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Latitude 50° - 59°
Declination CONTRARY name to Latitude

Sight-Reduction Tables for Latitude 50° - 59°

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!

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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°	40 00.0 -60.0 180.0	39 59.6 -60.0 178.7	39 58.2 -59.9 177.4	39 56.0 -59.9 176.1	39 53.0 -59.9 174.8
1°	39 00.0 -60.0 180.0	38 59.6 -60.0 178.7	38 58.3 -60.0 177.4	38 56.1 -59.9 176.1	38 53.1 -59.9 174.9
2°	38 00.0 -60.0 180.0	37 59.6 -60.0 178.7	37 58.3 -60.0 177.5	37 56.2 -60.0 176.2	37 53.2 -59.9 174.9
3°	37 00.0 -60.0 180.0	36 59.6 -60.0 178.7	36 58.3 -60.0 177.5	36 56.2 -59.9 176.3	36 53.3 -59.9 175.0
4°	36 00.0 -60.0 180.0	35 59.6 -60.0 178.8	35 58.3 -59.9 177.5	35 56.3 -60.0 176.3	35 53.4 -59.9 175.1
5°	35 00.0 -60.0 180.0	34 59.6 -60.0 178.8	34 58.4 -60.0 177.6	34 56.3 -59.9 176.4	34 53.5 -60.0 175.1
6°	34 00.0 -60.0 180.0	33 59.6 -60.0 178.8	33 58.4 -60.0 177.6	33 56.4 -60.0 176.4	33 53.5 -59.9 175.2
7°	33 00.0 -60.0 180.0	32 59.6 -60.0 178.8	32 58.4 -60.0 177.6	32 56.4 -59.9 176.5	32 53.6 -59.9 175.3
8°	32 00.0 -60.0 180.0	31 59.6 -60.0 178.8	31 58.4 -60.0 177.7	31 56.5 -60.0 176.5	31 53.7 -59.9 175.3
9°	31 00.0 -60.0 180.0	30 59.6 -60.0 178.8	30 58.4 -59.9 177.7	30 56.5 -59.9 176.5	30 53.8 -59.9 175.4
10°	30 00.0 -60.0 180.0	29 59.6 -60.0 178.9	29 58.5 -60.0 177.7	29 56.6 -60.0 176.6	29 53.9 -59.9 175.5
11°	29 00.0 -60.0 180.0	28 59.6 -60.0 178.9	28 58.5 -60.0 177.8	28 56.6 -60.0 176.6	28 54.0 -60.0 175.5
12°	28 00.0 -60.0 180.0	27 59.6 -60.0 178.9	27 58.5 -60.0 177.8	27 56.6 -59.9 176.7	27 54.0 -59.9 175.6
13°	27 00.0 -60.0 180.0	26 59.6 -60.0 178.9	26 58.5 -60.0 177.8	26 56.7 -60.0 176.7	26 54.1 -59.9 175.6
14°	26 00.0 -60.0 180.0	25 59.6 -60.0 178.9	25 58.5 -59.9 177.8	25 56.7 -59.9 176.8	25 54.2 -59.9 175.7
15°	25 00.0 -60.0 180.0	24 59.6 -60.0 178.9	24 58.6 -60.0 177.9	24 56.8 -60.0 176.8	24 54.3 -60.0 175.7
16°	24 00.0 -60.0 180.0	23 59.6 -59.9 178.9	23 58.6 -60.0 177.9	23 56.8 -59.9 176.8	23 54.3 -59.9 175.8
17°	23 00.0 -60.0 180.0	22 59.7 -60.0 179.0	22 58.6 -60.0 177.9	22 56.9 -60.0 176.9	22 54.4 -59.9 175.8
18°	22 00.0 -60.0 180.0	21 59.7 -60.0 179.0	21 58.6 -60.0 177.9	21 56.9 -60.0 176.9	21 54.5 -59.9 175.9
19°	21 00.0 -60.0 180.0	20 59.7 -60.0 179.0	20 58.6 -59.9 178.0	20 56.9 -59.9 177.0	20 54.6 -60.0 176.0
20°	20 00.0 -60.0 180.0	19 59.7 -60.0 179.0	19 58.7 -60.0 178.0	19 57.0 -60.0 177.0	19 54.6 -59.9 176.0
21°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.7 -60.0 178.0	18 57.0 -60.0 177.0	18 54.7 -59.9 176.1
22°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 58.7 -60.0 178.1	17 57.0 -59.9 177.1	17 54.8 -60.0 176.1
23°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 58.7 -60.0 178.1	16 57.1 -60.0 177.1	16 54.8 -59.9 176.2
24°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 58.7 -60.0 178.1	15 57.1 -59.9 177.1	15 54.9 -59.9 176.2
25°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.1	14 58.7 -59.9 178.1	14 57.2 -60.0 177.2	14 55.0 -60.0 176.2
26°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.1	13 58.8 -60.0 178.1	13 57.2 -60.0 177.2	13 55.0 -59.9 176.3
27°	13 00.0 -60.0 180.0	12 59.7 -60.0 179.1	12 58.8 -60.0 178.2	12 57.2 -59.9 177.3	12 55.1 -60.0 176.3
28°	12 00.0 -60.0 180.0	11 59.7 -60.0 179.1	11 58.8 -60.0 178.2	11 57.3 -60.0 177.3	11 55.1 -59.9 176.4
29°	11 00.0 -60.0 180.0	10 59.7 -60.0 179.1	10 58.8 -60.0 178.2	10 57.3 -60.0 177.3	10 55.2 -59.9 176.4

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°	39 49.0 -59.8 173.5	39 44.2 -59.7 172.2	39 38.6 -59.7 170.9	39 32.0 -59.6 169.6	39 24.6 -59.5 168.3
1°	38 49.2 -59.9 173.6	38 44.5 -59.8 172.3	38 38.9 -59.7 171.0	38 32.4 -59.6 169.8	38 25.1 -59.5 168.5
2°	37 49.3 -59.8 173.7	37 44.7 -59.8 172.4	37 39.2 -59.7 171.2	37 32.8 -59.6 169.9	37 25.6 -59.5 168.6
3°	36 49.5 -59.9 173.8	36 44.9 -59.8 172.5	36 39.5 -59.8 171.3	36 33.2 -59.6 170.0	36 26.1 -59.5 168.8
4°	35 49.6 -59.8 173.8	35 45.1 -59.8 172.6	35 39.7 -59.7 171.4	35 33.6 -59.7 170.2	35 26.6 -59.6 169.0
5°	34 49.8 -59.9 173.9	34 45.3 -59.8 172.7	34 40.0 -59.7 171.5	34 33.9 -59.6 170.3	34 27.0 -59.5 169.1
6°	33 49.9 -59.8 174.0	33 45.5 -59.8 172.8	33 40.3 -59.8 171.6	33 34.3 -59.7 170.4	33 27.5 -59.6 169.3
7°	32 50.1 -59.9 174.1	32 45.7 -59.8 172.9	32 40.5 -59.7 171.7	32 34.6 -59.7 170.6	32 27.9 -59.6 169.4
8°	31 50.2 -59.9 174.2	31 45.9 -59.8 173.0	31 40.8 -59.7 171.8	31 34.9 -59.6 170.7	31 28.3 -59.6 169.5
9°	30 50.3 -59.9 174.2	30 46.1 -59.8 173.1	30 41.1 -59.8 172.0	30 35.3 -59.7 170.8	30 28.7 -59.6 169.7
10°	29 50.4 -59.8 174.3	29 46.3 -59.9 173.2	29 41.3 -59.8 172.1	29 35.6 -59.7 170.9	29 29.1 -59.6 169.8
11°	28 50.6 -59.9 174.4	28 46.4 -59.8 173.3	28 41.5 -59.7 172.2	28 35.9 -59.7 171.0	28 29.5 -59.6 169.9
12°	27 50.7 -59.9 174.5	27 46.6 -59.8 173.4	27 41.8 -59.8 172.3	27 36.2 -59.7 171.2	27 29.9 -59.6 170.1
13°	26 50.8 -59.9 174.5	26 46.8 -59.9 173.4	26 42.0 -59.8 172.4	26 36.5 -59.7 171.3	26 30.3 -59.6 170.2
14°	25 50.9 -59.9 174.6	25 46.9 -59.8 173.5	25 42.2 -59.7 172.5	25 36.8 -59.7 171.4	25 30.7 -59.6 170.3
15°	24 51.0 -59.8 174.7	24 47.1 -59.8 173.6	24 42.5 -59.8 172.6	24 37.1 -59.7 171.5	24 31.1 -59.7 170.4
16°	23 51.2 -59.9 174.7	23 47.3 -59.9 173.7	23 42.7 -59.8 172.6	23 37.4 -59.7 171.6	23 31.4 -59.6 170.6
17°	22 51.3 -59.9 174.8	22 47.4 -59.8 173.8	22 42.9 -59.8 172.7	22 37.7 -59.7 171.7	22 31.8 -59.7 170.7
18°	21 51.4 -59.9 174.9	21 47.6 -59.9 173.9	21 43.1 -59.8 172.8	21 38.0 -59.8 171.8	21 32.1 -59.6 170.8
19°	20 51.5 -59.9 174.9	20 47.7 -59.8 173.9	20 43.3 -59.8 172.9	20 38.2 -59.7 171.9	20 32.5 -59.7 170.9
20°	19 51.6 -59.9 175.0	19 47.9 -59.8 174.0	19 43.5 -59.7 173.0	19 38.5 -59.7 172.0	19 32.8 -59.6 171.0
21°	18 51.7 -59.9 175.1	18 48.1 -59.9 174.1	18 43.8 -59.8 173.1	18 38.8 -59.7 172.1	18 33.2 -59.7 171.1
22°	17 51.8 -59.9 175.1	17 48.2 -59.8 174.2	17 44.0 -59.8 173.2	17 39.1 -59.8 172.2	17 33.5 -59.7 171.2
23°	16 51.9 -59.9 175.2	16 48.4 -59.9 174.2	16 44.2 -59.8 173.3	16 39.3 -59.7 172.3	16 33.8 -59.6 171.4
24°	15 52.0 -59.9 175.3	15 48.5 -59.9 174.3	15 44.4 -59.8 173.4	15 39.6 -59.8 172.4	15 34.2 -59.7 171.5
25°	14 52.1 -59.9 175.3	14 48.6 -59.8 174.4	14 44.6 -59.8 173.4	14 39.8 -59.7 172.5	14 34.5 -59.7 171.6
26°	13 52.2 -59.9 175.4	13 48.8 -59.9 174.4	13 44.8 -59.9 173.5	13 40.1 -59.8 172.6	13 34.8 -59.7 171.7
27°	12 52.3 -59.9 175.4	12 48.9 -59.8 174.5	12 44.9 -59.8 173.6	12 40.3 -59.7 172.7	12 35.1 -59.6 171.8
28°	11 52.4 -59.9 175.5	11 49.1 -59.9 174.6	11 45.1 -59.8 173.7	11 40.6 -59.8 172.8	11 35.5 -59.7 171.9
29°	10 52.5 -59.9 175.5	10 49.2 -59.8 174.7	10 45.3 -59.8 173.8	10 40.8 -59.7 172.9	10 35.8 -59.7 172.0

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°	39 16.4 -59.4 167.0	39 07.3 -59.2 165.8	38 57.4 -59.1 164.5	38 46.7 -59.0 163.2	38 35.2 -58.8 162.0
1°	38 17.0 -59.4 167.2	38 08.1 -59.3 166.0	37 58.3 -59.1 164.7	37 47.7 -59.0 163.5	37 36.4 -58.9 162.2
2°	37 17.6 -59.4 167.4	37 08.8 -59.3 166.2	36 59.2 -59.2 164.9	36 48.7 -59.0 163.7	36 37.5 -58.9 162.5
3°	36 18.2 -59.4 167.6	36 09.5 -59.3 166.3	36 00.0 -59.2 165.1	35 49.7 -59.0 163.9	35 38.6 -58.9 162.7
4°	35 18.8 -59.5 167.7	35 10.2 -59.3 166.5	35 00.8 -59.2 165.3	34 50.7 -59.1 164.1	34 39.7 -58.9 162.9
5°	34 19.3 -59.4 167.9	34 10.9 -59.4 166.7	34 01.6 -59.2 165.5	33 51.6 -59.1 164.3	33 40.8 -58.9 163.2
6°	33 19.9 -59.5 168.1	33 11.5 -59.3 166.9	33 02.4 -59.2 165.7	32 52.5 -59.1 164.6	32 41.9 -59.0 163.4
7°	32 20.4 -59.5 168.2	32 12.2 -59.4 167.1	32 03.2 -59.3 165.9	31 53.4 -59.1 164.8	31 42.9 -59.0 163.6
8°	31 20.9 -59.5 168.4	31 12.8 -59.4 167.2	31 03.9 -59.3 166.1	30 54.3 -59.2 165.0	30 43.9 -59.0 163.8
9°	30 21.4 -59.5 168.5	30 13.4 -59.4 167.4	30 04.6 -59.3 166.3	29 55.1 -59.2 165.1	29 44.9 -59.1 164.0
10°	29 21.9 -59.5 168.7	29 14.0 -59.4 167.6	29 05.3 -59.3 166.4	28 55.9 -59.1 165.3	28 45.8 -59.0 164.2
11°	28 22.4 -59.5 168.8	28 14.6 -59.4 167.7	28 06.0 -59.3 166.6	27 56.8 -59.2 165.5	27 46.8 -59.1 164.4
12°	27 22.9 -59.5 169.0	27 15.2 -59.5 167.9	27 06.7 -59.3 166.8	26 57.6 -59.3 165.7	26 47.7 -59.1 164.6
13°	26 23.4 -59.5 169.1	26 15.7 -59.4 168.0	26 07.4 -59.3 167.0	25 58.3 -59.2 165.9	25 48.6 -59.1 164.8
14°	25 23.9 -59.6 169.3	25 16.3 -59.4 168.2	25 08.1 -59.4 167.1	24 59.1 -59.2 166.1	24 49.5 -59.1 165.0
15°	24 24.3 -59.5 169.4	24 16.9 -59.5 168.3	24 08.7 -59.3 167.3	23 59.9 -59.3 166.2	23 50.4 -59.2 165.2
16°	23 24.8 -59.6 169.5	23 17.4 -59.5 168.5	23 09.4 -59.4 167.4	23 00.6 -59.2 166.4	22 51.2 -59.1 165.4
17°	22 25.2 -59.6 169.7	22 17.9 -59.4 168.6	22 10.0 -59.4 167.6	22 01.4 -59.3 166.6	21 52.1 -59.2 165.6
18°	21 25.6 -59.5 169.8	21 18.5 -59.5 168.8	21 10.6 -59.4 167.8	21 02.1 -59.3 166.7	20 52.9 -59.1 165.7
19°	20 26.1 -59.6 169.9	20 19.0 -59.5 168.9	20 11.2 -59.4 167.9	20 02.8 -59.3 166.9	19 53.8 -59.2 165.9
20°	19 26.5 -59.6 170.0	19 19.5 -59.5 169.0	19 11.8 -59.4 168.1	19 03.5 -59.3 167.1	18 54.6 -59.2 166.1
21°	18 26.9 -59.6 170.2	18 20.0 -59.5 169.2	18 12.4 -59.4 168.2	18 04.2 -59.3 167.2	17 55.4 -59.2 166.3
22°	17 27.3 -59.6 170.3	17 20.5 -59.5 169.3	17 13.0 -59.4 168.4	17 04.9 -59.3 167.4	16 56.2 -59.2 166.4
23°	16 27.7 -59.6 170.4	16 21.0 -59.5 169.5	16 13.6 -59.4 168.5	16 05.6 -59.3 167.6	15 57.0 -59.2 166.6
24°	15 28.1 -59.6 170.5	15 21.5 -59.5 169.6	15 14.2 -59.4 168.6	15 06.3 -59.3 167.7	14 57.8 -59.2 166.8
25°	14 28.5 -59.6 170.6	14 22.0 -59.6 169.7	14 14.8 -59.5 168.8	14 07.0 -59.4 167.9	13 58.6 -59.3 166.9
26°	13 28.9 -59.6 170.8	13 22.4 -59.5 169.8	13 15.3 -59.4 168.9	13 07.6 -59.3 168.0	12 59.3 -59.2 167.1
27°	12 29.3 -59.6 170.9	12 22.9 -59.5 170.0	12 15.9 -59.4 169.1	12 08.3 -59.3 168.2	12 00.1 -59.2 167.3
28°	11 29.7 -59.6 171.0	11 23.4 -59.5 170.1	11 16.5 -59.5 169.2	11 09.0 -59.4 168.3	11 00.9 -59.3 167.4
29°	10 30.1 -59.6 171.1	10 23.9 -59.6 170.2	10 17.0 -59.4 169.3	10 09.6 -59.3 168.5	10 01.6 -59.2 167.6

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°	38 22.8 -58.6 160.7	38 09.7 -58.5 159.5	37 55.8 -58.3 158.2	37 41.1 -58.1 157.0	37 25.7 -57.9 155.8
1°	37 24.2 -58.7 161.0	37 11.2 -58.5 159.8	36 57.5 -58.3 158.5	36 43.0 -58.1 157.3	36 27.8 -58.0 156.1
2°	36 25.5 -58.7 161.2	36 12.7 -58.5 160.0	35 59.2 -58.4 158.8	35 44.9 -58.2 157.6	35 29.8 -58.0 156.4
3°	35 26.8 -58.8 161.5	35 14.2 -58.6 160.3	35 00.8 -58.4 159.1	34 46.7 -58.3 157.9	34 31.8 -58.0 156.8
4°	34 28.0 -58.7 161.7	34 15.6 -58.6 160.6	34 02.4 -58.5 159.4	33 48.4 -58.2 158.2	33 33.8 -58.1 157.1
5°	33 29.3 -58.8 162.0	33 17.0 -58.7 160.8	33 03.9 -58.5 159.7	32 50.2 -58.4 158.5	32 35.7 -58.2 157.4
6°	32 30.5 -58.9 162.2	32 18.3 -58.7 161.1	32 05.4 -58.5 159.9	31 51.8 -58.3 158.8	31 37.5 -58.1 157.7
7°	31 31.6 -58.8 162.5	31 19.6 -58.7 161.3	31 06.9 -58.5 160.2	30 53.5 -58.4 159.1	30 39.4 -58.3 157.9
8°	30 32.8 -58.9 162.7	30 20.9 -58.7 161.6	30 08.4 -58.6 160.4	29 55.1 -58.4 159.3	29 41.1 -58.2 158.2
9°	29 33.9 -58.9 162.9	29 22.2 -58.8 161.8	29 09.8 -58.6 160.7	28 56.7 -58.5 159.6	28 42.9 -58.3 158.5
10°	28 35.0 -58.9 163.1	28 23.4 -58.8 162.0	28 11.2 -58.7 160.9	27 58.2 -58.4 159.8	27 44.6 -58.3 158.8
11°	27 36.1 -59.0 163.3	27 24.6 -58.8 162.3	27 12.5 -58.6 161.2	26 59.8 -58.5 160.1	26 46.3 -58.4 159.0
12°	26 37.1 -59.0 163.6	26 25.8 -58.8 162.5	26 13.9 -58.7 161.4	26 01.3 -58.6 160.3	25 47.9 -58.3 159.3
13°	25 38.1 -58.9 163.8	25 27.0 -58.8 162.7	25 15.2 -58.7 161.6	25 02.7 -58.5 160.6	24 49.6 -58.4 159.5
14°	24 39.2 -59.0 164.0	24 28.2 -58.9 162.9	24 16.5 -58.7 161.9	24 04.2 -58.6 160.8	23 51.2 -58.4 159.8
15°	23 40.2 -59.0 164.2	23 29.3 -58.9 163.1	23 17.8 -58.8 162.1	23 05.6 -58.6 161.1	22 52.8 -58.5 160.0
16°	22 41.2 -59.1 164.4	22 30.4 -58.9 163.3	22 19.0 -58.7 162.3	22 07.0 -58.6 161.3	21 54.3 -58.4 160.3
17°	21 42.1 -59.0 164.6	21 31.5 -58.9 163.5	21 20.3 -58.8 162.5	21 08.4 -58.6 161.5	20 55.9 -58.5 160.5
18°	20 43.1 -59.0 164.7	20 32.6 -58.9 163.7	20 21.5 -58.8 162.7	20 09.8 -58.7 161.8	19 57.4 -58.5 160.8
19°	19 44.1 -59.1 164.9	19 33.7 -58.9 163.9	19 22.7 -58.8 163.0	19 11.1 -58.7 162.0	18 58.9 -58.6 161.0
20°	18 45.0 -59.1 165.1	18 34.8 -59.0 164.1	18 23.9 -58.8 163.2	18 12.4 -58.6 162.2	18 00.3 -58.5 161.2
21°	17 45.9 -59.1 165.3	17 35.8 -58.9 164.3	17 25.1 -58.8 163.4	17 13.8 -58.7 162.4	17 01.8 -58.5 161.5
22°	16 46.8 -59.0 165.5	16 36.9 -59.0 164.5	16 26.3 -58.9 163.6	16 15.1 -58.7 162.6	16 03.3 -58.6 161.7
23°	15 47.8 -59.2 165.7	15 37.9 -59.0 164.7	15 27.4 -58.8 163.8	15 16.4 -58.8 162.9	15 04.7 -58.6 161.9
24°	14 48.6 -59.1 165.8	14 38.9 -59.0 164.9	14 28.6 -58.9 164.0	14 17.6 -58.7 163.1	14 06.1 -58.6 162.1
25°	13 49.5 -59.1 166.0	13 39.9 -59.0 165.1	13 29.7 -58.9 164.2	13 18.9 -58.7 163.3	13 07.5 -58.6 162.4
26°	12 50.4 -59.1 166.2	12 40.9 -59.0 165.3	12 30.8 -58.8 164.4	12 20.2 -58.8 163.5	12 08.9 -58.6 162.6
27°	11 51.3 -59.1 166.4	11 41.9 -59.0 165.5	11 32.0 -58.9 164.6	11 21.4 -58.7 163.7	11 10.3 -58.6 162.8
28°	10 52.2 -59.2 166.5	10 42.9 -59.0 165.7	10 33.1 -58.9 164.8	10 22.7 -58.8 163.9	10 11.7 -58.7 163.0
29°	9 53.0 -59.1 166.7	9 43.9 -59.0 165.8	9 34.2 -58.9 165.0	9 23.9 -58.8 164.1	9 13.0 -58.6 163.2

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°	37 09.5 -57.7 154.6	36 52.6 -57.5 153.4	36 35.0 -57.3 152.2	36 16.6 -57.0 151.0	35 57.6 -56.8 149.8
1°	36 11.8 -57.7 154.9	35 55.1 -57.5 153.7	35 37.7 -57.4 152.6	35 19.6 -57.2 151.4	35 00.8 -56.9 150.2
2°	35 14.1 -57.9 155.3	34 57.6 -57.7 154.1	34 40.3 -57.4 152.9	34 22.4 -57.1 151.8	34 03.9 -57.0 150.6
3°	34 16.2 -57.8 155.6	33 59.9 -57.6 154.4	33 42.9 -57.4 153.3	33 25.3 -57.3 152.1	33 06.9 -57.0 151.0
4°	33 18.4 -57.9 155.9	33 02.3 -57.7 154.8	32 45.5 -57.5 153.6	32 28.0 -57.3 152.5	32 09.9 -57.1 151.4
5°	32 20.5 -58.0 156.2	32 04.6 -57.8 155.1	31 48.0 -57.6 154.0	31 30.7 -57.4 152.8	31 12.8 -57.2 151.7
6°	31 22.5 -58.0 156.5	31 06.8 -57.8 155.4	30 50.4 -57.6 154.3	30 33.3 -57.4 153.2	30 15.6 -57.2 152.1
7°	30 24.5 -58.0 156.8	30 09.0 -57.9 155.7	29 52.8 -57.7 154.6	29 35.9 -57.4 153.5	29 18.4 -57.3 152.4
8°	29 26.5 -58.1 157.1	29 11.1 -57.9 156.0	28 55.1 -57.7 154.9	28 38.5 -57.6 153.8	28 21.1 -57.3 152.8
9°	28 28.4 -58.1 157.4	28 13.2 -57.9 156.3	27 57.4 -57.7 155.2	27 40.9 -57.5 154.2	27 23.8 -57.4 153.1
10°	27 30.3 -58.2 157.7	27 15.3 -58.0 156.6	26 59.7 -57.8 155.5	26 43.4 -57.6 154.5	26 26.4 -57.4 153.4
11°	26 32.1 -58.1 158.0	26 17.3 -58.0 156.9	26 01.9 -57.8 155.8	25 45.8 -57.7 154.8	25 29.0 -57.4 153.7
12°	25 34.0 -58.2 158.2	25 19.3 -58.0 157.2	25 04.1 -57.9 156.1	24 48.1 -57.6 155.1	24 31.6 -57.5 154.1
13°	24 35.8 -58.3 158.5	24 21.3 -58.1 157.5	24 06.2 -57.9 156.4	23 50.5 -57.7 155.4	23 34.1 -57.5 154.4
14°	23 37.5 -58.2 158.8	23 23.2 -58.1 157.7	23 08.3 -57.9 156.7	22 52.8 -57.8 155.7	22 36.6 -57.6 154.7
15°	22 39.3 -58.3 159.0	22 25.1 -58.1 158.0	22 10.4 -58.0 157.0	21 55.0 -57.8 156.0	21 39.0 -57.6 155.0
16°	21 41.0 -58.3 159.3	21 27.0 -58.1 158.3	21 12.4 -57.9 157.3	20 57.2 -57.8 156.3	20 41.4 -57.6 155.3
17°	20 42.7 -58.3 159.5	20 28.9 -58.2 158.5	20 14.5 -58.0 157.6	19 59.4 -57.8 156.6	19 43.8 -57.7 155.6
18°	19 44.4 -58.4 159.8	19 30.7 -58.2 158.8	19 16.5 -58.1 157.8	19 01.6 -57.9 156.9	18 46.1 -57.6 155.9
19°	18 46.0 -58.4 160.0	18 32.5 -58.2 159.1	18 18.4 -58.0 158.1	18 03.7 -57.8 157.1	17 48.5 -57.7 156.2
20°	17 47.6 -58.4 160.3	17 34.3 -58.2 159.3	17 20.4 -58.1 158.4	17 05.9 -57.9 157.4	16 50.8 -57.8 156.5
21°	16 49.2 -58.4 160.5	16 36.1 -58.3 159.6	16 22.3 -58.1 158.6	16 08.0 -58.0 157.7	15 53.0 -57.7 156.7
22°	15 50.8 -58.4 160.8	15 37.8 -58.2 159.8	15 24.2 -58.1 158.9	15 10.0 -57.9 158.0	14 55.3 -57.8 157.0
23°	14 52.4 -58.4 161.0	14 39.6 -58.3 160.1	14 26.1 -58.1 159.1	14 12.1 -58.0 158.2	13 57.5 -57.8 157.3
24°	13 54.0 -58.5 161.2	13 41.3 -58.3 160.3	13 28.0 -58.1 159.4	13 14.1 -57.9 158.5	12 59.7 -57.8 157.6
25°	12 55.5 -58.4 161.5	12 43.0 -58.3 160.6	12 29.9 -58.2 159.7	12 16.2 -58.0 158.8	12 01.9 -57.8 157.9
26°	11 57.1 -58.5 161.7	11 44.7 -58.3 160.8	11 31.7 -58.2 159.9	11 18.2 -58.0 159.0	11 04.1 -57.9 158.1
27°	10 58.6 -58.5 161.9	10 46.4 -58.4 161.0	10 33.5 -58.1 160.2	10 20.2 -58.1 159.3	10 06.2 -57.8 158.4
28°	10 00.1 -58.5 162.1	9 48.0 -58.3 161.3	9 35.4 -58.2 160.4	9 22.1 -58.0 159.5	9 08.4 -57.9 158.7
29°	9 01.6 -58.5 162.4	8 49.7 -58.4 161.5	8 37.2 -58.2 160.6	8 24.1 -58.0 159.8	8 10.5 -57.8 158.9

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°	35 37.9 -56.6 148.7	35 17.5 -56.4 147.5	34 56.4 -56.1 146.4	34 34.8 -55.9 145.2	34 12.5 -55.7 144.1
1°	34 41.3 -56.7 149.1	34 21.1 -56.4 147.9	34 00.3 -56.2 146.8	33 38.9 -56.0 145.7	33 16.8 -55.7 144.6
2°	33 44.6 -56.7 149.5	33 24.7 -56.5 148.3	33 04.1 -56.3 147.2	32 42.9 -56.0 146.1	32 21.1 -55.8 145.0
3°	32 47.9 -56.9 149.9	32 28.2 -56.6 148.7	32 07.8 -56.3 147.6	31 46.9 -56.2 146.5	31 25.3 -55.9 145.4
4°	31 51.0 -56.8 150.2	31 31.6 -56.7 149.1	31 11.5 -56.5 148.0	30 50.7 -56.2 146.9	30 29.4 -56.0 145.9
5°	30 54.2 -57.0 150.6	30 34.9 -56.7 149.5	30 15.0 -56.5 148.4	29 54.5 -56.2 147.3	29 33.4 -56.0 146.3
6°	29 57.2 -57.0 151.0	29 38.2 -56.8 149.9	29 18.5 -56.5 148.8	28 58.3 -56.4 147.7	28 37.4 -56.2 146.7
7°	29 00.2 -57.0 151.3	28 41.4 -56.9 150.3	28 22.0 -56.7 149.2	28 01.9 -56.4 148.1	27 41.2 -56.2 147.1
8°	28 03.2 -57.2 151.7	27 44.5 -56.9 150.6	27 25.3 -56.7 149.6	27 05.5 -56.5 148.5	26 45.0 -56.2 147.5
9°	27 06.0 -57.1 152.0	26 47.6 -56.9 151.0	26 28.6 -56.7 149.9	26 09.0 -56.5 148.9	25 48.8 -56.3 147.9
10°	26 08.9 -57.2 152.4	25 50.7 -57.0 151.3	25 31.9 -56.8 150.3	25 12.5 -56.6 149.3	24 52.5 -56.4 148.2
11°	25 11.7 -57.3 152.7	24 53.7 -57.1 151.7	24 35.1 -56.9 150.7	24 15.9 -56.7 149.6	23 56.1 -56.4 148.6
12°	24 14.4 -57.3 153.0	23 56.6 -57.1 152.0	23 38.2 -56.9 151.0	23 19.2 -56.7 150.0	22 59.7 -56.5 149.0
13°	23 17.1 -57.3 153.4	22 59.5 -57.1 152.4	22 41.3 -56.9 151.3	22 22.5 -56.7 150.4	22 03.2 -56.6 149.4
14°	22 19.8 -57.4 153.7	22 02.4 -57.2 152.7	21 44.4 -57.0 151.7	21 25.8 -56.8 150.7	21 06.6 -56.5 149.7
15°	21 22.4 -57.4 154.0	21 05.2 -57.2 153.0	20 47.4 -57.0 152.0	20 29.0 -56.8 151.0	20 10.1 -56.6 150.1
16°	20 25.0 -57.4 154.3	20 08.0 -57.3 153.3	19 50.4 -57.1 152.4	19 32.2 -56.9 151.4	19 13.5 -56.7 150.4
17°	19 27.6 -57.5 154.6	19 10.7 -57.2 153.7	18 53.3 -57.1 152.7	18 35.3 -56.8 151.7	18 16.8 -56.7 150.8
18°	18 30.1 -57.5 154.9	18 13.5 -57.4 154.0	17 56.2 -57.1 153.0	17 38.5 -57.0 152.1	17 20.1 -56.7 151.1
19°	17 32.6 -57.5 155.2	17 16.1 -57.3 154.3	16 59.1 -57.1 153.3	16 41.5 -56.9 152.4	16 23.4 -56.8 151.5
20°	16 35.1 -57.6 155.5	16 18.8 -57.4 154.6	16 02.0 -57.2 153.6	15 44.6 -57.0 152.7	15 26.6 -56.8 151.8
21°	15 37.5 -57.6 155.8	15 21.4 -57.4 154.9	15 04.8 -57.2 154.0	14 47.6 -57.0 153.0	14 29.8 -56.8 152.1
22°	14 39.9 -57.6 156.1	14 24.0 -57.4 155.2	14 07.6 -57.3 154.3	13 50.6 -57.1 153.4	13 33.0 -56.9 152.5
23°	13 42.3 -57.6 156.4	13 26.6 -57.4 155.5	13 10.3 -57.2 154.6	12 53.5 -57.0 153.7	12 36.1 -56.8 152.8
24°	12 44.7 -57.6 156.7	12 29.2 -57.5 155.8	12 13.1 -57.3 154.9	11 56.5 -57.1 154.0	11 39.3 -56.9 153.1
25°	11 47.1 -57.7 157.0	11 31.7 -57.4 156.1	11 15.8 -57.3 155.2	10 59.4 -57.1 154.3	10 42.4 -56.9 153.4
26°	10 49.4 -57.6 157.2	10 34.3 -57.5 156.4	10 18.5 -57.3 155.5	10 02.3 -57.2 154.6	9 45.5 -57.0 153.8
27°	9 51.8 -57.7 157.5	9 36.8 -57.5 156.7	9 21.2 -57.3 155.8	9 05.1 -57.1 154.9	8 48.5 -56.9 154.1
28°	8 54.1 -57.7 157.8	8 39.3 -57.6 157.0	8 23.9 -57.3 156.1	8 08.0 -57.1 155.2	7 51.6 -57.0 154.4
29°	7 56.4 -57.7 158.1	7 41.7 -57.5 157.2	7 26.6 -57.4 156.4	7 10.9 -57.2 155.6	6 54.6 -56.9 154.7

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°	33 49.6 -55.4 143.0	33 26.0 -55.1 141.9	33 02.0 -54.9 140.8	32 37.3 -54.6 139.7	32 12.1 -54.4 138.6
1°	32 54.2 -55.5 143.5	32 30.9 -55.2 142.4	32 07.1 -55.0 141.3	31 42.7 -54.8 140.2	31 17.7 -54.5 139.1
2°	31 58.7 -55.6 143.9	31 35.7 -55.4 142.8	31 12.1 -55.1 141.7	30 47.9 -54.8 140.7	30 23.2 -54.6 139.6
3°	31 03.1 -55.6 144.3	30 40.3 -55.4 143.3	30 17.0 -55.2 142.2	29 53.1 -55.0 141.1	29 28.6 -54.7 140.1
4°	30 07.5 -55.8 144.8	29 44.9 -55.5 143.7	29 21.8 -55.3 142.7	28 58.1 -55.0 141.6	28 33.9 -54.8 140.6
5°	29 11.7 -55.8 145.2	28 49.4 -55.6 144.2	28 26.5 -55.3 143.1	28 03.1 -55.1 142.1	27 39.1 -54.9 141.0
6°	28 15.9 -55.9 145.6	27 53.8 -55.6 144.6	27 31.2 -55.4 143.5	27 08.0 -55.2 142.5	26 44.2 -54.9 141.5
7°	27 20.0 -56.0 146.0	26 58.2 -55.8 145.0	26 35.8 -55.6 144.0	26 12.8 -55.3 142.9	25 49.3 -55.1 141.9
8°	26 24.0 -56.0 146.4	26 02.4 -55.8 145.4	25 40.2 -55.5 144.4	25 17.5 -55.4 143.4	24 54.2 -55.1 142.4
9°	25 28.0 -56.1 146.8	25 06.6 -55.9 145.8	24 44.7 -55.7 144.8	24 22.1 -55.4 143.8	23 59.1 -55.2 142.8
10°	24 31.9 -56.2 147.2	24 10.7 -55.9 146.2	23 49.0 -55.7 145.2	23 26.7 -55.5 144.2	23 03.9 -55.3 143.2
11°	23 35.7 -56.2 147.6	23 14.8 -56.0 146.6	22 53.3 -55.8 145.6	22 31.2 -55.5 144.6	22 08.6 -55.3 143.7
12°	22 39.5 -56.3 148.0	22 18.8 -56.1 147.0	21 57.5 -55.8 146.0	21 35.7 -55.6 145.0	21 13.3 -55.4 144.1
13°	21 43.2 -56.3 148.4	21 22.7 -56.1 147.4	21 01.7 -55.9 146.4	20 40.1 -55.7 145.4	20 17.9 -55.4 144.5
14°	20 46.9 -56.4 148.7	20 26.6 -56.1 147.8	20 05.8 -56.0 146.8	19 44.4 -55.7 145.8	19 22.5 -55.5 144.9
15°	19 50.5 -56.4 149.1	19 30.5 -56.2 148.1	19 09.8 -55.9 147.2	18 48.7 -55.8 146.2	18 27.0 -55.6 145.3
16°	18 54.1 -56.4 149.5	18 34.3 -56.3 148.5	18 13.9 -56.1 147.6	17 52.9 -55.8 146.6	17 31.4 -55.6 145.7
17°	17 57.7 -56.5 149.8	17 38.0 -56.3 148.9	17 17.8 -56.0 147.9	16 57.1 -55.9 147.0	16 35.8 -55.6 146.1
18°	17 01.2 -56.5 150.2	16 41.7 -56.3 149.2	16 21.8 -56.2 148.3	16 01.2 -55.9 147.4	15 40.2 -55.7 146.5
19°	16 04.7 -56.6 150.5	15 45.4 -56.3 149.6	15 25.6 -56.1 148.7	15 05.3 -55.9 147.8	14 44.5 -55.7 146.9
20°	15 08.1 -56.6 150.9	14 49.1 -56.4 150.0	14 29.5 -56.2 149.0	14 09.4 -56.0 148.1	13 48.8 -55.8 147.2
21°	14 11.5 -56.6 151.2	13 52.7 -56.4 150.3	13 33.3 -56.2 149.4	13 13.4 -56.0 148.5	12 53.0 -55.8 147.6
22°	13 14.9 -56.7 151.6	12 56.3 -56.5 150.7	12 37.1 -56.2 149.8	12 17.4 -56.0 148.9	11 57.2 -55.8 148.0
23°	12 18.2 -56.6 151.9	11 59.8 -56.5 151.0	11 40.9 -56.3 150.1	11 21.4 -56.1 149.2	11 01.4 -55.8 148.4
24°	11 21.6 -56.7 152.2	11 03.3 -56.5 151.4	10 44.6 -56.3 150.5	10 25.3 -56.0 149.6	10 05.6 -55.9 148.7
25°	10 24.9 -56.7 152.6	10 06.8 -56.5 151.7	9 48.3 -56.3 150.8	9 29.3 -56.1 150.0	9 09.7 -55.9 149.1
26°	9 28.2 -56.8 152.9	9 10.3 -56.5 152.0	8 52.0 -56.3 151.2	8 33.2 -56.2 150.3	8 13.8 -55.9 149.5
27°	8 31.4 -56.7 153.2	8 13.8 -56.6 152.4	7 55.7 -56.4 151.5	7 37.0 -56.1 150.7	7 17.9 -55.9 149.8
28°	7 34.7 -56.8 153.6	7 17.2 -56.5 152.7	6 59.3 -56.3 151.9	6 40.9 -56.2 151.0	6 22.0 -56.0 150.2
29°	6 37.9 -56.8 153.9	6 20.7 -56.6 153.0	6 03.0 -56.4 152.2	5 44.7 -56.1 151.4	5 26.0 -55.9 150.6

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°	31 46.3 -54.1 137.6	31 20.0 -53.8 136.5	30 53.2 -53.6 135.5	30 26.0 -53.4 134.4	29 58.2 -53.1 133.4
1°	30 52.2 -54.2 138.1	30 26.2 -54.0 137.0	29 59.6 -53.7 136.0	29 32.6 -53.5 135.0	29 05.1 -53.3 133.9
2°	29 58.0 -54.4 138.6	29 32.2 -54.1 137.5	29 05.9 -53.9 136.5	28 39.1 -53.6 135.5	28 11.8 -53.4 134.5
3°	29 03.6 -54.4 139.1	28 38.1 -54.2 138.0	28 12.0 -53.9 137.0	27 45.5 -53.7 136.0	27 18.4 -53.4 135.0
4°	28 09.2 -54.6 139.5	27 43.9 -54.3 138.5	27 18.1 -54.1 137.5	26 51.8 -53.9 136.5	26 25.0 -53.6 135.5
5°	27 14.6 -54.6 140.0	26 49.6 -54.4 139.0	26 24.0 -54.2 138.0	25 57.9 -53.9 137.0	25 31.4 -53.7 136.0
6°	26 20.0 -54.8 140.5	25 55.2 -54.5 139.5	25 29.8 -54.2 138.5	25 04.0 -54.0 137.5	24 37.7 -53.8 136.5
7°	25 25.2 -54.8 140.9	25 00.7 -54.6 139.9	24 35.6 -54.4 138.9	24 10.0 -54.1 138.0	23 43.9 -53.8 137.0
8°	24 30.4 -54.9 141.4	24 06.1 -54.7 140.4	23 41.2 -54.4 139.4	23 15.9 -54.2 138.4	22 50.1 -54.0 137.5
9°	23 35.5 -54.9 141.8	23 11.4 -54.7 140.8	22 46.8 -54.5 139.9	22 21.7 -54.3 138.9	21 56.1 -54.0 137.9
10°	22 40.6 -55.1 142.3	22 16.7 -54.8 141.3	21 52.3 -54.6 140.3	21 27.4 -54.3 139.3	21 02.1 -54.1 138.4
11°	21 45.5 -55.1 142.7	21 21.9 -54.9 141.7	20 57.7 -54.6 140.8	20 33.1 -54.4 139.8	20 08.0 -54.2 138.9
12°	20 50.4 -55.1 143.1	20 27.0 -54.9 142.1	20 03.1 -54.7 141.2	19 38.7 -54.5 140.3	19 13.8 -54.3 139.3
13°	19 55.3 -55.3 143.5	19 32.1 -55.0 142.6	19 08.4 -54.8 141.6	18 44.2 -54.5 140.7	18 19.5 -54.3 139.8
14°	19 00.0 -55.2 143.9	18 37.1 -55.1 143.0	18 13.6 -54.8 142.1	17 49.7 -54.6 141.1	17 25.2 -54.4 140.2
15°	18 04.8 -55.4 144.4	17 42.0 -55.1 143.4	17 18.8 -54.9 142.5	16 55.1 -54.7 141.6	16 30.8 -54.4 140.7
16°	17 09.4 -55.3 144.8	16 46.9 -55.1 143.8	16 23.9 -54.9 142.9	16 00.4 -54.7 142.0	15 36.4 -54.5 141.1
17°	16 14.1 -55.5 145.2	15 51.8 -55.2 144.2	15 29.0 -55.0 143.3	15 05.7 -54.7 142.4	14 41.9 -54.5 141.5
18°	15 18.6 -55.4 145.6	14 56.6 -55.3 144.6	14 34.0 -55.0 143.7	14 11.0 -54.8 142.8	13 47.4 -54.5 142.0
19°	14 23.2 -55.5 146.0	14 01.3 -55.3 145.1	13 39.0 -55.1 144.2	13 16.2 -54.9 143.3	12 52.9 -54.7 142.4
20°	13 27.7 -55.6 146.3	13 06.0 -55.3 145.5	12 43.9 -55.1 144.6	12 21.3 -54.9 143.7	11 58.2 -54.6 142.8
21°	12 32.1 -55.5 146.7	12 10.7 -55.3 145.8	11 48.8 -55.1 145.0	11 26.4 -54.9 144.1	11 03.6 -54.7 143.2
22°	11 36.6 -55.7 147.1	11 15.4 -55.4 146.2	10 53.7 -55.2 145.4	10 31.5 -54.9 144.5	10 08.9 -54.7 143.6
23°	10 40.9 -55.6 147.5	10 20.0 -55.4 146.6	9 58.5 -55.2 145.8	9 36.6 -55.0 144.9	9 14.2 -54.7 144.1
24°	9 45.3 -55.6 147.9	9 24.6 -55.5 147.0	9 03.3 -55.2 146.2	8 41.6 -55.0 145.3	8 19.5 -54.8 144.5
25°	8 49.7 -55.7 148.3	8 29.1 -55.4 147.4	8 08.1 -55.2 146.6	7 46.6 -55.0 145.7	7 24.7 -54.8 144.9
26°	7 54.0 -55.7 148.6	7 33.7 -55.5 147.8	7 12.9 -55.3 147.0	6 51.6 -55.0 146.1	6 29.9 -54.8 145.3
27°	6 58.3 -55.7 149.0	6 38.2 -55.5 148.2	6 17.6 -55.3 147.4	5 56.6 -55.1 146.5	5 35.1 -54.8 145.7
28°	6 02.6 -55.8 149.4	5 42.7 -55.5 148.6	5 22.3 -55.3 147.7	5 01.5 -55.0 146.9	4 40.3 -54.9 146.1
29°	5 06.8 -55.7 149.8	4 47.2 -55.5 148.9	4 27.0 -55.3 148.1	4 06.5 -55.1 147.3	3 45.4 -54.8 146.5

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°	29 29.9 -52.9 132.4	29 01.2 -52.6 131.4	28 32.1 -52.4 130.4	28 02.5 -52.2 129.4	27 32.5 -51.9 128.4
1°	28 37.0 -53.0 132.9	28 08.6 -52.8 131.9	27 39.7 -52.5 130.9	27 10.3 -52.3 130.0	26 40.6 -52.1 129.0
2°	27 44.0 -53.1 133.5	27 15.8 -52.9 132.5	26 47.2 -52.7 131.5	26 18.0 -52.3 130.5	25 48.5 -52.1 129.5
3°	26 50.9 -53.2 134.0	26 22.9 -52.9 133.0	25 54.5 -52.7 132.0	25 25.7 -52.6 131.1	24 56.4 -52.3 130.1
4°	25 57.7 -53.3 134.5	25 30.0 -53.1 133.5	25 01.8 -52.9 132.6	24 33.1 -52.6 131.6	24 04.1 -52.4 130.6
5°	25 04.4 -53.5 135.0	24 36.9 -53.3 134.0	24 08.9 -53.0 133.1	23 40.5 -52.7 132.1	23 11.7 -52.5 131.2
6°	24 10.9 -53.5 135.5	23 43.6 -53.3 134.5	23 15.9 -53.0 133.6	22 47.8 -52.9 132.6	22 19.2 -52.6 131.7
7°	23 17.4 -53.7 136.0	22 50.3 -53.3 135.0	22 22.9 -53.2 134.1	21 54.9 -52.9 133.1	21 26.6 -52.7 132.2
8°	22 23.7 -53.7 136.5	21 57.0 -53.5 135.5	21 29.7 -53.2 134.6	21 02.0 -53.0 133.6	20 33.9 -52.8 132.7
9°	21 30.0 -53.8 137.0	21 03.5 -53.6 136.0	20 36.5 -53.4 135.1	20 09.0 -53.1 134.1	19 41.1 -52.8 133.2
10°	20 36.2 -53.9 137.4	20 09.9 -53.6 136.5	19 43.1 -53.4 135.6	19 15.9 -53.2 134.6	18 48.3 -53.0 133.7
11°	19 42.3 -53.9 137.9	19 16.3 -53.8 137.0	18 49.7 -53.5 136.1	18 22.7 -53.2 135.1	17 55.3 -53.0 134.2
12°	18 48.4 -54.0 138.4	18 22.5 -53.7 137.5	17 56.2 -53.5 136.5	17 29.5 -53.3 135.6	17 02.3 -53.1 134.7
13°	17 54.4 -54.1 138.8	17 28.8 -53.9 137.9	17 02.7 -53.6 137.0	16 36.2 -53.4 136.1	16 09.2 -53.2 135.2
14°	17 00.3 -54.1 139.3	16 34.9 -53.9 138.4	16 09.1 -53.7 137.5	15 42.8 -53.5 136.6	15 16.0 -53.2 135.7
15°	16 06.2 -54.2 139.7	15 41.0 -54.0 138.8	15 15.4 -53.7 137.9	14 49.3 -53.5 137.0	14 22.8 -53.2 136.2
16°	15 12.0 -54.3 140.2	14 47.0 -54.0 139.3	14 21.7 -53.8 138.4	13 55.8 -53.5 137.5	13 29.6 -53.4 136.6
17°	14 17.7 -54.3 140.6	13 53.0 -54.0 139.7	13 27.9 -53.9 138.9	13 02.3 -53.6 138.0	12 36.2 -53.3 137.1
18°	13 23.4 -54.3 141.1	12 59.0 -54.2 140.2	12 34.0 -53.9 139.3	12 08.7 -53.7 138.4	11 42.9 -53.5 137.6
19°	12 29.1 -54.4 141.5	12 04.8 -54.1 140.6	11 40.1 -53.9 139.8	11 15.0 -53.7 138.9	10 49.4 -53.4 138.0
20°	11 34.7 -54.4 141.9	11 10.7 -54.2 141.1	10 46.2 -53.9 140.2	10 21.3 -53.7 139.3	9 56.0 -53.5 138.5
21°	10 40.3 -54.5 142.4	10 16.5 -54.2 141.5	9 52.3 -54.0 140.6	9 27.6 -53.8 139.8	9 02.5 -53.6 139.0
22°	9 45.8 -54.5 142.8	9 22.3 -54.3 141.9	8 58.3 -54.1 141.1	8 33.8 -53.8 140.2	8 08.9 -53.5 139.4
23°	8 51.3 -54.5 143.2	8 28.0 -54.3 142.4	8 04.2 -54.0 141.5	7 40.0 -53.8 140.7	7 15.4 -53.6 139.9
24°	7 56.8 -54.5 143.6	7 33.7 -54.3 142.8	7 10.2 -54.1 142.0	6 46.2 -53.8 141.1	6 21.8 -53.6 140.3
25°	7 02.3 -54.6 144.1	6 39.4 -54.3 143.2	6 16.1 -54.1 142.4	5 52.4 -53.9 141.6	5 28.2 -53.7 140.8
26°	6 07.7 -54.6 144.5	5 45.1 -54.4 143.7	5 22.0 -54.1 142.8	4 58.5 -53.9 142.0	4 34.5 -53.6 141.2
27°	5 13.1 -54.6 144.9	4 50.7 -54.3 144.1	4 27.9 -54.2 143.3	4 04.6 -53.9 142.5	3 40.9 -53.7 141.7
28°	4 18.5 -54.6 145.3	3 56.4 -54.4 144.5	3 33.7 -54.1 143.7	3 10.7 -53.9 142.9	2 47.2 -53.7 142.1
29°	3 23.9 -54.6 145.7	3 02.0 -54.4 144.9	2 39.6 -54.2 144.1	2 16.8 -53.9 143.3	1 53.5 -53.6 142.6

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°	27 02.0 -51.6 127.5	26 31.2 -51.4 126.5	26 00.0 -51.2 125.5	25 28.5 -51.0 124.6	24 56.5 -50.7 123.7
1°	26 10.4 -51.8 128.0	25 39.8 -51.6 127.1	25 08.8 -51.3 126.1	24 37.5 -51.1 125.2	24 05.8 -50.9 124.2
2°	25 18.6 -52.0 128.6	24 48.2 -51.7 127.6	24 17.5 -51.5 126.7	23 46.4 -51.3 125.8	23 14.9 -51.0 124.8
3°	24 26.6 -52.0 129.1	23 56.5 -51.8 128.2	23 26.0 -51.6 127.2	22 55.1 -51.3 126.3	22 23.9 -51.2 125.4
4°	23 34.6 -52.2 129.7	23 04.7 -51.9 128.7	22 34.4 -51.7 127.8	22 03.8 -51.5 126.9	21 32.7 -51.2 126.0
5°	22 42.4 -52.2 130.2	22 12.8 -52.0 129.3	21 42.7 -51.8 128.4	21 12.3 -51.6 127.4	20 41.5 -51.4 126.5
6°	21 50.2 -52.4 130.7	21 20.8 -52.2 129.8	20 50.9 -51.9 128.9	20 20.7 -51.7 128.0	19 50.1 -51.4 127.1
7°	20 57.8 -52.4 131.3	20 28.6 -52.2 130.3	19 59.0 -52.0 129.4	19 29.0 -51.7 128.5	18 58.7 -51.6 127.6
8°	20 05.4 -52.6 131.8	19 36.4 -52.3 130.9	19 07.0 -52.1 130.0	18 37.3 -51.9 129.1	18 07.1 -51.6 128.2
9°	19 12.8 -52.6 132.3	18 44.1 -52.4 131.4	18 14.9 -52.1 130.5	17 45.4 -51.9 129.6	17 15.5 -51.7 128.7
10°	18 20.2 -52.7 132.8	17 51.7 -52.5 131.9	17 22.8 -52.3 131.0	16 53.5 -52.1 130.1	16 23.8 -51.8 129.2
11°	17 27.5 -52.8 133.3	16 59.2 -52.6 132.4	16 30.5 -52.3 131.5	16 01.4 -52.1 130.6	15 32.0 -51.9 129.7
12°	16 34.7 -52.9 133.8	16 06.6 -52.6 132.9	15 38.2 -52.4 132.0	15 09.3 -52.1 131.1	14 40.1 -52.0 130.3
13°	15 41.8 -52.9 134.3	15 14.0 -52.7 133.4	14 45.8 -52.5 132.5	14 17.2 -52.3 131.7	13 48.1 -52.0 130.8
14°	14 48.9 -53.0 134.8	14 21.3 -52.7 133.9	13 53.3 -52.5 133.0	13 24.9 -52.3 132.2	12 56.1 -52.0 131.3
15°	13 55.9 -53.0 135.3	13 28.6 -52.9 134.4	13 00.8 -52.6 133.5	12 32.6 -52.3 132.7	12 04.1 -52.2 131.8
16°	13 02.9 -53.1 135.8	12 35.7 -52.8 134.9	12 08.2 -52.6 134.0	11 40.3 -52.4 133.2	11 11.9 -52.1 132.3
17°	12 09.8 -53.2 136.2	11 42.9 -52.9 135.4	11 15.6 -52.7 134.5	10 47.9 -52.5 133.7	10 19.8 -52.2 132.8
18°	11 16.6 -53.2 136.7	10 50.0 -53.0 135.8	10 22.9 -52.7 135.0	9 55.4 -52.5 134.2	9 27.6 -52.3 133.3
19°	10 23.4 -53.2 137.2	9 57.0 -53.0 136.3	9 30.2 -52.8 135.5	9 02.9 -52.5 134.6	8 35.3 -52.3 133.8
20°	9 30.2 -53.3 137.6	9 04.0 -53.0 136.8	8 37.4 -52.8 136.0	8 10.4 -52.6 135.1	7 43.0 -52.3 134.3
21°	8 36.9 -53.3 138.1	8 11.0 -53.1 137.3	7 44.6 -52.8 136.4	7 17.8 -52.6 135.6	6 50.7 -52.4 134.8
22°	7 43.6 -53.3 138.6	7 17.9 -53.1 137.7	6 51.8 -52.9 136.9	6 25.2 -52.6 136.1	5 58.3 -52.4 135.3
23°	6 50.3 -53.4 139.0	6 24.8 -53.1 138.2	5 58.9 -52.9 137.4	5 32.6 -52.6 136.6	5 05.9 -52.4 135.8
24°	5 56.9 -53.3 139.5	5 31.7 -53.2 138.7	5 06.0 -52.9 137.9	4 40.0 -52.7 137.1	4 13.5 -52.4 136.3
25°	5 03.6 -53.4 140.0	4 38.5 -53.1 139.1	4 13.1 -52.9 138.3	3 47.3 -52.7 137.5	3 21.1 -52.5 136.8
26°	4 10.2 -53.4 140.4	3 45.4 -53.2 139.6	3 20.2 -52.9 138.8	2 54.6 -52.7 138.0	2 28.6 -52.4 137.2
27°	3 16.8 -53.5 140.9	2 52.2 -53.2 140.1	2 27.3 -53.0 139.3	2 01.9 -52.7 138.5	1 36.2 -52.5 137.7
28°	2 23.3 -53.4 141.3	1 59.0 -53.2 140.5	1 34.3 -52.9 139.8	1 09.2 -52.7 139.0	0 43.7 -52.5 138.2
29°	1 29.9 -53.4 141.8	1 05.8 -53.2 141.0	0 41.4 -53.0 140.2	0 16.5 -52.7 139.5	-0 08.8 -52.4

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°	24 24.3 -50.6 122.7	23 51.7 -50.4 121.8	23 18.7 -50.1 120.9	22 45.5 -49.9 120.0	22 11.9 -49.7 119.1
1°	23 33.7 -50.6 123.3	23 01.3 -50.4 122.4	22 28.6 -50.2 121.5	21 55.6 -50.1 120.6	21 22.2 -49.8 119.7
2°	22 43.1 -50.8 123.9	22 10.9 -50.6 123.0	21 38.4 -50.4 122.1	21 05.5 -50.1 121.2	20 32.4 -50.0 120.3
3°	21 52.3 -51.0 124.5	21 20.3 -50.7 123.6	20 48.0 -50.5 122.7	20 15.4 -50.3 121.8	19 42.4 -50.0 120.9
4°	21 01.3 -51.0 125.0	20 29.6 -50.8 124.1	19 57.5 -50.6 123.2	19 25.1 -50.4 122.4	18 52.4 -50.2 121.5
5°	20 10.3 -51.1 125.6	19 38.8 -50.9 124.7	19 06.9 -50.7 123.8	18 34.7 -50.5 122.9	18 02.2 -50.3 122.0
6°	19 19.2 -51.3 126.2	18 47.9 -51.0 125.3	18 16.2 -50.8 124.4	17 44.2 -50.6 123.5	17 11.9 -50.4 122.6
7°	18 27.9 -51.3 126.7	17 56.9 -51.2 125.8	17 25.4 -50.9 124.9	16 53.6 -50.7 124.1	16 21.5 -50.5 123.2
8°	17 36.6 -51.4 127.3	17 05.7 -51.2 126.4	16 34.5 -51.0 125.5	16 02.9 -50.7 124.6	15 31.0 -50.5 123.8
9°	16 45.2 -51.5 127.8	16 14.5 -51.2 126.9	15 43.5 -51.0 126.0	15 12.2 -50.9 125.2	14 40.5 -50.6 124.3
10°	15 53.7 -51.6 128.3	15 23.3 -51.4 127.5	14 52.5 -51.2 126.6	14 21.3 -50.9 125.7	13 49.9 -50.7 124.9
11°	15 02.1 -51.6 128.9	14 31.9 -51.4 128.0	14 01.3 -51.2 127.1	13 30.4 -51.0 126.3	12 59.2 -50.8 125.4
12°	14 10.5 -51.7 129.4	13 40.5 -51.5 128.5	13 10.1 -51.2 127.7	12 39.4 -51.0 126.8	12 08.4 -50.9 126.0
13°	13 18.8 -51.8 129.9	12 49.0 -51.6 129.1	12 18.9 -51.4 128.2	11 48.4 -51.1 127.3	11 17.5 -50.9 126.5
14°	12 27.0 -51.9 130.4	11 57.4 -51.6 129.6	11 27.5 -51.4 128.7	10 57.3 -51.2 127.9	10 26.6 -50.9 127.0
15°	11 35.1 -51.9 130.9	11 05.8 -51.7 130.1	10 36.1 -51.4 129.3	10 06.1 -51.2 128.4	9 35.7 -51.0 127.6
16°	10 43.2 -51.9 131.5	10 14.1 -51.7 130.6	9 44.7 -51.5 129.8	9 14.9 -51.3 128.9	8 44.7 -51.1 128.1
17°	9 51.3 -52.0 132.0	9 22.4 -51.7 131.1	8 53.2 -51.5 130.3	8 23.6 -51.3 129.5	7 53.6 -51.0 128.6
18°	8 59.3 -52.0 132.5	8 30.7 -51.8 131.6	8 01.7 -51.6 130.8	7 32.3 -51.4 130.0	7 02.6 -51.2 129.2
19°	8 07.3 -52.1 133.0	7 38.9 -51.9 132.1	7 10.1 -51.6 131.3	6 40.9 -51.3 130.5	6 11.4 -51.1 129.7
20°	7 15.2 -52.1 133.5	6 47.0 -51.8 132.7	6 18.5 -51.7 131.8	5 49.6 -51.4 131.0	5 20.3 -51.2 130.2
21°	6 23.1 -52.1 134.0	5 55.2 -51.9 133.2	5 26.8 -51.6 132.4	4 58.2 -51.5 131.5	4 29.1 -51.2 130.7
22°	5 31.0 -52.2 134.5	5 03.3 -52.0 133.7	4 35.2 -51.7 132.9	4 06.7 -51.4 132.1	3 37.9 -51.2 131.3
23°	4 38.8 -52.2 135.0	4 11.3 -51.9 134.2	3 43.5 -51.7 133.4	3 15.3 -51.5 132.6	2 46.7 -51.2 131.8
24°	3 46.6 -52.2 135.5	3 19.4 -52.0 134.7	2 51.8 -51.7 133.9	2 23.8 -51.5 133.1	1 55.5 -51.3 132.3
25°	2 54.4 -52.2 136.0	2 27.4 -51.9 135.2	2 00.1 -51.8 134.4	1 32.3 -51.5 133.6	1 04.2 -51.2 132.8
26°	2 02.2 -52.2 136.5	1 35.5 -52.0 135.7	1 08.3 -51.7 134.9	0 40.8 -51.5 134.1	0 13.0 -51.3 133.4
27°	1 10.0 -52.2 136.9	0 43.5 -52.0 136.2	0 16.6 -51.7 135.4	-0 10.7 -51.4	-0 38.3 -51.2
28°	0 17.8 -52.2 137.4	-0 08.5 -52.0	-0 35.1 -51.8	-1 02.1 -51.5	-1 29.5 -51.3
29°	-0 34.4 -52.2	-1 00.5 -51.9	-1 26.9 -51.7	-1 53.6 -51.5	-2 20.8 -51.2

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°	21 38.1 -49.5 118.2	21 04.0 -49.4 117.3	20 29.6 -49.2 116.4	19 54.9 -48.9 115.6	19 20.0 -48.8 114.7
1°	20 48.6 -49.7 118.8	20 14.6 -49.4 117.9	19 40.4 -49.2 117.1	19 06.0 -49.1 116.2	18 31.2 -48.9 115.3
2°	19 58.9 -49.7 119.4	19 25.2 -49.6 118.5	18 51.2 -49.4 117.7	18 16.9 -49.2 116.8	17 42.3 -49.0 115.9
3°	19 09.2 -49.9 120.0	18 35.6 -49.6 119.1	18 01.8 -49.5 118.3	17 27.7 -49.3 117.4	16 53.3 -49.1 116.5
4°	18 19.3 -50.0 120.6	17 46.0 -49.8 119.7	17 12.3 -49.6 118.9	16 38.4 -49.4 118.0	16 04.2 -49.2 117.1
5°	17 29.3 -50.0 121.2	16 56.2 -49.9 120.3	16 22.7 -49.6 119.4	15 49.0 -49.5 118.6	15 15.0 -49.3 117.7
6°	16 39.3 -50.2 121.8	16 06.3 -50.0 120.9	15 33.1 -49.8 120.0	14 59.5 -49.6 119.2	14 25.7 -49.4 118.3
7°	15 49.1 -50.3 122.3	15 16.3 -50.0 121.5	14 43.3 -49.9 120.6	14 09.9 -49.6 119.8	13 36.3 -49.4 118.9
8°	14 58.8 -50.3 122.9	14 26.3 -50.2 122.0	13 53.4 -49.9 121.2	13 20.3 -49.7 120.3	12 46.9 -49.6 119.5
9°	14 08.5 -50.4 123.5	13 36.1 -50.2 122.6	13 03.5 -50.0 121.8	12 30.6 -49.9 120.9	11 57.3 -49.6 120.1
10°	13 18.1 -50.5 124.0	12 45.9 -50.3 123.2	12 13.5 -50.1 122.3	11 40.7 -49.8 121.5	11 07.7 -49.7 120.6
11°	12 27.6 -50.6 124.6	11 55.6 -50.3 123.7	11 23.4 -50.1 122.9	10 50.9 -50.0 122.0	10 18.0 -49.7 121.2
12°	11 37.0 -50.6 125.1	11 05.3 -50.4 124.3	10 33.3 -50.2 123.4	10 00.9 -50.0 122.6	9 28.3 -49.8 121.8
13°	10 46.4 -50.7 125.7	10 14.9 -50.5 124.8	9 43.1 -50.3 124.0	9 10.9 -50.0 123.2	8 38.5 -49.8 122.4
14°	9 55.7 -50.7 126.2	9 24.4 -50.5 125.4	8 52.8 -50.3 124.6	8 20.9 -50.1 123.7	7 48.7 -49.9 122.9
15°	9 05.0 -50.8 126.7	8 33.9 -50.6 125.9	8 02.5 -50.4 125.1	7 30.8 -50.2 124.3	6 58.8 -50.0 123.5
16°	8 14.2 -50.8 127.3	7 43.3 -50.6 126.5	7 12.1 -50.3 125.6	6 40.6 -50.1 124.8	6 08.8 -49.9 124.0
17°	7 23.4 -50.9 127.8	6 52.7 -50.6 127.0	6 21.8 -50.5 126.2	5 50.5 -50.2 125.4	5 18.9 -50.0 124.6
18°	6 32.5 -50.9 128.4	6 02.1 -50.7 127.5	5 31.3 -50.4 126.7	5 00.3 -50.3 125.9	4 28.9 -50.0 125.1
19°	5 41.6 -50.9 128.9	5 11.4 -50.7 128.1	4 40.9 -50.5 127.3	4 10.0 -50.2 126.5	3 38.9 -50.1 125.7
20°	4 50.7 -51.0 129.4	4 20.7 -50.7 128.6	3 50.4 -50.5 127.8	3 19.8 -50.3 127.0	2 48.8 -50.0 126.2
21°	3 59.7 -51.0 129.9	3 30.0 -50.8 129.2	2 59.9 -50.5 128.4	2 29.5 -50.3 127.6	1 58.8 -50.1 126.8
22°	3 08.7 -50.9 130.5	2 39.2 -50.7 129.7	2 09.4 -50.5 128.9	1 39.2 -50.3 128.1	1 08.7 -50.1 127.4
23°	2 17.8 -51.0 131.0	1 48.5 -50.8 130.2	1 18.9 -50.6 129.4	0 48.9 -50.3 128.7	0 18.6 -50.0 127.9
24°	1 26.8 -51.0 131.5	0 57.7 -50.8 130.8	0 28.3 -50.5 130.0	-0 01.4 -50.3	-0 31.4 -50.1
25°	0 35.8 -51.1 132.1	0 06.9 -50.7 131.3	-0 22.2 -50.5	-0 51.7 -50.3	-1 21.5 -50.0
26°	-0 15.3 -51.0	-0 43.8 -50.8	-1 12.7 -50.6	-1 42.0 -50.3	-2 11.5 -50.1
27°	-1 06.3 -51.0	-1 34.6 -50.7	-2 03.3 -50.5	-2 32.3 -50.2	-3 01.6 -50.0
28°	-1 57.3 -51.0	-2 25.3 -50.8	-2 53.8 -50.5	-3 22.5 -50.3	-3 51.6 -50.0
29°	-2 48.3 -50.9	-3 16.1 -50.7	-3 44.3 -50.5	-4 12.8 -50.2	-4 41.6 -50.0

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°	18 44.8 -48.6 113.9	18 09.4 -48.4 113.0	17 33.8 -48.2 112.2	16 58.0 -48.1 111.3	16 22.0 -48.0 110.5
1°	17 56.2 -48.7 114.5	17 21.0 -48.5 113.6	16 45.6 -48.4 112.8	16 09.9 -48.2 111.9	15 34.0 -48.0 111.1
2°	17 07.5 -48.8 115.1	16 32.5 -48.7 114.2	15 57.2 -48.5 113.4	15 21.7 -48.3 112.6	14 46.0 -48.2 111.7
3°	16 18.7 -48.9 115.7	15 43.8 -48.7 114.9	15 08.7 -48.6 114.0	14 33.4 -48.4 113.2	13 57.8 -48.3 112.3
4°	15 29.8 -49.1 116.3	14 55.1 -48.9 115.5	14 20.1 -48.6 114.6	13 45.0 -48.6 113.8	13 09.5 -48.3 113.0
5°	14 40.7 -49.1 116.9	14 06.2 -48.9 116.1	13 31.5 -48.8 115.2	12 56.4 -48.5 114.4	12 21.2 -48.4 113.6
6°	13 51.6 -49.2 117.5	13 17.3 -49.0 116.7	12 42.7 -48.8 115.8	12 07.9 -48.7 115.0	11 32.8 -48.5 114.2
7°	13 02.4 -49.2 118.1	12 28.3 -49.1 117.2	11 53.9 -49.0 116.4	11 19.2 -48.7 115.6	10 44.3 -48.6 114.8
8°	12 13.2 -49.4 118.7	11 39.2 -49.2 117.8	11 04.9 -48.9 117.0	10 30.5 -48.8 116.2	9 55.7 -48.6 115.4
9°	11 23.8 -49.4 119.2	10 50.0 -49.2 118.4	10 16.0 -49.1 117.6	9 41.7 -48.9 116.8	9 07.1 -48.7 116.0
10°	10 34.4 -49.5 119.8	10 00.8 -49.3 119.0	9 26.9 -49.1 118.2	8 52.8 -48.9 117.4	8 18.4 -48.7 116.6
11°	9 44.9 -49.5 120.4	9 11.5 -49.4 119.6	8 37.8 -49.1 118.8	8 03.9 -49.0 117.9	7 29.7 -48.8 117.1
12°	8 55.4 -49.6 121.0	8 22.1 -49.3 120.1	7 48.7 -49.2 119.3	7 14.9 -49.0 118.5	6 40.9 -48.8 117.7
13°	8 05.8 -49.7 121.5	7 32.8 -49.5 120.7	6 59.5 -49.3 119.9	6 25.9 -49.1 119.1	5 52.1 -48.9 118.3
14°	7 16.1 -49.7 122.1	6 43.3 -49.5 121.3	6 10.2 -49.3 120.5	5 36.8 -49.0 119.7	5 03.2 -48.9 118.9
15°	6 26.4 -49.7 122.7	5 53.8 -49.5 121.9	5 20.9 -49.3 121.1	4 47.8 -49.2 120.3	4 14.3 -48.9 119.5
16°	5 36.7 -49.7 123.2	5 04.3 -49.5 122.4	4 31.6 -49.3 121.6	3 58.6 -49.1 120.8	3 25.4 -48.9 120.1
17°	4 47.0 -49.8 123.8	4 14.8 -49.6 123.0	3 42.3 -49.4 122.2	3 09.5 -49.1 121.4	2 36.5 -49.0 120.6
18°	3 57.2 -49.8 124.4	3 25.2 -49.6 123.6	2 52.9 -49.4 122.8	2 20.4 -49.2 122.0	1 47.5 -49.0 121.2
19°	3 07.4 -49.8 124.9	2 35.6 -49.6 124.1	2 03.5 -49.3 123.3	1 31.2 -49.2 122.6	0 58.5 -48.9 121.8
20°	2 17.6 -49.9 125.5	1 46.0 -49.6 124.7	1 14.2 -49.4 123.9	0 42.0 -49.2 123.1	0 09.6 -49.0 122.4
21°	1 27.7 -49.8 126.0	0 56.4 -49.6 125.3	0 24.8 -49.4 124.5	-0 07.2 -49.2	-0 39.4 -49.0
22°	0 37.9 -49.8 126.6	0 06.8 -49.6 125.8	-0 24.6 -49.4	-0 56.4 -49.1	-1 28.4 -48.9
23°	-0 11.9 -49.9	-0 42.8 -49.7	-1 14.0 -49.4	-1 45.5 -49.2	-2 17.3 -49.0
24°	-1 01.8 -49.8	-1 32.5 -49.6	-2 03.4 -49.4	-2 34.7 -49.2	-3 06.3 -48.9
25°	-1 51.6 -49.8	-2 22.1 -49.6	-2 52.8 -49.4	-3 23.9 -49.1	-3 55.2 -48.9
26°	-2 41.4 -49.9	-3 11.7 -49.5	-3 42.2 -49.3	-4 13.0 -49.1	-4 44.1 -48.9
27°	-3 31.3 -49.7	-4 01.2 -49.6	-4 31.5 -49.3	-5 02.1 -49.1	-5 33.0 -48.8
28°	-4 21.0 -49.8	-4 50.8 -49.5	-5 20.8 -49.3	-5 51.2 -49.0	-6 21.8 -48.8
29°	-5 10.8 -49.7	-5 40.3 -49.5	-6 10.1 -49.2	-6 40.2 -49.0	-7 10.6 -48.8

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°	15 45.8 -47.8 109.7	15 09.4 -47.7 108.8	14 32.8 -47.6 108.0	13 56.0 -47.4 107.2	13 19.1 -47.3 106.4
1°	14 58.0 -48.0 110.3	14 21.7 -47.8 109.5	13 45.2 -47.6 108.6	13 08.6 -47.5 107.8	12 31.8 -47.4 107.0
2°	14 10.0 -48.0 110.9	13 33.9 -47.9 110.1	12 57.6 -47.7 109.3	12 21.1 -47.6 108.5	11 44.4 -47.4 107.6
3°	13 22.0 -48.1 111.5	12 46.0 -47.9 110.7	12 09.9 -47.8 109.9	11 33.5 -47.6 109.1	10 57.0 -47.5 108.3
4°	12 33.9 -48.2 112.1	11 58.1 -48.0 111.3	11 22.1 -47.9 110.5	10 45.9 -47.8 109.7	10 09.5 -47.6 108.9
5°	11 45.7 -48.2 112.7	11 10.1 -48.1 111.9	10 34.2 -48.0 111.1	9 58.1 -47.8 110.3	9 21.9 -47.7 109.5
6°	10 57.5 -48.3 113.4	10 22.0 -48.2 112.5	9 46.2 -48.0 111.7	9 10.3 -47.8 110.9	8 34.2 -47.7 110.1
7°	10 09.2 -48.4 114.0	9 33.8 -48.2 113.1	8 58.2 -48.0 112.3	8 22.5 -48.0 111.5	7 46.5 -47.8 110.7
8°	9 20.8 -48.5 114.6	8 45.6 -48.3 113.7	8 10.2 -48.2 112.9	7 34.5 -47.9 112.1	6 58.7 -47.8 111.3
9°	8 32.3 -48.5 115.2	7 57.3 -48.4 114.3	7 22.0 -48.1 113.5	6 46.6 -48.0 112.7	6 10.9 -47.9 112.0
10°	7 43.8 -48.6 115.7	7 08.9 -48.3 114.9	6 33.9 -48.3 114.1	5 58.6 -48.1 113.4	5 23.0 -47.8 112.6
11°	6 55.2 -48.6 116.3	6 20.6 -48.5 115.5	5 45.6 -48.2 114.7	5 10.5 -48.1 114.0	4 35.2 -48.0 113.2
12°	6 06.6 -48.6 116.9	5 32.1 -48.4 116.1	4 57.4 -48.3 115.3	4 22.4 -48.1 114.6	3 47.2 -47.9 113.8
13°	5 18.0 -48.7 117.5	4 43.7 -48.5 116.7	4 09.1 -48.3 115.9	3 34.3 -48.1 115.2	2 59.3 -48.0 114.4
14°	4 29.3 -48.7 118.1	3 55.2 -48.5 117.3	3 20.8 -48.3 116.5	2 46.2 -48.2 115.8	2 11.3 -48.0 115.0
15°	3 40.6 -48.7 118.7	3 06.7 -48.6 117.9	2 32.5 -48.4 117.1	1 58.0 -48.2 116.3	1 23.3 -48.0 115.6
16°	2 51.9 -48.8 119.3	2 18.1 -48.5 118.5	1 44.1 -48.4 117.7	1 09.8 -48.1 116.9	0 35.3 -48.0 116.2
17°	2 03.1 -48.7 119.9	1 29.6 -48.6 119.1	0 55.7 -48.3 118.3	0 21.7 -48.2 117.5	-0 12.7 -47.9
18°	1 14.4 -48.8 120.4	0 41.0 -48.6 119.7	0 07.4 -48.4 118.9	-0 26.5 -48.2	-1 00.6 -48.0
19°	0 25.6 -48.7 121.0	-0 07.6 -48.5	-0 41.0 -48.4	-1 14.7 -48.2	-1 48.6 -48.0
20°	-0 23.1 -48.8	-0 56.1 -48.6	-1 29.4 -48.3	-2 02.9 -48.1	-2 36.6 -48.0
21°	-1 11.9 -48.8	-1 44.7 -48.5	-2 17.7 -48.4	-2 51.0 -48.2	-3 24.6 -47.9
22°	-2 00.7 -48.7	-2 33.2 -48.6	-3 06.1 -48.3	-3 39.2 -48.1	-4 12.5 -47.9
23°	-2 49.4 -48.7	-3 21.8 -48.5	-3 54.4 -48.3	-4 27.3 -48.1	-5 00.4 -47.9
24°	-3 38.1 -48.7	-4 10.3 -48.5	-4 42.7 -48.2	-5 15.4 -48.0	-5 48.3 -47.8
25°	-4 26.8 -48.7	-4 58.8 -48.4	-5 30.9 -48.3	-6 03.4 -48.0	-6 36.1 -47.8
26°	-5 15.5 -48.7	-5 47.2 -48.4	-6 19.2 -48.2	-6 51.4 -48.0	-7 23.9 -47.8
27°	-6 04.2 -48.6	-6 35.6 -48.4	-7 07.4 -48.1	-7 39.4 -47.9	-8 11.7 -47.6
28°	-6 52.8 -48.5	-7 24.0 -48.3	-7 55.5 -48.1	-8 27.3 -47.8	-8 59.3 -47.7
29°	-7 41.3 -48.5	-8 12.3 -48.3	-8 43.6 -48.0	-9 15.1 -47.8	-9 47.0 -47.5

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°	12 42.0 -47.2 105.6	12 04.8 -47.1 104.8	11 27.4 -46.9 104.0	10 49.9 -46.8 103.2	10 12.3 -46.7 102.4
1°	11 54.8 -47.2 106.2	11 17.7 -47.1 105.4	10 40.5 -47.0 104.6	10 03.1 -46.9 103.8	9 25.6 -46.8 103.0
2°	11 07.6 -47.3 106.8	10 30.6 -47.2 106.0	9 53.5 -47.1 105.2	9 16.2 -47.0 104.4	8 38.8 -46.9 103.7
3°	10 20.3 -47.4 107.5	9 43.4 -47.3 106.7	9 06.4 -47.2 105.9	8 29.2 -47.0 105.1	7 51.9 -46.9 104.3
4°	9 32.9 -47.5 108.1	8 56.1 -47.3 107.3	8 19.2 -47.2 106.5	7 42.2 -47.1 105.7	7 05.0 -47.0 104.9
5°	8 45.4 -47.5 108.7	8 08.8 -47.4 107.9	7 32.0 -47.2 107.1	6 55.1 -47.1 106.3	6 18.0 -47.0 105.5
6°	7 57.9 -47.6 109.3	7 21.4 -47.4 108.5	6 44.8 -47.3 107.7	6 08.0 -47.2 107.0	5 31.0 -47.1 106.2
7°	7 10.3 -47.6 109.9	6 34.0 -47.5 109.1	5 57.5 -47.4 108.4	5 20.8 -47.2 107.6	4 43.9 -47.1 106.8
8°	6 22.7 -47.7 110.6	5 46.5 -47.5 109.8	5 10.1 -47.4 109.0	4 33.6 -47.3 108.2	3 56.8 -47.1 107.4
9°	5 35.0 -47.7 111.2	4 59.0 -47.6 110.4	4 22.7 -47.4 109.6	3 46.3 -47.3 108.8	3 09.7 -47.1 108.0
10°	4 47.3 -47.7 111.8	4 11.4 -47.6 111.0	3 35.3 -47.4 110.2	2 59.0 -47.3 109.4	2 22.6 -47.2 108.7
11°	3 59.6 -47.8 112.4	3 23.8 -47.6 111.6	2 47.9 -47.5 110.8	2 11.7 -47.3 110.0	1 35.4 -47.1 109.3
12°	3 11.8 -47.8 113.0	2 36.2 -47.6 112.2	2 00.4 -47.4 111.4	1 24.4 -47.3 110.7	0 48.3 -47.2 109.9
13°	2 24.0 -47.8 113.6	1 48.6 -47.6 112.8	1 13.0 -47.5 112.0	0 37.1 -47.3 111.3	0 01.1 -47.2 110.5
14°	1 36.2 -47.8 114.2	1 01.0 -47.7 113.4	0 25.5 -47.5 112.7	-0 10.2 -47.3	-0 46.1 -47.2
15°	0 48.4 -47.8 114.8	0 13.3 -47.6 114.0	-0 22.0 -47.5	-0 57.5 -47.4	-1 33.3 -47.1
16°	0 00.6 -47.8 115.4	-0 34.3 -47.7	-1 09.5 -47.5	-1 44.9 -47.3	-2 20.4 -47.2
17°	-0 47.2 -47.8	-1 22.0 -47.6	-1 57.0 -47.4	-2 32.2 -47.3	-3 07.6 -47.1
18°	-1 35.0 -47.8	-2 09.6 -47.6	-2 44.4 -47.5	-3 19.5 -47.2	-3 54.7 -47.1
19°	-2 22.8 -47.8	-2 57.2 -47.6	-3 31.9 -47.4	-4 06.7 -47.3	-4 41.8 -47.0
20°	-3 10.6 -47.8	-3 44.8 -47.6	-4 19.3 -47.4	-4 54.0 -47.2	-5 28.8 -47.1
21°	-3 58.4 -47.7	-4 32.4 -47.5	-5 06.7 -47.3	-5 41.2 -47.1	-6 15.9 -46.9
22°	-4 46.1 -47.7	-5 19.9 -47.5	-5 54.0 -47.3	-6 28.3 -47.1	-7 02.8 -47.0
23°	-5 33.8 -47.7	-6 07.4 -47.5	-6 41.3 -47.3	-7 15.4 -47.1	-7 49.8 -46.8
24°	-6 21.5 -47.6	-6 54.9 -47.4	-7 28.6 -47.2	-8 02.5 -47.0	-8 36.6 -46.9
25°	-7 09.1 -47.6	-7 42.3 -47.4	-8 15.8 -47.2	-8 49.5 -47.0	-9 23.5 -46.7
26°	-7 56.7 -47.5	-8 29.7 -47.3	-9 03.0 -47.0	-9 36.5 -46.8	
27°	-8 44.2 -47.5	-9 17.0 -47.2	-9 50.0 -47.1		
28°	-9 31.7 -47.4				
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°	9 34.6 -46.7 101.6	8 56.8 -46.6 100.8	8 18.8 -46.4 100.0	7 40.8 -46.4 99.2	7 02.7 -46.3 98.5
1°	8 47.9 -46.7 102.2	8 10.2 -46.6 101.5	7 32.4 -46.6 100.7	6 54.4 -46.5 99.9	6 16.4 -46.4 99.1
2°	8 01.2 -46.7 102.9	7 23.6 -46.7 102.1	6 45.8 -46.6 101.3	6 07.9 -46.5 100.5	5 30.0 -46.4 99.7
3°	7 14.5 -46.9 103.5	6 36.9 -46.7 102.7	5 59.2 -46.6 101.9	5 21.4 -46.5 101.2	4 43.6 -46.5 100.4
4°	6 27.6 -46.8 104.1	5 50.2 -46.8 103.4	5 12.6 -46.7 102.6	4 34.9 -46.6 101.8	3 57.1 -46.5 101.0
5°	5 40.8 -46.9 104.8	5 03.4 -46.8 104.0	4 25.9 -46.7 103.2	3 48.3 -46.6 102.4	3 10.6 -46.5 101.7
6°	4 53.9 -47.0 105.4	4 16.6 -46.8 104.6	3 39.2 -46.7 103.8	3 01.7 -46.6 103.1	2 24.1 -46.5 102.3
7°	4 06.9 -46.9 106.0	3 29.8 -46.9 105.2	2 52.5 -46.7 104.5	2 15.1 -46.6 103.7	1 37.6 -46.6 102.9
8°	3 20.0 -47.0 106.6	2 42.9 -46.8 105.9	2 05.8 -46.8 105.1	1 28.5 -46.7 104.3	0 51.0 -46.5 103.5
9°	2 33.0 -47.0 107.3	1 56.1 -46.9 106.5	1 19.0 -46.8 105.7	0 41.8 -46.6 104.9	0 04.5 -46.6 104.2
10°	1 46.0 -47.1 107.9	1 09.2 -46.9 107.1	0 32.2 -46.7 106.3	-0 04.8 -46.7	-0 42.1 -46.5
11°	0 58.9 -47.0 108.5	0 22.3 -46.9 107.7	-0 14.5 -46.8	-0 51.5 -46.7	-1 28.6 -46.5
12°	0 11.9 -47.0 109.1	-0 24.6 -46.9	-1 01.3 -46.8	-1 38.2 -46.6	-2 15.1 -46.6
13°	-0 35.1 -47.1	-1 11.5 -46.9	-1 48.1 -46.7	-2 24.8 -46.6	-3 01.7 -46.4
14°	-1 22.2 -47.0	-1 58.4 -46.9	-2 34.8 -46.8	-3 11.4 -46.6	-3 48.1 -46.5
15°	-2 09.2 -47.0	-2 45.3 -46.8	-3 21.6 -46.7	-3 58.0 -46.6	-4 34.6 -46.4
16°	-2 56.2 -47.0	-3 32.1 -46.9	-4 08.3 -46.6	-4 44.6 -46.5	-5 21.0 -46.4
17°	-3 43.2 -46.9	-4 19.0 -46.8	-4 54.9 -46.7	-5 31.1 -46.5	-6 07.4 -46.4
18°	-4 30.1 -47.0	-5 05.8 -46.7	-5 41.6 -46.6	-6 17.6 -46.4	-6 53.8 -46.3
19°	-5 17.1 -46.8	-5 52.5 -46.8	-6 28.2 -46.6	-7 04.0 -46.4	-7 40.1 -46.2
20°	-6 03.9 -46.9	-6 39.3 -46.6	-7 14.8 -46.5	-7 50.4 -46.4	-8 26.3 -46.2
21°	-6 50.8 -46.8	-7 25.9 -46.6	-8 01.3 -46.4	-8 36.8 -46.3	-9 12.5 -46.1
22°	-7 37.6 -46.7	-8 12.5 -46.6	-8 47.7 -46.4	-9 23.1 -46.2	-9 58.6 -46.0
23°	-8 24.3 -46.7	-8 59.1 -46.5	-9 34.1 -46.3		
24°	-9 11.0 -46.6	-9 45.6 -46.4			
25°	-9 57.6 -46.6				
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°	6 24.5 -46.3 97.7	5 46.3 -46.3 96.9	5 07.9 -46.1 96.1	4 29.6 -46.1 95.4	3 51.2 -46.1 94.6
1°	5 38.2 -46.3 98.3	5 00.0 -46.2 97.6	4 21.8 -46.2 96.8	3 43.5 -46.2 96.0	3 05.1 -46.1 95.2
2°	4 51.9 -46.3 99.0	4 13.8 -46.3 98.2	3 35.6 -46.2 97.4	2 57.3 -46.2 96.7	2 19.0 -46.1 95.9
3°	4 05.6 -46.4 99.6	3 27.5 -46.3 98.8	2 49.4 -46.3 98.1	2 11.1 -46.1 97.3	1 32.9 -46.2 96.5
4°	3 19.2 -46.4 100.2	2 41.2 -46.3 99.5	2 03.1 -46.2 98.7	1 25.0 -46.2 97.9	0 46.7 -46.1 97.2
5°	2 32.8 -46.4 100.9	1 54.9 -46.4 100.1	1 16.9 -46.3 99.3	0 38.8 -46.2 98.6	0 00.6 -46.2 97.8
6°	1 46.4 -46.5 101.5	1 08.5 -46.3 100.7	0 30.6 -46.3 100.0	-0 07.4 -46.2	-0 45.6 -46.1
7°	0 59.9 -46.4 102.1	0 22.2 -46.4 101.4	-0 15.7 -46.3	-0 53.6 -46.2	-1 31.7 -46.1
8°	0 13.5 -46.5 102.8	-0 24.2 -46.3	-1 02.0 -46.2	-1 39.8 -46.2	-2 17.8 -46.1
9°	-0 33.0 -46.4	-1 10.5 -46.4	-1 48.2 -46.3	-2 26.0 -46.2	-3 03.9 -46.1
10°	-1 19.4 -46.4	-1 56.9 -46.3	-2 34.5 -46.2	-3 12.2 -46.1	-3 50.0 -46.0
11°	-2 05.8 -46.5	-2 43.2 -46.3	-3 20.7 -46.2	-3 58.3 -46.1	-4 36.0 -46.1
12°	-2 52.3 -46.4	-3 29.5 -46.3	-4 06.9 -46.2	-4 44.4 -46.1	-5 22.1 -45.9
13°	-3 38.7 -46.3	-4 15.8 -46.3	-4 53.1 -46.1	-5 30.5 -46.0	-6 08.0 -46.0
14°	-4 25.0 -46.4	-5 02.1 -46.2	-5 39.2 -46.1	-6 16.5 -46.0	-6 54.0 -45.9
15°	-5 11.4 -46.3	-5 48.3 -46.2	-6 25.3 -46.1	-7 02.5 -46.0	-7 39.9 -45.8
16°	-5 57.7 -46.2	-6 34.5 -46.1	-7 11.4 -46.0	-7 48.5 -45.8	-8 25.7 -45.7
17°	-6 43.9 -46.2	-7 20.6 -46.0	-7 57.4 -45.9	-8 34.3 -45.8	-9 11.4 -45.7
18°	-7 30.1 -46.2	-8 06.6 -46.1	-8 43.3 -45.9	-9 20.1 -45.8	-9 57.1 -45.6
19°	-8 16.3 -46.1	-8 52.7 -45.9	-9 29.2 -45.8		
20°	-9 02.4 -46.0	-9 38.6 -45.9			
21°	-9 48.4 -45.9				
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°	3 12.7 -46.1 93.8	2 34.2 -46.0 93.1	1 55.7 -46.0 92.3	1 17.1 -46.0 91.5	0 38.6 -46.0 90.8
1°	2 26.6 -46.0 94.5	1 48.2 -46.1 93.7	1 09.7 -46.0 92.9	0 31.1 -45.9 92.2	-0 07.4 -46.0
2°	1 40.6 -46.1 95.1	1 02.1 -46.0 94.4	0 23.7 -46.0 93.6	-0 14.8 -46.0	-0 53.4 -45.9
3°	0 54.5 -46.1 95.8	0 16.1 -46.0 95.0	-0 22.3 -46.0	-1 00.8 -46.0	-1 39.3 -46.0
4°	0 08.4 -46.1 96.4	-0 29.9 -46.1	-1 08.3 -46.0	-1 46.8 -45.9	-2 25.3 -45.9
5°	-0 37.7 -46.0	-1 16.0 -46.0	-1 54.3 -46.0	-2 32.7 -46.0	-3 11.2 -45.9
6°	-1 23.7 -46.1	-2 02.0 -46.0	-2 40.3 -46.0	-3 18.7 -45.9	-3 57.1 -45.9
7°	-2 09.8 -46.1	-2 48.0 -46.0	-3 26.3 -45.9	-4 04.6 -45.9	-4 43.0 -45.8
8°	-2 55.9 -46.0	-3 34.0 -46.0	-4 12.2 -45.9	-4 50.5 -45.8	-5 28.8 -45.8
9°	-3 41.9 -46.0	-4 20.0 -45.9	-4 58.1 -45.9	-5 36.3 -45.8	-6 14.6 -45.8
10°	-4 27.9 -46.0	-5 05.9 -45.9	-5 44.0 -45.8	-6 22.1 -45.8	-7 00.4 -45.7
11°	-5 13.9 -45.9	-5 51.8 -45.8	-6 29.8 -45.8	-7 07.9 -45.7	-7 46.1 -45.6
12°	-5 59.8 -45.9	-6 37.6 -45.8	-7 15.6 -45.7	-7 53.6 -45.6	-8 31.7 -45.6
13°	-6 45.7 -45.8	-7 23.4 -45.8	-8 01.3 -45.6	-8 39.2 -45.6	-9 17.3 -45.5
14°	-7 31.5 -45.8	-8 09.2 -45.7	-8 46.9 -45.6	-9 24.8 -45.5	
15°	-8 17.3 -45.7	-8 54.9 -45.6	-9 32.5 -45.5		
16°	-9 03.0 -45.6	-9 40.5 -45.5			
17°	-9 48.6 -45.6				
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Latitude 50°

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 -46.0 90.0	-0 38.6 -45.9			
1°	-0 46.0 -45.9	-1 24.5 -46.0			
2°	-1 31.9 -46.0	-2 10.5 -45.9			
3°	-2 17.9 -45.9	-2 56.4 -45.9			
4°	-3 03.8 -45.9	-3 42.3 -45.9			
5°	-3 49.7 -45.9	-4 28.2 -45.9			
6°	-4 35.6 -45.8	-5 14.1 -45.8			
7°	-5 21.4 -45.8	-5 59.9 -45.7			
8°	-6 07.2 -45.8	-6 45.6 -45.8			
9°	-6 53.0 -45.7	-7 31.4 -45.6			
10°	-7 38.7 -45.6	-8 17.0 -45.6			
11°	-8 24.3 -45.6	-9 02.6 -45.5			
12°	-9 09.9 -45.5	-9 48.1 -45.5			
13°	-9 55.4 -45.4				
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°					
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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°	39 00.0 -60.0 180.0	38 59.6 -60.0 178.7	38 58.3 -60.0 177.4	38 56.2 -60.0 176.1	38 53.2 -59.9 174.9
1°	38 00.0 -60.0 180.0	37 59.6 -60.0 178.7	37 58.3 -59.9 177.5	37 56.2 -59.9 176.2	37 53.3 -59.9 174.9
2°	37 00.0 -60.0 180.0	36 59.6 -60.0 178.7	36 58.4 -60.0 177.5	36 56.3 -60.0 176.2	36 53.4 -59.9 175.0
3°	36 00.0 -60.0 180.0	35 59.6 -60.0 178.8	35 58.4 -60.0 177.5	35 56.3 -59.9 176.3	35 53.5 -59.9 175.1
4°	35 00.0 -60.0 180.0	34 59.6 -60.0 178.8	34 58.4 -60.0 177.6	34 56.4 -60.0 176.3	34 53.6 -59.9 175.1
5°	34 00.0 -60.0 180.0	33 59.6 -60.0 178.8	33 58.4 -60.0 177.6	33 56.4 -59.9 176.4	33 53.7 -59.9 175.2
6°	33 00.0 -60.0 180.0	32 59.6 -60.0 178.8	32 58.4 -59.9 177.6	32 56.5 -60.0 176.4	32 53.8 -60.0 175.3
7°	32 00.0 -60.0 180.0	31 59.6 -60.0 178.8	31 58.5 -60.0 177.7	31 56.5 -59.9 176.5	31 53.8 -59.9 175.3
8°	31 00.0 -60.0 180.0	30 59.6 -60.0 178.8	30 58.5 -60.0 177.7	30 56.6 -60.0 176.5	30 53.9 -59.9 175.4
9°	30 00.0 -60.0 180.0	29 59.6 -60.0 178.9	29 58.5 -60.0 177.7	29 56.6 -59.9 176.6	29 54.0 -59.9 175.4
10°	29 00.0 -60.0 180.0	28 59.6 -60.0 178.9	28 58.5 -60.0 177.7	28 56.7 -60.0 176.6	28 54.1 -60.0 175.5
11°	28 00.0 -60.0 180.0	27 59.6 -60.0 178.9	27 58.5 -59.9 177.8	27 56.7 -60.0 176.7	27 54.1 -59.9 175.6
12°	27 00.0 -60.0 180.0	26 59.6 -60.0 178.9	26 58.6 -60.0 177.8	26 56.7 -59.9 176.7	26 54.2 -59.9 175.6
13°	26 00.0 -60.0 180.0	25 59.6 -60.0 178.9	25 58.6 -60.0 177.8	25 56.8 -60.0 176.7	25 54.3 -59.9 175.7
14°	25 00.0 -60.0 180.0	24 59.6 -59.9 178.9	24 58.6 -60.0 177.9	24 56.8 -59.9 176.8	24 54.4 -60.0 175.7
15°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.6 -60.0 177.9	23 56.9 -60.0 176.8	23 54.4 -59.9 175.8
16°	23 00.0 -60.0 180.0	22 59.7 -60.0 179.0	22 58.6 -60.0 177.9	22 56.9 -60.0 176.9	22 54.5 -59.9 175.8
17°	22 00.0 -60.0 180.0	21 59.7 -60.0 179.0	21 58.6 -59.9 177.9	21 56.9 -59.9 176.9	21 54.6 -60.0 175.9
18°	21 00.0 -60.0 180.0	20 59.7 -60.0 179.0	20 58.7 -60.0 178.0	20 57.0 -60.0 176.9	20 54.6 -59.9 175.9
19°	20 00.0 -60.0 180.0	19 59.7 -60.0 179.0	19 58.7 -60.0 178.0	19 57.0 -59.9 177.0	19 54.7 -59.9 176.0
20°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.7 -60.0 178.0	18 57.1 -60.0 177.0	18 54.8 -60.0 176.0
21°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 58.7 -60.0 178.0	17 57.1 -60.0 177.1	17 54.8 -59.9 176.1
22°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 58.7 -60.0 178.1	16 57.1 -59.9 177.1	16 54.9 -59.9 176.1
23°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 58.7 -59.9 178.1	15 57.2 -60.0 177.1	15 55.0 -60.0 176.2
24°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.1	14 58.8 -60.0 178.1	14 57.2 -60.0 177.2	14 55.0 -59.9 176.2
25°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.1	13 58.8 -60.0 178.1	13 57.2 -59.9 177.2	13 55.1 -60.0 176.3
26°	13 00.0 -60.0 180.0	12 59.7 -60.0 179.1	12 58.8 -60.0 178.2	12 57.3 -60.0 177.2	12 55.1 -59.9 176.3
27°	12 00.0 -60.0 180.0	11 59.7 -60.0 179.1	11 58.8 -60.0 178.2	11 57.3 -60.0 177.3	11 55.2 -59.9 176.4
28°	11 00.0 -60.0 180.0	10 59.7 -60.0 179.1	10 58.8 -60.0 178.2	10 57.3 -59.9 177.3	10 55.3 -60.0 176.4
29°	10 00.0 -60.0 180.0	9 59.7 -60.0 179.1	9 58.8 -60.0 178.2	9 57.4 -60.0 177.3	9 55.3 -59.9 176.4

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°	38 49.4 -59.8 173.6	38 44.8 -59.8 172.3	38 39.3 -59.7 171.0	38 33.0 -59.6 169.7	38 25.9 -59.6 168.5
1°	37 49.6 -59.9 173.7	37 45.0 -59.8 172.4	37 39.6 -59.7 171.1	37 33.4 -59.7 169.9	37 26.3 -59.5 168.6
2°	36 49.7 -59.9 173.8	36 45.2 -59.8 172.5	36 39.9 -59.8 171.3	36 33.7 -59.6 170.0	36 26.8 -59.6 168.8
3°	35 49.8 -59.8 173.8	35 45.4 -59.8 172.6	35 40.1 -59.7 171.4	35 34.1 -59.7 170.2	35 27.2 -59.5 168.9
4°	34 50.0 -59.9 173.9	34 45.6 -59.8 172.7	34 40.4 -59.7 171.5	34 34.4 -59.6 170.3	34 27.7 -59.6 169.1
5°	33 50.1 -59.9 174.0	33 45.8 -59.8 172.8	33 40.7 -59.8 171.6	33 34.8 -59.7 170.4	33 28.1 -59.6 169.2
6°	32 50.2 -59.8 174.1	32 46.0 -59.9 172.9	32 40.9 -59.7 171.7	32 35.1 -59.7 170.5	32 28.5 -59.6 169.4
7°	31 50.4 -59.9 174.2	31 46.1 -59.8 173.0	31 41.2 -59.8 171.8	31 35.4 -59.7 170.7	31 28.9 -59.6 169.5
8°	30 50.5 -59.9 174.2	30 46.3 -59.8 173.1	30 41.4 -59.8 171.9	30 35.7 -59.7 170.8	30 29.3 -59.6 169.6
9°	29 50.6 -59.9 174.3	29 46.5 -59.8 173.2	29 41.6 -59.7 172.0	29 36.0 -59.7 170.9	29 29.7 -59.6 169.8
10°	28 50.7 -59.8 174.4	28 46.7 -59.9 173.3	28 41.9 -59.8 172.1	28 36.3 -59.7 171.0	28 30.1 -59.6 169.9
11°	27 50.9 -59.9 174.4	27 46.8 -59.8 173.3	27 42.1 -59.8 172.2	27 36.6 -59.7 171.1	27 30.5 -59.7 170.0
12°	26 51.0 -59.9 174.5	26 47.0 -59.8 173.4	26 42.3 -59.8 172.3	26 36.9 -59.7 171.2	26 30.8 -59.6 170.2
13°	25 51.1 -59.9 174.6	25 47.2 -59.9 173.5	25 42.5 -59.7 172.4	25 37.2 -59.7 171.4	25 31.2 -59.7 170.3
14°	24 51.2 -59.9 174.7	24 47.3 -59.8 173.6	24 42.8 -59.8 172.5	24 37.5 -59.7 171.5	24 31.5 -59.6 170.4
15°	23 51.3 -59.9 174.7	23 47.5 -59.9 173.7	23 43.0 -59.8 172.6	23 37.8 -59.8 171.6	23 31.9 -59.7 170.5
16°	22 51.4 -59.9 174.8	22 47.6 -59.8 173.7	22 43.2 -59.8 172.7	22 38.0 -59.7 171.7	22 32.2 -59.6 170.6
17°	21 51.5 -59.9 174.8	21 47.8 -59.9 173.8	21 43.4 -59.8 172.8	21 38.3 -59.7 171.8	21 32.6 -59.7 170.7
18°	20 51.6 -59.9 174.9	20 47.9 -59.8 173.9	20 43.6 -59.8 172.9	20 38.6 -59.8 171.9	20 32.9 -59.7 170.9
19°	19 51.7 -59.9 175.0	19 48.1 -59.9 174.0	19 43.8 -59.8 173.0	19 38.8 -59.7 172.0	19 33.2 -59.6 171.0
20°	18 51.8 -59.9 175.0	18 48.2 -59.8 174.0	18 44.0 -59.8 173.1	18 39.1 -59.7 172.1	18 33.6 -59.7 171.1
21°	17 51.9 -59.9 175.1	17 48.4 -59.9 174.1	17 44.2 -59.8 173.1	17 39.4 -59.8 172.2	17 33.9 -59.7 171.2
22°	16 52.0 -59.9 175.2	16 48.5 -59.8 174.2	16 44.4 -59.8 173.2	16 39.6 -59.7 172.3	16 34.2 -59.7 171.3
23°	15 52.1 -59.9 175.2	15 48.7 -59.9 174.3	15 44.6 -59.8 173.3	15 39.9 -59.8 172.4	15 34.5 -59.7 171.4
24°	14 52.2 -59.9 175.3	14 48.8 -59.9 174.3	14 44.8 -59.9 173.4	14 40.1 -59.8 172.4	14 34.8 -59.7 171.5
25°	13 52.3 -59.9 175.3	13 48.9 -59.8 174.4	13 44.9 -59.8 173.5	13 40.3 -59.7 172.5	13 35.1 -59.6 171.6
26°	12 52.4 -59.9 175.4	12 49.1 -59.9 174.5	12 45.1 -59.8 173.6	12 40.6 -59.8 172.6	12 35.5 -59.7 171.7
27°	11 52.5 -59.9 175.4	11 49.2 -59.9 174.5	11 45.3 -59.8 173.6	11 40.8 -59.7 172.7	11 35.8 -59.7 171.8
28°	10 52.6 -59.9 175.5	10 49.3 -59.8 174.6	10 45.5 -59.8 173.7	10 41.1 -59.8 172.8	10 36.1 -59.7 171.9
29°	9 52.7 -59.9 175.6	9 49.5 -59.9 174.7	9 45.7 -59.8 173.8	9 41.3 -59.8 172.9	9 36.4 -59.7 172.0

