-1 17.9 -54.5	-1 42.2 -54.4
16°	-1 01.0 -54.8	-1 24.5 -54.7	-1 48.3 -54.6	-2 12.4 -54.5	-2 36.6 -54.4
17°	-1 55.8 -54.8	-2 19.2 -54.7	-2 42.9 -54.6	-3 06.9 -54.4	-3 31.0 -54.4
18°	-2 50.6 -54.8	-3 13.9 -54.7	-3 37.5 -54.6	-4 01.3 -54.5	-4 25.4 -54.3
19°	-3 45.4 -54.8	-4 08.6 -54.7	-4 32.1 -54.5	-4 55.8 -54.4	-5 19.7 -54.4
20°	-4 40.2 -54.7	-5 03.3 -54.6	-5 26.6 -54.6	-5 50.2 -54.5	-6 14.1 -54.3
21°	-5 34.9 -54.8	-5 57.9 -54.7	-6 21.2 -54.5	-6 44.7 -54.4	-7 08.4 -54.3
22°	-6 29.7 -54.7	-6 52.6 -54.6	-7 15.7 -54.5	-7 39.1 -54.4	-8 02.7 -54.2
23°	-7 24.4 -54.7	-7 47.2 -54.6	-8 10.2 -54.5	-8 33.5 -54.3	-8 56.9 -54.3
24°	-8 19.1 -54.7	-8 41.8 -54.6	-9 04.7 -54.4	-9 27.8 -54.3	-9 51.2 -54.2
25°	-9 13.8 -54.7	-9 36.4 -54.5	-9 59.1 -54.4		
26°					
27°					
28°					
29°					

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	11 26.6 -54.0 112.4	11 00.5 -54.0 111.5	10 34.2 -53.9 110.5	10 07.7 -53.8 109.6	9 41.1 -53.7 108.7
1°	10 32.6 -54.1 112.8	10 06.5 -54.0 111.9	9 40.3 -54.0 111.0	9 13.9 -53.9 110.1	8 47.4 -53.8 109.2
2°	9 38.5 -54.2 113.3	9 12.5 -54.1 112.3	8 46.3 -53.9 111.4	8 20.0 -53.8 110.5	7 53.6 -53.8 109.6
3°	8 44.3 -54.2 113.7	8 18.4 -54.1 112.8	7 52.4 -54.0 111.9	7 26.2 -54.0 111.0	6 59.8 -53.9 110.1
4°	7 50.1 -54.2 114.1	7 24.3 -54.1 113.2	6 58.4 -54.1 112.3	6 32.2 -53.9 111.4	6 05.9 -53.8 110.5
5°	6 55.9 -54.2 114.6	6 30.2 -54.1 113.7	6 04.3 -54.0 112.8	5 38.3 -54.0 111.9	5 12.1 -53.9 111.0
6°	6 01.7 -54.2 115.0	5 36.1 -54.2 114.1	5 10.3 -54.1 113.2	4 44.3 -54.0 112.3	4 18.2 -53.9 111.4
7°	5 07.5 -54.3 115.4	4 41.9 -54.1 114.5	4 16.2 -54.0 113.6	3 50.3 -54.0 112.7	3 24.3 -53.9 111.8
8°	4 13.2 -54.2 115.9	3 47.8 -54.2 115.0	3 22.2 -54.1 114.1	2 56.3 -54.0 113.2	2 30.4 -54.0 112.3
9°	3 19.0 -54.3 116.3	2 53.6 -54.2 115.4	2 28.1 -54.1 114.5	2 02.3 -54.0 113.6	1 36.4 -53.9 112.7
10°	2 24.7 -54.3 116.7	1 59.4 -54.2 115.8	1 34.0 -54.1 114.9	1 08.3 -54.0 114.0	0 42.5 -53.9 113.2
11°	1 30.4 -54.3 117.1	1 05.2 -54.2 116.2	0 39.9 -54.2 115.4	0 14.3 -54.0 114.5	-0 11.4 -53.9
12°	0 36.1 -54.3 117.6	0 11.0 -54.2 116.7	-0 14.3 -54.1	-0 39.7 -54.0	-1 05.3 -54.0
13°	-0 18.2 -54.3	-0 43.2 -54.2	-1 08.4 -54.1	-1 33.7 -54.0	-1 59.3 -53.9
14°	-1 12.5 -54.3	-1 37.4 -54.2	-2 02.5 -54.1	-2 27.7 -54.0	-2 53.2 -53.9
15°	-2 06.8 -54.3	-2 31.6 -54.2	-2 56.6 -54.0	-3 21.7 -54.0	-3 47.1 -53.9
16°	-3 01.1 -54.3	-3 25.8 -54.1	-3 50.6 -54.1	-4 15.7 -54.0	-4 41.0 -53.9
17°	-3 55.4 -54.2	-4 19.9 -54.2	-4 44.7 -54.1	-5 09.7 -54.0	-5 34.9 -53.8
18°	-4 49.6 -54.3	-5 14.1 -54.1	-5 38.8 -54.0	-6 03.7 -53.9	-6 28.7 -53.9
19°	-5 43.9 -54.2	-6 08.2 -54.2	-6 32.8 -54.0	-6 57.6 -53.9	-7 22.6 -53.8
20°	-6 38.1 -54.2	-7 02.4 -54.1	-7 26.8 -54.0	-7 51.5 -53.9	-8 16.4 -53.8
21°	-7 32.3 -54.2	-7 56.5 -54.0	-8 20.8 -54.0	-8 45.4 -53.8	-9 10.2 -53.7
22°	-8 26.5 -54.1	-8 50.5 -54.1	-9 14.8 -53.9	-9 39.2 -53.9	
23°	-9 20.6 -54.2	-9 44.6 -54.0			
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 070° / 290°	LHA 071° / 289°	LHA 072° / 288°	LHA 073° / 287°	LHA 074° / 286°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	9 14.4 -53.7 107.8	8 47.5 -53.6 106.9	8 20.5 -53.6 106.0	7 53.4 -53.5 105.1	7 26.1 -53.4 104.2
1°	8 20.7 -53.7 108.3	7 53.9 -53.7 107.4	7 26.9 -53.5 106.5	6 59.9 -53.6 105.6	6 32.7 -53.5 104.7
2°	7 27.0 -53.8 108.7	7 00.2 -53.6 107.8	6 33.4 -53.7 106.9	6 06.3 -53.5 106.0	5 39.2 -53.5 105.1
3°	6 33.2 -53.7 109.2	6 06.6 -53.7 108.3	5 39.7 -53.6 107.4	5 12.8 -53.6 106.5	4 45.7 -53.5 105.6
4°	5 39.5 -53.8 109.6	5 12.9 -53.8 108.7	4 46.1 -53.6 107.8	4 19.2 -53.6 106.9	3 52.2 -53.5 106.0
5°	4 45.7 -53.8 110.1	4 19.1 -53.7 109.2	3 52.5 -53.7 108.3	3 25.6 -53.6 107.4	2 58.7 -53.5 106.5
6°	3 51.9 -53.9 110.5	3 25.4 -53.7 109.6	2 58.8 -53.7 108.7	2 32.0 -53.6 107.8	2 05.2 -53.6 106.9
7°	2 58.0 -53.8 110.9	2 31.7 -53.8 110.1	2 05.1 -53.7 109.2	1 38.4 -53.6 108.3	1 11.6 -53.5 107.4
8°	2 04.2 -53.8 111.4	1 37.9 -53.8 110.5	1 11.4 -53.6 109.6	0 44.8 -53.6 108.7	0 18.1 -53.6 107.8
9°	1 10.4 -53.9 111.8	0 44.1 -53.7 110.9	0 17.8 -53.7 110.1	-0 08.8 -53.6	-0 35.5 -53.5
10°	0 16.5 -53.8 112.3	-0 09.6 -53.8	-0 35.9 -53.7	-1 02.4 -53.6	-1 29.0 -53.5
11°	-0 37.3 -53.9	-1 03.4 -53.7	-1 29.6 -53.7	-1 56.0 -53.6	-2 22.5 -53.6
12°	-1 31.2 -53.8	-1 57.1 -53.8	-2 23.3 -53.7	-2 49.6 -53.6	-3 16.1 -53.5
13°	-2 25.0 -53.8	-2 50.9 -53.7	-3 17.0 -53.6	-3 43.2 -53.6	-4 09.6 -53.5
14°	-3 18.8 -53.8	-3 44.6 -53.8	-4 10.6 -53.7	-4 36.8 -53.5	-5 03.1 -53.4
15°	-4 12.6 -53.9	-4 38.4 -53.7	-5 04.3 -53.6	-5 30.3 -53.6	-5 56.5 -53.5
16°	-5 06.5 -53.7	-5 32.1 -53.7	-5 57.9 -53.6	-6 23.9 -53.5	-6 50.0 -53.4
17°	-6 00.2 -53.8	-6 25.8 -53.6	-6 51.5 -53.6	-7 17.4 -53.5	-7 43.4 -53.4
18°	-6 54.0 -53.7	-7 19.4 -53.7	-7 45.1 -53.5	-8 10.9 -53.4	-8 36.8 -53.4
19°	-7 47.7 -53.7	-8 13.1 -53.6	-8 38.6 -53.5	-9 04.3 -53.4	-9 30.2 -53.3
20°	-8 41.4 -53.7	-9 06.7 -53.6	-9 32.1 -53.5	-9 57.7 -53.4	
21°	-9 35.1 -53.7				
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 075° / 285°	LHA 076° / 284°	LHA 077° / 283°	LHA 078° / 282°	LHA 079° / 281°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	6 58.7 -53.3 103.3	6 31.3 -53.3 102.4	6 03.7 -53.3 101.5	5 36.1 -53.3 100.6	5 08.4 -53.2 99.7
1°	6 05.4 -53.4 103.8	5 38.0 -53.4 102.9	5 10.4 -53.3 102.0	4 42.8 -53.2 101.1	4 15.2 -53.3 100.2
2°	5 12.0 -53.5 104.2	4 44.6 -53.4 103.3	4 17.1 -53.3 102.4	3 49.6 -53.3 101.6	3 21.9 -53.2 100.7
3°	4 18.5 -53.4 104.7	3 51.2 -53.4 103.8	3 23.8 -53.3 102.9	2 56.3 -53.3 102.0	2 28.7 -53.2 101.1
4°	3 25.1 -53.5 105.1	2 57.8 -53.4 104.3	2 30.5 -53.4 103.4	2 03.0 -53.3 102.5	1 35.5 -53.3 101.6
5°	2 31.6 -53.4 105.6	2 04.4 -53.4 104.7	1 37.1 -53.3 103.8	1 09.7 -53.3 102.9	0 42.2 -53.2 102.1
6°	1 38.2 -53.5 106.0	1 11.0 -53.4 105.2	0 43.8 -53.4 104.3	0 16.4 -53.3 103.4	-0 11.0 -53.3
7°	0 44.7 -53.5 106.5	0 17.6 -53.4 105.6	-0 09.6 -53.3	-0 36.9 -53.3	-1 04.3 -53.2
8°	-0 08.8 -53.5	-0 35.8 -53.4	-1 02.9 -53.4	-1 30.2 -53.3	-1 57.5 -53.2
9°	-1 02.3 -53.4	-1 29.2 -53.4	-1 56.3 -53.3	-2 23.5 -53.2	-2 50.7 -53.3
10°	-1 55.7 -53.5	-2 22.6 -53.4	-2 49.6 -53.3	-3 16.7 -53.3	-3 44.0 -53.2
11°	-2 49.2 -53.5	-3 16.0 -53.4	-3 42.9 -53.4	-4 10.0 -53.3	-4 37.2 -53.2
12°	-3 42.7 -53.4	-4 09.4 -53.4	-4 36.3 -53.3	-5 03.3 -53.2	-5 30.4 -53.1
13°	-4 36.1 -53.4	-5 02.8 -53.3	-5 29.6 -53.2	-5 56.5 -53.2	-6 23.5 -53.2
14°	-5 29.5 -53.4	-5 56.1 -53.3	-6 22.8 -53.3	-6 49.7 -53.2	-7 16.7 -53.1
15°	-6 22.9 -53.4	-6 49.4 -53.3	-7 16.1 -53.2	-7 42.9 -53.1	-8 09.8 -53.1
16°	-7 16.3 -53.3	-7 42.7 -53.3	-8 09.3 -53.2	-8 36.0 -53.2	-9 02.9 -53.0
17°	-8 09.6 -53.4	-8 36.0 -53.2	-9 02.5 -53.2	-9 29.2 -53.0	-9 55.9 -53.0
18°	-9 03.0 -53.2	-9 29.2 -53.2	-9 55.7 -53.1		
19°	-9 56.2 -53.3				
20°					
21°					
22°					
23°					
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25°					
26°					
27°					
28°					
29°					

Dec	LHA 080° / 280°	LHA 081° / 279°	LHA 082° / 278°	LHA 083° / 277°	LHA 084° / 276°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	4 40.6 -53.2 98.8	4 12.7 -53.1 98.0	3 44.8 -53.1 97.1	3 16.8 -53.1 96.2	2 48.8 -53.1 95.3
1°	3 47.4 -53.2 99.3	3 19.6 -53.2 98.4	2 51.7 -53.1 97.5	2 23.7 -53.1 96.7	1 55.7 -53.0 95.8
2°	2 54.2 -53.2 99.8	2 26.4 -53.1 98.9	1 58.6 -53.1 98.0	1 30.6 -53.0 97.1	1 02.7 -53.1 96.2
3°	2 01.0 -53.2 100.2	1 33.3 -53.2 99.4	1 05.5 -53.2 98.5	0 37.6 -53.1 97.6	0 09.6 -53.0 96.7
4°	1 07.8 -53.2 100.7	0 40.1 -53.1 99.8	0 12.3 -53.1 98.9	-0 15.5 -53.1	-0 43.4 -53.1
5°	0 14.6 -53.2 101.2	-0 13.0 -53.2	-0 40.8 -53.1	-1 08.6 -53.1	-1 36.5 -53.1
6°	-0 38.6 -53.2	-1 06.2 -53.1	-1 33.9 -53.1	-2 01.7 -53.1	-2 29.6 -53.0
7°	-1 31.8 -53.2	-1 59.3 -53.2	-2 27.0 -53.1	-2 54.8 -53.0	-3 22.6 -53.0
8°	-2 25.0 -53.1	-2 52.5 -53.1	-3 20.1 -53.1	-3 47.8 -53.1	-4 15.6 -53.0
9°	-3 18.1 -53.2	-3 45.6 -53.2	-4 13.2 -53.1	-4 40.9 -53.0	-5 08.6 -53.0
10°	-4 11.3 -53.2	-4 38.8 -53.1	-5 06.3 -53.0	-5 33.9 -53.0	-6 01.6 -53.0
11°	-5 04.5 -53.1	-5 31.9 -53.0	-5 59.3 -53.1	-6 26.9 -53.0	-6 54.6 -52.9
12°	-5 57.6 -53.1	-6 24.9 -53.1	-6 52.4 -53.0	-7 19.9 -52.9	-7 47.5 -52.9
13°	-6 50.7 -53.1	-7 18.0 -53.0	-7 45.4 -52.9	-8 12.8 -53.0	-8 40.4 -52.9
14°	-7 43.8 -53.0	-8 11.0 -53.0	-8 38.3 -53.0	-9 05.8 -52.8	-9 33.3 -52.8
15°	-8 36.8 -53.1	-9 04.0 -53.0	-9 31.3 -52.9	-9 58.6 -52.9	
16°	-9 29.9 -52.9	-9 57.0 -52.9			
17°					
18°					
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Dec	LHA 085° / 275°	LHA 086° / 274°	LHA 087° / 273°	LHA 088° / 272°	LHA 089° / 271°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	2 20.7 -53.0 94.4	1 52.6 -53.0 93.5	1 24.5 -53.0 92.6	0 56.3 -53.0 91.8	0 28.2 -53.0 90.9
1°	1 27.7 -53.1 94.9	0 59.6 -53.0 94.0	0 31.5 -53.0 93.1	0 03.3 -52.9 92.2	-0 24.8 -53.0
2°	0 34.6 -53.0 95.4	0 06.6 -53.0 94.5	-0 21.5 -53.0	-0 49.6 -53.0	-1 17.8 -53.0
3°	-0 18.4 -53.0	-0 46.4 -53.0	-1 14.5 -53.0	-1 42.6 -53.0	-2 10.8 -52.9
4°	-1 11.4 -53.0	-1 39.4 -53.0	-2 07.5 -53.0	-2 35.6 -53.0	-3 03.7 -53.0
5°	-2 04.4 -53.1	-2 32.4 -53.0	-3 00.5 -53.0	-3 28.6 -52.9	-3 56.7 -52.9
6°	-2 57.5 -53.0	-3 25.4 -53.0	-3 53.5 -52.9	-4 21.5 -52.9	-4 49.6 -52.9
7°	-3 50.5 -53.0	-4 18.4 -53.0	-4 46.4 -52.9	-5 14.4 -53.0	-5 42.5 -52.9
8°	-4 43.5 -52.9	-5 11.4 -52.9	-5 39.3 -53.0	-6 07.4 -52.8	-6 35.4 -52.9
9°	-5 36.4 -53.0	-6 04.3 -52.9	-6 32.3 -52.8	-7 00.2 -52.9	-7 28.3 -52.8
10°	-6 29.4 -52.9	-6 57.2 -52.9	-7 25.1 -52.9	-7 53.1 -52.8	-8 21.1 -52.8
11°	-7 22.3 -52.9	-7 50.1 -52.9	-8 18.0 -52.8	-8 45.9 -52.8	-9 13.9 -52.8
12°	-8 15.2 -52.9	-8 43.0 -52.8	-9 10.8 -52.8	-9 38.7 -52.8	
13°	-9 08.1 -52.8	-9 35.8 -52.8			
14°					
15°					
16°					
17°					
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Latitude 62°

Declination CONTRARY name to Latitude

Dec	LHA 090° / 270°	LHA 091° / 269°	LHA 092° / 268°	LHA 093° / 267°	LHA 094° / 266°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	0 00.0 -53.0 90.0	-0 28.2 -52.9			
1°	-0 53.0 -52.9	-1 21.1 -53.0			
2°	-1 45.9 -53.0	-2 14.1 -53.0			
3°	-2 38.9 -53.0	-3 07.1 -52.9			
4°	-3 31.9 -52.9	-4 00.0 -53.0			
5°	-4 24.8 -52.9	-4 53.0 -52.9			
6°	-5 17.7 -52.9	-5 45.9 -52.9			
7°	-6 10.6 -52.9	-6 38.8 -52.8			
8°	-7 03.5 -52.9	-7 31.6 -52.9			
9°	-7 56.4 -52.8	-8 24.5 -52.8			
10°	-8 49.2 -52.7	-9 17.3 -52.7			
11°	-9 41.9 -52.8				
12°					
13°					
14°					
15°					
16°					
17°					
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 095° / 265°	LHA 096° / 264°	LHA 097° / 263°	LHA 098° / 262°	LHA 099° / 261°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°					
1°					
2°					
3°					
4°					
5°					
6°					
7°					
8°					
9°					
10°					
11°					
12°					
13°					
14°					
15°					
16°					
17°					
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

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The data on this page is believed to be accurate but no warranty is given for it's correctness. Use it only for training and exercising!

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	27 00.0 -60.0 180.0	26 59.7 -60.0 178.9	26 58.9 -60.0 177.8	26 57.6 -60.0 176.6	26 55.7 -59.9 175.5
1°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 58.9 -59.9 177.8	25 57.6 -60.0 176.7	25 55.8 -60.0 175.6
2°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 59.0 -60.0 177.8	24 57.6 -59.9 176.7	24 55.8 -60.0 175.6
3°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 59.0 -60.0 177.8	23 57.7 -60.0 176.7	23 55.8 -59.9 175.6
4°	23 00.0 -60.0 180.0	22 59.7 -60.0 178.9	22 59.0 -60.0 177.8	22 57.7 -60.0 176.7	22 55.9 -60.0 175.7
5°	22 00.0 -60.0 180.0	21 59.7 -60.0 178.9	21 59.0 -60.0 177.9	21 57.7 -60.0 176.8	21 55.9 -59.9 175.7
6°	21 00.0 -60.0 180.0	20 59.7 -60.0 178.9	20 59.0 -60.0 177.9	20 57.7 -60.0 176.8	20 56.0 -60.0 175.7
7°	20 00.0 -60.0 180.0	19 59.7 -59.9 178.9	19 59.0 -60.0 177.9	19 57.7 -59.9 176.8	19 56.0 -60.0 175.8
8°	19 00.0 -60.0 180.0	18 59.8 -60.0 179.0	18 59.0 -60.0 177.9	18 57.8 -60.0 176.9	18 56.0 -59.9 175.8
9°	18 00.0 -60.0 180.0	17 59.8 -60.0 179.0	17 59.0 -60.0 177.9	17 57.8 -60.0 176.9	17 56.1 -60.0 175.8
10°	17 00.0 -60.0 180.0	16 59.8 -60.0 179.0	16 59.0 -60.0 177.9	16 57.8 -60.0 176.9	16 56.1 -60.0 175.9
11°	16 00.0 -60.0 180.0	15 59.8 -60.0 179.0	15 59.0 -60.0 178.0	15 57.8 -60.0 176.9	15 56.1 -59.9 175.9
12°	15 00.0 -60.0 180.0	14 59.8 -60.0 179.0	14 59.0 -60.0 178.0	14 57.8 -59.9 177.0	14 56.2 -60.0 176.0
13°	14 00.0 -60.0 180.0	13 59.8 -60.0 179.0	13 59.0 -59.9 178.0	13 57.9 -60.0 177.0	13 56.2 -60.0 176.0
14°	13 00.0 -60.0 180.0	12 59.8 -60.0 179.0	12 59.1 -60.0 178.0	12 57.9 -60.0 177.0	12 56.2 -60.0 176.0
15°	12 00.0 -60.0 180.0	11 59.8 -60.0 179.0	11 59.1 -60.0 178.0	11 57.9 -60.0 177.0	11 56.2 -59.9 176.1
16°	11 00.0 -60.0 180.0	10 59.8 -60.0 179.0	10 59.1 -60.0 178.0	10 57.9 -60.0 177.1	10 56.3 -60.0 176.1
17°	10 00.0 -60.0 180.0	9 59.8 -60.0 179.0	9 59.1 -60.0 178.1	9 57.9 -60.0 177.1	9 56.3 -60.0 176.1
18°	9 00.0 -60.0 180.0	8 59.8 -60.0 179.0	8 59.1 -60.0 178.1	8 57.9 -59.9 177.1	8 56.3 -59.9 176.1
19°	8 00.0 -60.0 180.0	7 59.8 -60.0 179.0	7 59.1 -60.0 178.1	7 58.0 -60.0 177.1	7 56.4 -60.0 176.2
20°	7 00.0 -60.0 180.0	6 59.8 -60.0 179.1	6 59.1 -60.0 178.1	6 58.0 -60.0 177.2	6 56.4 -60.0 176.2
21°	6 00.0 -60.0 180.0	5 59.8 -60.0 179.1	5 59.1 -60.0 178.1	5 58.0 -60.0 177.2	5 56.4 -59.9 176.2
22°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.1	4 59.1 -60.0 178.1	4 58.0 -60.0 177.2	4 56.5 -60.0 176.3
23°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.1	3 59.1 -60.0 178.2	3 58.0 -60.0 177.2	3 56.5 -60.0 176.3
24°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.1	2 59.1 -60.0 178.2	2 58.0 -59.9 177.3	2 56.5 -59.9 176.3
25°	2 00.0 -60.0 180.0	1 59.8 -60.0 179.1	1 59.1 -60.0 178.2	1 58.1 -60.0 177.3	1 56.6 -60.0 176.4
26°	1 00.0 -60.0 180.0	0 59.8 -60.0 179.1	0 59.1 -59.9 178.2	0 58.1 -60.0 177.3	0 56.6 -60.0 176.4
27°	0 00.0 -60.0 180.0	-0 00.2 -60.0	-0 00.8 -60.0	-0 01.9 -60.0	-0 03.4 -60.0
28°	-1 00.0 -60.0	-1 00.2 -60.0	-1 00.8 -60.0	-1 01.9 -60.0	-1 03.4 -59.9
29°	-2 00.0 -60.0	-2 00.2 -60.0	-2 00.8 -60.0	-2 01.9 -60.0	-2 03.3 -60.0

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	26 53.3 -59.9 174.4	26 50.4 -59.9 173.3	26 47.0 -59.9 172.2	26 43.0 -59.9 171.0	26 38.5 -59.8 169.9
1°	25 53.4 -59.9 174.4	25 50.5 -59.9 173.3	25 47.1 -59.9 172.2	25 43.1 -59.8 171.1	25 38.7 -59.9 170.0
2°	24 53.5 -60.0 174.5	24 50.6 -59.9 173.4	24 47.2 -59.9 172.3	24 43.3 -59.9 171.2	24 38.8 -59.8 170.1
3°	23 53.5 -59.9 174.5	23 50.7 -60.0 173.4	23 47.3 -59.9 172.4	23 43.4 -59.8 171.3	23 39.0 -59.8 170.2
4°	22 53.6 -60.0 174.6	22 50.7 -59.9 173.5	22 47.4 -59.9 172.4	22 43.6 -59.9 171.3	22 39.2 -59.8 170.3
5°	21 53.6 -59.9 174.6	21 50.8 -59.9 173.6	21 47.5 -59.9 172.5	21 43.7 -59.9 171.4	21 39.4 -59.8 170.3
6°	20 53.7 -60.0 174.7	20 50.9 -59.9 173.6	20 47.6 -59.9 172.6	20 43.8 -59.8 171.5	20 39.6 -59.9 170.4
7°	19 53.7 -59.9 174.7	19 51.0 -60.0 173.7	19 47.7 -59.9 172.6	19 44.0 -59.9 171.6	19 39.7 -59.8 170.5
8°	18 53.8 -60.0 174.8	18 51.0 -59.9 173.7	18 47.8 -59.9 172.7	18 44.1 -59.9 171.6	18 39.9 -59.8 170.6
9°	17 53.8 -59.9 174.8	17 51.1 -59.9 173.8	17 47.9 -59.9 172.7	17 44.2 -59.8 171.7	17 40.1 -59.9 170.7
10°	16 53.9 -60.0 174.9	16 51.2 -59.9 173.8	16 48.0 -59.9 172.8	16 44.4 -59.9 171.8	16 40.2 -59.8 170.7
11°	15 53.9 -59.9 174.9	15 51.3 -60.0 173.9	15 48.1 -59.9 172.9	15 44.5 -59.9 171.8	15 40.4 -59.8 170.8
12°	14 54.0 -60.0 174.9	14 51.3 -59.9 173.9	14 48.2 -59.9 172.9	14 44.6 -59.8 171.9	14 40.6 -59.9 170.9
13°	13 54.0 -59.9 175.0	13 51.4 -59.9 174.0	13 48.3 -59.9 173.0	13 44.8 -59.9 172.0	13 40.7 -59.8 171.0
14°	12 54.1 -60.0 175.0	12 51.5 -59.9 174.0	12 48.4 -59.9 173.0	12 44.9 -59.9 172.0	12 40.9 -59.9 171.0
15°	11 54.1 -59.9 175.1	11 51.6 -60.0 174.1	11 48.5 -59.9 173.1	11 45.0 -59.9 172.1	11 41.0 -59.8 171.1
16°	10 54.2 -60.0 175.1	10 51.6 -59.9 174.1	10 48.6 -59.9 173.2	10 45.1 -59.8 172.2	10 41.2 -59.8 171.2
17°	9 54.2 -59.9 175.1	9 51.7 -59.9 174.2	9 48.7 -59.9 173.2	9 45.3 -59.9 172.2	9 41.4 -59.9 171.3
18°	8 54.3 -60.0 175.2	8 51.8 -60.0 174.2	8 48.8 -59.9 173.3	8 45.4 -59.9 172.3	8 41.5 -59.8 171.3
19°	7 54.3 -59.9 175.2	7 51.8 -59.9 174.3	7 48.9 -59.9 173.3	7 45.5 -59.9 172.4	7 41.7 -59.9 171.4
20°	6 54.4 -60.0 175.3	6 51.9 -59.9 174.3	6 49.0 -59.9 173.4	6 45.6 -59.9 172.4	6 41.8 -59.8 171.5
21°	5 54.4 -59.9 175.3	5 52.0 -60.0 174.4	5 49.1 -59.9 173.4	5 45.7 -59.8 172.5	5 42.0 -59.9 171.6
22°	4 54.5 -60.0 175.3	4 52.0 -59.9 174.4	4 49.2 -59.9 173.5	4 45.9 -59.9 172.6	4 42.1 -59.8 171.6
23°	3 54.5 -59.9 175.4	3 52.1 -59.9 174.5	3 49.3 -59.9 173.5	3 46.0 -59.9 172.6	3 42.3 -59.9 171.7
24°	2 54.6 -60.0 175.4	2 52.2 -60.0 174.5	2 49.4 -59.9 173.6	2 46.1 -59.9 172.7	2 42.4 -59.8 171.8
25°	1 54.6 -59.9 175.5	1 52.2 -59.9 174.6	1 49.5 -60.0 173.7	1 46.2 -59.9 172.8	1 42.6 -59.9 171.8
26°	0 54.7 -60.0 175.5	0 52.3 -59.9 174.6	0 49.5 -59.9 173.7	0 46.3 -59.8 172.8	0 42.7 -59.8 171.9
27°	-0 05.3 -59.9	-0 07.6 -60.0	-0 10.4 -59.9	-0 13.5 -59.9	-0 17.1 -59.9
28°	-1 05.2 -60.0	-1 07.6 -59.9	-1 10.3 -59.9	-1 13.4 -59.9	-1 17.0 -59.8
29°	-2 05.2 -60.0	-2 07.5 -59.9	-2 10.2 -59.9	-2 13.3 -59.9	-2 16.8 -59.9

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	26 33.4 -59.7 168.8	26 27.9 -59.7 167.7	26 21.8 -59.6 166.6	26 15.3 -59.7 165.5	26 08.2 -59.6 164.4
1°	25 33.7 -59.8 168.9	25 28.2 -59.8 167.8	25 22.2 -59.7 166.7	25 15.6 -59.6 165.6	25 08.6 -59.5 164.5
2°	24 33.9 -59.8 169.0	24 28.4 -59.7 167.9	24 22.5 -59.7 166.8	24 16.0 -59.6 165.7	24 09.1 -59.6 164.6
3°	23 34.1 -59.8 169.1	23 28.7 -59.7 168.0	23 22.8 -59.7 166.9	23 16.4 -59.6 165.8	23 09.5 -59.6 164.8
4°	22 34.3 -59.7 169.2	22 29.0 -59.8 168.1	22 23.1 -59.7 167.0	22 16.8 -59.7 166.0	22 09.9 -59.6 164.9
5°	21 34.6 -59.8 169.3	21 29.2 -59.7 168.2	21 23.4 -59.7 167.1	21 17.1 -59.6 166.1	21 10.3 -59.6 165.0
6°	20 34.8 -59.8 169.4	20 29.5 -59.7 168.3	20 23.7 -59.7 167.3	20 17.5 -59.7 166.2	20 10.7 -59.5 165.1
7°	19 35.0 -59.8 169.5	19 29.8 -59.8 168.4	19 24.0 -59.7 167.4	19 17.8 -59.6 166.3	19 11.2 -59.6 165.3
8°	18 35.2 -59.8 169.5	18 30.0 -59.7 168.5	18 24.3 -59.7 167.5	18 18.2 -59.7 166.4	18 11.6 -59.6 165.4
9°	17 35.4 -59.8 169.6	17 30.3 -59.8 168.6	17 24.6 -59.7 167.6	17 18.5 -59.6 166.5	17 12.0 -59.6 165.5
10°	16 35.6 -59.8 169.7	16 30.5 -59.7 168.7	16 24.9 -59.7 167.7	16 18.9 -59.7 166.7	16 12.4 -59.7 165.6
11°	15 35.8 -59.8 169.8	15 30.8 -59.8 168.8	15 25.2 -59.7 167.8	15 19.2 -59.6 166.8	15 12.7 -59.6 165.8
12°	14 36.0 -59.8 169.9	14 31.0 -59.8 168.9	14 25.5 -59.7 167.9	14 19.6 -59.7 166.9	14 13.1 -59.6 165.9
13°	13 36.2 -59.8 170.0	13 31.2 -59.7 169.0	13 25.8 -59.7 168.0	13 19.9 -59.7 167.0	13 13.5 -59.6 166.0
14°	12 36.4 -59.8 170.1	12 31.5 -59.8 169.1	12 26.1 -59.7 168.1	12 20.2 -59.7 167.1	12 13.9 -59.6 166.1
15°	11 36.6 -59.8 170.1	11 31.7 -59.8 169.2	11 26.4 -59.8 168.2	11 20.5 -59.6 167.2	11 14.3 -59.6 166.2
16°	10 36.8 -59.8 170.2	10 31.9 -59.7 169.2	10 26.6 -59.7 168.3	10 20.9 -59.7 167.3	10 14.7 -59.7 166.3
17°	9 37.0 -59.8 170.3	9 32.2 -59.8 169.3	9 26.9 -59.7 168.4	9 21.2 -59.7 167.4	9 15.0 -59.6 166.4
18°	8 37.2 -59.8 170.4	8 32.4 -59.8 169.4	8 27.2 -59.7 168.5	8 21.5 -59.7 167.5	8 15.4 -59.6 166.6
19°	7 37.4 -59.8 170.5	7 32.6 -59.7 169.5	7 27.5 -59.8 168.6	7 21.8 -59.6 167.6	7 15.8 -59.7 166.7
20°	6 37.6 -59.9 170.5	6 32.9 -59.8 169.6	6 27.7 -59.7 168.7	6 22.2 -59.7 167.7	6 16.1 -59.6 166.8
21°	5 37.7 -59.8 170.6	5 33.1 -59.8 169.7	5 28.0 -59.7 168.8	5 22.5 -59.7 167.8	5 16.5 -59.6 166.9
22°	4 37.9 -59.8 170.7	4 33.3 -59.8 169.8	4 28.3 -59.8 168.9	4 22.8 -59.7 167.9	4 16.9 -59.7 167.0
23°	3 38.1 -59.8 170.8	3 33.5 -59.7 169.9	3 28.5 -59.7 168.9	3 23.1 -59.7 168.0	3 17.2 -59.6 167.1
24°	2 38.3 -59.8 170.9	2 33.8 -59.8 170.0	2 28.8 -59.7 169.0	2 23.4 -59.7 168.1	2 17.6 -59.6 167.2
25°	1 38.5 -59.8 170.9	1 34.0 -59.8 170.0	1 29.1 -59.8 169.1	1 23.7 -59.7 168.2	1 18.0 -59.7 167.3
26°	0 38.7 -59.8 171.0	0 34.2 -59.7 170.1	0 29.3 -59.7 169.2	0 24.0 -59.6 168.3	0 18.3 -59.6 167.4
27°	-0 21.1 -59.8	-0 25.5 -59.8	-0 30.4 -59.7	-0 35.6 -59.7	-0 41.3 -59.6
28°	-1 20.9 -59.9	-1 25.3 -59.8	-1 30.1 -59.8	-1 35.3 -59.7	-1 40.9 -59.7
29°	-2 20.8 -59.8	-2 25.1 -59.8	-2 29.9 -59.7	-2 35.0 -59.7	-2 40.6 -59.6

Dec	LHA 015° / 345°	LHA 016° / 344°	LHA 017° / 343°	LHA 018° / 342°	LHA 019° / 341°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	26 00.6 -59.5 163.3	25 52.5 -59.4 162.2	25 43.9 -59.4 161.1	25 34.8 -59.3 160.0	25 25.2 -59.2 158.9
1°	25 01.1 -59.5 163.4	24 53.1 -59.5 162.3	24 44.5 -59.3 161.2	24 35.5 -59.3 160.1	24 26.0 -59.2 159.1
2°	24 01.6 -59.5 163.5	23 53.6 -59.4 162.5	23 45.2 -59.4 161.4	23 36.2 -59.3 160.3	23 26.8 -59.2 159.2
3°	23 02.1 -59.5 163.7	22 54.2 -59.5 162.6	22 45.8 -59.4 161.5	22 36.9 -59.3 160.5	22 27.6 -59.2 159.4
4°	22 02.6 -59.5 163.8	21 54.7 -59.4 162.8	21 46.4 -59.4 161.7	21 37.6 -59.3 160.6	21 28.4 -59.3 159.6
5°	21 03.1 -59.6 164.0	20 55.3 -59.5 162.9	20 47.0 -59.4 161.8	20 38.3 -59.3 160.8	20 29.1 -59.2 159.7
6°	20 03.5 -59.5 164.1	19 55.8 -59.4 163.0	19 47.6 -59.4 162.0	19 39.0 -59.3 161.0	19 29.9 -59.3 159.9
7°	19 04.0 -59.5 164.2	18 56.4 -59.5 163.2	18 48.2 -59.4 162.1	18 39.7 -59.4 161.1	18 30.6 -59.3 160.1
8°	18 04.5 -59.6 164.4	17 56.9 -59.5 163.3	17 48.8 -59.4 162.3	17 40.3 -59.3 161.3	17 31.3 -59.2 160.2
9°	17 04.9 -59.5 164.5	16 57.4 -59.5 163.5	16 49.4 -59.4 162.4	16 41.0 -59.4 161.4	16 32.1 -59.3 160.4
10°	16 05.4 -59.6 164.6	15 57.9 -59.5 163.6	15 50.0 -59.4 162.6	15 41.6 -59.4 161.6	15 32.8 -59.3 160.6
11°	15 05.8 -59.5 164.7	14 58.4 -59.5 163.7	14 50.6 -59.5 162.7	14 42.2 -59.3 161.7	14 33.5 -59.3 160.7
12°	14 06.3 -59.6 164.9	13 58.9 -59.5 163.9	13 51.1 -59.4 162.9	13 42.9 -59.4 161.9	13 34.2 -59.3 160.9
13°	13 06.7 -59.6 165.0	12 59.4 -59.5 164.0	12 51.7 -59.5 163.0	12 43.5 -59.4 162.0	12 34.9 -59.3 161.0
14°	12 07.1 -59.5 165.1	11 59.9 -59.5 164.1	11 52.2 -59.4 163.1	11 44.1 -59.4 162.2	11 35.6 -59.4 161.2
15°	11 07.6 -59.6 165.2	11 00.4 -59.5 164.3	10 52.8 -59.5 163.3	10 44.7 -59.3 162.3	10 36.2 -59.3 161.3
16°	10 08.0 -59.6 165.4	10 00.9 -59.5 164.4	9 53.3 -59.4 163.4	9 45.4 -59.4 162.5	9 36.9 -59.3 161.5
17°	9 08.4 -59.5 165.5	9 01.4 -59.5 164.5	8 53.9 -59.5 163.6	8 46.0 -59.4 162.6	8 37.6 -59.3 161.6
18°	8 08.9 -59.6 165.6	8 01.9 -59.6 164.6	7 54.4 -59.4 163.7	7 46.6 -59.4 162.7	7 38.3 -59.4 161.8
19°	7 09.3 -59.6 165.7	7 02.3 -59.5 164.8	6 55.0 -59.5 163.8	6 47.2 -59.4 162.9	6 38.9 -59.3 161.9
20°	6 09.7 -59.6 165.8	6 02.8 -59.5 164.9	5 55.5 -59.5 164.0	5 47.8 -59.4 163.0	5 39.6 -59.3 162.1
21°	5 10.1 -59.6 166.0	5 03.3 -59.5 165.0	4 56.0 -59.4 164.1	4 48.4 -59.4 163.2	4 40.3 -59.4 162.2
22°	4 10.5 -59.5 166.1	4 03.8 -59.6 165.2	3 56.6 -59.5 164.2	3 49.0 -59.4 163.3	3 40.9 -59.3 162.4
23°	3 11.0 -59.6 166.2	3 04.2 -59.5 165.3	2 57.1 -59.5 164.4	2 49.6 -59.4 163.5	2 41.6 -59.3 162.5
24°	2 11.4 -59.6 166.3	2 04.7 -59.5 165.4	1 57.6 -59.4 164.5	1 50.2 -59.5 163.6	1 42.3 -59.4 162.7
25°	1 11.8 -59.6 166.4	1 05.2 -59.5 165.5	0 58.2 -59.5 164.6	0 50.7 -59.4 163.7	0 42.9 -59.3 162.8
26°	0 12.2 -59.6 166.5	0 05.7 -59.6 165.7	-0 01.3 -59.5	-0 08.7 -59.4	-0 16.4 -59.4
27°	-0 47.4 -59.6	-0 53.9 -59.5	-1 00.8 -59.4	-1 08.1 -59.4	-1 15.8 -59.3
28°	-1 47.0 -59.6	-1 53.4 -59.5	-2 00.2 -59.5	-2 07.5 -59.4	-2 15.1 -59.3
29°	-2 46.6 -59.5	-2 52.9 -59.6	-2 59.7 -59.5	-3 06.9 -59.4	-3 14.4 -59.4

Dec	LHA 020° / 340°	LHA 021° / 339°	LHA 022° / 338°	LHA 023° / 337°	LHA 024° / 336°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	25 15.2 -59.2 157.8	25 04.6 -59.0 156.7	24 53.6 -58.9 155.6	24 42.1 -58.8 154.5	24 30.2 -58.8 153.4
1°	24 16.0 -59.1 158.0	24 05.6 -59.1 156.9	23 54.7 -59.0 155.8	23 43.3 -58.9 154.7	23 31.4 -58.8 153.7
2°	23 16.9 -59.1 158.2	23 06.5 -59.0 157.1	22 55.7 -59.0 156.0	22 44.4 -58.9 155.0	22 32.6 -58.8 153.9
3°	22 17.8 -59.2 158.3	22 07.5 -59.1 157.3	21 56.7 -59.0 156.2	21 45.5 -58.9 155.2	21 33.8 -58.8 154.1
4°	21 18.6 -59.1 158.5	21 08.4 -59.1 157.5	20 57.7 -59.0 156.4	20 46.6 -58.9 155.4	20 35.0 -58.8 154.3
5°	20 19.5 -59.2 158.7	20 09.3 -59.1 157.6	19 58.7 -59.0 156.6	19 47.7 -58.9 155.6	19 36.2 -58.8 154.5
6°	19 20.3 -59.2 158.9	19 10.2 -59.1 157.8	18 59.7 -59.0 156.8	18 48.8 -59.0 155.8	18 37.4 -58.9 154.7
7°	18 21.1 -59.2 159.0	18 11.1 -59.1 158.0	18 00.7 -59.0 157.0	17 49.8 -58.9 156.0	17 38.5 -58.9 154.9
8°	17 21.9 -59.2 159.2	17 12.0 -59.1 158.2	17 01.7 -59.1 157.2	16 50.9 -59.0 156.2	16 39.6 -58.8 155.1
9°	16 22.7 -59.2 159.4	16 12.9 -59.2 158.4	16 02.6 -59.1 157.4	15 51.9 -59.0 156.3	15 40.8 -58.9 155.3
10°	15 23.5 -59.2 159.6	15 13.7 -59.1 158.5	15 03.5 -59.0 157.5	14 52.9 -59.0 156.5	14 41.9 -58.9 155.5
11°	14 24.3 -59.3 159.7	14 14.6 -59.2 158.7	14 04.5 -59.1 157.7	13 53.9 -59.0 156.7	13 43.0 -59.0 155.7
12°	13 25.0 -59.2 159.9	13 15.4 -59.1 158.9	13 05.4 -59.1 157.9	12 54.9 -59.0 156.9	12 44.0 -58.9 155.9
13°	12 25.8 -59.2 160.0	12 16.3 -59.2 159.1	12 06.3 -59.1 158.1	11 55.9 -59.0 157.1	11 45.1 -58.9 156.1
14°	11 26.6 -59.3 160.2	11 17.1 -59.2 159.2	11 07.2 -59.1 158.3	10 56.9 -59.0 157.3	10 46.2 -58.9 156.3
15°	10 27.3 -59.2 160.4	10 17.9 -59.1 159.4	10 08.1 -59.1 158.4	9 57.9 -59.0 157.5	9 47.3 -59.0 156.5
16°	9 28.1 -59.3 160.5	9 18.8 -59.2 159.6	9 09.0 -59.1 158.6	8 58.9 -59.0 157.7	8 48.3 -58.9 156.7
17°	8 28.8 -59.3 160.7	8 19.6 -59.2 159.7	8 09.9 -59.1 158.8	7 59.9 -59.1 157.8	7 49.4 -59.0 156.9
18°	7 29.5 -59.2 160.8	7 20.4 -59.2 159.9	7 10.8 -59.1 159.0	7 00.8 -59.0 158.0	6 50.4 -58.9 157.1
19°	6 30.3 -59.3 161.0	6 21.2 -59.2 160.1	6 11.7 -59.1 159.1	6 01.8 -59.0 158.2	5 51.5 -59.0 157.3
20°	5 31.0 -59.2 161.2	5 22.0 -59.2 160.2	5 12.6 -59.1 159.3	5 02.8 -59.1 158.4	4 52.5 -58.9 157.4
21°	4 31.8 -59.3 161.3	4 22.8 -59.2 160.4	4 13.5 -59.1 159.5	4 03.7 -59.0 158.5	3 53.6 -59.0 157.6
22°	3 32.5 -59.3 161.5	3 23.6 -59.2 160.6	3 14.4 -59.2 159.6	3 04.7 -59.1 158.7	2 54.6 -59.0 157.8
23°	2 33.2 -59.3 161.6	2 24.4 -59.2 160.7	2 15.2 -59.1 159.8	2 05.6 -59.0 158.9	1 55.6 -58.9 158.0
24°	1 33.9 -59.2 161.8	1 25.2 -59.2 160.9	1 16.1 -59.1 160.0	1 06.6 -59.1 159.1	0 56.7 -59.0 158.2
25°	0 34.7 -59.3 161.9	0 26.0 -59.2 161.0	0 17.0 -59.1 160.2	0 07.5 -59.0 159.3	-0 02.3 -59.0
26°	-0 24.6 -59.3	-0 33.2 -59.2	-0 42.1 -59.2	-0 51.5 -59.1	-1 01.3 -58.9
27°	-1 23.9 -59.2	-1 32.4 -59.2	-1 41.3 -59.1	-1 50.6 -59.0	-2 00.2 -59.0
28°	-2 23.1 -59.3	-2 31.6 -59.2	-2 40.4 -59.1	-2 49.6 -59.1	-2 59.2 -59.0
29°	-3 22.4 -59.3	-3 30.8 -59.2	-3 39.5 -59.1	-3 48.7 -59.0	-3 58.2 -58.9

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	24 17.8 -58.7 152.4	24 04.9 -58.5 151.3	23 51.6 -58.4 150.2	23 37.9 -58.4 149.2	23 23.7 -58.3 148.1
1°	23 19.1 -58.7 152.6	23 06.4 -58.6 151.5	22 53.2 -58.5 150.5	22 39.5 -58.4 149.4	22 25.4 -58.2 148.4
2°	22 20.4 -58.7 152.8	22 07.8 -58.6 151.8	21 54.7 -58.5 150.7	21 41.1 -58.4 149.7	21 27.2 -58.4 148.6
3°	21 21.7 -58.7 153.1	21 09.2 -58.7 152.0	20 56.2 -58.6 151.0	20 42.7 -58.4 149.9	20 28.8 -58.3 148.9
4°	20 23.0 -58.7 153.3	20 10.5 -58.6 152.2	19 57.6 -58.5 151.2	19 44.3 -58.5 150.2	19 30.5 -58.3 149.1
5°	19 24.3 -58.8 153.5	19 11.9 -58.7 152.5	18 59.1 -58.6 151.4	18 45.8 -58.4 150.4	18 32.2 -58.4 149.4
6°	18 25.5 -58.8 153.7	18 13.2 -58.7 152.7	18 00.5 -58.6 151.7	17 47.4 -58.5 150.6	17 33.8 -58.4 149.6
7°	17 26.7 -58.7 153.9	17 14.5 -58.6 152.9	17 01.9 -58.6 151.9	16 48.9 -58.5 150.9	16 35.4 -58.4 149.9
8°	16 28.0 -58.8 154.1	16 15.9 -58.7 153.1	16 03.3 -58.6 152.1	15 50.4 -58.5 151.1	15 37.0 -58.4 150.1
9°	15 29.2 -58.8 154.3	15 17.2 -58.8 153.3	15 04.7 -58.6 152.3	14 51.9 -58.6 151.3	14 38.6 -58.5 150.3
10°	14 30.4 -58.9 154.5	14 18.4 -58.7 153.5	14 06.1 -58.6 152.5	13 53.3 -58.5 151.6	13 40.1 -58.4 150.6
11°	13 31.5 -58.8 154.7	13 19.7 -58.7 153.8	13 07.5 -58.7 152.8	12 54.8 -58.6 151.8	12 41.7 -58.5 150.8
12°	12 32.7 -58.8 154.9	12 21.0 -58.8 154.0	12 08.8 -58.6 153.0	11 56.2 -58.5 152.0	11 43.2 -58.4 151.0
13°	11 33.9 -58.9 155.1	11 22.2 -58.7 154.2	11 10.2 -58.7 153.2	10 57.7 -58.6 152.2	10 44.8 -58.5 151.3
14°	10 35.0 -58.8 155.3	10 23.5 -58.8 154.4	10 11.5 -58.7 153.4	9 59.1 -58.6 152.4	9 46.3 -58.5 151.5
15°	9 36.2 -58.9 155.5	9 24.7 -58.8 154.6	9 12.8 -58.7 153.6	9 00.5 -58.6 152.7	8 47.8 -58.5 151.7
16°	8 37.3 -58.8 155.7	8 25.9 -58.7 154.8	8 14.1 -58.7 153.8	8 01.9 -58.6 152.9	7 49.3 -58.5 151.9
17°	7 38.5 -58.9 155.9	7 27.2 -58.8 155.0	7 15.4 -58.6 154.0	7 03.3 -58.6 153.1	6 50.8 -58.5 152.2
18°	6 39.6 -58.9 156.1	6 28.4 -58.8 155.2	6 16.8 -58.7 154.3	6 04.7 -58.6 153.3	5 52.3 -58.5 152.4
19°	5 40.7 -58.8 156.3	5 29.6 -58.8 155.4	5 18.1 -58.7 154.5	5 06.1 -58.6 153.5	4 53.8 -58.5 152.6
20°	4 41.9 -58.9 156.5	4 30.8 -58.8 155.6	4 19.4 -58.8 154.7	4 07.5 -58.6 153.7	3 55.3 -58.6 152.8
21°	3 43.0 -58.9 156.7	3 32.0 -58.8 155.8	3 20.6 -58.7 154.9	3 08.9 -58.6 154.0	2 56.7 -58.5 153.1
22°	2 44.1 -58.9 156.9	2 33.2 -58.8 156.0	2 21.9 -58.7 155.1	2 10.3 -58.7 154.2	1 58.2 -58.5 153.3
23°	1 45.2 -58.9 157.1	1 34.4 -58.8 156.2	1 23.2 -58.7 155.3	1 11.6 -58.6 154.4	0 59.7 -58.5 153.5
24°	0 46.3 -58.9 157.3	0 35.6 -58.8 156.4	0 24.5 -58.7 155.5	0 13.0 -58.6 154.6	0 01.2 -58.6 153.7
25°	-0 12.6 -58.8	-0 23.2 -58.8	-0 34.2 -58.7	-0 45.6 -58.6	-0 57.4 -58.5
26°	-1 11.4 -58.9	-1 22.0 -58.8	-1 32.9 -58.7	-1 44.2 -58.6	-1 55.9 -58.5
27°	-2 10.3 -58.9	-2 20.8 -58.8	-2 31.6 -58.7	-2 42.8 -58.7	-2 54.4 -58.6
28°	-3 09.2 -58.9	-3 19.6 -58.8	-3 30.3 -58.7	-3 41.5 -58.6	-3 53.0 -58.5
29°	-4 08.1 -58.9	-4 18.4 -58.8	-4 29.0 -58.7	-4 40.1 -58.6	-4 51.5 -58.5

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	23 09.1 -58.2 147.1	22 54.1 -58.1 146.0	22 38.6 -57.9 145.0	22 22.8 -57.8 143.9	22 06.6 -57.8 142.9
1°	22 10.9 -58.1 147.3	21 56.0 -58.0 146.3	21 40.7 -58.0 145.2	21 25.0 -57.9 144.2	21 08.8 -57.7 143.2
2°	21 12.8 -58.2 147.6	20 58.0 -58.1 146.5	20 42.7 -58.0 145.5	20 27.1 -57.9 144.5	20 11.1 -57.8 143.5
3°	20 14.6 -58.3 147.8	19 59.9 -58.2 146.8	19 44.7 -58.0 145.8	19 29.2 -57.9 144.8	19 13.3 -57.8 143.7
4°	19 16.3 -58.2 148.1	19 01.7 -58.1 147.1	18 46.7 -58.0 146.1	18 31.3 -57.9 145.0	18 15.5 -57.8 144.0
5°	18 18.1 -58.3 148.4	18 03.6 -58.2 147.3	17 48.7 -58.1 146.3	17 33.4 -58.0 145.3	17 17.7 -57.9 144.3
6°	17 19.8 -58.3 148.6	17 05.4 -58.2 147.6	16 50.6 -58.1 146.6	16 35.4 -58.0 145.6	16 19.8 -57.8 144.6
7°	16 21.5 -58.3 148.9	16 07.2 -58.2 147.9	15 52.5 -58.1 146.9	15 37.4 -58.0 145.9	15 22.0 -57.9 144.9
8°	15 23.2 -58.3 149.1	15 09.0 -58.2 148.1	14 54.4 -58.1 147.1	14 39.4 -58.0 146.1	14 24.1 -57.9 145.1
9°	14 24.9 -58.3 149.3	14 10.8 -58.2 148.4	13 56.3 -58.1 147.4	13 41.4 -58.0 146.4	13 26.2 -58.0 145.4
10°	13 26.6 -58.4 149.6	13 12.6 -58.3 148.6	12 58.2 -58.2 147.6	12 43.4 -58.1 146.6	12 28.2 -57.9 145.7
11°	12 28.2 -58.4 149.8	12 14.3 -58.2 148.8	12 00.0 -58.1 147.9	11 45.3 -58.0 146.9	11 30.3 -58.0 145.9
12°	11 29.8 -58.3 150.1	11 16.1 -58.3 149.1	11 01.9 -58.2 148.1	10 47.3 -58.1 147.2	10 32.3 -57.9 146.2
13°	10 31.5 -58.4 150.3	10 17.8 -58.3 149.3	10 03.7 -58.2 148.4	9 49.2 -58.1 147.4	9 34.4 -58.0 146.5
14°	9 33.1 -58.4 150.5	9 19.5 -58.3 149.6	9 05.5 -58.2 148.6	8 51.1 -58.1 147.7	8 36.4 -58.0 146.7
15°	8 34.7 -58.4 150.8	8 21.2 -58.3 149.8	8 07.3 -58.2 148.9	7 53.0 -58.1 147.9	7 38.4 -58.0 147.0
16°	7 36.3 -58.4 151.0	7 22.9 -58.3 150.1	7 09.1 -58.2 149.1	6 54.9 -58.1 148.2	6 40.4 -58.0 147.2
17°	6 37.9 -58.4 151.2	6 24.6 -58.3 150.3	6 10.9 -58.2 149.4	5 56.8 -58.1 148.4	5 42.4 -58.1 147.5
18°	5 39.5 -58.4 151.5	5 26.3 -58.4 150.5	5 12.7 -58.3 149.6	4 58.7 -58.1 148.7	4 44.3 -58.0 147.7
19°	4 41.1 -58.5 151.7	4 27.9 -58.3 150.8	4 14.4 -58.2 149.8	4 00.6 -58.2 148.9	3 46.3 -58.0 148.0
20°	3 42.6 -58.4 151.9	3 29.6 -58.3 151.0	3 16.2 -58.2 150.1	3 02.4 -58.1 149.2	2 48.3 -58.0 148.3
21°	2 44.2 -58.4 152.1	2 31.3 -58.4 151.2	2 18.0 -58.3 150.3	2 04.3 -58.1 149.4	1 50.3 -58.1 148.5
22°	1 45.8 -58.5 152.4	1 32.9 -58.3 151.5	1 19.7 -58.2 150.6	1 06.2 -58.2 149.7	0 52.2 -58.0 148.8
23°	0 47.3 -58.4 152.6	0 34.6 -58.3 151.7	0 21.5 -58.2 150.8	0 08.0 -58.1 149.9	-0 05.8 -58.0
24°	-0 11.1 -58.4	-0 23.7 -58.4	-0 36.7 -58.3	-0 50.1 -58.1	-1 03.8 -58.1
25°	-1 09.5 -58.5	-1 22.1 -58.3	-1 35.0 -58.2	-1 48.2 -58.2	-2 01.9 -58.0
26°	-2 08.0 -58.4	-2 20.4 -58.3	-2 33.2 -58.2	-2 46.4 -58.1	-2 59.9 -58.0
27°	-3 06.4 -58.4	-3 18.7 -58.4	-3 31.4 -58.3	-3 44.5 -58.1	-3 57.9 -58.1
28°	-4 04.8 -58.4	-4 17.1 -58.3	-4 29.7 -58.2	-4 42.6 -58.2	-4 56.0 -58.0
29°	-5 03.2 -58.5	-5 15.4 -58.3	-5 27.9 -58.2	-5 40.8 -58.1	-5 54.0 -58.0

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	21 49.9 -57.6 141.8	21 32.9 -57.5 140.8	21 15.5 -57.4 139.8	20 57.7 -57.2 138.8	20 39.6 -57.2 137.7
1°	20 52.3 -57.6 142.1	20 35.4 -57.5 141.1	20 18.1 -57.4 140.1	20 00.5 -57.3 139.1	19 42.4 -57.2 138.1
2°	19 54.7 -57.7 142.4	19 37.9 -57.6 141.4	19 20.7 -57.4 140.4	19 03.2 -57.4 139.4	18 45.2 -57.2 138.4
3°	18 57.0 -57.7 142.7	18 40.3 -57.6 141.7	18 23.3 -57.5 140.7	18 05.8 -57.3 139.7	17 48.0 -57.2 138.7
4°	17 59.3 -57.7 143.0	17 42.7 -57.6 142.0	17 25.8 -57.5 141.0	17 08.5 -57.4 140.0	16 50.8 -57.3 139.0
5°	17 01.6 -57.7 143.3	16 45.1 -57.6 142.3	16 28.3 -57.5 141.3	16 11.1 -57.4 140.3	15 53.5 -57.3 139.3
6°	16 03.9 -57.8 143.6	15 47.5 -57.7 142.6	15 30.8 -57.6 141.6	15 13.7 -57.5 140.6	14 56.2 -57.3 139.6
7°	15 06.1 -57.8 143.9	14 49.8 -57.6 142.9	14 33.2 -57.6 141.9	14 16.2 -57.4 140.9	13 58.9 -57.4 139.9
8°	14 08.3 -57.8 144.1	13 52.2 -57.7 143.2	13 35.6 -57.6 142.2	13 18.8 -57.5 141.2	13 01.5 -57.4 140.2
9°	13 10.5 -57.8 144.4	12 54.5 -57.8 143.4	12 38.0 -57.6 142.5	12 21.3 -57.5 141.5	12 04.1 -57.4 140.5
10°	12 12.7 -57.9 144.7	11 56.7 -57.7 143.7	11 40.4 -57.6 142.8	11 23.8 -57.5 141.8	11 06.7 -57.4 140.8
11°	11 14.8 -57.8 145.0	10 59.0 -57.7 144.0	10 42.8 -57.6 143.0	10 26.3 -57.6 142.1	10 09.3 -57.4 141.1
12°	10 17.0 -57.9 145.2	10 01.3 -57.8 144.3	9 45.2 -57.7 143.3	9 28.7 -57.5 142.4	9 11.9 -57.4 141.4
13°	9 19.1 -57.9 145.5	9 03.5 -57.8 144.6	8 47.5 -57.6 143.6	8 31.2 -57.6 142.7	8 14.5 -57.5 141.7
14°	8 21.2 -57.9 145.8	8 05.7 -57.8 144.8	7 49.9 -57.7 143.9	7 33.6 -57.6 142.9	7 17.0 -57.4 142.0
15°	7 23.3 -57.9 146.0	7 07.9 -57.8 145.1	6 52.2 -57.7 144.2	6 36.0 -57.5 143.2	6 19.6 -57.5 142.3
16°	6 25.4 -57.9 146.3	6 10.1 -57.8 145.4	5 54.5 -57.7 144.4	5 38.5 -57.6 143.5	5 22.1 -57.5 142.6
17°	5 27.5 -57.9 146.6	5 12.3 -57.8 145.6	4 56.8 -57.7 144.7	4 40.9 -57.6 143.8	4 24.6 -57.5 142.9
18°	4 29.6 -57.9 146.8	4 14.5 -57.8 145.9	3 59.1 -57.7 145.0	3 43.3 -57.6 144.1	3 27.1 -57.5 143.2
19°	3 31.7 -57.9 147.1	3 16.7 -57.8 146.2	3 01.4 -57.7 145.3	2 45.7 -57.6 144.4	2 29.6 -57.5 143.4
20°	2 33.8 -57.9 147.3	2 18.9 -57.8 146.4	2 03.7 -57.8 145.5	1 48.1 -57.6 144.6	1 32.1 -57.5 143.7
21°	1 35.9 -58.0 147.6	1 21.1 -57.8 146.7	1 05.9 -57.7 145.8	0 50.5 -57.6 144.9	0 34.6 -57.5 144.0
22°	0 37.9 -57.9 147.9	0 23.3 -57.9 147.0	0 08.2 -57.7 146.1	-0 07.1 -57.7	-0 22.9 -57.5
23°	-0 20.0 -57.9	-0 34.6 -57.8	-0 49.5 -57.7	-1 04.8 -57.6	-1 20.4 -57.5
24°	-1 17.9 -58.0	-1 32.4 -57.8	-1 47.2 -57.7	-2 02.4 -57.6	-2 17.9 -57.5
25°	-2 15.9 -57.9	-2 30.2 -57.8	-2 44.9 -57.7	-3 00.0 -57.6	-3 15.4 -57.4
26°	-3 13.8 -57.9	-3 28.0 -57.8	-3 42.6 -57.7	-3 57.6 -57.6	-4 12.8 -57.5
27°	-4 11.7 -57.9	-4 25.8 -57.9	-4 40.3 -57.7	-4 55.2 -57.5	-5 10.3 -57.5
28°	-5 09.6 -57.9	-5 23.7 -57.8	-5 38.0 -57.7	-5 52.7 -57.6	-6 07.8 -57.5
29°	-6 07.5 -57.9	-6 21.5 -57.7	-6 35.7 -57.7	-6 50.3 -57.6	-7 05.3 -57.4

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	20 21.1 -57.1 136.7	20 02.2 -56.9 135.7	19 43.0 -56.8 134.7	19 23.5 -56.7 133.7	19 03.7 -56.6 132.7
1°	19 24.0 -57.0 137.0	19 05.3 -56.9 136.0	18 46.2 -56.8 135.0	18 26.8 -56.7 134.0	18 07.1 -56.6 133.0
2°	18 27.0 -57.1 137.4	18 08.4 -57.0 136.4	17 49.4 -56.9 135.4	17 30.1 -56.8 134.4	17 10.5 -56.7 133.4
3°	17 29.9 -57.2 137.7	17 11.4 -57.1 136.7	16 52.5 -56.9 135.7	16 33.3 -56.8 134.7	16 13.8 -56.7 133.7
4°	16 32.7 -57.1 138.0	16 14.3 -57.0 137.0	15 55.6 -56.9 136.0	15 36.5 -56.8 135.1	15 17.1 -56.7 134.1
5°	15 35.6 -57.2 138.3	15 17.3 -57.1 137.3	14 58.7 -57.0 136.4	14 39.7 -56.9 135.4	14 20.4 -56.7 134.4
6°	14 38.4 -57.2 138.6	14 20.2 -57.1 137.7	14 01.7 -57.0 136.7	13 42.8 -56.9 135.7	13 23.7 -56.8 134.8
7°	13 41.2 -57.3 139.0	13 23.1 -57.1 138.0	13 04.7 -57.0 137.0	12 45.9 -56.9 136.0	12 26.9 -56.8 135.1
8°	12 43.9 -57.3 139.3	12 26.0 -57.2 138.3	12 07.7 -57.1 137.3	11 49.0 -56.9 136.4	11 30.1 -56.8 135.4
9°	11 46.6 -57.2 139.6	11 28.8 -57.2 138.6	11 10.6 -57.0 137.6	10 52.1 -56.9 136.7	10 33.3 -56.9 135.7
10°	10 49.4 -57.3 139.9	10 31.6 -57.2 138.9	10 13.6 -57.1 138.0	9 55.2 -57.0 137.0	9 36.4 -56.8 136.1
11°	9 52.1 -57.3 140.2	9 34.4 -57.2 139.2	9 16.5 -57.1 138.3	8 58.2 -57.0 137.3	8 39.6 -56.9 136.4
12°	8 54.8 -57.4 140.5	8 37.2 -57.2 139.5	8 19.4 -57.1 138.6	8 01.2 -57.0 137.6	7 42.7 -56.9 136.7
13°	7 57.4 -57.3 140.8	7 40.0 -57.2 139.8	7 22.3 -57.1 138.9	7 04.2 -57.0 138.0	6 45.8 -56.9 137.0
14°	7 00.1 -57.4 141.1	6 42.8 -57.3 140.1	6 25.2 -57.2 139.2	6 07.2 -57.0 138.3	5 48.9 -56.9 137.4
15°	6 02.7 -57.3 141.4	5 45.5 -57.2 140.4	5 28.0 -57.1 139.5	5 10.2 -57.1 138.6	4 52.0 -56.9 137.7
16°	5 05.4 -57.4 141.7	4 48.3 -57.3 140.7	4 30.9 -57.2 139.8	4 13.1 -57.0 138.9	3 55.1 -56.9 138.0
17°	4 08.0 -57.4 142.0	3 51.0 -57.2 141.0	3 33.7 -57.1 140.1	3 16.1 -57.0 139.2	2 58.2 -57.0 138.3
18°	3 10.6 -57.4 142.2	2 53.8 -57.3 141.3	2 36.6 -57.2 140.4	2 19.1 -57.1 139.5	2 01.2 -56.9 138.6
19°	2 13.2 -57.4 142.5	1 56.5 -57.3 141.6	1 39.4 -57.1 140.7	1 22.0 -57.0 139.8	1 04.3 -57.0 138.9
20°	1 15.8 -57.3 142.8	0 59.2 -57.3 141.9	0 42.3 -57.2 141.0	0 25.0 -57.1 140.1	0 07.3 -56.9 139.2
21°	0 18.5 -57.4 143.1	0 01.9 -57.2 142.2	-0 14.9 -57.2	-0 32.1 -57.0	-0 49.6 -56.9
22°	-0 38.9 -57.4	-0 55.3 -57.3	-1 12.1 -57.1	-1 29.1 -57.1	-1 46.5 -57.0
23°	-1 36.3 -57.4	-1 52.6 -57.3	-2 09.2 -57.2	-2 26.2 -57.0	-2 43.5 -56.9
24°	-2 33.7 -57.4	-2 49.9 -57.2	-3 06.4 -57.1	-3 23.2 -57.1	-3 40.4 -56.9
25°	-3 31.1 -57.4	-3 47.1 -57.3	-4 03.5 -57.2	-4 20.3 -57.0	-4 37.3 -56.9
26°	-4 28.5 -57.3	-4 44.4 -57.3	-5 00.7 -57.1	-5 17.3 -57.0	-5 34.2 -56.9
27°	-5 25.8 -57.4	-5 41.7 -57.2	-5 57.8 -57.2	-6 14.3 -57.0	-6 31.1 -56.9
28°	-6 23.2 -57.3	-6 38.9 -57.2	-6 55.0 -57.1	-7 11.3 -57.0	-7 28.0 -56.9
29°	-7 20.5 -57.4	-7 36.1 -57.3	-7 52.1 -57.1	-8 08.3 -57.0	-8 24.9 -56.9

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	18 43.5 -56.5 131.7	18 23.0 -56.4 130.7	18 02.2 -56.3 129.7	17 41.1 -56.1 128.7	17 19.7 -56.0 127.8
1°	17 47.0 -56.5 132.1	17 26.6 -56.4 131.1	17 05.9 -56.2 130.1	16 45.0 -56.2 129.1	16 23.7 -56.1 128.1
2°	16 50.5 -56.5 132.4	16 30.2 -56.4 131.4	16 09.7 -56.4 130.4	15 48.8 -56.2 129.5	15 27.6 -56.1 128.5
3°	15 54.0 -56.6 132.8	15 33.8 -56.5 131.8	15 13.3 -56.3 130.8	14 52.6 -56.3 129.8	14 31.5 -56.1 128.9
4°	14 57.4 -56.6 133.1	14 37.3 -56.5 132.1	14 17.0 -56.4 131.2	13 56.3 -56.2 130.2	13 35.4 -56.2 129.2
5°	14 00.8 -56.7 133.4	13 40.8 -56.5 132.5	13 20.6 -56.4 131.5	13 00.1 -56.3 130.6	12 39.2 -56.2 129.6
6°	13 04.1 -56.6 133.8	12 44.3 -56.5 132.8	12 24.2 -56.5 131.9	12 03.8 -56.4 130.9	11 43.0 -56.2 130.0
7°	12 07.5 -56.7 134.1	11 47.8 -56.6 133.2	11 27.7 -56.4 132.2	11 07.4 -56.3 131.3	10 46.8 -56.2 130.3
8°	11 10.8 -56.7 134.5	10 51.2 -56.6 133.5	10 31.3 -56.5 132.6	10 11.1 -56.4 131.6	9 50.6 -56.3 130.7
9°	10 14.1 -56.7 134.8	9 54.6 -56.6 133.8	9 34.8 -56.5 132.9	9 14.7 -56.4 132.0	8 54.3 -56.3 131.0
10°	9 17.4 -56.8 135.1	8 58.0 -56.6 134.2	8 38.3 -56.5 133.2	8 18.3 -56.4 132.3	7 58.0 -56.3 131.4
11°	8 20.6 -56.7 135.4	8 01.4 -56.7 134.5	7 41.8 -56.6 133.6	7 21.9 -56.4 132.6	7 01.7 -56.3 131.7
12°	7 23.9 -56.8 135.8	7 04.7 -56.7 134.8	6 45.2 -56.5 133.9	6 25.5 -56.5 133.0	6 05.4 -56.3 132.1
13°	6 27.1 -56.8 136.1	6 08.0 -56.6 135.2	5 48.7 -56.6 134.3	5 29.0 -56.4 133.3	5 09.1 -56.4 132.4
14°	5 30.3 -56.8 136.4	5 11.4 -56.7 135.5	4 52.1 -56.6 134.6	4 32.6 -56.5 133.7	4 12.7 -56.3 132.8
15°	4 33.5 -56.8 136.8	4 14.7 -56.7 135.8	3 55.5 -56.5 134.9	3 36.1 -56.5 134.0	3 16.4 -56.4 133.1
16°	3 36.7 -56.8 137.1	3 18.0 -56.7 136.2	2 59.0 -56.6 135.3	2 39.6 -56.5 134.3	2 20.0 -56.4 133.4
17°	2 39.9 -56.8 137.4	2 21.3 -56.7 136.5	2 02.4 -56.6 135.6	1 43.1 -56.4 134.7	1 23.6 -56.3 133.8
18°	1 43.1 -56.9 137.7	1 24.6 -56.7 136.8	1 05.8 -56.6 135.9	0 46.7 -56.5 135.0	0 27.3 -56.4 134.1
19°	0 46.2 -56.8 138.0	0 27.9 -56.8 137.1	0 09.2 -56.6 136.3	-0 09.8 -56.5	-0 29.1 -56.4
20°	-0 10.6 -56.8	-0 28.9 -56.7	-0 47.4 -56.6	-1 06.3 -56.5	-1 25.5 -56.3
21°	-1 07.4 -56.8	-1 25.6 -56.7	-1 44.0 -56.6	-2 02.8 -56.4	-2 21.8 -56.4
22°	-2 04.2 -56.9	-2 22.3 -56.7	-2 40.6 -56.6	-2 59.2 -56.5	-3 18.2 -56.3
23°	-3 01.1 -56.8	-3 19.0 -56.7	-3 37.2 -56.6	-3 55.7 -56.5	-4 14.5 -56.4
24°	-3 57.9 -56.8	-4 15.7 -56.7	-4 33.8 -56.5	-4 52.2 -56.4	-5 10.9 -56.3
25°	-4 54.7 -56.8	-5 12.4 -56.6	-5 30.3 -56.6	-5 48.6 -56.5	-6 07.2 -56.3
26°	-5 51.5 -56.8	-6 09.0 -56.7	-6 26.9 -56.5	-6 45.1 -56.4	-7 03.5 -56.3
27°	-6 48.3 -56.7	-7 05.7 -56.6	-7 23.4 -56.6	-7 41.5 -56.4	-7 59.8 -56.3
28°	-7 45.0 -56.8	-8 02.3 -56.7	-8 20.0 -56.5	-8 37.9 -56.4	-8 56.1 -56.3
29°	-8 41.8 -56.7	-8 59.0 -56.6	-9 16.5 -56.5	-9 34.3 -56.4	-9 52.4 -56.2

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	16 58.0 -55.9 126.8	16 36.1 -55.8 125.8	16 13.8 -55.7 124.8	15 51.4 -55.6 123.9	15 28.6 -55.5 122.9
1°	16 02.1 -56.0 127.2	15 40.3 -55.9 126.2	15 18.1 -55.7 125.2	14 55.8 -55.7 124.3	14 33.1 -55.5 123.3
2°	15 06.1 -55.9 127.5	14 44.4 -55.9 126.6	14 22.4 -55.8 125.6	14 00.1 -55.6 124.7	13 37.6 -55.6 123.7
3°	14 10.2 -56.1 127.9	13 48.5 -55.9 126.9	13 26.6 -55.8 126.0	13 04.5 -55.8 125.0	12 42.0 -55.6 124.1
4°	13 14.1 -56.0 128.3	12 52.6 -55.9 127.3	12 30.8 -55.8 126.4	12 08.7 -55.7 125.4	11 46.4 -55.6 124.5
5°	12 18.1 -56.1 128.6	11 56.7 -56.0 127.7	11 35.0 -55.9 126.7	11 13.0 -55.8 125.8	10 50.8 -55.7 124.9
6°	11 22.0 -56.1 129.0	11 00.7 -56.0 128.1	10 39.1 -55.9 127.1	10 17.2 -55.7 126.2	9 55.1 -55.7 125.2
7°	10 25.9 -56.2 129.4	10 04.7 -56.0 128.4	9 43.2 -55.9 127.5	9 21.5 -55.9 126.5	8 59.4 -55.7 125.6
8°	9 29.7 -56.1 129.7	9 08.7 -56.1 128.8	8 47.3 -56.0 127.9	8 25.6 -55.8 126.9	8 03.7 -55.7 126.0
9°	8 33.6 -56.2 130.1	8 12.6 -56.1 129.1	7 51.3 -55.9 128.2	7 29.8 -55.8 127.3	7 08.0 -55.7 126.4
10°	7 37.4 -56.2 130.4	7 16.5 -56.0 129.5	6 55.4 -56.0 128.6	6 34.0 -55.9 127.7	6 12.3 -55.8 126.7
11°	6 41.2 -56.2 130.8	6 20.5 -56.1 129.9	5 59.4 -56.0 128.9	5 38.1 -55.9 128.0	5 16.5 -55.8 127.1
12°	5 45.0 -56.2 131.1	5 24.4 -56.2 130.2	5 03.4 -56.0 129.3	4 42.2 -55.9 128.4	4 20.7 -55.8 127.5
13°	4 48.8 -56.2 131.5	4 28.2 -56.1 130.6	4 07.4 -56.0 129.7	3 46.3 -55.9 128.8	3 24.9 -55.8 127.8
14°	3 52.6 -56.3 131.8	3 32.1 -56.1 130.9	3 11.4 -56.0 130.0	2 50.4 -55.9 129.1	2 29.1 -55.8 128.2
15°	2 56.3 -56.2 132.2	2 36.0 -56.1 131.3	2 15.4 -56.0 130.4	1 54.5 -55.9 129.5	1 33.3 -55.8 128.6
16°	2 00.1 -56.3 132.5	1 39.9 -56.2 131.6	1 19.4 -56.1 130.7	0 58.6 -55.9 129.8	0 37.5 -55.8 128.9
17°	1 03.8 -56.2 132.9	0 43.7 -56.1 132.0	0 23.3 -56.0 131.1	0 02.7 -56.0 130.2	-0 18.3 -55.8
18°	0 07.6 -56.3 133.2	-0 12.4 -56.2	-0 32.7 -56.0	-0 53.3 -55.9	-1 14.1 -55.8
19°	-0 48.7 -56.2	-1 08.6 -56.1	-1 28.7 -56.1	-1 49.2 -55.9	-2 09.9 -55.8
20°	-1 44.9 -56.3	-2 04.7 -56.1	-2 24.8 -56.0	-2 45.1 -55.9	-3 05.7 -55.8
21°	-2 41.2 -56.2	-3 00.8 -56.2	-3 20.8 -56.0	-3 41.0 -55.9	-4 01.5 -55.8
22°	-3 37.4 -56.3	-3 57.0 -56.1	-4 16.8 -56.0	-4 36.9 -55.9	-4 57.3 -55.7
23°	-4 33.7 -56.2	-4 53.1 -56.1	-5 12.8 -56.0	-5 32.8 -55.8	-5 53.0 -55.8
24°	-5 29.9 -56.2	-5 49.2 -56.1	-6 08.8 -55.9	-6 28.6 -55.9	-6 48.8 -55.7
25°	-6 26.1 -56.2	-6 45.3 -56.1	-7 04.7 -56.0	-7 24.5 -55.8	-7 44.5 -55.7
26°	-7 22.3 -56.2	-7 41.4 -56.0	-8 00.7 -55.9	-8 20.3 -55.8	-8 40.2 -55.7
27°	-8 18.5 -56.1	-8 37.4 -56.1	-8 56.6 -56.0	-9 16.1 -55.8	-9 35.9 -55.7
28°	-9 14.6 -56.2	-9 33.5 -56.0	-9 52.6 -55.8		
29°					

Dec	LHA 055° / 305°	LHA 056° / 304°	LHA 057° / 303°	LHA 058° / 302°	LHA 059° / 301°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	15 05.6 -55.4 122.0	14 42.4 -55.3 121.0	14 18.9 -55.2 120.1	13 55.2 -55.1 119.1	13 31.3 -55.0 118.2
1°	14 10.2 -55.4 122.4	13 47.1 -55.3 121.4	13 23.7 -55.2 120.5	13 00.1 -55.1 119.5	12 36.3 -55.0 118.6
2°	13 14.8 -55.5 122.8	12 51.8 -55.4 121.8	12 28.5 -55.3 120.9	12 05.0 -55.2 119.9	11 41.3 -55.1 119.0
3°	12 19.3 -55.5 123.1	11 56.4 -55.4 122.2	11 33.2 -55.3 121.3	11 09.8 -55.2 120.3	10 46.2 -55.1 119.4
4°	11 23.8 -55.5 123.5	11 01.0 -55.4 122.6	10 37.9 -55.3 121.7	10 14.6 -55.2 120.7	9 51.1 -55.1 119.8
5°	10 28.3 -55.6 123.9	10 05.6 -55.5 123.0	9 42.6 -55.3 122.0	9 19.4 -55.3 121.1	8 56.0 -55.2 120.2
6°	9 32.7 -55.5 124.3	9 10.1 -55.5 123.4	8 47.3 -55.4 122.4	8 24.1 -55.2 121.5	8 00.8 -55.2 120.6
7°	8 37.2 -55.6 124.7	8 14.6 -55.5 123.8	7 51.9 -55.4 122.8	7 28.9 -55.3 121.9	7 05.6 -55.2 121.0
8°	7 41.6 -55.7 125.1	7 19.1 -55.5 124.1	6 56.5 -55.4 123.2	6 33.6 -55.4 122.3	6 10.4 -55.2 121.4
9°	6 45.9 -55.6 125.4	6 23.6 -55.5 124.5	6 01.1 -55.5 123.6	5 38.2 -55.3 122.7	5 15.2 -55.2 121.8
10°	5 50.3 -55.7 125.8	5 28.1 -55.6 124.9	5 05.6 -55.4 124.0	4 42.9 -55.3 123.1	4 20.0 -55.3 122.2
11°	4 54.6 -55.6 126.2	4 32.5 -55.5 125.3	4 10.2 -55.5 124.4	3 47.6 -55.4 123.5	3 24.7 -55.2 122.6
12°	3 59.0 -55.7 126.6	3 37.0 -55.6 125.7	3 14.7 -55.5 124.7	2 52.2 -55.4 123.8	2 29.5 -55.3 122.9
13°	3 03.3 -55.7 126.9	2 41.4 -55.6 126.0	2 19.2 -55.4 125.1	1 56.8 -55.3 124.2	1 34.2 -55.3 123.3
14°	2 07.6 -55.7 127.3	1 45.8 -55.6 126.4	1 23.8 -55.5 125.5	1 01.5 -55.4 124.6	0 38.9 -55.2 123.7
15°	1 11.9 -55.7 127.7	0 50.2 -55.6 126.8	0 28.3 -55.5 125.9	0 06.1 -55.4 125.0	-0 16.3 -55.3
16°	0 16.2 -55.7 128.1	-0 05.4 -55.6	-0 27.2 -55.5	-0 49.3 -55.4	-1 11.6 -55.3
17°	-0 39.5 -55.7	-1 01.0 -55.5	-1 22.7 -55.5	-1 44.7 -55.3	-2 06.9 -55.2
18°	-1 35.2 -55.7	-1 56.5 -55.6	-2 18.2 -55.4	-2 40.0 -55.4	-3 02.1 -55.3
19°	-2 30.9 -55.7	-2 52.1 -55.6	-3 13.6 -55.5	-3 35.4 -55.3	-3 57.4 -55.2
20°	-3 26.6 -55.6	-3 47.7 -55.6	-4 09.1 -55.4	-4 30.7 -55.4	-4 52.6 -55.3
21°	-4 22.2 -55.7	-4 43.3 -55.5	-5 04.5 -55.5	-5 26.1 -55.3	-5 47.9 -55.2
22°	-5 17.9 -55.6	-5 38.8 -55.5	-6 00.0 -55.4	-6 21.4 -55.3	-6 43.1 -55.2
23°	-6 13.5 -55.7	-6 34.3 -55.6	-6 55.4 -55.4	-7 16.7 -55.3	-7 38.3 -55.1
24°	-7 09.2 -55.6	-7 29.9 -55.5	-7 50.8 -55.4	-8 12.0 -55.3	-8 33.4 -55.2
25°	-8 04.8 -55.6	-8 25.4 -55.4	-8 46.2 -55.3	-9 07.3 -55.2	-9 28.6 -55.1
26°	-9 00.4 -55.6	-9 20.8 -55.5	-9 41.5 -55.4		
27°	-9 56.0 -55.5				
28°					
29°					

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	13 07.2 -54.9 117.2	12 42.9 -54.8 116.3	12 18.4 -54.8 115.3	11 53.7 -54.7 114.4	11 28.8 -54.6 113.5
1°	12 12.3 -54.9 117.6	11 48.1 -54.9 116.7	11 23.6 -54.7 115.8	10 59.0 -54.7 114.8	10 34.2 -54.6 113.9
2°	11 17.4 -55.0 118.0	10 53.2 -54.9 117.1	10 28.9 -54.8 116.2	10 04.3 -54.7 115.3	9 39.6 -54.6 114.3
3°	10 22.4 -55.0 118.5	9 58.3 -54.9 117.5	9 34.1 -54.9 116.6	9 09.6 -54.7 115.7	8 45.0 -54.7 114.8
4°	9 27.4 -55.1 118.9	9 03.4 -55.0 117.9	8 39.2 -54.8 117.0	8 14.9 -54.8 116.1	7 50.3 -54.7 115.2
5°	8 32.3 -55.1 119.3	8 08.4 -54.9 118.3	7 44.4 -54.9 117.4	7 20.1 -54.8 116.5	6 55.6 -54.7 115.6
6°	7 37.2 -55.0 119.7	7 13.5 -55.0 118.7	6 49.5 -54.9 117.8	6 25.3 -54.8 116.9	6 00.9 -54.7 116.0
7°	6 42.2 -55.1 120.1	6 18.5 -55.0 119.1	5 54.6 -54.9 118.2	5 30.5 -54.9 117.3	5 06.2 -54.8 116.4
8°	5 47.1 -55.2 120.5	5 23.5 -55.1 119.5	4 59.7 -55.0 118.6	4 35.6 -54.8 117.7	4 11.4 -54.7 116.8
9°	4 51.9 -55.1 120.9	4 28.4 -55.0 119.9	4 04.7 -54.9 119.0	3 40.8 -54.8 118.1	3 16.7 -54.8 117.2
10°	3 56.8 -55.2 121.3	3 33.4 -55.1 120.3	3 09.8 -55.0 119.4	2 46.0 -54.9 118.5	2 21.9 -54.8 117.6
11°	3 01.6 -55.1 121.6	2 38.3 -55.0 120.7	2 14.8 -54.9 119.8	1 51.1 -54.9 118.9	1 27.1 -54.7 118.0
12°	2 06.5 -55.2 122.0	1 43.3 -55.1 121.1	1 19.9 -55.0 120.2	0 56.2 -54.9 119.3	0 32.4 -54.8 118.5
13°	1 11.3 -55.1 122.4	0 48.2 -55.1 121.5	0 24.9 -55.0 120.6	0 01.3 -54.8 119.8	-0 22.4 -54.8
14°	0 16.2 -55.2 122.8	-0 06.9 -55.0	-0 30.1 -54.9	-0 53.5 -54.9	-1 17.2 -54.8
15°	-0 39.0 -55.2	-1 01.9 -55.1	-1 25.0 -55.0	-1 48.4 -54.9	-2 12.0 -54.7
16°	-1 34.2 -55.1	-1 57.0 -55.0	-2 20.0 -55.0	-2 43.3 -54.8	-3 06.7 -54.8
17°	-2 29.3 -55.2	-2 52.0 -55.1	-3 15.0 -54.9	-3 38.1 -54.9	-4 01.5 -54.7
18°	-3 24.5 -55.1	-3 47.1 -55.0	-4 09.9 -54.9	-4 33.0 -54.8	-4 56.2 -54.7
19°	-4 19.6 -55.2	-4 42.1 -55.1	-5 04.8 -55.0	-5 27.8 -54.8	-5 50.9 -54.8
20°	-5 14.8 -55.1	-5 37.2 -55.0	-5 59.8 -54.9	-6 22.6 -54.8	-6 45.7 -54.6
21°	-6 09.9 -55.1	-6 32.2 -55.0	-6 54.7 -54.8	-7 17.4 -54.8	-7 40.3 -54.7
22°	-7 05.0 -55.1	-7 27.2 -54.9	-7 49.5 -54.9	-8 12.2 -54.7	-8 35.0 -54.7
23°	-8 00.1 -55.0	-8 22.1 -55.0	-8 44.4 -54.8	-9 06.9 -54.7	-9 29.7 -54.6
24°	-8 55.1 -55.1	-9 17.1 -54.9	-9 39.2 -54.8		
25°	-9 50.2 -55.0				
26°					
27°					
28°					
29°					

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	11 03.7 -54.5 112.6	10 38.5 -54.5 111.6	10 13.1 -54.4 110.7	9 47.5 -54.3 109.8	9 21.8 -54.2 108.9
1°	10 09.2 -54.5 113.0	9 44.0 -54.4 112.1	9 18.7 -54.3 111.1	8 53.2 -54.3 110.2	8 27.6 -54.2 109.3
2°	9 14.7 -54.6 113.4	8 49.6 -54.5 112.5	8 24.4 -54.4 111.6	7 58.9 -54.3 110.7	7 33.4 -54.3 109.7
3°	8 20.1 -54.5 113.8	7 55.1 -54.5 112.9	7 30.0 -54.5 112.0	7 04.6 -54.3 111.1	6 39.1 -54.2 110.2
4°	7 25.6 -54.6 114.3	7 00.6 -54.5 113.3	6 35.5 -54.4 112.4	6 10.3 -54.4 111.5	5 44.9 -54.3 110.6
5°	6 31.0 -54.7 114.7	6 06.1 -54.5 113.8	5 41.1 -54.5 112.8	5 15.9 -54.4 111.9	4 50.6 -54.3 111.0
6°	5 36.3 -54.6 115.1	5 11.6 -54.6 114.2	4 46.6 -54.4 113.3	4 21.5 -54.4 112.4	3 56.3 -54.4 111.5
7°	4 41.7 -54.7 115.5	4 17.0 -54.6 114.6	3 52.2 -54.5 113.7	3 27.1 -54.4 112.8	3 01.9 -54.3 111.9
8°	3 47.0 -54.6 115.9	3 22.4 -54.5 115.0	2 57.7 -54.5 114.1	2 32.7 -54.4 113.2	2 07.6 -54.3 112.3
9°	2 52.4 -54.7 116.3	2 27.9 -54.6 115.4	2 03.2 -54.5 114.5	1 38.3 -54.4 113.6	1 13.3 -54.4 112.7
10°	1 57.7 -54.7 116.7	1 33.3 -54.6 115.8	1 08.7 -54.5 114.9	0 43.9 -54.4 114.1	0 18.9 -54.3 113.2
11°	1 03.0 -54.7 117.2	0 38.7 -54.6 116.3	0 14.2 -54.6 115.4	-0 10.5 -54.5	-0 35.4 -54.4
12°	0 08.3 -54.7 117.6	-0 15.9 -54.6	-0 40.4 -54.5	-1 05.0 -54.4	-1 29.8 -54.3
13°	-0 46.4 -54.6	-1 10.5 -54.6	-1 34.9 -54.5	-1 59.4 -54.4	-2 24.1 -54.3
14°	-1 41.0 -54.7	-2 05.1 -54.6	-2 29.4 -54.5	-2 53.8 -54.4	-3 18.4 -54.4
15°	-2 35.7 -54.7	-2 59.7 -54.6	-3 23.9 -54.4	-3 48.2 -54.4	-4 12.8 -54.3
16°	-3 30.4 -54.7	-3 54.3 -54.5	-4 18.3 -54.5	-4 42.6 -54.4	-5 07.1 -54.2
17°	-4 25.1 -54.6	-4 48.8 -54.6	-5 12.8 -54.5	-5 37.0 -54.3	-6 01.3 -54.3
18°	-5 19.7 -54.6	-5 43.4 -54.5	-6 07.3 -54.4	-6 31.3 -54.4	-6 55.6 -54.3
19°	-6 14.3 -54.6	-6 37.9 -54.5	-7 01.7 -54.4	-7 25.7 -54.3	-7 49.9 -54.2
20°	-7 08.9 -54.6	-7 32.4 -54.5	-7 56.1 -54.4	-8 20.0 -54.3	-8 44.1 -54.2
21°	-8 03.5 -54.6	-8 26.9 -54.5	-8 50.5 -54.3	-9 14.3 -54.2	-9 38.3 -54.1
22°	-8 58.1 -54.5	-9 21.4 -54.4	-9 44.8 -54.4		
23°	-9 52.6 -54.5				
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 070° / 290°	LHA 071° / 289°	LHA 072° / 288°	LHA 073° / 287°	LHA 074° / 286°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	8 56.0 -54.2 108.0	8 30.0 -54.1 107.1	8 03.9 -54.0 106.1	7 37.7 -54.0 105.2	7 11.3 -53.9 104.3
1°	8 01.8 -54.1 108.4	7 35.9 -54.1 107.5	7 09.9 -54.1 106.6	6 43.7 -54.0 105.7	6 17.4 -53.9 104.8
2°	7 07.7 -54.2 108.8	6 41.8 -54.1 107.9	6 15.8 -54.0 107.0	5 49.7 -54.0 106.1	5 23.5 -53.9 105.2
3°	6 13.5 -54.2 109.3	5 47.7 -54.1 108.4	5 21.8 -54.1 107.5	4 55.7 -54.0 106.6	4 29.6 -54.0 105.7
4°	5 19.3 -54.2 109.7	4 53.6 -54.2 108.8	4 27.7 -54.1 107.9	4 01.7 -54.0 107.0	3 35.6 -54.0 106.1
5°	4 25.1 -54.3 110.1	3 59.4 -54.2 109.2	3 33.6 -54.1 108.3	3 07.7 -54.0 107.4	2 41.6 -53.9 106.5
6°	3 30.8 -54.2 110.6	3 05.2 -54.1 109.7	2 39.5 -54.1 108.8	2 13.7 -54.1 107.9	1 47.7 -54.0 107.0
7°	2 36.6 -54.3 111.0	2 11.1 -54.2 110.1	1 45.4 -54.1 109.2	1 19.6 -54.0 108.3	0 53.7 -54.0 107.4
8°	1 42.3 -54.2 111.4	1 16.9 -54.2 110.5	0 51.3 -54.1 109.6	0 25.6 -54.1 108.7	-0 00.3 -54.0
9°	0 48.1 -54.3 111.8	0 22.7 -54.2 110.9	-0 02.8 -54.1	-0 28.5 -54.0	-0 54.3 -54.0
10°	-0 06.2 -54.3	-0 31.5 -54.2	-0 56.9 -54.2	-1 22.5 -54.1	-1 48.3 -53.9
11°	-1 00.5 -54.2	-1 25.7 -54.2	-1 51.1 -54.1	-2 16.6 -54.0	-2 42.2 -54.0
12°	-1 54.7 -54.3	-2 19.9 -54.1	-2 45.2 -54.1	-3 10.6 -54.0	-3 36.2 -54.0
13°	-2 49.0 -54.2	-3 14.0 -54.2	-3 39.3 -54.0	-4 04.6 -54.0	-4 30.2 -53.9
14°	-3 43.2 -54.3	-4 08.2 -54.2	-4 33.3 -54.1	-4 58.6 -54.0	-5 24.1 -53.9
15°	-4 37.5 -54.2	-5 02.4 -54.1	-5 27.4 -54.1	-5 52.6 -54.0	-6 18.0 -53.9
16°	-5 31.7 -54.2	-5 56.5 -54.1	-6 21.5 -54.0	-6 46.6 -54.0	-7 11.9 -53.9
17°	-6 25.9 -54.2	-6 50.6 -54.1	-7 15.5 -54.0	-7 40.6 -53.9	-8 05.8 -53.8
18°	-7 20.1 -54.1	-7 44.7 -54.1	-8 09.5 -54.0	-8 34.5 -53.9	-8 59.6 -53.8
19°	-8 14.2 -54.1	-8 38.8 -54.0	-9 03.5 -53.9	-9 28.4 -53.8	-9 53.4 -53.8
20°	-9 08.3 -54.1	-9 32.8 -54.0	-9 57.4 -53.9		
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 075° / 285°	LHA 076° / 284°	LHA 077° / 283°	LHA 078° / 282°	LHA 079° / 281°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	6 44.9 -53.9 103.4	6 18.3 -53.8 102.5	5 51.7 -53.8 101.6	5 25.0 -53.7 100.7	4 58.2 -53.7 99.8
1°	5 51.0 -53.8 103.9	5 24.5 -53.8 103.0	4 57.9 -53.7 102.1	4 31.3 -53.8 101.2	4 04.5 -53.7 100.3
2°	4 57.2 -53.9 104.3	4 30.7 -53.8 103.4	4 04.2 -53.8 102.5	3 37.5 -53.7 101.6	3 10.8 -53.7 100.7
3°	4 03.3 -53.9 104.8	3 36.9 -53.9 103.9	3 10.4 -53.8 103.0	2 43.8 -53.8 102.1	2 17.1 -53.7 101.2
4°	3 09.4 -53.9 105.2	2 43.0 -53.8 104.3	2 16.6 -53.8 103.4	1 50.0 -53.7 102.5	1 23.4 -53.7 101.6
5°	2 15.5 -53.9 105.6	1 49.2 -53.9 104.7	1 22.8 -53.8 103.8	0 56.3 -53.8 103.0	0 29.7 -53.7 102.1
6°	1 21.6 -54.0 106.1	0 55.3 -53.8 105.2	0 29.0 -53.8 104.3	0 02.5 -53.7 103.4	-0 24.0 -53.7
7°	0 27.6 -53.9 106.5	0 01.5 -53.9 105.6	-0 24.8 -53.8	-0 51.2 -53.8	-1 17.7 -53.7
8°	-0 26.3 -53.9	-0 52.4 -53.9	-1 18.6 -53.8	-1 45.0 -53.7	-2 11.4 -53.7
9°	-1 20.2 -53.9	-1 46.3 -53.8	-2 12.4 -53.8	-2 38.7 -53.8	-3 05.1 -53.7
10°	-2 14.1 -53.9	-2 40.1 -53.9	-3 06.2 -53.8	-3 32.5 -53.7	-3 58.8 -53.7
11°	-3 08.0 -53.9	-3 34.0 -53.8	-4 00.0 -53.8	-4 26.2 -53.7	-4 52.5 -53.6
12°	-4 01.9 -53.9	-4 27.8 -53.8	-4 53.8 -53.7	-5 19.9 -53.7	-5 46.1 -53.7
13°	-4 55.8 -53.9	-5 21.6 -53.8	-5 47.5 -53.8	-6 13.6 -53.7	-6 39.8 -53.6
14°	-5 49.7 -53.8	-6 15.4 -53.8	-6 41.3 -53.7	-7 07.3 -53.6	-7 33.4 -53.6
15°	-6 43.5 -53.8	-7 09.2 -53.7	-7 35.0 -53.7	-8 00.9 -53.6	-8 27.0 -53.5
16°	-7 37.3 -53.8	-8 02.9 -53.8	-8 28.7 -53.6	-8 54.5 -53.6	-9 20.5 -53.5
17°	-8 31.1 -53.8	-8 56.7 -53.6	-9 22.3 -53.6	-9 48.1 -53.5	
18°	-9 24.9 -53.7	-9 50.3 -53.7			
19°					
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27°					
28°					
29°					

Dec	LHA 080° / 280°	LHA 081° / 279°	LHA 082° / 278°	LHA 083° / 277°	LHA 084° / 276°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	4 31.3 -53.6 98.9	4 04.4 -53.6 98.0	3 37.4 -53.6 97.1	3 10.3 -53.5 96.2	2 43.2 -53.5 95.4
1°	3 37.7 -53.7 99.4	3 10.8 -53.7 98.5	2 43.8 -53.6 97.6	2 16.8 -53.6 96.7	1 49.7 -53.6 95.8
2°	2 44.0 -53.6 99.8	2 17.1 -53.6 98.9	1 50.2 -53.6 98.0	1 23.2 -53.6 97.1	0 56.1 -53.5 96.3
3°	1 50.4 -53.7 100.3	1 23.5 -53.6 99.4	0 56.6 -53.6 98.5	0 29.6 -53.5 97.6	0 02.6 -53.5 96.7
4°	0 56.7 -53.7 100.7	0 29.9 -53.6 99.8	0 03.0 -53.6 98.9	-0 23.9 -53.6	-0 50.9 -53.6
5°	0 03.0 -53.6 101.2	-0 23.7 -53.7	-0 50.6 -53.6	-1 17.5 -53.5	-1 44.5 -53.5
6°	-0 50.6 -53.7	-1 17.4 -53.6	-1 44.2 -53.6	-2 11.0 -53.6	-2 38.0 -53.5
7°	-1 44.3 -53.7	-2 11.0 -53.6	-2 37.8 -53.5	-3 04.6 -53.5	-3 31.5 -53.5
8°	-2 38.0 -53.6	-3 04.6 -53.6	-3 31.3 -53.6	-3 58.1 -53.6	-4 25.0 -53.5
9°	-3 31.6 -53.7	-3 58.2 -53.6	-4 24.9 -53.5	-4 51.7 -53.5	-5 18.5 -53.5
10°	-4 25.3 -53.6	-4 51.8 -53.6	-5 18.4 -53.6	-5 45.2 -53.4	-6 12.0 -53.4
11°	-5 18.9 -53.6	-5 45.4 -53.5	-6 12.0 -53.5	-6 38.6 -53.5	-7 05.4 -53.4
12°	-6 12.5 -53.6	-6 38.9 -53.6	-7 05.5 -53.4	-7 32.1 -53.4	-7 58.8 -53.4
13°	-7 06.1 -53.5	-7 32.5 -53.4	-7 58.9 -53.5	-8 25.5 -53.4	-8 52.2 -53.4
14°	-7 59.6 -53.5	-8 25.9 -53.5	-8 52.4 -53.4	-9 18.9 -53.4	-9 45.6 -53.3
15°	-8 53.1 -53.5	-9 19.4 -53.4	-9 45.8 -53.4		
16°	-9 46.6 -53.5				
17°					
18°					
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Dec	LHA 085° / 275°	LHA 086° / 274°	LHA 087° / 273°	LHA 088° / 272°	LHA 089° / 271°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	2 16.1 -53.5 94.5	1 48.9 -53.5 93.6	1 21.7 -53.5 92.7	0 54.5 -53.5 91.8	0 27.2 -53.4 90.9
1°	1 22.6 -53.6 94.9	0 55.4 -53.5 94.0	0 28.2 -53.5 93.1	0 01.0 -53.5 92.2	-0 26.2 -53.5
2°	0 29.0 -53.5 95.4	0 01.9 -53.5 94.5	-0 25.3 -53.4	-0 52.5 -53.4	-1 19.7 -53.4
3°	-0 24.5 -53.5	-0 51.6 -53.5	-1 18.7 -53.5	-1 45.9 -53.5	-2 13.1 -53.5
4°	-1 18.0 -53.5	-1 45.1 -53.5	-2 12.2 -53.5	-2 39.4 -53.4	-3 06.6 -53.4
5°	-2 11.5 -53.5	-2 38.6 -53.4	-3 05.7 -53.4	-3 32.8 -53.5	-4 00.0 -53.4
6°	-3 05.0 -53.5	-3 32.0 -53.5	-3 59.1 -53.5	-4 26.3 -53.4	-4 53.4 -53.4
7°	-3 58.5 -53.4	-4 25.5 -53.4	-4 52.6 -53.4	-5 19.7 -53.4	-5 46.8 -53.4
8°	-4 51.9 -53.5	-5 18.9 -53.5	-5 46.0 -53.4	-6 13.1 -53.4	-6 40.2 -53.4
9°	-5 45.4 -53.4	-6 12.4 -53.4	-6 39.4 -53.4	-7 06.5 -53.3	-7 33.6 -53.3
10°	-6 38.8 -53.4	-7 05.8 -53.3	-7 32.8 -53.3	-7 59.8 -53.3	-8 26.9 -53.3
11°	-7 32.2 -53.4	-7 59.1 -53.4	-8 26.1 -53.3	-8 53.1 -53.3	-9 20.2 -53.3
12°	-8 25.6 -53.4	-8 52.5 -53.3	-9 19.4 -53.3	-9 46.4 -53.3	
13°	-9 19.0 -53.3	-9 45.8 -53.3			
14°					
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28°					
29°					

Latitude 63°

Declination CONTRARY name to Latitude

Dec	LHA 090° / 270°	LHA 091° / 269°	LHA 092° / 268°	LHA 093° / 267°	LHA 094° / 266°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	0 00.0 -53.5 90.0	-0 27.2 -53.5			
1°	-0 53.5 -53.4	-1 20.7 -53.5			
2°	-1 46.9 -53.5	-2 14.2 -53.4			
3°	-2 40.4 -53.4	-3 07.6 -53.4			
4°	-3 33.8 -53.4	-4 01.0 -53.5			
5°	-4 27.2 -53.4	-4 54.5 -53.4			
6°	-5 20.6 -53.4	-5 47.9 -53.3			
7°	-6 14.0 -53.4	-6 41.2 -53.4			
8°	-7 07.4 -53.3	-7 34.6 -53.3			
9°	-8 00.7 -53.3	-8 27.9 -53.3			
10°	-8 54.0 -53.3	-9 21.2 -53.3			
11°	-9 47.3 -53.2				
12°					
13°					
14°					
15°					
16°					
17°					
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27°					
28°					
29°					

Dec	LHA 095° / 265°	LHA 096° / 264°	LHA 097° / 263°	LHA 098° / 262°	LHA 099° / 261°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°					
1°					
2°					
3°					
4°					
5°					
6°					
7°					
8°					
9°					
10°					
11°					
12°					
13°					
14°					
15°					
16°					
17°					
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

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 The data on this page is believed to be accurate but no warranty is given for it's correctness. Use it only for training and exercising!

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 59.0 -60.0 177.8	25 57.7 -60.0 176.7	25 55.9 -59.9 175.6
1°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 59.0 -60.0 177.8	24 57.7 -60.0 176.7	24 56.0 -60.0 175.6
2°	24 00.0 -60.0 180.0	23 59.7 -59.9 178.9	23 59.0 -60.0 177.8	23 57.7 -59.9 176.7	23 56.0 -60.0 175.6
3°	23 00.0 -60.0 180.0	22 59.8 -60.0 178.9	22 59.0 -60.0 177.8	22 57.8 -60.0 176.7	22 56.0 -59.9 175.7
4°	22 00.0 -60.0 180.0	21 59.8 -60.0 178.9	21 59.0 -60.0 177.8	21 57.8 -60.0 176.8	21 56.1 -60.0 175.7
5°	21 00.0 -60.0 180.0	20 59.8 -60.0 178.9	20 59.0 -60.0 177.9	20 57.8 -60.0 176.8	20 56.1 -60.0 175.7
6°	20 00.0 -60.0 180.0	19 59.8 -60.0 178.9	19 59.0 -60.0 177.9	19 57.8 -60.0 176.8	19 56.1 -60.0 175.8
7°	19 00.0 -60.0 180.0	18 59.8 -60.0 179.0	18 59.0 -60.0 177.9	18 57.8 -60.0 176.9	18 56.1 -59.9 175.8
8°	18 00.0 -60.0 180.0	17 59.8 -60.0 179.0	17 59.0 -59.9 177.9	17 57.8 -59.9 176.9	17 56.2 -60.0 175.8
9°	17 00.0 -60.0 180.0	16 59.8 -60.0 179.0	16 59.1 -60.0 177.9	16 57.9 -60.0 176.9	16 56.2 -60.0 175.9
10°	16 00.0 -60.0 180.0	15 59.8 -60.0 179.0	15 59.1 -60.0 178.0	15 57.9 -60.0 176.9	15 56.2 -59.9 175.9
11°	15 00.0 -60.0 180.0	14 59.8 -60.0 179.0	14 59.1 -60.0 178.0	14 57.9 -60.0 177.0	14 56.3 -60.0 175.9
12°	14 00.0 -60.0 180.0	13 59.8 -60.0 179.0	13 59.1 -60.0 178.0	13 57.9 -60.0 177.0	13 56.3 -60.0 176.0
13°	13 00.0 -60.0 180.0	12 59.8 -60.0 179.0	12 59.1 -60.0 178.0	12 57.9 -59.9 177.0	12 56.3 -59.9 176.0
14°	12 00.0 -60.0 180.0	11 59.8 -60.0 179.0	11 59.1 -60.0 178.0	11 58.0 -60.0 177.0	11 56.4 -60.0 176.0
15°	11 00.0 -60.0 180.0	10 59.8 -60.0 179.0	10 59.1 -60.0 178.0	10 58.0 -60.0 177.0	10 56.4 -60.0 176.1
16°	10 00.0 -60.0 180.0	9 59.8 -60.0 179.0	9 59.1 -60.0 178.0	9 58.0 -60.0 177.1	9 56.4 -60.0 176.1
17°	9 00.0 -60.0 180.0	8 59.8 -60.0 179.0	8 59.1 -60.0 178.1	8 58.0 -60.0 177.1	8 56.4 -59.9 176.1
18°	8 00.0 -60.0 180.0	7 59.8 -60.0 179.0	7 59.1 -60.0 178.1	7 58.0 -60.0 177.1	7 56.5 -60.0 176.2
19°	7 00.0 -60.0 180.0	6 59.8 -60.0 179.0	6 59.1 -60.0 178.1	6 58.0 -60.0 177.1	6 56.5 -60.0 176.2
20°	6 00.0 -60.0 180.0	5 59.8 -60.0 179.1	5 59.1 -60.0 178.1	5 58.0 -59.9 177.2	5 56.5 -59.9 176.2
21°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.1	4 59.1 -60.0 178.1	4 58.1 -60.0 177.2	4 56.6 -60.0 176.3
22°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.1	3 59.1 -59.9 178.1	3 58.1 -60.0 177.2	3 56.6 -60.0 176.3
23°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.1	2 59.2 -60.0 178.2	2 58.1 -60.0 177.2	2 56.6 -60.0 176.3
24°	2 00.0 -60.0 180.0	1 59.8 -60.0 179.1	1 59.2 -60.0 178.2	1 58.1 -60.0 177.3	1 56.6 -59.9 176.3
25°	1 00.0 -60.0 180.0	0 59.8 -60.0 179.1	0 59.2 -60.0 178.2	0 58.1 -60.0 177.3	0 56.7 -60.0 176.4
26°	0 00.0 -60.0 180.0	-0 00.2 -60.0	-0 00.8 -60.0	-0 01.9 -59.9	-0 03.3 -60.0
27°	-1 00.0 -60.0	-1 00.2 -60.0	-1 00.8 -60.0	-1 01.8 -60.0	-1 03.3 -59.9
28°	-2 00.0 -60.0	-2 00.2 -60.0	-2 00.8 -60.0	-2 01.8 -60.0	-2 03.2 -60.0
29°	-3 00.0 -60.0	-3 00.2 -60.0	-3 00.8 -60.0	-3 01.8 -60.0	-3 03.2 -60.0

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	25 53.6 -59.9 174.4	25 50.8 -59.9 173.3	25 47.5 -59.9 172.2	25 43.7 -59.9 171.1	25 39.4 -59.8 170.0
1°	24 53.7 -60.0 174.5	24 50.9 -59.9 173.4	24 47.6 -59.9 172.3	24 43.8 -59.8 171.2	24 39.6 -59.9 170.1
2°	23 53.7 -59.9 174.5	23 51.0 -60.0 173.4	23 47.7 -59.9 172.4	23 44.0 -59.9 171.3	23 39.7 -59.8 170.2
3°	22 53.8 -60.0 174.6	22 51.0 -59.9 173.5	22 47.8 -59.9 172.4	22 44.1 -59.9 171.3	22 39.9 -59.8 170.3
4°	21 53.8 -59.9 174.6	21 51.1 -59.9 173.5	21 47.9 -59.9 172.5	21 44.2 -59.8 171.4	21 40.1 -59.9 170.3
5°	20 53.9 -60.0 174.7	20 51.2 -59.9 173.6	20 48.0 -59.9 172.5	20 44.4 -59.9 171.5	20 40.2 -59.8 170.4
6°	19 53.9 -59.9 174.7	19 51.3 -60.0 173.7	19 48.1 -59.9 172.6	19 44.5 -59.9 171.5	19 40.4 -59.9 170.5
7°	18 54.0 -60.0 174.8	18 51.3 -59.9 173.7	18 48.2 -59.9 172.7	18 44.6 -59.9 171.6	18 40.5 -59.8 170.6
8°	17 54.0 -59.9 174.8	17 51.4 -59.9 173.8	17 48.3 -59.9 172.7	17 44.7 -59.8 171.7	17 40.7 -59.8 170.6
9°	16 54.1 -60.0 174.8	16 51.5 -60.0 173.8	16 48.4 -59.9 172.8	16 44.9 -59.9 171.7	16 40.9 -59.9 170.7
10°	15 54.1 -59.9 174.9	15 51.5 -59.9 173.9	15 48.5 -59.9 172.8	15 45.0 -59.9 171.8	15 41.0 -59.8 170.8
11°	14 54.2 -60.0 174.9	14 51.6 -59.9 173.9	14 48.6 -59.9 172.9	14 45.1 -59.9 171.9	14 41.2 -59.9 170.9
12°	13 54.2 -59.9 175.0	13 51.7 -60.0 174.0	13 48.7 -59.9 172.9	13 45.2 -59.9 171.9	13 41.3 -59.8 170.9
13°	12 54.3 -60.0 175.0	12 51.7 -59.9 174.0	12 48.8 -59.9 173.0	12 45.3 -59.8 172.0	12 41.5 -59.9 171.0
14°	11 54.3 -59.9 175.0	11 51.8 -59.9 174.1	11 48.9 -59.9 173.1	11 45.5 -59.9 172.1	11 41.6 -59.8 171.1
15°	10 54.4 -60.0 175.1	10 51.9 -60.0 174.1	10 49.0 -60.0 173.1	10 45.6 -59.9 172.1	10 41.8 -59.9 171.2
16°	9 54.4 -60.0 175.1	9 51.9 -59.9 174.1	9 49.0 -59.9 173.2	9 45.7 -59.9 172.2	9 41.9 -59.9 171.2
17°	8 54.4 -59.9 175.2	8 52.0 -59.9 174.2	8 49.1 -59.9 173.2	8 45.8 -59.9 172.3	8 42.0 -59.8 171.3
18°	7 54.5 -60.0 175.2	7 52.1 -60.0 174.2	7 49.2 -59.9 173.3	7 45.9 -59.9 172.3	7 42.2 -59.9 171.4
19°	6 54.5 -59.9 175.2	6 52.1 -59.9 174.3	6 49.3 -59.9 173.3	6 46.0 -59.9 172.4	6 42.3 -59.8 171.4
20°	5 54.6 -60.0 175.3	5 52.2 -59.9 174.3	5 49.4 -59.9 173.4	5 46.1 -59.8 172.4	5 42.5 -59.9 171.5
21°	4 54.6 -59.9 175.3	4 52.3 -60.0 174.4	4 49.5 -59.9 173.4	4 46.3 -59.9 172.5	4 42.6 -59.8 171.6
22°	3 54.7 -60.0 175.4	3 52.3 -59.9 174.4	3 49.6 -60.0 173.5	3 46.4 -59.9 172.6	3 42.8 -59.9 171.6
23°	2 54.7 -59.9 175.4	2 52.4 -59.9 174.5	2 49.6 -59.9 173.6	2 46.5 -59.9 172.6	2 42.9 -59.9 171.7
24°	1 54.8 -60.0 175.4	1 52.5 -60.0 174.5	1 49.7 -59.9 173.6	1 46.6 -59.9 172.7	1 43.0 -59.8 171.8
25°	0 54.8 -60.0 175.5	0 52.5 -59.9 174.6	0 49.8 -59.9 173.7	0 46.7 -59.9 172.8	0 43.2 -59.9 171.8
26°	-0 05.2 -59.9	-0 07.4 -60.0	-0 10.1 -59.9	-0 13.2 -59.9	-0 16.7 -59.8
27°	-1 05.1 -60.0	-1 07.4 -59.9	-1 10.0 -59.9	-1 13.1 -59.9	-1 16.5 -59.9
28°	-2 05.1 -59.9	-2 07.3 -59.9	-2 09.9 -59.9	-2 13.0 -59.8	-2 16.4 -59.9
29°	-3 05.0 -60.0	-3 07.2 -60.0	-3 09.8 -60.0	-3 12.8 -59.9	-3 16.3 -59.8

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	25 34.6 -59.8 168.9	25 29.3 -59.8 167.8	25 23.5 -59.7 166.7	25 17.2 -59.7 165.6	25 10.4 -59.6 164.5
1°	24 34.8 -59.8 169.0	24 29.5 -59.7 167.9	24 23.8 -59.7 166.8	24 17.5 -59.6 165.7	24 10.8 -59.6 164.6
2°	23 35.0 -59.8 169.1	23 29.8 -59.8 168.0	23 24.1 -59.7 166.9	23 17.9 -59.7 165.8	23 11.2 -59.6 164.8
3°	22 35.2 -59.8 169.2	22 30.0 -59.7 168.1	22 24.4 -59.8 167.0	22 18.2 -59.7 165.9	22 11.6 -59.6 164.9
4°	21 35.4 -59.8 169.3	21 30.3 -59.8 168.2	21 24.6 -59.7 167.1	21 18.5 -59.6 166.1	21 12.0 -59.6 165.0
5°	20 35.6 -59.8 169.4	20 30.5 -59.8 168.3	20 24.9 -59.7 167.2	20 18.9 -59.7 166.2	20 12.4 -59.7 165.1
6°	19 35.8 -59.8 169.4	19 30.7 -59.7 168.4	19 25.2 -59.7 167.3	19 19.2 -59.7 166.3	19 12.7 -59.6 165.2
7°	18 36.0 -59.8 169.5	18 31.0 -59.8 168.5	18 25.5 -59.7 167.4	18 19.5 -59.6 166.4	18 13.1 -59.6 165.4
8°	17 36.2 -59.8 169.6	17 31.2 -59.8 168.6	17 25.8 -59.8 167.5	17 19.9 -59.7 166.5	17 13.5 -59.6 165.5
9°	16 36.4 -59.8 169.7	16 31.4 -59.7 168.7	16 26.0 -59.7 167.6	16 20.2 -59.7 166.6	16 13.9 -59.7 165.6
10°	15 36.6 -59.8 169.8	15 31.7 -59.8 168.8	15 26.3 -59.7 167.7	15 20.5 -59.7 166.7	15 14.2 -59.6 165.7
11°	14 36.8 -59.9 169.9	14 31.9 -59.8 168.8	14 26.6 -59.8 167.8	14 20.8 -59.7 166.8	14 14.6 -59.7 165.8
12°	13 36.9 -59.8 169.9	13 32.1 -59.8 168.9	13 26.8 -59.7 167.9	13 21.1 -59.7 166.9	13 14.9 -59.6 165.9
13°	12 37.1 -59.8 170.0	12 32.3 -59.7 169.0	12 27.1 -59.7 168.0	12 21.4 -59.7 167.0	12 15.3 -59.6 166.0
14°	11 37.3 -59.8 170.1	11 32.6 -59.8 169.1	11 27.4 -59.8 168.1	11 21.7 -59.7 167.1	11 15.7 -59.7 166.2
15°	10 37.5 -59.8 170.2	10 32.8 -59.8 169.2	10 27.6 -59.7 168.2	10 22.0 -59.7 167.2	10 16.0 -59.6 166.3
16°	9 37.7 -59.9 170.3	9 33.0 -59.8 169.3	9 27.9 -59.8 168.3	9 22.3 -59.7 167.3	9 16.4 -59.7 166.4
17°	8 37.8 -59.8 170.3	8 33.2 -59.8 169.4	8 28.1 -59.7 168.4	8 22.6 -59.7 167.4	8 16.7 -59.7 166.5
18°	7 38.0 -59.8 170.4	7 33.4 -59.8 169.5	7 28.4 -59.8 168.5	7 22.9 -59.7 167.5	7 17.0 -59.6 166.6
19°	6 38.2 -59.8 170.5	6 33.6 -59.8 169.5	6 28.6 -59.7 168.6	6 23.2 -59.7 167.6	6 17.4 -59.7 166.7
20°	5 38.4 -59.9 170.6	5 33.8 -59.7 169.6	5 28.9 -59.8 168.7	5 23.5 -59.7 167.7	5 17.7 -59.6 166.8
21°	4 38.5 -59.8 170.6	4 34.1 -59.8 169.7	4 29.1 -59.7 168.8	4 23.8 -59.7 167.8	4 18.1 -59.7 166.9
22°	3 38.7 -59.8 170.7	3 34.3 -59.8 169.8	3 29.4 -59.7 168.9	3 24.1 -59.7 167.9	3 18.4 -59.7 167.0
23°	2 38.9 -59.8 170.8	2 34.5 -59.8 169.9	2 29.7 -59.8 169.0	2 24.4 -59.7 168.0	2 18.7 -59.6 167.1
24°	1 39.1 -59.9 170.9	1 34.7 -59.8 170.0	1 29.9 -59.7 169.0	1 24.7 -59.7 168.1	1 19.1 -59.7 167.2
25°	0 39.2 -59.8 170.9	0 34.9 -59.8 170.0	0 30.2 -59.8 169.1	0 25.0 -59.7 168.2	0 19.4 -59.6 167.3
26°	-0 20.6 -59.8	-0 24.9 -59.8	-0 29.6 -59.7	-0 34.7 -59.7	-0 40.2 -59.7
27°	-1 20.4 -59.8	-1 24.7 -59.8	-1 29.3 -59.8	-1 34.4 -59.7	-1 39.9 -59.7
28°	-2 20.2 -59.9	-2 24.5 -59.8	-2 29.1 -59.7	-2 34.1 -59.7	-2 39.6 -59.6
29°	-3 20.1 -59.8	-3 24.3 -59.7	-3 28.8 -59.8	-3 33.8 -59.7	-3 39.2 -59.7

Dec	LHA 015° / 345°	LHA 016° / 344°	LHA 017° / 343°	LHA 018° / 342°	LHA 019° / 341°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	25 03.1 -59.5 163.4	24 55.3 -59.4 162.3	24 47.1 -59.4 161.2	24 38.4 -59.3 160.1	24 29.2 -59.2 159.0
1°	24 03.6 -59.6 163.5	23 55.9 -59.5 162.5	23 47.7 -59.4 161.4	23 39.1 -59.4 160.3	23 30.0 -59.3 159.2
2°	23 04.0 -59.5 163.7	22 56.4 -59.5 162.6	22 48.3 -59.4 161.5	22 39.7 -59.3 160.4	22 30.7 -59.3 159.4
3°	22 04.5 -59.6 163.8	21 56.9 -59.5 162.7	21 48.9 -59.5 161.7	21 40.4 -59.4 160.6	21 31.4 -59.3 159.5
4°	21 04.9 -59.5 163.9	20 57.4 -59.5 162.9	20 49.4 -59.4 161.8	20 41.0 -59.4 160.8	20 32.1 -59.3 159.7
5°	20 05.4 -59.6 164.1	19 57.9 -59.5 163.0	19 50.0 -59.4 162.0	19 41.6 -59.3 160.9	19 32.8 -59.3 159.9
6°	19 05.8 -59.6 164.2	18 58.4 -59.5 163.1	18 50.6 -59.5 162.1	18 42.3 -59.4 161.1	18 33.5 -59.3 160.0
7°	18 06.2 -59.5 164.3	17 58.9 -59.5 163.3	17 51.1 -59.4 162.2	17 42.9 -59.4 161.2	17 34.2 -59.4 160.2
8°	17 06.7 -59.6 164.4	16 59.4 -59.5 163.4	16 51.7 -59.5 162.4	16 43.5 -59.4 161.4	16 34.8 -59.3 160.3
9°	16 07.1 -59.6 164.6	15 59.9 -59.6 163.5	15 52.2 -59.5 162.5	15 44.1 -59.4 161.5	15 35.5 -59.3 160.5
10°	15 07.5 -59.6 164.7	15 00.3 -59.5 163.7	14 52.7 -59.5 162.7	14 44.7 -59.4 161.7	14 36.2 -59.4 160.7
11°	14 07.9 -59.6 164.8	14 00.8 -59.5 163.8	13 53.2 -59.4 162.8	13 45.3 -59.5 161.8	13 36.8 -59.3 160.8
12°	13 08.3 -59.6 164.9	13 01.3 -59.6 163.9	12 53.8 -59.5 162.9	12 45.8 -59.4 161.9	12 37.5 -59.4 161.0
13°	12 08.7 -59.6 165.1	12 01.7 -59.5 164.1	11 54.3 -59.5 163.1	11 46.4 -59.4 162.1	11 38.1 -59.3 161.1
14°	11 09.1 -59.6 165.2	11 02.2 -59.6 164.2	10 54.8 -59.5 163.2	10 47.0 -59.4 162.2	10 38.8 -59.4 161.3
15°	10 09.5 -59.6 165.3	10 02.6 -59.5 164.3	9 55.3 -59.5 163.3	9 47.6 -59.5 162.4	9 39.4 -59.4 161.4
16°	9 09.9 -59.6 165.4	9 03.1 -59.6 164.4	8 55.8 -59.5 163.5	8 48.1 -59.4 162.5	8 40.0 -59.4 161.5
17°	8 10.3 -59.6 165.5	8 03.5 -59.5 164.6	7 56.3 -59.5 163.6	7 48.7 -59.4 162.6	7 40.6 -59.3 161.7
18°	7 10.7 -59.6 165.6	7 04.0 -59.6 164.7	6 56.8 -59.5 163.7	6 49.3 -59.5 162.8	6 41.3 -59.4 161.8
19°	6 11.1 -59.6 165.8	6 04.4 -59.5 164.8	5 57.3 -59.5 163.9	5 49.8 -59.4 162.9	5 41.9 -59.4 162.0
20°	5 11.5 -59.6 165.9	5 04.9 -59.6 164.9	4 57.8 -59.5 164.0	4 50.4 -59.5 163.1	4 42.5 -59.4 162.1
21°	4 11.9 -59.6 166.0	4 05.3 -59.5 165.0	3 58.3 -59.5 164.1	3 50.9 -59.4 163.2	3 43.1 -59.4 162.3
22°	3 12.3 -59.6 166.1	3 05.8 -59.6 165.2	2 58.8 -59.5 164.2	2 51.5 -59.5 163.3	2 43.7 -59.3 162.4
23°	2 12.7 -59.6 166.2	2 06.2 -59.6 165.3	1 59.3 -59.5 164.4	1 52.0 -59.4 163.5	1 44.4 -59.4 162.6
24°	1 13.1 -59.6 166.3	1 06.6 -59.5 165.4	0 59.8 -59.5 164.5	0 52.6 -59.5 163.6	0 45.0 -59.4 162.7
25°	0 13.5 -59.7 166.4	0 07.1 -59.6 165.5	0 00.3 -59.5 164.6	-0 06.9 -59.4	-0 14.4 -59.4
26°	-0 46.2 -59.6	-0 52.5 -59.5	-0 59.2 -59.5	-1 06.3 -59.4	-1 13.8 -59.4
27°	-1 45.8 -59.6	-1 52.0 -59.6	-1 58.7 -59.5	-2 05.7 -59.5	-2 13.2 -59.4
28°	-2 45.4 -59.6	-2 51.6 -59.6	-2 58.2 -59.5	-3 05.2 -59.4	-3 12.6 -59.4
29°	-3 45.0 -59.6	-3 51.2 -59.5	-3 57.7 -59.5	-4 04.6 -59.5	-4 12.0 -59.3

Dec	LHA 020° / 340°	LHA 021° / 339°	LHA 022° / 338°	LHA 023° / 337°	LHA 024° / 336°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	24 19.6 -59.2 158.0	24 09.5 -59.1 156.9	23 58.9 -59.0 155.8	23 47.9 -58.9 154.7	23 36.5 -58.9 153.6
1°	23 20.4 -59.2 158.1	23 10.4 -59.2 157.1	22 59.9 -59.1 156.0	22 49.0 -59.0 154.9	22 37.6 -58.9 153.9
2°	22 21.2 -59.2 158.3	22 11.2 -59.1 157.2	22 00.8 -59.0 156.2	21 50.0 -59.0 155.1	21 38.7 -58.9 154.1
3°	21 22.0 -59.2 158.5	21 12.1 -59.1 157.4	21 01.8 -59.1 156.4	20 51.0 -59.0 155.3	20 39.8 -58.9 154.3
4°	20 22.8 -59.3 158.7	20 13.0 -59.2 157.6	20 02.7 -59.1 156.6	19 52.0 -59.0 155.5	19 40.9 -58.9 154.5
5°	19 23.5 -59.2 158.8	19 13.8 -59.2 157.8	19 03.6 -59.1 156.7	18 53.0 -59.0 155.7	18 42.0 -58.9 154.7
6°	18 24.3 -59.3 159.0	18 14.6 -59.1 158.0	18 04.5 -59.1 156.9	17 54.0 -59.0 155.9	17 43.1 -59.0 154.9
7°	17 25.0 -59.2 159.2	17 15.5 -59.2 158.1	17 05.4 -59.1 157.1	16 55.0 -59.0 156.1	16 44.1 -58.9 155.1
8°	16 25.8 -59.3 159.3	16 16.3 -59.2 158.3	16 06.3 -59.1 157.3	15 56.0 -59.1 156.3	15 45.2 -59.0 155.3
9°	15 26.5 -59.3 159.5	15 17.1 -59.2 158.5	15 07.2 -59.1 157.5	14 56.9 -59.0 156.5	14 46.2 -59.0 155.5
10°	14 27.2 -59.2 159.6	14 17.9 -59.2 158.6	14 08.1 -59.2 157.6	13 57.9 -59.1 156.6	13 47.2 -59.0 155.6
11°	13 28.0 -59.3 159.8	13 18.7 -59.3 158.8	13 08.9 -59.1 157.8	12 58.8 -59.1 156.8	12 48.2 -59.0 155.8
12°	12 28.7 -59.3 160.0	12 19.4 -59.2 159.0	12 09.8 -59.2 158.0	11 59.7 -59.0 157.0	11 49.2 -59.0 156.0
13°	11 29.4 -59.3 160.1	11 20.2 -59.2 159.1	11 10.6 -59.1 158.2	11 00.7 -59.1 157.2	10 50.2 -59.0 156.2
14°	10 30.1 -59.3 160.3	10 21.0 -59.2 159.3	10 11.5 -59.2 158.3	10 01.6 -59.1 157.4	9 51.2 -59.0 156.4
15°	9 30.8 -59.3 160.4	9 21.8 -59.3 159.5	9 12.3 -59.1 158.5	9 02.5 -59.1 157.5	8 52.2 -59.0 156.6
16°	8 31.5 -59.3 160.6	8 22.5 -59.2 159.6	8 13.2 -59.2 158.7	8 03.4 -59.1 157.7	7 53.2 -59.0 156.8
17°	7 32.2 -59.3 160.7	7 23.3 -59.3 159.8	7 14.0 -59.2 158.8	7 04.3 -59.1 157.9	6 54.2 -59.0 156.9
18°	6 32.9 -59.4 160.9	6 24.0 -59.2 159.9	6 14.8 -59.2 159.0	6 05.2 -59.1 158.1	5 55.2 -59.1 157.1
19°	5 33.5 -59.3 161.0	5 24.8 -59.3 160.1	5 15.6 -59.1 159.2	5 06.1 -59.1 158.2	4 56.1 -59.0 157.3
20°	4 34.2 -59.3 161.2	4 25.5 -59.2 160.3	4 16.5 -59.2 159.3	4 07.0 -59.1 158.4	3 57.1 -59.0 157.5
21°	3 34.9 -59.3 161.3	3 26.3 -59.3 160.4	3 17.3 -59.2 159.5	3 07.9 -59.1 158.6	2 58.1 -59.1 157.7
22°	2 35.6 -59.3 161.5	2 27.0 -59.2 160.6	2 18.1 -59.2 159.7	2 08.8 -59.2 158.7	1 59.0 -59.0 157.8
23°	1 36.3 -59.4 161.6	1 27.8 -59.3 160.7	1 18.9 -59.2 159.8	1 09.6 -59.1 158.9	1 00.0 -59.0 158.0
24°	0 36.9 -59.3 161.8	0 28.5 -59.2 160.9	0 19.7 -59.2 160.0	0 10.5 -59.1 159.1	0 01.0 -59.1 158.2
25°	-0 22.4 -59.3	-0 30.7 -59.3	-0 39.5 -59.1	-0 48.6 -59.1	-0 58.1 -59.0
26°	-1 21.7 -59.3	-1 30.0 -59.2	-1 38.6 -59.2	-1 47.7 -59.1	-1 57.1 -59.1
27°	-2 21.0 -59.3	-2 29.2 -59.3	-2 37.8 -59.2	-2 46.8 -59.1	-2 56.2 -59.0
28°	-3 20.3 -59.4	-3 28.5 -59.2	-3 37.0 -59.2	-3 45.9 -59.1	-3 55.2 -59.0
29°	-4 19.7 -59.3	-4 27.7 -59.3	-4 36.2 -59.2	-4 45.0 -59.1	-4 54.2 -59.1

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	23 24.6 -58.8 152.6	23 12.2 -58.6 151.5	22 59.5 -58.6 150.5	22 46.3 -58.5 149.4	22 32.7 -58.4 148.3
1°	22 25.8 -58.8 152.8	22 13.6 -58.7 151.7	22 00.9 -58.6 150.7	21 47.8 -58.5 149.6	21 34.3 -58.4 148.6
2°	21 27.0 -58.8 153.0	21 14.9 -58.8 152.0	21 02.3 -58.7 150.9	20 49.3 -58.6 149.9	20 35.9 -58.5 148.8
3°	20 28.2 -58.8 153.2	20 16.1 -58.7 152.2	20 03.6 -58.6 151.1	19 50.7 -58.5 150.1	19 37.4 -58.4 149.1
4°	19 29.4 -58.9 153.4	19 17.4 -58.8 152.4	19 05.0 -58.7 151.4	18 52.2 -58.6 150.3	18 39.0 -58.5 149.3
5°	18 30.5 -58.8 153.6	18 18.6 -58.7 152.6	18 06.3 -58.6 151.6	17 53.6 -58.6 150.6	17 40.5 -58.5 149.5
6°	17 31.7 -58.9 153.8	17 19.9 -58.8 152.8	17 07.7 -58.7 151.8	16 55.0 -58.6 150.8	16 42.0 -58.5 149.8
7°	16 32.8 -58.9 154.0	16 21.1 -58.8 153.0	16 09.0 -58.7 152.0	15 56.4 -58.6 151.0	15 43.5 -58.5 150.0
8°	15 33.9 -58.8 154.3	15 22.3 -58.8 153.2	15 10.3 -58.8 152.2	14 57.8 -58.6 151.2	14 45.0 -58.6 150.2
9°	14 35.1 -58.9 154.4	14 23.5 -58.8 153.4	14 11.5 -58.7 152.5	13 59.2 -58.7 151.5	13 46.4 -58.5 150.5
10°	13 36.2 -58.9 154.6	13 24.7 -58.8 153.7	13 12.8 -58.7 152.7	13 00.5 -58.6 151.7	12 47.9 -58.6 150.7
11°	12 37.3 -59.0 154.8	12 25.9 -58.9 153.9	12 14.1 -58.8 152.9	12 01.9 -58.7 151.9	11 49.3 -58.6 150.9
12°	11 38.3 -58.9 155.0	11 27.0 -58.8 154.1	11 15.3 -58.7 153.1	11 03.2 -58.6 152.1	10 50.7 -58.6 151.1
13°	10 39.4 -58.9 155.2	10 28.2 -58.8 154.3	10 16.6 -58.8 153.3	10 04.6 -58.7 152.3	9 51.1 -58.5 151.3
14°	9 40.5 -58.9 155.4	9 29.4 -58.9 154.5	9 17.8 -58.8 153.5	9 05.9 -58.7 152.5	8 53.6 -58.6 151.6
15°	8 41.6 -59.0 155.6	8 30.5 -58.9 154.7	8 19.0 -58.7 153.7	8 07.2 -58.7 152.7	7 55.0 -58.7 151.8
16°	7 42.6 -58.9 155.8	7 31.6 -58.8 154.8	7 20.3 -58.8 153.9	7 08.5 -58.7 152.9	6 56.3 -58.6 152.0
17°	6 43.7 -59.0 156.0	6 32.8 -58.9 155.0	6 21.5 -58.8 154.1	6 09.8 -58.7 153.2	5 57.7 -58.6 152.2
18°	5 44.7 -58.9 156.2	5 33.9 -58.9 155.2	5 22.7 -58.8 154.3	5 11.1 -58.7 153.4	4 59.1 -58.6 152.4
19°	4 45.8 -59.0 156.4	4 35.0 -58.8 155.4	4 23.9 -58.8 154.5	4 12.4 -58.7 153.6	4 00.5 -58.6 152.6
20°	3 46.8 -58.9 156.5	3 36.2 -58.9 155.6	3 25.1 -58.8 154.7	3 13.7 -58.7 153.8	3 01.9 -58.7 152.9
21°	2 47.9 -59.0 156.7	2 37.3 -58.9 155.8	2 26.3 -58.8 154.9	2 15.0 -58.7 154.0	2 03.2 -58.6 153.1
22°	1 48.9 -59.0 156.9	1 38.4 -58.9 156.0	1 27.5 -58.8 155.1	1 16.3 -58.8 154.2	1 04.6 -58.6 153.3
23°	0 49.9 -58.9 157.1	0 39.5 -58.9 156.2	0 28.7 -58.8 155.3	0 17.5 -58.7 154.4	0 06.0 -58.6 153.5
24°	-0 09.0 -59.0	-0 19.4 -58.8	-0 30.1 -58.8	-0 41.2 -58.7	-0 52.6 -58.7
25°	-1 08.0 -58.9	-1 18.2 -58.9	-1 28.9 -58.8	-1 39.9 -58.7	-1 51.3 -58.6
26°	-2 06.9 -59.0	-2 17.1 -58.9	-2 27.7 -58.8	-2 38.6 -58.7	-2 49.9 -58.6
27°	-3 05.9 -59.0	-3 16.0 -58.9	-3 26.5 -58.8	-3 37.3 -58.7	-3 48.5 -58.6
28°	-4 04.9 -58.9	-4 14.9 -58.8	-4 25.3 -58.8	-4 36.0 -58.7	-4 47.1 -58.7
29°	-5 03.8 -59.0	-5 13.7 -58.9	-5 24.1 -58.7	-5 34.7 -58.7	-5 45.8 -58.6

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	22 18.7 -58.3 147.3	22 04.3 -58.2 146.2	21 49.5 -58.2 145.2	21 34.2 -58.0 144.2	21 18.6 -57.9 143.1
1°	21 20.4 -58.3 147.5	21 06.1 -58.3 146.5	20 51.3 -58.1 145.5	20 36.2 -58.0 144.4	20 20.7 -57.9 143.4
2°	20 22.1 -58.4 147.8	20 07.8 -58.2 146.8	19 53.2 -58.1 145.7	19 38.2 -58.0 144.7	19 22.8 -57.9 143.7
3°	19 23.7 -58.4 148.0	19 09.6 -58.3 147.0	18 55.1 -58.2 146.0	18 40.2 -58.1 145.0	18 24.9 -58.0 143.9
4°	18 25.3 -58.3 148.3	18 11.3 -58.3 147.3	17 56.9 -58.2 146.2	17 42.1 -58.1 145.2	17 26.9 -58.0 144.2
5°	17 27.0 -58.4 148.5	17 13.0 -58.3 147.5	16 58.7 -58.2 146.5	16 44.0 -58.1 145.5	16 28.9 -58.0 144.5
6°	16 28.6 -58.5 148.8	16 14.7 -58.3 147.8	16 00.5 -58.2 146.8	15 45.9 -58.2 145.7	15 30.9 -58.1 144.7
7°	15 30.1 -58.4 149.0	15 16.4 -58.4 148.0	15 02.3 -58.3 147.0	14 47.7 -58.1 146.0	14 32.8 -58.0 145.0
8°	14 31.7 -58.5 149.2	14 18.0 -58.3 148.2	14 04.0 -58.3 147.2	13 49.6 -58.2 146.3	13 34.8 -58.1 145.3
9°	13 33.2 -58.4 149.5	13 19.7 -58.4 148.5	13 05.7 -58.2 147.5	12 51.4 -58.2 146.5	12 36.7 -58.1 145.5
10°	12 34.8 -58.5 149.7	12 21.3 -58.4 148.7	12 07.5 -58.3 147.7	11 53.2 -58.1 146.8	11 38.6 -58.1 145.8
11°	11 36.3 -58.5 149.9	11 22.9 -58.4 149.0	11 09.2 -58.3 148.0	10 55.1 -58.3 147.0	10 40.5 -58.1 146.0
12°	10 37.8 -58.5 150.2	10 24.5 -58.4 149.2	10 10.9 -58.3 148.2	9 56.8 -58.2 147.3	9 42.4 -58.1 146.3
13°	9 39.3 -58.5 150.4	9 26.1 -58.4 149.4	9 12.6 -58.3 148.5	8 58.6 -58.2 147.5	8 44.3 -58.1 146.5
14°	8 40.8 -58.5 150.6	8 27.7 -58.4 149.7	8 14.3 -58.4 148.7	8 00.4 -58.2 147.7	7 46.2 -58.2 146.8
15°	7 42.3 -58.5 150.8	7 29.3 -58.4 149.9	7 15.9 -58.3 148.9	7 02.2 -58.3 148.0	6 48.0 -58.1 147.0
16°	6 43.8 -58.5 151.1	6 30.9 -58.4 150.1	6 17.6 -58.3 149.2	6 03.9 -58.2 148.2	5 49.9 -58.2 147.3
17°	5 45.3 -58.5 151.3	5 32.5 -58.5 150.3	5 19.3 -58.4 149.4	5 05.7 -58.3 148.5	4 51.7 -58.1 147.5
18°	4 46.8 -58.6 151.5	4 34.0 -58.4 150.6	4 20.9 -58.3 149.6	4 07.4 -58.2 148.7	3 53.6 -58.2 147.8
19°	3 48.2 -58.5 151.7	3 35.6 -58.5 150.8	3 22.6 -58.4 149.9	3 09.2 -58.3 149.0	2 55.4 -58.1 148.0
20°	2 49.7 -58.6 151.9	2 37.1 -58.4 151.0	2 24.2 -58.4 150.1	2 10.9 -58.3 149.2	1 57.3 -58.2 148.3
21°	1 51.1 -58.5 152.2	1 38.7 -58.5 151.2	1 25.8 -58.3 150.3	1 12.6 -58.2 149.4	0 59.1 -58.2 148.5
22°	0 52.6 -58.5 152.4	0 40.2 -58.4 151.5	0 27.5 -58.4 150.6	0 14.4 -58.3 149.7	0 00.9 -58.1 148.8
23°	-0 05.9 -58.6	-0 18.2 -58.5	-0 30.9 -58.3	-0 43.9 -58.2	-0 57.2 -58.2
24°	-1 04.5 -58.5	-1 16.7 -58.4	-1 29.2 -58.4	-1 42.1 -58.3	-1 55.4 -58.2
25°	-2 03.0 -58.6	-2 15.1 -58.5	-2 27.6 -58.3	-2 40.4 -58.3	-2 53.6 -58.1
26°	-3 01.6 -58.5	-3 13.6 -58.4	-3 25.9 -58.4	-3 38.7 -58.2	-3 51.7 -58.2
27°	-4 00.1 -58.5	-4 12.0 -58.5	-4 24.3 -58.3	-4 36.9 -58.3	-4 49.9 -58.2
28°	-4 58.6 -58.5	-5 10.5 -58.4	-5 22.6 -58.4	-5 35.2 -58.2	-5 48.1 -58.1
29°	-5 57.1 -58.6	-6 08.9 -58.4	-6 21.0 -58.3	-6 33.4 -58.3	-6 46.2 -58.1

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	21 02.7 -57.8 142.1	20 46.3 -57.7 141.0	20 29.6 -57.6 140.0	20 12.5 -57.5 139.0	19 55.1 -57.4 138.0
1°	20 04.9 -57.9 142.4	19 48.6 -57.7 141.3	19 32.0 -57.6 140.3	19 15.0 -57.5 139.3	18 57.7 -57.4 138.3
2°	19 07.0 -57.8 142.6	18 50.9 -57.7 141.6	18 34.4 -57.6 140.6	18 17.5 -57.5 139.6	18 00.3 -57.4 138.6
3°	18 09.2 -57.9 142.9	17 53.2 -57.8 141.9	17 36.8 -57.7 140.9	17 20.0 -57.6 139.9	17 02.9 -57.5 138.9
4°	17 11.3 -57.9 143.2	16 55.4 -57.8 142.2	16 39.1 -57.7 141.2	16 22.4 -57.6 140.2	16 05.4 -57.5 139.2
5°	16 13.4 -57.9 143.5	15 57.6 -57.8 142.5	15 41.4 -57.7 141.5	15 24.8 -57.6 140.5	15 07.9 -57.5 139.5
6°	15 15.5 -57.9 143.8	14 59.8 -57.9 142.8	14 43.7 -57.8 141.8	14 27.2 -57.6 140.8	14 10.4 -57.5 139.8
7°	14 17.6 -58.0 144.0	14 01.9 -57.8 143.0	13 45.9 -57.7 142.0	13 29.6 -57.7 141.1	13 12.9 -57.6 140.1
8°	13 19.6 -57.9 144.3	13 04.1 -57.9 143.3	12 48.2 -57.8 142.3	12 31.9 -57.6 141.4	12 15.3 -57.5 140.4
9°	12 21.7 -58.0 144.6	12 06.2 -57.9 143.6	11 50.4 -57.8 142.6	11 34.3 -57.7 141.6	11 17.8 -57.6 140.7
10°	11 23.7 -58.0 144.8	11 08.3 -57.9 143.8	10 52.6 -57.8 142.9	10 36.6 -57.7 141.9	10 20.2 -57.6 141.0
11°	10 25.7 -58.0 145.1	10 10.4 -57.9 144.1	9 54.8 -57.8 143.2	9 38.9 -57.7 142.2	9 22.6 -57.6 141.2
12°	9 27.7 -58.1 145.3	9 12.5 -57.9 144.4	8 57.0 -57.8 143.4	8 41.2 -57.8 142.5	8 25.0 -57.6 141.5
13°	8 29.6 -58.0 145.6	8 14.6 -57.9 144.6	7 59.2 -57.8 143.7	7 43.4 -57.7 142.7	7 27.4 -57.7 141.8
14°	7 31.6 -58.0 145.8	7 16.7 -58.0 144.9	7 01.4 -57.9 144.0	6 45.7 -57.7 143.0	6 29.7 -57.6 142.1
15°	6 33.6 -58.1 146.1	6 18.7 -57.9 145.2	6 03.5 -57.8 144.2	5 48.0 -57.8 143.3	5 32.1 -57.7 142.4
16°	5 35.5 -58.0 146.4	5 20.8 -58.0 145.4	5 05.7 -57.9 144.5	4 50.2 -57.8 143.6	4 34.4 -57.6 142.6
17°	4 37.5 -58.1 146.6	4 22.8 -58.0 145.7	4 07.8 -57.9 144.8	3 52.4 -57.7 143.8	3 36.8 -57.7 142.9
18°	3 39.4 -58.1 146.9	3 24.8 -57.9 145.9	3 09.9 -57.8 145.0	2 54.7 -57.8 144.1	2 39.1 -57.7 143.2
19°	2 41.3 -58.0 147.1	2 26.9 -58.0 146.2	2 12.1 -57.9 145.3	1 56.9 -57.8 144.4	1 41.4 -57.6 143.5
20°	1 43.3 -58.1 147.4	1 28.9 -58.0 146.5	1 14.2 -57.9 145.6	0 59.1 -57.7 144.6	0 43.8 -57.7 143.7
21°	0 45.2 -58.1 147.6	0 30.9 -58.0 146.7	0 16.3 -57.9 145.8	0 01.4 -57.8 144.9	-0 13.9 -57.7
22°	-0 12.9 -58.1	-0 27.1 -57.9	-0 41.6 -57.8	-0 56.4 -57.8	-1 11.6 -57.7
23°	-1 11.0 -58.0	-1 25.0 -58.0	-1 39.4 -57.9	-1 54.2 -57.7	-2 09.3 -57.6
24°	-2 09.0 -58.1	-2 23.0 -58.0	-2 37.3 -57.9	-2 51.9 -57.8	-3 06.9 -57.7
25°	-3 07.1 -58.1	-3 21.0 -57.9	-3 35.2 -57.8	-3 49.7 -57.8	-4 04.6 -57.6
26°	-4 05.2 -58.0	-4 18.9 -58.0	-4 33.0 -57.9	-4 47.5 -57.7	-5 02.2 -57.7
27°	-5 03.2 -58.1	-5 16.9 -57.9	-5 30.9 -57.8	-5 45.2 -57.8	-5 59.9 -57.6
28°	-6 01.3 -58.0	-6 14.8 -58.0	-6 28.7 -57.9	-6 43.0 -57.7	-6 57.5 -57.7
29°	-6 59.3 -58.1	-7 12.8 -57.9	-7 26.6 -57.8	-7 40.7 -57.7	-7 55.2 -57.6