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°	38 17.9 -59.4 167.2	38 09.2 -59.3 166.0	37 59.6 -59.2 164.7	37 49.2 -59.0 163.5	37 38.1 -58.9 162.2
1°	37 18.5 -59.4 167.4	37 09.9 -59.4 166.1	37 00.4 -59.2 164.9	36 50.2 -59.1 163.7	36 39.2 -58.9 162.5
2°	36 19.1 -59.5 167.6	36 10.5 -59.3 166.3	36 01.2 -59.2 165.1	35 51.1 -59.1 163.9	35 40.3 -59.0 162.7
3°	35 19.6 -59.5 167.7	35 11.2 -59.4 166.5	35 02.0 -59.2 165.3	34 52.0 -59.1 164.1	34 41.3 -59.0 162.9
4°	34 20.1 -59.4 167.9	34 11.8 -59.3 166.7	34 02.8 -59.3 165.5	33 52.9 -59.1 164.3	33 42.3 -59.0 163.1
5°	33 20.7 -59.5 168.0	33 12.5 -59.4 166.9	33 03.5 -59.3 165.7	32 53.8 -59.2 164.5	32 43.3 -59.0 163.4
6°	32 21.2 -59.5 168.2	32 13.1 -59.4 167.0	32 04.2 -59.3 165.9	31 54.6 -59.1 164.7	31 44.3 -59.0 163.6
7°	31 21.7 -59.5 168.4	31 13.7 -59.4 167.2	31 04.9 -59.3 166.1	30 55.5 -59.2 164.9	30 45.3 -59.1 163.8
8°	30 22.2 -59.6 168.5	30 14.3 -59.5 167.4	30 05.6 -59.3 166.2	29 56.3 -59.2 165.1	29 46.2 -59.1 164.0
9°	29 22.6 -59.5 168.6	29 14.8 -59.4 167.5	29 06.3 -59.3 166.4	28 57.1 -59.2 165.3	28 47.1 -59.0 164.2
10°	28 23.1 -59.5 168.8	28 15.4 -59.4 167.7	28 07.0 -59.4 166.6	27 57.9 -59.3 165.5	27 48.1 -59.2 164.4
11°	27 23.6 -59.6 168.9	27 16.0 -59.5 167.8	27 07.6 -59.3 166.7	26 58.6 -59.2 165.7	26 48.9 -59.1 164.6
12°	26 24.0 -59.5 169.1	26 16.5 -59.5 168.0	26 08.3 -59.4 166.9	25 59.4 -59.3 165.8	25 49.8 -59.1 164.8
13°	25 24.5 -59.6 169.2	25 17.0 -59.4 168.1	25 08.9 -59.3 167.1	25 00.1 -59.2 166.0	24 50.7 -59.2 164.9
14°	24 24.9 -59.6 169.3	24 17.6 -59.5 168.3	24 09.6 -59.4 167.2	24 00.9 -59.3 166.2	23 51.5 -59.2 165.1
15°	23 25.3 -59.6 169.5	23 18.1 -59.5 168.4	23 10.2 -59.4 167.4	23 01.6 -59.3 166.3	22 52.3 -59.1 165.3
16°	22 25.7 -59.5 169.6	22 18.6 -59.5 168.6	22 10.8 -59.4 167.5	22 02.3 -59.3 166.5	21 53.2 -59.2 165.5
17°	21 26.2 -59.6 169.7	21 19.1 -59.5 168.7	21 11.4 -59.4 167.7	21 03.0 -59.3 166.7	20 54.0 -59.2 165.7
18°	20 26.6 -59.6 169.8	20 19.6 -59.5 168.8	20 12.0 -59.5 167.8	20 03.7 -59.3 166.8	19 54.8 -59.2 165.8
19°	19 27.0 -59.6 170.0	19 20.1 -59.5 169.0	19 12.5 -59.4 168.0	19 04.4 -59.4 167.0	18 55.6 -59.3 166.0
20°	18 27.4 -59.6 170.1	18 20.6 -59.5 169.1	18 13.1 -59.4 168.1	18 05.0 -59.3 167.2	17 56.3 -59.2 166.2
21°	17 27.8 -59.6 170.2	17 21.1 -59.6 169.2	17 13.7 -59.4 168.3	17 05.7 -59.3 167.3	16 57.1 -59.2 166.3
22°	16 28.2 -59.6 170.3	16 21.5 -59.5 169.4	16 14.3 -59.5 168.4	16 06.4 -59.4 167.5	15 57.9 -59.3 166.5
23°	15 28.6 -59.6 170.5	15 22.0 -59.5 169.5	15 14.8 -59.4 168.6	15 07.0 -59.3 167.6	14 58.6 -59.2 166.7
24°	14 29.0 -59.7 170.6	14 22.5 -59.6 169.6	14 15.4 -59.5 168.7	14 07.7 -59.4 167.8	13 59.4 -59.3 166.8
25°	13 29.3 -59.6 170.7	13 22.9 -59.5 169.8	13 15.9 -59.4 168.8	13 08.3 -59.4 167.9	13 00.1 -59.3 167.0
26°	12 29.7 -59.6 170.8	12 23.4 -59.6 169.9	12 16.5 -59.5 169.0	12 08.9 -59.3 168.1	12 00.8 -59.2 167.2
27°	11 30.1 -59.6 170.9	11 23.8 -59.5 170.0	11 17.0 -59.5 169.1	11 09.6 -59.4 168.2	11 01.6 -59.3 167.3
28°	10 30.5 -59.7 171.0	10 24.3 -59.6 170.1	10 17.5 -59.4 169.2	10 10.2 -59.4 168.4	10 02.3 -59.3 167.5
29°	9 30.8 -59.6 171.1	9 24.7 -59.5 170.3	9 18.1 -59.5 169.4	9 10.8 -59.4 168.5	9 03.0 -59.3 167.6

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°	37 26.2 -58.8 161.0	37 13.5 -58.6 159.7	37 00.0 -58.4 158.5	36 45.8 -58.2 157.3	36 30.9 -58.0 156.1
1°	36 27.4 -58.7 161.2	36 14.9 -58.6 160.0	36 01.6 -58.4 158.8	35 47.6 -58.3 157.6	35 32.9 -58.1 156.4
2°	35 28.7 -58.8 161.5	35 16.3 -58.7 160.3	35 03.2 -58.5 159.1	34 49.3 -58.3 157.9	34 34.8 -58.2 156.7
3°	34 29.9 -58.9 161.7	34 17.6 -58.6 160.5	34 04.7 -58.5 159.4	33 51.0 -58.3 158.2	33 36.6 -58.1 157.0
4°	33 31.0 -58.8 162.0	33 19.0 -58.7 160.8	33 06.2 -58.6 159.6	32 52.7 -58.4 158.5	32 38.5 -58.3 157.3
5°	32 32.2 -58.9 162.2	32 20.3 -58.8 161.0	32 07.6 -58.6 159.9	31 54.3 -58.4 158.7	31 40.2 -58.2 157.6
6°	31 33.3 -58.9 162.4	31 21.5 -58.7 161.3	31 09.0 -58.6 160.1	30 55.9 -58.5 159.0	30 42.0 -58.3 157.9
7°	30 34.4 -58.9 162.6	30 22.8 -58.8 161.5	30 10.4 -58.6 160.4	29 57.4 -58.5 159.3	29 43.7 -58.3 158.2
8°	29 35.5 -59.0 162.9	29 24.0 -58.8 161.7	29 11.8 -58.7 160.6	28 58.9 -58.5 159.5	28 45.4 -58.4 158.4
9°	28 36.5 -59.0 163.1	28 25.2 -58.9 162.0	28 13.1 -58.7 160.9	28 00.4 -58.5 159.8	27 47.0 -58.4 158.7
10°	27 37.5 -59.0 163.3	27 26.3 -58.8 162.2	27 14.4 -58.7 161.1	27 01.9 -58.6 160.0	26 48.6 -58.4 158.9
11°	26 38.5 -59.0 163.5	26 27.5 -58.9 162.4	26 15.7 -58.7 161.3	26 03.3 -58.6 160.3	25 50.2 -58.4 159.2
12°	25 39.5 -59.0 163.7	25 28.6 -58.9 162.6	25 17.0 -58.8 161.6	25 04.7 -58.6 160.5	24 51.8 -58.5 159.5
13°	24 40.5 -59.0 163.9	24 29.7 -58.9 162.8	24 18.2 -58.7 161.8	24 06.1 -58.6 160.7	23 53.3 -58.5 159.7
14°	23 41.5 -59.1 164.1	23 30.8 -58.9 163.0	23 19.5 -58.8 162.0	23 07.5 -58.7 161.0	22 54.8 -58.5 159.9
15°	22 42.4 -59.0 164.3	22 31.9 -59.0 163.2	22 20.7 -58.8 162.2	22 08.8 -58.6 161.2	21 56.3 -58.5 160.2
16°	21 43.4 -59.1 164.5	21 32.9 -58.9 163.4	21 21.9 -58.9 162.4	21 10.2 -58.7 161.4	20 57.8 -58.5 160.4
17°	20 44.3 -59.1 164.7	20 34.0 -59.0 163.6	20 23.0 -58.8 162.6	20 11.5 -58.7 161.6	19 59.3 -58.6 160.7
18°	19 45.2 -59.1 164.8	19 35.0 -59.0 163.8	19 24.2 -58.9 162.9	19 12.8 -58.8 161.9	19 00.7 -58.6 160.9
19°	18 46.1 -59.1 165.0	18 36.0 -59.0 164.0	18 25.3 -58.8 163.1	18 14.0 -58.7 162.1	18 02.1 -58.6 161.1
20°	17 47.0 -59.1 165.2	17 37.0 -59.0 164.2	17 26.5 -58.9 163.3	17 15.3 -58.8 162.3	17 03.5 -58.6 161.3
21°	16 47.9 -59.2 165.4	16 38.0 -59.0 164.4	16 27.6 -58.9 163.5	16 16.5 -58.7 162.5	16 04.9 -58.6 161.6
22°	15 48.7 -59.1 165.6	15 39.0 -59.0 164.6	15 28.7 -58.9 163.7	15 17.8 -58.8 162.7	15 06.3 -58.7 161.8
23°	14 49.6 -59.1 165.7	14 40.0 -59.0 164.8	14 29.8 -58.9 163.9	14 19.0 -58.8 162.9	14 07.6 -58.6 162.0
24°	13 50.5 -59.2 165.9	13 41.0 -59.1 165.0	13 30.9 -58.9 164.1	13 20.2 -58.8 163.1	13 09.0 -58.7 162.2
25°	12 51.3 -59.1 166.1	12 41.9 -59.0 165.2	12 32.0 -59.0 164.2	12 21.4 -58.8 163.3	12 10.3 -58.6 162.4
26°	11 52.2 -59.2 166.2	11 42.9 -59.1 165.3	11 33.0 -58.9 164.4	11 22.6 -58.8 163.5	11 11.7 -58.7 162.6
27°	10 53.0 -59.2 166.4	10 43.8 -59.0 165.5	10 34.1 -58.9 164.6	10 23.8 -58.8 163.7	10 13.0 -58.7 162.9
28°	9 53.8 -59.2 166.6	9 44.8 -59.1 165.7	9 35.2 -59.0 164.8	9 25.0 -58.8 163.9	9 14.3 -58.7 163.1
29°	8 54.6 -59.1 166.8	8 45.7 -59.1 165.9	8 36.2 -58.9 165.0	8 26.2 -58.9 164.1	8 15.6 -58.7 163.3

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°	36 15.2 -57.8 154.9	35 58.9 -57.7 153.7	35 41.8 -57.4 152.5	35 24.0 -57.2 151.4	35 05.6 -57.0 150.2
1°	35 17.4 -57.9 155.2	35 01.2 -57.7 154.1	34 44.4 -57.5 152.9	34 26.8 -57.3 151.7	34 08.6 -57.1 150.6
2°	34 19.5 -58.0 155.6	34 03.5 -57.7 154.4	33 46.9 -57.6 153.2	33 29.5 -57.4 152.1	33 11.5 -57.2 150.9
3°	33 21.5 -58.0 155.9	33 05.8 -57.8 154.7	32 49.3 -57.6 153.6	32 32.1 -57.4 152.4	32 14.3 -57.2 151.3
4°	32 23.5 -58.0 156.2	32 08.0 -57.9 155.0	31 51.7 -57.7 153.9	31 34.7 -57.4 152.8	31 17.1 -57.2 151.7
5°	31 25.5 -58.1 156.5	31 10.1 -57.9 155.3	30 54.0 -57.7 154.2	30 37.3 -57.6 153.1	30 19.9 -57.4 152.0
6°	30 27.4 -58.1 156.8	30 12.2 -57.9 155.6	29 56.3 -57.8 154.5	29 39.7 -57.5 153.4	29 22.5 -57.4 152.3
7°	29 29.3 -58.1 157.0	29 14.3 -58.0 155.9	28 58.5 -57.8 154.8	28 42.2 -57.7 153.8	28 25.1 -57.4 152.7
8°	28 31.2 -58.2 157.3	28 16.3 -58.0 156.2	28 00.7 -57.8 155.2	27 44.5 -57.6 154.1	27 27.7 -57.5 153.0
9°	27 33.0 -58.3 157.6	27 18.3 -58.1 156.5	27 02.9 -57.9 155.5	26 46.9 -57.7 154.4	26 30.2 -57.5 153.3
10°	26 34.7 -58.2 157.9	26 20.2 -58.1 156.8	26 05.0 -57.9 155.7	25 49.2 -57.8 154.7	25 32.7 -57.5 153.6
11°	25 36.5 -58.3 158.1	25 22.1 -58.1 157.1	25 07.1 -57.9 156.0	24 51.4 -57.7 155.0	24 35.2 -57.6 154.0
12°	24 38.2 -58.3 158.4	24 24.0 -58.1 157.4	24 09.2 -58.0 156.3	23 53.7 -57.8 155.3	23 37.6 -57.6 154.3
13°	23 39.9 -58.3 158.7	23 25.9 -58.2 157.6	23 11.2 -58.0 156.6	22 55.9 -57.9 155.6	22 40.0 -57.7 154.6
14°	22 41.6 -58.4 158.9	22 27.7 -58.2 157.9	22 13.2 -58.1 156.9	21 58.0 -57.8 155.9	21 42.3 -57.7 154.9
15°	21 43.2 -58.4 159.2	21 29.5 -58.2 158.2	21 15.1 -58.0 157.2	21 00.2 -57.9 156.2	20 44.6 -57.7 155.2
16°	20 44.8 -58.4 159.4	20 31.3 -58.3 158.4	20 17.1 -58.1 157.4	20 02.3 -57.9 156.4	19 46.9 -57.8 155.4
17°	19 46.4 -58.4 159.7	19 33.0 -58.3 158.7	19 19.0 -58.1 157.7	19 04.4 -58.0 156.7	18 49.1 -57.7 155.7
18°	18 48.0 -58.4 159.9	18 34.7 -58.2 158.9	18 20.9 -58.2 158.0	18 06.4 -58.0 157.0	17 51.4 -57.9 156.0
19°	17 49.6 -58.5 160.1	17 36.5 -58.3 159.2	17 22.7 -58.1 158.2	17 08.4 -58.0 157.3	16 53.5 -57.8 156.3
20°	16 51.1 -58.4 160.4	16 38.2 -58.4 159.4	16 24.6 -58.2 158.5	16 10.4 -58.0 157.5	15 55.7 -57.8 156.6
21°	15 52.7 -58.5 160.6	15 39.8 -58.3 159.7	15 26.4 -58.2 158.7	15 12.4 -58.0 157.8	14 57.9 -57.9 156.9
22°	14 54.2 -58.5 160.8	14 41.5 -58.4 159.9	14 28.2 -58.2 159.0	14 14.4 -58.0 158.1	14 00.0 -57.9 157.1
23°	13 55.7 -58.5 161.1	13 43.1 -58.3 160.1	13 30.0 -58.2 159.2	13 16.4 -58.1 158.3	13 02.1 -57.9 157.4
24°	12 57.2 -58.6 161.3	12 44.8 -58.4 160.4	12 31.8 -58.2 159.5	12 18.3 -58.1 158.6	12 04.2 -57.9 157.7
25°	11 58.6 -58.5 161.5	11 46.4 -58.4 160.6	11 33.6 -58.3 159.7	11 20.2 -58.1 158.8	11 06.3 -57.9 157.9
26°	11 00.1 -58.5 161.8	10 48.0 -58.4 160.9	10 35.3 -58.2 160.0	10 22.1 -58.1 159.1	10 08.4 -58.0 158.2
27°	10 01.6 -58.6 162.0	9 49.6 -58.4 161.1	9 37.1 -58.3 160.2	9 24.0 -58.1 159.3	9 10.4 -57.9 158.5
28°	9 03.0 -58.6 162.2	8 51.2 -58.4 161.3	8 38.8 -58.2 160.5	8 25.9 -58.1 159.6	8 12.5 -58.0 158.7
29°	8 04.4 -58.5 162.4	7 52.8 -58.5 161.6	7 40.6 -58.3 160.7	7 27.8 -58.1 159.8	7 14.5 -57.9 159.0

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°	34 46.5 -56.8 149.0	34 26.8 -56.6 147.9	34 06.4 -56.4 146.7	33 45.4 -56.2 145.6	33 23.7 -55.9 144.5
1°	33 49.7 -56.9 149.4	33 30.2 -56.7 148.3	33 10.0 -56.4 147.2	32 49.2 -56.2 146.0	32 27.8 -55.9 144.9
2°	32 52.8 -56.9 149.8	32 33.5 -56.7 148.7	32 13.6 -56.5 147.6	31 53.0 -56.3 146.5	31 31.9 -56.1 145.4
3°	31 55.9 -57.0 150.2	31 36.8 -56.8 149.1	31 17.1 -56.6 148.0	30 56.7 -56.3 146.9	30 35.8 -56.2 145.8
4°	30 58.9 -57.1 150.5	30 40.0 -56.9 149.4	30 20.5 -56.7 148.3	30 00.4 -56.5 147.3	29 39.6 -56.2 146.2
5°	30 01.8 -57.1 150.9	29 43.1 -56.9 149.8	29 23.8 -56.7 148.7	29 03.9 -56.5 147.7	28 43.4 -56.3 146.6
6°	29 04.7 -57.2 151.3	28 46.2 -57.0 150.2	28 27.1 -56.8 149.1	28 07.4 -56.5 148.0	27 47.1 -56.3 147.0
7°	28 07.5 -57.2 151.6	27 49.2 -57.0 150.5	27 30.3 -56.8 149.5	27 10.9 -56.7 148.4	26 50.8 -56.4 147.4
8°	27 10.3 -57.3 151.9	26 52.2 -57.1 150.9	26 33.5 -56.9 149.8	26 14.2 -56.6 148.8	25 54.4 -56.5 147.7
9°	26 13.0 -57.3 152.3	25 55.1 -57.1 151.2	25 36.6 -56.9 150.2	25 17.6 -56.8 149.1	24 57.9 -56.5 148.1
10°	25 15.7 -57.4 152.6	24 58.0 -57.2 151.6	24 39.7 -57.0 150.5	24 20.8 -56.7 149.5	24 01.4 -56.6 148.5
11°	24 18.3 -57.4 152.9	24 00.8 -57.2 151.9	23 42.7 -57.0 150.9	23 24.1 -56.9 149.9	23 04.8 -56.6 148.8
12°	23 20.9 -57.5 153.2	23 03.6 -57.3 152.2	22 45.7 -57.1 151.2	22 27.2 -56.9 150.2	22 08.2 -56.7 149.2
13°	22 23.4 -57.4 153.6	22 06.3 -57.3 152.5	21 48.6 -57.1 151.5	21 30.3 -56.9 150.5	21 11.5 -56.7 149.6
14°	21 26.0 -57.6 153.9	21 09.0 -57.3 152.9	20 51.5 -57.1 151.9	20 33.4 -56.9 150.9	20 14.8 -56.8 149.9
15°	20 28.4 -57.5 154.2	20 11.7 -57.4 153.2	19 54.4 -57.2 152.2	19 36.5 -57.0 151.2	19 18.0 -56.8 150.3
16°	19 30.9 -57.6 154.5	19 14.3 -57.4 153.5	18 57.2 -57.2 152.5	18 39.5 -57.0 151.6	18 21.2 -56.8 150.6
17°	18 33.3 -57.6 154.8	18 16.9 -57.4 153.8	18 00.0 -57.3 152.8	17 42.5 -57.1 151.9	17 24.4 -56.9 150.9
18°	17 35.7 -57.6 155.1	17 19.5 -57.4 154.1	17 02.7 -57.2 153.2	16 45.4 -57.1 152.2	16 27.5 -56.9 151.3
19°	16 38.1 -57.7 155.4	16 22.1 -57.5 154.4	16 05.5 -57.3 153.5	15 48.3 -57.1 152.5	15 30.6 -56.9 151.6
20°	15 40.4 -57.6 155.6	15 24.6 -57.5 154.7	15 08.2 -57.4 153.8	14 51.2 -57.1 152.8	14 33.7 -57.0 151.9
21°	14 42.8 -57.7 155.9	14 27.1 -57.5 155.0	14 10.8 -57.3 154.1	13 54.1 -57.2 153.2	13 36.7 -56.9 152.2
22°	13 45.1 -57.8 156.2	13 29.6 -57.6 155.3	13 13.5 -57.4 154.4	12 56.9 -57.2 153.5	12 39.8 -57.0 152.6
23°	12 47.3 -57.7 156.5	12 32.0 -57.6 155.6	12 16.1 -57.4 154.7	11 59.7 -57.2 153.8	11 42.8 -57.1 152.9
24°	11 49.6 -57.7 156.8	11 34.4 -57.5 155.9	11 18.7 -57.4 155.0	11 02.5 -57.2 154.1	10 45.7 -57.0 153.2
25°	10 51.9 -57.8 157.0	10 36.9 -57.6 156.2	10 21.3 -57.4 155.3	10 05.3 -57.3 154.4	9 48.7 -57.1 153.5
26°	9 54.1 -57.8 157.3	9 39.3 -57.6 156.4	9 23.9 -57.4 155.6	9 08.0 -57.2 154.7	8 51.6 -57.0 153.8
27°	8 56.3 -57.8 157.6	8 41.7 -57.7 156.7	8 26.5 -57.5 155.9	8 10.8 -57.3 155.0	7 54.6 -57.1 154.1
28°	7 58.5 -57.8 157.9	7 44.0 -57.6 157.0	7 29.0 -57.4 156.2	7 13.5 -57.3 155.3	6 57.5 -57.1 154.5
29°	7 00.7 -57.8 158.1	6 46.4 -57.6 157.3	6 31.6 -57.5 156.4	6 16.2 -57.3 155.6	6 00.4 -57.1 154.8

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°	33 01.5 -55.7 143.4	32 38.7 -55.4 142.3	32 15.3 -55.2 141.2	31 51.4 -55.0 140.1	31 26.9 -54.7 139.0
1°	32 05.8 -55.7 143.8	31 43.3 -55.5 142.7	31 20.1 -55.3 141.7	30 56.4 -55.0 140.6	30 32.2 -54.8 139.5
2°	31 10.1 -55.8 144.3	30 47.8 -55.7 143.2	30 24.8 -55.3 142.1	30 01.4 -55.2 141.0	29 37.4 -54.9 140.0
3°	30 14.3 -56.0 144.7	29 52.1 -55.6 143.6	29 29.5 -55.5 142.6	29 06.2 -55.2 141.5	28 42.5 -55.0 140.5
4°	29 18.3 -56.0 145.1	28 56.5 -55.8 144.0	28 34.0 -55.5 143.0	28 11.0 -55.3 141.9	27 47.5 -55.1 140.9
5°	28 22.3 -56.0 145.5	28 00.7 -55.9 144.5	27 38.5 -55.7 143.4	27 15.7 -55.4 142.4	26 52.4 -55.2 141.4
6°	27 26.3 -56.2 145.9	27 04.8 -55.9 144.9	26 42.8 -55.7 143.8	26 20.3 -55.5 142.8	25 57.2 -55.3 141.8
7°	26 30.1 -56.2 146.3	26 08.9 -56.0 145.3	25 47.1 -55.7 144.3	25 24.8 -55.5 143.2	25 01.9 -55.3 142.2
8°	25 33.9 -56.2 146.7	25 12.9 -56.0 145.7	24 51.4 -55.9 144.7	24 29.3 -55.7 143.7	24 06.6 -55.4 142.7
9°	24 37.7 -56.3 147.1	24 16.9 -56.1 146.1	23 55.5 -55.9 145.1	23 33.6 -55.6 144.1	23 11.2 -55.4 143.1
10°	23 41.4 -56.4 147.5	23 20.8 -56.2 146.5	22 59.6 -55.9 145.5	22 38.0 -55.8 144.5	22 15.8 -55.6 143.5
11°	22 45.0 -56.4 147.8	22 24.6 -56.2 146.8	22 03.7 -56.0 145.9	21 42.2 -55.8 144.9	21 20.2 -55.5 143.9
12°	21 48.6 -56.5 148.2	21 28.4 -56.3 147.2	21 07.7 -56.1 146.2	20 46.4 -55.8 145.3	20 24.7 -55.7 144.3
13°	20 52.1 -56.5 148.6	20 32.1 -56.3 147.6	20 11.6 -56.1 146.6	19 50.6 -55.9 145.7	19 29.0 -55.7 144.7
14°	19 55.6 -56.6 148.9	19 35.8 -56.3 148.0	19 15.5 -56.1 147.0	18 54.7 -56.0 146.0	18 33.3 -55.7 145.1
15°	18 59.0 -56.6 149.3	18 39.5 -56.4 148.3	18 19.4 -56.2 147.4	17 58.7 -56.0 146.4	17 37.6 -55.8 145.5
16°	18 02.4 -56.6 149.6	17 43.1 -56.5 148.7	17 23.2 -56.3 147.7	17 02.7 -56.0 146.8	16 41.8 -55.8 145.9
17°	17 05.8 -56.7 150.0	16 46.6 -56.5 149.0	16 26.9 -56.2 148.1	16 06.7 -56.1 147.2	15 46.0 -55.9 146.2
18°	16 09.1 -56.7 150.3	15 50.1 -56.5 149.4	15 30.7 -56.4 148.5	15 10.6 -56.1 147.5	14 50.1 -55.9 146.6
19°	15 12.4 -56.7 150.7	14 53.6 -56.5 149.7	14 34.3 -56.3 148.8	14 14.5 -56.1 147.9	13 54.2 -55.9 147.0
20°	14 15.7 -56.8 151.0	13 57.1 -56.6 150.1	13 38.0 -56.4 149.2	13 18.4 -56.2 148.3	12 58.3 -56.0 147.4
21°	13 18.9 -56.8 151.3	13 00.5 -56.6 150.4	12 41.6 -56.4 149.5	12 22.2 -56.2 148.6	12 02.3 -56.0 147.7
22°	12 22.1 -56.8 151.7	12 03.9 -56.6 150.8	11 45.2 -56.4 149.9	11 26.0 -56.2 149.0	11 06.3 -56.0 148.1
23°	11 25.3 -56.8 152.0	11 07.3 -56.6 151.1	10 48.8 -56.4 150.2	10 29.8 -56.2 149.3	10 10.3 -56.0 148.5
24°	10 28.5 -56.9 152.3	10 10.7 -56.7 151.4	9 52.4 -56.5 150.6	9 33.6 -56.3 149.7	9 14.3 -56.1 148.8
25°	9 31.6 -56.9 152.6	9 14.0 -56.7 151.8	8 55.9 -56.5 150.9	8 37.3 -56.3 150.0	8 18.2 -56.1 149.2
26°	8 34.7 -56.9 153.0	8 17.3 -56.7 152.1	7 59.4 -56.5 151.3	7 41.0 -56.3 150.4	7 22.1 -56.1 149.6
27°	7 37.8 -56.9 153.3	7 20.6 -56.7 152.4	7 02.9 -56.5 151.6	6 44.7 -56.3 150.7	6 26.0 -56.1 149.9
28°	6 40.9 -56.9 153.6	6 23.9 -56.7 152.8	6 06.4 -56.5 151.9	5 48.4 -56.4 151.1	5 29.9 -56.1 150.3
29°	5 44.0 -56.9 153.9	5 27.2 -56.8 153.1	5 09.9 -56.6 152.3	4 52.0 -56.3 151.4	4 33.8 -56.2 150.6

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°	31 01.9 -54.5 138.0	30 36.4 -54.3 136.9	30 10.3 -54.0 135.9	29 43.8 -53.8 134.8	29 16.8 -53.5 133.8
1°	30 07.4 -54.6 138.5	29 42.1 -54.3 137.4	29 16.3 -54.1 136.4	28 50.0 -53.8 135.4	28 23.3 -53.7 134.3
2°	29 12.8 -54.6 138.9	28 47.8 -54.5 137.9	28 22.2 -54.2 136.9	27 56.2 -54.0 135.9	27 29.6 -53.7 134.8
3°	28 18.2 -54.8 139.4	27 53.3 -54.5 138.4	27 28.0 -54.3 137.4	27 02.2 -54.1 136.4	26 35.9 -53.9 135.3
4°	27 23.4 -54.9 139.9	26 58.8 -54.6 138.9	26 33.7 -54.4 137.8	26 08.1 -54.2 136.8	25 42.0 -53.9 135.8
5°	26 28.5 -54.9 140.3	26 04.2 -54.8 139.3	25 39.3 -54.5 138.3	25 13.9 -54.2 137.3	24 48.1 -54.0 136.3
6°	25 33.6 -55.0 140.8	25 09.4 -54.8 139.8	24 44.8 -54.6 138.8	24 19.7 -54.4 137.8	23 54.1 -54.1 136.8
7°	24 38.6 -55.1 141.2	24 14.6 -54.8 140.2	23 50.2 -54.6 139.2	23 25.3 -54.4 138.2	23 00.0 -54.3 137.3
8°	23 43.5 -55.2 141.7	23 19.8 -55.0 140.7	22 55.6 -54.7 139.7	22 30.9 -54.5 138.7	22 05.7 -54.2 137.7
9°	22 48.3 -55.3 142.1	22 24.8 -55.0 141.1	22 00.9 -54.8 140.1	21 36.4 -54.6 139.2	21 11.5 -54.4 138.2
10°	21 53.0 -55.3 142.5	21 29.8 -55.1 141.5	21 06.1 -54.9 140.6	20 41.8 -54.6 139.6	20 17.1 -54.4 138.6
11°	20 57.7 -55.3 142.9	20 34.7 -55.1 142.0	20 11.2 -54.9 141.0	19 47.2 -54.7 140.0	19 22.7 -54.5 139.1
12°	20 02.4 -55.5 143.3	19 39.6 -55.2 142.4	19 16.3 -55.0 141.4	18 52.5 -54.8 140.5	18 28.2 -54.5 139.5
13°	19 06.9 -55.4 143.7	18 44.4 -55.3 142.8	18 21.3 -55.1 141.8	17 57.7 -54.8 140.9	17 33.7 -54.7 140.0
14°	18 11.5 -55.6 144.1	17 49.1 -55.3 143.2	17 26.2 -55.1 142.3	17 02.9 -54.9 141.3	16 39.0 -54.6 140.4
15°	17 15.9 -55.5 144.5	16 53.8 -55.4 143.6	16 31.1 -55.1 142.7	16 08.0 -54.9 141.8	15 44.4 -54.7 140.8
16°	16 20.4 -55.6 144.9	15 58.4 -55.4 144.0	15 36.0 -55.2 143.1	15 13.1 -55.0 142.2	14 49.7 -54.8 141.3
17°	15 24.8 -55.7 145.3	15 03.0 -55.4 144.4	14 40.8 -55.2 143.5	14 18.1 -55.0 142.6	13 54.9 -54.8 141.7
18°	14 29.1 -55.7 145.7	14 07.6 -55.5 144.8	13 45.6 -55.3 143.9	13 23.1 -55.1 143.0	13 00.1 -54.8 142.1
19°	13 33.4 -55.7 146.1	13 12.1 -55.5 145.2	12 50.3 -55.3 144.3	12 28.0 -55.1 143.4	12 05.3 -54.9 142.5
20°	12 37.7 -55.8 146.5	12 16.6 -55.6 145.6	11 55.0 -55.3 144.7	11 32.9 -55.1 143.8	11 10.4 -54.9 142.9
21°	11 41.9 -55.8 146.8	11 21.0 -55.6 146.0	10 59.7 -55.4 145.1	10 37.8 -55.1 144.2	10 15.5 -54.9 143.3
22°	10 46.1 -55.8 147.2	10 25.4 -55.6 146.3	10 04.3 -55.4 145.5	9 42.7 -55.2 144.6	9 20.6 -55.0 143.7
23°	9 50.3 -55.8 147.6	9 29.8 -55.6 146.7	9 08.9 -55.4 145.9	8 47.5 -55.2 145.0	8 25.6 -55.0 144.2
24°	8 54.5 -55.9 148.0	8 34.2 -55.6 147.1	8 13.5 -55.5 146.3	7 52.3 -55.3 145.4	7 30.6 -55.0 144.6
25°	7 58.6 -55.9 148.3	7 38.6 -55.7 147.5	7 18.0 -55.4 146.6	6 57.0 -55.2 145.8	6 35.6 -55.1 145.0
26°	7 02.7 -55.9 148.7	6 42.9 -55.7 147.9	6 22.6 -55.5 147.0	6 01.8 -55.3 146.2	5 40.5 -55.0 145.4
27°	6 06.8 -55.9 149.1	5 47.2 -55.7 148.2	5 27.1 -55.5 147.4	5 06.5 -55.3 146.6	4 45.5 -55.1 145.8
28°	5 10.9 -55.9 149.4	4 51.5 -55.7 148.6	4 31.6 -55.5 147.8	4 11.2 -55.3 147.0	3 50.4 -55.0 146.2
29°	4 15.0 -55.9 149.8	3 55.8 -55.8 149.0	3 36.1 -55.5 148.2	3 15.9 -55.3 147.4	2 55.4 -55.1 146.6

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°	28 49.3 -53.3 132.8	28 21.4 -53.1 131.8	27 53.0 -52.8 130.8	27 24.2 -52.6 129.8	26 55.0 -52.4 128.8
1°	27 56.0 -53.4 133.3	27 28.3 -53.1 132.3	27 00.2 -52.9 131.3	26 31.6 -52.7 130.3	26 02.6 -52.4 129.4
2°	27 02.6 -53.5 133.8	26 35.2 -53.3 132.8	26 07.3 -53.1 131.9	25 38.9 -52.8 130.9	25 10.2 -52.6 129.9
3°	26 09.1 -53.6 134.3	25 41.9 -53.4 133.4	25 14.2 -53.1 132.4	24 46.1 -52.9 131.4	24 17.6 -52.7 130.4
4°	25 15.5 -53.7 134.8	24 48.5 -53.5 133.9	24 21.1 -53.3 132.9	23 53.2 -53.0 131.9	23 24.9 -52.8 131.0
5°	24 21.8 -53.8 135.3	23 55.0 -53.6 134.4	23 27.8 -53.3 133.4	23 00.2 -53.2 132.4	22 32.1 -52.9 131.5
6°	23 28.0 -53.9 135.8	23 01.4 -53.6 134.9	22 34.5 -53.5 133.9	22 07.0 -53.2 132.9	21 39.2 -53.0 132.0
7°	22 34.1 -54.0 136.3	22 07.8 -53.8 135.3	21 41.0 -53.5 134.4	21 13.8 -53.3 133.4	20 46.2 -53.1 132.5
8°	21 40.1 -54.0 136.8	21 14.0 -53.8 135.8	20 47.5 -53.6 134.9	20 20.5 -53.4 133.9	19 53.1 -53.2 133.0
9°	20 46.1 -54.2 137.2	20 20.2 -53.9 136.3	19 53.9 -53.7 135.3	19 27.1 -53.4 134.4	18 59.9 -53.2 133.5
10°	19 51.9 -54.2 137.7	19 26.3 -54.0 136.8	19 00.2 -53.8 135.8	18 33.7 -53.6 134.9	18 06.7 -53.3 134.0
11°	18 57.7 -54.2 138.1	18 32.3 -54.0 137.2	18 06.4 -53.8 136.3	17 40.1 -53.6 135.4	17 13.4 -53.4 134.4
12°	18 03.5 -54.4 138.6	17 38.3 -54.1 137.7	17 12.6 -53.9 136.7	16 46.5 -53.6 135.8	16 20.0 -53.4 134.9
13°	17 09.1 -54.4 139.0	16 44.2 -54.2 138.1	16 18.7 -53.9 137.2	15 52.9 -53.8 136.3	15 26.6 -53.5 135.4
14°	16 14.7 -54.4 139.5	15 50.0 -54.2 138.6	15 24.8 -54.0 137.7	14 59.1 -53.7 136.8	14 33.1 -53.6 135.9
15°	15 20.3 -54.5 139.9	14 55.8 -54.3 139.0	14 30.8 -54.1 138.1	14 05.4 -53.9 137.2	13 39.5 -53.6 136.3
16°	14 25.8 -54.5 140.4	14 01.5 -54.3 139.5	13 36.7 -54.1 138.6	13 11.5 -53.9 137.7	12 45.9 -53.7 136.8
17°	13 31.3 -54.6 140.8	13 07.2 -54.4 139.9	12 42.6 -54.1 139.0	12 17.6 -53.9 138.1	11 52.2 -53.7 137.2
18°	12 36.7 -54.6 141.2	12 12.8 -54.4 140.3	11 48.5 -54.2 139.4	11 23.7 -53.9 138.6	10 58.5 -53.7 137.7
19°	11 42.1 -54.7 141.6	11 18.4 -54.4 140.8	10 54.3 -54.2 139.9	10 29.8 -54.0 139.0	10 04.8 -53.8 138.2
20°	10 47.4 -54.7 142.1	10 24.0 -54.5 141.2	10 00.1 -54.3 140.3	9 35.8 -54.1 139.5	9 11.0 -53.8 138.6
21°	9 52.7 -54.7 142.5	9 29.5 -54.5 141.6	9 05.8 -54.3 140.8	8 41.7 -54.0 139.9	8 17.2 -53.9 139.1
22°	8 58.0 -54.8 142.9	8 35.0 -54.5 142.0	8 11.5 -54.3 141.2	7 47.7 -54.1 140.3	7 23.3 -53.8 139.5
23°	8 03.2 -54.7 143.3	7 40.5 -54.6 142.5	7 17.2 -54.3 141.6	6 53.6 -54.1 140.8	6 29.5 -53.9 139.9
24°	7 08.5 -54.8 143.7	6 45.9 -54.6 142.9	6 22.9 -54.4 142.0	5 59.5 -54.2 141.2	5 35.6 -53.9 140.4
25°	6 13.7 -54.8 144.1	5 51.3 -54.6 143.3	5 28.5 -54.3 142.5	5 05.3 -54.1 141.6	4 41.7 -53.9 140.8
26°	5 18.9 -54.9 144.5	4 56.7 -54.6 143.7	4 34.2 -54.4 142.9	4 11.2 -54.2 142.1	3 47.8 -54.0 141.3
27°	4 24.0 -54.8 144.9	4 02.1 -54.6 144.1	3 39.8 -54.4 143.3	3 17.0 -54.2 142.5	2 53.8 -53.9 141.7
28°	3 29.2 -54.9 145.3	3 07.5 -54.6 144.5	2 45.4 -54.4 143.7	2 22.8 -54.2 142.9	1 59.9 -54.0 142.1
29°	2 34.3 -54.8 145.8	2 12.9 -54.7 145.0	1 51.0 -54.5 144.2	1 28.6 -54.2 143.4	1 05.9 -54.0 142.6

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°	26 25.4 -52.1 127.9	25 55.4 -51.9 126.9	25 25.0 -51.7 125.9	24 54.2 -51.4 125.0	24 23.1 -51.2 124.0
1°	25 33.3 -52.3 128.4	25 03.5 -52.1 127.4	24 33.3 -51.8 126.5	24 02.8 -51.6 125.5	23 31.9 -51.4 124.6
2°	24 41.0 -52.4 128.9	24 11.4 -52.1 128.0	23 41.5 -51.9 127.0	23 11.2 -51.7 126.1	22 40.5 -51.5 125.2
3°	23 48.6 -52.4 129.5	23 19.3 -52.3 128.5	22 49.6 -52.1 127.6	22 19.5 -51.9 126.7	21 49.0 -51.6 125.7
4°	22 56.2 -52.6 130.0	22 27.0 -52.3 129.1	21 57.5 -52.1 128.1	21 27.6 -51.9 127.2	20 57.4 -51.7 126.3
5°	22 03.6 -52.7 130.5	21 34.7 -52.5 129.6	21 05.4 -52.3 128.7	20 35.7 -52.0 127.7	20 05.7 -51.8 126.8
6°	21 10.9 -52.8 131.0	20 42.2 -52.5 130.1	20 13.1 -52.3 129.2	19 43.7 -52.1 128.3	19 13.9 -51.9 127.4
7°	20 18.1 -52.8 131.6	19 49.7 -52.7 130.6	19 20.8 -52.4 129.7	18 51.6 -52.2 128.8	18 22.0 -52.0 127.9
8°	19 25.3 -53.0 132.1	18 57.0 -52.7 131.1	18 28.4 -52.5 130.2	17 59.4 -52.3 129.3	17 30.0 -52.1 128.4
9°	18 32.3 -53.0 132.6	18 04.3 -52.8 131.6	17 35.9 -52.6 130.7	17 07.1 -52.4 129.8	16 37.9 -52.2 128.9
10°	17 39.3 -53.1 133.0	17 11.5 -52.9 132.1	16 43.3 -52.6 131.2	16 14.7 -52.4 130.3	15 45.7 -52.2 129.4
11°	16 46.2 -53.1 133.5	16 18.6 -52.9 132.6	15 50.7 -52.8 131.7	15 22.3 -52.5 130.8	14 53.5 -52.3 130.0
12°	15 53.1 -53.3 134.0	15 25.7 -53.0 133.1	14 57.9 -52.7 132.2	14 29.8 -52.6 131.3	14 01.2 -52.3 130.5
13°	14 59.8 -53.3 134.5	14 32.7 -53.1 133.6	14 05.2 -52.9 132.7	13 37.2 -52.6 131.8	13 08.9 -52.4 131.0
14°	14 06.5 -53.3 135.0	13 39.6 -53.1 134.1	13 12.3 -52.9 133.2	12 44.6 -52.7 132.3	12 16.5 -52.5 131.5
15°	13 13.2 -53.4 135.4	12 46.5 -53.2 134.6	12 19.4 -52.9 133.7	11 51.9 -52.7 132.8	11 24.0 -52.5 132.0
16°	12 19.8 -53.4 135.9	11 53.3 -53.2 135.0	11 26.5 -53.0 134.2	10 59.2 -52.8 133.3	10 31.5 -52.5 132.4
17°	11 26.4 -53.5 136.4	11 00.1 -53.2 135.5	10 33.5 -53.1 134.6	10 06.4 -52.8 133.8	9 39.0 -52.6 132.9
18°	10 32.9 -53.5 136.8	10 06.9 -53.3 136.0	9 40.4 -53.1 135.1	9 13.6 -52.9 134.3	8 46.4 -52.7 133.4
19°	9 39.4 -53.6 137.3	9 13.6 -53.4 136.4	8 47.3 -53.1 135.6	8 20.7 -52.9 134.8	7 53.7 -52.6 133.9
20°	8 45.8 -53.6 137.8	8 20.2 -53.3 136.9	7 54.2 -53.1 136.1	7 27.8 -52.9 135.2	7 01.1 -52.7 134.4
21°	7 52.2 -53.6 138.2	7 26.9 -53.4 137.4	7 01.1 -53.2 136.5	6 34.9 -52.9 135.7	6 08.4 -52.8 134.9
22°	6 58.6 -53.6 138.7	6 33.5 -53.5 137.8	6 07.9 -53.2 137.0	5 42.0 -53.0 136.2	5 15.6 -52.7 135.4
23°	6 05.0 -53.7 139.1	5 40.0 -53.4 138.3	5 14.7 -53.2 137.5	4 49.0 -53.0 136.6	4 22.9 -52.8 135.8
24°	5 11.3 -53.7 139.6	4 46.6 -53.5 138.7	4 21.5 -53.2 137.9	3 56.0 -53.0 137.1	3 30.1 -52.8 136.3
25°	4 17.6 -53.7 140.0	3 53.1 -53.4 139.2	3 28.3 -53.3 138.4	3 03.0 -53.0 137.6	2 37.3 -52.7 136.8
26°	3 23.9 -53.7 140.5	2 59.7 -53.5 139.7	2 35.0 -53.2 138.9	2 10.0 -53.0 138.1	1 44.6 -52.8 137.3
27°	2 30.2 -53.7 140.9	2 06.2 -53.5 140.1	1 41.8 -53.3 139.3	1 17.0 -53.1 138.5	0 51.8 -52.8 137.7
28°	1 36.5 -53.8 141.3	1 12.7 -53.5 140.6	0 48.5 -53.3 139.8	0 23.9 -53.0 139.0	-0 01.0 -52.8
29°	0 42.7 -53.7 141.8	0 19.2 -53.5 141.0	-0 04.8 -53.2	-0 29.1 -53.0	-0 53.8 -52.8

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°	23 51.7 -51.1 123.1	23 19.9 -50.9 122.2	22 47.7 -50.6 121.3	22 15.3 -50.4 120.4	21 42.6 -50.3 119.5
1°	23 00.6 -51.2 123.7	22 29.0 -50.9 122.8	21 57.1 -50.8 121.8	21 24.9 -50.6 120.9	20 52.3 -50.3 120.0
2°	22 09.4 -51.2 124.2	21 38.1 -51.1 123.3	21 06.3 -50.8 122.4	20 34.3 -50.7 121.5	20 02.0 -50.5 120.6
3°	21 18.2 -51.4 124.8	20 47.0 -51.2 123.9	20 15.5 -51.0 122.0	19 43.6 -50.7 122.1	19 11.5 -50.6 121.2
4°	20 26.8 -51.5 125.4	19 55.8 -51.3 124.4	19 24.5 -51.1 123.5	18 52.9 -50.9 122.6	18 20.9 -50.7 121.8
5°	19 35.3 -51.6 125.9	19 04.5 -51.4 125.0	18 33.4 -51.2 124.1	18 02.0 -51.0 123.2	17 30.2 -50.8 122.3
6°	18 43.7 -51.7 126.4	18 13.1 -51.5 125.5	17 42.2 -51.3 124.6	17 11.0 -51.1 123.8	16 39.4 -50.8 122.9
7°	17 52.0 -51.8 127.0	17 21.6 -51.5 126.1	16 50.9 -51.3 125.2	16 19.9 -51.1 124.3	15 48.6 -51.0 123.4
8°	17 00.2 -51.9 127.5	16 30.1 -51.7 126.6	15 59.6 -51.5 125.7	15 28.8 -51.3 124.9	14 57.6 -51.0 124.0
9°	16 08.3 -51.9 128.0	15 38.4 -51.7 127.1	15 08.1 -51.5 126.3	14 37.5 -51.3 125.4	14 06.6 -51.1 124.5
10°	15 16.4 -52.0 128.6	14 46.7 -51.8 127.7	14 16.6 -51.6 126.8	13 46.2 -51.4 125.9	13 15.5 -51.2 125.1
11°	14 24.4 -52.1 129.1	13 54.9 -51.9 128.2	13 25.0 -51.6 127.3	12 54.8 -51.4 126.5	12 24.3 -51.2 125.6
12°	13 32.3 -52.1 129.6	13 03.0 -51.9 128.7	12 33.4 -51.7 127.8	12 03.4 -51.5 127.0	11 33.1 -51.3 126.1
13°	12 40.2 -52.2 130.1	12 11.1 -52.0 129.2	11 41.7 -51.8 128.4	11 11.9 -51.5 127.5	10 41.8 -51.4 126.7
14°	11 48.0 -52.2 130.6	11 19.1 -52.0 129.7	10 49.9 -51.8 128.9	10 20.4 -51.6 128.0	9 50.4 -51.4 127.2
15°	10 55.8 -52.3 131.1	10 27.1 -52.1 130.2	9 58.1 -51.9 129.4	9 28.8 -51.7 128.5	8 59.0 -51.4 127.7
16°	10 03.5 -52.4 131.6	9 35.0 -52.1 130.7	9 06.2 -51.9 129.9	8 37.1 -51.7 129.1	8 07.6 -51.5 128.2
17°	9 11.1 -52.4 132.1	8 42.9 -52.1 131.2	8 14.3 -51.9 130.4	7 45.4 -51.7 129.6	7 16.1 -51.5 128.7
18°	8 18.7 -52.4 132.6	7 50.8 -52.2 131.7	7 22.4 -52.0 130.9	6 53.7 -51.8 130.1	6 24.6 -51.5 129.3
19°	7 26.3 -52.4 133.1	6 58.6 -52.3 132.2	6 30.4 -52.0 131.4	6 01.9 -51.8 130.6	5 33.1 -51.6 129.8
20°	6 33.9 -52.5 133.6	6 06.3 -52.2 132.7	5 38.4 -52.0 131.9	5 10.1 -51.8 131.1	4 41.5 -51.6 130.3
21°	5 41.4 -52.5 134.1	5 14.1 -52.3 133.2	4 46.4 -52.1 132.4	4 18.3 -51.8 131.6	3 49.9 -51.6 130.8
22°	4 48.9 -52.5 134.5	4 21.8 -52.3 133.7	3 54.3 -52.0 132.9	3 26.5 -51.8 132.1	2 58.3 -51.6 131.3
23°	3 56.4 -52.6 135.0	3 29.5 -52.3 134.2	3 02.3 -52.1 133.4	2 34.7 -51.9 132.6	2 06.7 -51.6 131.8
24°	3 03.8 -52.5 135.5	2 37.2 -52.3 134.7	2 10.2 -52.1 133.9	1 42.8 -51.9 133.1	1 15.1 -51.7 132.3
25°	2 11.3 -52.6 136.0	1 44.9 -52.4 135.2	1 18.1 -52.1 134.4	0 50.9 -51.8 133.6	0 23.4 -51.6 132.8
26°	1 18.7 -52.5 136.5	0 52.5 -52.3 135.7	0 26.0 -52.1 134.9	-0 00.9 -51.9	-0 28.2 -51.7
27°	0 26.2 -52.6 137.0	0 00.2 -52.3 136.2	-0 26.1 -52.1	-0 52.8 -51.9	-1 19.9 -51.6
28°	-0 26.4 -52.6	-0 52.1 -52.4	-1 18.2 -52.1	-1 44.7 -51.8	-2 11.5 -51.6
29°	-1 19.0 -52.5	-1 44.5 -52.3	-2 10.2 -52.1	-2 36.5 -51.9	-3 03.1 -51.6

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°	21 09.6 -50.1 118.6	20 36.3 -49.9 117.7	20 02.7 -49.7 116.8	19 28.8 -49.5 115.9	18 54.8 -49.4 115.0
1°	20 19.5 -50.2 119.1	19 46.4 -50.0 118.3	19 13.0 -49.8 117.4	18 39.3 -49.6 116.5	18 05.4 -49.5 115.6
2°	19 29.3 -50.3 119.7	18 56.4 -50.1 118.8	18 23.2 -49.9 118.0	17 49.7 -49.7 117.1	17 15.9 -49.5 116.2
3°	18 39.0 -50.4 120.3	18 06.3 -50.2 119.4	17 33.3 -50.1 118.5	17 00.0 -49.9 117.7	16 26.4 -49.7 116.8
4°	17 48.6 -50.4 120.9	17 16.1 -50.3 120.0	16 43.2 -50.1 119.1	16 10.1 -49.9 118.3	15 36.7 -49.7 117.4
5°	16 58.2 -50.6 121.4	16 25.8 -50.4 120.6	15 53.1 -50.2 119.7	15 20.2 -50.0 118.8	14 47.0 -49.9 118.0
6°	16 07.6 -50.7 122.0	15 35.4 -50.5 121.1	15 02.9 -50.3 120.3	14 30.2 -50.1 119.4	13 57.1 -49.9 118.6
7°	15 16.9 -50.8 122.6	14 44.9 -50.5 121.7	14 12.6 -50.3 120.8	13 40.1 -50.2 120.0	13 07.2 -50.0 119.1
8°	14 26.1 -50.8 123.1	13 54.4 -50.7 122.2	13 22.3 -50.5 121.4	12 49.9 -50.3 120.5	12 17.2 -50.0 119.7
9°	13 35.3 -50.9 123.7	13 03.7 -50.7 122.8	12 31.8 -50.5 121.9	11 59.6 -50.3 121.1	11 27.2 -50.2 120.3
10°	12 44.4 -51.0 124.2	12 13.0 -50.7 123.3	11 41.3 -50.5 122.5	11 09.3 -50.3 121.7	10 37.0 -50.1 120.8
11°	11 53.4 -51.0 124.7	11 22.3 -50.9 123.9	10 50.8 -50.7 123.0	10 19.0 -50.5 122.2	9 46.9 -50.3 121.4
12°	11 02.4 -51.1 125.3	10 31.4 -50.9 124.4	10 00.1 -50.7 123.6	9 28.5 -50.5 122.8	8 56.6 -50.3 121.9
13°	10 11.3 -51.1 125.8	9 40.5 -50.9 125.0	9 09.4 -50.7 124.1	8 38.0 -50.5 123.3	8 06.3 -50.3 122.5
14°	9 20.2 -51.2 126.3	8 49.6 -51.0 125.5	8 18.7 -50.8 124.7	7 47.5 -50.6 123.8	7 16.0 -50.4 123.0
15°	8 29.0 -51.2 126.9	7 58.6 -51.0 126.0	7 27.9 -50.8 125.2	6 56.9 -50.6 124.4	6 25.6 -50.4 123.6
16°	7 37.8 -51.3 127.4	7 07.6 -51.0 126.6	6 37.1 -50.8 125.7	6 06.3 -50.6 124.9	5 35.2 -50.4 124.1
17°	6 46.5 -51.3 127.9	6 16.6 -51.1 127.1	5 46.3 -50.9 126.3	5 15.7 -50.7 125.5	4 44.8 -50.5 124.7
18°	5 55.2 -51.3 128.4	5 25.5 -51.1 127.6	4 55.4 -50.9 126.8	4 25.0 -50.7 126.0	3 54.3 -50.5 125.2
19°	5 03.9 -51.4 129.0	4 34.4 -51.2 128.2	4 04.5 -50.9 127.3	3 34.3 -50.7 126.5	3 03.8 -50.5 125.7
20°	4 12.5 -51.3 129.5	3 43.2 -51.1 128.7	3 13.6 -51.0 127.9	2 43.6 -50.7 127.1	2 13.3 -50.5 126.3
21°	3 21.2 -51.4 130.0	2 52.1 -51.2 129.2	2 22.6 -50.9 128.4	1 52.9 -50.7 127.6	1 22.8 -50.5 126.8
22°	2 29.8 -51.4 130.5	2 00.9 -51.2 129.7	1 31.7 -51.0 128.9	1 02.2 -50.8 128.1	0 32.3 -50.5 127.4
23°	1 38.4 -51.4 131.0	1 09.7 -51.2 130.2	0 40.7 -50.9 129.5	0 11.4 -50.7 128.7	-0 18.2 -50.5
24°	0 47.0 -51.4 131.5	0 18.5 -51.1 130.8	-0 10.2 -51.0	-0 39.3 -50.8	-1 08.7 -50.5
25°	-0 04.4 -51.5	-0 32.6 -51.2	-1 01.2 -50.9	-1 30.1 -50.7	-1 59.2 -50.5
26°	-0 55.9 -51.4	-1 23.8 -51.2	-1 52.1 -51.0	-2 20.8 -50.7	-2 49.7 -50.5
27°	-1 47.3 -51.4	-2 15.0 -51.2	-2 43.1 -50.9	-3 11.5 -50.7	-3 40.2 -50.5
28°	-2 38.7 -51.3	-3 06.2 -51.1	-3 34.0 -50.9	-4 02.2 -50.7	-4 30.7 -50.4
29°	-3 30.0 -51.4	-3 57.3 -51.2	-4 24.9 -50.9	-4 52.9 -50.6	-5 21.1 -50.5

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°	18 20.4 -49.2 114.2	17 45.9 -49.1 113.3	17 11.1 -48.9 112.5	16 36.1 -48.7 111.6	16 00.9 -48.6 110.8
1°	17 31.2 -49.3 114.8	16 56.8 -49.1 113.9	16 22.2 -49.0 113.1	15 47.4 -48.9 112.2	15 12.3 -48.7 111.4
2°	16 41.9 -49.3 115.4	16 07.7 -49.2 114.5	15 33.2 -49.0 113.7	14 58.5 -48.9 112.8	14 23.6 -48.7 112.0
3°	15 52.6 -49.5 116.0	15 18.5 -49.3 115.1	14 44.2 -49.2 114.3	14 09.6 -49.0 113.4	13 34.9 -48.9 112.6
4°	15 03.1 -49.6 116.5	14 29.2 -49.4 115.7	13 55.0 -49.2 114.8	13 20.6 -49.0 114.0	12 46.0 -48.9 113.2
5°	14 13.5 -49.7 117.1	13 39.8 -49.5 116.3	13 05.8 -49.3 115.4	12 31.6 -49.2 114.6	11 57.1 -49.0 113.8
6°	13 23.8 -49.7 117.7	12 50.3 -49.6 116.9	12 16.5 -49.4 116.0	11 42.4 -49.2 115.2	11 08.1 -49.0 114.4
7°	12 34.1 -49.8 118.3	12 00.7 -49.6 117.4	11 27.1 -49.5 116.6	10 53.2 -49.3 115.8	10 19.1 -49.1 114.9
8°	11 44.3 -49.9 118.8	11 11.1 -49.7 118.0	10 37.6 -49.5 117.2	10 03.9 -49.3 116.3	9 30.0 -49.2 115.5
9°	10 54.4 -49.9 119.4	10 21.4 -49.8 118.6	9 48.1 -49.6 117.7	9 14.6 -49.4 116.9	8 40.8 -49.3 116.1
10°	10 04.5 -50.0 120.0	9 31.6 -49.8 119.1	8 58.5 -49.6 118.3	8 25.2 -49.5 117.5	7 51.5 -49.2 116.7
11°	9 14.5 -50.1 120.5	8 41.8 -49.8 119.7	8 08.9 -49.7 118.9	7 35.7 -49.5 118.1	7 02.3 -49.4 117.3
12°	8 24.4 -50.1 121.1	7 52.0 -50.0 120.3	7 19.2 -49.7 119.5	6 46.2 -49.5 118.6	6 12.9 -49.3 117.8
13°	7 34.3 -50.1 121.7	7 02.0 -49.9 120.8	6 29.5 -49.8 120.0	5 56.7 -49.6 119.2	5 23.6 -49.4 118.4
14°	6 44.2 -50.2 122.2	6 12.1 -50.0 121.4	5 39.7 -49.8 120.6	5 07.1 -49.6 119.8	4 34.2 -49.4 119.0
15°	5 54.0 -50.2 122.8	5 22.1 -50.0 121.9	4 49.9 -49.8 121.1	4 17.5 -49.6 120.3	3 44.8 -49.5 119.5
16°	5 03.8 -50.2 123.3	4 32.1 -50.0 122.5	4 00.1 -49.8 121.7	3 27.9 -49.7 120.9	2 55.3 -49.4 120.1
17°	4 13.6 -50.3 123.9	3 42.1 -50.1 123.1	3 10.3 -49.9 122.3	2 38.2 -49.6 121.5	2 05.9 -49.5 120.7
18°	3 23.3 -50.3 124.4	2 52.0 -50.1 123.6	2 20.4 -49.8 122.8	1 48.6 -49.7 122.0	1 16.4 -49.5 121.2
19°	2 33.0 -50.3 124.9	2 01.9 -50.0 124.2	1 30.6 -49.9 123.4	0 58.9 -49.7 122.6	0 26.9 -49.5 121.8
20°	1 42.7 -50.3 125.5	1 11.9 -50.1 124.7	0 40.7 -49.9 123.9	0 09.2 -49.7 123.1	-0 22.6 -49.4
21°	0 52.4 -50.3 126.0	0 21.8 -50.1 125.3	-0 09.2 -49.9	-0 40.5 -49.7	-1 12.0 -49.5
22°	0 02.1 -50.3 126.6	-0 28.3 -50.1	-0 59.1 -49.9	-1 30.2 -49.6	-2 01.5 -49.5
23°	-0 48.2 -50.3	-1 18.4 -50.1	-1 49.0 -49.8	-2 19.8 -49.7	-2 51.0 -49.4
24°	-1 38.5 -50.3	-2 08.5 -50.1	-2 38.8 -49.9	-3 09.5 -49.6	-3 40.4 -49.4
25°	-2 28.8 -50.2	-2 58.6 -50.0	-3 28.7 -49.8	-3 59.1 -49.6	-4 29.8 -49.4
26°	-3 19.0 -50.3	-3 48.6 -50.1	-4 18.5 -49.8	-4 48.7 -49.6	-5 19.2 -49.4
27°	-4 09.3 -50.2	-4 38.7 -50.0	-5 08.3 -49.8	-5 38.3 -49.6	-6 08.6 -49.3
28°	-4 59.5 -50.2	-5 28.7 -49.9	-5 58.1 -49.8	-6 27.9 -49.5	-6 57.9 -49.3
29°	-5 49.7 -50.2	-6 18.6 -50.0	-6 47.9 -49.7	-7 17.4 -49.4	-7 47.2 -49.2

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°	15 25.4 -48.4 109.9	14 49.9 -48.3 109.1	14 14.1 -48.2 108.3	13 38.1 -48.0 107.4	13 02.0 -47.9 106.6
1°	14 37.0 -48.5 110.5	14 01.6 -48.4 109.7	13 25.9 -48.2 108.9	12 50.1 -48.1 108.0	12 14.1 -48.0 107.2
2°	13 48.5 -48.6 111.1	13 13.2 -48.5 110.3	12 37.7 -48.3 109.5	12 02.0 -48.2 108.7	11 26.1 -48.0 107.8
3°	12 59.9 -48.7 111.7	12 24.7 -48.5 110.9	11 49.4 -48.4 110.1	11 13.8 -48.3 109.3	10 38.1 -48.2 108.5
4°	12 11.2 -48.7 112.3	11 36.2 -48.6 111.5	11 01.0 -48.5 110.7	10 25.5 -48.3 109.9	9 49.9 -48.1 109.1
5°	11 22.5 -48.9 112.9	10 47.6 -48.7 112.1	10 12.5 -48.5 111.3	9 37.2 -48.4 110.5	9 01.8 -48.3 109.7
6°	10 33.6 -48.9 113.5	9 58.9 -48.8 112.7	9 24.0 -48.6 111.9	8 48.8 -48.4 111.1	8 13.5 -48.3 110.3
7°	9 44.7 -48.9 114.1	9 10.1 -48.8 113.3	8 35.4 -48.7 112.5	8 00.4 -48.5 111.7	7 25.2 -48.4 110.9
8°	8 55.8 -49.1 114.7	8 21.3 -48.8 113.9	7 46.7 -48.7 113.1	7 11.9 -48.6 112.3	6 36.8 -48.4 111.5
9°	8 06.7 -49.0 115.3	7 32.5 -48.9 114.5	6 58.0 -48.7 113.7	6 23.3 -48.6 112.9	5 48.4 -48.4 112.1
10°	7 17.7 -49.1 115.9	6 43.6 -49.0 115.1	6 09.3 -48.8 114.2	5 34.7 -48.6 113.4	5 00.0 -48.5 112.6
11°	6 28.6 -49.2 116.4	5 54.6 -48.9 115.6	5 20.5 -48.8 114.8	4 46.1 -48.6 114.0	4 11.5 -48.5 113.2
12°	5 39.4 -49.2 117.0	5 05.7 -49.0 116.2	4 31.7 -48.9 115.4	3 57.5 -48.7 114.6	3 23.0 -48.5 113.8
13°	4 50.2 -49.2 117.6	4 16.7 -49.1 116.8	3 42.8 -48.8 116.0	3 08.8 -48.7 115.2	2 34.5 -48.5 114.4
14°	4 01.0 -49.2 118.2	3 27.6 -49.0 117.4	2 54.0 -48.9 116.6	2 20.1 -48.7 115.8	1 46.0 -48.6 115.0
15°	3 11.8 -49.3 118.7	2 38.6 -49.1 118.0	2 05.1 -48.9 117.2	1 31.4 -48.8 116.4	0 57.4 -48.5 115.6
16°	2 22.5 -49.2 119.3	1 49.5 -49.1 118.5	1 16.2 -48.9 117.7	0 42.6 -48.7 117.0	0 08.9 -48.6 116.2
17°	1 33.3 -49.3 119.9	1 00.4 -49.1 119.1	0 27.3 -48.9 118.3	-0 06.1 -48.7	-0 39.7 -48.5
18°	0 44.0 -49.3 120.5	0 11.3 -49.1 119.7	-0 21.6 -48.9	-0 54.8 -48.7	-1 28.2 -48.6
19°	-0 05.3 -49.3	-0 37.8 -49.1	-1 10.5 -48.9	-1 43.5 -48.7	-2 16.8 -48.5
20°	-0 54.6 -49.3	-1 26.9 -49.1	-1 59.4 -48.9	-2 32.2 -48.7	-3 05.3 -48.5
21°	-1 43.9 -49.2	-2 16.0 -49.0	-2 48.3 -48.9	-3 20.9 -48.7	-3 53.8 -48.5
22°	-2 33.1 -49.3	-3 05.0 -49.1	-3 37.2 -48.8	-4 09.6 -48.6	-4 42.3 -48.4
23°	-3 22.4 -49.2	-3 54.1 -49.0	-4 26.0 -48.8	-4 58.2 -48.7	-5 30.7 -48.4
24°	-4 11.6 -49.2	-4 43.1 -49.0	-5 14.8 -48.8	-5 46.9 -48.5	-6 19.1 -48.4
25°	-5 00.8 -49.2	-5 32.1 -49.0	-6 03.6 -48.8	-6 35.4 -48.6	-7 07.5 -48.3
26°	-5 50.0 -49.1	-6 21.1 -48.9	-6 52.4 -48.7	-7 24.0 -48.5	-7 55.8 -48.3
27°	-6 39.1 -49.1	-7 10.0 -48.9	-7 41.1 -48.6	-8 12.5 -48.4	-8 44.1 -48.2
28°	-7 28.2 -49.1	-7 58.9 -48.8	-8 29.7 -48.6	-9 00.9 -48.4	-9 32.3 -48.2
29°	-8 17.3 -49.0	-8 47.7 -48.8	-9 18.3 -48.6	-9 49.3 -48.3	

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°	12 25.8 -47.8 105.8	11 49.4 -47.7 105.0	11 12.8 -47.5 104.2	10 36.2 -47.5 103.4	9 59.4 -47.4 102.6
1°	11 38.0 -47.9 106.4	11 01.7 -47.8 105.6	10 25.3 -47.7 104.8	9 48.7 -47.6 104.0	9 12.0 -47.5 103.2
2°	10 50.1 -47.9 107.0	10 13.9 -47.8 106.2	9 37.6 -47.7 105.4	9 01.1 -47.6 104.6	8 24.5 -47.5 103.8
3°	10 02.2 -48.0 107.6	9 26.1 -47.9 106.8	8 49.9 -47.8 106.0	8 13.5 -47.6 105.2	7 37.0 -47.5 104.4
4°	9 14.2 -48.1 108.2	8 38.2 -47.9 107.4	8 02.1 -47.8 106.6	7 25.9 -47.7 105.8	6 49.5 -47.6 105.0
5°	8 26.1 -48.1 108.9	7 50.3 -48.0 108.0	7 14.3 -47.9 107.2	6 38.2 -47.8 106.4	6 01.9 -47.7 105.6
6°	7 38.0 -48.2 109.5	7 02.3 -48.1 108.7	6 26.4 -47.9 107.9	5 50.4 -47.8 107.1	5 14.2 -47.6 106.3
7°	6 49.8 -48.2 110.1	6 14.2 -48.0 109.3	5 38.5 -47.9 108.5	5 02.6 -47.8 107.7	4 26.6 -47.7 106.9
8°	6 01.6 -48.3 110.7	5 26.2 -48.2 109.9	4 50.6 -48.0 109.1	4 14.8 -47.9 108.3	3 38.9 -47.8 107.5
9°	5 13.3 -48.3 111.3	4 38.0 -48.1 110.5	4 02.6 -48.0 109.7	3 26.9 -47.8 108.9	2 51.1 -47.7 108.1
10°	4 25.0 -48.3 111.8	3 49.9 -48.2 111.1	3 14.6 -48.1 110.3	2 39.1 -47.9 109.5	2 03.4 -47.8 108.7
11°	3 36.7 -48.3 112.4	3 01.7 -48.2 111.7	2 26.5 -48.0 110.9	1 51.2 -48.0 110.1	1 15.6 -47.8 109.3
12°	2 48.4 -48.4 113.0	2 13.5 -48.2 112.2	1 38.5 -48.1 111.5	1 03.2 -47.9 110.7	0 27.8 -47.7 109.9
13°	2 00.0 -48.4 113.6	1 25.3 -48.2 112.8	0 50.4 -48.0 112.1	0 15.3 -47.9 111.3	-0 19.9 -47.8
14°	1 11.6 -48.3 114.2	0 37.1 -48.2 113.4	0 02.4 -48.1 112.7	-0 32.6 -47.9	-1 07.7 -47.8
15°	0 23.3 -48.4 114.8	-0 11.1 -48.2	-0 45.7 -48.1	-1 20.5 -47.9	-1 55.5 -47.7
16°	-0 25.1 -48.4	-0 59.3 -48.3	-1 33.8 -48.0	-2 08.4 -47.9	-2 43.2 -47.8
17°	-1 13.5 -48.4	-1 47.6 -48.2	-2 21.8 -48.1	-2 56.3 -47.9	-3 31.0 -47.7
18°	-2 01.9 -48.3	-2 35.8 -48.1	-3 09.9 -48.0	-3 44.2 -47.8	-4 18.7 -47.7
19°	-2 50.2 -48.4	-3 23.9 -48.2	-3 57.9 -48.0	-4 32.0 -47.8	-5 06.4 -47.6
20°	-3 38.6 -48.3	-4 12.1 -48.1	-4 45.9 -47.9	-5 19.8 -47.8	-5 54.0 -47.6
21°	-4 26.9 -48.3	-5 00.2 -48.1	-5 33.8 -47.9	-6 07.6 -47.7	-6 41.6 -47.6
22°	-5 15.2 -48.2	-5 48.3 -48.1	-6 21.7 -47.9	-6 55.3 -47.7	-7 29.2 -47.5
23°	-6 03.4 -48.3	-6 36.4 -48.0	-7 09.6 -47.8	-7 43.0 -47.7	-8 16.7 -47.4
24°	-6 51.7 -48.1	-7 24.4 -48.0	-7 57.4 -47.8	-8 30.7 -47.6	-9 04.1 -47.4
25°	-7 39.8 -48.2	-8 12.4 -47.9	-8 45.2 -47.7	-9 18.3 -47.5	-9 51.5 -47.4
26°	-8 28.0 -48.0	-9 00.3 -47.9	-9 32.9 -47.7		
27°	-9 16.0 -48.0	-9 48.2 -47.8			
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°	9 22.4 -47.2 101.8	8 45.4 -47.2 101.0	8 08.3 -47.1 100.2	7 31.1 -47.1 99.4	6 53.8 -47.0 98.6
1°	8 35.2 -47.4 102.4	7 58.2 -47.2 101.6	7 21.2 -47.2 100.8	6 44.0 -47.1 100.0	6 06.8 -47.0 99.2
2°	7 47.8 -47.4 103.0	7 11.0 -47.4 102.2	6 34.0 -47.2 101.4	5 56.9 -47.1 100.6	5 19.8 -47.1 99.8
3°	7 00.4 -47.5 103.6	6 23.6 -47.3 102.8	5 46.8 -47.3 102.0	5 09.8 -47.2 101.2	4 32.7 -47.1 100.5
4°	6 12.9 -47.5 104.2	5 36.3 -47.4 103.4	4 59.5 -47.3 102.7	4 22.6 -47.2 101.9	3 45.6 -47.1 101.1
5°	5 25.4 -47.5 104.9	4 48.9 -47.4 104.1	4 12.2 -47.3 103.3	3 35.4 -47.3 102.5	2 58.5 -47.2 101.7
6°	4 37.9 -47.6 105.5	4 01.5 -47.5 104.7	3 24.9 -47.4 103.9	2 48.1 -47.2 103.1	2 11.3 -47.2 102.3
7°	3 50.3 -47.5 106.1	3 14.0 -47.5 105.3	2 37.5 -47.4 104.5	2 00.9 -47.3 103.7	1 24.1 -47.1 102.9
8°	3 02.8 -47.7 106.7	2 26.5 -47.5 105.9	1 50.1 -47.4 105.1	1 13.6 -47.3 104.3	0 37.0 -47.2 103.6
9°	2 15.1 -47.6 107.3	1 39.0 -47.5 106.5	1 02.7 -47.3 105.7	0 26.3 -47.3 105.0	-0 10.2 -47.2
10°	1 27.5 -47.6 107.9	0 51.5 -47.5 107.1	0 15.4 -47.4 106.3	-0 21.0 -47.2	-0 57.4 -47.2
11°	0 39.9 -47.7 108.5	0 04.0 -47.5 107.7	-0 32.0 -47.4	-1 08.2 -47.3	-1 44.6 -47.1
12°	-0 07.8 -47.6	-0 43.5 -47.5	-1 19.4 -47.4	-1 55.5 -47.3	-2 31.7 -47.2
13°	-0 55.4 -47.6	-1 31.0 -47.5	-2 06.8 -47.4	-2 42.8 -47.2	-3 18.9 -47.1
14°	-1 43.0 -47.7	-2 18.5 -47.5	-2 54.2 -47.3	-3 30.0 -47.2	-4 06.0 -47.1
15°	-2 30.7 -47.6	-3 06.0 -47.5	-3 41.5 -47.4	-4 17.2 -47.2	-4 53.1 -47.0
16°	-3 18.3 -47.5	-3 53.5 -47.4	-4 28.9 -47.3	-5 04.4 -47.2	-5 40.1 -47.1
17°	-4 05.8 -47.6	-4 40.9 -47.4	-5 16.2 -47.2	-5 51.6 -47.1	-6 27.2 -46.9
18°	-4 53.4 -47.5	-5 28.3 -47.4	-6 03.4 -47.2	-6 38.7 -47.0	-7 14.1 -47.0
19°	-5 40.9 -47.5	-6 15.7 -47.3	-6 50.6 -47.2	-7 25.7 -47.1	-8 01.1 -46.8
20°	-6 28.4 -47.4	-7 03.0 -47.3	-7 37.8 -47.1	-8 12.8 -46.9	-8 47.9 -46.8
21°	-7 15.8 -47.4	-7 50.3 -47.2	-8 24.9 -47.0	-8 59.7 -46.9	-9 34.7 -46.7
22°	-8 03.2 -47.4	-8 37.5 -47.1	-9 11.9 -47.0	-9 46.6 -46.8	
23°	-8 50.6 -47.2	-9 24.6 -47.1	-9 58.9 -46.9		
24°	-9 37.8 -47.2				
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°	6 16.4 -46.9 97.8	5 39.0 -46.9 97.0	5 01.5 -46.8 96.2	4 23.9 -46.8 95.5	3 46.3 -46.7 94.7
1°	5 29.5 -47.0 98.4	4 52.1 -46.9 97.6	4 14.7 -46.9 96.9	3 37.1 -46.8 96.1	2 59.6 -46.8 95.3
2°	4 42.5 -47.0 99.1	4 05.2 -46.9 98.3	3 27.8 -46.9 97.5	2 50.3 -46.8 96.7	2 12.8 -46.8 95.9
3°	3 55.5 -47.0 99.7	3 18.3 -47.0 98.9	2 40.9 -46.9 98.1	2 03.5 -46.8 97.3	1 26.0 -46.8 96.6
4°	3 08.5 -47.1 100.3	2 31.3 -47.0 99.5	1 54.0 -46.9 98.7	1 16.7 -46.9 98.0	0 39.2 -46.8 97.2
5°	2 21.4 -47.0 100.9	1 44.3 -47.0 100.1	1 07.1 -46.9 99.4	0 29.8 -46.8 98.6	-0 07.6 -46.8
6°	1 34.4 -47.1 101.5	0 57.3 -47.0 100.8	0 20.2 -46.9 100.0	-0 17.0 -46.9	-0 54.4 -46.7
7°	0 47.3 -47.1 102.2	0 10.3 -47.0 101.4	-0 26.7 -47.0	-1 03.9 -46.8	-1 41.1 -46.8
8°	0 00.2 -47.1 102.8	-0 36.7 -47.0	-1 13.7 -46.9	-1 50.7 -46.9	-2 27.9 -46.8
9°	-0 46.9 -47.1	-1 23.7 -47.0	-2 00.6 -46.9	-2 37.6 -46.8	-3 14.7 -46.7
10°	-1 34.0 -47.0	-2 10.7 -46.9	-2 47.5 -46.8	-3 24.4 -46.8	-4 01.4 -46.7
11°	-2 21.0 -47.1	-2 57.6 -47.0	-3 34.3 -46.9	-4 11.2 -46.7	-4 48.1 -46.7
12°	-3 08.1 -47.0	-3 44.6 -46.9	-4 21.2 -46.8	-4 57.9 -46.8	-5 34.8 -46.6
13°	-3 55.1 -47.0	-4 31.5 -46.9	-5 08.0 -46.8	-5 44.7 -46.6	-6 21.4 -46.6
14°	-4 42.1 -47.0	-5 18.4 -46.9	-5 54.8 -46.7	-6 31.3 -46.7	-7 08.0 -46.5
15°	-5 29.1 -46.9	-6 05.3 -46.8	-6 41.5 -46.7	-7 18.0 -46.6	-7 54.5 -46.5
16°	-6 16.0 -46.9	-6 52.1 -46.7	-7 28.2 -46.7	-8 04.6 -46.5	-8 41.0 -46.4
17°	-7 02.9 -46.8	-7 38.8 -46.7	-8 14.9 -46.6	-8 51.1 -46.4	-9 27.4 -46.4
18°	-7 49.7 -46.8	-8 25.5 -46.7	-9 01.5 -46.5	-9 37.5 -46.4	
19°	-8 36.5 -46.7	-9 12.2 -46.5	-9 48.0 -46.4		
20°	-9 23.2 -46.7	-9 58.7 -46.6			
21°					
22°					
23°					
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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°	3 08.7 -46.8 93.9	2 31.0 -46.7 93.1	1 53.2 -46.6 92.3	1 15.5 -46.6 91.6	0 37.8 -46.7 90.8
1°	2 21.9 -46.7 94.5	1 44.3 -46.7 93.7	1 06.6 -46.7 93.0	0 28.9 -46.7 92.2	-0 08.9 -46.6
2°	1 35.2 -46.7 95.1	0 57.6 -46.7 94.4	0 19.9 -46.7 93.6	-0 17.8 -46.6	-0 55.5 -46.6
3°	0 48.5 -46.8 95.8	0 10.9 -46.7 95.0	-0 26.8 -46.6	-1 04.4 -46.7	-1 42.1 -46.6
4°	0 01.7 -46.7 96.4	-0 35.8 -46.7	-1 13.4 -46.7	-1 51.1 -46.6	-2 28.7 -46.6
5°	-0 45.0 -46.7	-1 22.5 -46.7	-2 00.1 -46.6	-2 37.7 -46.6	-3 15.3 -46.6
6°	-1 31.7 -46.8	-2 09.2 -46.7	-2 46.7 -46.6	-3 24.3 -46.6	-4 01.9 -46.6
7°	-2 18.5 -46.7	-2 55.9 -46.6	-3 33.3 -46.6	-4 10.9 -46.5	-4 48.5 -46.5
8°	-3 05.2 -46.7	-3 42.5 -46.7	-4 19.9 -46.6	-4 57.4 -46.5	-5 35.0 -46.4
9°	-3 51.9 -46.6	-4 29.2 -46.5	-5 06.5 -46.5	-5 43.9 -46.5	-6 21.4 -46.4
10°	-4 38.5 -46.7	-5 15.7 -46.6	-5 53.0 -46.5	-6 30.4 -46.4	-7 07.8 -46.4
11°	-5 25.2 -46.6	-6 02.3 -46.5	-6 39.5 -46.5	-7 16.8 -46.4	-7 54.2 -46.3
12°	-6 11.8 -46.5	-6 48.8 -46.5	-7 26.0 -46.3	-8 03.2 -46.3	-8 40.5 -46.3
13°	-6 58.3 -46.5	-7 35.3 -46.4	-8 12.3 -46.4	-8 49.5 -46.3	-9 26.8 -46.1
14°	-7 44.8 -46.4	-8 21.7 -46.3	-8 58.7 -46.2	-9 35.8 -46.1	
15°	-8 31.2 -46.4	-9 08.0 -46.3	-9 44.9 -46.2		
16°	-9 17.6 -46.3	-9 54.3 -46.2			
17°					
18°					
19°					
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28°					
29°					

Latitude 51°

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 -46.6 90.0	-0 37.8 -46.6			
1°	-0 46.6 -46.7	-1 24.4 -46.6			
2°	-1 33.3 -46.6	-2 11.0 -46.6			
3°	-2 19.9 -46.6	-2 57.6 -46.6			
4°	-3 06.5 -46.5	-3 44.2 -46.5			
5°	-3 53.0 -46.6	-4 30.7 -46.6			
6°	-4 39.6 -46.5	-5 17.3 -46.4			
7°	-5 26.1 -46.4	-6 03.7 -46.5			
8°	-6 12.5 -46.5	-6 50.2 -46.4			
9°	-6 59.0 -46.3	-7 36.6 -46.3			
10°	-7 45.3 -46.4	-8 22.9 -46.3			
11°	-8 31.7 -46.2	-9 09.2 -46.2			
12°	-9 17.9 -46.2	-9 55.4 -46.1			
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°					
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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°	38 00.0 -60.0 180.0	37 59.6 -60.0 178.7	37 58.4 -60.0 177.5	37 56.3 -59.9 176.2	37 53.5 -60.0 174.9
1°	37 00.0 -60.0 180.0	36 59.6 -60.0 178.7	36 58.4 -60.0 177.5	36 56.4 -60.0 176.2	36 53.5 -59.9 175.0
2°	36 00.0 -60.0 180.0	35 59.6 -60.0 178.8	35 58.4 -60.0 177.5	35 56.4 -59.9 176.3	35 53.6 -59.9 175.1
3°	35 00.0 -60.0 180.0	34 59.6 -60.0 178.8	34 58.4 -60.0 177.6	34 56.5 -60.0 176.3	34 53.7 -59.9 175.1
4°	34 00.0 -60.0 180.0	33 59.6 -60.0 178.8	33 58.4 -59.9 177.6	33 56.5 -59.9 176.4	33 53.8 -59.9 175.2
5°	33 00.0 -60.0 180.0	32 59.6 -60.0 178.8	32 58.5 -60.0 177.6	32 56.6 -60.0 176.4	32 53.9 -59.9 175.3
6°	32 00.0 -60.0 180.0	31 59.6 -60.0 178.8	31 58.5 -60.0 177.7	31 56.6 -60.0 176.5	31 54.0 -60.0 175.3
7°	31 00.0 -60.0 180.0	30 59.6 -60.0 178.8	30 58.5 -60.0 177.7	30 56.6 -59.9 176.5	30 54.0 -59.9 175.4
8°	30 00.0 -60.0 180.0	29 59.6 -60.0 178.9	29 58.5 -60.0 177.7	29 56.7 -60.0 176.6	29 54.1 -59.9 175.4
9°	29 00.0 -60.0 180.0	28 59.6 -60.0 178.9	28 58.5 -59.9 177.7	28 56.7 -59.9 176.6	28 54.2 -59.9 175.5
10°	28 00.0 -60.0 180.0	27 59.6 -60.0 178.9	27 58.6 -60.0 177.8	27 56.8 -60.0 176.7	27 54.3 -60.0 175.5
11°	27 00.0 -60.0 180.0	26 59.6 -60.0 178.9	26 58.6 -60.0 177.8	26 56.8 -60.0 176.7	26 54.3 -59.9 175.6
12°	26 00.0 -60.0 180.0	25 59.6 -59.9 178.9	25 58.6 -60.0 177.8	25 56.8 -59.9 176.7	25 54.4 -59.9 175.6
13°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 58.6 -60.0 177.9	24 56.9 -60.0 176.8	24 54.5 -60.0 175.7
14°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.6 -60.0 177.9	23 56.9 -59.9 176.8	23 54.5 -59.9 175.8
15°	23 00.0 -60.0 180.0	22 59.7 -60.0 179.0	22 58.6 -59.9 177.9	22 57.0 -60.0 176.9	22 54.6 -59.9 175.8
16°	22 00.0 -60.0 180.0	21 59.7 -60.0 179.0	21 58.7 -60.0 177.9	21 57.0 -60.0 176.9	21 54.7 -60.0 175.9
17°	21 00.0 -60.0 180.0	20 59.7 -60.0 179.0	20 58.7 -60.0 178.0	20 57.0 -59.9 176.9	20 54.7 -59.9 175.9
18°	20 00.0 -60.0 180.0	19 59.7 -60.0 179.0	19 58.7 -60.0 178.0	19 57.1 -60.0 177.0	19 54.8 -60.0 176.0
19°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.7 -60.0 178.0	18 57.1 -60.0 177.0	18 54.8 -59.9 176.0
20°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 58.7 -60.0 178.0	17 57.1 -59.9 177.0	17 54.9 -59.9 176.0
21°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 58.7 -59.9 178.0	16 57.2 -60.0 177.1	16 55.0 -60.0 176.1
22°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 58.8 -60.0 178.1	15 57.2 -60.0 177.1	15 55.0 -59.9 176.1
23°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.0	14 58.8 -60.0 178.1	14 57.2 -59.9 177.1	14 55.1 -60.0 176.2
24°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.1	13 58.8 -60.0 178.1	13 57.3 -60.0 177.2	13 55.1 -59.9 176.2
25°	13 00.0 -60.0 180.0	12 59.7 -60.0 179.1	12 58.8 -60.0 178.1	12 57.3 -60.0 177.2	12 55.2 -59.9 176.3
26°	12 00.0 -60.0 180.0	11 59.7 -60.0 179.1	11 58.8 -60.0 178.2	11 57.3 -59.9 177.2	11 55.3 -60.0 176.3
27°	11 00.0 -60.0 180.0	10 59.7 -60.0 179.1	10 58.8 -60.0 178.2	10 57.4 -60.0 177.3	10 55.3 -59.9 176.4
28°	10 00.0 -60.0 180.0	9 59.7 -60.0 179.1	9 58.8 -59.9 178.2	9 57.4 -60.0 177.3	9 55.4 -60.0 176.4
29°	9 00.0 -60.0 180.0	8 59.7 -60.0 179.1	8 58.9 -60.0 178.2	8 57.4 -59.9 177.3	8 55.4 -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°	37 49.8 -59.9 173.7	37 45.3 -59.8 172.4	37 40.0 -59.7 171.1	37 33.9 -59.6 169.9	37 27.1 -59.6 168.6
1°	36 49.9 -59.8 173.7	36 45.5 -59.8 172.5	36 40.3 -59.7 171.3	36 34.3 -59.7 170.0	36 27.5 -59.6 168.8
2°	35 50.1 -59.9 173.8	35 45.7 -59.8 172.6	35 40.6 -59.8 171.4	35 34.6 -59.6 170.2	35 27.9 -59.6 168.9
3°	34 50.2 -59.9 173.9	34 45.9 -59.8 172.7	34 40.8 -59.7 171.5	34 35.0 -59.7 170.3	34 28.3 -59.6 169.1
4°	33 50.3 -59.9 174.0	33 46.1 -59.9 172.8	33 41.1 -59.8 171.6	33 35.3 -59.7 170.4	33 28.7 -59.6 169.2
5°	32 50.4 -59.8 174.1	32 46.2 -59.8 172.9	32 41.3 -59.8 171.7	32 35.6 -59.7 170.5	32 29.1 -59.6 169.4
6°	31 50.6 -59.9 174.1	31 46.4 -59.8 173.0	31 41.5 -59.7 171.8	31 35.9 -59.7 170.6	31 29.5 -59.6 169.5
7°	30 50.7 -59.9 174.2	30 46.6 -59.8 173.1	30 41.8 -59.8 171.9	30 36.2 -59.7 170.8	30 29.9 -59.6 169.6
8°	29 50.8 -59.9 174.3	29 46.8 -59.9 173.2	29 42.0 -59.8 172.0	29 36.5 -59.7 170.9	29 30.3 -59.7 169.7
9°	28 50.9 -59.9 174.4	28 46.9 -59.8 173.2	28 42.2 -59.8 172.1	28 36.8 -59.7 171.0	28 30.6 -59.6 169.9
10°	27 51.0 -59.9 174.4	27 47.1 -59.9 173.3	27 42.4 -59.8 172.2	27 37.1 -59.8 171.1	27 31.0 -59.6 170.0
11°	26 51.1 -59.9 174.5	26 47.2 -59.8 173.4	26 42.6 -59.7 172.3	26 37.3 -59.7 171.2	26 31.4 -59.7 170.1
12°	25 51.2 -59.9 174.6	25 47.4 -59.9 173.5	25 42.9 -59.8 172.4	25 37.6 -59.7 171.3	25 31.7 -59.7 170.2
13°	24 51.3 -59.8 174.6	24 47.5 -59.8 173.6	24 43.1 -59.8 172.5	24 37.9 -59.7 171.4	24 32.0 -59.6 170.4
14°	23 51.5 -59.9 174.7	23 47.7 -59.9 173.6	23 43.3 -59.8 172.6	23 38.2 -59.8 171.5	23 32.4 -59.7 170.5
15°	22 51.6 -59.9 174.8	22 47.8 -59.8 173.7	22 43.5 -59.8 172.7	22 38.4 -59.7 171.6	22 32.7 -59.7 170.6
16°	21 51.7 -59.9 174.8	21 48.0 -59.9 173.8	21 43.7 -59.8 172.8	21 38.7 -59.8 171.7	21 33.0 -59.7 170.7
17°	20 51.8 -59.9 174.9	20 48.1 -59.8 173.9	20 43.9 -59.9 172.8	20 38.9 -59.7 171.8	20 33.3 -59.6 170.8
18°	19 51.9 -60.0 174.9	19 48.3 -59.9 173.9	19 44.0 -59.8 172.9	19 39.2 -59.8 171.9	19 33.7 -59.7 170.9
19°	18 51.9 -59.9 175.0	18 48.4 -59.8 174.0	18 44.2 -59.8 173.0	18 39.4 -59.7 172.0	18 34.0 -59.7 171.0
20°	17 52.0 -59.9 175.1	17 48.6 -59.9 174.1	17 44.4 -59.8 173.1	17 39.7 -59.8 172.1	17 34.3 -59.7 171.1
21°	16 52.1 -59.9 175.1	16 48.7 -59.9 174.1	16 44.6 -59.8 173.2	16 39.9 -59.8 172.2	16 34.6 -59.7 171.2
22°	15 52.2 -59.9 175.2	15 48.8 -59.8 174.2	15 44.8 -59.8 173.3	15 40.1 -59.7 172.3	15 34.9 -59.7 171.3
23°	14 52.3 -59.9 175.2	14 49.0 -59.9 174.3	14 45.0 -59.8 173.3	14 40.4 -59.8 172.4	14 35.2 -59.7 171.4
24°	13 52.4 -59.9 175.3	13 49.1 -59.9 174.4	13 45.2 -59.9 173.4	13 40.6 -59.7 172.5	13 35.5 -59.7 171.5
25°	12 52.5 -59.9 175.4	12 49.2 -59.9 174.4	12 45.3 -59.8 173.5	12 40.9 -59.8 172.6	12 35.8 -59.7 171.6
26°	11 52.6 -59.9 175.4	11 49.3 -59.8 174.5	11 45.5 -59.8 173.6	11 41.1 -59.8 172.7	11 36.1 -59.7 171.7
27°	10 52.7 -59.9 175.5	10 49.5 -59.9 174.6	10 45.7 -59.8 173.7	10 41.3 -59.8 172.8	10 36.4 -59.7 171.8
28°	9 52.8 -59.9 175.5	9 49.6 -59.9 174.6	9 45.9 -59.9 173.7	9 41.5 -59.7 172.8	9 36.7 -59.8 171.9
29°	8 52.9 -59.9 175.6	8 49.7 -59.8 174.7	8 46.0 -59.8 173.8	8 41.8 -59.8 172.9	8 36.9 -59.7 172.0

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°	37 19.4 -59.5 167.4	37 10.9 -59.3 166.1	37 01.7 -59.2 164.9	36 51.7 -59.1 163.7	36 40.9 -58.9 162.4
1°	36 19.9 -59.5 167.6	36 11.6 -59.4 166.3	36 02.5 -59.3 165.1	35 52.6 -59.1 163.9	35 42.0 -59.0 162.7
2°	35 20.4 -59.4 167.7	35 12.2 -59.4 166.5	35 03.2 -59.3 165.3	34 53.5 -59.2 164.1	34 43.0 -59.1 162.9
3°	34 21.0 -59.5 167.9	34 12.8 -59.4 166.7	34 03.9 -59.3 165.5	33 54.3 -59.2 164.3	33 43.9 -59.0 163.1
4°	33 21.5 -59.6 168.0	33 13.4 -59.4 166.8	33 04.6 -59.3 165.7	32 55.1 -59.2 164.5	32 44.9 -59.1 163.3
5°	32 21.9 -59.5 168.2	32 14.0 -59.4 167.0	32 05.3 -59.3 165.8	31 55.9 -59.2 164.7	31 45.8 -59.0 163.5
6°	31 22.4 -59.5 168.3	31 14.6 -59.5 167.2	31 06.0 -59.3 166.0	30 56.7 -59.2 164.9	30 46.8 -59.1 163.7
7°	30 22.9 -59.6 168.5	30 15.1 -59.4 167.3	30 06.7 -59.4 166.2	29 57.5 -59.2 165.1	29 47.7 -59.2 163.9
8°	29 23.3 -59.5 168.6	29 15.7 -59.5 167.5	29 07.3 -59.3 166.4	28 58.3 -59.3 165.2	28 48.5 -59.1 164.1
9°	28 23.8 -59.6 168.8	28 16.2 -59.4 167.6	28 08.0 -59.4 166.5	27 59.0 -59.2 165.4	27 49.4 -59.2 164.3
10°	27 24.2 -59.5 168.9	27 16.8 -59.5 167.8	27 08.6 -59.4 166.7	26 59.8 -59.3 165.6	26 50.2 -59.1 164.5
11°	26 24.7 -59.6 169.0	26 17.3 -59.5 167.9	26 09.2 -59.4 166.9	26 00.5 -59.3 165.8	25 51.1 -59.2 164.7
12°	25 25.1 -59.6 169.2	25 17.8 -59.5 168.1	25 09.8 -59.4 167.0	25 01.2 -59.3 165.9	24 51.9 -59.2 164.9
13°	24 25.5 -59.6 169.3	24 18.3 -59.5 168.2	24 10.4 -59.4 167.2	24 01.9 -59.3 166.1	23 52.7 -59.2 165.1
14°	23 25.9 -59.6 169.4	23 18.8 -59.5 168.4	23 11.0 -59.4 167.3	23 02.6 -59.3 166.3	22 53.5 -59.2 165.2
15°	22 26.3 -59.6 169.5	22 19.3 -59.5 168.5	22 11.6 -59.4 167.5	22 03.3 -59.4 166.4	21 54.3 -59.2 165.4
16°	21 26.7 -59.6 169.7	21 19.8 -59.5 168.6	21 12.2 -59.5 167.6	21 03.9 -59.3 166.6	20 55.1 -59.3 165.6
17°	20 27.1 -59.6 169.8	20 20.3 -59.6 168.8	20 12.7 -59.4 167.8	20 04.6 -59.3 166.8	19 55.8 -59.2 165.8
18°	19 27.5 -59.6 169.9	19 20.7 -59.5 168.9	19 13.3 -59.4 167.9	19 05.3 -59.4 166.9	18 56.6 -59.3 165.9
19°	18 27.9 -59.6 170.0	18 21.2 -59.6 169.0	18 13.9 -59.5 168.1	18 05.9 -59.4 167.1	17 57.3 -59.2 166.1
20°	17 28.3 -59.6 170.2	17 21.6 -59.5 169.2	17 14.4 -59.5 168.2	17 06.5 -59.3 167.2	16 58.1 -59.3 166.3
21°	16 28.7 -59.7 170.3	16 22.1 -59.5 169.3	16 14.9 -59.4 168.3	16 07.2 -59.4 167.4	15 58.8 -59.3 166.4
22°	15 29.0 -59.6 170.4	15 22.6 -59.6 169.4	15 15.5 -59.5 168.5	15 07.8 -59.4 167.5	14 59.5 -59.3 166.6
23°	14 29.4 -59.6 170.5	14 23.0 -59.6 169.6	14 16.0 -59.5 168.6	14 08.4 -59.4 167.7	14 00.2 -59.3 166.7
24°	13 29.8 -59.7 170.6	13 23.4 -59.5 169.7	13 16.5 -59.5 168.7	13 09.0 -59.4 167.8	13 00.9 -59.3 166.9
25°	12 30.1 -59.6 170.7	12 23.9 -59.6 169.8	12 17.0 -59.4 168.9	12 09.6 -59.4 168.0	12 01.6 -59.3 167.0
26°	11 30.5 -59.7 170.8	11 24.3 -59.6 169.9	11 17.6 -59.5 169.0	11 10.2 -59.4 168.1	11 02.3 -59.3 167.2
27°	10 30.8 -59.6 170.9	10 24.7 -59.5 170.0	10 18.1 -59.5 169.1	10 10.8 -59.4 168.3	10 03.0 -59.3 167.4
28°	9 31.2 -59.7 171.1	9 25.2 -59.6 170.2	9 18.6 -59.5 169.3	9 11.4 -59.4 168.4	9 03.7 -59.3 167.5
29°	8 31.5 -59.6 171.2	8 25.6 -59.6 170.3	8 19.1 -59.5 169.4	8 12.0 -59.4 168.5	8 04.4 -59.3 167.7

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°	36 29.4 -58.8 161.2	36 17.1 -58.6 160.0	36 04.1 -58.5 158.8	35 50.4 -58.3 157.6	35 36.0 -58.2 156.4
1°	35 30.6 -58.9 161.5	35 18.5 -58.7 160.3	35 05.6 -58.5 159.1	34 52.1 -58.4 157.9	34 37.8 -58.2 156.7
2°	34 31.7 -58.9 161.7	34 19.8 -58.8 160.5	34 07.1 -58.6 159.3	33 53.7 -58.4 158.2	33 39.6 -58.3 157.0
3°	33 32.8 -58.9 161.9	33 21.0 -58.7 160.8	33 08.5 -58.6 159.6	32 55.3 -58.5 158.4	32 41.3 -58.2 157.3
4°	32 33.9 -58.9 162.2	32 22.3 -58.8 161.0	32 09.9 -58.7 159.8	31 56.8 -58.5 158.7	31 43.1 -58.4 157.6
5°	31 35.0 -58.9 162.4	31 23.5 -58.8 161.2	31 11.2 -58.6 160.1	30 58.3 -58.5 159.0	30 44.7 -58.3 157.8
6°	30 36.1 -59.0 162.6	30 24.7 -58.9 161.5	30 12.6 -58.7 160.3	29 59.8 -58.5 159.2	29 46.4 -58.4 158.1
7°	29 37.1 -59.0 162.8	29 25.8 -58.8 161.7	29 13.9 -58.7 160.6	29 01.3 -58.6 159.5	28 48.0 -58.5 158.4
8°	28 38.1 -59.0 163.0	28 27.0 -58.9 161.9	28 15.2 -58.8 160.8	28 02.7 -58.6 159.7	27 49.5 -58.4 158.6
9°	27 39.1 -59.1 163.2	27 28.1 -58.9 162.1	27 16.4 -58.8 161.0	27 04.1 -58.6 160.0	26 51.1 -58.5 158.9
10°	26 40.0 -59.0 163.4	26 29.2 -58.9 162.3	26 17.6 -58.7 161.3	26 05.5 -58.7 160.2	25 52.6 -58.5 159.1
11°	25 41.0 -59.1 163.6	25 30.3 -59.0 162.6	25 18.9 -58.9 161.5	25 06.8 -58.7 160.4	24 54.1 -58.5 159.4
12°	24 41.9 -59.0 163.8	24 31.3 -58.9 162.8	24 20.0 -58.8 161.7	24 08.1 -58.7 160.7	23 55.6 -58.6 159.6
13°	23 42.9 -59.1 164.0	23 32.4 -59.0 163.0	23 21.2 -58.8 161.9	23 09.4 -58.7 160.9	22 57.0 -58.5 159.8
14°	22 43.8 -59.1 164.2	22 33.4 -59.0 163.2	22 22.4 -58.9 162.1	22 10.7 -58.7 161.1	21 58.5 -58.6 160.1
15°	21 44.7 -59.1 164.4	21 34.4 -59.0 163.4	21 23.5 -58.9 162.3	21 12.0 -58.7 161.3	20 59.9 -58.6 160.3
16°	20 45.6 -59.2 164.6	20 35.4 -59.0 163.6	20 24.6 -58.8 162.6	20 13.3 -58.8 161.5	20 01.3 -58.7 160.5
17°	19 46.4 -59.1 164.8	19 36.4 -59.0 163.8	19 25.8 -59.0 162.8	19 14.5 -58.8 161.8	19 02.6 -58.6 160.8
18°	18 47.3 -59.2 164.9	18 37.4 -59.1 163.9	18 26.8 -58.9 163.0	18 15.7 -58.8 162.0	18 04.0 -58.7 161.0
19°	17 48.1 -59.1 165.1	17 38.3 -59.0 164.1	17 27.9 -58.9 163.2	17 16.9 -58.8 162.2	17 05.3 -58.6 161.2
20°	16 49.0 -59.2 165.3	16 39.3 -59.1 164.3	16 29.0 -58.9 163.4	16 18.1 -58.8 162.4	16 06.7 -58.7 161.4
21°	15 49.8 -59.2 165.5	15 40.2 -59.0 164.5	15 30.1 -59.0 163.5	15 19.3 -58.8 162.6	15 08.0 -58.7 161.6
22°	14 50.6 -59.1 165.6	14 41.2 -59.1 164.7	14 31.1 -58.9 163.7	14 20.5 -58.9 162.8	14 09.3 -58.7 161.9
23°	13 51.5 -59.2 165.8	13 42.1 -59.1 164.9	13 32.2 -59.0 163.9	13 21.6 -58.8 163.0	13 10.6 -58.8 162.1
24°	12 52.3 -59.2 166.0	12 43.0 -59.1 165.0	12 33.2 -59.0 164.1	12 22.8 -58.9 163.2	12 11.8 -58.7 162.3
25°	11 53.1 -59.2 166.1	11 43.9 -59.1 165.2	11 34.2 -59.0 164.3	11 23.9 -58.8 163.4	11 13.1 -58.7 162.5
26°	10 53.9 -59.2 166.3	10 44.8 -59.1 165.4	10 35.2 -59.0 164.5	10 25.1 -58.9 163.6	10 14.4 -58.8 162.7
27°	9 54.7 -59.3 166.5	9 45.7 -59.1 165.6	9 36.2 -58.9 164.7	9 26.2 -58.9 163.8	9 15.6 -58.7 162.9
28°	8 55.4 -59.2 166.6	8 46.6 -59.1 165.7	8 37.3 -59.0 164.9	8 27.3 -58.8 164.0	8 16.9 -58.8 163.1
29°	7 56.2 -59.2 166.8	7 47.5 -59.1 165.9	7 38.3 -59.1 165.0	7 28.5 -58.9 164.2	7 18.1 -58.7 163.3

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°	35 20.8 -57.9 155.2	35 05.0 -57.8 154.0	34 48.5 -57.6 152.9	34 31.3 -57.4 151.7	34 13.5 -57.3 150.5
1°	34 22.9 -58.1 155.5	34 07.2 -57.8 154.4	33 50.9 -57.7 153.2	33 33.9 -57.5 152.0	33 16.2 -57.2 150.9
2°	33 24.8 -58.1 155.8	33 09.4 -58.0 154.7	32 53.2 -57.7 153.5	32 36.4 -57.5 152.4	32 19.0 -57.4 151.3
3°	32 26.7 -58.1 156.1	32 11.4 -57.9 155.0	31 55.5 -57.8 153.8	31 38.9 -57.6 152.7	31 21.6 -57.4 151.6
4°	31 28.6 -58.1 156.4	31 13.5 -58.0 155.3	30 57.7 -57.8 154.2	30 41.3 -57.6 153.0	30 24.2 -57.4 151.9
5°	30 30.5 -58.2 156.7	30 15.5 -58.0 155.6	29 59.9 -57.8 154.5	29 43.7 -57.7 153.4	29 26.8 -57.5 152.3
6°	29 32.3 -58.3 157.0	29 17.5 -58.1 155.9	29 02.1 -57.9 154.8	28 46.0 -57.7 153.7	28 29.3 -57.5 152.6
7°	28 34.0 -58.2 157.3	28 19.4 -58.1 156.2	28 04.2 -58.0 155.1	27 48.3 -57.8 154.0	27 31.8 -57.6 152.9
8°	27 35.8 -58.3 157.5	27 21.3 -58.1 156.4	27 06.2 -57.9 155.4	26 50.5 -57.8 154.3	26 34.2 -57.6 153.2
9°	26 37.5 -58.4 157.8	26 23.2 -58.2 156.7	26 08.3 -58.0 155.7	25 52.7 -57.8 154.6	25 36.6 -57.7 153.5
10°	25 39.1 -58.3 158.1	25 25.0 -58.2 157.0	25 10.3 -58.1 155.9	24 54.9 -57.9 154.9	24 38.9 -57.7 153.9
11°	24 40.8 -58.4 158.3	24 26.8 -58.2 157.3	24 12.2 -58.0 156.2	23 57.0 -57.9 155.2	23 41.2 -57.7 154.2
12°	23 42.4 -58.4 158.6	23 28.6 -58.3 157.5	23 14.2 -58.1 156.5	22 59.1 -57.9 155.5	22 43.5 -57.8 154.4
13°	22 44.0 -58.4 158.8	22 30.3 -58.2 157.8	22 16.1 -58.1 156.8	22 01.2 -58.0 155.8	21 45.7 -57.8 154.7
14°	21 45.6 -58.5 159.1	21 32.1 -58.3 158.0	21 18.0 -58.2 157.0	21 03.2 -57.9 156.0	20 47.9 -57.8 155.0
15°	20 47.1 -58.4 159.3	20 33.8 -58.4 158.3	20 19.8 -58.2 157.3	20 05.3 -58.1 156.3	19 50.1 -57.8 155.3
16°	19 48.7 -58.5 159.5	19 35.4 -58.3 158.6	19 21.6 -58.2 157.6	19 07.2 -58.0 156.6	18 52.3 -57.9 155.6
17°	18 50.2 -58.5 159.8	18 37.1 -58.4 158.8	18 23.4 -58.2 157.8	18 09.2 -58.0 156.8	17 54.4 -57.9 155.9
18°	17 51.7 -58.6 160.0	17 38.7 -58.3 159.0	17 25.2 -58.2 158.1	17 11.2 -58.1 157.1	16 56.5 -57.9 156.1
19°	16 53.1 -58.5 160.2	16 40.4 -58.4 159.3	16 27.0 -58.2 158.3	16 13.1 -58.1 157.4	15 58.6 -58.0 156.4
20°	15 54.6 -58.6 160.5	15 42.0 -58.4 159.5	15 28.8 -58.3 158.6	15 15.0 -58.1 157.6	15 00.6 -57.9 156.7
21°	14 56.0 -58.5 160.7	14 43.6 -58.5 159.8	14 30.5 -58.3 158.8	14 16.9 -58.2 157.9	14 02.7 -58.0 157.0
22°	13 57.5 -58.6 160.9	13 45.1 -58.4 160.0	13 32.2 -58.3 159.1	13 18.7 -58.1 158.1	13 04.7 -58.0 157.2
23°	12 58.9 -58.6 161.2	12 46.7 -58.5 160.2	12 33.9 -58.3 159.3	12 20.6 -58.2 158.4	12 06.7 -58.0 157.5
24°	12 00.3 -58.6 161.4	11 48.2 -58.4 160.5	11 35.6 -58.3 159.6	11 22.4 -58.1 158.6	11 08.7 -58.0 157.7
25°	11 01.7 -58.6 161.6	10 49.8 -58.5 160.7	10 37.3 -58.3 159.8	10 24.3 -58.2 158.9	10 10.7 -58.0 158.0
26°	10 03.1 -58.6 161.8	9 51.3 -58.5 160.9	9 39.0 -58.4 160.0	9 26.1 -58.2 159.1	9 12.7 -58.1 158.3
27°	9 04.5 -58.6 162.0	8 52.8 -58.5 161.1	8 40.6 -58.3 160.3	8 27.9 -58.2 159.4	8 14.6 -58.0 158.5
28°	8 05.9 -58.7 162.2	7 54.3 -58.5 161.4	7 42.3 -58.4 160.5	7 29.7 -58.2 159.6	7 16.6 -58.1 158.8
29°	7 07.2 -58.6 162.5	6 55.8 -58.5 161.6	6 43.9 -58.3 160.7	6 31.5 -58.2 159.9	6 18.5 -58.1 159.0