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	19 37.3 -57.3 137.0	19 19.2 -57.2 136.0	19 00.7 -57.0 134.9	18 42.0 -57.0 133.9	18 22.9 -56.9 132.9
1°	18 40.0 -57.3 137.3	18 22.0 -57.2 136.3	18 03.7 -57.1 135.3	17 45.0 -57.0 134.3	17 26.0 -56.9 133.3
2°	17 42.7 -57.3 137.6	17 24.8 -57.2 136.6	17 06.6 -57.1 135.6	16 48.0 -57.0 134.6	16 29.1 -56.9 133.6
3°	16 45.4 -57.3 137.9	16 27.6 -57.2 136.9	16 09.5 -57.2 135.9	15 51.0 -57.0 134.9	15 32.2 -56.9 133.9
4°	15 48.1 -57.4 138.2	15 30.4 -57.3 137.2	15 12.3 -57.1 136.2	14 54.0 -57.1 135.3	14 35.3 -57.0 134.3
5°	14 50.7 -57.4 138.5	14 33.1 -57.3 137.5	14 15.2 -57.2 136.5	13 56.9 -57.1 135.6	13 38.3 -57.0 134.6
6°	13 53.3 -57.5 138.8	13 35.8 -57.3 137.8	13 18.0 -57.3 136.9	12 59.8 -57.1 135.9	12 41.3 -57.0 134.9
7°	12 55.8 -57.4 139.1	12 38.5 -57.4 138.1	12 20.7 -57.2 137.2	12 02.7 -57.1 136.2	11 44.3 -57.0 135.2
8°	11 58.4 -57.5 139.4	11 41.1 -57.3 138.4	11 23.5 -57.3 137.5	11 05.6 -57.2 136.5	10 47.3 -57.1 135.6
9°	11 00.9 -57.5 139.7	10 43.8 -57.4 138.7	10 26.2 -57.2 137.8	10 08.4 -57.2 136.8	9 50.2 -57.0 135.9
10°	10 03.4 -57.4 140.0	9 46.4 -57.4 139.0	9 29.0 -57.3 138.1	9 11.2 -57.2 137.1	8 53.2 -57.1 136.2
11°	9 06.0 -57.6 140.3	8 49.0 -57.4 139.3	8 31.7 -57.3 138.4	8 14.0 -57.2 137.4	7 56.1 -57.1 136.5
12°	8 08.4 -57.5 140.6	7 51.6 -57.5 139.6	7 34.4 -57.4 138.7	7 16.8 -57.2 137.7	6 59.0 -57.1 136.8
13°	7 10.9 -57.5 140.9	6 54.1 -57.4 139.9	6 37.0 -57.3 139.0	6 19.6 -57.2 138.0	6 01.9 -57.1 137.1
14°	6 13.4 -57.6 141.1	5 56.7 -57.4 140.2	5 39.7 -57.3 139.3	5 22.4 -57.2 138.3	5 04.8 -57.2 137.4
15°	5 15.8 -57.5 141.4	4 59.3 -57.5 140.5	4 42.4 -57.4 139.6	4 25.2 -57.3 138.6	4 07.6 -57.1 137.7
16°	4 18.3 -57.6 141.7	4 01.8 -57.4 140.8	3 45.0 -57.3 139.9	3 27.9 -57.2 138.9	3 10.5 -57.2 138.0
17°	3 20.7 -57.5 142.0	3 04.4 -57.5 141.1	2 47.7 -57.4 140.2	2 30.7 -57.3 139.2	2 13.3 -57.1 138.3
18°	2 23.2 -57.6 142.3	2 06.9 -57.5 141.4	1 50.3 -57.3 140.5	1 33.4 -57.2 139.5	1 16.2 -57.2 138.6
19°	1 25.6 -57.6 142.6	1 09.4 -57.4 141.7	0 53.0 -57.4 140.7	0 36.2 -57.3 139.8	0 19.0 -57.1 138.9
20°	0 28.0 -57.5 142.8	0 12.0 -57.5 141.9	-0 04.4 -57.4	-0 21.1 -57.2	-0 38.1 -57.2
21°	-0 29.5 -57.6	-0 45.5 -57.4	-1 01.8 -57.3	-1 18.3 -57.3	-1 35.3 -57.1
22°	-1 27.1 -57.6	-1 42.9 -57.5	-1 59.1 -57.4	-2 15.6 -57.3	-2 32.4 -57.1
23°	-2 24.7 -57.5	-2 40.4 -57.5	-2 56.5 -57.3	-3 12.9 -57.2	-3 29.5 -57.2
24°	-3 22.2 -57.6	-3 37.9 -57.4	-3 53.8 -57.4	-4 10.1 -57.2	-4 26.7 -57.1
25°	-4 19.8 -57.5	-4 35.3 -57.5	-4 51.2 -57.3	-5 07.3 -57.3	-5 23.8 -57.1
26°	-5 17.3 -57.6	-5 32.8 -57.4	-5 48.5 -57.3	-6 04.6 -57.2	-6 20.9 -57.1
27°	-6 14.9 -57.5	-6 30.2 -57.4	-6 45.8 -57.3	-7 01.8 -57.2	-7 18.0 -57.1
28°	-7 12.4 -57.5	-7 27.6 -57.4	-7 43.1 -57.4	-7 59.0 -57.2	-8 15.1 -57.1
29°	-8 09.9 -57.6	-8 25.0 -57.4	-8 40.5 -57.2	-8 56.2 -57.2	-9 12.2 -57.1

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	18 03.5 -56.8 131.9	17 43.8 -56.7 131.0	17 23.7 -56.5 130.0	17 03.4 -56.4 129.0	16 42.9 -56.4 128.0
1°	17 06.7 -56.7 132.3	16 47.1 -56.7 131.3	16 27.2 -56.6 130.3	16 07.0 -56.5 129.3	15 46.5 -56.3 128.4
2°	16 10.0 -56.9 132.6	15 50.4 -56.7 131.6	15 30.6 -56.6 130.7	15 10.5 -56.4 129.7	14 50.2 -56.4 128.7
3°	15 13.1 -56.8 133.0	14 53.7 -56.7 132.0	14 34.0 -56.6 131.0	14 14.1 -56.6 130.0	13 53.8 -56.4 129.1
4°	14 16.3 -56.8 133.3	13 57.0 -56.7 132.3	13 37.4 -56.6 131.3	13 17.5 -56.5 130.4	12 57.4 -56.5 129.4
5°	13 19.5 -56.9 133.6	13 00.3 -56.8 132.7	12 40.8 -56.7 131.7	12 21.0 -56.6 130.7	12 00.9 -56.5 129.8
6°	12 22.6 -56.9 133.9	12 03.5 -56.8 133.0	11 44.1 -56.7 132.0	11 24.4 -56.6 131.1	11 04.4 -56.5 130.1
7°	11 25.7 -57.0 134.3	11 06.7 -56.9 133.3	10 47.4 -56.7 132.4	10 27.8 -56.6 131.4	10 07.9 -56.5 130.5
8°	10 28.7 -56.9 134.6	10 09.8 -56.8 133.6	9 50.7 -56.8 132.7	9 31.2 -56.7 131.7	9 11.4 -56.5 130.8
9°	9 31.8 -57.0 134.9	9 13.0 -56.9 134.0	8 53.9 -56.7 133.0	8 34.5 -56.6 132.1	8 14.9 -56.6 131.1
10°	8 34.8 -57.0 135.2	8 16.1 -56.8 134.3	7 57.2 -56.8 133.3	7 37.9 -56.7 132.4	7 18.3 -56.6 131.5
11°	7 37.8 -57.0 135.5	7 19.3 -56.9 134.6	7 00.4 -56.8 133.7	6 41.2 -56.7 132.7	6 21.7 -56.5 131.8
12°	6 40.8 -57.0 135.9	6 22.4 -56.9 134.9	6 03.6 -56.8 134.0	5 44.5 -56.7 133.1	5 25.2 -56.6 132.1
13°	5 43.8 -57.0 136.2	5 25.5 -57.0 135.2	5 06.8 -56.8 134.3	4 47.8 -56.7 133.4	4 28.6 -56.6 132.5
14°	4 46.8 -57.0 136.5	4 28.5 -56.9 135.6	4 10.0 -56.8 134.6	3 51.1 -56.7 133.7	3 32.0 -56.7 132.8
15°	3 49.8 -57.1 136.8	3 31.6 -56.9 135.9	3 13.2 -56.9 135.0	2 54.4 -56.7 134.0	2 35.3 -56.6 133.1
16°	2 52.7 -57.0 137.1	2 34.7 -57.0 136.2	2 16.3 -56.8 135.3	1 57.7 -56.8 134.4	1 38.7 -56.6 133.5
17°	1 55.7 -57.0 137.4	1 37.7 -56.9 136.5	1 19.5 -56.8 135.6	1 00.9 -56.7 134.7	0 42.1 -56.6 133.8
18°	0 58.7 -57.1 137.7	0 40.8 -56.9 136.8	0 22.7 -56.9 135.9	0 04.2 -56.7 135.0	-0 14.5 -56.6
19°	0 01.6 -57.0 138.0	-0 16.1 -57.0	-0 34.2 -56.8	-0 52.5 -56.7	-1 11.1 -56.7
20°	-0 55.4 -57.1	-1 13.1 -56.9	-1 31.0 -56.8	-1 49.2 -56.7	-2 07.8 -56.6
21°	-1 52.5 -57.0	-2 10.0 -56.9	-2 27.8 -56.9	-2 45.9 -56.8	-3 04.4 -56.6
22°	-2 49.5 -57.1	-3 06.9 -57.0	-3 24.7 -56.8	-3 42.7 -56.7	-4 01.0 -56.6
23°	-3 46.6 -57.0	-4 03.9 -56.9	-4 21.5 -56.8	-4 39.4 -56.7	-4 57.6 -56.6
24°	-4 43.6 -57.0	-5 00.8 -56.9	-5 18.3 -56.8	-5 36.1 -56.7	-5 54.2 -56.5
25°	-5 40.6 -57.0	-5 57.7 -56.9	-6 15.1 -56.8	-6 32.8 -56.6	-6 50.7 -56.6
26°	-6 37.6 -57.0	-6 54.6 -56.9	-7 11.9 -56.7	-7 29.4 -56.7	-7 47.3 -56.6
27°	-7 34.6 -57.0	-7 51.5 -56.8	-8 08.6 -56.8	-8 26.1 -56.6	-8 43.9 -56.5
28°	-8 31.6 -57.0	-8 48.3 -56.9	-9 05.4 -56.7	-9 22.7 -56.7	-9 40.4 -56.5
29°	-9 28.6 -56.9	-9 45.2 -56.8			

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	16 22.0 -56.2 127.0	16 00.9 -56.2 126.0	15 39.5 -56.1 125.1	15 17.8 -55.9 124.1	14 55.9 -55.8 123.1
1°	15 25.8 -56.3 127.4	15 04.7 -56.1 126.4	14 43.4 -56.0 125.4	14 21.9 -56.0 124.5	14 00.1 -55.9 123.5
2°	14 29.5 -56.3 127.7	14 08.6 -56.2 126.8	13 47.4 -56.1 125.8	13 25.9 -56.0 124.9	13 04.2 -55.9 123.9
3°	13 33.2 -56.3 128.1	13 12.4 -56.2 127.1	12 51.3 -56.1 126.2	12 29.9 -56.0 125.2	12 08.3 -55.9 124.3
4°	12 36.9 -56.4 128.5	12 16.2 -56.3 127.5	11 55.2 -56.2 126.5	11 33.9 -56.1 125.6	11 12.4 -56.0 124.6
5°	11 40.5 -56.3 128.8	11 19.9 -56.3 127.9	10 59.0 -56.2 126.9	10 37.8 -56.0 126.0	10 16.4 -56.0 125.0
6°	10 44.2 -56.4 129.2	10 23.6 -56.3 128.2	10 02.8 -56.2 127.3	9 41.8 -56.1 126.3	9 20.4 -56.0 125.4
7°	9 47.8 -56.4 129.5	9 27.3 -56.3 128.6	9 06.6 -56.2 127.6	8 45.7 -56.1 126.7	8 24.4 -56.0 125.7
8°	8 51.4 -56.5 129.8	8 31.0 -56.3 128.9	8 10.4 -56.2 128.0	7 49.6 -56.2 127.0	7 28.4 -56.0 126.1
9°	7 54.9 -56.4 130.2	7 34.7 -56.4 129.3	7 14.2 -56.3 128.3	6 53.4 -56.1 127.4	6 32.4 -56.1 126.5
10°	6 58.5 -56.5 130.5	6 38.3 -56.3 129.6	6 17.9 -56.2 128.7	5 57.3 -56.2 127.7	5 36.3 -56.0 126.8
11°	6 02.0 -56.5 130.9	5 42.0 -56.4 129.9	5 21.7 -56.3 129.0	5 01.1 -56.2 128.1	4 40.3 -56.1 127.2
12°	5 05.5 -56.5 131.2	4 45.6 -56.4 130.3	4 25.4 -56.3 129.4	4 04.9 -56.2 128.4	3 44.2 -56.1 127.5
13°	4 09.0 -56.5 131.6	3 49.2 -56.4 130.6	3 29.1 -56.3 129.7	3 08.7 -56.2 128.8	2 48.1 -56.1 127.9
14°	3 12.5 -56.5 131.9	2 52.8 -56.4 131.0	2 32.8 -56.3 130.1	2 12.5 -56.2 129.2	1 52.0 -56.1 128.2
15°	2 16.0 -56.5 132.2	1 56.4 -56.4 131.3	1 36.5 -56.3 130.4	1 16.3 -56.2 129.5	0 55.9 -56.1 128.6
16°	1 19.5 -56.5 132.6	1 00.0 -56.4 131.7	0 40.2 -56.3 130.8	0 20.1 -56.2 129.9	-0 00.2 -56.1
17°	0 23.0 -56.5 132.9	0 03.6 -56.4 132.0	-0 16.1 -56.3	-0 36.1 -56.2	-0 56.3 -56.1
18°	-0 33.5 -56.5	-0 52.8 -56.4	-1 12.4 -56.3	-1 32.3 -56.2	-1 52.4 -56.1
19°	-1 30.0 -56.6	-1 49.2 -56.5	-2 08.7 -56.3	-2 28.5 -56.2	-2 48.5 -56.1
20°	-2 26.6 -56.5	-2 45.7 -56.3	-3 05.0 -56.3	-3 24.7 -56.1	-3 44.6 -56.0
21°	-3 23.1 -56.5	-3 42.0 -56.4	-4 01.3 -56.3	-4 20.8 -56.2	-4 40.6 -56.1
22°	-4 19.6 -56.5	-4 38.4 -56.4	-4 57.6 -56.3	-5 17.0 -56.2	-5 36.7 -56.1
23°	-5 16.1 -56.4	-5 34.8 -56.4	-5 53.9 -56.2	-6 13.2 -56.1	-6 32.8 -56.0
24°	-6 12.5 -56.5	-6 31.2 -56.3	-6 50.1 -56.3	-7 09.3 -56.2	-7 28.8 -56.0
25°	-7 09.0 -56.5	-7 27.5 -56.4	-7 46.4 -56.2	-8 05.5 -56.1	-8 24.8 -56.0
26°	-8 05.5 -56.4	-8 23.9 -56.3	-8 42.6 -56.2	-9 01.6 -56.1	-9 20.8 -56.0
27°	-9 01.9 -56.4	-9 20.2 -56.3	-9 38.8 -56.2	-9 57.7 -56.0	
28°	-9 58.3 -56.4				
29°					

Dec	LHA 055° / 305°	LHA 056° / 304°	LHA 057° / 303°	LHA 058° / 302°	LHA 059° / 301°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	14 33.8 -55.8 122.2	14 11.4 -55.7 121.2	13 48.8 -55.6 120.3	13 26.0 -55.5 119.3	13 02.9 -55.4 118.4
1°	13 38.0 -55.7 122.6	13 15.7 -55.6 121.6	12 53.2 -55.6 120.7	12 30.5 -55.5 119.7	12 07.5 -55.4 118.8
2°	12 42.3 -55.8 122.9	12 20.1 -55.7 122.0	11 57.6 -55.6 121.0	11 35.0 -55.5 120.1	11 12.1 -55.4 119.2
3°	11 46.5 -55.9 123.3	11 24.4 -55.8 122.4	11 02.0 -55.6 121.4	10 39.5 -55.6 120.5	10 16.7 -55.5 119.5
4°	10 50.6 -55.8 123.7	10 28.6 -55.7 122.7	10 06.4 -55.7 121.8	9 43.9 -55.6 120.9	9 21.2 -55.5 119.9
5°	9 54.8 -55.9 124.1	9 32.9 -55.8 123.1	9 10.7 -55.7 122.2	8 48.3 -55.6 121.3	8 25.7 -55.5 120.3
6°	8 58.9 -55.9 124.4	8 37.1 -55.8 123.5	8 15.0 -55.7 122.6	7 52.7 -55.6 121.6	7 30.2 -55.5 120.7
7°	8 03.0 -56.0 124.8	7 41.3 -55.9 123.9	7 19.3 -55.7 122.9	6 57.1 -55.6 122.0	6 34.7 -55.6 121.1
8°	7 07.0 -55.9 125.2	6 45.4 -55.8 124.2	6 23.6 -55.8 123.3	6 01.5 -55.7 122.4	5 39.1 -55.5 121.5
9°	6 11.1 -55.9 125.5	5 49.6 -55.9 124.6	5 27.8 -55.8 123.7	5 05.8 -55.7 122.8	4 43.6 -55.6 121.8
10°	5 15.2 -56.0 125.9	4 53.7 -55.9 125.0	4 32.0 -55.7 124.1	4 10.1 -55.6 123.1	3 48.0 -55.6 122.2
11°	4 19.2 -56.0 126.3	3 57.8 -55.8 125.3	3 36.3 -55.8 124.4	3 14.5 -55.7 123.5	2 52.4 -55.6 122.6
12°	3 23.2 -56.0 126.6	3 02.0 -55.9 125.7	2 40.5 -55.8 124.8	2 18.8 -55.7 123.9	1 56.8 -55.6 123.0
13°	2 27.2 -56.0 127.0	2 06.1 -55.9 126.1	1 44.7 -55.8 125.2	1 23.1 -55.7 124.3	1 01.2 -55.6 123.3
14°	1 31.2 -56.0 127.3	1 10.2 -55.9 126.4	0 48.9 -55.8 125.5	0 27.4 -55.7 124.6	0 05.6 -55.6 123.7
15°	0 35.2 -56.0 127.7	0 14.3 -55.9 126.8	-0 06.9 -55.8	-0 28.3 -55.7	-0 50.0 -55.6
16°	-0 20.8 -56.0	-0 41.6 -55.9	-1 02.7 -55.8	-1 24.0 -55.7	-1 45.6 -55.6
17°	-1 16.8 -56.0	-1 37.5 -55.9	-1 58.5 -55.8	-2 19.7 -55.7	-2 41.2 -55.6
18°	-2 12.8 -56.0	-2 33.4 -55.9	-2 54.3 -55.8	-3 15.4 -55.7	-3 36.8 -55.6
19°	-3 08.8 -55.9	-3 29.3 -55.9	-3 50.1 -55.7	-4 11.1 -55.7	-4 32.4 -55.5
20°	-4 04.7 -56.0	-4 25.2 -55.8	-4 45.8 -55.8	-5 06.8 -55.6	-5 27.9 -55.6
21°	-5 00.7 -56.0	-5 21.0 -55.9	-5 41.6 -55.7	-6 02.4 -55.7	-6 23.5 -55.5
22°	-5 56.7 -55.9	-6 16.9 -55.8	-6 37.3 -55.8	-6 58.1 -55.6	-7 19.0 -55.5
23°	-6 52.6 -55.9	-7 12.7 -55.8	-7 33.1 -55.7	-7 53.7 -55.6	-8 14.5 -55.5
24°	-7 48.5 -56.0	-8 08.5 -55.8	-8 28.8 -55.7	-8 49.3 -55.6	-9 10.0 -55.5
25°	-8 44.5 -55.8	-9 04.3 -55.8	-9 24.5 -55.6	-9 44.9 -55.5	
26°	-9 40.3 -55.9				
27°					
28°					
29°					

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	12 39.7 -55.3 117.4	12 16.2 -55.2 116.5	11 52.6 -55.1 115.5	11 28.8 -55.1 114.6	11 04.8 -55.0 113.7
1°	11 44.4 -55.3 117.8	11 21.0 -55.2 116.9	10 57.5 -55.2 115.9	10 33.7 -55.1 115.0	10 09.8 -55.0 114.1
2°	10 49.1 -55.4 118.2	10 25.8 -55.3 117.3	10 02.3 -55.2 116.3	9 38.6 -55.1 115.4	9 14.8 -55.0 114.5
3°	9 53.7 -55.4 118.6	9 30.5 -55.3 117.7	9 07.1 -55.2 116.7	8 43.5 -55.1 115.8	8 19.8 -55.1 114.9
4°	8 58.3 -55.4 119.0	8 35.2 -55.3 118.1	8 11.9 -55.2 117.1	7 48.4 -55.1 116.2	7 24.7 -55.0 115.3
5°	8 02.9 -55.4 119.4	7 39.9 -55.3 118.5	7 16.7 -55.3 117.5	6 53.3 -55.2 116.6	6 29.7 -55.1 115.7
6°	7 07.5 -55.4 119.8	6 44.6 -55.4 118.8	6 21.4 -55.2 117.9	5 58.1 -55.2 117.0	5 34.6 -55.1 116.1
7°	6 12.1 -55.5 120.2	5 49.2 -55.4 119.2	5 26.2 -55.3 118.3	5 02.9 -55.2 117.4	4 39.5 -55.2 116.5
8°	5 16.6 -55.5 120.5	4 53.8 -55.3 119.6	4 30.9 -55.3 118.7	4 07.7 -55.2 117.8	3 44.3 -55.1 116.9
9°	4 21.1 -55.5 120.9	3 58.5 -55.4 120.0	3 35.6 -55.3 119.1	3 12.5 -55.2 118.2	2 49.2 -55.1 117.3
10°	3 25.6 -55.5 121.3	3 03.1 -55.4 120.4	2 40.3 -55.4 119.5	2 17.3 -55.3 118.6	1 54.1 -55.2 117.7
11°	2 30.1 -55.5 121.7	2 07.7 -55.5 120.8	1 44.9 -55.3 119.9	1 22.0 -55.2 119.0	0 58.9 -55.1 118.1
12°	1 34.6 -55.5 122.1	1 12.2 -55.4 121.2	0 49.6 -55.3 120.3	0 26.8 -55.2 119.4	0 03.8 -55.2 118.5
13°	0 39.1 -55.5 122.4	0 16.8 -55.4 121.5	-0 05.7 -55.3	-0 28.4 -55.3	-0 51.4 -55.1
14°	-0 16.4 -55.5	-0 38.6 -55.4	-1 01.0 -55.3	-1 23.7 -55.2	-1 46.5 -55.1
15°	-1 11.9 -55.5	-1 34.0 -55.4	-1 56.3 -55.4	-2 18.9 -55.2	-2 41.6 -55.2
16°	-2 07.4 -55.5	-2 29.4 -55.4	-2 51.7 -55.3	-3 14.1 -55.2	-3 36.8 -55.1
17°	-3 02.9 -55.5	-3 24.8 -55.4	-3 47.0 -55.3	-4 09.3 -55.2	-4 31.9 -55.1
18°	-3 58.4 -55.5	-4 20.2 -55.4	-4 42.3 -55.2	-5 04.5 -55.2	-5 27.0 -55.1
19°	-4 53.9 -55.4	-5 15.6 -55.4	-5 37.5 -55.3	-5 59.7 -55.2	-6 22.1 -55.1
20°	-5 49.3 -55.5	-6 11.0 -55.3	-6 32.8 -55.3	-6 54.9 -55.1	-7 17.2 -55.0
21°	-6 44.8 -55.4	-7 06.3 -55.3	-7 28.1 -55.2	-7 50.0 -55.2	-8 12.2 -55.1
22°	-7 40.2 -55.4	-8 01.6 -55.3	-8 23.3 -55.2	-8 45.2 -55.1	-9 07.3 -55.0
23°	-8 35.6 -55.4	-8 56.9 -55.3	-9 18.5 -55.2	-9 40.3 -55.0	
24°	-9 31.0 -55.4	-9 52.2 -55.3			
25°					
26°					
27°					
28°					
29°					

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	10 40.6 -54.9 112.7	10 16.3 -54.9 111.8	9 51.8 -54.8 110.9	9 27.1 -54.7 110.0	9 02.3 -54.6 109.0
1°	9 45.7 -54.9 113.1	9 21.4 -54.8 112.2	8 57.0 -54.8 111.3	8 32.4 -54.7 110.4	8 07.7 -54.7 109.5
2°	8 50.8 -55.0 113.6	8 26.6 -54.9 112.6	8 02.2 -54.8 111.7	7 37.7 -54.7 110.8	7 13.0 -54.6 109.9
3°	7 55.8 -54.9 114.0	7 31.7 -54.9 113.0	7 07.4 -54.8 112.1	6 43.0 -54.8 111.2	6 18.4 -54.7 110.3
4°	7 00.9 -55.0 114.4	6 36.8 -54.9 113.4	6 12.6 -54.8 112.5	5 48.2 -54.8 111.6	5 23.7 -54.7 110.7
5°	6 05.9 -55.1 114.8	5 41.9 -54.9 113.9	5 17.8 -54.9 112.9	4 53.4 -54.7 112.0	4 29.0 -54.7 111.1
6°	5 10.8 -55.0 115.2	4 47.0 -55.0 114.3	4 22.9 -54.9 113.3	3 58.7 -54.8 112.4	3 34.3 -54.8 111.5
7°	4 15.8 -55.0 115.6	3 52.0 -55.0 114.7	3 28.0 -54.9 113.7	3 03.9 -54.8 112.8	2 39.5 -54.7 111.9
8°	3 20.8 -55.1 116.0	2 57.0 -54.9 115.1	2 33.1 -54.9 114.2	2 09.1 -54.9 113.2	1 44.8 -54.7 112.3
9°	2 25.7 -55.0 116.4	2 02.1 -55.0 115.5	1 38.2 -54.9 114.6	1 14.2 -54.8 113.7	0 50.1 -54.8 112.8
10°	1 30.7 -55.1 116.8	1 07.1 -55.0 115.9	0 43.3 -54.8 115.0	0 19.4 -54.8 114.1	-0 04.7 -54.7
11°	0 35.6 -55.0 117.2	0 12.1 -55.0 116.3	-0 11.5 -54.9	-0 35.4 -54.8	-0 59.4 -54.8
12°	-0 19.4 -55.1	-0 42.9 -54.9	-1 06.4 -54.9	-1 30.2 -54.8	-1 54.2 -54.7
13°	-1 14.5 -55.1	-1 37.8 -55.0	-2 01.3 -54.9	-2 25.0 -54.8	-2 48.9 -54.7
14°	-2 09.6 -55.0	-2 32.8 -55.0	-2 56.2 -54.9	-3 19.8 -54.8	-3 43.6 -54.7
15°	-3 04.6 -55.0	-3 27.8 -54.9	-3 51.1 -54.9	-4 14.6 -54.8	-4 38.3 -54.7
16°	-3 59.6 -55.1	-4 22.7 -55.0	-4 46.0 -54.8	-5 09.4 -54.8	-5 33.0 -54.7
17°	-4 54.7 -55.0	-5 17.7 -54.9	-5 40.8 -54.9	-6 04.2 -54.7	-6 27.7 -54.7
18°	-5 49.7 -55.0	-6 12.6 -54.9	-6 35.7 -54.8	-6 58.9 -54.8	-7 22.4 -54.6
19°	-6 44.7 -55.0	-7 07.5 -54.9	-7 30.5 -54.8	-7 53.7 -54.7	-8 17.0 -54.7
20°	-7 39.7 -54.9	-8 02.4 -54.8	-8 25.3 -54.7	-8 48.4 -54.6	-9 11.7 -54.5
21°	-8 34.6 -55.0	-8 57.2 -54.9	-9 20.0 -54.8	-9 43.0 -54.7	
22°	-9 29.6 -54.9	-9 52.1 -54.8			
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 070° / 290°	LHA 071° / 289°	LHA 072° / 288°	LHA 073° / 287°	LHA 074° / 286°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	8 37.4 -54.6 108.1	8 12.3 -54.5 107.2	7 47.1 -54.4 106.3	7 21.8 -54.4 105.4	6 56.4 -54.3 104.5
1°	7 42.8 -54.6 108.5	7 17.8 -54.5 107.6	6 52.7 -54.5 106.7	6 27.4 -54.4 105.8	6 02.1 -54.4 104.9
2°	6 48.2 -54.6 109.0	6 23.3 -54.5 108.0	5 58.2 -54.5 107.1	5 33.0 -54.4 106.2	5 07.7 -54.4 105.3
3°	5 53.6 -54.6 109.4	5 28.8 -54.6 108.5	5 03.7 -54.5 107.5	4 38.6 -54.4 106.6	4 13.3 -54.3 105.7
4°	4 59.0 -54.6 109.8	4 34.2 -54.6 108.9	4 09.2 -54.5 108.0	3 44.2 -54.5 107.1	3 19.0 -54.4 106.2
5°	4 04.4 -54.7 110.2	3 39.6 -54.6 109.3	3 14.7 -54.5 108.4	2 49.7 -54.5 107.5	2 24.6 -54.5 106.6
6°	3 09.7 -54.6 110.6	2 45.0 -54.6 109.7	2 20.2 -54.5 108.8	1 55.2 -54.4 107.9	1 30.1 -54.4 107.0
7°	2 15.1 -54.7 111.0	1 50.4 -54.6 110.1	1 25.7 -54.6 109.2	1 00.8 -54.5 108.3	0 35.7 -54.4 107.4
8°	1 20.4 -54.7 111.4	0 55.8 -54.6 110.5	0 31.1 -54.5 109.6	0 06.3 -54.5 108.7	-0 18.7 -54.4
9°	0 25.7 -54.6 111.9	0 01.2 -54.6 111.0	-0 23.4 -54.5	-0 48.2 -54.4	-1 13.1 -54.4
10°	-0 28.9 -54.7	-0 53.4 -54.6	-1 17.9 -54.6	-1 42.6 -54.5	-2 07.5 -54.4
11°	-1 23.6 -54.7	-1 48.0 -54.6	-2 12.5 -54.5	-2 37.1 -54.5	-3 01.9 -54.4
12°	-2 18.3 -54.6	-2 42.6 -54.5	-3 07.0 -54.5	-3 31.6 -54.4	-3 56.3 -54.4
13°	-3 12.9 -54.7	-3 37.1 -54.6	-4 01.5 -54.5	-4 26.0 -54.4	-4 50.7 -54.3
14°	-4 07.6 -54.6	-4 31.7 -54.6	-4 56.0 -54.5	-5 20.4 -54.5	-5 45.0 -54.4
15°	-5 02.2 -54.7	-5 26.3 -54.5	-5 50.5 -54.5	-6 14.9 -54.3	-6 39.4 -54.3
16°	-5 56.9 -54.6	-6 20.8 -54.5	-6 45.0 -54.4	-7 09.2 -54.4	-7 33.7 -54.3
17°	-6 51.5 -54.5	-7 15.3 -54.5	-7 39.4 -54.4	-8 03.6 -54.4	-8 28.0 -54.3
18°	-7 46.0 -54.6	-8 09.8 -54.5	-8 33.8 -54.4	-8 58.0 -54.3	-9 22.3 -54.2
19°	-8 40.6 -54.5	-9 04.3 -54.5	-9 28.2 -54.4	-9 52.3 -54.3	
20°	-9 35.1 -54.5	-9 58.8 -54.4			
21°					
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29°					

Dec	LHA 075° / 285°	LHA 076° / 284°	LHA 077° / 283°	LHA 078° / 282°	LHA 079° / 281°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	6 30.9 -54.3 103.5	6 05.3 -54.3 102.6	5 39.6 -54.2 101.7	5 13.8 -54.2 100.8	4 47.9 -54.1 99.9
1°	5 36.6 -54.3 104.0	5 11.0 -54.2 103.1	4 45.4 -54.3 102.2	4 19.6 -54.2 101.2	3 53.8 -54.2 100.3
2°	4 42.3 -54.3 104.4	4 16.8 -54.3 103.5	3 51.1 -54.2 102.6	3 25.4 -54.2 101.7	2 59.6 -54.1 100.8
3°	3 48.0 -54.4 104.8	3 22.5 -54.3 103.9	2 56.9 -54.2 103.0	2 31.2 -54.2 102.1	2 05.5 -54.2 101.2
4°	2 53.6 -54.3 105.2	2 28.2 -54.3 104.3	2 02.7 -54.3 103.4	1 37.0 -54.2 102.5	1 11.3 -54.1 101.6
5°	1 59.3 -54.4 105.7	1 33.9 -54.3 104.8	1 08.4 -54.2 103.9	0 42.8 -54.2 103.0	0 17.2 -54.2 102.1
6°	1 04.9 -54.3 106.1	0 39.6 -54.3 105.2	0 14.2 -54.3 104.3	-0 11.4 -54.2	-0 37.0 -54.2
7°	0 10.6 -54.4 106.5	-0 14.7 -54.3	-0 40.1 -54.2	-1 05.6 -54.2	-1 31.2 -54.1
8°	-0 43.8 -54.3	-1 09.0 -54.3	-1 34.3 -54.3	-1 59.8 -54.2	-2 25.3 -54.2
9°	-1 38.1 -54.4	-2 03.3 -54.3	-2 28.6 -54.2	-2 54.0 -54.1	-3 19.5 -54.1
10°	-2 32.5 -54.3	-2 57.6 -54.3	-3 22.8 -54.2	-3 48.1 -54.2	-4 13.6 -54.1
11°	-3 26.8 -54.3	-3 51.9 -54.2	-4 17.0 -54.2	-4 42.3 -54.2	-5 07.7 -54.1
12°	-4 21.1 -54.4	-4 46.1 -54.3	-5 11.2 -54.2	-5 36.5 -54.1	-6 01.8 -54.1
13°	-5 15.5 -54.3	-5 40.4 -54.2	-6 05.4 -54.2	-6 30.6 -54.1	-6 55.9 -54.0
14°	-6 09.8 -54.2	-6 34.6 -54.2	-6 59.6 -54.2	-7 24.7 -54.1	-7 49.9 -54.1
15°	-7 04.0 -54.3	-7 28.8 -54.2	-7 53.8 -54.1	-8 18.8 -54.1	-8 44.0 -54.0
16°	-7 58.3 -54.2	-8 23.0 -54.2	-8 47.9 -54.1	-9 12.9 -54.0	-9 38.0 -53.9
17°	-8 52.5 -54.2	-9 17.2 -54.1	-9 42.0 -54.0		
18°	-9 46.7 -54.2				
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27°					
28°					
29°					

Dec	LHA 080° / 280°	LHA 081° / 279°	LHA 082° / 278°	LHA 083° / 277°	LHA 084° / 276°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	4 21.9 -54.0 99.0	3 55.9 -54.0 98.1	3 29.9 -54.1 97.2	3 03.7 -54.0 96.3	2 37.6 -54.0 95.4
1°	3 27.9 -54.2 99.4	3 01.9 -54.1 98.5	2 35.8 -54.0 97.6	2 09.7 -54.0 96.7	1 43.6 -54.0 95.8
2°	2 33.7 -54.1 99.9	2 07.8 -54.1 99.0	1 41.8 -54.1 98.1	1 15.7 -54.0 97.2	0 49.6 -54.0 96.3
3°	1 39.6 -54.1 100.3	1 13.7 -54.1 99.4	0 47.7 -54.0 98.5	0 21.7 -54.0 97.6	-0 04.4 -54.0
4°	0 45.5 -54.1 100.7	0 19.6 -54.0 99.8	-0 06.3 -54.1	-0 32.3 -54.0	-0 58.4 -54.0
5°	-0 08.6 -54.1	-0 34.4 -54.1	-1 00.4 -54.0	-1 26.3 -54.1	-1 52.4 -54.0
6°	-1 02.7 -54.1	-1 28.5 -54.1	-1 54.4 -54.1	-2 20.4 -54.0	-2 46.4 -54.0
7°	-1 56.8 -54.1	-2 22.6 -54.1	-2 48.5 -54.0	-3 14.4 -54.0	-3 40.4 -53.9
8°	-2 50.9 -54.1	-3 16.7 -54.0	-3 42.5 -54.0	-4 08.4 -53.9	-4 34.3 -54.0
9°	-3 45.0 -54.1	-4 10.7 -54.1	-4 36.5 -54.0	-5 02.3 -54.0	-5 28.3 -53.9
10°	-4 39.1 -54.1	-5 04.8 -54.0	-5 30.5 -54.0	-5 56.3 -54.0	-6 22.2 -53.9
11°	-5 33.2 -54.1	-5 58.8 -54.0	-6 24.5 -53.9	-6 50.3 -53.9	-7 16.1 -53.9
12°	-6 27.3 -54.0	-6 52.8 -54.0	-7 18.4 -54.0	-7 44.2 -53.9	-8 10.0 -53.8
13°	-7 21.3 -54.0	-7 46.8 -53.9	-8 12.4 -53.9	-8 38.1 -53.8	-9 03.8 -53.9
14°	-8 15.3 -54.0	-8 40.7 -54.0	-9 06.3 -53.9	-9 31.9 -53.9	-9 57.7 -53.7
15°	-9 09.3 -53.9	-9 34.7 -53.9			
16°					
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Dec	LHA 085° / 275°	LHA 086° / 274°	LHA 087° / 273°	LHA 088° / 272°	LHA 089° / 271°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	2 11.4 -54.0 94.5	1 45.1 -53.9 93.6	1 18.9 -54.0 92.7	0 52.6 -53.9 91.8	0 26.3 -53.9 90.9
1°	1 17.4 -54.0 94.9	0 51.2 -54.0 94.0	0 24.9 -53.9 93.1	-0 01.3 -54.0	-0 27.6 -54.0
2°	0 23.4 -53.9 95.4	-0 02.8 -53.9	-0 29.0 -54.0	-0 55.3 -53.9	-1 21.6 -53.9
3°	-0 30.5 -54.0	-0 56.7 -54.0	-1 23.0 -53.9	-1 49.2 -53.9	-2 15.5 -53.9
4°	-1 24.5 -54.0	-1 50.7 -53.9	-2 16.9 -53.9	-2 43.1 -53.9	-3 09.4 -53.9
5°	-2 18.5 -54.0	-2 44.6 -54.0	-3 10.8 -53.9	-3 37.0 -53.9	-4 03.3 -53.9
6°	-3 12.5 -53.9	-3 38.6 -53.9	-4 04.7 -53.9	-4 30.9 -53.9	-4 57.2 -53.9
7°	-4 06.4 -53.9	-4 32.5 -53.9	-4 58.6 -53.9	-5 24.8 -53.9	-5 51.1 -53.8
8°	-5 00.3 -54.0	-5 26.4 -53.9	-5 52.5 -53.9	-6 18.7 -53.8	-6 44.9 -53.8
9°	-5 54.3 -53.9	-6 20.3 -53.9	-6 46.4 -53.8	-7 12.5 -53.9	-7 38.7 -53.8
10°	-6 48.2 -53.8	-7 14.2 -53.8	-7 40.2 -53.9	-8 06.4 -53.8	-8 32.5 -53.8
11°	-7 42.0 -53.9	-8 08.0 -53.8	-8 34.1 -53.7	-9 00.2 -53.7	-9 26.3 -53.7
12°	-8 35.9 -53.8	-9 01.8 -53.8	-9 27.8 -53.8	-9 53.9 -53.7	
13°	-9 29.7 -53.8	-9 55.6 -53.8			
14°					
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Latitude 64°

Declination CONTRARY name to Latitude

Dec	LHA 090° / 270°	LHA 091° / 269°	LHA 092° / 268°	LHA 093° / 267°	LHA 094° / 266°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	0 00.0 -53.9 90.0	-0 26.3 -53.9			
1°	-0 53.9 -54.0	-1 20.2 -54.0			
2°	-1 47.9 -53.9	-2 14.2 -53.9			
3°	-2 41.8 -53.9	-3 08.1 -53.9			
4°	-3 35.7 -53.9	-4 02.0 -53.9			
5°	-4 29.6 -53.9	-4 55.9 -53.8			
6°	-5 23.5 -53.8	-5 49.7 -53.9			
7°	-6 17.3 -53.9	-6 43.6 -53.8			
8°	-7 11.2 -53.8	-7 37.4 -53.8			
9°	-8 05.0 -53.7	-8 31.2 -53.8			
10°	-8 58.7 -53.8	-9 25.0 -53.7			
11°	-9 52.5 -53.7				
12°					
13°					
14°					
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Dec	LHA 095° / 265°	LHA 096° / 264°	LHA 097° / 263°	LHA 098° / 262°	LHA 099° / 261°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°					
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The data on this page is believed to be accurate but no warranty is given for it's correctness. Use it only for training and exercising!

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	25 00.0 -60.0 180.0	24 59.8 -60.0 178.9	24 59.0 -60.0 177.8	24 57.8 -60.0 176.7	24 56.1 -60.0 175.6
1°	24 00.0 -60.0 180.0	23 59.8 -60.0 178.9	23 59.0 -60.0 177.8	23 57.8 -60.0 176.7	23 56.1 -59.9 175.6
2°	23 00.0 -60.0 180.0	22 59.8 -60.0 178.9	22 59.0 -60.0 177.8	22 57.8 -59.9 176.7	22 56.2 -60.0 175.7
3°	22 00.0 -60.0 180.0	21 59.8 -60.0 178.9	21 59.0 -59.9 177.8	21 57.9 -60.0 176.8	21 56.2 -60.0 175.7
4°	21 00.0 -60.0 180.0	20 59.8 -60.0 178.9	20 59.1 -60.0 177.9	20 57.9 -60.0 176.8	20 56.2 -60.0 175.7
5°	20 00.0 -60.0 180.0	19 59.8 -60.0 178.9	19 59.1 -60.0 177.9	19 57.9 -60.0 176.8	19 56.2 -59.9 175.8
6°	19 00.0 -60.0 180.0	18 59.8 -60.0 178.9	18 59.1 -60.0 177.9	18 57.9 -60.0 176.8	18 56.3 -60.0 175.8
7°	18 00.0 -60.0 180.0	17 59.8 -60.0 179.0	17 59.1 -60.0 177.9	17 57.9 -60.0 176.9	17 56.3 -60.0 175.8
8°	17 00.0 -60.0 180.0	16 59.8 -60.0 179.0	16 59.1 -60.0 177.9	16 57.9 -59.9 176.9	16 56.3 -59.9 175.9
9°	16 00.0 -60.0 180.0	15 59.8 -60.0 179.0	15 59.1 -60.0 177.9	15 58.0 -60.0 176.9	15 56.4 -60.0 175.9
10°	15 00.0 -60.0 180.0	14 59.8 -60.0 179.0	14 59.1 -60.0 178.0	14 58.0 -60.0 176.9	14 56.4 -60.0 175.9
11°	14 00.0 -60.0 180.0	13 59.8 -60.0 179.0	13 59.1 -60.0 178.0	13 58.0 -60.0 177.0	13 56.4 -60.0 176.0
12°	13 00.0 -60.0 180.0	12 59.8 -60.0 179.0	12 59.1 -60.0 178.0	12 58.0 -60.0 177.0	12 56.4 -59.9 176.0
13°	12 00.0 -60.0 180.0	11 59.8 -60.0 179.0	11 59.1 -60.0 178.0	11 58.0 -60.0 177.0	11 56.5 -60.0 176.0
14°	11 00.0 -60.0 180.0	10 59.8 -60.0 179.0	10 59.1 -60.0 178.0	10 58.0 -60.0 177.0	10 56.5 -60.0 176.0
15°	10 00.0 -60.0 180.0	9 59.8 -60.0 179.0	9 59.1 -60.0 178.0	9 58.0 -59.9 177.1	9 56.5 -59.9 176.1
16°	9 00.0 -60.0 180.0	8 59.8 -60.0 179.0	8 59.1 -60.0 178.1	8 58.1 -60.0 177.1	8 56.6 -60.0 176.1
17°	8 00.0 -60.0 180.0	7 59.8 -60.0 179.0	7 59.1 -59.9 178.1	7 58.1 -60.0 177.1	7 56.6 -60.0 176.1
18°	7 00.0 -60.0 180.0	6 59.8 -60.0 179.0	6 59.2 -60.0 178.1	6 58.1 -60.0 177.1	6 56.6 -60.0 176.2
19°	6 00.0 -60.0 180.0	5 59.8 -60.0 179.0	5 59.2 -60.0 178.1	5 58.1 -60.0 177.1	5 56.6 -59.9 176.2
20°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.1	4 59.2 -60.0 178.1	4 58.1 -60.0 177.2	4 56.7 -60.0 176.2
21°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.1	3 59.2 -60.0 178.1	3 58.1 -59.9 177.2	3 56.7 -60.0 176.3
22°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.1	2 59.2 -60.0 178.1	2 58.2 -60.0 177.2	2 56.7 -60.0 176.3
23°	2 00.0 -60.0 180.0	1 59.8 -60.0 179.1	1 59.2 -60.0 178.2	1 58.2 -60.0 177.2	1 56.7 -59.9 176.3
24°	1 00.0 -60.0 180.0	0 59.8 -60.0 179.1	0 59.2 -60.0 178.2	0 58.2 -60.0 177.3	0 56.8 -60.0 176.3
25°	0 00.0 -60.0 180.0	-0 00.2 -60.0	-0 00.8 -60.0	-0 01.8 -60.0	-0 03.2 -60.0
26°	-1 00.0 -60.0	-1 00.2 -60.0	-1 00.8 -60.0	-1 01.8 -60.0	-1 03.2 -60.0
27°	-2 00.0 -60.0	-2 00.2 -60.0	-2 00.8 -60.0	-2 01.8 -60.0	-2 03.2 -59.9
28°	-3 00.0 -60.0	-3 00.2 -60.0	-3 00.8 -60.0	-3 01.8 -59.9	-3 03.1 -60.0
29°	-4 00.0 -60.0	-4 00.2 -60.0	-4 00.8 -60.0	-4 01.7 -60.0	-4 03.1 -60.0

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	24 53.9 -59.9 174.5	24 51.2 -59.9 173.4	24 48.1 -59.9 172.3	24 44.4 -59.9 171.2	24 40.3 -59.9 170.1
1°	23 54.0 -60.0 174.5	23 51.3 -59.9 173.4	23 48.2 -59.9 172.3	23 44.5 -59.8 171.3	23 40.4 -59.8 170.2
2°	22 54.0 -60.0 174.6	22 51.4 -60.0 173.5	22 48.3 -60.0 172.4	22 44.7 -59.9 171.3	22 40.6 -59.8 170.2
3°	21 54.0 -59.9 174.6	21 51.4 -59.9 173.5	21 48.3 -59.9 172.5	21 44.8 -59.9 171.4	21 40.8 -59.9 170.3
4°	20 54.1 -60.0 174.7	20 51.5 -59.9 173.6	20 48.4 -59.9 172.5	20 44.9 -59.9 171.5	20 40.9 -59.8 170.4
5°	19 54.1 -59.9 174.7	19 51.6 -60.0 173.6	19 48.5 -59.9 172.6	19 45.0 -59.9 171.5	19 41.1 -59.9 170.5
6°	18 54.2 -60.0 174.7	18 51.6 -59.9 173.7	18 48.6 -59.9 172.6	18 45.1 -59.8 171.6	18 41.2 -59.9 170.5
7°	17 54.2 -59.9 174.8	17 51.7 -59.9 173.7	17 48.7 -59.9 172.7	17 45.3 -59.9 171.7	17 41.3 -59.8 170.6
8°	16 54.3 -60.0 174.8	16 51.8 -60.0 173.8	16 48.8 -59.9 172.8	16 45.4 -59.9 171.7	16 41.5 -59.9 170.7
9°	15 54.3 -59.9 174.9	15 51.8 -59.9 173.8	15 48.9 -59.9 172.8	15 45.5 -59.9 171.8	15 41.6 -59.8 170.8
10°	14 54.4 -60.0 174.9	14 51.9 -59.9 173.9	14 49.0 -60.0 172.9	14 45.6 -59.9 171.9	14 41.8 -59.9 170.8
11°	13 54.4 -59.9 174.9	13 52.0 -60.0 173.9	13 49.0 -59.9 172.9	13 45.7 -59.9 171.9	13 41.9 -59.8 170.9
12°	12 54.5 -60.0 175.0	12 52.0 -59.9 174.0	12 49.1 -59.9 173.0	12 45.8 -59.9 172.0	12 42.1 -59.9 171.0
13°	11 54.5 -60.0 175.0	11 52.1 -60.0 174.0	11 49.2 -59.9 173.0	11 45.9 -59.9 172.0	11 42.2 -59.9 171.0
14°	10 54.5 -59.9 175.1	10 52.1 -59.9 174.1	10 49.3 -59.9 173.1	10 46.0 -59.9 172.1	10 42.3 -59.8 171.1
15°	9 54.6 -60.0 175.1	9 52.2 -59.9 174.1	9 49.4 -59.9 173.1	9 46.1 -59.9 172.2	9 42.5 -59.9 171.2
16°	8 54.6 -59.9 175.1	8 52.3 -60.0 174.2	8 49.5 -60.0 173.2	8 46.2 -59.9 172.2	8 42.6 -59.9 171.2
17°	7 54.7 -60.0 175.2	7 52.3 -59.9 174.2	7 49.5 -59.9 173.2	7 46.3 -59.8 172.3	7 42.7 -59.8 171.3
18°	6 54.7 -60.0 175.2	6 52.4 -60.0 174.3	6 49.6 -59.9 173.3	6 46.5 -59.9 172.3	6 42.9 -59.9 171.4
19°	5 54.7 -59.9 175.2	5 52.4 -59.9 174.3	5 49.7 -59.9 173.3	5 46.6 -59.9 172.4	5 43.0 -59.9 171.5
20°	4 54.8 -60.0 175.3	4 52.5 -59.9 174.3	4 49.8 -59.9 173.4	4 46.7 -59.9 172.5	4 43.1 -59.8 171.5
21°	3 54.8 -59.9 175.3	3 52.6 -60.0 174.4	3 49.9 -60.0 173.5	3 46.8 -59.9 172.5	3 43.3 -59.9 171.6
22°	2 54.9 -60.0 175.4	2 52.6 -59.9 174.4	2 49.9 -59.9 173.5	2 46.9 -59.9 172.6	2 43.4 -59.9 171.7
23°	1 54.9 -60.0 175.4	1 52.7 -60.0 174.5	1 50.0 -59.9 173.6	1 47.0 -59.9 172.6	1 43.5 -59.8 171.7
24°	0 54.9 -59.9 175.4	0 52.7 -59.9 174.5	0 50.1 -59.9 173.6	0 47.1 -59.9 172.7	0 43.7 -59.9 171.8
25°	-0 05.0 -60.0	-0 07.2 -60.0	-0 09.8 -59.9	-0 12.8 -59.9	-0 16.2 -59.9
26°	-1 05.0 -59.9	-1 07.2 -59.9	-1 09.7 -60.0	-1 12.7 -59.9	-1 16.1 -59.8
27°	-2 04.9 -60.0	-2 07.1 -59.9	-2 09.7 -59.9	-2 12.6 -59.9	-2 15.9 -59.9
28°	-3 04.9 -59.9	-3 07.0 -60.0	-3 09.6 -59.9	-3 12.5 -59.9	-3 15.8 -59.9
29°	-4 04.8 -60.0	-4 07.0 -59.9	-4 09.5 -59.9	-4 12.4 -59.9	-4 15.7 -59.9

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	24 35.7 -59.8 169.0	24 30.6 -59.8 167.9	24 25.1 -59.8 166.8	24 19.0 -59.6 165.7	24 12.5 -59.6 164.6
1°	23 35.9 -59.8 169.1	23 30.8 -59.7 168.0	23 25.3 -59.7 166.9	23 19.4 -59.7 165.8	23 12.9 -59.6 164.7
2°	22 36.1 -59.8 169.2	22 31.1 -59.8 168.1	22 25.6 -59.7 167.0	22 19.7 -59.7 165.9	22 13.3 -59.7 164.9
3°	21 36.3 -59.9 169.3	21 31.3 -59.8 168.2	21 25.9 -59.8 167.1	21 20.0 -59.7 166.0	21 13.6 -59.6 165.0
4°	20 36.4 -59.8 169.3	20 31.5 -59.8 168.3	20 26.1 -59.7 167.2	20 20.3 -59.7 166.2	20 14.0 -59.6 165.1
5°	19 36.6 -59.8 169.4	19 31.7 -59.7 168.4	19 26.4 -59.7 167.3	19 20.6 -59.7 166.3	19 14.4 -59.7 165.2
6°	18 36.8 -59.8 169.5	18 32.0 -59.8 168.5	18 26.7 -59.8 167.4	18 20.9 -59.7 166.4	18 14.7 -59.6 165.3
7°	17 37.0 -59.8 169.6	17 32.2 -59.8 168.5	17 26.9 -59.7 167.5	17 21.2 -59.7 166.5	17 15.1 -59.7 165.4
8°	16 37.2 -59.9 169.7	16 32.4 -59.8 168.6	16 27.2 -59.8 167.6	16 21.5 -59.7 166.6	16 15.4 -59.7 165.5
9°	15 37.3 -59.8 169.7	15 32.6 -59.8 168.7	15 27.4 -59.7 167.7	15 21.8 -59.7 166.7	15 15.7 -59.6 165.7
10°	14 37.5 -59.8 169.8	14 32.8 -59.8 168.8	14 27.7 -59.8 167.8	14 22.1 -59.7 166.8	14 16.1 -59.7 165.8
11°	13 37.7 -59.8 169.9	13 33.0 -59.8 168.9	13 27.9 -59.7 167.9	13 22.4 -59.7 166.9	13 16.4 -59.7 165.9
12°	12 37.9 -59.9 170.0	12 33.2 -59.8 169.0	12 28.2 -59.8 168.0	12 22.7 -59.8 167.0	12 16.7 -59.6 166.0
13°	11 38.0 -59.8 170.1	11 33.4 -59.8 169.1	11 28.4 -59.8 168.1	11 22.9 -59.7 167.1	11 17.1 -59.7 166.1
14°	10 38.2 -59.8 170.1	10 33.6 -59.8 169.1	10 28.6 -59.7 168.2	10 23.2 -59.7 167.2	10 17.4 -59.7 166.2
15°	9 38.4 -59.9 170.2	9 33.8 -59.8 169.2	9 28.9 -59.8 168.3	9 23.5 -59.7 167.3	9 17.7 -59.7 166.3
16°	8 38.5 -59.8 170.3	8 34.0 -59.8 169.3	8 29.1 -59.7 168.3	8 23.8 -59.7 167.4	8 18.0 -59.6 166.4
17°	7 38.7 -59.8 170.4	7 34.2 -59.8 169.4	7 29.4 -59.8 168.4	7 24.1 -59.8 167.5	7 18.4 -59.7 166.5
18°	6 38.9 -59.9 170.4	6 34.4 -59.8 169.5	6 29.6 -59.8 168.5	6 24.3 -59.7 167.6	6 18.7 -59.7 166.6
19°	5 39.0 -59.8 170.5	5 34.6 -59.8 169.6	5 29.8 -59.7 168.6	5 24.6 -59.7 167.7	5 19.0 -59.7 166.7
20°	4 39.2 -59.9 170.6	4 34.8 -59.8 169.6	4 30.1 -59.8 168.7	4 24.9 -59.7 167.8	4 19.3 -59.7 166.8
21°	3 39.3 -59.8 170.7	3 35.0 -59.8 169.7	3 30.3 -59.8 168.8	3 25.2 -59.8 167.9	3 19.6 -59.7 166.9
22°	2 39.5 -59.8 170.7	2 35.2 -59.8 169.8	2 30.5 -59.7 168.9	2 25.4 -59.7 168.0	2 19.9 -59.6 167.0
23°	1 39.7 -59.9 170.8	1 35.4 -59.8 169.9	1 30.8 -59.8 169.0	1 25.7 -59.7 168.0	1 20.3 -59.7 167.1
24°	0 39.8 -59.8 170.9	0 35.6 -59.8 170.0	0 31.0 -59.8 169.1	0 26.0 -59.7 168.1	0 20.6 -59.7 167.2
25°	-0 20.0 -59.8	-0 24.2 -59.8	-0 28.8 -59.7	-0 33.7 -59.8	-0 39.1 -59.7
26°	-1 19.8 -59.9	-1 24.0 -59.8	-1 28.5 -59.8	-1 33.5 -59.7	-1 38.8 -59.7
27°	-2 19.7 -59.8	-2 23.8 -59.8	-2 28.3 -59.8	-2 33.2 -59.7	-2 38.5 -59.7
28°	-3 19.5 -59.9	-3 23.6 -59.8	-3 28.1 -59.7	-3 32.9 -59.8	-3 38.2 -59.7
29°	-4 19.4 -59.8	-4 23.4 -59.8	-4 27.8 -59.8	-4 32.7 -59.7	-4 37.9 -59.6

Dec	LHA 015° / 345°	LHA 016° / 344°	LHA 017° / 343°	LHA 018° / 342°	LHA 019° / 341°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	24 05.6 -59.6 163.5	23 58.2 -59.6 162.4	23 50.3 -59.5 161.4	23 41.9 -59.3 160.3	23 33.2 -59.4 159.2
1°	23 06.0 -59.6 163.7	22 58.6 -59.5 162.6	22 50.8 -59.4 161.5	22 42.6 -59.4 160.4	22 33.8 -59.3 159.4
2°	22 06.4 -59.6 163.8	21 59.1 -59.5 162.7	21 51.4 -59.5 161.6	21 43.2 -59.5 160.6	21 34.5 -59.3 159.5
3°	21 06.8 -59.5 163.9	20 59.6 -59.5 162.9	20 51.9 -59.5 161.8	20 43.7 -59.4 160.7	20 35.2 -59.4 159.7
4°	20 07.3 -59.6 164.0	20 00.1 -59.6 163.0	19 52.4 -59.5 161.9	19 44.3 -59.4 160.9	19 35.8 -59.4 159.8
5°	19 07.7 -59.6 164.2	19 00.5 -59.5 163.1	18 52.9 -59.5 162.1	18 44.9 -59.4 161.0	18 36.4 -59.3 160.0
6°	18 08.1 -59.6 164.3	18 01.0 -59.6 163.2	17 53.4 -59.5 162.2	17 45.5 -59.5 161.2	17 37.1 -59.4 160.1
7°	17 08.5 -59.6 164.4	17 01.4 -59.5 163.4	16 53.9 -59.5 162.3	16 46.0 -59.4 161.3	16 37.7 -59.4 160.3
8°	16 08.9 -59.7 164.5	16 01.9 -59.6 163.5	15 54.4 -59.5 162.5	15 46.6 -59.4 161.5	15 38.3 -59.4 160.4
9°	15 09.2 -59.6 164.6	15 02.3 -59.6 163.6	14 54.9 -59.5 162.6	14 47.2 -59.5 161.6	14 38.9 -59.4 160.6
10°	14 09.6 -59.6 164.8	14 02.7 -59.5 163.8	13 55.4 -59.5 162.7	13 47.7 -59.5 161.7	13 39.5 -59.4 160.7
11°	13 10.0 -59.6 164.9	13 03.2 -59.6 163.9	12 55.9 -59.5 162.9	12 48.2 -59.4 161.9	12 40.1 -59.4 160.9
12°	12 10.4 -59.6 165.0	12 03.6 -59.6 164.0	11 56.4 -59.5 163.0	11 48.8 -59.5 162.0	11 40.7 -59.4 161.0
13°	11 10.8 -59.7 165.1	11 04.0 -59.5 164.1	10 56.9 -59.5 163.1	10 49.3 -59.5 162.1	10 41.3 -59.4 161.2
14°	10 11.1 -59.6 165.2	10 04.5 -59.6 164.2	9 57.4 -59.6 163.3	9 49.8 -59.4 162.3	9 41.9 -59.4 161.3
15°	9 11.5 -59.6 165.3	9 04.9 -59.6 164.4	8 57.8 -59.5 163.4	8 50.4 -59.5 162.4	8 42.5 -59.4 161.4
16°	8 11.9 -59.7 165.4	8 05.3 -59.6 164.5	7 58.3 -59.5 163.5	7 50.9 -59.5 162.6	7 43.1 -59.4 161.6
17°	7 12.2 -59.6 165.6	7 05.7 -59.6 164.6	6 58.8 -59.6 163.6	6 51.4 -59.5 162.7	6 43.7 -59.4 161.7
18°	6 12.6 -59.6 165.7	6 06.1 -59.6 164.7	5 59.2 -59.5 163.8	5 51.9 -59.4 162.8	5 44.3 -59.5 161.9
19°	5 13.0 -59.7 165.8	5 06.5 -59.6 164.8	4 59.7 -59.5 163.9	4 52.5 -59.5 162.9	4 44.8 -59.4 162.0
20°	4 13.3 -59.6 165.9	4 06.9 -59.5 164.9	4 00.2 -59.6 164.0	3 53.0 -59.5 163.1	3 45.4 -59.4 162.1
21°	3 13.7 -59.6 166.0	3 07.4 -59.6 165.1	3 00.6 -59.5 164.1	2 53.5 -59.5 163.2	2 46.0 -59.5 162.3
22°	2 14.1 -59.7 166.1	2 07.8 -59.6 165.2	2 01.1 -59.6 164.3	1 54.0 -59.5 163.3	1 46.5 -59.4 162.4
23°	1 14.4 -59.6 166.2	1 08.2 -59.6 165.3	1 01.5 -59.5 164.4	0 54.5 -59.5 163.5	0 47.1 -59.4 162.6
24°	0 14.8 -59.7 166.3	0 08.6 -59.6 165.4	0 02.0 -59.5 164.5	-0 05.0 -59.4	-0 12.3 -59.4
25°	-0 44.9 -59.6	-0 51.0 -59.6	-0 57.5 -59.6	-1 04.4 -59.5	-1 11.7 -59.5
26°	-1 44.5 -59.6	-1 50.6 -59.6	-1 57.1 -59.5	-2 03.9 -59.5	-2 11.2 -59.4
27°	-2 44.1 -59.7	-2 50.2 -59.6	-2 56.6 -59.6	-3 03.4 -59.5	-3 10.6 -59.4
28°	-3 43.8 -59.6	-3 49.8 -59.6	-3 56.2 -59.5	-4 02.9 -59.5	-4 10.0 -59.5
29°	-4 43.4 -59.7	-4 49.4 -59.6	-4 55.7 -59.5	-5 02.4 -59.5	-5 09.5 -59.4

Dec	LHA 020° / 340°	LHA 021° / 339°	LHA 022° / 338°	LHA 023° / 337°	LHA 024° / 336°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	23 23.9 -59.2 158.1	23 14.3 -59.2 157.0	23 04.2 -59.2 156.0	22 53.6 -59.0 154.9	22 42.7 -59.0 153.8
1°	22 24.7 -59.3 158.3	22 15.1 -59.2 157.2	22 05.0 -59.1 156.2	21 54.6 -59.1 155.1	21 43.7 -59.0 154.0
2°	21 25.4 -59.3 158.5	21 15.9 -59.2 157.4	21 05.9 -59.1 156.3	20 55.5 -59.0 155.3	20 44.7 -59.0 154.2
3°	20 26.1 -59.2 158.6	20 16.7 -59.2 157.6	20 06.8 -59.2 156.5	19 56.5 -59.1 155.5	19 45.7 -59.0 154.4
4°	19 26.9 -59.3 158.8	19 17.5 -59.3 157.7	19 07.6 -59.1 156.7	18 57.4 -59.1 155.7	18 46.7 -59.0 154.6
5°	18 27.6 -59.3 158.9	18 18.2 -59.2 157.9	18 08.5 -59.2 156.9	17 58.3 -59.1 155.8	17 47.7 -59.0 154.8
6°	17 28.3 -59.4 159.1	17 19.0 -59.2 158.1	17 09.3 -59.2 157.1	16 59.2 -59.1 156.0	16 48.7 -59.0 155.0
7°	16 28.9 -59.3 159.3	16 19.8 -59.3 158.2	16 10.1 -59.1 157.2	16 00.1 -59.1 156.2	15 49.7 -59.1 155.2
8°	15 29.6 -59.3 159.4	15 20.5 -59.3 158.4	15 11.0 -59.2 157.4	15 01.0 -59.1 156.4	14 50.6 -59.0 155.4
9°	14 30.3 -59.3 159.6	14 21.2 -59.2 158.6	14 11.8 -59.2 157.6	14 01.9 -59.1 156.6	13 51.6 -59.1 155.6
10°	13 31.0 -59.4 159.7	13 22.0 -59.3 158.7	13 12.6 -59.2 157.7	13 02.8 -59.2 156.7	12 52.5 -59.0 155.7
11°	12 31.6 -59.3 159.9	12 22.7 -59.3 158.9	12 13.4 -59.2 157.9	12 03.6 -59.1 156.9	11 53.5 -59.1 155.9
12°	11 32.3 -59.4 160.0	11 23.4 -59.3 159.0	11 14.2 -59.3 158.1	11 04.5 -59.2 157.1	10 54.4 -59.1 156.1
13°	10 32.9 -59.3 160.2	10 24.1 -59.2 159.2	10 14.9 -59.2 158.2	10 05.3 -59.1 157.3	9 55.3 -59.0 156.3
14°	9 33.6 -59.4 160.3	9 24.9 -59.3 159.4	9 15.7 -59.2 158.4	9 06.2 -59.2 157.4	8 56.3 -59.1 156.5
15°	8 34.2 -59.3 160.5	8 25.6 -59.3 159.5	8 16.5 -59.2 158.6	8 07.0 -59.1 157.6	7 57.2 -59.1 156.6
16°	7 34.9 -59.4 160.6	7 26.3 -59.3 159.7	7 17.3 -59.3 158.7	7 07.9 -59.2 157.8	6 58.1 -59.1 156.8
17°	6 35.5 -59.3 160.8	6 27.0 -59.3 159.8	6 18.0 -59.2 158.9	6 08.7 -59.2 157.9	5 59.0 -59.1 157.0
18°	5 36.2 -59.4 160.9	5 27.7 -59.3 160.0	5 18.8 -59.2 159.0	5 09.5 -59.1 158.1	4 59.9 -59.1 157.2
19°	4 36.8 -59.4 161.1	4 28.4 -59.3 160.1	4 19.6 -59.3 159.2	4 10.4 -59.2 158.3	4 00.8 -59.1 157.3
20°	3 37.4 -59.3 161.2	3 29.1 -59.3 160.3	3 20.3 -59.2 159.4	3 11.2 -59.2 158.4	3 01.7 -59.1 157.5
21°	2 38.1 -59.4 161.4	2 29.8 -59.3 160.4	2 21.1 -59.3 159.5	2 12.0 -59.2 158.6	2 02.6 -59.1 157.7
22°	1 38.7 -59.4 161.5	1 30.5 -59.4 160.6	1 21.8 -59.2 159.7	1 12.8 -59.1 158.8	1 03.5 -59.1 157.8
23°	0 39.3 -59.3 161.6	0 31.1 -59.3 160.7	0 22.6 -59.2 159.8	0 13.7 -59.2 158.9	0 04.4 -59.2 158.0
24°	-0 20.0 -59.4	-0 28.2 -59.3	-0 36.6 -59.3	-0 45.5 -59.2	-0 54.8 -59.1
25°	-1 19.4 -59.4	-1 27.5 -59.3	-1 35.9 -59.2	-1 44.7 -59.2	-1 53.9 -59.1
26°	-2 18.8 -59.4	-2 26.8 -59.3	-2 35.1 -59.3	-2 43.9 -59.1	-2 53.0 -59.1
27°	-3 18.2 -59.3	-3 26.1 -59.3	-3 34.4 -59.2	-3 43.0 -59.2	-3 52.1 -59.1
28°	-4 17.5 -59.4	-4 25.4 -59.3	-4 33.6 -59.3	-4 42.2 -59.2	-4 51.2 -59.1
29°	-5 16.9 -59.3	-5 24.7 -59.3	-5 32.9 -59.2	-5 41.4 -59.1	-5 50.3 -59.1

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	22 31.3 -58.9 152.8	22 19.5 -58.8 151.7	22 07.2 -58.7 150.7	21 54.6 -58.6 149.6	21 41.6 -58.6 148.5
1°	21 32.4 -58.9 153.0	21 20.7 -58.9 151.9	21 08.5 -58.7 150.9	20 56.0 -58.7 149.8	20 43.0 -58.5 148.8
2°	20 33.5 -58.9 153.2	20 21.8 -58.8 152.1	20 09.8 -58.7 151.1	19 57.3 -58.6 150.1	19 44.5 -58.6 149.0
3°	19 34.6 -58.9 153.4	19 23.0 -58.8 152.3	19 11.1 -58.8 151.3	18 58.7 -58.7 150.3	18 45.9 -58.6 149.2
4°	18 35.7 -59.0 153.6	18 24.2 -58.9 152.6	18 12.3 -58.8 151.5	18 00.0 -58.7 150.5	17 47.3 -58.6 149.5
5°	17 36.7 -58.9 153.8	17 25.3 -58.8 152.8	17 13.5 -58.8 151.7	17 01.3 -58.7 150.7	16 48.7 -58.6 149.7
6°	16 37.8 -59.0 154.0	16 26.5 -58.9 153.0	16 14.7 -58.8 151.9	16 02.6 -58.7 150.9	15 50.1 -58.6 149.9
7°	15 38.8 -58.9 154.2	15 27.6 -58.9 153.2	15 15.9 -58.8 152.2	15 03.9 -58.7 151.1	14 51.5 -58.7 150.1
8°	14 39.9 -59.0 154.4	14 28.7 -58.9 153.4	14 17.1 -58.8 152.4	14 05.2 -58.8 151.4	13 52.8 -58.6 150.4
9°	13 40.9 -59.0 154.6	13 29.8 -58.9 153.6	13 18.3 -58.8 152.6	13 06.4 -58.7 151.6	12 54.2 -58.7 150.6
10°	12 41.9 -59.0 154.7	12 30.9 -58.9 153.8	12 19.5 -58.8 152.8	12 07.7 -58.8 151.8	11 55.5 -58.7 150.8
11°	11 42.9 -59.0 154.9	11 32.0 -58.9 153.9	11 20.7 -58.9 153.0	11 08.9 -58.7 152.0	10 56.8 -58.6 151.0
12°	10 43.9 -59.0 155.1	10 33.1 -59.0 154.1	10 21.8 -58.8 153.2	10 10.2 -58.8 152.2	9 58.2 -58.7 151.2
13°	9 44.9 -59.0 155.3	9 34.1 -58.9 154.3	9 23.0 -58.9 153.4	9 11.4 -58.8 152.4	8 59.5 -58.7 151.4
14°	8 45.9 -59.0 155.5	8 35.2 -58.9 154.5	8 24.1 -58.9 153.6	8 12.6 -58.8 152.6	8 00.8 -58.7 151.6
15°	7 46.9 -59.0 155.7	7 36.3 -59.0 154.7	7 25.2 -58.8 153.8	7 13.8 -58.7 152.8	7 02.1 -58.7 151.8
16°	6 47.9 -59.0 155.9	6 37.3 -58.9 154.9	6 26.4 -58.9 153.9	6 15.1 -58.8 153.0	6 03.4 -58.8 152.1
17°	5 48.9 -59.1 156.0	5 38.4 -59.0 155.1	5 27.5 -58.9 154.1	5 16.3 -58.8 153.2	5 04.6 -58.7 152.3
18°	4 49.8 -59.0 156.2	4 39.4 -58.9 155.3	4 28.6 -58.9 154.3	4 17.5 -58.8 153.4	4 05.9 -58.7 152.5
19°	3 50.8 -59.0 156.4	3 40.5 -59.0 155.5	3 29.7 -58.8 154.5	3 18.7 -58.8 153.6	3 07.2 -58.7 152.7
20°	2 51.8 -59.1 156.6	2 41.5 -59.0 155.6	2 30.9 -58.9 154.7	2 19.9 -58.9 153.8	2 08.5 -58.8 152.9
21°	1 52.7 -59.0 156.7	1 42.5 -58.9 155.8	1 32.0 -58.9 154.9	1 21.0 -58.8 154.0	1 09.7 -58.7 153.1
22°	0 53.7 -59.0 156.9	0 43.6 -59.0 156.0	0 33.1 -58.9 155.1	0 22.2 -58.8 154.2	0 11.0 -58.7 153.3
23°	-0 05.3 -59.1	-0 15.4 -58.9	-0 25.8 -58.9	-0 36.6 -58.8	-0 47.7 -58.7
24°	-1 04.4 -59.0	-1 14.3 -59.0	-1 24.7 -58.9	-1 35.4 -58.8	-1 46.4 -58.8
25°	-2 03.4 -59.0	-2 13.3 -59.0	-2 23.6 -58.8	-2 34.2 -58.8	-2 45.2 -58.7
26°	-3 02.4 -59.1	-3 12.3 -58.9	-3 22.4 -58.9	-3 33.0 -58.8	-3 43.9 -58.7
27°	-4 01.5 -59.0	-4 11.2 -59.0	-4 21.3 -58.9	-4 31.8 -58.8	-4 42.6 -58.7
28°	-5 00.5 -59.0	-5 10.2 -58.9	-5 20.2 -58.9	-5 30.6 -58.8	-5 41.3 -58.7
29°	-5 59.5 -59.0	-6 09.1 -59.0	-6 19.1 -58.8	-6 29.4 -58.8	-6 40.0 -58.7