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°	33 55.0 -57.0 149.4	33 35.8 -56.8 148.2	33 16.1 -56.6 147.1	32 55.7 -56.3 146.0	32 34.8 -56.2 144.9
1°	32 58.0 -57.1 149.8	32 39.0 -56.8 148.6	32 19.5 -56.7 147.5	31 59.4 -56.5 146.4	31 38.6 -56.2 145.3
2°	32 00.9 -57.1 150.1	31 42.2 -57.0 149.0	31 22.8 -56.7 147.9	31 02.9 -56.5 146.8	30 42.4 -56.3 145.7
3°	31 03.8 -57.2 150.5	30 45.2 -57.0 149.4	30 26.1 -56.8 148.3	30 06.4 -56.6 147.2	29 46.1 -56.4 146.1
4°	30 06.6 -57.3 150.8	29 48.2 -57.0 149.7	29 29.3 -56.8 148.6	29 09.8 -56.6 147.6	28 49.7 -56.4 146.5
5°	29 09.3 -57.3 151.2	28 51.2 -57.1 150.1	28 32.5 -56.9 149.0	28 13.2 -56.7 147.9	27 53.3 -56.5 146.9
6°	28 12.0 -57.3 151.5	27 54.1 -57.2 150.4	27 35.6 -57.0 149.4	27 16.5 -56.8 148.3	26 56.8 -56.6 147.3
7°	27 14.7 -57.4 151.8	26 56.9 -57.2 150.8	26 38.6 -57.0 149.7	26 19.7 -56.8 148.7	26 00.2 -56.6 147.6
8°	26 17.3 -57.5 152.2	25 59.7 -57.2 151.1	25 41.6 -57.1 150.1	25 22.9 -56.9 149.0	25 03.6 -56.7 148.0
9°	25 19.8 -57.5 152.5	25 02.5 -57.3 151.5	24 44.5 -57.1 150.4	24 26.0 -56.9 149.4	24 06.9 -56.7 148.4
10°	24 22.3 -57.5 152.8	24 05.2 -57.4 151.8	23 47.4 -57.1 150.8	23 29.1 -57.0 149.7	23 10.2 -56.8 148.7
11°	23 24.8 -57.5 153.1	23 07.8 -57.3 152.1	22 50.3 -57.2 151.1	22 32.1 -57.0 150.1	22 13.4 -56.8 149.1
12°	22 27.3 -57.6 153.4	22 10.5 -57.5 152.4	21 53.1 -57.3 151.4	21 35.1 -57.0 150.4	21 16.6 -56.9 149.4
13°	21 29.7 -57.6 153.7	21 13.0 -57.4 152.7	20 55.8 -57.2 151.7	20 38.1 -57.1 150.7	20 19.7 -56.9 149.8
14°	20 32.1 -57.7 154.0	20 15.6 -57.5 153.0	19 58.6 -57.3 152.0	19 41.0 -57.2 151.1	19 22.8 -56.9 150.1
15°	19 34.4 -57.7 154.3	19 18.1 -57.5 153.3	19 01.3 -57.4 152.4	18 43.8 -57.1 151.4	18 25.9 -57.0 150.4
16°	18 36.7 -57.7 154.6	18 20.6 -57.5 153.6	18 03.9 -57.3 152.7	17 46.7 -57.2 151.7	17 28.9 -57.0 150.8
17°	17 39.0 -57.7 154.9	17 23.1 -57.6 153.9	17 06.6 -57.4 153.0	16 49.5 -57.2 152.0	16 31.9 -57.0 151.1
18°	16 41.3 -57.8 155.2	16 25.5 -57.6 154.2	16 09.2 -57.4 153.3	15 52.3 -57.2 152.3	15 34.9 -57.1 151.4
19°	15 43.5 -57.7 155.5	15 27.9 -57.6 154.5	15 11.8 -57.5 153.6	14 55.1 -57.3 152.7	14 37.8 -57.1 151.7
20°	14 45.8 -57.8 155.8	14 30.3 -57.6 154.8	14 14.3 -57.4 153.9	13 57.8 -57.3 153.0	13 40.7 -57.1 152.0
21°	13 48.0 -57.9 156.0	13 32.7 -57.7 155.1	13 16.9 -57.5 154.2	13 00.5 -57.3 153.3	12 43.6 -57.1 152.4
22°	12 50.1 -57.8 156.3	12 35.0 -57.6 155.4	12 19.4 -57.5 154.5	12 03.2 -57.3 153.6	11 46.5 -57.2 152.7
23°	11 52.3 -57.8 156.6	11 37.4 -57.7 155.7	11 21.9 -57.5 154.8	11 05.9 -57.4 153.9	10 49.3 -57.1 153.0
24°	10 54.5 -57.9 156.8	10 39.7 -57.7 156.0	10 24.4 -57.6 155.1	10 08.5 -57.3 154.2	9 52.2 -57.2 153.3
25°	9 56.6 -57.9 157.1	9 42.0 -57.7 156.2	9 26.8 -57.5 155.3	9 11.2 -57.4 154.5	8 55.0 -57.2 153.6
26°	8 58.7 -57.9 157.4	8 44.3 -57.8 156.5	8 29.3 -57.6 155.6	8 13.8 -57.4 154.8	7 57.8 -57.2 153.9
27°	8 00.8 -57.9 157.6	7 46.5 -57.7 156.8	7 31.7 -57.6 155.9	7 16.4 -57.4 155.1	7 00.6 -57.3 154.2
28°	7 02.9 -57.9 157.9	6 48.8 -57.8 157.1	6 34.1 -57.5 156.2	6 19.0 -57.4 155.4	6 03.3 -57.2 154.5
29°	6 05.0 -57.9 158.2	5 51.0 -57.7 157.3	5 36.6 -57.6 156.5	5 21.6 -57.4 155.6	5 06.1 -57.3 154.8

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°	32 13.2 -55.9 143.8	31 51.1 -55.7 142.7	31 28.4 -55.4 141.6	31 05.2 -55.2 140.5	30 41.5 -55.1 139.4
1°	31 17.3 -56.0 144.2	30 55.4 -55.8 143.1	30 33.0 -55.6 142.0	30 10.0 -55.4 141.0	29 46.4 -55.1 139.9
2°	30 21.3 -56.1 144.6	29 59.6 -55.9 143.5	29 37.4 -55.7 142.5	29 14.6 -55.4 141.4	28 51.3 -55.2 140.4
3°	29 25.2 -56.2 145.0	29 03.7 -55.9 144.0	28 41.7 -55.7 142.9	28 19.2 -55.5 141.8	27 56.1 -55.3 140.8
4°	28 29.0 -56.2 145.4	28 07.8 -56.0 144.4	27 46.0 -55.8 143.3	27 23.7 -55.6 142.3	27 00.8 -55.4 141.2
5°	27 32.8 -56.3 145.8	27 11.8 -56.1 144.8	26 50.2 -55.9 143.7	26 28.1 -55.7 142.7	26 05.4 -55.4 141.7
6°	26 36.5 -56.4 146.2	26 15.7 -56.2 145.2	25 54.3 -55.9 144.1	25 32.4 -55.7 143.1	25 10.0 -55.6 142.1
7°	25 40.1 -56.4 146.6	25 19.5 -56.2 145.6	24 58.4 -56.1 144.5	24 36.7 -55.8 143.5	24 14.4 -55.6 142.5
8°	24 43.7 -56.5 147.0	24 23.3 -56.3 145.9	24 02.3 -56.0 144.9	23 40.9 -55.9 143.9	23 18.8 -55.6 142.9
9°	23 47.2 -56.5 147.3	23 27.0 -56.3 146.3	23 06.3 -56.2 145.3	22 45.0 -55.9 144.3	22 23.2 -55.7 143.3
10°	22 50.7 -56.6 147.7	22 30.7 -56.4 146.7	22 10.1 -56.1 145.7	21 49.1 -56.0 144.7	21 27.5 -55.8 143.7
11°	21 54.1 -56.6 148.1	21 34.3 -56.4 147.1	21 14.0 -56.3 146.1	20 53.1 -56.0 145.1	20 31.7 -55.8 144.1
12°	20 57.5 -56.7 148.4	20 37.9 -56.5 147.4	20 17.7 -56.2 146.5	19 57.1 -56.1 145.5	19 35.9 -55.9 144.5
13°	20 00.8 -56.7 148.8	19 41.4 -56.5 147.8	19 21.5 -56.4 146.8	19 01.0 -56.1 145.9	18 40.0 -55.9 144.9
14°	19 04.1 -56.7 149.1	18 44.9 -56.6 148.1	18 25.1 -56.3 147.2	18 04.9 -56.2 146.2	17 44.1 -56.0 145.3
15°	18 07.4 -56.8 149.5	17 48.3 -56.5 148.5	17 28.8 -56.4 147.5	17 08.7 -56.2 146.6	16 48.1 -56.0 145.7
16°	17 10.6 -56.8 149.8	16 51.8 -56.7 148.8	16 32.4 -56.5 147.9	16 12.5 -56.2 147.0	15 52.1 -56.0 146.0
17°	16 13.8 -56.9 150.1	15 55.1 -56.6 149.2	15 35.9 -56.4 148.3	15 16.3 -56.3 147.3	14 56.1 -56.1 146.4
18°	15 16.9 -56.8 150.5	14 58.5 -56.7 149.5	14 39.5 -56.5 148.6	14 20.0 -56.3 147.7	14 00.0 -56.1 146.8
19°	14 20.1 -56.9 150.8	14 01.8 -56.7 149.9	13 43.0 -56.6 149.0	13 23.7 -56.4 148.0	13 03.9 -56.2 147.1
20°	13 23.2 -57.0 151.1	13 05.1 -56.8 150.2	12 46.4 -56.5 149.3	12 27.3 -56.3 148.4	12 07.7 -56.1 147.5
21°	12 26.2 -56.9 151.4	12 08.3 -56.8 150.5	11 49.9 -56.6 149.6	11 31.0 -56.4 148.7	11 11.6 -56.2 147.8
22°	11 29.3 -57.0 151.8	11 11.5 -56.7 150.9	10 53.3 -56.6 150.0	10 34.6 -56.4 149.1	10 15.4 -56.3 148.2
23°	10 32.3 -57.0 152.1	10 14.8 -56.9 151.2	9 56.7 -56.6 150.3	9 38.2 -56.5 149.4	9 19.1 -56.2 148.6
24°	9 35.3 -57.0 152.4	9 17.9 -56.8 151.5	9 00.1 -56.7 150.7	8 41.7 -56.4 149.8	8 22.9 -56.3 148.9
25°	8 38.3 -57.0 152.7	8 21.1 -56.8 151.8	8 03.4 -56.6 151.0	7 45.3 -56.5 150.1	7 26.6 -56.2 149.3
26°	7 41.3 -57.1 153.0	7 24.3 -56.9 152.2	7 06.8 -56.7 151.3	6 48.8 -56.5 150.5	6 30.4 -56.3 149.6
27°	6 44.2 -57.0 153.3	6 27.4 -56.9 152.5	6 10.1 -56.7 151.6	5 52.3 -56.5 150.8	5 34.1 -56.3 150.0
28°	5 47.2 -57.1 153.7	5 30.5 -56.8 152.8	5 13.4 -56.7 152.0	4 55.8 -56.5 151.1	4 37.8 -56.3 150.3
29°	4 50.1 -57.0 154.0	4 33.7 -56.9 153.1	4 16.7 -56.7 152.3	3 59.3 -56.5 151.5	3 41.5 -56.4 150.7

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°	30 17.2 -54.8 138.4	29 52.4 -54.6 137.3	29 27.1 -54.4 136.3	29 01.3 -54.1 135.2	28 35.1 -53.9 134.2
1°	29 22.4 -54.9 138.8	28 57.8 -54.7 137.8	28 32.7 -54.4 136.8	28 07.2 -54.2 135.7	27 41.2 -54.0 134.7
2°	28 27.5 -55.0 139.3	28 03.1 -54.7 138.3	27 38.3 -54.5 137.2	27 13.0 -54.3 136.2	26 47.2 -54.1 135.2
3°	27 32.5 -55.1 139.8	27 08.4 -54.9 138.7	26 43.8 -54.7 137.7	26 18.7 -54.5 136.7	25 53.1 -54.2 135.7
4°	26 37.4 -55.2 140.2	26 13.5 -54.9 139.2	25 49.1 -54.7 138.2	25 24.2 -54.5 137.2	24 58.9 -54.3 136.2
5°	25 42.2 -55.2 140.6	25 18.6 -55.1 139.6	24 54.4 -54.8 138.6	24 29.7 -54.6 137.6	24 04.6 -54.4 136.6
6°	24 47.0 -55.3 141.1	24 23.5 -55.1 140.1	23 59.6 -54.9 139.1	23 35.1 -54.6 138.1	23 10.2 -54.4 137.1
7°	23 51.7 -55.4 141.5	23 28.4 -55.1 140.5	23 04.7 -55.0 139.5	22 40.5 -54.8 138.5	22 15.8 -54.5 137.6
8°	22 56.3 -55.4 141.9	22 33.3 -55.3 140.9	22 09.7 -55.0 139.9	21 45.7 -54.8 139.0	21 21.3 -54.6 138.0
9°	22 00.9 -55.5 142.3	21 38.0 -55.3 141.4	21 14.7 -55.1 140.4	20 50.9 -54.8 139.4	20 26.7 -54.7 138.4
10°	21 05.4 -55.6 142.7	20 42.7 -55.3 141.8	20 19.6 -55.1 140.8	19 56.1 -55.0 139.8	19 32.0 -54.7 138.9
11°	20 09.8 -55.6 143.1	19 47.4 -55.4 142.2	19 24.5 -55.2 141.2	19 01.1 -55.0 140.3	18 37.3 -54.8 139.3
12°	19 14.2 -55.7 143.5	18 52.0 -55.5 142.6	18 29.3 -55.3 141.6	18 06.1 -55.0 140.7	17 42.5 -54.9 139.7
13°	18 18.5 -55.7 143.9	17 56.5 -55.5 143.0	17 34.0 -55.3 142.0	17 11.1 -55.1 141.1	16 47.6 -54.8 140.2
14°	17 22.8 -55.8 144.3	17 01.0 -55.6 143.4	16 38.7 -55.3 142.4	16 16.0 -55.2 141.5	15 52.8 -55.0 140.6
15°	16 27.0 -55.8 144.7	16 05.4 -55.6 143.8	15 43.4 -55.4 142.8	15 20.8 -55.2 141.9	14 57.8 -55.0 141.0
16°	15 31.2 -55.8 145.1	15 09.8 -55.6 144.2	14 48.0 -55.5 143.2	14 25.6 -55.2 142.3	14 02.8 -55.0 141.4
17°	14 35.4 -55.9 145.5	14 14.2 -55.7 144.6	13 52.5 -55.4 143.6	13 30.4 -55.3 142.7	13 07.8 -55.1 141.8
18°	13 39.5 -55.9 145.8	13 18.5 -55.7 144.9	12 57.1 -55.6 144.0	12 35.1 -55.3 143.1	12 12.7 -55.1 142.2
19°	12 43.6 -56.0 146.2	12 22.8 -55.7 145.3	12 01.5 -55.5 144.4	11 39.8 -55.3 143.5	11 17.6 -55.1 142.6
20°	11 47.6 -55.9 146.6	11 27.1 -55.8 145.7	11 06.0 -55.6 144.8	10 44.5 -55.4 143.9	10 22.5 -55.2 143.0
21°	10 51.7 -56.0 147.0	10 31.3 -55.8 146.1	10 10.4 -55.6 145.2	9 49.1 -55.4 144.3	9 27.3 -55.2 143.4
22°	9 55.7 -56.1 147.3	9 35.5 -55.8 146.4	9 14.8 -55.6 145.6	8 53.7 -55.4 144.7	8 32.1 -55.2 143.8
23°	8 59.6 -56.0 147.7	8 39.7 -55.9 146.8	8 19.2 -55.6 146.0	7 58.3 -55.5 145.1	7 36.9 -55.2 144.2
24°	8 03.6 -56.1 148.0	7 43.8 -55.9 147.2	7 23.6 -55.7 146.3	7 02.8 -55.4 145.5	6 41.7 -55.3 144.6
25°	7 07.5 -56.1 148.4	6 47.9 -55.8 147.6	6 27.9 -55.7 146.7	6 07.4 -55.5 145.9	5 46.4 -55.2 145.0
26°	6 11.4 -56.0 148.8	5 52.1 -55.9 147.9	5 32.2 -55.7 147.1	5 11.9 -55.5 146.2	4 51.2 -55.3 145.4
27°	5 15.4 -56.2 149.1	4 56.2 -55.9 148.3	4 36.5 -55.7 147.5	4 16.4 -55.5 146.6	3 55.9 -55.3 145.8
28°	4 19.2 -56.1 149.5	4 00.3 -56.0 148.7	3 40.8 -55.7 147.8	3 20.9 -55.5 147.0	3 00.6 -55.3 146.2
29°	3 23.1 -56.1 149.8	3 04.3 -55.9 149.0	2 45.1 -55.7 148.2	2 25.4 -55.5 147.4	2 05.3 -55.3 146.6

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°	28 08.4 -53.7 133.2	27 41.2 -53.4 132.2	27 13.7 -53.3 131.2	26 45.6 -53.0 130.2	26 17.2 -52.8 129.2
1°	27 14.7 -53.8 133.7	26 47.8 -53.6 132.7	26 20.4 -53.3 131.7	25 52.6 -53.1 130.7	25 24.4 -52.9 129.7
2°	26 20.9 -53.9 134.2	25 54.2 -53.6 133.2	25 27.1 -53.5 132.2	24 59.5 -53.2 131.2	24 31.5 -53.0 130.3
3°	25 27.0 -53.9 134.7	25 00.6 -53.8 133.7	24 33.6 -53.5 132.7	24 06.3 -53.3 131.7	23 38.5 -53.1 130.8
4°	24 33.1 -54.1 135.2	24 06.8 -53.8 134.2	23 40.1 -53.6 133.2	23 13.0 -53.5 132.2	22 45.4 -53.2 131.3
5°	23 39.0 -54.1 135.6	23 13.0 -54.0 134.7	22 46.5 -53.8 133.7	22 19.5 -53.5 132.7	21 52.2 -53.3 131.8
6°	22 44.9 -54.3 136.1	22 19.0 -54.0 135.1	21 52.7 -53.8 134.2	21 26.0 -53.5 133.2	20 58.9 -53.4 132.3
7°	21 50.6 -54.3 136.6	21 25.0 -54.1 135.6	20 58.9 -53.8 134.7	20 32.5 -53.7 133.7	20 05.5 -53.4 132.8
8°	20 56.3 -54.4 137.0	20 30.9 -54.2 136.1	20 05.1 -54.0 135.1	19 38.8 -53.8 134.2	19 12.1 -53.5 133.2
9°	20 01.9 -54.4 137.5	19 36.7 -54.2 136.5	19 11.1 -54.0 135.6	18 45.0 -53.8 134.7	18 18.6 -53.6 133.7
10°	19 07.5 -54.5 137.9	18 42.5 -54.3 137.0	18 17.1 -54.1 136.1	17 51.2 -53.9 135.1	17 25.0 -53.7 134.2
11°	18 13.0 -54.6 138.4	17 48.2 -54.4 137.4	17 23.0 -54.2 136.5	16 57.3 -53.9 135.6	16 31.3 -53.7 134.7
12°	17 18.4 -54.6 138.8	16 53.8 -54.4 137.9	16 28.8 -54.2 137.0	16 03.4 -54.0 136.0	15 37.6 -53.8 135.1
13°	16 23.8 -54.7 139.2	15 59.4 -54.5 138.3	15 34.6 -54.2 137.4	15 09.4 -54.0 136.5	14 43.8 -53.9 135.6
14°	15 29.1 -54.8 139.7	15 04.9 -54.5 138.8	14 40.4 -54.3 137.8	14 15.4 -54.1 136.9	13 49.9 -53.9 136.0
15°	14 34.3 -54.7 140.1	14 10.4 -54.6 139.2	13 46.1 -54.4 138.3	13 21.3 -54.2 137.4	12 56.0 -53.9 136.5
16°	13 39.6 -54.9 140.5	13 15.8 -54.6 139.6	12 51.7 -54.4 138.7	12 27.1 -54.2 137.8	12 02.1 -54.0 136.9
17°	12 44.7 -54.8 140.9	12 21.2 -54.6 140.0	11 57.3 -54.4 139.2	11 32.9 -54.2 138.3	11 08.1 -54.0 137.4
18°	11 49.9 -54.9 141.3	11 26.6 -54.7 140.5	11 02.9 -54.5 139.6	10 38.7 -54.3 138.7	10 14.1 -54.1 137.8
19°	10 55.0 -54.9 141.8	10 31.9 -54.7 140.9	10 08.4 -54.5 140.0	9 44.4 -54.3 139.1	9 20.0 -54.0 138.3
20°	10 00.1 -55.0 142.2	9 37.2 -54.8 141.3	9 13.9 -54.6 140.4	8 50.1 -54.3 139.6	8 26.0 -54.2 138.7
21°	9 05.1 -55.0 142.6	8 42.4 -54.7 141.7	8 19.3 -54.5 140.9	7 55.8 -54.4 140.0	7 31.8 -54.1 139.1
22°	8 10.1 -55.0 143.0	7 47.7 -54.8 142.1	7 24.8 -54.6 141.3	7 01.4 -54.3 140.4	6 37.7 -54.2 139.6
23°	7 15.1 -55.0 143.4	6 52.9 -54.9 142.5	6 30.2 -54.6 141.7	6 07.1 -54.4 140.8	5 43.5 -54.2 140.0
24°	6 20.1 -55.1 143.8	5 58.0 -54.8 142.9	5 35.6 -54.7 142.1	5 12.7 -54.4 141.3	4 49.3 -54.2 140.4
25°	5 25.0 -55.0 144.2	5 03.2 -54.8 143.4	4 40.9 -54.6 142.5	4 18.3 -54.5 141.7	3 55.1 -54.2 140.9
26°	4 30.0 -55.1 144.6	4 08.4 -54.9 143.8	3 46.3 -54.7 142.9	3 23.8 -54.4 142.1	3 00.9 -54.2 141.3
27°	3 34.9 -55.1 145.0	3 13.5 -54.9 144.2	2 51.6 -54.6 143.3	2 29.4 -54.5 142.5	2 06.7 -54.2 141.7
28°	2 39.8 -55.1 145.4	2 18.6 -54.9 144.6	1 57.0 -54.7 143.8	1 34.9 -54.4 143.0	1 12.5 -54.3 142.2
29°	1 44.7 -55.1 145.8	1 23.7 -54.9 145.0	1 02.3 -54.7 144.2	0 40.5 -54.5 143.4	0 18.2 -54.2 142.6

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°	25 48.4 -52.6 128.2	25 19.2 -52.4 127.3	24 49.6 -52.1 126.3	24 19.7 -52.0 125.4	23 49.4 -51.8 124.4
1°	24 55.8 -52.7 128.8	24 26.8 -52.4 127.8	23 57.5 -52.3 126.9	23 27.7 -52.0 125.9	22 57.6 -51.8 125.0
2°	24 03.1 -52.8 129.3	23 34.4 -52.6 128.3	23 05.2 -52.4 127.4	22 35.7 -52.2 126.4	22 05.8 -52.0 125.5
3°	23 10.3 -52.8 129.8	22 41.8 -52.7 128.9	22 12.8 -52.4 127.9	21 43.5 -52.3 127.0	21 13.8 -52.1 126.0
4°	22 17.5 -53.0 130.3	21 49.1 -52.8 129.4	21 20.4 -52.6 128.4	20 51.2 -52.3 127.5	20 21.7 -52.1 126.6
5°	21 24.5 -53.1 130.8	20 56.3 -52.9 129.9	20 27.8 -52.7 129.0	19 58.9 -52.5 128.0	19 29.6 -52.3 127.1
6°	20 31.4 -53.2 131.3	20 03.4 -52.9 130.4	19 35.1 -52.7 129.5	19 06.4 -52.5 128.5	18 37.3 -52.3 127.6
7°	19 38.2 -53.2 131.8	19 10.5 -53.0 130.9	18 42.4 -52.9 130.0	18 13.9 -52.6 129.1	17 45.0 -52.4 128.1
8°	18 45.0 -53.3 132.3	18 17.5 -53.2 131.4	17 49.5 -52.9 130.5	17 21.3 -52.7 129.6	16 52.6 -52.5 128.6
9°	17 51.7 -53.4 132.8	17 24.3 -53.1 131.9	16 56.6 -52.9 131.0	16 28.6 -52.8 130.1	16 00.1 -52.6 129.2
10°	16 58.3 -53.5 133.3	16 31.2 -53.3 132.4	16 03.7 -53.1 131.5	15 35.8 -52.8 130.6	15 07.5 -52.6 129.7
11°	16 04.8 -53.5 133.7	15 37.9 -53.3 132.8	15 10.6 -53.1 131.9	14 43.0 -52.9 131.0	14 14.9 -52.7 130.2
12°	15 11.3 -53.6 134.2	14 44.6 -53.4 133.3	14 17.5 -53.1 132.4	13 50.1 -53.0 131.5	13 22.2 -52.7 130.6
13°	14 17.7 -53.6 134.7	13 51.2 -53.4 133.8	13 24.4 -53.2 132.9	12 57.1 -53.0 132.0	12 29.5 -52.8 131.1
14°	13 24.1 -53.7 135.1	12 57.8 -53.4 134.3	12 31.2 -53.3 133.4	12 04.1 -53.0 132.5	11 36.7 -52.9 131.6
15°	12 30.4 -53.7 135.6	12 04.4 -53.6 134.7	11 37.9 -53.3 133.8	11 11.1 -53.1 133.0	10 43.8 -52.8 132.1
16°	11 36.7 -53.8 136.1	11 10.8 -53.5 135.2	10 44.6 -53.3 134.3	10 18.0 -53.2 133.4	9 51.0 -53.0 132.6
17°	10 42.9 -53.8 136.5	10 17.3 -53.6 135.6	9 51.3 -53.4 134.8	9 24.8 -53.1 133.9	8 58.0 -52.9 133.1
18°	9 49.1 -53.9 137.0	9 23.7 -53.7 136.1	8 57.9 -53.5 135.2	8 31.7 -53.3 134.4	8 05.1 -53.0 133.5
19°	8 55.2 -53.8 137.4	8 30.0 -53.6 136.6	8 04.4 -53.4 135.7	7 38.4 -53.2 134.9	7 12.1 -53.1 134.0
20°	8 01.4 -53.9 137.9	7 36.4 -53.7 137.0	7 11.0 -53.5 136.2	6 45.2 -53.3 135.3	6 19.0 -53.0 134.5
21°	7 07.5 -54.0 138.3	6 42.7 -53.7 137.5	6 17.5 -53.5 136.6	5 51.9 -53.2 135.8	5 26.0 -53.1 134.9
22°	6 13.5 -53.9 138.7	5 49.0 -53.8 137.9	5 24.0 -53.5 137.1	4 58.7 -53.3 136.2	4 32.9 -53.1 135.4
23°	5 19.6 -54.0 139.2	4 55.2 -53.7 138.3	4 30.5 -53.5 137.5	4 05.4 -53.4 136.7	3 39.8 -53.1 135.9
24°	4 25.6 -54.0 139.6	4 01.5 -53.8 138.8	3 37.0 -53.6 138.0	3 12.0 -53.3 137.2	2 46.7 -53.1 136.3
25°	3 31.6 -54.0 140.1	3 07.7 -53.8 139.2	2 43.4 -53.6 138.4	2 18.7 -53.4 137.6	1 53.6 -53.1 136.8
26°	2 37.6 -54.0 140.5	2 13.9 -53.8 139.7	1 49.8 -53.5 138.9	1 25.3 -53.3 138.1	1 00.5 -53.2 137.3
27°	1 43.6 -54.0 140.9	1 20.1 -53.7 140.1	0 56.3 -53.6 139.3	0 32.0 -53.4 138.5	0 07.3 -53.1 137.7
28°	0 49.6 -54.0 141.4	0 26.4 -53.8 140.6	0 02.7 -53.6 139.8	-0 21.4 -53.3	-0 45.8 -53.1
29°	-0 04.4 -54.0	-0 27.4 -53.8	-0 50.9 -53.5	-1 14.7 -53.3	-1 38.9 -53.1

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°	23 18.7 -51.5 123.5	22 47.7 -51.3 122.5	22 16.5 -51.2 121.6	21 44.8 -50.9 120.7	21 12.9 -50.7 119.8
1°	22 27.2 -51.7 124.0	21 56.4 -51.5 123.1	21 25.3 -51.3 122.2	20 53.9 -51.1 121.3	20 22.2 -50.9 120.4
2°	21 35.5 -51.7 124.6	21 04.9 -51.5 123.7	20 34.0 -51.3 122.7	20 02.8 -51.2 121.8	19 31.3 -51.0 120.9
3°	20 43.8 -51.9 125.1	20 13.4 -51.7 124.2	19 42.7 -51.5 123.3	19 11.6 -51.2 122.4	18 40.3 -51.1 121.5
4°	19 51.9 -52.0 125.7	19 21.7 -51.7 124.7	18 51.2 -51.6 123.8	18 20.4 -51.4 122.9	17 49.2 -51.2 122.0
5°	18 59.9 -52.0 126.2	18 30.0 -51.9 125.3	17 59.6 -51.6 124.4	17 29.0 -51.5 123.5	16 58.0 -51.2 122.6
6°	18 07.9 -52.1 126.7	17 38.1 -51.9 125.8	17 08.0 -51.7 124.9	16 37.5 -51.5 124.0	16 06.8 -51.4 123.1
7°	17 15.8 -52.2 127.2	16 46.2 -52.0 126.3	16 16.3 -51.9 125.4	15 46.0 -51.6 124.5	15 15.4 -51.4 123.7
8°	16 23.6 -52.3 127.7	15 54.2 -52.1 126.8	15 24.4 -51.8 126.0	14 54.4 -51.7 125.1	14 24.0 -51.5 124.2
9°	15 31.3 -52.4 128.3	15 02.1 -52.2 127.4	14 32.6 -52.0 126.5	14 02.7 -51.8 125.6	13 32.5 -51.6 124.7
10°	14 38.9 -52.4 128.8	14 09.9 -52.2 127.9	13 40.6 -52.0 127.0	13 10.9 -51.8 126.1	12 40.9 -51.6 125.2
11°	13 46.5 -52.5 129.3	13 17.7 -52.3 128.4	12 48.6 -52.1 127.5	12 19.1 -51.9 126.6	11 49.3 -51.7 125.8
12°	12 54.0 -52.5 129.8	12 25.4 -52.3 128.9	11 56.5 -52.1 128.0	11 27.2 -51.9 127.2	10 57.6 -51.7 126.3
13°	12 01.5 -52.6 130.3	11 33.1 -52.4 129.4	11 04.4 -52.2 128.5	10 35.3 -52.0 127.7	10 05.9 -51.8 126.8
14°	11 08.9 -52.6 130.7	10 40.7 -52.4 129.9	10 12.2 -52.2 129.0	9 43.3 -52.0 128.2	9 14.1 -51.8 127.3
15°	10 16.3 -52.7 131.2	9 48.3 -52.5 130.4	9 20.0 -52.3 129.5	8 51.3 -52.1 128.7	8 22.3 -51.9 127.8
16°	9 23.6 -52.7 131.7	8 55.8 -52.5 130.9	8 27.7 -52.3 130.0	7 59.2 -52.1 129.2	7 30.4 -51.9 128.3
17°	8 30.9 -52.8 132.2	8 03.3 -52.5 131.4	7 35.4 -52.3 130.5	7 07.1 -52.1 129.7	6 38.5 -51.9 128.8
18°	7 38.1 -52.8 132.7	7 10.8 -52.6 131.8	6 43.1 -52.4 131.0	6 15.0 -52.1 130.2	5 46.6 -51.9 129.3
19°	6 45.3 -52.8 133.2	6 18.2 -52.6 132.3	5 50.7 -52.4 131.5	5 22.9 -52.2 130.7	4 54.7 -52.0 129.8
20°	5 52.5 -52.8 133.6	5 25.6 -52.6 132.8	4 58.3 -52.4 132.0	4 30.7 -52.2 131.2	4 02.7 -52.0 130.3
21°	4 59.7 -52.9 134.1	4 33.0 -52.7 133.3	4 05.9 -52.4 132.5	3 38.5 -52.3 131.7	3 10.7 -52.0 130.8
22°	4 06.8 -52.9 134.6	3 40.3 -52.7 133.8	3 13.5 -52.5 133.0	2 46.2 -52.2 132.2	2 18.7 -52.0 131.3
23°	3 13.9 -52.9 135.1	2 47.6 -52.6 134.3	2 21.0 -52.4 133.4	1 54.0 -52.2 132.6	1 26.7 -52.1 131.8
24°	2 21.0 -52.9 135.5	1 55.0 -52.7 134.7	1 28.6 -52.5 133.9	1 01.8 -52.3 133.1	0 34.6 -52.0 132.3
25°	1 28.1 -52.9 136.0	1 02.3 -52.7 135.2	0 36.1 -52.5 134.4	0 09.5 -52.2 133.6	-0 17.4 -52.0
26°	0 35.2 -52.9 136.5	0 09.6 -52.7 135.7	-0 16.4 -52.4	-0 42.7 -52.3	-1 09.4 -52.0
27°	-0 17.7 -52.9	-0 43.1 -52.7	-1 08.8 -52.5	-1 35.0 -52.2	-2 01.4 -52.0
28°	-1 10.6 -52.9	-1 35.8 -52.6	-2 01.3 -52.4	-2 27.2 -52.2	-2 53.4 -52.0
29°	-2 03.5 -52.9	-2 28.4 -52.7	-2 53.7 -52.5	-3 19.4 -52.2	-3 45.4 -52.0

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°	20 40.7 -50.6 118.9	20 08.2 -50.4 118.0	19 35.5 -50.2 117.1	19 02.5 -50.1 116.2	18 29.2 -49.9 115.3
1°	19 50.1 -50.7 119.5	19 17.8 -50.5 118.6	18 45.3 -50.4 117.7	18 12.4 -50.2 116.8	17 39.3 -50.0 115.9
2°	18 59.4 -50.8 120.0	18 27.3 -50.6 119.1	17 54.9 -50.4 118.3	17 22.2 -50.2 117.4	16 49.3 -50.1 116.5
3°	18 08.6 -50.9 120.6	17 36.7 -50.7 119.7	17 04.5 -50.6 118.8	16 32.0 -50.4 117.9	15 59.2 -50.2 117.1
4°	17 17.7 -51.0 121.1	16 46.0 -50.8 120.3	16 13.9 -50.6 119.4	15 41.6 -50.5 118.5	15 09.0 -50.3 117.6
5°	16 26.7 -51.0 121.7	15 55.2 -50.9 120.8	15 23.3 -50.7 119.9	14 51.1 -50.5 119.1	14 18.7 -50.3 118.2
6°	15 35.7 -51.2 122.2	15 04.3 -51.0 121.4	14 32.6 -50.8 120.5	14 00.6 -50.6 119.6	13 28.4 -50.5 118.8
7°	14 44.5 -51.2 122.8	14 13.3 -51.0 121.9	13 41.8 -50.9 121.0	13 10.0 -50.7 120.2	12 37.9 -50.5 119.3
8°	13 53.3 -51.3 123.3	13 22.3 -51.2 122.5	12 50.9 -50.9 121.6	12 19.3 -50.7 120.7	11 47.4 -50.5 119.9
9°	13 02.0 -51.4 123.9	12 31.1 -51.1 123.0	12 00.0 -51.0 122.1	11 28.6 -50.8 121.3	10 56.9 -50.7 120.4
10°	12 10.6 -51.4 124.4	11 40.0 -51.3 123.5	11 09.0 -51.0 122.7	10 37.8 -50.9 121.8	10 06.2 -50.6 121.0
11°	11 19.2 -51.5 124.9	10 48.7 -51.3 124.1	10 18.0 -51.1 123.2	9 46.9 -50.9 122.4	9 15.6 -50.8 121.5
12°	10 27.7 -51.5 125.4	9 57.4 -51.3 124.6	9 26.9 -51.2 123.7	8 56.0 -51.0 122.9	8 24.8 -50.7 122.1
13°	9 36.2 -51.6 126.0	9 06.1 -51.4 125.1	8 35.7 -51.2 124.3	8 05.0 -51.0 123.4	7 34.1 -50.8 122.6
14°	8 44.6 -51.6 126.5	8 14.7 -51.4 125.6	7 44.5 -51.2 124.8	7 14.0 -51.0 124.0	6 43.3 -50.9 123.1
15°	7 53.0 -51.7 127.0	7 23.3 -51.5 126.1	6 53.3 -51.3 125.3	6 23.0 -51.1 124.5	5 52.4 -50.9 123.7
16°	7 01.3 -51.7 127.5	6 31.8 -51.5 126.7	6 02.0 -51.3 125.8	5 31.9 -51.1 125.0	5 01.5 -50.9 124.2
17°	6 09.6 -51.7 128.0	5 40.3 -51.5 127.2	5 10.7 -51.3 126.4	4 40.8 -51.1 125.5	4 10.6 -50.9 124.7
18°	5 17.9 -51.8 128.5	4 48.8 -51.5 127.7	4 19.4 -51.3 126.9	3 49.7 -51.1 126.1	3 19.7 -50.9 125.3
19°	4 26.1 -51.7 129.0	3 57.3 -51.6 128.2	3 28.1 -51.4 127.4	2 58.6 -51.2 126.6	2 28.8 -51.0 125.8
20°	3 34.4 -51.8 129.5	3 05.7 -51.6 128.7	2 36.7 -51.3 127.9	2 07.4 -51.1 127.1	1 37.8 -50.9 126.3
21°	2 42.6 -51.8 130.0	2 14.1 -51.5 129.2	1 45.4 -51.4 128.4	1 16.3 -51.2 127.6	0 46.9 -51.0 126.8
22°	1 50.8 -51.8 130.5	1 22.6 -51.6 129.7	0 54.0 -51.4 128.9	0 25.1 -51.2 128.2	-0 04.1 -51.0
23°	0 59.0 -51.8 131.0	0 31.0 -51.6 130.3	0 02.6 -51.4 129.5	-0 26.1 -51.1	-0 55.1 -50.9
24°	0 07.2 -51.8 131.6	-0 20.6 -51.6	-0 48.8 -51.4	-1 17.2 -51.2	-1 46.0 -51.0
25°	-0 44.6 -51.8	-1 12.2 -51.6	-1 40.2 -51.3	-2 08.4 -51.2	-2 37.0 -50.9
26°	-1 36.4 -51.8	-2 03.8 -51.6	-2 31.5 -51.4	-2 59.6 -51.1	-3 27.9 -50.9
27°	-2 28.2 -51.8	-2 55.4 -51.6	-3 22.9 -51.3	-3 50.7 -51.1	-4 18.8 -50.9
28°	-3 20.0 -51.8	-3 47.0 -51.5	-4 14.2 -51.3	-4 41.8 -51.1	-5 09.7 -50.9
29°	-4 11.8 -51.8	-4 38.5 -51.5	-5 05.5 -51.3	-5 32.9 -51.1	-6 00.6 -50.8

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°	17 55.7 -49.7 114.5	17 22.0 -49.6 113.6	16 48.0 -49.4 112.7	16 13.8 -49.3 111.9	15 39.5 -49.2 111.0
1°	17 06.0 -49.9 115.0	16 32.4 -49.7 114.2	15 58.6 -49.6 113.3	15 24.5 -49.3 112.5	14 50.3 -49.2 111.6
2°	16 16.1 -49.9 115.6	15 42.7 -49.8 114.8	15 09.0 -49.6 113.9	14 35.2 -49.5 113.1	14 01.1 -49.4 112.2
3°	15 26.2 -50.0 116.2	14 52.9 -49.8 115.3	14 19.4 -49.7 114.5	13 45.7 -49.6 113.6	13 11.7 -49.4 112.8
4°	14 36.2 -50.2 116.8	14 03.1 -50.0 115.9	13 29.7 -49.8 115.1	12 56.1 -49.6 114.2	12 22.3 -49.4 113.4
5°	13 46.0 -50.1 117.3	13 13.1 -50.0 116.5	12 39.9 -49.8 115.6	12 06.5 -49.7 114.8	11 32.9 -49.6 114.0
6°	12 55.9 -50.3 117.9	12 23.1 -50.1 117.1	11 50.1 -50.0 116.2	11 16.8 -49.8 115.4	10 43.3 -49.6 114.5
7°	12 05.6 -50.3 118.5	11 33.0 -50.2 117.6	11 00.1 -50.0 116.8	10 27.0 -49.8 115.9	9 53.7 -49.7 115.1
8°	11 15.3 -50.4 119.0	10 42.8 -50.2 118.2	10 10.1 -50.0 117.3	9 37.2 -49.9 116.5	9 04.0 -49.7 115.7
9°	10 24.9 -50.5 119.6	9 52.6 -50.3 118.7	9 20.1 -50.1 117.9	8 47.3 -49.9 117.1	8 14.3 -49.8 116.2
10°	9 34.4 -50.5 120.1	9 02.3 -50.3 119.3	8 30.0 -50.2 118.5	7 57.4 -50.0 117.6	7 24.5 -49.8 116.8
11°	8 43.9 -50.5 120.7	8 12.0 -50.3 119.8	7 39.8 -50.1 119.0	7 07.4 -50.0 118.2	6 34.7 -49.8 117.4
12°	7 53.4 -50.6 121.2	7 21.7 -50.4 120.4	6 49.7 -50.3 119.6	6 17.4 -50.1 118.7	5 44.9 -49.9 117.9
13°	7 02.8 -50.6 121.8	6 31.3 -50.5 120.9	5 59.4 -50.2 120.1	5 27.3 -50.0 119.3	4 55.0 -49.9 118.5
14°	6 12.2 -50.7 122.3	5 40.8 -50.5 121.5	5 09.2 -50.3 120.7	4 37.3 -50.1 119.8	4 05.1 -49.9 119.0
15°	5 21.5 -50.7 122.8	4 50.3 -50.5 122.0	4 18.9 -50.3 121.2	3 47.2 -50.2 120.4	3 15.2 -50.0 119.6
16°	4 30.8 -50.7 123.4	3 59.8 -50.5 122.6	3 28.6 -50.4 121.8	2 57.0 -50.1 120.9	2 25.2 -50.0 120.1
17°	3 40.1 -50.7 123.9	3 09.3 -50.5 123.1	2 38.2 -50.3 122.3	2 06.9 -50.2 121.5	1 35.2 -49.9 120.7
18°	2 49.4 -50.7 124.4	2 18.8 -50.6 123.6	1 47.9 -50.4 122.8	1 16.7 -50.1 122.0	0 45.3 -50.0 121.3
19°	1 58.7 -50.8 125.0	1 28.2 -50.5 124.2	0 57.5 -50.3 123.4	0 26.6 -50.2 122.6	-0 04.7 -50.0
20°	1 07.9 -50.8 125.5	0 37.7 -50.6 124.7	0 07.2 -50.4 123.9	-0 23.6 -50.2	-0 54.7 -49.9
21°	0 17.1 -50.7 126.0	-0 12.9 -50.5	-0 43.2 -50.3	-1 13.8 -50.1	-1 44.6 -50.0
22°	-0 33.6 -50.8	-1 03.4 -50.6	-1 33.5 -50.4	-2 03.9 -50.2	-2 34.6 -50.0
23°	-1 24.4 -50.7	-1 54.0 -50.5	-2 23.9 -50.3	-2 54.1 -50.1	-3 24.6 -49.9
24°	-2 15.1 -50.8	-2 44.5 -50.5	-3 14.2 -50.3	-3 44.2 -50.1	-4 14.5 -49.9
25°	-3 05.9 -50.7	-3 35.0 -50.6	-4 04.5 -50.3	-4 34.3 -50.1	-5 04.4 -49.9
26°	-3 56.6 -50.7	-4 25.6 -50.4	-4 54.8 -50.3	-5 24.4 -50.1	-5 54.3 -49.8
27°	-4 47.3 -50.7	-5 16.0 -50.5	-5 45.1 -50.2	-6 14.5 -50.0	-6 44.1 -49.8
28°	-5 38.0 -50.6	-6 06.5 -50.4	-6 35.3 -50.2	-7 04.5 -50.0	-7 33.9 -49.8
29°	-6 28.6 -50.6	-6 56.9 -50.4	-7 25.5 -50.2	-7 54.5 -49.9	-8 23.7 -49.7

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°	15 04.9 -49.0 110.2	14 30.1 -48.9 109.3	13 55.2 -48.8 108.5	13 20.1 -48.7 107.7	12 44.8 -48.5 106.8
1°	14 15.9 -49.1 110.8	13 41.2 -48.9 109.9	13 06.4 -48.8 109.1	12 31.4 -48.7 108.3	11 56.3 -48.6 107.4
2°	13 26.8 -49.2 111.4	12 52.3 -49.1 110.5	12 17.6 -48.9 109.7	11 42.7 -48.8 108.9	11 07.7 -48.7 108.0
3°	12 37.6 -49.3 112.0	12 03.2 -49.1 111.1	11 28.7 -49.0 110.3	10 53.9 -48.8 109.5	10 19.0 -48.7 108.6
4°	11 48.3 -49.3 112.5	11 14.1 -49.2 111.7	10 39.7 -49.1 110.9	10 05.1 -48.9 110.0	9 30.3 -48.8 109.2
5°	10 59.0 -49.4 113.1	10 24.9 -49.2 112.3	9 50.6 -49.1 111.5	9 16.2 -49.0 110.6	8 41.5 -48.9 109.8
6°	10 09.6 -49.5 113.7	9 35.7 -49.4 112.9	9 01.5 -49.1 112.0	8 27.2 -49.0 111.2	7 52.6 -48.8 110.4
7°	9 20.1 -49.5 114.3	8 46.3 -49.3 113.4	8 12.4 -49.3 112.6	7 38.2 -49.1 111.8	7 03.8 -49.0 111.0
8°	8 30.6 -49.5 114.8	7 57.0 -49.4 114.0	7 23.1 -49.2 113.2	6 49.1 -49.1 112.4	6 14.8 -48.9 111.6
9°	7 41.1 -49.7 115.4	7 07.6 -49.5 114.6	6 33.9 -49.3 113.8	6 00.0 -49.2 113.0	5 25.9 -49.1 112.1
10°	6 51.4 -49.6 116.0	6 18.1 -49.5 115.2	5 44.6 -49.4 114.3	5 10.8 -49.2 113.5	4 36.8 -49.0 112.7
11°	6 01.8 -49.7 116.5	5 28.6 -49.5 115.7	4 55.2 -49.3 114.9	4 21.6 -49.2 114.1	3 47.8 -49.0 113.3
12°	5 12.1 -49.7 117.1	4 39.1 -49.5 116.3	4 05.9 -49.4 115.5	3 32.4 -49.2 114.7	2 58.8 -49.1 113.9
13°	4 22.4 -49.7 117.7	3 49.6 -49.6 116.9	3 16.5 -49.4 116.1	2 43.2 -49.2 115.3	2 09.7 -49.1 114.5
14°	3 32.7 -49.8 118.2	3 00.0 -49.6 117.4	2 27.1 -49.4 116.6	1 54.0 -49.3 115.8	1 20.6 -49.1 115.0
15°	2 42.9 -49.8 118.8	2 10.4 -49.6 118.0	1 37.7 -49.5 117.2	1 04.7 -49.3 116.4	0 31.5 -49.1 115.6
16°	1 53.1 -49.7 119.3	1 20.8 -49.6 118.6	0 48.2 -49.4 117.8	0 15.4 -49.2 117.0	-0 17.6 -49.1
17°	1 03.4 -49.8 119.9	0 31.2 -49.6 119.1	-0 01.2 -49.4	-0 33.8 -49.3	-1 06.7 -49.1
18°	0 13.6 -49.8 120.5	-0 18.4 -49.6	-0 50.6 -49.4	-1 23.1 -49.2	-1 55.8 -49.1
19°	-0 36.2 -49.8	-1 08.0 -49.6	-1 40.0 -49.5	-2 12.3 -49.3	-2 44.9 -49.0
20°	-1 26.0 -49.8	-1 57.6 -49.6	-2 29.5 -49.4	-3 01.6 -49.2	-3 33.9 -49.1
21°	-2 15.8 -49.8	-2 47.2 -49.6	-3 18.9 -49.4	-3 50.8 -49.2	-4 23.0 -49.0
22°	-3 05.6 -49.7	-3 36.8 -49.5	-4 08.3 -49.3	-4 40.0 -49.2	-5 12.0 -49.0
23°	-3 55.3 -49.7	-4 26.3 -49.6	-4 57.6 -49.3	-5 29.2 -49.1	-6 01.0 -48.9
24°	-4 45.0 -49.7	-5 15.9 -49.5	-5 46.9 -49.3	-6 18.3 -49.1	-6 49.9 -48.9
25°	-5 34.7 -49.7	-6 05.4 -49.4	-6 36.2 -49.3	-7 07.4 -49.1	-7 38.8 -48.9
26°	-6 24.4 -49.6	-6 54.8 -49.4	-7 25.5 -49.2	-7 56.5 -49.0	-8 27.7 -48.8
27°	-7 14.0 -49.6	-7 44.2 -49.4	-8 14.7 -49.2	-8 45.5 -48.9	-9 16.5 -48.7
28°	-8 03.6 -49.6	-8 33.6 -49.3	-9 03.9 -49.1	-9 34.4 -48.9	
29°	-8 53.2 -49.4	-9 22.9 -49.3	-9 53.0 -49.0		

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°	12 09.3 -48.4 106.0	11 33.8 -48.3 105.2	10 58.0 -48.2 104.4	10 22.2 -48.1 103.5	9 46.2 -48.0 102.7
1°	11 20.9 -48.4 106.6	10 45.5 -48.4 105.8	10 09.8 -48.2 105.0	9 34.1 -48.2 104.2	8 58.2 -48.1 103.3
2°	10 32.5 -48.6 107.2	9 57.1 -48.4 106.4	9 21.6 -48.3 105.6	8 45.9 -48.2 104.8	8 10.1 -48.1 103.9
3°	9 43.9 -48.6 107.8	9 08.7 -48.5 107.0	8 33.3 -48.4 106.2	7 57.7 -48.3 105.4	7 22.0 -48.1 104.5
4°	8 55.3 -48.7 108.4	8 20.2 -48.6 107.6	7 44.9 -48.4 106.8	7 09.4 -48.3 106.0	6 33.9 -48.3 105.1
5°	8 06.6 -48.7 109.0	7 31.6 -48.6 108.2	6 56.5 -48.5 107.4	6 21.1 -48.3 106.6	5 45.6 -48.2 105.7
6°	7 17.9 -48.7 109.6	6 43.0 -48.6 108.8	6 08.0 -48.5 108.0	5 32.8 -48.4 107.1	4 57.4 -48.3 106.3
7°	6 29.2 -48.8 110.2	5 54.4 -48.7 109.4	5 19.5 -48.6 108.5	4 44.4 -48.5 107.7	4 09.1 -48.3 106.9
8°	5 40.4 -48.9 110.8	5 05.7 -48.7 109.9	4 30.9 -48.5 109.1	3 55.9 -48.4 108.3	3 20.8 -48.3 107.5
9°	4 51.5 -48.8 111.3	4 17.0 -48.7 110.5	3 42.4 -48.6 109.7	3 07.5 -48.5 108.9	2 32.5 -48.4 108.1
10°	4 02.7 -48.9 111.9	3 28.3 -48.7 111.1	2 53.8 -48.7 110.3	2 19.0 -48.5 109.5	1 44.1 -48.3 108.7
11°	3 13.8 -48.9 112.5	2 39.6 -48.8 111.7	2 05.1 -48.6 110.9	1 30.5 -48.4 110.1	0 55.8 -48.4 109.3
12°	2 24.9 -48.9 113.1	1 50.8 -48.8 112.3	1 16.5 -48.6 111.5	0 42.1 -48.5 110.7	0 07.4 -48.4 109.9
13°	1 36.0 -49.0 113.7	1 02.0 -48.8 112.9	0 27.9 -48.7 112.1	-0 06.4 -48.5	-0 41.0 -48.3
14°	0 47.0 -48.9 114.2	0 13.2 -48.8 113.4	-0 20.8 -48.6	-0 54.9 -48.5	-1 29.3 -48.4
15°	-0 01.9 -49.0	-0 35.6 -48.7	-1 09.4 -48.6	-1 43.4 -48.5	-2 17.7 -48.3
16°	-0 50.9 -48.9	-1 24.3 -48.8	-1 58.0 -48.6	-2 31.9 -48.5	-3 06.0 -48.3
17°	-1 39.8 -48.9	-2 13.1 -48.8	-2 46.6 -48.6	-3 20.4 -48.4	-3 54.3 -48.3
18°	-2 28.7 -48.9	-3 01.9 -48.7	-3 35.2 -48.6	-4 08.8 -48.4	-4 42.6 -48.3
19°	-3 17.6 -48.9	-3 50.6 -48.7	-4 23.8 -48.6	-4 57.2 -48.4	-5 30.9 -48.2
20°	-4 06.5 -48.9	-4 39.3 -48.7	-5 12.4 -48.5	-5 45.6 -48.4	-6 19.1 -48.2
21°	-4 55.4 -48.8	-5 28.0 -48.7	-6 00.9 -48.5	-6 34.0 -48.3	-7 07.3 -48.1
22°	-5 44.2 -48.8	-6 16.7 -48.6	-6 49.4 -48.4	-7 22.3 -48.2	-7 55.4 -48.1
23°	-6 33.0 -48.8	-7 05.3 -48.6	-7 37.8 -48.4	-8 10.5 -48.2	-8 43.5 -48.0
24°	-7 21.8 -48.7	-7 53.9 -48.5	-8 26.2 -48.3	-8 58.7 -48.2	-9 31.5 -48.0
25°	-8 10.5 -48.6	-8 42.4 -48.4	-9 14.5 -48.3	-9 46.9 -48.1	
26°	-8 59.1 -48.6	-9 30.8 -48.4			
27°	-9 47.7 -48.6				
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°	9 10.1 -47.9 101.9	8 33.9 -47.8 101.1	7 57.6 -47.7 100.3	7 21.3 -47.7 99.5	6 44.8 -47.7 98.7
1°	8 22.2 -48.0 102.5	7 46.1 -47.9 101.7	7 09.9 -47.8 100.9	6 33.6 -47.8 100.1	5 57.1 -47.6 99.3
2°	7 34.2 -48.0 103.1	6 58.2 -47.9 102.3	6 22.1 -47.9 101.5	5 45.8 -47.8 100.7	5 09.5 -47.7 99.9
3°	6 46.2 -48.1 103.7	6 10.3 -48.0 102.9	5 34.2 -47.9 102.1	4 58.0 -47.8 101.3	4 21.8 -47.8 100.5
4°	5 58.1 -48.1 104.3	5 22.3 -48.0 103.5	4 46.3 -47.9 102.7	4 10.2 -47.8 101.9	3 34.0 -47.7 101.1
5°	5 10.0 -48.1 104.9	4 34.3 -48.1 104.1	3 58.4 -48.0 103.3	3 22.4 -47.9 102.5	2 46.3 -47.8 101.8
6°	4 21.9 -48.2 105.5	3 46.2 -48.1 104.7	3 10.4 -47.9 103.9	2 34.5 -47.9 103.2	1 58.5 -47.8 102.4
7°	3 33.7 -48.2 106.1	2 58.1 -48.0 105.3	2 22.5 -48.0 104.5	1 46.6 -47.9 103.8	1 10.7 -47.8 103.0
8°	2 45.5 -48.2 106.7	2 10.1 -48.1 105.9	1 34.5 -48.0 105.1	0 58.7 -47.9 104.4	0 22.9 -47.8 103.6
9°	1 57.3 -48.2 107.3	1 22.0 -48.2 106.5	0 46.5 -48.0 105.7	0 10.8 -47.9 105.0	-0 24.9 -47.8
10°	1 09.1 -48.3 107.9	0 33.8 -48.1 107.1	-0 01.5 -48.0	-0 37.1 -47.8	-1 12.7 -47.8
11°	0 20.8 -48.2 108.5	-0 14.3 -48.1	-0 49.5 -48.0	-1 24.9 -47.9	-2 00.5 -47.8
12°	-0 27.4 -48.2	-1 02.4 -48.1	-1 37.5 -48.0	-2 12.8 -47.9	-2 48.3 -47.7
13°	-1 15.6 -48.3	-1 50.5 -48.1	-2 25.5 -48.0	-3 00.7 -47.9	-3 36.0 -47.8
14°	-2 03.9 -48.2	-2 38.6 -48.1	-3 13.5 -48.0	-3 48.6 -47.8	-4 23.8 -47.7
15°	-2 52.1 -48.2	-3 26.7 -48.0	-4 01.5 -47.9	-4 36.4 -47.8	-5 11.5 -47.6
16°	-3 40.3 -48.2	-4 14.7 -48.1	-4 49.4 -47.9	-5 24.2 -47.7	-5 59.1 -47.7
17°	-4 28.5 -48.1	-5 02.8 -48.0	-5 37.3 -47.8	-6 11.9 -47.8	-6 46.8 -47.6
18°	-5 16.6 -48.1	-5 50.8 -47.9	-6 25.1 -47.8	-6 59.7 -47.6	-7 34.4 -47.5
19°	-6 04.7 -48.1	-6 38.7 -47.9	-7 12.9 -47.8	-7 47.3 -47.6	-8 21.9 -47.5
20°	-6 52.8 -48.0	-7 26.6 -47.9	-8 00.7 -47.7	-8 34.9 -47.6	-9 09.4 -47.4
21°	-7 40.8 -48.0	-8 14.5 -47.8	-8 48.4 -47.7	-9 22.5 -47.5	-9 56.8 -47.3
22°	-8 28.8 -47.9	-9 02.3 -47.8	-9 36.1 -47.5		
23°	-9 16.7 -47.8	-9 50.1 -47.6			
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°	6 08.2 -47.5 97.9	5 31.6 -47.5 97.1	4 54.9 -47.5 96.3	4 18.2 -47.5 95.5	3 41.4 -47.4 94.7
1°	5 20.7 -47.7 98.5	4 44.1 -47.6 97.7	4 07.4 -47.5 96.9	3 30.7 -47.4 96.1	2 54.0 -47.4 95.3
2°	4 33.0 -47.6 99.1	3 56.5 -47.5 98.3	3 19.9 -47.5 97.5	2 43.3 -47.5 96.8	2 06.6 -47.4 96.0
3°	3 45.4 -47.7 99.7	3 09.0 -47.6 98.9	2 32.4 -47.5 98.2	1 55.8 -47.5 97.4	1 19.2 -47.5 96.6
4°	2 57.7 -47.6 100.4	2 21.4 -47.7 99.6	1 44.9 -47.6 98.8	1 08.3 -47.4 98.0	0 31.7 -47.4 97.2
5°	2 10.1 -47.7 101.0	1 33.7 -47.6 100.2	0 57.3 -47.5 99.4	0 20.9 -47.5 98.6	-0 15.7 -47.4
6°	1 22.4 -47.8 101.6	0 46.1 -47.6 100.8	0 09.8 -47.6 100.0	-0 26.6 -47.5	-1 03.1 -47.5
7°	0 34.6 -47.7 102.2	-0 01.5 -47.6	-0 37.8 -47.5	-1 14.1 -47.5	-1 50.6 -47.4
8°	-0 13.1 -47.7	-0 49.1 -47.7	-1 25.3 -47.6	-2 01.6 -47.5	-2 38.0 -47.4
9°	-1 00.8 -47.7	-1 36.8 -47.6	-2 12.9 -47.5	-2 49.1 -47.4	-3 25.4 -47.4
10°	-1 48.5 -47.7	-2 24.4 -47.6	-3 00.4 -47.5	-3 36.5 -47.5	-4 12.8 -47.3
11°	-2 36.2 -47.7	-3 12.0 -47.6	-3 47.9 -47.5	-4 24.0 -47.4	-5 00.1 -47.3
12°	-3 23.9 -47.6	-3 59.6 -47.5	-4 35.4 -47.5	-5 11.4 -47.3	-5 47.4 -47.3
13°	-4 11.5 -47.6	-4 47.1 -47.5	-5 22.9 -47.4	-5 58.7 -47.3	-6 34.7 -47.2
14°	-4 59.1 -47.6	-5 34.6 -47.5	-6 10.3 -47.3	-6 46.0 -47.3	-7 21.9 -47.2
15°	-5 46.7 -47.6	-6 22.1 -47.4	-6 57.6 -47.4	-7 33.3 -47.2	-8 09.1 -47.1
16°	-6 34.3 -47.5	-7 09.5 -47.4	-7 45.0 -47.2	-8 20.5 -47.2	-8 56.2 -47.1
17°	-7 21.8 -47.4	-7 56.9 -47.4	-8 32.2 -47.2	-9 07.7 -47.1	-9 43.3 -46.9
18°	-8 09.2 -47.4	-8 44.3 -47.2	-9 19.4 -47.2	-9 54.8 -47.0	
19°	-8 56.6 -47.4	-9 31.5 -47.2			
20°	-9 44.0 -47.2				
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°	3 04.6 -47.4 93.9	2 27.7 -47.3 93.2	1 50.8 -47.3 92.4	1 13.9 -47.3 91.6	0 36.9 -47.2 90.8
1°	2 17.2 -47.4 94.6	1 40.4 -47.4 93.8	1 03.5 -47.3 93.0	0 26.6 -47.3 92.2	-0 10.3 -47.3
2°	1 29.8 -47.4 95.2	0 53.0 -47.3 94.4	0 16.2 -47.4 93.6	-0 20.7 -47.3	-0 57.6 -47.3
3°	0 42.4 -47.4 95.8	0 05.7 -47.4 95.0	-0 31.2 -47.3	-1 08.0 -47.3	-1 44.9 -47.3
4°	-0 05.0 -47.3	-0 41.7 -47.3	-1 18.5 -47.3	-1 55.3 -47.3	-2 32.2 -47.2
5°	-0 52.3 -47.4	-1 29.0 -47.4	-2 05.8 -47.3	-2 42.6 -47.2	-3 19.4 -47.2
6°	-1 39.7 -47.4	-2 16.4 -47.3	-2 53.1 -47.2	-3 29.8 -47.3	-4 06.6 -47.2
7°	-2 27.1 -47.4	-3 03.7 -47.3	-3 40.3 -47.3	-4 17.1 -47.2	-4 53.8 -47.2
8°	-3 14.5 -47.3	-3 51.0 -47.3	-4 27.6 -47.2	-5 04.3 -47.1	-5 41.0 -47.1
9°	-4 01.8 -47.3	-4 38.3 -47.2	-5 14.8 -47.2	-5 51.4 -47.2	-6 28.1 -47.1
10°	-4 49.1 -47.3	-5 25.5 -47.2	-6 02.0 -47.1	-6 38.6 -47.0	-7 15.2 -47.0
11°	-5 36.4 -47.2	-6 12.7 -47.2	-6 49.1 -47.1	-7 25.6 -47.1	-8 02.2 -47.0
12°	-6 23.6 -47.2	-6 59.9 -47.1	-7 36.2 -47.1	-8 12.7 -46.9	-8 49.2 -46.9
13°	-7 10.8 -47.1	-7 47.0 -47.0	-8 23.3 -46.9	-8 59.6 -46.9	-9 36.1 -46.8
14°	-7 57.9 -47.1	-8 34.0 -47.0	-9 10.2 -46.9	-9 46.5 -46.9	
15°	-8 45.0 -47.0	-9 21.0 -46.9	-9 57.1 -46.9		
16°	-9 32.0 -47.0				
17°					
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

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 -47.3 90.0	-0 36.9 -47.3			
1°	-0 47.3 -47.3	-1 24.2 -47.3			
2°	-1 34.6 -47.2	-2 11.5 -47.2			
3°	-2 21.8 -47.3	-2 58.7 -47.3			
4°	-3 09.1 -47.2	-3 46.0 -47.2			
5°	-3 56.3 -47.2	-4 33.2 -47.2			
6°	-4 43.5 -47.2	-5 20.4 -47.1			
7°	-5 30.7 -47.1	-6 07.5 -47.1			
8°	-6 17.8 -47.1	-6 54.6 -47.0			
9°	-7 04.9 -47.0	-7 41.6 -47.0			
10°	-7 51.9 -47.0	-8 28.6 -47.0			
11°	-8 38.9 -46.9	-9 15.6 -46.8			
12°	-9 25.8 -46.8				
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°					

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°	37 00.0 -60.0 180.0	36 59.6 -60.0 178.7	36 58.4 -60.0 177.5	36 56.5 -60.0 176.2	36 53.7 -59.9 175.0
1°	36 00.0 -60.0 180.0	35 59.6 -60.0 178.8	35 58.4 -59.9 177.5	35 56.5 -60.0 176.3	35 53.8 -59.9 175.1
2°	35 00.0 -60.0 180.0	34 59.6 -60.0 178.8	34 58.5 -60.0 177.6	34 56.5 -59.9 176.3	34 53.9 -60.0 175.1
3°	34 00.0 -60.0 180.0	33 59.6 -60.0 178.8	33 58.5 -60.0 177.6	33 56.6 -60.0 176.4	33 53.9 -59.9 175.2
4°	33 00.0 -60.0 180.0	32 59.6 -60.0 178.8	32 58.5 -60.0 177.6	32 56.6 -59.9 176.4	32 54.0 -59.9 175.2
5°	32 00.0 -60.0 180.0	31 59.6 -60.0 178.8	31 58.5 -60.0 177.7	31 56.7 -60.0 176.5	31 54.1 -59.9 175.3
6°	31 00.0 -60.0 180.0	30 59.6 -60.0 178.8	30 58.5 -59.9 177.7	30 56.7 -59.9 176.5	30 54.2 -60.0 175.4
7°	30 00.0 -60.0 180.0	29 59.6 -60.0 178.9	29 58.6 -60.0 177.7	29 56.8 -60.0 176.6	29 54.2 -59.9 175.4
8°	29 00.0 -60.0 180.0	28 59.6 -60.0 178.9	28 58.6 -60.0 177.7	28 56.8 -60.0 176.6	28 54.3 -59.9 175.5
9°	28 00.0 -60.0 180.0	27 59.6 -59.9 178.9	27 58.6 -60.0 177.8	27 56.8 -59.9 176.6	27 54.4 -60.0 175.5
10°	27 00.0 -60.0 180.0	26 59.7 -60.0 178.9	26 58.6 -60.0 177.8	26 56.9 -60.0 176.7	26 54.4 -59.9 175.6
11°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 58.6 -60.0 177.8	25 56.9 -60.0 176.7	25 54.5 -59.9 175.6
12°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 58.6 -59.9 177.8	24 56.9 -59.9 176.8	24 54.6 -60.0 175.7
13°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.7 -60.0 177.9	23 57.0 -60.0 176.8	23 54.6 -59.9 175.7
14°	23 00.0 -60.0 180.0	22 59.7 -60.0 178.9	22 58.7 -60.0 177.9	22 57.0 -60.0 176.8	22 54.7 -59.9 175.8
15°	22 00.0 -60.0 180.0	21 59.7 -60.0 179.0	21 58.7 -60.0 177.9	21 57.0 -59.9 176.9	21 54.8 -60.0 175.8
16°	21 00.0 -60.0 180.0	20 59.7 -60.0 179.0	20 58.7 -60.0 177.9	20 57.1 -60.0 176.9	20 54.8 -59.9 175.9
17°	20 00.0 -60.0 180.0	19 59.7 -60.0 179.0	19 58.7 -60.0 178.0	19 57.1 -60.0 176.9	19 54.9 -60.0 175.9
18°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.7 -60.0 178.0	18 57.1 -59.9 177.0	18 54.9 -59.9 176.0
19°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 58.7 -59.9 178.0	17 57.2 -60.0 177.0	17 55.0 -60.0 176.0
20°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 58.8 -60.0 178.0	16 57.2 -60.0 177.1	16 55.0 -59.9 176.1
21°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 58.8 -60.0 178.1	15 57.2 -59.9 177.1	15 55.1 -59.9 176.1
22°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.0	14 58.8 -60.0 178.1	14 57.3 -60.0 177.1	14 55.2 -60.0 176.2
23°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.1	13 58.8 -60.0 178.1	13 57.3 -60.0 177.2	13 55.2 -59.9 176.2
24°	13 00.0 -60.0 180.0	12 59.7 -60.0 179.1	12 58.8 -60.0 178.1	12 57.3 -59.9 177.2	12 55.3 -60.0 176.3
25°	12 00.0 -60.0 180.0	11 59.7 -60.0 179.1	11 58.8 -60.0 178.1	11 57.4 -60.0 177.2	11 55.3 -59.9 176.3
26°	11 00.0 -60.0 180.0	10 59.7 -60.0 179.1	10 58.8 -59.9 178.2	10 57.4 -60.0 177.3	10 55.4 -60.0 176.3
27°	10 00.0 -60.0 180.0	9 59.7 -60.0 179.1	9 58.9 -60.0 178.2	9 57.4 -59.9 177.3	9 55.4 -59.9 176.4
28°	9 00.0 -60.0 180.0	8 59.7 -60.0 179.1	8 58.9 -60.0 178.2	8 57.5 -60.0 177.3	8 55.5 -60.0 176.4
29°	8 00.0 -60.0 180.0	7 59.7 -60.0 179.1	7 58.9 -60.0 178.2	7 57.5 -60.0 177.4	7 55.5 -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°	36 50.2 -59.9 173.7	36 45.8 -59.8 172.5	36 40.7 -59.7 171.3	36 34.9 -59.7 170.0	36 28.2 -59.6 168.8
1°	35 50.3 -59.9 173.8	35 46.0 -59.8 172.6	35 41.0 -59.8 171.4	35 35.2 -59.7 170.1	35 28.6 -59.6 168.9
2°	34 50.4 -59.9 173.9	34 46.2 -59.8 172.7	34 41.2 -59.7 171.5	34 35.5 -59.7 170.3	34 29.0 -59.6 169.1
3°	33 50.5 -59.9 174.0	33 46.4 -59.9 172.8	33 41.5 -59.8 171.6	33 35.8 -59.7 170.4	33 29.4 -59.6 169.2
4°	32 50.6 -59.8 174.1	32 46.5 -59.8 172.9	32 41.7 -59.8 171.7	32 36.1 -59.7 170.5	32 29.8 -59.6 169.3
5°	31 50.8 -59.9 174.1	31 46.7 -59.8 173.0	31 41.9 -59.8 171.8	31 36.4 -59.7 170.6	31 30.2 -59.7 169.5
6°	30 50.9 -59.9 174.2	30 46.9 -59.9 173.1	30 42.1 -59.7 171.9	30 36.7 -59.7 170.7	30 30.5 -59.6 169.6
7°	29 51.0 -59.9 174.3	29 47.0 -59.8 173.1	29 42.4 -59.8 172.0	29 37.0 -59.8 170.9	29 30.9 -59.7 169.7
8°	28 51.1 -59.9 174.3	28 47.2 -59.9 173.2	28 42.6 -59.8 172.1	28 37.2 -59.7 171.0	28 31.2 -59.6 169.8
9°	27 51.2 -59.9 174.4	27 47.3 -59.8 173.3	27 42.8 -59.8 172.2	27 37.5 -59.7 171.1	27 31.6 -59.7 170.0
10°	26 51.3 -59.9 174.5	26 47.5 -59.9 173.4	26 43.0 -59.8 172.3	26 37.8 -59.8 171.2	26 31.9 -59.7 170.1
11°	25 51.4 -59.9 174.5	25 47.6 -59.8 173.5	25 43.2 -59.8 172.4	25 38.0 -59.7 171.3	25 32.2 -59.6 170.2
12°	24 51.5 -59.9 174.6	24 47.8 -59.9 173.5	24 43.4 -59.8 172.5	24 38.3 -59.7 171.4	24 32.6 -59.7 170.3
13°	23 51.6 -59.9 174.7	23 47.9 -59.8 173.6	23 43.6 -59.8 172.5	23 38.6 -59.8 171.5	23 32.9 -59.7 170.4
14°	22 51.7 -59.9 174.7	22 48.1 -59.9 173.7	22 43.8 -59.9 172.6	22 38.8 -59.7 171.6	22 33.2 -59.7 170.5
15°	21 51.8 -59.9 174.8	21 48.2 -59.9 173.8	21 43.9 -59.8 172.7	21 39.1 -59.8 171.7	21 33.5 -59.7 170.6
16°	20 51.9 -59.9 174.9	20 48.3 -59.8 173.8	20 44.1 -59.8 172.8	20 39.3 -59.8 171.8	20 33.8 -59.7 170.8
17°	19 52.0 -59.9 174.9	19 48.5 -59.9 173.9	19 44.3 -59.8 172.9	19 39.5 -59.7 171.9	19 34.1 -59.7 170.9
18°	18 52.1 -59.9 175.0	18 48.6 -59.9 174.0	18 44.5 -59.8 173.0	18 39.8 -59.8 172.0	18 34.4 -59.7 171.0
19°	17 52.2 -59.9 175.0	17 48.7 -59.8 174.0	17 44.7 -59.8 173.1	17 40.0 -59.8 172.1	17 34.7 -59.7 171.1
20°	16 52.3 -59.9 175.1	16 48.9 -59.9 174.1	16 44.9 -59.9 173.1	16 40.2 -59.7 172.2	16 35.0 -59.7 171.2
21°	15 52.4 -60.0 175.1	15 49.0 -59.9 174.2	15 45.0 -59.8 173.2	15 40.5 -59.8 172.2	15 35.3 -59.7 171.3
22°	14 52.4 -59.9 175.2	14 49.1 -59.8 174.2	14 45.2 -59.8 173.3	14 40.7 -59.8 172.3	14 35.6 -59.7 171.4
23°	13 52.5 -59.9 175.3	13 49.3 -59.9 174.3	13 45.4 -59.9 173.4	13 40.9 -59.8 172.4	13 35.9 -59.8 171.5
24°	12 52.6 -59.9 175.3	12 49.4 -59.9 174.4	12 45.5 -59.8 173.4	12 41.1 -59.7 172.5	12 36.1 -59.7 171.6
25°	11 52.7 -59.9 175.4	11 49.5 -59.9 174.4	11 45.7 -59.8 173.5	11 41.4 -59.8 172.6	11 36.4 -59.7 171.7
26°	10 52.8 -59.9 175.4	10 49.6 -59.9 174.5	10 45.9 -59.8 173.6	10 41.6 -59.8 172.7	10 36.7 -59.7 171.8
27°	9 52.9 -59.9 175.5	9 49.7 -59.8 174.6	9 46.1 -59.9 173.7	9 41.8 -59.8 172.8	9 37.0 -59.8 171.9
28°	8 53.0 -60.0 175.5	8 49.9 -59.9 174.6	8 46.2 -59.8 173.7	8 42.0 -59.8 172.9	8 37.2 -59.7 172.0
29°	7 53.0 -59.9 175.6	7 50.0 -59.9 174.7	7 46.4 -59.9 173.8	7 42.2 -59.8 172.9	7 37.5 -59.7 172.1

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°	36 20.8 -59.5 167.5	36 12.6 -59.3 166.3	36 03.7 -59.3 165.1	35 54.1 -59.2 163.9	35 43.7 -59.1 162.7
1°	35 21.3 -59.5 167.7	35 13.3 -59.5 166.5	35 04.4 -59.3 165.3	34 54.9 -59.2 164.1	34 44.6 -59.0 162.9
2°	34 21.8 -59.5 167.9	34 13.8 -59.4 166.7	34 05.1 -59.3 165.5	33 55.7 -59.2 164.3	33 45.6 -59.1 163.1
3°	33 22.3 -59.6 168.0	33 14.4 -59.4 166.8	33 05.8 -59.3 165.7	32 56.5 -59.2 164.5	32 46.5 -59.1 163.3
4°	32 22.7 -59.5 168.2	32 15.0 -59.5 167.0	32 06.5 -59.4 165.8	31 57.3 -59.2 164.7	31 47.4 -59.1 163.5
5°	31 23.2 -59.6 168.3	31 15.5 -59.4 167.2	31 07.1 -59.3 166.0	30 58.1 -59.3 164.8	30 48.3 -59.2 163.7
6°	30 23.6 -59.5 168.5	30 16.1 -59.5 167.3	30 07.8 -59.4 166.2	29 58.8 -59.3 165.0	29 49.1 -59.1 163.9
7°	29 24.1 -59.6 168.6	29 16.6 -59.5 167.5	29 08.4 -59.4 166.3	28 59.5 -59.3 165.2	28 50.0 -59.2 164.1
8°	28 24.5 -59.6 168.7	28 17.1 -59.5 167.6	28 09.0 -59.4 166.5	28 00.2 -59.2 165.4	27 50.8 -59.2 164.3
9°	27 24.9 -59.6 168.9	27 17.6 -59.5 167.8	27 09.6 -59.4 166.7	27 01.0 -59.4 165.6	26 51.6 -59.2 164.5
10°	26 25.3 -59.5 169.0	26 18.1 -59.5 167.9	26 10.2 -59.4 166.8	26 01.6 -59.3 165.7	25 52.4 -59.2 164.6
11°	25 25.8 -59.6 169.1	25 18.6 -59.5 168.0	25 10.8 -59.4 167.0	25 02.3 -59.3 165.9	24 53.2 -59.2 164.8
12°	24 26.2 -59.7 169.2	24 19.1 -59.5 168.2	24 11.4 -59.5 167.1	24 03.0 -59.4 166.1	23 54.0 -59.3 165.0
13°	23 26.5 -59.6 169.4	23 19.6 -59.6 168.3	23 11.9 -59.4 167.3	23 03.6 -59.3 166.2	22 54.7 -59.2 165.2
14°	22 26.9 -59.6 169.5	22 20.0 -59.5 168.5	22 12.5 -59.5 167.4	22 04.3 -59.4 166.4	21 55.5 -59.3 165.3
15°	21 27.3 -59.6 169.6	21 20.5 -59.6 168.6	21 13.0 -59.4 167.6	21 04.9 -59.3 166.5	20 56.2 -59.3 165.5
16°	20 27.7 -59.6 169.7	20 20.9 -59.5 168.7	20 13.6 -59.5 167.7	20 05.6 -59.4 166.7	19 56.9 -59.2 165.7
17°	19 28.1 -59.7 169.9	19 21.4 -59.6 168.8	19 14.1 -59.5 167.8	19 06.2 -59.4 166.8	18 57.7 -59.3 165.8
18°	18 28.4 -59.6 170.0	18 21.8 -59.5 169.0	18 14.6 -59.5 168.0	18 06.8 -59.4 167.0	17 58.4 -59.3 166.0
19°	17 28.8 -59.6 170.1	17 22.3 -59.6 169.1	17 15.1 -59.4 168.1	17 07.4 -59.4 167.1	16 59.1 -59.3 166.2
20°	16 29.2 -59.7 170.2	16 22.7 -59.6 169.2	16 15.7 -59.5 168.3	16 08.0 -59.4 167.3	15 59.8 -59.3 166.3
21°	15 29.5 -59.6 170.3	15 23.1 -59.5 169.4	15 16.2 -59.5 168.4	15 08.6 -59.4 167.4	15 00.5 -59.4 166.5
22°	14 29.9 -59.7 170.4	14 23.6 -59.6 169.5	14 16.7 -59.5 168.5	14 09.2 -59.4 167.6	14 01.1 -59.3 166.6
23°	13 30.2 -59.6 170.5	13 24.0 -59.6 169.6	13 17.2 -59.5 168.7	13 09.8 -59.4 167.7	13 01.8 -59.3 166.8
24°	12 30.6 -59.7 170.6	12 24.4 -59.6 169.7	12 17.7 -59.5 168.8	12 10.4 -59.5 167.9	12 02.5 -59.3 166.9
25°	11 30.9 -59.7 170.8	11 24.8 -59.6 169.8	11 18.2 -59.5 168.9	11 10.9 -59.4 168.0	11 03.2 -59.4 167.1
26°	10 31.2 -59.6 170.9	10 25.2 -59.6 170.0	10 18.7 -59.6 169.1	10 11.5 -59.4 168.1	10 03.8 -59.3 167.2
27°	9 31.6 -59.7 171.0	9 25.6 -59.6 170.1	9 19.1 -59.5 169.2	9 12.1 -59.5 168.3	9 04.5 -59.4 167.4
28°	8 31.9 -59.6 171.1	8 26.0 -59.5 170.2	8 19.6 -59.5 169.3	8 12.6 -59.4 168.4	8 05.1 -59.3 167.5
29°	7 32.3 -59.7 171.2	7 26.5 -59.6 170.3	7 20.1 -59.5 169.4	7 13.2 -59.4 168.6	7 05.8 -59.4 167.7

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°	35 32.6 -58.9 161.5	35 20.7 -58.7 160.2	35 08.2 -58.7 159.1	34 54.9 -58.5 157.9	34 40.9 -58.2 156.7
1°	34 33.7 -59.0 161.7	34 22.0 -58.8 160.5	34 09.5 -58.6 159.3	33 56.4 -58.4 158.1	33 42.7 -58.4 157.0
2°	33 34.7 -58.9 161.9	33 23.2 -58.9 160.7	33 10.9 -58.7 159.6	32 58.0 -58.6 158.4	32 44.3 -58.3 157.2
3°	32 35.8 -59.0 162.1	32 24.3 -58.8 161.0	32 12.2 -58.7 159.8	31 59.4 -58.5 158.7	31 46.0 -58.4 157.5
4°	31 36.8 -59.0 162.4	31 25.5 -58.9 161.2	31 13.5 -58.7 160.1	31 00.9 -58.6 158.9	30 47.6 -58.5 157.8
5°	30 37.8 -59.0 162.6	30 26.6 -58.9 161.4	30 14.8 -58.8 160.3	30 02.3 -58.6 159.2	29 49.1 -58.4 158.0
6°	29 38.8 -59.1 162.8	29 27.7 -58.9 161.6	29 16.0 -58.7 160.5	29 03.7 -58.7 159.4	28 50.7 -58.5 158.3
7°	28 39.7 -59.0 163.0	28 28.8 -58.9 161.9	28 17.3 -58.8 160.8	28 05.0 -58.6 159.7	27 52.2 -58.6 158.6
8°	27 40.7 -59.1 163.2	27 29.9 -58.9 162.1	27 18.5 -58.9 161.0	27 06.4 -58.7 159.9	26 53.6 -58.5 158.8
9°	26 41.6 -59.1 163.4	26 31.0 -59.0 162.3	26 19.6 -58.8 161.2	26 07.7 -58.7 160.1	25 55.1 -58.6 159.1
10°	25 42.5 -59.1 163.6	25 32.0 -59.0 162.5	25 20.8 -58.9 161.4	25 09.0 -58.8 160.4	24 56.5 -58.6 159.3
11°	24 43.4 -59.1 163.8	24 33.0 -59.0 162.7	24 21.9 -58.8 161.6	24 10.2 -58.7 160.6	23 57.9 -58.6 159.5
12°	23 44.3 -59.1 163.9	23 34.0 -59.0 162.9	23 23.1 -58.9 161.8	23 11.5 -58.8 160.8	22 59.3 -58.6 159.8
13°	22 45.2 -59.2 164.1	22 35.0 -59.1 163.1	22 24.2 -58.9 162.1	22 12.7 -58.8 161.0	22 00.7 -58.7 160.0
14°	21 46.0 -59.1 164.3	21 35.9 -59.0 163.3	21 25.3 -59.0 162.3	21 13.9 -58.8 161.2	21 02.0 -58.6 160.2
15°	20 46.9 -59.2 164.5	20 36.9 -59.1 163.5	20 26.3 -58.9 162.5	20 15.1 -58.8 161.4	20 03.4 -58.7 160.4
16°	19 47.7 -59.2 164.7	19 37.8 -59.0 163.7	19 27.4 -59.0 162.7	19 16.3 -58.8 161.7	19 04.7 -58.7 160.7
17°	18 48.5 -59.2 164.8	18 38.8 -59.1 163.8	18 28.4 -58.9 162.9	18 17.5 -58.9 161.9	18 06.0 -58.8 160.9
18°	17 49.3 -59.2 165.0	17 39.7 -59.1 164.0	17 29.5 -59.0 163.0	17 18.6 -58.8 162.1	17 07.2 -58.7 161.1
19°	16 50.1 -59.2 165.2	16 40.6 -59.1 164.2	16 30.5 -59.0 163.2	16 19.8 -58.9 162.3	16 08.5 -58.7 161.3
20°	15 50.9 -59.2 165.4	15 41.5 -59.1 164.4	15 31.5 -59.0 163.4	15 20.9 -58.9 162.5	15 09.8 -58.8 161.5
21°	14 51.7 -59.2 165.5	14 42.4 -59.1 164.6	14 32.5 -59.0 163.6	14 22.0 -58.8 162.7	14 11.0 -58.8 161.7
22°	13 52.5 -59.2 165.7	13 43.3 -59.1 164.7	13 33.5 -59.0 163.8	13 23.2 -58.9 162.9	13 12.2 -58.7 161.9
23°	12 53.3 -59.3 165.9	12 44.2 -59.2 164.9	12 34.5 -59.0 164.0	12 24.3 -58.9 163.1	12 13.5 -58.8 162.1
24°	11 54.0 -59.2 166.0	11 45.0 -59.1 165.1	11 35.5 -59.1 164.2	11 25.4 -59.0 163.3	11 14.7 -58.8 162.3
25°	10 54.8 -59.2 166.2	10 45.9 -59.1 165.3	10 36.4 -59.0 164.4	10 26.4 -58.9 163.5	10 15.9 -58.8 162.6
26°	9 55.6 -59.3 166.3	9 46.8 -59.2 165.4	9 37.4 -59.0 164.5	9 27.5 -58.9 163.6	9 17.1 -58.8 162.8
27°	8 56.3 -59.2 166.5	8 47.6 -59.1 165.6	8 38.4 -59.1 164.7	8 28.6 -58.9 163.8	8 18.3 -58.8 163.0
28°	7 57.1 -59.3 166.7	7 48.5 -59.2 165.8	7 39.3 -59.0 164.9	7 29.7 -59.0 164.0	7 19.5 -58.9 163.2
29°	6 57.8 -59.2 166.8	6 49.3 -59.1 165.9	6 40.3 -59.1 165.1	6 30.7 -58.9 164.2	6 20.6 -58.8 163.4

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°	34 26.3 -58.1 155.5	34 11.0 -57.9 154.3	33 55.0 -57.7 153.2	33 38.4 -57.6 152.0	33 21.1 -57.4 150.9
1°	33 28.2 -58.2 155.8	33 13.1 -58.0 154.6	32 57.3 -57.9 153.5	32 40.8 -57.6 152.3	32 23.7 -57.4 151.2
2°	32 30.0 -58.2 156.1	32 15.1 -58.1 154.9	31 59.4 -57.8 153.8	31 43.2 -57.7 152.7	31 26.3 -57.5 151.5
3°	31 31.8 -58.2 156.4	31 17.0 -58.1 155.2	31 01.6 -57.9 154.1	30 45.5 -57.7 153.0	30 28.8 -57.6 151.9
4°	30 33.6 -58.3 156.7	30 18.9 -58.1 155.5	30 03.7 -58.0 154.4	29 47.8 -57.8 153.3	29 31.2 -57.6 152.2
5°	29 35.3 -58.3 156.9	29 20.8 -58.1 155.8	29 05.7 -58.0 154.7	28 50.0 -57.8 153.6	28 33.6 -57.6 152.5
6°	28 37.0 -58.4 157.2	28 22.7 -58.2 156.1	28 07.7 -58.0 155.0	27 52.2 -57.9 153.9	27 36.0 -57.7 152.8
7°	27 38.6 -58.3 157.5	27 24.5 -58.2 156.4	27 09.7 -58.1 155.3	26 54.3 -57.9 154.2	26 38.3 -57.7 153.2
8°	26 40.3 -58.4 157.7	26 26.3 -58.3 156.7	26 11.6 -58.0 155.6	25 56.4 -57.9 154.5	25 40.6 -57.8 153.5
9°	25 41.9 -58.5 158.0	25 28.0 -58.3 156.9	25 13.6 -58.2 155.9	24 58.5 -58.0 154.8	24 42.8 -57.8 153.8
10°	24 43.4 -58.4 158.2	24 29.7 -58.3 157.2	24 15.4 -58.1 156.1	24 00.5 -58.0 155.1	23 45.0 -57.8 154.0
11°	23 45.0 -58.5 158.5	23 31.4 -58.3 157.4	23 17.3 -58.2 156.4	23 02.5 -58.0 155.4	22 47.2 -57.9 154.3
12°	22 46.5 -58.5 158.7	22 33.1 -58.3 157.7	22 19.1 -58.2 156.7	22 04.5 -58.0 155.6	21 49.3 -57.9 154.6
13°	21 48.0 -58.5 159.0	21 34.8 -58.4 157.9	21 20.9 -58.2 156.9	21 06.5 -58.1 155.9	20 51.4 -57.9 154.9
14°	20 49.5 -58.5 159.2	20 36.4 -58.4 158.2	20 22.7 -58.3 157.2	20 08.4 -58.1 156.2	19 53.5 -57.9 155.2
15°	19 51.0 -58.6 159.4	19 38.0 -58.4 158.4	19 24.4 -58.2 157.4	19 10.3 -58.1 156.4	18 55.6 -58.0 155.5
16°	18 52.4 -58.6 159.7	18 39.6 -58.5 158.7	18 26.2 -58.3 157.7	18 12.2 -58.2 156.7	17 57.6 -58.0 155.7
17°	17 53.8 -58.5 159.9	17 41.1 -58.4 158.9	17 27.9 -58.3 157.9	17 14.0 -58.1 157.0	16 59.6 -58.0 156.0
18°	16 55.3 -58.7 160.1	16 42.7 -58.5 159.2	16 29.6 -58.4 158.2	16 15.9 -58.2 157.2	16 01.6 -58.0 156.3
19°	15 56.6 -58.6 160.3	15 44.2 -58.5 159.4	15 31.2 -58.3 158.4	15 17.7 -58.2 157.5	15 03.6 -58.1 156.5
20°	14 58.0 -58.6 160.6	14 45.7 -58.5 159.6	14 32.9 -58.4 158.7	14 19.5 -58.2 157.7	14 05.5 -58.0 156.8
21°	13 59.4 -58.6 160.8	13 47.2 -58.5 159.8	13 34.5 -58.3 158.9	13 21.3 -58.3 158.0	13 07.5 -58.1 157.1
22°	13 00.8 -58.7 161.0	12 48.7 -58.5 160.1	12 36.2 -58.4 159.2	12 23.0 -58.2 158.2	12 09.4 -58.1 157.3
23°	12 02.1 -58.6 161.2	11 50.2 -58.5 160.3	11 37.8 -58.4 159.4	11 24.8 -58.3 158.5	11 11.3 -58.1 157.6
24°	11 03.5 -58.7 161.4	10 51.7 -58.6 160.5	10 39.4 -58.4 159.6	10 26.5 -58.2 158.7	10 13.2 -58.2 157.8
25°	10 04.8 -58.7 161.6	9 53.1 -58.5 160.8	9 41.0 -58.4 159.9	9 28.3 -58.3 159.0	9 15.0 -58.1 158.1
26°	9 06.1 -58.7 161.9	8 54.6 -58.6 161.0	8 42.6 -58.5 160.1	8 30.0 -58.3 159.2	8 16.9 -58.1 158.3
27°	8 07.4 -58.7 162.1	7 56.0 -58.5 161.2	7 44.1 -58.4 160.3	7 31.7 -58.3 159.4	7 18.8 -58.2 158.6
28°	7 08.7 -58.7 162.3	6 57.5 -58.6 161.4	6 45.7 -58.4 160.5	6 33.4 -58.3 159.7	6 20.6 -58.1 158.8
29°	6 10.0 -58.7 162.5	5 58.9 -58.6 161.6	5 47.3 -58.5 160.8	5 35.1 -58.3 159.9	5 22.5 -58.2 159.1

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°	33 03.2 -57.2 149.7	32 44.7 -57.0 148.6	32 25.6 -56.8 147.5	32 05.9 -56.6 146.3	31 45.6 -56.4 145.2
1°	32 06.0 -57.2 150.1	31 47.7 -57.0 149.0	31 28.8 -56.9 147.8	31 09.3 -56.7 146.7	30 49.2 -56.5 145.6
2°	31 08.8 -57.3 150.4	30 50.7 -57.2 149.3	30 31.9 -56.9 148.2	30 12.6 -56.7 147.1	29 52.7 -56.5 146.0
3°	30 11.5 -57.4 150.8	29 53.5 -57.2 149.7	29 35.0 -57.0 148.6	29 15.9 -56.8 147.5	28 56.2 -56.6 146.4
4°	29 14.1 -57.4 151.1	28 56.3 -57.2 150.0	28 38.0 -57.0 148.9	28 19.1 -56.9 147.9	27 59.6 -56.7 146.8
5°	28 16.7 -57.5 151.4	27 59.1 -57.3 150.4	27 41.0 -57.1 149.3	27 22.2 -56.9 148.2	27 02.9 -56.7 147.2
6°	27 19.2 -57.5 151.8	27 01.8 -57.3 150.7	26 43.9 -57.2 149.6	26 25.3 -56.9 148.6	26 06.2 -56.8 147.5
7°	26 21.7 -57.6 152.1	26 04.5 -57.4 151.0	25 46.7 -57.2 150.0	25 28.4 -57.0 148.9	25 09.4 -56.8 147.9
8°	25 24.1 -57.5 152.4	25 07.1 -57.4 151.4	24 49.5 -57.2 150.3	24 31.4 -57.1 149.3	24 12.6 -56.8 148.2
9°	24 26.6 -57.7 152.7	24 09.7 -57.5 151.7	23 52.3 -57.3 150.6	23 34.3 -57.1 149.6	23 15.8 -57.0 148.6
10°	23 28.9 -57.6 153.0	23 12.2 -57.4 152.0	22 55.0 -57.3 151.0	22 37.2 -57.1 149.9	22 18.8 -56.9 148.9
11°	22 31.3 -57.7 153.3	22 14.8 -57.6 152.3	21 57.7 -57.4 151.3	21 40.1 -57.2 150.3	21 21.9 -57.0 149.3
12°	21 33.6 -57.8 153.6	21 17.2 -57.5 152.6	21 00.3 -57.4 151.6	20 42.9 -57.2 150.6	20 24.9 -57.1 149.6
13°	20 35.8 -57.7 153.9	20 19.7 -57.6 152.9	20 02.9 -57.4 151.9	19 45.7 -57.3 150.9	19 27.8 -57.0 149.9
14°	19 38.1 -57.8 154.2	19 22.1 -57.6 153.2	19 05.5 -57.4 152.2	18 48.4 -57.3 151.2	18 30.8 -57.1 150.3
15°	18 40.3 -57.8 154.5	18 24.5 -57.7 153.5	18 08.1 -57.5 152.5	17 51.1 -57.3 151.5	17 33.7 -57.2 150.6
16°	17 42.5 -57.9 154.8	17 26.8 -57.7 153.8	17 10.6 -57.5 152.8	16 53.8 -57.3 151.9	16 36.5 -57.1 150.9
17°	16 44.6 -57.8 155.0	16 29.1 -57.7 154.1	16 13.1 -57.6 153.1	15 56.5 -57.4 152.2	15 39.4 -57.2 151.2
18°	15 46.8 -57.9 155.3	15 31.4 -57.7 154.4	15 15.5 -57.5 153.4	14 59.1 -57.4 152.5	14 42.2 -57.2 151.5
19°	14 48.9 -57.9 155.6	14 33.7 -57.7 154.6	14 18.0 -57.6 153.7	14 01.7 -57.4 152.8	13 45.0 -57.3 151.8
20°	13 51.0 -57.9 155.9	13 36.0 -57.8 154.9	13 20.4 -57.6 154.0	13 04.3 -57.4 153.1	12 47.7 -57.3 152.1
21°	12 53.1 -57.9 156.1	12 38.2 -57.7 155.2	12 22.8 -57.6 154.3	12 06.9 -57.5 153.4	11 50.4 -57.2 152.5
22°	11 55.2 -58.0 156.4	11 40.5 -57.8 155.5	11 25.2 -57.6 154.6	11 09.4 -57.4 153.7	10 53.2 -57.3 152.8
23°	10 57.2 -57.9 156.7	10 42.7 -57.8 155.8	10 27.6 -57.7 154.9	10 12.0 -57.5 154.0	9 55.9 -57.3 153.1
24°	9 59.3 -58.0 156.9	9 44.9 -57.9 156.0	9 29.9 -57.6 155.1	9 14.5 -57.5 154.2	8 58.6 -57.4 153.4
25°	9 01.3 -58.0 157.2	8 47.0 -57.8 156.3	8 32.3 -57.7 155.4	8 17.0 -57.5 154.5	8 01.2 -57.3 153.7
26°	8 03.3 -58.0 157.4	7 49.2 -57.8 156.6	7 34.6 -57.7 155.7	7 19.5 -57.5 154.8	7 03.9 -57.4 154.0
27°	7 05.3 -58.0 157.7	6 51.4 -57.9 156.8	6 36.9 -57.7 156.0	6 22.0 -57.6 155.1	6 06.5 -57.3 154.3
28°	6 07.3 -58.0 158.0	5 53.5 -57.8 157.1	5 39.2 -57.7 156.2	5 24.4 -57.5 155.4	5 09.2 -57.4 154.5
29°	5 09.3 -58.0 158.2	4 55.7 -57.9 157.4	4 41.5 -57.7 156.5	4 26.9 -57.5 155.7	4 11.8 -57.4 154.8

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°	31 24.7 -56.2 144.1	31 03.3 -56.0 143.0	30 41.3 -55.8 142.0	30 18.8 -55.6 140.9	29 55.7 -55.3 139.8
1°	30 28.5 -56.2 144.5	30 07.3 -56.0 143.5	29 45.5 -55.8 142.4	29 23.2 -55.6 141.3	29 00.4 -55.4 140.3
2°	29 32.3 -56.4 144.9	29 11.3 -56.2 143.9	28 49.7 -55.9 142.8	28 27.6 -55.7 141.7	28 05.0 -55.5 140.7
3°	28 35.9 -56.4 145.3	28 15.1 -56.2 144.3	27 53.8 -56.0 143.2	27 31.9 -55.8 142.2	27 09.5 -55.6 141.1
4°	27 39.5 -56.4 145.7	27 18.9 -56.2 144.7	26 57.8 -56.1 143.6	26 36.1 -55.9 142.6	26 13.9 -55.7 141.5
5°	26 43.1 -56.5 146.1	26 22.7 -56.4 145.1	26 01.7 -56.1 144.0	25 40.2 -55.9 143.0	25 18.2 -55.7 142.0
6°	25 46.6 -56.6 146.5	25 26.3 -56.3 145.4	25 05.6 -56.2 144.4	24 44.3 -56.0 143.4	24 22.5 -55.8 142.4
7°	24 50.0 -56.7 146.8	24 30.0 -56.5 145.8	24 09.4 -56.2 144.8	23 48.3 -56.0 143.8	23 26.7 -55.8 142.8
8°	23 53.3 -56.6 147.2	23 33.5 -56.5 146.2	23 13.2 -56.3 145.2	22 52.3 -56.1 144.2	22 30.9 -55.9 143.2
9°	22 56.7 -56.8 147.6	22 37.0 -56.5 146.6	22 16.9 -56.4 145.6	21 56.2 -56.2 144.6	21 35.0 -56.0 143.6
10°	21 59.9 -56.7 147.9	21 40.5 -56.6 146.9	21 20.5 -56.4 145.9	21 00.0 -56.2 144.9	20 39.0 -56.0 143.9
11°	21 03.2 -56.9 148.3	20 43.9 -56.6 147.3	20 24.1 -56.4 146.3	20 03.8 -56.2 145.3	19 43.0 -56.0 144.3
12°	20 06.3 -56.8 148.6	19 47.3 -56.7 147.6	19 27.7 -56.5 146.7	19 07.6 -56.3 145.7	18 47.0 -56.1 144.7
13°	19 09.5 -56.9 149.0	18 50.6 -56.7 148.0	18 31.2 -56.5 147.0	18 11.3 -56.4 146.0	17 50.9 -56.2 145.1
14°	18 12.6 -56.9 149.3	17 53.9 -56.8 148.3	17 34.7 -56.6 147.4	17 14.9 -56.3 146.4	16 54.7 -56.2 145.5
15°	17 15.7 -57.0 149.6	16 57.1 -56.7 148.7	16 38.1 -56.6 147.7	16 18.6 -56.4 146.8	15 58.5 -56.2 145.8
16°	16 18.7 -57.0 149.9	16 00.4 -56.8 149.0	15 41.5 -56.6 148.1	15 22.2 -56.5 147.1	15 02.3 -56.3 146.2
17°	15 21.7 -57.0 150.3	15 03.6 -56.9 149.3	14 44.9 -56.7 148.4	14 25.7 -56.5 147.5	14 06.0 -56.2 146.5
18°	14 24.7 -57.0 150.6	14 06.7 -56.9 149.7	13 48.2 -56.7 148.7	13 29.2 -56.5 147.8	13 09.8 -56.4 146.9
19°	13 27.7 -57.1 150.9	13 09.8 -56.8 150.0	12 51.5 -56.7 149.1	12 32.7 -56.5 148.2	12 13.4 -56.3 147.2
20°	12 30.6 -57.1 151.2	12 13.0 -57.0 150.3	11 54.8 -56.7 149.4	11 36.2 -56.5 148.5	11 17.1 -56.4 147.6
21°	11 33.5 -57.1 151.5	11 16.0 -56.9 150.6	10 58.1 -56.8 149.7	10 39.7 -56.6 148.8	10 20.7 -56.4 147.9
22°	10 36.4 -57.1 151.9	10 19.1 -56.9 151.0	10 01.3 -56.7 150.1	9 43.1 -56.6 149.2	9 24.3 -56.4 148.3
23°	9 39.3 -57.2 152.2	9 22.2 -57.0 151.3	9 04.6 -56.8 150.4	8 46.5 -56.6 149.5	8 27.9 -56.4 148.6
24°	8 42.1 -57.1 152.5	8 25.2 -57.0 151.6	8 07.8 -56.8 150.7	7 49.9 -56.7 149.9	7 31.5 -56.4 149.0
25°	7 45.0 -57.2 152.8	7 28.2 -57.0 151.9	7 11.0 -56.9 151.0	6 53.2 -56.6 150.2	6 35.1 -56.5 149.3
26°	6 47.8 -57.2 153.1	6 31.2 -57.0 152.2	6 14.1 -56.8 151.4	5 56.6 -56.7 150.5	5 38.6 -56.5 149.7
27°	5 50.6 -57.2 153.4	5 34.2 -57.0 152.5	5 17.3 -56.8 151.7	4 59.9 -56.6 150.8	4 42.1 -56.5 150.0
28°	4 53.4 -57.2 153.7	4 37.2 -57.1 152.9	4 20.5 -56.9 152.0	4 03.3 -56.7 151.2	3 45.6 -56.4 150.3
29°	3 56.2 -57.2 154.0	3 40.1 -57.0 153.2	3 23.6 -56.9 152.3	3 06.6 -56.7 151.5	2 49.2 -56.5 150.7

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°	29 32.2 -55.1 138.8	29 08.1 -54.9 137.7	28 43.6 -54.7 136.7	28 18.6 -54.5 135.6	27 53.1 -54.3 134.6
1°	28 37.1 -55.2 139.2	28 13.2 -55.0 138.2	27 48.9 -54.8 137.1	27 24.1 -54.6 136.1	26 58.8 -54.3 135.1
2°	27 41.9 -55.3 139.7	27 18.2 -55.0 138.6	26 54.1 -54.9 137.6	26 29.5 -54.6 136.6	26 04.5 -54.5 135.6
3°	26 46.6 -55.4 140.1	26 23.2 -55.2 139.1	25 59.2 -54.9 138.0	25 34.9 -54.8 137.0	25 10.0 -54.5 136.0
4°	25 51.2 -55.5 140.5	25 28.0 -55.3 139.5	25 04.3 -55.0 138.5	24 40.1 -54.8 137.5	24 15.5 -54.6 136.5
5°	24 55.7 -55.5 140.9	24 32.7 -55.3 139.9	24 09.3 -55.1 138.9	23 45.3 -54.9 137.9	23 20.9 -54.7 136.9
6°	24 00.2 -55.6 141.4	23 37.4 -55.3 140.4	23 14.2 -55.2 139.4	22 50.4 -55.0 138.4	22 26.2 -54.8 137.4
7°	23 04.6 -55.6 141.8	22 42.1 -55.5 140.8	22 19.0 -55.3 139.8	21 55.4 -55.0 138.8	21 31.4 -54.8 137.8
8°	22 09.0 -55.7 142.2	21 46.6 -55.5 141.2	21 23.7 -55.3 140.2	21 00.4 -55.1 139.2	20 36.6 -54.9 138.3
9°	21 13.3 -55.8 142.6	20 51.1 -55.6 141.6	20 28.4 -55.3 140.6	20 05.3 -55.2 139.6	19 41.7 -55.0 138.7
10°	20 17.5 -55.8 143.0	19 55.5 -55.6 142.0	19 33.1 -55.5 141.0	19 10.1 -55.2 140.1	18 46.7 -55.0 139.1
11°	19 21.7 -55.9 143.4	18 59.9 -55.6 142.4	18 37.6 -55.4 141.4	18 14.9 -55.3 140.5	17 51.7 -55.1 139.5
12°	18 25.8 -55.9 143.7	18 04.3 -55.8 142.8	17 42.2 -55.5 141.8	17 19.6 -55.3 140.9	16 56.6 -55.1 139.9
13°	17 29.9 -55.9 144.1	17 08.5 -55.7 143.2	16 46.7 -55.6 142.2	16 24.3 -55.4 141.3	16 01.5 -55.2 140.4
14°	16 34.0 -56.0 144.5	16 12.8 -55.8 143.6	15 51.1 -55.6 142.6	15 28.9 -55.4 141.7	15 06.3 -55.2 140.8
15°	15 38.0 -56.0 144.9	15 17.0 -55.9 143.9	14 55.5 -55.7 143.0	14 33.5 -55.4 142.1	14 11.1 -55.2 141.2
16°	14 42.0 -56.1 145.2	14 21.1 -55.8 144.3	13 59.8 -55.6 143.4	13 38.1 -55.5 142.5	13 15.9 -55.3 141.6
17°	13 45.9 -56.1 145.6	13 25.3 -55.9 144.7	13 04.2 -55.8 143.8	12 42.6 -55.5 142.9	12 20.6 -55.3 142.0
18°	12 49.8 -56.1 146.0	12 29.4 -56.0 145.1	12 08.4 -55.7 144.2	11 47.1 -55.6 143.3	11 25.3 -55.4 142.4
19°	11 53.7 -56.2 146.3	11 33.4 -55.9 145.4	11 12.7 -55.8 144.5	10 51.5 -55.6 143.6	10 29.9 -55.4 142.8
20°	10 57.5 -56.2 146.7	10 37.5 -56.0 145.8	10 16.9 -55.8 144.9	9 55.9 -55.6 144.0	9 34.5 -55.4 143.1
21°	10 01.3 -56.2 147.1	9 41.5 -56.1 146.2	9 21.1 -55.8 145.3	9 00.3 -55.6 144.4	8 39.1 -55.4 143.5
22°	9 05.1 -56.2 147.4	8 45.4 -56.0 146.5	8 25.3 -55.8 145.7	8 04.7 -55.6 144.8	7 43.7 -55.5 143.9
23°	8 08.9 -56.2 147.8	7 49.4 -56.0 146.9	7 29.5 -55.9 146.0	7 09.1 -55.7 145.2	6 48.2 -55.5 144.3
24°	7 12.7 -56.3 148.1	6 53.4 -56.1 147.3	6 33.6 -55.9 146.4	6 13.4 -55.7 145.5	5 52.7 -55.4 144.7
25°	6 16.4 -56.3 148.5	5 57.3 -56.1 147.6	5 37.7 -55.9 146.8	5 17.7 -55.7 145.9	4 57.3 -55.5 145.1
26°	5 20.1 -56.3 148.8	5 01.2 -56.1 148.0	4 41.8 -55.9 147.1	4 22.0 -55.7 146.3	4 01.8 -55.6 145.5
27°	4 23.8 -56.3 149.2	4 05.1 -56.1 148.3	3 45.9 -55.9 147.5	3 26.3 -55.7 146.7	3 06.2 -55.5 145.8
28°	3 27.5 -56.3 149.5	3 09.0 -56.1 148.7	2 50.0 -55.9 147.9	2 30.6 -55.7 147.0	2 10.7 -55.5 146.2
29°	2 31.2 -56.3 149.9	2 12.9 -56.1 149.0	1 54.1 -55.9 148.2	1 34.9 -55.8 147.4	1 15.2 -55.5 146.6