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	21 28.1 -58.4 147.5	21 14.3 -58.3 146.5	21 00.1 -58.2 145.4	20 45.5 -58.1 144.4	20 30.6 -58.1 143.3
1°	20 29.7 -58.5 147.7	20 16.0 -58.4 146.7	20 01.9 -58.3 145.7	19 47.4 -58.2 144.6	19 32.5 -58.1 143.6
2°	19 31.2 -58.4 148.0	19 17.6 -58.4 147.0	19 03.6 -58.3 145.9	18 49.2 -58.2 144.9	18 34.4 -58.1 143.9
3°	18 32.8 -58.5 148.2	18 19.2 -58.4 147.2	18 05.3 -58.3 146.2	17 51.0 -58.3 145.2	17 36.3 -58.1 144.1
4°	17 34.3 -58.6 148.5	17 20.8 -58.4 147.4	17 07.0 -58.4 146.4	16 52.7 -58.2 145.4	16 38.2 -58.2 144.4
5°	16 35.7 -58.5 148.7	16 22.4 -58.5 147.7	16 08.6 -58.3 146.7	15 54.5 -58.3 145.7	15 40.0 -58.2 144.7
6°	15 37.2 -58.5 148.9	15 23.9 -58.4 147.9	15 10.3 -58.4 146.9	14 56.2 -58.2 145.9	14 41.8 -58.2 144.9
7°	14 38.7 -58.6 149.1	14 25.5 -58.5 148.1	14 11.9 -58.4 147.1	13 58.0 -58.3 146.1	13 43.6 -58.2 145.2
8°	13 40.1 -58.6 149.4	13 27.0 -58.5 148.4	13 13.5 -58.4 147.4	12 59.7 -58.3 146.4	12 45.4 -58.2 145.4
9°	12 41.5 -58.5 149.6	12 28.5 -58.5 148.6	12 15.1 -58.4 147.6	12 01.4 -58.4 146.6	11 47.2 -58.2 145.7
10°	11 43.0 -58.6 149.8	11 30.0 -58.5 148.8	11 16.7 -58.4 147.8	11 03.0 -58.3 146.9	10 49.0 -58.3 145.9
11°	10 44.4 -58.6 150.0	10 31.5 -58.5 149.1	10 18.3 -58.4 148.1	10 04.7 -58.3 147.1	9 50.7 -58.2 146.1
12°	9 45.8 -58.6 150.2	9 33.0 -58.5 149.3	9 19.9 -58.5 148.3	9 06.4 -58.4 147.3	8 52.5 -58.3 146.4
13°	8 47.2 -58.7 150.5	8 34.5 -58.6 149.5	8 21.4 -58.4 148.5	8 08.0 -58.4 147.6	7 54.2 -58.2 146.6
14°	7 48.5 -58.6 150.7	7 35.9 -58.5 149.7	7 23.0 -58.5 148.8	7 09.6 -58.3 147.8	6 56.0 -58.3 146.9
15°	6 49.9 -58.6 150.9	6 37.4 -58.5 149.9	6 24.5 -58.4 149.0	6 11.3 -58.4 148.1	5 57.7 -58.3 147.1
16°	5 51.3 -58.6 151.1	5 38.9 -58.6 150.2	5 26.1 -58.5 149.2	5 12.9 -58.4 148.3	4 59.4 -58.3 147.3
17°	4 52.7 -58.7 151.3	4 40.3 -58.5 150.4	4 27.6 -58.5 149.4	4 14.5 -58.4 148.5	4 01.1 -58.3 147.6
18°	3 54.0 -58.6 151.5	3 41.8 -58.6 150.6	3 29.1 -58.4 149.7	3 16.1 -58.3 148.7	3 02.8 -58.3 147.8
19°	2 55.4 -58.7 151.7	2 43.2 -58.6 150.8	2 30.7 -58.5 149.9	2 17.8 -58.4 149.0	2 04.5 -58.3 148.1
20°	1 56.7 -58.6 152.0	1 44.6 -58.5 151.0	1 32.2 -58.5 150.1	1 19.4 -58.4 149.2	1 06.2 -58.3 148.3
21°	0 58.1 -58.7 152.2	0 46.1 -58.6 151.3	0 33.7 -58.5 150.3	0 21.0 -58.4 149.4	0 07.9 -58.3 148.5
22°	-0 00.6 -58.6	-0 12.5 -58.5	-0 24.8 -58.4	-0 37.4 -58.4	-0 50.4 -58.3
23°	-0 59.2 -58.6	-1 11.0 -58.6	-1 23.2 -58.5	-1 35.8 -58.4	-1 48.7 -58.3
24°	-1 57.8 -58.7	-2 09.6 -58.6	-2 21.7 -58.5	-2 34.2 -58.4	-2 47.0 -58.3
25°	-2 56.5 -58.6	-3 08.2 -58.5	-3 20.2 -58.5	-3 32.6 -58.3	-3 45.3 -58.3
26°	-3 55.1 -58.7	-4 06.7 -58.6	-4 18.7 -58.4	-4 30.9 -58.4	-4 43.6 -58.3
27°	-4 53.8 -58.6	-5 05.3 -58.5	-5 17.1 -58.5	-5 29.3 -58.4	-5 41.9 -58.2
28°	-5 52.4 -58.6	-6 03.8 -58.6	-6 15.6 -58.4	-6 27.7 -58.4	-6 40.1 -58.3
29°	-6 51.0 -58.6	-7 02.4 -58.5	-7 14.0 -58.5	-7 26.1 -58.3	-7 38.4 -58.3

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	20 15.3 -58.0 142.3	19 59.6 -57.9 141.3	19 43.5 -57.7 140.3	19 27.2 -57.7 139.2	19 10.4 -57.6 138.2
1°	19 17.3 -58.0 142.6	19 01.7 -57.9 141.6	18 45.8 -57.8 140.5	18 29.5 -57.7 139.5	18 12.8 -57.6 138.5
2°	18 19.3 -58.0 142.9	18 03.8 -57.9 141.8	17 48.0 -57.9 140.8	17 31.8 -57.8 139.8	17 15.2 -57.6 138.8
3°	17 21.3 -58.1 143.1	17 05.9 -58.0 142.1	16 50.1 -57.8 141.1	16 34.0 -57.7 140.1	16 17.6 -57.7 139.1
4°	16 23.2 -58.0 143.4	16 07.9 -57.9 142.4	15 52.3 -57.9 141.4	15 36.3 -57.8 140.4	15 19.9 -57.7 139.4
5°	15 25.2 -58.1 143.6	15 10.0 -58.0 142.7	14 54.4 -57.9 141.7	14 38.5 -57.8 140.7	14 22.2 -57.7 139.7
6°	14 27.1 -58.1 143.9	14 12.0 -58.0 142.9	13 56.5 -57.9 141.9	13 40.7 -57.8 140.9	13 24.5 -57.7 140.0
7°	13 29.0 -58.1 144.2	13 14.0 -58.1 143.2	12 58.6 -57.9 142.2	12 42.9 -57.9 141.2	12 26.8 -57.7 140.2
8°	12 30.9 -58.2 144.4	12 15.9 -58.0 143.4	12 00.7 -58.0 142.5	11 45.0 -57.8 141.5	11 29.1 -57.8 140.5
9°	11 32.7 -58.1 144.7	11 17.9 -58.0 143.7	11 02.7 -57.9 142.7	10 47.2 -57.9 141.8	10 31.3 -57.7 140.8
10°	10 34.6 -58.2 144.9	10 19.9 -58.1 144.0	10 04.8 -58.0 143.0	9 49.3 -57.9 142.0	9 33.6 -57.8 141.1
11°	9 36.4 -58.1 145.2	9 21.8 -58.1 144.2	9 06.8 -58.0 143.3	8 51.4 -57.8 142.3	8 35.8 -57.8 141.3
12°	8 38.3 -58.2 145.4	8 23.7 -58.1 144.5	8 08.8 -58.0 143.5	7 53.6 -57.9 142.6	7 38.0 -57.8 141.6
13°	7 40.1 -58.2 145.7	7 25.6 -58.1 144.7	7 10.8 -58.0 143.8	6 55.7 -57.9 142.8	6 40.2 -57.8 141.9
14°	6 41.9 -58.2 145.9	6 27.5 -58.1 145.0	6 12.8 -58.0 144.0	5 57.8 -58.0 143.1	5 42.4 -57.9 142.1
15°	5 43.7 -58.2 146.2	5 29.4 -58.1 145.2	5 14.8 -58.0 144.3	4 59.8 -57.9 143.3	4 44.5 -57.8 142.4
16°	4 45.5 -58.2 146.4	4 31.3 -58.1 145.5	4 16.8 -58.0 144.5	4 01.9 -57.9 143.6	3 46.7 -57.8 142.7
17°	3 47.3 -58.2 146.7	3 33.2 -58.1 145.7	3 18.8 -58.0 144.8	3 04.0 -57.9 143.9	2 48.9 -57.9 142.9
18°	2 49.1 -58.2 146.9	2 35.1 -58.1 146.0	2 20.8 -58.1 145.1	2 06.1 -58.0 144.1	1 51.0 -57.8 143.2
19°	1 50.9 -58.2 147.1	1 37.0 -58.1 146.2	1 22.7 -58.0 145.3	1 08.1 -57.9 144.4	0 53.2 -57.8 143.5
20°	0 52.7 -58.2 147.4	0 38.9 -58.1 146.5	0 24.7 -58.0 145.6	0 10.2 -57.9 144.7	-0 04.6 -57.9
21°	-0 05.5 -58.2	-0 19.2 -58.2	-0 33.3 -58.0	-0 47.7 -58.0	-1 02.5 -57.8
22°	-1 03.7 -58.2	-1 17.4 -58.1	-1 31.3 -58.1	-1 45.7 -57.9	-2 00.3 -57.8
23°	-2 01.9 -58.2	-2 15.5 -58.1	-2 29.4 -58.0	-2 43.6 -57.9	-2 58.1 -57.9
24°	-3 00.1 -58.2	-3 13.6 -58.1	-3 27.4 -58.0	-3 41.5 -57.9	-3 56.0 -57.8
25°	-3 58.3 -58.2	-4 11.7 -58.1	-4 25.4 -58.0	-4 39.4 -58.0	-4 53.8 -57.8
26°	-4 56.5 -58.2	-5 09.8 -58.1	-5 23.4 -58.0	-5 37.4 -57.9	-5 51.6 -57.8
27°	-5 54.7 -58.2	-6 07.9 -58.1	-6 21.4 -58.0	-6 35.3 -57.9	-6 49.4 -57.8
28°	-6 52.9 -58.2	-7 06.0 -58.1	-7 19.4 -58.0	-7 33.2 -57.9	-7 47.2 -57.8
29°	-7 51.1 -58.2	-8 04.1 -58.1	-8 17.4 -58.0	-8 31.1 -57.8	-8 45.0 -57.8

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	18 53.4 -57.5 137.2	18 36.0 -57.4 136.2	18 18.3 -57.3 135.2	18 00.2 -57.2 134.2	17 41.9 -57.1 133.2
1°	17 55.9 -57.5 137.5	17 38.6 -57.4 136.5	17 21.0 -57.3 135.5	17 03.0 -57.2 134.5	16 44.8 -57.1 133.5
2°	16 58.4 -57.6 137.8	16 41.2 -57.5 136.8	16 23.7 -57.4 135.8	16 05.8 -57.2 134.8	15 47.7 -57.2 133.8
3°	16 00.8 -57.5 138.1	15 43.7 -57.4 137.1	15 26.3 -57.4 136.1	15 08.6 -57.3 135.1	14 50.5 -57.1 134.1
4°	15 03.3 -57.6 138.4	14 46.3 -57.5 137.4	14 28.9 -57.4 136.4	14 11.3 -57.3 135.4	13 53.4 -57.3 134.5
5°	14 05.7 -57.6 138.7	13 48.8 -57.5 137.7	13 31.5 -57.4 136.7	13 14.0 -57.3 135.7	12 56.1 -57.2 134.8
6°	13 08.1 -57.7 139.0	12 51.3 -57.6 138.0	12 34.1 -57.4 137.0	12 16.7 -57.4 136.0	11 58.9 -57.2 135.1
7°	12 10.4 -57.6 139.3	11 53.7 -57.5 138.3	11 36.7 -57.5 137.3	11 19.3 -57.3 136.3	11 01.7 -57.3 135.4
8°	11 12.8 -57.7 139.5	10 56.2 -57.6 138.6	10 39.2 -57.4 137.6	10 22.0 -57.4 136.6	10 04.4 -57.3 135.7
9°	10 15.1 -57.6 139.8	9 58.6 -57.6 138.9	9 41.8 -57.5 137.9	9 24.6 -57.4 136.9	9 07.1 -57.3 136.0
10°	9 17.5 -57.7 140.1	9 01.0 -57.6 139.1	8 44.3 -57.5 138.2	8 27.2 -57.4 137.2	8 09.8 -57.3 136.3
11°	8 19.8 -57.7 140.4	8 03.4 -57.6 139.4	7 46.8 -57.5 138.5	7 29.8 -57.4 137.5	7 12.5 -57.3 136.6
12°	7 22.1 -57.7 140.7	7 05.8 -57.6 139.7	6 49.3 -57.5 138.8	6 32.4 -57.4 137.8	6 15.2 -57.3 136.9
13°	6 24.4 -57.8 140.9	6 08.2 -57.6 140.0	5 51.8 -57.6 139.0	5 35.0 -57.5 138.1	5 17.9 -57.3 137.2
14°	5 26.6 -57.7 141.2	5 10.6 -57.6 140.3	4 54.2 -57.5 139.3	4 37.5 -57.4 138.4	4 20.6 -57.4 137.5
15°	4 28.9 -57.7 141.5	4 13.0 -57.7 140.5	3 56.7 -57.6 139.6	3 40.1 -57.4 138.7	3 23.2 -57.3 137.8
16°	3 31.2 -57.8 141.8	3 15.3 -57.6 140.8	2 59.1 -57.5 139.9	2 42.7 -57.5 139.0	2 25.9 -57.4 138.1
17°	2 33.4 -57.7 142.0	2 17.7 -57.7 141.1	2 01.6 -57.5 140.2	1 45.2 -57.4 139.3	1 28.5 -57.3 138.4
18°	1 35.7 -57.7 142.3	1 20.0 -57.6 141.4	1 04.1 -57.6 140.5	0 47.8 -57.5 139.6	0 31.2 -57.4 138.6
19°	0 38.0 -57.8 142.6	0 22.4 -57.7 141.7	0 06.5 -57.6 140.8	-0 09.7 -57.5	-0 26.2 -57.4
20°	-0 19.8 -57.7	-0 35.3 -57.6	-0 51.1 -57.5	-1 07.2 -57.4	-1 23.6 -57.3
21°	-1 17.5 -57.8	-1 32.9 -57.7	-1 48.6 -57.5	-2 04.6 -57.5	-2 20.9 -57.4
22°	-2 15.3 -57.7	-2 30.6 -57.6	-2 46.1 -57.6	-3 02.1 -57.4	-3 18.3 -57.3
23°	-3 13.0 -57.7	-3 28.2 -57.6	-3 43.7 -57.5	-3 59.5 -57.4	-4 15.6 -57.3
24°	-4 10.7 -57.8	-4 25.8 -57.7	-4 41.2 -57.6	-4 56.9 -57.5	-5 12.9 -57.4
25°	-5 08.5 -57.7	-5 23.5 -57.6	-5 38.8 -57.5	-5 54.4 -57.4	-6 10.3 -57.3
26°	-6 06.2 -57.7	-6 21.1 -57.6	-6 36.3 -57.5	-6 51.8 -57.4	-7 07.6 -57.3
27°	-7 03.9 -57.7	-7 18.7 -57.6	-7 33.8 -57.5	-7 49.2 -57.4	-8 04.9 -57.3
28°	-8 01.6 -57.7	-8 16.3 -57.6	-8 31.3 -57.5	-8 46.6 -57.4	-9 02.2 -57.3
29°	-8 59.3 -57.7	-9 13.9 -57.6	-9 28.8 -57.5	-9 44.0 -57.3	-9 59.5 -57.2

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	17 23.3 -57.0 132.2	17 04.3 -56.9 131.2	16 45.1 -56.8 130.2	16 25.6 -56.7 129.2	16 05.8 -56.6 128.2
1°	16 26.3 -57.1 132.5	16 07.4 -56.9 131.5	15 48.3 -56.8 130.5	15 28.9 -56.8 129.6	15 09.2 -56.6 128.6
2°	15 29.2 -57.0 132.8	15 10.5 -57.0 131.9	14 51.5 -56.9 130.9	14 32.1 -56.7 129.9	14 12.6 -56.7 128.9
3°	14 32.2 -57.1 133.2	14 13.5 -56.9 132.2	13 54.6 -56.9 131.2	13 35.4 -56.8 130.2	13 15.9 -56.7 129.3
4°	13 35.1 -57.1 133.5	13 16.6 -57.1 132.5	12 57.7 -56.9 131.5	12 38.6 -56.8 130.6	12 19.2 -56.7 129.6
5°	12 38.0 -57.1 133.8	12 19.5 -57.0 132.8	12 00.8 -56.9 131.9	11 41.8 -56.9 130.9	11 22.5 -56.8 129.9
6°	11 40.9 -57.2 134.1	11 22.5 -57.0 133.1	11 03.9 -57.0 132.2	10 44.9 -56.8 131.2	10 25.7 -56.8 130.3
7°	10 43.7 -57.1 134.4	10 25.5 -57.1 133.5	10 06.9 -57.0 132.5	9 48.1 -56.9 131.5	9 28.9 -56.7 130.6
8°	9 46.6 -57.2 134.7	9 28.4 -57.1 133.8	9 09.9 -57.0 132.8	8 51.2 -56.9 131.9	8 32.2 -56.8 130.9
9°	8 49.4 -57.2 135.0	8 31.3 -57.1 134.1	8 12.9 -57.0 133.1	7 54.3 -56.9 132.2	7 35.4 -56.9 131.2
10°	7 52.2 -57.2 135.3	7 34.2 -57.1 134.4	7 15.9 -57.0 133.4	6 57.4 -56.9 132.5	6 38.5 -56.8 131.6
11°	6 55.0 -57.3 135.6	6 37.1 -57.1 134.7	6 18.9 -57.0 133.8	6 00.5 -57.0 132.8	5 41.7 -56.8 131.9
12°	5 57.7 -57.2 135.9	5 40.0 -57.2 135.0	5 21.9 -57.1 134.1	5 03.5 -56.9 133.1	4 44.9 -56.9 132.2
13°	5 00.5 -57.2 136.2	4 42.8 -57.1 135.3	4 24.8 -57.0 134.4	4 06.6 -57.0 133.5	3 48.0 -56.8 132.5
14°	4 03.3 -57.3 136.5	3 45.7 -57.2 135.6	3 27.8 -57.1 134.7	3 09.6 -56.9 133.8	2 51.2 -56.9 132.8
15°	3 06.0 -57.2 136.8	2 48.5 -57.1 135.9	2 30.7 -57.0 135.0	2 12.7 -57.0 134.1	1 54.3 -56.9 133.2
16°	2 08.8 -57.3 137.1	1 51.4 -57.2 136.2	1 33.7 -57.1 135.3	1 15.7 -57.0 134.4	0 57.4 -56.8 133.5
17°	1 11.5 -57.2 137.4	0 54.2 -57.1 136.5	0 36.6 -57.0 135.6	0 18.7 -56.9 134.7	0 00.6 -56.9 133.8
18°	0 14.3 -57.3 137.7	-0 02.9 -57.2	-0 20.4 -57.1	-0 38.2 -57.0	-0 56.3 -56.9
19°	-0 43.0 -57.3	-1 00.1 -57.2	-1 17.5 -57.1	-1 35.2 -56.9	-1 53.2 -56.8
20°	-1 40.3 -57.2	-1 57.3 -57.1	-2 14.6 -57.0	-2 32.1 -57.0	-2 50.0 -56.9
21°	-2 37.5 -57.3	-2 54.4 -57.2	-3 11.6 -57.1	-3 29.1 -56.9	-3 46.9 -56.8
22°	-3 34.8 -57.2	-3 51.6 -57.1	-4 08.7 -57.0	-4 26.0 -57.0	-4 43.7 -56.9
23°	-4 32.0 -57.2	-4 48.7 -57.2	-5 05.7 -57.0	-5 23.0 -56.9	-5 40.6 -56.8
24°	-5 29.2 -57.3	-5 45.9 -57.1	-6 02.7 -57.1	-6 19.9 -56.9	-6 37.4 -56.8
25°	-6 26.5 -57.2	-6 43.0 -57.1	-6 59.8 -57.0	-7 16.8 -56.9	-7 34.2 -56.8
26°	-7 23.7 -57.2	-7 40.1 -57.1	-7 56.8 -57.0	-8 13.7 -56.9	-8 31.0 -56.8
27°	-8 20.9 -57.2	-8 37.2 -57.1	-8 53.8 -57.0	-9 10.6 -56.9	-9 27.8 -56.8
28°	-9 18.1 -57.2	-9 34.3 -57.0	-9 50.8 -56.9		
29°					

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	15 45.8 -56.6 127.3	15 25.4 -56.4 126.3	15 04.9 -56.4 125.3	14 44.1 -56.3 124.3	14 23.0 -56.2 123.4
1°	14 49.2 -56.5 127.6	14 29.0 -56.4 126.6	14 08.5 -56.3 125.7	13 47.8 -56.3 124.7	13 26.8 -56.1 123.7
2°	13 52.7 -56.6 127.9	13 32.6 -56.5 127.0	13 12.2 -56.4 126.0	12 51.5 -56.3 125.0	12 30.7 -56.3 124.1
3°	12 56.1 -56.6 128.3	12 36.1 -56.5 127.3	12 15.8 -56.4 126.4	11 55.2 -56.3 125.4	11 34.4 -56.2 124.4
4°	11 59.5 -56.6 128.6	11 39.6 -56.6 127.7	11 19.4 -56.5 126.7	10 58.9 -56.3 125.8	10 38.2 -56.3 124.8
5°	11 02.9 -56.7 129.0	10 43.0 -56.5 128.0	10 22.9 -56.4 127.1	10 02.6 -56.4 126.1	9 41.9 -56.2 125.2
6°	10 06.2 -56.6 129.3	9 46.5 -56.6 128.3	9 26.5 -56.5 127.4	9 06.2 -56.4 126.4	8 45.7 -56.3 125.5
7°	9 09.6 -56.7 129.6	8 49.9 -56.6 128.7	8 30.0 -56.5 127.7	8 09.8 -56.4 126.8	7 49.4 -56.4 125.9
8°	8 12.9 -56.7 130.0	7 53.3 -56.6 129.0	7 33.5 -56.6 128.1	7 13.4 -56.5 127.1	6 53.0 -56.3 126.2
9°	7 16.2 -56.8 130.3	6 56.7 -56.6 129.4	6 36.9 -56.5 128.4	6 16.9 -56.4 127.5	5 56.7 -56.4 126.5
10°	6 19.4 -56.7 130.6	6 00.1 -56.7 129.7	5 40.4 -56.5 128.8	5 20.5 -56.5 127.8	5 00.3 -56.3 126.9
11°	5 22.7 -56.7 130.9	5 03.4 -56.6 130.0	4 43.9 -56.6 129.1	4 24.0 -56.4 128.2	4 04.0 -56.4 127.2
12°	4 26.0 -56.8 131.3	4 06.8 -56.7 130.3	3 47.3 -56.6 129.4	3 27.6 -56.5 128.5	3 07.6 -56.4 127.6
13°	3 29.2 -56.8 131.6	3 10.1 -56.7 130.7	2 50.7 -56.5 129.8	2 31.1 -56.5 128.8	2 11.2 -56.3 127.9
14°	2 32.4 -56.7 131.9	2 13.4 -56.6 131.0	1 54.2 -56.6 130.1	1 34.6 -56.4 129.2	1 14.9 -56.4 128.3
15°	1 35.7 -56.8 132.2	1 16.8 -56.7 131.3	0 57.6 -56.6 130.4	0 38.2 -56.5 129.5	0 18.5 -56.4 128.6
16°	0 38.9 -56.8 132.6	0 20.1 -56.7 131.7	0 01.0 -56.5 130.8	-0 18.3 -56.5	-0 37.9 -56.4
17°	-0 17.9 -56.7	-0 36.6 -56.6	-0 55.5 -56.6	-1 14.8 -56.5	-1 34.3 -56.4
18°	-1 14.6 -56.8	-1 33.2 -56.7	-1 52.1 -56.6	-2 11.3 -56.4	-2 30.7 -56.3
19°	-2 11.4 -56.8	-2 29.9 -56.7	-2 48.7 -56.6	-3 07.7 -56.5	-3 27.0 -56.4
20°	-3 08.2 -56.7	-3 26.6 -56.6	-3 45.3 -56.5	-4 04.2 -56.5	-4 23.4 -56.4
21°	-4 04.9 -56.8	-4 23.2 -56.7	-4 41.8 -56.6	-5 00.7 -56.4	-5 19.8 -56.3
22°	-5 01.7 -56.7	-5 19.9 -56.6	-5 38.4 -56.5	-5 57.1 -56.4	-6 16.1 -56.3
23°	-5 58.4 -56.7	-6 16.5 -56.6	-6 34.9 -56.5	-6 53.5 -56.5	-7 12.4 -56.4
24°	-6 55.1 -56.7	-7 13.1 -56.6	-7 31.4 -56.5	-7 50.0 -56.4	-8 08.8 -56.3
25°	-7 51.8 -56.7	-8 09.7 -56.6	-8 27.9 -56.5	-8 46.4 -56.3	-9 05.1 -56.2
26°	-8 48.5 -56.7	-9 06.3 -56.6	-9 24.4 -56.5	-9 42.7 -56.4	
27°	-9 45.2 -56.7				
28°					
29°					

Dec	LHA 055° / 305°	LHA 056° / 304°	LHA 057° / 303°	LHA 058° / 302°	LHA 059° / 301°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	14 01.7 -56.1 122.4	13 40.2 -56.0 121.4	13 18.4 -55.9 120.5	12 56.5 -55.8 119.5	12 34.3 -55.7 118.6
1°	13 05.6 -56.1 122.8	12 44.2 -56.0 121.8	12 22.5 -55.9 120.9	12 00.7 -55.9 119.9	11 38.6 -55.8 119.0
2°	12 09.5 -56.1 123.1	11 48.2 -56.0 122.2	11 26.6 -55.9 121.2	11 04.8 -55.8 120.3	10 42.8 -55.8 119.3
3°	11 13.4 -56.1 123.5	10 52.2 -56.1 122.5	10 30.7 -56.0 121.6	10 09.0 -55.9 120.6	9 47.0 -55.8 119.7
4°	10 17.3 -56.2 123.8	9 56.1 -56.1 122.9	9 34.7 -56.0 122.0	9 13.1 -56.0 121.0	8 51.2 -55.8 120.1
5°	9 21.1 -56.2 124.2	9 00.0 -56.1 123.3	8 38.7 -56.0 122.3	8 17.1 -55.9 121.4	7 55.4 -55.9 120.4
6°	8 24.9 -56.2 124.6	8 03.9 -56.1 123.6	7 42.7 -56.1 122.7	7 21.2 -55.9 121.7	6 59.5 -55.8 120.8
7°	7 28.7 -56.3 124.9	7 07.8 -56.2 124.0	6 46.6 -56.0 123.0	6 25.3 -56.0 122.1	6 03.7 -55.9 121.2
8°	6 32.4 -56.2 125.3	6 11.6 -56.1 124.3	5 50.6 -56.1 123.4	5 29.3 -56.0 122.5	5 07.8 -55.9 121.5
9°	5 36.2 -56.3 125.6	5 15.5 -56.2 124.7	4 54.5 -56.1 123.8	4 33.3 -56.0 122.8	4 11.9 -55.9 121.9
10°	4 39.9 -56.2 126.0	4 19.3 -56.2 125.0	3 58.4 -56.1 124.1	3 37.3 -56.0 123.2	3 16.0 -55.9 122.3
11°	3 43.7 -56.3 126.3	3 23.1 -56.2 125.4	3 02.3 -56.1 124.5	2 41.3 -56.0 123.6	2 20.1 -55.9 122.6
12°	2 47.4 -56.3 126.7	2 26.9 -56.2 125.7	2 06.2 -56.1 124.8	1 45.3 -56.0 123.9	1 24.2 -56.0 123.0
13°	1 51.1 -56.3 127.0	1 30.7 -56.2 126.1	1 10.1 -56.1 125.2	0 49.3 -56.0 124.3	0 28.2 -55.9 123.4
14°	0 54.8 -56.3 127.4	0 34.5 -56.1 126.4	0 14.0 -56.1 125.5	-0 06.7 -56.0	-0 27.7 -55.9
15°	-0 01.5 -56.3	-0 21.6 -56.2	-0 42.1 -56.1	-1 02.7 -56.0	-1 23.6 -55.9
16°	-0 57.8 -56.2	-1 17.8 -56.2	-1 38.2 -56.1	-1 58.7 -56.1	-2 19.5 -56.0
17°	-1 54.0 -56.3	-2 14.0 -56.2	-2 34.3 -56.1	-2 54.8 -55.9	-3 15.5 -55.9
18°	-2 50.3 -56.3	-3 10.2 -56.2	-3 30.4 -56.1	-3 50.7 -56.0	-4 11.4 -55.9
19°	-3 46.6 -56.3	-4 06.4 -56.2	-4 26.5 -56.0	-4 46.7 -56.0	-5 07.3 -55.8
20°	-4 42.9 -56.2	-5 02.6 -56.1	-5 22.5 -56.1	-5 42.7 -56.0	-6 03.1 -55.9
21°	-5 39.1 -56.3	-5 58.7 -56.2	-6 18.6 -56.0	-6 38.7 -55.9	-6 59.0 -55.9
22°	-6 35.4 -56.2	-6 54.9 -56.1	-7 14.6 -56.1	-7 34.6 -56.0	-7 54.9 -55.8
23°	-7 31.6 -56.2	-7 51.0 -56.1	-8 10.7 -56.0	-8 30.6 -55.9	-8 50.7 -55.8
24°	-8 27.8 -56.2	-8 47.1 -56.1	-9 06.7 -56.0	-9 26.5 -55.9	-9 46.5 -55.8
25°	-9 24.0 -56.2	-9 43.2 -56.1			
26°					
27°					
28°					
29°					

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	12 11.9 -55.6 117.6	11 49.4 -55.6 116.7	11 26.6 -55.5 115.7	11 03.7 -55.4 114.8	10 40.6 -55.4 113.8
1°	11 16.3 -55.7 118.0	10 53.8 -55.6 117.1	10 31.1 -55.5 116.1	10 08.3 -55.5 115.2	9 45.2 -55.3 114.2
2°	10 20.6 -55.7 118.4	9 58.2 -55.6 117.4	9 35.6 -55.5 116.5	9 12.8 -55.4 115.6	8 49.9 -55.4 114.6
3°	9 24.9 -55.7 118.8	9 02.6 -55.7 117.8	8 40.1 -55.6 116.9	8 17.4 -55.5 115.9	7 54.5 -55.5 115.0
4°	8 29.2 -55.8 119.1	8 06.9 -55.6 118.2	7 44.5 -55.6 117.3	7 21.9 -55.6 116.3	6 59.0 -55.4 115.4
5°	7 33.4 -55.7 119.5	7 11.3 -55.7 118.6	6 48.9 -55.6 117.6	6 26.3 -55.5 116.7	6 03.6 -55.5 115.8
6°	6 37.7 -55.8 119.9	6 15.6 -55.7 118.9	5 53.3 -55.6 118.0	5 30.8 -55.5 117.1	5 08.1 -55.4 116.2
7°	5 41.9 -55.8 120.2	5 19.9 -55.8 119.3	4 57.7 -55.7 118.4	4 35.3 -55.6 117.5	4 12.7 -55.5 116.6
8°	4 46.1 -55.8 120.6	4 24.1 -55.7 119.7	4 02.0 -55.6 118.8	3 39.7 -55.6 117.9	3 17.2 -55.5 116.9
9°	3 50.3 -55.9 121.0	3 28.4 -55.7 120.1	3 06.4 -55.7 119.1	2 44.1 -55.5 118.2	2 21.7 -55.5 117.3
10°	2 54.4 -55.8 121.4	2 32.7 -55.8 120.4	2 10.7 -55.6 119.5	1 48.6 -55.6 118.6	1 26.2 -55.5 117.7
11°	1 58.6 -55.8 121.7	1 36.9 -55.7 120.8	1 15.1 -55.7 119.9	0 53.0 -55.6 119.0	0 30.7 -55.5 118.1
12°	1 02.8 -55.9 122.1	0 41.2 -55.8 121.2	0 19.4 -55.7 120.3	-0 02.6 -55.6	-0 24.8 -55.5
13°	0 06.9 -55.8 122.5	-0 14.6 -55.7	-0 36.3 -55.6	-0 58.2 -55.6	-1 20.3 -55.5
14°	-0 48.9 -55.8	-1 10.3 -55.8	-1 31.9 -55.7	-1 53.8 -55.6	-2 15.8 -55.5
15°	-1 44.7 -55.9	-2 06.1 -55.7	-2 27.6 -55.7	-2 49.4 -55.5	-3 11.3 -55.5
16°	-2 40.6 -55.8	-3 01.8 -55.7	-3 23.3 -55.6	-3 44.9 -55.6	-4 06.8 -55.5
17°	-3 36.4 -55.8	-3 57.5 -55.8	-4 18.9 -55.6	-4 40.5 -55.5	-5 02.3 -55.4
18°	-4 32.2 -55.8	-4 53.3 -55.7	-5 14.5 -55.7	-5 36.0 -55.6	-5 57.7 -55.5
19°	-5 28.0 -55.8	-5 49.0 -55.7	-6 10.2 -55.6	-6 31.6 -55.5	-6 53.2 -55.4
20°	-6 23.8 -55.8	-6 44.7 -55.7	-7 05.8 -55.6	-7 27.1 -55.5	-7 48.6 -55.4
21°	-7 19.6 -55.7	-7 40.4 -55.6	-8 01.4 -55.5	-8 22.6 -55.4	-8 44.0 -55.4
22°	-8 15.3 -55.8	-8 36.0 -55.7	-8 56.9 -55.6	-9 18.0 -55.5	-9 39.4 -55.3
23°	-9 11.1 -55.7	-9 31.7 -55.6	-9 52.5 -55.5		
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	10 17.3 -55.3 112.9	9 53.9 -55.2 112.0	9 30.3 -55.2 111.0	9 06.5 -55.0 110.1	8 42.7 -55.1 109.2
1°	9 22.0 -55.3 113.3	8 58.7 -55.3 112.4	8 35.1 -55.1 111.4	8 11.5 -55.1 110.5	7 47.6 -55.0 109.6
2°	8 26.7 -55.3 113.7	8 03.4 -55.2 112.8	7 40.0 -55.2 111.8	7 16.4 -55.2 110.9	6 52.6 -55.1 110.0
3°	7 31.4 -55.4 114.1	7 08.2 -55.3 113.2	6 44.8 -55.2 112.2	6 21.2 -55.1 111.3	5 57.5 -55.1 110.4
4°	6 36.0 -55.3 114.5	6 12.9 -55.3 113.6	5 49.6 -55.3 112.6	5 26.1 -55.2 111.7	5 02.4 -55.1 110.8
5°	5 40.7 -55.4 114.9	5 17.6 -55.3 113.9	4 54.3 -55.2 113.0	4 30.9 -55.2 112.1	4 07.3 -55.1 111.2
6°	4 45.3 -55.4 115.2	4 22.3 -55.4 114.3	3 59.1 -55.3 113.4	3 35.7 -55.2 112.5	3 12.2 -55.1 111.6
7°	3 49.9 -55.4 115.6	3 26.9 -55.3 114.7	3 03.8 -55.2 113.8	2 40.5 -55.1 112.9	2 17.1 -55.1 112.0
8°	2 54.5 -55.4 116.0	2 31.6 -55.3 115.1	2 08.6 -55.3 114.2	1 45.4 -55.2 113.3	1 22.0 -55.1 112.4
9°	1 59.1 -55.4 116.4	1 36.3 -55.4 115.5	1 13.3 -55.3 114.6	0 50.2 -55.2 113.7	0 26.9 -55.2 112.8
10°	1 03.7 -55.5 116.8	0 40.9 -55.3 115.9	0 18.0 -55.3 115.0	-0 05.0 -55.2	-0 28.3 -55.1
11°	0 08.2 -55.4 117.2	-0 14.4 -55.4	-0 37.3 -55.2	-1 00.2 -55.2	-1 23.4 -55.1
12°	-0 47.2 -55.4	-1 09.8 -55.3	-1 32.5 -55.3	-1 55.4 -55.2	-2 18.5 -55.2
13°	-1 42.6 -55.4	-2 05.1 -55.4	-2 27.8 -55.3	-2 50.6 -55.2	-3 13.7 -55.1
14°	-2 38.0 -55.4	-3 00.5 -55.3	-3 23.1 -55.2	-3 45.8 -55.2	-4 08.8 -55.1
15°	-3 33.4 -55.4	-3 55.8 -55.3	-4 18.3 -55.2	-4 41.0 -55.2	-5 03.9 -55.1
16°	-4 28.8 -55.4	-4 51.1 -55.3	-5 13.5 -55.3	-5 36.2 -55.1	-5 59.0 -55.0
17°	-5 24.2 -55.4	-5 46.4 -55.3	-6 08.8 -55.2	-6 31.3 -55.1	-6 54.0 -55.1
18°	-6 19.6 -55.4	-6 41.7 -55.3	-7 04.0 -55.2	-7 26.4 -55.1	-7 49.1 -55.0
19°	-7 15.0 -55.3	-7 37.0 -55.2	-7 59.2 -55.1	-8 21.5 -55.1	-8 44.1 -55.0
20°	-8 10.3 -55.3	-8 32.2 -55.2	-8 54.3 -55.2	-9 16.6 -55.1	-9 39.1 -55.0
21°	-9 05.6 -55.3	-9 27.4 -55.2	-9 49.5 -55.1		
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Dec	LHA 070° / 290°	LHA 071° / 289°	LHA 072° / 288°	LHA 073° / 287°	LHA 074° / 286°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	8 18.7 -55.0 108.3	7 54.5 -54.9 107.3	7 30.2 -54.8 106.4	7 05.9 -54.8 105.5	6 41.4 -54.8 104.6
1°	7 23.7 -55.0 108.7	6 59.6 -54.9 107.7	6 35.4 -54.9 106.8	6 11.1 -54.9 105.9	5 46.6 -54.8 105.0
2°	6 28.7 -55.0 109.1	6 04.7 -55.0 108.1	5 40.5 -54.9 107.2	5 16.2 -54.8 106.3	4 51.8 -54.8 105.4
3°	5 33.7 -55.0 109.5	5 09.7 -55.0 108.5	4 45.6 -54.9 107.6	4 21.4 -54.9 106.7	3 57.0 -54.8 105.8
4°	4 38.7 -55.1 109.9	4 14.7 -54.9 108.9	3 50.7 -54.9 108.0	3 26.5 -54.8 107.1	3 02.2 -54.8 106.2
5°	3 43.6 -55.0 110.3	3 19.8 -55.0 109.3	2 55.8 -55.0 108.4	2 31.7 -54.9 107.5	2 07.4 -54.8 106.6
6°	2 48.6 -55.1 110.7	2 24.8 -55.0 109.8	2 00.8 -54.9 108.8	1 36.8 -54.9 107.9	1 12.6 -54.8 107.0
7°	1 53.5 -55.0 111.1	1 29.8 -55.0 110.2	1 05.9 -54.9 109.2	0 41.9 -54.9 108.3	0 17.8 -54.9 107.4
8°	0 58.5 -55.1 111.5	0 34.8 -55.0 110.6	0 11.0 -55.0 109.6	-0 13.0 -54.9	-0 37.1 -54.8
9°	0 03.4 -55.1 111.9	-0 20.2 -55.0	-0 44.0 -54.9	-1 07.9 -54.8	-1 31.9 -54.8
10°	-0 51.7 -55.0	-1 15.2 -55.0	-1 38.9 -54.9	-2 02.7 -54.9	-2 26.7 -54.8
11°	-1 46.7 -55.1	-2 10.2 -55.0	-2 33.8 -55.0	-2 57.6 -54.9	-3 21.5 -54.8
12°	-2 41.8 -55.0	-3 05.2 -55.0	-3 28.8 -54.9	-3 52.5 -54.8	-4 16.3 -54.8
13°	-3 36.8 -55.1	-4 00.2 -55.0	-4 23.7 -54.9	-4 47.3 -54.9	-5 11.1 -54.8
14°	-4 31.9 -55.0	-4 55.2 -54.9	-5 18.6 -54.9	-5 42.2 -54.8	-6 05.9 -54.7
15°	-5 26.9 -55.0	-5 50.1 -54.9	-6 13.5 -54.8	-6 37.0 -54.8	-7 00.6 -54.8
16°	-6 21.9 -55.0	-6 45.0 -55.0	-7 08.3 -54.9	-7 31.8 -54.7	-7 55.4 -54.7
17°	-7 16.9 -55.0	-7 40.0 -54.9	-8 03.2 -54.8	-8 26.5 -54.8	-8 50.1 -54.6
18°	-8 11.9 -54.9	-8 34.9 -54.8	-8 58.0 -54.8	-9 21.3 -54.7	-9 44.7 -54.7
19°	-9 06.8 -54.9	-9 29.7 -54.9	-9 52.8 -54.8		
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Dec	LHA 075° / 285°	LHA 076° / 284°	LHA 077° / 283°	LHA 078° / 282°	LHA 079° / 281°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	6 16.8 -54.7 103.6	5 52.1 -54.7 102.7	5 27.3 -54.6 101.8	5 02.5 -54.6 100.9	4 37.5 -54.5 100.0
1°	5 22.1 -54.8 104.1	4 57.4 -54.7 103.1	4 32.7 -54.7 102.2	4 07.9 -54.7 101.3	3 43.0 -54.6 100.4
2°	4 27.3 -54.7 104.5	4 02.7 -54.7 103.6	3 38.0 -54.6 102.6	3 13.2 -54.6 101.7	2 48.4 -54.6 100.8
3°	3 32.6 -54.8 104.9	3 08.0 -54.7 104.0	2 43.4 -54.7 103.1	2 18.6 -54.6 102.1	1 53.8 -54.6 101.2
4°	2 37.8 -54.7 105.3	2 13.3 -54.7 104.4	1 48.7 -54.7 103.5	1 24.0 -54.6 102.6	0 59.2 -54.6 101.7
5°	1 43.1 -54.8 105.7	1 18.6 -54.7 104.8	0 54.0 -54.6 103.9	0 29.4 -54.7 103.0	0 04.6 -54.6 102.1
6°	0 48.3 -54.8 106.1	0 23.9 -54.7 105.2	-0 00.6 -54.7	-0 25.3 -54.6	-0 50.0 -54.6
7°	-0 06.5 -54.8	-0 30.8 -54.8	-0 55.3 -54.7	-1 19.9 -54.6	-1 44.6 -54.6
8°	-1 01.3 -54.7	-1 25.6 -54.7	-1 50.0 -54.7	-2 14.5 -54.6	-2 39.2 -54.5
9°	-1 56.0 -54.8	-2 20.3 -54.7	-2 44.7 -54.6	-3 09.1 -54.7	-3 33.7 -54.6
10°	-2 50.8 -54.7	-3 15.0 -54.7	-3 39.3 -54.7	-4 03.8 -54.6	-4 28.3 -54.5
11°	-3 45.5 -54.8	-4 09.7 -54.7	-4 34.0 -54.6	-4 58.4 -54.5	-5 22.8 -54.6
12°	-4 40.3 -54.7	-5 04.4 -54.7	-5 28.6 -54.6	-5 52.9 -54.6	-6 17.4 -54.5
13°	-5 35.0 -54.7	-5 59.1 -54.6	-6 23.2 -54.6	-6 47.5 -54.5	-7 11.9 -54.5
14°	-6 29.7 -54.7	-6 53.7 -54.6	-7 17.8 -54.6	-7 42.0 -54.6	-8 06.4 -54.4
15°	-7 24.4 -54.7	-7 48.3 -54.6	-8 12.4 -54.5	-8 36.6 -54.4	-9 00.8 -54.5
16°	-8 19.1 -54.6	-8 42.9 -54.6	-9 06.9 -54.6	-9 31.0 -54.5	-9 55.3 -54.4
17°	-9 13.7 -54.6	-9 37.5 -54.6			
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Dec	LHA 080° / 280°	LHA 081° / 279°	LHA 082° / 278°	LHA 083° / 277°	LHA 084° / 276°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	4 12.5 -54.5 99.1	3 47.4 -54.5 98.2	3 22.3 -54.5 97.3	2 57.1 -54.4 96.3	2 31.9 -54.4 95.4
1°	3 18.0 -54.6 99.5	2 52.9 -54.5 98.6	2 27.8 -54.4 97.7	2 02.7 -54.5 96.8	1 37.5 -54.5 95.9
2°	2 23.4 -54.5 99.9	1 58.4 -54.5 99.0	1 33.4 -54.5 98.1	1 08.2 -54.4 97.2	0 43.0 -54.4 96.3
3°	1 28.9 -54.6 100.3	1 03.9 -54.5 99.4	0 38.9 -54.5 98.5	0 13.8 -54.5 97.6	-0 11.4 -54.4
4°	0 34.3 -54.5 100.7	0 09.4 -54.5 99.8	-0 15.6 -54.5	-0 40.7 -54.5	-1 05.8 -54.5
5°	-0 20.2 -54.6	-0 45.1 -54.6	-1 10.1 -54.5	-1 35.2 -54.4	-2 00.3 -54.4
6°	-1 14.8 -54.5	-1 39.7 -54.5	-2 04.6 -54.5	-2 29.6 -54.5	-2 54.7 -54.4
7°	-2 09.3 -54.6	-2 34.2 -54.5	-2 59.1 -54.5	-3 24.1 -54.4	-3 49.1 -54.5
8°	-3 03.9 -54.5	-3 28.7 -54.5	-3 53.6 -54.4	-4 18.5 -54.4	-4 43.6 -54.3
9°	-3 58.4 -54.5	-4 23.2 -54.5	-4 48.0 -54.5	-5 12.9 -54.5	-5 37.9 -54.4
10°	-4 52.9 -54.5	-5 17.7 -54.4	-5 42.5 -54.4	-6 07.4 -54.3	-6 32.3 -54.4
11°	-5 47.4 -54.5	-6 12.1 -54.5	-6 36.9 -54.4	-7 01.7 -54.4	-7 26.7 -54.3
12°	-6 41.9 -54.5	-7 06.6 -54.4	-7 31.3 -54.4	-7 56.1 -54.4	-8 21.0 -54.3
13°	-7 36.4 -54.4	-8 01.0 -54.4	-8 25.7 -54.3	-8 50.5 -54.3	-9 15.3 -54.3
14°	-8 30.8 -54.4	-8 55.4 -54.3	-9 20.0 -54.3	-9 44.8 -54.2	
15°	-9 25.2 -54.4	-9 49.7 -54.4			
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Dec	LHA 085° / 275°	LHA 086° / 274°	LHA 087° / 273°	LHA 088° / 272°	LHA 089° / 271°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	2 06.7 -54.5 94.5	1 41.4 -54.4 93.6	1 16.0 -54.4 92.7	0 50.7 -54.4 91.8	0 25.4 -54.4 90.9
1°	1 12.2 -54.4 95.0	0 47.0 -54.5 94.0	0 21.6 -54.3 93.1	-0 03.7 -54.4	-0 29.0 -54.4
2°	0 17.8 -54.4 95.4	-0 07.5 -54.4	-0 32.7 -54.4	-0 58.1 -54.3	-1 23.4 -54.4
3°	-0 36.6 -54.4	-1 01.9 -54.4	-1 27.1 -54.4	-1 52.4 -54.4	-2 17.8 -54.3
4°	-1 31.0 -54.4	-1 56.3 -54.4	-2 21.5 -54.4	-2 46.8 -54.4	-3 12.1 -54.4
5°	-2 25.4 -54.5	-2 50.7 -54.3	-3 15.9 -54.4	-3 41.2 -54.3	-4 06.5 -54.3
6°	-3 19.9 -54.4	-3 45.0 -54.4	-4 10.3 -54.3	-4 35.5 -54.4	-5 00.8 -54.4
7°	-4 14.3 -54.3	-4 39.4 -54.4	-5 04.6 -54.4	-5 29.9 -54.3	-5 55.2 -54.3
8°	-5 08.6 -54.4	-5 33.8 -54.3	-5 59.0 -54.3	-6 24.2 -54.3	-6 49.5 -54.3
9°	-6 03.0 -54.4	-6 28.1 -54.3	-6 53.3 -54.3	-7 18.5 -54.3	-7 43.8 -54.2
10°	-6 57.4 -54.3	-7 22.4 -54.3	-7 47.6 -54.3	-8 12.8 -54.2	-8 38.0 -54.2
11°	-7 51.7 -54.3	-8 16.7 -54.3	-8 41.9 -54.2	-9 07.0 -54.2	-9 32.2 -54.2
12°	-8 46.0 -54.2	-9 11.0 -54.2	-9 36.1 -54.2		
13°	-9 40.2 -54.3				
14°					
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Dec	LHA 090° / 270°	LHA 091° / 269°	LHA 092° / 268°	LHA 093° / 267°	LHA 094° / 266°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	0 00.0 -54.4 90.0	-0 25.4 -54.3			
1°	-0 54.4 -54.4	-1 19.7 -54.4			
2°	-1 48.8 -54.3	-2 14.1 -54.4			
3°	-2 43.1 -54.4	-3 08.5 -54.3			
4°	-3 37.5 -54.3	-4 02.8 -54.4			
5°	-4 31.8 -54.4	-4 57.2 -54.3			
6°	-5 26.2 -54.3	-5 51.5 -54.3			
7°	-6 20.5 -54.3	-6 45.8 -54.3			
8°	-7 14.8 -54.2	-7 40.1 -54.3			
9°	-8 09.0 -54.3	-8 34.4 -54.2			
10°	-9 03.3 -54.2	-9 28.6 -54.2			
11°	-9 57.5 -54.2				
12°					
13°					
14°					
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Dec	LHA 095° / 265°	LHA 096° / 264°	LHA 097° / 263°	LHA 098° / 262°	LHA 099° / 261°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°					
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Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	24 00.0 -60.0 180.0	23 59.8 -60.0 178.9	23 59.1 -60.0 177.8	23 57.9 -60.0 176.7	23 56.3 -60.0 175.6
1°	23 00.0 -60.0 180.0	22 59.8 -60.0 178.9	22 59.1 -60.0 177.8	22 57.9 -60.0 176.7	22 56.3 -60.0 175.7
2°	22 00.0 -60.0 180.0	21 59.8 -60.0 178.9	21 59.1 -60.0 177.8	21 57.9 -59.9 176.8	21 56.3 -59.9 175.7
3°	21 00.0 -60.0 180.0	20 59.8 -60.0 178.9	20 59.1 -60.0 177.9	20 58.0 -60.0 176.8	20 56.4 -60.0 175.7
4°	20 00.0 -60.0 180.0	19 59.8 -60.0 178.9	19 59.1 -60.0 177.9	19 58.0 -60.0 176.8	19 56.4 -60.0 175.8
5°	19 00.0 -60.0 180.0	18 59.8 -60.0 178.9	18 59.1 -60.0 177.9	18 58.0 -60.0 176.8	18 56.4 -60.0 175.8
6°	18 00.0 -60.0 180.0	17 59.8 -60.0 179.0	17 59.1 -60.0 177.9	17 58.0 -60.0 176.9	17 56.4 -59.9 175.8
7°	17 00.0 -60.0 180.0	16 59.8 -60.0 179.0	16 59.1 -60.0 177.9	16 58.0 -60.0 176.9	16 56.5 -60.0 175.8
8°	16 00.0 -60.0 180.0	15 59.8 -60.0 179.0	15 59.1 -60.0 177.9	15 58.0 -60.0 176.9	15 56.5 -60.0 175.9
9°	15 00.0 -60.0 180.0	14 59.8 -60.0 179.0	14 59.1 -60.0 178.0	14 58.0 -59.9 176.9	14 56.5 -60.0 175.9
10°	14 00.0 -60.0 180.0	13 59.8 -60.0 179.0	13 59.1 -60.0 178.0	13 58.1 -60.0 177.0	13 56.5 -59.9 175.9
11°	13 00.0 -60.0 180.0	12 59.8 -60.0 179.0	12 59.1 -60.0 178.0	12 58.1 -60.0 177.0	12 56.6 -60.0 176.0
12°	12 00.0 -60.0 180.0	11 59.8 -60.0 179.0	11 59.1 -59.9 178.0	11 58.1 -60.0 177.0	11 56.6 -60.0 176.0
13°	11 00.0 -60.0 180.0	10 59.8 -60.0 179.0	10 59.2 -60.0 178.0	10 58.1 -60.0 177.0	10 56.6 -60.0 176.0
14°	10 00.0 -60.0 180.0	9 59.8 -60.0 179.0	9 59.2 -60.0 178.0	9 58.1 -60.0 177.0	9 56.6 -59.9 176.1
15°	9 00.0 -60.0 180.0	8 59.8 -60.0 179.0	8 59.2 -60.0 178.0	8 58.1 -60.0 177.1	8 56.7 -60.0 176.1
16°	8 00.0 -60.0 180.0	7 59.8 -60.0 179.0	7 59.2 -60.0 178.1	7 58.1 -59.9 177.1	7 56.7 -60.0 176.1
17°	7 00.0 -60.0 180.0	6 59.8 -60.0 179.0	6 59.2 -60.0 178.1	6 58.2 -60.0 177.1	6 56.7 -60.0 176.1
18°	6 00.0 -60.0 180.0	5 59.8 -60.0 179.0	5 59.2 -60.0 178.1	5 58.2 -60.0 177.1	5 56.7 -59.9 176.2
19°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.1	4 59.2 -60.0 178.1	4 58.2 -60.0 177.2	4 56.8 -60.0 176.2
20°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.1	3 59.2 -60.0 178.1	3 58.2 -60.0 177.2	3 56.8 -60.0 176.2
21°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.1	2 59.2 -60.0 178.1	2 58.2 -60.0 177.2	2 56.8 -60.0 176.3
22°	2 00.0 -60.0 180.0	1 59.8 -60.0 179.1	1 59.2 -60.0 178.1	1 58.2 -60.0 177.2	1 56.8 -59.9 176.3
23°	1 00.0 -60.0 180.0	0 59.8 -60.0 179.1	0 59.2 -60.0 178.2	0 58.2 -60.0 177.2	0 56.9 -60.0 176.3
24°	0 00.0 -60.0 180.0	-0 00.2 -60.0	-0 00.8 -60.0	-0 01.8 -59.9	-0 03.1 -60.0
25°	-1 00.0 -60.0	-1 00.2 -60.0	-1 00.8 -60.0	-1 01.7 -60.0	-1 03.1 -60.0
26°	-2 00.0 -60.0	-2 00.2 -60.0	-2 00.8 -60.0	-2 01.7 -60.0	-2 03.1 -59.9
27°	-3 00.0 -60.0	-3 00.2 -60.0	-3 00.8 -60.0	-3 01.7 -60.0	-3 03.0 -60.0
28°	-4 00.0 -60.0	-4 00.2 -60.0	-4 00.8 -59.9	-4 01.7 -60.0	-4 03.0 -60.0
29°	-5 00.0 -60.0	-5 00.2 -60.0	-5 00.7 -60.0	-5 01.7 -60.0	-5 03.0 -60.0

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	23 54.2 -60.0 174.5	23 51.6 -59.9 173.4	23 48.6 -59.9 172.3	23 45.1 -59.9 171.3	23 41.2 -59.9 170.2
1°	22 54.2 -59.9 174.6	22 51.7 -60.0 173.5	22 48.7 -59.9 172.4	22 45.2 -59.9 171.3	22 41.3 -59.8 170.2
2°	21 54.3 -60.0 174.6	21 51.7 -59.9 173.5	21 48.8 -59.9 172.5	21 45.3 -59.8 171.4	21 41.5 -59.9 170.3
3°	20 54.3 -59.9 174.7	20 51.8 -59.9 173.6	20 48.9 -60.0 172.5	20 45.5 -59.9 171.5	20 41.6 -59.9 170.4
4°	19 54.4 -60.0 174.7	19 51.9 -60.0 173.6	19 48.9 -59.9 172.6	19 45.6 -59.9 171.5	19 41.7 -59.8 170.5
5°	18 54.4 -60.0 174.7	18 51.9 -59.9 173.7	18 49.0 -59.9 172.6	18 45.7 -59.9 171.6	18 41.9 -59.9 170.5
6°	17 54.4 -59.9 174.8	17 52.0 -59.9 173.7	17 49.1 -59.9 172.7	17 45.8 -59.9 171.6	17 42.0 -59.9 170.6
7°	16 54.5 -60.0 174.8	16 52.1 -60.0 173.8	16 49.2 -59.9 172.7	16 45.9 -59.9 171.7	16 42.1 -59.8 170.7
8°	15 54.5 -59.9 174.9	15 52.1 -59.9 173.8	15 49.3 -60.0 172.8	15 46.0 -59.9 171.8	15 42.3 -59.9 170.7
9°	14 54.6 -60.0 174.9	14 52.2 -60.0 173.9	14 49.3 -59.9 172.8	14 46.1 -59.9 171.8	14 42.4 -59.9 170.8
10°	13 54.6 -60.0 174.9	13 52.2 -59.9 173.9	13 49.4 -59.9 172.9	13 46.2 -59.9 171.9	13 42.5 -59.8 170.9
11°	12 54.6 -59.9 175.0	12 52.3 -60.0 174.0	12 49.5 -59.9 173.0	12 46.3 -59.9 171.9	12 42.7 -59.9 170.9
12°	11 54.7 -60.0 175.0	11 52.3 -59.9 174.0	11 49.6 -59.9 173.0	11 46.4 -59.9 172.0	11 42.8 -59.9 171.0
13°	10 54.7 -59.9 175.0	10 52.4 -59.9 174.0	10 49.7 -60.0 173.1	10 46.5 -59.9 172.1	10 42.9 -59.9 171.1
14°	9 54.8 -60.0 175.1	9 52.5 -60.0 174.1	9 49.7 -59.9 173.1	9 46.6 -59.9 172.1	9 43.0 -59.8 171.1
15°	8 54.8 -60.0 175.1	8 52.5 -59.9 174.1	8 49.8 -59.9 173.2	8 46.7 -59.9 172.2	8 43.2 -59.9 171.2
16°	7 54.8 -59.9 175.1	7 52.6 -60.0 174.2	7 49.9 -59.9 173.2	7 46.8 -59.9 172.2	7 43.3 -59.9 171.3
17°	6 54.9 -60.0 175.2	6 52.6 -59.9 174.2	6 50.0 -60.0 173.3	6 46.9 -59.9 172.3	6 43.4 -59.9 171.3
18°	5 54.9 -59.9 175.2	5 52.7 -60.0 174.3	5 50.0 -59.9 173.3	5 47.0 -59.9 172.4	5 43.5 -59.8 171.4
19°	4 55.0 -60.0 175.3	4 52.7 -59.9 174.3	4 50.1 -59.9 173.4	4 47.1 -59.9 172.4	4 43.7 -59.9 171.5
20°	3 55.0 -60.0 175.3	3 52.8 -60.0 174.4	3 50.2 -59.9 173.4	3 47.2 -59.9 172.5	3 43.8 -59.9 171.5
21°	2 55.0 -59.9 175.3	2 52.8 -59.9 174.4	2 50.3 -60.0 173.5	2 47.3 -59.9 172.5	2 43.9 -59.9 171.6
22°	1 55.1 -60.0 175.4	1 52.9 -60.0 174.4	1 50.3 -59.9 173.5	1 47.4 -59.9 172.6	1 44.0 -59.8 171.7
23°	0 55.1 -60.0 175.4	0 52.9 -59.9 174.5	0 50.4 -59.9 173.6	0 47.5 -59.9 172.6	0 44.2 -59.9 171.7
24°	-0 04.9 -59.9	-0 07.0 -59.9	-0 09.5 -59.9	-0 12.4 -59.9	-0 15.7 -59.9
25°	-1 04.8 -60.0	-1 06.9 -60.0	-1 09.4 -60.0	-1 12.3 -59.9	-1 15.6 -59.9
26°	-2 04.8 -59.9	-2 06.9 -59.9	-2 09.4 -59.9	-2 12.2 -59.9	-2 15.5 -59.9
27°	-3 04.7 -60.0	-3 06.8 -60.0	-3 09.3 -59.9	-3 12.1 -59.9	-3 15.4 -59.8
28°	-4 04.7 -60.0	-4 06.8 -59.9	-4 09.2 -60.0	-4 12.0 -59.9	-4 15.2 -59.9
29°	-5 04.7 -59.9	-5 06.7 -60.0	-5 09.2 -59.9	-5 11.9 -60.0	-5 15.1 -59.9

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	23 36.8 -59.8 169.1	23 31.9 -59.8 168.0	23 26.6 -59.7 166.9	23 20.9 -59.7 165.8	23 14.7 -59.7 164.7
1°	22 37.0 -59.9 169.2	22 32.1 -59.7 168.1	22 26.9 -59.8 167.0	22 21.2 -59.7 165.9	22 15.0 -59.7 164.9
2°	21 37.1 -59.8 169.2	21 32.4 -59.8 168.2	21 27.1 -59.7 167.1	21 21.5 -59.8 166.0	21 15.3 -59.6 165.0
3°	20 37.3 -59.8 169.3	20 32.6 -59.8 168.3	20 27.4 -59.8 167.2	20 21.7 -59.7 166.1	20 15.7 -59.7 165.1
4°	19 37.5 -59.9 169.4	19 32.8 -59.8 168.3	19 27.6 -59.7 167.3	19 22.0 -59.7 166.2	19 16.0 -59.7 165.2
5°	18 37.6 -59.8 169.5	18 33.0 -59.8 168.4	18 27.9 -59.8 167.4	18 22.3 -59.7 166.3	18 16.3 -59.6 165.3
6°	17 37.8 -59.8 169.6	17 33.2 -59.8 168.5	17 28.1 -59.8 167.5	17 22.6 -59.7 166.4	17 16.7 -59.7 165.4
7°	16 38.0 -59.9 169.6	16 33.4 -59.8 168.6	16 28.3 -59.7 167.6	16 22.9 -59.8 166.5	16 17.0 -59.7 165.5
8°	15 38.1 -59.8 169.7	15 33.6 -59.8 168.7	15 28.6 -59.8 167.7	15 23.1 -59.7 166.6	15 17.3 -59.7 165.6
9°	14 38.3 -59.8 169.8	14 33.8 -59.8 168.8	14 28.8 -59.8 167.8	14 23.4 -59.7 166.7	14 17.6 -59.7 165.7
10°	13 38.5 -59.9 169.9	13 34.0 -59.9 168.9	13 29.0 -59.8 167.8	13 23.7 -59.8 166.8	13 17.9 -59.7 165.8
11°	12 38.6 -59.8 169.9	12 34.1 -59.8 168.9	12 29.2 -59.7 167.9	12 23.9 -59.7 166.9	12 18.2 -59.7 165.9
12°	11 38.8 -59.9 170.0	11 34.3 -59.8 169.0	11 29.5 -59.8 168.0	11 24.2 -59.7 167.0	11 18.5 -59.7 166.0
13°	10 38.9 -59.8 170.1	10 34.5 -59.8 169.1	10 29.7 -59.8 168.1	10 24.5 -59.8 167.1	10 18.8 -59.7 166.1
14°	9 39.1 -59.9 170.2	9 34.7 -59.8 169.2	9 29.9 -59.8 168.2	9 24.7 -59.7 167.2	9 19.1 -59.7 166.2
15°	8 39.2 -59.8 170.2	8 34.9 -59.8 169.3	8 30.1 -59.7 168.3	8 25.0 -59.8 167.3	8 19.4 -59.7 166.3
16°	7 39.4 -59.9 170.3	7 35.1 -59.8 169.3	7 30.4 -59.8 168.4	7 25.2 -59.7 167.4	7 19.7 -59.7 166.4
17°	6 39.5 -59.8 170.4	6 35.3 -59.9 169.4	6 30.6 -59.8 168.5	6 25.5 -59.8 167.5	6 20.0 -59.7 166.5
18°	5 39.7 -59.9 170.4	5 35.4 -59.8 169.5	5 30.8 -59.8 168.5	5 25.7 -59.7 167.6	5 20.3 -59.7 166.6
19°	4 39.8 -59.8 170.5	4 35.6 -59.8 169.6	4 31.0 -59.8 168.6	4 26.0 -59.7 167.7	4 20.6 -59.7 166.7
20°	3 40.0 -59.9 170.6	3 35.8 -59.8 169.7	3 31.2 -59.8 168.7	3 26.3 -59.8 167.8	3 20.9 -59.7 166.8
21°	2 40.1 -59.8 170.7	2 36.0 -59.8 169.7	2 31.4 -59.7 168.8	2 26.5 -59.7 167.9	2 21.2 -59.7 166.9
22°	1 40.3 -59.9 170.7	1 36.2 -59.9 169.8	1 31.7 -59.8 168.9	1 26.8 -59.8 168.0	1 21.5 -59.7 167.0
23°	0 40.4 -59.8 170.8	0 36.3 -59.8 169.9	0 31.9 -59.8 169.0	0 27.0 -59.7 168.0	0 21.8 -59.7 167.1
24°	-0 19.4 -59.9	-0 23.5 -59.8	-0 27.9 -59.8	-0 32.7 -59.8	-0 37.9 -59.8
25°	-1 19.3 -59.8	-1 23.3 -59.8	-1 27.7 -59.8	-1 32.5 -59.7	-1 37.7 -59.7
26°	-2 19.1 -59.9	-2 23.1 -59.8	-2 27.5 -59.8	-2 32.2 -59.8	-2 37.4 -59.7
27°	-3 19.0 -59.8	-3 22.9 -59.8	-3 27.3 -59.8	-3 32.0 -59.7	-3 37.1 -59.7
28°	-4 18.8 -59.9	-4 22.7 -59.9	-4 27.1 -59.7	-4 31.7 -59.8	-4 36.8 -59.7
29°	-5 18.7 -59.8	-5 22.6 -59.8	-5 26.8 -59.8	-5 31.5 -59.7	-5 36.5 -59.7

Dec	LHA 015° / 345°	LHA 016° / 344°	LHA 017° / 343°	LHA 018° / 342°	LHA 019° / 341°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	23 08.0 -59.6 163.7	23 00.9 -59.5 162.6	22 53.4 -59.5 161.5	22 45.4 -59.4 160.4	22 37.0 -59.3 159.3
1°	22 08.4 -59.6 163.8	22 01.4 -59.6 162.7	21 53.9 -59.5 161.6	21 46.0 -59.5 160.6	21 37.7 -59.4 159.5
2°	21 08.8 -59.6 163.9	21 01.8 -59.6 162.8	20 54.4 -59.5 161.8	20 46.5 -59.4 160.7	20 38.3 -59.4 159.7
3°	20 09.2 -59.6 164.0	20 02.2 -59.5 163.0	19 54.9 -59.5 161.9	19 47.1 -59.5 160.9	19 38.9 -59.4 159.8
4°	19 09.6 -59.7 164.1	19 02.7 -59.6 163.1	18 55.4 -59.6 162.0	18 47.6 -59.5 161.0	18 39.5 -59.4 160.0
5°	18 09.9 -59.6 164.3	18 03.1 -59.6 163.2	17 55.8 -59.5 162.2	17 48.1 -59.4 161.1	17 40.1 -59.5 160.1
6°	17 10.3 -59.6 164.4	17 03.5 -59.6 163.3	16 56.3 -59.5 162.3	16 48.7 -59.5 161.3	16 40.6 -59.4 160.2
7°	16 10.7 -59.7 164.5	16 03.9 -59.6 163.5	15 56.8 -59.6 162.4	15 49.2 -59.5 161.4	15 41.2 -59.4 160.4
8°	15 11.0 -59.6 164.6	15 04.3 -59.6 163.6	14 57.2 -59.5 162.6	14 49.7 -59.5 161.5	14 41.8 -59.5 160.5
9°	14 11.4 -59.7 164.7	14 04.7 -59.6 163.7	13 57.7 -59.6 162.7	13 50.2 -59.5 161.7	13 42.3 -59.4 160.7
10°	13 11.7 -59.6 164.8	13 05.1 -59.6 163.8	12 58.1 -59.5 162.8	12 50.7 -59.5 161.8	12 42.9 -59.5 160.8
11°	12 12.1 -59.7 164.9	12 05.5 -59.6 163.9	11 58.6 -59.6 162.9	11 51.2 -59.5 161.9	11 43.4 -59.4 160.9
12°	11 12.4 -59.6 165.0	11 05.9 -59.6 164.1	10 59.0 -59.5 163.1	10 51.7 -59.5 162.1	10 44.0 -59.5 161.1
13°	10 12.8 -59.7 165.2	10 06.3 -59.6 164.2	9 59.5 -59.6 163.2	9 52.2 -59.5 162.2	9 44.5 -59.4 161.2
14°	9 13.1 -59.6 165.3	9 06.7 -59.6 164.3	8 59.9 -59.6 163.3	8 52.7 -59.5 162.3	8 45.1 -59.5 161.4
15°	8 13.5 -59.7 165.4	8 07.1 -59.6 164.4	8 00.3 -59.5 163.4	7 53.2 -59.5 162.5	7 45.6 -59.4 161.5
16°	7 13.8 -59.7 165.5	7 07.5 -59.6 164.5	7 00.8 -59.6 163.6	6 53.7 -59.6 162.6	6 46.2 -59.5 161.6
17°	6 14.1 -59.6 165.6	6 07.9 -59.7 164.6	6 01.2 -59.6 163.7	5 54.1 -59.5 162.7	5 46.7 -59.5 161.8
18°	5 14.5 -59.7 165.7	5 08.2 -59.6 164.7	5 01.6 -59.5 163.8	4 54.6 -59.5 162.8	4 47.2 -59.4 161.9
19°	4 14.8 -59.7 165.8	4 08.6 -59.6 164.9	4 02.1 -59.6 163.9	3 55.1 -59.5 163.0	3 47.8 -59.5 162.0
20°	3 15.1 -59.6 165.9	3 09.0 -59.6 165.0	3 02.5 -59.6 164.0	2 55.6 -59.6 163.1	2 48.3 -59.5 162.2
21°	2 15.5 -59.7 166.0	2 09.4 -59.6 165.1	2 02.9 -59.6 164.1	1 56.0 -59.5 163.2	1 48.8 -59.5 162.3
22°	1 15.8 -59.7 166.1	1 09.8 -59.7 165.2	1 03.3 -59.5 164.3	0 56.5 -59.5 163.3	0 49.3 -59.4 162.4
23°	0 16.1 -59.6 166.2	0 10.1 -59.6 165.3	0 03.8 -59.6 164.4	-0 03.0 -59.5	-0 10.1 -59.5
24°	-0 43.5 -59.7	-0 49.5 -59.6	-0 55.8 -59.6	-1 02.5 -59.5	-1 09.6 -59.5
25°	-1 43.2 -59.7	-1 49.1 -59.6	-1 55.4 -59.6	-2 02.0 -59.6	-2 09.1 -59.4
26°	-2 42.9 -59.6	-2 48.7 -59.6	-2 55.0 -59.5	-3 01.6 -59.5	-3 08.5 -59.5
27°	-3 42.5 -59.7	-3 48.3 -59.7	-3 54.5 -59.6	-4 01.1 -59.5	-4 08.0 -59.5
28°	-4 42.2 -59.7	-4 48.0 -59.6	-4 54.1 -59.6	-5 00.6 -59.5	-5 07.5 -59.4
29°	-5 41.9 -59.6	-5 47.6 -59.6	-5 53.7 -59.5	-6 00.1 -59.6	-6 06.9 -59.5