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°	27 27.2 -54.1 133.6	27 00.8 -53.8 132.6	26 34.0 -53.6 131.6	26 06.8 -53.5 130.6	25 39.1 -53.2 129.6
1°	26 33.1 -54.1 134.1	26 07.0 -54.0 133.1	25 40.4 -53.8 132.1	25 13.3 -53.5 131.1	24 45.9 -53.3 130.1
2°	25 39.0 -54.3 134.6	25 13.0 -54.0 133.6	24 46.6 -53.8 132.6	24 19.8 -53.6 131.6	23 52.6 -53.4 130.6
3°	24 44.7 -54.3 135.0	24 19.0 -54.1 134.0	23 52.8 -53.9 133.0	23 26.2 -53.7 132.1	22 59.2 -53.5 131.1
4°	23 50.4 -54.4 135.5	23 24.9 -54.2 134.5	22 58.9 -54.0 133.5	22 32.5 -53.8 132.6	22 05.7 -53.6 131.6
5°	22 56.0 -54.5 135.9	22 30.7 -54.3 135.0	22 04.9 -54.1 134.0	21 38.7 -53.9 133.0	21 12.1 -53.7 132.1
6°	22 01.5 -54.6 136.4	21 36.4 -54.4 135.4	21 10.8 -54.1 134.5	20 44.8 -53.9 133.5	20 18.4 -53.7 132.6
7°	21 06.9 -54.6 136.8	20 42.0 -54.4 135.9	20 16.7 -54.3 134.9	19 50.9 -54.0 134.0	19 24.7 -53.8 133.0
8°	20 12.3 -54.7 137.3	19 47.6 -54.5 136.3	19 22.4 -54.2 135.4	18 56.9 -54.1 134.4	18 30.9 -53.9 133.5
9°	19 17.6 -54.8 137.7	18 53.1 -54.6 136.8	18 28.2 -54.4 135.8	18 02.8 -54.2 134.9	17 37.0 -54.0 134.0
10°	18 22.8 -54.8 138.2	17 58.5 -54.6 137.2	17 33.8 -54.4 136.3	17 08.6 -54.2 135.3	16 43.0 -54.0 134.4
11°	17 28.0 -54.8 138.6	17 03.9 -54.6 137.6	16 39.4 -54.5 136.7	16 14.4 -54.3 135.8	15 49.0 -54.0 134.9
12°	16 33.2 -55.0 139.0	16 09.3 -54.8 138.1	15 44.9 -54.5 137.2	15 20.1 -54.3 136.2	14 55.0 -54.2 135.3
13°	15 38.2 -54.9 139.4	15 14.5 -54.7 138.5	14 50.4 -54.6 137.6	14 25.8 -54.3 136.7	14 00.8 -54.1 135.8
14°	14 43.3 -55.0 139.8	14 19.8 -54.8 138.9	13 55.8 -54.6 138.0	13 31.5 -54.5 137.1	13 06.7 -54.2 136.2
15°	13 48.3 -55.1 140.3	13 25.0 -54.9 139.3	13 01.2 -54.6 138.4	12 37.0 -54.4 137.5	12 12.5 -54.3 136.6
16°	12 53.2 -55.1 140.7	12 30.1 -54.9 139.8	12 06.6 -54.7 138.9	11 42.6 -54.5 138.0	11 18.2 -54.3 137.1
17°	11 58.1 -55.1 141.1	11 35.2 -54.9 140.2	11 11.9 -54.8 139.3	10 48.1 -54.5 138.4	10 23.9 -54.3 137.5
18°	11 03.0 -55.2 141.5	10 40.3 -55.0 140.6	10 17.1 -54.7 139.7	9 53.6 -54.6 138.8	9 29.6 -54.4 137.9
19°	10 07.8 -55.2 141.9	9 45.3 -55.0 141.0	9 22.4 -54.8 140.1	8 59.0 -54.6 139.2	8 35.2 -54.4 138.4
20°	9 12.6 -55.2 142.3	8 50.3 -55.0 141.4	8 27.6 -54.8 140.5	8 04.4 -54.6 139.7	7 40.8 -54.4 138.8
21°	8 17.4 -55.2 142.7	7 55.3 -55.0 141.8	7 32.8 -54.9 140.9	7 09.8 -54.6 140.1	6 46.4 -54.4 139.2
22°	7 22.2 -55.3 143.1	7 00.3 -55.1 142.2	6 37.9 -54.8 141.3	6 15.2 -54.7 140.5	5 52.0 -54.5 139.6
23°	6 26.9 -55.2 143.5	6 05.2 -55.1 142.6	5 43.1 -54.9 141.8	5 20.5 -54.7 140.9	4 57.5 -54.4 140.1
24°	5 31.7 -55.3 143.8	5 10.1 -55.0 143.0	4 48.2 -54.9 142.2	4 25.8 -54.6 141.3	4 03.1 -54.5 140.5
25°	4 36.4 -55.3 144.2	4 15.1 -55.2 143.4	3 53.3 -54.9 142.6	3 31.2 -54.7 141.7	3 08.6 -54.5 140.9
26°	3 41.1 -55.3 144.6	3 19.9 -55.1 143.8	2 58.4 -54.9 143.0	2 36.5 -54.7 142.1	2 14.1 -54.5 141.3
27°	2 45.8 -55.4 145.0	2 24.8 -55.1 144.2	2 03.5 -54.9 143.4	1 41.8 -54.8 142.6	1 19.6 -54.5 141.7
28°	1 50.4 -55.3 145.4	1 29.7 -55.1 144.6	1 08.6 -54.9 143.8	0 47.0 -54.7 143.0	0 25.1 -54.5 142.2
29°	0 55.1 -55.3 145.8	0 34.6 -55.1 145.0	0 13.7 -55.0 144.2	-0 07.7 -54.7	-0 29.4 -54.5

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°	25 11.1 -53.0 128.6	24 42.7 -52.8 127.6	24 13.9 -52.6 126.7	23 44.8 -52.4 125.7	23 15.3 -52.2 124.8
1°	24 18.1 -53.1 129.1	23 49.9 -52.9 128.2	23 21.3 -52.7 127.2	22 52.4 -52.5 126.2	22 23.1 -52.3 125.3
2°	23 25.0 -53.2 129.6	22 57.0 -53.0 128.7	22 28.6 -52.8 127.7	21 59.9 -52.6 126.8	21 30.8 -52.4 125.8
3°	22 31.8 -53.3 130.1	22 04.0 -53.1 129.2	21 35.8 -52.9 128.2	21 07.3 -52.7 127.3	20 38.4 -52.5 126.4
4°	21 38.5 -53.4 130.6	21 10.9 -53.2 129.7	20 42.9 -53.0 128.7	20 14.6 -52.8 127.8	19 45.9 -52.6 126.9
5°	20 45.1 -53.5 131.1	20 17.7 -53.2 130.2	19 49.9 -53.0 129.2	19 21.8 -52.9 128.3	18 53.3 -52.7 127.4
6°	19 51.6 -53.5 131.6	19 24.5 -53.4 130.7	18 56.9 -53.2 129.7	18 28.9 -52.9 128.8	18 00.6 -52.8 127.9
7°	18 58.1 -53.6 132.1	18 31.1 -53.4 131.2	18 03.7 -53.2 130.2	17 36.0 -53.0 129.3	17 07.8 -52.8 128.4
8°	18 04.5 -53.7 132.6	17 37.7 -53.5 131.6	17 10.5 -53.3 130.7	16 43.0 -53.1 129.8	16 15.0 -52.9 128.9
9°	17 10.8 -53.8 133.0	16 44.2 -53.5 132.1	16 17.2 -53.3 131.2	15 49.9 -53.2 130.3	15 22.1 -52.9 129.4
10°	16 17.0 -53.8 133.5	15 50.7 -53.7 132.6	15 23.9 -53.4 131.7	14 56.7 -53.2 130.8	14 29.2 -53.0 129.9
11°	15 23.2 -53.8 134.0	14 57.0 -53.6 133.0	14 30.5 -53.5 132.1	14 03.5 -53.3 131.2	13 36.2 -53.1 130.3
12°	14 29.4 -53.9 134.4	14 03.4 -53.7 133.5	13 37.0 -53.5 132.6	13 10.2 -53.3 131.7	12 43.1 -53.1 130.8
13°	13 35.5 -54.0 134.9	13 09.7 -53.8 134.0	12 43.5 -53.6 133.1	12 16.9 -53.4 132.2	11 50.0 -53.2 131.3
14°	12 41.5 -54.0 135.3	12 15.9 -53.8 134.4	11 49.9 -53.6 133.5	11 23.5 -53.4 132.6	10 56.8 -53.2 131.8
15°	11 47.5 -54.1 135.8	11 22.1 -53.9 134.9	10 56.3 -53.7 134.0	10 30.1 -53.4 133.1	10 03.6 -53.3 132.2
16°	10 53.4 -54.1 136.2	10 28.2 -53.9 135.3	10 02.6 -53.7 134.4	9 36.7 -53.5 133.6	9 10.3 -53.3 132.7
17°	9 59.3 -54.1 136.6	9 34.3 -53.9 135.8	9 08.9 -53.7 134.9	8 43.2 -53.5 134.0	8 17.0 -53.3 133.2
18°	9 05.2 -54.2 137.1	8 40.4 -53.9 136.2	8 15.2 -53.7 135.3	7 49.7 -53.6 134.5	7 23.7 -53.3 133.6
19°	8 11.0 -54.1 137.5	7 46.5 -54.0 136.6	7 21.5 -53.8 135.8	6 56.1 -53.6 134.9	6 30.4 -53.4 134.1
20°	7 16.9 -54.3 137.9	6 52.5 -54.0 137.1	6 27.7 -53.8 136.2	6 02.5 -53.6 135.4	5 37.0 -53.4 134.6
21°	6 22.6 -54.2 138.4	5 58.5 -54.1 137.5	5 33.9 -53.8 136.7	5 08.9 -53.6 135.8	4 43.6 -53.4 135.0
22°	5 28.4 -54.2 138.8	5 04.4 -54.0 138.0	4 40.1 -53.9 137.1	4 15.3 -53.6 136.3	3 50.2 -53.5 135.5
23°	4 34.2 -54.3 139.2	4 10.4 -54.1 138.4	3 46.2 -53.8 137.6	3 21.7 -53.7 136.7	2 56.7 -53.4 135.9
24°	3 39.9 -54.3 139.7	3 16.3 -54.0 138.8	2 52.4 -53.9 138.0	2 28.0 -53.6 137.2	2 03.3 -53.5 136.4
25°	2 45.6 -54.3 140.1	2 22.3 -54.1 139.3	1 58.5 -53.9 138.5	1 34.4 -53.7 137.6	1 09.8 -53.4 136.8
26°	1 51.3 -54.3 140.5	1 28.2 -54.1 139.7	1 04.6 -53.8 138.9	0 40.7 -53.7 138.1	0 16.4 -53.5 137.3
27°	0 57.0 -54.3 140.9	0 34.1 -54.1 140.1	0 10.8 -53.9 139.3	-0 13.0 -53.6	-0 37.1 -53.4
28°	0 02.7 -54.2 141.4	-0 20.0 -54.1	-0 43.1 -53.9	-1 06.6 -53.7	-1 30.5 -53.5
29°	-0 51.5 -54.3	-1 14.1 -54.1	-1 37.0 -53.9	-2 00.3 -53.6	-2 24.0 -53.4

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°	22 45.5 -52.0 123.8	22 15.3 -51.8 122.9	21 44.8 -51.6 122.0	21 14.1 -51.5 121.0	20 43.0 -51.3 120.1
1°	21 53.5 -52.2 124.4	21 23.5 -51.9 123.4	20 53.2 -51.7 122.5	20 22.6 -51.6 121.6	19 51.7 -51.4 120.7
2°	21 01.3 -52.2 124.9	20 31.6 -52.1 124.0	20 01.5 -51.9 123.0	19 31.0 -51.6 122.1	19 00.3 -51.5 121.2
3°	20 09.1 -52.3 125.4	19 39.5 -52.1 124.5	19 09.6 -51.9 123.6	18 39.4 -51.8 122.7	18 08.8 -51.6 121.8
4°	19 16.8 -52.4 125.9	18 47.4 -52.2 125.0	18 17.7 -52.1 124.1	17 47.6 -51.8 123.2	17 17.2 -51.6 122.3
5°	18 24.4 -52.5 126.5	17 55.2 -52.3 125.5	17 25.6 -52.1 124.6	16 55.8 -51.9 123.7	16 25.6 -51.7 122.8
6°	17 31.9 -52.5 127.0	17 02.9 -52.4 126.1	16 33.5 -52.1 125.2	16 03.9 -52.0 124.3	15 33.9 -51.8 123.4
7°	16 39.4 -52.7 127.5	16 10.5 -52.4 126.6	15 41.4 -52.3 125.7	15 11.9 -52.1 124.8	14 42.1 -51.9 123.9
8°	15 46.7 -52.7 128.0	15 18.1 -52.5 127.1	14 49.1 -52.3 126.2	14 19.8 -52.1 125.3	13 50.2 -52.0 124.4
9°	14 54.0 -52.7 128.5	14 25.6 -52.6 127.6	13 56.8 -52.4 126.7	13 27.7 -52.2 125.8	12 58.2 -52.0 124.9
10°	14 01.3 -52.9 129.0	13 33.0 -52.6 128.1	13 04.4 -52.4 127.2	12 35.5 -52.3 126.3	12 06.2 -52.0 125.4
11°	13 08.4 -52.8 129.4	12 40.4 -52.7 128.6	12 12.0 -52.5 127.7	11 43.2 -52.3 126.8	11 14.2 -52.1 125.9
12°	12 15.6 -53.0 129.9	11 47.7 -52.7 129.1	11 19.5 -52.5 128.2	10 50.9 -52.3 127.3	10 22.1 -52.2 126.4
13°	11 22.6 -52.9 130.4	10 55.0 -52.8 129.5	10 27.0 -52.6 128.7	9 58.6 -52.4 127.8	9 29.9 -52.2 126.9
14°	10 29.7 -53.0 130.9	10 02.2 -52.8 130.0	9 34.4 -52.7 129.2	9 06.2 -52.4 128.3	8 37.7 -52.2 127.4
15°	9 36.7 -53.1 131.4	9 09.4 -52.9 130.5	8 41.7 -52.6 129.6	8 13.8 -52.5 128.8	7 45.5 -52.3 127.9
16°	8 43.6 -53.1 131.8	8 16.5 -52.9 131.0	7 49.1 -52.7 130.1	7 21.3 -52.5 129.3	6 53.2 -52.3 128.4
17°	7 50.5 -53.1 132.3	7 23.6 -52.9 131.5	6 56.4 -52.7 130.6	6 28.8 -52.5 129.8	6 00.9 -52.4 128.9
18°	6 57.4 -53.2 132.8	6 30.7 -52.9 131.9	6 03.7 -52.8 131.1	5 36.3 -52.6 130.3	5 08.5 -52.3 129.4
19°	6 04.2 -53.1 133.2	5 37.8 -53.0 132.4	5 10.9 -52.8 131.6	4 43.7 -52.5 130.7	4 16.2 -52.4 129.9
20°	5 11.1 -53.2 133.7	4 44.8 -53.0 132.9	4 18.1 -52.7 132.0	3 51.2 -52.6 131.2	3 23.8 -52.4 130.4
21°	4 17.9 -53.2 134.2	3 51.8 -53.0 133.3	3 25.4 -52.8 132.5	2 58.6 -52.6 131.7	2 31.4 -52.4 130.9
22°	3 24.7 -53.3 134.6	2 58.8 -53.0 133.8	2 32.6 -52.9 133.0	2 06.0 -52.6 132.2	1 39.0 -52.4 131.4
23°	2 31.4 -53.2 135.1	2 05.8 -53.1 134.3	1 39.7 -52.8 133.5	1 13.4 -52.7 132.7	0 46.6 -52.4 131.9
24°	1 38.2 -53.2 135.6	1 12.7 -53.0 134.8	0 46.9 -52.8 133.9	0 20.7 -52.6 133.1	-0 05.8 -52.4
25°	0 45.0 -53.3 136.0	0 19.7 -53.0 135.2	-0 05.9 -52.8	-0 31.9 -52.6	-0 58.2 -52.4
26°	-0 08.3 -53.2	-0 33.3 -53.1	-0 58.7 -52.8	-1 24.5 -52.6	-1 50.6 -52.4
27°	-1 01.5 -53.3	-1 26.4 -53.0	-1 51.5 -52.9	-2 17.1 -52.6	-2 43.0 -52.4
28°	-1 54.8 -53.2	-2 19.4 -53.0	-2 44.4 -52.8	-3 09.7 -52.6	-3 35.4 -52.3
29°	-2 48.0 -53.2	-3 12.4 -53.0	-3 37.2 -52.7	-4 02.3 -52.5	-4 27.7 -52.4

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°	20 11.6 -51.1 119.2	19 39.9 -50.9 118.3	19 08.0 -50.8 117.4	18 35.8 -50.6 116.5	18 03.4 -50.4 115.6
1°	19 20.5 -51.2 119.8	18 49.0 -51.0 118.9	18 17.2 -50.8 118.0	17 45.2 -50.7 117.1	17 13.0 -50.6 116.2
2°	18 29.3 -51.3 120.3	17 58.0 -51.2 119.4	17 26.4 -51.0 118.5	16 54.5 -50.8 117.6	16 22.4 -50.6 116.8
3°	17 38.0 -51.4 120.9	17 06.8 -51.2 120.0	16 35.4 -51.0 119.1	16 03.7 -50.9 118.2	15 31.8 -50.7 117.3
4°	16 46.6 -51.5 121.4	16 15.6 -51.3 120.5	15 44.4 -51.2 119.6	15 12.8 -50.9 118.8	14 41.1 -50.8 117.9
5°	15 55.1 -51.6 121.9	15 24.3 -51.4 121.1	14 53.2 -51.2 120.2	14 21.9 -51.0 119.3	13 50.3 -50.9 118.4
6°	15 03.5 -51.6 122.5	14 32.9 -51.4 121.6	14 02.0 -51.2 120.7	13 30.9 -51.2 119.8	12 59.4 -50.9 119.0
7°	14 11.9 -51.7 123.0	13 41.5 -51.5 122.1	13 10.8 -51.4 121.2	12 39.7 -51.1 120.4	12 08.5 -51.0 119.5
8°	13 20.2 -51.7 123.5	12 50.0 -51.6 122.6	12 19.4 -51.4 121.8	11 48.6 -51.2 120.9	11 17.5 -51.1 120.1
9°	12 28.5 -51.9 124.0	11 58.4 -51.6 123.2	11 28.0 -51.4 122.3	10 57.4 -51.3 121.4	10 26.4 -51.1 120.6
10°	11 36.6 -51.8 124.6	11 06.8 -51.7 123.7	10 36.6 -51.6 122.8	10 06.1 -51.4 122.0	9 35.3 -51.2 121.1
11°	10 44.8 -52.0 125.1	10 15.1 -51.8 124.2	9 45.0 -51.5 123.3	9 14.7 -51.3 122.5	8 44.1 -51.2 121.6
12°	9 52.8 -51.9 125.6	9 23.3 -51.8 124.7	8 53.5 -51.6 123.9	8 23.4 -51.5 123.0	7 52.9 -51.2 122.2
13°	9 00.9 -52.0 126.1	8 31.5 -51.8 125.2	8 01.9 -51.6 124.4	7 31.9 -51.4 123.5	7 01.7 -51.3 122.7
14°	8 08.9 -52.1 126.6	7 39.7 -51.8 125.7	7 10.3 -51.7 124.9	6 40.5 -51.5 124.1	6 10.4 -51.3 123.2
15°	7 16.8 -52.1 127.1	6 47.9 -51.9 126.2	6 18.6 -51.7 125.4	5 49.0 -51.5 124.6	5 19.1 -51.3 123.7
16°	6 24.7 -52.1 127.6	5 56.0 -52.0 126.8	5 26.9 -51.8 125.9	4 57.5 -51.6 125.1	4 27.8 -51.4 124.3
17°	5 32.6 -52.1 128.1	5 04.0 -51.9 127.3	4 35.1 -51.7 126.4	4 05.9 -51.5 125.6	3 36.4 -51.3 124.8
18°	4 40.5 -52.2 128.6	4 12.1 -52.0 127.8	3 43.4 -51.8 126.9	3 14.4 -51.6 126.1	2 45.1 -51.4 125.3
19°	3 48.3 -52.1 129.1	3 20.1 -51.9 128.3	2 51.6 -51.8 127.4	2 22.8 -51.6 126.6	1 53.7 -51.4 125.8
20°	2 56.2 -52.2 129.6	2 28.2 -52.0 128.8	1 59.8 -51.7 127.9	1 31.2 -51.6 127.1	1 02.3 -51.4 126.3
21°	2 04.0 -52.2 130.1	1 36.2 -52.0 129.3	1 08.1 -51.8 128.5	0 39.6 -51.6 127.6	0 10.9 -51.4 126.8
22°	1 11.8 -52.2 130.6	0 44.2 -52.0 129.8	0 16.3 -51.8 129.0	-0 12.0 -51.6	-0 40.5 -51.4
23°	0 19.6 -52.2 131.1	-0 07.8 -52.0	-0 35.5 -51.8	-1 03.6 -51.6	-1 31.9 -51.4
24°	-0 32.6 -52.2	-0 59.8 -52.0	-1 27.3 -51.8	-1 55.2 -51.5	-2 23.3 -51.4
25°	-1 24.8 -52.2	-1 51.8 -52.0	-2 19.1 -51.8	-2 46.7 -51.6	-3 14.7 -51.3
26°	-2 17.0 -52.2	-2 43.8 -52.0	-3 10.9 -51.8	-3 38.3 -51.6	-4 06.0 -51.4
27°	-3 09.2 -52.2	-3 35.8 -51.9	-4 02.7 -51.7	-4 29.9 -51.5	-4 57.4 -51.3
28°	-4 01.4 -52.1	-4 27.7 -52.0	-4 54.4 -51.7	-5 21.4 -51.5	-5 48.7 -51.3
29°	-4 53.5 -52.2	-5 19.7 -51.9	-5 46.1 -51.7	-6 12.9 -51.5	-6 40.0 -51.2

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°	17 30.7 -50.3 114.8	16 57.8 -50.1 113.9	16 24.7 -50.0 113.0	15 51.4 -49.9 112.1	15 17.8 -49.7 111.3
1°	16 40.4 -50.4 115.3	16 07.7 -50.3 114.5	15 34.7 -50.1 113.6	15 01.5 -50.0 112.7	14 28.1 -49.8 111.9
2°	15 50.0 -50.4 115.9	15 17.4 -50.3 115.0	14 44.6 -50.2 114.2	14 11.5 -50.0 113.3	13 38.3 -49.9 112.4
3°	14 59.6 -50.6 116.5	14 27.1 -50.4 115.6	13 54.4 -50.2 114.7	13 21.5 -50.1 113.9	12 48.4 -50.0 113.0
4°	14 09.0 -50.6 117.0	13 36.7 -50.5 116.1	13 04.2 -50.3 115.3	12 31.4 -50.2 114.4	11 58.4 -50.0 113.6
5°	13 18.4 -50.7 117.6	12 46.2 -50.5 116.7	12 13.9 -50.4 115.8	11 41.2 -50.2 115.0	11 08.4 -50.1 114.1
6°	12 27.7 -50.8 118.1	11 55.7 -50.6 117.2	11 23.5 -50.5 116.4	10 51.0 -50.3 115.5	10 18.3 -50.1 114.7
7°	11 36.9 -50.8 118.7	11 05.1 -50.7 117.8	10 33.0 -50.5 116.9	10 00.7 -50.3 116.1	9 28.2 -50.2 115.3
8°	10 46.1 -50.9 119.2	10 14.4 -50.7 118.3	9 42.5 -50.5 117.5	9 10.4 -50.4 116.6	8 38.0 -50.3 115.8
9°	9 55.2 -51.0 119.7	9 23.7 -50.8 118.9	8 52.0 -50.7 118.0	8 20.0 -50.5 117.2	7 47.7 -50.3 116.4
10°	9 04.2 -50.9 120.3	8 32.9 -50.8 119.4	8 01.3 -50.6 118.6	7 29.5 -50.5 117.7	6 57.4 -50.3 116.9
11°	8 13.3 -51.1 120.8	7 42.1 -50.8 120.0	7 10.7 -50.7 119.1	6 39.0 -50.5 118.3	6 07.1 -50.4 117.5
12°	7 22.2 -51.0 121.3	6 51.3 -50.9 120.5	6 20.0 -50.7 119.7	5 48.5 -50.5 118.8	5 16.7 -50.3 118.0
13°	6 31.2 -51.1 121.9	6 00.4 -51.0 121.0	5 29.3 -50.8 120.2	4 58.0 -50.6 119.4	4 26.4 -50.5 118.6
14°	5 40.1 -51.2 122.4	5 09.4 -50.9 121.6	4 38.5 -50.7 120.7	4 07.4 -50.6 119.9	3 35.9 -50.4 119.1
15°	4 48.9 -51.1 122.9	4 18.5 -51.0 122.1	3 47.8 -50.8 121.3	3 16.8 -50.6 120.5	2 45.5 -50.4 119.6
16°	3 57.8 -51.2 123.4	3 27.5 -51.0 122.6	2 57.0 -50.8 121.8	2 26.2 -50.7 121.0	1 55.1 -50.5 120.2
17°	3 06.6 -51.2 124.0	2 36.5 -51.0 123.1	2 06.2 -50.9 122.3	1 35.5 -50.6 121.5	1 04.6 -50.5 120.7
18°	2 15.4 -51.2 124.5	1 45.5 -51.0 123.7	1 15.3 -50.8 122.9	0 44.9 -50.7 122.1	0 14.1 -50.4 121.3
19°	1 24.2 -51.2 125.0	0 54.5 -51.0 124.2	0 24.5 -50.8 123.4	-0 05.8 -50.6	-0 36.3 -50.5
20°	0 33.0 -51.2 125.5	0 03.5 -51.0 124.7	-0 26.3 -50.8	-0 56.4 -50.6	-1 26.8 -50.4
21°	-0 18.2 -51.2	-0 47.5 -51.0	-1 17.1 -50.9	-1 47.0 -50.7	-2 17.2 -50.5
22°	-1 09.4 -51.2	-1 38.5 -51.0	-2 08.0 -50.8	-2 37.7 -50.6	-3 07.7 -50.4
23°	-2 00.6 -51.2	-2 29.5 -51.0	-2 58.8 -50.8	-3 28.3 -50.6	-3 58.1 -50.4
24°	-2 51.8 -51.1	-3 20.5 -51.0	-3 49.6 -50.7	-4 18.9 -50.6	-4 48.5 -50.4
25°	-3 42.9 -51.2	-4 11.5 -50.9	-4 40.3 -50.8	-5 09.5 -50.5	-5 38.9 -50.3
26°	-4 34.1 -51.1	-5 02.4 -51.0	-5 31.1 -50.7	-6 00.0 -50.5	-6 29.2 -50.3
27°	-5 25.2 -51.1	-5 53.4 -50.9	-6 21.8 -50.7	-6 50.5 -50.5	-7 19.5 -50.3
28°	-6 16.3 -51.1	-6 44.3 -50.8	-7 12.5 -50.6	-7 41.0 -50.4	-8 09.8 -50.2
29°	-7 07.4 -51.0	-7 35.1 -50.8	-8 03.1 -50.6	-8 31.4 -50.4	-9 00.0 -50.2

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°	14 44.1 -49.6 110.4	14 10.1 -49.4 109.6	13 36.0 -49.3 108.7	13 01.7 -49.2 107.9	12 27.3 -49.1 107.0
1°	13 54.5 -49.7 111.0	13 20.7 -49.6 110.2	12 46.7 -49.4 109.3	12 12.5 -49.3 108.5	11 38.2 -49.2 107.6
2°	13 04.8 -49.7 111.6	12 31.1 -49.6 110.7	11 57.3 -49.5 109.9	11 23.2 -49.3 109.1	10 49.0 -49.2 108.2
3°	12 15.1 -49.9 112.2	11 41.5 -49.7 111.3	11 07.8 -49.6 110.5	10 33.9 -49.5 109.6	9 59.8 -49.4 108.8
4°	11 25.2 -49.9 112.7	10 51.8 -49.7 111.9	10 18.2 -49.6 111.0	9 44.4 -49.5 110.2	9 10.4 -49.3 109.4
5°	10 35.3 -49.9 113.3	10 02.1 -49.8 112.5	9 28.6 -49.7 111.6	8 54.9 -49.5 110.8	8 21.1 -49.4 109.9
6°	9 45.4 -50.0 113.9	9 12.3 -49.9 113.0	8 38.9 -49.7 112.2	8 05.4 -49.6 111.4	7 31.7 -49.5 110.5
7°	8 55.4 -50.0 114.4	8 22.4 -49.9 113.6	7 49.2 -49.7 112.7	7 15.8 -49.6 111.9	6 42.2 -49.5 111.1
8°	8 05.4 -50.1 115.0	7 32.5 -49.9 114.1	6 59.5 -49.9 113.3	6 26.2 -49.7 112.5	5 52.7 -49.5 111.7
9°	7 15.3 -50.2 115.5	6 42.6 -50.0 114.7	6 09.6 -49.8 113.9	5 36.5 -49.7 113.0	5 03.2 -49.6 112.2
10°	6 25.1 -50.2 116.1	5 52.6 -50.0 115.3	5 19.8 -49.9 114.4	4 46.8 -49.7 113.6	4 13.6 -49.5 112.8
11°	5 34.9 -50.2 116.6	5 02.6 -50.1 115.8	4 29.9 -49.9 115.0	3 57.1 -49.7 114.2	3 24.1 -49.6 113.4
12°	4 44.7 -50.2 117.2	4 12.5 -50.1 116.4	3 40.0 -49.9 115.5	3 07.4 -49.8 114.7	2 34.5 -49.7 113.9
13°	3 54.5 -50.2 117.7	3 22.4 -50.1 116.9	2 50.1 -49.9 116.1	2 17.6 -49.8 115.3	1 44.8 -49.6 114.5
14°	3 04.3 -50.3 118.3	2 32.3 -50.1 117.5	2 00.2 -50.0 116.7	1 27.8 -49.8 115.9	0 55.2 -49.6 115.0
15°	2 14.0 -50.3 118.8	1 42.2 -50.1 118.0	1 10.2 -49.9 117.2	0 38.0 -49.8 116.4	0 05.6 -49.7 115.6
16°	1 23.7 -50.3 119.4	0 52.1 -50.1 118.6	0 20.3 -50.0 117.8	-0 11.8 -49.8	-0 44.1 -49.6
17°	0 33.4 -50.3 119.9	0 02.0 -50.1 119.1	-0 29.7 -49.9	-1 01.6 -49.7	-1 33.7 -49.6
18°	-0 16.9 -50.2	-0 48.1 -50.1	-1 19.6 -49.9	-1 51.3 -49.8	-2 23.3 -49.6
19°	-1 07.1 -50.3	-1 38.2 -50.1	-2 09.5 -50.0	-2 41.1 -49.8	-3 12.9 -49.6
20°	-1 57.4 -50.3	-2 28.3 -50.1	-2 59.5 -49.9	-3 30.9 -49.7	-4 02.5 -49.6
21°	-2 47.7 -50.2	-3 18.4 -50.1	-3 49.4 -49.9	-4 20.6 -49.7	-4 52.1 -49.5
22°	-3 37.9 -50.3	-4 08.5 -50.0	-4 39.3 -49.8	-5 10.3 -49.7	-5 41.6 -49.5
23°	-4 28.2 -50.2	-4 58.5 -50.1	-5 29.1 -49.9	-6 00.0 -49.7	-6 31.1 -49.5
24°	-5 18.4 -50.2	-5 48.6 -49.9	-6 19.0 -49.8	-6 49.7 -49.6	-7 20.6 -49.4
25°	-6 08.6 -50.1	-6 38.5 -50.0	-7 08.8 -49.7	-7 39.3 -49.5	-8 10.0 -49.4
26°	-6 58.7 -50.1	-7 28.5 -49.9	-7 58.5 -49.7	-8 28.8 -49.5	-8 59.4 -49.3
27°	-7 48.8 -50.1	-8 18.4 -49.9	-8 48.2 -49.7	-9 18.3 -49.5	-9 48.7 -49.3
28°	-8 38.9 -50.0	-9 08.3 -49.8	-9 37.9 -49.6		
29°	-9 28.9 -50.0	-9 58.1 -49.7			

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°	11 52.7 -49.0 106.2	11 17.9 -48.8 105.4	10 43.1 -48.8 104.5	10 08.0 -48.7 103.7	9 32.9 -48.6 102.9
1°	11 03.7 -49.1 106.8	10 29.1 -49.0 106.0	9 54.3 -48.9 105.1	9 19.3 -48.7 104.3	8 44.3 -48.7 103.5
2°	10 14.6 -49.1 107.4	9 40.1 -49.0 106.6	9 05.4 -48.9 105.7	8 30.6 -48.8 104.9	7 55.6 -48.7 104.1
3°	9 25.5 -49.2 108.0	8 51.1 -49.1 107.1	8 16.5 -49.0 106.3	7 41.8 -48.9 105.5	7 06.9 -48.8 104.7
4°	8 36.3 -49.2 108.5	8 02.0 -49.1 107.7	7 27.5 -49.0 106.9	6 52.9 -48.9 106.1	6 18.1 -48.8 105.3
5°	7 47.1 -49.3 109.1	7 12.9 -49.2 108.3	6 38.5 -49.1 107.5	6 04.0 -49.0 106.7	5 29.3 -48.8 105.8
6°	6 57.8 -49.4 109.7	6 23.7 -49.2 108.9	5 49.4 -49.1 108.1	5 15.0 -49.0 107.2	4 40.5 -48.9 106.4
7°	6 08.4 -49.3 110.3	5 34.5 -49.3 109.5	5 00.3 -49.1 108.6	4 26.0 -49.0 107.8	3 51.6 -48.9 107.0
8°	5 19.1 -49.4 110.8	4 45.2 -49.2 110.0	4 11.2 -49.1 109.2	3 37.0 -49.0 108.4	3 02.7 -48.9 107.6
9°	4 29.7 -49.5 111.4	3 56.0 -49.3 110.6	3 22.1 -49.2 109.8	2 48.0 -49.0 109.0	2 13.8 -48.9 108.2
10°	3 40.2 -49.4 112.0	3 06.7 -49.3 111.2	2 32.9 -49.2 110.4	1 59.0 -49.1 109.6	1 24.9 -49.0 108.7
11°	2 50.8 -49.5 112.5	2 17.4 -49.4 111.7	1 43.7 -49.2 110.9	1 09.9 -49.1 110.1	0 35.9 -48.9 109.3
12°	2 01.3 -49.4 113.1	1 28.0 -49.3 112.3	0 54.5 -49.2 111.5	0 20.8 -49.0 110.7	-0 13.0 -49.0
13°	1 11.9 -49.5 113.7	0 38.7 -49.3 112.9	0 05.3 -49.2 112.1	-0 28.2 -49.1	-1 02.0 -48.9
14°	0 22.4 -49.5 114.2	-0 10.6 -49.4	-0 43.9 -49.2	-1 17.3 -49.0	-1 50.9 -48.9
15°	-0 27.1 -49.5	-1 00.0 -49.3	-1 33.1 -49.1	-2 06.3 -49.1	-2 39.8 -48.9
16°	-1 16.6 -49.5	-1 49.3 -49.3	-2 22.2 -49.2	-2 55.4 -49.0	-3 28.7 -48.9
17°	-2 06.1 -49.4	-2 38.6 -49.3	-3 11.4 -49.2	-3 44.4 -49.0	-4 17.6 -48.9
18°	-2 55.5 -49.5	-3 27.9 -49.3	-4 00.6 -49.1	-4 33.4 -49.0	-5 06.5 -48.8
19°	-3 45.0 -49.4	-4 17.2 -49.3	-4 49.7 -49.1	-5 22.4 -48.9	-5 55.3 -48.8
20°	-4 34.4 -49.4	-5 06.5 -49.2	-5 38.8 -49.1	-6 11.3 -48.9	-6 44.1 -48.7
21°	-5 23.8 -49.3	-5 55.7 -49.2	-6 27.9 -49.0	-7 00.2 -48.9	-7 32.8 -48.7
22°	-6 13.1 -49.4	-6 44.9 -49.2	-7 16.9 -49.0	-7 49.1 -48.8	-8 21.5 -48.7
23°	-7 02.5 -49.3	-7 34.1 -49.1	-8 05.9 -48.9	-8 37.9 -48.8	-9 10.2 -48.6
24°	-7 51.8 -49.2	-8 23.2 -49.0	-8 54.8 -48.9	-9 26.7 -48.7	-9 58.8 -48.5
25°	-8 41.0 -49.2	-9 12.2 -49.0	-9 43.7 -48.8		
26°	-9 30.2 -49.1				
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°	8 57.7 -48.6 102.1	8 22.3 -48.5 101.3	7 46.8 -48.4 100.4	7 11.3 -48.3 99.6	6 35.6 -48.2 98.8
1°	8 09.1 -48.6 102.7	7 33.8 -48.5 101.9	6 58.4 -48.4 101.0	6 23.0 -48.4 100.2	5 47.4 -48.3 99.4
2°	7 20.5 -48.6 103.3	6 45.3 -48.5 102.5	6 10.0 -48.5 101.6	5 34.6 -48.4 100.8	4 59.1 -48.3 100.0
3°	6 31.9 -48.7 103.9	5 56.8 -48.6 103.0	5 21.5 -48.5 102.2	4 46.2 -48.4 101.4	4 10.8 -48.4 100.6
4°	5 43.2 -48.7 104.4	5 08.2 -48.6 103.6	4 33.0 -48.5 102.8	3 57.8 -48.5 102.0	3 22.4 -48.4 101.2
5°	4 54.5 -48.7 105.0	4 19.6 -48.7 104.2	3 44.5 -48.6 103.4	3 09.3 -48.5 102.6	2 34.0 -48.4 101.8
6°	4 05.8 -48.8 105.6	3 30.9 -48.7 104.8	2 55.9 -48.5 104.0	2 20.8 -48.4 103.2	1 45.6 -48.4 102.4
7°	3 17.0 -48.8 106.2	2 42.2 -48.6 105.4	2 07.4 -48.6 104.6	1 32.4 -48.5 103.8	0 57.2 -48.4 103.0
8°	2 28.2 -48.8 106.8	1 53.6 -48.7 106.0	1 18.8 -48.6 105.2	0 43.9 -48.5 104.4	0 08.8 -48.4 103.6
9°	1 39.4 -48.8 107.4	1 04.9 -48.7 106.6	0 30.2 -48.6 105.8	-0 04.6 -48.5	-0 39.6 -48.4
10°	0 50.6 -48.8 107.9	0 16.2 -48.8 107.1	-0 18.4 -48.6	-0 53.1 -48.5	-1 28.0 -48.4
11°	0 01.8 -48.9 108.5	-0 32.6 -48.7	-1 07.0 -48.6	-1 41.6 -48.5	-2 16.4 -48.4
12°	-0 47.1 -48.8	-1 21.3 -48.7	-1 55.6 -48.6	-2 30.1 -48.5	-3 04.8 -48.3
13°	-1 35.9 -48.8	-2 10.0 -48.6	-2 44.2 -48.6	-3 18.6 -48.4	-3 53.1 -48.4
14°	-2 24.7 -48.8	-2 58.6 -48.7	-3 32.8 -48.5	-4 07.0 -48.5	-4 41.5 -48.3
15°	-3 13.5 -48.7	-3 47.3 -48.6	-4 21.3 -48.5	-4 55.5 -48.4	-5 29.8 -48.3
16°	-4 02.2 -48.8	-4 35.9 -48.7	-5 09.8 -48.5	-5 43.9 -48.3	-6 18.1 -48.2
17°	-4 51.0 -48.7	-5 24.6 -48.5	-5 58.3 -48.4	-6 32.2 -48.3	-7 06.3 -48.2
18°	-5 39.7 -48.7	-6 13.1 -48.6	-6 46.7 -48.4	-7 20.5 -48.3	-7 54.5 -48.1
19°	-6 28.4 -48.6	-7 01.7 -48.5	-7 35.1 -48.4	-8 08.8 -48.2	-8 42.6 -48.1
20°	-7 17.0 -48.6	-7 50.2 -48.4	-8 23.5 -48.3	-8 57.0 -48.1	-9 30.7 -48.0
21°	-8 05.6 -48.6	-8 38.6 -48.4	-9 11.8 -48.2	-9 45.1 -48.1	
22°	-8 54.2 -48.4	-9 27.0 -48.3			
23°	-9 42.6 -48.5				
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°	5 59.9 -48.2 98.0	5 24.1 -48.1 97.2	4 48.3 -48.1 96.4	4 12.4 -48.1 95.6	3 36.4 -48.0 94.8
1°	5 11.7 -48.2 98.6	4 36.0 -48.2 97.8	4 00.2 -48.2 97.0	3 24.3 -48.1 96.2	2 48.4 -48.1 95.4
2°	4 23.5 -48.3 99.2	3 47.8 -48.2 98.4	3 12.0 -48.1 97.6	2 36.2 -48.1 96.8	2 00.3 -48.0 96.0
3°	3 35.2 -48.3 99.8	2 59.6 -48.2 99.0	2 23.9 -48.2 98.2	1 48.1 -48.1 97.4	1 12.3 -48.1 96.6
4°	2 46.9 -48.3 100.4	2 11.4 -48.3 99.6	1 35.7 -48.1 98.8	1 00.0 -48.1 98.0	0 24.2 -48.1 97.2
5°	1 58.6 -48.3 101.0	1 23.1 -48.2 100.2	0 47.6 -48.2 99.4	0 11.9 -48.1 98.6	-0 23.9 -48.0
6°	1 10.3 -48.3 101.6	0 34.9 -48.3 100.8	-0 00.6 -48.2	-0 36.2 -48.1	-1 11.9 -48.1
7°	0 22.0 -48.3 102.2	-0 13.4 -48.2	-0 48.8 -48.2	-1 24.3 -48.2	-2 00.0 -48.0
8°	-0 26.3 -48.4	-1 01.6 -48.2	-1 37.0 -48.1	-2 12.5 -48.0	-2 48.0 -48.0
9°	-1 14.7 -48.3	-1 49.8 -48.3	-2 25.1 -48.2	-3 00.5 -48.1	-3 36.0 -48.0
10°	-2 03.0 -48.3	-2 38.1 -48.2	-3 13.3 -48.1	-3 48.6 -48.1	-4 24.0 -48.0
11°	-2 51.3 -48.3	-3 26.3 -48.2	-4 01.4 -48.1	-4 36.7 -48.0	-5 12.0 -47.9
12°	-3 39.6 -48.2	-4 14.5 -48.1	-4 49.5 -48.1	-5 24.7 -48.0	-5 59.9 -47.9
13°	-4 27.8 -48.3	-5 02.6 -48.2	-5 37.6 -48.0	-6 12.7 -47.9	-6 47.8 -47.9
14°	-5 16.1 -48.2	-5 50.8 -48.1	-6 25.6 -48.0	-7 00.6 -47.9	-7 35.7 -47.8
15°	-6 04.3 -48.1	-6 38.9 -48.0	-7 13.6 -48.0	-7 48.5 -47.8	-8 23.5 -47.7
16°	-6 52.4 -48.1	-7 26.9 -48.0	-8 01.6 -47.8	-8 36.3 -47.8	-9 11.2 -47.7
17°	-7 40.5 -48.1	-8 14.9 -48.0	-8 49.4 -47.9	-9 24.1 -47.7	-9 58.9 -47.6
18°	-8 28.6 -48.0	-9 02.9 -47.8	-9 37.3 -47.7		
19°	-9 16.6 -47.9	-9 50.7 -47.9			
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°	3 00.4 -48.0 94.0	2 24.4 -48.0 93.2	1 48.3 -48.0 92.4	1 12.2 -47.9 91.6	0 36.1 -47.9 90.8
1°	2 12.4 -48.0 94.6	1 36.4 -48.0 93.8	1 00.3 -47.9 93.0	0 24.3 -48.0 92.2	-0 11.8 -47.9
2°	1 24.4 -48.0 95.2	0 48.4 -48.0 94.4	0 12.4 -48.0 93.6	-0 23.7 -47.9	-0 59.7 -47.9
3°	0 36.4 -48.0 95.8	0 00.4 -48.0 95.0	-0 35.6 -47.9	-1 11.6 -47.9	-1 47.6 -48.0
4°	-0 11.6 -48.1	-0 47.6 -47.9	-1 23.5 -48.0	-1 59.5 -47.9	-2 35.6 -47.8
5°	-0 59.7 -48.0	-1 35.5 -48.0	-2 11.5 -47.9	-2 47.4 -47.9	-3 23.4 -47.9
6°	-1 47.7 -48.0	-2 23.5 -47.9	-2 59.4 -47.9	-3 35.3 -47.9	-4 11.3 -47.8
7°	-2 35.7 -48.0	-3 11.4 -48.0	-3 47.3 -47.9	-4 23.2 -47.8	-4 59.1 -47.8
8°	-3 23.7 -47.9	-3 59.4 -47.9	-4 35.2 -47.8	-5 11.0 -47.8	-5 46.9 -47.8
9°	-4 11.6 -48.0	-4 47.3 -47.9	-5 23.0 -47.8	-5 58.8 -47.8	-6 34.7 -47.7
10°	-4 59.6 -47.9	-5 35.2 -47.8	-6 10.8 -47.8	-6 46.6 -47.7	-7 22.4 -47.7
11°	-5 47.5 -47.8	-6 23.0 -47.8	-6 58.6 -47.7	-7 34.3 -47.7	-8 10.1 -47.6
12°	-6 35.3 -47.8	-7 10.8 -47.7	-7 46.3 -47.7	-8 22.0 -47.6	-8 57.7 -47.5
13°	-7 23.1 -47.8	-7 58.5 -47.7	-8 34.0 -47.6	-9 09.6 -47.5	-9 45.2 -47.5
14°	-8 10.9 -47.7	-8 46.2 -47.6	-9 21.6 -47.6	-9 57.1 -47.5	
15°	-8 58.6 -47.7	-9 33.8 -47.6			
16°	-9 46.3 -47.6				
17°					
18°					
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27°					
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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 -47.9 90.0	-0 36.1 -47.9			
1°	-0 47.9 -47.9	-1 24.0 -47.9			
2°	-1 35.8 -47.9	-2 11.9 -47.9			
3°	-2 23.7 -47.9	-2 59.8 -47.9			
4°	-3 11.6 -47.9	-3 47.7 -47.9			
5°	-3 59.5 -47.8	-4 35.6 -47.8			
6°	-4 47.3 -47.8	-5 23.4 -47.8			
7°	-5 35.1 -47.8	-6 11.2 -47.7			
8°	-6 22.9 -47.7	-6 58.9 -47.7			
9°	-7 10.6 -47.7	-7 46.6 -47.6			
10°	-7 58.3 -47.6	-8 34.2 -47.6			
11°	-8 45.9 -47.6	-9 21.8 -47.5			
12°	-9 33.5 -47.5				
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°					

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°	36 00.0 -60.0 180.0	35 59.6 -60.0 178.8	35 58.5 -60.0 177.5	35 56.6 -60.0 176.3	35 53.9 -59.9 175.1
1°	35 00.0 -60.0 180.0	34 59.6 -60.0 178.8	34 58.5 -60.0 177.6	34 56.6 -59.9 176.3	34 54.0 -59.9 175.1
2°	34 00.0 -60.0 180.0	33 59.6 -60.0 178.8	33 58.5 -60.0 177.6	33 56.7 -60.0 176.4	33 54.1 -60.0 175.2
3°	33 00.0 -60.0 180.0	32 59.6 -60.0 178.8	32 58.5 -59.9 177.6	32 56.7 -60.0 176.4	32 54.1 -59.9 175.2
4°	32 00.0 -60.0 180.0	31 59.6 -60.0 178.8	31 58.6 -60.0 177.6	31 56.7 -59.9 176.5	31 54.2 -59.9 175.3
5°	31 00.0 -60.0 180.0	30 59.6 -60.0 178.8	30 58.6 -60.0 177.7	30 56.8 -60.0 176.5	30 54.3 -59.9 175.4
6°	30 00.0 -60.0 180.0	29 59.6 -59.9 178.9	29 58.6 -60.0 177.7	29 56.8 -59.9 176.6	29 54.4 -60.0 175.4
7°	29 00.0 -60.0 180.0	28 59.7 -60.0 178.9	28 58.6 -60.0 177.7	28 56.9 -60.0 176.6	28 54.4 -59.9 175.5
8°	28 00.0 -60.0 180.0	27 59.7 -60.0 178.9	27 58.6 -60.0 177.8	27 56.9 -60.0 176.6	27 54.5 -60.0 175.5
9°	27 00.0 -60.0 180.0	26 59.7 -60.0 178.9	26 58.6 -59.9 177.8	26 56.9 -59.9 176.7	26 54.5 -59.9 175.6
10°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 58.7 -60.0 177.8	25 57.0 -60.0 176.7	25 54.6 -59.9 175.6
11°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 58.7 -60.0 177.8	24 57.0 -60.0 176.8	24 54.7 -60.0 175.7
12°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.7 -60.0 177.9	23 57.0 -59.9 176.8	23 54.7 -59.9 175.7
13°	23 00.0 -60.0 180.0	22 59.7 -60.0 178.9	22 58.7 -60.0 177.9	22 57.1 -60.0 176.8	22 54.8 -59.9 175.8
14°	22 00.0 -60.0 180.0	21 59.7 -60.0 179.0	21 58.7 -60.0 177.9	21 57.1 -60.0 176.9	21 54.9 -60.0 175.8
15°	21 00.0 -60.0 180.0	20 59.7 -60.0 179.0	20 58.7 -60.0 177.9	20 57.1 -59.9 176.9	20 54.9 -59.9 175.9
16°	20 00.0 -60.0 180.0	19 59.7 -60.0 179.0	19 58.7 -59.9 178.0	19 57.2 -60.0 176.9	19 55.0 -60.0 175.9
17°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.8 -60.0 178.0	18 57.2 -60.0 177.0	18 55.0 -59.9 176.0
18°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 58.8 -60.0 178.0	17 57.2 -59.9 177.0	17 55.1 -60.0 176.0
19°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 58.8 -60.0 178.0	16 57.3 -60.0 177.0	16 55.1 -59.9 176.0
20°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 58.8 -60.0 178.0	15 57.3 -60.0 177.1	15 55.2 -60.0 176.1
21°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.0	14 58.8 -60.0 178.1	14 57.3 -59.9 177.1	14 55.2 -59.9 176.1
22°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.0	13 58.8 -60.0 178.1	13 57.4 -60.0 177.1	13 55.3 -59.9 176.2
23°	13 00.0 -60.0 180.0	12 59.7 -60.0 179.1	12 58.8 -59.9 178.1	12 57.4 -60.0 177.2	12 55.4 -60.0 176.2
24°	12 00.0 -60.0 180.0	11 59.7 -60.0 179.1	11 58.9 -60.0 178.1	11 57.4 -60.0 177.2	11 55.4 -59.9 176.3
25°	11 00.0 -60.0 180.0	10 59.7 -60.0 179.1	10 58.9 -60.0 178.2	10 57.4 -59.9 177.2	10 55.5 -60.0 176.3
26°	10 00.0 -60.0 180.0	9 59.7 -60.0 179.1	9 58.9 -60.0 178.2	9 57.5 -60.0 177.3	9 55.5 -59.9 176.4
27°	9 00.0 -60.0 180.0	8 59.7 -60.0 179.1	8 58.9 -60.0 178.2	8 57.5 -60.0 177.3	8 55.6 -60.0 176.4
28°	8 00.0 -60.0 180.0	7 59.7 -60.0 179.1	7 58.9 -60.0 178.2	7 57.5 -59.9 177.3	7 55.6 -59.9 176.4
29°	7 00.0 -60.0 180.0	6 59.7 -60.0 179.1	6 58.9 -60.0 178.2	6 57.6 -60.0 177.4	6 55.7 -60.0 176.5

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°	35 50.5 -59.9 173.8	35 46.3 -59.8 172.6	35 41.4 -59.7 171.4	35 35.8 -59.7 170.1	35 29.3 -59.6 168.9
1°	34 50.6 -59.9 173.9	34 46.5 -59.8 172.7	34 41.7 -59.8 171.5	34 36.1 -59.8 170.3	34 29.7 -59.6 169.1
2°	33 50.7 -59.8 174.0	33 46.7 -59.9 172.8	33 41.9 -59.8 171.6	33 36.3 -59.7 170.4	33 30.1 -59.6 169.2
3°	32 50.9 -59.9 174.1	32 46.8 -59.8 172.9	32 42.1 -59.8 171.7	32 36.6 -59.7 170.5	32 30.5 -59.7 169.3
4°	31 51.0 -59.9 174.1	31 47.0 -59.9 173.0	31 42.3 -59.8 171.8	31 36.9 -59.7 170.6	31 30.8 -59.6 169.5
5°	30 51.1 -59.9 174.2	30 47.1 -59.8 173.0	30 42.5 -59.8 171.9	30 37.2 -59.7 170.7	30 31.2 -59.7 169.6
6°	29 51.2 -59.9 174.3	29 47.3 -59.8 173.1	29 42.7 -59.8 172.0	29 37.5 -59.8 170.8	29 31.5 -59.7 169.7
7°	28 51.3 -59.9 174.3	28 47.5 -59.9 173.2	28 42.9 -59.8 172.1	28 37.7 -59.7 170.9	28 31.8 -59.6 169.8
8°	27 51.4 -59.9 174.4	27 47.6 -59.9 173.3	27 43.1 -59.8 172.2	27 38.0 -59.8 171.1	27 32.2 -59.7 169.9
9°	26 51.5 -59.9 174.5	26 47.7 -59.8 173.4	26 43.3 -59.8 172.3	26 38.2 -59.7 171.2	26 32.5 -59.7 170.1
10°	25 51.6 -59.9 174.5	25 47.9 -59.9 173.4	25 43.5 -59.8 172.3	25 38.5 -59.8 171.3	25 32.8 -59.7 170.2
11°	24 51.7 -59.9 174.6	24 48.0 -59.8 173.5	24 43.7 -59.8 172.4	24 38.7 -59.7 171.4	24 33.1 -59.7 170.3
12°	23 51.8 -59.9 174.7	23 48.2 -59.9 173.6	23 43.9 -59.8 172.5	23 39.0 -59.8 171.5	23 33.4 -59.7 170.4
13°	22 51.9 -59.9 174.7	22 48.3 -59.9 173.7	22 44.1 -59.8 172.6	22 39.2 -59.8 171.6	22 33.7 -59.7 170.5
14°	21 52.0 -60.0 174.8	21 48.4 -59.8 173.7	21 44.3 -59.9 172.7	21 39.4 -59.7 171.6	21 34.0 -59.7 170.6
15°	20 52.0 -59.9 174.8	20 48.6 -59.9 173.8	20 44.4 -59.8 172.8	20 39.7 -59.8 171.7	20 34.3 -59.7 170.7
16°	19 52.1 -59.9 174.9	19 48.7 -59.9 173.9	19 44.6 -59.8 172.9	19 39.9 -59.8 171.8	19 34.6 -59.7 170.8
17°	18 52.2 -59.9 174.9	18 48.8 -59.9 173.9	18 44.8 -59.9 172.9	18 40.1 -59.7 171.9	18 34.9 -59.7 170.9
18°	17 52.3 -59.9 175.0	17 48.9 -59.8 174.0	17 44.9 -59.8 173.0	17 40.4 -59.8 172.0	17 35.2 -59.8 171.0
19°	16 52.4 -59.9 175.1	16 49.1 -59.9 174.1	16 45.1 -59.8 173.1	16 40.6 -59.8 172.1	16 35.4 -59.7 171.1
20°	15 52.5 -59.9 175.1	15 49.2 -59.9 174.1	15 45.3 -59.8 173.2	15 40.8 -59.8 172.2	15 35.7 -59.7 171.2
21°	14 52.6 -59.9 175.2	14 49.3 -59.9 174.2	14 45.5 -59.9 173.2	14 41.0 -59.8 172.3	14 36.0 -59.8 171.3
22°	13 52.7 -60.0 175.2	13 49.4 -59.9 174.3	13 45.6 -59.8 173.3	13 41.2 -59.8 172.4	13 36.2 -59.7 171.4
23°	12 52.7 -59.9 175.3	12 49.5 -59.8 174.3	12 45.8 -59.9 173.4	12 41.4 -59.8 172.5	12 36.5 -59.7 171.5
24°	11 52.8 -59.9 175.3	11 49.7 -59.9 174.4	11 45.9 -59.8 173.5	11 41.6 -59.7 172.5	11 36.8 -59.8 171.6
25°	10 52.9 -59.9 175.4	10 49.8 -59.9 174.5	10 46.1 -59.8 173.5	10 41.9 -59.8 172.6	10 37.0 -59.7 171.7
26°	9 53.0 -59.9 175.4	9 49.9 -59.9 174.5	9 46.3 -59.9 173.6	9 42.1 -59.8 172.7	9 37.3 -59.7 171.8
27°	8 53.1 -60.0 175.5	8 50.0 -59.9 174.6	8 46.4 -59.8 173.7	8 42.3 -59.8 172.8	8 37.6 -59.8 171.9
28°	7 53.1 -59.9 175.5	7 50.1 -59.9 174.7	7 46.6 -59.9 173.8	7 42.5 -59.8 172.9	7 37.8 -59.7 172.0
29°	6 53.2 -59.9 175.6	6 50.2 -59.8 174.7	6 46.7 -59.8 173.8	6 42.7 -59.8 173.0	6 38.1 -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°	35 22.2 -59.5 167.7	35 14.3 -59.4 166.5	35 05.7 -59.3 165.3	34 56.4 -59.2 164.1	34 46.4 -59.1 162.9
1°	34 22.7 -59.6 167.9	34 14.9 -59.5 166.7	34 06.4 -59.4 165.5	33 57.2 -59.3 164.3	33 47.3 -59.2 163.1
2°	33 23.1 -59.5 168.0	33 15.4 -59.4 166.8	33 07.0 -59.3 165.6	32 57.9 -59.2 164.5	32 48.1 -59.1 163.3
3°	32 23.6 -59.6 168.1	32 16.0 -59.5 167.0	32 07.7 -59.4 165.8	31 58.7 -59.3 164.6	31 49.0 -59.2 163.5
4°	31 24.0 -59.6 168.3	31 16.5 -59.5 167.1	31 08.3 -59.4 166.0	30 59.4 -59.3 164.8	30 49.8 -59.1 163.7
5°	30 24.4 -59.6 168.4	30 17.0 -59.5 167.3	30 08.9 -59.4 166.1	30 00.1 -59.3 165.0	29 50.7 -59.2 163.9
6°	29 24.8 -59.5 168.6	29 17.5 -59.5 167.4	29 09.5 -59.4 166.3	29 00.8 -59.3 165.2	28 51.5 -59.2 164.1
7°	28 25.3 -59.6 168.7	28 18.0 -59.5 167.6	28 10.1 -59.4 166.5	28 01.5 -59.3 165.3	27 52.3 -59.3 164.2
8°	27 25.7 -59.6 168.8	27 18.5 -59.5 167.7	27 10.7 -59.5 166.6	27 02.2 -59.4 165.5	26 53.0 -59.2 164.4
9°	26 26.1 -59.7 169.0	26 19.0 -59.6 167.9	26 11.2 -59.4 166.8	26 02.8 -59.3 165.7	25 53.8 -59.3 164.6
10°	25 26.4 -59.6 169.1	25 19.4 -59.5 168.0	25 11.8 -59.5 166.9	25 03.5 -59.4 165.8	24 54.5 -59.2 164.8
11°	24 26.8 -59.6 169.2	24 19.9 -59.5 168.1	24 12.3 -59.4 167.1	24 04.1 -59.4 166.0	23 55.3 -59.3 164.9
12°	23 27.2 -59.6 169.3	23 20.4 -59.6 168.3	23 12.9 -59.5 167.2	23 04.7 -59.3 166.2	22 56.0 -59.3 165.1
13°	22 27.6 -59.7 169.5	22 20.8 -59.6 168.4	22 13.4 -59.5 167.4	22 05.4 -59.4 166.3	21 56.7 -59.3 165.3
14°	21 27.9 -59.6 169.6	21 21.2 -59.5 168.5	21 13.9 -59.5 167.5	21 06.0 -59.4 166.5	20 57.4 -59.3 165.4
15°	20 28.3 -59.7 169.7	20 21.7 -59.6 168.7	20 14.4 -59.5 167.6	20 06.6 -59.4 166.6	19 58.1 -59.3 165.6
16°	19 28.6 -59.6 169.8	19 22.1 -59.6 168.8	19 14.9 -59.5 167.8	19 07.2 -59.4 166.8	18 58.8 -59.3 165.8
17°	18 29.0 -59.7 169.9	18 22.5 -59.6 168.9	18 15.4 -59.5 167.9	18 07.8 -59.5 166.9	17 59.5 -59.4 165.9
18°	17 29.3 -59.6 170.0	17 22.9 -59.5 169.0	17 15.9 -59.5 168.0	17 08.3 -59.4 167.1	17 00.1 -59.3 166.1
19°	16 29.7 -59.7 170.1	16 23.4 -59.6 169.2	16 16.4 -59.5 168.2	16 08.9 -59.4 167.2	16 00.8 -59.3 166.2
20°	15 30.0 -59.6 170.3	15 23.8 -59.6 169.3	15 16.9 -59.5 168.3	15 09.5 -59.5 167.3	15 01.5 -59.4 166.4
21°	14 30.4 -59.7 170.4	14 24.2 -59.6 169.4	14 17.4 -59.5 168.4	14 10.0 -59.4 167.5	14 02.1 -59.3 166.5
22°	13 30.7 -59.7 170.5	13 24.6 -59.6 169.5	13 17.9 -59.6 168.6	13 10.6 -59.4 167.6	13 02.8 -59.4 166.7
23°	12 31.0 -59.6 170.6	12 25.0 -59.6 169.6	12 18.3 -59.5 168.7	12 11.2 -59.5 167.8	12 03.4 -59.4 166.8
24°	11 31.4 -59.7 170.7	11 25.4 -59.6 169.8	11 18.8 -59.5 168.8	11 11.7 -59.5 167.9	11 04.0 -59.3 167.0
25°	10 31.7 -59.7 170.8	10 25.8 -59.7 169.9	10 19.3 -59.6 169.0	10 12.2 -59.4 168.0	10 04.7 -59.4 167.1
26°	9 32.0 -59.7 170.9	9 26.1 -59.6 170.0	9 19.7 -59.5 169.1	9 12.8 -59.5 168.2	9 05.3 -59.4 167.3
27°	8 32.3 -59.7 171.0	8 26.5 -59.6 170.1	8 20.2 -59.5 169.2	8 13.3 -59.4 168.3	8 05.9 -59.4 167.4
28°	7 32.6 -59.6 171.1	7 26.9 -59.6 170.2	7 20.7 -59.6 169.3	7 13.9 -59.5 168.5	7 06.5 -59.3 167.6
29°	6 33.0 -59.7 171.2	6 27.3 -59.6 170.3	6 21.1 -59.5 169.5	6 14.4 -59.5 168.6	6 07.2 -59.4 167.7

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°	34 35.6 -58.9 161.7	34 24.2 -58.8 160.5	34 12.1 -58.7 159.3	33 59.3 -58.6 158.1	33 45.8 -58.4 156.9
1°	33 36.7 -59.0 161.9	33 25.4 -58.9 160.7	33 13.4 -58.8 159.5	33 00.7 -58.6 158.4	32 47.4 -58.5 157.2
2°	32 37.7 -59.1 162.1	32 26.5 -58.9 160.9	32 14.6 -58.7 159.8	32 02.1 -58.6 158.6	31 48.9 -58.4 157.5
3°	31 38.6 -59.0 162.3	31 27.6 -58.9 161.2	31 15.9 -58.8 160.0	31 03.5 -58.7 158.9	30 50.5 -58.5 157.7
4°	30 39.6 -59.1 162.5	30 28.7 -59.0 161.4	30 17.1 -58.8 160.3	30 04.8 -58.6 159.1	29 52.0 -58.6 158.0
5°	29 40.5 -59.1 162.7	29 29.7 -58.9 161.6	29 18.3 -58.9 160.5	29 06.2 -58.7 159.4	28 53.4 -58.5 158.3
6°	28 41.4 -59.1 162.9	28 30.8 -59.0 161.8	28 19.4 -58.8 160.7	28 07.5 -58.8 159.6	27 54.9 -58.6 158.5
7°	27 42.3 -59.1 163.1	27 31.8 -59.0 162.0	27 20.6 -58.9 160.9	27 08.7 -58.7 159.8	26 56.3 -58.6 158.7
8°	26 43.2 -59.1 163.3	26 32.8 -59.0 162.2	26 21.7 -58.9 161.1	26 10.0 -58.8 160.1	25 57.7 -58.7 159.0
9°	25 44.1 -59.1 163.5	25 33.8 -59.1 162.4	25 22.8 -58.9 161.4	25 11.2 -58.8 160.3	24 59.0 -58.6 159.2
10°	24 45.0 -59.2 163.7	24 34.7 -59.0 162.6	24 23.9 -58.9 161.6	24 12.4 -58.8 160.5	24 00.4 -58.7 159.5
11°	23 45.8 -59.2 163.9	23 35.7 -59.1 162.8	23 25.0 -59.0 161.8	23 13.6 -58.8 160.7	23 01.7 -58.7 159.7
12°	22 46.6 -59.2 164.1	22 36.6 -59.0 163.0	22 26.0 -58.9 162.0	22 14.8 -58.8 160.9	22 03.0 -58.7 159.9
13°	21 47.4 -59.2 164.2	21 37.6 -59.1 163.2	21 27.1 -59.0 162.2	21 16.0 -58.9 161.1	21 04.3 -58.8 160.1
14°	20 48.2 -59.2 164.4	20 38.5 -59.1 163.4	20 28.1 -59.0 162.4	20 17.1 -58.9 161.4	20 05.5 -58.7 160.3
15°	19 49.0 -59.2 164.6	19 39.4 -59.1 163.6	19 29.1 -59.0 162.6	19 18.2 -58.8 161.6	19 06.8 -58.8 160.6
16°	18 49.8 -59.2 164.8	18 40.3 -59.2 163.8	18 30.1 -59.0 162.8	18 19.4 -58.9 161.8	18 08.0 -58.7 160.8
17°	17 50.6 -59.2 164.9	17 41.1 -59.1 163.9	17 31.1 -59.0 163.0	17 20.5 -59.0 162.0	17 09.3 -58.8 161.0
18°	16 51.4 -59.3 165.1	16 42.0 -59.1 164.1	16 32.1 -59.1 163.1	16 21.5 -58.9 162.2	16 10.5 -58.8 161.2
19°	15 52.1 -59.2 165.3	15 42.9 -59.2 164.3	15 33.0 -59.0 163.3	15 22.6 -58.9 162.4	15 11.7 -58.9 161.4
20°	14 52.9 -59.3 165.4	14 43.7 -59.1 164.5	14 34.0 -59.1 163.5	14 23.7 -58.9 162.6	14 12.8 -58.8 161.6
21°	13 53.6 -59.2 165.6	13 44.6 -59.2 164.6	13 34.9 -59.0 163.7	13 24.8 -59.0 162.7	13 14.0 -58.8 161.8
22°	12 54.4 -59.3 165.7	12 45.4 -59.2 164.8	12 35.9 -59.1 163.9	12 25.8 -59.0 162.9	12 15.2 -58.9 162.0
23°	11 55.1 -59.3 165.9	11 46.2 -59.1 165.0	11 36.8 -59.1 164.1	11 26.8 -58.9 163.1	11 16.3 -58.8 162.2
24°	10 55.8 -59.3 166.1	10 47.1 -59.2 165.1	10 37.7 -59.0 164.2	10 27.9 -59.0 163.3	10 17.5 -58.9 162.4
25°	9 56.5 -59.2 166.2	9 47.9 -59.2 165.3	9 38.7 -59.1 164.4	9 28.9 -59.0 163.5	9 18.6 -58.8 162.6
26°	8 57.3 -59.3 166.4	8 48.7 -59.2 165.5	8 39.6 -59.1 164.6	8 29.9 -58.9 163.7	8 19.8 -58.9 162.8
27°	7 58.0 -59.3 166.5	7 49.5 -59.2 165.6	7 40.5 -59.1 164.8	7 31.0 -59.0 163.9	7 20.9 -58.9 163.0
28°	6 58.7 -59.3 166.7	6 50.3 -59.2 165.8	6 41.4 -59.1 164.9	6 32.0 -59.0 164.1	6 22.0 -58.9 163.2
29°	5 59.4 -59.3 166.8	5 51.1 -59.2 166.0	5 42.3 -59.1 165.1	5 33.0 -59.0 164.2	5 23.1 -58.8 163.4

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°	33 31.7 -58.3 155.8	33 16.9 -58.1 154.6	33 01.4 -57.9 153.5	32 45.3 -57.7 152.3	32 28.7 -57.6 151.2
1°	32 33.4 -58.3 156.1	32 18.8 -58.2 154.9	32 03.5 -58.0 153.8	31 47.6 -57.8 152.6	31 31.1 -57.6 151.5
2°	31 35.1 -58.3 156.3	31 20.6 -58.1 155.2	31 05.5 -58.0 154.1	30 49.8 -57.8 153.0	30 33.5 -57.7 151.8
3°	30 36.8 -58.4 156.6	30 22.5 -58.2 155.5	30 07.5 -58.0 154.4	29 52.0 -57.9 153.3	29 35.8 -57.7 152.2
4°	29 38.4 -58.4 156.9	29 24.3 -58.3 155.8	29 09.5 -58.1 154.7	28 54.1 -57.9 153.6	28 38.1 -57.8 152.5
5°	28 40.0 -58.4 157.2	28 26.0 -58.2 156.0	28 11.4 -58.1 155.0	27 56.2 -58.0 153.9	27 40.3 -57.8 152.8
6°	27 41.6 -58.4 157.4	27 27.8 -58.3 156.3	27 13.3 -58.1 155.2	26 58.2 -58.0 154.2	26 42.5 -57.8 153.1
7°	26 43.2 -58.5 157.7	26 29.5 -58.4 156.6	26 15.2 -58.2 155.5	26 00.2 -58.0 154.4	25 44.7 -57.8 153.4
8°	25 44.7 -58.5 157.9	25 31.1 -58.3 156.8	25 17.0 -58.2 155.8	25 02.2 -58.0 154.7	24 46.9 -57.9 153.7
9°	24 46.2 -58.5 158.2	24 32.8 -58.4 157.1	24 18.8 -58.3 156.0	24 04.2 -58.1 155.0	23 49.0 -58.0 154.0
10°	23 47.7 -58.6 158.4	23 34.4 -58.4 157.4	23 20.5 -58.2 156.3	23 06.1 -58.1 155.3	22 51.0 -57.9 154.2
11°	22 49.1 -58.5 158.6	22 36.0 -58.4 157.6	22 22.3 -58.3 156.6	22 08.0 -58.2 155.5	21 53.1 -58.0 154.5
12°	21 50.6 -58.6 158.9	21 37.6 -58.5 157.8	21 24.0 -58.3 156.8	21 09.8 -58.2 155.8	20 55.1 -58.0 154.8
13°	20 52.0 -58.6 159.1	20 39.1 -58.4 158.1	20 25.7 -58.4 157.1	20 11.6 -58.1 156.1	19 57.1 -58.1 155.1
14°	19 53.4 -58.6 159.3	19 40.7 -58.5 158.3	19 27.3 -58.3 157.3	19 13.5 -58.2 156.3	18 59.0 -58.0 155.3
15°	18 54.8 -58.7 159.6	18 42.2 -58.5 158.6	18 29.0 -58.4 157.6	18 15.3 -58.3 156.6	18 01.0 -58.1 155.6
16°	17 56.1 -58.6 159.8	17 43.7 -58.6 158.8	17 30.6 -58.4 157.8	17 17.0 -58.2 156.8	17 02.9 -58.1 155.9
17°	16 57.5 -58.7 160.0	16 45.1 -58.5 159.0	16 32.2 -58.4 158.1	16 18.8 -58.3 157.1	16 04.8 -58.1 156.1
18°	15 58.8 -58.7 160.2	15 46.6 -58.6 159.3	15 33.8 -58.4 158.3	15 20.5 -58.3 157.3	15 06.7 -58.2 156.4
19°	15 00.1 -58.7 160.4	14 48.0 -58.5 159.5	14 35.4 -58.4 158.5	14 22.2 -58.3 157.6	14 08.5 -58.1 156.6
20°	14 01.4 -58.7 160.7	13 49.5 -58.6 159.7	13 37.0 -58.5 158.8	13 23.9 -58.3 157.8	13 10.4 -58.2 156.9
21°	13 02.7 -58.7 160.9	12 50.9 -58.6 159.9	12 38.5 -58.4 159.0	12 25.6 -58.3 158.1	12 12.2 -58.2 157.1
22°	12 04.0 -58.7 161.1	11 52.3 -58.6 160.2	11 40.1 -58.5 159.2	11 27.3 -58.3 158.3	11 14.0 -58.2 157.4
23°	11 05.3 -58.7 161.3	10 53.7 -58.6 160.4	10 41.6 -58.5 159.5	10 29.0 -58.4 158.5	10 15.8 -58.2 157.6
24°	10 06.6 -58.8 161.5	9 55.1 -58.6 160.6	9 43.1 -58.5 159.7	9 30.6 -58.3 158.8	9 17.6 -58.2 157.9
25°	9 07.8 -58.7 161.7	8 56.5 -58.6 160.8	8 44.6 -58.5 159.9	8 32.3 -58.4 159.0	8 19.4 -58.2 158.1
26°	8 09.1 -58.8 161.9	7 57.9 -58.7 161.0	7 46.1 -58.5 160.1	7 33.9 -58.4 159.3	7 21.2 -58.3 158.4
27°	7 10.3 -58.7 162.1	6 59.2 -58.6 161.2	6 47.6 -58.5 160.4	6 35.5 -58.3 159.5	6 22.9 -58.2 158.6
28°	6 11.6 -58.8 162.3	6 00.6 -58.6 161.4	5 49.1 -58.5 160.6	5 37.2 -58.4 159.7	5 24.7 -58.3 158.9
29°	5 12.8 -58.8 162.5	5 02.0 -58.7 161.7	4 50.6 -58.5 160.8	4 38.8 -58.4 159.9	4 26.4 -58.2 159.1

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°	32 11.3 -57.3 150.0	31 53.4 -57.2 148.9	31 34.9 -57.0 147.8	31 15.8 -56.8 146.7	30 56.2 -56.6 145.6
1°	31 14.0 -57.5 150.4	30 56.2 -57.2 149.3	30 37.9 -57.1 148.2	30 19.0 -56.9 147.1	29 59.6 -56.7 146.0
2°	30 16.5 -57.5 150.7	29 59.0 -57.3 149.6	29 40.8 -57.1 148.5	29 22.1 -56.9 147.4	29 02.9 -56.8 146.3
3°	29 19.0 -57.5 151.1	29 01.7 -57.4 150.0	28 43.7 -57.2 148.9	28 25.2 -57.0 147.8	28 06.1 -56.8 146.7
4°	28 21.5 -57.6 151.4	28 04.3 -57.4 150.3	27 46.5 -57.2 149.2	27 28.2 -57.0 148.1	27 09.3 -56.9 147.1
5°	27 23.9 -57.6 151.7	27 06.9 -57.5 150.6	26 49.3 -57.3 149.6	26 31.2 -57.1 148.5	26 12.4 -56.9 147.4
6°	26 26.3 -57.7 152.0	26 09.4 -57.5 150.9	25 52.0 -57.3 149.9	25 34.1 -57.2 148.8	25 15.5 -56.9 147.8
7°	25 28.6 -57.7 152.3	25 11.9 -57.5 151.3	24 54.7 -57.4 150.2	24 36.9 -57.2 149.2	24 18.6 -57.1 148.1
8°	24 30.9 -57.7 152.6	24 14.4 -57.6 151.6	23 57.3 -57.4 150.5	23 39.7 -57.2 149.5	23 21.5 -57.0 148.5
9°	23 33.2 -57.8 152.9	23 16.8 -57.6 151.9	22 59.9 -57.4 150.8	22 42.5 -57.3 149.8	22 24.5 -57.1 148.8
10°	22 35.4 -57.8 153.2	22 19.2 -57.6 152.2	22 02.5 -57.5 151.2	21 45.2 -57.3 150.1	21 27.4 -57.1 149.1
11°	21 37.6 -57.8 153.5	21 21.6 -57.7 152.5	21 05.0 -57.5 151.5	20 47.9 -57.3 150.5	20 30.3 -57.2 149.5
12°	20 39.8 -57.9 153.8	20 23.9 -57.7 152.8	20 07.5 -57.5 151.8	19 50.6 -57.4 150.8	19 33.1 -57.2 149.8
13°	19 41.9 -57.9 154.1	19 26.2 -57.7 153.1	19 10.0 -57.6 152.1	18 53.2 -57.4 151.1	18 35.9 -57.3 150.1
14°	18 44.0 -57.9 154.3	18 28.5 -57.8 153.4	18 12.4 -57.6 152.4	17 55.8 -57.5 151.4	17 38.6 -57.2 150.4
15°	17 46.1 -57.9 154.6	17 30.7 -57.8 153.6	17 14.8 -57.6 152.7	16 58.3 -57.4 151.7	16 41.4 -57.3 150.7
16°	16 48.2 -58.0 154.9	16 32.9 -57.8 153.9	16 17.2 -57.7 153.0	16 00.9 -57.5 152.0	15 44.1 -57.4 151.0
17°	15 50.2 -57.9 155.2	15 35.1 -57.8 154.2	15 19.5 -57.6 153.2	15 03.4 -57.5 152.3	14 46.7 -57.3 151.3
18°	14 52.3 -58.0 155.4	14 37.3 -57.8 154.5	14 21.9 -57.7 153.5	14 05.9 -57.5 152.6	13 49.4 -57.4 151.7
19°	13 54.3 -58.1 155.7	13 39.5 -57.9 154.8	13 24.2 -57.7 153.8	13 08.4 -57.6 152.9	12 52.0 -57.4 152.0
20°	12 56.2 -58.0 156.0	12 41.6 -57.9 155.0	12 26.5 -57.8 154.1	12 10.8 -57.6 153.2	11 54.6 -57.4 152.3
21°	11 58.2 -58.0 156.2	11 43.7 -57.9 155.3	11 28.7 -57.7 154.4	11 13.2 -57.5 153.5	10 57.2 -57.4 152.5
22°	11 00.2 -58.1 156.5	10 45.8 -57.9 155.6	10 31.0 -57.8 154.7	10 15.7 -57.6 153.7	9 59.8 -57.4 152.8
23°	10 02.1 -58.0 156.7	9 47.9 -57.9 155.8	9 33.2 -57.7 154.9	9 18.1 -57.7 154.0	9 02.4 -57.5 153.1
24°	9 04.1 -58.1 157.0	8 50.0 -57.9 156.1	8 35.5 -57.8 155.2	8 20.4 -57.6 154.3	8 04.9 -57.5 153.4
25°	8 06.0 -58.1 157.2	7 52.1 -57.9 156.4	7 37.7 -57.8 155.5	7 22.8 -57.6 154.6	7 07.4 -57.4 153.7
26°	7 07.9 -58.1 157.5	6 54.2 -58.0 156.6	6 39.9 -57.8 155.7	6 25.2 -57.7 154.9	6 10.0 -57.5 154.0
27°	6 09.8 -58.1 157.7	5 56.2 -57.9 156.9	5 42.1 -57.8 156.0	5 27.5 -57.6 155.2	5 12.5 -57.5 154.3
28°	5 11.7 -58.1 158.0	4 58.3 -58.0 157.1	4 44.3 -57.8 156.3	4 29.9 -57.7 155.4	4 15.0 -57.5 154.6
29°	4 13.6 -58.1 158.2	4 00.3 -58.0 157.4	3 46.5 -57.8 156.6	3 32.2 -57.6 155.7	3 17.5 -57.5 154.9

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°	30 36.0 -56.4 144.5	30 15.2 -56.2 143.4	29 53.9 -56.0 142.3	29 32.1 -55.8 141.2	29 09.8 -55.6 140.2
1°	29 39.6 -56.5 144.9	29 19.0 -56.3 143.8	28 57.9 -56.1 142.7	28 36.3 -55.9 141.7	28 14.2 -55.8 140.6
2°	28 43.1 -56.6 145.3	28 22.7 -56.4 144.2	28 01.8 -56.2 143.1	27 40.4 -56.0 142.1	27 18.4 -55.7 141.0
3°	27 46.5 -56.6 145.6	27 26.3 -56.4 144.6	27 05.6 -56.2 143.5	26 44.4 -56.0 142.5	26 22.7 -55.9 141.4
4°	26 49.9 -56.7 146.0	26 29.9 -56.5 145.0	26 09.4 -56.3 143.9	25 48.4 -56.2 142.9	25 26.8 -55.9 141.8
5°	25 53.2 -56.7 146.4	25 33.4 -56.6 145.3	25 13.1 -56.4 144.3	24 52.2 -56.1 143.3	24 30.9 -56.0 142.2
6°	24 56.5 -56.8 146.7	24 36.8 -56.6 145.7	24 16.7 -56.4 144.7	23 56.1 -56.3 143.7	23 34.9 -56.0 142.6
7°	23 59.7 -56.9 147.1	23 40.2 -56.6 146.1	23 20.3 -56.5 145.1	22 59.8 -56.2 144.0	22 38.9 -56.1 143.0
8°	23 02.8 -56.8 147.4	22 43.6 -56.7 146.4	22 23.8 -56.5 145.4	22 03.6 -56.4 144.4	21 42.8 -56.2 143.4
9°	22 06.0 -57.0 147.8	21 46.9 -56.7 146.8	21 27.3 -56.5 145.8	21 07.2 -56.3 144.8	20 46.6 -56.1 143.8
10°	21 09.0 -56.9 148.1	20 50.2 -56.8 147.1	20 30.8 -56.7 146.1	20 10.9 -56.5 145.1	19 50.5 -56.3 144.2
11°	20 12.1 -57.0 148.5	19 53.4 -56.9 147.5	19 34.1 -56.6 146.5	19 14.4 -56.4 145.5	18 54.2 -56.3 144.5
12°	19 15.1 -57.1 148.8	18 56.5 -56.8 147.8	18 37.5 -56.7 146.8	18 18.0 -56.5 145.9	17 57.9 -56.3 144.9
13°	18 18.0 -57.0 149.1	17 59.7 -56.9 148.2	17 40.8 -56.7 147.2	17 21.5 -56.6 146.2	17 01.6 -56.4 145.3
14°	17 21.0 -57.1 149.5	17 02.8 -56.9 148.5	16 44.1 -56.8 147.5	16 24.9 -56.6 146.6	16 05.2 -56.4 145.6
15°	16 23.9 -57.2 149.8	16 05.9 -57.0 148.8	15 47.3 -56.7 147.9	15 28.3 -56.6 146.9	15 08.8 -56.4 146.0
16°	15 26.7 -57.1 150.1	15 08.9 -57.0 149.1	14 50.6 -56.9 148.2	14 31.7 -56.6 147.3	14 12.4 -56.4 146.3
17°	14 29.6 -57.2 150.4	14 11.9 -57.0 149.5	13 53.7 -56.8 148.5	13 35.1 -56.7 147.6	13 16.0 -56.5 146.7
18°	13 32.4 -57.2 150.7	13 14.9 -57.0 149.8	12 56.9 -56.9 148.9	12 38.4 -56.7 147.9	12 19.5 -56.6 147.0
19°	12 35.2 -57.2 151.0	12 17.9 -57.1 150.1	12 00.0 -56.8 149.2	11 41.7 -56.7 148.3	11 22.9 -56.5 147.4
20°	11 38.0 -57.3 151.3	11 20.8 -57.1 150.4	11 03.2 -57.0 149.5	10 45.0 -56.7 148.6	10 26.4 -56.6 147.7
21°	10 40.7 -57.2 151.6	10 23.7 -57.1 150.7	10 06.2 -56.9 149.8	9 48.3 -56.8 148.9	9 29.8 -56.5 148.0
22°	9 43.5 -57.3 151.9	9 26.6 -57.1 151.0	9 09.3 -56.9 150.2	8 51.5 -56.7 149.3	8 33.3 -56.6 148.4
23°	8 46.2 -57.3 152.2	8 29.5 -57.1 151.4	8 12.4 -57.0 150.5	7 54.8 -56.8 149.6	7 36.7 -56.6 148.7
24°	7 48.9 -57.3 152.5	7 32.4 -57.2 151.7	7 15.4 -57.0 150.8	6 58.0 -56.8 149.9	6 40.1 -56.7 149.0
25°	6 51.6 -57.3 152.8	6 35.2 -57.1 152.0	6 18.4 -56.9 151.1	6 01.2 -56.8 150.2	5 43.4 -56.6 149.4
26°	5 54.3 -57.4 153.1	5 38.1 -57.2 152.3	5 21.5 -57.0 151.4	5 04.4 -56.9 150.6	4 46.8 -56.6 149.7
27°	4 56.9 -57.3 153.4	4 40.9 -57.1 152.6	4 24.5 -57.0 151.7	4 07.5 -56.8 150.9	3 50.2 -56.7 150.0
28°	3 59.6 -57.3 153.7	3 43.8 -57.2 152.9	3 27.5 -57.0 152.0	3 10.7 -56.8 151.2	2 53.5 -56.7 150.4
29°	3 02.3 -57.4 154.0	2 46.6 -57.2 153.2	2 30.5 -57.1 152.4	2 13.9 -56.9 151.5	1 56.8 -56.6 150.7

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°	28 46.9 -55.4 139.1	28 23.6 -55.2 138.1	27 59.8 -55.0 137.0	27 35.6 -54.9 136.0	27 10.8 -54.6 135.0
1°	27 51.5 -55.5 139.6	27 28.4 -55.3 138.5	27 04.8 -55.1 137.5	26 40.7 -54.9 136.5	26 16.2 -54.7 135.4
2°	26 56.0 -55.6 140.0	26 33.1 -55.4 139.0	26 09.7 -55.2 137.9	25 45.8 -54.9 136.9	25 21.5 -54.8 135.9
3°	26 00.4 -55.6 140.4	25 37.7 -55.4 139.4	25 14.5 -55.2 138.4	24 50.9 -55.1 137.3	24 26.7 -54.8 136.3
4°	25 04.8 -55.7 140.8	24 42.3 -55.6 139.8	24 19.3 -55.4 138.8	23 55.8 -55.1 137.8	23 31.9 -55.0 136.8
5°	24 09.1 -55.8 141.2	23 46.7 -55.6 140.2	23 23.9 -55.4 139.2	23 00.7 -55.2 138.2	22 36.9 -55.0 137.2
6°	23 13.3 -55.9 141.6	22 51.1 -55.6 140.6	22 28.5 -55.4 139.6	22 05.5 -55.3 138.6	21 41.9 -55.0 137.7
7°	22 17.4 -55.9 142.0	21 55.5 -55.7 141.0	21 33.1 -55.5 140.0	21 10.2 -55.3 139.1	20 46.9 -55.2 138.1
8°	21 21.5 -55.9 142.4	20 59.8 -55.8 141.4	20 37.6 -55.6 140.4	20 14.9 -55.4 139.5	19 51.7 -55.2 138.5
9°	20 25.6 -56.0 142.8	20 04.0 -55.8 141.8	19 42.0 -55.7 140.8	19 19.5 -55.5 139.9	18 56.5 -55.2 138.9
10°	19 29.6 -56.1 143.2	19 08.2 -55.9 142.2	18 46.3 -55.6 141.2	18 24.0 -55.5 140.3	18 01.3 -55.3 139.3
11°	18 33.5 -56.1 143.6	18 12.3 -55.9 142.6	17 50.7 -55.8 141.6	17 28.5 -55.5 140.7	17 06.0 -55.4 139.7
12°	17 37.4 -56.1 143.9	17 16.4 -55.9 143.0	16 54.9 -55.7 142.0	16 33.0 -55.6 141.1	16 10.6 -55.4 140.1
13°	16 41.3 -56.2 144.3	16 20.5 -56.0 143.4	15 59.2 -55.8 142.4	15 37.4 -55.6 141.5	15 15.2 -55.4 140.5
14°	15 45.1 -56.2 144.7	15 24.5 -56.1 143.7	15 03.4 -55.9 142.8	14 41.8 -55.7 141.9	14 19.8 -55.5 140.9
15°	14 48.9 -56.3 145.0	14 28.4 -56.0 144.1	14 07.5 -55.9 143.2	13 46.1 -55.7 142.2	13 24.3 -55.5 141.3
16°	13 52.6 -56.3 145.4	13 32.4 -56.1 144.5	13 11.6 -55.9 143.5	12 50.4 -55.7 142.6	12 28.8 -55.5 141.7
17°	12 56.3 -56.3 145.8	12 36.3 -56.2 144.8	12 15.7 -55.9 143.9	11 54.7 -55.7 143.0	11 33.3 -55.6 142.1
18°	12 00.0 -56.3 146.1	11 40.1 -56.1 145.2	11 19.8 -56.0 144.3	10 59.0 -55.8 143.4	10 37.7 -55.6 142.5
19°	11 03.7 -56.4 146.5	10 44.0 -56.2 145.6	10 23.8 -56.0 144.7	10 03.2 -55.8 143.8	9 42.1 -55.6 142.9
20°	10 07.3 -56.4 146.8	9 47.8 -56.2 145.9	9 27.8 -56.0 145.0	9 07.4 -55.9 144.1	8 46.5 -55.7 143.2
21°	9 10.9 -56.4 147.2	8 51.6 -56.2 146.3	8 31.8 -56.1 145.4	8 11.5 -55.8 144.5	7 50.8 -55.6 143.6
22°	8 14.5 -56.4 147.5	7 55.4 -56.3 146.6	7 35.7 -56.0 145.7	7 15.7 -55.9 144.9	6 55.2 -55.7 144.0
23°	7 18.1 -56.4 147.8	6 59.1 -56.2 147.0	6 39.7 -56.1 146.1	6 19.8 -55.9 145.2	5 59.5 -55.7 144.4
24°	6 21.7 -56.5 148.2	6 02.9 -56.3 147.3	5 43.6 -56.1 146.5	5 23.9 -55.9 145.6	5 03.8 -55.8 144.7
25°	5 25.2 -56.4 148.5	5 06.6 -56.3 147.7	4 47.5 -56.1 146.8	4 28.0 -55.9 146.0	4 08.0 -55.7 145.1
26°	4 28.8 -56.5 148.9	4 10.3 -56.3 148.0	3 51.4 -56.1 147.2	3 32.1 -55.9 146.3	3 12.3 -55.7 145.5
27°	3 32.3 -56.5 149.2	3 14.0 -56.3 148.4	2 55.3 -56.1 147.5	2 36.2 -56.0 146.7	2 16.6 -55.8 145.9
28°	2 35.8 -56.4 149.5	2 17.7 -56.3 148.7	1 59.2 -56.1 147.9	1 40.2 -55.9 147.1	1 20.8 -55.7 146.2
29°	1 39.4 -56.5 149.9	1 21.4 -56.3 149.1	1 03.1 -56.1 148.2	0 44.3 -55.9 147.4	0 25.1 -55.7 146.6

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°	26 45.7 -54.5 134.0	26 20.1 -54.3 132.9	25 54.0 -54.0 131.9	25 27.6 -53.8 130.9	25 00.8 -53.7 130.0
1°	25 51.2 -54.5 134.4	25 25.8 -54.3 133.4	25 00.0 -54.1 132.4	24 33.8 -53.9 131.4	24 07.1 -53.7 130.4
2°	24 56.7 -54.5 134.9	24 31.5 -54.3 133.9	24 05.9 -54.2 132.9	23 39.9 -54.0 131.9	23 13.4 -53.8 130.9
3°	24 02.2 -54.7 135.3	23 37.2 -54.5 134.4	23 11.7 -54.2 133.4	22 45.9 -54.1 132.4	22 19.6 -53.8 131.4
4°	23 07.5 -54.7 135.8	22 42.7 -54.5 134.8	22 17.5 -54.4 133.8	21 51.8 -54.1 132.9	21 25.8 -54.0 131.9
5°	22 12.8 -54.8 136.2	21 48.2 -54.7 135.3	21 23.1 -54.4 134.3	20 57.7 -54.3 133.3	20 31.8 -54.0 132.4
6°	21 18.0 -54.9 136.7	20 53.5 -54.6 135.7	20 28.7 -54.5 134.7	20 03.4 -54.3 133.8	19 37.8 -54.1 132.8
7°	20 23.1 -55.0 137.1	19 58.9 -54.8 136.1	19 34.2 -54.6 135.2	19 09.1 -54.3 134.2	18 43.7 -54.2 133.3
8°	19 28.1 -55.0 137.5	19 04.1 -54.8 136.6	18 39.6 -54.6 135.6	18 14.8 -54.4 134.7	17 49.5 -54.2 133.7
9°	18 33.1 -55.0 138.0	18 09.3 -54.9 137.0	17 45.0 -54.6 136.1	17 20.4 -54.5 135.1	16 55.3 -54.3 134.2
10°	17 38.1 -55.1 138.4	17 14.4 -54.9 137.4	16 50.4 -54.8 136.5	16 25.9 -54.6 135.6	16 01.0 -54.4 134.6
11°	16 43.0 -55.2 138.8	16 19.5 -55.0 137.9	15 55.6 -54.7 136.9	15 31.3 -54.5 136.0	15 06.6 -54.4 135.1
12°	15 47.8 -55.2 139.2	15 24.5 -55.0 138.3	15 00.9 -54.9 137.3	14 36.8 -54.7 136.4	14 12.2 -54.4 135.5
13°	14 52.6 -55.2 139.6	14 29.5 -55.0 138.7	14 06.0 -54.8 137.8	13 42.1 -54.7 136.8	13 17.8 -54.5 135.9
14°	13 57.4 -55.3 140.0	13 34.5 -55.1 139.1	13 11.2 -54.9 138.2	12 47.4 -54.7 137.3	12 23.3 -54.5 136.4
15°	13 02.1 -55.4 140.4	12 39.4 -55.2 139.5	12 16.3 -55.0 138.6	11 52.7 -54.7 137.7	11 28.8 -54.6 136.8
16°	12 06.7 -55.3 140.8	11 44.2 -55.1 139.9	11 21.3 -55.0 139.0	10 58.0 -54.8 138.1	10 34.2 -54.6 137.2
17°	11 11.4 -55.4 141.2	10 49.1 -55.2 140.3	10 26.3 -55.0 139.4	10 03.2 -54.8 138.5	9 39.6 -54.6 137.6
18°	10 16.0 -55.4 141.6	9 53.9 -55.2 140.7	9 31.3 -55.0 139.8	9 08.4 -54.9 138.9	8 45.0 -54.7 138.1
19°	9 20.6 -55.4 142.0	8 58.7 -55.3 141.1	8 36.3 -55.1 140.2	8 13.5 -54.8 139.3	7 50.3 -54.6 138.5
20°	8 25.2 -55.5 142.4	8 03.4 -55.3 141.5	7 41.2 -55.0 140.6	7 18.7 -54.9 139.8	6 55.7 -54.7 138.9
21°	7 29.7 -55.5 142.8	7 08.1 -55.3 141.9	6 46.2 -55.1 141.0	6 23.8 -54.9 140.2	6 01.0 -54.8 139.3
22°	6 34.2 -55.5 143.1	6 12.8 -55.3 142.3	5 51.1 -55.2 141.4	5 28.9 -55.0 140.6	5 06.2 -54.7 139.7
23°	5 38.7 -55.5 143.5	5 17.5 -55.3 142.7	4 55.9 -55.1 141.8	4 33.9 -54.9 141.0	4 11.5 -54.7 140.1
24°	4 43.2 -55.5 143.9	4 22.2 -55.3 143.1	4 00.8 -55.1 142.2	3 39.0 -55.0 141.4	3 16.8 -54.8 140.5
25°	3 47.7 -55.6 144.3	3 26.9 -55.4 143.4	3 05.7 -55.2 142.6	2 44.0 -54.9 141.8	2 22.0 -54.8 140.9
26°	2 52.1 -55.5 144.7	2 31.5 -55.3 143.8	2 10.5 -55.2 143.0	1 49.1 -55.0 142.2	1 27.2 -54.7 141.4
27°	1 56.6 -55.6 145.0	1 36.2 -55.4 144.2	1 15.3 -55.1 143.4	0 54.1 -55.0 142.6	0 32.5 -54.8 141.8
28°	1 01.0 -55.5 145.4	0 40.8 -55.3 144.6	0 20.2 -55.2 143.8	-0 00.9 -54.9	-0 22.3 -54.8
29°	0 05.5 -55.6 145.8	-0 14.5 -55.4	-0 35.0 -55.1	-0 55.8 -55.0	-1 17.1 -54.7

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°	24 33.5 -53.4 129.0	24 05.9 -53.2 128.0	23 37.9 -53.0 127.0	23 09.6 -52.8 126.1	22 40.9 -52.6 125.1
1°	23 40.1 -53.5 129.5	23 12.7 -53.3 128.5	22 44.9 -53.1 127.5	22 16.8 -53.0 126.6	21 48.3 -52.8 125.6
2°	22 46.6 -53.6 130.0	22 19.4 -53.4 129.0	21 51.8 -53.2 128.0	21 23.8 -53.0 127.1	20 55.5 -52.8 126.1
3°	21 53.0 -53.7 130.5	21 26.0 -53.5 129.5	20 58.6 -53.3 128.5	20 30.8 -53.1 127.6	20 02.7 -53.0 126.7
4°	20 59.3 -53.8 130.9	20 32.5 -53.6 130.0	20 05.3 -53.4 129.0	19 37.7 -53.2 128.1	19 09.7 -53.0 127.2
5°	20 05.5 -53.8 131.4	19 38.9 -53.7 130.5	19 11.9 -53.5 129.5	18 44.5 -53.3 128.6	18 16.7 -53.0 127.6
6°	19 11.7 -53.9 131.9	18 45.2 -53.7 130.9	18 18.4 -53.5 130.0	17 51.2 -53.3 129.1	17 23.7 -53.2 128.1
7°	18 17.8 -54.0 132.3	17 51.5 -53.8 131.4	17 24.9 -53.6 130.5	16 57.9 -53.4 129.5	16 30.5 -53.2 128.6
8°	17 23.8 -54.0 132.8	16 57.7 -53.8 131.9	16 31.3 -53.7 130.9	16 04.5 -53.5 130.0	15 37.3 -53.3 129.1
9°	16 29.8 -54.1 133.2	16 03.9 -53.9 132.3	15 37.6 -53.7 131.4	15 11.0 -53.5 130.5	14 44.0 -53.4 129.6
10°	15 35.7 -54.2 133.7	15 10.0 -54.0 132.8	14 43.9 -53.8 131.9	14 17.5 -53.6 131.0	13 50.6 -53.4 130.1
11°	14 41.5 -54.2 134.1	14 16.0 -54.0 133.2	13 50.1 -53.8 132.3	13 23.9 -53.7 131.4	12 57.2 -53.4 130.5
12°	13 47.3 -54.2 134.6	13 22.0 -54.1 133.7	12 56.3 -53.9 132.8	12 30.2 -53.6 131.9	12 03.8 -53.5 131.0
13°	12 53.1 -54.3 135.0	12 27.9 -54.1 134.1	12 02.4 -53.9 133.2	11 36.6 -53.8 132.3	11 10.3 -53.5 131.4
14°	11 58.8 -54.4 135.5	11 33.8 -54.1 134.6	11 08.5 -53.9 133.7	10 42.8 -53.7 132.8	10 16.8 -53.6 131.9
15°	11 04.4 -54.3 135.9	10 39.7 -54.2 135.0	10 14.6 -54.0 134.1	9 49.1 -53.8 133.2	9 23.2 -53.6 132.4
16°	10 10.1 -54.4 136.3	9 45.5 -54.2 135.4	9 20.6 -54.0 134.6	8 55.3 -53.9 133.7	8 29.6 -53.7 132.8
17°	9 15.7 -54.5 136.8	8 51.3 -54.2 135.9	8 26.6 -54.1 135.0	8 01.4 -53.8 134.1	7 35.9 -53.6 133.3
18°	8 21.2 -54.4 137.2	7 57.1 -54.3 136.3	7 32.5 -54.1 135.4	7 07.6 -53.9 134.6	6 42.3 -53.7 133.7
19°	7 26.8 -54.5 137.6	7 02.8 -54.3 136.7	6 38.4 -54.1 135.9	6 13.7 -53.9 135.0	5 48.6 -53.7 134.2
20°	6 32.3 -54.5 138.0	6 08.5 -54.3 137.2	5 44.3 -54.1 136.3	5 19.8 -53.9 135.5	4 54.9 -53.8 134.6
21°	5 37.8 -54.6 138.4	5 14.2 -54.4 137.6	4 50.2 -54.1 136.7	4 25.9 -54.0 135.9	4 01.1 -53.7 135.1
22°	4 43.2 -54.5 138.9	4 19.8 -54.3 138.0	3 56.1 -54.2 137.2	3 31.9 -53.9 136.3	3 07.4 -53.8 135.5
23°	3 48.7 -54.5 139.3	3 25.5 -54.4 138.4	3 01.9 -54.1 137.6	2 38.0 -54.0 136.8	2 13.6 -53.7 136.0
24°	2 54.2 -54.6 139.7	2 31.1 -54.3 138.9	2 07.8 -54.2 138.0	1 44.0 -54.0 137.2	1 19.9 -53.8 136.4
25°	1 59.6 -54.6 140.1	1 36.8 -54.4 139.3	1 13.6 -54.2 138.5	0 50.0 -54.0 137.7	0 26.1 -53.8 136.8
26°	1 05.0 -54.5 140.5	0 42.4 -54.4 139.7	0 19.4 -54.2 138.9	-0 04.0 -53.9	-0 27.7 -53.8
27°	0 10.5 -54.6 140.9	-0 12.0 -54.3	-0 34.8 -54.1	-0 57.9 -54.0	-1 21.5 -53.7
28°	-0 44.1 -54.6	-1 06.3 -54.4	-1 28.9 -54.2	-1 51.9 -54.0	-2 15.2 -53.8
29°	-1 38.7 -54.6	-2 00.7 -54.4	-2 23.1 -54.1	-2 45.9 -53.9	-3 09.0 -53.7