Dec	LHA 020° / 340°	LHA 021° / 339°	LHA 022° / 338°	LHA 023° / 337°	LHA 024° / 336°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	22 28.2 -59.3 158.3	22 19.0 -59.3 157.2	22 09.3 -59.2 156.1	21 59.2 -59.1 155.1	21 48.8 -59.1 154.0
1°	21 28.9 -59.3 158.4	21 19.7 -59.2 157.4	21 10.1 -59.2 156.3	21 00.1 -59.1 155.3	20 49.7 -59.0 154.2
2°	20 29.6 -59.4 158.6	20 20.5 -59.3 157.5	20 10.9 -59.2 156.5	20 01.0 -59.1 155.4	19 50.7 -59.1 154.4
3°	19 30.2 -59.3 158.8	19 21.2 -59.3 157.7	19 11.7 -59.2 156.7	19 01.9 -59.2 155.6	18 51.6 -59.1 154.6
4°	18 30.9 -59.4 158.9	18 21.9 -59.3 157.9	18 12.5 -59.2 156.8	18 02.7 -59.2 155.8	17 52.5 -59.1 154.8
5°	17 31.5 -59.3 159.1	17 22.6 -59.3 158.0	17 13.3 -59.3 157.0	17 03.5 -59.1 156.0	16 53.4 -59.1 154.9
6°	16 32.2 -59.4 159.2	16 23.3 -59.3 158.2	16 14.0 -59.2 157.2	16 04.4 -59.2 156.1	15 54.3 -59.1 155.1
7°	15 32.8 -59.4 159.4	15 24.0 -59.3 158.3	15 14.8 -59.2 157.3	15 05.2 -59.2 156.3	14 55.2 -59.1 155.3
8°	14 33.4 -59.3 159.5	14 24.7 -59.3 158.5	14 15.6 -59.3 157.5	14 06.0 -59.2 156.5	13 56.1 -59.1 155.5
9°	13 34.1 -59.4 159.7	13 25.4 -59.4 158.7	13 16.3 -59.3 157.7	13 06.8 -59.2 156.7	12 57.0 -59.2 155.7
10°	12 34.7 -59.4 159.8	12 26.0 -59.3 158.8	12 17.0 -59.2 157.8	12 07.6 -59.2 156.8	11 57.8 -59.1 155.8
11°	11 35.3 -59.4 160.0	11 26.7 -59.3 159.0	11 17.8 -59.3 158.0	11 08.4 -59.2 157.0	10 58.7 -59.2 156.0
12°	10 35.9 -59.4 160.1	10 27.4 -59.4 159.1	10 18.5 -59.3 158.1	10 09.2 -59.2 157.2	9 59.5 -59.1 156.2
13°	9 36.5 -59.4 160.2	9 28.0 -59.3 159.3	9 19.2 -59.3 158.3	9 10.0 -59.2 157.3	9 00.4 -59.2 156.3
14°	8 37.1 -59.4 160.4	8 28.7 -59.3 159.4	8 19.9 -59.3 158.4	8 10.8 -59.3 157.5	8 01.2 -59.1 156.5
15°	7 37.7 -59.4 160.5	7 29.4 -59.4 159.6	7 20.6 -59.2 158.6	7 11.5 -59.2 157.6	7 02.1 -59.2 156.7
16°	6 38.3 -59.4 160.7	6 30.0 -59.3 159.7	6 21.4 -59.3 158.8	6 12.3 -59.2 157.8	6 02.9 -59.2 156.8
17°	5 38.9 -59.4 160.8	5 30.7 -59.4 159.9	5 22.1 -59.3 158.9	5 13.1 -59.2 158.0	5 03.7 -59.1 157.0
18°	4 39.5 -59.5 161.0	4 31.3 -59.4 160.0	4 22.8 -59.3 159.1	4 13.9 -59.3 158.1	4 04.6 -59.2 157.2
19°	3 40.0 -59.4 161.1	3 31.9 -59.3 160.2	3 23.5 -59.3 159.2	3 14.6 -59.2 158.3	3 05.4 -59.2 157.3
20°	2 40.6 -59.4 161.2	2 32.6 -59.4 160.3	2 24.2 -59.3 159.4	2 15.4 -59.2 158.4	2 06.2 -59.1 157.5
21°	1 41.2 -59.4 161.4	1 33.2 -59.3 160.4	1 24.9 -59.3 159.5	1 16.2 -59.3 158.6	1 07.1 -59.2 157.7
22°	0 41.8 -59.4 161.5	0 33.9 -59.4 160.6	0 25.6 -59.3 159.7	0 16.9 -59.2 158.8	0 07.9 -59.2 157.8
23°	-0 17.6 -59.4	-0 25.5 -59.4	-0 33.7 -59.3	-0 42.3 -59.3	-0 51.3 -59.2
24°	-1 17.0 -59.5	-1 24.9 -59.3	-1 33.0 -59.3	-1 41.6 -59.2	-1 50.5 -59.1
25°	-2 16.5 -59.4	-2 24.2 -59.4	-2 32.3 -59.3	-2 40.8 -59.2	-2 49.6 -59.2
26°	-3 15.9 -59.4	-3 23.6 -59.3	-3 31.6 -59.3	-3 40.0 -59.3	-3 48.8 -59.2
27°	-4 15.3 -59.4	-4 22.9 -59.4	-4 30.9 -59.3	-4 39.3 -59.2	-4 48.0 -59.1
28°	-5 14.7 -59.4	-5 22.3 -59.3	-5 30.2 -59.3	-5 38.5 -59.2	-5 47.1 -59.2
29°	-6 14.1 -59.4	-6 21.6 -59.4	-6 29.5 -59.3	-6 37.7 -59.2	-6 46.3 -59.2

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	21 37.9 -59.0 153.0	21 26.6 -58.9 151.9	21 14.9 -58.8 150.8	21 02.8 -58.7 149.8	20 50.3 -58.6 148.8
1°	20 38.9 -59.0 153.2	20 27.7 -58.9 152.1	20 16.1 -58.9 151.1	20 04.1 -58.8 150.0	19 51.7 -58.7 149.0
2°	19 39.9 -59.0 153.4	19 28.8 -59.0 152.3	19 17.2 -58.8 151.3	19 05.3 -58.8 150.2	18 53.0 -58.7 149.2
3°	18 40.9 -59.0 153.5	18 29.8 -58.9 152.5	18 18.4 -58.9 151.5	18 06.5 -58.8 150.4	17 54.3 -58.7 149.4
4°	17 41.9 -59.0 153.7	17 30.9 -58.9 152.7	17 19.5 -58.9 151.7	17 07.7 -58.7 150.7	16 55.6 -58.7 149.6
5°	16 42.9 -59.1 153.9	16 32.0 -59.0 152.9	16 20.6 -58.8 151.9	16 09.0 -58.9 150.9	15 56.9 -58.7 149.8
6°	15 43.8 -59.0 154.1	15 33.0 -59.0 153.1	15 21.8 -58.9 152.1	15 10.1 -58.8 151.1	14 58.2 -58.8 150.1
7°	14 44.8 -59.0 154.3	14 34.0 -58.9 153.3	14 22.9 -58.9 152.3	14 11.3 -58.8 151.3	13 59.4 -58.7 150.3
8°	13 45.8 -59.1 154.5	13 35.1 -59.0 153.5	13 24.0 -59.0 152.5	13 12.5 -58.8 151.5	13 00.7 -58.8 150.5
9°	12 46.7 -59.1 154.7	12 36.1 -59.0 153.7	12 25.0 -58.9 152.7	12 13.7 -58.9 151.7	12 01.9 -58.8 150.7
10°	11 47.6 -59.0 154.8	11 37.1 -59.0 153.8	11 26.1 -58.9 152.9	11 14.8 -58.8 151.9	11 03.1 -58.8 150.9
11°	10 48.6 -59.1 155.0	10 38.1 -59.0 154.0	10 27.2 -58.9 153.1	10 16.0 -58.9 152.1	10 04.3 -58.7 151.1
12°	9 49.5 -59.1 155.2	9 39.1 -59.1 154.2	9 28.3 -59.0 153.2	9 17.1 -58.9 152.3	9 05.6 -58.8 151.3
13°	8 50.4 -59.1 155.4	8 40.0 -59.0 154.4	8 29.3 -58.9 153.4	8 18.2 -58.9 152.5	8 06.8 -58.8 151.5
14°	7 51.3 -59.1 155.5	7 41.0 -59.0 154.6	7 30.4 -59.0 153.6	7 19.3 -58.8 152.7	7 08.0 -58.8 151.7
15°	6 52.2 -59.1 155.7	6 42.0 -59.0 154.8	6 31.4 -58.9 153.8	6 20.5 -58.9 152.9	6 09.2 -58.9 151.9
16°	5 53.1 -59.1 155.9	5 43.0 -59.0 154.9	5 32.5 -59.0 154.0	5 21.6 -58.9 153.0	5 10.3 -58.8 152.1
17°	4 54.0 -59.1 156.1	4 44.0 -59.1 155.1	4 33.5 -59.0 154.2	4 22.7 -58.9 153.2	4 11.5 -58.8 152.3
18°	3 54.9 -59.1 156.2	3 44.9 -59.0 155.3	3 34.5 -58.9 154.4	3 23.8 -58.9 153.4	3 12.7 -58.8 152.5
19°	2 55.8 -59.1 156.4	2 45.9 -59.1 155.5	2 35.6 -59.0 154.6	2 24.9 -58.9 153.6	2 13.9 -58.8 152.7
20°	1 56.7 -59.1 156.6	1 46.8 -59.0 155.7	1 36.6 -59.0 154.7	1 26.0 -58.9 153.8	1 15.1 -58.9 152.9
21°	0 57.6 -59.1 156.8	0 47.8 -59.0 155.8	0 37.6 -58.9 154.9	0 27.1 -58.9 154.0	0 16.2 -58.8 153.1
22°	-0 01.5 -59.1	-0 11.2 -59.1	-0 21.3 -59.0	-0 31.8 -58.9	-0 42.6 -58.8
23°	-1 00.6 -59.1	-1 10.3 -59.0	-1 20.3 -59.0	-1 30.7 -58.9	-1 41.4 -58.8
24°	-1 59.7 -59.1	-2 09.3 -59.0	-2 19.3 -58.9	-2 29.6 -58.9	-2 40.2 -58.8
25°	-2 58.8 -59.1	-3 08.3 -59.1	-3 18.2 -59.0	-3 28.5 -58.9	-3 39.0 -58.8
26°	-3 57.9 -59.1	-4 07.4 -59.0	-4 17.2 -59.0	-4 27.4 -58.8	-4 37.8 -58.9
27°	-4 57.0 -59.1	-5 06.4 -59.0	-5 16.2 -58.9	-5 26.2 -58.9	-5 36.7 -58.8
28°	-5 56.1 -59.1	-6 05.4 -59.1	-6 15.1 -59.0	-6 25.1 -58.9	-6 35.5 -58.8
29°	-6 55.2 -59.1	-7 04.5 -59.0	-7 14.1 -58.9	-7 24.0 -58.9	-7 34.3 -58.8

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	20 37.5 -58.6 147.7	20 24.3 -58.5 146.7	20 10.7 -58.4 145.6	19 56.7 -58.3 144.6	19 42.4 -58.3 143.6
1°	19 38.9 -58.6 147.9	19 25.8 -58.5 146.9	19 12.3 -58.5 145.9	18 58.4 -58.4 144.8	18 44.1 -58.2 143.8
2°	18 40.3 -58.6 148.2	18 27.3 -58.6 147.1	18 13.8 -58.4 146.1	18 00.0 -58.3 145.1	17 45.9 -58.3 144.1
3°	17 41.7 -58.6 148.4	17 28.7 -58.5 147.4	17 15.4 -58.5 146.3	17 01.7 -58.4 145.3	16 47.6 -58.3 144.3
4°	16 43.1 -58.7 148.6	16 30.2 -58.6 147.6	16 16.9 -58.5 146.6	16 03.3 -58.4 145.6	15 49.3 -58.3 144.6
5°	15 44.4 -58.6 148.8	15 31.6 -58.5 147.8	15 18.4 -58.4 146.8	15 04.9 -58.4 145.8	14 51.0 -58.3 144.8
6°	14 45.8 -58.7 149.1	14 33.1 -58.6 148.0	14 20.0 -58.5 147.0	14 06.5 -58.4 146.0	13 52.7 -58.3 145.1
7°	13 47.1 -58.7 149.3	13 34.5 -58.6 148.3	13 21.5 -58.6 147.3	13 08.1 -58.4 146.3	12 54.4 -58.4 145.3
8°	12 48.4 -58.6 149.5	12 35.9 -58.6 148.5	12 22.9 -58.5 147.5	12 09.7 -58.5 146.5	11 56.0 -58.3 145.5
9°	11 49.8 -58.7 149.7	11 37.3 -58.6 148.7	11 24.4 -58.5 147.7	11 11.2 -58.4 146.7	10 57.7 -58.4 145.8
10°	10 51.1 -58.7 149.9	10 38.7 -58.7 148.9	10 25.9 -58.6 148.0	10 12.8 -58.5 147.0	9 59.3 -58.4 146.0
11°	9 52.4 -58.7 150.1	9 40.0 -58.6 149.1	9 27.3 -58.5 148.2	9 14.3 -58.5 147.2	9 00.9 -58.4 146.2
12°	8 53.7 -58.8 150.3	8 41.4 -58.6 149.4	8 28.8 -58.6 148.4	8 15.8 -58.5 147.4	8 02.5 -58.4 146.5
13°	7 54.9 -58.7 150.5	7 42.8 -58.7 149.6	7 30.2 -58.6 148.6	7 17.3 -58.5 147.7	7 04.1 -58.4 146.7
14°	6 56.2 -58.7 150.7	6 44.1 -58.6 149.8	6 31.6 -58.5 148.8	6 18.8 -58.4 147.9	6 05.7 -58.4 146.9
15°	5 57.5 -58.8 150.9	5 45.5 -58.7 150.0	5 33.1 -58.6 149.1	5 20.4 -58.5 148.1	5 07.3 -58.4 147.2
16°	4 58.7 -58.7 151.2	4 46.8 -58.7 150.2	4 34.5 -58.6 149.3	4 21.9 -58.5 148.3	4 08.9 -58.5 147.4
17°	4 00.0 -58.7 151.4	3 48.1 -58.6 150.4	3 35.9 -58.6 149.5	3 23.4 -58.6 148.6	3 10.4 -58.4 147.6
18°	3 01.3 -58.8 151.6	2 49.5 -58.7 150.6	2 37.3 -58.6 149.7	2 24.8 -58.5 148.8	2 12.0 -58.4 147.8
19°	2 02.5 -58.7 151.8	1 50.8 -58.7 150.8	1 38.7 -58.5 149.9	1 26.3 -58.5 149.0	1 13.6 -58.4 148.1
20°	1 03.8 -58.8 152.0	0 52.1 -58.6 151.1	0 40.2 -58.6 150.1	0 27.8 -58.5 149.2	0 15.2 -58.5 148.3
21°	0 05.0 -58.7 152.2	-0 06.5 -58.7	-0 18.4 -58.6	-0 30.7 -58.5	-0 43.3 -58.4
22°	-0 53.7 -58.8	-1 05.2 -58.7	-1 17.0 -58.6	-1 29.2 -58.5	-1 41.7 -58.4
23°	-1 52.5 -58.7	-2 03.9 -58.6	-2 15.6 -58.6	-2 27.7 -58.5	-2 40.1 -58.4
24°	-2 51.2 -58.7	-3 02.5 -58.7	-3 14.2 -58.6	-3 26.2 -58.5	-3 38.5 -58.4
25°	-3 49.9 -58.8	-4 01.2 -58.7	-4 12.8 -58.6	-4 24.7 -58.5	-4 36.9 -58.5
26°	-4 48.7 -58.7	-4 59.9 -58.6	-5 11.4 -58.5	-5 23.2 -58.5	-5 35.4 -58.4
27°	-5 47.4 -58.8	-5 58.5 -58.7	-6 09.9 -58.6	-6 21.7 -58.5	-6 33.8 -58.4
28°	-6 46.2 -58.7	-6 57.2 -58.6	-7 08.5 -58.6	-7 20.2 -58.5	-7 32.2 -58.4
29°	-7 44.9 -58.7	-7 55.8 -58.7	-8 07.1 -58.5	-8 18.7 -58.4	-8 30.6 -58.4

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	19 27.7 -58.1 142.5	19 12.7 -58.1 141.5	18 57.3 -57.9 140.5	18 41.6 -57.8 139.5	18 25.6 -57.8 138.4
1°	18 29.6 -58.2 142.8	18 14.6 -58.0 141.8	17 59.4 -58.0 140.8	17 43.8 -57.9 139.7	17 27.8 -57.8 138.7
2°	17 31.4 -58.2 143.0	17 16.6 -58.1 142.0	17 01.4 -58.0 141.0	16 45.9 -58.0 140.0	16 30.0 -57.8 139.0
3°	16 33.2 -58.2 143.3	16 18.5 -58.2 142.3	16 03.4 -58.1 141.3	15 47.9 -57.9 140.3	15 32.2 -57.9 139.3
4°	15 35.0 -58.2 143.6	15 20.3 -58.1 142.6	15 05.3 -58.0 141.6	14 50.0 -58.0 140.6	14 34.3 -57.8 139.6
5°	14 36.8 -58.3 143.8	14 22.2 -58.1 142.8	14 07.3 -58.1 141.8	13 52.0 -57.9 140.8	13 36.5 -57.9 139.8
6°	13 38.5 -58.2 144.1	13 24.1 -58.2 143.1	13 09.2 -58.1 142.1	12 54.1 -58.0 141.1	12 38.6 -57.9 140.1
7°	12 40.3 -58.3 144.3	12 25.9 -58.2 143.3	12 11.1 -58.1 142.3	11 56.1 -58.0 141.3	11 40.7 -58.0 140.4
8°	11 42.0 -58.2 144.5	11 27.7 -58.2 143.6	11 13.0 -58.1 142.6	10 58.1 -58.1 141.6	10 42.7 -57.9 140.6
9°	10 43.8 -58.3 144.8	10 29.5 -58.2 143.8	10 14.9 -58.1 142.8	10 00.0 -58.0 141.9	9 44.8 -57.9 140.9
10°	9 45.5 -58.3 145.0	9 31.3 -58.2 144.1	9 16.8 -58.1 143.1	9 02.0 -58.0 142.1	8 46.9 -58.0 141.2
11°	8 47.2 -58.3 145.3	8 33.1 -58.2 144.3	8 18.7 -58.2 143.3	8 04.0 -58.1 142.4	7 48.9 -58.0 141.4
12°	7 48.9 -58.4 145.5	7 34.9 -58.3 144.5	7 20.5 -58.1 143.6	7 05.9 -58.1 142.6	6 50.9 -57.9 141.7
13°	6 50.5 -58.3 145.7	6 36.6 -58.2 144.8	6 22.4 -58.2 143.8	6 07.8 -58.0 142.9	5 53.0 -58.0 141.9
14°	5 52.2 -58.3 146.0	5 38.4 -58.3 145.0	5 24.2 -58.1 144.1	5 09.8 -58.1 143.1	4 55.0 -58.0 142.2
15°	4 53.9 -58.4 146.2	4 40.1 -58.2 145.3	4 26.1 -58.2 144.3	4 11.7 -58.1 143.4	3 57.0 -58.0 142.5
16°	3 55.5 -58.3 146.5	3 41.9 -58.3 145.5	3 27.9 -58.2 144.6	3 13.6 -58.1 143.6	2 59.0 -58.0 142.7
17°	2 57.2 -58.3 146.7	2 43.6 -58.2 145.8	2 29.7 -58.1 144.8	2 15.5 -58.1 143.9	2 01.0 -58.0 143.0
18°	1 58.9 -58.4 146.9	1 45.4 -58.3 146.0	1 31.6 -58.2 145.1	1 17.4 -58.0 144.1	1 03.0 -58.0 143.2
19°	1 00.5 -58.3 147.2	0 47.1 -58.2 146.2	0 33.4 -58.2 145.3	0 19.4 -58.1 144.4	0 05.0 -58.0 143.5
20°	0 02.2 -58.4 147.4	-0 11.1 -58.3	-0 24.8 -58.1	-0 38.7 -58.1	-0 53.0 -58.0
21°	-0 56.2 -58.3	-1 09.4 -58.3	-1 22.9 -58.2	-1 36.8 -58.1	-1 51.0 -58.0
22°	-1 54.5 -58.3	-2 07.7 -58.2	-2 21.1 -58.2	-2 34.9 -58.1	-2 49.0 -58.0
23°	-2 52.8 -58.4	-3 05.9 -58.3	-3 19.3 -58.2	-3 33.0 -58.1	-3 47.0 -58.0
24°	-3 51.2 -58.3	-4 04.2 -58.2	-4 17.5 -58.1	-4 31.1 -58.0	-4 45.0 -58.0
25°	-4 49.5 -58.3	-5 02.4 -58.3	-5 15.6 -58.2	-5 29.1 -58.1	-5 43.0 -58.0
26°	-5 47.8 -58.4	-6 00.7 -58.2	-6 13.8 -58.1	-6 27.2 -58.1	-6 41.0 -57.9
27°	-6 46.2 -58.3	-6 58.9 -58.2	-7 11.9 -58.2	-7 25.3 -58.0	-7 38.9 -58.0
28°	-7 44.5 -58.3	-7 57.1 -58.2	-8 10.1 -58.1	-8 23.3 -58.1	-8 36.9 -57.9
29°	-8 42.8 -58.3	-8 55.3 -58.3	-9 08.2 -58.1	-9 21.4 -58.0	-9 34.8 -58.0

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	18 09.3 -57.7 137.4	17 52.6 -57.6 136.4	17 35.6 -57.5 135.4	17 18.3 -57.4 134.4	17 00.8 -57.4 133.4
1°	17 11.6 -57.8 137.7	16 55.0 -57.6 136.7	16 38.1 -57.5 135.7	16 20.9 -57.4 134.7	16 03.4 -57.3 133.7
2°	16 13.8 -57.7 138.0	15 57.4 -57.7 137.0	15 40.6 -57.6 136.0	15 23.5 -57.5 135.0	15 06.1 -57.4 134.0
3°	15 16.1 -57.8 138.3	14 59.7 -57.7 137.3	14 43.0 -57.6 136.3	14 26.0 -57.5 135.3	14 08.7 -57.4 134.3
4°	14 18.3 -57.7 138.6	14 02.0 -57.7 137.6	13 45.4 -57.6 136.6	13 28.5 -57.5 135.6	13 11.3 -57.5 134.6
5°	13 20.6 -57.9 138.8	13 04.3 -57.7 137.9	12 47.8 -57.6 136.9	12 31.0 -57.6 135.9	12 13.8 -57.4 134.9
6°	12 22.7 -57.8 139.1	12 06.6 -57.7 138.1	11 50.2 -57.7 137.2	11 33.4 -57.5 136.2	11 16.4 -57.5 135.2
7°	11 24.9 -57.8 139.4	11 08.9 -57.8 138.4	10 52.5 -57.6 137.4	10 35.9 -57.6 136.5	10 18.9 -57.5 135.5
8°	10 27.1 -57.9 139.7	10 11.1 -57.7 138.7	9 54.9 -57.7 137.7	9 38.3 -57.6 136.8	9 21.4 -57.4 135.8
9°	9 29.2 -57.8 139.9	9 13.4 -57.8 139.0	8 57.2 -57.7 138.0	8 40.7 -57.6 137.0	8 24.0 -57.6 136.1
10°	8 31.4 -57.9 140.2	8 15.6 -57.8 139.2	7 59.5 -57.7 138.3	7 43.1 -57.6 137.3	7 26.4 -57.5 136.4
11°	7 33.5 -57.9 140.5	7 17.8 -57.8 139.5	7 01.8 -57.7 138.6	6 45.5 -57.6 137.6	6 28.9 -57.5 136.7
12°	6 35.6 -57.8 140.7	6 20.0 -57.8 139.8	6 04.1 -57.7 138.8	5 47.9 -57.6 137.9	5 31.4 -57.5 136.9
13°	5 37.8 -57.9 141.0	5 22.2 -57.8 140.1	5 06.4 -57.7 139.1	4 50.3 -57.6 138.2	4 33.9 -57.6 137.2
14°	4 39.9 -57.9 141.3	4 24.4 -57.8 140.3	4 08.7 -57.7 139.4	3 52.7 -57.7 138.5	3 36.3 -57.5 137.5
15°	3 42.0 -58.0 141.5	3 26.6 -57.8 140.6	3 11.0 -57.8 139.7	2 55.0 -57.6 138.7	2 38.8 -57.6 137.8
16°	2 44.0 -57.9 141.8	2 28.8 -57.8 140.9	2 13.2 -57.7 139.9	1 57.4 -57.7 139.0	1 41.2 -57.5 138.1
17°	1 46.1 -57.9 142.0	1 31.0 -57.8 141.1	1 15.5 -57.7 140.2	0 59.7 -57.6 139.3	0 43.7 -57.6 138.4
18°	0 48.2 -57.9 142.3	0 33.2 -57.9 141.4	0 17.8 -57.8 140.5	0 02.1 -57.7 139.6	-0 13.9 -57.5
19°	-0 09.7 -57.9	-0 24.7 -57.8	-0 40.0 -57.7	-0 55.6 -57.6	-1 11.4 -57.6
20°	-1 07.6 -57.9	-1 22.5 -57.8	-1 37.7 -57.7	-1 53.2 -57.6	-2 09.0 -57.5
21°	-2 05.5 -57.9	-2 20.3 -57.8	-2 35.4 -57.8	-2 50.8 -57.7	-3 06.5 -57.6
22°	-3 03.4 -57.9	-3 18.1 -57.9	-3 33.2 -57.7	-3 48.5 -57.6	-4 04.1 -57.5
23°	-4 01.3 -57.9	-4 16.0 -57.8	-4 30.9 -57.7	-4 46.1 -57.6	-5 01.6 -57.6
24°	-4 59.2 -57.9	-5 13.8 -57.8	-5 28.6 -57.7	-5 43.7 -57.7	-5 59.2 -57.5
25°	-5 57.1 -57.9	-6 11.6 -57.8	-6 26.3 -57.7	-6 41.4 -57.6	-6 56.7 -57.5
26°	-6 55.0 -57.9	-7 09.4 -57.7	-7 24.0 -57.7	-7 39.0 -57.6	-7 54.2 -57.5
27°	-7 52.9 -57.8	-8 07.1 -57.8	-8 21.7 -57.7	-8 36.6 -57.5	-8 51.7 -57.5
28°	-8 50.7 -57.9	-9 04.9 -57.8	-9 19.4 -57.6	-9 34.1 -57.6	-9 49.2 -57.5
29°	-9 48.6 -57.8				

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	16 42.9 -57.3 132.4	16 24.7 -57.1 131.4	16 06.3 -57.1 130.4	15 47.6 -57.0 129.4	15 28.6 -56.9 128.5
1°	15 45.6 -57.2 132.7	15 27.6 -57.2 131.7	15 09.2 -57.1 130.7	14 50.6 -57.0 129.8	14 31.7 -56.9 128.8
2°	14 48.4 -57.3 133.0	14 30.4 -57.2 132.0	14 12.1 -57.1 131.1	13 53.6 -57.0 130.1	13 34.8 -57.0 129.1
3°	13 51.1 -57.3 133.3	13 33.2 -57.3 132.4	13 15.0 -57.1 131.4	12 56.6 -57.1 130.4	12 37.8 -56.9 129.4
4°	12 53.8 -57.4 133.6	12 35.9 -57.2 132.7	12 17.9 -57.2 131.7	11 59.5 -57.1 130.7	11 40.9 -57.0 129.8
5°	11 56.4 -57.3 133.9	11 38.7 -57.3 133.0	11 20.7 -57.2 132.0	11 02.4 -57.1 131.0	10 43.9 -57.0 130.1
6°	10 59.1 -57.4 134.2	10 41.4 -57.3 133.3	10 23.5 -57.2 132.3	10 05.3 -57.1 131.4	9 46.9 -57.0 130.4
7°	10 01.7 -57.4 134.5	9 44.1 -57.3 133.6	9 26.3 -57.2 132.6	9 08.2 -57.1 131.7	8 49.9 -57.1 130.7
8°	9 04.3 -57.4 134.8	8 46.8 -57.3 133.9	8 29.1 -57.2 132.9	8 11.1 -57.1 132.0	7 52.8 -57.0 131.0
9°	8 06.9 -57.4 135.1	7 49.5 -57.3 134.2	7 31.9 -57.3 133.2	7 14.0 -57.2 132.3	6 55.8 -57.1 131.3
10°	7 09.5 -57.5 135.4	6 52.2 -57.3 134.5	6 34.6 -57.2 133.5	6 16.8 -57.2 132.6	5 58.7 -57.1 131.6
11°	6 12.0 -57.4 135.7	5 54.9 -57.4 134.8	5 37.4 -57.3 133.8	5 19.6 -57.1 132.9	5 01.6 -57.1 132.0
12°	5 14.6 -57.5 136.0	4 57.5 -57.4 135.1	4 40.1 -57.2 134.1	4 22.5 -57.2 133.2	4 04.5 -57.0 132.3
13°	4 17.1 -57.4 136.3	4 00.1 -57.3 135.4	3 42.9 -57.3 134.4	3 25.3 -57.2 133.5	3 07.5 -57.1 132.6
14°	3 19.7 -57.5 136.6	3 02.8 -57.4 135.7	2 45.6 -57.3 134.7	2 28.1 -57.2 133.8	2 10.4 -57.1 132.9
15°	2 22.2 -57.4 136.9	2 05.4 -57.4 135.9	1 48.3 -57.3 135.0	1 30.9 -57.2 134.1	1 13.3 -57.1 133.2
16°	1 24.8 -57.5 137.2	1 08.0 -57.3 136.2	0 51.0 -57.3 135.3	0 33.7 -57.2 134.4	0 16.2 -57.1 133.5
17°	0 27.3 -57.5 137.5	0 10.7 -57.4 136.5	-0 06.3 -57.2	-0 23.5 -57.2	-0 40.9 -57.2
18°	-0 30.2 -57.4	-0 46.7 -57.4	-1 03.5 -57.3	-1 20.7 -57.2	-1 38.1 -57.1
19°	-1 27.6 -57.5	-1 44.1 -57.4	-2 00.8 -57.3	-2 17.9 -57.1	-2 35.2 -57.0
20°	-2 25.1 -57.4	-2 41.5 -57.3	-2 58.1 -57.3	-3 15.0 -57.2	-3 32.2 -57.1
21°	-3 22.5 -57.5	-3 38.8 -57.4	-3 55.4 -57.2	-4 12.2 -57.2	-4 29.3 -57.1
22°	-4 20.0 -57.4	-4 36.2 -57.3	-4 52.6 -57.3	-5 09.4 -57.2	-5 26.4 -57.1
23°	-5 17.4 -57.5	-5 33.5 -57.4	-5 49.9 -57.3	-6 06.6 -57.1	-6 23.5 -57.0
24°	-6 14.9 -57.4	-6 30.9 -57.3	-6 47.2 -57.2	-7 03.7 -57.2	-7 20.5 -57.1
25°	-7 12.3 -57.4	-7 28.2 -57.3	-7 44.4 -57.2	-8 00.9 -57.1	-8 17.6 -57.0
26°	-8 09.7 -57.4	-8 25.5 -57.3	-8 41.6 -57.2	-8 58.0 -57.1	-9 14.6 -57.0
27°	-9 07.1 -57.4	-9 22.8 -57.3	-9 38.8 -57.2	-9 55.1 -57.1	
28°					
29°					

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	15 09.4 -56.9 127.5	14 49.9 -56.8 126.5	14 30.1 -56.6 125.5	14 10.1 -56.5 124.5	13 49.9 -56.5 123.6
1°	14 12.5 -56.8 127.8	13 53.1 -56.7 126.8	13 33.5 -56.7 125.9	13 13.6 -56.6 124.9	12 53.4 -56.4 123.9
2°	13 15.7 -56.8 128.1	12 56.4 -56.8 127.2	12 36.8 -56.7 126.2	12 17.0 -56.6 125.2	11 57.0 -56.6 124.3
3°	12 18.9 -56.9 128.5	11 59.6 -56.8 127.5	11 40.1 -56.7 126.5	11 20.4 -56.6 125.6	11 00.4 -56.5 124.6
4°	11 22.0 -56.9 128.8	11 02.8 -56.8 127.8	10 43.4 -56.7 126.9	10 23.8 -56.7 125.9	10 03.9 -56.6 124.9
5°	10 25.1 -56.9 129.1	10 06.0 -56.8 128.2	9 46.7 -56.7 127.2	9 27.1 -56.6 126.2	9 07.3 -56.5 125.3
6°	9 28.2 -57.0 129.4	9 09.2 -56.9 128.5	8 50.0 -56.8 127.5	8 30.5 -56.7 126.6	8 10.8 -56.6 125.6
7°	8 31.2 -56.9 129.8	8 12.3 -56.8 128.8	7 53.2 -56.8 127.9	7 33.8 -56.7 126.9	7 14.2 -56.6 126.0
8°	7 34.3 -57.0 130.1	7 15.5 -56.9 129.1	6 56.4 -56.8 128.2	6 37.1 -56.7 127.2	6 17.6 -56.7 126.3
9°	6 37.3 -57.0 130.4	6 18.6 -56.9 129.4	5 59.6 -56.8 128.5	5 40.4 -56.7 127.6	5 20.9 -56.6 126.6
10°	5 40.3 -57.0 130.7	5 21.7 -56.9 129.8	5 02.8 -56.8 128.8	4 43.7 -56.7 127.9	4 24.3 -56.6 127.0
11°	4 43.3 -56.9 131.0	4 24.8 -56.9 130.1	4 06.0 -56.8 129.1	3 47.0 -56.8 128.2	3 27.7 -56.7 127.3
12°	3 46.4 -57.1 131.3	3 27.9 -56.9 130.4	3 09.2 -56.8 129.5	2 50.2 -56.7 128.5	2 31.0 -56.6 127.6
13°	2 49.3 -57.0 131.6	2 31.0 -56.9 130.7	2 12.4 -56.9 129.8	1 53.5 -56.8 128.9	1 34.4 -56.7 127.9
14°	1 52.3 -57.0 132.0	1 34.1 -57.0 131.0	1 15.5 -56.8 130.1	0 56.7 -56.7 129.2	0 37.7 -56.7 128.3
15°	0 55.3 -57.0 132.3	0 37.1 -56.9 131.3	0 18.7 -56.8 130.4	0 00.0 -56.8 129.5	-0 19.0 -56.6
16°	-0 01.7 -57.0	-0 19.8 -56.9	-0 38.1 -56.9	-0 56.8 -56.7	-1 15.6 -56.7
17°	-0 58.7 -57.0	-1 16.7 -56.9	-1 35.0 -56.8	-1 53.5 -56.7	-2 12.3 -56.6
18°	-1 55.7 -57.0	-2 13.6 -56.9	-2 31.8 -56.8	-2 50.2 -56.8	-3 08.9 -56.7
19°	-2 52.7 -57.0	-3 10.5 -57.0	-3 28.6 -56.9	-3 47.0 -56.7	-4 05.6 -56.6
20°	-3 49.7 -57.0	-4 07.5 -56.9	-4 25.5 -56.8	-4 43.7 -56.7	-5 02.2 -56.6
21°	-4 46.7 -57.0	-5 04.4 -56.9	-5 22.3 -56.8	-5 40.4 -56.7	-5 58.8 -56.6
22°	-5 43.7 -57.0	-6 01.3 -56.8	-6 19.1 -56.8	-6 37.1 -56.7	-6 55.4 -56.6
23°	-6 40.7 -56.9	-6 58.1 -56.9	-7 15.9 -56.7	-7 33.8 -56.7	-7 52.0 -56.6
24°	-7 37.6 -57.0	-7 55.0 -56.9	-8 12.6 -56.8	-8 30.5 -56.7	-8 48.6 -56.6
25°	-8 34.6 -56.9	-8 51.9 -56.8	-9 09.4 -56.7	-9 27.2 -56.6	-9 45.2 -56.5
26°	-9 31.5 -56.9	-9 48.7 -56.8			
27°					
28°					
29°					

Dec	LHA 055° / 305°	LHA 056° / 304°	LHA 057° / 303°	LHA 058° / 302°	LHA 059° / 301°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	13 29.5 -56.4 122.6	13 08.8 -56.3 121.6	12 47.9 -56.2 120.7	12 26.8 -56.1 119.7	12 05.5 -56.0 118.8
1°	12 33.1 -56.4 123.0	12 12.5 -56.3 122.0	11 51.7 -56.3 121.0	11 30.7 -56.2 120.1	11 09.5 -56.1 119.1
2°	11 36.7 -56.5 123.3	11 16.2 -56.4 122.3	10 55.4 -56.2 121.4	10 34.5 -56.2 120.4	10 13.4 -56.2 119.5
3°	10 40.2 -56.4 123.7	10 19.8 -56.4 122.7	9 59.2 -56.3 121.7	9 38.3 -56.2 120.8	9 17.2 -56.1 119.8
4°	9 43.8 -56.5 124.0	9 23.4 -56.4 123.0	9 02.9 -56.3 122.1	8 42.1 -56.2 121.1	8 21.1 -56.2 120.2
5°	8 47.3 -56.5 124.3	8 27.0 -56.4 123.4	8 06.6 -56.4 122.4	7 45.9 -56.3 121.5	7 24.9 -56.1 120.6
6°	7 50.8 -56.5 124.7	7 30.6 -56.4 123.7	7 10.2 -56.3 122.8	6 49.6 -56.3 121.9	6 28.8 -56.2 120.9
7°	6 54.3 -56.5 125.0	6 34.2 -56.4 124.1	6 13.9 -56.4 123.1	5 53.3 -56.3 122.2	5 32.6 -56.2 121.3
8°	5 57.8 -56.6 125.4	5 37.8 -56.5 124.4	5 17.5 -56.4 123.5	4 57.0 -56.3 122.5	4 36.4 -56.2 121.6
9°	5 01.2 -56.5 125.7	4 41.3 -56.5 124.8	4 21.1 -56.4 123.8	4 00.7 -56.3 122.9	3 40.2 -56.3 122.0
10°	4 04.7 -56.6 126.0	3 44.8 -56.4 125.1	3 24.7 -56.3 124.2	3 04.4 -56.3 123.2	2 43.9 -56.2 122.3
11°	3 08.1 -56.5 126.4	2 48.4 -56.5 125.4	2 28.4 -56.4 124.5	2 08.1 -56.3 123.6	1 47.7 -56.2 122.7
12°	2 11.6 -56.6 126.7	1 51.9 -56.5 125.8	1 32.0 -56.4 124.9	1 11.8 -56.3 123.9	0 51.5 -56.3 123.0
13°	1 15.0 -56.6 127.0	0 55.4 -56.5 126.1	0 35.6 -56.4 125.2	0 15.5 -56.3 124.3	-0 04.8 -56.2
14°	0 18.4 -56.6 127.4	-0 01.1 -56.5	-0 20.8 -56.4	-0 40.8 -56.3	-1 01.0 -56.2
15°	-0 38.2 -56.5	-0 57.6 -56.5	-1 17.2 -56.4	-1 37.1 -56.3	-1 57.2 -56.3
16°	-1 34.7 -56.6	-1 54.1 -56.4	-2 13.6 -56.4	-2 33.4 -56.3	-2 53.5 -56.2
17°	-2 31.3 -56.6	-2 50.5 -56.5	-3 10.0 -56.4	-3 29.7 -56.3	-3 49.7 -56.2
18°	-3 27.9 -56.5	-3 47.0 -56.5	-4 06.4 -56.4	-4 26.0 -56.3	-4 45.9 -56.2
19°	-4 24.4 -56.6	-4 43.5 -56.4	-5 02.8 -56.4	-5 22.3 -56.3	-5 42.1 -56.2
20°	-5 21.0 -56.5	-5 39.9 -56.5	-5 59.2 -56.3	-6 18.6 -56.3	-6 38.3 -56.2
21°	-6 17.5 -56.5	-6 36.4 -56.4	-6 55.5 -56.4	-7 14.9 -56.2	-7 34.5 -56.1
22°	-7 14.0 -56.5	-7 32.8 -56.4	-7 51.9 -56.3	-8 11.1 -56.3	-8 30.6 -56.2
23°	-8 10.5 -56.5	-8 29.2 -56.4	-8 48.2 -56.3	-9 07.4 -56.2	-9 26.8 -56.1
24°	-9 07.0 -56.5	-9 25.6 -56.4	-9 44.5 -56.3		
25°					
26°					
27°					
28°					
29°					

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	11 44.0 -56.0 117.8	11 22.4 -56.0 116.9	11 00.5 -55.9 115.9	10 38.5 -55.8 115.0	10 16.3 -55.8 114.0
1°	10 48.0 -56.0 118.2	10 26.4 -55.9 117.2	10 04.6 -55.8 116.3	9 42.7 -55.8 115.3	9 20.5 -55.7 114.4
2°	9 52.0 -56.0 118.5	9 30.5 -56.0 117.6	9 08.8 -55.9 116.6	8 46.9 -55.9 115.7	8 24.8 -55.8 114.8
3°	8 56.0 -56.1 118.9	8 34.5 -56.0 118.0	8 12.9 -56.0 117.0	7 51.0 -55.8 116.1	7 29.0 -55.8 115.1
4°	7 59.9 -56.1 119.3	7 38.5 -56.0 118.3	7 16.9 -55.9 117.4	6 55.2 -55.9 116.4	6 33.2 -55.8 115.5
5°	7 03.8 -56.1 119.6	6 42.5 -56.0 118.7	6 21.0 -55.9 117.7	5 59.3 -55.9 116.8	5 37.4 -55.8 115.9
6°	6 07.7 -56.1 120.0	5 46.5 -56.1 119.0	5 25.1 -56.0 118.1	5 03.4 -55.9 117.2	4 41.6 -55.8 116.2
7°	5 11.6 -56.1 120.3	4 50.4 -56.0 119.4	4 29.1 -56.0 118.5	4 07.5 -55.9 117.5	3 45.8 -55.8 116.6
8°	4 15.5 -56.2 120.7	3 54.4 -56.1 119.8	3 33.1 -56.0 118.8	3 11.6 -55.9 117.9	2 50.0 -55.9 117.0
9°	3 19.3 -56.1 121.0	2 58.3 -56.0 120.1	2 37.1 -56.0 119.2	2 15.7 -55.9 118.3	1 54.1 -55.8 117.3
10°	2 23.2 -56.1 121.4	2 02.3 -56.1 120.5	1 41.1 -56.0 119.6	1 19.8 -55.9 118.6	0 58.3 -55.8 117.7
11°	1 27.1 -56.2 121.7	1 06.2 -56.1 120.8	0 45.1 -56.0 119.9	0 23.9 -55.9 119.0	0 02.5 -55.9 118.1
12°	0 30.9 -56.2 122.1	0 10.1 -56.1 121.2	-0 10.9 -56.0	-0 32.0 -56.0	-0 53.4 -55.8
13°	-0 25.3 -56.1	-0 46.0 -56.0	-1 06.9 -55.9	-1 28.0 -55.9	-1 49.2 -55.9
14°	-1 21.4 -56.2	-1 42.0 -56.1	-2 02.8 -56.0	-2 23.9 -55.9	-2 45.1 -55.8
15°	-2 17.6 -56.1	-2 38.1 -56.1	-2 58.8 -56.0	-3 19.8 -55.9	-3 40.9 -55.8
16°	-3 13.7 -56.1	-3 34.2 -56.0	-3 54.8 -56.0	-4 15.7 -55.9	-4 36.7 -55.9
17°	-4 09.8 -56.2	-4 30.2 -56.1	-4 50.8 -56.0	-5 11.6 -55.9	-5 32.6 -55.7
18°	-5 06.0 -56.1	-5 26.3 -56.0	-5 46.8 -55.9	-6 07.5 -55.8	-6 28.3 -55.8
19°	-6 02.1 -56.1	-6 22.3 -56.0	-6 42.7 -55.9	-7 03.3 -55.9	-7 24.1 -55.8
20°	-6 58.2 -56.1	-7 18.3 -56.0	-7 38.6 -55.9	-7 59.2 -55.8	-8 19.9 -55.7
21°	-7 54.3 -56.0	-8 14.3 -56.0	-8 34.5 -55.9	-8 55.0 -55.8	-9 15.6 -55.8
22°	-8 50.3 -56.1	-9 10.3 -55.9	-9 30.4 -55.9	-9 50.8 -55.8	
23°	-9 46.4 -56.0				
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	9 53.9 -55.7 113.1	9 31.3 -55.5 112.1	9 08.7 -55.6 111.2	8 45.8 -55.4 110.3	8 22.9 -55.4 109.3
1°	8 58.2 -55.7 113.5	8 35.8 -55.7 112.5	8 13.1 -55.5 111.6	7 50.4 -55.5 110.6	7 27.5 -55.5 109.7
2°	8 02.5 -55.6 113.8	7 40.1 -55.6 112.9	7 17.6 -55.6 112.0	6 54.9 -55.5 111.0	6 32.0 -55.4 110.1
3°	7 06.9 -55.8 114.2	6 44.5 -55.6 113.3	6 22.0 -55.6 112.3	5 59.4 -55.6 111.4	5 36.6 -55.5 110.5
4°	6 11.1 -55.7 114.6	5 48.9 -55.7 113.6	5 26.4 -55.6 112.7	5 03.8 -55.5 111.8	4 41.1 -55.5 110.9
5°	5 15.4 -55.7 115.0	4 53.2 -55.7 114.0	4 30.8 -55.6 113.1	4 08.3 -55.5 112.2	3 45.6 -55.5 111.2
6°	4 19.7 -55.8 115.3	3 57.5 -55.7 114.4	3 35.2 -55.6 113.5	3 12.8 -55.6 112.5	2 50.1 -55.5 111.6
7°	3 23.9 -55.8 115.7	3 01.8 -55.7 114.8	2 39.6 -55.6 113.8	2 17.2 -55.6 112.9	1 54.6 -55.5 112.0
8°	2 28.1 -55.7 116.1	2 06.1 -55.7 115.1	1 44.0 -55.7 114.2	1 21.6 -55.5 113.3	0 59.1 -55.5 112.4
9°	1 32.4 -55.8 116.4	1 10.4 -55.7 115.5	0 48.3 -55.6 114.6	0 26.1 -55.6 113.7	0 03.6 -55.5 112.8
10°	0 36.6 -55.8 116.8	0 14.7 -55.7 115.9	-0 07.3 -55.6	-0 29.5 -55.6	-0 51.9 -55.5
11°	-0 19.2 -55.7	-0 41.0 -55.7	-1 02.9 -55.7	-1 25.1 -55.5	-1 47.4 -55.5
12°	-1 14.9 -55.8	-1 36.7 -55.7	-1 58.6 -55.6	-2 20.6 -55.6	-2 42.9 -55.5
13°	-2 10.7 -55.8	-2 32.4 -55.7	-2 54.2 -55.6	-3 16.2 -55.6	-3 38.4 -55.4
14°	-3 06.5 -55.7	-3 28.1 -55.6	-3 49.8 -55.6	-4 11.8 -55.5	-4 33.8 -55.5
15°	-4 02.2 -55.8	-4 23.7 -55.7	-4 45.4 -55.6	-5 07.3 -55.5	-5 29.3 -55.5
16°	-4 58.0 -55.7	-5 19.4 -55.7	-5 41.0 -55.6	-6 02.8 -55.5	-6 24.8 -55.4
17°	-5 53.7 -55.7	-6 15.1 -55.6	-6 36.6 -55.6	-6 58.3 -55.5	-7 20.2 -55.4
18°	-6 49.4 -55.7	-7 10.7 -55.6	-7 32.2 -55.5	-7 53.8 -55.5	-8 15.6 -55.4
19°	-7 45.1 -55.7	-8 06.3 -55.6	-8 27.7 -55.5	-8 49.3 -55.4	-9 11.0 -55.4
20°	-8 40.8 -55.7	-9 01.9 -55.6	-9 23.2 -55.5	-9 44.7 -55.5	
21°	-9 36.5 -55.6	-9 57.5 -55.6			
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 070° / 290°	LHA 071° / 289°	LHA 072° / 288°	LHA 073° / 287°	LHA 074° / 286°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	7 59.8 -55.4 108.4	7 36.6 -55.3 107.5	7 13.2 -55.2 106.5	6 49.8 -55.2 105.6	6 26.2 -55.1 104.7
1°	7 04.4 -55.4 108.8	6 41.3 -55.4 107.9	6 18.0 -55.3 106.9	5 54.6 -55.3 106.0	5 31.1 -55.2 105.1
2°	6 09.0 -55.4 109.2	5 45.9 -55.3 108.2	5 22.7 -55.3 107.3	4 59.3 -55.2 106.4	4 35.9 -55.2 105.5
3°	5 13.6 -55.4 109.6	4 50.6 -55.4 108.6	4 27.4 -55.3 107.7	4 04.1 -55.3 106.8	3 40.7 -55.2 105.9
4°	4 18.2 -55.4 109.9	3 55.2 -55.3 109.0	3 32.1 -55.3 108.1	3 08.8 -55.2 107.2	2 45.5 -55.3 106.3
5°	3 22.8 -55.4 110.3	2 59.9 -55.4 109.4	2 36.8 -55.3 108.5	2 13.6 -55.3 107.6	1 50.2 -55.2 106.6
6°	2 27.4 -55.5 110.7	2 04.5 -55.4 109.8	1 41.5 -55.4 108.9	1 18.3 -55.3 108.0	0 55.0 -55.2 107.0
7°	1 31.9 -55.4 111.1	1 09.1 -55.4 110.2	0 46.1 -55.3 109.3	0 23.0 -55.2 108.3	-0 00.2 -55.2
8°	0 36.5 -55.4 111.5	0 13.7 -55.4 110.6	-0 09.2 -55.3	-0 32.2 -55.3	-0 55.4 -55.2
9°	-0 18.9 -55.5	-0 41.7 -55.3	-1 04.5 -55.4	-1 27.5 -55.3	-1 50.6 -55.3
10°	-1 14.4 -55.4	-1 37.0 -55.4	-1 59.9 -55.3	-2 22.8 -55.3	-2 45.9 -55.2
11°	-2 09.8 -55.5	-2 32.4 -55.4	-2 55.2 -55.3	-3 18.1 -55.2	-3 41.1 -55.2
12°	-3 05.3 -55.4	-3 27.8 -55.4	-3 50.5 -55.3	-4 13.3 -55.2	-4 36.3 -55.1
13°	-4 00.7 -55.4	-4 23.2 -55.3	-4 45.8 -55.3	-5 08.5 -55.3	-5 31.4 -55.2
14°	-4 56.1 -55.4	-5 18.5 -55.4	-5 41.1 -55.2	-6 03.8 -55.2	-6 26.6 -55.2
15°	-5 51.5 -55.4	-6 13.9 -55.3	-6 36.3 -55.3	-6 59.0 -55.2	-7 21.8 -55.1
16°	-6 46.9 -55.4	-7 09.2 -55.3	-7 31.6 -55.2	-7 54.2 -55.1	-8 16.9 -55.1
17°	-7 42.3 -55.3	-8 04.5 -55.2	-8 26.8 -55.2	-8 49.3 -55.2	-9 12.0 -55.1
18°	-8 37.6 -55.3	-8 59.7 -55.3	-9 22.0 -55.2	-9 44.5 -55.1	
19°	-9 32.9 -55.3	-9 55.0 -55.2			
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Dec	LHA 075° / 285°	LHA 076° / 284°	LHA 077° / 283°	LHA 078° / 282°	LHA 079° / 281°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	6 02.6 -55.2 103.8	5 38.8 -55.1 102.8	5 15.0 -55.1 101.9	4 51.1 -55.1 101.0	4 27.1 -55.0 100.1
1°	5 07.4 -55.1 104.2	4 43.7 -55.1 103.2	4 19.9 -55.0 102.3	3 56.0 -55.0 101.4	3 32.1 -55.0 100.5
2°	4 12.3 -55.2 104.5	3 48.6 -55.1 103.6	3 24.9 -55.1 102.7	3 01.0 -55.0 101.8	2 37.1 -55.0 100.9
3°	3 17.1 -55.1 104.9	2 53.5 -55.1 104.0	2 29.8 -55.1 103.1	2 06.0 -55.1 102.2	1 42.1 -55.0 101.3
4°	2 22.0 -55.2 105.3	1 58.4 -55.1 104.4	1 34.7 -55.1 103.5	1 10.9 -55.0 102.6	0 47.1 -55.0 101.7
5°	1 26.8 -55.2 105.7	1 03.3 -55.2 104.8	0 39.6 -55.1 103.9	0 15.9 -55.1 103.0	-0 07.9 -55.0
6°	0 31.6 -55.1 106.1	0 08.1 -55.1 105.2	-0 15.5 -55.0	-0 39.2 -55.0	-1 02.9 -55.0
7°	-0 23.5 -55.2	-0 47.0 -55.1	-1 10.5 -55.1	-1 34.2 -55.0	-1 57.9 -55.0
8°	-1 18.7 -55.2	-1 42.1 -55.1	-2 05.6 -55.1	-2 29.2 -55.1	-2 52.9 -55.0
9°	-2 13.9 -55.1	-2 37.2 -55.2	-3 00.7 -55.1	-3 24.3 -55.0	-3 47.9 -55.0
10°	-3 09.0 -55.2	-3 32.4 -55.1	-3 55.8 -55.0	-4 19.3 -55.0	-4 42.9 -55.0
11°	-4 04.2 -55.1	-4 27.5 -55.1	-4 50.8 -55.1	-5 14.3 -55.0	-5 37.9 -54.9
12°	-4 59.3 -55.2	-5 22.6 -55.0	-5 45.9 -55.0	-6 09.3 -55.0	-6 32.8 -55.0
13°	-5 54.5 -55.1	-6 17.6 -55.1	-6 40.9 -55.0	-7 04.3 -54.9	-7 27.8 -54.9
14°	-6 49.6 -55.1	-7 12.7 -55.0	-7 35.9 -55.0	-7 59.2 -55.0	-8 22.7 -54.9
15°	-7 44.7 -55.1	-8 07.7 -55.0	-8 30.9 -54.9	-8 54.2 -54.9	-9 17.6 -54.8
16°	-8 39.8 -55.0	-9 02.7 -55.0	-9 25.8 -55.0	-9 49.1 -54.9	
17°	-9 34.8 -55.0	-9 57.7 -55.0			
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Dec	LHA 080° / 280°	LHA 081° / 279°	LHA 082° / 278°	LHA 083° / 277°	LHA 084° / 276°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	4 03.0 -54.9 99.2	3 38.9 -54.9 98.2	3 14.7 -54.9 97.3	2 50.5 -54.9 96.4	2 26.2 -54.9 95.5
1°	3 08.1 -55.0 99.6	2 44.0 -55.0 98.6	2 19.8 -54.9 97.7	1 55.6 -54.9 96.8	1 31.3 -54.8 95.9
2°	2 13.1 -55.0 100.0	1 49.0 -54.9 99.0	1 24.9 -54.9 98.1	1 00.7 -54.9 97.2	0 36.5 -54.9 96.3
3°	1 18.1 -55.0 100.4	0 54.1 -55.0 99.4	0 30.0 -54.9 98.5	0 05.8 -54.9 97.6	-0 18.4 -54.9
4°	0 23.1 -54.9 100.8	-0 00.9 -54.9	-0 24.9 -55.0	-0 49.1 -54.9	-1 13.3 -54.8
5°	-0 31.8 -55.0	-0 55.8 -55.0	-1 19.9 -54.9	-1 44.0 -54.9	-2 08.1 -54.9
6°	-1 26.8 -55.0	-1 50.8 -54.9	-2 14.8 -54.9	-2 38.9 -54.8	-3 03.0 -54.9
7°	-2 21.8 -54.9	-2 45.7 -54.9	-3 09.7 -54.9	-3 33.7 -54.9	-3 57.9 -54.8
8°	-3 16.7 -55.0	-3 40.6 -54.9	-4 04.6 -54.9	-4 28.6 -54.9	-4 52.7 -54.8
9°	-4 11.7 -54.9	-4 35.5 -54.9	-4 59.5 -54.8	-5 23.5 -54.8	-5 47.5 -54.8
10°	-5 06.6 -55.0	-5 30.4 -54.9	-5 54.3 -54.9	-6 18.3 -54.8	-6 42.3 -54.8
11°	-6 01.6 -54.9	-6 25.3 -54.9	-6 49.2 -54.8	-7 13.1 -54.8	-7 37.1 -54.8
12°	-6 56.5 -54.9	-7 20.2 -54.8	-7 44.0 -54.8	-8 07.9 -54.8	-8 31.9 -54.7
13°	-7 51.4 -54.8	-8 15.0 -54.9	-8 38.8 -54.8	-9 02.7 -54.7	-9 26.6 -54.7
14°	-8 46.2 -54.9	-9 09.9 -54.8	-9 33.6 -54.8	-9 57.4 -54.7	
15°	-9 41.1 -54.8				
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Dec	LHA 085° / 275°	LHA 086° / 274°	LHA 087° / 273°	LHA 088° / 272°	LHA 089° / 271°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	2 01.9 -54.9 94.6	1 37.6 -54.9 93.7	1 13.2 -54.8 92.7	0 48.8 -54.8 91.8	0 24.4 -54.8 90.9
1°	1 07.0 -54.8 95.0	0 42.7 -54.8 94.1	0 18.4 -54.9 93.1	-0 06.0 -54.8	-0 30.4 -54.8
2°	0 12.2 -54.9 95.4	-0 12.1 -54.9	-0 36.5 -54.8	-1 00.8 -54.9	-1 25.2 -54.8
3°	-0 42.7 -54.8	-1 07.0 -54.8	-1 31.3 -54.8	-1 55.7 -54.8	-2 20.0 -54.8
4°	-1 37.5 -54.9	-2 01.8 -54.8	-2 26.1 -54.8	-2 50.5 -54.8	-3 14.8 -54.8
5°	-2 32.4 -54.8	-2 56.6 -54.8	-3 20.9 -54.8	-3 45.3 -54.8	-4 09.6 -54.8
6°	-3 27.2 -54.8	-3 51.4 -54.9	-4 15.7 -54.8	-4 40.1 -54.7	-5 04.4 -54.8
7°	-4 22.0 -54.8	-4 46.3 -54.7	-5 10.5 -54.8	-5 34.8 -54.8	-5 59.2 -54.7
8°	-5 16.8 -54.8	-5 41.0 -54.8	-6 05.3 -54.8	-6 29.6 -54.7	-6 53.9 -54.7
9°	-6 11.6 -54.8	-6 35.8 -54.8	-7 00.1 -54.7	-7 24.3 -54.7	-7 48.6 -54.7
10°	-7 06.4 -54.8	-7 30.6 -54.7	-7 54.8 -54.7	-8 19.0 -54.7	-8 43.3 -54.7
11°	-8 01.2 -54.7	-8 25.3 -54.7	-8 49.5 -54.7	-9 13.7 -54.7	-9 38.0 -54.6
12°	-8 55.9 -54.7	-9 20.0 -54.7	-9 44.2 -54.6		
13°	-9 50.6 -54.7				
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Latitude 66°

Declination CONTRARY name to Latitude

Dec	LHA 090° / 270°	LHA 091° / 269°	LHA 092° / 268°	LHA 093° / 267°	LHA 094° / 266°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	0 00.0 -54.8 90.0	-0 24.4 -54.8			
1°	-0 54.8 -54.8	-1 19.2 -54.8			
2°	-1 49.6 -54.8	-2 14.0 -54.8			
3°	-2 44.4 -54.8	-3 08.8 -54.8			
4°	-3 39.2 -54.8	-4 03.6 -54.8			
5°	-4 34.0 -54.8	-4 58.4 -54.8			
6°	-5 28.8 -54.7	-5 53.2 -54.7			
7°	-6 23.5 -54.8	-6 47.9 -54.7			
8°	-7 18.3 -54.7	-7 42.6 -54.7			
9°	-8 13.0 -54.7	-8 37.3 -54.7			
10°	-9 07.7 -54.6	-9 32.0 -54.7			
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Dec	LHA 095° / 265°	LHA 096° / 264°	LHA 097° / 263°	LHA 098° / 262°	LHA 099° / 261°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
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The data on this page is believed to be accurate but no warranty is given for it's correctness. Use it only for training and exercising!

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	23 00.0 -60.0 180.0	22 59.8 -60.0 178.9	22 59.1 -60.0 177.8	22 58.0 -60.0 176.7	22 56.4 -59.9 175.7
1°	22 00.0 -60.0 180.0	21 59.8 -60.0 178.9	21 59.1 -60.0 177.8	21 58.0 -60.0 176.8	21 56.5 -60.0 175.7
2°	21 00.0 -60.0 180.0	20 59.8 -60.0 178.9	20 59.1 -60.0 177.9	20 58.0 -60.0 176.8	20 56.5 -60.0 175.7
3°	20 00.0 -60.0 180.0	19 59.8 -60.0 178.9	19 59.1 -60.0 177.9	19 58.0 -59.9 176.8	19 56.5 -60.0 175.8
4°	19 00.0 -60.0 180.0	18 59.8 -60.0 178.9	18 59.1 -60.0 177.9	18 58.1 -60.0 176.8	18 56.5 -59.9 175.8
5°	18 00.0 -60.0 180.0	17 59.8 -60.0 179.0	17 59.1 -60.0 177.9	17 58.1 -60.0 176.9	17 56.6 -60.0 175.8
6°	17 00.0 -60.0 180.0	16 59.8 -60.0 179.0	16 59.1 -59.9 177.9	16 58.1 -60.0 176.9	16 56.6 -60.0 175.8
7°	16 00.0 -60.0 180.0	15 59.8 -60.0 179.0	15 59.2 -60.0 177.9	15 58.1 -60.0 176.9	15 56.6 -60.0 175.9
8°	15 00.0 -60.0 180.0	14 59.8 -60.0 179.0	14 59.2 -60.0 177.9	14 58.1 -60.0 176.9	14 56.6 -59.9 175.9
9°	14 00.0 -60.0 180.0	13 59.8 -60.0 179.0	13 59.2 -60.0 178.0	13 58.1 -60.0 176.9	13 56.7 -60.0 175.9
10°	13 00.0 -60.0 180.0	12 59.8 -60.0 179.0	12 59.2 -60.0 178.0	12 58.1 -59.9 177.0	12 56.7 -60.0 176.0
11°	12 00.0 -60.0 180.0	11 59.8 -60.0 179.0	11 59.2 -60.0 178.0	11 58.2 -60.0 177.0	11 56.7 -60.0 176.0
12°	11 00.0 -60.0 180.0	10 59.8 -60.0 179.0	10 59.2 -60.0 178.0	10 58.2 -60.0 177.0	10 56.7 -59.9 176.0
13°	10 00.0 -60.0 180.0	9 59.8 -60.0 179.0	9 59.2 -60.0 178.0	9 58.2 -60.0 177.0	9 56.8 -60.0 176.0
14°	9 00.0 -60.0 180.0	8 59.8 -60.0 179.0	8 59.2 -60.0 178.0	8 58.2 -60.0 177.1	8 56.8 -60.0 176.1
15°	8 00.0 -60.0 180.0	7 59.8 -60.0 179.0	7 59.2 -60.0 178.0	7 58.2 -60.0 177.1	7 56.8 -60.0 176.1
16°	7 00.0 -60.0 180.0	6 59.8 -60.0 179.0	6 59.2 -60.0 178.1	6 58.2 -60.0 177.1	6 56.8 -59.9 176.1
17°	6 00.0 -60.0 180.0	5 59.8 -60.0 179.0	5 59.2 -60.0 178.1	5 58.2 -60.0 177.1	5 56.9 -60.0 176.2
18°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.0	4 59.2 -60.0 178.1	4 58.2 -59.9 177.1	4 56.9 -60.0 176.2
19°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.1	3 59.2 -60.0 178.1	3 58.3 -60.0 177.2	3 56.9 -60.0 176.2
20°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.1	2 59.2 -60.0 178.1	2 58.3 -60.0 177.2	2 56.9 -60.0 176.2
21°	2 00.0 -60.0 180.0	1 59.8 -60.0 179.1	1 59.2 -60.0 178.1	1 58.3 -60.0 177.2	1 56.9 -59.9 176.3
22°	1 00.0 -60.0 180.0	0 59.8 -60.0 179.1	0 59.2 -60.0 178.1	0 58.3 -60.0 177.2	0 57.0 -60.0 176.3
23°	0 00.0 -60.0 180.0	-0 00.2 -60.0	-0 00.8 -59.9	-0 01.7 -60.0	-0 03.0 -60.0
24°	-1 00.0 -60.0	-1 00.2 -60.0	-1 00.7 -60.0	-1 01.7 -60.0	-1 03.0 -60.0
25°	-2 00.0 -60.0	-2 00.2 -60.0	-2 00.7 -60.0	-2 01.7 -60.0	-2 03.0 -59.9
26°	-3 00.0 -60.0	-3 00.2 -60.0	-3 00.7 -60.0	-3 01.7 -59.9	-3 02.9 -60.0
27°	-4 00.0 -60.0	-4 00.2 -60.0	-4 00.7 -60.0	-4 01.6 -60.0	-4 02.9 -60.0
28°	-5 00.0 -60.0	-5 00.2 -60.0	-5 00.7 -60.0	-5 01.6 -60.0	-5 02.9 -60.0
29°	-6 00.0 -60.0	-6 00.2 -60.0	-6 00.7 -60.0	-6 01.6 -60.0	-6 02.9 -60.0

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	22 54.4 -59.9 174.6	22 52.0 -59.9 173.5	22 49.1 -59.9 172.4	22 45.8 -59.9 171.3	22 42.1 -59.9 170.2
1°	21 54.5 -60.0 174.6	21 52.1 -60.0 173.5	21 49.2 -59.9 172.5	21 45.9 -59.9 171.4	21 42.2 -59.9 170.3
2°	20 54.5 -59.9 174.6	20 52.1 -59.9 173.6	20 49.3 -59.9 172.5	20 46.0 -59.9 171.4	20 42.3 -59.9 170.4
3°	19 54.6 -60.0 174.7	19 52.2 -60.0 173.6	19 49.4 -60.0 172.6	19 46.1 -59.9 171.5	19 42.4 -59.8 170.4
4°	18 54.6 -60.0 174.7	18 52.2 -59.9 173.7	18 49.4 -59.9 172.6	18 46.2 -59.9 171.6	18 42.6 -59.9 170.5
5°	17 54.6 -59.9 174.8	17 52.3 -59.9 173.7	17 49.5 -59.9 172.7	17 46.3 -59.9 171.6	17 42.7 -59.9 170.6
6°	16 54.7 -60.0 174.8	16 52.4 -60.0 173.8	16 49.6 -59.9 172.7	16 46.4 -59.9 171.7	16 42.8 -59.9 170.7
7°	15 54.7 -59.9 174.8	15 52.4 -59.9 173.8	15 49.7 -60.0 172.8	15 46.5 -59.9 171.7	15 42.9 -59.8 170.7
8°	14 54.8 -60.0 174.9	14 52.5 -60.0 173.9	14 49.7 -59.9 172.8	14 46.6 -59.9 171.8	14 43.1 -59.9 170.8
9°	13 54.8 -60.0 174.9	13 52.5 -59.9 173.9	13 49.8 -59.9 172.9	13 46.7 -59.9 171.9	13 43.2 -59.9 170.8
10°	12 54.8 -59.9 174.9	12 52.6 -60.0 173.9	12 49.9 -59.9 172.9	12 46.8 -59.9 171.9	12 43.3 -59.9 170.9
11°	11 54.9 -60.0 175.0	11 52.6 -59.9 174.0	11 50.0 -60.0 173.0	11 46.9 -59.9 172.0	11 43.4 -59.9 171.0
12°	10 54.9 -60.0 175.0	10 52.7 -60.0 174.0	10 50.0 -59.9 173.0	10 47.0 -59.9 172.0	10 43.5 -59.9 171.0
13°	9 54.9 -59.9 175.1	9 52.7 -59.9 174.1	9 50.1 -59.9 173.1	9 47.1 -59.9 172.1	9 43.6 -59.8 171.1
14°	8 55.0 -60.0 175.1	8 52.8 -60.0 174.1	8 50.2 -60.0 173.1	8 47.2 -59.9 172.1	8 43.8 -59.9 171.2
15°	7 55.0 -59.9 175.1	7 52.8 -59.9 174.1	7 50.2 -59.9 173.2	7 47.3 -60.0 172.2	7 43.9 -59.9 171.2
16°	6 55.1 -60.0 175.2	6 52.9 -60.0 174.2	6 50.3 -59.9 173.2	6 47.3 -59.9 172.3	6 44.0 -59.9 171.3
17°	5 55.1 -60.0 175.2	5 52.9 -59.9 174.2	5 50.4 -60.0 173.3	5 47.4 -59.9 172.3	5 44.1 -59.9 171.4
18°	4 55.1 -59.9 175.2	4 53.0 -60.0 174.3	4 50.4 -59.9 173.3	4 47.5 -59.9 172.4	4 44.2 -59.9 171.4
19°	3 55.2 -60.0 175.3	3 53.0 -59.9 174.3	3 50.5 -59.9 173.4	3 47.6 -59.9 172.4	3 44.3 -59.9 171.5
20°	2 55.2 -60.0 175.3	2 53.1 -60.0 174.4	2 50.6 -60.0 173.4	2 47.7 -59.9 172.5	2 44.4 -59.8 171.5
21°	1 55.2 -59.9 175.3	1 53.1 -59.9 174.4	1 50.6 -59.9 173.5	1 47.8 -59.9 172.5	1 44.6 -59.9 171.6
22°	0 55.3 -60.0 175.4	0 53.2 -60.0 174.4	0 50.7 -59.9 173.5	0 47.9 -59.9 172.6	0 44.7 -59.9 171.7
23°	-0 04.7 -60.0	-0 06.8 -59.9	-0 09.2 -59.9	-0 12.0 -59.9	-0 15.2 -59.9
24°	-1 04.7 -59.9	-1 06.7 -60.0	-1 09.1 -60.0	-1 11.9 -60.0	-1 15.1 -59.9
25°	-2 04.6 -60.0	-2 06.7 -59.9	-2 09.1 -59.9	-2 11.9 -59.9	-2 15.0 -59.9
26°	-3 04.6 -60.0	-3 06.6 -60.0	-3 09.0 -59.9	-3 11.8 -59.9	-3 14.9 -59.9
27°	-4 04.6 -59.9	-4 06.6 -59.9	-4 08.9 -60.0	-4 11.7 -59.9	-4 14.8 -59.9
28°	-5 04.5 -60.0	-5 06.5 -60.0	-5 08.9 -59.9	-5 11.6 -59.9	-5 14.7 -59.8
29°	-6 04.5 -60.0	-6 06.5 -59.9	-6 08.8 -59.9	-6 11.5 -59.9	-6 14.5 -59.9

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	22 37.9 -59.9 169.2	22 33.2 -59.8 168.1	22 28.2 -59.8 167.0	22 22.7 -59.7 165.9	22 16.8 -59.7 164.8
1°	21 38.0 -59.8 169.2	21 33.4 -59.8 168.2	21 28.4 -59.8 167.1	21 23.0 -59.8 166.0	21 17.1 -59.7 165.0
2°	20 38.2 -59.9 169.3	20 33.6 -59.8 168.2	20 28.6 -59.7 167.2	20 23.2 -59.7 166.1	20 17.4 -59.7 165.1
3°	19 38.3 -59.8 169.4	19 33.8 -59.8 168.3	19 28.8 -59.8 167.3	19 23.5 -59.8 166.2	19 17.7 -59.7 165.2
4°	18 38.5 -59.9 169.5	18 34.0 -59.8 168.4	18 29.1 -59.8 167.4	18 23.7 -59.7 166.3	18 18.0 -59.7 165.3
5°	17 38.6 -59.8 169.5	17 34.2 -59.8 168.5	17 29.3 -59.8 167.5	17 24.0 -59.7 166.4	17 18.3 -59.7 165.4
6°	16 38.8 -59.9 169.6	16 34.4 -59.9 168.6	16 29.5 -59.8 167.5	16 24.3 -59.8 166.5	16 18.6 -59.7 165.5
7°	15 38.9 -59.8 169.7	15 34.5 -59.8 168.7	15 29.7 -59.8 167.6	15 24.5 -59.7 166.6	15 18.9 -59.7 165.6
8°	14 39.1 -59.9 169.8	14 34.7 -59.8 168.7	14 29.9 -59.7 167.7	14 24.8 -59.8 166.7	14 19.2 -59.8 165.7
9°	13 39.2 -59.8 169.8	13 34.9 -59.8 168.8	13 30.2 -59.8 167.8	13 25.0 -59.8 166.8	13 19.4 -59.7 165.8
10°	12 39.4 -59.9 169.9	12 35.1 -59.8 168.9	12 30.4 -59.8 167.9	12 25.2 -59.7 166.9	12 19.7 -59.7 165.9
11°	11 39.5 -59.8 170.0	11 35.3 -59.9 169.0	11 30.6 -59.8 168.0	11 25.5 -59.8 167.0	11 20.0 -59.7 166.0
12°	10 39.7 -59.9 170.0	10 35.4 -59.8 169.1	10 30.8 -59.8 168.1	10 25.7 -59.7 167.1	10 20.3 -59.7 166.1
13°	9 39.8 -59.8 170.1	9 35.6 -59.8 169.1	9 31.0 -59.8 168.1	9 26.0 -59.8 167.2	9 20.6 -59.8 166.2
14°	8 40.0 -59.9 170.2	8 35.8 -59.9 169.2	8 31.2 -59.8 168.2	8 26.2 -59.8 167.3	8 20.8 -59.7 166.3
15°	7 40.1 -59.9 170.3	7 35.9 -59.8 169.3	7 31.4 -59.8 168.3	7 26.4 -59.7 167.3	7 21.1 -59.7 166.4
16°	6 40.2 -59.8 170.3	6 36.1 -59.8 169.4	6 31.6 -59.8 168.4	6 26.7 -59.8 167.4	6 21.4 -59.7 166.5
17°	5 40.4 -59.9 170.4	5 36.3 -59.9 169.4	5 31.8 -59.8 168.5	5 26.9 -59.8 167.5	5 21.7 -59.8 166.6
18°	4 40.5 -59.8 170.5	4 36.4 -59.8 169.5	4 32.0 -59.8 168.6	4 27.1 -59.7 167.6	4 21.9 -59.7 166.7
19°	3 40.7 -59.9 170.5	3 36.6 -59.8 169.6	3 32.2 -59.8 168.6	3 27.4 -59.8 167.7	3 22.2 -59.7 166.8
20°	2 40.8 -59.9 170.6	2 36.8 -59.9 169.7	2 32.4 -59.8 168.7	2 27.6 -59.8 167.8	2 22.5 -59.8 166.8
21°	1 40.9 -59.8 170.7	1 36.9 -59.8 169.7	1 32.6 -59.8 168.8	1 27.8 -59.7 167.9	1 22.7 -59.7 166.9
22°	0 41.1 -59.9 170.7	0 37.1 -59.8 169.8	0 32.8 -59.8 168.9	0 28.1 -59.8 168.0	0 23.0 -59.7 167.0
23°	-0 18.8 -59.8	-0 22.7 -59.9	-0 27.0 -59.8	-0 31.7 -59.8	-0 36.7 -59.8
24°	-1 18.6 -59.9	-1 22.6 -59.8	-1 26.8 -59.8	-1 31.5 -59.7	-1 36.5 -59.7
25°	-2 18.5 -59.9	-2 22.4 -59.8	-2 26.6 -59.8	-2 31.2 -59.8	-2 36.2 -59.7
26°	-3 18.4 -59.8	-3 22.2 -59.8	-3 26.4 -59.8	-3 31.0 -59.8	-3 35.9 -59.8
27°	-4 18.2 -59.9	-4 22.0 -59.9	-4 26.2 -59.8	-4 30.8 -59.7	-4 35.7 -59.7
28°	-5 18.1 -59.9	-5 21.9 -59.8	-5 26.0 -59.8	-5 30.5 -59.8	-5 35.4 -59.7
29°	-6 18.0 -59.8	-6 21.7 -59.8	-6 25.8 -59.8	-6 30.3 -59.8	-6 35.1 -59.7