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°	22 11.9 -52.4 124.2	21 42.6 -52.3 123.2	21 12.9 -52.1 122.3	20 43.0 -52.0 121.4	20 12.7 -51.8 120.4
1°	21 19.5 -52.6 124.7	20 50.3 -52.4 123.8	20 20.8 -52.2 122.8	19 51.0 -52.0 121.9	19 20.9 -51.8 121.0
2°	20 26.9 -52.7 125.2	19 57.9 -52.5 124.3	19 28.6 -52.3 123.3	18 59.0 -52.1 122.4	18 29.1 -52.0 121.5
3°	19 34.2 -52.7 125.7	19 05.4 -52.5 124.8	18 36.3 -52.4 123.9	18 06.9 -52.3 123.0	17 37.1 -52.0 122.0
4°	18 41.5 -52.9 126.2	18 12.9 -52.7 125.3	17 43.9 -52.5 124.4	17 14.6 -52.2 123.5	16 45.1 -52.1 122.6
5°	17 48.6 -52.9 126.7	17 20.2 -52.7 125.8	16 51.4 -52.5 124.9	16 22.4 -52.4 124.0	15 53.0 -52.2 123.1
6°	16 55.7 -52.9 127.2	16 27.5 -52.8 126.3	15 58.9 -52.6 125.4	15 30.0 -52.4 124.5	15 00.8 -52.3 123.6
7°	16 02.8 -53.1 127.7	15 34.7 -52.9 126.8	15 06.3 -52.7 125.9	14 37.6 -52.5 125.0	14 08.5 -52.3 124.1
8°	15 09.7 -53.1 128.2	14 41.8 -52.9 127.3	14 13.6 -52.7 126.4	13 45.1 -52.6 125.5	13 16.2 -52.4 124.6
9°	14 16.6 -53.1 128.7	13 48.9 -53.0 127.8	13 20.9 -52.8 126.9	12 52.5 -52.6 126.0	12 23.8 -52.4 125.1
10°	13 23.5 -53.2 129.2	12 55.9 -53.0 128.3	12 28.1 -52.9 127.4	11 59.9 -52.7 126.5	11 31.4 -52.5 125.6
11°	12 30.3 -53.3 129.6	12 02.9 -53.1 128.7	11 35.2 -52.9 127.8	11 07.2 -52.7 127.0	10 38.9 -52.5 126.1
12°	11 37.0 -53.3 130.1	11 09.8 -53.1 129.2	10 42.3 -52.9 128.3	10 14.5 -52.7 127.5	9 46.4 -52.6 126.6
13°	10 43.7 -53.4 130.6	10 16.7 -53.1 129.7	9 49.4 -53.0 128.8	9 21.8 -52.8 127.9	8 53.8 -52.6 127.1
14°	9 50.3 -53.3 131.0	9 23.6 -53.2 130.2	8 56.4 -53.0 129.3	8 29.0 -52.9 128.4	8 01.2 -52.7 127.6
15°	8 57.0 -53.5 131.5	8 30.4 -53.3 130.6	8 03.4 -53.0 129.8	7 36.1 -52.8 128.9	7 08.5 -52.7 128.0
16°	8 03.5 -53.4 132.0	7 37.1 -53.2 131.1	7 10.4 -53.1 130.2	6 43.3 -52.9 129.4	6 15.8 -52.7 128.5
17°	7 10.1 -53.5 132.4	6 43.9 -53.3 131.6	6 17.3 -53.1 130.7	5 50.4 -52.9 129.9	5 23.1 -52.7 129.0
18°	6 16.6 -53.5 132.9	5 50.6 -53.3 132.0	5 24.2 -53.1 131.2	4 57.5 -53.0 130.3	4 30.4 -52.7 129.5
19°	5 23.1 -53.5 133.3	4 57.3 -53.4 132.5	4 31.1 -53.2 131.6	4 04.5 -52.9 130.8	3 37.7 -52.8 130.0
20°	4 29.6 -53.6 133.8	4 03.9 -53.3 132.9	3 37.9 -53.1 132.1	3 11.6 -53.0 131.3	2 44.9 -52.7 130.4
21°	3 36.0 -53.5 134.2	3 10.6 -53.4 133.4	2 44.8 -53.2 132.6	2 18.6 -52.9 131.7	1 52.2 -52.8 130.9
22°	2 42.5 -53.6 134.7	2 17.2 -53.3 133.9	1 51.6 -53.2 133.0	1 25.7 -53.0 132.2	0 59.4 -52.8 131.4
23°	1 48.9 -53.6 135.1	1 23.9 -53.4 134.3	0 58.4 -53.1 133.5	0 32.7 -53.0 132.7	0 06.6 -52.8 131.9
24°	0 55.3 -53.5 135.6	0 30.5 -53.4 134.8	0 05.3 -53.2 134.0	-0 20.3 -53.0	-0 46.2 -52.8
25°	0 01.8 -53.6 136.0	-0 22.9 -53.4	-0 47.9 -53.2	-1 13.3 -52.9	-1 39.0 -52.7
26°	-0 51.8 -53.6	-1 16.3 -53.3	-1 41.1 -53.1	-2 06.2 -53.0	-2 31.7 -52.8
27°	-1 45.4 -53.5	-2 09.6 -53.4	-2 34.2 -53.2	-2 59.2 -52.9	-3 24.5 -52.7
28°	-2 38.9 -53.6	-3 03.0 -53.3	-3 27.4 -53.1	-3 52.1 -53.0	-4 17.2 -52.8
29°	-3 32.5 -53.5	-3 56.3 -53.4	-4 20.5 -53.2	-4 45.1 -52.9	-5 10.0 -52.7

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°	19 42.2 -51.6 119.5	19 11.3 -51.4 118.6	18 40.3 -51.3 117.7	18 08.9 -51.1 116.8	17 37.3 -51.0 115.9
1°	18 50.6 -51.7 120.1	18 19.9 -51.5 119.2	17 49.0 -51.4 118.3	17 17.8 -51.2 117.4	16 46.3 -51.0 116.5
2°	17 58.9 -51.8 120.6	17 28.4 -51.7 119.7	16 57.6 -51.5 118.8	16 26.6 -51.3 117.9	15 55.3 -51.2 117.0
3°	17 07.1 -51.9 121.1	16 36.7 -51.7 120.2	16 06.1 -51.5 119.3	15 35.3 -51.4 118.5	15 04.1 -51.2 117.6
4°	16 15.2 -51.9 121.7	15 45.0 -51.7 120.8	15 14.6 -51.6 119.9	14 43.9 -51.5 119.0	14 12.9 -51.3 118.1
5°	15 23.3 -52.1 122.2	14 53.3 -51.9 121.3	14 23.0 -51.7 120.4	13 52.4 -51.5 119.5	13 21.6 -51.4 118.6
6°	14 31.2 -52.1 122.7	14 01.4 -51.9 121.8	13 31.3 -51.8 120.9	13 00.9 -51.6 120.0	12 30.2 -51.4 119.2
7°	13 39.1 -52.1 123.2	13 09.5 -52.0 122.3	12 39.5 -51.8 121.4	12 09.3 -51.6 120.6	11 38.8 -51.5 119.7
8°	12 47.0 -52.2 123.7	12 17.5 -52.0 122.8	11 47.7 -51.8 122.0	11 17.7 -51.7 121.1	10 47.3 -51.5 120.2
9°	11 54.8 -52.3 124.2	11 25.5 -52.1 123.3	10 55.9 -51.9 122.5	10 26.0 -51.8 121.6	9 55.8 -51.6 120.7
10°	11 02.5 -52.3 124.7	10 33.4 -52.1 123.8	10 04.0 -52.0 123.0	9 34.2 -51.8 122.1	9 04.2 -51.6 121.3
11°	10 10.2 -52.3 125.2	9 41.3 -52.2 124.4	9 12.0 -52.0 123.5	8 42.4 -51.8 122.6	8 12.6 -51.7 121.8
12°	9 17.9 -52.4 125.7	8 49.1 -52.2 124.9	8 20.0 -52.0 124.0	7 50.6 -51.9 123.1	7 20.9 -51.7 122.3
13°	8 25.5 -52.4 126.2	7 56.9 -52.3 125.4	7 28.0 -52.1 124.5	6 58.7 -51.9 123.6	6 29.2 -51.7 122.8
14°	7 33.1 -52.5 126.7	7 04.6 -52.3 125.8	6 35.9 -52.1 125.0	6 06.8 -51.9 124.2	5 37.5 -51.7 123.3
15°	6 40.6 -52.5 127.2	6 12.3 -52.3 126.3	5 43.8 -52.2 125.5	5 14.9 -51.9 124.7	4 45.8 -51.8 123.8
16°	5 48.1 -52.5 127.7	5 20.0 -52.3 126.8	4 51.6 -52.1 126.0	4 23.0 -52.0 125.2	3 54.0 -51.8 124.3
17°	4 55.6 -52.6 128.2	4 27.7 -52.4 127.3	3 59.5 -52.2 126.5	3 31.0 -52.0 125.7	3 02.2 -51.8 124.8
18°	4 03.0 -52.5 128.6	3 35.3 -52.3 127.8	3 07.3 -52.2 127.0	2 39.0 -52.0 126.2	2 10.4 -51.8 125.3
19°	3 10.5 -52.6 129.1	2 43.0 -52.4 128.3	2 15.1 -52.2 127.5	1 47.0 -52.0 126.7	1 18.6 -51.9 125.8
20°	2 17.9 -52.6 129.6	1 50.6 -52.4 128.8	1 22.9 -52.2 128.0	0 55.0 -52.0 127.2	0 26.7 -51.8 126.3
21°	1 25.3 -52.5 130.1	0 58.2 -52.4 129.3	0 30.7 -52.2 128.5	0 03.0 -52.0 127.7	-0 25.1 -51.8
22°	0 32.8 -52.6 130.6	0 05.8 -52.4 129.8	-0 21.5 -52.2	-0 49.0 -52.1	-1 16.9 -51.8
23°	-0 19.8 -52.6	-0 46.6 -52.4	-1 13.7 -52.2	-1 41.1 -52.0	-2 08.7 -51.9
24°	-1 12.4 -52.6	-1 39.0 -52.4	-2 05.9 -52.1	-2 33.1 -51.9	-3 00.6 -51.8
25°	-2 05.0 -52.6	-2 31.4 -52.3	-2 58.0 -52.2	-3 25.0 -52.0	-3 52.4 -51.7
26°	-2 57.6 -52.5	-3 23.7 -52.4	-3 50.2 -52.2	-4 17.0 -52.0	-4 44.1 -51.8
27°	-3 50.1 -52.6	-4 16.1 -52.3	-4 42.4 -52.1	-5 09.0 -51.9	-5 35.9 -51.7
28°	-4 42.7 -52.5	-5 08.4 -52.3	-5 34.5 -52.1	-6 00.9 -51.9	-6 27.6 -51.7
29°	-5 35.2 -52.5	-6 00.7 -52.3	-6 26.6 -52.1	-6 52.8 -51.9	-7 19.3 -51.7

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°	17 05.5 -50.9 115.0	16 33.4 -50.7 114.2	16 01.1 -50.5 113.3	15 28.6 -50.4 112.4	14 55.9 -50.3 111.5
1°	16 14.6 -50.9 115.6	15 42.7 -50.8 114.7	15 10.6 -50.7 113.8	14 38.2 -50.5 113.0	14 05.6 -50.3 112.1
2°	15 23.7 -51.0 116.1	14 51.9 -50.8 115.3	14 19.9 -50.7 114.4	13 47.7 -50.6 113.5	13 15.3 -50.5 112.7
3°	14 32.7 -51.0 116.7	14 01.1 -50.9 115.8	13 29.2 -50.7 114.9	12 57.1 -50.6 114.1	12 24.8 -50.5 113.2
4°	13 41.7 -51.2 117.2	13 10.2 -51.0 116.4	12 38.5 -50.9 115.5	12 06.5 -50.7 114.6	11 34.3 -50.5 113.8
5°	12 50.5 -51.2 117.8	12 19.2 -51.1 116.9	11 47.6 -50.9 116.0	11 15.8 -50.7 115.2	10 43.8 -50.6 114.3
6°	11 59.3 -51.2 118.3	11 28.1 -51.1 117.4	10 56.7 -50.9 116.6	10 25.1 -50.9 115.7	9 53.2 -50.7 114.9
7°	11 08.1 -51.4 118.8	10 37.0 -51.1 118.0	10 05.8 -51.1 117.1	9 34.2 -50.8 116.3	9 02.5 -50.7 115.4
8°	10 16.7 -51.3 119.4	9 45.9 -51.2 118.5	9 14.7 -51.0 117.6	8 43.4 -50.9 116.8	8 11.8 -50.8 115.9
9°	9 25.4 -51.5 119.9	8 54.7 -51.3 119.0	8 23.7 -51.1 118.2	7 52.5 -51.0 117.3	7 21.0 -50.8 116.5
10°	8 33.9 -51.4 120.4	8 03.4 -51.3 119.6	7 32.6 -51.2 118.7	7 01.5 -51.0 117.9	6 30.2 -50.8 117.0
11°	7 42.5 -51.5 120.9	7 12.1 -51.3 120.1	6 41.4 -51.1 119.2	6 10.5 -51.0 118.4	5 39.4 -50.9 117.6
12°	6 51.0 -51.5 121.4	6 20.8 -51.4 120.6	5 50.3 -51.2 119.8	5 19.5 -51.0 118.9	4 48.5 -50.8 118.1
13°	5 59.5 -51.6 122.0	5 29.4 -51.4 121.1	4 59.1 -51.3 120.3	4 28.5 -51.1 119.4	3 57.7 -51.0 118.6
14°	5 07.9 -51.6 122.5	4 38.0 -51.4 121.6	4 07.8 -51.2 120.8	3 37.4 -51.1 120.0	3 06.7 -50.9 119.1
15°	4 16.3 -51.6 123.0	3 46.6 -51.4 122.2	3 16.6 -51.3 121.3	2 46.3 -51.1 120.5	2 15.8 -50.9 119.7
16°	3 24.7 -51.6 123.5	2 55.2 -51.5 122.7	2 25.3 -51.2 121.8	1 55.2 -51.1 121.0	1 24.9 -50.9 120.2
17°	2 33.1 -51.6 124.0	2 03.7 -51.4 123.2	1 34.1 -51.3 122.4	1 04.1 -51.1 121.5	0 34.0 -51.0 120.7
18°	1 41.5 -51.7 124.5	1 12.3 -51.5 123.7	0 42.8 -51.3 122.9	0 13.0 -51.1 122.1	-0 17.0 -50.9
19°	0 49.8 -51.6 125.0	0 20.8 -51.5 124.2	-0 08.5 -51.3	-0 38.1 -51.1	-1 07.9 -51.0
20°	-0 01.8 -51.7	-0 30.7 -51.4	-0 59.8 -51.3	-1 29.2 -51.1	-1 58.9 -50.9
21°	-0 53.5 -51.6	-1 22.1 -51.5	-1 51.1 -51.2	-2 20.3 -51.1	-2 49.8 -50.9
22°	-1 45.1 -51.6	-2 13.6 -51.4	-2 42.3 -51.3	-3 11.4 -51.1	-3 40.7 -50.9
23°	-2 36.7 -51.7	-3 05.0 -51.5	-3 33.6 -51.2	-4 02.5 -51.0	-4 31.6 -50.9
24°	-3 28.4 -51.6	-3 56.5 -51.4	-4 24.8 -51.3	-4 53.5 -51.1	-5 22.5 -50.8
25°	-4 20.0 -51.5	-4 47.9 -51.4	-5 16.1 -51.2	-5 44.6 -51.0	-6 13.3 -50.8
26°	-5 11.5 -51.6	-5 39.3 -51.3	-6 07.3 -51.1	-6 35.6 -50.9	-7 04.1 -50.8
27°	-6 03.1 -51.5	-6 30.6 -51.3	-6 58.4 -51.2	-7 26.5 -50.9	-7 54.9 -50.7
28°	-6 54.6 -51.5	-7 21.9 -51.3	-7 49.6 -51.0	-8 17.4 -50.9	-8 45.6 -50.7
29°	-7 46.1 -51.5	-8 13.2 -51.3	-8 40.6 -51.1	-9 08.3 -50.9	-9 36.3 -50.6

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°	14 23.0 -50.1 110.7	13 49.9 -50.0 109.8	13 16.6 -49.9 109.0	12 43.2 -49.8 108.1	12 09.6 -49.7 107.3
1°	13 32.9 -50.3 111.2	12 59.9 -50.1 110.4	12 26.7 -49.9 109.5	11 53.4 -49.9 108.7	11 19.9 -49.7 107.8
2°	12 42.6 -50.3 111.8	12 09.8 -50.2 110.9	11 36.8 -50.1 110.1	11 03.5 -49.9 109.2	10 30.2 -49.9 108.4
3°	11 52.3 -50.3 112.4	11 19.6 -50.2 111.5	10 46.7 -50.1 110.7	10 13.6 -50.0 109.8	9 40.3 -49.8 109.0
4°	11 02.0 -50.5 112.9	10 29.4 -50.3 112.1	9 56.6 -50.2 111.2	9 23.6 -50.0 110.4	8 50.5 -50.0 109.5
5°	10 11.5 -50.4 113.5	9 39.1 -50.4 112.6	9 06.4 -50.2 111.8	8 33.6 -50.1 110.9	8 00.5 -49.9 110.1
6°	9 21.1 -50.6 114.0	8 48.7 -50.4 113.2	8 16.2 -50.2 112.3	7 43.5 -50.1 111.5	7 10.6 -50.0 110.6
7°	8 30.5 -50.5 114.6	7 58.3 -50.4 113.7	7 26.0 -50.3 112.9	6 53.4 -50.2 112.0	6 20.6 -50.1 111.2
8°	7 40.0 -50.7 115.1	7 07.9 -50.5 114.3	6 35.7 -50.4 113.4	6 03.2 -50.2 112.6	5 30.5 -50.0 111.8
9°	6 49.3 -50.6 115.6	6 17.4 -50.5 114.8	5 45.3 -50.3 114.0	5 13.0 -50.2 113.1	4 40.5 -50.1 112.3
10°	5 58.7 -50.7 116.2	5 26.9 -50.5 115.3	4 55.0 -50.4 114.5	4 22.8 -50.3 113.7	3 50.4 -50.2 112.9
11°	5 08.0 -50.7 116.7	4 36.4 -50.6 115.9	4 04.6 -50.5 115.1	3 32.5 -50.3 114.2	3 00.2 -50.1 113.4
12°	4 17.3 -50.7 117.3	3 45.8 -50.5 116.4	3 14.1 -50.4 115.6	2 42.2 -50.3 114.8	2 10.1 -50.1 114.0
13°	3 26.6 -50.8 117.8	2 55.3 -50.6 117.0	2 23.7 -50.4 116.1	1 51.9 -50.3 115.3	1 20.0 -50.2 114.5
14°	2 35.8 -50.7 118.3	2 04.7 -50.7 117.5	1 33.3 -50.5 116.7	1 01.6 -50.3 115.9	0 29.8 -50.2 115.1
15°	1 45.1 -50.8 118.9	1 14.0 -50.6 118.0	0 42.8 -50.5 117.2	0 11.3 -50.3 116.4	-0 20.4 -50.1
16°	0 54.3 -50.8 119.4	0 23.4 -50.6 118.6	-0 07.7 -50.4	-0 39.0 -50.3	-1 10.5 -50.2
17°	0 03.5 -50.8 119.9	-0 27.2 -50.6	-0 58.1 -50.5	-1 29.3 -50.3	-2 00.7 -50.1
18°	-0 47.3 -50.7	-1 17.8 -50.6	-1 48.6 -50.4	-2 19.6 -50.3	-2 50.8 -50.1
19°	-1 38.0 -50.8	-2 08.4 -50.6	-2 39.0 -50.4	-3 09.9 -50.2	-3 40.9 -50.1
20°	-2 28.8 -50.8	-2 59.0 -50.6	-3 29.4 -50.4	-4 00.1 -50.3	-4 31.0 -50.1
21°	-3 19.6 -50.7	-3 49.6 -50.5	-4 19.8 -50.4	-4 50.4 -50.2	-5 21.1 -50.1
22°	-4 10.3 -50.7	-4 40.1 -50.6	-5 10.2 -50.4	-5 40.6 -50.2	-6 11.2 -50.0
23°	-5 01.0 -50.7	-5 30.7 -50.5	-6 00.6 -50.3	-6 30.8 -50.1	-7 01.2 -50.0
24°	-5 51.7 -50.6	-6 21.2 -50.4	-6 50.9 -50.3	-7 20.9 -50.1	-7 51.2 -49.9
25°	-6 42.3 -50.7	-7 11.6 -50.5	-7 41.2 -50.3	-8 11.0 -50.1	-8 41.1 -49.9
26°	-7 33.0 -50.5	-8 02.1 -50.4	-8 31.5 -50.2	-9 01.1 -50.0	-9 31.0 -49.8
27°	-8 23.5 -50.6	-8 52.5 -50.3	-9 21.7 -50.1	-9 51.1 -50.0	
28°	-9 14.1 -50.5	-9 42.8 -50.3			
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°	11 35.8 -49.5 106.4	11 01.9 -49.4 105.6	10 27.9 -49.4 104.7	9 53.7 -49.3 103.9	9 19.4 -49.2 103.1
1°	10 46.3 -49.7 107.0	10 12.5 -49.6 106.1	9 38.5 -49.4 105.3	9 04.4 -49.3 104.5	8 30.2 -49.3 103.6
2°	9 56.6 -49.7 107.6	9 22.9 -49.6 106.7	8 49.1 -49.5 105.9	8 15.1 -49.4 105.0	7 40.9 -49.3 104.2
3°	9 06.9 -49.8 108.1	8 33.3 -49.6 107.3	7 59.6 -49.6 106.4	7 25.7 -49.5 105.6	6 51.6 -49.3 104.8
4°	8 17.1 -49.8 108.7	7 43.7 -49.7 107.9	7 10.0 -49.6 107.0	6 36.2 -49.5 106.2	6 02.3 -49.4 105.4
5°	7 27.3 -49.8 109.2	6 54.0 -49.8 108.4	6 20.4 -49.6 107.6	5 46.7 -49.5 106.8	5 12.9 -49.4 105.9
6°	6 37.5 -49.9 109.8	6 04.2 -49.7 109.0	5 30.8 -49.7 108.2	4 57.2 -49.5 107.3	4 23.5 -49.5 106.5
7°	5 47.6 -49.9 110.4	5 14.5 -49.8 109.5	4 41.1 -49.7 108.7	4 07.7 -49.6 107.9	3 34.0 -49.5 107.1
8°	4 57.7 -50.0 110.9	4 24.7 -49.9 110.1	3 51.4 -49.7 109.3	3 18.1 -49.6 108.5	2 44.5 -49.4 107.6
9°	4 07.7 -49.9 111.5	3 34.8 -49.8 110.7	3 01.7 -49.7 109.8	2 28.5 -49.6 109.0	1 55.1 -49.5 108.2
10°	3 17.8 -50.0 112.0	2 45.0 -49.9 111.2	2 12.0 -49.7 110.4	1 38.9 -49.6 109.6	1 05.6 -49.5 108.8
11°	2 27.8 -50.0 112.6	1 55.1 -49.9 111.8	1 22.3 -49.8 111.0	0 49.3 -49.7 110.1	0 16.1 -49.5 109.3
12°	1 37.8 -50.0 113.1	1 05.2 -49.8 112.3	0 32.5 -49.7 111.5	-0 00.4 -49.6	-0 33.4 -49.5
13°	0 47.8 -50.1 113.7	0 15.4 -49.9 112.9	-0 17.2 -49.8	-0 50.0 -49.6	-1 22.9 -49.5
14°	-0 02.3 -50.0	-0 34.5 -49.9	-1 07.0 -49.7	-1 39.6 -49.6	-2 12.4 -49.5
15°	-0 52.3 -50.0	-1 24.4 -49.9	-1 56.7 -49.7	-2 29.2 -49.6	-3 01.9 -49.5
16°	-1 42.3 -50.0	-2 14.3 -49.8	-2 46.4 -49.8	-3 18.8 -49.6	-3 51.4 -49.4
17°	-2 32.3 -50.0	-3 04.1 -49.9	-3 36.2 -49.6	-4 08.4 -49.5	-4 40.8 -49.4
18°	-3 22.3 -49.9	-3 54.0 -49.8	-4 25.8 -49.7	-4 57.9 -49.6	-5 30.2 -49.4
19°	-4 12.2 -50.0	-4 43.8 -49.8	-5 15.5 -49.7	-5 47.5 -49.5	-6 19.6 -49.4
20°	-5 02.2 -49.9	-5 33.6 -49.7	-6 05.2 -49.6	-6 37.0 -49.4	-7 09.0 -49.3
21°	-5 52.1 -49.9	-6 23.3 -49.7	-6 54.8 -49.5	-7 26.4 -49.4	-7 58.3 -49.2
22°	-6 42.0 -49.8	-7 13.0 -49.7	-7 44.3 -49.5	-8 15.8 -49.4	-8 47.5 -49.2
23°	-7 31.8 -49.8	-8 02.7 -49.7	-8 33.8 -49.5	-9 05.2 -49.3	-9 36.7 -49.1
24°	-8 21.6 -49.8	-8 52.4 -49.5	-9 23.3 -49.4	-9 54.5 -49.2	
25°	-9 11.4 -49.7	-9 41.9 -49.6			
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°	8 45.0 -49.1 102.2	8 10.5 -49.1 101.4	7 35.9 -49.0 100.6	7 01.2 -49.0 99.8	6 26.4 -48.9 98.9
1°	7 55.9 -49.2 102.8	7 21.4 -49.1 102.0	6 46.9 -49.0 101.2	6 12.2 -48.9 100.3	5 37.5 -48.9 99.5
2°	7 06.7 -49.2 103.4	6 32.3 -49.1 102.6	5 57.9 -49.1 101.7	5 23.3 -49.0 100.9	4 48.6 -48.9 100.1
3°	6 17.5 -49.3 104.0	5 43.2 -49.2 103.1	5 08.8 -49.1 102.3	4 34.3 -49.1 101.5	3 59.7 -49.0 100.7
4°	5 28.2 -49.3 104.5	4 54.0 -49.2 103.7	4 19.7 -49.1 102.9	3 45.2 -49.0 102.1	3 10.7 -49.0 101.3
5°	4 38.9 -49.3 105.1	4 04.8 -49.2 104.3	3 30.6 -49.2 103.5	2 56.2 -49.1 102.7	2 21.7 -49.0 101.8
6°	3 49.6 -49.4 105.7	3 15.6 -49.3 104.9	2 41.4 -49.2 104.0	2 07.1 -49.0 103.2	1 32.7 -49.0 102.4
7°	3 00.2 -49.3 106.3	2 26.3 -49.3 105.4	1 52.2 -49.1 104.6	1 18.1 -49.1 103.8	0 43.7 -49.0 103.0
8°	2 10.9 -49.4 106.8	1 37.0 -49.3 106.0	1 03.1 -49.2 105.2	0 29.0 -49.1 104.4	-0 05.3 -49.0
9°	1 21.5 -49.4 107.4	0 47.7 -49.2 106.6	0 13.9 -49.2 105.8	-0 20.1 -49.1	-0 54.3 -49.0
10°	0 32.1 -49.4 108.0	-0 01.5 -49.3	-0 35.3 -49.2	-1 09.2 -49.1	-1 43.3 -49.0
11°	-0 17.3 -49.4	-0 50.8 -49.3	-1 24.5 -49.2	-1 58.3 -49.1	-2 32.3 -48.9
12°	-1 06.7 -49.4	-1 40.1 -49.3	-2 13.7 -49.1	-2 47.4 -49.0	-3 21.2 -49.0
13°	-1 56.1 -49.3	-2 29.4 -49.2	-3 02.8 -49.2	-3 36.4 -49.1	-4 10.2 -48.9
14°	-2 45.4 -49.4	-3 18.6 -49.3	-3 52.0 -49.1	-4 25.5 -49.0	-4 59.1 -48.9
15°	-3 34.8 -49.3	-4 07.9 -49.2	-4 41.1 -49.1	-5 14.5 -48.9	-5 48.0 -48.9
16°	-4 24.1 -49.3	-4 57.1 -49.1	-5 30.2 -49.0	-6 03.4 -49.0	-6 36.9 -48.8
17°	-5 13.4 -49.3	-5 46.2 -49.2	-6 19.2 -49.0	-6 52.4 -48.9	-7 25.7 -48.8
18°	-6 02.7 -49.3	-6 35.4 -49.1	-7 08.2 -49.0	-7 41.3 -48.8	-8 14.5 -48.7
19°	-6 52.0 -49.2	-7 24.5 -49.1	-7 57.2 -48.9	-8 30.1 -48.8	-9 03.2 -48.6
20°	-7 41.2 -49.1	-8 13.6 -49.0	-8 46.1 -48.9	-9 18.9 -48.7	-9 51.8 -48.6
21°	-8 30.3 -49.1	-9 02.6 -48.9	-9 35.0 -48.8		
22°	-9 19.4 -49.1	-9 51.5 -48.9			
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°	5 51.5 -48.8 98.1	5 16.5 -48.7 97.3	4 41.5 -48.7 96.5	4 06.5 -48.7 95.7	3 31.3 -48.6 94.9
1°	5 02.7 -48.9 98.7	4 27.8 -48.8 97.9	3 52.8 -48.7 97.1	3 17.8 -48.7 96.3	2 42.7 -48.7 95.4
2°	4 13.8 -48.8 99.3	3 39.0 -48.8 98.5	3 04.1 -48.8 97.7	2 29.1 -48.7 96.8	1 54.0 -48.6 96.0
3°	3 25.0 -48.9 99.9	2 50.2 -48.9 99.1	2 15.3 -48.8 98.2	1 40.4 -48.7 97.4	1 05.4 -48.7 96.6
4°	2 36.1 -48.9 100.4	2 01.3 -48.8 99.6	1 26.5 -48.7 98.8	0 51.7 -48.8 98.0	0 16.7 -48.7 97.2
5°	1 47.2 -49.0 101.0	1 12.5 -48.8 100.2	0 37.8 -48.8 99.4	0 02.9 -48.7 98.6	-0 32.0 -48.7
6°	0 58.2 -48.9 101.6	0 23.7 -48.9 100.8	-0 11.0 -48.8	-0 45.8 -48.7	-1 20.7 -48.6
7°	0 09.3 -48.9 102.2	-0 25.2 -48.8	-0 59.8 -48.8	-1 34.5 -48.7	-2 09.3 -48.7
8°	-0 39.6 -48.9	-1 14.0 -48.9	-1 48.6 -48.8	-2 23.2 -48.8	-2 58.0 -48.6
9°	-1 28.5 -48.9	-2 02.9 -48.8	-2 37.4 -48.7	-3 12.0 -48.6	-3 46.6 -48.6
10°	-2 17.4 -48.9	-2 51.7 -48.8	-3 26.1 -48.8	-4 00.6 -48.7	-4 35.2 -48.6
11°	-3 06.3 -48.9	-3 40.5 -48.8	-4 14.9 -48.7	-4 49.3 -48.6	-5 23.8 -48.6
12°	-3 55.2 -48.9	-4 29.3 -48.8	-5 03.6 -48.6	-5 37.9 -48.6	-6 12.4 -48.5
13°	-4 44.1 -48.8	-5 18.1 -48.7	-5 52.2 -48.7	-6 26.5 -48.6	-7 00.9 -48.4
14°	-5 32.9 -48.8	-6 06.8 -48.7	-6 40.9 -48.6	-7 15.1 -48.5	-7 49.3 -48.5
15°	-6 21.7 -48.7	-6 55.5 -48.7	-7 29.5 -48.5	-8 03.6 -48.4	-8 37.8 -48.3
16°	-7 10.4 -48.7	-7 44.2 -48.6	-8 18.0 -48.5	-8 52.0 -48.4	-9 26.1 -48.3
17°	-7 59.1 -48.7	-8 32.8 -48.5	-9 06.5 -48.4	-9 40.4 -48.3	
18°	-8 47.8 -48.6	-9 21.3 -48.5	-9 54.9 -48.4		
19°	-9 36.4 -48.5				
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 56.2 -48.6 94.0	2 21.0 -48.6 93.2	1 45.8 -48.6 92.4	1 10.5 -48.5 91.6	0 35.3 -48.6 90.8
1°	2 07.6 -48.7 94.6	1 32.4 -48.6 93.8	0 57.2 -48.6 93.0	0 22.0 -48.6 92.2	-0 13.3 -48.5
2°	1 18.9 -48.6 95.2	0 43.8 -48.6 94.4	0 08.6 -48.5 93.6	-0 26.6 -48.5	-1 01.8 -48.6
3°	0 30.3 -48.6 95.8	-0 04.8 -48.6	-0 39.9 -48.6	-1 15.1 -48.6	-1 50.4 -48.5
4°	-0 18.3 -48.7	-0 53.4 -48.6	-1 28.5 -48.6	-2 03.7 -48.5	-2 38.9 -48.5
5°	-1 07.0 -48.6	-1 42.0 -48.6	-2 17.1 -48.5	-2 52.2 -48.5	-3 27.4 -48.5
6°	-1 55.6 -48.6	-2 30.6 -48.6	-3 05.6 -48.6	-3 40.7 -48.5	-4 15.9 -48.4
7°	-2 44.2 -48.6	-3 19.2 -48.5	-3 54.2 -48.5	-4 29.2 -48.5	-5 04.3 -48.5
8°	-3 32.8 -48.6	-4 07.7 -48.5	-4 42.7 -48.4	-5 17.7 -48.4	-5 52.8 -48.4
9°	-4 21.4 -48.5	-4 56.2 -48.5	-5 31.1 -48.5	-6 06.1 -48.4	-6 41.2 -48.3
10°	-5 09.9 -48.6	-5 44.7 -48.5	-6 19.6 -48.4	-6 54.5 -48.3	-7 29.5 -48.3
11°	-5 58.5 -48.4	-6 33.2 -48.4	-7 08.0 -48.3	-7 42.8 -48.3	-8 17.8 -48.2
12°	-6 46.9 -48.5	-7 21.6 -48.3	-7 56.3 -48.3	-8 31.1 -48.3	-9 06.0 -48.2
13°	-7 35.4 -48.4	-8 09.9 -48.4	-8 44.6 -48.3	-9 19.4 -48.2	-9 54.2 -48.1
14°	-8 23.8 -48.3	-8 58.3 -48.2	-9 32.9 -48.1		
15°	-9 12.1 -48.3	-9 46.5 -48.2			
16°					
17°					
18°					
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28°					
29°					

Latitude 54°

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 -48.5 90.0	-0 35.3 -48.5			
1°	-0 48.5 -48.6	-1 23.8 -48.5			
2°	-1 37.1 -48.5	-2 12.3 -48.6			
3°	-2 25.6 -48.5	-3 00.9 -48.5			
4°	-3 14.1 -48.5	-3 49.4 -48.4			
5°	-4 02.6 -48.5	-4 37.8 -48.5			
6°	-4 51.1 -48.4	-5 26.3 -48.4			
7°	-5 39.5 -48.4	-6 14.7 -48.4			
8°	-6 27.9 -48.3	-7 03.1 -48.3			
9°	-7 16.2 -48.4	-7 51.4 -48.3			
10°	-8 04.6 -48.2	-8 39.7 -48.2			
11°	-8 52.8 -48.2	-9 27.9 -48.1			
12°	-9 41.0 -48.1				
13°					
14°					
15°					
16°					
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18°					
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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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14°					
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16°					
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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°	35 00.0 -60.0 180.0	34 59.6 -60.0 178.8	34 58.5 -59.9 177.6	34 56.7 -60.0 176.3	34 54.1 -59.9 175.1
1°	34 00.0 -60.0 180.0	33 59.6 -60.0 178.8	33 58.6 -60.0 177.6	33 56.7 -59.9 176.4	33 54.2 -59.9 175.2
2°	33 00.0 -60.0 180.0	32 59.6 -60.0 178.8	32 58.6 -60.0 177.6	32 56.8 -60.0 176.4	32 54.3 -60.0 175.2
3°	32 00.0 -60.0 180.0	31 59.6 -59.9 178.8	31 58.6 -60.0 177.6	31 56.8 -59.9 176.5	31 54.3 -59.9 175.3
4°	31 00.0 -60.0 180.0	30 59.7 -60.0 178.8	30 58.6 -60.0 177.7	30 56.9 -60.0 176.5	30 54.4 -59.9 175.3
5°	30 00.0 -60.0 180.0	29 59.7 -60.0 178.8	29 58.6 -60.0 177.7	29 56.9 -60.0 176.6	29 54.5 -60.0 175.4
6°	29 00.0 -60.0 180.0	28 59.7 -60.0 178.9	28 58.6 -60.0 177.7	28 56.9 -59.9 176.6	28 54.5 -59.9 175.5
7°	28 00.0 -60.0 180.0	27 59.7 -60.0 178.9	27 58.6 -59.9 177.8	27 57.0 -60.0 176.6	27 54.6 -59.9 175.5
8°	27 00.0 -60.0 180.0	26 59.7 -60.0 178.9	26 58.7 -60.0 177.8	26 57.0 -60.0 176.7	26 54.7 -60.0 175.6
9°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 58.7 -60.0 177.8	25 57.0 -59.9 176.7	25 54.7 -59.9 175.6
10°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 58.7 -60.0 177.8	24 57.1 -60.0 176.7	24 54.8 -60.0 175.7
11°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.7 -60.0 177.9	23 57.1 -60.0 176.8	23 54.8 -59.9 175.7
12°	23 00.0 -60.0 180.0	22 59.7 -60.0 178.9	22 58.7 -60.0 177.9	22 57.1 -59.9 176.8	22 54.9 -59.9 175.8
13°	22 00.0 -60.0 180.0	21 59.7 -60.0 178.9	21 58.7 -59.9 177.9	21 57.2 -60.0 176.8	21 55.0 -60.0 175.8
14°	21 00.0 -60.0 180.0	20 59.7 -60.0 179.0	20 58.8 -60.0 177.9	20 57.2 -60.0 176.9	20 55.0 -59.9 175.8
15°	20 00.0 -60.0 180.0	19 59.7 -60.0 179.0	19 58.8 -60.0 177.9	19 57.2 -59.9 176.9	19 55.1 -60.0 175.9
16°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.8 -60.0 178.0	18 57.3 -60.0 177.0	18 55.1 -59.9 175.9
17°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 58.8 -60.0 178.0	17 57.3 -60.0 177.0	17 55.2 -60.0 176.0
18°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 58.8 -60.0 178.0	16 57.3 -60.0 177.0	16 55.2 -59.9 176.0
19°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 58.8 -60.0 178.0	15 57.3 -59.9 177.0	15 55.3 -60.0 176.1
20°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.0	14 58.8 -60.0 178.1	14 57.4 -60.0 177.1	14 55.3 -59.9 176.1
21°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.0	13 58.8 -59.9 178.1	13 57.4 -60.0 177.1	13 55.4 -60.0 176.2
22°	13 00.0 -60.0 180.0	12 59.7 -60.0 179.0	12 58.9 -60.0 178.1	12 57.4 -59.9 177.1	12 55.4 -59.9 176.2
23°	12 00.0 -60.0 180.0	11 59.7 -60.0 179.1	11 58.9 -60.0 178.1	11 57.5 -60.0 177.2	11 55.5 -60.0 176.2
24°	11 00.0 -60.0 180.0	10 59.7 -60.0 179.1	10 58.9 -60.0 178.1	10 57.5 -60.0 177.2	10 55.5 -59.9 176.3
25°	10 00.0 -60.0 180.0	9 59.7 -60.0 179.1	9 58.9 -60.0 178.2	9 57.5 -60.0 177.2	9 55.6 -60.0 176.3
26°	9 00.0 -60.0 180.0	8 59.7 -60.0 179.1	8 58.9 -60.0 178.2	8 57.5 -59.9 177.3	8 55.6 -59.9 176.4
27°	8 00.0 -60.0 180.0	7 59.7 -60.0 179.1	7 58.9 -60.0 178.2	7 57.6 -60.0 177.3	7 55.7 -60.0 176.4
28°	7 00.0 -60.0 180.0	6 59.7 -60.0 179.1	6 58.9 -60.0 178.2	6 57.6 -60.0 177.3	6 55.7 -59.9 176.4
29°	6 00.0 -60.0 180.0	5 59.7 -60.0 179.1	5 58.9 -59.9 178.2	5 57.6 -59.9 177.4	5 55.8 -60.0 176.5

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°	34 50.8 -59.8 173.9	34 46.8 -59.8 172.7	34 42.1 -59.8 171.5	34 36.6 -59.7 170.3	34 30.5 -59.7 169.1
1°	33 51.0 -59.9 174.0	33 47.0 -59.9 172.8	33 42.3 -59.8 171.6	33 36.9 -59.7 170.4	33 30.8 -59.7 169.2
2°	32 51.1 -59.9 174.0	32 47.1 -59.8 172.9	32 42.5 -59.8 171.7	32 37.2 -59.8 170.5	32 31.1 -59.6 169.3
3°	31 51.2 -59.9 174.1	31 47.3 -59.9 172.9	31 42.7 -59.8 171.8	31 37.4 -59.7 170.6	31 31.5 -59.7 169.4
4°	30 51.3 -59.9 174.2	30 47.4 -59.8 173.0	30 42.9 -59.8 171.9	30 37.7 -59.7 170.7	30 31.8 -59.7 169.6
5°	29 51.4 -59.9 174.3	29 47.6 -59.9 173.1	29 43.1 -59.8 172.0	29 38.0 -59.8 170.8	29 32.1 -59.6 169.7
6°	28 51.5 -59.9 174.3	28 47.7 -59.8 173.2	28 43.3 -59.8 172.1	28 38.2 -59.7 170.9	28 32.5 -59.7 169.8
7°	27 51.6 -59.9 174.4	27 47.9 -59.9 173.3	27 43.5 -59.8 172.1	27 38.5 -59.8 171.0	27 32.8 -59.7 169.9
8°	26 51.7 -59.9 174.4	26 48.0 -59.9 173.3	26 43.7 -59.8 172.2	26 38.7 -59.8 171.1	26 33.1 -59.7 170.0
9°	25 51.8 -59.9 174.5	25 48.1 -59.8 173.4	25 43.9 -59.9 172.3	25 38.9 -59.7 171.2	25 33.4 -59.7 170.1
10°	24 51.9 -60.0 174.6	24 48.3 -59.9 173.5	24 44.0 -59.8 172.4	24 39.2 -59.8 171.3	24 33.7 -59.7 170.2
11°	23 51.9 -59.9 174.6	23 48.4 -59.9 173.6	23 44.2 -59.8 172.5	23 39.4 -59.8 171.4	23 34.0 -59.8 170.4
12°	22 52.0 -59.9 174.7	22 48.5 -59.8 173.6	22 44.4 -59.8 172.6	22 39.6 -59.7 171.5	22 34.2 -59.7 170.5
13°	21 52.1 -59.9 174.7	21 48.7 -59.9 173.7	21 44.6 -59.9 172.7	21 39.9 -59.8 171.6	21 34.5 -59.7 170.6
14°	20 52.2 -59.9 174.8	20 48.8 -59.9 173.8	20 44.7 -59.8 172.7	20 40.1 -59.8 171.7	20 34.8 -59.7 170.7
15°	19 52.3 -59.9 174.9	19 48.9 -59.9 173.8	19 44.9 -59.8 172.8	19 40.3 -59.8 171.8	19 35.1 -59.8 170.8
16°	18 52.4 -59.9 174.9	18 49.0 -59.9 173.9	18 45.1 -59.9 172.9	18 40.5 -59.8 171.9	18 35.3 -59.7 170.9
17°	17 52.5 -60.0 175.0	17 49.1 -59.8 174.0	17 45.2 -59.8 173.0	17 40.7 -59.8 172.0	17 35.6 -59.7 171.0
18°	16 52.5 -59.9 175.0	16 49.3 -59.9 174.0	16 45.4 -59.8 173.0	16 40.9 -59.8 172.1	16 35.9 -59.8 171.1
19°	15 52.6 -59.9 175.1	15 49.4 -59.9 174.1	15 45.6 -59.9 173.1	15 41.1 -59.8 172.1	15 36.1 -59.7 171.2
20°	14 52.7 -59.9 175.1	14 49.5 -59.9 174.2	14 45.7 -59.8 173.2	14 41.3 -59.8 172.2	14 36.4 -59.7 171.3
21°	13 52.8 -59.9 175.2	13 49.6 -59.9 174.2	13 45.9 -59.9 173.3	13 41.5 -59.7 172.3	13 36.7 -59.8 171.4
22°	12 52.9 -60.0 175.2	12 49.7 -59.9 174.3	12 46.0 -59.8 173.3	12 41.8 -59.8 172.4	12 36.9 -59.7 171.5
23°	11 52.9 -59.9 175.3	11 49.8 -59.8 174.4	11 46.2 -59.9 173.4	11 42.0 -59.8 172.5	11 37.2 -59.8 171.5
24°	10 53.0 -59.9 175.3	10 50.0 -59.9 174.4	10 46.3 -59.8 173.5	10 42.2 -59.9 172.6	10 37.4 -59.7 171.6
25°	9 53.1 -59.9 175.4	9 50.1 -59.9 174.5	9 46.5 -59.9 173.6	9 42.3 -59.8 172.6	9 37.7 -59.8 171.7
26°	8 53.2 -60.0 175.5	8 50.2 -59.9 174.5	8 46.6 -59.8 173.6	8 42.5 -59.8 172.7	8 37.9 -59.7 171.8
27°	7 53.2 -59.9 175.5	7 50.3 -59.9 174.6	7 46.8 -59.9 173.7	7 42.7 -59.8 172.8	7 38.2 -59.8 171.9
28°	6 53.3 -59.9 175.6	6 50.4 -59.9 174.7	6 46.9 -59.8 173.8	6 42.9 -59.8 172.9	6 38.4 -59.7 172.0
29°	5 53.4 -59.9 175.6	5 50.5 -59.9 174.7	5 47.1 -59.9 173.8	5 43.1 -59.8 173.0	5 38.7 -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°	34 23.6 -59.6 167.9	34 16.0 -59.5 166.7	34 07.7 -59.4 165.5	33 58.7 -59.3 164.3	33 49.0 -59.2 163.1
1°	33 24.0 -59.6 168.0	33 16.5 -59.5 166.8	33 08.3 -59.4 165.6	32 59.4 -59.3 164.4	32 49.8 -59.1 163.3
2°	32 24.4 -59.6 168.1	32 17.0 -59.5 167.0	32 08.9 -59.4 165.8	32 00.1 -59.3 164.6	31 50.7 -59.2 163.5
3°	31 24.8 -59.6 168.3	31 17.5 -59.5 167.1	31 09.5 -59.4 166.0	31 00.8 -59.3 164.8	30 51.5 -59.3 163.7
4°	30 25.2 -59.6 168.4	30 18.0 -59.5 167.3	30 10.1 -59.5 166.1	30 01.5 -59.4 165.0	29 52.2 -59.2 163.8
5°	29 25.6 -59.6 168.5	29 18.5 -59.6 167.4	29 10.6 -59.4 166.3	29 02.1 -59.3 165.1	28 53.0 -59.3 164.0
6°	28 26.0 -59.6 168.7	28 18.9 -59.5 167.6	28 11.2 -59.5 166.4	28 02.8 -59.4 165.3	27 53.7 -59.2 164.2
7°	27 26.4 -59.6 168.8	27 19.4 -59.5 167.7	27 11.7 -59.4 166.6	27 03.4 -59.3 165.5	26 54.5 -59.3 164.4
8°	26 26.8 -59.6 168.9	26 19.9 -59.6 167.8	26 12.3 -59.5 166.7	26 04.1 -59.4 165.6	25 55.2 -59.3 164.6
9°	25 27.2 -59.7 169.1	25 20.3 -59.6 168.0	25 12.8 -59.5 166.9	25 04.7 -59.4 165.8	24 55.9 -59.3 164.7
10°	24 27.5 -59.6 169.2	24 20.7 -59.5 168.1	24 13.3 -59.5 167.0	24 05.3 -59.4 166.0	23 56.6 -59.3 164.9
11°	23 27.9 -59.7 169.3	23 21.2 -59.6 168.2	23 13.8 -59.5 167.2	23 05.9 -59.4 166.1	22 57.3 -59.3 165.1
12°	22 28.2 -59.6 169.4	22 21.6 -59.6 168.4	22 14.3 -59.5 167.3	22 06.5 -59.4 166.3	21 58.0 -59.3 165.2
13°	21 28.6 -59.7 169.5	21 22.0 -59.6 168.5	21 14.8 -59.5 167.4	21 07.1 -59.5 166.4	20 58.7 -59.4 165.4
14°	20 28.9 -59.6 169.6	20 22.4 -59.6 168.6	20 15.3 -59.5 167.6	20 07.6 -59.4 166.6	19 59.3 -59.3 165.5
15°	19 29.3 -59.7 169.8	19 22.8 -59.6 168.7	19 15.8 -59.5 167.7	19 08.2 -59.4 166.7	19 00.0 -59.4 165.7
16°	18 29.6 -59.7 169.9	18 23.2 -59.6 168.9	18 16.3 -59.5 167.9	18 08.8 -59.5 166.8	18 00.6 -59.3 165.8
17°	17 29.9 -59.7 170.0	17 23.6 -59.6 169.0	17 16.8 -59.6 168.0	17 09.3 -59.4 167.0	17 01.3 -59.4 166.0
18°	16 30.2 -59.6 170.1	16 24.0 -59.6 169.1	16 17.2 -59.5 168.1	16 09.9 -59.5 167.1	16 01.9 -59.4 166.1
19°	15 30.6 -59.7 170.2	15 24.4 -59.6 169.2	15 17.7 -59.6 168.2	15 10.4 -59.5 167.3	15 02.5 -59.4 166.3
20°	14 30.9 -59.7 170.3	14 24.8 -59.6 169.3	14 18.1 -59.5 168.4	14 10.9 -59.4 167.4	14 03.1 -59.3 166.4
21°	13 31.2 -59.7 170.4	13 25.2 -59.6 169.4	13 18.6 -59.5 168.5	13 11.5 -59.5 167.5	13 03.8 -59.4 166.6
22°	12 31.5 -59.7 170.5	12 25.6 -59.7 169.6	12 19.1 -59.6 168.6	12 12.0 -59.5 167.7	12 04.4 -59.4 166.7
23°	11 31.8 -59.7 170.6	11 25.9 -59.6 169.7	11 19.5 -59.6 168.7	11 12.5 -59.5 167.8	11 05.0 -59.4 166.9
24°	10 32.1 -59.6 170.7	10 26.3 -59.6 169.8	10 19.9 -59.5 168.9	10 13.0 -59.5 167.9	10 05.6 -59.4 167.0
25°	9 32.5 -59.7 170.8	9 26.7 -59.6 169.9	9 20.4 -59.6 169.0	9 13.5 -59.4 168.1	9 06.2 -59.4 167.2
26°	8 32.8 -59.7 170.9	8 27.1 -59.7 170.0	8 20.8 -59.5 169.1	8 14.1 -59.5 168.2	8 06.8 -59.4 167.3
27°	7 33.1 -59.7 171.0	7 27.4 -59.6 170.1	7 21.3 -59.6 169.2	7 14.6 -59.5 168.3	7 07.4 -59.5 167.5
28°	6 33.4 -59.7 171.1	6 27.8 -59.6 170.2	6 21.7 -59.6 169.4	6 15.1 -59.5 168.5	6 07.9 -59.4 167.6
29°	5 33.7 -59.7 171.2	5 28.2 -59.7 170.3	5 22.1 -59.5 169.5	5 15.6 -59.5 168.6	5 08.5 -59.4 167.7

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°	33 38.6 -59.0 161.9	33 27.6 -58.9 160.7	33 15.9 -58.8 159.5	33 03.5 -58.6 158.4	32 50.5 -58.5 157.2
1°	32 39.6 -59.1 162.1	32 28.7 -59.0 160.9	32 17.1 -58.8 159.8	32 04.9 -58.7 158.6	31 52.0 -58.5 157.5
2°	31 40.5 -59.1 162.3	31 29.7 -58.9 161.2	31 18.3 -58.9 160.0	31 06.2 -58.7 158.9	30 53.5 -58.6 157.7
3°	30 41.4 -59.1 162.5	30 30.8 -59.0 161.4	30 19.4 -58.8 160.2	30 07.5 -58.8 159.1	29 54.9 -58.6 158.0
4°	29 42.3 -59.1 162.7	29 31.8 -59.0 161.6	29 20.6 -58.9 160.5	29 08.7 -58.7 159.3	28 56.3 -58.6 158.2
5°	28 43.2 -59.1 162.9	28 32.8 -59.1 161.8	28 21.7 -58.9 160.7	28 10.0 -58.8 159.6	27 57.7 -58.7 158.5
6°	27 44.1 -59.2 163.1	27 33.7 -59.0 162.0	27 22.8 -59.0 160.9	27 11.2 -58.8 159.8	26 59.0 -58.7 158.7
7°	26 44.9 -59.2 163.3	26 34.7 -59.1 162.2	26 23.8 -58.9 161.1	26 12.4 -58.8 160.0	26 00.3 -58.7 158.9
8°	25 45.7 -59.2 163.5	25 35.6 -59.1 162.4	25 24.9 -59.0 161.3	25 13.6 -58.9 160.2	25 01.6 -58.7 159.2
9°	24 46.5 -59.2 163.6	24 36.5 -59.0 162.6	24 25.9 -58.9 161.5	24 14.7 -58.8 160.4	24 02.9 -58.7 159.4
10°	23 47.3 -59.2 163.8	23 37.5 -59.2 162.8	23 27.0 -59.0 161.7	23 15.9 -58.9 160.7	23 04.2 -58.8 159.6
11°	22 48.1 -59.2 164.0	22 38.3 -59.1 163.0	22 28.0 -59.1 161.9	22 17.0 -58.9 160.9	22 05.4 -58.8 159.8
12°	21 48.9 -59.2 164.2	21 39.2 -59.1 163.1	21 28.9 -59.0 162.1	21 18.1 -58.9 161.1	21 06.6 -58.8 160.0
13°	20 49.7 -59.3 164.3	20 40.1 -59.1 163.3	20 29.9 -59.0 162.3	20 19.2 -59.0 161.3	20 07.8 -58.8 160.3
14°	19 50.4 -59.2 164.5	19 41.0 -59.2 163.5	19 30.9 -59.1 162.5	19 20.2 -58.9 161.5	19 09.0 -58.8 160.5
15°	18 51.2 -59.3 164.7	18 41.8 -59.2 163.7	18 31.8 -59.0 162.7	18 21.3 -58.9 161.7	18 10.2 -58.8 160.7
16°	17 51.9 -59.2 164.8	17 42.6 -59.1 163.9	17 32.8 -59.1 162.9	17 22.4 -59.0 161.9	17 11.4 -58.9 160.9
17°	16 52.7 -59.3 165.0	16 43.5 -59.2 164.0	16 33.7 -59.1 163.0	16 23.4 -59.0 162.1	16 12.5 -58.9 161.1
18°	15 53.4 -59.3 165.2	15 44.3 -59.2 164.2	15 34.6 -59.1 163.2	15 24.4 -59.0 162.3	15 13.6 -58.8 161.3
19°	14 54.1 -59.3 165.3	14 45.1 -59.2 164.4	14 35.5 -59.1 163.4	14 25.4 -59.0 162.4	14 14.8 -58.9 161.5
20°	13 54.8 -59.3 165.5	13 45.9 -59.2 164.5	13 36.4 -59.1 163.6	13 26.4 -59.0 162.6	13 15.9 -58.9 161.7
21°	12 55.5 -59.3 165.6	12 46.7 -59.2 164.7	12 37.3 -59.1 163.8	12 27.4 -59.0 162.8	12 17.0 -58.9 161.9
22°	11 56.2 -59.3 165.8	11 47.5 -59.2 164.9	11 38.2 -59.1 163.9	11 28.4 -59.0 163.0	11 18.1 -58.9 162.1
23°	10 56.9 -59.3 166.0	10 48.3 -59.2 165.0	10 39.1 -59.1 164.1	10 29.4 -59.0 163.2	10 19.2 -58.9 162.3
24°	9 57.6 -59.3 166.1	9 49.1 -59.3 165.2	9 40.0 -59.1 164.3	9 30.4 -59.0 163.4	9 20.3 -58.9 162.5
25°	8 58.3 -59.4 166.3	8 49.8 -59.2 165.4	8 40.9 -59.2 164.5	8 31.4 -59.1 163.5	8 21.4 -59.0 162.6
26°	7 58.9 -59.3 166.4	7 50.6 -59.2 165.5	7 41.7 -59.1 164.6	7 32.3 -59.0 163.7	7 22.4 -58.9 162.8
27°	6 59.6 -59.3 166.6	6 51.4 -59.3 165.7	6 42.6 -59.1 164.8	6 33.3 -59.0 163.9	6 23.5 -58.9 163.0
28°	6 00.3 -59.3 166.7	5 52.1 -59.2 165.8	5 43.5 -59.2 165.0	5 34.3 -59.1 164.1	5 24.6 -59.0 163.2
29°	5 01.0 -59.4 166.9	4 52.9 -59.3 166.0	4 44.3 -59.1 165.1	4 35.2 -59.0 164.3	4 25.6 -58.9 163.4

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°	32 36.9 -58.4 156.0	32 22.6 -58.2 154.9	32 07.7 -58.1 153.7	31 52.1 -57.9 152.6	31 36.0 -57.7 151.5
1°	31 38.5 -58.4 156.3	31 24.4 -58.3 155.2	31 09.6 -58.1 154.0	30 54.2 -57.9 152.9	30 38.3 -57.8 151.8
2°	30 40.1 -58.4 156.6	30 26.1 -58.3 155.5	30 11.5 -58.1 154.3	29 56.3 -58.0 153.2	29 40.5 -57.8 152.1
3°	29 41.7 -58.5 156.8	29 27.8 -58.3 155.7	29 13.4 -58.2 154.6	28 58.3 -58.0 153.5	28 42.7 -57.9 152.4
4°	28 43.2 -58.5 157.1	28 29.5 -58.3 156.0	28 15.2 -58.2 154.9	28 00.3 -58.0 153.8	27 44.8 -57.9 152.7
5°	27 44.7 -58.5 157.4	27 31.2 -58.4 156.3	27 17.0 -58.2 155.2	27 02.3 -58.1 154.1	26 46.9 -57.9 153.0
6°	26 46.2 -58.6 157.6	26 32.8 -58.4 156.5	26 18.8 -58.3 155.4	26 04.2 -58.1 154.4	25 49.0 -58.0 153.3
7°	25 47.6 -58.5 157.8	25 34.4 -58.5 156.8	25 20.5 -58.3 155.7	25 06.1 -58.2 154.6	24 51.0 -58.0 153.6
8°	24 49.1 -58.6 158.1	24 35.9 -58.4 157.0	24 22.2 -58.3 156.0	24 07.9 -58.2 154.9	23 53.0 -58.0 153.9
9°	23 50.5 -58.6 158.3	23 37.5 -58.5 157.3	23 23.9 -58.4 156.2	23 09.7 -58.2 155.2	22 55.0 -58.1 154.1
10°	22 51.9 -58.7 158.6	22 39.0 -58.5 157.5	22 25.5 -58.3 156.5	22 11.5 -58.2 155.4	21 56.9 -58.0 154.4
11°	21 53.2 -58.6 158.8	21 40.5 -58.5 157.8	21 27.2 -58.4 156.7	21 13.3 -58.2 155.7	20 58.9 -58.1 154.7
12°	20 54.6 -58.7 159.0	20 42.0 -58.6 158.0	20 28.8 -58.4 157.0	20 15.1 -58.3 156.0	20 00.8 -58.2 154.9
13°	19 55.9 -58.7 159.2	19 43.4 -58.5 158.2	19 30.4 -58.4 157.2	19 16.8 -58.3 156.2	19 02.6 -58.1 155.2
14°	18 57.2 -58.7 159.5	18 44.9 -58.6 158.5	18 32.0 -58.5 157.5	18 18.5 -58.3 156.5	18 04.5 -58.2 155.5
15°	17 58.5 -58.7 159.7	17 46.3 -58.6 158.7	17 33.5 -58.5 157.7	17 20.2 -58.4 156.7	17 06.3 -58.2 155.7
16°	16 59.8 -58.7 159.9	16 47.7 -58.6 158.9	16 35.0 -58.4 157.9	16 21.8 -58.3 157.0	16 08.1 -58.2 156.0
17°	16 01.1 -58.8 160.1	15 49.1 -58.6 159.1	15 36.6 -58.5 158.2	15 23.5 -58.4 157.2	15 09.9 -58.2 156.2
18°	15 02.3 -58.7 160.3	14 50.5 -58.7 159.4	14 38.1 -58.5 158.4	14 25.1 -58.4 157.4	14 11.7 -58.3 156.5
19°	14 03.6 -58.8 160.5	13 51.8 -58.6 159.6	13 39.6 -58.6 158.6	13 26.7 -58.3 157.7	13 13.4 -58.2 156.7
20°	13 04.8 -58.8 160.7	12 53.2 -58.7 159.8	12 41.0 -58.5 158.8	12 28.4 -58.4 157.9	12 15.2 -58.3 157.0
21°	12 06.0 -58.7 160.9	11 54.5 -58.6 160.0	11 42.5 -58.5 159.1	11 30.0 -58.5 158.1	11 16.9 -58.3 157.2
22°	11 07.3 -58.8 161.1	10 55.9 -58.7 160.2	10 44.0 -58.6 159.3	10 31.5 -58.4 158.4	10 18.6 -58.3 157.5
23°	10 08.5 -58.8 161.3	9 57.2 -58.7 160.4	9 45.4 -58.6 159.5	9 33.1 -58.4 158.6	9 20.3 -58.3 157.7
24°	9 09.7 -58.8 161.5	8 58.5 -58.7 160.6	8 46.8 -58.5 159.7	8 34.7 -58.5 158.8	8 22.0 -58.3 157.9
25°	8 10.9 -58.9 161.8	7 59.8 -58.7 160.9	7 48.3 -58.6 160.0	7 36.2 -58.4 159.1	7 23.7 -58.3 158.2
26°	7 12.0 -58.8 161.9	7 01.1 -58.7 161.1	6 49.7 -58.6 160.2	6 37.8 -58.5 159.3	6 25.4 -58.4 158.4
27°	6 13.2 -58.8 162.1	6 02.4 -58.7 161.3	5 51.1 -58.6 160.4	5 39.3 -58.4 159.5	5 27.0 -58.3 158.7
28°	5 14.4 -58.8 162.3	5 03.7 -58.7 161.5	4 52.5 -58.6 160.6	4 40.9 -58.5 159.7	4 28.7 -58.3 158.9
29°	4 15.6 -58.9 162.5	4 05.0 -58.7 161.7	3 53.9 -58.5 160.8	3 42.4 -58.5 160.0	3 30.4 -58.4 159.1

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°	31 19.3 -57.6 150.3	31 02.0 -57.4 149.2	30 44.1 -57.2 148.1	30 25.6 -57.0 147.0	30 06.6 -56.8 145.9
1°	30 21.7 -57.6 150.7	30 04.6 -57.5 149.6	29 46.9 -57.3 148.5	29 28.6 -57.1 147.4	29 09.8 -57.0 146.3
2°	29 24.1 -57.6 151.0	29 07.1 -57.4 149.9	28 49.6 -57.3 148.8	28 31.5 -57.1 147.7	28 12.8 -56.9 146.6
3°	28 26.5 -57.7 151.3	28 09.7 -57.6 150.2	27 52.3 -57.4 149.1	27 34.4 -57.2 148.1	27 15.9 -57.0 147.0
4°	27 28.8 -57.8 151.6	27 12.1 -57.5 150.5	26 54.9 -57.4 149.5	26 37.2 -57.3 148.4	26 18.9 -57.1 147.3
5°	26 31.0 -57.7 151.9	26 14.6 -57.7 150.9	25 57.5 -57.4 149.8	25 39.9 -57.2 148.7	25 21.8 -57.1 147.7
6°	25 33.3 -57.9 152.2	25 16.9 -57.6 151.2	25 00.1 -57.5 150.1	24 42.7 -57.4 149.1	24 24.7 -57.2 148.0
7°	24 35.4 -57.8 152.5	24 19.3 -57.7 151.5	24 02.6 -57.6 150.4	23 45.3 -57.3 149.4	23 27.5 -57.2 148.4
8°	23 37.6 -57.9 152.8	23 21.6 -57.7 151.8	23 05.0 -57.5 150.7	22 48.0 -57.4 149.7	22 30.3 -57.2 148.7
9°	22 39.7 -57.9 153.1	22 23.9 -57.8 152.1	22 07.5 -57.6 151.1	21 50.6 -57.5 150.0	21 33.1 -57.3 149.0
10°	21 41.8 -57.9 153.4	21 26.1 -57.8 152.4	21 09.9 -57.6 151.4	20 53.1 -57.4 150.3	20 35.8 -57.3 149.3
11°	20 43.9 -58.0 153.7	20 28.3 -57.8 152.7	20 12.3 -57.7 151.6	19 55.7 -57.5 150.6	19 38.5 -57.3 149.6
12°	19 45.9 -58.0 153.9	19 30.5 -57.8 152.9	19 14.6 -57.7 151.9	18 58.2 -57.6 150.9	18 41.2 -57.4 150.0
13°	18 47.9 -58.0 154.2	18 32.7 -57.9 153.2	18 16.9 -57.7 152.2	18 00.6 -57.5 151.2	17 43.8 -57.4 150.3
14°	17 49.9 -58.0 154.5	17 34.8 -57.9 153.5	17 19.2 -57.7 152.5	17 03.1 -57.6 151.5	16 46.4 -57.4 150.6
15°	16 51.9 -58.1 154.8	16 36.9 -57.9 153.8	16 21.5 -57.8 152.8	16 05.5 -57.6 151.8	15 49.0 -57.5 150.9
16°	15 53.8 -58.0 155.0	15 39.0 -57.9 154.0	15 23.7 -57.8 153.1	15 07.9 -57.7 152.1	14 51.5 -57.4 151.2
17°	14 55.8 -58.1 155.3	14 41.1 -57.9 154.3	14 25.9 -57.8 153.4	14 10.2 -57.6 152.4	13 54.1 -57.5 151.5
18°	13 57.7 -58.1 155.5	13 43.2 -58.0 154.6	13 28.1 -57.8 153.6	13 12.6 -57.7 152.7	12 56.6 -57.6 151.8
19°	12 59.6 -58.2 155.8	12 45.2 -58.0 154.9	12 30.3 -57.8 153.9	12 14.9 -57.7 153.0	11 59.0 -57.5 152.1
20°	12 01.4 -58.1 156.0	11 47.2 -58.0 155.1	11 32.5 -57.9 154.2	11 17.2 -57.7 153.3	11 01.5 -57.5 152.3
21°	11 03.3 -58.1 156.3	10 49.2 -58.0 155.4	10 34.6 -57.8 154.5	10 19.5 -57.7 153.5	10 04.0 -57.6 152.6
22°	10 05.2 -58.2 156.5	9 51.2 -58.0 155.6	9 36.8 -57.9 154.7	9 21.8 -57.7 153.8	9 06.4 -57.6 152.9
23°	9 07.0 -58.2 156.8	8 53.2 -58.0 155.9	8 38.9 -57.9 155.0	8 24.1 -57.7 154.1	8 08.8 -57.6 153.2
24°	8 08.8 -58.2 157.0	7 55.2 -58.1 156.2	7 41.0 -57.9 155.3	7 26.4 -57.8 154.4	7 11.2 -57.6 153.5
25°	7 10.6 -58.1 157.3	6 57.1 -58.0 156.4	6 43.1 -57.9 155.5	6 28.6 -57.8 154.6	6 13.6 -57.6 153.8
26°	6 12.5 -58.2 157.5	5 59.1 -58.1 156.7	5 45.2 -57.9 155.8	5 30.8 -57.7 154.9	5 16.0 -57.6 154.0
27°	5 14.3 -58.2 157.8	5 01.0 -58.0 156.9	4 47.3 -57.9 156.1	4 33.1 -57.8 155.2	4 18.4 -57.6 154.3
28°	4 16.1 -58.2 158.0	4 03.0 -58.1 157.2	3 49.4 -58.0 156.3	3 35.3 -57.8 155.5	3 20.8 -57.6 154.6
29°	3 17.9 -58.2 158.3	3 04.9 -58.1 157.4	2 51.4 -57.9 156.6	2 37.5 -57.7 155.7	2 23.2 -57.7 154.9

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°	29 47.0 -56.6 144.8	29 26.9 -56.4 143.7	29 06.3 -56.3 142.7	28 45.2 -56.1 141.6	28 23.6 -55.9 140.5
1°	28 50.4 -56.7 145.2	28 30.5 -56.6 144.1	28 10.0 -56.3 143.1	27 49.1 -56.2 142.0	27 27.7 -56.0 140.9
2°	27 53.7 -56.8 145.6	27 33.9 -56.6 144.5	27 13.7 -56.4 143.4	26 52.9 -56.2 142.4	26 31.7 -56.1 141.3
3°	26 56.9 -56.9 145.9	26 37.3 -56.6 144.9	26 17.3 -56.5 143.8	25 56.7 -56.3 142.8	25 35.6 -56.1 141.7
4°	26 00.0 -56.9 146.3	25 40.7 -56.7 145.2	25 20.8 -56.5 144.2	25 00.4 -56.3 143.2	24 39.5 -56.1 142.1
5°	25 03.1 -56.9 146.6	24 44.0 -56.8 145.6	24 24.3 -56.6 144.6	24 04.1 -56.4 143.5	23 43.4 -56.3 142.5
6°	24 06.2 -57.0 147.0	23 47.2 -56.8 146.0	23 27.7 -56.7 144.9	23 07.7 -56.5 143.9	22 47.1 -56.2 142.9
7°	23 09.2 -57.0 147.3	22 50.4 -56.9 146.3	22 31.0 -56.6 145.3	22 11.2 -56.5 144.3	21 50.9 -56.4 143.3
8°	22 12.2 -57.1 147.7	21 53.5 -56.9 146.7	21 34.4 -56.8 145.6	21 14.7 -56.6 144.6	20 54.5 -56.3 143.6
9°	21 15.1 -57.1 148.0	20 56.6 -56.9 147.0	20 37.6 -56.7 146.0	20 18.1 -56.5 145.0	19 58.2 -56.5 144.0
10°	20 18.0 -57.1 148.3	19 59.7 -57.0 147.3	19 40.9 -56.8 146.3	19 21.6 -56.7 145.4	19 01.7 -56.4 144.4
11°	19 20.9 -57.2 148.7	19 02.7 -57.0 147.7	18 44.1 -56.9 146.7	18 24.9 -56.7 145.7	18 05.3 -56.5 144.7
12°	18 23.7 -57.2 149.0	18 05.7 -57.0 148.0	17 47.2 -56.9 147.0	17 28.2 -56.7 146.0	17 08.8 -56.6 145.1
13°	17 26.5 -57.3 149.3	17 08.7 -57.1 148.3	16 50.3 -56.9 147.4	16 31.5 -56.7 146.4	16 12.2 -56.5 145.4
14°	16 29.2 -57.2 149.6	16 11.6 -57.1 148.6	15 53.4 -56.9 147.7	15 34.8 -56.8 146.7	15 15.7 -56.6 145.8
15°	15 32.0 -57.3 149.9	15 14.5 -57.1 149.0	14 56.5 -57.0 148.0	14 38.0 -56.8 147.1	14 19.1 -56.7 146.1
16°	14 34.7 -57.3 150.2	14 17.4 -57.2 149.3	13 59.5 -57.0 148.3	13 41.2 -56.8 147.4	13 22.4 -56.6 146.5
17°	13 37.4 -57.4 150.5	13 20.2 -57.2 149.6	13 02.5 -57.0 148.7	12 44.4 -56.9 147.7	12 25.8 -56.7 146.8
18°	12 40.0 -57.3 150.8	12 23.0 -57.2 149.9	12 05.5 -57.0 149.0	11 47.5 -56.8 148.1	11 29.1 -56.7 147.1
19°	11 42.7 -57.4 151.1	11 25.8 -57.2 150.2	11 08.5 -57.1 149.3	10 50.7 -56.9 148.4	10 32.4 -56.7 147.5
20°	10 45.3 -57.4 151.4	10 28.6 -57.2 150.5	10 11.4 -57.1 149.6	9 53.8 -56.9 148.7	9 35.7 -56.8 147.8
21°	9 47.9 -57.4 151.7	9 31.4 -57.3 150.8	9 14.3 -57.0 149.9	8 56.9 -57.0 149.0	8 38.9 -56.7 148.1
22°	8 50.5 -57.4 152.0	8 34.1 -57.3 151.1	8 17.3 -57.2 150.2	7 59.9 -56.9 149.3	7 42.2 -56.8 148.5
23°	7 53.1 -57.5 152.3	7 36.8 -57.2 151.4	7 20.1 -57.1 150.5	7 03.0 -57.0 149.7	6 45.4 -56.8 148.8
24°	6 55.6 -57.4 152.6	6 39.6 -57.3 151.7	6 23.0 -57.1 150.8	6 06.0 -56.9 150.0	5 48.6 -56.8 149.1
25°	5 58.2 -57.5 152.9	5 42.3 -57.3 152.0	5 25.9 -57.1 151.2	5 09.1 -57.0 150.3	4 51.8 -56.8 149.4
26°	5 00.7 -57.4 153.2	4 45.0 -57.3 152.3	4 28.8 -57.2 151.5	4 12.1 -57.0 150.6	3 55.0 -56.8 149.7
27°	4 03.3 -57.5 153.5	3 47.7 -57.3 152.6	3 31.6 -57.1 151.8	3 15.1 -57.0 150.9	2 58.2 -56.9 150.1
28°	3 05.8 -57.5 153.8	2 50.4 -57.4 152.9	2 34.5 -57.2 152.1	2 18.1 -57.0 151.2	2 01.3 -56.8 150.4
29°	2 08.3 -57.5 154.0	1 53.0 -57.3 153.2	1 37.3 -57.2 152.4	1 21.1 -57.0 151.5	1 04.5 -56.8 150.7

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°	28 01.5 -55.8 139.5	27 38.9 -55.6 138.4	27 15.8 -55.3 137.4	26 52.3 -55.2 136.4	26 28.3 -55.0 135.3
1°	27 05.7 -55.7 139.9	26 43.3 -55.6 138.9	26 20.5 -55.4 137.8	25 57.1 -55.2 136.8	25 33.3 -55.0 135.8
2°	26 10.0 -55.9 140.3	25 47.7 -55.6 139.3	25 25.1 -55.5 138.2	25 01.9 -55.3 137.2	24 38.3 -55.1 136.2
3°	25 14.1 -55.9 140.7	24 52.1 -55.8 139.7	24 29.6 -55.6 138.7	24 06.6 -55.3 137.7	23 43.2 -55.2 136.7
4°	24 18.2 -56.0 141.1	23 56.3 -55.8 140.1	23 34.0 -55.6 139.1	23 11.3 -55.5 138.1	22 48.0 -55.2 137.1
5°	23 22.2 -56.1 141.5	23 00.5 -55.8 140.5	22 38.4 -55.7 139.5	22 15.8 -55.5 138.5	21 52.8 -55.3 137.5
6°	22 26.1 -56.1 141.9	22 04.7 -55.9 140.9	21 42.7 -55.7 139.9	21 20.3 -55.5 138.9	20 57.5 -55.4 137.9
7°	21 30.0 -56.1 142.3	21 08.8 -56.0 141.3	20 47.0 -55.8 140.3	20 24.8 -55.6 139.3	20 02.1 -55.4 138.3
8°	20 33.9 -56.2 142.7	20 12.8 -56.0 141.7	19 51.2 -55.8 140.7	19 29.2 -55.7 139.7	19 06.7 -55.5 138.7
9°	19 37.7 -56.2 143.0	19 16.8 -56.1 142.0	18 55.4 -55.9 141.1	18 33.5 -55.7 140.1	18 11.2 -55.5 139.1
10°	18 41.5 -56.3 143.4	18 20.7 -56.1 142.4	17 59.5 -55.9 141.5	17 37.8 -55.7 140.5	17 15.7 -55.6 139.5
11°	17 45.2 -56.4 143.8	17 24.6 -56.2 142.8	17 03.6 -56.0 141.8	16 42.1 -55.8 140.9	16 20.1 -55.6 139.9
12°	16 48.8 -56.3 144.1	16 28.4 -56.1 143.2	16 07.6 -56.0 142.2	15 46.3 -55.9 141.3	15 24.5 -55.6 140.3
13°	15 52.5 -56.4 144.5	15 32.3 -56.3 143.5	15 11.6 -56.1 142.6	14 50.4 -55.8 141.6	14 28.9 -55.7 140.7
14°	14 56.1 -56.4 144.8	14 36.0 -56.2 143.9	14 15.5 -56.1 143.0	13 54.6 -55.9 142.0	13 33.2 -55.8 141.1
15°	13 59.7 -56.5 145.2	13 39.8 -56.3 144.2	13 19.4 -56.1 143.3	12 58.7 -56.0 142.4	12 37.4 -55.7 141.5
16°	13 03.2 -56.5 145.5	12 43.5 -56.3 144.6	12 23.3 -56.1 143.7	12 02.7 -55.9 142.8	11 41.7 -55.8 141.8
17°	12 06.7 -56.5 145.9	11 47.2 -56.4 145.0	11 27.2 -56.2 144.0	11 06.8 -56.0 143.1	10 45.9 -55.8 142.2
18°	11 10.2 -56.5 146.2	10 50.8 -56.3 145.3	10 31.0 -56.2 144.4	10 10.8 -56.1 143.5	9 50.1 -55.9 142.6
19°	10 13.7 -56.6 146.6	9 54.5 -56.4 145.7	9 34.8 -56.2 144.8	9 14.7 -56.0 143.9	8 54.2 -55.8 143.0
20°	9 17.1 -56.6 146.9	8 58.1 -56.4 146.0	8 38.6 -56.2 145.1	8 18.7 -56.1 144.2	7 58.4 -55.9 143.3
21°	8 20.5 -56.6 147.2	8 01.7 -56.5 146.3	7 42.4 -56.3 145.5	7 22.6 -56.0 144.6	7 02.5 -55.9 143.7
22°	7 23.9 -56.6 147.6	7 05.2 -56.4 146.7	6 46.1 -56.2 145.8	6 26.6 -56.1 144.9	6 06.6 -55.9 144.1
23°	6 27.3 -56.6 147.9	6 08.8 -56.4 147.0	5 49.9 -56.3 146.2	5 30.5 -56.1 145.3	5 10.7 -55.9 144.4
24°	5 30.7 -56.6 148.2	5 12.4 -56.5 147.4	4 53.6 -56.3 146.5	4 34.4 -56.1 145.7	4 14.8 -56.0 144.8
25°	4 34.1 -56.7 148.6	4 15.9 -56.5 147.7	3 57.3 -56.3 146.9	3 38.3 -56.2 146.0	3 18.8 -55.9 145.2
26°	3 37.4 -56.6 148.9	3 19.4 -56.5 148.0	3 01.0 -56.3 147.2	2 42.1 -56.1 146.4	2 22.9 -56.0 145.5
27°	2 40.8 -56.7 149.2	2 22.9 -56.4 148.4	2 04.7 -56.3 147.5	1 46.0 -56.1 146.7	1 26.9 -55.9 145.9
28°	1 44.1 -56.6 149.6	1 26.5 -56.5 148.7	1 08.4 -56.3 147.9	0 49.9 -56.2 147.1	0 31.0 -56.0 146.2
29°	0 47.5 -56.7 149.9	0 30.0 -56.5 149.1	0 12.1 -56.3 148.2	-0 06.3 -56.1	-0 25.0 -55.9

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°	26 03.9 -54.8 134.3	25 39.0 -54.5 133.3	25 13.8 -54.4 132.3	24 48.1 -54.2 131.3	24 22.1 -54.0 130.3
1°	25 09.1 -54.8 134.8	24 44.5 -54.7 133.8	24 19.4 -54.4 132.8	23 53.9 -54.2 131.8	23 28.1 -54.1 130.8
2°	24 14.3 -54.9 135.2	23 49.8 -54.7 134.2	23 25.0 -54.6 133.2	22 59.7 -54.4 132.2	22 34.0 -54.2 131.3
3°	23 19.4 -55.0 135.7	22 55.1 -54.8 134.7	22 30.4 -54.6 133.7	22 05.3 -54.4 132.7	21 39.8 -54.2 131.7
4°	22 24.4 -55.1 136.1	22 00.3 -54.9 135.1	21 35.8 -54.7 134.1	21 10.9 -54.5 133.1	20 45.6 -54.3 132.2
5°	21 29.3 -55.1 136.5	21 05.4 -54.9 135.5	20 41.1 -54.7 134.6	20 16.4 -54.6 133.6	19 51.3 -54.4 132.6
6°	20 34.2 -55.2 136.9	20 10.5 -55.0 136.0	19 46.4 -54.8 135.0	19 21.8 -54.6 134.0	18 56.9 -54.5 133.1
7°	19 39.0 -55.2 137.4	19 15.5 -55.1 136.4	18 51.6 -54.9 135.4	18 27.2 -54.7 134.5	18 02.4 -54.5 133.5
8°	18 43.8 -55.3 137.8	18 20.4 -55.1 136.8	17 56.7 -54.9 135.9	17 32.5 -54.7 134.9	17 07.9 -54.5 134.0
9°	17 48.5 -55.4 138.2	17 25.3 -55.1 137.2	17 01.8 -55.0 136.3	16 37.8 -54.8 135.3	16 13.4 -54.6 134.4
10°	16 53.1 -55.3 138.6	16 30.2 -55.2 137.6	16 06.8 -55.1 136.7	15 43.0 -54.9 135.8	15 18.8 -54.7 134.8
11°	15 57.8 -55.5 139.0	15 35.0 -55.3 138.0	15 11.7 -55.0 137.1	14 48.1 -54.9 136.2	14 24.1 -54.7 135.2
12°	15 02.3 -55.5 139.4	14 39.7 -55.3 138.4	14 16.7 -55.1 137.5	13 53.2 -54.9 136.6	13 29.4 -54.8 135.7
13°	14 06.8 -55.5 139.8	13 44.4 -55.3 138.8	13 21.6 -55.2 137.9	12 58.3 -55.0 137.0	12 34.6 -54.8 136.1
14°	13 11.3 -55.5 140.2	12 49.1 -55.4 139.2	12 26.4 -55.2 138.3	12 03.3 -55.0 137.4	11 39.8 -54.8 136.5
15°	12 15.8 -55.6 140.6	11 53.7 -55.4 139.6	11 31.2 -55.2 138.7	11 08.3 -55.0 137.8	10 45.0 -54.9 136.9
16°	11 20.2 -55.6 140.9	10 58.3 -55.4 140.0	10 36.0 -55.3 139.1	10 13.3 -55.1 138.2	9 50.1 -54.8 137.3
17°	10 24.6 -55.6 141.3	10 02.9 -55.5 140.4	9 40.7 -55.2 139.5	9 18.2 -55.1 138.6	8 55.3 -55.0 137.7
18°	9 29.0 -55.7 141.7	9 07.4 -55.5 140.8	8 45.5 -55.3 139.9	8 23.1 -55.1 139.0	8 00.3 -54.9 138.2
19°	8 33.3 -55.7 142.1	8 11.9 -55.5 141.2	7 50.2 -55.4 140.3	7 28.0 -55.2 139.4	7 05.4 -55.0 138.6
20°	7 37.6 -55.7 142.5	7 16.4 -55.5 141.6	6 54.8 -55.3 140.7	6 32.8 -55.1 139.8	6 10.4 -54.9 139.0
21°	6 41.9 -55.7 142.8	6 20.9 -55.5 142.0	5 59.5 -55.4 141.1	5 37.7 -55.2 140.2	5 15.5 -55.0 139.4
22°	5 46.2 -55.8 143.2	5 25.4 -55.6 142.3	5 04.1 -55.3 141.5	4 42.5 -55.2 140.6	4 20.5 -55.0 139.8
23°	4 50.4 -55.7 143.6	4 29.8 -55.6 142.7	4 08.8 -55.4 141.9	3 47.3 -55.2 141.0	3 25.5 -55.1 140.2
24°	3 54.7 -55.8 143.9	3 34.2 -55.5 143.1	3 13.4 -55.4 142.2	2 52.1 -55.2 141.4	2 30.4 -55.0 140.6
25°	2 58.9 -55.7 144.3	2 38.7 -55.6 143.5	2 18.0 -55.4 142.6	1 56.9 -55.2 141.8	1 35.4 -55.0 141.0
26°	2 03.2 -55.8 144.7	1 43.1 -55.6 143.8	1 22.6 -55.4 143.0	1 01.7 -55.2 142.2	0 40.4 -55.0 141.4
27°	1 07.4 -55.8 145.1	0 47.5 -55.6 144.2	0 27.2 -55.4 143.4	0 06.5 -55.3 142.6	-0 14.6 -55.1
28°	0 11.6 -55.7 145.4	-0 08.1 -55.6	-0 28.2 -55.4	-0 48.8 -55.2	-1 09.7 -55.0
29°	-0 44.1 -55.8	-1 03.7 -55.6	-1 23.6 -55.4	-1 44.0 -55.2	-2 04.7 -55.0

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°	23 55.6 -53.8 129.3	23 28.8 -53.6 128.3	23 01.7 -53.5 127.4	22 34.1 -53.2 126.4	22 06.3 -53.1 125.5
1°	23 01.8 -53.9 129.8	22 35.2 -53.7 128.8	22 08.2 -53.5 127.9	21 40.9 -53.4 126.9	21 13.2 -53.2 126.0
2°	22 07.9 -54.0 130.3	21 41.5 -53.8 129.3	21 14.7 -53.6 128.4	20 47.5 -53.4 127.4	20 20.0 -53.3 126.5
3°	21 13.9 -54.0 130.8	20 47.7 -53.9 129.8	20 21.1 -53.7 128.8	19 54.1 -53.5 127.9	19 26.7 -53.3 126.9
4°	20 19.9 -54.1 131.2	19 53.8 -53.9 130.3	19 27.4 -53.8 129.3	19 00.6 -53.6 128.4	18 33.4 -53.4 127.4
5°	19 25.8 -54.2 131.7	18 59.9 -54.1 130.7	18 33.6 -53.8 129.8	18 07.0 -53.7 128.8	17 40.0 -53.5 127.9
6°	18 31.6 -54.3 132.1	18 05.8 -54.0 131.2	17 39.8 -54.0 130.2	17 13.3 -53.7 129.3	16 46.5 -53.5 128.4
7°	17 37.3 -54.3 132.6	17 11.8 -54.2 131.6	16 45.8 -53.9 130.7	16 19.6 -53.8 129.8	15 53.0 -53.7 128.8
8°	16 43.0 -54.4 133.0	16 17.6 -54.2 132.1	15 51.9 -54.0 131.2	15 25.8 -53.9 130.2	14 59.3 -53.6 129.3
9°	15 48.6 -54.5 133.5	15 23.4 -54.2 132.5	14 57.9 -54.1 131.6	14 31.9 -53.8 130.7	14 05.7 -53.7 129.8
10°	14 54.1 -54.4 133.9	14 29.2 -54.3 133.0	14 03.8 -54.1 132.1	13 38.1 -54.0 131.1	13 12.0 -53.8 130.2
11°	13 59.7 -54.6 134.3	13 34.9 -54.4 133.4	13 09.7 -54.2 132.5	12 44.1 -54.0 131.6	12 18.2 -53.8 130.7
12°	13 05.1 -54.5 134.8	12 40.5 -54.4 133.8	12 15.5 -54.2 132.9	11 50.1 -54.0 132.0	11 24.4 -53.9 131.1
13°	12 10.6 -54.6 135.2	11 46.1 -54.4 134.3	11 21.3 -54.3 133.4	10 56.1 -54.1 132.5	10 30.5 -53.9 131.6
14°	11 16.0 -54.7 135.6	10 51.7 -54.5 134.7	10 27.0 -54.2 133.8	10 02.0 -54.1 132.9	9 36.6 -53.9 132.0
15°	10 21.3 -54.7 136.0	9 57.2 -54.5 135.1	9 32.8 -54.4 134.2	9 07.9 -54.1 133.4	8 42.7 -53.9 132.5
16°	9 26.6 -54.7 136.4	9 02.7 -54.5 135.6	8 38.4 -54.3 134.7	8 13.8 -54.2 133.8	7 48.8 -54.0 132.9
17°	8 31.9 -54.7 136.9	8 08.2 -54.6 136.0	7 44.1 -54.4 135.1	7 19.6 -54.2 134.2	6 54.8 -54.0 133.4
18°	7 37.2 -54.8 137.3	7 13.6 -54.5 136.4	6 49.7 -54.4 135.5	6 25.4 -54.2 134.7	6 00.8 -54.1 133.8
19°	6 42.4 -54.8 137.7	6 19.1 -54.6 136.8	5 55.3 -54.4 136.0	5 31.2 -54.2 135.1	5 06.7 -54.0 134.2
20°	5 47.6 -54.8 138.1	5 24.5 -54.6 137.2	5 00.9 -54.4 136.4	4 37.0 -54.3 135.5	4 12.7 -54.1 134.7
21°	4 52.8 -54.8 138.5	4 29.9 -54.7 137.7	4 06.5 -54.5 136.8	3 42.7 -54.2 136.0	3 18.6 -54.0 135.1
22°	3 58.0 -54.8 138.9	3 35.2 -54.6 138.1	3 12.0 -54.4 137.2	2 48.5 -54.3 136.4	2 24.6 -54.1 135.5
23°	3 03.2 -54.8 139.3	2 40.6 -54.7 138.5	2 17.6 -54.5 137.6	1 54.2 -54.3 136.8	1 30.5 -54.1 136.0
24°	2 08.4 -54.9 139.7	1 45.9 -54.6 138.9	1 23.1 -54.4 138.1	0 59.9 -54.2 137.2	0 36.4 -54.1 136.4
25°	1 13.5 -54.8 140.1	0 51.3 -54.7 139.3	0 28.7 -54.5 138.5	0 05.7 -54.3 137.7	-0 17.7 -54.1
26°	0 18.7 -54.8 140.5	-0 03.4 -54.6	-0 25.8 -54.5	-0 48.6 -54.3	-1 11.8 -54.1
27°	-0 36.1 -54.9	-0 58.0 -54.7	-1 20.3 -54.4	-1 42.9 -54.2	-2 05.9 -54.0
28°	-1 31.0 -54.8	-1 52.7 -54.6	-2 14.7 -54.5	-2 37.1 -54.3	-2 59.9 -54.1
29°	-2 25.8 -54.9	-2 47.3 -54.6	-3 09.2 -54.4	-3 31.4 -54.3	-3 54.0 -54.0

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°	21 38.1 -52.9 124.5	21 09.6 -52.8 123.6	20 40.7 -52.6 122.6	20 11.6 -52.4 121.7	19 42.2 -52.3 120.8
1°	20 45.2 -53.0 125.0	20 16.8 -52.8 124.1	19 48.1 -52.6 123.1	19 19.2 -52.5 122.2	18 49.9 -52.3 121.3
2°	19 52.2 -53.1 125.5	19 24.0 -52.9 124.6	18 55.5 -52.8 123.6	18 26.7 -52.6 122.7	17 57.6 -52.4 121.8
3°	18 59.1 -53.2 126.0	18 31.1 -53.0 125.1	18 02.7 -52.8 124.1	17 34.1 -52.7 123.2	17 05.2 -52.5 122.3
4°	18 05.9 -53.2 126.5	17 38.1 -53.1 125.6	17 09.9 -52.9 124.6	16 41.4 -52.7 123.7	16 12.7 -52.6 122.8
5°	17 12.7 -53.4 127.0	16 45.0 -53.1 126.1	16 17.0 -53.0 125.1	15 48.7 -52.8 124.2	15 20.1 -52.6 123.3
6°	16 19.3 -53.3 127.5	15 51.9 -53.2 126.5	15 24.0 -53.0 125.6	14 55.9 -52.8 124.7	14 27.5 -52.7 123.8
7°	15 26.0 -53.5 127.9	14 58.7 -53.3 127.0	14 31.0 -53.1 126.1	14 03.1 -53.0 125.2	13 34.8 -52.8 124.3
8°	14 32.5 -53.4 128.4	14 05.4 -53.3 127.5	13 37.9 -53.1 126.6	13 10.1 -52.9 125.7	12 42.0 -52.8 124.8
9°	13 39.1 -53.6 128.9	13 12.1 -53.4 128.0	12 44.8 -53.2 127.1	12 17.2 -53.1 126.2	11 49.2 -52.8 125.3
10°	12 45.5 -53.6 129.3	12 18.7 -53.4 128.4	11 51.6 -53.2 127.5	11 24.1 -53.0 126.6	10 56.4 -52.9 125.8
11°	11 51.9 -53.6 129.8	11 25.3 -53.5 128.9	10 58.4 -53.3 128.0	10 31.1 -53.1 127.1	10 03.5 -53.0 126.2
12°	10 58.3 -53.7 130.2	10 31.8 -53.4 129.4	10 05.1 -53.4 128.5	9 38.0 -53.2 127.6	9 10.5 -52.9 126.7
13°	10 04.6 -53.7 130.7	9 38.4 -53.6 129.8	9 11.7 -53.3 128.9	8 44.8 -53.2 128.1	8 17.6 -53.0 127.2
14°	9 10.9 -53.7 131.2	8 44.8 -53.6 130.3	8 18.4 -53.4 129.4	7 51.6 -53.2 128.5	7 24.6 -53.1 127.7
15°	8 17.2 -53.8 131.6	7 51.2 -53.5 130.7	7 25.0 -53.4 129.9	6 58.4 -53.2 129.0	6 31.5 -53.1 128.1
16°	7 23.4 -53.8 132.1	6 57.7 -53.7 131.2	6 31.6 -53.5 130.3	6 05.2 -53.3 129.5	5 38.4 -53.0 128.6
17°	6 29.6 -53.8 132.5	6 04.0 -53.6 131.6	5 38.1 -53.4 130.8	5 11.9 -53.3 129.9	4 45.4 -53.2 129.1
18°	5 35.8 -53.9 132.9	5 10.4 -53.7 132.1	4 44.7 -53.5 131.2	4 18.6 -53.3 130.4	3 52.2 -53.1 129.5
19°	4 41.9 -53.9 133.4	4 16.7 -53.7 132.5	3 51.2 -53.5 131.7	3 25.3 -53.3 130.8	2 59.1 -53.1 130.0
20°	3 48.0 -53.8 133.8	3 23.0 -53.7 133.0	2 57.7 -53.5 132.1	2 32.0 -53.3 131.3	2 06.0 -53.2 130.5
21°	2 54.2 -53.9 134.3	2 29.3 -53.7 133.4	2 04.2 -53.5 132.6	1 38.7 -53.3 131.8	1 12.8 -53.1 130.9
22°	2 00.3 -53.9 134.7	1 35.6 -53.7 133.9	1 10.7 -53.6 133.0	0 45.4 -53.4 132.2	0 19.7 -53.1 131.4
23°	1 06.4 -53.9 135.1	0 41.9 -53.7 134.3	0 17.1 -53.5 133.5	-0 08.0 -53.3	-0 33.4 -53.2
24°	0 12.5 -53.9 135.6	-0 11.8 -53.7	-0 36.4 -53.5	-1 01.3 -53.3	-1 26.6 -53.1
25°	-0 41.4 -53.9	-1 05.5 -53.7	-1 29.9 -53.5	-1 54.6 -53.4	-2 19.7 -53.2
26°	-1 35.3 -53.9	-1 59.2 -53.7	-2 23.4 -53.5	-2 48.0 -53.3	-3 12.9 -53.1
27°	-2 29.2 -53.9	-2 52.9 -53.7	-3 16.9 -53.5	-3 41.3 -53.3	-4 06.0 -53.1
28°	-3 23.1 -53.8	-3 46.6 -53.6	-4 10.4 -53.5	-4 34.6 -53.3	-4 59.1 -53.1
29°	-4 16.9 -53.9	-4 40.2 -53.7	-5 03.9 -53.4	-5 27.9 -53.2	-5 52.2 -53.0

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°	19 12.4 -52.0 119.8	18 42.5 -52.0 118.9	18 12.2 -51.8 118.0	17 41.7 -51.6 117.1	17 10.9 -51.4 116.2
1°	18 20.4 -52.2 120.4	17 50.5 -52.0 119.4	17 20.4 -51.8 118.5	16 50.1 -51.7 117.6	16 19.5 -51.6 116.7
2°	17 28.2 -52.3 120.9	16 58.5 -52.1 120.0	16 28.6 -52.0 119.1	15 58.4 -51.8 118.2	15 27.9 -51.7 117.3
3°	16 35.9 -52.3 121.4	16 06.4 -52.2 120.5	15 36.6 -52.0 119.6	15 06.6 -51.9 118.7	14 36.2 -51.7 117.8
4°	15 43.6 -52.4 121.9	15 14.2 -52.2 121.0	14 44.6 -52.1 120.1	14 14.7 -51.9 119.2	13 44.5 -51.7 118.3
5°	14 51.2 -52.5 122.4	14 22.0 -52.3 121.5	13 52.5 -52.1 120.6	13 22.8 -52.0 119.7	12 52.8 -51.9 118.8
6°	13 58.7 -52.5 122.9	13 29.7 -52.4 122.0	13 00.4 -52.2 121.1	12 30.8 -52.1 120.2	12 00.9 -51.9 119.4
7°	13 06.2 -52.6 123.4	12 37.3 -52.4 122.5	12 08.2 -52.3 121.6	11 38.7 -52.1 120.7	11 09.0 -51.9 119.9
8°	12 13.6 -52.6 123.9	11 44.9 -52.5 123.0	11 15.9 -52.3 122.1	10 46.6 -52.1 121.3	10 17.1 -52.0 120.4
9°	11 21.0 -52.7 124.4	10 52.4 -52.5 123.5	10 23.6 -52.4 122.6	9 54.5 -52.2 121.8	9 25.1 -52.1 120.9
10°	10 28.3 -52.7 124.9	9 59.9 -52.6 124.0	9 31.2 -52.4 123.1	9 02.3 -52.3 122.3	8 33.0 -52.0 121.4
11°	9 35.6 -52.8 125.4	9 07.3 -52.6 124.5	8 38.8 -52.4 123.6	8 10.0 -52.2 122.8	7 41.0 -52.2 121.9
12°	8 42.8 -52.8 125.8	8 14.7 -52.6 125.0	7 46.4 -52.5 124.1	7 17.8 -52.3 123.2	6 48.8 -52.1 122.4
13°	7 50.0 -52.8 126.3	7 22.1 -52.7 125.5	6 53.9 -52.5 124.6	6 25.5 -52.4 123.7	5 56.7 -52.2 122.9
14°	6 57.2 -52.9 126.8	6 29.4 -52.7 125.9	6 01.4 -52.5 125.1	5 33.1 -52.3 124.2	5 04.5 -52.2 123.4
15°	6 04.3 -52.9 127.3	5 36.7 -52.7 126.4	5 08.9 -52.5 125.6	4 40.8 -52.4 124.7	4 12.3 -52.2 123.9
16°	5 11.4 -52.9 127.8	4 44.0 -52.7 126.9	4 16.4 -52.6 126.1	3 48.4 -52.4 125.2	3 20.1 -52.2 124.4
17°	4 18.5 -53.0 128.2	3 51.3 -52.8 127.4	3 23.8 -52.6 126.5	2 56.0 -52.4 125.7	2 27.9 -52.2 124.9
18°	3 25.5 -52.9 128.7	2 58.5 -52.7 127.9	2 31.2 -52.6 127.0	2 03.6 -52.4 126.2	1 35.7 -52.3 125.4
19°	2 32.6 -53.0 129.2	2 05.8 -52.8 128.3	1 38.6 -52.6 127.5	1 11.2 -52.5 126.7	0 43.4 -52.2 125.9
20°	1 39.6 -52.9 129.6	1 13.0 -52.8 128.8	0 46.0 -52.6 128.0	0 18.7 -52.4 127.2	-0 08.8 -52.3
21°	0 46.7 -53.0 130.1	0 20.2 -52.8 129.3	-0 06.6 -52.6	-0 33.7 -52.4	-1 01.1 -52.2
22°	-0 06.3 -52.9	-0 32.6 -52.8	-0 59.2 -52.6	-1 26.1 -52.4	-1 53.3 -52.3
23°	-0 59.2 -53.0	-1 25.4 -52.7	-1 51.8 -52.6	-2 18.5 -52.4	-2 45.6 -52.2
24°	-1 52.2 -53.0	-2 18.1 -52.8	-2 44.4 -52.5	-3 10.9 -52.4	-3 37.8 -52.2
25°	-2 45.2 -52.9	-3 10.9 -52.7	-3 36.9 -52.6	-4 03.3 -52.4	-4 30.0 -52.2
26°	-3 38.1 -52.9	-4 03.6 -52.8	-4 29.5 -52.6	-4 55.7 -52.3	-5 22.2 -52.1
27°	-4 31.0 -52.9	-4 56.4 -52.7	-5 22.1 -52.5	-5 48.0 -52.4	-6 14.3 -52.2
28°	-5 23.9 -52.9	-5 49.1 -52.7	-6 14.6 -52.5	-6 40.4 -52.3	-7 06.5 -52.1
29°	-6 16.8 -52.9	-6 41.8 -52.6	-7 07.1 -52.4	-7 32.7 -52.2	-7 58.6 -52.0

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°	16 39.9 -51.3 115.3	16 08.7 -51.2 114.4	15 37.3 -51.1 113.5	15 05.6 -50.9 112.7	14 33.8 -50.9 111.8
1°	15 48.6 -51.4 115.9	15 17.5 -51.3 115.0	14 46.2 -51.1 114.1	14 14.7 -51.0 113.2	13 42.9 -50.8 112.3
2°	14 57.2 -51.5 116.4	14 26.2 -51.3 115.5	13 55.1 -51.3 114.6	13 23.7 -51.1 113.7	12 52.1 -51.0 112.9
3°	14 05.7 -51.6 116.9	13 34.9 -51.5 116.0	13 03.8 -51.3 115.2	12 32.6 -51.2 114.3	12 01.1 -51.0 113.4
4°	13 14.1 -51.6 117.4	12 43.4 -51.4 116.6	12 12.5 -51.3 115.7	11 41.4 -51.2 114.8	11 10.1 -51.1 113.9
5°	12 22.5 -51.7 118.0	11 52.0 -51.6 117.1	11 21.2 -51.4 116.2	10 50.2 -51.3 115.3	10 19.0 -51.1 114.5
6°	11 30.8 -51.8 118.5	11 00.4 -51.6 117.6	10 29.8 -51.5 116.7	9 58.9 -51.3 115.9	9 27.9 -51.2 115.0
7°	10 39.0 -51.8 119.0	10 08.8 -51.6 118.1	9 38.3 -51.5 117.3	9 07.6 -51.3 116.4	8 36.7 -51.2 115.5
8°	9 47.2 -51.8 119.5	9 17.2 -51.7 118.6	8 46.8 -51.5 117.8	8 16.3 -51.4 116.9	7 45.5 -51.3 116.1
9°	8 55.4 -51.9 120.0	8 25.5 -51.8 119.2	7 55.3 -51.6 118.3	7 24.9 -51.5 117.4	6 54.2 -51.3 116.6
10°	8 03.5 -51.9 120.5	7 33.7 -51.7 119.7	7 03.7 -51.6 118.8	6 33.4 -51.4 118.0	6 02.9 -51.3 117.1
11°	7 11.6 -52.0 121.0	6 42.0 -51.8 120.2	6 12.1 -51.6 119.3	5 42.0 -51.5 118.5	5 11.6 -51.3 117.6
12°	6 19.6 -51.9 121.5	5 50.2 -51.8 120.7	5 20.5 -51.7 119.8	4 50.5 -51.5 119.0	4 20.3 -51.4 118.2
13°	5 27.7 -52.0 122.0	4 58.4 -51.9 121.2	4 28.8 -51.7 120.4	3 59.0 -51.6 119.5	3 28.9 -51.4 118.7
14°	4 35.7 -52.1 122.5	4 06.5 -51.9 121.7	3 37.1 -51.7 120.9	3 07.4 -51.5 120.0	2 37.5 -51.4 119.2
15°	3 43.6 -52.0 123.0	3 14.6 -51.8 122.2	2 45.4 -51.7 121.4	2 15.9 -51.6 120.5	1 46.1 -51.4 119.7
16°	2 51.6 -52.1 123.5	2 22.8 -51.9 122.7	1 53.7 -51.8 121.9	1 24.3 -51.6 121.0	0 54.7 -51.4 120.2
17°	1 59.5 -52.0 124.0	1 30.9 -51.9 123.2	1 01.9 -51.7 122.4	0 32.7 -51.5 121.6	0 03.3 -51.4 120.7
18°	1 07.5 -52.1 124.5	0 39.0 -51.9 123.7	0 10.2 -51.7 122.9	-0 18.8 -51.6	-0 48.1 -51.4
19°	0 15.4 -52.1 125.0	-0 12.9 -51.9	-0 41.5 -51.8	-1 10.4 -51.6	-1 39.5 -51.4
20°	-0 36.7 -52.1	-1 04.8 -51.9	-1 33.3 -51.7	-2 02.0 -51.5	-2 30.9 -51.4
21°	-1 28.8 -52.0	-1 56.7 -51.9	-2 25.0 -51.7	-2 53.5 -51.6	-3 22.3 -51.4
22°	-2 20.8 -52.1	-2 48.6 -51.9	-3 16.7 -51.7	-3 45.1 -51.5	-4 13.7 -51.3
23°	-3 12.9 -52.0	-3 40.5 -51.9	-4 08.4 -51.7	-4 36.6 -51.5	-5 05.0 -51.4
24°	-4 04.9 -52.0	-4 32.4 -51.8	-5 00.1 -51.6	-5 28.1 -51.5	-5 56.4 -51.3
25°	-4 56.9 -52.0	-5 24.2 -51.8	-5 51.7 -51.7	-6 19.6 -51.4	-6 47.7 -51.2
26°	-5 48.9 -52.0	-6 16.0 -51.8	-6 43.4 -51.6	-7 11.0 -51.4	-7 38.9 -51.3
27°	-6 40.9 -52.0	-7 07.8 -51.7	-7 35.0 -51.5	-8 02.4 -51.4	-8 30.2 -51.1
28°	-7 32.9 -51.9	-7 59.5 -51.8	-8 26.5 -51.5	-8 53.8 -51.3	-9 21.3 -51.2
29°	-8 24.8 -51.8	-8 51.3 -51.6	-9 18.0 -51.5	-9 45.1 -51.3	

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°	14 01.7 -50.7 110.9	13 29.5 -50.6 110.0	12 57.0 -50.4 109.2	12 24.5 -50.4 108.3	11 51.7 -50.2 107.5
1°	13 11.0 -50.8 111.5	12 38.9 -50.7 110.6	12 06.6 -50.6 109.7	11 34.1 -50.4 108.9	11 01.5 -50.4 108.0
2°	12 20.2 -50.8 112.0	11 48.2 -50.7 111.1	11 16.0 -50.5 110.3	10 43.7 -50.5 109.4	10 11.1 -50.3 108.6
3°	11 29.4 -50.9 112.5	10 57.5 -50.7 111.7	10 25.5 -50.7 110.8	9 53.2 -50.5 110.0	9 20.8 -50.5 109.1
4°	10 38.5 -50.9 113.1	10 06.8 -50.9 112.2	9 34.8 -50.7 111.4	9 02.7 -50.6 110.5	8 30.3 -50.4 109.7
5°	9 47.6 -51.0 113.6	9 15.9 -50.8 112.8	8 44.1 -50.7 111.9	8 12.1 -50.6 111.1	7 39.9 -50.5 110.2
6°	8 56.6 -51.1 114.2	8 25.1 -50.9 113.3	7 53.4 -50.8 112.5	7 21.5 -50.7 111.6	6 49.4 -50.6 110.8
7°	8 05.5 -51.0 114.7	7 34.2 -51.0 113.8	7 02.6 -50.8 113.0	6 30.8 -50.7 112.1	5 58.8 -50.5 111.3
8°	7 14.5 -51.2 115.2	6 43.2 -51.0 114.4	6 11.8 -50.9 113.5	5 40.1 -50.7 112.7	5 08.3 -50.7 111.8
9°	6 23.3 -51.1 115.7	5 52.2 -51.0 114.9	5 20.9 -50.9 114.1	4 49.4 -50.8 113.2	4 17.6 -50.6 112.4
10°	5 32.2 -51.2 116.3	5 01.2 -51.0 115.4	4 30.0 -50.9 114.6	3 58.6 -50.7 113.8	3 27.0 -50.6 112.9
11°	4 41.0 -51.2 116.8	4 10.2 -51.1 116.0	3 39.1 -50.9 115.1	3 07.9 -50.8 114.3	2 36.4 -50.7 113.5
12°	3 49.8 -51.2 117.3	3 19.1 -51.1 116.5	2 48.2 -50.9 115.6	2 17.1 -50.8 114.8	1 45.7 -50.6 114.0
13°	2 58.6 -51.3 117.8	2 28.0 -51.1 117.0	1 57.3 -51.0 116.2	1 26.3 -50.8 115.4	0 55.1 -50.7 114.5
14°	2 07.3 -51.2 118.4	1 36.9 -51.1 117.5	1 06.3 -50.9 116.7	0 35.5 -50.9 115.9	0 04.4 -50.7 115.1
15°	1 16.1 -51.3 118.9	0 45.8 -51.1 118.1	0 15.4 -51.0 117.2	-0 15.4 -50.8	-0 46.3 -50.7
16°	0 24.8 -51.2 119.4	-0 05.3 -51.1	-0 35.6 -51.0	-1 06.2 -50.8	-1 37.0 -50.6
17°	-0 26.4 -51.3	-0 56.4 -51.1	-1 26.6 -50.9	-1 57.0 -50.8	-2 27.6 -50.7
18°	-1 17.7 -51.2	-1 47.5 -51.1	-2 17.5 -50.9	-2 47.8 -50.7	-3 18.3 -50.6
19°	-2 08.9 -51.3	-2 38.6 -51.0	-3 08.4 -51.0	-3 38.5 -50.8	-4 08.9 -50.6
20°	-3 00.2 -51.2	-3 29.6 -51.1	-3 59.4 -50.8	-4 29.3 -50.7	-4 59.5 -50.6
21°	-3 51.4 -51.2	-4 20.7 -51.0	-4 50.2 -50.9	-5 20.0 -50.8	-5 50.1 -50.5
22°	-4 42.6 -51.2	-5 11.7 -51.0	-5 41.1 -50.9	-6 10.8 -50.6	-6 40.6 -50.5
23°	-5 33.8 -51.1	-6 02.7 -51.0	-6 32.0 -50.8	-7 01.4 -50.7	-7 31.1 -50.5
24°	-6 24.9 -51.1	-6 53.7 -51.0	-7 22.8 -50.7	-7 52.1 -50.6	-8 21.6 -50.5
25°	-7 16.0 -51.1	-7 44.7 -50.9	-8 13.5 -50.8	-8 42.7 -50.5	-9 12.1 -50.3
26°	-8 07.1 -51.1	-8 35.6 -50.8	-9 04.3 -50.6	-9 33.2 -50.5	
27°	-8 58.2 -50.9	-9 26.4 -50.8	-9 54.9 -50.7		
28°	-9 49.1 -51.0				
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°	11 18.8 -50.2 106.6	10 45.7 -50.0 105.8	10 12.6 -50.0 104.9	9 39.2 -49.8 104.1	9 05.8 -49.8 103.2
1°	10 28.6 -50.2 107.2	9 55.7 -50.1 106.3	9 22.6 -50.0 105.5	8 49.4 -50.0 104.6	8 16.0 -49.9 103.8
2°	9 38.4 -50.2 107.7	9 05.6 -50.2 106.9	8 32.6 -50.1 106.0	7 59.4 -50.0 105.2	7 26.1 -49.8 104.3
3°	8 48.2 -50.3 108.3	8 15.4 -50.2 107.4	7 42.5 -50.1 106.6	7 09.4 -50.0 105.7	6 36.3 -50.0 104.9
4°	7 57.9 -50.4 108.8	7 25.2 -50.2 108.0	6 52.4 -50.2 107.1	6 19.4 -50.0 106.3	5 46.3 -49.9 105.5
5°	7 07.5 -50.4 109.4	6 35.0 -50.3 108.5	6 02.2 -50.1 107.7	5 29.4 -50.1 106.9	4 56.4 -50.0 106.0
6°	6 17.1 -50.4 109.9	5 44.7 -50.4 109.1	5 12.1 -50.3 108.2	4 39.3 -50.1 107.4	4 06.4 -50.0 106.6
7°	5 26.7 -50.5 110.5	4 54.3 -50.3 109.6	4 21.8 -50.2 108.8	3 49.2 -50.1 108.0	3 16.4 -50.1 107.1
8°	4 36.2 -50.5 111.0	4 04.0 -50.4 110.2	3 31.6 -50.2 109.3	2 59.1 -50.2 108.5	2 26.3 -50.0 107.7
9°	3 45.7 -50.5 111.5	3 13.6 -50.4 110.7	2 41.4 -50.3 109.9	2 08.9 -50.1 109.1	1 36.3 -50.1 108.2
10°	2 55.2 -50.5 112.1	2 23.2 -50.3 111.3	1 51.1 -50.3 110.4	1 18.8 -50.2 109.6	0 46.2 -50.0 108.8
11°	2 04.7 -50.5 112.6	1 32.9 -50.5 111.8	1 00.8 -50.3 111.0	0 28.6 -50.2 110.2	-0 03.8 -50.1
12°	1 14.2 -50.6 113.2	0 42.4 -50.4 112.3	0 10.5 -50.3 111.5	-0 21.6 -50.1	-0 53.9 -50.0
13°	0 23.6 -50.5 113.7	-0 08.0 -50.4	-0 39.8 -50.2	-1 11.7 -50.2	-1 43.9 -50.1
14°	-0 26.9 -50.5	-0 58.4 -50.4	-1 30.0 -50.3	-2 01.9 -50.2	-2 34.0 -50.0
15°	-1 17.4 -50.6	-1 48.8 -50.4	-2 20.3 -50.3	-2 52.1 -50.1	-3 24.0 -50.0
16°	-2 08.0 -50.5	-2 39.2 -50.4	-3 10.6 -50.2	-3 42.2 -50.1	-4 14.0 -50.0
17°	-2 58.5 -50.5	-3 29.6 -50.3	-4 00.8 -50.3	-4 32.3 -50.1	-5 04.0 -49.9
18°	-3 49.0 -50.5	-4 19.9 -50.3	-4 51.1 -50.1	-5 22.4 -50.0	-5 53.9 -49.9
19°	-4 39.5 -50.4	-5 10.2 -50.4	-5 41.2 -50.2	-6 12.4 -50.1	-6 43.8 -49.9
20°	-5 29.9 -50.4	-6 00.6 -50.2	-6 31.4 -50.1	-7 02.5 -50.0	-7 33.7 -49.9
21°	-6 20.3 -50.4	-6 50.8 -50.3	-7 21.5 -50.1	-7 52.5 -49.9	-8 23.6 -49.8
22°	-7 10.7 -50.4	-7 41.1 -50.2	-8 11.6 -50.1	-8 42.4 -49.9	-9 13.4 -49.7
23°	-8 01.1 -50.3	-8 31.3 -50.1	-9 01.7 -50.0	-9 32.3 -49.8	
24°	-8 51.4 -50.3	-9 21.4 -50.1	-9 51.7 -49.9		
25°	-9 41.7 -50.2				
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°	8 32.2 -49.7 102.4	7 58.6 -49.7 101.5	7 24.8 -49.6 100.7	6 50.9 -49.5 99.9	6 17.0 -49.5 99.0
1°	7 42.5 -49.8 102.9	7 08.9 -49.7 102.1	6 35.2 -49.6 101.3	6 01.4 -49.5 100.4	5 27.5 -49.5 99.6
2°	6 52.7 -49.8 103.5	6 19.2 -49.7 102.7	5 45.6 -49.7 101.8	5 11.9 -49.6 101.0	4 38.0 -49.5 100.2
3°	6 02.9 -49.8 104.1	5 29.5 -49.8 103.2	4 55.9 -49.6 102.4	4 22.3 -49.6 101.6	3 48.5 -49.5 100.7
4°	5 13.1 -49.9 104.6	4 39.7 -49.8 103.8	4 06.3 -49.8 103.0	3 32.7 -49.7 102.1	2 59.0 -49.6 101.3
5°	4 23.2 -49.9 105.2	3 49.9 -49.8 104.4	3 16.5 -49.7 103.5	2 43.0 -49.6 102.7	2 09.4 -49.6 101.9
6°	3 33.3 -49.9 105.7	3 00.1 -49.8 104.9	2 26.8 -49.7 104.1	1 53.4 -49.7 103.3	1 19.8 -49.6 102.4
7°	2 43.4 -49.9 106.3	2 10.3 -49.8 105.5	1 37.1 -49.8 104.6	1 03.7 -49.6 103.8	0 30.2 -49.5 103.0
8°	1 53.5 -50.0 106.9	1 20.5 -49.9 106.0	0 47.3 -49.7 105.2	0 14.1 -49.7 104.4	-0 19.3 -49.6
9°	1 03.5 -49.9 107.4	0 30.6 -49.8 106.6	-0 02.4 -49.8	-0 35.6 -49.7	-1 08.9 -49.6
10°	0 13.6 -50.0 108.0	-0 19.2 -49.9	-0 52.2 -49.7	-1 25.3 -49.6	-1 58.5 -49.6
11°	-0 36.4 -49.9	-1 09.1 -49.8	-1 41.9 -49.8	-2 14.9 -49.7	-2 48.1 -49.5
12°	-1 26.3 -49.9	-1 58.9 -49.8	-2 31.7 -49.7	-3 04.6 -49.6	-3 37.6 -49.5
13°	-2 16.2 -50.0	-2 48.7 -49.9	-3 21.4 -49.7	-3 54.2 -49.6	-4 27.1 -49.5
14°	-3 06.2 -49.9	-3 38.6 -49.7	-4 11.1 -49.7	-4 43.8 -49.6	-5 16.6 -49.5
15°	-3 56.1 -49.9	-4 28.3 -49.8	-5 00.8 -49.6	-5 33.4 -49.5	-6 06.1 -49.5
16°	-4 46.0 -49.8	-5 18.1 -49.8	-5 50.4 -49.7	-6 22.9 -49.5	-6 55.6 -49.3
17°	-5 35.8 -49.8	-6 07.9 -49.7	-6 40.1 -49.5	-7 12.4 -49.5	-7 44.9 -49.4
18°	-6 25.6 -49.8	-6 57.6 -49.6	-7 29.6 -49.6	-8 01.9 -49.4	-8 34.3 -49.3
19°	-7 15.4 -49.8	-7 47.2 -49.6	-8 19.2 -49.5	-8 51.3 -49.4	-9 23.6 -49.2
20°	-8 05.2 -49.7	-8 36.8 -49.6	-9 08.7 -49.4	-9 40.7 -49.3	
21°	-8 54.9 -49.6	-9 26.4 -49.5	-9 58.1 -49.4		
22°	-9 44.5 -49.6				
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°	5 43.0 -49.4 98.2	5 08.9 -49.4 97.4	4 34.7 -49.3 96.6	4 00.5 -49.3 95.7	3 26.2 -49.2 94.9
1°	4 53.6 -49.5 98.8	4 19.5 -49.4 98.0	3 45.4 -49.3 97.1	3 11.2 -49.3 96.3	2 37.0 -49.3 95.5
2°	4 04.1 -49.4 99.4	3 30.1 -49.4 98.5	2 56.1 -49.4 97.7	2 21.9 -49.3 96.9	1 47.7 -49.2 96.1
3°	3 14.7 -49.5 99.9	2 40.7 -49.4 99.1	2 06.7 -49.4 98.3	1 32.6 -49.3 97.5	0 58.5 -49.3 96.6
4°	2 25.2 -49.5 100.5	1 51.3 -49.4 99.7	1 17.3 -49.4 98.8	0 43.3 -49.3 98.0	0 09.2 -49.3 97.2
5°	1 35.7 -49.5 101.1	1 01.9 -49.5 100.2	0 27.9 -49.3 99.4	-0 06.0 -49.4	-0 40.1 -49.3
6°	0 46.2 -49.5 101.6	0 12.4 -49.4 100.8	-0 21.4 -49.4	-0 55.4 -49.3	-1 29.4 -49.3
7°	-0 03.3 -49.5	-0 37.0 -49.5	-1 10.8 -49.4	-1 44.7 -49.3	-2 18.7 -49.2
8°	-0 52.8 -49.6	-1 26.5 -49.4	-2 00.2 -49.3	-2 34.0 -49.3	-3 07.9 -49.2
9°	-1 42.4 -49.4	-2 15.9 -49.4	-2 49.5 -49.4	-3 23.3 -49.3	-3 57.1 -49.3
10°	-2 31.8 -49.5	-3 05.3 -49.4	-3 38.9 -49.3	-4 12.6 -49.2	-4 46.4 -49.1
11°	-3 21.3 -49.5	-3 54.7 -49.4	-4 28.2 -49.3	-5 01.8 -49.2	-5 35.5 -49.2
12°	-4 10.8 -49.4	-4 44.1 -49.3	-5 17.5 -49.3	-5 51.0 -49.2	-6 24.7 -49.1
13°	-5 00.2 -49.4	-5 33.4 -49.4	-6 06.8 -49.2	-6 40.2 -49.2	-7 13.8 -49.1
14°	-5 49.6 -49.4	-6 22.8 -49.2	-6 56.0 -49.2	-7 29.4 -49.1	-8 02.9 -49.0
15°	-6 39.0 -49.3	-7 12.0 -49.3	-7 45.2 -49.1	-8 18.5 -49.0	-8 51.9 -48.9
16°	-7 28.3 -49.3	-8 01.3 -49.2	-8 34.3 -49.1	-9 07.5 -49.0	-9 40.8 -48.9
17°	-8 17.6 -49.3	-8 50.5 -49.1	-9 23.4 -49.0	-9 56.5 -48.9	
18°	-9 06.9 -49.1	-9 39.6 -49.1			
19°	-9 56.0 -49.2				
20°					
21°					
22°					
23°					
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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 51.9 -49.2 94.1	2 17.6 -49.2 93.3	1 43.2 -49.2 92.5	1 08.8 -49.1 91.6	0 34.4 -49.1 90.8
1°	2 02.7 -49.2 94.7	1 28.4 -49.2 93.9	0 54.0 -49.1 93.0	0 19.7 -49.2 92.2	-0 14.7 -49.2
2°	1 13.5 -49.3 95.2	0 39.2 -49.2 94.4	0 04.9 -49.2 93.6	-0 29.5 -49.2	-1 03.9 -49.1
3°	0 24.2 -49.2 95.8	-0 10.0 -49.2	-0 44.3 -49.2	-1 18.7 -49.1	-1 53.0 -49.2
4°	-0 25.0 -49.2	-0 59.2 -49.2	-1 33.5 -49.2	-2 07.8 -49.2	-2 42.2 -49.1
5°	-1 14.2 -49.3	-1 48.4 -49.2	-2 22.7 -49.1	-2 57.0 -49.1	-3 31.3 -49.1
6°	-2 03.5 -49.2	-2 37.6 -49.2	-3 11.8 -49.2	-3 46.1 -49.1	-4 20.4 -49.1
7°	-2 52.7 -49.2	-3 26.8 -49.1	-4 01.0 -49.1	-4 35.2 -49.1	-5 09.5 -49.0
8°	-3 41.9 -49.2	-4 15.9 -49.2	-4 50.1 -49.0	-5 24.3 -49.0	-5 58.5 -49.0
9°	-4 31.1 -49.1	-5 05.1 -49.1	-5 39.1 -49.1	-6 13.3 -49.0	-6 47.5 -48.9
10°	-5 20.2 -49.1	-5 54.2 -49.0	-6 28.2 -49.0	-7 02.3 -48.9	-7 36.4 -49.0
11°	-6 09.3 -49.1	-6 43.2 -49.0	-7 17.2 -49.0	-7 51.2 -49.0	-8 25.4 -48.8
12°	-6 58.4 -49.1	-7 32.2 -49.0	-8 06.2 -48.9	-8 40.2 -48.8	-9 14.2 -48.8
13°	-7 47.5 -49.0	-8 21.2 -48.9	-8 55.1 -48.8	-9 29.0 -48.8	
14°	-8 36.5 -48.9	-9 10.1 -48.9	-9 43.9 -48.8		
15°	-9 25.4 -48.9	-9 59.0 -48.8			
16°					
17°					
18°					
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28°					
29°					

Latitude 55°

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 -49.1 90.0	-0 34.4 -49.2			
1°	-0 49.1 -49.2	-1 23.6 -49.1			
2°	-1 38.3 -49.1	-2 12.7 -49.1			
3°	-2 27.4 -49.1	-3 01.8 -49.1			
4°	-3 16.5 -49.1	-3 50.9 -49.1			
5°	-4 05.6 -49.1	-4 40.0 -49.1			
6°	-4 54.7 -49.1	-5 29.1 -49.0			
7°	-5 43.8 -49.0	-6 18.1 -49.0			
8°	-6 32.8 -48.9	-7 07.1 -48.9			
9°	-7 21.7 -49.0	-7 56.0 -48.9			
10°	-8 10.7 -48.8	-8 44.9 -48.9			
11°	-8 59.5 -48.9	-9 33.8 -48.7			
12°	-9 48.4 -48.7				
13°					
14°					
15°					
16°					
17°					
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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°	34 00.0 -60.0 180.0	33 59.6 -59.9 178.8	33 58.6 -60.0 177.6	33 56.8 -59.9 176.4	33 54.4 -60.0 175.2
1°	33 00.0 -60.0 180.0	32 59.7 -60.0 178.8	32 58.6 -60.0 177.6	32 56.9 -60.0 176.4	32 54.4 -59.9 175.2
2°	32 00.0 -60.0 180.0	31 59.7 -60.0 178.8	31 58.6 -60.0 177.6	31 56.9 -60.0 176.5	31 54.5 -60.0 175.3
3°	31 00.0 -60.0 180.0	30 59.7 -60.0 178.8	30 58.6 -59.9 177.7	30 56.9 -59.9 176.5	30 54.5 -59.9 175.3
4°	30 00.0 -60.0 180.0	29 59.7 -60.0 178.8	29 58.7 -60.0 177.7	29 57.0 -60.0 176.5	29 54.6 -59.9 175.4
5°	29 00.0 -60.0 180.0	28 59.7 -60.0 178.9	28 58.7 -60.0 177.7	28 57.0 -60.0 176.6	28 54.7 -60.0 175.4
6°	28 00.0 -60.0 180.0	27 59.7 -60.0 178.9	27 58.7 -60.0 177.7	27 57.0 -59.9 176.6	27 54.7 -59.9 175.5
7°	27 00.0 -60.0 180.0	26 59.7 -60.0 178.9	26 58.7 -60.0 177.8	26 57.1 -60.0 176.7	26 54.8 -60.0 175.5
8°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 58.7 -60.0 177.8	25 57.1 -60.0 176.7	25 54.8 -59.9 175.6
9°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 58.7 -60.0 177.8	24 57.1 -59.9 176.7	24 54.9 -59.9 175.6
10°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.7 -59.9 177.8	23 57.2 -60.0 176.8	23 55.0 -60.0 175.7
11°	23 00.0 -60.0 180.0	22 59.7 -60.0 178.9	22 58.8 -60.0 177.9	22 57.2 -60.0 176.8	22 55.0 -59.9 175.7
12°	22 00.0 -60.0 180.0	21 59.7 -60.0 178.9	21 58.8 -60.0 177.9	21 57.2 -59.9 176.8	21 55.1 -60.0 175.8
13°	21 00.0 -60.0 180.0	20 59.7 -60.0 179.0	20 58.8 -60.0 177.9	20 57.3 -60.0 176.9	20 55.1 -59.9 175.8
14°	20 00.0 -60.0 180.0	19 59.7 -60.0 179.0	19 58.8 -60.0 177.9	19 57.3 -60.0 176.9	19 55.2 -60.0 175.9
15°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.8 -60.0 178.0	18 57.3 -60.0 176.9	18 55.2 -59.9 175.9
16°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 58.8 -60.0 178.0	17 57.3 -59.9 177.0	17 55.3 -60.0 176.0
17°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 58.8 -60.0 178.0	16 57.4 -60.0 177.0	16 55.3 -59.9 176.0
18°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 58.8 -59.9 178.0	15 57.4 -60.0 177.0	15 55.4 -60.0 176.0
19°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.0	14 58.9 -60.0 178.0	14 57.4 -60.0 177.1	14 55.4 -59.9 176.1
20°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.0	13 58.9 -60.0 178.1	13 57.4 -59.9 177.1	13 55.5 -60.0 176.1
21°	13 00.0 -60.0 180.0	12 59.7 -60.0 179.0	12 58.9 -60.0 178.1	12 57.5 -60.0 177.1	12 55.5 -59.9 176.2
22°	12 00.0 -60.0 180.0	11 59.7 -60.0 179.1	11 58.9 -60.0 178.1	11 57.5 -60.0 177.2	11 55.6 -60.0 176.2
23°	11 00.0 -60.0 180.0	10 59.7 -60.0 179.1	10 58.9 -60.0 178.1	10 57.5 -59.9 177.2	10 55.6 -59.9 176.3
24°	10 00.0 -60.0 180.0	9 59.7 -60.0 179.1	9 58.9 -60.0 178.1	9 57.6 -60.0 177.2	9 55.7 -60.0 176.3
25°	9 00.0 -60.0 180.0	8 59.7 -60.0 179.1	8 58.9 -60.0 178.2	8 57.6 -60.0 177.2	8 55.7 -59.9 176.3
26°	8 00.0 -60.0 180.0	7 59.7 -60.0 179.1	7 58.9 -60.0 178.2	7 57.6 -60.0 177.3	7 55.8 -60.0 176.4
27°	7 00.0 -60.0 180.0	6 59.7 -60.0 179.1	6 58.9 -59.9 178.2	6 57.6 -59.9 177.3	6 55.8 -60.0 176.4
28°	6 00.0 -60.0 180.0	5 59.7 -60.0 179.1	5 59.0 -60.0 178.2	5 57.7 -60.0 177.3	5 55.8 -59.9 176.4
29°	5 00.0 -60.0 180.0	4 59.7 -60.0 179.1	4 59.0 -60.0 178.2	4 57.7 -60.0 177.4	4 55.9 -60.0 176.5

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°	33 51.2 -59.9 174.0	33 47.3 -59.8 172.8	33 42.7 -59.8 171.6	33 37.5 -59.8 170.4	33 31.5 -59.6 169.2
1°	32 51.3 -59.9 174.0	32 47.5 -59.9 172.9	32 42.9 -59.8 171.7	32 37.7 -59.7 170.5	32 31.9 -59.7 169.3
2°	31 51.4 -59.9 174.1	31 47.6 -59.9 172.9	31 43.1 -59.8 171.8	31 38.0 -59.8 170.6	31 32.2 -59.7 169.4
3°	30 51.5 -59.9 174.2	30 47.7 -59.8 173.0	30 43.3 -59.8 171.9	30 38.2 -59.7 170.7	30 32.5 -59.7 169.5
4°	29 51.6 -59.9 174.2	29 47.9 -59.9 173.1	29 43.5 -59.8 172.0	29 38.5 -59.8 170.8	29 32.8 -59.7 169.7
5°	28 51.7 -59.9 174.3	28 48.0 -59.9 173.2	28 43.7 -59.8 172.0	28 38.7 -59.7 170.9	28 33.1 -59.7 169.8
6°	27 51.8 -59.9 174.4	27 48.1 -59.8 173.3	27 43.9 -59.8 172.1	27 39.0 -59.8 171.0	27 33.4 -59.7 169.9
7°	26 51.9 -60.0 174.4	26 48.3 -59.9 173.3	26 44.1 -59.9 172.2	26 39.2 -59.8 171.1	26 33.7 -59.7 170.0
8°	25 51.9 -59.9 174.5	25 48.4 -59.9 173.4	25 44.2 -59.8 172.3	25 39.4 -59.8 171.2	25 34.0 -59.7 170.1
9°	24 52.0 -59.9 174.6	24 48.5 -59.8 173.5	24 44.4 -59.8 172.4	24 39.6 -59.7 171.3	24 34.3 -59.8 170.2
10°	23 52.1 -59.9 174.6	23 48.7 -59.9 173.5	23 44.6 -59.9 172.5	23 39.9 -59.8 171.4	23 34.5 -59.7 170.3
11°	22 52.2 -59.9 174.7	22 48.8 -59.9 173.6	22 44.7 -59.8 172.5	22 40.1 -59.8 171.5	22 34.8 -59.7 170.4
12°	21 52.3 -59.9 174.7	21 48.9 -59.9 173.7	21 44.9 -59.8 172.6	21 40.3 -59.8 171.6	21 35.1 -59.8 170.5
13°	20 52.4 -60.0 174.8	20 49.0 -59.9 173.7	20 45.1 -59.9 172.7	20 40.5 -59.8 171.7	20 35.3 -59.7 170.6
14°	19 52.4 -59.9 174.8	19 49.1 -59.9 173.8	19 45.2 -59.8 172.8	19 40.7 -59.8 171.8	19 35.6 -59.7 170.7
15°	18 52.5 -59.9 174.9	18 49.2 -59.8 173.9	18 45.4 -59.9 172.9	18 40.9 -59.8 171.8	18 35.9 -59.8 170.8
16°	17 52.6 -59.9 174.9	17 49.4 -59.9 173.9	17 45.5 -59.8 172.9	17 41.1 -59.8 171.9	17 36.1 -59.7 170.9
17°	16 52.7 -59.9 175.0	16 49.5 -59.9 174.0	16 45.7 -59.9 173.0	16 41.3 -59.8 172.0	16 36.4 -59.8 171.0
18°	15 52.8 -60.0 175.1	15 49.6 -59.9 174.1	15 45.8 -59.8 173.1	15 41.5 -59.8 172.1	15 36.6 -59.7 171.1
19°	14 52.8 -59.9 175.1	14 49.7 -59.9 174.1	14 46.0 -59.9 173.2	14 41.7 -59.8 172.2	14 36.9 -59.8 171.2
20°	13 52.9 -59.9 175.2	13 49.8 -59.9 174.2	13 46.1 -59.8 173.2	13 41.9 -59.8 172.3	13 37.1 -59.8 171.3
21°	12 53.0 -59.9 175.2	12 49.9 -59.9 174.3	12 46.3 -59.9 173.3	12 42.1 -59.8 172.3	12 37.3 -59.7 171.4
22°	11 53.1 -60.0 175.3	11 50.0 -59.9 174.3	11 46.4 -59.8 173.4	11 42.3 -59.8 172.4	11 37.6 -59.8 171.5
23°	10 53.1 -59.9 175.3	10 50.1 -59.9 174.4	10 46.6 -59.9 173.4	10 42.5 -59.8 172.5	10 37.8 -59.7 171.6
24°	9 53.2 -59.9 175.4	9 50.2 -59.9 174.4	9 46.7 -59.8 173.5	9 42.7 -59.9 172.6	9 38.1 -59.8 171.7
25°	8 53.3 -59.9 175.4	8 50.3 -59.9 174.5	8 46.9 -59.9 173.6	8 42.8 -59.8 172.7	8 38.3 -59.8 171.8
26°	7 53.4 -60.0 175.5	7 50.4 -59.9 174.6	7 47.0 -59.9 173.7	7 43.0 -59.8 172.7	7 38.5 -59.7 171.8
27°	6 53.4 -59.9 175.5	6 50.5 -59.8 174.6	6 47.1 -59.8 173.7	6 43.2 -59.8 172.8	6 38.8 -59.8 171.9
28°	5 53.5 -59.9 175.6	5 50.7 -59.9 174.7	5 47.3 -59.9 173.8	5 43.4 -59.8 172.9	5 39.0 -59.8 172.0
29°	4 53.6 -60.0 175.6	4 50.8 -59.9 174.7	4 47.4 -59.8 173.9	4 43.6 -59.8 173.0	4 39.2 -59.7 172.1

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°	33 24.9 -59.6 168.0	33 17.6 -59.5 166.8	33 09.6 -59.4 165.6	33 00.9 -59.3 164.4	32 51.6 -59.2 163.3
1°	32 25.3 -59.6 168.1	32 18.1 -59.6 167.0	32 10.2 -59.5 165.8	32 01.6 -59.4 164.6	31 52.4 -59.3 163.5
2°	31 25.7 -59.6 168.3	31 18.5 -59.5 167.1	31 10.7 -59.4 165.9	31 02.2 -59.3 164.8	30 53.1 -59.2 163.6
3°	30 26.1 -59.6 168.4	30 19.0 -59.5 167.2	30 11.3 -59.5 166.1	30 02.9 -59.4 165.0	29 53.9 -59.3 163.8
4°	29 26.5 -59.7 168.5	29 19.5 -59.6 167.4	29 11.8 -59.5 166.3	29 03.5 -59.4 165.1	28 54.6 -59.3 164.0
5°	28 26.8 -59.6 168.7	28 19.9 -59.6 167.5	28 12.3 -59.4 166.4	28 04.1 -59.4 165.3	27 55.3 -59.3 164.2
6°	27 27.2 -59.7 168.8	27 20.3 -59.5 167.7	27 12.9 -59.5 166.6	27 04.7 -59.4 165.4	26 56.0 -59.3 164.3
7°	26 27.5 -59.6 168.9	26 20.8 -59.6 167.8	26 13.4 -59.5 166.7	26 05.3 -59.4 165.6	25 56.7 -59.3 164.5
8°	25 27.9 -59.7 169.0	25 21.2 -59.6 167.9	25 13.9 -59.5 166.8	25 05.9 -59.4 165.8	24 57.4 -59.4 164.7
9°	24 28.2 -59.6 169.1	24 21.6 -59.6 168.1	24 14.4 -59.6 167.0	24 06.5 -59.4 165.9	23 58.0 -59.3 164.8
10°	23 28.6 -59.7 169.3	23 22.0 -59.6 168.2	23 14.8 -59.5 167.1	23 07.1 -59.5 166.1	22 58.7 -59.4 165.0
11°	22 28.9 -59.7 169.4	22 22.4 -59.6 168.3	22 15.3 -59.5 167.3	22 07.6 -59.4 166.2	21 59.3 -59.3 165.2
12°	21 29.2 -59.6 169.5	21 22.8 -59.6 168.4	21 15.8 -59.5 167.4	21 08.2 -59.5 166.4	21 00.0 -59.4 165.3
13°	20 29.6 -59.7 169.6	20 23.2 -59.6 168.6	20 16.3 -59.6 167.5	20 08.7 -59.4 166.5	20 00.6 -59.4 165.5
14°	19 29.9 -59.7 169.7	19 23.6 -59.6 168.7	19 16.7 -59.5 167.7	19 09.3 -59.5 166.6	19 01.2 -59.4 165.6
15°	18 30.2 -59.7 169.8	18 24.0 -59.6 168.8	18 17.2 -59.6 167.8	18 09.8 -59.5 166.8	18 01.8 -59.4 165.8
16°	17 30.5 -59.7 169.9	17 24.4 -59.7 168.9	17 17.6 -59.5 167.9	17 10.3 -59.5 166.9	17 02.4 -59.4 165.9
17°	16 30.8 -59.7 170.0	16 24.7 -59.6 169.0	16 18.1 -59.6 168.0	16 10.8 -59.4 167.1	16 03.0 -59.4 166.1
18°	15 31.1 -59.7 170.1	15 25.1 -59.6 169.1	15 18.5 -59.6 168.2	15 11.4 -59.5 167.2	15 03.6 -59.4 166.2
19°	14 31.4 -59.7 170.2	14 25.5 -59.7 169.3	14 18.9 -59.5 168.3	14 11.9 -59.5 167.3	14 04.2 -59.4 166.4
20°	13 31.7 -59.7 170.3	13 25.8 -59.6 169.4	13 19.4 -59.6 168.4	13 12.4 -59.5 167.5	13 04.8 -59.4 166.5
21°	12 32.0 -59.7 170.4	12 26.2 -59.6 169.5	12 19.8 -59.6 168.5	12 12.9 -59.5 167.6	12 05.4 -59.4 166.6
22°	11 32.3 -59.7 170.5	11 26.6 -59.7 169.6	11 20.2 -59.5 168.7	11 13.4 -59.5 167.7	11 06.0 -59.5 166.8
23°	10 32.6 -59.7 170.6	10 26.9 -59.6 169.7	10 20.7 -59.6 168.8	10 13.9 -59.6 167.9	10 06.5 -59.4 166.9
24°	9 32.9 -59.7 170.7	9 27.3 -59.7 169.8	9 21.1 -59.6 168.9	9 14.3 -59.5 168.0	9 07.1 -59.4 167.1
25°	8 33.2 -59.7 170.8	8 27.6 -59.6 169.9	8 21.5 -59.6 169.0	8 14.8 -59.5 168.1	8 07.7 -59.5 167.2
26°	7 33.5 -59.7 170.9	7 28.0 -59.7 170.0	7 21.9 -59.6 169.1	7 15.3 -59.5 168.2	7 08.2 -59.4 167.3
27°	6 33.8 -59.7 171.0	6 28.3 -59.6 170.1	6 22.3 -59.6 169.3	6 15.8 -59.5 168.4	6 08.8 -59.5 167.5
28°	5 34.1 -59.7 171.1	5 28.7 -59.7 170.3	5 22.7 -59.6 169.4	5 16.3 -59.5 168.5	5 09.3 -59.4 167.6
29°	4 34.4 -59.7 171.2	4 29.0 -59.7 170.4	4 23.1 -59.6 169.5	4 16.8 -59.6 168.6	4 09.9 -59.4 167.8

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°	32 41.6 -59.1 162.1	32 30.9 -59.0 160.9	32 19.7 -58.9 159.8	32 07.7 -58.7 158.6	31 55.2 -58.6 157.4
1°	31 42.5 -59.2 162.3	31 31.9 -59.0 161.1	31 20.8 -58.9 160.0	31 09.0 -58.8 158.8	30 56.6 -58.7 157.7
2°	30 43.3 -59.1 162.5	30 32.9 -59.0 161.3	30 21.9 -59.0 160.2	30 10.2 -58.8 159.1	29 57.9 -58.7 157.9
3°	29 44.2 -59.2 162.7	29 33.9 -59.1 161.6	29 22.9 -58.9 160.4	29 11.4 -58.8 159.3	28 59.2 -58.7 158.2
4°	28 45.0 -59.2 162.9	28 34.8 -59.1 161.8	28 24.0 -59.0 160.6	28 12.6 -58.9 159.5	28 00.5 -58.7 158.4
5°	27 45.8 -59.2 163.1	27 35.7 -59.1 162.0	27 25.0 -58.9 160.8	27 13.7 -58.8 159.7	27 01.8 -58.7 158.6
6°	26 46.6 -59.2 163.2	26 36.6 -59.1 162.1	26 26.1 -59.0 161.1	26 14.9 -58.9 160.0	26 03.1 -58.8 158.9
7°	25 47.4 -59.2 163.4	25 37.5 -59.1 162.3	25 27.1 -59.1 161.3	25 16.0 -58.9 160.2	25 04.3 -58.8 159.1
8°	24 48.2 -59.2 163.6	24 38.4 -59.1 162.5	24 28.0 -59.0 161.5	24 17.1 -58.9 160.4	24 05.5 -58.8 159.3
9°	23 49.0 -59.3 163.8	23 39.3 -59.2 162.7	23 29.0 -59.0 161.6	23 18.2 -59.0 160.6	23 06.7 -58.8 159.5
10°	22 49.7 -59.3 163.9	22 40.1 -59.1 162.9	22 30.0 -59.1 161.8	22 19.2 -58.9 160.8	22 07.9 -58.8 159.7
11°	21 50.4 -59.2 164.1	21 41.0 -59.2 163.1	21 30.9 -59.1 162.0	21 20.3 -59.0 161.0	21 09.1 -58.9 160.0
12°	20 51.2 -59.3 164.3	20 41.8 -59.2 163.2	20 31.8 -59.1 162.2	20 21.3 -59.0 161.2	20 10.2 -58.9 160.2
13°	19 51.9 -59.3 164.4	19 42.6 -59.2 163.4	19 32.7 -59.0 162.4	19 22.3 -59.0 161.4	19 11.3 -58.8 160.4
14°	18 52.6 -59.3 164.6	18 43.4 -59.2 163.6	18 33.7 -59.2 162.6	18 23.3 -59.0 161.6	18 12.5 -58.9 160.6
15°	17 53.3 -59.3 164.8	17 44.2 -59.2 163.8	17 34.5 -59.1 162.8	17 24.3 -59.0 161.8	17 13.6 -58.9 160.8
16°	16 54.0 -59.3 164.9	16 45.0 -59.2 163.9	16 35.4 -59.1 162.9	16 25.3 -59.0 162.0	16 14.7 -59.0 161.0
17°	15 54.7 -59.3 165.1	15 45.8 -59.3 164.1	15 36.3 -59.1 163.1	15 26.3 -59.0 162.1	15 15.7 -58.9 161.2
18°	14 55.4 -59.4 165.2	14 46.5 -59.2 164.3	14 37.2 -59.2 163.3	14 27.3 -59.1 162.3	14 16.8 -58.9 161.4
19°	13 56.0 -59.3 165.4	13 47.3 -59.2 164.4	13 38.0 -59.1 163.5	13 28.2 -59.0 162.5	13 17.9 -59.0 161.6
20°	12 56.7 -59.3 165.5	12 48.1 -59.3 164.6	12 38.9 -59.2 163.6	12 29.2 -59.1 162.7	12 18.9 -58.9 161.8
21°	11 57.4 -59.4 165.7	11 48.8 -59.2 164.8	11 39.7 -59.1 163.8	11 30.1 -59.1 162.9	11 20.0 -59.0 161.9
22°	10 58.0 -59.3 165.9	10 49.6 -59.3 164.9	10 40.6 -59.2 164.0	10 31.0 -59.0 163.1	10 21.0 -59.0 162.1
23°	9 58.7 -59.4 166.0	9 50.3 -59.3 165.1	9 41.4 -59.2 164.2	9 32.0 -59.1 163.2	9 22.0 -58.9 162.3
24°	8 59.3 -59.3 166.1	8 51.0 -59.2 165.2	8 42.2 -59.1 164.3	8 32.9 -59.1 163.4	8 23.1 -59.0 162.5
25°	8 00.0 -59.4 166.3	7 51.8 -59.3 165.4	7 43.1 -59.2 164.5	7 33.8 -59.1 163.6	7 24.1 -59.0 162.7
26°	7 00.6 -59.3 166.4	6 52.5 -59.3 165.5	6 43.9 -59.2 164.7	6 34.7 -59.0 163.8	6 25.1 -59.0 162.9
27°	6 01.3 -59.4 166.6	5 53.2 -59.3 165.7	5 44.7 -59.2 164.8	5 35.7 -59.1 163.9	5 26.1 -59.0 163.1
28°	5 01.9 -59.4 166.7	4 53.9 -59.2 165.9	4 45.5 -59.2 165.0	4 36.6 -59.1 164.1	4 27.1 -59.0 163.2
29°	4 02.5 -59.3 166.9	3 54.7 -59.3 166.0	3 46.3 -59.2 165.2	3 37.5 -59.1 164.3	3 28.1 -58.9 163.4

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°	31 42.0 -58.5 156.3	31 28.2 -58.3 155.2	31 13.8 -58.2 154.0	30 58.8 -58.0 152.9	30 43.2 -57.9 151.8
1°	30 43.5 -58.5 156.6	30 29.9 -58.4 155.4	30 15.6 -58.2 154.3	30 00.8 -58.1 153.2	29 45.3 -57.9 152.1
2°	29 45.0 -58.5 156.8	29 31.5 -58.4 155.7	29 17.4 -58.3 154.6	29 02.7 -58.1 153.5	28 47.4 -58.0 152.4
3°	28 46.5 -58.6 157.1	28 33.1 -58.4 156.0	28 19.1 -58.3 154.9	28 04.6 -58.2 153.8	27 49.4 -58.0 152.7
4°	27 47.9 -58.6 157.3	27 34.7 -58.5 156.2	27 20.8 -58.3 155.1	27 06.4 -58.2 154.0	26 51.4 -58.0 152.9
5°	26 49.3 -58.6 157.6	26 36.2 -58.5 156.5	26 22.5 -58.3 155.4	26 08.2 -58.2 154.3	25 53.4 -58.1 153.2
6°	25 50.7 -58.7 157.8	25 37.7 -58.5 156.7	25 24.2 -58.4 155.6	25 10.0 -58.2 154.6	24 55.3 -58.0 153.5
7°	24 52.0 -58.6 158.0	24 39.2 -58.5 157.0	24 25.8 -58.4 155.9	24 11.8 -58.3 154.8	23 57.3 -58.2 153.8
8°	23 53.4 -58.7 158.3	23 40.7 -58.6 157.2	23 27.4 -58.4 156.1	23 13.5 -58.3 155.1	22 59.1 -58.1 154.1
9°	22 54.7 -58.7 158.5	22 42.1 -58.6 157.4	22 29.0 -58.5 156.4	22 15.2 -58.3 155.4	22 01.0 -58.2 154.3
10°	21 56.0 -58.7 158.7	21 43.5 -58.6 157.7	21 30.5 -58.5 156.6	21 16.9 -58.3 155.6	21 02.8 -58.2 154.6
11°	20 57.3 -58.8 158.9	20 44.9 -58.6 157.9	20 32.0 -58.5 156.9	20 18.6 -58.4 155.9	20 04.6 -58.2 154.8
12°	19 58.5 -58.7 159.1	19 46.3 -58.6 158.1	19 33.5 -58.5 157.1	19 20.2 -58.4 156.1	19 06.4 -58.3 155.1
13°	18 59.8 -58.8 159.4	18 47.7 -58.7 158.4	18 35.0 -58.5 157.4	18 21.8 -58.4 156.4	18 08.1 -58.2 155.4
14°	18 01.0 -58.8 159.6	17 49.0 -58.6 158.6	17 36.5 -58.5 157.6	17 23.4 -58.4 156.6	17 09.9 -58.3 155.6
15°	17 02.2 -58.8 159.8	16 50.4 -58.7 158.8	16 38.0 -58.6 157.8	16 25.0 -58.4 156.8	16 11.6 -58.3 155.9
16°	16 03.4 -58.8 160.0	15 51.7 -58.7 159.0	15 39.4 -58.6 158.0	15 26.6 -58.4 157.1	15 13.3 -58.3 156.1
17°	15 04.6 -58.8 160.2	14 53.0 -58.7 159.2	14 40.8 -58.5 158.3	14 28.2 -58.5 157.3	14 15.0 -58.4 156.3
18°	14 05.8 -58.8 160.4	13 54.3 -58.7 159.4	13 42.3 -58.6 158.5	13 29.7 -58.5 157.5	13 16.6 -58.3 156.6
19°	13 07.0 -58.8 160.6	12 55.6 -58.7 159.7	12 43.7 -58.6 158.7	12 31.2 -58.5 157.8	12 18.3 -58.4 156.8
20°	12 08.2 -58.9 160.8	11 56.9 -58.8 159.9	11 45.1 -58.7 158.9	11 32.7 -58.5 158.0	11 19.9 -58.4 157.1
21°	11 09.3 -58.8 161.0	10 58.1 -58.7 160.1	10 46.4 -58.6 159.1	10 34.2 -58.5 158.2	10 21.5 -58.3 157.3
22°	10 10.5 -58.9 161.2	9 59.4 -58.8 160.3	9 47.8 -58.6 159.4	9 35.7 -58.5 158.4	9 23.2 -58.4 157.5
23°	9 11.6 -58.9 161.4	9 00.6 -58.7 160.5	8 49.2 -58.7 159.6	8 37.2 -58.5 158.7	8 24.8 -58.4 157.8
24°	8 12.7 -58.8 161.6	8 01.9 -58.8 160.7	7 50.5 -58.6 159.8	7 38.7 -58.5 158.9	7 26.4 -58.4 158.0
25°	7 13.9 -58.9 161.8	7 03.1 -58.7 160.9	6 51.9 -58.6 160.0	6 40.2 -58.5 159.1	6 28.0 -58.4 158.2
26°	6 15.0 -58.9 162.0	6 04.4 -58.8 161.1	5 53.3 -58.7 160.2	5 41.7 -58.6 159.3	5 29.6 -58.4 158.5
27°	5 16.1 -58.9 162.2	5 05.6 -58.8 161.3	4 54.6 -58.7 160.4	4 43.1 -58.5 159.6	4 31.2 -58.5 158.7
28°	4 17.2 -58.9 162.4	4 06.8 -58.8 161.5	3 55.9 -58.6 160.6	3 44.6 -58.6 159.8	3 32.7 -58.4 158.9
29°	3 18.3 -58.9 162.6	3 08.0 -58.7 161.7	2 57.3 -58.7 160.8	2 46.0 -58.5 160.0	2 34.3 -58.4 159.1

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°	30 27.1 -57.8 150.6	30 10.3 -57.5 149.5	29 53.0 -57.4 148.4	29 35.2 -57.2 147.3	29 16.8 -57.0 146.2
1°	29 29.3 -57.7 151.0	29 12.8 -57.6 149.9	28 55.6 -57.4 148.8	28 38.0 -57.3 147.7	28 19.8 -57.2 146.6
2°	28 31.6 -57.8 151.3	28 15.2 -57.7 150.2	27 58.2 -57.5 149.1	27 40.7 -57.3 148.0	27 22.6 -57.1 146.9
3°	27 33.8 -57.9 151.6	27 17.5 -57.7 150.5	27 00.7 -57.5 149.4	26 43.4 -57.4 148.3	26 25.5 -57.2 147.3
4°	26 35.9 -57.9 151.9	26 19.8 -57.7 150.8	26 03.2 -57.6 149.7	25 46.0 -57.4 148.7	25 28.3 -57.3 147.6
5°	25 38.0 -57.9 152.2	25 22.1 -57.8 151.1	25 05.6 -57.6 150.0	24 48.6 -57.5 149.0	24 31.0 -57.3 147.9
6°	24 40.1 -57.9 152.5	24 24.3 -57.8 151.4	24 08.0 -57.7 150.3	23 51.1 -57.5 149.3	23 33.7 -57.3 148.3
7°	23 42.2 -58.0 152.7	23 26.5 -57.8 151.7	23 10.3 -57.6 150.6	22 53.6 -57.5 149.6	22 36.4 -57.4 148.6
8°	22 44.2 -58.0 153.0	22 28.7 -57.9 152.0	22 12.7 -57.8 150.9	21 56.1 -57.6 149.9	21 39.0 -57.4 148.9
9°	21 46.2 -58.1 153.3	21 30.8 -57.9 152.3	21 14.9 -57.7 151.2	20 58.5 -57.6 150.2	20 41.6 -57.4 149.2
10°	20 48.1 -58.0 153.6	20 32.9 -57.9 152.5	20 17.2 -57.8 151.5	20 00.9 -57.6 150.5	19 44.2 -57.5 149.5
11°	19 50.1 -58.1 153.8	19 35.0 -57.9 152.8	19 19.4 -57.8 151.8	19 03.3 -57.6 150.8	18 46.7 -57.5 149.8
12°	18 52.0 -58.1 154.1	18 37.1 -58.0 153.1	18 21.6 -57.8 152.1	18 05.7 -57.7 151.1	17 49.2 -57.5 150.1
13°	17 53.9 -58.2 154.4	17 39.1 -58.0 153.4	17 23.8 -57.9 152.4	17 08.0 -57.7 151.4	16 51.7 -57.6 150.4
14°	16 55.7 -58.1 154.6	16 41.1 -58.0 153.6	16 25.9 -57.8 152.7	16 10.3 -57.7 151.7	15 54.1 -57.6 150.7
15°	15 57.6 -58.2 154.9	15 43.1 -58.1 153.9	15 28.1 -57.9 152.9	15 12.6 -57.8 152.0	14 56.5 -57.6 151.0
16°	14 59.4 -58.2 155.1	14 45.0 -58.0 154.2	14 30.2 -57.9 153.2	14 14.8 -57.8 152.3	13 58.9 -57.6 151.3
17°	14 01.2 -58.2 155.4	13 47.0 -58.1 154.4	13 32.3 -58.0 153.5	13 17.0 -57.7 152.5	13 01.3 -57.6 151.6
18°	13 03.0 -58.2 155.6	12 48.9 -58.0 154.7	12 34.3 -57.9 153.7	12 19.3 -57.8 152.8	12 03.7 -57.7 151.9
19°	12 04.8 -58.2 155.9	11 50.9 -58.1 154.9	11 36.4 -58.0 154.0	11 21.5 -57.9 153.1	11 06.0 -57.7 152.2
20°	11 06.6 -58.3 156.1	10 52.8 -58.1 155.2	10 38.4 -57.9 154.3	10 23.6 -57.8 153.4	10 08.3 -57.6 152.4
21°	10 08.3 -58.2 156.4	9 54.7 -58.2 155.5	9 40.5 -58.0 154.5	9 25.8 -57.8 153.6	9 10.7 -57.7 152.7
22°	9 10.1 -58.3 156.6	8 56.5 -58.1 155.7	8 42.5 -58.0 154.8	8 28.0 -57.9 153.9	8 13.0 -57.8 153.0
23°	8 11.8 -58.2 156.9	7 58.4 -58.1 156.0	7 44.5 -58.0 155.1	7 30.1 -57.9 154.2	7 15.2 -57.7 153.3
24°	7 13.6 -58.3 157.1	7 00.3 -58.2 156.2	6 46.5 -58.0 155.3	6 32.2 -57.8 154.4	6 17.5 -57.7 153.5
25°	6 15.3 -58.3 157.3	6 02.1 -58.1 156.5	5 48.5 -58.0 155.6	5 34.4 -57.9 154.7	5 19.8 -57.7 153.8
26°	5 17.0 -58.3 157.6	5 04.0 -58.2 156.7	4 50.5 -58.1 155.8	4 36.5 -57.9 155.0	4 22.1 -57.8 154.1
27°	4 18.7 -58.3 157.8	4 05.8 -58.1 156.9	3 52.4 -58.0 156.1	3 38.6 -57.9 155.2	3 24.3 -57.7 154.4
28°	3 20.4 -58.3 158.1	3 07.7 -58.2 157.2	2 54.4 -58.0 156.3	2 40.7 -57.9 155.5	2 26.6 -57.8 154.6
29°	2 22.1 -58.3 158.3	2 09.5 -58.2 157.4	1 56.4 -58.0 156.6	1 42.8 -57.9 155.7	1 28.8 -57.7 154.9

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°	28 57.9 -56.9 145.1	28 38.5 -56.7 144.1	28 18.5 -56.5 143.0	27 58.1 -56.4 141.9	27 37.1 -56.1 140.9
1°	28 01.0 -56.9 145.5	27 41.8 -56.8 144.4	27 22.0 -56.6 143.4	27 01.7 -56.4 142.3	26 41.0 -56.3 141.3
2°	27 04.1 -57.0 145.9	26 45.0 -56.8 144.8	26 25.4 -56.6 143.7	26 05.3 -56.5 142.7	25 44.7 -56.3 141.7
3°	26 07.1 -57.1 146.2	25 48.2 -56.9 145.2	25 28.8 -56.7 144.1	25 08.8 -56.5 143.1	24 48.4 -56.3 142.0
4°	25 10.0 -57.0 146.6	24 51.3 -56.9 145.5	24 32.1 -56.8 144.5	24 12.3 -56.6 143.4	23 52.1 -56.4 142.4
5°	24 13.0 -57.2 146.9	23 54.4 -57.0 145.9	23 35.3 -56.8 144.8	23 15.7 -56.6 143.8	22 55.7 -56.5 142.8
6°	23 15.8 -57.1 147.2	22 57.4 -57.0 146.2	22 38.5 -56.8 145.2	22 19.1 -56.7 144.2	21 59.2 -56.5 143.1
7°	22 18.7 -57.3 147.6	22 00.4 -57.1 146.5	21 41.7 -56.9 145.5	21 22.4 -56.7 144.5	21 02.7 -56.6 143.5
8°	21 21.4 -57.2 147.9	21 03.3 -57.0 146.9	20 44.8 -57.0 145.9	20 25.7 -56.8 144.9	20 06.1 -56.5 143.9
9°	20 24.2 -57.3 148.2	20 06.3 -57.2 147.2	19 47.8 -56.9 146.2	19 28.9 -56.8 145.2	19 09.6 -56.7 144.2
10°	19 26.9 -57.3 148.5	19 09.1 -57.1 147.5	18 50.9 -57.0 146.5	18 32.1 -56.8 145.5	18 12.9 -56.7 144.6
11°	18 29.6 -57.4 148.8	18 12.0 -57.2 147.8	17 53.9 -57.1 146.9	17 35.3 -56.9 145.9	17 16.2 -56.7 144.9
12°	17 32.2 -57.3 149.1	17 14.8 -57.2 148.2	16 56.8 -57.0 147.2	16 38.4 -56.9 146.2	16 19.5 -56.7 145.3
13°	16 34.9 -57.4 149.4	16 17.6 -57.3 148.5	15 59.8 -57.1 147.5	15 41.5 -56.9 146.5	15 22.8 -56.8 145.6
14°	15 37.5 -57.5 149.8	15 20.3 -57.3 148.8	15 02.7 -57.1 147.8	14 44.6 -57.0 146.9	14 26.0 -56.8 145.9
15°	14 40.0 -57.4 150.1	14 23.0 -57.3 149.1	14 05.6 -57.2 148.1	13 47.6 -57.0 147.2	13 29.2 -56.8 146.3
16°	13 42.6 -57.5 150.3	13 25.7 -57.3 149.4	13 08.4 -57.1 148.5	12 50.6 -57.0 147.5	12 32.4 -56.9 146.6
17°	12 45.1 -57.5 150.6	12 28.4 -57.3 149.7	12 11.3 -57.2 148.8	11 53.6 -57.0 147.8	11 35.5 -56.8 146.9
18°	11 47.6 -57.5 150.9	11 31.1 -57.4 150.0	11 14.1 -57.2 149.1	10 56.6 -57.0 148.2	10 38.7 -56.9 147.2
19°	10 50.1 -57.5 151.2	10 33.7 -57.4 150.3	10 16.9 -57.3 149.4	9 59.6 -57.1 148.5	9 41.8 -56.9 147.6
20°	9 52.6 -57.6 151.5	9 36.3 -57.3 150.6	9 19.6 -57.2 149.7	9 02.5 -57.1 148.8	8 44.9 -57.0 147.9
21°	8 55.0 -57.5 151.8	8 39.0 -57.4 150.9	8 22.4 -57.2 150.0	8 05.4 -57.1 149.1	7 47.9 -56.9 148.2
22°	7 57.5 -57.6 152.1	7 41.6 -57.5 151.2	7 25.2 -57.3 150.3	7 08.3 -57.1 149.4	6 51.0 -56.9 148.5
23°	6 59.9 -57.6 152.4	6 44.1 -57.4 151.5	6 27.9 -57.3 150.6	6 11.2 -57.1 149.7	5 54.1 -57.0 148.8
24°	6 02.3 -57.5 152.7	5 46.7 -57.4 151.8	5 30.6 -57.3 150.9	5 14.1 -57.2 150.0	4 57.1 -57.0 149.2
25°	5 04.8 -57.6 152.9	4 49.3 -57.5 152.1	4 33.3 -57.3 151.2	4 16.9 -57.1 150.3	4 00.1 -57.0 149.5
26°	4 07.2 -57.6 153.2	3 51.8 -57.4 152.4	3 36.0 -57.3 151.5	3 19.8 -57.1 150.6	3 03.1 -56.9 149.8
27°	3 09.6 -57.6 153.5	2 54.4 -57.5 152.6	2 38.7 -57.3 151.8	2 22.7 -57.2 150.9	2 06.2 -57.0 150.1
28°	2 12.0 -57.6 153.8	1 56.9 -57.4 152.9	1 41.4 -57.3 152.1	1 25.5 -57.1 151.2	1 09.2 -57.0 150.4
29°	1 14.4 -57.6 154.1	0 59.5 -57.5 153.2	0 44.1 -57.3 152.4	0 28.4 -57.2 151.6	0 12.2 -57.0 150.7

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°	27 15.7 -56.0 139.8	26 53.9 -55.9 138.8	26 31.5 -55.6 137.7	26 08.7 -55.4 136.7	25 45.5 -55.3 135.7
1°	26 19.7 -56.0 140.2	25 58.0 -55.8 139.2	25 35.9 -55.7 138.1	25 13.3 -55.5 137.1	24 50.2 -55.3 136.1
2°	25 23.7 -56.1 140.6	25 02.2 -56.0 139.6	24 40.2 -55.8 138.6	24 17.8 -55.6 137.5	23 54.9 -55.4 136.5
3°	24 27.6 -56.2 141.0	24 06.2 -56.0 140.0	23 44.4 -55.8 139.0	23 22.2 -55.7 138.0	22 59.5 -55.5 136.9
4°	23 31.4 -56.3 141.4	23 10.2 -56.1 140.4	22 48.6 -55.9 139.4	22 26.5 -55.7 138.4	22 04.0 -55.5 137.4
5°	22 35.1 -56.2 141.8	22 14.1 -56.1 140.8	21 52.7 -55.9 139.8	21 30.8 -55.8 138.8	21 08.5 -55.6 137.8
6°	21 38.9 -56.4 142.1	21 18.0 -56.1 141.1	20 56.8 -56.0 140.1	20 35.0 -55.8 139.2	20 12.9 -55.7 138.2
7°	20 42.5 -56.4 142.5	20 21.9 -56.2 141.5	20 00.8 -56.1 140.5	19 39.2 -55.9 139.5	19 17.2 -55.7 138.6
8°	19 46.1 -56.4 142.9	19 25.7 -56.3 141.9	19 04.7 -56.1 140.9	18 43.3 -55.9 139.9	18 21.5 -55.7 139.0
9°	18 49.7 -56.5 143.2	18 29.4 -56.3 142.3	18 08.6 -56.1 141.3	17 47.4 -55.9 140.3	17 25.8 -55.8 139.3
10°	17 53.2 -56.5 143.6	17 33.1 -56.4 142.6	17 12.5 -56.2 141.7	16 51.5 -56.0 140.7	16 30.0 -55.8 139.7
11°	16 56.7 -56.5 143.9	16 36.7 -56.3 143.0	16 16.3 -56.2 142.0	15 55.5 -56.1 141.1	15 34.2 -55.9 140.1
12°	16 00.2 -56.6 144.3	15 40.4 -56.4 143.3	15 20.1 -56.2 142.4	14 59.4 -56.1 141.4	14 38.3 -55.9 140.5
13°	15 03.6 -56.6 144.6	14 44.0 -56.5 143.7	14 23.9 -56.3 142.7	14 03.3 -56.1 141.8	13 42.4 -56.0 140.9
14°	14 07.0 -56.6 145.0	13 47.5 -56.5 144.0	13 27.6 -56.3 143.1	13 07.2 -56.1 142.2	12 46.4 -55.9 141.2
15°	13 10.4 -56.7 145.3	12 51.0 -56.5 144.4	12 31.3 -56.4 143.5	12 11.1 -56.2 142.5	11 50.5 -56.0 141.6
16°	12 13.7 -56.7 145.7	11 54.5 -56.5 144.7	11 34.9 -56.3 143.8	11 14.9 -56.2 142.9	10 54.5 -56.1 142.0
17°	11 17.0 -56.7 146.0	10 58.0 -56.5 145.1	10 38.6 -56.4 144.2	10 18.7 -56.2 143.2	9 58.4 -56.0 142.3
18°	10 20.3 -56.7 146.3	10 01.5 -56.6 145.4	9 42.2 -56.4 144.5	9 22.5 -56.2 143.6	9 02.4 -56.1 142.7
19°	9 23.6 -56.8 146.7	9 04.9 -56.6 145.7	8 45.8 -56.4 144.8	8 26.3 -56.3 144.0	8 06.3 -56.1 143.1
20°	8 26.8 -56.8 147.0	8 08.3 -56.6 146.1	7 49.4 -56.5 145.2	7 30.0 -56.3 144.3	7 10.2 -56.1 143.4
21°	7 30.0 -56.7 147.3	7 11.7 -56.6 146.4	6 52.9 -56.4 145.5	6 33.7 -56.3 144.7	6 14.1 -56.1 143.8
22°	6 33.3 -56.8 147.6	6 15.1 -56.6 146.8	5 56.5 -56.5 145.9	5 37.4 -56.3 145.0	5 18.0 -56.1 144.1
23°	5 36.5 -56.8 148.0	5 18.5 -56.7 147.1	5 00.0 -56.5 146.2	4 41.1 -56.3 145.3	4 21.9 -56.2 144.5
24°	4 39.7 -56.8 148.3	4 21.8 -56.6 147.4	4 03.5 -56.5 146.6	3 44.8 -56.3 145.7	3 25.7 -56.1 144.8
25°	3 42.9 -56.9 148.6	3 25.2 -56.7 147.7	3 07.0 -56.4 146.9	2 48.5 -56.3 146.0	2 29.6 -56.2 145.2
26°	2 46.0 -56.8 148.9	2 28.5 -56.7 148.1	2 10.6 -56.5 147.2	1 52.2 -56.3 146.4	1 33.4 -56.2 145.5
27°	1 49.2 -56.8 149.2	1 31.8 -56.6 148.4	1 14.1 -56.5 147.6	0 55.9 -56.4 146.7	0 37.2 -56.1 145.9
28°	0 52.4 -56.8 149.6	0 35.2 -56.7 148.7	0 17.6 -56.5 147.9	-0 00.5 -56.3	-0 18.9 -56.2
29°	-0 04.4 -56.9	-0 21.5 -56.7	-0 38.9 -56.5	-0 56.8 -56.3	-1 15.1 -56.1

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°	25 21.8 -55.1 134.7	24 57.8 -54.9 133.6	24 33.3 -54.7 132.6	24 08.4 -54.5 131.6	23 43.1 -54.3 130.6
1°	24 26.7 -55.1 135.1	24 02.9 -55.0 134.1	23 38.6 -54.9 133.1	23 13.9 -54.7 132.1	22 48.8 -54.5 131.1
2°	23 31.6 -55.2 135.5	23 07.9 -55.1 134.5	22 43.7 -54.8 133.5	22 19.2 -54.7 132.5	21 54.3 -54.5 131.6
3°	22 36.4 -55.3 135.9	22 12.8 -55.1 135.0	21 48.9 -55.0 134.0	21 24.5 -54.7 133.0	20 59.8 -54.6 132.0
4°	21 41.1 -55.4 136.4	21 17.7 -55.2 135.4	20 53.9 -55.0 134.4	20 29.8 -54.9 133.4	20 05.2 -54.7 132.5
5°	20 45.7 -55.4 136.8	20 22.5 -55.2 135.8	19 58.9 -55.1 134.8	19 34.9 -54.9 133.9	19 10.5 -54.7 132.9
6°	19 50.3 -55.5 137.2	19 27.3 -55.3 136.2	19 03.8 -55.1 135.2	18 40.0 -54.9 134.3	18 15.8 -54.8 133.3
7°	18 54.8 -55.5 137.6	18 32.0 -55.4 136.6	18 08.7 -55.2 135.7	17 45.1 -55.0 134.7	17 21.0 -54.8 133.8
8°	17 59.3 -55.6 138.0	17 36.6 -55.4 137.0	17 13.5 -55.2 136.1	16 50.1 -55.1 135.1	16 26.2 -54.9 134.2
9°	17 03.7 -55.6 138.4	16 41.2 -55.4 137.4	16 18.3 -55.3 136.5	15 55.0 -55.1 135.5	15 31.3 -54.9 134.6
10°	16 08.1 -55.7 138.8	15 45.8 -55.5 137.8	15 23.0 -55.3 136.9	14 59.9 -55.1 135.9	14 36.4 -55.0 135.0
11°	15 12.4 -55.7 139.2	14 50.3 -55.6 138.2	14 27.7 -55.3 137.3	14 04.8 -55.2 136.4	13 41.4 -55.0 135.4
12°	14 16.7 -55.7 139.6	13 54.7 -55.5 138.6	13 32.4 -55.4 137.7	13 09.6 -55.2 136.8	12 46.4 -55.1 135.8
13°	13 21.0 -55.8 139.9	12 59.2 -55.6 139.0	12 37.0 -55.5 138.1	12 14.4 -55.3 137.2	11 51.3 -55.0 136.2
14°	12 25.2 -55.8 140.3	12 03.6 -55.7 139.4	11 41.5 -55.4 138.5	11 19.1 -55.3 137.6	10 56.3 -55.2 136.6
15°	11 29.4 -55.8 140.7	11 07.9 -55.6 139.8	10 46.1 -55.5 138.9	10 23.8 -55.3 138.0	10 01.1 -55.1 137.0
16°	10 33.6 -55.9 141.1	10 12.3 -55.7 140.1	9 50.6 -55.5 139.2	9 28.5 -55.4 138.3	9 06.0 -55.2 137.4
17°	9 37.7 -55.9 141.4	9 16.6 -55.7 140.5	8 55.1 -55.6 139.6	8 33.1 -55.3 138.7	8 10.8 -55.2 137.8
18°	8 41.8 -55.9 141.8	8 20.9 -55.8 140.9	7 59.5 -55.5 140.0	7 37.8 -55.4 139.1	7 15.6 -55.2 138.2
19°	7 45.9 -55.9 142.2	7 25.1 -55.7 141.3	7 04.0 -55.6 140.4	6 42.4 -55.4 139.5	6 20.4 -55.2 138.6
20°	6 50.0 -55.9 142.5	6 29.4 -55.8 141.6	6 08.4 -55.6 140.8	5 47.0 -55.5 139.9	5 25.2 -55.3 139.0
21°	5 54.1 -56.0 142.9	5 33.6 -55.8 142.0	5 12.8 -55.6 141.2	4 51.5 -55.4 140.3	4 29.9 -55.3 139.4
22°	4 58.1 -55.9 143.3	4 37.8 -55.7 142.4	4 17.2 -55.6 141.5	3 56.1 -55.4 140.7	3 34.6 -55.2 139.8
23°	4 02.2 -56.0 143.6	3 42.1 -55.8 142.8	3 21.6 -55.7 141.9	3 00.7 -55.5 141.0	2 39.4 -55.3 140.2
24°	3 06.2 -56.0 144.0	2 46.3 -55.9 143.1	2 25.9 -55.6 142.3	2 05.2 -55.5 141.4	1 44.1 -55.3 140.6
25°	2 10.2 -56.0 144.3	1 50.4 -55.8 143.5	1 30.3 -55.7 142.7	1 09.7 -55.4 141.8	0 48.8 -55.3 141.0
26°	1 14.2 -56.0 144.7	0 54.6 -55.8 143.9	0 34.6 -55.6 143.0	0 14.3 -55.5 142.2	-0 06.5 -55.3
27°	0 18.2 -56.0 145.1	-0 01.2 -55.8	-0 21.0 -55.6	-0 41.2 -55.5	-1 01.8 -55.3
28°	-0 37.8 -56.0	-0 57.0 -55.8	-1 16.6 -55.7	-1 36.7 -55.4	-1 57.1 -55.2
29°	-1 33.8 -55.9	-1 52.8 -55.8	-2 12.3 -55.6	-2 32.1 -55.5	-2 52.3 -55.3

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°	23 17.5 -54.2 129.7	22 51.5 -54.0 128.7	22 25.1 -53.8 127.7	21 58.4 -53.7 126.7	21 31.3 -53.5 125.8
1°	22 23.3 -54.3 130.1	21 57.5 -54.1 129.2	21 31.3 -54.0 128.2	21 04.7 -53.7 127.2	20 37.8 -53.6 126.3
2°	21 29.0 -54.3 130.6	21 03.4 -54.2 129.6	20 37.3 -54.0 128.7	20 11.0 -53.9 127.7	19 44.2 -53.6 126.7
3°	20 34.7 -54.5 131.0	20 09.2 -54.3 130.1	19 43.3 -54.1 129.1	19 17.1 -53.9 128.2	18 50.6 -53.8 127.2
4°	19 40.2 -54.4 131.5	19 14.9 -54.3 130.5	18 49.2 -54.1 129.6	18 23.2 -54.0 128.6	17 56.8 -53.8 127.7
5°	18 45.8 -54.6 131.9	18 20.6 -54.4 131.0	17 55.1 -54.2 130.0	17 29.2 -54.0 129.1	17 03.0 -53.8 128.1
6°	17 51.2 -54.6 132.4	17 26.2 -54.4 131.4	17 00.9 -54.3 130.5	16 35.2 -54.1 129.5	16 09.2 -54.0 128.6
7°	16 56.6 -54.7 132.8	16 31.8 -54.5 131.9	16 06.6 -54.3 130.9	15 41.1 -54.1 130.0	15 15.2 -54.0 129.1
8°	16 01.9 -54.7 133.2	15 37.3 -54.5 132.3	15 12.3 -54.4 131.4	14 47.0 -54.2 130.4	14 21.2 -54.0 129.5
9°	15 07.2 -54.7 133.7	14 42.8 -54.6 132.7	14 17.9 -54.4 131.8	13 52.8 -54.3 130.9	13 27.2 -54.1 130.0
10°	14 12.5 -54.8 134.1	13 48.2 -54.6 133.2	13 23.5 -54.4 132.2	12 58.5 -54.3 131.3	12 33.1 -54.1 130.4
11°	13 17.7 -54.9 134.5	12 53.6 -54.7 133.6	12 29.1 -54.5 132.7	12 04.2 -54.3 131.8	11 39.0 -54.2 130.8
12°	12 22.8 -54.9 134.9	11 58.9 -54.7 134.0	11 34.6 -54.6 133.1	11 09.9 -54.4 132.2	10 44.8 -54.2 131.3
13°	11 27.9 -54.9 135.3	11 04.2 -54.8 134.4	10 40.0 -54.6 133.5	10 15.5 -54.4 132.6	9 50.6 -54.2 131.7
14°	10 33.0 -54.9 135.7	10 09.4 -54.8 134.8	9 45.4 -54.6 133.9	9 21.1 -54.4 133.0	8 56.4 -54.3 132.2
15°	9 38.1 -55.0 136.1	9 14.6 -54.8 135.3	8 50.8 -54.6 134.4	8 26.7 -54.5 133.5	8 02.1 -54.2 132.6
16°	8 43.1 -55.0 136.6	8 19.8 -54.8 135.7	7 56.2 -54.6 134.8	7 32.2 -54.5 133.9	7 07.9 -54.4 133.0
17°	7 48.1 -55.0 137.0	7 25.0 -54.8 136.1	7 01.6 -54.7 135.2	6 37.7 -54.5 134.3	6 13.5 -54.3 133.4
18°	6 53.1 -55.1 137.4	6 30.2 -54.9 136.5	6 06.9 -54.7 135.6	5 43.2 -54.5 134.7	5 19.2 -54.3 133.9
19°	5 58.0 -55.0 137.8	5 35.3 -54.9 136.9	5 12.2 -54.7 136.0	4 48.7 -54.5 135.2	4 24.9 -54.4 134.3
20°	5 03.0 -55.1 138.2	4 40.4 -54.9 137.3	4 17.5 -54.8 136.4	3 54.2 -54.6 135.6	3 30.5 -54.4 134.7
21°	4 07.9 -55.1 138.6	3 45.5 -54.9 137.7	3 22.7 -54.7 136.8	2 59.6 -54.6 136.0	2 36.1 -54.4 135.1
22°	3 12.8 -55.1 139.0	2 50.6 -54.9 138.1	2 28.0 -54.8 137.3	2 05.0 -54.5 136.4	1 41.7 -54.4 135.6
23°	2 17.7 -55.1 139.4	1 55.7 -55.0 138.5	1 33.2 -54.7 137.7	1 10.5 -54.6 136.8	0 47.3 -54.4 136.0
24°	1 22.6 -55.1 139.7	1 00.7 -54.9 138.9	0 38.5 -54.8 138.1	0 15.9 -54.6 137.2	-0 07.1 -54.4
25°	0 27.5 -55.1 140.1	0 05.8 -54.9 139.3	-0 16.3 -54.7	-0 38.7 -54.5	-1 01.5 -54.3
26°	-0 27.6 -55.1	-0 49.1 -55.0	-1 11.0 -54.8	-1 33.2 -54.6	-1 55.8 -54.4
27°	-1 22.7 -55.1	-1 44.1 -54.9	-2 05.8 -54.7	-2 27.8 -54.6	-2 50.2 -54.4
28°	-2 17.8 -55.1	-2 39.0 -54.9	-3 00.5 -54.7	-3 22.4 -54.5	-3 44.6 -54.4
29°	-3 12.9 -55.1	-3 33.9 -54.9	-3 55.2 -54.8	-4 16.9 -54.6	-4 39.0 -54.3

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°	21 04.0 -53.4 124.8	20 36.3 -53.2 123.9	20 08.2 -53.0 122.9	19 39.9 -52.8 122.0	19 11.3 -52.7 121.1
1°	20 10.6 -53.4 125.3	19 43.1 -53.3 124.4	19 15.2 -53.1 123.4	18 47.1 -53.0 122.5	18 18.6 -52.8 121.6
2°	19 17.2 -53.5 125.8	18 49.8 -53.3 124.9	18 22.1 -53.2 123.9	17 54.1 -53.0 123.0	17 25.8 -52.8 122.1
3°	18 23.7 -53.6 126.3	17 56.5 -53.4 125.3	17 28.9 -53.2 124.4	17 01.1 -53.1 123.5	16 33.0 -53.0 122.6
4°	17 30.1 -53.6 126.7	17 03.1 -53.5 125.8	16 35.7 -53.3 124.9	16 08.0 -53.1 124.0	15 40.0 -52.9 123.1
5°	16 36.5 -53.7 127.2	16 09.6 -53.6 126.3	15 42.4 -53.4 125.4	15 14.9 -53.2 124.4	14 47.1 -53.1 123.5
6°	15 42.8 -53.8 127.7	15 16.0 -53.5 126.8	14 49.0 -53.4 125.8	14 21.7 -53.3 124.9	13 54.0 -53.1 124.0
7°	14 49.0 -53.8 128.1	14 22.5 -53.7 127.2	13 55.6 -53.5 126.3	13 28.4 -53.3 125.4	13 00.9 -53.2 124.5
8°	13 55.2 -53.9 128.6	13 28.8 -53.7 127.7	13 02.1 -53.5 126.8	12 35.1 -53.4 125.9	12 07.7 -53.2 125.0
9°	13 01.3 -53.9 129.1	12 35.1 -53.7 128.1	12 08.6 -53.6 127.2	11 41.7 -53.4 126.3	11 14.5 -53.3 125.4
10°	12 07.4 -53.9 129.5	11 41.4 -53.8 128.6	11 15.0 -53.7 127.7	10 48.3 -53.5 126.8	10 21.2 -53.3 125.9
11°	11 13.5 -54.0 129.9	10 47.6 -53.9 129.0	10 21.3 -53.6 128.2	9 54.8 -53.5 127.3	9 27.9 -53.3 126.4
12°	10 19.5 -54.1 130.4	9 53.7 -53.8 129.5	9 27.7 -53.7 128.6	9 01.3 -53.5 127.7	8 34.6 -53.4 126.8
13°	9 25.4 -54.0 130.8	8 59.9 -53.9 129.9	8 34.0 -53.7 129.1	8 07.8 -53.6 128.2	7 41.2 -53.4 127.3
14°	8 31.4 -54.1 131.3	8 06.0 -53.9 130.4	7 40.3 -53.8 129.5	7 14.2 -53.6 128.6	6 47.8 -53.4 127.8
15°	7 37.3 -54.1 131.7	7 12.1 -54.0 130.8	6 46.5 -53.8 130.0	6 20.6 -53.6 129.1	5 54.4 -53.4 128.2
16°	6 43.2 -54.2 132.1	6 18.1 -54.0 131.3	5 52.7 -53.8 130.4	5 27.0 -53.6 129.5	5 01.0 -53.5 128.7
17°	5 49.0 -54.2 132.6	5 24.1 -54.0 131.7	4 58.9 -53.8 130.8	4 33.4 -53.7 130.0	4 07.5 -53.5 129.1
18°	4 54.8 -54.1 133.0	4 30.1 -54.0 132.1	4 05.1 -53.8 131.3	3 39.7 -53.6 130.4	3 14.0 -53.5 129.6
19°	4 00.7 -54.2 133.4	3 36.1 -54.0 132.6	3 11.3 -53.9 131.7	2 46.1 -53.7 130.9	2 20.5 -53.5 130.0
20°	3 06.5 -54.2 133.9	2 42.1 -54.0 133.0	2 17.4 -53.8 132.2	1 52.4 -53.7 131.3	1 27.0 -53.5 130.5
21°	2 12.3 -54.2 134.3	1 48.1 -54.0 133.5	1 23.6 -53.9 132.6	0 58.7 -53.7 131.8	0 33.5 -53.5 130.9
22°	1 18.1 -54.3 134.7	0 54.1 -54.1 133.9	0 29.7 -53.9 133.1	0 05.0 -53.7 132.2	-0 20.0 -53.5
23°	0 23.8 -54.2 135.2	0 00.0 -54.0 134.3	-0 24.2 -53.8	-0 48.7 -53.6	-1 13.5 -53.5
24°	-0 30.4 -54.2	-0 54.0 -54.1	-1 18.0 -53.9	-1 42.3 -53.7	-2 07.0 -53.5
25°	-1 24.6 -54.2	-1 48.1 -54.0	-2 11.9 -53.8	-2 36.0 -53.7	-3 00.5 -53.5
26°	-2 18.8 -54.2	-2 42.1 -54.0	-3 05.7 -53.8	-3 29.7 -53.6	-3 54.0 -53.4
27°	-3 13.0 -54.2	-3 36.1 -54.0	-3 59.5 -53.9	-4 23.3 -53.7	-4 47.4 -53.5
28°	-4 07.2 -54.2	-4 30.1 -54.0	-4 53.4 -53.8	-5 17.0 -53.6	-5 40.9 -53.4
29°	-5 01.4 -54.1	-5 24.1 -54.0	-5 47.2 -53.8	-6 10.6 -53.6	-6 34.3 -53.4

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°	18 42.5 -52.6 120.1	18 13.3 -52.4 119.2	17 43.9 -52.3 118.3	17 14.2 -52.1 117.4	16 44.3 -52.0 116.5
1°	17 49.9 -52.6 120.6	17 20.9 -52.5 119.7	16 51.6 -52.3 118.8	16 22.1 -52.2 117.9	15 52.3 -52.0 117.0
2°	16 57.3 -52.7 121.1	16 28.4 -52.5 120.2	15 59.3 -52.4 119.3	15 29.9 -52.3 118.4	15 00.3 -52.1 117.5
3°	16 04.6 -52.8 121.6	15 35.9 -52.7 120.7	15 06.9 -52.5 119.8	14 37.6 -52.3 118.9	14 08.2 -52.2 118.0
4°	15 11.8 -52.9 122.1	14 43.2 -52.7 121.2	14 14.4 -52.5 120.3	13 45.3 -52.4 119.4	13 16.0 -52.3 118.5
5°	14 18.9 -52.9 122.6	13 50.5 -52.7 121.7	13 21.9 -52.6 120.8	12 52.9 -52.4 119.9	12 23.7 -52.3 119.0
6°	13 26.0 -52.9 123.1	12 57.8 -52.8 122.2	12 29.3 -52.7 121.3	12 00.5 -52.5 120.4	11 31.4 -52.3 119.5
7°	12 33.1 -53.0 123.6	12 05.0 -52.9 122.7	11 36.6 -52.7 121.8	11 08.0 -52.6 120.9	10 39.1 -52.4 120.0
8°	11 40.1 -53.1 124.1	11 12.1 -52.9 123.2	10 43.9 -52.7 122.3	10 15.4 -52.6 121.4	9 46.7 -52.5 120.5
9°	10 47.0 -53.1 124.6	10 19.2 -52.9 123.7	9 51.2 -52.8 122.8	9 22.8 -52.6 121.9	8 54.2 -52.5 121.0
10°	9 53.9 -53.1 125.0	9 26.3 -53.0 124.1	8 58.4 -52.8 123.3	8 30.2 -52.7 122.4	8 01.7 -52.5 121.5
11°	9 00.8 -53.2 125.5	8 33.3 -53.0 124.6	8 05.6 -52.9 123.7	7 37.5 -52.7 122.9	7 09.2 -52.5 122.0
12°	8 07.6 -53.2 126.0	7 40.3 -53.0 125.1	7 12.7 -52.9 124.2	6 44.8 -52.7 123.4	6 16.7 -52.6 122.5
13°	7 14.4 -53.2 126.4	6 47.3 -53.1 125.6	6 19.8 -52.9 124.7	5 52.1 -52.8 123.8	5 24.1 -52.6 123.0
14°	6 21.2 -53.3 126.9	5 54.2 -53.1 126.0	5 26.9 -52.9 125.2	4 59.3 -52.7 124.3	4 31.5 -52.6 123.5
15°	5 27.9 -53.3 127.4	5 01.1 -53.1 126.5	4 34.0 -53.0 125.6	4 06.6 -52.8 124.8	3 38.9 -52.7 123.9
16°	4 34.6 -53.3 127.8	4 08.0 -53.2 127.0	3 41.0 -53.0 126.1	3 13.8 -52.8 125.3	2 46.2 -52.6 124.4
17°	3 41.3 -53.3 128.3	3 14.8 -53.1 127.4	2 48.0 -52.9 126.6	2 21.0 -52.9 125.7	1 53.6 -52.7 124.9
18°	2 48.0 -53.3 128.7	2 21.7 -53.2 127.9	1 55.1 -53.0 127.1	1 28.1 -52.8 126.2	1 00.9 -52.6 125.4
19°	1 54.7 -53.3 129.2	1 28.5 -53.1 128.4	1 02.1 -53.0 127.5	0 35.3 -52.8 126.7	0 08.3 -52.7 125.9
20°	1 01.4 -53.4 129.7	0 35.4 -53.2 128.8	0 09.1 -53.0 128.0	-0 17.5 -52.8	-0 44.4 -52.6
21°	0 08.0 -53.3 130.1	-0 17.8 -53.1	-0 43.9 -53.0	-1 10.3 -52.8	-1 37.0 -52.7
22°	-0 45.3 -53.3	-1 10.9 -53.2	-1 36.9 -53.0	-2 03.1 -52.9	-2 29.7 -52.6
23°	-1 38.6 -53.4	-2 04.1 -53.2	-2 29.9 -52.9	-2 56.0 -52.8	-3 22.3 -52.6
24°	-2 32.0 -53.3	-2 57.3 -53.1	-3 22.8 -53.0	-3 48.8 -52.7	-4 14.9 -52.7
25°	-3 25.3 -53.3	-3 50.4 -53.1	-4 15.8 -52.9	-4 41.5 -52.8	-5 07.6 -52.5
26°	-4 18.6 -53.3	-4 43.5 -53.1	-5 08.7 -53.0	-5 34.3 -52.7	-6 00.1 -52.6
27°	-5 11.9 -53.2	-5 36.6 -53.1	-6 01.7 -52.9	-6 27.0 -52.7	-6 52.7 -52.5
28°	-6 05.1 -53.3	-6 29.7 -53.0	-6 54.6 -52.8	-7 19.7 -52.7	-7 45.2 -52.5
29°	-6 58.4 -53.2	-7 22.7 -53.1	-7 47.4 -52.9	-8 12.4 -52.7	-8 37.7 -52.5

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°	16 14.2 -51.9 115.6	15 43.8 -51.7 114.7	15 13.2 -51.6 113.8	14 42.4 -51.5 112.9	14 11.4 -51.4 112.0
1°	15 22.3 -51.9 116.1	14 52.1 -51.8 115.2	14 21.6 -51.6 114.3	13 50.9 -51.5 113.4	13 20.0 -51.4 112.5
2°	14 30.4 -52.0 116.6	14 00.3 -51.9 115.7	13 30.0 -51.8 114.8	12 59.4 -51.6 114.0	12 28.6 -51.4 113.1
3°	13 38.4 -52.0 117.1	13 08.4 -51.9 116.2	12 38.2 -51.7 115.4	12 07.8 -51.6 114.5	11 37.2 -51.6 113.6
4°	12 46.4 -52.1 117.6	12 16.5 -51.9 116.8	11 46.5 -51.9 115.9	11 16.2 -51.8 115.0	10 45.6 -51.5 114.1
5°	11 54.3 -52.2 118.2	11 24.6 -52.1 117.3	10 54.6 -51.9 116.4	10 24.4 -51.7 115.5	9 54.1 -51.7 114.6
6°	11 02.1 -52.2 118.7	10 32.5 -52.0 117.8	10 02.7 -51.9 116.9	9 32.7 -51.8 116.0	9 02.4 -51.6 115.2
7°	10 09.9 -52.3 119.2	9 40.5 -52.2 118.3	9 10.8 -52.0 117.4	8 40.9 -51.9 116.5	8 10.8 -51.7 115.7
8°	9 17.6 -52.3 119.7	8 48.3 -52.1 118.8	8 18.8 -52.0 117.9	7 49.0 -51.8 117.0	7 19.1 -51.8 116.2
9°	8 25.3 -52.3 120.2	7 56.2 -52.2 119.3	7 26.8 -52.0 118.4	6 57.2 -51.9 117.6	6 27.3 -51.8 116.7
10°	7 33.0 -52.4 120.6	7 04.0 -52.2 119.8	6 34.8 -52.1 118.9	6 05.3 -52.0 118.1	5 35.5 -51.8 117.2
11°	6 40.6 -52.4 121.1	6 11.8 -52.3 120.3	5 42.7 -52.1 119.4	5 13.3 -51.9 118.6	4 43.7 -51.8 117.7
12°	5 48.2 -52.4 121.6	5 19.5 -52.3 120.8	4 50.6 -52.2 119.9	4 21.4 -52.0 119.1	3 51.9 -51.8 118.2
13°	4 55.8 -52.4 122.1	4 27.2 -52.2 121.3	3 58.4 -52.1 120.4	3 29.4 -52.0 119.6	3 00.1 -51.9 118.7
14°	4 03.4 -52.5 122.6	3 35.0 -52.4 121.8	3 06.3 -52.2 120.9	2 37.4 -52.0 120.1	2 08.2 -51.8 119.2
15°	3 10.9 -52.5 123.1	2 42.6 -52.3 122.2	2 14.1 -52.1 121.4	1 45.4 -52.0 120.6	1 16.4 -51.9 119.7
16°	2 18.4 -52.5 123.6	1 50.3 -52.3 122.7	1 22.0 -52.2 121.9	0 53.4 -52.1 121.1	0 24.5 -51.9 120.2
17°	1 25.9 -52.5 124.1	0 58.0 -52.3 123.2	0 29.8 -52.2 122.4	0 01.3 -52.0 121.6	-0 27.4 -51.8
18°	0 33.4 -52.5 124.5	0 05.7 -52.4 123.7	-0 22.4 -52.2	-0 50.7 -52.0	-1 19.2 -51.9
19°	-0 19.1 -52.5	-0 46.7 -52.3	-1 14.6 -52.1	-1 42.7 -52.0	-2 11.1 -51.9
20°	-1 11.6 -52.4	-1 39.0 -52.3	-2 06.7 -52.2	-2 34.7 -52.0	-3 03.0 -51.8
21°	-2 04.0 -52.5	-2 31.3 -52.3	-2 58.9 -52.1	-3 26.7 -52.0	-3 54.8 -51.8
22°	-2 56.5 -52.5	-3 23.6 -52.3	-3 51.0 -52.2	-4 18.7 -52.0	-4 46.6 -51.8
23°	-3 49.0 -52.4	-4 15.9 -52.3	-4 43.2 -52.1	-5 10.7 -51.9	-5 38.4 -51.8
24°	-4 41.4 -52.5	-5 08.2 -52.3	-5 35.3 -52.1	-6 02.6 -51.9	-6 30.2 -51.7
25°	-5 33.9 -52.4	-6 00.5 -52.2	-6 27.4 -52.0	-6 54.5 -51.9	-7 21.9 -51.7
26°	-6 26.3 -52.4	-6 52.7 -52.2	-7 19.4 -52.0	-7 46.4 -51.8	-8 13.6 -51.7
27°	-7 18.7 -52.3	-7 44.9 -52.2	-8 11.4 -52.0	-8 38.2 -51.8	-9 05.3 -51.6
28°	-8 11.0 -52.3	-8 37.1 -52.1	-9 03.4 -51.9	-9 30.0 -51.8	-9 56.9 -51.6
29°	-9 03.3 -52.3	-9 29.2 -52.1	-9 55.3 -51.9		

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°	13 40.2 -51.2 111.1	13 08.8 -51.1 110.3	12 37.2 -51.0 109.4	12 05.5 -50.9 108.5	11 33.6 -50.8 107.7
1°	12 49.0 -51.3 111.7	12 17.7 -51.2 110.8	11 46.2 -51.0 109.9	11 14.6 -51.0 109.1	10 42.8 -50.8 108.2
2°	11 57.7 -51.4 112.2	11 26.5 -51.2 111.3	10 55.2 -51.2 110.5	10 23.6 -51.0 109.6	9 52.0 -51.0 108.7
3°	11 06.3 -51.4 112.7	10 35.3 -51.3 111.9	10 04.0 -51.1 111.0	9 32.6 -51.0 110.1	9 01.0 -50.9 109.3
4°	10 14.9 -51.4 113.3	9 44.0 -51.3 112.4	9 12.9 -51.2 111.5	8 41.6 -51.1 110.7	8 10.1 -51.0 109.8
5°	9 23.5 -51.5 113.8	8 52.7 -51.4 112.9	8 21.7 -51.3 112.1	7 50.5 -51.2 111.2	7 19.1 -51.0 110.3
6°	8 32.0 -51.6 114.3	8 01.3 -51.4 113.4	7 30.4 -51.3 112.6	6 59.3 -51.2 111.7	6 28.1 -51.1 110.9
7°	7 40.4 -51.6 114.8	7 09.9 -51.5 114.0	6 39.1 -51.3 113.1	6 08.1 -51.2 112.2	5 37.0 -51.1 111.4
8°	6 48.8 -51.6 115.3	6 18.4 -51.5 114.5	5 47.8 -51.4 113.6	5 16.9 -51.2 112.8	4 45.9 -51.1 111.9
9°	5 57.2 -51.6 115.8	5 26.9 -51.5 115.0	4 56.4 -51.4 114.1	4 25.7 -51.3 113.3	3 54.8 -51.2 112.4
10°	5 05.6 -51.7 116.4	4 35.4 -51.5 115.5	4 05.0 -51.4 114.7	3 34.4 -51.2 113.8	3 03.6 -51.1 113.0
11°	4 13.9 -51.7 116.9	3 43.9 -51.6 116.0	3 13.6 -51.4 115.2	2 43.2 -51.3 114.3	2 12.5 -51.2 113.5
12°	3 22.2 -51.7 117.4	2 52.3 -51.5 116.5	2 22.2 -51.4 115.7	1 51.9 -51.3 114.9	1 21.3 -51.2 114.0
13°	2 30.5 -51.7 117.9	2 00.8 -51.6 117.0	1 30.8 -51.5 116.2	1 00.6 -51.3 115.4	0 30.1 -51.1 114.5
14°	1 38.8 -51.7 118.4	1 09.2 -51.6 117.6	0 39.3 -51.4 116.7	0 09.3 -51.3 115.9	-0 21.0 -51.2
15°	0 47.1 -51.7 118.9	0 17.6 -51.6 118.1	-0 12.1 -51.4	-0 42.0 -51.4	-1 12.2 -51.2
16°	-0 04.6 -51.7	-0 34.0 -51.5	-1 03.5 -51.5	-1 33.4 -51.2	-2 03.4 -51.1
17°	-0 56.3 -51.8	-1 25.5 -51.6	-1 55.0 -51.4	-2 24.6 -51.3	-2 54.5 -51.2
18°	-1 48.1 -51.7	-2 17.1 -51.6	-2 46.4 -51.4	-3 15.9 -51.3	-3 45.7 -51.1
19°	-2 39.8 -51.7	-3 08.7 -51.5	-3 37.8 -51.4	-4 07.2 -51.2	-4 36.8 -51.1
20°	-3 31.5 -51.6	-4 00.2 -51.5	-4 29.2 -51.4	-4 58.4 -51.3	-5 27.9 -51.1
21°	-4 23.1 -51.7	-4 51.7 -51.5	-5 20.6 -51.3	-5 49.7 -51.2	-6 19.0 -51.0
22°	-5 14.8 -51.6	-5 43.2 -51.5	-6 11.9 -51.3	-6 40.9 -51.1	-7 10.0 -51.0
23°	-6 06.4 -51.6	-6 34.7 -51.5	-7 03.2 -51.3	-7 32.0 -51.1	-8 01.0 -51.0
24°	-6 58.0 -51.6	-7 26.2 -51.4	-7 54.5 -51.3	-8 23.1 -51.1	-8 52.0 -50.9
25°	-7 49.6 -51.6	-8 17.6 -51.3	-8 45.8 -51.2	-9 14.2 -51.0	-9 42.9 -50.9
26°	-8 41.2 -51.5	-9 08.9 -51.4	-9 37.0 -51.1		
27°	-9 32.7 -51.4				
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°	11 01.6 -50.7 106.8	10 29.4 -50.6 105.9	9 57.0 -50.5 105.1	9 24.6 -50.5 104.2	8 52.0 -50.4 103.4
1°	10 10.9 -50.8 107.3	9 38.8 -50.7 106.5	9 06.5 -50.6 105.6	8 34.1 -50.5 104.8	8 01.6 -50.4 103.9
2°	9 20.1 -50.8 107.9	8 48.1 -50.7 107.0	8 15.9 -50.6 106.2	7 43.6 -50.5 105.3	7 11.2 -50.4 104.5
3°	8 29.3 -50.9 108.4	7 57.4 -50.8 107.6	7 25.3 -50.6 106.7	6 53.1 -50.6 105.9	6 20.8 -50.5 105.0
4°	7 38.4 -50.9 109.0	7 06.6 -50.8 108.1	6 34.7 -50.7 107.2	6 02.5 -50.6 106.4	5 30.3 -50.5 105.6
5°	6 47.5 -50.9 109.5	6 15.8 -50.8 108.6	5 44.0 -50.8 107.8	5 11.9 -50.6 106.9	4 39.8 -50.6 106.1
6°	5 56.6 -50.9 110.0	5 25.0 -50.8 109.2	4 53.2 -50.7 108.3	4 21.3 -50.6 107.5	3 49.2 -50.5 106.6
7°	5 05.7 -51.0 110.5	4 34.2 -50.9 109.7	4 02.5 -50.8 108.9	3 30.7 -50.7 108.0	2 58.7 -50.6 107.2
8°	4 14.7 -51.0 111.1	3 43.3 -50.9 110.2	3 11.7 -50.8 109.4	2 40.0 -50.7 108.6	2 08.1 -50.6 107.7
9°	3 23.7 -51.1 111.6	2 52.4 -50.9 110.8	2 20.9 -50.8 109.9	1 49.3 -50.7 109.1	1 17.5 -50.6 108.3
10°	2 32.6 -51.0 112.1	2 01.5 -50.9 111.3	1 30.1 -50.8 110.5	0 58.6 -50.7 109.6	0 26.9 -50.6 108.8
11°	1 41.6 -51.0 112.7	1 10.6 -51.0 111.8	0 39.3 -50.8 111.0	0 07.9 -50.7 110.2	-0 23.7 -50.6
12°	0 50.6 -51.1 113.2	0 19.6 -50.9 112.4	-0 11.5 -50.8	-0 42.8 -50.7	-1 14.3 -50.5
13°	-0 00.5 -51.0	-0 31.3 -50.9	-1 02.3 -50.8	-1 33.5 -50.7	-2 04.8 -50.6
14°	-0 51.5 -51.1	-1 22.2 -50.9	-1 53.1 -50.8	-2 24.2 -50.7	-2 55.4 -50.6
15°	-1 42.6 -51.0	-2 13.1 -50.9	-2 43.9 -50.8	-3 14.9 -50.6	-3 46.0 -50.5
16°	-2 33.6 -51.0	-3 04.0 -50.9	-3 34.7 -50.7	-4 05.5 -50.6	-4 36.5 -50.5
17°	-3 24.6 -51.0	-3 54.9 -50.9	-4 25.4 -50.8	-4 56.1 -50.7	-5 27.0 -50.5
18°	-4 15.6 -51.0	-4 45.8 -50.9	-5 16.2 -50.7	-5 46.8 -50.5	-6 17.5 -50.5
19°	-5 06.6 -51.0	-5 36.7 -50.8	-6 06.9 -50.7	-6 37.3 -50.6	-7 08.0 -50.4
20°	-5 57.6 -50.9	-6 27.5 -50.8	-6 57.6 -50.6	-7 27.9 -50.5	-7 58.4 -50.4
21°	-6 48.5 -50.9	-7 18.3 -50.7	-7 48.2 -50.6	-8 18.4 -50.4	-8 48.8 -50.3
22°	-7 39.4 -50.8	-8 09.0 -50.7	-8 38.8 -50.6	-9 08.8 -50.5	-9 39.1 -50.2
23°	-8 30.2 -50.9	-8 59.7 -50.7	-9 29.4 -50.5	-9 59.3 -50.3	
24°	-9 21.1 -50.7	-9 50.4 -50.6			
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°	8 19.3 -50.3 102.5	7 46.5 -50.2 101.7	7 13.6 -50.2 100.8	6 40.6 -50.1 100.0	6 07.5 -50.0 99.2
1°	7 29.0 -50.3 103.1	6 56.3 -50.3 102.2	6 23.4 -50.2 101.4	5 50.5 -50.1 100.5	5 17.5 -50.1 99.7
2°	6 38.7 -50.4 103.6	6 06.0 -50.3 102.8	5 33.2 -50.2 101.9	5 00.4 -50.2 101.1	4 27.4 -50.1 100.3
3°	5 48.3 -50.4 104.2	5 15.7 -50.3 103.3	4 43.0 -50.2 102.5	4 10.2 -50.2 101.6	3 37.3 -50.1 100.8
4°	4 57.9 -50.4 104.7	4 25.4 -50.4 103.9	3 52.8 -50.3 103.0	3 20.0 -50.2 102.2	2 47.2 -50.2 101.4
5°	4 07.5 -50.5 105.3	3 35.0 -50.3 104.4	3 02.5 -50.3 103.6	2 29.8 -50.2 102.7	1 57.0 -50.1 101.9
6°	3 17.0 -50.5 105.8	2 44.7 -50.4 105.0	2 12.2 -50.3 104.1	1 39.6 -50.2 103.3	1 06.9 -50.2 102.5
7°	2 26.5 -50.4 106.3	1 54.3 -50.4 105.5	1 21.9 -50.3 104.7	0 49.4 -50.3 103.8	0 16.7 -50.1 103.0
8°	1 36.1 -50.5 106.9	1 03.9 -50.4 106.1	0 31.6 -50.3 105.2	-0 00.9 -50.2	-0 33.4 -50.2
9°	0 45.6 -50.5 107.4	0 13.5 -50.4 106.6	-0 18.7 -50.3	-0 51.1 -50.2	-1 23.6 -50.1
10°	-0 04.9 -50.5	-0 36.9 -50.4	-1 09.0 -50.3	-1 41.3 -50.2	-2 13.7 -50.1
11°	-0 55.4 -50.5	-1 27.3 -50.4	-1 59.3 -50.3	-2 31.5 -50.2	-3 03.8 -50.1
12°	-1 45.9 -50.5	-2 17.7 -50.4	-2 49.6 -50.3	-3 21.7 -50.2	-3 53.9 -50.1
13°	-2 36.4 -50.4	-3 08.1 -50.3	-3 39.9 -50.3	-4 11.9 -50.2	-4 44.0 -50.1
14°	-3 26.8 -50.5	-3 58.4 -50.4	-4 30.2 -50.2	-5 02.1 -50.1	-5 34.1 -50.0
15°	-4 17.3 -50.4	-4 48.8 -50.3	-5 20.4 -50.2	-5 52.2 -50.1	-6 24.1 -50.0
16°	-5 07.7 -50.4	-5 39.1 -50.3	-6 10.6 -50.2	-6 42.3 -50.1	-7 14.1 -50.0
17°	-5 58.1 -50.4	-6 29.4 -50.2	-7 00.8 -50.1	-7 32.4 -50.0	-8 04.1 -49.9
18°	-6 48.5 -50.3	-7 19.6 -50.2	-7 50.9 -50.1	-8 22.4 -49.9	-8 54.0 -49.9
19°	-7 38.8 -50.3	-8 09.8 -50.2	-8 41.0 -50.0	-9 12.3 -50.0	-9 43.9 -49.8
20°	-8 29.1 -50.2	-9 00.0 -50.1	-9 31.0 -50.0		
21°	-9 19.3 -50.2	-9 50.1 -50.0			
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°	5 34.3 -50.0 98.3	5 01.1 -49.9 97.5	4 27.8 -49.9 96.6	3 54.5 -49.9 95.8	3 21.1 -49.9 95.0
1°	4 44.3 -50.0 98.9	4 11.2 -50.0 98.0	3 37.9 -49.9 97.2	3 04.6 -49.9 96.4	2 31.2 -49.8 95.5
2°	3 54.3 -50.0 99.4	3 21.2 -50.0 98.6	2 48.0 -50.0 97.8	2 14.7 -49.9 96.9	1 41.4 -49.9 96.1
3°	3 04.3 -50.1 100.0	2 31.2 -50.0 99.1	1 58.0 -49.9 98.3	1 24.8 -49.9 97.5	0 51.5 -49.9 96.7
4°	2 14.2 -50.0 100.5	1 41.2 -50.0 99.7	1 08.1 -50.0 98.9	0 34.9 -49.9 98.0	0 01.6 -49.8 97.2
5°	1 24.2 -50.1 101.1	0 51.2 -50.0 100.3	0 18.1 -49.9 99.4	-0 15.0 -49.9	-0 48.2 -49.9
6°	0 34.1 -50.1 101.6	0 01.2 -50.0 100.8	-0 31.8 -50.0	-1 04.9 -49.9	-1 38.1 -49.8
7°	-0 16.0 -50.1	-0 48.8 -50.1	-1 21.8 -49.9	-1 54.8 -49.9	-2 27.9 -49.9
8°	-1 06.1 -50.1	-1 38.9 -50.0	-2 11.7 -50.0	-2 44.7 -49.9	-3 17.8 -49.8
9°	-1 56.2 -50.0	-2 28.9 -50.0	-3 01.7 -49.9	-3 34.6 -49.8	-4 07.6 -49.8
10°	-2 46.2 -50.1	-3 18.9 -49.9	-3 51.6 -49.9	-4 24.4 -49.9	-4 57.4 -49.7
11°	-3 36.3 -50.0	-4 08.8 -50.0	-4 41.5 -49.9	-5 14.3 -49.8	-5 47.1 -49.8
12°	-4 26.3 -50.0	-4 58.8 -49.9	-5 31.4 -49.8	-6 04.1 -49.7	-6 36.9 -49.7
13°	-5 16.3 -50.0	-5 48.7 -49.9	-6 21.2 -49.8	-6 53.8 -49.8	-7 26.6 -49.6
14°	-6 06.3 -49.9	-6 38.6 -49.8	-7 11.0 -49.8	-7 43.6 -49.6	-8 16.2 -49.6
15°	-6 56.2 -49.9	-7 28.4 -49.8	-8 00.8 -49.7	-8 33.2 -49.7	-9 05.8 -49.6
16°	-7 46.1 -49.9	-8 18.2 -49.8	-8 50.5 -49.7	-9 22.9 -49.6	-9 55.4 -49.5
17°	-8 36.0 -49.8	-9 08.0 -49.7	-9 40.2 -49.6		
18°	-9 25.8 -49.7	-9 57.7 -49.7			
19°					
20°					
21°					
22°					
23°					
24°					
25°					
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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 47.6 -49.8 94.1	2 14.1 -49.8 93.3	1 40.6 -49.7 92.5	1 07.1 -49.8 91.7	0 33.6 -49.8 90.8
1°	1 57.8 -49.8 94.7	1 24.3 -49.7 93.9	0 50.9 -49.8 93.0	0 17.3 -49.7 92.2	-0 16.2 -49.7
2°	1 08.0 -49.8 95.3	0 34.6 -49.8 94.4	0 01.1 -49.8 93.6	-0 32.4 -49.8	-1 05.9 -49.8
3°	0 18.2 -49.9 95.8	-0 15.2 -49.8	-0 48.7 -49.8	-1 22.2 -49.7	-1 55.7 -49.7
4°	-0 31.7 -49.8	-1 05.0 -49.8	-1 38.5 -49.7	-2 11.9 -49.7	-2 45.4 -49.7
5°	-1 21.5 -49.8	-1 54.8 -49.8	-2 28.2 -49.8	-3 01.6 -49.8	-3 35.1 -49.7
6°	-2 11.3 -49.8	-2 44.6 -49.8	-3 18.0 -49.7	-3 51.4 -49.7	-4 24.8 -49.7
7°	-3 01.1 -49.8	-3 34.4 -49.7	-4 07.7 -49.7	-4 41.1 -49.6	-5 14.5 -49.6
8°	-3 50.9 -49.8	-4 24.1 -49.7	-4 57.4 -49.7	-5 30.7 -49.7	-6 04.1 -49.6
9°	-4 40.7 -49.7	-5 13.8 -49.7	-5 47.1 -49.6	-6 20.4 -49.6	-6 53.7 -49.6
10°	-5 30.4 -49.7	-6 03.5 -49.7	-6 36.7 -49.6	-7 10.0 -49.5	-7 43.3 -49.5
11°	-6 20.1 -49.7	-6 53.2 -49.6	-7 26.3 -49.6	-7 59.5 -49.5	-8 32.8 -49.4
12°	-7 09.8 -49.6	-7 42.8 -49.5	-8 15.9 -49.5	-8 49.0 -49.5	-9 22.2 -49.4
13°	-7 59.4 -49.6	-8 32.3 -49.6	-9 05.4 -49.4	-9 38.5 -49.4	
14°	-8 49.0 -49.5	-9 21.9 -49.4	-9 54.8 -49.4		
15°	-9 38.5 -49.5				
16°					
17°					
18°					
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23°					
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28°					
29°					