Dec	LHA 015° / 345°	LHA 016° / 344°	LHA 017° / 343°	LHA 018° / 342°	LHA 019° / 341°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	22 10.4 -59.6 163.8	22 03.7 -59.6 162.7	21 56.5 -59.6 161.6	21 48.9 -59.5 160.6	21 40.9 -59.5 159.5
1°	21 10.8 -59.7 163.9	21 04.1 -59.6 162.8	20 56.9 -59.5 161.8	20 49.4 -59.5 160.7	20 41.4 -59.4 159.6
2°	20 11.1 -59.6 164.0	20 04.5 -59.6 162.9	19 57.4 -59.6 161.9	19 49.9 -59.5 160.8	19 42.0 -59.5 159.8
3°	19 11.5 -59.7 164.1	19 04.9 -59.7 163.1	18 57.8 -59.5 162.0	18 50.4 -59.5 161.0	18 42.5 -59.4 159.9
4°	18 11.8 -59.6 164.2	18 05.2 -59.6 163.2	17 58.3 -59.6 162.1	17 50.9 -59.5 161.1	17 43.1 -59.5 160.1
5°	17 12.2 -59.7 164.3	17 05.6 -59.6 163.3	16 58.7 -59.6 162.3	16 51.4 -59.6 161.2	16 43.6 -59.5 160.2
6°	16 12.5 -59.7 164.5	16 06.0 -59.6 163.4	15 59.1 -59.6 162.4	15 51.8 -59.5 161.4	15 44.1 -59.4 160.3
7°	15 12.8 -59.6 164.6	15 06.4 -59.6 163.5	14 59.5 -59.5 162.5	14 52.3 -59.5 161.5	14 44.7 -59.5 160.5
8°	14 13.2 -59.7 164.7	14 06.8 -59.7 163.7	14 00.0 -59.6 162.6	13 52.8 -59.6 161.6	13 45.2 -59.5 160.6
9°	13 13.5 -59.7 164.8	13 07.1 -59.6 163.8	13 00.4 -59.6 162.8	12 53.2 -59.5 161.8	12 45.7 -59.5 160.7
10°	12 13.8 -59.7 164.9	12 07.5 -59.6 163.9	12 00.8 -59.6 162.9	11 53.7 -59.5 161.9	11 46.2 -59.5 160.9
11°	11 14.1 -59.7 165.0	11 07.9 -59.7 164.0	11 01.2 -59.6 163.0	10 54.2 -59.6 162.0	10 46.7 -59.5 161.0
12°	10 14.4 -59.6 165.1	10 08.2 -59.6 164.1	10 01.6 -59.6 163.1	9 54.6 -59.5 162.1	9 47.2 -59.5 161.1
13°	9 14.8 -59.7 165.2	9 08.6 -59.7 164.2	9 02.0 -59.6 163.2	8 55.1 -59.6 162.3	8 47.7 -59.5 161.3
14°	8 15.1 -59.7 165.3	8 08.9 -59.6 164.3	8 02.4 -59.6 163.4	7 55.5 -59.5 162.4	7 48.2 -59.5 161.4
15°	7 15.4 -59.7 165.4	7 09.3 -59.7 164.4	7 02.8 -59.6 163.5	6 56.0 -59.6 162.5	6 48.7 -59.5 161.5
16°	6 15.7 -59.7 165.5	6 09.6 -59.6 164.5	6 03.2 -59.6 163.6	5 56.4 -59.6 162.6	5 49.2 -59.5 161.7
17°	5 16.0 -59.7 165.6	5 10.0 -59.6 164.7	5 03.6 -59.6 163.7	4 56.8 -59.5 162.7	4 49.7 -59.5 161.8
18°	4 16.3 -59.7 165.7	4 10.4 -59.7 164.8	4 04.0 -59.6 163.8	3 57.3 -59.6 162.9	3 50.2 -59.5 161.9
19°	3 16.6 -59.7 165.8	3 10.7 -59.6 164.9	3 04.4 -59.6 163.9	2 57.7 -59.5 163.0	2 50.7 -59.5 162.0
20°	2 16.9 -59.6 165.9	2 11.1 -59.7 165.0	2 04.8 -59.6 164.0	1 58.2 -59.6 163.1	1 51.2 -59.5 162.2
21°	1 17.3 -59.7 166.0	1 11.4 -59.6 165.1	1 05.2 -59.6 164.2	0 58.6 -59.6 163.2	0 51.7 -59.6 162.3
22°	0 17.6 -59.7 166.1	0 11.8 -59.7 165.2	0 05.6 -59.6 164.3	-0 01.0 -59.5	-0 07.9 -59.5
23°	-0 42.1 -59.7	-0 47.9 -59.7	-0 54.0 -59.6	-1 00.5 -59.6	-1 07.4 -59.5
24°	-1 41.8 -59.7	-1 47.6 -59.6	-1 53.6 -59.6	-2 00.1 -59.5	-2 06.9 -59.5
25°	-2 41.5 -59.7	-2 47.2 -59.7	-2 53.2 -59.6	-2 59.6 -59.6	-3 06.4 -59.5
26°	-3 41.2 -59.7	-3 46.9 -59.6	-3 52.8 -59.7	-3 59.2 -59.6	-4 05.9 -59.5
27°	-4 40.9 -59.7	-4 46.5 -59.6	-4 52.5 -59.6	-4 58.8 -59.5	-5 05.4 -59.5
28°	-5 40.6 -59.7	-5 46.1 -59.7	-5 52.1 -59.6	-5 58.3 -59.6	-6 04.9 -59.5
29°	-6 40.3 -59.7	-6 45.8 -59.6	-6 51.7 -59.6	-6 57.9 -59.5	-7 04.4 -59.5

Dec	LHA 020° / 340°	LHA 021° / 339°	LHA 022° / 338°	LHA 023° / 337°	LHA 024° / 336°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	21 32.5 -59.4 158.4	21 23.6 -59.3 157.4	21 14.4 -59.2 156.3	21 04.8 -59.2 155.2	20 54.8 -59.1 154.2
1°	20 33.1 -59.4 158.6	20 24.3 -59.3 157.5	20 15.2 -59.3 156.5	20 05.6 -59.2 155.4	19 55.7 -59.2 154.4
2°	19 33.7 -59.4 158.7	19 25.0 -59.4 157.7	19 15.9 -59.3 156.6	19 06.4 -59.2 155.6	18 56.5 -59.1 154.5
3°	18 34.3 -59.4 158.9	18 25.6 -59.3 157.8	18 16.6 -59.3 156.8	18 07.2 -59.2 155.8	17 57.4 -59.2 154.7
4°	17 34.9 -59.4 159.0	17 26.3 -59.4 158.0	17 17.3 -59.3 157.0	17 08.0 -59.3 155.9	16 58.2 -59.2 154.9
5°	16 35.5 -59.4 159.2	16 26.9 -59.3 158.1	16 18.0 -59.3 157.1	16 08.7 -59.2 156.1	15 59.0 -59.2 155.1
6°	15 36.1 -59.5 159.3	15 27.6 -59.4 158.3	15 18.7 -59.3 157.3	15 09.5 -59.3 156.3	14 59.8 -59.1 155.2
7°	14 36.6 -59.4 159.5	14 28.2 -59.4 158.4	14 19.4 -59.3 157.4	14 10.2 -59.2 156.4	14 00.7 -59.2 155.4
8°	13 37.2 -59.4 159.6	13 28.8 -59.3 158.6	13 20.1 -59.3 157.6	13 11.0 -59.3 156.6	13 01.5 -59.2 155.6
9°	12 37.8 -59.5 159.7	12 29.5 -59.4 158.7	12 20.8 -59.3 157.7	12 11.7 -59.3 156.7	12 02.3 -59.2 155.7
10°	11 38.3 -59.4 159.9	11 30.1 -59.4 158.9	11 21.5 -59.4 157.9	11 12.4 -59.2 156.9	11 03.1 -59.2 155.9
11°	10 38.9 -59.4 160.0	10 30.7 -59.4 159.0	10 22.1 -59.3 158.0	10 13.2 -59.3 157.1	10 03.9 -59.3 156.1
12°	9 39.5 -59.5 160.2	9 31.3 -59.4 159.2	9 22.8 -59.3 158.2	9 13.9 -59.3 157.2	9 04.6 -59.2 156.2
13°	8 40.0 -59.4 160.3	8 31.9 -59.4 159.3	8 23.5 -59.4 158.3	8 14.6 -59.3 157.4	8 05.4 -59.2 156.4
14°	7 40.6 -59.5 160.4	7 32.5 -59.4 159.5	7 24.1 -59.3 158.5	7 15.3 -59.3 157.5	7 06.2 -59.2 156.6
15°	6 41.1 -59.5 160.6	6 33.1 -59.4 159.6	6 24.8 -59.4 158.6	6 16.0 -59.2 157.7	6 07.0 -59.3 156.7
16°	5 41.6 -59.4 160.7	5 33.7 -59.4 159.8	5 25.4 -59.3 158.8	5 16.8 -59.3 157.8	5 07.7 -59.2 156.9
17°	4 42.2 -59.5 160.8	4 34.3 -59.4 159.9	4 26.1 -59.4 158.9	4 17.5 -59.3 158.0	4 08.5 -59.2 157.0
18°	3 42.7 -59.4 161.0	3 34.9 -59.4 160.0	3 26.7 -59.3 159.1	3 18.2 -59.3 158.1	3 09.3 -59.3 157.2
19°	2 43.3 -59.5 161.1	2 35.5 -59.4 160.2	2 27.4 -59.4 159.2	2 18.9 -59.3 158.3	2 10.0 -59.2 157.4
20°	1 43.8 -59.4 161.2	1 36.1 -59.4 160.3	1 28.0 -59.3 159.4	1 19.6 -59.3 158.5	1 10.8 -59.2 157.5
21°	0 44.4 -59.5 161.4	0 36.7 -59.4 160.5	0 28.7 -59.4 159.5	0 20.3 -59.3 158.6	0 11.6 -59.3 157.7
22°	-0 15.1 -59.5	-0 22.7 -59.4	-0 30.7 -59.3	-0 39.0 -59.3	-0 47.7 -59.2
23°	-1 14.6 -59.4	-1 22.1 -59.4	-1 30.0 -59.4	-1 38.3 -59.3	-1 46.9 -59.3
24°	-2 14.0 -59.5	-2 21.5 -59.4	-2 29.4 -59.3	-2 37.6 -59.3	-2 46.2 -59.2
25°	-3 13.5 -59.5	-3 20.9 -59.5	-3 28.7 -59.4	-3 36.9 -59.3	-3 45.4 -59.2
26°	-4 13.0 -59.4	-4 20.4 -59.4	-4 28.1 -59.3	-4 36.2 -59.3	-4 44.6 -59.2
27°	-5 12.4 -59.5	-5 19.8 -59.4	-5 27.4 -59.4	-5 35.5 -59.3	-5 43.8 -59.3
28°	-6 11.9 -59.4	-6 19.2 -59.4	-6 26.8 -59.3	-6 34.8 -59.3	-6 43.1 -59.2
29°	-7 11.3 -59.5	-7 18.6 -59.4	-7 26.1 -59.4	-7 34.1 -59.2	-7 42.3 -59.2

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	20 44.4 -59.1 153.1	20 33.6 -59.0 152.1	20 22.4 -58.9 151.0	20 10.9 -58.9 150.0	19 59.0 -58.8 148.9
1°	19 45.3 -59.1 153.3	19 34.6 -59.0 152.3	19 23.5 -58.9 151.2	19 12.0 -58.8 150.2	19 00.2 -58.8 149.2
2°	18 46.2 -59.0 153.5	18 35.6 -59.0 152.5	18 24.6 -59.0 151.4	18 13.2 -58.9 150.4	18 01.4 -58.8 149.4
3°	17 47.2 -59.1 153.7	17 36.6 -59.1 152.7	17 25.6 -58.9 151.6	17 14.3 -58.9 150.6	17 02.6 -58.8 149.6
4°	16 48.1 -59.1 153.9	16 37.5 -59.0 152.8	16 26.7 -59.0 151.8	16 15.4 -58.9 150.8	16 03.8 -58.8 149.8
5°	15 49.0 -59.2 154.1	15 38.5 -59.0 153.0	15 27.7 -59.0 152.0	15 16.5 -58.9 151.0	15 05.0 -58.9 150.0
6°	14 49.8 -59.1 154.2	14 39.5 -59.1 153.2	14 28.7 -59.0 152.2	14 17.6 -58.9 151.2	14 06.1 -58.8 150.2
7°	13 50.7 -59.1 154.4	13 40.4 -59.1 153.4	13 29.7 -59.0 152.4	13 18.7 -58.9 151.4	13 07.3 -58.9 150.4
8°	12 51.6 -59.1 154.6	12 41.3 -59.0 153.6	12 30.7 -59.0 152.6	12 19.8 -59.0 151.6	12 08.4 -58.9 150.6
9°	11 52.5 -59.2 154.8	11 42.3 -59.1 153.8	11 31.7 -59.0 152.8	11 20.8 -58.9 151.8	11 09.5 -58.8 150.8
10°	10 53.3 -59.1 154.9	10 43.2 -59.1 153.9	10 32.7 -59.0 152.9	10 21.9 -59.0 152.0	10 10.7 -58.9 151.0
11°	9 54.2 -59.2 155.1	9 44.1 -59.1 154.1	9 33.7 -59.0 153.1	9 22.9 -58.9 152.2	9 11.8 -58.9 151.2
12°	8 55.0 -59.1 155.3	8 45.0 -59.1 154.3	8 34.7 -59.1 153.3	8 24.0 -59.0 152.3	8 12.9 -58.9 151.4
13°	7 55.9 -59.2 155.4	7 45.9 -59.1 154.5	7 35.6 -59.0 153.5	7 25.0 -59.0 152.5	7 14.0 -58.9 151.6
14°	6 56.7 -59.2 155.6	6 46.8 -59.1 154.6	6 36.6 -59.0 153.7	6 26.0 -58.9 152.7	6 15.1 -58.9 151.8
15°	5 57.5 -59.1 155.8	5 47.7 -59.1 154.8	5 37.6 -59.1 153.9	5 27.1 -59.0 152.9	5 16.2 -58.9 151.9
16°	4 58.4 -59.2 155.9	4 48.6 -59.1 155.0	4 38.5 -59.0 154.0	4 28.1 -59.0 153.1	4 17.3 -58.9 152.1
17°	3 59.2 -59.2 156.1	3 49.5 -59.1 155.2	3 39.5 -59.1 154.2	3 29.1 -59.0 153.3	3 18.4 -58.9 152.3
18°	3 00.0 -59.2 156.3	2 50.4 -59.1 155.3	2 40.4 -59.0 154.4	2 30.1 -58.9 153.5	2 19.5 -58.9 152.5
19°	2 00.8 -59.1 156.4	1 51.3 -59.1 155.5	1 41.4 -59.1 154.6	1 31.2 -59.0 153.6	1 20.6 -58.9 152.7
20°	1 01.7 -59.2 156.6	0 52.2 -59.1 155.7	0 42.3 -59.0 154.7	0 32.2 -59.0 153.8	0 21.7 -59.0 152.9
21°	0 02.5 -59.2 156.8	-0 06.9 -59.2	-0 16.7 -59.1	-0 26.8 -59.0	-0 37.3 -58.9
22°	-0 56.7 -59.2	-1 06.1 -59.1	-1 15.8 -59.0	-1 25.8 -59.0	-1 36.2 -58.9
23°	-1 55.9 -59.1	-2 05.2 -59.1	-2 14.8 -59.0	-2 24.8 -59.0	-2 35.1 -58.9
24°	-2 55.0 -59.2	-3 04.3 -59.1	-3 13.8 -59.1	-3 23.8 -58.9	-3 34.0 -58.9
25°	-3 54.2 -59.2	-4 03.4 -59.1	-4 12.9 -59.0	-4 22.7 -59.0	-4 32.9 -58.9
26°	-4 53.4 -59.2	-5 02.5 -59.1	-5 11.9 -59.1	-5 21.7 -59.0	-5 31.8 -58.9
27°	-5 52.6 -59.1	-6 01.6 -59.1	-6 11.0 -59.0	-6 20.7 -58.9	-6 30.7 -58.9
28°	-6 51.7 -59.2	-7 00.7 -59.1	-7 10.0 -59.0	-7 19.6 -59.0	-7 29.6 -58.9
29°	-7 50.9 -59.1	-7 59.8 -59.1	-8 09.0 -59.1	-8 18.6 -59.0	-8 28.5 -58.9

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	19 46.7 -58.7 147.9	19 34.1 -58.7 146.9	19 21.1 -58.6 145.8	19 07.7 -58.4 144.8	18 54.0 -58.3 143.8
1°	18 48.0 -58.7 148.1	18 35.4 -58.6 147.1	18 22.5 -58.5 146.1	18 09.3 -58.5 145.0	17 55.7 -58.4 144.0
2°	17 49.3 -58.7 148.3	17 36.8 -58.7 147.3	17 24.0 -58.6 146.3	17 10.8 -58.5 145.3	16 57.3 -58.5 144.3
3°	16 50.6 -58.8 148.6	16 38.1 -58.6 147.5	16 25.4 -58.6 146.5	16 12.3 -58.5 145.5	15 58.8 -58.4 144.5
4°	15 51.8 -58.7 148.8	15 39.5 -58.7 147.8	15 26.8 -58.6 146.7	15 13.8 -58.6 145.7	15 00.4 -58.5 144.7
5°	14 53.1 -58.8 149.0	14 40.8 -58.7 148.0	14 28.2 -58.6 147.0	14 15.2 -58.5 146.0	14 01.9 -58.4 145.0
6°	13 54.3 -58.8 149.2	13 42.1 -58.7 148.2	13 29.6 -58.7 147.2	13 16.7 -58.6 146.2	13 03.5 -58.5 145.2
7°	12 55.5 -58.8 149.4	12 43.4 -58.7 148.4	12 30.9 -58.6 147.4	12 18.1 -58.5 146.4	12 05.0 -58.5 145.4
8°	11 56.7 -58.8 149.6	11 44.7 -58.7 148.6	11 32.3 -58.6 147.6	11 19.6 -58.6 146.6	11 06.5 -58.5 145.6
9°	10 57.9 -58.8 149.8	10 46.0 -58.8 148.8	10 33.7 -58.7 147.8	10 21.0 -58.6 146.9	10 08.0 -58.5 145.9
10°	9 59.1 -58.8 150.0	9 47.2 -58.7 149.0	9 35.0 -58.7 148.0	9 22.4 -58.6 147.1	9 09.5 -58.5 146.1
11°	9 00.3 -58.8 150.2	8 48.5 -58.8 149.2	8 36.3 -58.6 148.3	8 23.8 -58.6 147.3	8 11.0 -58.5 146.3
12°	8 01.5 -58.8 150.4	7 49.7 -58.7 149.4	7 37.7 -58.7 148.5	7 25.2 -58.6 147.5	7 12.5 -58.6 146.5
13°	7 02.7 -58.9 150.6	6 51.0 -58.8 149.6	6 39.0 -58.7 148.7	6 26.6 -58.6 147.7	6 13.9 -58.5 146.8
14°	6 03.8 -58.8 150.8	5 52.2 -58.7 149.8	5 40.3 -58.7 148.9	5 28.0 -58.6 147.9	5 15.4 -58.5 147.0
15°	5 05.0 -58.8 151.0	4 53.5 -58.8 150.0	4 41.6 -58.7 149.1	4 29.4 -58.6 148.1	4 16.9 -58.6 147.2
16°	4 06.2 -58.9 151.2	3 54.7 -58.8 150.2	3 42.9 -58.7 149.3	3 30.8 -58.6 148.4	3 18.3 -58.5 147.4
17°	3 07.3 -58.8 151.4	2 55.9 -58.7 150.5	2 44.2 -58.7 149.5	2 32.2 -58.7 148.6	2 19.8 -58.6 147.6
18°	2 08.5 -58.8 151.6	1 57.2 -58.8 150.7	1 45.5 -58.7 149.7	1 33.5 -58.6 148.8	1 21.2 -58.5 147.9
19°	1 09.7 -58.9 151.8	0 58.4 -58.8 150.9	0 46.8 -58.7 149.9	0 34.9 -58.6 149.0	0 22.7 -58.6 148.1
20°	0 10.8 -58.8 152.0	-0 00.4 -58.7	-0 11.9 -58.7	-0 23.7 -58.6	-0 35.9 -58.5
21°	-0 48.0 -58.9	-0 59.1 -58.8	-1 10.6 -58.7	-1 22.3 -58.7	-1 34.4 -58.6
22°	-1 46.9 -58.8	-1 57.9 -58.8	-2 09.3 -58.7	-2 21.0 -58.6	-2 33.0 -58.5
23°	-2 45.7 -58.9	-2 56.7 -58.8	-3 08.0 -58.7	-3 19.6 -58.6	-3 31.5 -58.6
24°	-3 44.6 -58.8	-3 55.5 -58.7	-4 06.7 -58.7	-4 18.2 -58.6	-4 30.1 -58.5
25°	-4 43.4 -58.8	-4 54.2 -58.8	-5 05.4 -58.6	-5 16.8 -58.6	-5 28.6 -58.5
26°	-5 42.2 -58.9	-5 53.0 -58.7	-6 04.0 -58.7	-6 15.4 -58.6	-6 27.1 -58.6
27°	-6 41.1 -58.8	-6 51.7 -58.8	-7 02.7 -58.7	-7 14.0 -58.6	-7 25.7 -58.5
28°	-7 39.9 -58.8	-7 50.5 -58.7	-8 01.4 -58.7	-8 12.6 -58.6	-8 24.2 -58.5
29°	-8 38.7 -58.8	-8 49.2 -58.8	-9 00.1 -58.6	-9 11.2 -58.6	-9 22.7 -58.5

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	18 40.0 -58.3 142.7	18 25.7 -58.3 141.7	18 11.0 -58.2 140.7	17 56.0 -58.1 139.7	17 40.6 -57.9 138.7
1°	17 41.7 -58.3 143.0	17 27.4 -58.2 142.0	17 12.8 -58.1 141.0	16 57.9 -58.1 139.9	16 42.7 -58.0 138.9
2°	16 43.4 -58.4 143.2	16 29.2 -58.3 142.2	16 14.7 -58.2 141.2	15 59.8 -58.1 140.2	15 44.7 -58.1 139.2
3°	15 45.0 -58.3 143.5	15 30.9 -58.2 142.5	15 16.5 -58.2 141.5	15 01.7 -58.1 140.5	14 46.6 -58.0 139.5
4°	14 46.7 -58.4 143.7	14 32.7 -58.3 142.7	14 18.3 -58.2 141.7	14 03.6 -58.1 140.7	13 48.6 -58.0 139.7
5°	13 48.3 -58.4 144.0	13 34.4 -58.3 143.0	13 20.1 -58.3 142.0	13 05.5 -58.2 141.0	12 50.6 -58.1 140.0
6°	12 49.9 -58.4 144.2	12 36.1 -58.4 143.2	12 21.8 -58.2 142.2	12 07.3 -58.1 141.2	11 52.5 -58.1 140.2
7°	11 51.5 -58.4 144.4	11 37.7 -58.3 143.4	11 23.6 -58.3 142.5	11 09.2 -58.2 141.5	10 54.4 -58.1 140.5
8°	10 53.1 -58.4 144.7	10 39.4 -58.3 143.7	10 25.3 -58.2 142.7	10 11.0 -58.2 141.7	9 56.3 -58.1 140.8
9°	9 54.7 -58.4 144.9	9 41.1 -58.4 143.9	9 27.1 -58.3 142.9	9 12.8 -58.2 142.0	8 58.2 -58.1 141.0
10°	8 56.3 -58.5 145.1	8 42.7 -58.4 144.2	8 28.8 -58.3 143.2	8 14.6 -58.2 142.2	8 00.1 -58.1 141.3
11°	7 57.8 -58.4 145.4	7 44.3 -58.3 144.4	7 30.5 -58.3 143.4	7 16.4 -58.2 142.5	7 02.0 -58.2 141.5
12°	6 59.4 -58.5 145.6	6 46.0 -58.4 144.6	6 32.2 -58.3 143.7	6 18.2 -58.2 142.7	6 03.8 -58.1 141.8
13°	6 00.9 -58.4 145.8	5 47.6 -58.4 144.9	5 33.9 -58.3 143.9	5 20.0 -58.3 143.0	5 05.7 -58.2 142.0
14°	5 02.5 -58.5 146.0	4 49.2 -58.4 145.1	4 35.6 -58.3 144.1	4 21.7 -58.2 143.2	4 07.5 -58.1 142.3
15°	4 04.0 -58.5 146.3	3 50.8 -58.4 145.3	3 37.3 -58.3 144.4	3 23.5 -58.2 143.4	3 09.4 -58.2 142.5
16°	3 05.5 -58.4 146.5	2 52.4 -58.4 145.5	2 39.0 -58.3 144.6	2 25.3 -58.3 143.7	2 11.2 -58.1 142.7
17°	2 07.1 -58.5 146.7	1 54.0 -58.4 145.8	1 40.7 -58.3 144.8	1 27.0 -58.2 143.9	1 13.1 -58.2 143.0
18°	1 08.6 -58.5 146.9	0 55.6 -58.4 146.0	0 42.4 -58.3 145.1	0 28.8 -58.2 144.2	0 14.9 -58.1 143.2
19°	0 10.1 -58.5 147.2	-0 02.8 -58.3	-0 15.9 -58.4	-0 29.4 -58.3	-0 43.2 -58.2
20°	-0 48.4 -58.4	-1 01.1 -58.4	-1 14.3 -58.3	-1 27.7 -58.2	-1 41.4 -58.1
21°	-1 46.8 -58.5	-1 59.5 -58.4	-2 12.6 -58.3	-2 25.9 -58.2	-2 39.5 -58.2
22°	-2 45.3 -58.5	-2 57.9 -58.4	-3 10.9 -58.3	-3 24.1 -58.3	-3 37.7 -58.1
23°	-3 43.8 -58.4	-3 56.3 -58.4	-4 09.2 -58.3	-4 22.4 -58.2	-4 35.8 -58.2
24°	-4 42.2 -58.5	-4 54.7 -58.4	-5 07.5 -58.3	-5 20.6 -58.2	-5 34.0 -58.1
25°	-5 40.7 -58.5	-5 53.1 -58.4	-6 05.8 -58.3	-6 18.8 -58.2	-6 32.1 -58.2
26°	-6 39.2 -58.4	-6 51.5 -58.3	-7 04.1 -58.3	-7 17.0 -58.2	-7 30.3 -58.1
27°	-7 37.6 -58.4	-7 49.8 -58.4	-8 02.4 -58.3	-8 15.2 -58.2	-8 28.4 -58.1
28°	-8 36.0 -58.5	-8 48.2 -58.4	-9 00.7 -58.2	-9 13.4 -58.2	-9 26.5 -58.1
29°	-9 34.5 -58.4	-9 46.6 -58.3	-9 58.9 -58.3		

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	17 25.0 -57.9 137.6	17 09.1 -57.9 136.6	16 52.8 -57.7 135.6	16 36.3 -57.7 134.6	16 19.4 -57.5 133.6
1°	16 27.1 -57.9 137.9	16 11.2 -57.8 136.9	15 55.1 -57.8 135.9	15 38.6 -57.6 134.9	15 21.9 -57.6 133.9
2°	15 29.2 -58.0 138.2	15 13.4 -57.8 137.2	14 57.3 -57.7 136.2	14 41.0 -57.7 135.2	14 24.3 -57.6 134.2
3°	14 31.2 -57.9 138.5	14 15.6 -57.9 137.5	13 59.6 -57.8 136.5	13 43.3 -57.7 135.5	13 26.7 -57.6 134.5
4°	13 33.3 -58.0 138.7	13 17.7 -57.9 137.7	13 01.8 -57.8 136.8	12 45.6 -57.8 135.8	12 29.1 -57.7 134.8
5°	12 35.3 -58.0 139.0	12 19.8 -57.9 138.0	12 04.0 -57.9 137.0	11 47.8 -57.7 136.0	11 31.4 -57.6 135.1
6°	11 37.3 -58.0 139.3	11 21.9 -57.9 138.3	11 06.1 -57.8 137.3	10 50.1 -57.8 136.3	10 33.8 -57.7 135.4
7°	10 39.3 -58.0 139.5	10 24.0 -58.0 138.5	10 08.3 -57.9 137.6	9 52.3 -57.7 136.6	9 36.1 -57.7 135.6
8°	9 41.3 -58.0 139.8	9 26.0 -57.9 138.8	9 10.4 -57.8 137.8	8 54.6 -57.8 136.9	8 38.4 -57.7 135.9
9°	8 43.3 -58.0 140.0	8 28.1 -58.0 139.1	8 12.6 -57.9 138.1	7 56.8 -57.8 137.1	7 40.7 -57.7 136.2
10°	7 45.3 -58.1 140.3	7 30.1 -57.9 139.3	7 14.7 -57.9 138.4	6 59.0 -57.8 137.4	6 43.0 -57.7 136.5
11°	6 47.2 -58.0 140.5	6 32.2 -58.0 139.6	6 16.8 -57.9 138.6	6 01.2 -57.8 137.7	5 45.3 -57.8 136.7
12°	5 49.2 -58.1 140.8	5 34.2 -58.0 139.9	5 18.9 -57.9 138.9	5 03.4 -57.8 138.0	4 47.5 -57.7 137.0
13°	4 51.1 -58.1 141.1	4 36.2 -58.0 140.1	4 21.0 -57.9 139.2	4 05.6 -57.9 138.2	3 49.8 -57.7 137.3
14°	3 53.0 -58.0 141.3	3 38.2 -58.0 140.4	3 23.1 -57.9 139.4	3 07.7 -57.8 138.5	2 52.1 -57.8 137.6
15°	2 55.0 -58.1 141.6	2 40.2 -57.9 140.6	2 25.2 -57.9 139.7	2 09.9 -57.8 138.8	1 54.3 -57.7 137.8
16°	1 56.9 -58.1 141.8	1 42.3 -58.0 140.9	1 27.3 -57.9 140.0	1 12.1 -57.8 139.0	0 56.6 -57.8 138.1
17°	0 58.8 -58.1 142.1	0 44.3 -58.0 141.1	0 29.4 -57.9 140.2	0 14.3 -57.9 139.3	-0 01.2 -57.7
18°	0 00.7 -58.0 142.3	-0 13.7 -58.0	-0 28.5 -57.9	-0 43.6 -57.8	-0 58.9 -57.8
19°	-0 57.3 -58.1	-1 11.7 -58.0	-1 26.4 -57.9	-1 41.4 -57.8	-1 56.7 -57.7
20°	-1 55.4 -58.1	-2 09.7 -58.0	-2 24.3 -57.9	-2 39.2 -57.9	-2 54.4 -57.8
21°	-2 53.5 -58.1	-3 07.7 -58.0	-3 22.2 -57.9	-3 37.1 -57.8	-3 52.2 -57.7
22°	-3 51.6 -58.0	-4 05.7 -58.0	-4 20.1 -57.9	-4 34.9 -57.8	-4 49.9 -57.7
23°	-4 49.6 -58.1	-5 03.7 -58.0	-5 18.0 -57.9	-5 32.7 -57.8	-5 47.6 -57.7
24°	-5 47.7 -58.0	-6 01.7 -57.9	-6 15.9 -57.9	-6 30.5 -57.8	-6 45.3 -57.7
25°	-6 45.7 -58.1	-6 59.6 -58.0	-7 13.8 -57.9	-7 28.3 -57.8	-7 43.0 -57.7
26°	-7 43.8 -58.0	-7 57.6 -57.9	-8 11.7 -57.9	-8 26.1 -57.8	-8 40.7 -57.7
27°	-8 41.8 -58.0	-8 55.5 -58.0	-9 09.6 -57.8	-9 23.9 -57.7	-9 38.4 -57.7
28°	-9 39.8 -58.1	-9 53.5 -57.9			
29°					

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	16 02.3 -57.4 132.6	15 44.9 -57.4 131.6	15 27.3 -57.3 130.6	15 09.4 -57.3 129.7	14 51.2 -57.2 128.7
1°	15 04.9 -57.6 132.9	14 47.5 -57.4 131.9	14 30.0 -57.4 130.9	14 12.1 -57.2 130.0	13 54.0 -57.1 129.0
2°	14 07.3 -57.5 133.2	13 50.1 -57.4 132.2	13 32.6 -57.3 131.3	13 14.9 -57.3 130.3	12 56.9 -57.2 129.3
3°	13 09.8 -57.5 133.5	12 52.7 -57.5 132.5	12 35.3 -57.4 131.6	12 17.6 -57.3 130.6	11 59.7 -57.3 129.6
4°	12 12.3 -57.6 133.8	11 55.2 -57.5 132.8	11 37.9 -57.4 131.9	11 20.3 -57.3 130.9	11 02.4 -57.2 129.9
5°	11 14.7 -57.6 134.1	10 57.7 -57.5 133.1	10 40.5 -57.4 132.1	10 23.0 -57.4 131.2	10 05.2 -57.2 130.2
6°	10 17.1 -57.6 134.4	10 00.2 -57.5 133.4	9 43.1 -57.4 132.4	9 25.6 -57.3 131.5	9 08.0 -57.3 130.5
7°	9 19.5 -57.6 134.7	9 02.7 -57.5 133.7	8 45.7 -57.5 132.7	8 28.3 -57.4 131.8	8 10.7 -57.3 130.8
8°	8 21.9 -57.6 134.9	8 05.2 -57.5 134.0	7 48.2 -57.4 133.0	7 30.9 -57.3 132.1	7 13.4 -57.3 131.1
9°	7 24.3 -57.6 135.2	7 07.7 -57.6 134.3	6 50.8 -57.5 133.3	6 33.6 -57.4 132.4	6 16.1 -57.3 131.4
10°	6 26.7 -57.6 135.5	6 10.1 -57.5 134.6	5 53.3 -57.5 133.6	5 36.2 -57.4 132.7	5 18.8 -57.3 131.7
11°	5 29.1 -57.7 135.8	5 12.6 -57.6 134.8	4 55.8 -57.5 133.9	4 38.8 -57.4 133.0	4 21.5 -57.3 132.0
12°	4 31.4 -57.6 136.1	4 15.0 -57.6 135.1	3 58.3 -57.5 134.2	3 41.4 -57.4 133.2	3 24.2 -57.3 132.3
13°	3 33.8 -57.7 136.3	3 17.4 -57.5 135.4	3 00.8 -57.5 134.5	2 44.0 -57.4 133.5	2 26.9 -57.4 132.6
14°	2 36.1 -57.7 136.6	2 19.9 -57.6 135.7	2 03.3 -57.5 134.8	1 46.6 -57.4 133.8	1 29.5 -57.3 132.9
15°	1 38.4 -57.6 136.9	1 22.3 -57.6 136.0	1 05.8 -57.4 135.0	0 49.2 -57.5 134.1	0 32.2 -57.3 133.2
16°	0 40.8 -57.7 137.2	0 24.7 -57.6 136.3	0 08.4 -57.5 135.3	-0 08.3 -57.4	-0 25.1 -57.4
17°	-0 16.9 -57.7	-0 32.9 -57.6	-0 49.1 -57.5	-1 05.7 -57.4	-1 22.5 -57.3
18°	-1 14.6 -57.6	-1 30.5 -57.5	-1 46.6 -57.5	-2 03.1 -57.4	-2 19.8 -57.3
19°	-2 12.2 -57.7	-2 28.0 -57.6	-2 44.1 -57.5	-3 00.5 -57.4	-3 17.1 -57.3
20°	-3 09.9 -57.6	-3 25.6 -57.6	-3 41.6 -57.5	-3 57.9 -57.4	-4 14.4 -57.4
21°	-4 07.5 -57.7	-4 23.2 -57.5	-4 39.1 -57.5	-4 55.3 -57.4	-5 11.8 -57.3
22°	-5 05.2 -57.6	-5 20.7 -57.6	-5 36.6 -57.5	-5 52.7 -57.4	-6 09.1 -57.3
23°	-6 02.8 -57.7	-6 18.3 -57.6	-6 34.1 -57.4	-6 50.1 -57.3	-7 06.4 -57.2
24°	-7 00.5 -57.6	-7 15.9 -57.5	-7 31.5 -57.5	-7 47.4 -57.4	-8 03.6 -57.3
25°	-7 58.1 -57.6	-8 13.4 -57.5	-8 29.0 -57.4	-8 44.8 -57.4	-9 00.9 -57.3
26°	-8 55.7 -57.6	-9 10.9 -57.5	-9 26.4 -57.4	-9 42.2 -57.3	-9 58.2 -57.2
27°	-9 53.3 -57.6				
28°					
29°					

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	14 32.8 -57.1 127.7	14 14.1 -57.0 126.7	13 55.2 -56.9 125.7	13 36.0 -56.8 124.7	13 16.6 -56.7 123.8
1°	13 35.7 -57.1 128.0	13 17.1 -57.0 127.0	12 58.3 -57.0 126.0	12 39.2 -56.9 125.1	12 19.9 -56.8 124.1
2°	12 38.6 -57.1 128.3	12 20.1 -57.1 127.3	12 01.3 -56.9 126.4	11 42.3 -56.9 125.4	11 23.1 -56.8 124.4
3°	11 41.5 -57.2 128.6	11 23.0 -57.0 127.7	11 04.4 -57.0 126.7	10 45.4 -56.9 125.7	10 26.3 -56.8 124.8
4°	10 44.3 -57.1 128.9	10 26.0 -57.1 128.0	10 07.4 -57.0 127.0	9 48.5 -56.9 126.0	9 29.5 -56.9 125.1
5°	9 47.2 -57.2 129.2	9 28.9 -57.1 128.3	9 10.4 -57.0 127.3	8 51.6 -56.9 126.4	8 32.6 -56.8 125.4
6°	8 50.0 -57.2 129.6	8 31.8 -57.1 128.6	8 13.4 -57.1 127.6	7 54.7 -57.0 126.7	7 35.8 -56.9 125.7
7°	7 52.8 -57.2 129.9	7 34.7 -57.1 128.9	7 16.3 -57.0 128.0	6 57.7 -56.9 127.0	6 38.9 -56.9 126.1
8°	6 55.6 -57.2 130.2	6 37.6 -57.2 129.2	6 19.3 -57.1 128.3	6 00.8 -57.0 127.3	5 42.0 -56.9 126.4
9°	5 58.4 -57.2 130.5	5 40.4 -57.1 129.5	5 22.2 -57.0 128.6	5 03.8 -57.0 127.6	4 45.1 -56.9 126.7
10°	5 01.2 -57.3 130.8	4 43.3 -57.2 129.8	4 25.2 -57.1 128.9	4 06.8 -57.0 128.0	3 48.2 -56.9 127.0
11°	4 03.9 -57.2 131.1	3 46.1 -57.1 130.1	3 28.1 -57.1 129.2	3 09.8 -57.0 128.3	2 51.3 -56.9 127.3
12°	3 06.7 -57.2 131.4	2 49.0 -57.2 130.4	2 31.0 -57.1 129.5	2 12.8 -57.0 128.6	1 54.4 -56.9 127.6
13°	2 09.5 -57.3 131.7	1 51.8 -57.1 130.7	1 33.9 -57.0 129.8	1 15.8 -57.0 128.9	0 57.5 -57.0 128.0
14°	1 12.2 -57.2 132.0	0 54.7 -57.2 131.0	0 36.9 -57.1 130.1	0 18.8 -57.0 129.2	0 00.5 -56.9 128.3
15°	0 15.0 -57.3 132.3	-0 02.5 -57.2	-0 20.2 -57.1	-0 38.2 -57.0	-0 56.4 -56.9
16°	-0 42.3 -57.2	-0 59.7 -57.1	-1 17.3 -57.1	-1 35.2 -57.0	-1 53.3 -56.9
17°	-1 39.5 -57.3	-1 56.8 -57.2	-2 14.4 -57.1	-2 32.2 -57.0	-2 50.2 -56.9
18°	-2 36.8 -57.2	-2 54.0 -57.2	-3 11.5 -57.0	-3 29.2 -57.0	-3 47.1 -57.0
19°	-3 34.0 -57.2	-3 51.2 -57.1	-4 08.5 -57.1	-4 26.2 -57.0	-4 44.1 -56.8
20°	-4 31.2 -57.3	-4 48.3 -57.1	-5 05.6 -57.1	-5 23.2 -56.9	-5 40.9 -56.9
21°	-5 28.5 -57.2	-5 45.4 -57.2	-6 02.7 -57.0	-6 20.1 -57.0	-6 37.8 -56.9
22°	-6 25.7 -57.2	-6 42.6 -57.1	-6 59.7 -57.0	-7 17.1 -56.9	-7 34.7 -56.9
23°	-7 22.9 -57.2	-7 39.7 -57.1	-7 56.7 -57.1	-8 14.0 -57.0	-8 31.6 -56.8
24°	-8 20.1 -57.2	-8 36.8 -57.1	-8 53.8 -57.0	-9 11.0 -56.9	-9 28.4 -56.8
25°	-9 17.3 -57.1	-9 33.9 -57.1	-9 50.8 -57.0		
26°					
27°					
28°					
29°					

Dec	LHA 055° / 305°	LHA 056° / 304°	LHA 057° / 303°	LHA 058° / 302°	LHA 059° / 301°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	12 57.0 -56.6 122.8	12 37.2 -56.6 121.8	12 17.2 -56.5 120.9	11 57.0 -56.5 119.9	11 36.6 -56.4 118.9
1°	12 00.4 -56.7 123.1	11 40.6 -56.6 122.2	11 20.7 -56.6 121.2	11 00.5 -56.5 120.3	10 40.2 -56.4 119.3
2°	11 03.7 -56.8 123.5	10 44.0 -56.7 122.5	10 24.1 -56.6 121.6	10 04.0 -56.5 120.6	9 43.8 -56.5 119.6
3°	10 06.9 -56.7 123.8	9 47.3 -56.6 122.8	9 27.5 -56.6 121.9	9 07.5 -56.5 120.9	8 47.3 -56.4 120.0
4°	9 10.2 -56.8 124.1	8 50.7 -56.7 123.2	8 30.9 -56.6 122.2	8 11.0 -56.5 121.3	7 50.9 -56.5 120.3
5°	8 13.4 -56.8 124.5	7 54.0 -56.7 123.5	7 34.3 -56.6 122.6	7 14.5 -56.6 121.6	6 54.4 -56.5 120.7
6°	7 16.6 -56.8 124.8	6 57.3 -56.8 123.8	6 37.7 -56.7 122.9	6 17.9 -56.6 121.9	5 57.9 -56.5 121.0
7°	6 19.8 -56.8 125.1	6 00.5 -56.7 124.2	5 41.0 -56.6 123.2	5 21.3 -56.6 122.3	5 01.4 -56.5 121.3
8°	5 23.0 -56.8 125.4	5 03.8 -56.7 124.5	4 44.4 -56.7 123.6	4 24.7 -56.6 122.6	4 04.9 -56.5 121.7
9°	4 26.2 -56.8 125.8	4 07.1 -56.8 124.8	3 47.7 -56.7 123.9	3 28.1 -56.6 123.0	3 08.4 -56.6 122.0
10°	3 29.4 -56.9 126.1	3 10.3 -56.7 125.1	2 51.0 -56.6 124.2	2 31.5 -56.6 123.3	2 11.8 -56.5 122.4
11°	2 32.5 -56.8 126.4	2 13.6 -56.8 125.5	1 54.4 -56.7 124.5	1 34.9 -56.6 123.6	1 15.3 -56.5 122.7
12°	1 35.7 -56.8 126.7	1 16.8 -56.8 125.8	0 57.7 -56.7 124.9	0 38.3 -56.6 123.9	0 18.8 -56.6 123.0
13°	0 38.9 -56.9 127.0	0 20.0 -56.7 126.1	0 01.0 -56.7 125.2	-0 18.3 -56.6	-0 37.8 -56.5
14°	-0 18.0 -56.8	-0 36.7 -56.8	-0 55.7 -56.7	-1 14.9 -56.6	-1 34.3 -56.5
15°	-1 14.8 -56.9	-1 33.5 -56.8	-1 52.4 -56.7	-2 11.5 -56.6	-2 30.8 -56.6
16°	-2 11.7 -56.8	-2 30.3 -56.7	-2 49.1 -56.6	-3 08.1 -56.6	-3 27.4 -56.5
17°	-3 08.5 -56.8	-3 27.0 -56.8	-3 45.7 -56.7	-4 04.7 -56.6	-4 23.9 -56.5
18°	-4 05.3 -56.9	-4 23.8 -56.7	-4 42.4 -56.7	-5 01.3 -56.6	-5 20.4 -56.5
19°	-5 02.2 -56.8	-5 20.5 -56.7	-5 39.1 -56.6	-5 57.9 -56.5	-6 16.9 -56.5
20°	-5 59.0 -56.8	-6 17.2 -56.8	-6 35.7 -56.7	-6 54.4 -56.6	-7 13.4 -56.4
21°	-6 55.8 -56.8	-7 14.0 -56.7	-7 32.4 -56.6	-7 51.0 -56.5	-8 09.8 -56.5
22°	-7 52.6 -56.7	-8 10.7 -56.6	-8 29.0 -56.6	-8 47.5 -56.5	-9 06.3 -56.4
23°	-8 49.3 -56.8	-9 07.3 -56.7	-9 25.6 -56.6	-9 44.0 -56.5	
24°	-9 46.1 -56.7				
25°					
26°					
27°					
28°					
29°					

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	11 16.0 -56.4 118.0	10 55.2 -56.3 117.0	10 34.2 -56.2 116.1	10 13.1 -56.2 115.1	9 51.8 -56.1 114.2
1°	10 19.6 -56.3 118.3	9 58.9 -56.3 117.4	9 38.0 -56.2 116.4	9 16.9 -56.1 115.5	8 55.7 -56.1 114.5
2°	9 23.3 -56.4 118.7	9 02.6 -56.3 117.7	8 41.8 -56.2 116.8	8 20.8 -56.2 115.8	7 59.6 -56.1 114.9
3°	8 26.9 -56.4 119.0	8 06.3 -56.3 118.1	7 45.6 -56.3 117.1	7 24.6 -56.2 116.2	7 03.5 -56.1 115.3
4°	7 30.5 -56.4 119.4	7 10.0 -56.3 118.4	6 49.3 -56.3 117.5	6 28.4 -56.2 116.6	6 07.4 -56.2 115.6
5°	6 34.1 -56.4 119.7	6 13.7 -56.4 118.8	5 53.0 -56.3 117.8	5 32.2 -56.2 116.9	5 11.2 -56.1 116.0
6°	5 37.7 -56.4 120.1	5 17.3 -56.3 119.1	4 56.7 -56.2 118.2	4 36.0 -56.2 117.3	4 15.1 -56.2 116.3
7°	4 41.3 -56.5 120.4	4 21.0 -56.4 119.5	4 00.5 -56.3 118.5	3 39.8 -56.3 117.6	3 18.9 -56.2 116.7
8°	3 44.8 -56.4 120.7	3 24.6 -56.4 119.8	3 04.2 -56.4 118.9	2 43.5 -56.2 118.0	2 22.7 -56.1 117.0
9°	2 48.4 -56.5 121.1	2 28.2 -56.4 120.2	2 07.8 -56.3 119.2	1 47.3 -56.2 118.3	1 26.6 -56.2 117.4
10°	1 51.9 -56.4 121.4	1 31.8 -56.4 120.5	1 11.5 -56.3 119.6	0 51.1 -56.3 118.6	0 30.4 -56.2 117.7
11°	0 55.5 -56.5 121.8	0 35.4 -56.3 120.8	0 15.2 -56.3 119.9	-0 05.2 -56.2	-0 25.8 -56.2
12°	-0 01.0 -56.4	-0 20.9 -56.4	-0 41.1 -56.3	-1 01.4 -56.3	-1 22.0 -56.1
13°	-0 57.4 -56.5	-1 17.3 -56.4	-1 37.4 -56.3	-1 57.7 -56.2	-2 18.1 -56.2
14°	-1 53.9 -56.5	-2 13.7 -56.4	-2 33.7 -56.3	-2 53.9 -56.3	-3 14.3 -56.2
15°	-2 50.4 -56.4	-3 10.1 -56.4	-3 30.0 -56.3	-3 50.2 -56.2	-4 10.5 -56.1
16°	-3 46.8 -56.4	-4 06.5 -56.3	-4 26.3 -56.3	-4 46.4 -56.2	-5 06.6 -56.2
17°	-4 43.2 -56.5	-5 02.8 -56.4	-5 22.6 -56.3	-5 42.6 -56.2	-6 02.8 -56.1
18°	-5 39.7 -56.4	-5 59.2 -56.3	-6 18.9 -56.3	-6 38.8 -56.2	-6 58.9 -56.1
19°	-6 36.1 -56.4	-6 55.5 -56.3	-7 15.2 -56.2	-7 35.0 -56.2	-7 55.0 -56.1
20°	-7 32.5 -56.4	-7 51.8 -56.4	-8 11.4 -56.2	-8 31.2 -56.1	-8 51.1 -56.1
21°	-8 28.9 -56.4	-8 48.2 -56.2	-9 07.6 -56.2	-9 27.3 -56.1	-9 47.2 -56.0
22°	-9 25.3 -56.3	-9 44.4 -56.3			
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	9 30.3 -56.0 113.2	9 08.7 -56.0 112.3	8 46.9 -55.9 111.3	8 25.0 -55.8 110.4	8 03.0 -55.8 109.5
1°	8 34.3 -56.1 113.6	8 12.7 -56.0 112.7	7 51.0 -55.9 111.7	7 29.2 -55.9 110.8	7 07.2 -55.8 109.8
2°	7 38.2 -56.0 114.0	7 16.7 -55.9 113.0	6 55.1 -55.9 112.1	6 33.3 -55.9 111.1	6 11.4 -55.9 110.2
3°	6 42.2 -56.1 114.3	6 20.8 -56.0 113.4	5 59.2 -56.0 112.4	5 37.4 -55.9 111.5	5 15.5 -55.8 110.6
4°	5 46.1 -56.0 114.7	5 24.8 -56.1 113.7	5 03.2 -55.9 112.8	4 41.5 -55.9 111.9	4 19.7 -55.8 110.9
5°	4 50.1 -56.1 115.0	4 28.7 -56.0 114.1	4 07.3 -56.0 113.2	3 45.6 -55.9 112.2	3 23.9 -55.9 111.3
6°	3 54.0 -56.1 115.4	3 32.7 -56.0 114.5	3 11.3 -56.0 113.5	2 49.7 -55.9 112.6	2 28.0 -55.9 111.7
7°	2 57.9 -56.1 115.7	2 36.7 -56.1 114.8	2 15.3 -56.0 113.9	1 53.8 -55.9 113.0	1 32.1 -55.8 112.0
8°	2 01.8 -56.1 116.1	1 40.6 -56.0 115.2	1 19.3 -55.9 114.2	0 57.9 -55.9 113.3	0 36.3 -55.9 112.4
9°	1 05.7 -56.2 116.5	0 44.6 -56.1 115.5	0 23.4 -56.0 114.6	0 02.0 -56.0 113.7	-0 19.6 -55.9
10°	0 09.5 -56.1 116.8	-0 11.5 -56.0	-0 32.6 -56.0	-0 54.0 -55.9	-1 15.5 -55.8
11°	-0 46.6 -56.1	-1 07.5 -56.1	-1 28.6 -56.0	-1 49.9 -55.9	-2 11.3 -55.9
12°	-1 42.7 -56.1	-2 03.6 -56.0	-2 24.6 -56.0	-2 45.8 -55.9	-3 07.2 -55.8
13°	-2 38.8 -56.1	-2 59.6 -56.0	-3 20.6 -55.9	-3 41.7 -55.9	-4 03.0 -55.9
14°	-3 34.9 -56.1	-3 55.6 -56.0	-4 16.5 -56.0	-4 37.6 -55.9	-4 58.9 -55.8
15°	-4 31.0 -56.1	-4 51.6 -56.1	-5 12.5 -55.9	-5 33.5 -55.9	-5 54.7 -55.8
16°	-5 27.1 -56.0	-5 47.7 -56.0	-6 08.4 -56.0	-6 29.4 -55.8	-6 50.5 -55.8
17°	-6 23.1 -56.1	-6 43.7 -55.9	-7 04.4 -55.9	-7 25.2 -55.9	-7 46.3 -55.8
18°	-7 19.2 -56.0	-7 39.6 -56.0	-8 00.3 -55.9	-8 21.1 -55.8	-8 42.1 -55.7
19°	-8 15.2 -56.0	-8 35.6 -55.9	-8 56.2 -55.8	-9 16.9 -55.8	-9 37.8 -55.7
20°	-9 11.2 -56.0	-9 31.5 -56.0	-9 52.0 -55.9		
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 070° / 290°	LHA 071° / 289°	LHA 072° / 288°	LHA 073° / 287°	LHA 074° / 286°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	7 40.8 -55.7 108.5	7 18.5 -55.7 107.6	6 56.1 -55.6 106.7	6 33.6 -55.6 105.7	6 11.0 -55.6 104.8
1°	6 45.1 -55.8 108.9	6 22.8 -55.7 108.0	6 00.5 -55.7 107.0	5 38.0 -55.6 106.1	5 15.4 -55.6 105.2
2°	5 49.3 -55.8 109.3	5 27.1 -55.7 108.3	5 04.8 -55.7 107.4	4 42.4 -55.7 106.5	4 19.8 -55.6 105.5
3°	4 53.5 -55.8 109.6	4 31.4 -55.8 108.7	4 09.1 -55.7 107.8	3 46.7 -55.6 106.8	3 24.2 -55.6 105.9
4°	3 57.7 -55.8 110.0	3 35.6 -55.7 109.1	3 13.4 -55.7 108.2	2 51.1 -55.7 107.2	2 28.6 -55.6 106.3
5°	3 01.9 -55.8 110.4	2 39.9 -55.7 109.4	2 17.7 -55.7 108.5	1 55.4 -55.6 107.6	1 33.0 -55.6 106.7
6°	2 06.1 -55.8 110.7	1 44.2 -55.8 109.8	1 22.0 -55.7 108.9	0 59.8 -55.7 108.0	0 37.4 -55.6 107.0
7°	1 10.3 -55.8 111.1	0 48.4 -55.7 110.2	0 26.3 -55.7 109.3	0 04.1 -55.6 108.3	-0 18.2 -55.6
8°	0 14.5 -55.8 111.5	-0 07.3 -55.8	-0 29.4 -55.7	-0 51.5 -55.7	-1 13.8 -55.6
9°	-0 41.3 -55.8	-1 03.1 -55.8	-1 25.1 -55.7	-1 47.2 -55.6	-2 09.4 -55.6
10°	-1 37.1 -55.8	-1 58.9 -55.7	-2 20.8 -55.7	-2 42.8 -55.6	-3 05.0 -55.6
11°	-2 32.9 -55.8	-2 54.6 -55.7	-3 16.5 -55.6	-3 38.4 -55.7	-4 00.6 -55.5
12°	-3 28.7 -55.8	-3 50.3 -55.8	-4 12.1 -55.7	-4 34.1 -55.6	-4 56.1 -55.6
13°	-4 24.5 -55.7	-4 46.1 -55.7	-5 07.8 -55.7	-5 29.7 -55.6	-5 51.7 -55.6
14°	-5 20.2 -55.8	-5 41.8 -55.7	-6 03.5 -55.6	-6 25.3 -55.6	-6 47.3 -55.5
15°	-6 16.0 -55.8	-6 37.5 -55.7	-6 59.1 -55.6	-7 20.9 -55.6	-7 42.8 -55.5
16°	-7 11.8 -55.7	-7 33.2 -55.6	-7 54.7 -55.7	-8 16.5 -55.5	-8 38.3 -55.5
17°	-8 07.5 -55.7	-8 28.8 -55.7	-8 50.4 -55.5	-9 12.0 -55.5	-9 33.8 -55.5
18°	-9 03.2 -55.7	-9 24.5 -55.6	-9 45.9 -55.6		
19°	-9 58.9 -55.7				
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 075° / 285°	LHA 076° / 284°	LHA 077° / 283°	LHA 078° / 282°	LHA 079° / 281°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	5 48.3 -55.6 103.9	5 25.4 -55.4 102.9	5 02.6 -55.5 102.0	4 39.6 -55.4 101.1	4 16.5 -55.4 100.1
1°	4 52.7 -55.5 104.2	4 30.0 -55.5 103.3	4 07.1 -55.5 102.4	3 44.2 -55.5 101.5	3 21.1 -55.3 100.5
2°	3 57.2 -55.6 104.6	3 34.5 -55.5 103.7	3 11.6 -55.4 102.8	2 48.7 -55.4 101.8	2 25.8 -55.5 100.9
3°	3 01.6 -55.5 105.0	2 39.0 -55.6 104.1	2 16.2 -55.5 103.1	1 53.3 -55.4 102.2	1 30.3 -55.4 101.3
4°	2 06.1 -55.6 105.4	1 43.4 -55.5 104.4	1 20.7 -55.5 103.5	0 57.9 -55.5 102.6	0 34.9 -55.4 101.7
5°	1 10.5 -55.5 105.8	0 47.9 -55.5 104.8	0 25.2 -55.5 103.9	0 02.4 -55.4 103.0	-0 20.5 -55.4
6°	0 15.0 -55.6 106.1	-0 07.6 -55.5	-0 30.3 -55.5	-0 53.0 -55.5	-1 15.9 -55.4
7°	-0 40.6 -55.5	-1 03.1 -55.5	-1 25.8 -55.4	-1 48.5 -55.4	-2 11.3 -55.4
8°	-1 36.1 -55.6	-1 58.6 -55.5	-2 21.2 -55.5	-2 43.9 -55.4	-3 06.7 -55.4
9°	-2 31.7 -55.6	-2 54.1 -55.6	-3 16.7 -55.5	-3 39.3 -55.5	-4 02.1 -55.4
10°	-3 27.3 -55.5	-3 49.7 -55.4	-4 12.2 -55.4	-4 34.8 -55.4	-4 57.5 -55.3
11°	-4 22.8 -55.5	-4 45.1 -55.5	-5 07.6 -55.4	-5 30.2 -55.4	-5 52.8 -55.4
12°	-5 18.3 -55.5	-5 40.6 -55.5	-6 03.0 -55.5	-6 25.6 -55.3	-6 48.2 -55.3
13°	-6 13.8 -55.5	-6 36.1 -55.4	-6 58.5 -55.4	-7 20.9 -55.4	-7 43.5 -55.3
14°	-7 09.3 -55.5	-7 31.5 -55.5	-7 53.9 -55.3	-8 16.3 -55.3	-8 38.8 -55.3
15°	-8 04.8 -55.5	-8 27.0 -55.4	-8 49.2 -55.4	-9 11.6 -55.3	-9 34.1 -55.3
16°	-9 00.3 -55.4	-9 22.4 -55.4	-9 44.6 -55.3		
17°	-9 55.7 -55.4				
18°					
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Dec	LHA 080° / 280°	LHA 081° / 279°	LHA 082° / 278°	LHA 083° / 277°	LHA 084° / 276°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	3 53.4 -55.3 99.2	3 30.3 -55.4 98.3	3 07.0 -55.3 97.4	2 43.8 -55.3 96.4	2 20.4 -55.2 95.5
1°	2 58.1 -55.4 99.6	2 34.9 -55.3 98.7	2 11.7 -55.3 97.8	1 48.5 -55.3 96.8	1 25.2 -55.3 95.9
2°	2 02.7 -55.4 100.0	1 39.6 -55.4 99.1	1 16.4 -55.3 98.1	0 53.2 -55.3 97.2	0 29.9 -55.3 96.3
3°	1 07.3 -55.4 100.4	0 44.2 -55.3 99.5	0 21.1 -55.4 98.5	-0 02.1 -55.3	-0 25.4 -55.3
4°	0 11.9 -55.3 100.8	-0 11.1 -55.4	-0 34.3 -55.3	-0 57.4 -55.3	-1 20.7 -55.3
5°	-0 43.4 -55.4	-1 06.5 -55.3	-1 29.6 -55.3	-1 52.7 -55.3	-2 16.0 -55.2
6°	-1 38.8 -55.4	-2 01.8 -55.4	-2 24.9 -55.3	-2 48.0 -55.3	-3 11.2 -55.3
7°	-2 34.2 -55.4	-2 57.2 -55.3	-3 20.2 -55.3	-3 43.3 -55.3	-4 06.5 -55.3
8°	-3 29.6 -55.3	-3 52.5 -55.3	-4 15.5 -55.3	-4 38.6 -55.3	-5 01.8 -55.2
9°	-4 24.9 -55.4	-4 47.8 -55.3	-5 10.8 -55.3	-5 33.9 -55.2	-5 57.0 -55.2
10°	-5 20.3 -55.3	-5 43.1 -55.3	-6 06.1 -55.3	-6 29.1 -55.3	-6 52.2 -55.2
11°	-6 15.6 -55.3	-6 38.4 -55.3	-7 01.4 -55.2	-7 24.4 -55.2	-7 47.4 -55.2
12°	-7 10.9 -55.3	-7 33.7 -55.3	-7 56.6 -55.2	-8 19.6 -55.2	-8 42.6 -55.2
13°	-8 06.2 -55.3	-8 29.0 -55.2	-8 51.8 -55.2	-9 14.8 -55.1	-9 37.8 -55.1
14°	-9 01.5 -55.2	-9 24.2 -55.2	-9 47.0 -55.2		
15°	-9 56.7 -55.2				
16°					
17°					
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29°					

Dec	LHA 085° / 275°	LHA 086° / 274°	LHA 087° / 273°	LHA 088° / 272°	LHA 089° / 271°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	1 57.1 -55.3 94.6	1 33.7 -55.2 93.7	1 10.3 -55.2 92.8	0 46.9 -55.3 91.8	0 23.4 -55.2 90.9
1°	1 01.8 -55.2 95.0	0 38.5 -55.3 94.1	0 15.1 -55.3 93.2	-0 08.4 -55.2	-0 31.8 -55.2
2°	0 06.6 -55.3 95.4	-0 16.8 -55.2	-0 40.2 -55.2	-1 03.6 -55.2	-1 27.0 -55.2
3°	-0 48.7 -55.3	-1 12.0 -55.3	-1 35.4 -55.3	-1 58.8 -55.3	-2 22.2 -55.3
4°	-1 44.0 -55.2	-2 07.3 -55.2	-2 30.7 -55.2	-2 54.1 -55.2	-3 17.5 -55.2
5°	-2 39.2 -55.3	-3 02.5 -55.3	-3 25.9 -55.2	-3 49.3 -55.2	-4 12.7 -55.2
6°	-3 34.5 -55.2	-3 57.8 -55.2	-4 21.1 -55.2	-4 44.5 -55.2	-5 07.9 -55.2
7°	-4 29.7 -55.3	-4 53.0 -55.2	-5 16.3 -55.2	-5 39.7 -55.2	-6 03.1 -55.1
8°	-5 25.0 -55.2	-5 48.2 -55.2	-6 11.5 -55.2	-6 34.9 -55.1	-6 58.2 -55.2
9°	-6 20.2 -55.2	-6 43.4 -55.2	-7 06.7 -55.1	-7 30.0 -55.2	-7 53.4 -55.1
10°	-7 15.4 -55.2	-7 38.6 -55.1	-8 01.8 -55.2	-8 25.2 -55.1	-8 48.5 -55.1
11°	-8 10.6 -55.1	-8 33.7 -55.2	-8 57.0 -55.1	-9 20.3 -55.1	-9 43.6 -55.1
12°	-9 05.7 -55.1	-9 28.9 -55.1	-9 52.1 -55.1		
13°					
14°					
15°					
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28°					
29°					

Latitude 67°

Declination CONTRARY name to Latitude

Dec	LHA 090° / 270°	LHA 091° / 269°	LHA 092° / 268°	LHA 093° / 267°	LHA 094° / 266°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	0 00.0 -55.2 90.0	-0 23.4 -55.3			
1°	-0 55.2 -55.3	-1 18.7 -55.2			
2°	-1 50.5 -55.2	-2 13.9 -55.2			
3°	-2 45.7 -55.2	-3 09.1 -55.2			
4°	-3 40.9 -55.2	-4 04.3 -55.2			
5°	-4 36.1 -55.2	-4 59.5 -55.2			
6°	-5 31.3 -55.2	-5 54.7 -55.2			
7°	-6 26.5 -55.1	-6 49.9 -55.1			
8°	-7 21.6 -55.2	-7 45.0 -55.2			
9°	-8 16.8 -55.1	-8 40.2 -55.1			
10°	-9 11.9 -55.1	-9 35.3 -55.0			
11°					
12°					
13°					
14°					
15°					
16°					
17°					
18°					
19°					
20°					
21°					
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23°					
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27°					
28°					
29°					

Dec	LHA 095° / 265°	LHA 096° / 264°	LHA 097° / 263°	LHA 098° / 262°	LHA 099° / 261°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°					
1°					
2°					
3°					
4°					
5°					
6°					
7°					
8°					
9°					
10°					
11°					
12°					
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 The data on this page is believed to be accurate but no warranty is given for it's correctness. Use it only for training and exercising!