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 -49.7 90.0	-0 33.6 -49.7			
1°	-0 49.7 -49.8	-1 23.3 -49.7			
2°	-1 39.5 -49.7	-2 13.0 -49.7			
3°	-2 29.2 -49.7	-3 02.7 -49.8			
4°	-3 18.9 -49.7	-3 52.5 -49.6			
5°	-4 08.6 -49.7	-4 42.1 -49.7			
6°	-4 58.3 -49.6	-5 31.8 -49.6			
7°	-5 47.9 -49.6	-6 21.4 -49.6			
8°	-6 37.5 -49.6	-7 11.0 -49.5			
9°	-7 27.1 -49.5	-8 00.5 -49.5			
10°	-8 16.6 -49.5	-8 50.0 -49.5			
11°	-9 06.1 -49.4	-9 39.5 -49.4			
12°	-9 55.5 -49.4				
13°					
14°					
15°					
16°					
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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°					
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28°					
29°					

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°	33 00.0 -60.0 180.0	32 59.7 -60.0 178.8	32 58.6 -59.9 177.6	32 56.9 -59.9 176.4	32 54.6 -60.0 175.2
1°	32 00.0 -60.0 180.0	31 59.7 -60.0 178.8	31 58.7 -60.0 177.6	31 57.0 -60.0 176.5	31 54.6 -59.9 175.3
2°	31 00.0 -60.0 180.0	30 59.7 -60.0 178.8	30 58.7 -60.0 177.7	30 57.0 -60.0 176.5	30 54.7 -60.0 175.3
3°	30 00.0 -60.0 180.0	29 59.7 -60.0 178.8	29 58.7 -60.0 177.7	29 57.0 -59.9 176.5	29 54.7 -59.9 175.4
4°	29 00.0 -60.0 180.0	28 59.7 -60.0 178.9	28 58.7 -60.0 177.7	28 57.1 -60.0 176.6	28 54.8 -59.9 175.4
5°	28 00.0 -60.0 180.0	27 59.7 -60.0 178.9	27 58.7 -60.0 177.7	27 57.1 -60.0 176.6	27 54.9 -60.0 175.5
6°	27 00.0 -60.0 180.0	26 59.7 -60.0 178.9	26 58.7 -60.0 177.8	26 57.1 -59.9 176.7	26 54.9 -59.9 175.5
7°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 58.7 -59.9 177.8	25 57.2 -60.0 176.7	25 55.0 -60.0 175.6
8°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 58.8 -60.0 177.8	24 57.2 -60.0 176.7	24 55.0 -59.9 175.6
9°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.8 -60.0 177.8	23 57.2 -59.9 176.8	23 55.1 -60.0 175.7
10°	23 00.0 -60.0 180.0	22 59.7 -60.0 178.9	22 58.8 -60.0 177.9	22 57.3 -60.0 176.8	22 55.1 -59.9 175.7
11°	22 00.0 -60.0 180.0	21 59.7 -60.0 178.9	21 58.8 -60.0 177.9	21 57.3 -60.0 176.8	21 55.2 -60.0 175.8
12°	21 00.0 -60.0 180.0	20 59.7 -60.0 179.0	20 58.8 -60.0 177.9	20 57.3 -60.0 176.9	20 55.2 -59.9 175.8
13°	20 00.0 -60.0 180.0	19 59.7 -60.0 179.0	19 58.8 -60.0 177.9	19 57.3 -59.9 176.9	19 55.3 -60.0 175.9
14°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.8 -60.0 177.9	18 57.4 -60.0 176.9	18 55.3 -59.9 175.9
15°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 58.8 -59.9 178.0	17 57.4 -60.0 177.0	17 55.4 -60.0 175.9
16°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 58.9 -60.0 178.0	16 57.4 -60.0 177.0	16 55.4 -59.9 176.0
17°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 58.9 -60.0 178.0	15 57.4 -59.9 177.0	15 55.5 -60.0 176.0
18°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.0	14 58.9 -60.0 178.0	14 57.5 -60.0 177.0	14 55.5 -59.9 176.1
19°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.0	13 58.9 -60.0 178.1	13 57.5 -60.0 177.1	13 55.6 -60.0 176.1
20°	13 00.0 -60.0 180.0	12 59.7 -60.0 179.0	12 58.9 -60.0 178.1	12 57.5 -59.9 177.1	12 55.6 -60.0 176.1
21°	12 00.0 -60.0 180.0	11 59.7 -60.0 179.0	11 58.9 -60.0 178.1	11 57.6 -60.0 177.1	11 55.6 -59.9 176.2
22°	11 00.0 -60.0 180.0	10 59.7 -60.0 179.1	10 58.9 -60.0 178.1	10 57.6 -60.0 177.2	10 55.7 -60.0 176.2
23°	10 00.0 -60.0 180.0	9 59.7 -60.0 179.1	9 58.9 -60.0 178.1	9 57.6 -60.0 177.2	9 55.7 -59.9 176.3
24°	9 00.0 -60.0 180.0	8 59.7 -60.0 179.1	8 58.9 -59.9 178.2	8 57.6 -59.9 177.2	8 55.8 -60.0 176.3
25°	8 00.0 -60.0 180.0	7 59.7 -60.0 179.1	7 59.0 -60.0 178.2	7 57.7 -60.0 177.3	7 55.8 -59.9 176.3
26°	7 00.0 -60.0 180.0	6 59.7 -60.0 179.1	6 59.0 -60.0 178.2	6 57.7 -60.0 177.3	6 55.9 -60.0 176.4
27°	6 00.0 -60.0 180.0	5 59.7 -60.0 179.1	5 59.0 -60.0 178.2	5 57.7 -60.0 177.3	5 55.9 -59.9 176.4
28°	5 00.0 -60.0 180.0	4 59.7 -60.0 179.1	4 59.0 -60.0 178.2	4 57.7 -59.9 177.3	4 56.0 -60.0 176.5
29°	4 00.0 -60.0 180.0	3 59.7 -59.9 179.1	3 59.0 -60.0 178.2	3 57.8 -60.0 177.4	3 56.0 -60.0 176.5

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°	32 51.5 -59.9 174.0	32 47.8 -59.9 172.9	32 43.4 -59.8 171.7	32 38.3 -59.7 170.5	32 32.6 -59.7 169.3
1°	31 51.6 -59.9 174.1	31 47.9 -59.8 172.9	31 43.6 -59.8 171.8	31 38.6 -59.8 170.6	31 32.9 -59.7 169.4
2°	30 51.7 -59.9 174.2	30 48.1 -59.9 173.0	30 43.8 -59.9 171.9	30 38.8 -59.8 170.7	30 33.2 -59.7 169.5
3°	29 51.8 -59.9 174.2	29 48.2 -59.9 173.1	29 43.9 -59.8 171.9	29 39.0 -59.7 170.8	29 33.5 -59.7 169.7
4°	28 51.9 -59.9 174.3	28 48.3 -59.9 173.2	28 44.1 -59.8 172.0	28 39.3 -59.8 170.9	28 33.8 -59.8 169.8
5°	27 52.0 -59.9 174.4	27 48.4 -59.8 173.2	27 44.3 -59.9 172.1	27 39.5 -59.8 171.0	27 34.0 -59.7 169.9
6°	26 52.1 -60.0 174.4	26 48.6 -59.9 173.3	26 44.4 -59.8 172.2	26 39.7 -59.8 171.1	26 34.3 -59.7 170.0
7°	25 52.1 -59.9 174.5	25 48.7 -59.9 173.4	25 44.6 -59.8 172.3	25 39.9 -59.8 171.2	25 34.6 -59.7 170.1
8°	24 52.2 -59.9 174.5	24 48.8 -59.9 173.5	24 44.8 -59.9 172.4	24 40.1 -59.8 171.3	24 34.9 -59.8 170.2
9°	23 52.3 -59.9 174.6	23 48.9 -59.9 173.5	23 44.9 -59.8 172.4	23 40.3 -59.8 171.4	23 35.1 -59.7 170.3
10°	22 52.4 -59.9 174.7	22 49.0 -59.9 173.6	22 45.1 -59.9 172.5	22 40.5 -59.8 171.5	22 35.4 -59.8 170.4
11°	21 52.5 -60.0 174.7	21 49.1 -59.8 173.7	21 45.2 -59.8 172.6	21 40.7 -59.8 171.5	21 35.6 -59.7 170.5
12°	20 52.5 -59.9 174.8	20 49.3 -59.9 173.7	20 45.4 -59.9 172.7	20 40.9 -59.8 171.6	20 35.9 -59.8 170.6
13°	19 52.6 -59.9 174.8	19 49.4 -59.9 173.8	19 45.5 -59.8 172.8	19 41.1 -59.8 171.7	19 36.1 -59.7 170.7
14°	18 52.7 -59.9 174.9	18 49.5 -59.9 173.8	18 45.7 -59.9 172.8	18 41.3 -59.8 171.8	18 36.4 -59.8 170.8
15°	17 52.8 -60.0 174.9	17 49.6 -59.9 173.9	17 45.8 -59.8 172.9	17 41.5 -59.8 171.9	17 36.6 -59.7 170.9
16°	16 52.8 -59.9 175.0	16 49.7 -59.9 174.0	16 46.0 -59.9 173.0	16 41.7 -59.8 172.0	16 36.9 -59.8 171.0
17°	15 52.9 -59.9 175.0	15 49.8 -59.9 174.0	15 46.1 -59.8 173.0	15 41.9 -59.8 172.1	15 37.1 -59.8 171.1
18°	14 53.0 -59.9 175.1	14 49.9 -59.9 174.1	14 46.3 -59.9 173.1	14 42.1 -59.8 172.1	14 37.3 -59.7 171.2
19°	13 53.1 -60.0 175.1	13 50.0 -59.9 174.2	13 46.4 -59.9 173.2	13 42.3 -59.9 172.2	13 37.6 -59.8 171.2
20°	12 53.1 -59.9 175.2	12 50.1 -59.9 174.2	12 46.5 -59.8 173.3	12 42.4 -59.8 172.3	12 37.8 -59.8 171.3
21°	11 53.2 -59.9 175.2	11 50.2 -59.9 174.3	11 46.7 -59.9 173.3	11 42.6 -59.8 172.4	11 38.0 -59.8 171.4
22°	10 53.3 -60.0 175.3	10 50.3 -59.9 174.3	10 46.8 -59.8 173.4	10 42.8 -59.8 172.5	10 38.2 -59.7 171.5
23°	9 53.3 -59.9 175.3	9 50.4 -59.9 174.4	9 47.0 -59.9 173.5	9 43.0 -59.8 172.5	9 38.5 -59.8 171.6
24°	8 53.4 -59.9 175.4	8 50.5 -59.9 174.5	8 47.1 -59.9 173.5	8 43.2 -59.9 172.6	8 38.7 -59.8 171.7
25°	7 53.5 -60.0 175.4	7 50.6 -59.9 174.5	7 47.2 -59.8 173.6	7 43.3 -59.8 172.7	7 38.9 -59.8 171.8
26°	6 53.5 -59.9 175.5	6 50.7 -59.9 174.6	6 47.4 -59.9 173.7	6 43.5 -59.8 172.8	6 39.1 -59.7 171.9
27°	5 53.6 -59.9 175.5	5 50.8 -59.9 174.6	5 47.5 -59.9 173.7	5 43.7 -59.8 172.8	5 39.4 -59.8 171.9
28°	4 53.7 -59.9 175.6	4 50.9 -59.9 174.7	4 47.6 -59.8 173.8	4 43.9 -59.9 172.9	4 39.6 -59.8 172.0
29°	3 53.8 -60.0 175.6	3 51.0 -59.9 174.7	3 47.8 -59.9 173.9	3 44.0 -59.8 173.0	3 39.8 -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°	32 26.2 -59.6 168.1	32 19.1 -59.5 167.0	32 11.4 -59.4 165.8	32 03.1 -59.4 164.6	31 54.1 -59.3 163.4
1°	31 26.6 -59.7 168.3	31 19.6 -59.6 167.1	31 12.0 -59.5 165.9	31 03.7 -59.4 164.8	30 54.8 -59.3 163.6
2°	30 26.9 -59.6 168.4	30 20.0 -59.5 167.2	30 12.5 -59.5 166.1	30 04.3 -59.4 164.9	29 55.5 -59.3 163.8
3°	29 27.3 -59.7 168.5	29 20.5 -59.6 167.4	29 13.0 -59.5 166.2	29 04.9 -59.4 165.1	28 56.2 -59.3 164.0
4°	28 27.6 -59.6 168.6	28 20.9 -59.6 167.5	28 13.5 -59.5 166.4	28 05.5 -59.4 165.3	27 56.9 -59.4 164.1
5°	27 28.0 -59.7 168.8	27 21.3 -59.6 167.6	27 14.0 -59.5 166.5	27 06.1 -59.5 165.4	26 57.5 -59.3 164.3
6°	26 28.3 -59.6 168.9	26 21.7 -59.6 167.8	26 14.5 -59.5 166.7	26 06.6 -59.4 165.6	25 58.2 -59.4 164.5
7°	25 28.7 -59.7 169.0	25 22.1 -59.6 167.9	25 15.0 -59.6 166.8	25 07.2 -59.5 165.7	24 58.8 -59.3 164.6
8°	24 29.0 -59.7 169.1	24 22.5 -59.6 168.0	24 15.4 -59.5 166.9	24 07.7 -59.4 165.9	23 59.5 -59.4 164.8
9°	23 29.3 -59.7 169.2	23 22.9 -59.6 168.2	23 15.9 -59.6 167.1	23 08.3 -59.5 166.0	23 00.1 -59.4 165.0
10°	22 29.6 -59.7 169.3	22 23.3 -59.6 168.3	22 16.3 -59.5 167.2	22 08.8 -59.5 166.2	22 00.7 -59.4 165.1
11°	21 29.9 -59.7 169.4	21 23.7 -59.7 168.4	21 16.8 -59.6 167.3	21 09.3 -59.4 166.3	21 01.3 -59.4 165.3
12°	20 30.2 -59.6 169.6	20 24.0 -59.6 168.5	20 17.2 -59.5 167.5	20 09.9 -59.5 166.4	20 01.9 -59.4 165.4
13°	19 30.6 -59.7 169.7	19 24.4 -59.6 168.6	19 17.7 -59.6 167.6	19 10.4 -59.5 166.6	19 02.5 -59.4 165.6
14°	18 30.9 -59.8 169.8	18 24.8 -59.7 168.7	18 18.1 -59.6 167.7	18 10.9 -59.5 166.7	18 03.1 -59.4 165.7
15°	17 31.1 -59.7 169.9	17 25.1 -59.6 168.9	17 18.5 -59.6 167.9	17 11.4 -59.5 166.9	17 03.7 -59.5 165.9
16°	16 31.4 -59.7 170.0	16 25.5 -59.7 169.0	16 18.9 -59.5 168.0	16 11.9 -59.5 167.0	16 04.2 -59.4 166.0
17°	15 31.7 -59.7 170.1	15 25.8 -59.6 169.1	15 19.4 -59.6 168.1	15 12.4 -59.6 167.1	15 04.8 -59.4 166.1
18°	14 32.0 -59.7 170.2	14 26.2 -59.7 169.2	14 19.8 -59.6 168.2	14 12.8 -59.5 167.2	14 05.4 -59.5 166.3
19°	13 32.3 -59.7 170.3	13 26.5 -59.6 169.3	13 20.2 -59.6 168.3	13 13.3 -59.5 167.4	13 05.9 -59.4 166.4
20°	12 32.6 -59.7 170.4	12 26.9 -59.7 169.4	12 20.6 -59.6 168.5	12 13.8 -59.5 167.5	12 06.5 -59.5 166.6
21°	11 32.9 -59.7 170.5	11 27.2 -59.7 169.5	11 21.0 -59.6 168.6	11 14.3 -59.6 167.6	11 07.0 -59.5 166.7
22°	10 33.2 -59.8 170.6	10 27.5 -59.6 169.6	10 21.4 -59.6 168.7	10 14.7 -59.5 167.8	10 07.5 -59.4 166.8
23°	9 33.4 -59.7 170.7	9 27.9 -59.7 169.7	9 21.8 -59.6 168.8	9 15.2 -59.5 167.9	9 08.1 -59.5 167.0
24°	8 33.7 -59.7 170.8	8 28.2 -59.7 169.8	8 22.2 -59.6 168.9	8 15.7 -59.6 168.0	8 08.6 -59.4 167.1
25°	7 34.0 -59.7 170.9	7 28.5 -59.6 170.0	7 22.6 -59.6 169.0	7 16.1 -59.5 168.1	7 09.2 -59.5 167.2
26°	6 34.3 -59.8 171.0	6 28.9 -59.7 170.1	6 23.0 -59.6 169.2	6 16.6 -59.6 168.3	6 09.7 -59.5 167.4
27°	5 34.5 -59.7 171.1	5 29.2 -59.7 170.2	5 23.4 -59.6 169.3	5 17.0 -59.5 168.4	5 10.2 -59.5 167.5
28°	4 34.8 -59.7 171.2	4 29.5 -59.7 170.3	4 23.8 -59.7 169.4	4 17.5 -59.6 168.5	4 10.7 -59.4 167.6
29°	3 35.1 -59.8 171.2	3 29.8 -59.6 170.4	3 24.1 -59.6 169.5	3 17.9 -59.5 168.6	3 11.3 -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°	31 44.5 -59.2 162.3	31 34.2 -59.1 161.1	31 23.3 -58.9 160.0	31 11.8 -58.8 158.8	30 59.7 -58.7 157.7
1°	30 45.3 -59.2 162.5	30 35.1 -59.1 161.3	30 24.4 -59.0 160.2	30 13.0 -58.9 159.1	30 01.0 -58.7 157.9
2°	29 46.1 -59.2 162.7	29 36.0 -59.1 161.5	29 25.4 -59.0 160.4	29 14.1 -58.9 159.3	29 02.3 -58.8 158.2
3°	28 46.9 -59.2 162.8	28 36.9 -59.1 161.7	28 26.4 -59.0 160.6	28 15.2 -58.9 159.5	28 03.5 -58.8 158.4
4°	27 47.7 -59.3 163.0	27 37.8 -59.1 161.9	27 27.4 -59.1 160.8	27 16.3 -58.9 159.7	27 04.7 -58.8 158.6
5°	26 48.4 -59.2 163.2	26 38.7 -59.2 162.1	26 28.3 -59.0 161.0	26 17.4 -58.9 159.9	26 05.9 -58.8 158.8
6°	25 49.2 -59.3 163.4	25 39.5 -59.2 162.3	25 29.3 -59.1 161.2	25 18.5 -59.0 160.1	25 07.1 -58.9 159.0
7°	24 49.9 -59.3 163.6	24 40.3 -59.1 162.5	24 30.2 -59.1 161.4	24 19.5 -59.0 160.3	24 08.2 -58.8 159.3
8°	23 50.6 -59.3 163.7	23 41.2 -59.2 162.7	23 31.1 -59.1 161.6	23 20.5 -59.0 160.5	23 09.4 -58.9 159.5
9°	22 51.3 -59.3 163.9	22 42.0 -59.2 162.8	22 32.0 -59.1 161.8	22 21.5 -59.0 160.7	22 10.5 -58.9 159.7
10°	21 52.0 -59.3 164.1	21 42.8 -59.3 163.0	21 32.9 -59.1 162.0	21 22.5 -59.0 160.9	21 11.6 -58.9 159.9
11°	20 52.7 -59.3 164.2	20 43.5 -59.2 163.2	20 33.8 -59.1 162.1	20 23.5 -59.0 161.1	20 12.7 -59.0 160.1
12°	19 53.4 -59.3 164.4	19 44.3 -59.2 163.4	19 34.7 -59.2 162.3	19 24.5 -59.1 161.3	19 13.7 -58.9 160.3
13°	18 54.1 -59.4 164.5	18 45.1 -59.3 163.5	18 35.5 -59.1 162.5	18 25.4 -59.0 161.5	18 14.8 -59.0 160.5
14°	17 54.7 -59.3 164.7	17 45.8 -59.2 163.7	17 36.4 -59.2 162.7	17 26.4 -59.1 161.7	17 15.8 -58.9 160.7
15°	16 55.4 -59.4 164.9	16 46.6 -59.3 163.9	16 37.2 -59.1 162.9	16 27.3 -59.0 161.9	16 16.9 -59.0 160.9
16°	15 56.0 -59.3 165.0	15 47.3 -59.2 164.0	15 38.1 -59.2 163.0	15 28.3 -59.1 162.0	15 17.9 -59.0 161.1
17°	14 56.7 -59.4 165.2	14 48.1 -59.3 164.2	14 38.9 -59.2 163.2	14 29.2 -59.1 162.2	14 18.9 -59.0 161.3
18°	13 57.3 -59.3 165.3	13 48.8 -59.3 164.3	13 39.7 -59.2 163.4	13 30.1 -59.1 162.4	13 19.9 -59.0 161.4
19°	12 58.0 -59.4 165.5	12 49.5 -59.3 164.5	12 40.5 -59.2 163.5	12 31.0 -59.1 162.6	12 20.9 -59.0 161.6
20°	11 58.6 -59.4 165.6	11 50.2 -59.3 164.7	11 41.3 -59.2 163.7	11 31.9 -59.1 162.8	11 21.9 -59.0 161.8
21°	10 59.2 -59.4 165.8	10 50.9 -59.3 164.8	10 42.1 -59.2 163.9	10 32.8 -59.2 162.9	10 22.9 -59.0 162.0
22°	9 59.8 -59.3 165.9	9 51.6 -59.3 165.0	9 42.9 -59.2 164.0	9 33.6 -59.1 163.1	9 23.9 -59.0 162.2
23°	9 00.5 -59.4 166.0	8 52.3 -59.3 165.1	8 43.7 -59.2 164.2	8 34.5 -59.1 163.3	8 24.9 -59.1 162.4
24°	8 01.1 -59.4 166.2	7 53.0 -59.3 165.3	7 44.5 -59.3 164.4	7 35.4 -59.1 163.5	7 25.8 -59.0 162.5
25°	7 01.7 -59.4 166.3	6 53.7 -59.3 165.4	6 45.2 -59.2 164.5	6 36.3 -59.2 163.6	6 26.8 -59.0 162.7
26°	6 02.3 -59.4 166.5	5 54.4 -59.3 165.6	5 46.0 -59.2 164.7	5 37.1 -59.1 163.8	5 27.8 -59.1 162.9
27°	5 02.9 -59.4 166.6	4 55.1 -59.3 165.7	4 46.8 -59.3 164.8	4 38.0 -59.1 164.0	4 28.7 -59.0 163.1
28°	4 03.5 -59.4 166.8	3 55.8 -59.4 165.9	3 47.5 -59.2 165.0	3 38.9 -59.2 164.1	3 29.7 -59.1 163.3
29°	3 04.1 -59.4 166.9	2 56.4 -59.3 166.0	2 48.3 -59.2 165.2	2 39.7 -59.1 164.3	2 30.6 -59.0 163.4

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°	30 47.0 -58.6 156.5	30 33.7 -58.5 155.4	30 19.8 -58.3 154.3	30 05.3 -58.1 153.2	29 50.3 -58.0 152.0
1°	29 48.4 -58.6 156.8	29 35.2 -58.4 155.7	29 21.5 -58.4 154.5	29 07.2 -58.3 153.4	28 52.3 -58.1 152.3
2°	28 49.8 -58.6 157.0	28 36.8 -58.6 155.9	28 23.1 -58.3 154.8	28 08.9 -58.2 153.7	27 54.2 -58.1 152.6
3°	27 51.2 -58.7 157.3	27 38.2 -58.5 156.2	27 24.8 -58.4 155.1	27 10.7 -58.3 154.0	26 56.1 -58.1 152.9
4°	26 52.5 -58.7 157.5	26 39.7 -58.6 156.4	26 26.4 -58.5 155.3	26 12.4 -58.3 154.3	25 58.0 -58.2 153.2
5°	25 53.8 -58.7 157.7	25 41.1 -58.5 156.7	25 27.9 -58.4 155.6	25 14.1 -58.3 154.5	24 59.8 -58.2 153.4
6°	24 55.1 -58.7 158.0	24 42.6 -58.7 156.9	24 29.5 -58.5 155.8	24 15.8 -58.4 154.8	24 01.6 -58.2 153.7
7°	23 56.4 -58.8 158.2	23 43.9 -58.6 157.1	23 31.0 -58.5 156.1	23 17.4 -58.3 155.0	23 03.4 -58.3 154.0
8°	22 57.6 -58.8 158.4	22 45.3 -58.6 157.4	22 32.5 -58.6 156.3	22 19.1 -58.4 155.3	22 05.1 -58.2 154.2
9°	21 58.8 -58.7 158.6	21 46.7 -58.7 157.6	21 33.9 -58.5 156.6	21 20.7 -58.5 155.5	21 06.9 -58.3 154.5
10°	21 00.1 -58.8 158.9	20 48.0 -58.7 157.8	20 35.4 -58.6 156.8	20 22.2 -58.4 155.8	20 08.6 -58.4 154.7
11°	20 01.3 -58.9 159.1	19 49.3 -58.7 158.0	19 36.8 -58.6 157.0	19 23.8 -58.5 156.0	19 10.2 -58.3 155.0
12°	19 02.4 -58.8 159.3	18 50.6 -58.7 158.3	18 38.2 -58.6 157.3	18 25.3 -58.4 156.2	18 11.9 -58.3 155.2
13°	18 03.6 -58.8 159.5	17 51.9 -58.7 158.5	17 39.6 -58.6 157.5	17 26.9 -58.5 156.5	17 13.6 -58.4 155.5
14°	17 04.8 -58.9 159.7	16 53.2 -58.8 158.7	16 41.0 -58.6 157.7	16 28.4 -58.6 156.7	16 15.2 -58.4 155.7
15°	16 05.9 -58.9 159.9	15 54.4 -58.7 158.9	15 42.4 -58.7 157.9	15 29.8 -58.5 156.9	15 16.8 -58.4 156.0
16°	15 07.0 -58.8 160.1	14 55.7 -58.8 159.1	14 43.7 -58.6 158.1	14 31.3 -58.5 157.2	14 18.4 -58.4 156.2
17°	14 08.2 -58.9 160.3	13 56.9 -58.8 159.3	13 45.1 -58.7 158.4	13 32.8 -58.6 157.4	13 20.0 -58.5 156.4
18°	13 09.3 -58.9 160.5	12 58.1 -58.8 159.5	12 46.4 -58.7 158.6	12 34.2 -58.5 157.6	12 21.5 -58.4 156.7
19°	12 10.4 -58.9 160.7	11 59.3 -58.8 159.7	11 47.7 -58.6 158.8	11 35.7 -58.6 157.8	11 23.1 -58.5 156.9
20°	11 11.5 -58.9 160.9	11 00.5 -58.8 159.9	10 49.1 -58.7 159.0	10 37.1 -58.6 158.1	10 24.6 -58.4 157.1
21°	10 12.6 -59.0 161.1	10 01.7 -58.8 160.1	9 50.4 -58.7 159.2	9 38.5 -58.6 158.3	9 26.2 -58.5 157.4
22°	9 13.6 -58.9 161.3	9 02.9 -58.8 160.3	8 51.7 -58.7 159.4	8 39.9 -58.6 158.5	8 27.7 -58.5 157.6
23°	8 14.7 -58.9 161.5	8 04.1 -58.8 160.5	7 53.0 -58.8 159.6	7 41.3 -58.6 158.7	7 29.2 -58.5 157.8
24°	7 15.8 -58.9 161.6	7 05.3 -58.9 160.7	6 54.2 -58.7 159.8	6 42.7 -58.6 158.9	6 30.7 -58.4 158.0
25°	6 16.9 -59.0 161.8	6 06.4 -58.8 160.9	5 55.5 -58.7 160.0	5 44.1 -58.6 159.2	5 32.3 -58.5 158.3
26°	5 17.9 -58.9 162.0	5 07.6 -58.8 161.1	4 56.8 -58.7 160.2	4 45.5 -58.6 159.4	4 33.8 -58.5 158.5
27°	4 19.0 -59.0 162.2	4 08.8 -58.9 161.3	3 58.1 -58.8 160.5	3 46.9 -58.6 159.6	3 35.3 -58.6 158.7
28°	3 20.0 -58.9 162.4	3 09.9 -58.8 161.5	2 59.3 -58.7 160.7	2 48.3 -58.7 159.8	2 36.7 -58.5 158.9
29°	2 21.1 -59.0 162.6	2 11.1 -58.9 161.7	2 00.6 -58.7 160.9	1 49.6 -58.6 160.0	1 38.2 -58.5 159.2

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°	29 34.7 -57.9 150.9	29 18.5 -57.7 149.8	29 01.8 -57.5 148.7	28 44.6 -57.4 147.6	28 26.8 -57.2 146.5
1°	28 36.8 -57.9 151.2	28 20.8 -57.8 150.1	28 04.3 -57.7 149.0	27 47.2 -57.5 148.0	27 29.6 -57.3 146.9
2°	27 38.9 -58.0 151.5	27 23.0 -57.8 150.4	27 06.6 -57.6 149.4	26 49.7 -57.5 148.3	26 32.3 -57.4 147.2
3°	26 40.9 -58.0 151.8	26 25.2 -57.8 150.7	26 09.0 -57.7 149.7	25 52.2 -57.5 148.6	25 34.9 -57.4 147.5
4°	25 42.9 -58.0 152.1	25 27.4 -57.9 151.0	25 11.3 -57.7 150.0	24 54.7 -57.6 148.9	24 37.5 -57.4 147.9
5°	24 44.9 -58.0 152.4	24 29.5 -57.9 151.3	24 13.6 -57.8 150.3	23 57.1 -57.6 149.2	23 40.1 -57.5 148.2
6°	23 46.9 -58.1 152.7	23 31.6 -58.0 151.6	23 15.8 -57.8 150.6	22 59.5 -57.7 149.5	22 42.6 -57.5 148.5
7°	22 48.8 -58.1 152.9	22 33.6 -57.9 151.9	22 18.0 -57.8 150.9	22 01.8 -57.7 149.8	21 45.1 -57.5 148.8
8°	21 50.7 -58.2 153.2	21 35.7 -58.0 152.2	21 20.2 -57.9 151.1	21 04.1 -57.7 150.1	20 47.6 -57.6 149.1
9°	20 52.5 -58.1 153.5	20 37.7 -58.1 152.4	20 22.3 -57.9 151.4	20 06.4 -57.7 150.4	19 50.0 -57.6 149.4
10°	19 54.4 -58.2 153.7	19 39.6 -58.0 152.7	19 24.4 -57.9 151.7	19 08.7 -57.8 150.7	18 52.4 -57.6 149.7
11°	18 56.2 -58.2 154.0	18 41.6 -58.1 153.0	18 26.5 -58.0 152.0	18 10.9 -57.8 151.0	17 54.8 -57.7 150.0
12°	17 58.0 -58.3 154.2	17 43.5 -58.1 153.2	17 28.5 -57.9 152.3	17 13.1 -57.8 151.3	16 57.1 -57.7 150.3
13°	16 59.7 -58.2 154.5	16 45.4 -58.1 153.5	16 30.6 -58.0 152.5	16 15.3 -57.9 151.5	15 59.4 -57.7 150.6
14°	16 01.5 -58.3 154.7	15 47.3 -58.1 153.8	15 32.6 -58.0 152.8	15 17.4 -57.8 151.8	15 01.7 -57.7 150.9
15°	15 03.2 -58.2 155.0	14 49.2 -58.2 154.0	14 34.6 -58.0 153.1	14 19.6 -57.9 152.1	14 04.0 -57.7 151.1
16°	14 05.0 -58.3 155.2	13 51.0 -58.1 154.3	13 36.6 -58.0 153.3	13 21.7 -57.9 152.4	13 06.3 -57.8 151.4
17°	13 06.7 -58.3 155.5	12 52.9 -58.2 154.5	12 38.6 -58.1 153.6	12 23.8 -57.9 152.6	12 08.5 -57.8 151.7
18°	12 08.4 -58.4 155.7	11 54.7 -58.2 154.8	11 40.5 -58.1 153.8	11 25.9 -58.0 152.9	11 10.7 -57.8 152.0
19°	11 10.0 -58.3 156.0	10 56.5 -58.2 155.0	10 42.4 -58.0 154.1	10 27.9 -57.9 153.2	10 12.9 -57.8 152.2
20°	10 11.7 -58.3 156.2	9 58.3 -58.2 155.3	9 44.4 -58.1 154.4	9 30.0 -58.0 153.4	9 15.1 -57.8 152.5
21°	9 13.4 -58.4 156.4	9 00.1 -58.3 155.5	8 46.3 -58.1 154.6	8 32.0 -57.9 153.7	8 17.3 -57.8 152.8
22°	8 15.0 -58.3 156.7	8 01.8 -58.2 155.8	7 48.2 -58.1 154.9	7 34.1 -58.0 154.0	7 19.5 -57.8 153.1
23°	7 16.7 -58.4 156.9	7 03.6 -58.2 156.0	6 50.1 -58.1 155.1	6 36.1 -58.0 154.2	6 21.7 -57.9 153.3
24°	6 18.3 -58.4 157.1	6 05.4 -58.3 156.3	5 52.0 -58.2 155.4	5 38.1 -58.0 154.5	5 23.8 -57.9 153.6
25°	5 19.9 -58.4 157.4	5 07.1 -58.2 156.5	4 53.8 -58.1 155.6	4 40.1 -58.0 154.7	4 25.9 -57.8 153.9
26°	4 21.5 -58.3 157.6	4 08.9 -58.3 156.7	3 55.7 -58.1 155.9	3 42.1 -58.0 155.0	3 28.1 -57.9 154.1
27°	3 23.2 -58.4 157.8	3 10.6 -58.3 157.0	2 57.6 -58.1 156.1	2 44.1 -58.0 155.2	2 30.2 -57.8 154.4
28°	2 24.8 -58.4 158.1	2 12.3 -58.2 157.2	1 59.5 -58.2 156.4	1 46.1 -58.0 155.5	1 32.4 -57.9 154.6
29°	1 26.4 -58.4 158.3	1 14.1 -58.3 157.4	1 01.3 -58.1 156.6	0 48.1 -58.0 155.8	0 34.5 -57.9 154.9

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°	28 08.6 -57.1 145.5	27 49.8 -56.9 144.4	27 30.5 -56.8 143.3	27 10.7 -56.6 142.2	26 50.5 -56.4 141.2
1°	27 11.5 -57.2 145.8	26 52.9 -57.0 144.7	26 33.7 -56.8 143.7	26 14.1 -56.6 142.6	25 54.1 -56.5 141.6
2°	26 14.3 -57.2 146.1	25 55.9 -57.1 145.1	25 36.9 -56.8 144.0	25 17.5 -56.7 143.0	24 57.6 -56.6 141.9
3°	25 17.1 -57.2 146.5	24 58.8 -57.0 145.4	24 40.1 -57.0 144.4	24 20.8 -56.8 143.3	24 01.0 -56.5 142.3
4°	24 19.9 -57.3 146.8	24 01.8 -57.2 145.8	23 43.1 -56.9 144.7	23 24.0 -56.8 143.7	23 04.5 -56.7 142.7
5°	23 22.6 -57.3 147.1	23 04.6 -57.1 146.1	22 46.2 -57.0 145.1	22 27.2 -56.8 144.1	22 07.8 -56.7 143.0
6°	22 25.3 -57.3 147.5	22 07.5 -57.2 146.4	21 49.2 -57.1 145.4	21 30.4 -56.9 144.4	21 11.1 -56.7 143.4
7°	21 28.0 -57.4 147.8	21 10.3 -57.3 146.8	20 52.1 -57.1 145.7	20 33.5 -56.9 144.7	20 14.4 -56.8 143.7
8°	20 30.6 -57.5 148.1	20 13.0 -57.2 147.1	19 55.0 -57.1 146.1	19 36.6 -57.0 145.1	19 17.6 -56.8 144.1
9°	19 33.1 -57.4 148.4	19 15.8 -57.3 147.4	18 57.9 -57.1 146.4	18 39.6 -57.0 145.4	18 20.8 -56.8 144.4
10°	18 35.7 -57.5 148.7	18 18.5 -57.4 147.7	18 00.8 -57.2 146.7	17 42.6 -57.0 145.7	17 24.0 -56.9 144.8
11°	17 38.2 -57.5 149.0	17 21.1 -57.3 148.0	17 03.6 -57.2 147.0	16 45.6 -57.1 146.1	16 27.1 -56.9 145.1
12°	16 40.7 -57.5 149.3	16 23.8 -57.4 148.3	16 06.4 -57.3 147.3	15 48.5 -57.1 146.4	15 30.2 -57.0 145.4
13°	15 43.2 -57.6 149.6	15 26.4 -57.4 148.6	15 09.1 -57.2 147.7	14 51.4 -57.1 146.7	14 33.2 -56.9 145.7
14°	14 45.6 -57.6 149.9	14 29.0 -57.5 148.9	14 11.9 -57.3 148.0	13 54.3 -57.1 147.0	13 36.3 -57.0 146.1
15°	13 48.0 -57.6 150.2	13 31.5 -57.4 149.2	13 14.6 -57.3 148.3	12 57.2 -57.2 147.3	12 39.3 -57.0 146.4
16°	12 50.4 -57.6 150.5	12 34.1 -57.5 149.5	12 17.3 -57.4 148.6	12 00.0 -57.2 147.6	11 42.3 -57.1 146.7
17°	11 52.8 -57.7 150.8	11 36.6 -57.5 149.8	11 19.9 -57.3 148.9	11 02.8 -57.2 147.9	10 45.2 -57.0 147.0
18°	10 55.1 -57.6 151.0	10 39.1 -57.5 150.1	10 22.6 -57.4 149.2	10 05.6 -57.2 148.3	9 48.2 -57.1 147.3
19°	9 57.5 -57.7 151.3	9 41.6 -57.6 150.4	9 25.2 -57.4 149.5	9 08.4 -57.3 148.6	8 51.1 -57.1 147.6
20°	8 59.8 -57.7 151.6	8 44.0 -57.5 150.7	8 27.8 -57.4 149.8	8 11.1 -57.2 148.9	7 54.0 -57.1 148.0
21°	8 02.1 -57.6 151.9	7 46.5 -57.5 151.0	7 30.4 -57.4 150.1	7 13.9 -57.3 149.2	6 56.9 -57.1 148.3
22°	7 04.5 -57.8 152.2	6 49.0 -57.6 151.3	6 33.0 -57.4 150.4	6 16.6 -57.2 149.5	5 59.8 -57.1 148.6
23°	6 06.7 -57.7 152.4	5 51.4 -57.6 151.5	5 35.6 -57.4 150.7	5 19.4 -57.3 149.8	5 02.7 -57.1 148.9
24°	5 09.0 -57.7 152.7	4 53.8 -57.5 151.8	4 38.2 -57.5 150.9	4 22.1 -57.3 150.1	4 05.6 -57.2 149.2
25°	4 11.3 -57.7 153.0	3 56.3 -57.6 152.1	3 40.7 -57.4 151.2	3 24.8 -57.3 150.4	3 08.4 -57.1 149.5
26°	3 13.6 -57.7 153.2	2 58.7 -57.6 152.4	2 43.3 -57.4 151.5	2 27.5 -57.3 150.7	2 11.3 -57.2 149.8
27°	2 15.9 -57.8 153.5	2 01.1 -57.6 152.7	1 45.9 -57.5 151.8	1 30.2 -57.3 151.0	1 14.1 -57.1 150.1
28°	1 18.1 -57.7 153.8	1 03.5 -57.6 152.9	0 48.4 -57.4 152.1	0 32.9 -57.3 151.3	0 17.0 -57.2 150.4
29°	0 20.4 -57.7 154.1	0 05.9 -57.6 153.2	-0 09.0 -57.5	-0 24.4 -57.3	-0 40.2 -57.1

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°	26 29.8 -56.3 140.1	26 08.6 -56.1 139.1	25 47.0 -55.9 138.1	25 24.9 -55.7 137.0	25 02.4 -55.5 136.0
1°	25 33.5 -56.3 140.5	25 12.5 -56.1 139.5	24 51.1 -56.0 138.5	24 29.2 -55.8 137.4	24 06.9 -55.7 136.4
2°	24 37.2 -56.4 140.9	24 16.4 -56.2 139.9	23 55.1 -56.0 138.9	23 33.4 -55.9 137.8	23 11.2 -55.7 136.8
3°	23 40.8 -56.4 141.3	23 20.2 -56.3 140.3	22 59.1 -56.1 139.2	22 37.5 -55.9 138.2	22 15.5 -55.7 137.2
4°	22 44.4 -56.5 141.7	22 23.9 -56.3 140.6	22 03.0 -56.2 139.6	21 41.6 -56.0 138.6	21 19.8 -55.8 137.6
5°	21 47.9 -56.5 142.0	21 27.6 -56.4 141.0	21 06.8 -56.2 140.0	20 45.6 -56.0 139.0	20 24.0 -55.9 138.0
6°	20 51.4 -56.6 142.4	20 31.2 -56.4 141.4	20 10.6 -56.2 140.4	19 49.6 -56.1 139.4	19 28.1 -55.9 138.4
7°	19 54.8 -56.6 142.7	19 34.8 -56.4 141.7	19 14.4 -56.3 140.8	18 53.5 -56.1 139.8	18 32.2 -56.0 138.8
8°	18 58.2 -56.6 143.1	18 38.4 -56.5 142.1	18 18.1 -56.4 141.1	17 57.4 -56.2 140.1	17 36.2 -56.0 139.2
9°	18 01.6 -56.7 143.4	17 41.9 -56.5 142.5	17 21.7 -56.3 141.5	17 01.2 -56.2 140.5	16 40.2 -56.1 139.5
10°	17 04.9 -56.7 143.8	16 45.4 -56.6 142.8	16 25.4 -56.4 141.8	16 05.0 -56.3 140.9	15 44.1 -56.0 139.9
11°	16 08.2 -56.8 144.1	15 48.8 -56.6 143.2	15 29.0 -56.5 142.2	15 08.7 -56.3 141.2	14 48.1 -56.2 140.3
12°	15 11.4 -56.8 144.5	14 52.2 -56.6 143.5	14 32.5 -56.4 142.5	14 12.4 -56.3 141.6	13 51.9 -56.1 140.7
13°	14 14.6 -56.8 144.8	13 55.6 -56.7 143.8	13 36.1 -56.5 142.9	13 16.1 -56.3 142.0	12 55.8 -56.2 141.0
14°	13 17.8 -56.8 145.1	12 58.9 -56.7 144.2	12 39.6 -56.6 143.2	12 19.8 -56.4 142.3	11 59.6 -56.2 141.4
15°	12 21.0 -56.9 145.4	12 02.2 -56.7 144.5	11 43.0 -56.5 143.6	11 23.4 -56.4 142.7	11 03.4 -56.2 141.7
16°	11 24.1 -56.9 145.8	11 05.5 -56.7 144.8	10 46.5 -56.6 143.9	10 27.0 -56.4 143.0	10 07.2 -56.3 142.1
17°	10 27.2 -56.9 146.1	10 08.8 -56.8 145.2	9 49.9 -56.6 144.3	9 30.6 -56.4 143.3	9 10.9 -56.3 142.4
18°	9 30.3 -56.9 146.4	9 12.0 -56.7 145.5	8 53.3 -56.6 144.6	8 34.2 -56.5 143.7	8 14.6 -56.3 142.8
19°	8 33.4 -56.9 146.7	8 15.3 -56.8 145.8	7 56.7 -56.6 144.9	7 37.7 -56.4 144.0	7 18.3 -56.3 143.1
20°	7 36.5 -57.0 147.1	7 18.5 -56.8 146.2	7 00.1 -56.7 145.3	6 41.3 -56.5 144.4	6 22.0 -56.3 143.5
21°	6 39.5 -56.9 147.4	6 21.7 -56.8 146.5	6 03.4 -56.6 145.6	5 44.8 -56.5 144.7	5 25.7 -56.3 143.8
22°	5 42.6 -57.0 147.7	5 24.9 -56.8 146.8	5 06.8 -56.7 145.9	4 48.3 -56.5 145.1	4 29.4 -56.4 144.2
23°	4 45.6 -57.0 148.0	4 28.1 -56.9 147.1	4 10.1 -56.6 146.3	3 51.8 -56.5 145.4	3 33.0 -56.3 144.5
24°	3 48.6 -57.0 148.3	3 31.2 -56.8 147.5	3 13.5 -56.7 146.6	2 55.3 -56.6 145.7	2 36.7 -56.4 144.9
25°	2 51.6 -57.0 148.6	2 34.4 -56.8 147.8	2 16.8 -56.7 146.9	1 58.7 -56.5 146.1	1 40.3 -56.4 145.2
26°	1 54.6 -57.0 148.9	1 37.6 -56.9 148.1	1 20.1 -56.7 147.2	1 02.2 -56.5 146.4	0 43.9 -56.3 145.6
27°	0 57.6 -57.0 149.3	0 40.7 -56.8 148.4	0 23.4 -56.7 147.6	0 05.7 -56.5 146.7	-0 12.4 -56.4
28°	0 00.6 -57.0 149.6	-0 16.1 -56.8	-0 33.3 -56.7	-0 50.8 -56.6	-1 08.8 -56.4
29°	-0 56.4 -56.9	-1 12.9 -56.9	-1 30.0 -56.6	-1 47.4 -56.5	-2 05.2 -56.3

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°	24 39.5 -55.4 135.0	24 16.2 -55.2 134.0	23 52.5 -55.1 133.0	23 28.4 -54.9 132.0	23 03.9 -54.7 131.0
1°	23 44.1 -55.4 135.4	23 21.0 -55.3 134.4	22 57.4 -55.1 133.4	22 33.5 -55.0 132.4	22 09.2 -54.8 131.4
2°	22 48.7 -55.6 135.8	22 25.7 -55.4 134.8	22 02.3 -55.2 133.8	21 38.5 -55.0 132.8	21 14.4 -54.9 131.9
3°	21 53.1 -55.6 136.2	21 30.3 -55.4 135.2	21 07.1 -55.3 134.2	20 43.5 -55.1 133.3	20 19.5 -54.9 132.3
4°	20 57.5 -55.6 136.6	20 34.9 -55.5 135.6	20 11.8 -55.3 134.7	19 48.4 -55.1 133.7	19 24.6 -55.0 132.7
5°	20 01.9 -55.7 137.0	19 39.4 -55.5 136.1	19 16.5 -55.3 135.1	18 53.3 -55.3 134.1	18 29.6 -55.0 133.1
6°	19 06.2 -55.8 137.4	18 43.9 -55.6 136.5	18 21.2 -55.5 135.5	17 58.0 -55.2 134.5	17 34.6 -55.1 133.6
7°	18 10.4 -55.8 137.8	17 48.3 -55.7 136.8	17 25.7 -55.4 135.9	17 02.8 -55.3 134.9	16 39.5 -55.2 134.0
8°	17 14.6 -55.8 138.2	16 52.6 -55.6 137.2	16 30.3 -55.6 136.3	16 07.5 -55.4 135.3	15 44.3 -55.2 134.4
9°	16 18.8 -55.9 138.6	15 57.0 -55.8 137.6	15 34.7 -55.5 136.7	15 12.1 -55.4 135.7	14 49.1 -55.2 134.8
10°	15 22.9 -55.9 139.0	15 01.2 -55.7 138.0	14 39.2 -55.6 137.1	14 16.7 -55.4 136.1	13 53.9 -55.3 135.2
11°	14 27.0 -56.0 139.3	14 05.5 -55.8 138.4	13 43.6 -55.7 137.5	13 21.3 -55.5 136.5	12 58.6 -55.3 135.6
12°	13 31.0 -56.0 139.7	13 09.7 -55.9 138.8	12 47.9 -55.6 137.8	12 25.8 -55.5 136.9	12 03.3 -55.3 136.0
13°	12 35.0 -56.0 140.1	12 13.8 -55.8 139.1	11 52.3 -55.7 138.2	11 30.3 -55.5 137.3	11 08.0 -55.4 136.4
14°	11 39.0 -56.1 140.4	11 18.0 -55.9 139.5	10 56.6 -55.8 138.6	10 34.8 -55.6 137.7	10 12.6 -55.4 136.8
15°	10 42.9 -56.0 140.8	10 22.1 -55.9 139.9	10 00.8 -55.7 139.0	9 39.2 -55.6 138.1	9 17.2 -55.5 137.2
16°	9 46.9 -56.1 141.2	9 26.2 -56.0 140.3	9 05.1 -55.8 139.4	8 43.6 -55.6 138.5	8 21.7 -55.4 137.6
17°	8 50.8 -56.1 141.5	8 30.2 -55.9 140.6	8 09.3 -55.8 139.7	7 48.0 -55.6 138.8	7 26.3 -55.5 137.9
18°	7 54.7 -56.2 141.9	7 34.3 -56.0 141.0	7 13.5 -55.8 140.1	6 52.4 -55.7 139.2	6 30.8 -55.5 138.3
19°	6 58.5 -56.1 142.2	6 38.3 -56.0 141.4	6 17.7 -55.8 140.5	5 56.7 -55.7 139.6	5 35.3 -55.5 138.7
20°	6 02.4 -56.2 142.6	5 42.3 -56.0 141.7	5 21.9 -55.9 140.8	5 01.0 -55.6 140.0	4 39.8 -55.5 139.1
21°	5 06.2 -56.2 143.0	4 46.3 -56.0 142.1	4 26.0 -55.8 141.2	4 05.4 -55.7 140.3	3 44.3 -55.5 139.5
22°	4 10.0 -56.2 143.3	3 50.3 -56.0 142.4	3 30.2 -55.9 141.6	3 09.7 -55.7 140.7	2 48.8 -55.5 139.8
23°	3 13.8 -56.2 143.7	2 54.3 -56.1 142.8	2 34.3 -55.8 141.9	2 14.0 -55.7 141.1	1 53.3 -55.6 140.2
24°	2 17.6 -56.2 144.0	1 58.2 -56.0 143.2	1 38.5 -55.9 142.3	1 18.3 -55.7 141.4	0 57.7 -55.5 140.6
25°	1 21.4 -56.2 144.4	1 02.2 -56.0 143.5	0 42.6 -55.9 142.7	0 22.6 -55.7 141.8	0 02.2 -55.6 141.0
26°	0 25.2 -56.2 144.7	0 06.2 -56.1 143.9	-0 13.3 -55.9	-0 33.1 -55.7	-0 53.4 -55.5
27°	-0 31.0 -56.2	-0 49.9 -56.0	-1 09.2 -55.8	-1 28.8 -55.7	-1 48.9 -55.5
28°	-1 27.2 -56.2	-1 45.9 -56.0	-2 05.0 -55.9	-2 24.5 -55.7	-2 44.4 -55.5
29°	-2 23.4 -56.2	-2 41.9 -56.1	-3 00.9 -55.9	-3 20.2 -55.7	-3 39.9 -55.6

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°	22 39.1 -54.6 130.0	22 13.8 -54.4 129.0	21 48.3 -54.3 128.0	21 22.4 -54.1 127.1	20 56.1 -53.9 126.1
1°	21 44.5 -54.6 130.4	21 19.4 -54.4 129.5	20 54.0 -54.3 128.5	20 28.3 -54.2 127.5	20 02.2 -54.0 126.6
2°	20 49.9 -54.7 130.9	20 25.0 -54.6 129.9	19 59.7 -54.3 128.9	19 34.1 -54.2 128.0	19 08.2 -54.0 127.0
3°	19 55.2 -54.8 131.3	19 30.4 -54.6 130.4	19 05.4 -54.5 129.4	18 39.9 -54.3 128.4	18 14.2 -54.2 127.5
4°	19 00.4 -54.8 131.7	18 35.8 -54.6 130.8	18 10.9 -54.5 129.8	17 45.6 -54.3 128.9	17 20.0 -54.1 127.9
5°	18 05.6 -54.9 132.2	17 41.2 -54.7 131.2	17 16.4 -54.5 130.3	16 51.3 -54.4 129.3	16 25.9 -54.3 128.4
6°	17 10.7 -54.9 132.6	16 46.5 -54.8 131.7	16 21.9 -54.7 130.7	15 56.9 -54.4 129.8	15 31.6 -54.3 128.8
7°	16 15.8 -55.0 133.0	15 51.7 -54.8 132.1	15 27.2 -54.6 131.1	15 02.5 -54.5 130.2	14 37.3 -54.3 129.3
8°	15 20.8 -55.1 133.4	14 56.9 -54.9 132.5	14 32.6 -54.7 131.6	14 08.0 -54.6 130.6	13 43.0 -54.4 129.7
9°	14 25.7 -55.0 133.9	14 02.0 -54.9 132.9	13 37.9 -54.8 132.0	13 13.4 -54.6 131.1	12 48.6 -54.4 130.1
10°	13 30.7 -55.1 134.3	13 07.1 -55.0 133.3	12 43.1 -54.8 132.4	12 18.8 -54.6 131.5	11 54.2 -54.5 130.6
11°	12 35.6 -55.2 134.7	12 12.1 -55.0 133.7	11 48.3 -54.8 132.8	11 24.2 -54.7 131.9	10 59.7 -54.5 131.0
12°	11 40.4 -55.2 135.1	11 17.1 -55.0 134.2	10 53.5 -54.8 133.2	10 29.5 -54.7 132.3	10 05.2 -54.5 131.4
13°	10 45.2 -55.2 135.5	10 22.1 -55.0 134.6	9 58.7 -54.9 133.7	9 34.8 -54.7 132.7	9 10.7 -54.6 131.8
14°	9 50.0 -55.2 135.9	9 27.1 -55.1 135.0	9 03.8 -54.9 134.1	8 40.1 -54.7 133.2	8 16.1 -54.6 132.3
15°	8 54.8 -55.3 136.3	8 32.0 -55.1 135.4	8 08.9 -55.0 134.5	7 45.4 -54.8 133.6	7 21.5 -54.6 132.7
16°	7 59.5 -55.3 136.7	7 36.9 -55.1 135.8	7 13.9 -54.9 134.9	6 50.6 -54.8 134.0	6 26.9 -54.6 133.1
17°	7 04.2 -55.3 137.0	6 41.8 -55.2 136.2	6 19.0 -55.0 135.3	5 55.8 -54.8 134.4	5 32.3 -54.7 133.5
18°	6 08.9 -55.3 137.4	5 46.6 -55.1 136.6	5 24.0 -55.0 135.7	5 01.0 -54.9 134.8	4 37.6 -54.7 133.9
19°	5 13.6 -55.4 137.8	4 51.5 -55.2 137.0	4 29.0 -55.0 136.1	4 06.1 -54.8 135.2	3 42.9 -54.6 134.3
20°	4 18.2 -55.3 138.2	3 56.3 -55.2 137.3	3 34.0 -55.1 136.5	3 11.3 -54.9 135.6	2 48.3 -54.7 134.8
21°	3 22.9 -55.4 138.6	3 01.1 -55.2 137.7	2 38.9 -55.0 136.9	2 16.4 -54.8 136.0	1 53.6 -54.7 135.2
22°	2 27.5 -55.3 139.0	2 05.9 -55.2 138.1	1 43.9 -55.0 137.3	1 21.6 -54.9 136.4	0 58.9 -54.7 135.6
23°	1 32.2 -55.4 139.4	1 10.7 -55.2 138.5	0 48.9 -55.0 137.7	0 26.7 -54.9 136.8	0 04.2 -54.7 136.0
24°	0 36.8 -55.4 139.8	0 15.5 -55.2 138.9	-0 06.1 -55.1	-0 28.2 -54.8	-0 50.5 -54.7
25°	-0 18.6 -55.3	-0 39.7 -55.2	-1 01.2 -55.0	-1 23.0 -54.9	-1 45.2 -54.7
26°	-1 13.9 -55.4	-1 34.9 -55.2	-1 56.2 -55.0	-2 17.9 -54.8	-2 39.9 -54.7
27°	-2 09.3 -55.4	-2 30.1 -55.2	-2 51.2 -55.1	-3 12.7 -54.9	-3 34.6 -54.6
28°	-3 04.7 -55.3	-3 25.3 -55.2	-3 46.3 -55.0	-4 07.6 -54.8	-4 29.2 -54.7
29°	-4 00.0 -55.4	-4 20.5 -55.1	-4 41.3 -55.0	-5 02.4 -54.8	-5 23.9 -54.6

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°	20 29.6 -53.8 125.1	20 02.7 -53.6 124.2	19 35.5 -53.5 123.2	19 08.0 -53.3 122.3	18 40.3 -53.2 121.4
1°	19 35.8 -53.8 125.6	19 09.1 -53.7 124.7	18 42.0 -53.5 123.7	18 14.7 -53.4 122.8	17 47.1 -53.2 121.8
2°	18 42.0 -53.9 126.1	18 15.4 -53.7 125.1	17 48.5 -53.6 124.2	17 21.3 -53.4 123.3	16 53.9 -53.3 122.3
3°	17 48.1 -54.0 126.5	17 21.7 -53.9 125.6	16 54.9 -53.6 124.7	16 27.9 -53.5 123.7	16 00.6 -53.4 122.8
4°	16 54.1 -54.0 127.0	16 27.8 -53.8 126.1	16 01.3 -53.7 125.1	15 34.4 -53.6 124.2	15 07.2 -53.4 123.3
5°	16 00.1 -54.1 127.4	15 34.0 -53.9 126.5	15 07.6 -53.8 125.6	14 40.8 -53.6 124.7	14 13.8 -53.5 123.8
6°	15 06.0 -54.1 127.9	14 40.1 -54.0 127.0	14 13.8 -53.8 126.1	13 47.2 -53.7 125.1	13 20.3 -53.5 124.2
7°	14 11.9 -54.2 128.3	13 46.1 -54.1 127.4	13 20.0 -53.9 126.5	12 53.5 -53.7 125.6	12 26.8 -53.5 124.7
8°	13 17.7 -54.2 128.8	12 52.0 -54.0 127.9	12 26.1 -53.9 127.0	11 59.8 -53.7 126.0	11 33.3 -53.7 125.1
9°	12 23.5 -54.3 129.2	11 58.0 -54.1 128.3	11 32.2 -54.0 127.4	11 06.1 -53.8 126.5	10 39.6 -53.6 125.6
10°	11 29.2 -54.3 129.7	11 03.9 -54.2 128.8	10 38.2 -54.0 127.9	10 12.3 -53.9 127.0	9 46.0 -53.7 126.1
11°	10 34.9 -54.4 130.1	10 09.7 -54.2 129.2	9 44.2 -54.0 128.3	9 18.4 -53.9 127.4	8 52.3 -53.7 126.5
12°	9 40.5 -54.3 130.5	9 15.5 -54.2 129.6	8 50.2 -54.1 128.7	8 24.5 -53.9 127.8	7 58.6 -53.8 127.0
13°	8 46.2 -54.5 131.0	8 21.3 -54.2 130.1	7 56.1 -54.1 129.2	7 30.6 -53.9 128.3	7 04.8 -53.7 127.4
14°	7 51.7 -54.4 131.4	7 27.1 -54.3 130.5	7 02.0 -54.1 129.6	6 36.7 -53.9 128.7	6 11.1 -53.8 127.9
15°	6 57.3 -54.4 131.8	6 32.8 -54.3 130.9	6 07.9 -54.1 130.0	5 42.8 -54.0 129.2	5 17.3 -53.8 128.3
16°	6 02.9 -54.5 132.2	5 38.5 -54.3 131.4	5 13.8 -54.1 130.5	4 48.8 -54.0 129.6	4 23.5 -53.9 128.7
17°	5 08.4 -54.5 132.6	4 44.2 -54.3 131.8	4 19.7 -54.2 130.9	3 54.8 -54.0 130.0	3 29.6 -53.8 129.2
18°	4 13.9 -54.5 133.1	3 49.9 -54.4 132.2	3 25.5 -54.2 131.3	3 00.8 -54.0 130.5	2 35.8 -53.9 129.6
19°	3 19.4 -54.5 133.5	2 55.5 -54.3 132.6	2 31.3 -54.2 131.8	2 06.8 -54.0 130.9	1 41.9 -53.8 130.1
20°	2 24.9 -54.5 133.9	2 01.2 -54.4 133.1	1 37.1 -54.2 132.2	1 12.8 -54.1 131.4	0 48.1 -53.9 130.5
21°	1 30.4 -54.6 134.3	1 06.8 -54.3 133.5	0 42.9 -54.2 132.6	0 18.7 -54.0 131.8	-0 05.8 -53.9
22°	0 35.8 -54.5 134.7	0 12.5 -54.4 133.9	-0 11.3 -54.1	-0 35.3 -54.0	-0 59.7 -53.8
23°	-0 18.7 -54.5	-0 41.9 -54.4	-1 05.4 -54.2	-1 29.3 -54.0	-1 53.5 -53.9
24°	-1 13.2 -54.5	-1 36.3 -54.3	-1 59.6 -54.2	-2 23.3 -54.0	-2 47.4 -53.8
25°	-2 07.7 -54.6	-2 30.6 -54.4	-2 53.8 -54.2	-3 17.3 -54.0	-3 41.2 -53.8
26°	-3 02.3 -54.5	-3 25.0 -54.3	-3 48.0 -54.2	-4 11.3 -54.0	-4 35.0 -53.8
27°	-3 56.8 -54.5	-4 19.3 -54.3	-4 42.2 -54.1	-5 05.3 -54.0	-5 28.8 -53.8
28°	-4 51.3 -54.4	-5 13.6 -54.3	-5 36.3 -54.1	-5 59.3 -53.9	-6 22.6 -53.8
29°	-5 45.7 -54.5	-6 07.9 -54.3	-6 30.4 -54.1	-6 53.2 -54.0	-7 16.4 -53.7

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°	18 12.2 -53.0 120.4	17 43.9 -52.9 119.5	17 15.3 -52.7 118.6	16 46.5 -52.6 117.7	16 17.4 -52.4 116.7
1°	17 19.2 -53.1 120.9	16 51.0 -52.9 120.0	16 22.6 -52.8 119.1	15 53.9 -52.7 118.2	15 25.0 -52.6 117.2
2°	16 26.1 -53.1 121.4	15 58.1 -53.0 120.5	15 29.8 -52.9 119.6	15 01.2 -52.7 118.7	14 32.4 -52.5 117.7
3°	15 33.0 -53.2 121.9	15 05.1 -53.1 121.0	14 36.9 -52.9 120.1	14 08.5 -52.8 119.1	13 39.9 -52.7 118.2
4°	14 39.8 -53.3 122.4	14 12.0 -53.1 121.5	13 44.0 -53.0 120.5	13 15.7 -52.8 119.6	12 47.2 -52.7 118.7
5°	13 46.5 -53.3 122.8	13 18.9 -53.2 121.9	12 51.0 -53.0 121.0	12 22.9 -52.9 120.1	11 54.5 -52.8 119.2
6°	12 53.2 -53.4 123.3	12 25.7 -53.2 122.4	11 58.0 -53.1 121.5	11 30.0 -52.9 120.6	11 01.7 -52.8 119.7
7°	11 59.8 -53.4 123.8	11 32.5 -53.3 122.9	11 04.9 -53.1 122.0	10 37.1 -53.0 121.1	10 08.9 -52.8 120.2
8°	11 06.4 -53.5 124.2	10 39.2 -53.3 123.3	10 11.8 -53.2 122.5	9 44.1 -53.0 121.6	9 16.1 -52.9 120.7
9°	10 12.9 -53.5 124.7	9 45.9 -53.3 123.8	9 18.6 -53.2 122.9	8 51.1 -53.1 122.0	8 23.2 -52.9 121.2
10°	9 19.4 -53.5 125.2	8 52.6 -53.4 124.3	8 25.4 -53.2 123.4	7 58.0 -53.1 122.5	7 30.3 -52.9 121.6
11°	8 25.9 -53.6 125.6	7 59.2 -53.4 124.7	7 32.2 -53.3 123.9	7 04.9 -53.1 123.0	6 37.4 -53.0 122.1
12°	7 32.3 -53.6 126.1	7 05.8 -53.5 125.2	6 38.9 -53.3 124.3	6 11.8 -53.2 123.4	5 44.4 -53.0 122.6
13°	6 38.7 -53.6 126.5	6 12.3 -53.4 125.7	5 45.6 -53.3 124.8	5 18.6 -53.1 123.9	4 51.4 -53.0 123.0
14°	5 45.1 -53.6 127.0	5 18.9 -53.5 126.1	4 52.3 -53.3 125.2	4 25.5 -53.2 124.4	3 58.4 -53.1 123.5
15°	4 51.5 -53.7 127.4	4 25.4 -53.5 126.6	3 59.0 -53.4 125.7	3 32.3 -53.2 124.8	3 05.3 -53.0 124.0
16°	3 57.8 -53.7 127.9	3 31.9 -53.5 127.0	3 05.6 -53.3 126.2	2 39.1 -53.2 125.3	2 12.3 -53.1 124.5
17°	3 04.1 -53.6 128.3	2 38.4 -53.6 127.5	2 12.3 -53.4 126.6	1 45.9 -53.2 125.8	1 19.2 -53.0 124.9
18°	2 10.5 -53.7 128.8	1 44.8 -53.5 127.9	1 18.9 -53.4 127.1	0 52.7 -53.2 126.2	0 26.2 -53.1 125.4
19°	1 16.8 -53.7 129.2	0 51.3 -53.5 128.4	0 25.5 -53.3 127.5	-0 00.5 -53.2	-0 26.9 -53.0
20°	0 23.1 -53.7 129.7	-0 02.2 -53.6	-0 27.8 -53.4	-0 53.7 -53.3	-1 19.9 -53.1
21°	-0 30.6 -53.7	-0 55.8 -53.5	-1 21.2 -53.4	-1 47.0 -53.2	-2 13.0 -53.0
22°	-1 24.3 -53.7	-1 49.3 -53.5	-2 14.6 -53.3	-2 40.2 -53.2	-3 06.0 -53.1
23°	-2 18.0 -53.7	-2 42.8 -53.5	-3 07.9 -53.4	-3 33.4 -53.1	-3 59.1 -53.0
24°	-3 11.7 -53.7	-3 36.3 -53.5	-4 01.3 -53.3	-4 26.5 -53.2	-4 52.1 -53.0
25°	-4 05.4 -53.6	-4 29.8 -53.5	-4 54.6 -53.3	-5 19.7 -53.1	-5 45.1 -52.9
26°	-4 59.0 -53.7	-5 23.3 -53.5	-5 47.9 -53.3	-6 12.8 -53.2	-6 38.0 -53.0
27°	-5 52.7 -53.6	-6 16.8 -53.4	-6 41.2 -53.3	-7 06.0 -53.1	-7 31.0 -52.9
28°	-6 46.3 -53.6	-7 10.2 -53.4	-7 34.5 -53.2	-7 59.1 -53.0	-8 23.9 -52.9
29°	-7 39.9 -53.5	-8 03.6 -53.4	-8 27.7 -53.2	-8 52.1 -53.0	-9 16.8 -52.8

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°	15 48.1 -52.3 115.8	15 18.6 -52.2 114.9	14 48.9 -52.1 114.0	14 18.9 -51.9 113.1	13 48.8 -51.9 112.2
1°	14 55.8 -52.4 116.3	14 26.4 -52.3 115.4	13 56.8 -52.2 114.5	13 27.0 -52.1 113.7	12 56.9 -51.9 112.8
2°	14 03.4 -52.4 116.8	13 34.1 -52.3 115.9	13 04.6 -52.2 115.1	12 34.9 -52.0 114.2	12 05.0 -51.9 113.3
3°	13 11.0 -52.6 117.3	12 41.8 -52.4 116.5	12 12.4 -52.2 115.6	11 42.9 -52.2 114.7	11 13.1 -52.1 113.8
4°	12 18.4 -52.5 117.8	11 49.4 -52.4 117.0	11 20.2 -52.3 116.1	10 50.7 -52.2 115.2	10 21.0 -52.0 114.3
5°	11 25.9 -52.7 118.3	10 57.0 -52.5 117.4	10 27.9 -52.4 116.6	9 58.5 -52.2 115.7	9 29.0 -52.1 114.8
6°	10 33.2 -52.6 118.8	10 04.5 -52.5 117.9	9 35.5 -52.4 117.1	9 06.3 -52.3 116.2	8 36.9 -52.2 115.3
7°	9 40.6 -52.7 119.3	9 12.0 -52.6 118.4	8 43.1 -52.4 117.5	8 14.0 -52.3 116.7	7 44.7 -52.2 115.8
8°	8 47.9 -52.8 119.8	8 19.4 -52.6 118.9	7 50.7 -52.5 118.0	7 21.7 -52.3 117.2	6 52.5 -52.2 116.3
9°	7 55.1 -52.7 120.3	7 26.8 -52.7 119.4	6 58.2 -52.5 118.5	6 29.4 -52.4 117.7	6 00.3 -52.2 116.8
10°	7 02.4 -52.9 120.8	6 34.1 -52.6 119.9	6 05.7 -52.5 119.0	5 37.0 -52.4 118.2	5 08.1 -52.3 117.3
11°	6 09.5 -52.8 121.2	5 41.5 -52.7 120.4	5 13.2 -52.6 119.5	4 44.6 -52.4 118.6	4 15.8 -52.3 117.8
12°	5 16.7 -52.8 121.7	4 48.8 -52.7 120.8	4 20.6 -52.6 120.0	3 52.2 -52.4 119.1	3 23.5 -52.3 118.3
13°	4 23.9 -52.9 122.2	3 56.1 -52.7 121.3	3 28.0 -52.5 120.5	2 59.8 -52.5 119.6	2 31.2 -52.3 118.8
14°	3 31.0 -52.9 122.7	3 03.4 -52.8 121.8	2 35.5 -52.6 121.0	2 07.3 -52.4 120.1	1 38.9 -52.3 119.3
15°	2 38.1 -52.9 123.1	2 10.6 -52.7 122.3	1 42.9 -52.6 121.4	1 14.9 -52.5 120.6	0 46.6 -52.3 119.7
16°	1 45.2 -52.9 123.6	1 17.9 -52.8 122.8	0 50.3 -52.6 121.9	0 22.4 -52.5 121.1	-0 05.7 -52.3
17°	0 52.3 -52.9 124.1	0 25.1 -52.7 123.2	-0 02.3 -52.7	-0 30.1 -52.4	-0 58.0 -52.4
18°	-0 00.6 -52.9	-0 27.6 -52.8	-0 55.0 -52.6	-1 22.5 -52.5	-1 50.4 -52.3
19°	-0 53.5 -52.9	-1 20.4 -52.7	-1 47.6 -52.6	-2 15.0 -52.4	-2 42.7 -52.3
20°	-1 46.4 -52.9	-2 13.1 -52.8	-2 40.2 -52.5	-3 07.4 -52.5	-3 35.0 -52.2
21°	-2 39.3 -52.9	-3 05.9 -52.7	-3 32.7 -52.6	-3 59.9 -52.4	-4 27.2 -52.3
22°	-3 32.2 -52.8	-3 58.6 -52.7	-4 25.3 -52.6	-4 52.3 -52.4	-5 19.5 -52.2
23°	-4 25.0 -52.9	-4 51.3 -52.7	-5 17.9 -52.5	-5 44.7 -52.3	-6 11.7 -52.2
24°	-5 17.9 -52.8	-5 44.0 -52.7	-6 10.4 -52.5	-6 37.0 -52.4	-7 03.9 -52.2
25°	-6 10.7 -52.8	-6 36.7 -52.6	-7 02.9 -52.5	-7 29.4 -52.3	-7 56.1 -52.2
26°	-7 03.5 -52.8	-7 29.3 -52.6	-7 55.4 -52.4	-8 21.7 -52.2	-8 48.3 -52.1
27°	-7 56.3 -52.8	-8 21.9 -52.6	-8 47.8 -52.4	-9 13.9 -52.3	-9 40.4 -52.0
28°	-8 49.1 -52.7	-9 14.5 -52.5	-9 40.2 -52.3		
29°	-9 41.8 -52.6				

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°	13 18.4 -51.7 111.4	12 47.9 -51.6 110.5	12 17.2 -51.5 109.6	11 46.3 -51.4 108.7	11 15.3 -51.3 107.8
1°	12 26.7 -51.8 111.9	11 56.3 -51.7 111.0	11 25.7 -51.6 110.1	10 54.9 -51.5 109.2	10 24.0 -51.4 108.4
2°	11 34.9 -51.9 112.4	11 04.6 -51.7 111.5	10 34.1 -51.6 110.6	10 03.4 -51.5 109.8	9 32.6 -51.4 108.9
3°	10 43.0 -51.9 112.9	10 12.9 -51.8 112.0	9 42.5 -51.7 111.2	9 11.9 -51.6 110.3	8 41.2 -51.5 109.4
4°	9 51.1 -51.9 113.4	9 21.1 -51.9 112.5	8 50.8 -51.7 111.7	8 20.3 -51.6 110.8	7 49.7 -51.5 109.9
5°	8 59.2 -52.0 113.9	8 29.2 -51.8 113.1	7 59.1 -51.8 112.2	7 28.7 -51.6 111.3	6 58.2 -51.6 110.5
6°	8 07.2 -52.0 114.4	7 37.4 -52.0 113.6	7 07.3 -51.8 112.7	6 37.1 -51.7 111.8	6 06.6 -51.5 111.0
7°	7 15.2 -52.1 114.9	6 45.4 -51.9 114.1	6 15.5 -51.8 113.2	5 45.4 -51.7 112.3	5 15.1 -51.6 111.5
8°	6 23.1 -52.1 115.4	5 53.5 -52.0 114.6	5 23.7 -51.9 113.7	4 53.7 -51.8 112.9	4 23.5 -51.7 112.0
9°	5 31.0 -52.1 115.9	5 01.5 -52.0 115.1	4 31.8 -51.8 114.2	4 01.9 -51.7 113.4	3 31.8 -51.6 112.5
10°	4 38.9 -52.1 116.4	4 09.5 -52.0 115.6	3 40.0 -51.9 114.7	3 10.2 -51.8 113.9	2 40.2 -51.7 113.0
11°	3 46.8 -52.2 116.9	3 17.5 -52.0 116.1	2 48.1 -51.9 115.2	2 18.4 -51.8 114.4	1 48.5 -51.6 113.5
12°	2 54.6 -52.1 117.4	2 25.5 -52.0 116.6	1 56.2 -51.9 115.7	1 26.6 -51.8 114.9	0 56.9 -51.7 114.0
13°	2 02.5 -52.2 117.9	1 33.5 -52.1 117.1	1 04.3 -51.9 116.2	0 34.8 -51.7 115.4	0 05.2 -51.6 114.5
14°	1 10.3 -52.2 118.4	0 41.4 -52.0 117.6	0 12.4 -52.0 116.7	-0 16.9 -51.8	-0 46.4 -51.7
15°	0 18.1 -52.2 118.9	-0 10.6 -52.1	-0 39.6 -51.9	-1 08.7 -51.8	-1 38.1 -51.7
16°	-0 34.1 -52.2	-1 02.7 -52.0	-1 31.5 -51.9	-2 00.5 -51.8	-2 29.8 -51.6
17°	-1 26.3 -52.1	-1 54.7 -52.0	-2 23.4 -51.9	-2 52.3 -51.7	-3 21.4 -51.6
18°	-2 18.4 -52.2	-2 46.7 -52.0	-3 15.3 -51.8	-3 44.0 -51.8	-4 13.0 -51.6
19°	-3 10.6 -52.1	-3 38.7 -52.1	-4 07.1 -51.9	-4 35.8 -51.7	-5 04.6 -51.6
20°	-4 02.7 -52.2	-4 30.8 -51.9	-4 59.0 -51.8	-5 27.5 -51.7	-5 56.2 -51.6
21°	-4 54.9 -52.1	-5 22.7 -52.0	-5 50.8 -51.9	-6 19.2 -51.7	-6 47.8 -51.5
22°	-5 47.0 -52.0	-6 14.7 -51.9	-6 42.7 -51.7	-7 10.9 -51.6	-7 39.3 -51.5
23°	-6 39.0 -52.1	-7 06.6 -51.9	-7 34.4 -51.8	-8 02.5 -51.6	-8 30.8 -51.4
24°	-7 31.1 -52.0	-7 58.5 -51.9	-8 26.2 -51.7	-8 54.1 -51.5	-9 22.2 -51.4
25°	-8 23.1 -52.0	-8 50.4 -51.8	-9 17.9 -51.6	-9 45.6 -51.5	
26°	-9 15.1 -51.9	-9 42.2 -51.8			
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°	10 44.1 -51.2 107.0	10 12.8 -51.1 106.1	9 41.3 -51.0 105.2	9 09.8 -51.0 104.4	8 38.0 -50.9 103.5
1°	9 52.9 -51.3 107.5	9 21.7 -51.2 106.6	8 50.3 -51.1 105.8	8 18.8 -51.1 104.9	7 47.1 -50.9 104.1
2°	9 01.6 -51.3 108.0	8 30.5 -51.3 107.2	7 59.2 -51.2 106.3	7 27.7 -51.0 105.4	6 56.2 -51.0 104.6
3°	8 10.3 -51.4 108.6	7 39.2 -51.3 107.7	7 08.0 -51.2 106.8	6 36.7 -51.2 106.0	6 05.2 -51.1 105.1
4°	7 18.9 -51.4 109.1	6 47.9 -51.3 108.2	6 16.8 -51.2 107.4	5 45.5 -51.1 106.5	5 14.1 -51.0 105.6
5°	6 27.5 -51.5 109.6	5 56.6 -51.3 108.7	5 25.6 -51.3 107.9	4 54.4 -51.1 107.0	4 23.1 -51.1 106.2
6°	5 36.0 -51.4 110.1	5 05.3 -51.4 109.3	4 34.3 -51.2 108.4	4 03.3 -51.2 107.6	3 32.0 -51.1 106.7
7°	4 44.6 -51.5 110.6	4 13.9 -51.4 109.8	3 43.1 -51.3 108.9	3 12.1 -51.2 108.1	2 40.9 -51.1 107.2
8°	3 53.1 -51.5 111.1	3 22.5 -51.4 110.3	2 51.8 -51.3 109.4	2 20.9 -51.2 108.6	1 49.8 -51.1 107.8
9°	3 01.6 -51.6 111.7	2 31.1 -51.4 110.8	2 00.5 -51.4 110.0	1 29.7 -51.3 109.1	0 58.7 -51.1 108.3
10°	2 10.0 -51.5 112.2	1 39.7 -51.5 111.3	1 09.1 -51.3 110.5	0 38.4 -51.2 109.6	0 07.6 -51.1 108.8
11°	1 18.5 -51.6 112.7	0 48.2 -51.4 111.8	0 17.8 -51.3 111.0	-0 12.8 -51.2	-0 43.5 -51.1
12°	0 26.9 -51.5 113.2	-0 03.2 -51.4	-0 33.5 -51.3	-1 04.0 -51.2	-1 34.6 -51.2
13°	-0 24.6 -51.5	-0 54.6 -51.4	-1 24.8 -51.3	-1 55.2 -51.2	-2 25.8 -51.0
14°	-1 16.1 -51.6	-1 46.0 -51.5	-2 16.1 -51.3	-2 46.4 -51.2	-3 16.8 -51.1
15°	-2 07.7 -51.5	-2 37.5 -51.4	-3 07.4 -51.3	-3 37.6 -51.2	-4 07.9 -51.1
16°	-2 59.2 -51.5	-3 28.9 -51.4	-3 58.7 -51.3	-4 28.8 -51.1	-4 59.0 -51.0
17°	-3 50.7 -51.5	-4 20.3 -51.3	-4 50.0 -51.2	-5 19.9 -51.1	-5 50.0 -51.0
18°	-4 42.2 -51.5	-5 11.6 -51.4	-5 41.2 -51.2	-6 11.0 -51.1	-6 41.0 -51.0
19°	-5 33.7 -51.4	-6 03.0 -51.3	-6 32.4 -51.2	-7 02.1 -51.1	-7 32.0 -50.9
20°	-6 25.1 -51.5	-6 54.3 -51.3	-7 23.6 -51.2	-7 53.2 -51.0	-8 22.9 -50.9
21°	-7 16.6 -51.3	-7 45.6 -51.2	-8 14.8 -51.1	-8 44.2 -51.0	-9 13.8 -50.8
22°	-8 07.9 -51.4	-8 36.8 -51.2	-9 05.9 -51.0	-9 35.2 -50.9	
23°	-8 59.3 -51.3	-9 28.0 -51.1	-9 56.9 -51.0		
24°	-9 50.6 -51.2				
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°	8 06.2 -50.8 102.7	7 34.3 -50.8 101.8	7 02.2 -50.7 101.0	6 30.1 -50.6 100.1	5 57.9 -50.6 99.3
1°	7 15.4 -50.9 103.2	6 43.5 -50.8 102.3	6 11.5 -50.7 101.5	5 39.5 -50.7 100.6	5 07.3 -50.6 99.8
2°	6 24.5 -50.9 103.7	5 52.7 -50.9 102.9	5 20.8 -50.8 102.0	4 48.8 -50.8 101.2	4 16.7 -50.7 100.3
3°	5 33.6 -51.0 104.3	5 01.8 -50.8 103.4	4 30.0 -50.8 102.6	3 58.0 -50.7 101.7	3 26.0 -50.7 100.9
4°	4 42.6 -51.0 104.8	4 11.0 -50.9 103.9	3 39.2 -50.8 103.1	3 07.3 -50.7 102.3	2 35.3 -50.7 101.4
5°	3 51.6 -50.9 105.3	3 20.1 -50.9 104.5	2 48.4 -50.9 103.6	2 16.6 -50.8 102.8	1 44.6 -50.7 101.9
6°	3 00.7 -51.1 105.9	2 29.2 -51.0 105.0	1 57.5 -50.8 104.2	1 25.8 -50.8 103.3	0 53.9 -50.7 102.5
7°	2 09.6 -51.0 106.4	1 38.2 -50.9 105.5	1 06.7 -50.9 104.7	0 35.0 -50.8 103.9	0 03.2 -50.7 103.0
8°	1 18.6 -51.0 106.9	0 47.3 -50.9 106.1	0 15.8 -50.8 105.2	-0 15.8 -50.7	-0 47.5 -50.7
9°	0 27.6 -51.0 107.4	-0 03.6 -51.0	-0 35.0 -50.9	-1 06.5 -50.8	-1 38.2 -50.7
10°	-0 23.4 -51.0	-0 54.6 -50.9	-1 25.9 -50.8	-1 57.3 -50.8	-2 28.9 -50.6
11°	-1 14.4 -51.1	-1 45.5 -50.9	-2 16.7 -50.9	-2 48.1 -50.7	-3 19.5 -50.7
12°	-2 05.5 -51.0	-2 36.4 -50.9	-3 07.6 -50.8	-3 38.8 -50.7	-4 10.2 -50.6
13°	-2 56.5 -51.0	-3 27.3 -50.9	-3 58.4 -50.8	-4 29.5 -50.7	-5 00.8 -50.7
14°	-3 47.5 -50.9	-4 18.2 -50.9	-4 49.2 -50.7	-5 20.2 -50.7	-5 51.5 -50.5
15°	-4 38.4 -51.0	-5 09.1 -50.8	-5 39.9 -50.8	-6 10.9 -50.7	-6 42.0 -50.6
16°	-5 29.4 -50.9	-5 59.9 -50.9	-6 30.7 -50.7	-7 01.6 -50.6	-7 32.6 -50.5
17°	-6 20.3 -50.9	-6 50.8 -50.7	-7 21.4 -50.6	-7 52.2 -50.5	-8 23.1 -50.5
18°	-7 11.2 -50.8	-7 41.5 -50.8	-8 12.0 -50.7	-8 42.7 -50.5	-9 13.6 -50.4
19°	-8 02.0 -50.9	-8 32.3 -50.7	-9 02.7 -50.5	-9 33.2 -50.5	
20°	-8 52.9 -50.7	-9 23.0 -50.6	-9 53.2 -50.6		
21°	-9 43.6 -50.7				
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°	5 25.6 -50.5 98.4	4 53.3 -50.6 97.6	4 20.8 -50.4 96.7	3 48.3 -50.4 95.9	3 15.8 -50.4 95.0
1°	4 35.1 -50.6 99.0	4 02.7 -50.5 98.1	3 30.4 -50.5 97.3	2 57.9 -50.5 96.4	2 25.4 -50.4 95.6
2°	3 44.5 -50.6 99.5	3 12.2 -50.6 98.6	2 39.9 -50.6 97.8	2 07.4 -50.4 97.0	1 35.0 -50.4 96.1
3°	2 53.9 -50.7 100.0	2 21.6 -50.5 99.2	1 49.3 -50.5 98.3	1 17.0 -50.5 97.5	0 44.6 -50.5 96.7
4°	2 03.2 -50.6 100.6	1 31.1 -50.6 99.7	0 58.8 -50.5 98.9	0 26.5 -50.5 98.0	-0 05.9 -50.4
5°	1 12.6 -50.6 101.1	0 40.5 -50.6 100.3	0 08.3 -50.5 99.4	-0 24.0 -50.4	-0 56.3 -50.4
6°	0 22.0 -50.7 101.6	-0 10.1 -50.6	-0 42.2 -50.5	-1 14.4 -50.5	-1 46.7 -50.5
7°	-0 28.7 -50.6	-1 00.7 -50.5	-1 32.7 -50.6	-2 04.9 -50.5	-2 37.2 -50.4
8°	-1 19.3 -50.6	-1 51.2 -50.6	-2 23.3 -50.5	-2 55.4 -50.4	-3 27.6 -50.4
9°	-2 09.9 -50.6	-2 41.8 -50.5	-3 13.8 -50.4	-3 45.8 -50.4	-4 18.0 -50.3
10°	-3 00.5 -50.6	-3 32.3 -50.6	-4 04.2 -50.5	-4 36.2 -50.4	-5 08.3 -50.4
11°	-3 51.1 -50.6	-4 22.9 -50.5	-4 54.7 -50.4	-5 26.6 -50.4	-5 58.7 -50.3
12°	-4 41.7 -50.6	-5 13.4 -50.5	-5 45.1 -50.4	-6 17.0 -50.3	-6 49.0 -50.2
13°	-5 32.3 -50.5	-6 03.9 -50.4	-6 35.5 -50.4	-7 07.3 -50.3	-7 39.2 -50.3
14°	-6 22.8 -50.5	-6 54.3 -50.4	-7 25.9 -50.3	-7 57.6 -50.3	-8 29.5 -50.1
15°	-7 13.3 -50.5	-7 44.7 -50.4	-8 16.2 -50.3	-8 47.9 -50.2	-9 19.6 -50.2
16°	-8 03.8 -50.4	-8 35.1 -50.3	-9 06.5 -50.2	-9 38.1 -50.1	
17°	-8 54.2 -50.3	-9 25.4 -50.3	-9 56.7 -50.2		
18°	-9 44.5 -50.3				
19°					
20°					
21°					
22°					
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24°					
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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 43.2 -50.3 94.2	2 10.6 -50.3 93.4	1 38.0 -50.3 92.5	1 05.3 -50.3 91.7	0 32.7 -50.3 90.8
1°	1 52.9 -50.4 94.7	1 20.3 -50.4 93.9	0 47.7 -50.4 93.1	0 15.0 -50.3 92.2	-0 17.6 -50.4
2°	1 02.5 -50.4 95.3	0 29.9 -50.4 94.4	-0 02.7 -50.3	-0 35.3 -50.3	-1 08.0 -50.3
3°	0 12.1 -50.4 95.8	-0 20.5 -50.3	-0 53.0 -50.4	-1 25.6 -50.4	-1 58.3 -50.3
4°	-0 38.3 -50.4	-1 10.8 -50.4	-1 43.4 -50.3	-2 16.0 -50.3	-2 48.6 -50.3
5°	-1 28.7 -50.4	-2 01.2 -50.3	-2 33.7 -50.3	-3 06.3 -50.3	-3 38.9 -50.2
6°	-2 19.1 -50.4	-2 51.5 -50.4	-3 24.0 -50.3	-3 56.6 -50.2	-4 29.1 -50.3
7°	-3 09.5 -50.4	-3 41.9 -50.3	-4 14.3 -50.3	-4 46.8 -50.3	-5 19.4 -50.2
8°	-3 59.9 -50.3	-4 32.2 -50.3	-5 04.6 -50.3	-5 37.1 -50.2	-6 09.6 -50.2
9°	-4 50.2 -50.3	-5 22.5 -50.3	-5 54.9 -50.2	-6 27.3 -50.2	-6 59.8 -50.1
10°	-5 40.5 -50.3	-6 12.8 -50.2	-6 45.1 -50.2	-7 17.5 -50.1	-7 49.9 -50.1
11°	-6 30.8 -50.2	-7 03.0 -50.2	-7 35.3 -50.1	-8 07.6 -50.1	-8 40.0 -50.1
12°	-7 21.0 -50.2	-7 53.2 -50.1	-8 25.4 -50.1	-8 57.7 -50.1	-9 30.1 -50.0
13°	-8 11.2 -50.2	-8 43.3 -50.1	-9 15.5 -50.0	-9 47.8 -49.9	
14°	-9 01.4 -50.1	-9 33.4 -50.1			
15°	-9 51.5 -50.1				
16°					
17°					
18°					
19°					
20°					
21°					
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23°					
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28°					
29°					

Latitude 57°

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 -50.3 90.0	-0 32.7 -50.3			
1°	-0 50.3 -50.3	-1 23.0 -50.3			
2°	-1 40.6 -50.3	-2 13.3 -50.3			
3°	-2 30.9 -50.3	-3 03.6 -50.3			
4°	-3 21.2 -50.3	-3 53.9 -50.3			
5°	-4 11.5 -50.3	-4 44.2 -50.2			
6°	-5 01.8 -50.2	-5 34.4 -50.2			
7°	-5 52.0 -50.2	-6 24.6 -50.2			
8°	-6 42.2 -50.1	-7 14.8 -50.1			
9°	-7 32.3 -50.1	-8 04.9 -50.1			
10°	-8 22.4 -50.1	-8 55.0 -50.0			
11°	-9 12.5 -50.0	-9 45.0 -50.0			
12°					
13°					
14°					
15°					
16°					
17°					
18°					
19°					
20°					
21°					
22°					
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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°					
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27°					
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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°	32 00.0 -60.0 180.0	31 59.7 -60.0 178.8	31 58.7 -60.0 177.6	31 57.1 -60.0 176.5	31 54.8 -60.0 175.3
1°	31 00.0 -60.0 180.0	30 59.7 -60.0 178.8	30 58.7 -60.0 177.7	30 57.1 -60.0 176.5	30 54.8 -59.9 175.3
2°	30 00.0 -60.0 180.0	29 59.7 -60.0 178.8	29 58.7 -60.0 177.7	29 57.1 -59.9 176.5	29 54.9 -60.0 175.4
3°	29 00.0 -60.0 180.0	28 59.7 -60.0 178.9	28 58.7 -60.0 177.7	28 57.2 -60.0 176.6	28 54.9 -59.9 175.4
4°	28 00.0 -60.0 180.0	27 59.7 -60.0 178.9	27 58.7 -59.9 177.7	27 57.2 -60.0 176.6	27 55.0 -60.0 175.5
5°	27 00.0 -60.0 180.0	26 59.7 -60.0 178.9	26 58.8 -60.0 177.8	26 57.2 -60.0 176.6	26 55.0 -59.9 175.5
6°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 58.8 -60.0 177.8	25 57.2 -59.9 176.7	25 55.1 -60.0 175.6
7°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 58.8 -60.0 177.8	24 57.3 -60.0 176.7	24 55.1 -59.9 175.6
8°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.8 -60.0 177.8	23 57.3 -60.0 176.7	23 55.2 -60.0 175.7
9°	23 00.0 -60.0 180.0	22 59.7 -60.0 178.9	22 58.8 -60.0 177.9	22 57.3 -60.0 176.8	22 55.2 -59.9 175.7
10°	22 00.0 -60.0 180.0	21 59.7 -60.0 178.9	21 58.8 -60.0 177.9	21 57.3 -59.9 176.8	21 55.3 -60.0 175.8
11°	21 00.0 -60.0 180.0	20 59.7 -60.0 178.9	20 58.8 -60.0 177.9	20 57.4 -60.0 176.8	20 55.3 -59.9 175.8
12°	20 00.0 -60.0 180.0	19 59.7 -60.0 179.0	19 58.8 -59.9 177.9	19 57.4 -60.0 176.9	19 55.4 -60.0 175.8
13°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.9 -60.0 177.9	18 57.4 -59.9 176.9	18 55.4 -59.9 175.9
14°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 58.9 -60.0 178.0	17 57.5 -60.0 176.9	17 55.5 -60.0 175.9
15°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 58.9 -60.0 178.0	16 57.5 -60.0 177.0	16 55.5 -59.9 176.0
16°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 58.9 -60.0 178.0	15 57.5 -60.0 177.0	15 55.6 -60.0 176.0
17°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.0	14 58.9 -60.0 178.0	14 57.5 -59.9 177.0	14 55.6 -59.9 176.0
18°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.0	13 58.9 -60.0 178.0	13 57.6 -60.0 177.1	13 55.7 -60.0 176.1
19°	13 00.0 -60.0 180.0	12 59.7 -60.0 179.0	12 58.9 -60.0 178.1	12 57.6 -60.0 177.1	12 55.7 -60.0 176.1
20°	12 00.0 -60.0 180.0	11 59.7 -60.0 179.0	11 58.9 -60.0 178.1	11 57.6 -60.0 177.1	11 55.7 -59.9 176.2
21°	11 00.0 -60.0 180.0	10 59.7 -60.0 179.0	10 58.9 -59.9 178.1	10 57.6 -60.0 177.1	10 55.8 -60.0 176.2
22°	10 00.0 -60.0 180.0	9 59.7 -60.0 179.1	9 59.0 -60.0 178.1	9 57.6 -59.9 177.2	9 55.8 -59.9 176.2
23°	9 00.0 -60.0 180.0	8 59.7 -60.0 179.1	8 59.0 -60.0 178.1	8 57.7 -60.0 177.2	8 55.9 -60.0 176.3
24°	8 00.0 -60.0 180.0	7 59.7 -60.0 179.1	7 59.0 -60.0 178.2	7 57.7 -60.0 177.2	7 55.9 -60.0 176.3
25°	7 00.0 -60.0 180.0	6 59.7 -60.0 179.1	6 59.0 -60.0 178.2	6 57.7 -60.0 177.3	6 55.9 -59.9 176.3
26°	6 00.0 -60.0 180.0	5 59.7 -59.9 179.1	5 59.0 -60.0 178.2	5 57.7 -59.9 177.3	5 56.0 -60.0 176.4
27°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.1	4 59.0 -60.0 178.2	4 57.8 -60.0 177.3	4 56.0 -59.9 176.4
28°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.1	3 59.0 -60.0 178.2	3 57.8 -60.0 177.3	3 56.1 -60.0 176.5
29°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.1	2 59.0 -60.0 178.2	2 57.8 -60.0 177.4	2 56.1 -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°	31 51.8 -59.9 174.1	31 48.2 -59.8 172.9	31 44.0 -59.8 171.8	31 39.1 -59.7 170.6	31 33.6 -59.7 169.4
1°	30 51.9 -59.9 174.2	30 48.4 -59.9 173.0	30 44.2 -59.8 171.9	30 39.4 -59.8 170.7	30 33.9 -59.7 169.5
2°	29 52.0 -59.9 174.2	29 48.5 -59.9 173.1	29 44.4 -59.9 171.9	29 39.6 -59.8 170.8	29 34.2 -59.8 169.6
3°	28 52.1 -59.9 174.3	28 48.6 -59.9 173.2	28 44.5 -59.8 172.0	28 39.8 -59.8 170.9	28 34.4 -59.7 169.8
4°	27 52.2 -59.9 174.4	27 48.7 -59.8 173.2	27 44.7 -59.9 172.1	27 40.0 -59.8 171.0	27 34.7 -59.7 169.9
5°	26 52.3 -60.0 174.4	26 48.9 -59.9 173.3	26 44.8 -59.8 172.2	26 40.2 -59.8 171.1	26 35.0 -59.8 170.0
6°	25 52.3 -59.9 174.5	25 49.0 -59.9 173.4	25 45.0 -59.9 172.3	25 40.4 -59.8 171.2	25 35.2 -59.7 170.1
7°	24 52.4 -59.9 174.5	24 49.1 -59.9 173.4	24 45.1 -59.8 172.3	24 40.6 -59.8 171.3	24 35.5 -59.8 170.2
8°	23 52.5 -59.9 174.6	23 49.2 -59.9 173.5	23 45.3 -59.9 172.4	23 40.8 -59.8 171.3	23 35.7 -59.7 170.3
9°	22 52.6 -60.0 174.6	22 49.3 -59.9 173.6	22 45.4 -59.8 172.5	22 41.0 -59.8 171.4	22 36.0 -59.8 170.4
10°	21 52.6 -59.9 174.7	21 49.4 -59.9 173.6	21 45.6 -59.9 172.6	21 41.2 -59.8 171.5	21 36.2 -59.8 170.5
11°	20 52.7 -59.9 174.7	20 49.5 -59.9 173.7	20 45.7 -59.8 172.6	20 41.4 -59.8 171.6	20 36.4 -59.7 170.6
12°	19 52.8 -59.9 174.8	19 49.6 -59.9 173.8	19 45.9 -59.9 172.7	19 41.6 -59.9 171.7	19 36.7 -59.8 170.7
13°	18 52.9 -60.0 174.9	18 49.7 -59.9 173.8	18 46.0 -59.8 172.8	18 41.7 -59.8 171.8	18 36.9 -59.8 170.7
14°	17 52.9 -59.9 174.9	17 49.8 -59.9 173.9	17 46.2 -59.9 172.9	17 41.9 -59.8 171.9	17 37.1 -59.7 170.8
15°	16 53.0 -59.9 175.0	16 49.9 -59.9 173.9	16 46.3 -59.9 172.9	16 42.1 -59.8 171.9	16 37.4 -59.8 170.9
16°	15 53.1 -60.0 175.0	15 50.0 -59.9 174.0	15 46.4 -59.8 173.0	15 42.3 -59.8 172.0	15 37.6 -59.8 171.0
17°	14 53.1 -59.9 175.1	14 50.1 -59.9 174.1	14 46.6 -59.9 173.1	14 42.5 -59.9 172.1	14 37.8 -59.8 171.1
18°	13 53.2 -59.9 175.1	13 50.2 -59.9 174.1	13 46.7 -59.9 173.1	13 42.6 -59.8 172.2	13 38.0 -59.7 171.2
19°	12 53.3 -60.0 175.2	12 50.3 -59.9 174.2	12 46.8 -59.8 173.2	12 42.8 -59.8 172.2	12 38.3 -59.8 171.3
20°	11 53.3 -59.9 175.2	11 50.4 -59.9 174.2	11 47.0 -59.9 173.3	11 43.0 -59.9 172.3	11 38.5 -59.8 171.4
21°	10 53.4 -59.9 175.2	10 50.5 -59.9 174.3	10 47.1 -59.9 173.3	10 43.1 -59.8 172.4	10 38.7 -59.8 171.5
22°	9 53.5 -60.0 175.3	9 50.6 -59.9 174.4	9 47.2 -59.9 173.4	9 43.3 -59.8 172.5	9 38.9 -59.8 171.5
23°	8 53.5 -59.9 175.3	8 50.7 -59.9 174.4	8 47.3 -59.8 173.5	8 43.5 -59.8 172.6	8 39.1 -59.8 171.6
24°	7 53.6 -59.9 175.4	7 50.8 -59.9 174.5	7 47.5 -59.9 173.5	7 43.7 -59.9 172.6	7 39.3 -59.8 171.7
25°	6 53.7 -60.0 175.4	6 50.9 -59.9 174.5	6 47.6 -59.9 173.6	6 43.8 -59.8 172.7	6 39.5 -59.8 171.8
26°	5 53.7 -59.9 175.5	5 51.0 -59.9 174.6	5 47.7 -59.8 173.7	5 44.0 -59.9 172.8	5 39.7 -59.8 171.9
27°	4 53.8 -59.9 175.5	4 51.1 -59.9 174.6	4 47.9 -59.9 173.7	4 44.1 -59.8 172.9	4 39.9 -59.7 172.0
28°	3 53.9 -60.0 175.6	3 51.2 -59.9 174.7	3 48.0 -59.9 173.8	3 44.3 -59.8 172.9	3 40.2 -59.8 172.0
29°	2 53.9 -59.9 175.6	2 51.3 -59.9 174.7	2 48.1 -59.9 173.9	2 44.5 -59.9 173.0	2 40.4 -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°	31 27.5 -59.7 168.3	31 20.7 -59.6 167.1	31 13.3 -59.6 165.9	31 05.2 -59.4 164.8	30 56.6 -59.4 163.6
1°	30 27.8 -59.7 168.4	30 21.1 -59.6 167.2	30 13.7 -59.5 166.1	30 05.8 -59.4 164.9	29 57.2 -59.3 163.8
2°	29 28.1 -59.6 168.5	29 21.5 -59.6 167.4	29 14.2 -59.5 166.2	29 06.4 -59.5 165.1	28 57.9 -59.4 164.0
3°	28 28.5 -59.7 168.6	28 21.9 -59.6 167.5	28 14.7 -59.5 166.4	28 06.9 -59.4 165.2	27 58.5 -59.4 164.1
4°	27 28.8 -59.7 168.7	27 22.3 -59.6 167.6	27 15.2 -59.6 166.5	27 07.5 -59.5 165.4	26 59.1 -59.3 164.3
5°	26 29.1 -59.7 168.9	26 22.7 -59.6 167.8	26 15.6 -59.5 166.6	26 08.0 -59.5 165.5	25 59.8 -59.4 164.4
6°	25 29.4 -59.6 169.0	25 23.1 -59.7 167.9	25 16.1 -59.6 166.8	25 08.5 -59.5 165.7	25 00.4 -59.4 164.6
7°	24 29.8 -59.7 169.1	24 23.4 -59.6 168.0	24 16.5 -59.5 166.9	24 09.0 -59.4 165.8	24 01.0 -59.4 164.8
8°	23 30.1 -59.7 169.2	23 23.8 -59.6 168.1	23 17.0 -59.6 167.0	23 09.6 -59.5 166.0	23 01.6 -59.5 164.9
9°	22 30.4 -59.7 169.3	22 24.2 -59.7 168.2	22 17.4 -59.6 167.2	22 10.1 -59.6 166.1	22 02.1 -59.4 165.1
10°	21 30.7 -59.8 169.4	21 24.5 -59.6 168.4	21 17.8 -59.6 167.3	21 10.5 -59.5 166.3	21 02.7 -59.4 165.2
11°	20 30.9 -59.7 169.5	20 24.9 -59.7 168.5	20 18.2 -59.5 167.4	20 11.0 -59.5 166.4	20 03.3 -59.5 165.4
12°	19 31.2 -59.7 169.6	19 25.2 -59.6 168.6	19 18.7 -59.6 167.6	19 11.5 -59.5 166.5	19 03.8 -59.4 165.5
13°	18 31.5 -59.7 169.7	18 25.6 -59.7 168.7	18 19.1 -59.6 167.7	18 12.0 -59.5 166.7	18 04.4 -59.5 165.6
14°	17 31.8 -59.7 169.8	17 25.9 -59.7 168.8	17 19.5 -59.6 167.8	17 12.5 -59.6 166.8	17 04.9 -59.4 165.8
15°	16 32.1 -59.7 169.9	16 26.2 -59.6 168.9	16 19.9 -59.6 167.9	16 12.9 -59.5 166.9	16 05.5 -59.5 165.9
16°	15 32.4 -59.8 170.0	15 26.6 -59.7 169.0	15 20.3 -59.7 168.0	15 13.4 -59.5 167.1	15 06.0 -59.5 166.1
17°	14 32.6 -59.7 170.1	14 26.9 -59.7 169.1	14 20.6 -59.6 168.2	14 13.9 -59.6 167.2	14 06.5 -59.4 166.2
18°	13 32.9 -59.7 170.2	13 27.2 -59.6 169.2	13 21.0 -59.6 168.3	13 14.3 -59.5 167.3	13 07.1 -59.5 166.3
19°	12 33.2 -59.8 170.3	12 27.6 -59.7 169.4	12 21.4 -59.6 168.4	12 14.8 -59.6 167.4	12 07.6 -59.5 166.5
20°	11 33.4 -59.7 170.4	11 27.9 -59.7 169.5	11 21.8 -59.6 168.5	11 15.2 -59.6 167.6	11 08.1 -59.5 166.6
21°	10 33.7 -59.7 170.5	10 28.2 -59.7 169.6	10 22.2 -59.6 168.6	10 15.6 -59.5 167.7	10 08.6 -59.5 166.7
22°	9 34.0 -59.8 170.6	9 28.5 -59.7 169.7	9 22.6 -59.7 168.7	9 16.1 -59.6 167.8	9 09.1 -59.5 166.9
23°	8 34.2 -59.7 170.7	8 28.8 -59.7 169.8	8 22.9 -59.6 168.8	8 16.5 -59.5 167.9	8 09.6 -59.5 167.0
24°	7 34.5 -59.8 170.8	7 29.1 -59.6 169.9	7 23.3 -59.6 169.0	7 17.0 -59.6 168.0	7 10.1 -59.5 167.1
25°	6 34.7 -59.7 170.9	6 29.5 -59.7 170.0	6 23.7 -59.7 169.1	6 17.4 -59.6 168.2	6 10.6 -59.5 167.3
26°	5 35.0 -59.7 171.0	5 29.8 -59.7 170.1	5 24.0 -59.6 169.2	5 17.8 -59.5 168.3	5 11.1 -59.5 167.4
27°	4 35.3 -59.8 171.1	4 30.1 -59.7 170.2	4 24.4 -59.6 169.3	4 18.3 -59.6 168.4	4 11.6 -59.5 167.5
28°	3 35.5 -59.7 171.2	3 30.4 -59.7 170.3	3 24.8 -59.7 169.4	3 18.7 -59.6 168.5	3 12.1 -59.5 167.6
29°	2 35.8 -59.8 171.3	2 30.7 -59.7 170.4	2 25.1 -59.6 169.5	2 19.1 -59.6 168.6	2 12.6 -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°	30 47.3 -59.3 162.5	30 37.4 -59.1 161.3	30 26.9 -59.0 160.2	30 15.8 -58.9 159.0	30 04.2 -58.8 157.9
1°	29 48.0 -59.2 162.6	29 38.3 -59.2 161.5	29 27.9 -59.1 160.4	29 16.9 -58.9 159.3	29 05.4 -58.9 158.1
2°	28 48.8 -59.3 162.8	28 39.1 -59.2 161.7	28 28.8 -59.0 160.6	28 18.0 -59.0 159.5	28 06.5 -58.8 158.4
3°	27 49.5 -59.3 163.0	27 39.9 -59.2 161.9	27 29.8 -59.1 160.8	27 19.0 -59.0 159.7	27 07.7 -58.9 158.6
4°	26 50.2 -59.3 163.2	26 40.7 -59.2 162.1	26 30.7 -59.1 161.0	26 20.0 -59.0 159.9	26 08.8 -58.9 158.8
5°	25 50.9 -59.3 163.4	25 41.5 -59.2 162.3	25 31.6 -59.1 161.2	25 21.0 -59.0 160.1	25 09.9 -58.9 159.0
6°	24 51.6 -59.3 163.5	24 42.3 -59.2 162.4	24 32.5 -59.2 161.4	24 22.0 -59.0 160.3	24 11.0 -58.9 159.2
7°	23 52.3 -59.3 163.7	23 43.1 -59.2 162.6	23 33.3 -59.1 161.5	23 23.0 -59.1 160.5	23 12.1 -59.0 159.4
8°	22 53.0 -59.3 163.8	22 43.9 -59.3 162.8	22 34.2 -59.2 161.7	22 23.9 -59.0 160.7	22 13.1 -58.9 159.6
9°	21 53.7 -59.4 164.0	21 44.6 -59.2 163.0	21 35.0 -59.1 161.9	21 24.9 -59.1 160.9	21 14.2 -59.0 159.8
10°	20 54.3 -59.3 164.2	20 45.4 -59.3 163.1	20 35.9 -59.2 162.1	20 25.8 -59.1 161.0	20 15.2 -59.0 160.0
11°	19 55.0 -59.4 164.3	19 46.1 -59.3 163.3	19 36.7 -59.2 162.3	19 26.7 -59.1 161.2	19 16.2 -59.0 160.2
12°	18 55.6 -59.4 164.5	18 46.8 -59.3 163.5	18 37.5 -59.2 162.4	18 27.6 -59.1 161.4	18 17.2 -59.0 160.4
13°	17 56.2 -59.3 164.6	17 47.5 -59.3 163.6	17 38.3 -59.2 162.6	17 28.5 -59.1 161.6	17 18.2 -59.0 160.6
14°	16 56.9 -59.4 164.8	16 48.2 -59.3 163.8	16 39.1 -59.2 162.8	16 29.4 -59.1 161.8	16 19.2 -59.0 160.8
15°	15 57.5 -59.4 164.9	15 48.9 -59.3 163.9	15 39.9 -59.2 162.9	15 30.3 -59.1 162.0	15 20.2 -59.1 161.0
16°	14 58.1 -59.4 165.1	14 49.6 -59.3 164.1	14 40.7 -59.3 163.1	14 31.2 -59.2 162.1	14 21.1 -59.0 161.2
17°	13 58.7 -59.4 165.2	13 50.3 -59.3 164.2	13 41.4 -59.2 163.3	13 32.0 -59.1 162.3	13 22.1 -59.1 161.3
18°	12 59.3 -59.4 165.4	12 51.0 -59.3 164.4	12 42.2 -59.3 163.4	12 32.9 -59.2 162.5	12 23.0 -59.0 161.5
19°	11 59.9 -59.4 165.5	11 51.7 -59.4 164.6	11 42.9 -59.2 163.6	11 33.7 -59.1 162.6	11 24.0 -59.1 161.7
20°	11 00.5 -59.4 165.7	10 52.3 -59.3 164.7	10 43.7 -59.2 163.8	10 34.6 -59.2 162.8	10 24.9 -59.1 161.9
21°	10 01.1 -59.5 165.8	9 53.0 -59.3 164.9	9 44.5 -59.3 163.9	9 35.4 -59.2 163.0	9 25.8 -59.0 162.1
22°	9 01.6 -59.4 165.9	8 53.7 -59.4 165.0	8 45.2 -59.3 164.1	8 36.2 -59.1 163.2	8 26.8 -59.1 162.2
23°	8 02.2 -59.4 166.1	7 54.3 -59.3 165.2	7 45.9 -59.2 164.2	7 37.1 -59.2 163.3	7 27.7 -59.1 162.4
24°	7 02.8 -59.4 166.2	6 55.0 -59.4 165.3	6 46.7 -59.3 164.4	6 37.9 -59.2 163.5	6 28.6 -59.1 162.6
25°	6 03.4 -59.5 166.4	5 55.6 -59.3 165.5	5 47.4 -59.3 164.6	5 38.7 -59.2 163.7	5 29.5 -59.1 162.8
26°	5 03.9 -59.4 166.5	4 56.3 -59.4 165.6	4 48.1 -59.2 164.7	4 39.5 -59.2 163.8	4 30.4 -59.1 162.9
27°	4 04.5 -59.4 166.6	3 56.9 -59.3 165.7	3 48.9 -59.3 164.9	3 40.3 -59.2 164.0	3 31.3 -59.1 163.1
28°	3 05.1 -59.4 166.8	2 57.6 -59.4 165.9	2 49.6 -59.3 165.0	2 41.1 -59.1 164.1	2 32.2 -59.1 163.3
29°	2 05.7 -59.5 166.9	1 58.2 -59.3 166.0	1 50.3 -59.3 165.2	1 42.0 -59.2 164.3	1 33.1 -59.1 163.4