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	22 00.0 -60.0 180.0	21 59.8 -60.0 178.9	21 59.2 -60.0 177.8	21 58.1 -60.0 176.8	21 56.6 -60.0 175.7
1°	21 00.0 -60.0 180.0	20 59.8 -60.0 178.9	20 59.2 -60.0 177.9	20 58.1 -60.0 176.8	20 56.6 -59.9 175.7
2°	20 00.0 -60.0 180.0	19 59.8 -60.0 178.9	19 59.2 -60.0 177.9	19 58.1 -60.0 176.8	19 56.7 -60.0 175.7
3°	19 00.0 -60.0 180.0	18 59.8 -60.0 178.9	18 59.2 -60.0 177.9	18 58.1 -60.0 176.8	18 56.7 -60.0 175.8
4°	18 00.0 -60.0 180.0	17 59.8 -60.0 179.0	17 59.2 -60.0 177.9	17 58.1 -59.9 176.9	17 56.7 -60.0 175.8
5°	17 00.0 -60.0 180.0	16 59.8 -60.0 179.0	16 59.2 -60.0 177.9	16 58.2 -60.0 176.9	16 56.7 -59.9 175.8
6°	16 00.0 -60.0 180.0	15 59.8 -60.0 179.0	15 59.2 -60.0 177.9	15 58.2 -60.0 176.9	15 56.8 -60.0 175.9
7°	15 00.0 -60.0 180.0	14 59.8 -60.0 179.0	14 59.2 -60.0 177.9	14 58.2 -60.0 176.9	14 56.8 -60.0 175.9
8°	14 00.0 -60.0 180.0	13 59.8 -60.0 179.0	13 59.2 -60.0 178.0	13 58.2 -60.0 176.9	13 56.8 -60.0 175.9
9°	13 00.0 -60.0 180.0	12 59.8 -60.0 179.0	12 59.2 -60.0 178.0	12 58.2 -60.0 177.0	12 56.8 -60.0 175.9
10°	12 00.0 -60.0 180.0	11 59.8 -60.0 179.0	11 59.2 -60.0 178.0	11 58.2 -60.0 177.0	11 56.8 -59.9 176.0
11°	11 00.0 -60.0 180.0	10 59.8 -60.0 179.0	10 59.2 -60.0 178.0	10 58.2 -60.0 177.0	10 56.9 -60.0 176.0
12°	10 00.0 -60.0 180.0	9 59.8 -60.0 179.0	9 59.2 -60.0 178.0	9 58.2 -59.9 177.0	9 56.9 -60.0 176.0
13°	9 00.0 -60.0 180.0	8 59.8 -60.0 179.0	8 59.2 -60.0 178.0	8 58.3 -60.0 177.0	8 56.9 -60.0 176.1
14°	8 00.0 -60.0 180.0	7 59.8 -60.0 179.0	7 59.2 -60.0 178.0	7 58.3 -60.0 177.1	7 56.9 -60.0 176.1
15°	7 00.0 -60.0 180.0	6 59.8 -60.0 179.0	6 59.2 -60.0 178.1	6 58.3 -60.0 177.1	6 56.9 -59.9 176.1
16°	6 00.0 -60.0 180.0	5 59.8 -60.0 179.0	5 59.2 -60.0 178.1	5 58.3 -60.0 177.1	5 57.0 -60.0 176.1
17°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.0	4 59.2 -59.9 178.1	4 58.3 -60.0 177.1	4 57.0 -60.0 176.2
18°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.0	3 59.3 -60.0 178.1	3 58.3 -60.0 177.1	3 57.0 -60.0 176.2
19°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.1	2 59.3 -60.0 178.1	2 58.3 -60.0 177.2	2 57.0 -59.9 176.2
20°	2 00.0 -60.0 180.0	1 59.8 -60.0 179.1	1 59.3 -60.0 178.1	1 58.3 -59.9 177.2	1 57.1 -60.0 176.2
21°	1 00.0 -60.0 180.0	0 59.8 -60.0 179.1	0 59.3 -60.0 178.1	0 58.4 -60.0 177.2	0 57.1 -60.0 176.3
22°	0 00.0 -60.0 180.0	-0 00.2 -60.0	-0 00.7 -60.0	-0 01.6 -60.0	-0 02.9 -60.0
23°	-1 00.0 -60.0	-1 00.2 -60.0	-1 00.7 -60.0	-1 01.6 -60.0	-1 02.9 -60.0
24°	-2 00.0 -60.0	-2 00.2 -60.0	-2 00.7 -60.0	-2 01.6 -60.0	-2 02.9 -59.9
25°	-3 00.0 -60.0	-3 00.2 -60.0	-3 00.7 -60.0	-3 01.6 -60.0	-3 02.8 -60.0
26°	-4 00.0 -60.0	-4 00.2 -60.0	-4 00.7 -60.0	-4 01.6 -60.0	-4 02.8 -60.0
27°	-5 00.0 -60.0	-5 00.2 -60.0	-5 00.7 -60.0	-5 01.6 -60.0	-5 02.8 -60.0
28°	-6 00.0 -60.0	-6 00.2 -60.0	-6 00.7 -60.0	-6 01.6 -60.0	-6 02.8 -60.0
29°	-7 00.0 -60.0	-7 00.2 -60.0	-7 00.7 -60.0	-7 01.6 -59.9	-7 02.8 -59.9

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	21 54.7 -59.9 174.6	21 52.4 -60.0 173.5	21 49.7 -60.0 172.5	21 46.5 -59.9 171.4	21 42.9 -59.9 170.3
1°	20 54.8 -60.0 174.6	20 52.4 -59.9 173.6	20 49.7 -59.9 172.5	20 46.6 -59.9 171.4	20 43.0 -59.8 170.4
2°	19 54.8 -60.0 174.7	19 52.5 -59.9 173.6	19 49.8 -59.9 172.6	19 46.7 -59.9 171.5	19 43.2 -59.9 170.4
3°	18 54.8 -59.9 174.7	18 52.6 -60.0 173.7	18 49.9 -60.0 172.6	18 46.8 -59.9 171.6	18 43.3 -59.9 170.5
4°	17 54.9 -60.0 174.8	17 52.6 -59.9 173.7	17 49.9 -59.9 172.7	17 46.9 -59.9 171.6	17 43.4 -59.9 170.6
5°	16 54.9 -60.0 174.8	16 52.7 -60.0 173.8	16 50.0 -59.9 172.7	16 47.0 -60.0 171.7	16 43.5 -59.9 170.6
6°	15 54.9 -59.9 174.8	15 52.7 -59.9 173.8	15 50.1 -60.0 172.8	15 47.0 -59.9 171.7	15 43.6 -59.9 170.7
7°	14 55.0 -60.0 174.9	14 52.8 -60.0 173.8	14 50.1 -59.9 172.8	14 47.1 -59.9 171.8	14 43.7 -59.9 170.8
8°	13 55.0 -60.0 174.9	13 52.8 -59.9 173.9	13 50.2 -59.9 172.9	13 47.2 -59.9 171.8	13 43.8 -59.9 170.8
9°	12 55.0 -59.9 174.9	12 52.9 -60.0 173.9	12 50.3 -60.0 172.9	12 47.3 -59.9 171.9	12 43.9 -59.9 170.9
10°	11 55.1 -60.0 175.0	11 52.9 -60.0 174.0	11 50.3 -59.9 173.0	11 47.4 -59.9 172.0	11 44.0 -59.8 170.9
11°	10 55.1 -60.0 175.0	10 52.9 -59.9 174.0	10 50.4 -59.9 173.0	10 47.5 -59.9 172.0	10 44.2 -59.9 171.0
12°	9 55.1 -59.9 175.0	9 53.0 -60.0 174.0	9 50.5 -60.0 173.1	9 47.6 -60.0 172.1	9 44.3 -59.9 171.1
13°	8 55.2 -60.0 175.1	8 53.0 -59.9 174.1	8 50.5 -59.9 173.1	8 47.6 -59.9 172.1	8 44.4 -59.9 171.1
14°	7 55.2 -60.0 175.1	7 53.1 -60.0 174.1	7 50.6 -59.9 173.1	7 47.7 -59.9 172.2	7 44.5 -59.9 171.2
15°	6 55.2 -59.9 175.1	6 53.1 -59.9 174.2	6 50.7 -60.0 173.2	6 47.8 -59.9 172.2	6 44.6 -59.9 171.2
16°	5 55.3 -60.0 175.2	5 53.2 -60.0 174.2	5 50.7 -59.9 173.2	5 47.9 -59.9 172.3	5 44.7 -59.9 171.3
17°	4 55.3 -60.0 175.2	4 53.2 -59.9 174.2	4 50.8 -60.0 173.3	4 48.0 -59.9 172.3	4 44.8 -59.9 171.4
18°	3 55.3 -59.9 175.2	3 53.3 -60.0 174.3	3 50.8 -59.9 173.3	3 48.1 -60.0 172.4	3 44.9 -59.9 171.4
19°	2 55.4 -60.0 175.3	2 53.3 -59.9 174.3	2 50.9 -59.9 173.4	2 48.1 -59.9 172.4	2 45.0 -59.9 171.5
20°	1 55.4 -60.0 175.3	1 53.4 -60.0 174.4	1 51.0 -60.0 173.4	1 48.2 -59.9 172.5	1 45.1 -59.9 171.5
21°	0 55.4 -59.9 175.3	0 53.4 -59.9 174.4	0 51.0 -59.9 173.5	0 48.3 -59.9 172.5	0 45.2 -59.9 171.6
22°	-0 04.5 -60.0	-0 06.5 -60.0	-0 08.9 -59.9	-0 11.6 -59.9	-0 14.7 -59.9
23°	-1 04.5 -60.0	-1 06.5 -59.9	-1 08.8 -60.0	-1 11.5 -60.0	-1 14.6 -59.9
24°	-2 04.5 -59.9	-2 06.4 -60.0	-2 08.8 -59.9	-2 11.5 -59.9	-2 14.5 -59.9
25°	-3 04.4 -60.0	-3 06.4 -60.0	-3 08.7 -59.9	-3 11.4 -59.9	-3 14.4 -59.9
26°	-4 04.4 -60.0	-4 06.4 -59.9	-4 08.6 -60.0	-4 11.3 -59.9	-4 14.3 -59.9
27°	-5 04.4 -60.0	-5 06.3 -60.0	-5 08.6 -59.9	-5 11.2 -59.9	-5 14.2 -59.9
28°	-6 04.4 -59.9	-6 06.3 -59.9	-6 08.5 -60.0	-6 11.1 -59.9	-6 14.1 -59.9
29°	-7 04.3 -60.0	-7 06.2 -60.0	-7 08.5 -59.9	-7 11.0 -60.0	-7 14.0 -59.9

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	21 38.9 -59.8 169.2	21 34.5 -59.8 168.2	21 29.7 -59.8 167.1	21 24.5 -59.8 166.0	21 18.8 -59.7 164.9
1°	20 39.1 -59.9 169.3	20 34.7 -59.8 168.2	20 29.9 -59.8 167.2	20 24.7 -59.7 166.1	20 19.1 -59.7 165.1
2°	19 39.2 -59.8 169.4	19 34.9 -59.9 168.3	19 30.1 -59.8 167.3	19 25.0 -59.8 166.2	19 19.4 -59.7 165.2
3°	18 39.4 -59.9 169.5	18 35.0 -59.8 168.4	18 30.3 -59.8 167.4	18 25.2 -59.8 166.3	18 19.7 -59.7 165.3
4°	17 39.5 -59.9 169.5	17 35.2 -59.8 168.5	17 30.5 -59.8 167.4	17 25.4 -59.7 166.4	17 20.0 -59.8 165.4
5°	16 39.6 -59.8 169.6	16 35.4 -59.9 168.6	16 30.7 -59.8 167.5	16 25.7 -59.8 166.5	16 20.2 -59.7 165.5
6°	15 39.8 -59.9 169.7	15 35.5 -59.8 168.6	15 30.9 -59.8 167.6	15 25.9 -59.8 166.6	15 20.5 -59.7 165.6
7°	14 39.9 -59.9 169.7	14 35.7 -59.8 168.7	14 31.1 -59.8 167.7	14 26.1 -59.7 166.7	14 20.8 -59.8 165.6
8°	13 40.0 -59.8 169.8	13 35.9 -59.9 168.8	13 31.3 -59.8 167.8	13 26.4 -59.8 166.8	13 21.0 -59.7 165.7
9°	12 40.2 -59.9 169.9	12 36.0 -59.8 168.9	12 31.5 -59.8 167.9	12 26.6 -59.8 166.8	12 21.3 -59.8 165.8
10°	11 40.3 -59.9 169.9	11 36.2 -59.8 168.9	11 31.7 -59.8 167.9	11 26.8 -59.8 166.9	11 21.5 -59.7 165.9
11°	10 40.4 -59.8 170.0	10 36.4 -59.9 169.0	10 31.9 -59.8 168.0	10 27.0 -59.8 167.0	10 21.8 -59.8 166.0
12°	9 40.6 -59.9 170.1	9 36.5 -59.8 169.1	9 32.1 -59.8 168.1	9 27.2 -59.7 167.1	9 22.0 -59.7 166.1
13°	8 40.7 -59.9 170.1	8 36.7 -59.9 169.2	8 32.3 -59.9 168.2	8 27.5 -59.8 167.2	8 22.3 -59.8 166.2
14°	7 40.8 -59.8 170.2	7 36.8 -59.8 169.2	7 32.4 -59.8 168.3	7 27.7 -59.8 167.3	7 22.5 -59.7 166.3
15°	6 41.0 -59.9 170.3	6 37.0 -59.9 169.3	6 32.6 -59.8 168.3	6 27.9 -59.8 167.4	6 22.8 -59.8 166.4
16°	5 41.1 -59.9 170.3	5 37.1 -59.8 169.4	5 32.8 -59.8 168.4	5 28.1 -59.8 167.5	5 23.0 -59.7 166.5
17°	4 41.2 -59.8 170.4	4 37.3 -59.9 169.5	4 33.0 -59.8 168.5	4 28.3 -59.8 167.5	4 23.3 -59.8 166.6
18°	3 41.4 -59.9 170.5	3 37.4 -59.8 169.5	3 33.2 -59.8 168.6	3 28.5 -59.7 167.6	3 23.5 -59.7 166.7
19°	2 41.5 -59.9 170.5	2 37.6 -59.8 169.6	2 33.4 -59.9 168.7	2 28.8 -59.8 167.7	2 23.8 -59.8 166.8
20°	1 41.6 -59.9 170.6	1 37.8 -59.9 169.7	1 33.5 -59.8 168.7	1 29.0 -59.8 167.8	1 24.0 -59.7 166.9
21°	0 41.7 -59.8 170.7	0 37.9 -59.8 169.7	0 33.7 -59.8 168.8	0 29.2 -59.8 167.9	0 24.3 -59.8 166.9
22°	-0 18.1 -59.9	-0 21.9 -59.9	-0 26.1 -59.8	-0 30.6 -59.8	-0 35.5 -59.7
23°	-1 18.0 -59.9	-1 21.8 -59.8	-1 25.9 -59.8	-1 30.4 -59.8	-1 35.2 -59.8
24°	-2 17.9 -59.9	-2 21.6 -59.9	-2 25.7 -59.8	-2 30.2 -59.8	-2 35.0 -59.7
25°	-3 17.8 -59.8	-3 21.5 -59.8	-3 25.5 -59.9	-3 30.0 -59.7	-3 34.7 -59.8
26°	-4 17.6 -59.9	-4 21.3 -59.9	-4 25.4 -59.8	-4 29.7 -59.8	-4 34.5 -59.7
27°	-5 17.5 -59.9	-5 21.2 -59.8	-5 25.2 -59.8	-5 29.5 -59.8	-5 34.2 -59.8
28°	-6 17.4 -59.8	-6 21.0 -59.9	-6 25.0 -59.8	-6 29.3 -59.8	-6 34.0 -59.7
29°	-7 17.2 -59.9	-7 20.9 -59.8	-7 24.8 -59.8	-7 29.1 -59.8	-7 33.7 -59.8

Dec	LHA 015° / 345°	LHA 016° / 344°	LHA 017° / 343°	LHA 018° / 342°	LHA 019° / 341°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	21 12.8 -59.7 163.9	21 06.4 -59.7 162.8	20 59.5 -59.6 161.8	20 52.3 -59.6 160.7	20 44.7 -59.5 159.6
1°	20 13.1 -59.7 164.0	20 06.7 -59.6 162.9	19 59.9 -59.6 161.9	19 52.7 -59.5 160.8	19 45.2 -59.5 159.8
2°	19 13.4 -59.6 164.1	19 07.1 -59.7 163.0	19 00.3 -59.6 162.0	18 53.2 -59.6 160.9	18 45.7 -59.5 159.9
3°	18 13.8 -59.7 164.2	18 07.4 -59.6 163.2	18 00.7 -59.6 162.1	17 53.6 -59.5 161.1	17 46.2 -59.5 160.0
4°	17 14.1 -59.7 164.3	17 07.8 -59.7 163.3	17 01.1 -59.6 162.2	16 54.1 -59.6 161.2	16 46.7 -59.6 160.2
5°	16 14.4 -59.7 164.4	16 08.1 -59.6 163.4	16 01.5 -59.6 162.4	15 54.5 -59.5 161.3	15 47.1 -59.5 160.3
6°	15 14.7 -59.7 164.5	15 08.5 -59.7 163.5	15 01.9 -59.6 162.5	14 55.0 -59.6 161.5	14 47.6 -59.5 160.4
7°	14 15.0 -59.7 164.6	14 08.8 -59.6 163.6	14 02.3 -59.6 162.6	13 55.4 -59.6 161.6	13 48.1 -59.5 160.6
8°	13 15.3 -59.7 164.7	13 09.2 -59.7 163.7	13 02.7 -59.6 162.7	12 55.8 -59.6 161.7	12 48.6 -59.6 160.7
9°	12 15.6 -59.7 164.8	12 09.5 -59.7 163.8	12 03.1 -59.7 162.8	11 56.2 -59.5 161.8	11 49.0 -59.5 160.8
10°	11 15.9 -59.7 164.9	11 09.8 -59.6 163.9	11 03.4 -59.6 162.9	10 56.7 -59.6 161.9	10 49.5 -59.5 160.9
11°	10 16.2 -59.7 165.0	10 10.2 -59.7 164.0	10 03.8 -59.6 163.1	9 57.1 -59.6 162.1	9 50.0 -59.6 161.1
12°	9 16.5 -59.7 165.1	9 10.5 -59.7 164.2	9 04.2 -59.6 163.2	8 57.5 -59.6 162.2	8 50.4 -59.5 161.2
13°	8 16.8 -59.8 165.2	8 10.8 -59.6 164.3	8 04.6 -59.7 163.3	7 57.9 -59.6 162.3	7 50.9 -59.6 161.3
14°	7 17.0 -59.7 165.3	7 11.2 -59.7 164.4	7 04.9 -59.6 163.4	6 58.3 -59.6 162.4	6 51.3 -59.5 161.4
15°	6 17.3 -59.7 165.4	6 11.5 -59.7 164.5	6 05.3 -59.6 163.5	5 58.7 -59.6 162.5	5 51.8 -59.5 161.6
16°	5 17.6 -59.7 165.5	5 11.8 -59.7 164.6	5 05.7 -59.7 163.6	4 59.1 -59.6 162.7	4 52.3 -59.6 161.7
17°	4 17.9 -59.7 165.6	4 12.1 -59.6 164.7	4 06.0 -59.6 163.7	3 59.5 -59.6 162.8	3 52.7 -59.5 161.8
18°	3 18.2 -59.7 165.7	3 12.5 -59.7 164.8	3 06.4 -59.7 163.8	2 59.9 -59.6 162.9	2 53.2 -59.6 161.9
19°	2 18.5 -59.8 165.8	2 12.8 -59.7 164.9	2 06.7 -59.6 163.9	2 00.3 -59.5 163.0	1 53.6 -59.6 162.1
20°	1 18.7 -59.7 165.9	1 13.1 -59.7 165.0	1 07.1 -59.6 164.1	1 00.8 -59.6 163.1	0 54.0 -59.5 162.2
21°	0 19.0 -59.7 166.0	0 13.4 -59.7 165.1	0 07.5 -59.7 164.2	0 01.2 -59.6 163.2	-0 05.5 -59.6
22°	-0 40.7 -59.7	-0 46.3 -59.6	-0 52.2 -59.6	-0 58.4 -59.6	-1 05.1 -59.5
23°	-1 40.4 -59.7	-1 45.9 -59.7	-1 51.8 -59.7	-1 58.0 -59.6	-2 04.6 -59.6
24°	-2 40.1 -59.7	-2 45.6 -59.7	-2 51.5 -59.6	-2 57.6 -59.6	-3 04.2 -59.5
25°	-3 39.8 -59.8	-3 45.3 -59.7	-3 51.1 -59.6	-3 57.2 -59.6	-4 03.7 -59.6
26°	-4 39.6 -59.7	-4 45.0 -59.6	-4 50.7 -59.7	-4 56.8 -59.6	-5 03.3 -59.5
27°	-5 39.3 -59.7	-5 44.6 -59.7	-5 50.4 -59.6	-5 56.4 -59.6	-6 02.8 -59.6
28°	-6 39.0 -59.7	-6 44.3 -59.7	-6 50.0 -59.6	-6 56.0 -59.6	-7 02.4 -59.5
29°	-7 38.7 -59.7	-7 44.0 -59.7	-7 49.6 -59.7	-7 55.6 -59.6	-8 01.9 -59.5

Dec	LHA 020° / 340°	LHA 021° / 339°	LHA 022° / 338°	LHA 023° / 337°	LHA 024° / 336°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	20 36.6 -59.4 158.6	20 28.2 -59.4 157.5	20 19.4 -59.3 156.5	20 10.3 -59.3 155.4	20 00.7 -59.2 154.3
1°	19 37.2 -59.4 158.7	19 28.8 -59.3 157.7	19 20.1 -59.3 156.6	19 11.0 -59.3 155.6	19 01.5 -59.2 154.5
2°	18 37.8 -59.5 158.9	18 29.5 -59.4 157.8	18 20.8 -59.4 156.8	18 11.7 -59.3 155.7	18 02.3 -59.2 154.7
3°	17 38.3 -59.5 159.0	17 30.1 -59.5 158.0	17 21.4 -59.3 156.9	17 12.4 -59.3 155.9	17 03.1 -59.3 154.9
4°	16 38.8 -59.4 159.1	16 30.6 -59.4 158.1	16 22.1 -59.4 157.1	16 13.1 -59.3 156.1	16 03.8 -59.2 155.0
5°	15 39.4 -59.5 159.3	15 31.2 -59.4 158.3	15 22.7 -59.3 157.2	15 13.8 -59.3 156.2	15 04.6 -59.3 155.2
6°	14 39.9 -59.5 159.4	14 31.8 -59.4 158.4	14 23.4 -59.4 157.4	14 14.5 -59.3 156.4	14 05.3 -59.2 155.4
7°	13 40.4 -59.4 159.6	13 32.4 -59.4 158.5	13 24.0 -59.4 157.5	13 15.2 -59.3 156.5	13 06.1 -59.3 155.5
8°	12 41.0 -59.5 159.7	12 33.0 -59.5 158.7	12 24.6 -59.4 157.7	12 15.9 -59.3 156.7	12 06.8 -59.3 155.7
9°	11 41.5 -59.5 159.8	11 33.5 -59.4 158.8	11 25.2 -59.3 157.8	11 16.6 -59.4 156.8	11 07.5 -59.2 155.8
10°	10 42.0 -59.5 160.0	10 34.1 -59.4 159.0	10 25.9 -59.4 158.0	10 17.2 -59.3 157.0	10 08.3 -59.3 156.0
11°	9 42.5 -59.5 160.1	9 34.7 -59.5 159.1	9 26.5 -59.4 158.1	9 17.9 -59.3 157.1	9 09.0 -59.3 156.1
12°	8 43.0 -59.5 160.2	8 35.2 -59.4 159.2	8 27.1 -59.4 158.3	8 18.6 -59.4 157.3	8 09.7 -59.3 156.3
13°	7 43.5 -59.5 160.3	7 35.8 -59.5 159.4	7 27.7 -59.4 158.4	7 19.2 -59.3 157.4	7 10.4 -59.3 156.5
14°	6 44.0 -59.5 160.5	6 36.3 -59.4 159.5	6 28.3 -59.4 158.5	6 19.9 -59.4 157.6	6 11.1 -59.3 156.6
15°	5 44.5 -59.5 160.6	5 36.9 -59.5 159.6	5 28.9 -59.4 158.7	5 20.5 -59.3 157.7	5 11.8 -59.3 156.8
16°	4 45.0 -59.5 160.7	4 37.4 -59.4 159.8	4 29.5 -59.4 158.8	4 21.2 -59.4 157.9	4 12.5 -59.3 156.9
17°	3 45.5 -59.5 160.9	3 38.0 -59.5 159.9	3 30.1 -59.4 159.0	3 21.8 -59.3 158.0	3 13.2 -59.2 157.1
18°	2 46.0 -59.5 161.0	2 38.5 -59.4 160.1	2 30.7 -59.4 159.1	2 22.5 -59.4 158.2	2 14.0 -59.3 157.2
19°	1 46.5 -59.5 161.1	1 39.1 -59.5 160.2	1 31.3 -59.4 159.2	1 23.1 -59.3 158.3	1 14.7 -59.3 157.4
20°	0 47.0 -59.5 161.3	0 39.6 -59.5 160.3	0 31.9 -59.4 159.4	0 23.8 -59.4 158.5	0 15.4 -59.3 157.5
21°	-0 12.5 -59.5	-0 19.9 -59.4	-0 27.5 -59.5	-0 35.6 -59.3	-0 43.9 -59.3
22°	-1 12.0 -59.5	-1 19.3 -59.5	-1 27.0 -59.4	-1 34.9 -59.4	-1 43.2 -59.3
23°	-2 11.5 -59.5	-2 18.8 -59.4	-2 26.4 -59.4	-2 34.3 -59.3	-2 42.5 -59.3
24°	-3 11.0 -59.5	-3 18.2 -59.5	-3 25.8 -59.4	-3 33.6 -59.4	-3 41.8 -59.3
25°	-4 10.5 -59.5	-4 17.7 -59.4	-4 25.2 -59.4	-4 33.0 -59.3	-4 41.1 -59.3
26°	-5 10.0 -59.5	-5 17.1 -59.5	-5 24.6 -59.4	-5 32.3 -59.4	-5 40.4 -59.3
27°	-6 09.5 -59.5	-6 16.6 -59.4	-6 24.0 -59.4	-6 31.7 -59.3	-6 39.7 -59.3
28°	-7 09.0 -59.5	-7 16.0 -59.5	-7 23.4 -59.4	-7 31.0 -59.4	-7 39.0 -59.3
29°	-8 08.5 -59.5	-8 15.5 -59.4	-8 22.8 -59.4	-8 30.4 -59.3	-8 38.3 -59.3

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	19 50.8 -59.1 153.3	19 40.5 -59.1 152.3	19 29.9 -59.0 151.2	19 18.9 -59.0 150.2	19 07.5 -58.9 149.1
1°	18 51.7 -59.2 153.5	18 41.4 -59.0 152.4	18 30.9 -59.1 151.4	18 19.9 -58.9 150.4	18 08.6 -58.9 149.3
2°	17 52.5 -59.2 153.7	17 42.4 -59.2 152.6	17 31.8 -59.0 151.6	17 21.0 -59.0 150.6	17 09.7 -58.9 149.5
3°	16 53.3 -59.1 153.8	16 43.2 -59.1 152.8	16 32.8 -59.1 151.8	16 22.0 -59.0 150.7	16 10.8 -58.9 149.7
4°	15 54.2 -59.2 154.0	15 44.1 -59.1 153.0	15 33.7 -59.0 152.0	15 23.0 -59.0 150.9	15 11.9 -58.9 149.9
5°	14 55.0 -59.2 154.2	14 45.0 -59.1 153.2	14 34.7 -59.1 152.1	14 24.0 -59.0 151.1	14 13.0 -59.0 150.1
6°	13 55.8 -59.2 154.3	13 45.9 -59.2 153.3	13 35.6 -59.1 152.3	13 25.0 -59.0 151.3	13 14.0 -58.9 150.3
7°	12 56.6 -59.2 154.5	12 46.7 -59.1 153.5	12 36.5 -59.1 152.5	12 26.0 -59.0 151.5	12 15.1 -59.0 150.5
8°	11 57.4 -59.2 154.7	11 47.6 -59.2 153.7	11 37.4 -59.0 152.7	11 27.0 -59.1 151.7	11 16.1 -58.9 150.7
9°	10 58.2 -59.3 154.8	10 48.4 -59.1 153.8	10 38.4 -59.1 152.9	10 27.9 -59.0 151.9	10 17.2 -59.0 150.9
10°	9 58.9 -59.2 155.0	9 49.3 -59.2 154.0	9 39.3 -59.1 153.0	9 28.9 -59.1 152.0	9 18.2 -59.0 151.1
11°	8 59.7 -59.2 155.2	8 50.1 -59.2 154.2	8 40.2 -59.2 153.2	8 29.8 -59.0 152.2	8 19.2 -59.0 151.3
12°	8 00.5 -59.2 155.3	7 50.9 -59.1 154.4	7 41.0 -59.1 153.4	7 30.8 -59.0 152.4	7 20.2 -59.0 151.4
13°	7 01.3 -59.3 155.5	6 51.8 -59.2 154.5	6 41.9 -59.1 153.6	6 31.8 -59.1 152.6	6 21.2 -59.0 151.6
14°	6 02.0 -59.2 155.6	5 52.6 -59.2 154.7	5 42.8 -59.1 153.7	5 32.7 -59.1 152.8	5 22.2 -59.0 151.8
15°	5 02.8 -59.2 155.8	4 53.4 -59.2 154.9	4 43.7 -59.1 153.9	4 33.6 -59.0 152.9	4 23.2 -58.9 152.0
16°	4 03.6 -59.3 156.0	3 54.2 -59.1 155.0	3 44.6 -59.1 154.1	3 34.6 -59.1 153.1	3 24.3 -59.0 152.2
17°	3 04.3 -59.2 156.1	2 55.1 -59.2 155.2	2 45.5 -59.2 154.2	2 35.5 -59.0 153.3	2 25.3 -59.0 152.4
18°	2 05.1 -59.3 156.3	1 55.9 -59.2 155.3	1 46.3 -59.1 154.4	1 36.5 -59.1 153.5	1 26.3 -59.1 152.5
19°	1 05.8 -59.2 156.4	0 56.7 -59.2 155.5	0 47.2 -59.1 154.6	0 37.4 -59.1 153.6	0 27.2 -59.0 152.7
20°	0 06.6 -59.2 156.6	-0 02.5 -59.2	-0 11.9 -59.1	-0 21.7 -59.0	-0 31.8 -59.0
21°	-0 52.6 -59.3	-1 01.7 -59.2	-1 11.0 -59.2	-1 20.7 -59.1	-1 30.8 -59.0
22°	-1 51.9 -59.2	-2 00.9 -59.2	-2 10.2 -59.1	-2 19.8 -59.1	-2 29.8 -59.0
23°	-2 51.1 -59.3	-3 00.1 -59.1	-3 09.3 -59.1	-3 18.9 -59.0	-3 28.8 -59.0
24°	-3 50.4 -59.2	-3 59.2 -59.2	-4 08.4 -59.1	-4 17.9 -59.1	-4 27.8 -58.9
25°	-4 49.6 -59.2	-4 58.4 -59.2	-5 07.5 -59.2	-5 17.0 -59.0	-5 26.7 -59.0
26°	-5 48.8 -59.3	-5 57.6 -59.2	-6 06.7 -59.1	-6 16.0 -59.1	-6 25.7 -59.0
27°	-6 48.1 -59.2	-6 56.8 -59.1	-7 05.8 -59.1	-7 15.1 -59.0	-7 24.7 -59.0
28°	-7 47.3 -59.2	-7 55.9 -59.2	-8 04.9 -59.1	-8 14.1 -59.1	-8 23.7 -59.0
29°	-8 46.5 -59.3	-8 55.1 -59.2	-9 04.0 -59.1	-9 13.2 -59.0	-9 22.7 -59.0

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	18 55.8 -58.8 148.1	18 43.8 -58.8 147.1	18 31.4 -58.7 146.0	18 18.6 -58.6 145.0	18 05.6 -58.5 144.0
1°	17 57.0 -58.8 148.3	17 45.0 -58.7 147.3	17 32.7 -58.7 146.2	17 20.0 -58.6 145.2	17 07.1 -58.6 144.2
2°	16 58.2 -58.9 148.5	16 46.3 -58.8 147.5	16 34.0 -58.7 146.5	16 21.4 -58.6 145.4	16 08.5 -58.6 144.4
3°	15 59.3 -58.8 148.7	15 47.5 -58.8 147.7	15 35.3 -58.7 146.7	15 22.8 -58.7 145.7	15 09.9 -58.5 144.6
4°	15 00.5 -58.9 148.9	14 48.7 -58.8 147.9	14 36.6 -58.7 146.9	14 24.1 -58.6 145.9	14 11.4 -58.6 144.9
5°	14 01.6 -58.9 149.1	13 49.9 -58.8 148.1	13 37.9 -58.8 147.1	13 25.5 -58.7 146.1	13 12.8 -58.6 145.1
6°	13 02.7 -58.9 149.3	12 51.1 -58.8 148.3	12 39.1 -58.7 147.3	12 26.8 -58.7 146.3	12 14.2 -58.6 145.3
7°	12 03.8 -58.8 149.5	11 52.3 -58.9 148.5	11 40.4 -58.8 147.5	11 28.1 -58.7 146.5	11 15.6 -58.7 145.5
8°	11 05.0 -58.9 149.7	10 53.4 -58.8 148.7	10 41.6 -58.8 147.7	10 29.4 -58.7 146.7	10 16.9 -58.6 145.8
9°	10 06.1 -59.0 149.9	9 54.6 -58.8 148.9	9 42.8 -58.7 147.9	9 30.7 -58.7 146.9	9 18.3 -58.6 146.0
10°	9 07.1 -58.9 150.1	8 55.8 -58.9 149.1	8 44.1 -58.8 148.1	8 32.0 -58.7 147.2	8 19.7 -58.7 146.2
11°	8 08.2 -58.9 150.3	7 56.9 -58.8 149.3	7 45.3 -58.8 148.3	7 33.3 -58.7 147.4	7 21.0 -58.6 146.4
12°	7 09.3 -58.9 150.5	6 58.1 -58.9 149.5	6 46.5 -58.8 148.5	6 34.6 -58.7 147.6	6 22.4 -58.7 146.6
13°	6 10.4 -58.9 150.7	5 59.2 -58.9 149.7	5 47.7 -58.8 148.7	5 35.9 -58.7 147.8	5 23.7 -58.6 146.8
14°	5 11.5 -59.0 150.8	5 00.3 -58.8 149.9	4 48.9 -58.8 148.9	4 37.2 -58.8 148.0	4 25.1 -58.7 147.0
15°	4 12.5 -58.9 151.0	4 01.5 -58.9 150.1	3 50.1 -58.8 149.1	3 38.4 -58.7 148.2	3 26.4 -58.6 147.2
16°	3 13.6 -58.9 151.2	3 02.6 -58.9 150.3	2 51.3 -58.8 149.3	2 39.7 -58.7 148.4	2 27.8 -58.7 147.5
17°	2 14.7 -59.0 151.4	2 03.7 -58.8 150.5	1 52.5 -58.8 149.5	1 41.0 -58.8 148.6	1 29.1 -58.7 147.7
18°	1 15.7 -58.9 151.6	1 04.9 -58.9 150.7	0 53.7 -58.8 149.7	0 42.2 -58.7 148.8	0 30.4 -58.7 147.9
19°	0 16.8 -59.0 151.8	0 06.0 -58.9 150.9	-0 05.1 -58.8	-0 16.5 -58.8	-0 28.3 -58.6
20°	-0 42.2 -58.9	-0 52.9 -58.8	-1 03.9 -58.8	-1 15.3 -58.7	-1 26.9 -58.7
21°	-1 41.1 -58.9	-1 51.7 -58.9	-2 02.7 -58.8	-2 14.0 -58.7	-2 25.6 -58.7
22°	-2 40.0 -59.0	-2 50.6 -58.9	-3 01.5 -58.8	-3 12.7 -58.8	-3 24.3 -58.6
23°	-3 39.0 -58.9	-3 49.5 -58.9	-4 00.3 -58.8	-4 11.5 -58.7	-4 22.9 -58.7
24°	-4 37.9 -58.9	-4 48.4 -58.8	-4 59.1 -58.8	-5 10.2 -58.7	-5 21.6 -58.6
25°	-5 36.8 -59.0	-5 47.2 -58.9	-5 57.9 -58.8	-6 08.9 -58.7	-6 20.2 -58.7
26°	-6 35.8 -58.9	-6 46.1 -58.8	-6 56.7 -58.8	-7 07.6 -58.8	-7 18.9 -58.6
27°	-7 34.7 -58.9	-7 44.9 -58.9	-7 55.5 -58.8	-8 06.4 -58.7	-8 17.5 -58.7
28°	-8 33.6 -58.9	-8 43.8 -58.8	-8 54.3 -58.7	-9 05.1 -58.7	-9 16.2 -58.6
29°	-9 32.5 -58.9	-9 42.6 -58.9	-9 53.0 -58.8		

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	17 52.2 -58.5 142.9	17 38.5 -58.4 141.9	17 24.5 -58.3 140.9	17 10.2 -58.3 139.9	16 55.5 -58.1 138.9
1°	16 53.7 -58.4 143.2	16 40.1 -58.4 142.2	16 26.2 -58.4 141.1	16 11.9 -58.2 140.1	15 57.4 -58.2 139.1
2°	15 55.3 -58.5 143.4	15 41.7 -58.4 142.4	15 27.8 -58.3 141.4	15 13.7 -58.3 140.4	14 59.2 -58.2 139.4
3°	14 56.8 -58.5 143.6	14 43.3 -58.4 142.6	14 29.5 -58.4 141.6	14 15.4 -58.3 140.6	14 01.0 -58.2 139.6
4°	13 58.3 -58.5 143.9	13 44.9 -58.5 142.9	13 31.1 -58.3 141.9	13 17.1 -58.3 140.9	13 02.8 -58.2 139.9
5°	12 59.8 -58.6 144.1	12 46.4 -58.4 143.1	12 32.8 -58.4 142.1	12 18.8 -58.3 141.1	12 04.6 -58.3 140.1
6°	12 01.2 -58.5 144.3	11 48.0 -58.5 143.3	11 34.4 -58.4 142.3	11 20.5 -58.3 141.4	11 06.3 -58.2 140.4
7°	11 02.7 -58.6 144.5	10 49.5 -58.5 143.6	10 36.0 -58.4 142.6	10 22.2 -58.4 141.6	10 08.1 -58.3 140.6
8°	10 04.1 -58.5 144.8	9 51.0 -58.5 143.8	9 37.6 -58.4 142.8	9 23.8 -58.3 141.8	9 09.8 -58.3 140.9
9°	9 05.6 -58.6 145.0	8 52.5 -58.5 144.0	8 39.2 -58.5 143.0	8 25.5 -58.3 142.1	8 11.5 -58.2 141.1
10°	8 07.0 -58.6 145.2	7 54.0 -58.5 144.2	7 40.7 -58.4 143.3	7 27.2 -58.4 142.3	7 13.3 -58.3 141.3
11°	7 08.4 -58.5 145.4	6 55.5 -58.5 144.5	6 42.3 -58.4 143.5	6 28.8 -58.4 142.5	6 15.0 -58.3 141.6
12°	6 09.9 -58.6 145.6	5 57.0 -58.5 144.7	5 43.9 -58.5 143.7	5 30.4 -58.3 142.8	5 16.7 -58.3 141.8
13°	5 11.3 -58.6 145.9	4 58.5 -58.5 144.9	4 45.4 -58.4 144.0	4 32.1 -58.4 143.0	4 18.4 -58.3 142.1
14°	4 12.7 -58.6 146.1	4 00.0 -58.5 145.1	3 47.0 -58.5 144.2	3 33.7 -58.4 143.2	3 20.1 -58.3 142.3
15°	3 14.1 -58.6 146.3	3 01.5 -58.6 145.4	2 48.5 -58.4 144.4	2 35.3 -58.4 143.5	2 21.8 -58.3 142.5
16°	2 15.5 -58.6 146.5	2 02.9 -58.5 145.6	1 50.1 -58.5 144.6	1 36.9 -58.4 143.7	1 23.5 -58.3 142.8
17°	1 16.9 -58.6 146.7	1 04.4 -58.5 145.8	0 51.6 -58.4 144.9	0 38.5 -58.3 143.9	0 25.2 -58.3 143.0
18°	0 18.3 -58.6 146.9	0 05.9 -58.5 146.0	-0 06.8 -58.5	-0 19.8 -58.4	-0 33.1 -58.3
19°	-0 40.3 -58.6	-0 52.6 -58.6	-1 05.3 -58.4	-1 18.2 -58.4	-1 31.4 -58.4
20°	-1 38.9 -58.6	-1 51.2 -58.5	-2 03.7 -58.5	-2 16.6 -58.4	-2 29.8 -58.3
21°	-2 37.5 -58.6	-2 49.7 -58.5	-3 02.2 -58.4	-3 15.0 -58.4	-3 28.1 -58.3
22°	-3 36.1 -58.6	-3 48.2 -58.5	-4 00.6 -58.5	-4 13.4 -58.3	-4 26.4 -58.3
23°	-4 34.7 -58.6	-4 46.7 -58.5	-4 59.1 -58.4	-5 11.7 -58.4	-5 24.7 -58.2
24°	-5 33.3 -58.5	-5 45.2 -58.6	-5 57.5 -58.5	-6 10.1 -58.3	-6 22.9 -58.3
25°	-6 31.8 -58.6	-6 43.8 -58.5	-6 56.0 -58.4	-7 08.4 -58.4	-7 21.2 -58.3
26°	-7 30.4 -58.6	-7 42.3 -58.5	-7 54.4 -58.4	-8 06.8 -58.3	-8 19.5 -58.3
27°	-8 29.0 -58.6	-8 40.8 -58.4	-8 52.8 -58.4	-9 05.1 -58.4	-9 17.8 -58.2
28°	-9 27.6 -58.5	-9 39.2 -58.5	-9 51.2 -58.4		
29°					

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	16 40.6 -58.1 137.9	16 25.4 -58.1 136.8	16 09.8 -57.9 135.8	15 54.0 -57.8 134.8	15 38.0 -57.8 133.8
1°	15 42.5 -58.1 138.1	15 27.3 -58.0 137.1	15 11.9 -57.9 136.1	14 56.2 -57.9 135.1	14 40.2 -57.8 134.1
2°	14 44.4 -58.1 138.4	14 29.3 -58.0 137.4	14 14.0 -58.0 136.4	13 58.3 -57.9 135.4	13 42.4 -57.8 134.4
3°	13 46.3 -58.2 138.6	13 31.3 -58.1 137.6	13 16.0 -58.0 136.6	13 00.4 -57.9 135.7	12 44.6 -57.9 134.7
4°	12 48.1 -58.1 138.9	12 33.2 -58.1 137.9	12 18.0 -58.0 136.9	12 02.5 -57.9 135.9	11 46.7 -57.8 134.9
5°	11 50.0 -58.2 139.1	11 35.1 -58.0 138.2	11 20.0 -58.0 137.2	11 04.6 -58.0 136.2	10 48.9 -57.9 135.2
6°	10 51.8 -58.1 139.4	10 37.1 -58.1 138.4	10 22.0 -58.0 137.4	10 06.6 -57.9 136.5	9 51.0 -57.9 135.5
7°	9 53.7 -58.2 139.6	9 39.0 -58.2 138.7	9 24.0 -58.1 137.7	9 08.7 -58.0 136.7	8 53.1 -57.8 135.7
8°	8 55.5 -58.2 139.9	8 40.8 -58.1 138.9	8 25.9 -58.0 137.9	8 10.7 -57.9 137.0	7 55.3 -57.9 136.0
9°	7 57.3 -58.2 140.1	7 42.7 -58.1 139.2	7 27.9 -58.1 138.2	7 12.8 -58.0 137.2	6 57.4 -57.9 136.3
10°	6 59.1 -58.2 140.4	6 44.6 -58.1 139.4	6 29.8 -58.0 138.5	6 14.8 -58.0 137.5	5 59.5 -58.0 136.5
11°	6 00.9 -58.3 140.6	5 46.5 -58.2 139.7	5 31.8 -58.1 138.7	5 16.8 -58.0 137.8	5 01.5 -57.9 136.8
12°	5 02.6 -58.2 140.9	4 48.3 -58.1 139.9	4 33.7 -58.1 139.0	4 18.8 -58.0 138.0	4 03.6 -57.9 137.1
13°	4 04.4 -58.2 141.1	3 50.2 -58.2 140.2	3 35.6 -58.1 139.2	3 20.8 -58.0 138.3	3 05.7 -57.9 137.3
14°	3 06.2 -58.2 141.3	2 52.0 -58.1 140.4	2 37.5 -58.0 139.5	2 22.8 -58.0 138.5	2 07.8 -58.0 137.6
15°	2 08.0 -58.3 141.6	1 53.9 -58.2 140.7	1 39.5 -58.1 139.7	1 24.8 -58.0 138.8	1 09.8 -57.9 137.8
16°	1 09.7 -58.2 141.8	0 55.7 -58.2 140.9	0 41.4 -58.1 140.0	0 26.8 -58.0 139.0	0 11.9 -57.9 138.1
17°	0 11.5 -58.2 142.1	-0 02.5 -58.1	-0 16.7 -58.1	-0 31.2 -58.0	-0 46.0 -58.0
18°	-0 46.7 -58.3	-1 00.6 -58.2	-1 14.8 -58.1	-1 29.2 -58.0	-1 44.0 -57.9
19°	-1 45.0 -58.2	-1 58.8 -58.1	-2 12.9 -58.1	-2 27.2 -58.0	-2 41.9 -57.9
20°	-2 43.2 -58.2	-2 56.9 -58.2	-3 11.0 -58.0	-3 25.2 -58.0	-3 39.8 -57.9
21°	-3 41.4 -58.3	-3 55.1 -58.1	-4 09.0 -58.1	-4 23.2 -58.0	-4 37.7 -57.9
22°	-4 39.7 -58.2	-4 53.2 -58.2	-5 07.1 -58.1	-5 21.2 -58.0	-5 35.6 -58.0
23°	-5 37.9 -58.2	-5 51.4 -58.1	-6 05.2 -58.0	-6 19.2 -58.0	-6 33.6 -57.9
24°	-6 36.1 -58.2	-6 49.5 -58.1	-7 03.2 -58.1	-7 17.2 -58.0	-7 31.5 -57.9
25°	-7 34.3 -58.2	-7 47.6 -58.2	-8 01.3 -58.0	-8 15.2 -57.9	-8 29.4 -57.8
26°	-8 32.5 -58.2	-8 45.8 -58.1	-8 59.3 -58.0	-9 13.1 -58.0	-9 27.2 -57.9
27°	-9 30.7 -58.2	-9 43.9 -58.1	-9 57.3 -58.1		
28°					
29°					

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	15 21.6 -57.7 132.8	15 05.0 -57.6 131.8	14 48.1 -57.5 130.8	14 31.0 -57.5 129.9	14 13.6 -57.4 128.9
1°	14 23.9 -57.7 133.1	14 07.4 -57.7 132.1	13 50.6 -57.6 131.1	13 33.5 -57.5 130.2	13 16.2 -57.4 129.2
2°	13 26.2 -57.8 133.4	13 09.7 -57.6 132.4	12 53.0 -57.6 131.4	12 36.0 -57.5 130.4	12 18.8 -57.4 129.5
3°	12 28.4 -57.7 133.7	12 12.1 -57.7 132.7	11 55.4 -57.6 131.7	11 38.5 -57.5 130.7	11 21.4 -57.5 129.8
4°	11 30.7 -57.8 134.0	11 14.4 -57.7 133.0	10 57.8 -57.6 132.0	10 41.0 -57.6 131.0	10 23.9 -57.5 130.1
5°	10 32.9 -57.8 134.2	10 16.7 -57.7 133.3	10 00.2 -57.7 132.3	9 43.4 -57.5 131.3	9 26.4 -57.5 130.3
6°	9 35.1 -57.8 134.5	9 19.0 -57.8 133.5	9 02.5 -57.6 132.6	8 45.9 -57.6 131.6	8 28.9 -57.5 130.6
7°	8 37.3 -57.8 134.8	8 21.2 -57.7 133.8	8 04.9 -57.7 132.8	7 48.3 -57.6 131.9	7 31.4 -57.5 130.9
8°	7 39.5 -57.8 135.0	7 23.5 -57.7 134.1	7 07.2 -57.6 133.1	6 50.7 -57.6 132.2	6 33.9 -57.5 131.2
9°	6 41.7 -57.8 135.3	6 25.8 -57.8 134.4	6 09.6 -57.7 133.4	5 53.1 -57.6 132.4	5 36.4 -57.5 131.5
10°	5 43.9 -57.9 135.6	5 28.0 -57.8 134.6	5 11.9 -57.7 133.7	4 55.5 -57.6 132.7	4 38.9 -57.6 131.8
11°	4 46.0 -57.8 135.9	4 30.2 -57.7 134.9	4 14.2 -57.7 134.0	3 57.9 -57.6 133.0	3 41.3 -57.5 132.1
12°	3 48.2 -57.9 136.1	3 32.5 -57.8 135.2	3 16.5 -57.7 134.2	3 00.3 -57.7 133.3	2 43.8 -57.6 132.3
13°	2 50.3 -57.8 136.4	2 34.7 -57.8 135.4	2 18.8 -57.7 134.5	2 02.6 -57.6 133.6	1 46.2 -57.5 132.6
14°	1 52.5 -57.9 136.6	1 36.9 -57.8 135.7	1 21.1 -57.7 134.8	1 05.0 -57.6 133.8	0 48.7 -57.6 132.9
15°	0 54.6 -57.8 136.9	0 39.1 -57.7 136.0	0 23.4 -57.7 135.1	0 07.4 -57.6 134.1	-0 08.9 -57.5
16°	-0 03.2 -57.9	-0 18.6 -57.8	-0 34.3 -57.7	-0 50.2 -57.7	-1 06.4 -57.6
17°	-1 01.1 -57.8	-1 16.4 -57.8	-1 32.0 -57.7	-1 47.9 -57.6	-2 04.0 -57.5
18°	-1 58.9 -57.9	-2 14.2 -57.8	-2 29.7 -57.7	-2 45.5 -57.6	-3 01.5 -57.6
19°	-2 56.8 -57.8	-3 12.0 -57.7	-3 27.4 -57.7	-3 43.1 -57.6	-3 59.1 -57.5
20°	-3 54.6 -57.9	-4 09.7 -57.8	-4 25.1 -57.7	-4 40.7 -57.6	-4 56.6 -57.5
21°	-4 52.5 -57.8	-5 07.5 -57.8	-5 22.8 -57.7	-5 38.3 -57.6	-5 54.1 -57.6
22°	-5 50.3 -57.9	-6 05.3 -57.7	-6 20.5 -57.7	-6 35.9 -57.6	-6 51.7 -57.5
23°	-6 48.2 -57.8	-7 03.0 -57.8	-7 18.2 -57.6	-7 33.5 -57.6	-7 49.2 -57.5
24°	-7 46.0 -57.8	-8 00.8 -57.7	-8 15.8 -57.7	-8 31.1 -57.6	-8 46.7 -57.5
25°	-8 43.8 -57.8	-8 58.5 -57.7	-9 13.5 -57.6	-9 28.7 -57.5	-9 44.2 -57.4
26°	-9 41.6 -57.8	-9 56.2 -57.7			
27°					
28°					
29°					

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	13 56.0 -57.3 127.9	13 38.1 -57.2 126.9	13 20.1 -57.2 125.9	13 01.7 -57.1 124.9	12 43.2 -57.0 124.0
1°	12 58.7 -57.4 128.2	12 40.9 -57.3 127.2	12 22.9 -57.2 126.2	12 04.6 -57.1 125.3	11 46.2 -57.1 124.3
2°	12 01.3 -57.3 128.5	11 43.6 -57.3 127.5	11 25.7 -57.3 126.5	11 07.5 -57.2 125.6	10 49.1 -57.1 124.6
3°	11 04.0 -57.4 128.8	10 46.3 -57.3 127.8	10 28.4 -57.2 126.8	10 10.3 -57.1 125.9	9 52.0 -57.1 124.9
4°	10 06.6 -57.4 129.1	9 49.0 -57.3 128.1	9 31.2 -57.3 127.1	9 13.2 -57.2 126.2	8 54.9 -57.1 125.2
5°	9 09.2 -57.5 129.4	8 51.7 -57.4 128.4	8 33.9 -57.2 127.5	8 16.0 -57.2 126.5	7 57.8 -57.1 125.5
6°	8 11.7 -57.4 129.7	7 54.3 -57.3 128.7	7 36.7 -57.3 127.8	7 18.8 -57.2 126.8	7 00.7 -57.2 125.8
7°	7 14.3 -57.4 130.0	6 57.0 -57.4 129.0	6 39.4 -57.3 128.1	6 21.6 -57.2 127.1	6 03.5 -57.1 126.1
8°	6 16.9 -57.5 130.3	5 59.6 -57.4 129.3	5 42.1 -57.3 128.4	5 24.4 -57.3 127.4	5 06.4 -57.2 126.5
9°	5 19.4 -57.4 130.5	5 02.2 -57.4 129.6	4 44.8 -57.3 128.6	4 27.1 -57.2 127.7	4 09.2 -57.1 126.8
10°	4 22.0 -57.5 130.8	4 04.8 -57.3 129.9	3 47.5 -57.3 128.9	3 29.9 -57.3 128.0	3 12.1 -57.2 127.1
11°	3 24.5 -57.5 131.1	3 07.5 -57.4 130.2	2 50.2 -57.4 129.2	2 32.6 -57.2 128.3	2 14.9 -57.2 127.4
12°	2 27.0 -57.4 131.4	2 10.1 -57.4 130.5	1 52.8 -57.3 129.5	1 35.4 -57.3 128.6	1 17.7 -57.2 127.7
13°	1 29.6 -57.5 131.7	1 12.7 -57.4 130.8	0 55.5 -57.3 129.8	0 38.1 -57.2 128.9	0 20.5 -57.1 128.0
14°	0 32.1 -57.5 132.0	0 15.3 -57.4 131.1	-0 01.8 -57.3	-0 19.1 -57.3	-0 36.6 -57.2
15°	-0 25.4 -57.5	-0 42.1 -57.4	-0 59.1 -57.4	-1 16.4 -57.2	-1 33.8 -57.2
16°	-1 22.9 -57.4	-1 39.5 -57.4	-1 56.5 -57.3	-2 13.6 -57.3	-2 31.0 -57.2
17°	-2 20.3 -57.5	-2 36.9 -57.4	-2 53.8 -57.3	-3 10.9 -57.2	-3 28.2 -57.1
18°	-3 17.8 -57.5	-3 34.3 -57.4	-3 51.1 -57.3	-4 08.1 -57.2	-4 25.3 -57.2
19°	-4 15.3 -57.4	-4 31.7 -57.4	-4 48.4 -57.3	-5 05.3 -57.3	-5 22.5 -57.1
20°	-5 12.7 -57.5	-5 29.1 -57.4	-5 45.7 -57.3	-6 02.6 -57.2	-6 19.6 -57.2
21°	-6 10.2 -57.4	-6 26.5 -57.3	-6 43.0 -57.3	-6 59.8 -57.2	-7 16.8 -57.1
22°	-7 07.6 -57.5	-7 23.8 -57.4	-7 40.3 -57.3	-7 57.0 -57.2	-8 13.9 -57.1
23°	-8 05.1 -57.4	-8 21.2 -57.3	-8 37.6 -57.2	-8 54.2 -57.1	-9 11.0 -57.1
24°	-9 02.5 -57.4	-9 18.5 -57.3	-9 34.8 -57.3	-9 51.3 -57.2	
25°	-9 59.9 -57.4				
26°					
27°					
28°					
29°					

Dec	LHA 055° / 305°	LHA 056° / 304°	LHA 057° / 303°	LHA 058° / 302°	LHA 059° / 301°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	12 24.5 -57.0 123.0	12 05.5 -56.9 122.0	11 46.3 -56.8 121.1	11 27.0 -56.8 120.1	11 07.5 -56.8 119.1
1°	11 27.5 -57.0 123.3	11 08.6 -56.9 122.3	10 49.5 -56.8 121.4	10 30.2 -56.8 120.4	10 10.7 -56.7 119.5
2°	10 30.5 -57.0 123.6	10 11.7 -57.0 122.7	9 52.7 -56.9 121.7	9 33.4 -56.8 120.7	9 14.0 -56.7 119.8
3°	9 33.5 -57.0 123.9	9 14.7 -56.9 123.0	8 55.8 -56.9 122.0	8 36.6 -56.8 121.1	8 17.3 -56.8 120.1
4°	8 36.5 -57.1 124.3	8 17.8 -57.0 123.3	7 58.9 -56.9 122.3	7 39.8 -56.8 121.4	7 20.5 -56.8 120.4
5°	7 39.4 -57.1 124.6	7 20.8 -57.0 123.6	7 02.0 -56.9 122.7	6 43.0 -56.9 121.7	6 23.7 -56.7 120.8
6°	6 42.3 -57.0 124.9	6 23.8 -57.0 123.9	6 05.1 -57.0 123.0	5 46.1 -56.9 122.0	5 27.0 -56.8 121.1
7°	5 45.3 -57.1 125.2	5 26.8 -57.0 124.2	5 08.1 -56.9 123.3	4 49.2 -56.8 122.4	4 30.2 -56.9 121.4
8°	4 48.2 -57.1 125.5	4 29.8 -57.0 124.6	4 11.2 -57.0 123.6	3 52.4 -56.9 122.7	3 33.3 -56.8 121.7
9°	3 51.1 -57.1 125.8	3 32.8 -57.0 124.9	3 14.2 -56.9 123.9	2 55.5 -56.9 123.0	2 36.5 -56.8 122.1
10°	2 54.0 -57.1 126.1	2 35.8 -57.1 125.2	2 17.3 -57.0 124.3	1 58.6 -56.9 123.3	1 39.7 -56.8 122.4
11°	1 56.9 -57.1 126.4	1 38.7 -57.0 125.5	1 20.3 -56.9 124.6	1 01.7 -56.9 123.6	0 42.9 -56.8 122.7
12°	0 59.8 -57.1 126.7	0 41.7 -57.0 125.8	0 23.4 -57.0 124.9	0 04.8 -56.9 124.0	-0 13.9 -56.9
13°	0 02.7 -57.1 127.0	-0 15.3 -57.1	-0 33.6 -57.0	-0 52.1 -56.9	-1 10.8 -56.8
14°	-0 54.4 -57.1	-1 12.4 -57.0	-1 30.6 -56.9	-1 49.0 -56.9	-2 07.6 -56.8
15°	-1 51.5 -57.1	-2 09.4 -57.0	-2 27.5 -57.0	-2 45.9 -56.8	-3 04.4 -56.8
16°	-2 48.6 -57.1	-3 06.4 -57.1	-3 24.5 -56.9	-3 42.7 -56.9	-4 01.2 -56.8
17°	-3 45.7 -57.1	-4 03.5 -57.0	-4 21.4 -57.0	-4 39.6 -56.9	-4 58.0 -56.8
18°	-4 42.8 -57.1	-5 00.5 -57.0	-5 18.4 -56.9	-5 36.5 -56.8	-5 54.8 -56.8
19°	-5 39.9 -57.0	-5 57.5 -57.0	-6 15.3 -56.9	-6 33.3 -56.9	-6 51.6 -56.7
20°	-6 36.9 -57.1	-6 54.5 -56.9	-7 12.2 -56.9	-7 30.2 -56.8	-7 48.3 -56.8
21°	-7 34.0 -57.0	-7 51.4 -57.0	-8 09.1 -56.9	-8 27.0 -56.8	-8 45.1 -56.7
22°	-8 31.0 -57.1	-8 48.4 -57.0	-9 06.0 -56.9	-9 23.8 -56.8	-9 41.8 -56.8
23°	-9 28.1 -57.0	-9 45.4 -56.9			
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	10 47.7 -56.6 118.2	10 27.8 -56.6 117.2	10 07.7 -56.5 116.2	9 47.5 -56.5 115.3	9 27.1 -56.4 114.3
1°	9 51.1 -56.7 118.5	9 31.2 -56.6 117.5	9 11.2 -56.5 116.6	8 51.0 -56.4 115.6	8 30.7 -56.4 114.7
2°	8 54.4 -56.7 118.8	8 34.6 -56.6 117.9	8 14.7 -56.6 116.9	7 54.6 -56.5 116.0	7 34.3 -56.5 115.0
3°	7 57.7 -56.7 119.2	7 38.0 -56.6 118.2	7 18.1 -56.5 117.3	6 58.1 -56.6 116.3	6 37.8 -56.4 115.4
4°	7 01.0 -56.7 119.5	6 41.4 -56.7 118.5	6 21.6 -56.6 117.6	6 01.5 -56.5 116.6	5 41.4 -56.5 115.7
5°	6 04.3 -56.7 119.8	5 44.7 -56.6 118.9	5 25.0 -56.6 117.9	5 05.0 -56.5 117.0	4 44.9 -56.5 116.0
6°	5 07.6 -56.7 120.1	4 48.1 -56.7 119.2	4 28.4 -56.6 118.3	4 08.5 -56.6 117.3	3 48.4 -56.4 116.4
7°	4 10.9 -56.8 120.5	3 51.4 -56.7 119.5	3 31.8 -56.6 118.6	3 11.9 -56.5 117.7	2 52.0 -56.5 116.7
8°	3 14.1 -56.7 120.8	2 54.7 -56.6 119.9	2 35.2 -56.7 118.9	2 15.4 -56.6 118.0	1 55.5 -56.5 117.1
9°	2 17.4 -56.8 121.1	1 58.1 -56.7 120.2	1 38.5 -56.6 119.3	1 18.8 -56.5 118.3	0 59.0 -56.5 117.4
10°	1 20.6 -56.7 121.4	1 01.4 -56.7 120.5	0 41.9 -56.6 119.6	0 22.3 -56.6 118.7	0 02.5 -56.5 117.7
11°	0 23.9 -56.8 121.8	0 04.7 -56.7 120.8	-0 14.7 -56.6	-0 34.3 -56.5	-0 54.0 -56.5
12°	-0 32.9 -56.7	-0 52.0 -56.7	-1 11.3 -56.7	-1 30.8 -56.6	-1 50.5 -56.5
13°	-1 29.6 -56.8	-1 48.7 -56.7	-2 08.0 -56.6	-2 27.4 -56.5	-2 47.0 -56.5
14°	-2 26.4 -56.7	-2 45.4 -56.7	-3 04.6 -56.6	-3 23.9 -56.6	-3 43.5 -56.5
15°	-3 23.1 -56.8	-3 42.1 -56.6	-4 01.2 -56.6	-4 20.5 -56.5	-4 40.0 -56.4
16°	-4 19.9 -56.7	-4 38.7 -56.7	-4 57.8 -56.6	-5 17.0 -56.5	-5 36.4 -56.5
17°	-5 16.6 -56.7	-5 35.4 -56.6	-5 54.4 -56.5	-6 13.5 -56.6	-6 32.9 -56.4
18°	-6 13.3 -56.7	-6 32.0 -56.7	-6 50.9 -56.6	-7 10.1 -56.4	-7 29.3 -56.5
19°	-7 10.0 -56.7	-7 28.7 -56.6	-7 47.5 -56.6	-8 06.5 -56.5	-8 25.8 -56.4
20°	-8 06.7 -56.7	-8 25.3 -56.6	-8 44.1 -56.5	-9 03.0 -56.5	-9 22.2 -56.4
21°	-9 03.4 -56.7	-9 21.9 -56.6	-9 40.6 -56.5	-9 59.5 -56.4	
22°					
23°					
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Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	9 06.5 -56.3 113.4	8 45.8 -56.3 112.4	8 25.0 -56.2 111.5	8 04.0 -56.2 110.5	7 42.9 -56.1 109.6
1°	8 10.2 -56.4 113.7	7 49.5 -56.3 112.8	7 28.8 -56.3 111.8	7 07.8 -56.2 110.9	6 46.8 -56.2 109.9
2°	7 13.8 -56.4 114.1	6 53.2 -56.3 113.1	6 32.5 -56.3 112.2	6 11.6 -56.2 111.2	5 50.6 -56.2 110.3
3°	6 17.4 -56.4 114.4	5 56.9 -56.3 113.5	5 36.2 -56.3 112.5	5 15.4 -56.3 111.6	4 54.4 -56.2 110.7
4°	5 21.0 -56.4 114.8	5 00.6 -56.4 113.8	4 39.9 -56.3 112.9	4 19.1 -56.2 111.9	3 58.2 -56.2 111.0
5°	4 24.6 -56.4 115.1	4 04.2 -56.4 114.2	3 43.6 -56.3 113.2	3 22.9 -56.3 112.3	3 02.0 -56.2 111.4
6°	3 28.2 -56.4 115.4	3 07.8 -56.3 114.5	2 47.3 -56.3 113.6	2 26.6 -56.2 112.6	2 05.8 -56.2 111.7
7°	2 31.8 -56.4 115.8	2 11.5 -56.4 114.9	1 51.0 -56.3 113.9	1 30.4 -56.3 113.0	1 09.6 -56.2 112.1
8°	1 35.4 -56.5 116.1	1 15.1 -56.4 115.2	0 54.7 -56.3 114.3	0 34.1 -56.2 113.3	0 13.4 -56.2 112.4
9°	0 38.9 -56.4 116.5	0 18.7 -56.4 115.5	-0 01.6 -56.4	-0 22.1 -56.3	-0 42.8 -56.2
10°	-0 17.5 -56.4	-0 37.7 -56.3	-0 58.0 -56.3	-1 18.4 -56.3	-1 39.0 -56.2
11°	-1 13.9 -56.5	-1 34.0 -56.4	-1 54.3 -56.3	-2 14.7 -56.2	-2 35.2 -56.2
12°	-2 10.4 -56.4	-2 30.4 -56.4	-2 50.6 -56.3	-3 10.9 -56.3	-3 31.4 -56.2
13°	-3 06.8 -56.4	-3 26.8 -56.3	-3 46.9 -56.3	-4 07.2 -56.2	-4 27.6 -56.2
14°	-4 03.2 -56.4	-4 23.1 -56.4	-4 43.2 -56.3	-5 03.4 -56.2	-5 23.8 -56.2
15°	-4 59.6 -56.4	-5 19.5 -56.3	-5 39.5 -56.3	-5 59.6 -56.3	-6 20.0 -56.1
16°	-5 56.0 -56.4	-6 15.8 -56.3	-6 35.8 -56.2	-6 55.9 -56.2	-7 16.1 -56.2
17°	-6 52.4 -56.4	-7 12.1 -56.3	-7 32.0 -56.3	-7 52.1 -56.1	-8 12.3 -56.1
18°	-7 48.8 -56.4	-8 08.4 -56.3	-8 28.3 -56.2	-8 48.2 -56.2	-9 08.4 -56.1
19°	-8 45.2 -56.3	-9 04.7 -56.3	-9 24.5 -56.2	-9 44.4 -56.1	
20°	-9 41.5 -56.3				
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Dec	LHA 070° / 290°	LHA 071° / 289°	LHA 072° / 288°	LHA 073° / 287°	LHA 074° / 286°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	7 21.7 -56.1 108.6	7 00.3 -56.0 107.7	6 38.8 -56.0 106.8	6 17.3 -56.0 105.8	5 55.6 -55.9 104.9
1°	6 25.6 -56.1 109.0	6 04.3 -56.1 108.1	5 42.8 -56.0 107.1	5 21.3 -56.0 106.2	4 59.7 -56.0 105.3
2°	5 29.5 -56.2 109.4	5 08.2 -56.1 108.4	4 46.8 -56.0 107.5	4 25.3 -56.0 106.5	4 03.7 -55.9 105.6
3°	4 33.3 -56.1 109.7	4 12.1 -56.1 108.8	3 50.8 -56.1 107.8	3 29.3 -56.0 106.9	3 07.8 -56.0 106.0
4°	3 37.2 -56.2 110.1	3 16.0 -56.1 109.1	2 54.7 -56.0 108.2	2 33.3 -56.0 107.3	2 11.8 -56.0 106.3
5°	2 41.0 -56.1 110.4	2 19.9 -56.1 109.5	1 58.7 -56.1 108.6	1 37.3 -56.0 107.6	1 15.8 -56.0 106.7
6°	1 44.9 -56.2 110.8	1 23.8 -56.1 109.8	1 02.6 -56.1 108.9	0 41.3 -56.0 108.0	0 19.8 -55.9 107.1
7°	0 48.7 -56.1 111.1	0 27.7 -56.1 110.2	0 06.5 -56.0 109.3	-0 14.7 -56.1	-0 36.1 -56.0
8°	-0 07.4 -56.2	-0 28.4 -56.1	-0 49.5 -56.1	-1 10.8 -56.0	-1 32.1 -56.0
9°	-1 03.6 -56.2	-1 24.5 -56.1	-1 45.6 -56.0	-2 06.8 -56.0	-2 28.1 -55.9
10°	-1 59.8 -56.1	-2 20.6 -56.1	-2 41.6 -56.1	-3 02.8 -56.0	-3 24.0 -56.0
11°	-2 55.9 -56.1	-3 16.7 -56.1	-3 37.7 -56.0	-3 58.8 -56.0	-4 20.0 -55.9
12°	-3 52.0 -56.2	-4 12.8 -56.1	-4 33.7 -56.1	-4 54.8 -56.0	-5 15.9 -56.0
13°	-4 48.2 -56.1	-5 08.9 -56.1	-5 29.8 -56.0	-5 50.8 -55.9	-6 11.9 -55.9
14°	-5 44.3 -56.1	-6 05.0 -56.0	-6 25.8 -56.0	-6 46.7 -56.0	-7 07.8 -55.9
15°	-6 40.4 -56.1	-7 01.0 -56.1	-7 21.8 -56.0	-7 42.7 -55.9	-8 03.7 -55.9
16°	-7 36.5 -56.1	-7 57.1 -56.0	-8 17.8 -55.9	-8 38.6 -55.9	-8 59.6 -55.8
17°	-8 32.6 -56.1	-8 53.1 -56.0	-9 13.7 -56.0	-9 34.5 -55.9	-9 55.4 -55.9
18°	-9 28.7 -56.0	-9 49.1 -56.0			
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Dec	LHA 075° / 285°	LHA 076° / 284°	LHA 077° / 283°	LHA 078° / 282°	LHA 079° / 281°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	5 33.8 -55.9 104.0	5 12.0 -55.9 103.0	4 50.0 -55.8 102.1	4 28.0 -55.8 101.1	4 05.9 -55.7 100.2
1°	4 37.9 -55.9 104.3	4 16.1 -55.9 103.4	3 54.2 -55.8 102.4	3 32.2 -55.8 101.5	3 10.2 -55.8 100.6
2°	3 42.0 -55.9 104.7	3 20.2 -55.9 103.7	2 58.4 -55.9 102.8	2 36.4 -55.8 101.9	2 14.4 -55.8 101.0
3°	2 46.1 -55.9 105.0	2 24.3 -55.8 104.1	2 02.5 -55.9 103.2	1 40.6 -55.8 102.3	1 18.6 -55.8 101.3
4°	1 50.2 -56.0 105.4	1 28.5 -55.9 104.5	1 06.6 -55.8 103.5	0 44.8 -55.9 102.6	0 22.8 -55.8 101.7
5°	0 54.2 -55.9 105.8	0 32.6 -55.9 104.8	0 10.8 -55.9 103.9	-0 11.1 -55.8	-0 33.0 -55.8
6°	-0 01.7 -55.9	-0 23.3 -55.9	-0 45.1 -55.8	-1 06.9 -55.8	-1 28.8 -55.8
7°	-0 57.6 -56.0	-1 19.2 -55.9	-1 40.9 -55.9	-2 02.7 -55.8	-2 24.6 -55.8
8°	-1 53.6 -55.9	-2 15.1 -55.9	-2 36.8 -55.8	-2 58.5 -55.9	-3 20.4 -55.8
9°	-2 49.5 -55.9	-3 11.0 -55.9	-3 32.6 -55.9	-3 54.4 -55.8	-4 16.2 -55.7
10°	-3 45.4 -55.9	-4 06.9 -55.9	-4 28.5 -55.8	-4 50.2 -55.7	-5 11.9 -55.8
11°	-4 41.3 -55.9	-5 02.8 -55.8	-5 24.3 -55.8	-5 45.9 -55.8	-6 07.7 -55.7
12°	-5 37.2 -55.9	-5 58.6 -55.9	-6 20.1 -55.8	-6 41.7 -55.8	-7 03.4 -55.7
13°	-6 33.1 -55.9	-6 54.5 -55.8	-7 15.9 -55.8	-7 37.5 -55.7	-7 59.1 -55.7
14°	-7 29.0 -55.8	-7 50.3 -55.8	-8 11.7 -55.8	-8 33.2 -55.7	-8 54.8 -55.7
15°	-8 24.8 -55.9	-8 46.1 -55.8	-9 07.5 -55.7	-9 28.9 -55.7	-9 50.5 -55.7
16°	-9 20.7 -55.8	-9 41.9 -55.7			
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Dec	LHA 080° / 280°	LHA 081° / 279°	LHA 082° / 278°	LHA 083° / 277°	LHA 084° / 276°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	3 43.8 -55.8 99.3	3 21.6 -55.8 98.4	2 59.3 -55.7 97.4	2 37.0 -55.7 96.5	2 14.6 -55.6 95.6
1°	2 48.0 -55.7 99.7	2 25.8 -55.7 98.7	2 03.6 -55.7 97.8	1 41.3 -55.7 96.9	1 19.0 -55.7 95.9
2°	1 52.3 -55.8 100.0	1 30.1 -55.7 99.1	1 07.9 -55.7 98.2	0 45.6 -55.7 97.2	0 23.3 -55.7 96.3
3°	0 56.5 -55.8 100.4	0 34.4 -55.8 99.5	0 12.2 -55.8 98.5	-0 10.1 -55.7	-0 32.4 -55.7
4°	0 00.7 -55.7 100.8	-0 21.4 -55.7	-0 43.6 -55.7	-1 05.8 -55.7	-1 28.1 -55.6
5°	-0 55.0 -55.8	-1 17.1 -55.8	-1 39.3 -55.7	-2 01.5 -55.7	-2 23.7 -55.7
6°	-1 50.8 -55.8	-2 12.9 -55.7	-2 35.0 -55.7	-2 57.2 -55.7	-3 19.4 -55.7
7°	-2 46.6 -55.7	-3 08.6 -55.7	-3 30.7 -55.7	-3 52.9 -55.6	-4 15.1 -55.6
8°	-3 42.3 -55.8	-4 04.3 -55.7	-4 26.4 -55.7	-4 48.5 -55.7	-5 10.7 -55.7
9°	-4 38.1 -55.7	-5 00.0 -55.7	-5 22.1 -55.6	-5 44.2 -55.6	-6 06.4 -55.6
10°	-5 33.8 -55.7	-5 55.7 -55.7	-6 17.7 -55.7	-6 39.8 -55.7	-7 02.0 -55.6
11°	-6 29.5 -55.7	-6 51.4 -55.7	-7 13.4 -55.6	-7 35.5 -55.6	-7 57.6 -55.6
12°	-7 25.2 -55.7	-7 47.1 -55.6	-8 09.0 -55.7	-8 31.1 -55.6	-8 53.2 -55.5
13°	-8 20.9 -55.7	-8 42.7 -55.7	-9 04.7 -55.5	-9 26.7 -55.5	-9 48.7 -55.6
14°	-9 16.6 -55.6	-9 38.4 -55.6			
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Dec	LHA 085° / 275°	LHA 086° / 274°	LHA 087° / 273°	LHA 088° / 272°	LHA 089° / 271°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	1 52.3 -55.7 94.6	1 29.8 -55.6 93.7	1 07.4 -55.6 92.8	0 44.9 -55.6 91.9	0 22.5 -55.7 90.9
1°	0 56.6 -55.7 95.0	0 34.2 -55.7 94.1	0 11.8 -55.7 93.2	-0 10.7 -55.6	-0 33.2 -55.6
2°	0 00.9 -55.6 95.4	-0 21.5 -55.6	-0 43.9 -55.6	-1 06.3 -55.7	-1 28.8 -55.6
3°	-0 54.7 -55.7	-1 17.1 -55.7	-1 39.5 -55.7	-2 02.0 -55.6	-2 24.4 -55.6
4°	-1 50.4 -55.7	-2 12.8 -55.6	-2 35.2 -55.6	-2 57.6 -55.6	-3 20.0 -55.6
5°	-2 46.1 -55.6	-3 08.4 -55.6	-3 30.8 -55.6	-3 53.2 -55.6	-4 15.6 -55.6
6°	-3 41.7 -55.6	-4 04.0 -55.7	-4 26.4 -55.6	-4 48.8 -55.6	-5 11.2 -55.6
7°	-4 37.3 -55.7	-4 59.7 -55.6	-5 22.0 -55.6	-5 44.4 -55.6	-6 06.8 -55.6
8°	-5 33.0 -55.6	-5 55.3 -55.6	-6 17.6 -55.6	-6 40.0 -55.6	-7 02.4 -55.6
9°	-6 28.6 -55.6	-6 50.9 -55.6	-7 13.2 -55.6	-7 35.6 -55.5	-7 58.0 -55.5
10°	-7 24.2 -55.6	-7 46.5 -55.5	-8 08.8 -55.5	-8 31.1 -55.5	-8 53.5 -55.5
11°	-8 19.8 -55.5	-8 42.0 -55.5	-9 04.3 -55.5	-9 26.6 -55.5	-9 49.0 -55.5
12°	-9 15.3 -55.6	-9 37.5 -55.6	-9 59.8 -55.5		
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Latitude 68°

Declination CONTRARY name to Latitude

Dec	LHA 090° / 270°	LHA 091° / 269°	LHA 092° / 268°	LHA 093° / 267°	LHA 094° / 266°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	0 00.0 -55.6 90.0	-0 22.5 -55.6			
1°	-0 55.6 -55.7	-1 18.1 -55.6			
2°	-1 51.3 -55.6	-2 13.7 -55.7			
3°	-2 46.9 -55.6	-3 09.4 -55.6			
4°	-3 42.5 -55.6	-4 05.0 -55.6			
5°	-4 38.1 -55.6	-5 00.6 -55.6			
6°	-5 33.7 -55.6	-5 56.2 -55.5			
7°	-6 29.3 -55.5	-6 51.7 -55.6			
8°	-7 24.8 -55.6	-7 47.3 -55.5			
9°	-8 20.4 -55.5	-8 42.8 -55.5			
10°	-9 15.9 -55.5	-9 38.3 -55.5			
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Dec	LHA 095° / 265°	LHA 096° / 264°	LHA 097° / 263°	LHA 098° / 262°	LHA 099° / 261°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°					
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The data on this page is believed to be accurate but no warranty is given for it's correctness. Use it only for training and exercising!

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	21 00.0 -60.0 180.0	20 59.8 -60.0 178.9	20 59.2 -60.0 177.9	20 58.2 -60.0 176.8	20 56.8 -60.0 175.7
1°	20 00.0 -60.0 180.0	19 59.8 -60.0 178.9	19 59.2 -60.0 177.9	19 58.2 -60.0 176.8	19 56.8 -60.0 175.7
2°	19 00.0 -60.0 180.0	18 59.8 -60.0 178.9	18 59.2 -60.0 177.9	18 58.2 -60.0 176.8	18 56.8 -60.0 175.8
3°	18 00.0 -60.0 180.0	17 59.8 -60.0 178.9	17 59.2 -60.0 177.9	17 58.2 -60.0 176.9	17 56.8 -59.9 175.8
4°	17 00.0 -60.0 180.0	16 59.8 -60.0 179.0	16 59.2 -60.0 177.9	16 58.2 -59.9 176.9	16 56.9 -60.0 175.8
5°	16 00.0 -60.0 180.0	15 59.8 -60.0 179.0	15 59.2 -60.0 177.9	15 58.3 -60.0 176.9	15 56.9 -60.0 175.9
6°	15 00.0 -60.0 180.0	14 59.8 -60.0 179.0	14 59.2 -60.0 177.9	14 58.3 -60.0 176.9	14 56.9 -60.0 175.9
7°	14 00.0 -60.0 180.0	13 59.8 -60.0 179.0	13 59.2 -60.0 178.0	13 58.3 -60.0 176.9	13 56.9 -59.9 175.9
8°	13 00.0 -60.0 180.0	12 59.8 -60.0 179.0	12 59.2 -60.0 178.0	12 58.3 -60.0 177.0	12 57.0 -60.0 175.9
9°	12 00.0 -60.0 180.0	11 59.8 -60.0 179.0	11 59.2 -60.0 178.0	11 58.3 -60.0 177.0	11 57.0 -60.0 176.0
10°	11 00.0 -60.0 180.0	10 59.8 -60.0 179.0	10 59.2 -59.9 178.0	10 58.3 -60.0 177.0	10 57.0 -60.0 176.0
11°	10 00.0 -60.0 180.0	9 59.8 -60.0 179.0	9 59.3 -60.0 178.0	9 58.3 -60.0 177.0	9 57.0 -60.0 176.0
12°	9 00.0 -60.0 180.0	8 59.8 -60.0 179.0	8 59.3 -60.0 178.0	8 58.3 -60.0 177.0	8 57.0 -60.0 176.0
13°	8 00.0 -60.0 180.0	7 59.8 -60.0 179.0	7 59.3 -60.0 178.0	7 58.3 -60.0 177.0	7 57.0 -59.9 176.1
14°	7 00.0 -60.0 180.0	6 59.8 -60.0 179.0	6 59.3 -60.0 178.0	6 58.3 -59.9 177.1	6 57.1 -60.0 176.1
15°	6 00.0 -60.0 180.0	5 59.8 -60.0 179.0	5 59.3 -60.0 178.1	5 58.4 -60.0 177.1	5 57.1 -60.0 176.1
16°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.0	4 59.3 -60.0 178.1	4 58.4 -60.0 177.1	4 57.1 -60.0 176.1
17°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.0	3 59.3 -60.0 178.1	3 58.4 -60.0 177.1	3 57.1 -60.0 176.2
18°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.0	2 59.3 -60.0 178.1	2 58.4 -60.0 177.1	2 57.1 -59.9 176.2
19°	2 00.0 -60.0 180.0	1 59.8 -60.0 179.1	1 59.3 -60.0 178.1	1 58.4 -60.0 177.2	1 57.2 -60.0 176.2
20°	1 00.0 -60.0 180.0	0 59.8 -60.0 179.1	0 59.3 -60.0 178.1	0 58.4 -60.0 177.2	0 57.2 -60.0 176.2
21°	0 00.0 -60.0 180.0	-0 00.2 -60.0	-0 00.7 -60.0	-0 01.6 -60.0	-0 02.8 -60.0
22°	-1 00.0 -60.0	-1 00.2 -60.0	-1 00.7 -60.0	-1 01.6 -60.0	-1 02.8 -60.0
23°	-2 00.0 -60.0	-2 00.2 -60.0	-2 00.7 -60.0	-2 01.6 -59.9	-2 02.8 -59.9
24°	-3 00.0 -60.0	-3 00.2 -60.0	-3 00.7 -60.0	-3 01.5 -60.0	-3 02.7 -60.0
25°	-4 00.0 -60.0	-4 00.2 -60.0	-4 00.7 -60.0	-4 01.5 -60.0	-4 02.7 -60.0
26°	-5 00.0 -60.0	-5 00.2 -60.0	-5 00.7 -60.0	-5 01.5 -60.0	-5 02.7 -60.0
27°	-6 00.0 -60.0	-6 00.2 -60.0	-6 00.7 -60.0	-6 01.5 -60.0	-6 02.7 -60.0
28°	-7 00.0 -60.0	-7 00.2 -60.0	-7 00.7 -60.0	-7 01.5 -60.0	-7 02.7 -60.0
29°	-8 00.0 -60.0	-8 00.2 -60.0	-8 00.7 -60.0	-8 01.5 -60.0	-8 02.7 -59.9

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	20 55.0 -60.0 174.6	20 52.8 -60.0 173.6	20 50.2 -60.0 172.5	20 47.2 -59.9 171.4	20 43.8 -59.9 170.4
1°	19 55.0 -60.0 174.7	19 52.8 -59.9 173.6	19 50.2 -59.9 172.6	19 47.3 -60.0 171.5	19 43.9 -59.9 170.4
2°	18 55.0 -59.9 174.7	18 52.9 -60.0 173.7	18 50.3 -59.9 172.6	18 47.3 -59.9 171.6	18 44.0 -59.9 170.5
3°	17 55.1 -60.0 174.8	17 52.9 -59.9 173.7	17 50.4 -60.0 172.7	17 47.4 -59.9 171.6	17 44.1 -59.9 170.6
4°	16 55.1 -60.0 174.8	16 53.0 -60.0 173.7	16 50.4 -59.9 172.7	16 47.5 -59.9 171.7	16 44.2 -59.9 170.6
5°	15 55.1 -59.9 174.8	15 53.0 -59.9 173.8	15 50.5 -60.0 172.8	15 47.6 -59.9 171.7	15 44.3 -59.9 170.7
6°	14 55.2 -60.0 174.9	14 53.1 -60.0 173.8	14 50.5 -59.9 172.8	14 47.7 -60.0 171.8	14 44.4 -59.9 170.7
7°	13 55.2 -60.0 174.9	13 53.1 -60.0 173.9	13 50.6 -59.9 172.8	13 47.7 -59.9 171.8	13 44.5 -59.9 170.8
8°	12 55.2 -59.9 174.9	12 53.1 -59.9 173.9	12 50.7 -60.0 172.9	12 47.8 -59.9 171.9	12 44.6 -59.9 170.9
9°	11 55.3 -60.0 175.0	11 53.2 -60.0 173.9	11 50.7 -59.9 172.9	11 47.9 -59.9 171.9	11 44.7 -59.9 170.9
10°	10 55.3 -60.0 175.0	10 53.2 -59.9 174.0	10 50.8 -60.0 173.0	10 48.0 -59.9 172.0	10 44.8 -59.9 171.0
11°	9 55.3 -59.9 175.0	9 53.3 -60.0 174.0	9 50.8 -59.9 173.0	9 48.1 -60.0 172.0	9 44.9 -59.9 171.0
12°	8 55.4 -60.0 175.0	8 53.3 -59.9 174.1	8 50.9 -59.9 173.1	8 48.1 -59.9 172.1	8 45.0 -59.9 171.1
13°	7 55.4 -60.0 175.1	7 53.4 -60.0 174.1	7 51.0 -60.0 173.1	7 48.2 -59.9 172.1	7 45.1 -59.9 171.2
14°	6 55.4 -60.0 175.1	6 53.4 -60.0 174.1	6 51.0 -59.9 173.2	6 48.3 -59.9 172.2	6 45.2 -59.9 171.2
15°	5 55.4 -59.9 175.1	5 53.4 -59.9 174.2	5 51.1 -60.0 173.2	5 48.4 -60.0 172.2	5 45.3 -59.9 171.3
16°	4 55.5 -60.0 175.2	4 53.5 -60.0 174.2	4 51.1 -59.9 173.2	4 48.4 -59.9 172.3	4 45.4 -59.9 171.3
17°	3 55.5 -60.0 175.2	3 53.5 -59.9 174.2	3 51.2 -59.9 173.3	3 48.5 -59.9 172.3	3 45.5 -59.9 171.4
18°	2 55.5 -59.9 175.2	2 53.6 -60.0 174.3	2 51.3 -60.0 173.3	2 48.6 -59.9 172.4	2 45.6 -59.9 171.4
19°	1 55.6 -60.0 175.3	1 53.6 -59.9 174.3	1 51.3 -59.9 173.4	1 48.7 -60.0 172.4	1 45.7 -60.0 171.5
20°	0 55.6 -60.0 175.3	0 53.7 -60.0 174.4	0 51.4 -60.0 173.4	0 48.7 -59.9 172.5	0 45.7 -59.9 171.5
21°	-0 04.4 -59.9	-0 06.3 -60.0	-0 08.6 -59.9	-0 11.2 -59.9	-0 14.2 -59.9
22°	-1 04.3 -60.0	-1 06.3 -59.9	-1 08.5 -60.0	-1 11.1 -59.9	-1 14.1 -59.9
23°	-2 04.3 -60.0	-2 06.2 -60.0	-2 08.5 -59.9	-2 11.0 -60.0	-2 14.0 -59.9
24°	-3 04.3 -60.0	-3 06.2 -59.9	-3 08.4 -59.9	-3 11.0 -59.9	-3 13.9 -59.9
25°	-4 04.3 -59.9	-4 06.1 -60.0	-4 08.3 -60.0	-4 10.9 -59.9	-4 13.8 -59.9
26°	-5 04.2 -60.0	-5 06.1 -59.9	-5 08.3 -59.9	-5 10.8 -59.9	-5 13.7 -59.9
27°	-6 04.2 -60.0	-6 06.0 -60.0	-6 08.2 -60.0	-6 10.7 -60.0	-6 13.6 -59.9
28°	-7 04.2 -59.9	-7 06.0 -60.0	-7 08.2 -59.9	-7 10.7 -59.9	-7 13.5 -59.9
29°	-8 04.1 -60.0	-8 06.0 -59.9	-8 08.1 -60.0	-8 10.6 -59.9	-8 13.4 -59.9

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	20 40.0 -59.9 169.3	20 35.8 -59.9 168.2	20 31.2 -59.8 167.2	20 26.2 -59.7 166.1	20 20.9 -59.8 165.0
1°	19 40.1 -59.9 169.4	19 35.9 -59.8 168.3	19 31.4 -59.8 167.3	19 26.5 -59.8 166.2	19 21.1 -59.7 165.1
2°	18 40.2 -59.8 169.4	18 36.1 -59.8 168.4	18 31.6 -59.8 167.3	18 26.7 -59.8 166.3	18 21.4 -59.8 165.2
3°	17 40.4 -59.9 169.5	17 36.3 -59.9 168.5	17 31.8 -59.8 167.4	17 26.9 -59.8 166.4	17 21.6 -59.7 165.3
4°	16 40.5 -59.9 169.6	16 36.4 -59.8 168.5	16 32.0 -59.9 167.5	16 27.1 -59.8 166.5	16 21.9 -59.8 165.4
5°	15 40.6 -59.9 169.6	15 36.6 -59.9 168.6	15 32.1 -59.8 167.6	15 27.3 -59.8 166.6	15 22.1 -59.7 165.5
6°	14 40.7 -59.8 169.7	14 36.7 -59.8 168.7	14 32.3 -59.8 167.7	14 27.5 -59.8 166.6	14 22.4 -59.8 165.6
7°	13 40.9 -59.9 169.8	13 36.9 -59.9 168.8	13 32.5 -59.8 167.7	13 27.7 -59.8 166.7	13 22.6 -59.7 165.7
8°	12 41.0 -59.9 169.8	12 37.0 -59.8 168.8	12 32.7 -59.9 167.8	12 27.9 -59.8 166.8	12 22.9 -59.8 165.8
9°	11 41.1 -59.9 169.9	11 37.2 -59.9 168.9	11 32.8 -59.8 167.9	11 28.1 -59.7 166.9	11 23.1 -59.8 165.9
10°	10 41.2 -59.8 170.0	10 37.3 -59.8 169.0	10 33.0 -59.8 168.0	10 28.4 -59.8 167.0	10 23.3 -59.7 166.0
11°	9 41.4 -59.9 170.0	9 37.5 -59.9 169.0	9 33.2 -59.8 168.1	9 28.6 -59.8 167.1	9 23.6 -59.8 166.1
12°	8 41.5 -59.9 170.1	8 37.6 -59.9 169.1	8 33.4 -59.9 168.1	8 28.8 -59.8 167.1	8 23.8 -59.8 166.2
13°	7 41.6 -59.9 170.2	7 37.7 -59.8 169.2	7 33.5 -59.8 168.2	7 29.0 -59.9 167.2	7 24.0 -59.8 166.2
14°	6 41.7 -59.9 170.2	6 37.9 -59.9 169.3	6 33.7 -59.8 168.3	6 29.1 -59.8 167.3	6 24.2 -59.7 166.3
15°	5 41.8 -59.9 170.3	5 38.0 -59.8 169.3	5 33.9 -59.9 168.4	5 29.3 -59.8 167.4	5 24.5 -59.8 166.4
16°	4 41.9 -59.8 170.4	4 38.2 -59.9 169.4	4 34.0 -59.8 168.4	4 29.5 -59.8 167.5	4 24.7 -59.8 166.5
17°	3 42.1 -59.9 170.4	3 38.3 -59.9 169.5	3 34.2 -59.8 168.5	3 29.7 -59.8 167.6	3 24.9 -59.7 166.6
18°	2 42.2 -59.9 170.5	2 38.4 -59.8 169.5	2 34.4 -59.9 168.6	2 29.9 -59.8 167.6	2 25.2 -59.8 166.7
19°	1 42.3 -59.9 170.5	1 38.6 -59.9 169.6	1 34.5 -59.8 168.7	1 30.1 -59.8 167.7	1 25.4 -59.8 166.8
20°	0 42.4 -59.9 170.6	0 38.7 -59.8 169.7	0 34.7 -59.8 168.7	0 30.3 -59.8 167.8	0 25.6 -59.8 166.9
21°	-0 17.5 -59.9	-0 21.1 -59.9	-0 25.1 -59.9	-0 29.5 -59.8	-0 34.2 -59.7
22°	-1 17.4 -59.8	-1 21.0 -59.9	-1 25.0 -59.8	-1 29.3 -59.8	-1 33.9 -59.8
23°	-2 17.2 -59.9	-2 20.9 -59.8	-2 24.8 -59.8	-2 29.1 -59.8	-2 33.7 -59.8
24°	-3 17.1 -59.9	-3 20.7 -59.9	-3 24.6 -59.9	-3 28.9 -59.8	-3 33.5 -59.8
25°	-4 17.0 -59.9	-4 20.6 -59.8	-4 24.5 -59.8	-4 28.7 -59.8	-4 33.3 -59.7
26°	-5 16.9 -59.9	-5 20.4 -59.9	-5 24.3 -59.8	-5 28.5 -59.8	-5 33.0 -59.8
27°	-6 16.8 -59.9	-6 20.3 -59.8	-6 24.1 -59.9	-6 28.3 -59.8	-6 32.8 -59.8
28°	-7 16.7 -59.8	-7 20.1 -59.9	-7 24.0 -59.8	-7 28.1 -59.8	-7 32.6 -59.7
29°	-8 16.5 -59.9	-8 20.0 -59.9	-8 23.8 -59.8	-8 27.9 -59.8	-8 32.3 -59.8

Dec	LHA 015° / 345°	LHA 016° / 344°	LHA 017° / 343°	LHA 018° / 342°	LHA 019° / 341°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	20 15.1 -59.7 164.0	20 09.0 -59.6 162.9	20 02.5 -59.6 161.9	19 55.6 -59.5 160.8	19 48.4 -59.6 159.8
1°	19 15.4 -59.7 164.1	19 09.4 -59.7 163.0	19 02.9 -59.6 162.0	18 56.1 -59.6 160.9	18 48.8 -59.5 159.9
2°	18 15.7 -59.7 164.2	18 09.7 -59.7 163.1	18 03.3 -59.7 162.1	17 56.5 -59.6 161.1	17 49.3 -59.5 160.0
3°	17 16.0 -59.7 164.3	17 10.0 -59.7 163.3	17 03.6 -59.6 162.2	16 56.9 -59.6 161.2	16 49.8 -59.6 160.1
4°	16 16.3 -59.7 164.4	16 10.3 -59.7 163.4	16 04.0 -59.7 162.3	15 57.3 -59.6 161.3	15 50.2 -59.6 160.3
5°	15 16.6 -59.7 164.5	15 10.6 -59.6 163.5	15 04.3 -59.6 162.4	14 57.7 -59.6 161.4	14 50.6 -59.5 160.4
6°	14 16.9 -59.8 164.6	14 11.0 -59.7 163.6	14 04.7 -59.7 162.6	13 58.1 -59.6 161.5	13 51.1 -59.6 160.5
7°	13 17.1 -59.7 164.7	13 11.3 -59.7 163.7	13 05.0 -59.6 162.7	12 58.5 -59.7 161.7	12 51.5 -59.6 160.6
8°	12 17.4 -59.7 164.8	12 11.6 -59.7 163.8	12 05.4 -59.7 162.8	11 58.8 -59.6 161.8	11 51.9 -59.5 160.8
9°	11 17.7 -59.8 164.9	11 11.9 -59.7 163.9	11 05.7 -59.6 162.9	10 59.2 -59.6 161.9	10 52.4 -59.6 160.9
10°	10 17.9 -59.7 165.0	10 12.2 -59.7 164.0	10 06.1 -59.7 163.0	9 59.6 -59.6 162.0	9 52.8 -59.6 161.0
11°	9 18.2 -59.7 165.1	9 12.5 -59.7 164.1	9 06.4 -59.6 163.1	9 00.0 -59.6 162.1	8 53.2 -59.6 161.1
12°	8 18.5 -59.8 165.2	8 12.8 -59.7 164.2	8 06.8 -59.7 163.2	8 00.4 -59.7 162.2	7 53.6 -59.6 161.2
13°	7 18.7 -59.7 165.3	7 13.1 -59.7 164.3	7 07.1 -59.7 163.3	7 00.7 -59.6 162.3	6 54.0 -59.5 161.4
14°	6 19.0 -59.7 165.4	6 13.4 -59.7 164.4	6 07.4 -59.6 163.4	6 01.1 -59.6 162.5	5 54.5 -59.6 161.5
15°	5 19.3 -59.8 165.5	5 13.7 -59.7 164.5	5 07.8 -59.7 163.5	5 01.5 -59.6 162.6	4 54.9 -59.6 161.6
16°	4 19.5 -59.7 165.6	4 14.0 -59.7 164.6	4 08.1 -59.7 163.6	4 01.9 -59.7 162.7	3 55.3 -59.6 161.7
17°	3 19.8 -59.8 165.6	3 14.3 -59.7 164.7	3 08.4 -59.6 163.7	3 02.2 -59.6 162.8	2 55.7 -59.6 161.8
18°	2 20.0 -59.7 165.7	2 14.6 -59.7 164.8	2 08.8 -59.7 163.8	2 02.6 -59.6 162.9	1 56.1 -59.6 162.0
19°	1 20.3 -59.7 165.8	1 14.9 -59.7 164.9	1 09.1 -59.7 163.9	1 03.0 -59.7 163.0	0 56.5 -59.6 162.1
20°	0 20.6 -59.8 165.9	0 15.2 -59.8 165.0	0 09.4 -59.7 164.1	0 03.3 -59.6 163.1	-0 03.1 -59.6
21°	-0 39.2 -59.7	-0 44.6 -59.7	-0 50.3 -59.6	-0 56.3 -59.6	-1 02.7 -59.6
22°	-1 38.9 -59.8	-1 44.3 -59.7	-1 49.9 -59.7	-1 55.9 -59.7	-2 02.3 -59.5
23°	-2 38.7 -59.7	-2 44.0 -59.7	-2 49.6 -59.7	-2 55.6 -59.6	-3 01.8 -59.6
24°	-3 38.4 -59.8	-3 43.7 -59.7	-3 49.3 -59.6	-3 55.2 -59.6	-4 01.4 -59.6
25°	-4 38.2 -59.7	-4 43.4 -59.7	-4 48.9 -59.7	-4 54.8 -59.6	-5 01.0 -59.6
26°	-5 37.9 -59.7	-5 43.1 -59.7	-5 48.6 -59.7	-5 54.4 -59.7	-6 00.6 -59.6
27°	-6 37.6 -59.8	-6 42.8 -59.7	-6 48.3 -59.6	-6 54.1 -59.6	-7 00.2 -59.6
28°	-7 37.4 -59.7	-7 42.5 -59.7	-7 47.9 -59.7	-7 53.7 -59.6	-7 59.8 -59.6
29°	-8 37.1 -59.7	-8 42.2 -59.7	-8 47.6 -59.7	-8 53.3 -59.6	-8 59.4 -59.5

Dec	LHA 020° / 340°	LHA 021° / 339°	LHA 022° / 338°	LHA 023° / 337°	LHA 024° / 336°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	19 40.8 -59.5 158.7	19 32.8 -59.5 157.6	19 24.4 -59.4 156.6	19 15.7 -59.4 155.5	19 06.6 -59.3 154.5
1°	18 41.3 -59.5 158.8	18 33.3 -59.4 157.8	18 25.0 -59.4 156.7	18 16.3 -59.3 155.7	18 07.3 -59.3 154.7
2°	17 41.8 -59.5 159.0	17 33.9 -59.5 157.9	17 25.6 -59.4 156.9	17 17.0 -59.4 155.9	17 08.0 -59.3 154.8
3°	16 42.3 -59.5 159.1	16 34.4 -59.4 158.1	16 26.2 -59.4 157.0	16 17.6 -59.3 156.0	16 08.7 -59.3 155.0
4°	15 42.8 -59.6 159.2	15 35.0 -59.5 158.2	15 26.8 -59.4 157.2	15 18.3 -59.4 156.2	15 09.4 -59.3 155.1
5°	14 43.2 -59.5 159.4	14 35.5 -59.5 158.4	14 27.4 -59.4 157.3	14 18.9 -59.4 156.3	14 10.1 -59.3 155.3
6°	13 43.7 -59.5 159.5	13 36.0 -59.5 158.5	13 28.0 -59.5 157.5	13 19.5 -59.3 156.5	13 10.8 -59.3 155.5
7°	12 44.2 -59.5 159.6	12 36.5 -59.4 158.6	12 28.5 -59.4 157.6	12 20.2 -59.4 156.6	12 11.5 -59.4 155.6
8°	11 44.7 -59.6 159.8	11 37.1 -59.5 158.8	11 29.1 -59.4 157.8	11 20.8 -59.4 156.8	11 12.1 -59.3 155.8
9°	10 45.1 -59.5 159.9	10 37.6 -59.5 158.9	10 29.7 -59.5 157.9	10 21.4 -59.4 156.9	10 12.8 -59.4 155.9
10°	9 45.6 -59.5 160.0	9 38.1 -59.5 159.0	9 30.2 -59.4 158.0	9 22.0 -59.4 157.0	9 13.4 -59.3 156.1
11°	8 46.1 -59.6 160.1	8 38.6 -59.5 159.2	8 30.8 -59.5 158.2	8 22.6 -59.4 157.2	8 14.1 -59.3 156.2
12°	7 46.5 -59.5 160.3	7 39.1 -59.5 159.3	7 31.3 -59.4 158.3	7 23.2 -59.4 157.3	7 14.8 -59.4 156.4
13°	6 47.0 -59.5 160.4	6 39.6 -59.5 159.4	6 31.9 -59.5 158.4	6 23.8 -59.4 157.5	6 15.4 -59.3 156.5
14°	5 47.5 -59.6 160.5	5 40.1 -59.5 159.5	5 32.4 -59.4 158.6	5 24.4 -59.4 157.6	5 16.1 -59.4 156.7
15°	4 47.9 -59.5 160.6	4 40.6 -59.5 159.7	4 33.0 -59.5 158.7	4 25.0 -59.4 157.8	4 16.7 -59.4 156.8
16°	3 48.4 -59.6 160.8	3 41.1 -59.5 159.8	3 33.5 -59.4 158.9	3 25.6 -59.4 157.9	3 17.3 -59.3 156.9
17°	2 48.8 -59.5 160.9	2 41.6 -59.5 159.9	2 34.1 -59.5 159.0	2 26.2 -59.4 158.0	2 18.0 -59.4 157.1
18°	1 49.3 -59.6 161.0	1 42.1 -59.5 160.1	1 34.6 -59.4 159.1	1 26.8 -59.4 158.2	1 18.6 -59.3 157.2
19°	0 49.7 -59.5 161.1	0 42.6 -59.5 160.2	0 35.2 -59.5 159.3	0 27.4 -59.4 158.3	0 19.3 -59.4 157.4
20°	-0 09.8 -59.6	-0 16.9 -59.5	-0 24.3 -59.5	-0 32.0 -59.4	-0 40.1 -59.3
21°	-1 09.4 -59.5	-1 16.4 -59.5	-1 23.8 -59.4	-1 31.4 -59.5	-1 39.4 -59.4
22°	-2 08.9 -59.6	-2 15.9 -59.5	-2 23.2 -59.5	-2 30.9 -59.4	-2 38.8 -59.4
23°	-3 08.5 -59.5	-3 15.4 -59.5	-3 22.7 -59.4	-3 30.3 -59.4	-3 38.2 -59.3
24°	-4 08.0 -59.6	-4 14.9 -59.5	-4 22.1 -59.5	-4 29.7 -59.4	-4 37.5 -59.4
25°	-5 07.6 -59.5	-5 14.4 -59.5	-5 21.6 -59.4	-5 29.1 -59.4	-5 36.9 -59.3
26°	-6 07.1 -59.5	-6 13.9 -59.5	-6 21.0 -59.5	-6 28.5 -59.4	-6 36.2 -59.4
27°	-7 06.6 -59.6	-7 13.4 -59.5	-7 20.5 -59.4	-7 27.9 -59.4	-7 35.6 -59.3
28°	-8 06.2 -59.5	-8 12.9 -59.5	-8 19.9 -59.5	-8 27.3 -59.4	-8 34.9 -59.4
29°	-9 05.7 -59.5	-9 12.4 -59.5	-9 19.4 -59.4	-9 26.7 -59.4	-9 34.3 -59.3

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	18 57.2 -59.3 153.5	18 47.4 -59.2 152.4	18 37.3 -59.1 151.4	18 26.8 -59.1 150.3	18 16.0 -59.0 149.3
1°	17 57.9 -59.2 153.6	17 48.2 -59.2 152.6	17 38.2 -59.2 151.6	17 27.7 -59.0 150.5	17 17.0 -59.0 149.5
2°	16 58.7 -59.2 153.8	16 49.0 -59.2 152.8	16 39.0 -59.1 151.7	16 28.7 -59.1 150.7	16 18.0 -59.0 149.7
3°	15 59.5 -59.3 154.0	15 49.8 -59.1 152.9	15 39.9 -59.1 151.9	15 29.6 -59.1 150.9	15 19.0 -59.0 149.9
4°	15 00.2 -59.3 154.1	14 50.7 -59.3 153.1	14 40.8 -59.2 152.1	14 30.5 -59.1 151.1	14 20.0 -59.1 150.1
5°	14 00.9 -59.2 154.3	13 51.4 -59.2 153.3	13 41.6 -59.2 152.3	13 31.4 -59.1 151.2	13 20.9 -59.0 150.2
6°	13 01.7 -59.3 154.4	12 52.2 -59.2 153.4	12 42.4 -59.1 152.4	12 32.3 -59.1 151.4	12 21.9 -59.1 150.4
7°	12 02.4 -59.3 154.6	11 53.0 -59.2 153.6	11 43.3 -59.2 152.6	11 33.2 -59.1 151.6	11 22.8 -59.0 150.6
8°	11 03.1 -59.3 154.8	10 53.8 -59.2 153.8	10 44.1 -59.2 152.8	10 34.1 -59.1 151.8	10 23.8 -59.1 150.8
9°	10 03.8 -59.2 154.9	9 54.6 -59.3 153.9	9 44.9 -59.1 152.9	9 35.0 -59.1 151.9	9 24.7 -59.0 151.0
10°	9 04.6 -59.3 155.1	8 55.3 -59.2 154.1	8 45.8 -59.2 153.1	8 35.9 -59.2 152.1	8 25.7 -59.1 151.1
11°	8 05.3 -59.3 155.2	7 56.1 -59.3 154.2	7 46.6 -59.2 153.3	7 36.7 -59.1 152.3	7 26.6 -59.1 151.3
12°	7 06.0 -59.3 155.4	6 56.8 -59.2 154.4	6 47.4 -59.2 153.4	6 37.6 -59.1 152.5	6 27.5 -59.1 151.5
13°	6 06.7 -59.3 155.5	5 57.6 -59.2 154.6	5 48.2 -59.2 153.6	5 38.5 -59.2 152.6	5 28.4 -59.0 151.7
14°	5 07.4 -59.3 155.7	4 58.4 -59.3 154.7	4 49.0 -59.2 153.8	4 39.3 -59.1 152.8	4 29.4 -59.1 151.8
15°	4 08.1 -59.3 155.8	3 59.1 -59.3 154.9	3 49.8 -59.2 153.9	3 40.2 -59.1 153.0	3 30.3 -59.1 152.0
16°	3 08.8 -59.3 156.0	2 59.8 -59.2 155.0	2 50.6 -59.2 154.1	2 41.1 -59.2 153.1	2 31.2 -59.1 152.2
17°	2 09.5 -59.4 156.1	2 00.6 -59.3 155.2	1 51.4 -59.2 154.3	1 41.9 -59.1 153.3	1 32.1 -59.1 152.4
18°	1 10.1 -59.3 156.3	1 01.3 -59.2 155.4	0 52.2 -59.2 154.4	0 42.8 -59.2 153.5	0 33.0 -59.1 152.5
19°	0 10.8 -59.3 156.4	0 02.1 -59.3 155.5	-0 07.0 -59.2	-0 16.4 -59.1	-0 26.1 -59.1
20°	-0 48.5 -59.3	-0 57.2 -59.2	-1 06.2 -59.2	-1 15.5 -59.2	-1 25.2 -59.0
21°	-1 47.8 -59.3	-1 56.4 -59.3	-2 05.4 -59.2	-2 14.7 -59.1	-2 24.2 -59.1
22°	-2 47.1 -59.3	-2 55.7 -59.2	-3 04.6 -59.2	-3 13.8 -59.1	-3 23.3 -59.1
23°	-3 46.4 -59.3	-3 54.9 -59.3	-4 03.8 -59.2	-4 12.9 -59.2	-4 22.4 -59.1
24°	-4 45.7 -59.3	-4 54.2 -59.2	-5 03.0 -59.2	-5 12.1 -59.1	-5 21.5 -59.1
25°	-5 45.0 -59.3	-5 53.4 -59.3	-6 02.2 -59.2	-6 11.2 -59.2	-6 20.6 -59.0
26°	-6 44.3 -59.3	-6 52.7 -59.2	-7 01.4 -59.1	-7 10.4 -59.1	-7 19.6 -59.1
27°	-7 43.6 -59.3	-7 51.9 -59.3	-8 00.5 -59.2	-8 09.5 -59.1	-8 18.7 -59.1
28°	-8 42.9 -59.3	-8 51.2 -59.2	-8 59.7 -59.2	-9 08.6 -59.1	-9 17.8 -59.0
29°	-9 42.2 -59.3	-9 50.4 -59.2	-9 58.9 -59.2		

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	18 04.8 -58.9 148.3	17 53.4 -58.9 147.2	17 41.6 -58.8 146.2	17 29.4 -58.7 145.2	17 17.0 -58.7 144.2
1°	17 05.9 -58.9 148.5	16 54.5 -58.9 147.4	16 42.8 -58.8 146.4	16 30.7 -58.7 145.4	16 18.3 -58.6 144.4
2°	16 07.0 -59.0 148.7	15 55.6 -58.9 147.6	15 44.0 -58.9 146.6	15 32.0 -58.8 145.6	15 19.7 -58.7 144.6
3°	15 08.0 -58.9 148.9	14 56.7 -58.9 147.8	14 45.1 -58.8 146.8	14 33.2 -58.8 145.8	14 21.0 -58.7 144.8
4°	14 09.1 -59.0 149.0	13 57.8 -58.9 148.0	13 46.3 -58.9 147.0	13 34.4 -58.8 146.0	13 22.3 -58.8 145.0
5°	13 10.1 -59.0 149.2	12 58.9 -58.9 148.2	12 47.4 -58.8 147.2	12 35.6 -58.7 146.2	12 23.5 -58.7 145.2
6°	12 11.1 -59.0 149.4	12 00.0 -58.9 148.4	11 48.6 -58.9 147.4	11 36.9 -58.8 146.4	11 24.8 -58.7 145.4
7°	11 12.1 -59.0 149.6	11 01.1 -59.0 148.6	10 49.7 -58.9 147.6	10 38.1 -58.9 146.6	10 26.1 -58.8 145.6
8°	10 13.1 -59.0 149.8	10 02.1 -58.9 148.8	9 50.8 -58.8 147.8	9 39.2 -58.8 146.8	9 27.3 -58.7 145.8
9°	9 14.1 -59.0 150.0	9 03.2 -58.9 149.0	8 52.0 -58.9 148.0	8 40.4 -58.8 147.0	8 28.6 -58.8 146.1
10°	8 15.1 -59.0 150.2	8 04.3 -59.0 149.2	7 53.1 -58.9 148.2	7 41.6 -58.8 147.2	7 29.8 -58.8 146.3
11°	7 16.1 -59.0 150.3	7 05.3 -58.9 149.4	6 54.2 -58.9 148.4	6 42.8 -58.9 147.4	6 31.0 -58.7 146.5
12°	6 17.1 -59.0 150.5	6 06.4 -59.0 149.6	5 55.3 -58.9 148.6	5 43.9 -58.8 147.6	5 32.3 -58.8 146.7
13°	5 18.1 -59.0 150.7	5 07.4 -59.0 149.7	4 56.4 -58.9 148.8	4 45.1 -58.8 147.8	4 33.5 -58.8 146.9
14°	4 19.1 -59.1 150.9	4 08.4 -58.9 149.9	3 57.5 -58.9 149.0	3 46.3 -58.9 148.0	3 34.7 -58.7 147.1
15°	3 20.0 -59.0 151.1	3 09.5 -59.0 150.1	2 58.6 -58.9 149.2	2 47.4 -58.8 148.2	2 36.0 -58.8 147.3
16°	2 21.0 -59.0 151.2	2 10.5 -59.0 150.3	1 59.7 -58.9 149.4	1 48.6 -58.9 148.4	1 37.2 -58.8 147.5
17°	1 22.0 -59.1 151.4	1 11.5 -58.9 150.5	1 00.8 -58.9 149.5	0 49.7 -58.8 148.6	0 38.4 -58.8 147.7
18°	0 22.9 -59.0 151.6	0 12.6 -59.0 150.7	0 01.9 -58.9 149.7	-0 09.1 -58.9	-0 20.4 -58.8
19°	-0 36.1 -59.0	-0 46.4 -59.0	-0 57.0 -58.9	-1 08.0 -58.8	-1 19.2 -58.8
20°	-1 35.1 -59.0	-1 45.4 -58.9	-1 55.9 -58.9	-2 06.8 -58.8	-2 18.0 -58.7
21°	-2 34.1 -59.1	-2 44.3 -59.0	-2 54.8 -58.9	-3 05.6 -58.9	-3 16.7 -58.8
22°	-3 33.2 -59.0	-3 43.3 -59.0	-3 53.7 -58.9	-4 04.5 -58.8	-4 15.5 -58.8
23°	-4 32.2 -59.0	-4 42.3 -58.9	-4 52.6 -58.9	-5 03.3 -58.9	-5 14.3 -58.8
24°	-5 31.2 -59.0	-5 41.2 -59.0	-5 51.5 -58.9	-6 02.2 -58.8	-6 13.1 -58.7
25°	-6 30.2 -59.0	-6 40.2 -58.9	-6 50.4 -58.9	-7 01.0 -58.8	-7 11.8 -58.8
26°	-7 29.2 -59.1	-7 39.1 -59.0	-7 49.3 -58.9	-7 59.8 -58.8	-8 10.6 -58.7
27°	-8 28.3 -59.0	-8 38.1 -58.9	-8 48.2 -58.9	-8 58.6 -58.8	-9 09.3 -58.8
28°	-9 27.3 -59.0	-9 37.0 -59.0	-9 47.1 -58.9	-9 57.4 -58.9	
29°					

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	17 04.3 -58.6 143.1	16 51.2 -58.5 142.1	16 37.9 -58.5 141.1	16 24.2 -58.4 140.1	16 10.3 -58.4 139.1
1°	16 05.7 -58.7 143.4	15 52.7 -58.6 142.3	15 39.4 -58.5 141.3	15 25.8 -58.4 140.3	15 11.9 -58.3 139.3
2°	15 07.0 -58.6 143.6	14 54.1 -58.5 142.6	14 40.9 -58.5 141.6	14 27.4 -58.4 140.5	14 13.6 -58.4 139.5
3°	14 08.4 -58.6 143.8	13 55.6 -58.6 142.8	13 42.4 -58.5 141.8	13 29.0 -58.5 140.8	13 15.2 -58.4 139.8
4°	13 09.8 -58.7 144.0	12 57.0 -58.6 143.0	12 43.9 -58.5 142.0	12 30.5 -58.4 141.0	12 16.8 -58.3 140.0
5°	12 11.1 -58.6 144.2	11 58.4 -58.6 143.2	11 45.4 -58.6 142.2	11 32.1 -58.5 141.2	11 18.5 -58.4 140.3
6°	11 12.5 -58.7 144.4	10 59.8 -58.6 143.5	10 46.8 -58.5 142.5	10 33.6 -58.5 141.5	10 20.1 -58.4 140.5
7°	10 13.8 -58.7 144.7	10 01.2 -58.6 143.7	9 48.3 -58.5 142.7	9 35.1 -58.5 141.7	9 21.7 -58.5 140.7
8°	9 15.1 -58.7 144.9	9 02.6 -58.6 143.9	8 49.8 -58.6 142.9	8 36.6 -58.4 141.9	8 23.2 -58.4 141.0
9°	8 16.4 -58.7 145.1	8 04.0 -58.7 144.1	7 51.2 -58.6 143.1	7 38.2 -58.5 142.2	7 24.8 -58.4 141.2
10°	7 17.7 -58.7 145.3	7 05.3 -58.6 144.3	6 52.6 -58.5 143.3	6 39.7 -58.5 142.4	6 26.4 -58.5 141.4
11°	6 19.0 -58.7 145.5	6 06.7 -58.7 144.5	5 54.1 -58.6 143.6	5 41.2 -58.6 142.6	5 27.9 -58.4 141.6
12°	5 20.3 -58.7 145.7	5 08.0 -58.6 144.7	4 55.5 -58.6 143.8	4 42.6 -58.5 142.8	4 29.5 -58.4 141.9
13°	4 21.6 -58.7 145.9	4 09.4 -58.6 145.0	3 56.9 -58.6 144.0	3 44.1 -58.5 143.0	3 31.1 -58.5 142.1
14°	3 22.9 -58.7 146.1	3 10.8 -58.7 145.2	2 58.3 -58.6 144.2	2 45.6 -58.5 143.3	2 32.6 -58.4 142.3
15°	2 24.2 -58.7 146.3	2 12.1 -58.6 145.4	1 59.7 -58.5 144.4	1 47.1 -58.5 143.5	1 34.2 -58.5 142.5
16°	1 25.5 -58.8 146.5	1 13.5 -58.7 145.6	1 01.2 -58.6 144.6	0 48.6 -58.5 143.7	0 35.7 -58.4 142.8
17°	0 26.7 -58.7 146.7	0 14.8 -58.7 145.8	0 02.6 -58.6 144.9	-0 09.9 -58.6	-0 22.7 -58.5
18°	-0 32.0 -58.7	-0 43.9 -58.6	-0 56.0 -58.6	-1 08.5 -58.5	-1 21.2 -58.5
19°	-1 30.7 -58.7	-1 42.5 -58.7	-1 54.6 -58.6	-2 07.0 -58.5	-2 19.7 -58.4
20°	-2 29.4 -58.7	-2 41.2 -58.6	-2 53.2 -58.6	-3 05.5 -58.5	-3 18.1 -58.5
21°	-3 28.1 -58.7	-3 39.8 -58.7	-3 51.8 -58.6	-4 04.0 -58.5	-4 16.6 -58.4
22°	-4 26.8 -58.8	-4 38.5 -58.6	-4 50.4 -58.5	-5 02.5 -58.5	-5 15.0 -58.4
23°	-5 25.6 -58.7	-5 37.1 -58.6	-5 48.9 -58.6	-6 01.0 -58.5	-6 13.4 -58.5
24°	-6 24.3 -58.7	-6 35.7 -58.7	-6 47.5 -58.6	-6 59.5 -58.5	-7 11.9 -58.4
25°	-7 23.0 -58.6	-7 34.4 -58.6	-7 46.1 -58.5	-7 58.0 -58.5	-8 10.3 -58.4
26°	-8 21.6 -58.7	-8 33.0 -58.6	-8 44.6 -58.6	-8 56.5 -58.5	-9 08.7 -58.4
27°	-9 20.3 -58.7	-9 31.6 -58.6	-9 43.2 -58.5	-9 55.0 -58.5	
28°					
29°					

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	15 56.0 -58.2 138.1	15 41.5 -58.2 137.0	15 26.7 -58.1 136.0	15 11.7 -58.1 135.0	14 56.3 -58.0 134.0
1°	14 57.8 -58.3 138.3	14 43.3 -58.2 137.3	14 28.6 -58.1 136.3	14 13.6 -58.1 135.3	13 58.3 -58.0 134.3
2°	13 59.5 -58.3 138.5	13 45.1 -58.2 137.5	13 30.5 -58.2 136.5	13 15.5 -58.0 135.6	13 00.3 -58.0 134.6
3°	13 01.2 -58.3 138.8	12 46.9 -58.2 137.8	12 32.3 -58.2 136.8	12 17.5 -58.1 135.8	12 02.3 -58.0 134.8
4°	12 02.9 -58.3 139.0	11 48.7 -58.3 138.0	11 34.1 -58.1 137.1	11 19.4 -58.2 136.1	11 04.3 -58.0 135.1
5°	11 04.6 -58.4 139.3	10 50.4 -58.3 138.3	10 36.0 -58.2 137.3	10 21.2 -58.1 136.3	10 06.3 -58.1 135.3
6°	10 06.2 -58.3 139.5	9 52.1 -58.2 138.5	9 37.8 -58.2 137.5	9 23.1 -58.1 136.6	9 08.2 -58.1 135.6
7°	9 07.9 -58.3 139.7	8 53.9 -58.3 138.8	8 39.6 -58.3 137.8	8 25.0 -58.2 136.8	8 10.1 -58.0 135.8
8°	8 09.6 -58.4 140.0	7 55.6 -58.3 139.0	7 41.3 -58.2 138.0	7 26.8 -58.1 137.1	7 12.1 -58.1 136.1
9°	7 11.2 -58.4 140.2	6 57.3 -58.3 139.2	6 43.1 -58.2 138.3	6 28.7 -58.2 137.3	6 14.0 -58.1 136.4
10°	6 12.8 -58.3 140.4	5 59.0 -58.3 139.5	5 44.9 -58.2 138.5	5 30.5 -58.1 137.6	5 15.9 -58.1 136.6
11°	5 14.5 -58.4 140.7	5 00.7 -58.3 139.7	4 46.7 -58.3 138.8	4 32.4 -58.2 137.8	4 17.8 -58.1 136.9
12°	4 16.1 -58.4 140.9	4 02.4 -58.3 140.0	3 48.4 -58.2 139.0	3 34.2 -58.2 138.1	3 19.7 -58.1 137.1
13°	3 17.7 -58.4 141.1	3 04.1 -58.3 140.2	2 50.2 -58.3 139.2	2 36.0 -58.2 138.3	2 21.6 -58.1 137.4
14°	2 19.3 -58.4 141.4	2 05.8 -58.3 140.4	1 51.9 -58.2 139.5	1 37.8 -58.1 138.5	1 23.5 -58.1 137.6
15°	1 20.9 -58.3 141.6	1 07.5 -58.4 140.7	0 53.7 -58.3 139.7	0 39.7 -58.2 138.8	0 25.4 -58.2 137.9
16°	0 22.6 -58.4 141.8	0 09.1 -58.3 140.9	-0 04.6 -58.2	-0 18.5 -58.2	-0 32.8 -58.1
17°	-0 35.8 -58.4	-0 49.2 -58.3	-1 02.8 -58.3	-1 16.7 -58.2	-1 30.9 -58.1
18°	-1 34.2 -58.4	-1 47.5 -58.3	-2 01.1 -58.2	-2 14.9 -58.2	-2 29.0 -58.1
19°	-2 32.6 -58.4	-2 45.8 -58.3	-2 59.3 -58.2	-3 13.1 -58.1	-3 27.1 -58.1
20°	-3 31.0 -58.4	-3 44.1 -58.3	-3 57.5 -58.3	-4 11.2 -58.2	-4 25.2 -58.1
21°	-4 29.4 -58.3	-4 42.4 -58.3	-4 55.8 -58.2	-5 09.4 -58.2	-5 23.3 -58.1
22°	-5 27.7 -58.4	-5 40.7 -58.3	-5 54.0 -58.2	-6 07.6 -58.1	-6 21.4 -58.1
23°	-6 26.1 -58.4	-6 39.0 -58.3	-6 52.2 -58.3	-7 05.7 -58.2	-7 19.5 -58.0
24°	-7 24.5 -58.3	-7 37.3 -58.3	-7 50.5 -58.2	-8 03.9 -58.1	-8 17.5 -58.1
25°	-8 22.8 -58.4	-8 35.6 -58.3	-8 48.7 -58.2	-9 02.0 -58.1	-9 15.6 -58.0
26°	-9 21.2 -58.3	-9 33.9 -58.3	-9 46.9 -58.2		
27°					
28°					
29°					

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	14 40.7 -57.9 133.0	14 24.9 -57.8 132.0	14 08.8 -57.8 131.0	13 52.5 -57.7 130.1	13 35.9 -57.7 129.1
1°	13 42.8 -57.9 133.3	13 27.1 -57.9 132.3	13 11.0 -57.8 131.3	12 54.8 -57.8 130.3	12 38.2 -57.6 129.3
2°	12 44.9 -57.9 133.6	12 29.2 -57.9 132.6	12 13.2 -57.8 131.6	11 57.0 -57.7 130.6	11 40.6 -57.7 129.6
3°	11 47.0 -58.0 133.8	11 31.3 -57.9 132.9	11 15.4 -57.8 131.9	10 59.3 -57.8 130.9	10 42.9 -57.7 129.9
4°	10 49.0 -58.0 134.1	10 33.4 -57.9 133.1	10 17.6 -57.8 132.1	10 01.5 -57.7 131.2	9 45.2 -57.7 130.2
5°	9 51.0 -58.0 134.4	9 35.5 -57.9 133.4	9 19.8 -57.9 132.4	9 03.8 -57.8 131.4	8 47.5 -57.7 130.5
6°	8 53.0 -58.0 134.6	8 37.6 -57.9 133.6	8 21.9 -57.9 132.7	8 06.0 -57.8 131.7	7 49.8 -57.7 130.7
7°	7 55.0 -58.0 134.9	7 39.7 -58.0 133.9	7 24.0 -57.8 132.9	7 08.2 -57.8 132.0	6 52.1 -57.8 131.0
8°	6 57.0 -58.0 135.1	6 41.7 -57.9 134.2	6 26.2 -57.9 133.2	6 10.4 -57.8 132.3	5 54.3 -57.7 131.3
9°	5 59.0 -58.0 135.4	5 43.8 -58.0 134.4	5 28.3 -57.9 133.5	5 12.6 -57.8 132.5	4 56.6 -57.7 131.6
10°	5 01.0 -58.0 135.6	4 45.8 -57.9 134.7	4 30.4 -57.9 133.7	4 14.8 -57.9 132.8	3 58.9 -57.8 131.8
11°	4 03.0 -58.1 135.9	3 47.9 -58.0 135.0	3 32.5 -57.9 134.0	3 16.9 -57.8 133.1	3 01.1 -57.8 132.1
12°	3 04.9 -58.0 136.2	2 49.9 -58.0 135.2	2 34.6 -57.9 134.3	2 19.1 -57.8 133.3	2 03.3 -57.7 132.4
13°	2 06.9 -58.1 136.4	1 51.9 -57.9 135.5	1 36.7 -57.9 134.5	1 21.3 -57.9 133.6	1 05.6 -57.8 132.7
14°	1 08.8 -58.0 136.7	0 54.0 -58.0 135.7	0 38.8 -57.9 134.8	0 23.4 -57.8 133.9	0 07.8 -57.7 132.9
15°	0 10.8 -58.0 136.9	-0 04.0 -58.0	-0 19.1 -57.9	-0 34.4 -57.8	-0 49.9 -57.8
16°	-0 47.2 -58.1	-1 02.0 -58.0	-1 17.0 -57.9	-1 32.2 -57.9	-1 47.7 -57.8
17°	-1 45.3 -58.0	-2 00.0 -57.9	-2 14.9 -57.9	-2 30.1 -57.8	-2 45.5 -57.7
18°	-2 43.3 -58.1	-2 57.9 -58.0	-3 12.8 -57.9	-3 27.9 -57.8	-3 43.2 -57.8
19°	-3 41.4 -58.0	-3 55.9 -57.9	-4 10.7 -57.9	-4 25.7 -57.8	-4 41.0 -57.7
20°	-4 39.4 -58.0	-4 53.8 -58.0	-5 08.6 -57.8	-5 23.5 -57.8	-5 38.7 -57.8
21°	-5 37.4 -58.0	-5 51.8 -57.9	-6 06.4 -57.9	-6 21.3 -57.8	-6 36.5 -57.7
22°	-6 35.4 -58.0	-6 49.7 -58.0	-7 04.3 -57.9	-7 19.1 -57.8	-7 34.2 -57.7
23°	-7 33.4 -58.0	-7 47.7 -57.9	-8 02.2 -57.8	-8 16.9 -57.8	-8 31.9 -57.7
24°	-8 31.4 -58.0	-8 45.6 -57.9	-9 00.0 -57.9	-9 14.7 -57.8	-9 29.6 -57.7
25°	-9 29.4 -58.0	-9 43.5 -57.9	-9 57.9 -57.8		
26°					
27°					
28°					
29°					

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	13 19.1 -57.6 128.1	13 02.0 -57.5 127.1	12 44.8 -57.5 126.1	12 27.3 -57.4 125.1	12 09.6 -57.3 124.1
1°	12 21.5 -57.6 128.4	12 04.5 -57.5 127.4	11 47.3 -57.4 126.4	11 29.9 -57.4 125.4	11 12.3 -57.3 124.5
2°	11 23.9 -57.6 128.6	11 07.0 -57.5 127.7	10 49.9 -57.5 126.7	10 32.5 -57.4 125.7	10 15.0 -57.4 124.8
3°	10 26.3 -57.6 128.9	10 09.5 -57.6 128.0	9 52.4 -57.5 127.0	9 35.1 -57.4 126.0	9 17.6 -57.3 125.0
4°	9 28.7 -57.7 129.2	9 11.9 -57.6 128.2	8 54.9 -57.5 127.3	8 37.7 -57.4 126.3	8 20.3 -57.4 125.3
5°	8 31.0 -57.6 129.5	8 14.3 -57.5 128.5	7 57.4 -57.5 127.6	7 40.3 -57.5 126.6	7 22.9 -57.4 125.6
6°	7 33.4 -57.7 129.8	7 16.8 -57.6 128.8	6 59.9 -57.5 127.9	6 42.8 -57.5 126.9	6 25.5 -57.4 125.9
7°	6 35.7 -57.6 130.1	6 19.2 -57.6 129.1	6 02.4 -57.6 128.1	5 45.3 -57.4 127.2	5 28.1 -57.4 126.2
8°	5 38.1 -57.7 130.3	5 21.6 -57.6 129.4	5 04.8 -57.5 128.4	4 47.9 -57.5 127.5	4 30.7 -57.4 126.5
9°	4 40.4 -57.7 130.6	4 24.0 -57.7 129.7	4 07.3 -57.6 128.7	3 50.4 -57.5 127.8	3 33.3 -57.4 126.8
10°	3 42.7 -57.7 130.9	3 26.3 -57.6 129.9	3 09.7 -57.5 129.0	2 52.9 -57.5 128.0	2 35.9 -57.4 127.1
11°	2 45.0 -57.7 131.2	2 28.7 -57.6 130.2	2 12.2 -57.6 129.3	1 55.4 -57.5 128.3	1 38.5 -57.5 127.4
12°	1 47.3 -57.7 131.4	1 31.1 -57.6 130.5	1 14.6 -57.5 129.6	0 57.9 -57.4 128.6	0 41.0 -57.4 127.7
13°	0 49.6 -57.6 131.7	0 33.5 -57.6 130.8	0 17.1 -57.6 129.8	0 00.5 -57.5 128.9	-0 16.4 -57.4
14°	-0 08.0 -57.7	-0 24.1 -57.7	-0 40.5 -57.5	-0 57.0 -57.5	-1 13.8 -57.4
15°	-1 05.7 -57.7	-1 21.8 -57.6	-1 38.0 -57.6	-1 54.5 -57.5	-2 11.2 -57.4
16°	-2 03.4 -57.7	-2 19.4 -57.6	-2 35.6 -57.5	-2 52.0 -57.5	-3 08.6 -57.5
17°	-3 01.1 -57.7	-3 17.0 -57.6	-3 33.1 -57.6	-3 49.5 -57.5	-4 06.1 -57.4
18°	-3 58.8 -57.7	-4 14.6 -57.6	-4 30.7 -57.5	-4 47.0 -57.4	-5 03.5 -57.4
19°	-4 56.5 -57.7	-5 12.2 -57.6	-5 28.2 -57.6	-5 44.4 -57.5	-6 00.9 -57.3
20°	-5 54.2 -57.6	-6 09.8 -57.6	-6 25.8 -57.5	-6 41.9 -57.4	-6 58.2 -57.4
21°	-6 51.8 -57.7	-7 07.4 -57.6	-7 23.3 -57.5	-7 39.3 -57.5	-7 55.6 -57.4
22°	-7 49.5 -57.6	-8 05.0 -57.6	-8 20.8 -57.5	-8 36.8 -57.4	-8 53.0 -57.3
23°	-8 47.1 -57.7	-9 02.6 -57.5	-9 18.3 -57.5	-9 34.2 -57.4	-9 50.3 -57.4
24°	-9 44.8 -57.6				
25°					
26°					
27°					
28°					
29°					

Dec	LHA 055° / 305°	LHA 056° / 304°	LHA 057° / 303°	LHA 058° / 302°	LHA 059° / 301°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	11 51.7 -57.2 123.2	11 33.6 -57.2 122.2	11 15.3 -57.1 121.2	10 56.8 -57.0 120.3	10 38.2 -57.0 119.3
1°	10 54.5 -57.3 123.5	10 36.4 -57.2 122.5	10 18.2 -57.1 121.5	9 59.8 -57.1 120.6	9 41.2 -57.0 119.6
2°	9 57.2 -57.3 123.8	9 39.2 -57.2 122.8	9 21.1 -57.2 121.8	9 02.7 -57.1 120.9	8 44.2 -57.1 119.9
3°	8 59.9 -57.3 124.1	8 42.0 -57.2 123.1	8 23.9 -57.2 122.2	8 05.6 -57.1 121.2	7 47.1 -57.0 120.2
4°	8 02.6 -57.3 124.4	7 44.8 -57.3 123.4	7 26.7 -57.2 122.5	7 08.5 -57.1 121.5	6 50.1 -57.1 120.5
5°	7 05.3 -57.3 124.7	6 47.5 -57.2 123.7	6 29.5 -57.1 122.8	6 11.4 -57.2 121.8	5 53.0 -57.1 120.9
6°	6 08.0 -57.3 125.0	5 50.3 -57.3 124.0	5 32.4 -57.3 123.1	5 14.2 -57.1 122.1	4 55.9 -57.1 121.2
7°	5 10.7 -57.4 125.3	4 53.0 -57.3 124.3	4 35.1 -57.2 123.4	4 17.1 -57.2 122.4	3 58.8 -57.0 121.5
8°	4 13.3 -57.3 125.6	3 55.7 -57.3 124.6	3 37.9 -57.2 123.7	3 19.9 -57.1 122.7	3 01.8 -57.1 121.8
9°	3 16.0 -57.4 125.9	2 58.4 -57.2 124.9	2 40.7 -57.2 124.0	2 22.8 -57.2 123.0	2 04.7 -57.1 122.1
10°	2 18.6 -57.3 126.2	2 01.2 -57.3 125.2	1 43.5 -57.2 124.3	1 25.6 -57.1 123.3	1 07.6 -57.1 122.4
11°	1 21.3 -57.4 126.5	1 03.9 -57.3 125.5	0 46.3 -57.3 124.6	0 28.5 -57.2 123.6	0 10.5 -57.1 122.7
12°	0 23.9 -57.3 126.7	0 06.6 -57.3 125.8	-0 11.0 -57.2	-0 28.7 -57.2	-0 46.6 -57.1
13°	-0 33.4 -57.4	-0 50.7 -57.3	-1 08.2 -57.2	-1 25.9 -57.1	-1 43.7 -57.1
14°	-1 30.8 -57.3	-1 48.0 -57.3	-2 05.4 -57.2	-2 23.0 -57.2	-2 40.8 -57.1
15°	-2 28.1 -57.4	-2 45.3 -57.3	-3 02.6 -57.2	-3 20.2 -57.1	-3 37.9 -57.1
16°	-3 25.5 -57.3	-3 42.6 -57.2	-3 59.8 -57.2	-4 17.3 -57.2	-4 35.0 -57.1
17°	-4 22.8 -57.4	-4 39.8 -57.3	-4 57.0 -57.2	-5 14.5 -57.1	-5 32.1 -57.0
18°	-5 20.2 -57.3	-5 37.1 -57.3	-5 54.2 -57.2	-6 11.6 -57.1	-6 29.1 -57.1
19°	-6 17.5 -57.3	-6 34.4 -57.2	-6 51.4 -57.2	-7 08.7 -57.1	-7 26.2 -57.0
20°	-7 14.8 -57.3	-7 31.6 -57.3	-7 48.6 -57.2	-8 05.8 -57.1	-8 23.2 -57.1
21°	-8 12.1 -57.3	-8 28.9 -57.2	-8 45.8 -57.1	-9 02.9 -57.1	-9 20.3 -57.0
22°	-9 09.4 -57.3	-9 26.1 -57.2	-9 42.9 -57.2		
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	10 19.3 -56.9 118.3	10 00.3 -56.9 117.4	9 41.1 -56.8 116.4	9 21.8 -56.8 115.4	9 02.3 -56.7 114.5
1°	9 22.4 -57.0 118.6	9 03.4 -56.9 117.7	8 44.3 -56.8 116.7	8 25.0 -56.8 115.8	8 05.6 -56.8 114.8
2°	8 25.4 -57.0 119.0	8 06.5 -56.9 118.0	7 47.5 -56.9 117.0	7 28.2 -56.8 116.1	7 08.8 -56.7 115.1
3°	7 28.4 -56.9 119.3	7 09.6 -56.9 118.3	6 50.6 -56.9 117.4	6 31.4 -56.8 116.4	6 12.1 -56.8 115.5
4°	6 31.5 -57.0 119.6	6 12.7 -57.0 118.6	5 53.7 -56.9 117.7	5 34.6 -56.8 116.7	5 15.3 -56.8 115.8
5°	5 34.5 -57.1 119.9	5 15.7 -56.9 119.0	4 56.8 -56.9 118.0	4 37.8 -56.9 117.1	4 18.5 -56.8 116.1
6°	4 37.4 -57.0 120.2	4 18.8 -57.0 119.3	3 59.9 -56.9 118.3	3 40.9 -56.8 117.4	3 21.7 -56.7 116.4
7°	3 40.4 -57.0 120.5	3 21.8 -57.0 119.6	3 03.0 -56.9 118.6	2 44.1 -56.9 117.7	2 25.0 -56.8 116.8
8°	2 43.4 -57.0 120.8	2 24.8 -56.9 119.9	2 06.1 -56.9 119.0	1 47.2 -56.8 118.0	1 28.2 -56.8 117.1
9°	1 46.4 -57.1 121.2	1 27.9 -57.0 120.2	1 09.2 -56.9 119.3	0 50.4 -56.9 118.3	0 31.4 -56.9 117.4
10°	0 49.3 -57.0 121.5	0 30.9 -57.0 120.5	0 12.3 -56.9 119.6	-0 06.5 -56.9	-0 25.5 -56.8
11°	-0 07.7 -57.1	-0 26.1 -57.0	-0 44.6 -56.9	-1 03.4 -56.8	-1 22.3 -56.8
12°	-1 04.8 -57.0	-1 23.1 -56.9	-1 41.5 -57.0	-2 00.2 -56.9	-2 19.1 -56.7
13°	-2 01.8 -57.0	-2 20.0 -57.0	-2 38.5 -56.9	-2 57.1 -56.8	-3 15.8 -56.8
14°	-2 58.8 -57.0	-3 17.0 -57.0	-3 35.4 -56.9	-3 53.9 -56.9	-4 12.6 -56.8
15°	-3 55.8 -57.1	-4 14.0 -56.9	-4 32.3 -56.9	-4 50.8 -56.8	-5 09.4 -56.8
16°	-4 52.9 -57.0	-5 10.9 -57.0	-5 29.2 -56.8	-5 47.6 -56.8	-6 06.2 -56.7
17°	-5 49.9 -57.0	-6 07.9 -56.9	-6 26.0 -56.9	-6 44.4 -56.8	-7 02.9 -56.8
18°	-6 46.9 -57.0	-7 04.8 -56.9	-7 22.9 -56.9	-7 41.2 -56.8	-7 59.7 -56.7
19°	-7 43.9 -56.9	-8 01.7 -56.9	-8 19.8 -56.8	-8 38.0 -56.8	-8 56.4 -56.7
20°	-8 40.8 -57.0	-8 58.6 -56.9	-9 16.6 -56.8	-9 34.8 -56.7	-9 53.1 -56.7
21°	-9 37.8 -56.9	-9 55.5 -56.9			
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	8 42.7 -56.7 113.5	8 22.9 -56.6 112.6	8 03.0 -56.6 111.6	7 42.9 -56.5 110.7	7 22.7 -56.5 109.7
1°	7 46.0 -56.7 113.9	7 26.3 -56.7 112.9	7 06.4 -56.6 112.0	6 46.4 -56.6 111.0	6 26.2 -56.5 110.1
2°	6 49.3 -56.7 114.2	6 29.6 -56.6 113.2	6 09.8 -56.6 112.3	5 49.8 -56.5 111.3	5 29.7 -56.5 110.4
3°	5 52.6 -56.7 114.5	5 33.0 -56.7 113.6	5 13.2 -56.6 112.6	4 53.3 -56.6 111.7	4 33.2 -56.5 110.7
4°	4 55.9 -56.8 114.8	4 36.3 -56.7 113.9	4 16.6 -56.7 113.0	3 56.7 -56.6 112.0	3 36.7 -56.5 111.1
5°	3 59.1 -56.7 115.2	3 39.6 -56.7 114.2	3 19.9 -56.6 113.3	3 00.1 -56.6 112.3	2 40.2 -56.6 111.4
6°	3 02.4 -56.7 115.5	2 42.9 -56.7 114.6	2 23.3 -56.6 113.6	2 03.5 -56.6 112.7	1 43.6 -56.5 111.7
7°	2 05.7 -56.8 115.8	1 46.2 -56.6 114.9	1 26.7 -56.7 113.9	1 06.9 -56.5 113.0	0 47.1 -56.6 112.1
8°	1 08.9 -56.7 116.1	0 49.6 -56.7 115.2	0 30.0 -56.6 114.3	0 10.4 -56.6 113.3	-0 09.5 -56.5
9°	0 12.2 -56.8 116.5	-0 07.1 -56.7	-0 26.6 -56.7	-0 46.2 -56.6	-1 06.0 -56.5
10°	-0 44.6 -56.7	-1 03.8 -56.7	-1 23.3 -56.6	-1 42.8 -56.6	-2 02.5 -56.6
11°	-1 41.3 -56.8	-2 00.5 -56.7	-2 19.9 -56.6	-2 39.4 -56.6	-2 59.1 -56.5
12°	-2 38.1 -56.7	-2 57.2 -56.7	-3 16.5 -56.7	-3 36.0 -56.6	-3 55.6 -56.5
13°	-3 34.8 -56.7	-3 53.9 -56.7	-4 13.2 -56.6	-4 32.6 -56.5	-4 52.1 -56.5
14°	-4 31.5 -56.7	-4 50.6 -56.6	-5 09.8 -56.6	-5 29.1 -56.6	-5 48.6 -56.5
15°	-5 28.2 -56.8	-5 47.2 -56.7	-6 06.4 -56.6	-6 25.7 -56.5	-6 45.1 -56.5
16°	-6 25.0 -56.6	-6 43.9 -56.6	-7 03.0 -56.6	-7 22.2 -56.5	-7 41.6 -56.5
17°	-7 21.6 -56.7	-7 40.5 -56.6	-7 59.6 -56.5	-8 18.7 -56.6	-8 38.1 -56.4
18°	-8 18.3 -56.7	-8 37.1 -56.7	-8 56.1 -56.6	-9 15.3 -56.4	-9 34.5 -56.5
19°	-9 15.0 -56.6	-9 33.8 -56.5	-9 52.7 -56.5		
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Dec	LHA 070° / 290°	LHA 071° / 289°	LHA 072° / 288°	LHA 073° / 287°	LHA 074° / 286°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	7 02.4 -56.4 108.8	6 42.0 -56.4 107.8	6 21.5 -56.4 106.9	6 00.9 -56.4 105.9	5 40.1 -56.3 105.0
1°	6 06.0 -56.5 109.1	5 45.6 -56.4 108.2	5 25.1 -56.4 107.2	5 04.5 -56.3 106.3	4 43.8 -56.3 105.3
2°	5 09.5 -56.5 109.4	4 49.2 -56.4 108.5	4 28.7 -56.4 107.6	4 08.2 -56.4 106.6	3 47.5 -56.3 105.7
3°	4 13.0 -56.4 109.8	3 52.8 -56.5 108.8	3 32.3 -56.3 107.9	3 11.8 -56.3 107.0	2 51.2 -56.3 106.0
4°	3 16.6 -56.5 110.1	2 56.3 -56.4 109.2	2 36.0 -56.5 108.2	2 15.5 -56.4 107.3	1 54.9 -56.3 106.4
5°	2 20.1 -56.5 110.5	1 59.9 -56.5 109.5	1 39.5 -56.4 108.6	1 19.1 -56.4 107.7	0 58.6 -56.4 106.7
6°	1 23.6 -56.5 110.8	1 03.4 -56.4 109.9	0 43.1 -56.4 108.9	0 22.7 -56.3 108.0	0 02.2 -56.3 107.1
7°	0 27.1 -56.5 111.1	0 07.0 -56.5 110.2	-0 13.3 -56.4	-0 33.6 -56.4	-0 54.1 -56.3
8°	-0 29.4 -56.5	-0 49.5 -56.4	-1 09.7 -56.4	-1 30.0 -56.3	-1 50.4 -56.3
9°	-1 25.9 -56.5	-1 45.9 -56.5	-2 06.1 -56.4	-2 26.3 -56.4	-2 46.7 -56.3
10°	-2 22.4 -56.5	-2 42.4 -56.4	-3 02.5 -56.4	-3 22.7 -56.4	-3 43.0 -56.4
11°	-3 18.9 -56.5	-3 38.8 -56.4	-3 58.9 -56.4	-4 19.1 -56.3	-4 39.4 -56.2
12°	-4 15.4 -56.4	-4 35.2 -56.5	-4 55.3 -56.3	-5 15.4 -56.3	-5 35.6 -56.3
13°	-5 11.8 -56.5	-5 31.7 -56.4	-5 51.6 -56.4	-6 11.7 -56.3	-6 31.9 -56.3
14°	-6 08.3 -56.4	-6 28.1 -56.4	-6 48.0 -56.3	-7 08.0 -56.3	-7 28.2 -56.3
15°	-7 04.7 -56.5	-7 24.5 -56.3	-7 44.3 -56.4	-8 04.3 -56.3	-8 24.5 -56.2
16°	-8 01.2 -56.4	-8 20.8 -56.4	-8 40.7 -56.3	-9 00.6 -56.3	-9 20.7 -56.2
17°	-8 57.6 -56.4	-9 17.2 -56.4	-9 37.0 -56.3	-9 56.9 -56.2	
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Dec	LHA 075° / 285°	LHA 076° / 284°	LHA 077° / 283°	LHA 078° / 282°	LHA 079° / 281°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	5 19.3 -56.2 104.0	4 58.4 -56.2 103.1	4 37.4 -56.2 102.2	4 16.4 -56.2 101.2	3 55.3 -56.2 100.3
1°	4 23.1 -56.3 104.4	4 02.2 -56.3 103.5	3 41.2 -56.2 102.5	3 20.2 -56.2 101.6	2 59.1 -56.2 100.6
2°	3 26.8 -56.3 104.7	3 05.9 -56.2 103.8	2 45.0 -56.2 102.9	2 24.0 -56.2 101.9	2 02.9 -56.1 101.0
3°	2 30.5 -56.3 105.1	2 09.7 -56.3 104.2	1 48.8 -56.2 103.2	1 27.8 -56.2 102.3	1 06.8 -56.2 101.3
4°	1 34.2 -56.3 105.4	1 13.4 -56.2 104.5	0 52.6 -56.2 103.6	0 31.6 -56.2 102.6	0 10.6 -56.1 101.7
5°	0 37.9 -56.3 105.8	0 17.2 -56.3 104.8	-0 03.6 -56.3	-0 24.6 -56.1	-0 45.5 -56.2
6°	-0 18.4 -56.3	-0 39.1 -56.2	-0 59.9 -56.2	-1 20.7 -56.2	-1 41.7 -56.2
7°	-1 14.7 -56.2	-1 35.3 -56.3	-1 56.1 -56.2	-2 16.9 -56.2	-2 37.9 -56.1
8°	-2 10.9 -56.3	-2 31.6 -56.2	-2 52.3 -56.2	-3 13.1 -56.2	-3 34.0 -56.2
9°	-3 07.2 -56.3	-3 27.8 -56.3	-3 48.5 -56.2	-4 09.3 -56.2	-4 30.2 -56.1
10°	-4 03.5 -56.3	-4 24.1 -56.2	-4 44.7 -56.2	-5 05.5 -56.1	-5 26.3 -56.1
11°	-4 59.8 -56.2	-5 20.3 -56.2	-5 40.9 -56.2	-6 01.6 -56.2	-6 22.4 -56.1
12°	-5 56.0 -56.3	-6 16.5 -56.2	-6 37.1 -56.1	-6 57.8 -56.1	-7 18.5 -56.1
13°	-6 52.3 -56.2	-7 12.7 -56.2	-7 33.2 -56.2	-7 53.9 -56.1	-8 14.6 -56.1
14°	-7 48.5 -56.2	-8 08.9 -56.2	-8 29.4 -56.1	-8 50.0 -56.1	-9 10.7 -56.0
15°	-8 44.7 -56.2	-9 05.1 -56.1	-9 25.5 -56.1	-9 46.1 -56.0	
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Dec	LHA 080° / 280°	LHA 081° / 279°	LHA 082° / 278°	LHA 083° / 277°	LHA 084° / 276°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	3 34.1 -56.2 99.3	3 12.8 -56.1 98.4	2 51.5 -56.1 97.5	2 30.2 -56.1 96.5	2 08.8 -56.0 95.6
1°	2 37.9 -56.1 99.7	2 16.7 -56.1 98.8	1 55.4 -56.1 97.8	1 34.1 -56.1 96.9	1 12.8 -56.1 96.0
2°	1 41.8 -56.1 100.1	1 20.6 -56.1 99.1	0 59.3 -56.0 98.2	0 38.0 -56.0 97.3	0 16.7 -56.1 96.3
3°	0 45.7 -56.2 100.4	0 24.5 -56.1 99.5	0 03.3 -56.1 98.5	-0 18.0 -56.1	-0 39.4 -56.0
4°	-0 10.5 -56.1	-0 31.6 -56.1	-0 52.8 -56.1	-1 14.1 -56.1	-1 35.4 -56.1
5°	-1 06.6 -56.1	-1 27.7 -56.1	-1 48.9 -56.1	-2 10.2 -56.0	-2 31.5 -56.0
6°	-2 02.7 -56.2	-2 23.8 -56.2	-2 45.0 -56.1	-3 06.2 -56.1	-3 27.5 -56.1
7°	-2 58.9 -56.1	-3 20.0 -56.1	-3 41.1 -56.1	-4 02.3 -56.1	-4 23.6 -56.0
8°	-3 55.0 -56.1	-4 16.1 -56.0	-4 37.2 -56.0	-4 58.4 -56.0	-5 19.6 -56.0
9°	-4 51.1 -56.1	-5 12.1 -56.1	-5 33.2 -56.1	-5 54.4 -56.0	-6 15.6 -56.0
10°	-5 47.2 -56.1	-6 08.2 -56.1	-6 29.3 -56.0	-6 50.4 -56.0	-7 11.6 -56.0
11°	-6 43.3 -56.1	-7 04.3 -56.0	-7 25.3 -56.0	-7 46.4 -56.0	-8 07.6 -56.0
12°	-7 39.4 -56.0	-8 00.3 -56.0	-8 21.3 -56.0	-8 42.4 -56.0	-9 03.6 -55.9
13°	-8 35.4 -56.1	-8 56.3 -56.1	-9 17.3 -56.0	-9 38.4 -55.9	-9 59.5 -55.9
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Dec	LHA 085° / 275°	LHA 086° / 274°	LHA 087° / 273°	LHA 088° / 272°	LHA 089° / 271°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	1 47.4 -56.1 94.7	1 25.9 -56.0 93.7	1 04.5 -56.0 92.8	0 43.0 -56.0 91.9	0 21.5 -56.0 90.9
1°	0 51.3 -56.0 95.0	0 29.9 -56.0 94.1	0 08.5 -56.1 93.2	-0 13.0 -56.0	-0 34.5 -56.0
2°	-0 04.7 -56.0	-0 26.1 -56.1	-0 47.6 -56.0	-1 09.0 -56.1	-1 30.5 -56.0
3°	-1 00.7 -56.1	-1 22.2 -56.0	-1 43.6 -56.0	-2 05.1 -56.0	-2 26.5 -56.0
4°	-1 56.8 -56.0	-2 18.2 -56.0	-2 39.6 -56.0	-3 01.1 -56.0	-3 22.5 -56.0
5°	-2 52.8 -56.1	-3 14.2 -56.0	-3 35.6 -56.0	-3 57.1 -56.0	-4 18.5 -56.0
6°	-3 48.9 -56.0	-4 10.2 -56.0	-4 31.6 -56.0	-4 53.1 -56.0	-5 14.5 -56.0
7°	-4 44.9 -56.0	-5 06.2 -56.0	-5 27.6 -56.0	-5 49.1 -55.9	-6 10.5 -56.0
8°	-5 40.9 -56.0	-6 02.2 -56.0	-6 23.6 -56.0	-6 45.0 -56.0	-7 06.5 -55.9
9°	-6 36.9 -56.0	-6 58.2 -56.0	-7 19.6 -55.9	-7 41.0 -55.9	-8 02.4 -55.9
10°	-7 32.9 -55.9	-7 54.2 -55.9	-8 15.5 -56.0	-8 36.9 -55.9	-8 58.3 -55.9
11°	-8 28.8 -56.0	-8 50.1 -55.9	-9 11.5 -55.9	-9 32.8 -55.9	-9 54.2 -55.9
12°	-9 24.8 -55.9	-9 46.0 -55.9			
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Declination CONTRARY name to Latitude

Dec	LHA 090° / 270°	LHA 091° / 269°	LHA 092° / 268°	LHA 093° / 267°	LHA 094° / 266°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	0 00.0 -56.0 90.0	-0 21.5 -56.0			
1°	-0 56.0 -56.0	-1 17.5 -56.0			
2°	-1 52.0 -56.0	-2 13.5 -56.0			
3°	-2 48.0 -56.0	-3 09.5 -56.0			
4°	-3 44.0 -56.0	-4 05.5 -56.0			
5°	-4 40.0 -56.0	-5 01.5 -56.0			
6°	-5 36.0 -56.0	-5 57.5 -56.0			
7°	-6 32.0 -55.9	-6 53.5 -55.9			
8°	-7 27.9 -56.0	-7 49.4 -55.9			
9°	-8 23.9 -55.9	-8 45.3 -55.9			
10°	-9 19.8 -55.9	-9 41.2 -55.9			
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Dec	LHA 095° / 265°	LHA 096° / 264°	LHA 097° / 263°	LHA 098° / 262°	LHA 099° / 261°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
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