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°	29 51.9 -58.7 156.8	29 39.1 -58.6 155.6	29 25.7 -58.4 154.5	29 11.7 -58.3 153.4	28 57.2 -58.1 152.3
1°	28 53.2 -58.7 157.0	28 40.5 -58.6 155.9	28 27.3 -58.5 154.8	28 13.4 -58.3 153.7	27 59.1 -58.2 152.6
2°	27 54.5 -58.7 157.2	27 41.9 -58.6 156.1	27 28.8 -58.5 155.0	27 15.1 -58.4 153.9	27 00.9 -58.3 152.9
3°	26 55.8 -58.8 157.5	26 43.3 -58.6 156.4	26 30.3 -58.5 155.3	26 16.7 -58.4 154.2	26 02.6 -58.2 153.1
4°	25 57.0 -58.8 157.7	25 44.7 -58.7 156.6	25 31.8 -58.6 155.5	25 18.3 -58.4 154.5	25 04.4 -58.3 153.4
5°	24 58.2 -58.8 157.9	24 46.0 -58.7 156.8	24 33.2 -58.5 155.8	24 19.9 -58.4 154.7	24 06.1 -58.3 153.6
6°	23 59.4 -58.8 158.1	23 47.3 -58.7 157.1	23 34.7 -58.6 156.0	23 21.5 -58.5 155.0	23 07.8 -58.4 153.9
7°	23 00.6 -58.8 158.4	22 48.6 -58.7 157.3	22 36.1 -58.6 156.3	22 23.0 -58.5 155.2	22 09.4 -58.3 154.2
8°	22 01.8 -58.9 158.6	21 49.9 -58.7 157.5	21 37.5 -58.6 156.5	21 24.5 -58.5 155.4	21 11.1 -58.4 154.4
9°	21 02.9 -58.8 158.8	20 51.2 -58.8 157.7	20 38.9 -58.7 156.7	20 26.0 -58.5 155.7	20 12.7 -58.4 154.7
10°	20 04.1 -58.9 159.0	19 52.4 -58.8 158.0	19 40.2 -58.6 156.9	19 27.5 -58.5 155.9	19 14.3 -58.5 154.9
11°	19 05.2 -58.9 159.2	18 53.6 -58.7 158.2	18 41.6 -58.7 157.2	18 29.0 -58.6 156.1	18 15.8 -58.4 155.1
12°	18 06.3 -58.9 159.4	17 54.9 -58.8 158.4	17 42.9 -58.7 157.4	17 30.4 -58.6 156.4	17 17.4 -58.5 155.4
13°	17 07.4 -58.9 159.6	16 56.1 -58.9 158.6	16 44.2 -58.7 157.6	16 31.8 -58.6 156.6	16 18.9 -58.4 155.6
14°	16 08.5 -58.9 159.8	15 57.2 -58.8 158.8	15 45.5 -58.7 157.8	15 33.2 -58.6 156.8	15 20.5 -58.5 155.8
15°	15 09.6 -59.0 160.0	14 58.4 -58.8 159.0	14 46.8 -58.8 158.0	14 34.6 -58.6 157.0	14 22.0 -58.5 156.1
16°	14 10.6 -58.9 160.2	13 59.6 -58.9 159.2	13 48.0 -58.7 158.2	13 36.0 -58.6 157.3	13 23.5 -58.5 156.3
17°	13 11.7 -59.0 160.4	13 00.7 -58.8 159.4	12 49.3 -58.7 158.4	12 37.4 -58.7 157.5	12 25.0 -58.6 156.5
18°	12 12.7 -58.9 160.6	12 01.9 -58.9 159.6	11 50.6 -58.8 158.7	11 38.7 -58.6 157.7	11 26.4 -58.5 156.8
19°	11 13.8 -59.0 160.7	11 03.0 -58.8 159.8	10 51.8 -58.8 158.9	10 40.1 -58.7 157.9	10 27.9 -58.6 157.0
20°	10 14.8 -59.0 160.9	10 04.2 -58.9 160.0	9 53.0 -58.7 159.1	9 41.4 -58.6 158.1	9 29.3 -58.5 157.2
21°	9 15.8 -59.0 161.1	9 05.3 -58.9 160.2	8 54.3 -58.8 159.3	8 42.8 -58.7 158.3	8 30.8 -58.6 157.4
22°	8 16.8 -59.0 161.3	8 06.4 -58.9 160.4	7 55.5 -58.8 159.5	7 44.1 -58.7 158.6	7 32.2 -58.5 157.6
23°	7 17.8 -59.0 161.5	7 07.5 -58.9 160.6	6 56.7 -58.8 159.7	6 45.4 -58.7 158.8	6 33.7 -58.6 157.9
24°	6 18.8 -59.0 161.7	6 08.6 -58.9 160.8	5 57.9 -58.8 159.9	5 46.7 -58.7 159.0	5 35.1 -58.6 158.1
25°	5 19.8 -59.0 161.9	5 09.7 -58.9 161.0	4 59.1 -58.8 160.1	4 48.0 -58.6 159.2	4 36.5 -58.6 158.3
26°	4 20.8 -59.0 162.0	4 10.8 -58.9 161.2	4 00.3 -58.8 160.3	3 49.4 -58.7 159.4	3 37.9 -58.6 158.5
27°	3 21.8 -59.0 162.2	3 11.9 -58.9 161.3	3 01.5 -58.8 160.5	2 50.7 -58.7 159.6	2 39.3 -58.5 158.7
28°	2 22.8 -59.0 162.4	2 13.0 -58.9 161.5	2 02.7 -58.8 160.7	1 52.0 -58.7 159.8	1 40.8 -58.6 158.9
29°	1 23.8 -59.0 162.6	1 14.1 -58.9 161.7	1 03.9 -58.8 160.9	0 53.3 -58.7 160.0	0 42.2 -58.6 159.2

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°	28 42.2 -58.0 151.2	28 26.6 -57.9 150.1	28 10.5 -57.8 149.0	27 53.8 -57.5 147.9	27 36.7 -57.4 146.8
1°	27 44.2 -58.1 151.5	27 28.7 -57.9 150.4	27 12.7 -57.7 149.3	26 56.3 -57.7 148.2	26 39.3 -57.5 147.2
2°	26 46.1 -58.1 151.8	26 30.8 -58.0 150.7	26 15.0 -57.9 149.6	25 58.6 -57.7 148.5	25 41.8 -57.6 147.5
3°	25 48.0 -58.1 152.0	25 32.8 -58.0 151.0	25 17.1 -57.8 149.9	25 00.9 -57.7 148.8	24 44.2 -57.5 147.8
4°	24 49.9 -58.2 152.3	24 34.8 -58.0 151.3	24 19.3 -57.9 150.2	24 03.2 -57.7 149.1	23 46.7 -57.6 148.1
5°	23 51.7 -58.2 152.6	23 36.8 -58.0 151.5	23 21.4 -57.9 150.5	23 05.5 -57.8 149.4	22 49.1 -57.7 148.4
6°	22 53.5 -58.2 152.9	22 38.8 -58.1 151.8	22 23.5 -58.0 150.8	22 07.7 -57.8 149.7	21 51.4 -57.6 148.7
7°	21 55.3 -58.2 153.1	21 40.7 -58.1 152.1	21 25.5 -57.9 151.0	21 09.9 -57.8 150.0	20 53.8 -57.7 149.0
8°	20 57.1 -58.3 153.4	20 42.6 -58.2 152.3	20 27.6 -58.0 151.3	20 12.1 -57.9 150.3	19 56.1 -57.8 149.3
9°	19 58.8 -58.3 153.6	19 44.4 -58.1 152.6	19 29.6 -58.1 151.6	19 14.2 -57.9 150.6	18 58.3 -57.7 149.6
10°	19 00.5 -58.3 153.9	18 46.3 -58.2 152.9	18 31.5 -58.0 151.9	18 16.3 -57.9 150.9	18 00.6 -57.8 149.9
11°	18 02.2 -58.3 154.1	17 48.1 -58.2 153.1	17 33.5 -58.1 152.1	17 18.4 -58.0 151.1	17 02.8 -57.8 150.1
12°	17 03.9 -58.3 154.4	16 49.9 -58.2 153.4	16 35.4 -58.1 152.4	16 20.4 -57.9 151.4	16 05.0 -57.8 150.4
13°	16 05.6 -58.4 154.6	15 51.7 -58.2 153.6	15 37.3 -58.1 152.7	15 22.5 -58.0 151.7	15 07.2 -57.9 150.7
14°	15 07.2 -58.4 154.9	14 53.5 -58.3 153.9	14 39.2 -58.1 152.9	14 24.5 -58.0 151.9	14 09.3 -57.9 151.0
15°	14 08.8 -58.4 155.1	13 55.2 -58.3 154.1	13 41.1 -58.1 153.2	13 26.5 -58.0 152.2	13 11.4 -57.8 151.3
16°	13 10.4 -58.3 155.3	12 56.9 -58.2 154.4	12 43.0 -58.2 153.4	12 28.5 -58.0 152.5	12 13.6 -57.9 151.5
17°	12 12.1 -58.5 155.6	11 58.7 -58.3 154.6	11 44.8 -58.2 153.7	11 30.5 -58.1 152.7	11 15.7 -57.9 151.8
18°	11 13.6 -58.4 155.8	11 00.4 -58.3 154.9	10 46.6 -58.1 153.9	10 32.4 -58.0 153.0	10 17.8 -58.0 152.1
19°	10 15.2 -58.4 156.0	10 02.1 -58.3 155.1	9 48.5 -58.2 154.2	9 34.4 -58.1 153.2	9 19.8 -57.9 152.3
20°	9 16.8 -58.4 156.3	9 03.8 -58.4 155.3	8 50.3 -58.2 154.4	8 36.3 -58.1 153.5	8 21.9 -58.0 152.6
21°	8 18.4 -58.5 156.5	8 05.4 -58.3 155.6	7 52.1 -58.2 154.7	7 38.2 -58.0 153.8	7 23.9 -57.9 152.8
22°	7 19.9 -58.4 156.7	7 07.1 -58.3 155.8	6 53.9 -58.3 154.9	6 40.2 -58.1 154.0	6 26.0 -58.0 153.1
23°	6 21.5 -58.5 157.0	6 08.8 -58.4 156.1	5 55.6 -58.2 155.2	5 42.1 -58.1 154.3	5 28.0 -57.9 153.4
24°	5 23.0 -58.5 157.2	5 10.4 -58.3 156.3	4 57.4 -58.2 155.4	4 44.0 -58.1 154.5	4 30.1 -58.0 153.6
25°	4 24.5 -58.4 157.4	4 12.1 -58.4 156.5	3 59.2 -58.2 155.6	3 45.9 -58.1 154.8	3 32.1 -58.0 153.9
26°	3 26.1 -58.5 157.6	3 13.7 -58.3 156.8	3 01.0 -58.3 155.9	2 47.8 -58.2 155.0	2 34.1 -58.0 154.1
27°	2 27.6 -58.5 157.9	2 15.4 -58.4 157.0	2 02.7 -58.2 156.1	1 49.6 -58.1 155.3	1 36.1 -58.0 154.4
28°	1 29.1 -58.5 158.1	1 17.0 -58.3 157.2	1 04.5 -58.2 156.4	0 51.5 -58.1 155.5	0 38.1 -58.0 154.7
29°	0 30.6 -58.4 158.3	0 18.7 -58.4 157.5	0 06.3 -58.3 156.6	-0 06.6 -58.1	-0 19.9 -57.9

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°	27 19.1 -57.3 145.8	27 00.9 -57.1 144.7	26 42.3 -57.0 143.6	26 23.2 -56.8 142.6	26 03.6 -56.6 141.5
1°	26 21.8 -57.4 146.1	26 03.8 -57.2 145.0	25 45.3 -57.0 144.0	25 26.4 -56.9 142.9	25 07.0 -56.7 141.9
2°	25 24.4 -57.4 146.4	25 06.6 -57.2 145.4	24 48.3 -57.1 144.3	24 29.5 -56.9 143.3	24 10.3 -56.8 142.2
3°	24 27.0 -57.4 146.7	24 09.4 -57.3 145.7	23 51.2 -57.1 144.6	23 32.6 -57.0 143.6	23 13.5 -56.8 142.6
4°	23 29.6 -57.4 147.1	23 12.1 -57.3 146.0	22 54.1 -57.2 145.0	22 35.6 -57.0 144.0	22 16.7 -56.9 142.9
5°	22 32.2 -57.5 147.4	22 14.8 -57.4 146.3	21 56.9 -57.2 145.3	21 38.6 -57.1 144.3	21 19.8 -56.9 143.3
6°	21 34.7 -57.6 147.7	21 17.4 -57.4 146.7	20 59.7 -57.2 145.6	20 41.5 -57.1 144.6	20 22.9 -56.9 143.6
7°	20 37.1 -57.5 148.0	20 20.0 -57.4 147.0	20 02.5 -57.3 146.0	19 44.4 -57.1 144.9	19 26.0 -57.0 143.9
8°	19 39.6 -57.6 148.3	19 22.6 -57.4 147.3	19 05.2 -57.3 146.3	18 47.3 -57.1 145.3	18 29.0 -57.0 144.3
9°	18 42.0 -57.6 148.6	18 25.2 -57.5 147.6	18 07.9 -57.3 146.6	17 50.2 -57.2 145.6	17 32.0 -57.1 144.6
10°	17 44.4 -57.7 148.9	17 27.7 -57.5 147.9	17 10.6 -57.4 146.9	16 53.0 -57.3 145.9	16 34.9 -57.1 144.9
11°	16 46.7 -57.6 149.2	16 30.2 -57.5 148.2	16 13.2 -57.4 147.2	15 55.7 -57.2 146.2	15 37.8 -57.1 145.2
12°	15 49.1 -57.7 149.4	15 32.7 -57.6 148.5	15 15.8 -57.4 147.5	14 58.5 -57.3 146.5	14 40.7 -57.1 145.6
13°	14 51.4 -57.7 149.7	14 35.1 -57.6 148.8	14 18.4 -57.4 147.8	14 01.2 -57.3 146.8	13 43.6 -57.1 145.9
14°	13 53.7 -57.8 150.0	13 37.5 -57.6 149.1	13 21.0 -57.5 148.1	13 03.9 -57.3 147.1	12 46.5 -57.2 146.2
15°	12 55.9 -57.7 150.3	12 39.9 -57.6 149.3	12 23.5 -57.5 148.4	12 06.6 -57.3 147.4	11 49.3 -57.2 146.5
16°	11 58.2 -57.8 150.6	11 42.3 -57.6 149.6	11 26.0 -57.5 148.7	11 09.3 -57.4 147.7	10 52.1 -57.2 146.8
17°	11 00.4 -57.8 150.8	10 44.7 -57.7 149.9	10 28.5 -57.5 149.0	10 11.9 -57.3 148.0	9 54.9 -57.2 147.1
18°	10 02.6 -57.8 151.1	9 47.0 -57.6 150.2	9 31.0 -57.5 149.3	9 14.6 -57.4 148.3	8 57.7 -57.3 147.4
19°	9 04.8 -57.8 151.4	8 49.4 -57.7 150.5	8 33.5 -57.5 149.6	8 17.2 -57.4 148.6	8 00.4 -57.2 147.7
20°	8 07.0 -57.8 151.7	7 51.7 -57.7 150.8	7 36.0 -57.6 149.8	7 19.8 -57.4 148.9	7 03.2 -57.3 148.0
21°	7 09.2 -57.8 151.9	6 54.0 -57.7 151.0	6 38.4 -57.5 150.1	6 22.4 -57.5 149.2	6 05.9 -57.3 148.3
22°	6 11.4 -57.8 152.2	5 56.3 -57.7 151.3	5 40.9 -57.6 150.4	5 24.9 -57.4 149.5	5 08.6 -57.3 148.6
23°	5 13.6 -57.9 152.5	4 58.6 -57.7 151.6	4 43.3 -57.6 150.7	4 27.5 -57.4 149.8	4 11.3 -57.3 148.9
24°	4 15.7 -57.8 152.7	4 00.9 -57.7 151.9	3 45.7 -57.6 151.0	3 30.1 -57.5 150.1	3 14.0 -57.3 149.2
25°	3 17.9 -57.9 153.0	3 03.2 -57.7 152.1	2 48.1 -57.5 151.3	2 32.6 -57.4 150.4	2 16.7 -57.3 149.5
26°	2 20.0 -57.8 153.3	2 05.5 -57.7 152.4	1 50.6 -57.6 151.5	1 35.2 -57.4 150.7	1 19.4 -57.3 149.8
27°	1 22.2 -57.9 153.5	1 07.8 -57.7 152.7	0 53.0 -57.6 151.8	0 37.8 -57.5 151.0	0 22.1 -57.3 150.1
28°	0 24.3 -57.8 153.8	0 10.1 -57.8 153.0	-0 04.6 -57.6	-0 19.7 -57.4	-0 35.2 -57.3
29°	-0 33.5 -57.9	-0 47.7 -57.7	-1 02.2 -57.6	-1 17.1 -57.5	-1 32.5 -57.3

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°	25 43.6 -56.5 140.5	25 23.2 -56.4 139.4	25 02.3 -56.2 138.4	24 40.9 -56.0 137.3	24 19.2 -55.9 136.3
1°	24 47.1 -56.6 140.8	24 26.8 -56.4 139.8	24 06.1 -56.3 138.8	23 44.9 -56.1 137.7	23 23.3 -55.9 136.7
2°	23 50.5 -56.6 141.2	23 30.4 -56.5 140.2	23 09.8 -56.3 139.1	22 48.8 -56.1 138.1	22 27.4 -56.0 137.1
3°	22 53.9 -56.6 141.6	22 33.9 -56.5 140.5	22 13.5 -56.3 139.5	21 52.7 -56.2 138.5	21 31.4 -56.1 137.5
4°	21 57.3 -56.7 141.9	21 37.4 -56.5 140.9	21 17.2 -56.4 139.9	20 56.5 -56.3 138.9	20 35.3 -56.0 137.9
5°	21 00.6 -56.8 142.3	20 40.9 -56.6 141.3	20 20.8 -56.5 140.3	20 00.2 -56.3 139.3	19 39.3 -56.2 138.3
6°	20 03.8 -56.8 142.6	19 44.3 -56.7 141.6	19 24.3 -56.5 140.6	19 03.9 -56.3 139.6	18 43.1 -56.2 138.6
7°	19 07.0 -56.8 142.9	18 47.6 -56.6 142.0	18 27.8 -56.5 141.0	18 07.6 -56.4 140.0	17 46.9 -56.2 139.0
8°	18 10.2 -56.9 143.3	17 51.0 -56.8 142.3	17 31.3 -56.6 141.3	17 11.2 -56.4 140.3	16 50.7 -56.2 139.4
9°	17 13.3 -56.9 143.6	16 54.2 -56.7 142.6	16 34.7 -56.6 141.7	16 14.8 -56.4 140.7	15 54.5 -56.3 139.7
10°	16 16.4 -56.9 144.0	15 57.5 -56.8 143.0	15 38.1 -56.6 142.0	15 18.4 -56.5 141.1	14 58.2 -56.4 140.1
11°	15 19.5 -57.0 144.3	15 00.7 -56.8 143.3	14 41.5 -56.6 142.4	14 21.9 -56.5 141.4	14 01.8 -56.3 140.4
12°	14 22.5 -56.9 144.6	14 03.9 -56.8 143.7	13 44.9 -56.7 142.7	13 25.4 -56.6 141.7	13 05.5 -56.4 140.8
13°	13 25.6 -57.0 144.9	13 07.1 -56.9 144.0	12 48.2 -56.7 143.0	12 28.8 -56.5 142.1	12 09.1 -56.4 141.2
14°	12 28.6 -57.1 145.2	12 10.2 -56.9 144.3	11 51.5 -56.8 143.4	11 32.3 -56.6 142.4	11 02.7 -56.5 141.5
15°	11 31.5 -57.0 145.6	11 13.3 -56.9 144.6	10 54.7 -56.7 143.7	10 35.7 -56.6 142.8	10 16.2 -56.4 141.8
16°	10 34.5 -57.1 145.9	10 16.4 -56.9 145.0	9 58.0 -56.8 144.0	9 39.1 -56.6 143.1	9 19.8 -56.5 142.2
17°	9 37.4 -57.1 146.2	9 19.5 -56.9 145.3	9 01.2 -56.8 144.4	8 42.5 -56.7 143.4	8 23.3 -56.5 142.5
18°	8 40.3 -57.1 146.5	8 22.6 -57.0 145.6	8 04.4 -56.8 144.7	7 45.8 -56.7 143.8	7 26.8 -56.5 142.9
19°	7 43.2 -57.1 146.8	7 25.6 -57.0 145.9	7 07.6 -56.8 145.0	6 49.1 -56.6 144.1	6 30.3 -56.5 143.2
20°	6 46.1 -57.1 147.1	6 28.6 -56.9 146.2	6 10.8 -56.9 145.3	5 52.5 -56.7 144.4	5 33.8 -56.6 143.5
21°	5 49.0 -57.2 147.4	5 31.7 -57.0 146.5	5 13.9 -56.8 145.7	4 55.8 -56.7 144.8	4 37.2 -56.5 143.9
22°	4 51.8 -57.1 147.7	4 34.7 -57.0 146.9	4 17.1 -56.9 146.0	3 59.1 -56.7 145.1	3 40.7 -56.6 144.2
23°	3 54.7 -57.2 148.0	3 37.7 -57.0 147.2	3 20.2 -56.8 146.3	3 02.4 -56.7 145.4	2 44.1 -56.5 144.6
24°	2 57.5 -57.1 148.4	2 40.7 -57.1 147.5	2 23.4 -56.9 146.6	2 05.7 -56.7 145.7	1 47.6 -56.6 144.9
25°	2 00.4 -57.2 148.7	1 43.6 -57.0 147.8	1 26.5 -56.9 146.9	1 09.0 -56.8 146.1	0 51.0 -56.5 145.2
26°	1 03.2 -57.1 149.0	0 46.6 -57.0 148.1	0 29.6 -56.8 147.3	0 12.2 -56.7 146.4	-0 05.5 -56.6
27°	0 06.1 -57.2 149.3	-0 10.4 -57.0	-0 27.2 -56.9	-0 44.5 -56.7	-1 02.1 -56.6
28°	-0 51.1 -57.1	-1 07.4 -57.0	-1 24.1 -56.9	-1 41.2 -56.7	-1 58.7 -56.5
29°	-1 48.2 -57.2	-2 04.4 -57.0	-2 21.0 -56.8	-2 37.9 -56.7	-2 55.2 -56.6

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°	23 57.0 -55.7 135.3	23 34.4 -55.5 134.3	23 11.5 -55.4 133.3	22 48.2 -55.3 132.3	22 24.5 -55.1 131.3
1°	23 01.3 -55.8 135.7	22 38.9 -55.6 134.7	22 16.1 -55.4 133.7	21 52.9 -55.3 132.7	21 29.4 -55.2 131.7
2°	22 05.5 -55.8 136.1	21 43.3 -55.7 135.1	21 20.7 -55.6 134.1	20 57.6 -55.3 133.1	20 34.2 -55.2 132.1
3°	21 09.7 -55.9 136.5	20 47.6 -55.7 135.5	20 25.1 -55.5 134.5	20 02.3 -55.4 133.5	19 39.0 -55.2 132.6
4°	20 13.8 -55.9 136.9	19 51.9 -55.8 135.9	19 29.6 -55.6 134.9	19 06.9 -55.5 133.9	18 43.8 -55.3 133.0
5°	19 17.9 -56.0 137.3	18 56.1 -55.8 136.3	18 34.0 -55.7 135.3	18 11.4 -55.5 134.3	17 48.5 -55.4 133.4
6°	18 21.9 -56.0 137.7	18 00.3 -55.9 136.7	17 38.3 -55.7 135.7	17 15.9 -55.6 134.7	16 53.1 -55.4 133.8
7°	17 25.9 -56.1 138.0	17 04.4 -55.9 137.1	16 42.6 -55.8 136.1	16 20.3 -55.6 135.1	15 57.7 -55.4 134.2
8°	16 29.8 -56.1 138.4	16 08.5 -55.9 137.4	15 46.8 -55.8 136.5	15 24.7 -55.6 135.5	15 02.3 -55.5 134.6
9°	15 33.7 -56.1 138.8	15 12.6 -56.0 137.8	14 51.0 -55.8 136.9	14 29.1 -55.7 135.9	14 06.8 -55.5 135.0
10°	14 37.6 -56.2 139.1	14 16.6 -56.0 138.2	13 55.2 -55.9 137.2	13 33.4 -55.7 136.3	13 11.3 -55.6 135.4
11°	13 41.4 -56.2 139.5	13 20.6 -56.1 138.6	12 59.3 -55.9 137.6	12 37.7 -55.8 136.7	12 15.7 -55.6 135.7
12°	12 45.2 -56.2 139.9	12 24.5 -56.1 138.9	12 03.4 -55.9 138.0	11 41.9 -55.7 137.1	11 20.1 -55.6 136.1
13°	11 49.0 -56.3 140.2	11 28.4 -56.1 139.3	11 07.5 -56.0 138.4	10 46.2 -55.8 137.4	10 24.5 -55.7 136.5
14°	10 52.7 -56.3 140.6	10 32.3 -56.1 139.6	10 11.5 -56.0 138.7	9 50.4 -55.9 137.8	9 28.8 -55.7 136.9
15°	9 56.4 -56.3 140.9	9 36.2 -56.2 140.0	9 15.5 -56.0 139.1	8 54.5 -55.8 138.2	8 33.1 -55.7 137.3
16°	9 00.1 -56.3 141.3	8 40.0 -56.2 140.4	8 19.5 -56.0 139.5	7 58.7 -55.9 138.5	7 37.4 -55.7 137.6
17°	8 03.8 -56.4 141.6	7 43.8 -56.2 140.7	7 23.5 -56.0 139.8	7 02.8 -55.9 138.9	6 41.7 -55.7 138.0
18°	7 07.4 -56.3 142.0	6 47.6 -56.2 141.1	6 27.5 -56.1 140.2	6 06.9 -55.9 139.3	5 46.0 -55.8 138.4
19°	6 11.1 -56.4 142.3	5 51.4 -56.2 141.4	5 31.4 -56.1 140.5	5 11.0 -55.9 139.6	4 50.2 -55.7 138.8
20°	5 14.7 -56.4 142.7	4 55.2 -56.2 141.8	4 35.3 -56.0 140.9	4 15.1 -55.9 140.0	3 54.5 -55.8 139.1
21°	4 18.3 -56.4 143.0	3 59.0 -56.3 142.1	3 39.3 -56.1 141.2	3 19.2 -56.0 140.4	2 58.7 -55.8 139.5
22°	3 21.9 -56.4 143.3	3 02.7 -56.2 142.5	2 43.2 -56.1 141.6	2 23.2 -55.9 140.7	2 02.9 -55.8 139.9
23°	2 25.5 -56.4 143.7	2 06.5 -56.3 142.8	1 47.1 -56.1 142.0	1 27.3 -55.9 141.1	1 07.1 -55.7 140.2
24°	1 29.1 -56.4 144.0	1 10.2 -56.2 143.2	0 51.0 -56.1 142.3	0 31.4 -56.0 141.5	0 11.4 -55.8 140.6
25°	0 32.7 -56.4 144.4	0 14.0 -56.3 143.5	-0 05.1 -56.1	-0 24.6 -55.9	-0 44.4 -55.8
26°	-0 23.7 -56.4	-0 42.3 -56.2	-1 01.2 -56.1	-1 20.5 -56.0	-1 40.2 -55.8
27°	-1 20.1 -56.4	-1 38.5 -56.3	-1 57.3 -56.1	-2 16.5 -55.9	-2 36.0 -55.8
28°	-2 16.5 -56.4	-2 34.8 -56.2	-2 53.4 -56.1	-3 12.4 -55.9	-3 31.8 -55.7
29°	-3 12.9 -56.4	-3 31.0 -56.3	-3 49.5 -56.1	-4 08.3 -56.0	-4 27.5 -55.8

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°	22 00.4 -54.9 130.3	21 36.0 -54.8 129.3	21 11.2 -54.6 128.3	20 46.1 -54.5 127.4	20 20.6 -54.3 126.4
1°	21 05.5 -55.0 130.7	20 41.2 -54.8 129.8	20 16.6 -54.7 128.8	19 51.6 -54.5 127.8	19 26.3 -54.3 126.8
2°	20 10.5 -55.1 131.2	19 46.4 -54.9 130.2	19 21.9 -54.7 129.2	18 57.1 -54.6 128.3	18 32.0 -54.5 127.3
3°	19 15.4 -55.1 131.6	18 51.5 -55.0 130.6	18 27.2 -54.8 129.7	18 02.5 -54.6 128.7	17 37.5 -54.4 127.7
4°	18 20.3 -55.1 132.0	17 56.5 -55.0 131.0	17 32.4 -54.9 130.1	17 07.9 -54.7 129.1	16 43.1 -54.6 128.2
5°	17 25.2 -55.2 132.4	17 01.5 -55.0 131.5	16 37.5 -54.9 130.5	16 13.2 -54.8 129.6	15 48.5 -54.6 128.6
6°	16 30.0 -55.3 132.8	16 06.5 -55.1 131.9	15 42.6 -54.9 130.9	15 18.4 -54.8 130.0	14 53.9 -54.6 129.0
7°	15 34.7 -55.3 133.2	15 11.4 -55.2 132.3	14 47.7 -55.0 131.3	14 23.6 -54.8 130.4	13 59.3 -54.7 129.5
8°	14 39.4 -55.3 133.6	14 16.2 -55.1 132.7	13 52.7 -55.0 131.8	13 28.8 -54.9 130.8	13 04.6 -54.7 129.9
9°	13 44.1 -55.4 134.0	13 21.1 -55.3 133.1	12 57.7 -55.1 132.2	12 33.9 -54.9 131.2	12 09.9 -54.8 130.3
10°	12 48.7 -55.4 134.4	12 25.8 -55.2 133.5	12 02.6 -55.1 132.6	11 39.0 -54.9 131.6	11 15.1 -54.8 130.7
11°	11 53.3 -55.4 134.8	11 30.6 -55.3 133.9	11 07.5 -55.1 133.0	10 44.1 -55.0 132.1	10 20.3 -54.9 131.1
12°	10 57.9 -55.5 135.2	10 35.3 -55.3 134.3	10 12.4 -55.2 133.4	9 49.1 -55.0 132.5	9 25.4 -54.8 131.6
13°	10 02.4 -55.5 135.6	9 40.0 -55.4 134.7	9 17.2 -55.2 133.8	8 54.1 -55.1 132.9	8 30.6 -54.9 132.0
14°	9 06.9 -55.5 136.0	8 44.6 -55.3 135.1	8 22.0 -55.2 134.2	7 59.0 -55.0 133.3	7 35.7 -54.9 132.4
15°	8 11.4 -55.6 136.4	7 49.3 -55.4 135.5	7 26.8 -55.3 134.6	7 04.0 -55.1 133.7	6 40.8 -54.9 132.8
16°	7 15.8 -55.5 136.7	6 53.9 -55.4 135.9	6 31.5 -55.2 135.0	6 08.9 -55.1 134.1	5 45.9 -55.0 133.2
17°	6 20.3 -55.6 137.1	5 58.5 -55.5 136.2	5 36.3 -55.3 135.4	5 13.8 -55.1 134.5	4 50.9 -54.9 133.6
18°	5 24.7 -55.6 137.5	5 03.0 -55.4 136.6	4 41.0 -55.3 135.7	4 18.7 -55.2 134.9	3 56.0 -55.0 134.0
19°	4 29.1 -55.6 137.9	4 07.6 -55.5 137.0	3 45.7 -55.3 136.1	3 23.5 -55.1 135.3	3 01.0 -55.0 134.4
20°	3 33.5 -55.6 138.3	3 12.1 -55.4 137.4	2 50.4 -55.3 136.5	2 28.4 -55.2 135.7	2 06.0 -55.0 134.8
21°	2 37.9 -55.6 138.6	2 16.7 -55.5 137.8	1 55.1 -55.3 136.9	1 33.2 -55.1 136.0	1 11.0 -55.0 135.2
22°	1 42.3 -55.7 139.0	1 21.2 -55.4 138.2	0 59.8 -55.3 137.3	0 38.1 -55.2 136.4	0 16.0 -55.0 135.6
23°	0 46.6 -55.6 139.4	0 25.8 -55.5 138.5	0 04.5 -55.3 137.7	-0 17.1 -55.1	-0 39.0 -55.0
24°	-0 09.0 -55.6	-0 29.7 -55.5	-0 50.8 -55.3	-1 12.2 -55.2	-1 34.0 -55.0
25°	-1 04.6 -55.7	-1 25.2 -55.5	-1 46.1 -55.3	-2 07.4 -55.1	-2 29.0 -54.9
26°	-2 00.3 -55.6	-2 20.7 -55.4	-2 41.4 -55.3	-3 02.5 -55.1	-3 23.9 -55.0
27°	-2 55.9 -55.6	-3 16.1 -55.5	-3 36.7 -55.3	-3 57.6 -55.1	-4 18.9 -55.0
28°	-3 51.5 -55.6	-4 11.6 -55.4	-4 32.0 -55.3	-4 52.7 -55.2	-5 13.9 -54.9
29°	-4 47.1 -55.6	-5 07.0 -55.4	-5 27.3 -55.2	-5 47.9 -55.0	-6 08.8 -54.9

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°	19 54.9 -54.2 125.4	19 28.8 -54.0 124.5	19 02.5 -53.9 123.5	18 35.8 -53.7 122.6	18 08.9 -53.6 121.6
1°	19 00.7 -54.2 125.9	18 34.8 -54.0 124.9	18 08.6 -53.9 124.0	17 42.1 -53.8 123.0	17 15.3 -53.6 122.1
2°	18 06.5 -54.3 126.3	17 40.8 -54.2 125.4	17 14.7 -54.0 124.5	16 48.3 -53.8 123.5	16 21.7 -53.7 122.6
3°	17 12.2 -54.3 126.8	16 46.6 -54.2 125.8	16 20.7 -54.0 124.9	15 54.5 -53.9 124.0	15 28.0 -53.8 123.0
4°	16 17.9 -54.4 127.2	15 52.4 -54.2 126.3	15 26.7 -54.2 125.4	15 00.6 -54.0 124.4	14 34.2 -53.8 123.5
5°	15 23.5 -54.4 127.7	14 58.2 -54.3 126.7	14 32.5 -54.1 125.8	14 06.6 -54.0 124.9	13 40.4 -53.9 124.0
6°	14 29.1 -54.5 128.1	14 03.9 -54.4 127.2	13 38.4 -54.2 126.3	13 12.6 -54.1 125.3	12 46.5 -53.9 124.4
7°	13 34.6 -54.6 128.5	13 09.5 -54.4 127.6	12 44.2 -54.3 126.7	12 18.5 -54.1 125.8	11 52.6 -54.0 124.9
8°	12 40.0 -54.6 129.0	12 15.1 -54.4 128.0	11 49.9 -54.2 127.1	11 24.4 -54.1 126.2	10 58.6 -54.0 125.3
9°	11 45.4 -54.6 129.4	11 20.7 -54.5 128.5	10 55.7 -54.4 127.6	10 30.3 -54.2 126.7	10 04.6 -54.0 125.7
10°	10 50.8 -54.6 129.8	10 26.2 -54.5 128.9	10 01.3 -54.3 128.0	9 36.1 -54.2 127.1	9 10.6 -54.0 126.2
11°	9 56.2 -54.7 130.2	9 31.7 -54.5 129.3	9 07.0 -54.4 128.4	8 41.9 -54.2 127.5	8 16.6 -54.1 126.6
12°	9 01.5 -54.7 130.7	8 37.2 -54.6 129.7	8 12.6 -54.4 128.9	7 47.7 -54.3 128.0	7 22.5 -54.2 127.1
13°	8 06.8 -54.8 131.1	7 42.6 -54.5 130.2	7 18.2 -54.4 129.3	6 53.4 -54.3 128.4	6 28.3 -54.1 127.5
14°	7 12.0 -54.7 131.5	6 48.1 -54.6 130.6	6 23.8 -54.5 129.7	5 59.1 -54.3 128.8	5 34.2 -54.1 127.9
15°	6 17.3 -54.8 131.9	5 53.5 -54.7 131.0	5 29.3 -54.5 130.1	5 04.8 -54.3 129.2	4 40.1 -54.2 128.4
16°	5 22.5 -54.8 132.3	4 58.8 -54.6 131.4	4 34.8 -54.5 130.5	4 10.5 -54.3 129.7	3 45.9 -54.2 128.8
17°	4 27.7 -54.8 132.7	4 04.2 -54.7 131.8	3 40.3 -54.5 131.0	3 16.2 -54.4 130.1	2 51.7 -54.2 129.2
18°	3 32.9 -54.8 133.1	3 09.5 -54.6 132.2	2 45.8 -54.5 131.4	2 21.8 -54.3 130.5	1 57.5 -54.2 129.7
19°	2 38.1 -54.8 133.5	2 14.9 -54.7 132.7	1 51.3 -54.5 131.8	1 27.5 -54.4 130.9	1 03.3 -54.2 130.1
20°	1 43.3 -54.9 133.9	1 20.2 -54.7 133.1	0 56.8 -54.5 132.2	0 33.1 -54.4 131.4	0 09.1 -54.2 130.5
21°	0 48.4 -54.8 134.3	0 25.5 -54.6 133.5	0 02.3 -54.5 132.6	-0 21.3 -54.3	-0 45.1 -54.2
22°	-0 06.4 -54.8	-0 29.1 -54.7	-0 52.2 -54.5	-1 15.6 -54.4	-1 39.3 -54.2
23°	-1 01.2 -54.9	-1 23.8 -54.7	-1 46.7 -54.5	-2 10.0 -54.3	-2 33.5 -54.2
24°	-1 56.1 -54.8	-2 18.5 -54.7	-2 41.2 -54.5	-3 04.3 -54.4	-3 27.7 -54.2
25°	-2 50.9 -54.8	-3 13.2 -54.6	-3 35.7 -54.5	-3 58.7 -54.3	-4 21.9 -54.1
26°	-3 45.7 -54.8	-4 07.8 -54.6	-4 30.2 -54.5	-4 53.0 -54.3	-5 16.0 -54.2
27°	-4 40.5 -54.8	-5 02.4 -54.7	-5 24.7 -54.5	-5 47.3 -54.3	-6 10.2 -54.1
28°	-5 35.3 -54.8	-5 57.1 -54.6	-6 19.2 -54.4	-6 41.6 -54.3	-7 04.3 -54.1
29°	-6 30.1 -54.7	-6 51.7 -54.6	-7 13.6 -54.4	-7 35.9 -54.2	-7 58.4 -54.1

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°	17 41.7 -53.4 120.7	17 14.2 -53.3 119.8	16 46.5 -53.2 118.8	16 18.5 -53.0 117.9	15 50.3 -52.9 117.0
1°	16 48.3 -53.6 121.2	16 20.9 -53.4 120.2	15 53.3 -53.2 119.3	15 25.5 -53.1 118.4	14 57.4 -53.0 117.5
2°	15 54.7 -53.5 121.6	15 27.5 -53.4 120.7	15 00.1 -53.3 119.8	14 32.4 -53.2 118.9	14 04.4 -53.0 118.0
3°	15 01.2 -53.7 122.1	14 34.1 -53.5 121.2	14 06.8 -53.4 120.3	13 39.2 -53.2 119.4	13 11.4 -53.1 118.5
4°	14 07.5 -53.6 122.6	13 40.6 -53.5 121.7	13 13.4 -53.4 120.7	12 46.0 -53.3 119.8	12 18.3 -53.2 118.9
5°	13 13.9 -53.8 123.0	12 47.1 -53.6 122.1	12 20.0 -53.4 121.2	11 52.7 -53.3 120.3	11 25.1 -53.2 119.4
6°	12 20.1 -53.7 123.5	11 53.5 -53.6 122.6	11 26.6 -53.5 121.7	10 59.4 -53.4 120.8	10 31.9 -53.2 119.9
7°	11 26.4 -53.8 124.0	10 59.9 -53.7 123.0	10 33.1 -53.6 122.1	10 06.0 -53.4 121.2	9 38.7 -53.3 120.3
8°	10 32.6 -53.9 124.4	10 06.2 -53.7 123.5	9 39.5 -53.5 122.6	9 12.6 -53.4 121.7	8 45.4 -53.3 120.8
9°	9 38.7 -53.9 124.8	9 12.5 -53.8 124.0	8 46.0 -53.7 123.1	8 19.2 -53.5 122.2	7 52.1 -53.3 121.3
10°	8 44.8 -53.9 125.3	8 18.7 -53.8 124.4	7 52.3 -53.6 123.5	7 25.7 -53.5 122.6	6 58.8 -53.4 121.7
11°	7 50.9 -54.0 125.7	7 24.9 -53.8 124.8	6 58.7 -53.7 124.0	6 32.2 -53.5 123.1	6 05.4 -53.4 122.2
12°	6 56.9 -53.9 126.2	6 31.1 -53.8 125.3	6 05.0 -53.6 124.4	5 38.7 -53.6 123.5	5 12.0 -53.4 122.7
13°	6 03.0 -54.0 126.6	5 37.3 -53.8 125.7	5 11.4 -53.7 124.9	4 45.1 -53.5 124.0	4 18.6 -53.4 123.1
14°	5 09.0 -54.0 127.1	4 43.5 -53.9 126.2	4 17.7 -53.8 125.3	3 51.6 -53.6 124.4	3 25.2 -53.4 123.6
15°	4 15.0 -54.0 127.5	3 49.6 -53.9 126.6	3 23.9 -53.7 125.8	2 58.0 -53.6 124.9	2 31.8 -53.5 124.0
16°	3 21.0 -54.1 127.9	2 55.7 -53.9 127.1	2 30.2 -53.7 126.2	2 04.4 -53.6 125.3	1 38.3 -53.4 124.5
17°	2 26.9 -54.0 128.4	2 01.8 -53.9 127.5	1 36.5 -53.8 126.6	1 10.8 -53.6 125.8	0 44.9 -53.5 124.9
18°	1 32.9 -54.1 128.8	1 07.9 -53.9 127.9	0 42.7 -53.7 127.1	0 17.2 -53.6 126.2	-0 08.6 -53.4
19°	0 38.8 -54.0 129.2	0 14.0 -53.9 128.4	-0 11.0 -53.8	-0 36.4 -53.6	-1 02.0 -53.5
20°	-0 15.2 -54.1	-0 39.9 -53.9	-1 04.8 -53.7	-1 30.0 -53.6	-1 55.5 -53.4
21°	-1 09.3 -54.0	-1 33.8 -53.8	-1 58.5 -53.8	-2 23.6 -53.6	-2 48.9 -53.4
22°	-2 03.3 -54.1	-2 27.6 -53.9	-2 52.3 -53.7	-3 17.2 -53.5	-3 42.3 -53.5
23°	-2 57.4 -54.0	-3 21.5 -53.9	-3 46.0 -53.7	-4 10.7 -53.6	-4 35.8 -53.3
24°	-3 51.4 -54.0	-4 15.4 -53.9	-4 39.7 -53.7	-5 04.3 -53.5	-5 29.1 -53.4
25°	-4 45.4 -54.0	-5 09.3 -53.8	-5 33.4 -53.7	-5 57.8 -53.5	-6 22.5 -53.4
26°	-5 39.4 -54.0	-6 03.1 -53.8	-6 27.1 -53.6	-6 51.3 -53.5	-7 15.9 -53.3
27°	-6 33.4 -54.0	-6 56.9 -53.8	-7 20.7 -53.6	-7 44.8 -53.5	-8 09.2 -53.3
28°	-7 27.4 -53.9	-7 50.7 -53.8	-8 14.3 -53.6	-8 38.3 -53.4	-9 02.5 -53.3
29°	-8 21.3 -53.9	-8 44.5 -53.7	-9 07.9 -53.6	-9 31.7 -53.4	-9 55.8 -53.2

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°	15 21.9 -52.8 116.1	14 53.2 -52.7 115.2	14 24.3 -52.5 114.3	13 55.2 -52.4 113.4	13 26.0 -52.4 112.5
1°	14 29.1 -52.9 116.6	14 00.5 -52.7 115.7	13 31.8 -52.7 114.8	13 02.8 -52.5 113.9	12 33.6 -52.4 113.0
2°	13 36.2 -52.9 117.1	13 07.8 -52.8 116.2	12 39.1 -52.6 115.3	12 10.3 -52.6 114.4	11 41.2 -52.4 113.5
3°	12 43.3 -53.0 117.6	12 15.0 -52.9 116.6	11 46.5 -52.8 115.8	11 17.7 -52.6 114.9	10 48.8 -52.5 114.0
4°	11 50.3 -53.0 118.0	11 22.1 -52.9 117.1	10 53.7 -52.7 116.2	10 25.1 -52.6 115.3	9 56.3 -52.6 114.5
5°	10 57.3 -53.1 118.5	10 29.2 -52.9 117.6	10 01.0 -52.9 116.7	9 32.5 -52.7 115.8	9 03.7 -52.6 114.9
6°	10 04.2 -53.1 119.0	9 36.3 -53.0 118.1	9 08.1 -52.8 117.2	8 39.8 -52.8 116.3	8 11.1 -52.6 115.4
7°	9 11.1 -53.1 119.5	8 43.3 -53.0 118.6	8 15.3 -52.9 117.7	7 47.0 -52.7 116.8	7 18.5 -52.6 115.9
8°	8 18.0 -53.2 119.9	7 50.3 -53.0 119.0	7 22.4 -52.9 118.2	6 54.3 -52.8 117.3	6 25.9 -52.7 116.4
9°	7 24.8 -53.2 120.4	6 57.3 -53.1 119.5	6 29.5 -53.0 118.6	6 01.5 -52.9 117.8	5 33.2 -52.7 116.9
10°	6 31.6 -53.2 120.9	6 04.2 -53.1 120.0	5 36.5 -52.9 119.1	5 08.6 -52.8 118.2	4 40.5 -52.7 117.4
11°	5 38.4 -53.3 121.3	5 11.1 -53.1 120.4	4 43.6 -53.0 119.6	4 15.8 -52.8 118.7	3 47.8 -52.7 117.8
12°	4 45.1 -53.2 121.8	4 18.0 -53.1 120.9	3 50.6 -53.0 120.0	3 23.0 -52.9 119.2	2 55.1 -52.8 118.3
13°	3 51.9 -53.3 122.2	3 24.9 -53.2 121.4	2 57.6 -53.0 120.5	2 30.1 -52.9 119.7	2 02.3 -52.7 118.8
14°	2 58.6 -53.3 122.7	2 31.7 -53.1 121.8	2 04.6 -53.0 121.0	1 37.2 -52.9 120.1	1 09.6 -52.8 119.3
15°	2 05.3 -53.3 123.2	1 38.6 -53.2 122.3	1 11.6 -53.1 121.5	0 44.3 -52.9 120.6	0 16.8 -52.7 119.8
16°	1 12.0 -53.3 123.6	0 45.4 -53.2 122.8	0 18.5 -53.0 121.9	-0 08.6 -52.9	-0 35.9 -52.8
17°	0 18.7 -53.3 124.1	-0 07.8 -53.1	-0 34.5 -53.0	-1 01.5 -52.9	-1 28.7 -52.7
18°	-0 34.6 -53.3	-1 00.9 -53.2	-1 27.5 -53.0	-1 54.4 -52.8	-2 21.4 -52.8
19°	-1 27.9 -53.3	-1 54.1 -53.2	-2 20.5 -53.0	-2 47.2 -52.9	-3 14.2 -52.7
20°	-2 21.2 -53.3	-2 47.3 -53.1	-3 13.5 -53.0	-3 40.1 -52.8	-4 06.9 -52.7
21°	-3 14.5 -53.3	-3 40.4 -53.1	-4 06.5 -53.0	-4 32.9 -52.9	-4 59.6 -52.7
22°	-4 07.8 -53.3	-4 33.5 -53.1	-4 59.5 -53.0	-5 25.8 -52.8	-5 52.3 -52.7
23°	-5 01.1 -53.2	-5 26.6 -53.1	-5 52.5 -52.9	-6 18.6 -52.8	-6 45.0 -52.6
24°	-5 54.3 -53.2	-6 19.7 -53.1	-6 45.4 -52.9	-7 11.4 -52.7	-7 37.6 -52.6
25°	-6 47.5 -53.2	-7 12.8 -53.0	-7 38.3 -52.9	-8 04.1 -52.8	-8 30.2 -52.6
26°	-7 40.7 -53.2	-8 05.8 -53.0	-8 31.2 -52.8	-8 56.9 -52.6	-9 22.8 -52.5
27°	-8 33.9 -53.1	-8 58.8 -53.0	-9 24.0 -52.8	-9 49.5 -52.7	
28°	-9 27.0 -53.1	-9 51.8 -52.9			
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 56.5 -52.3 111.6	12 26.8 -52.1 110.7	11 57.0 -52.0 109.8	11 27.0 -51.9 108.9	10 56.8 -51.8 108.0
1°	12 04.2 -52.2 112.1	11 34.7 -52.2 111.2	11 05.0 -52.1 110.3	10 35.1 -52.0 109.4	10 05.0 -51.9 108.5
2°	11 12.0 -52.4 112.6	10 42.5 -52.2 111.7	10 12.9 -52.2 110.8	9 43.1 -52.1 109.9	9 13.1 -52.0 109.1
3°	10 19.6 -52.4 113.1	9 50.3 -52.3 112.2	9 20.7 -52.1 111.3	8 51.0 -52.0 110.4	8 21.1 -51.9 109.6
4°	9 27.2 -52.4 113.6	8 58.0 -52.3 112.7	8 28.6 -52.3 111.8	7 59.0 -52.2 110.9	7 29.2 -52.0 110.1
5°	8 34.8 -52.5 114.1	8 05.7 -52.4 113.2	7 36.3 -52.2 112.3	7 06.8 -52.1 111.4	6 37.2 -52.1 110.6
6°	7 42.3 -52.5 114.6	7 13.3 -52.4 113.7	6 44.1 -52.3 112.8	6 14.7 -52.2 111.9	5 45.1 -52.1 111.1
7°	6 49.8 -52.5 115.0	6 20.9 -52.4 114.2	5 51.8 -52.3 113.3	5 22.5 -52.2 112.4	4 53.0 -52.0 111.6
8°	5 57.3 -52.5 115.5	5 28.5 -52.4 114.7	4 59.5 -52.3 113.8	4 30.3 -52.2 112.9	4 01.0 -52.2 112.1
9°	5 04.8 -52.6 116.0	4 36.1 -52.5 115.1	4 07.2 -52.4 114.3	3 38.1 -52.2 113.4	3 08.8 -52.1 112.6
10°	4 12.2 -52.6 116.5	3 43.6 -52.5 115.6	3 14.8 -52.3 114.8	2 45.9 -52.3 113.9	2 16.7 -52.1 113.1
11°	3 19.6 -52.6 117.0	2 51.1 -52.4 116.1	2 22.5 -52.4 115.3	1 53.6 -52.2 114.4	1 24.6 -52.2 113.6
12°	2 27.0 -52.6 117.5	1 58.7 -52.5 116.6	1 30.1 -52.4 115.7	1 01.4 -52.3 114.9	0 32.4 -52.1 114.0
13°	1 34.4 -52.7 117.9	1 06.2 -52.5 117.1	0 37.7 -52.3 116.2	0 09.1 -52.2 115.4	-0 19.7 -52.1
14°	0 41.7 -52.6 118.4	0 13.7 -52.5 117.6	-0 14.6 -52.4	-0 43.1 -52.3	-1 11.8 -52.2
15°	-0 10.9 -52.6	-0 38.8 -52.5	-1 07.0 -52.4	-1 35.4 -52.2	-2 04.0 -52.1
16°	-1 03.5 -52.6	-1 31.3 -52.5	-1 59.4 -52.3	-2 27.6 -52.3	-2 56.1 -52.1
17°	-1 56.1 -52.7	-2 23.8 -52.5	-2 51.7 -52.4	-3 19.9 -52.2	-3 48.2 -52.1
18°	-2 48.8 -52.6	-3 16.3 -52.5	-3 44.1 -52.3	-4 12.1 -52.2	-4 40.3 -52.1
19°	-3 41.4 -52.5	-4 08.8 -52.4	-4 36.4 -52.3	-5 04.3 -52.2	-5 32.4 -52.0
20°	-4 33.9 -52.6	-5 01.2 -52.5	-5 28.7 -52.3	-5 56.5 -52.1	-6 24.4 -52.1
21°	-5 26.5 -52.6	-5 53.7 -52.4	-6 21.0 -52.3	-6 48.6 -52.2	-7 16.5 -51.9
22°	-6 19.1 -52.5	-6 46.1 -52.3	-7 13.3 -52.2	-7 40.8 -52.0	-8 08.4 -52.0
23°	-7 11.6 -52.5	-7 38.4 -52.4	-8 05.5 -52.2	-8 32.8 -52.1	-9 00.4 -51.9
24°	-8 04.1 -52.4	-8 30.8 -52.3	-8 57.7 -52.2	-9 24.9 -52.0	-9 52.3 -51.9
25°	-8 56.5 -52.4	-9 23.1 -52.2	-9 49.9 -52.1		
26°	-9 48.9 -52.4				
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°	10 26.5 -51.7 107.2	9 56.1 -51.7 106.3	9 25.5 -51.6 105.4	8 54.8 -51.5 104.5	8 23.9 -51.4 103.7
1°	9 34.8 -51.8 107.7	9 04.4 -51.7 106.8	8 33.9 -51.7 105.9	8 03.3 -51.6 105.1	7 32.5 -51.5 104.2
2°	8 43.0 -51.9 108.2	8 12.7 -51.8 107.3	7 42.2 -51.6 106.4	7 11.7 -51.6 105.6	6 41.0 -51.5 104.7
3°	7 51.1 -51.9 108.7	7 20.9 -51.8 107.8	6 50.6 -51.7 106.9	6 20.1 -51.6 106.1	5 49.5 -51.6 105.2
4°	6 59.2 -51.9 109.2	6 29.1 -51.8 108.3	5 58.9 -51.8 107.5	5 28.5 -51.7 106.6	4 57.9 -51.6 105.7
5°	6 07.3 -51.9 109.7	5 37.3 -51.9 108.8	5 07.1 -51.7 108.0	4 36.8 -51.7 107.1	4 06.3 -51.5 106.2
6°	5 15.4 -52.0 110.2	4 45.4 -51.8 109.3	4 15.4 -51.8 108.5	3 45.1 -51.7 107.6	3 14.8 -51.7 106.8
7°	4 23.4 -52.0 110.7	3 53.6 -51.9 109.8	3 23.6 -51.8 109.0	2 53.4 -51.7 108.1	2 23.1 -51.6 107.3
8°	3 31.4 -52.0 111.2	3 01.7 -51.9 110.3	2 31.8 -51.8 109.5	2 01.7 -51.7 108.6	1 31.5 -51.6 107.8
9°	2 39.4 -52.0 111.7	2 09.8 -52.0 110.8	1 40.0 -51.9 110.0	1 10.0 -51.7 109.1	0 39.9 -51.6 108.3
10°	1 47.4 -52.1 112.2	1 17.8 -51.9 111.3	0 48.1 -51.8 110.5	0 18.3 -51.7 109.6	-0 11.7 -51.7
11°	0 55.3 -52.0 112.7	0 25.9 -51.9 111.8	-0 03.7 -51.8	-0 33.4 -51.8	-1 03.4 -51.6
12°	0 03.3 -52.0 113.2	-0 26.0 -51.9	-0 55.5 -51.8	-1 25.2 -51.7	-1 55.0 -51.6
13°	-0 48.7 -52.0	-1 17.9 -51.9	-1 47.3 -51.8	-2 16.9 -51.7	-2 46.6 -51.6
14°	-1 40.7 -52.1	-2 09.8 -52.0	-2 39.1 -51.8	-3 08.6 -51.7	-3 38.2 -51.6
15°	-2 32.8 -52.0	-3 01.8 -51.8	-3 30.9 -51.8	-4 00.3 -51.6	-4 29.8 -51.6
16°	-3 24.8 -52.0	-3 53.6 -51.9	-4 22.7 -51.8	-4 51.9 -51.7	-5 21.4 -51.5
17°	-4 16.8 -51.9	-4 45.5 -51.9	-5 14.5 -51.7	-5 43.6 -51.6	-6 12.9 -51.5
18°	-5 08.7 -52.0	-5 37.4 -51.8	-6 06.2 -51.7	-6 35.2 -51.6	-7 04.4 -51.5
19°	-6 00.7 -51.9	-6 29.2 -51.8	-6 57.9 -51.7	-7 26.8 -51.6	-7 55.9 -51.4
20°	-6 52.6 -51.9	-7 21.0 -51.8	-7 49.6 -51.6	-8 18.4 -51.5	-8 47.3 -51.4
21°	-7 44.5 -51.9	-8 12.8 -51.7	-8 41.2 -51.6	-9 09.9 -51.4	-9 38.7 -51.4
22°	-8 36.4 -51.8	-9 04.5 -51.7	-9 32.8 -51.6		
23°	-9 28.2 -51.7	-9 56.2 -51.6			
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 53.0 -51.4 102.8	7 21.9 -51.3 101.9	6 50.8 -51.3 101.1	6 19.5 -51.2 100.2	5 48.2 -51.2 99.4
1°	7 01.6 -51.4 103.3	6 30.6 -51.3 102.5	5 59.5 -51.3 101.6	5 28.3 -51.2 100.7	4 57.0 -51.1 99.9
2°	6 10.2 -51.5 103.8	5 39.3 -51.4 103.0	5 08.2 -51.3 102.1	4 37.1 -51.3 101.3	4 05.9 -51.2 100.4
3°	5 18.7 -51.4 104.4	4 47.9 -51.4 103.5	4 16.9 -51.3 102.6	3 45.8 -51.3 101.8	3 14.7 -51.3 100.9
4°	4 27.3 -51.5 104.9	3 56.5 -51.5 104.0	3 25.6 -51.4 103.2	2 54.5 -51.2 102.3	2 23.4 -51.2 101.5
5°	3 35.8 -51.6 105.4	3 05.0 -51.4 104.5	2 34.2 -51.4 103.7	2 03.3 -51.4 102.8	1 32.2 -51.2 102.0
6°	2 44.2 -51.5 105.9	2 13.6 -51.5 105.0	1 42.8 -51.3 104.2	1 11.9 -51.3 103.3	0 41.0 -51.3 102.5
7°	1 52.7 -51.5 106.4	1 22.1 -51.4 105.6	0 51.5 -51.4 104.7	0 20.6 -51.3 103.9	-0 10.3 -51.2
8°	1 01.2 -51.6 106.9	0 30.7 -51.5 106.1	0 00.1 -51.4 105.2	-0 30.7 -51.3	-1 01.5 -51.3
9°	0 09.6 -51.5 107.4	-0 20.8 -51.4	-0 51.3 -51.4	-1 22.0 -51.3	-1 52.8 -51.2
10°	-0 41.9 -51.6	-1 12.2 -51.5	-1 42.7 -51.4	-2 13.3 -51.3	-2 44.0 -51.2
11°	-1 33.5 -51.5	-2 03.7 -51.4	-2 34.1 -51.3	-3 04.6 -51.2	-3 35.2 -51.2
12°	-2 25.0 -51.5	-2 55.1 -51.5	-3 25.4 -51.4	-3 55.8 -51.3	-4 26.4 -51.2
13°	-3 16.5 -51.5	-3 46.6 -51.4	-4 16.8 -51.3	-4 47.1 -51.2	-5 17.6 -51.1
14°	-4 08.0 -51.5	-4 38.0 -51.4	-5 08.1 -51.3	-5 38.3 -51.2	-6 08.7 -51.1
15°	-4 59.5 -51.5	-5 29.4 -51.3	-5 59.4 -51.2	-6 29.5 -51.2	-6 59.8 -51.1
16°	-5 51.0 -51.4	-6 20.7 -51.4	-6 50.6 -51.3	-7 20.7 -51.1	-7 50.9 -51.1
17°	-6 42.4 -51.4	-7 12.1 -51.2	-7 41.9 -51.2	-8 11.8 -51.1	-8 42.0 -51.0
18°	-7 33.8 -51.4	-8 03.3 -51.3	-8 33.1 -51.1	-9 02.9 -51.1	-9 33.0 -50.9
19°	-8 25.2 -51.3	-8 54.6 -51.2	-9 24.2 -51.1	-9 54.0 -51.0	
20°	-9 16.5 -51.3	-9 45.8 -51.2			
21°					
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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°	5 16.8 -51.1 98.5	4 45.3 -51.1 97.7	4 13.8 -51.1 96.8	3 42.2 -51.0 95.9	3 10.5 -50.9 95.1
1°	4 25.7 -51.2 99.0	3 54.2 -51.1 98.2	3 22.7 -51.0 97.3	2 51.2 -51.0 96.5	2 19.6 -51.0 95.6
2°	3 34.5 -51.1 99.6	3 03.1 -51.1 98.7	2 31.7 -51.1 97.9	2 00.2 -51.1 97.0	1 28.6 -51.0 96.1
3°	2 43.4 -51.2 100.1	2 12.0 -51.1 99.2	1 40.6 -51.0 98.4	1 09.1 -51.0 97.5	0 37.6 -51.0 96.7
4°	1 52.2 -51.2 100.6	1 20.9 -51.1 99.8	0 49.6 -51.1 98.9	0 18.1 -51.0 98.1	-0 13.4 -51.0
5°	1 01.0 -51.1 101.1	0 29.8 -51.1 100.3	-0 01.5 -51.1	-0 32.9 -51.1	-1 04.4 -51.0
6°	0 09.9 -51.2 101.6	-0 21.3 -51.1	-0 52.6 -51.1	-1 24.0 -51.0	-1 55.4 -51.0
7°	-0 41.3 -51.2	-1 12.4 -51.2	-1 43.7 -51.0	-2 15.0 -51.0	-2 46.4 -50.9
8°	-1 32.5 -51.2	-2 03.6 -51.1	-2 34.7 -51.1	-3 06.0 -51.0	-3 37.3 -51.0
9°	-2 23.7 -51.1	-2 54.7 -51.1	-3 25.8 -51.0	-3 57.0 -50.9	-4 28.3 -50.9
10°	-3 14.8 -51.2	-3 45.8 -51.0	-4 16.8 -51.0	-4 47.9 -51.0	-5 19.2 -50.9
11°	-4 06.0 -51.1	-4 36.8 -51.1	-5 07.8 -51.0	-5 38.9 -50.9	-6 10.1 -50.8
12°	-4 57.1 -51.1	-5 27.9 -51.0	-5 58.8 -50.9	-6 29.8 -50.9	-7 00.9 -50.9
13°	-5 48.2 -51.0	-6 18.9 -51.0	-6 49.7 -51.0	-7 20.7 -50.8	-7 51.8 -50.7
14°	-6 39.2 -51.1	-7 09.9 -51.0	-7 40.7 -50.8	-8 11.5 -50.9	-8 42.5 -50.8
15°	-7 30.3 -51.0	-8 00.9 -50.9	-8 31.5 -50.9	-9 02.4 -50.7	-9 33.3 -50.7
16°	-8 21.3 -50.9	-8 51.8 -50.8	-9 22.4 -50.8	-9 53.1 -50.7	
17°	-9 12.2 -50.9	-9 42.6 -50.8			
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 38.8 -50.9 94.2	2 07.1 -50.9 93.4	1 35.4 -51.0 92.5	1 03.6 -50.9 91.7	0 31.8 -50.9 90.8
1°	1 47.9 -51.0 94.8	1 16.2 -50.9 93.9	0 44.4 -50.9 93.1	0 12.7 -50.9 92.2	-0 19.1 -50.9
2°	0 56.9 -50.9 95.3	0 25.3 -51.0 94.5	-0 06.5 -50.9	-0 38.2 -50.9	-1 10.0 -50.9
3°	0 06.0 -51.0 95.8	-0 25.7 -50.9	-0 57.4 -50.9	-1 29.1 -50.9	-2 00.9 -50.8
4°	-0 45.0 -50.9	-1 16.6 -50.9	-1 48.3 -50.9	-2 20.0 -50.9	-2 51.7 -50.9
5°	-1 35.9 -51.0	-2 07.5 -50.9	-2 39.2 -50.9	-3 10.9 -50.8	-3 42.6 -50.8
6°	-2 26.9 -50.9	-2 58.4 -50.9	-3 30.1 -50.8	-4 01.7 -50.8	-4 33.4 -50.8
7°	-3 17.8 -50.9	-3 49.3 -50.9	-4 20.9 -50.9	-4 52.5 -50.9	-5 24.2 -50.8
8°	-4 08.7 -50.9	-4 40.2 -50.9	-5 11.8 -50.8	-5 43.4 -50.7	-6 15.0 -50.8
9°	-4 59.6 -50.9	-5 31.1 -50.8	-6 02.6 -50.8	-6 34.1 -50.8	-7 05.8 -50.7
10°	-5 50.5 -50.8	-6 21.9 -50.8	-6 53.4 -50.7	-7 24.9 -50.7	-7 56.5 -50.6
11°	-6 41.3 -50.8	-7 12.7 -50.7	-7 44.1 -50.7	-8 15.6 -50.6	-8 47.1 -50.7
12°	-7 32.1 -50.8	-8 03.4 -50.7	-8 34.8 -50.7	-9 06.2 -50.7	-9 37.8 -50.5
13°	-8 22.9 -50.7	-8 54.1 -50.7	-9 25.5 -50.6	-9 56.9 -50.5	
14°	-9 13.6 -50.7	-9 44.8 -50.6			
15°					
16°					
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Latitude 58°

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 -50.9 90.0	-0 31.8 -50.9			
1°	-0 50.9 -50.9	-1 22.7 -50.9			
2°	-1 41.8 -50.8	-2 13.6 -50.8			
3°	-2 32.6 -50.9	-3 04.4 -50.9			
4°	-3 23.5 -50.8	-3 55.3 -50.8			
5°	-4 14.3 -50.8	-4 46.1 -50.8			
6°	-5 05.1 -50.8	-5 36.9 -50.8			
7°	-5 55.9 -50.8	-6 27.7 -50.7			
8°	-6 46.7 -50.7	-7 18.4 -50.7			
9°	-7 37.4 -50.7	-8 09.1 -50.7			
10°	-8 28.1 -50.6	-8 59.8 -50.6			
11°	-9 18.7 -50.6	-9 50.4 -50.5			
12°					
13°					
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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°					
1°					
2°					
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4°					
5°					
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9°					
10°					
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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°	31 00.0 -60.0 180.0	30 59.7 -60.0 178.8	30 58.7 -59.9 177.7	30 57.2 -60.0 176.5	30 55.0 -60.0 175.3
1°	30 00.0 -60.0 180.0	29 59.7 -60.0 178.8	29 58.8 -60.0 177.7	29 57.2 -60.0 176.5	29 55.0 -59.9 175.4
2°	29 00.0 -60.0 180.0	28 59.7 -60.0 178.9	28 58.8 -60.0 177.7	28 57.2 -59.9 176.6	28 55.1 -60.0 175.4
3°	28 00.0 -60.0 180.0	27 59.7 -60.0 178.9	27 58.8 -60.0 177.7	27 57.3 -60.0 176.6	27 55.1 -59.9 175.5
4°	27 00.0 -60.0 180.0	26 59.7 -60.0 178.9	26 58.8 -60.0 177.8	26 57.3 -60.0 176.6	26 55.2 -60.0 175.5
5°	26 00.0 -60.0 180.0	25 59.7 -60.0 178.9	25 58.8 -60.0 177.8	25 57.3 -60.0 176.7	25 55.2 -59.9 175.6
6°	25 00.0 -60.0 180.0	24 59.7 -60.0 178.9	24 58.8 -60.0 177.8	24 57.3 -59.9 176.7	24 55.3 -60.0 175.6
7°	24 00.0 -60.0 180.0	23 59.7 -60.0 178.9	23 58.8 -60.0 177.8	23 57.4 -60.0 176.7	23 55.3 -59.9 175.7
8°	23 00.0 -60.0 180.0	22 59.7 -60.0 178.9	22 58.8 -59.9 177.8	22 57.4 -60.0 176.8	22 55.4 -60.0 175.7
9°	22 00.0 -60.0 180.0	21 59.7 -60.0 178.9	21 58.9 -60.0 177.9	21 57.4 -60.0 176.8	21 55.4 -59.9 175.7
10°	21 00.0 -60.0 180.0	20 59.7 -60.0 178.9	20 58.9 -60.0 177.9	20 57.4 -59.9 176.8	20 55.5 -60.0 175.8
11°	20 00.0 -60.0 180.0	19 59.7 -60.0 179.0	19 58.9 -60.0 177.9	19 57.5 -60.0 176.9	19 55.5 -60.0 175.8
12°	19 00.0 -60.0 180.0	18 59.7 -60.0 179.0	18 58.9 -60.0 177.9	18 57.5 -60.0 176.9	18 55.5 -59.9 175.9
13°	18 00.0 -60.0 180.0	17 59.7 -60.0 179.0	17 58.9 -60.0 178.0	17 57.5 -60.0 176.9	17 55.6 -60.0 175.9
14°	17 00.0 -60.0 180.0	16 59.7 -60.0 179.0	16 58.9 -60.0 178.0	16 57.5 -59.9 177.0	16 55.6 -59.9 175.9
15°	16 00.0 -60.0 180.0	15 59.7 -60.0 179.0	15 58.9 -60.0 178.0	15 57.6 -60.0 177.0	15 55.7 -60.0 176.0
16°	15 00.0 -60.0 180.0	14 59.7 -60.0 179.0	14 58.9 -60.0 178.0	14 57.6 -60.0 177.0	14 55.7 -60.0 176.0
17°	14 00.0 -60.0 180.0	13 59.7 -60.0 179.0	13 58.9 -60.0 178.0	13 57.6 -60.0 177.0	13 55.7 -59.9 176.1
18°	13 00.0 -60.0 180.0	12 59.7 -60.0 179.0	12 58.9 -59.9 178.0	12 57.6 -59.9 177.1	12 55.8 -60.0 176.1
19°	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 55.8 -59.9 176.1
20°	11 00.0 -60.0 180.0	10 59.7 -60.0 179.0	10 59.0 -60.0 178.1	10 57.7 -60.0 177.1	10 55.9 -60.0 176.2
21°	10 00.0 -60.0 180.0	9 59.7 -60.0 179.1	9 59.0 -60.0 178.1	9 57.7 -60.0 177.2	9 55.9 -59.9 176.2
22°	9 00.0 -60.0 180.0	8 59.7 -60.0 179.1	8 59.0 -60.0 178.1	8 57.7 -60.0 177.2	8 56.0 -60.0 176.2
23°	8 00.0 -60.0 180.0	7 59.7 -59.9 179.1	7 59.0 -60.0 178.1	7 57.7 -59.9 177.2	7 56.0 -60.0 176.3
24°	7 00.0 -60.0 180.0	6 59.8 -60.0 179.1	6 59.0 -60.0 178.2	6 57.8 -60.0 177.2	6 56.0 -59.9 176.3
25°	6 00.0 -60.0 180.0	5 59.8 -60.0 179.1	5 59.0 -60.0 178.2	5 57.8 -60.0 177.3	5 56.1 -60.0 176.4
26°	5 00.0 -60.0 180.0	4 59.8 -60.0 179.1	4 59.0 -60.0 178.2	4 57.8 -60.0 177.3	4 56.1 -60.0 176.4
27°	4 00.0 -60.0 180.0	3 59.8 -60.0 179.1	3 59.0 -60.0 178.2	3 57.8 -59.9 177.3	3 56.1 -59.9 176.4
28°	3 00.0 -60.0 180.0	2 59.8 -60.0 179.1	2 59.0 -59.9 178.2	2 57.9 -60.0 177.3	2 56.2 -60.0 176.5
29°	2 00.0 -60.0 180.0	1 59.8 -60.0 179.1	1 59.1 -60.0 178.2	1 57.9 -60.0 177.4	1 56.2 -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°	30 52.1 -59.9 174.2	30 48.7 -59.9 173.0	30 44.6 -59.8 171.8	30 39.9 -59.8 170.7	30 34.6 -59.7 169.5
1°	29 52.2 -59.9 174.2	29 48.8 -59.9 173.1	29 44.8 -59.9 171.9	29 40.1 -59.8 170.8	29 34.9 -59.8 169.6
2°	28 52.3 -59.9 174.3	28 48.9 -59.9 173.2	28 44.9 -59.8 172.0	28 40.3 -59.8 170.9	28 35.1 -59.7 169.7
3°	27 52.4 -59.9 174.3	27 49.0 -59.9 173.2	27 45.1 -59.9 172.1	27 40.5 -59.8 171.0	27 35.4 -59.8 169.8
4°	26 52.5 -60.0 174.4	26 49.1 -59.8 173.3	26 45.2 -59.8 172.2	26 40.7 -59.8 171.1	26 35.6 -59.7 169.9
5°	25 52.5 -59.9 174.5	25 49.3 -59.9 173.4	25 45.4 -59.9 172.3	25 40.9 -59.8 171.2	25 35.9 -59.8 170.0
6°	24 52.6 -59.9 174.5	24 49.4 -59.9 173.4	24 45.5 -59.8 172.3	24 41.1 -59.8 171.2	24 36.1 -59.7 170.1
7°	23 52.7 -59.9 174.6	23 49.5 -59.9 173.5	23 45.7 -59.9 172.4	23 41.3 -59.8 171.3	23 36.4 -59.8 170.2
8°	22 52.8 -60.0 174.6	22 49.6 -59.9 173.6	22 45.8 -59.8 172.5	22 41.5 -59.8 171.4	22 36.6 -59.8 170.3
9°	21 52.8 -59.9 174.7	21 49.7 -59.9 173.6	21 46.0 -59.9 172.6	21 41.7 -59.9 171.5	21 36.8 -59.8 170.4
10°	20 52.9 -59.9 174.7	20 49.8 -59.9 173.7	20 46.1 -59.9 172.6	20 41.8 -59.8 171.6	20 37.0 -59.7 170.5
11°	19 53.0 -60.0 174.8	19 49.9 -59.9 173.7	19 46.2 -59.8 172.7	19 42.0 -59.8 171.7	19 37.3 -59.8 170.6
12°	18 53.0 -59.9 174.8	18 50.0 -59.9 173.8	18 46.4 -59.9 172.8	18 42.2 -59.8 171.7	18 37.5 -59.8 170.7
13°	17 53.1 -59.9 174.9	17 50.1 -59.9 173.9	17 46.5 -59.9 172.8	17 42.4 -59.9 171.8	17 37.7 -59.8 170.8
14°	16 53.2 -60.0 174.9	16 50.2 -59.9 173.9	16 46.6 -59.9 172.9	16 42.5 -59.8 171.9	16 37.9 -59.8 170.9
15°	15 53.2 -59.9 175.0	15 50.3 -59.9 174.0	15 46.7 -59.8 173.0	15 42.7 -59.8 172.0	15 38.1 -59.8 171.0
16°	14 53.3 -59.9 175.0	14 50.4 -60.0 174.0	14 46.9 -59.9 173.0	14 42.9 -59.9 172.0	14 38.3 -59.8 171.1
17°	13 53.4 -60.0 175.1	13 50.4 -59.9 174.1	13 47.0 -59.9 173.1	13 43.0 -59.8 172.1	13 38.5 -59.8 171.1
18°	12 53.4 -59.9 175.1	12 50.5 -59.9 174.1	12 47.1 -59.9 173.2	12 43.2 -59.8 172.2	12 38.7 -59.8 171.2
19°	11 53.5 -59.9 175.2	11 50.6 -59.9 174.2	11 47.2 -59.8 173.2	11 43.4 -59.9 172.3	11 38.9 -59.8 171.3
20°	10 53.6 -60.0 175.2	10 50.7 -59.9 174.3	10 47.4 -59.9 173.3	10 43.5 -59.8 172.4	10 39.1 -59.8 171.4
21°	9 53.6 -59.9 175.3	9 50.8 -59.9 174.3	9 47.5 -59.9 173.4	9 43.7 -59.9 172.4	9 39.3 -59.8 171.5
22°	8 53.7 -60.0 175.3	8 50.9 -59.9 174.4	8 47.6 -59.9 173.4	8 43.8 -59.8 172.5	8 39.5 -59.8 171.6
23°	7 53.7 -59.9 175.4	7 51.0 -59.9 174.4	7 47.7 -59.8 173.5	7 44.0 -59.9 172.6	7 39.7 -59.8 171.6
24°	6 53.8 -59.9 175.4	6 51.1 -59.9 174.5	6 47.9 -59.9 173.6	6 44.1 -59.8 172.6	6 39.9 -59.8 171.7
25°	5 53.9 -60.0 175.4	5 51.2 -60.0 174.5	5 48.0 -59.9 173.6	5 44.3 -59.8 172.7	5 40.1 -59.8 171.8
26°	4 53.9 -59.9 175.5	4 51.2 -59.9 174.6	4 48.1 -59.9 173.7	4 44.5 -59.9 172.8	4 40.3 -59.8 171.9
27°	3 54.0 -60.0 175.5	3 51.3 -59.9 174.6	3 48.2 -59.9 173.8	3 44.6 -59.8 172.9	3 40.5 -59.8 172.0
28°	2 54.0 -59.9 175.6	2 51.4 -59.9 174.7	2 48.3 -59.8 173.8	2 44.8 -59.9 172.9	2 40.7 -59.8 172.1
29°	1 54.1 -59.9 175.6	1 51.5 -59.9 174.8	1 48.5 -59.9 173.9	1 44.9 -59.8 173.0	1 40.9 -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°	30 28.7 -59.7 168.4	30 22.2 -59.6 167.2	30 15.0 -59.5 166.1	30 07.3 -59.5 164.9	29 59.0 -59.4 163.8
1°	29 29.0 -59.7 168.5	29 22.6 -59.7 167.4	29 15.5 -59.6 166.2	29 07.8 -59.4 165.1	28 59.6 -59.4 163.9
2°	28 29.3 -59.7 168.6	28 22.9 -59.6 167.5	28 15.9 -59.5 166.4	28 08.4 -59.5 165.2	28 00.2 -59.4 164.1
3°	27 29.6 -59.6 168.7	27 23.3 -59.6 167.6	27 16.4 -59.6 166.5	27 08.9 -59.5 165.4	27 00.8 -59.4 164.3
4°	26 30.0 -59.8 168.8	26 23.7 -59.7 167.7	26 16.8 -59.6 166.6	26 09.4 -59.5 165.5	26 01.4 -59.5 164.4
5°	25 30.2 -59.7 169.0	25 24.0 -59.6 167.9	25 17.2 -59.5 166.8	25 09.9 -59.5 165.7	25 01.9 -59.4 164.6
6°	24 30.5 -59.7 169.1	24 24.4 -59.7 168.0	24 17.7 -59.6 166.9	24 10.4 -59.5 165.8	24 02.5 -59.4 164.7
7°	23 30.8 -59.7 169.2	23 24.7 -59.6 168.1	23 18.1 -59.6 167.0	23 10.9 -59.6 165.9	23 03.1 -59.5 164.9
8°	22 31.1 -59.7 169.3	22 25.1 -59.7 168.2	22 18.5 -59.6 167.1	22 11.3 -59.5 166.1	22 03.6 -59.4 165.0
9°	21 31.4 -59.7 169.4	21 25.4 -59.7 168.3	21 18.9 -59.6 167.3	21 11.8 -59.5 166.2	21 04.2 -59.5 165.2
10°	20 31.7 -59.8 169.5	20 25.7 -59.6 168.4	20 19.3 -59.6 167.4	20 12.3 -59.6 166.3	20 04.7 -59.5 165.3
11°	19 31.9 -59.7 169.6	19 26.1 -59.7 168.5	19 19.7 -59.6 167.5	19 12.7 -59.5 166.5	19 05.2 -59.5 165.4
12°	18 32.2 -59.7 169.7	18 26.4 -59.7 168.7	18 20.1 -59.7 167.6	18 13.2 -59.6 166.6	18 05.7 -59.4 165.6
13°	17 32.5 -59.8 169.8	17 26.7 -59.7 168.8	17 20.4 -59.6 167.7	17 13.6 -59.6 166.7	17 06.3 -59.5 165.7
14°	16 32.7 -59.7 169.9	16 27.0 -59.6 168.9	16 20.8 -59.6 167.9	16 14.0 -59.5 166.9	16 06.8 -59.5 165.9
15°	15 33.0 -59.7 170.0	15 27.4 -59.7 169.0	15 21.2 -59.6 168.0	15 14.5 -59.6 167.0	15 07.3 -59.5 166.0
16°	14 33.3 -59.8 170.1	14 27.7 -59.7 169.1	14 21.6 -59.7 168.1	14 14.9 -59.6 167.1	14 07.8 -59.5 166.1
17°	13 33.5 -59.7 170.2	13 28.0 -59.7 169.2	13 21.9 -59.6 168.2	13 15.3 -59.5 167.2	13 08.3 -59.5 166.3
18°	12 33.8 -59.8 170.3	12 28.3 -59.7 169.3	12 22.3 -59.7 168.3	12 15.8 -59.6 167.4	12 08.8 -59.6 166.4
19°	11 34.0 -59.7 170.4	11 28.6 -59.7 169.4	11 22.6 -59.6 168.4	11 16.2 -59.6 167.5	11 09.2 -59.5 166.5
20°	10 34.3 -59.8 170.4	10 28.9 -59.7 169.5	10 23.0 -59.6 168.5	10 16.6 -59.6 167.6	10 09.7 -59.5 166.6
21°	9 34.5 -59.7 170.5	9 29.2 -59.7 169.6	9 23.4 -59.7 168.7	9 17.0 -59.6 167.7	9 10.2 -59.5 166.8
22°	8 34.8 -59.8 170.6	8 29.5 -59.7 169.7	8 23.7 -59.6 168.8	8 17.4 -59.5 167.8	8 10.7 -59.5 166.9
23°	7 35.0 -59.7 170.7	7 29.8 -59.7 169.8	7 24.1 -59.7 168.9	7 17.9 -59.6 168.0	7 11.2 -59.6 167.0
24°	6 35.3 -59.8 170.8	6 30.1 -59.7 169.9	6 24.4 -59.6 169.0	6 18.3 -59.6 168.1	6 11.6 -59.5 167.2
25°	5 35.5 -59.8 170.9	5 30.4 -59.7 170.0	5 24.8 -59.7 169.1	5 18.7 -59.6 168.2	5 12.1 -59.5 167.3
26°	4 35.7 -59.7 171.0	4 30.7 -59.7 170.1	4 25.1 -59.6 169.2	4 19.1 -59.6 168.3	4 12.6 -59.6 167.4
27°	3 36.0 -59.8 171.1	3 31.0 -59.8 170.2	3 25.5 -59.7 169.3	3 19.5 -59.6 168.4	3 13.0 -59.5 167.5
28°	2 36.2 -59.7 171.2	2 31.2 -59.7 170.3	2 25.8 -59.7 169.4	2 19.9 -59.6 168.5	2 13.5 -59.5 167.7
29°	1 36.5 -59.8 171.3	1 31.5 -59.7 170.4	1 26.1 -59.6 169.5	1 20.3 -59.6 168.7	1 14.0 -59.6 167.8

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°	29 50.0 -59.3 162.6	29 40.5 -59.2 161.5	29 30.4 -59.1 160.4	29 19.8 -59.0 159.2	29 08.5 -58.9 158.1
1°	28 50.7 -59.3 162.8	28 41.3 -59.2 161.7	28 31.3 -59.1 160.6	28 20.8 -59.1 159.4	28 09.6 -58.9 158.3
2°	27 51.4 -59.3 163.0	27 42.1 -59.2 161.9	27 32.2 -59.1 160.8	27 21.7 -59.0 159.7	27 10.7 -58.9 158.5
3°	26 52.1 -59.3 163.2	26 42.9 -59.3 162.1	26 33.1 -59.2 160.9	26 22.7 -59.0 159.9	26 11.8 -59.0 158.8
4°	25 52.8 -59.4 163.3	25 43.6 -59.2 162.2	25 33.9 -59.1 161.1	25 23.7 -59.1 160.0	25 12.8 -58.9 159.0
5°	24 53.4 -59.3 163.5	24 44.4 -59.3 162.4	24 34.8 -59.2 161.3	24 24.6 -59.1 160.2	24 13.9 -59.0 159.2
6°	23 54.1 -59.4 163.6	23 45.1 -59.3 162.6	23 35.6 -59.2 161.5	23 25.5 -59.1 160.4	23 14.9 -59.0 159.4
7°	22 54.7 -59.3 163.8	22 45.8 -59.3 162.7	22 36.4 -59.2 161.7	22 26.4 -59.1 160.6	22 15.9 -59.0 159.6
8°	21 55.4 -59.4 164.0	21 46.5 -59.3 162.9	21 37.2 -59.2 161.9	21 27.3 -59.1 160.8	21 16.9 -59.1 159.8
9°	20 56.0 -59.4 164.1	20 47.2 -59.3 163.1	20 38.0 -59.2 162.0	20 28.2 -59.2 161.0	20 17.8 -59.0 159.9
10°	19 56.6 -59.4 164.3	19 47.9 -59.3 163.2	19 38.8 -59.3 162.2	19 29.0 -59.1 161.2	19 18.8 -59.1 160.1
11°	18 57.2 -59.4 164.4	18 48.6 -59.3 163.4	18 39.5 -59.2 162.4	18 29.9 -59.2 161.3	18 19.7 -59.0 160.3
12°	17 57.8 -59.4 164.6	17 49.3 -59.3 163.5	17 40.3 -59.3 162.5	17 30.7 -59.1 161.5	17 20.7 -59.1 160.5
13°	16 58.4 -59.5 164.7	16 50.0 -59.4 163.7	16 41.0 -59.2 162.7	16 31.6 -59.2 161.7	16 21.6 -59.1 160.7
14°	15 58.9 -59.4 164.9	15 50.6 -59.3 163.9	15 41.8 -59.3 162.9	15 32.4 -59.2 161.9	15 22.5 -59.1 160.9
15°	14 59.5 -59.4 165.0	14 51.3 -59.4 164.0	14 42.5 -59.3 163.0	14 33.2 -59.2 162.0	14 23.4 -59.1 161.1
16°	14 00.1 -59.4 165.1	13 51.9 -59.3 164.2	13 43.2 -59.2 163.2	13 34.0 -59.2 162.2	13 24.3 -59.1 161.2
17°	13 00.7 -59.5 165.3	12 52.6 -59.4 164.3	12 44.0 -59.3 163.3	12 34.8 -59.2 162.4	12 25.2 -59.1 161.4
18°	12 01.2 -59.4 165.4	11 53.2 -59.4 164.5	11 44.7 -59.3 163.5	11 35.6 -59.2 162.5	11 26.1 -59.1 161.6
19°	11 01.8 -59.5 165.6	10 53.8 -59.3 164.6	10 45.4 -59.3 163.7	10 36.4 -59.2 162.7	10 27.0 -59.1 161.8
20°	10 02.3 -59.4 165.7	9 54.5 -59.4 164.8	9 46.1 -59.3 163.8	9 37.2 -59.2 162.9	9 27.9 -59.1 161.9
21°	9 02.9 -59.5 165.8	8 55.1 -59.4 164.9	8 46.8 -59.3 164.0	8 38.0 -59.2 163.0	8 28.8 -59.2 162.1
22°	8 03.4 -59.4 166.0	7 55.7 -59.4 165.0	7 47.5 -59.3 164.1	7 38.8 -59.2 163.2	7 29.6 -59.1 162.3
23°	7 04.0 -59.5 166.1	6 56.3 -59.4 165.2	6 48.2 -59.3 164.3	6 39.6 -59.3 163.4	6 30.5 -59.2 162.4
24°	6 04.5 -59.4 166.2	5 56.9 -59.3 165.3	5 48.9 -59.3 164.4	5 40.3 -59.2 163.5	5 31.3 -59.1 162.6
25°	5 05.1 -59.5 166.4	4 57.6 -59.4 165.5	4 49.6 -59.3 164.6	4 41.1 -59.2 163.7	4 32.2 -59.1 162.8
26°	4 05.6 -59.5 166.5	3 58.2 -59.4 165.6	3 50.3 -59.4 164.7	3 41.9 -59.2 163.8	3 33.1 -59.2 163.0
27°	3 06.1 -59.4 166.6	2 58.8 -59.4 165.8	2 50.9 -59.3 164.9	2 42.7 -59.3 164.0	2 33.9 -59.1 163.1
28°	2 06.7 -59.5 166.8	1 59.4 -59.4 165.9	1 51.6 -59.3 165.0	1 43.4 -59.2 164.2	1 34.8 -59.2 163.3
29°	1 07.2 -59.5 166.9	1 00.0 -59.4 166.0	0 52.3 -59.3 165.2	0 44.2 -59.3 164.3	0 35.6 -59.1 163.5

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°	28 56.7 -58.8 157.0	28 44.4 -58.7 155.9	28 31.5 -58.6 154.8	28 18.0 -58.4 153.7	28 04.0 -58.3 152.6
1°	27 57.9 -58.8 157.2	27 45.7 -58.7 156.1	27 32.9 -58.6 155.0	27 19.6 -58.5 153.9	27 05.7 -58.3 152.8
2°	26 59.1 -58.8 157.4	26 47.0 -58.7 156.3	26 34.3 -58.6 155.3	26 21.1 -58.4 154.2	26 07.4 -58.3 153.1
3°	26 00.3 -58.8 157.7	25 48.3 -58.7 156.6	25 35.7 -58.6 155.5	25 22.7 -58.5 154.4	25 09.1 -58.4 153.3
4°	25 01.5 -58.9 157.9	24 49.6 -58.8 156.8	24 37.1 -58.6 155.7	24 24.2 -58.6 154.7	24 10.7 -58.4 153.6
5°	24 02.6 -58.9 158.1	23 50.8 -58.8 157.0	23 38.5 -58.7 156.0	23 25.6 -58.5 154.9	23 12.3 -58.5 153.8
6°	23 03.7 -58.9 158.3	22 52.0 -58.8 157.2	22 39.8 -58.7 156.2	22 27.1 -58.6 155.1	22 13.8 -58.4 154.1
7°	22 04.8 -58.9 158.5	21 53.2 -58.8 157.5	21 41.1 -58.7 156.4	21 28.5 -58.6 155.4	21 15.4 -58.5 154.3
8°	21 05.9 -58.9 158.7	20 54.4 -58.8 157.7	20 42.4 -58.7 156.6	20 29.9 -58.6 155.6	20 16.9 -58.5 154.6
9°	20 07.0 -59.0 158.9	19 55.6 -58.8 157.9	19 43.7 -58.7 156.9	19 31.3 -58.6 155.8	19 18.4 -58.5 154.8
10°	19 08.0 -58.9 159.1	18 56.8 -58.9 158.1	18 45.0 -58.8 157.1	18 32.7 -58.6 156.1	18 19.9 -58.5 155.0
11°	18 09.1 -59.0 159.3	17 57.9 -58.9 158.3	17 46.2 -58.7 157.3	17 34.1 -58.7 156.3	17 21.4 -58.6 155.3
12°	17 10.1 -59.0 159.5	16 59.0 -58.8 158.5	16 47.5 -58.8 157.5	16 35.4 -58.7 156.5	16 22.8 -58.5 155.5
13°	16 11.1 -58.9 159.7	16 00.2 -58.9 158.7	15 48.7 -58.8 157.7	15 36.7 -58.7 156.7	15 24.3 -58.6 155.7
14°	15 12.2 -59.0 159.9	15 01.3 -58.9 158.9	14 49.9 -58.8 157.9	14 38.0 -58.6 156.9	14 25.7 -58.6 156.0
15°	14 13.2 -59.0 160.1	14 02.4 -58.9 159.1	13 51.1 -58.8 158.1	13 39.4 -58.8 157.1	13 27.1 -58.6 156.2
16°	13 14.2 -59.1 160.3	13 03.5 -58.9 159.3	12 52.3 -58.8 158.3	12 40.6 -58.7 157.4	12 28.5 -58.6 156.4
17°	12 15.1 -59.0 160.4	12 04.6 -59.0 159.5	11 53.5 -58.8 158.5	11 41.9 -58.7 157.6	11 29.9 -58.6 156.6
18°	11 16.1 -59.0 160.6	11 05.6 -58.9 159.7	10 54.7 -58.9 158.7	10 43.2 -58.7 157.8	10 31.3 -58.6 156.8
19°	10 17.1 -59.0 160.8	10 06.7 -58.9 159.9	9 55.8 -58.8 158.9	9 44.5 -58.8 158.0	9 32.7 -58.7 157.0
20°	9 18.1 -59.1 161.0	9 07.8 -59.0 160.1	8 57.0 -58.9 159.1	8 45.7 -58.7 158.2	8 34.0 -58.6 157.3
21°	8 19.0 -59.0 161.2	8 08.8 -58.9 160.2	7 58.1 -58.8 159.3	7 47.0 -58.8 158.4	7 35.4 -58.7 157.5
22°	7 20.0 -59.1 161.4	7 09.9 -59.0 160.4	6 59.3 -58.9 159.5	6 48.2 -58.7 158.6	6 36.7 -58.6 157.7
23°	6 20.9 -59.0 161.5	6 10.9 -58.9 160.6	6 00.4 -58.8 159.7	5 49.5 -58.8 158.8	5 38.1 -58.7 157.9
24°	5 21.9 -59.1 161.7	5 12.0 -59.0 160.8	5 01.6 -58.9 159.9	4 50.7 -58.7 159.0	4 39.4 -58.6 158.1
25°	4 22.8 -59.0 161.9	4 13.0 -59.0 161.0	4 02.7 -58.9 160.1	3 52.0 -58.8 159.2	3 40.8 -58.7 158.3
26°	3 23.8 -59.1 162.1	3 14.0 -58.9 161.2	3 03.8 -58.8 160.3	2 53.2 -58.8 159.4	2 42.1 -58.7 158.5
27°	2 24.7 -59.1 162.2	2 15.1 -59.0 161.4	2 05.0 -58.9 160.5	1 54.4 -58.8 159.6	1 43.4 -58.6 158.7
28°	1 25.6 -59.0 162.4	1 16.1 -59.0 161.5	1 06.1 -58.9 160.7	0 55.6 -58.7 159.8	0 44.8 -58.7 159.0
29°	0 26.6 -59.1 162.6	0 17.1 -58.9 161.7	0 07.2 -58.9 160.9	-0 03.1 -58.8	-0 13.9 -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°	27 49.5 -58.1 151.5	27 34.5 -58.0 150.4	27 19.0 -57.9 149.3	27 02.9 -57.7 148.2	26 46.4 -57.6 147.1
1°	26 51.4 -58.2 151.7	26 36.5 -58.1 150.6	26 21.1 -58.0 149.6	26 05.2 -57.8 148.5	25 48.8 -57.7 147.4
2°	25 53.2 -58.3 152.0	25 38.4 -58.1 150.9	25 23.1 -57.9 149.9	25 07.4 -57.9 148.8	24 51.1 -57.7 147.7
3°	24 54.9 -58.2 152.3	24 40.3 -58.1 151.2	24 25.2 -58.0 150.1	24 09.5 -57.8 149.1	23 53.4 -57.7 148.0
4°	23 56.7 -58.3 152.5	23 42.2 -58.2 151.5	23 27.2 -58.1 150.4	23 11.7 -57.9 149.4	22 55.7 -57.8 148.3
5°	22 58.4 -58.3 152.8	22 44.0 -58.2 151.7	22 29.1 -58.0 150.7	22 13.8 -58.0 149.7	21 57.9 -57.8 148.6
6°	22 00.1 -58.4 153.0	21 45.8 -58.2 152.0	21 31.1 -58.1 151.0	21 15.8 -57.9 149.9	21 00.1 -57.8 148.9
7°	21 01.7 -58.3 153.3	20 47.6 -58.2 152.3	20 33.0 -58.1 151.2	20 17.9 -58.0 150.2	20 02.3 -57.9 149.2
8°	20 03.4 -58.4 153.5	19 49.4 -58.3 152.5	19 34.9 -58.2 151.5	19 19.9 -58.0 150.5	19 04.4 -57.9 149.5
9°	19 05.0 -58.4 153.8	18 51.1 -58.3 152.8	18 36.7 -58.1 151.8	18 21.9 -58.1 150.8	18 06.5 -57.9 149.7
10°	18 06.6 -58.4 154.0	17 52.8 -58.3 153.0	17 38.6 -58.2 152.0	17 23.8 -58.0 151.0	17 08.6 -57.9 150.0
11°	17 08.2 -58.4 154.3	16 54.5 -58.3 153.3	16 40.4 -58.2 152.3	16 25.8 -58.1 151.3	16 10.7 -57.9 150.3
12°	16 09.8 -58.5 154.5	15 56.2 -58.3 153.5	15 42.2 -58.2 152.5	15 27.7 -58.1 151.5	15 12.8 -58.0 150.6
13°	15 11.3 -58.4 154.7	14 57.9 -58.3 153.8	14 44.0 -58.2 152.8	14 29.6 -58.1 151.8	14 14.8 -58.0 150.8
14°	14 12.9 -58.5 155.0	13 59.6 -58.4 154.0	13 45.8 -58.3 153.0	13 31.5 -58.1 152.1	13 16.8 -58.0 151.1
15°	13 14.4 -58.5 155.2	13 01.2 -58.4 154.2	12 47.5 -58.2 153.3	12 33.4 -58.1 152.3	12 18.8 -58.0 151.4
16°	12 15.9 -58.5 155.4	12 02.8 -58.4 154.5	11 49.3 -58.3 153.5	11 35.3 -58.2 152.6	11 20.8 -58.0 151.6
17°	11 17.4 -58.5 155.7	11 04.4 -58.4 154.7	10 51.0 -58.3 153.8	10 37.1 -58.1 152.8	10 22.8 -58.1 151.9
18°	10 18.9 -58.5 155.9	10 06.0 -58.4 154.9	9 52.7 -58.3 154.0	9 39.0 -58.2 153.1	9 24.7 -58.0 152.1
19°	9 20.4 -58.6 156.1	9 07.6 -58.4 155.2	8 54.4 -58.3 154.2	8 40.8 -58.2 153.3	8 26.7 -58.1 152.4
20°	8 21.8 -58.5 156.3	8 09.2 -58.4 155.4	7 56.1 -58.3 154.5	7 42.6 -58.2 153.6	7 28.6 -58.1 152.6
21°	7 23.3 -58.5 156.6	7 10.8 -58.4 155.6	6 57.8 -58.3 154.7	6 44.4 -58.2 153.8	6 30.5 -58.0 152.9
22°	6 24.8 -58.6 156.8	6 12.4 -58.5 155.9	5 59.5 -58.3 155.0	5 46.2 -58.2 154.1	5 32.5 -58.1 153.2
23°	5 26.2 -58.5 157.0	5 13.9 -58.4 156.1	5 01.2 -58.3 155.2	4 48.0 -58.2 154.3	4 34.4 -58.1 153.4
24°	4 27.7 -58.6 157.2	4 15.5 -58.5 156.3	4 02.9 -58.4 155.4	3 49.8 -58.2 154.5	3 36.3 -58.1 153.7
25°	3 29.1 -58.5 157.4	3 17.0 -58.4 156.5	3 04.5 -58.3 155.7	2 51.6 -58.2 154.8	2 38.2 -58.1 153.9
26°	2 30.6 -58.6 157.7	2 18.6 -58.4 156.8	2 06.2 -58.3 155.9	1 53.4 -58.3 155.0	1 40.1 -58.1 154.2
27°	1 32.0 -58.6 157.9	1 20.2 -58.5 157.0	1 07.9 -58.4 156.1	0 55.1 -58.2 155.3	0 42.0 -58.1 154.4
28°	0 33.4 -58.5 158.1	0 21.7 -58.5 157.2	0 09.5 -58.3 156.4	-0 03.1 -58.2	-0 16.1 -58.1
29°	-0 25.1 -58.6	-0 36.8 -58.4	-0 48.8 -58.3	-1 01.3 -58.2	-1 14.2 -58.1

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°	26 29.4 -57.5 146.0	26 11.9 -57.4 145.0	25 53.9 -57.2 143.9	25 35.5 -57.1 142.9	25 16.6 -56.9 141.8
1°	25 31.9 -57.5 146.4	25 14.5 -57.3 145.3	24 56.7 -57.2 144.2	24 38.4 -57.1 143.2	24 19.7 -57.0 142.2
2°	24 34.4 -57.6 146.7	24 17.2 -57.5 145.6	23 59.5 -57.3 144.6	23 41.3 -57.1 143.5	23 22.7 -57.0 142.5
3°	23 36.8 -57.6 147.0	23 19.7 -57.4 145.9	23 02.2 -57.3 144.9	22 44.2 -57.2 143.9	22 25.7 -57.0 142.8
4°	22 39.2 -57.6 147.3	22 22.3 -57.5 146.2	22 04.9 -57.4 145.2	21 47.0 -57.2 144.2	21 28.7 -57.1 143.2
5°	21 41.6 -57.7 147.6	21 24.8 -57.6 146.6	21 07.5 -57.4 145.5	20 49.8 -57.3 144.5	20 31.6 -57.1 143.5
6°	20 43.9 -57.7 147.9	20 27.2 -57.5 146.9	20 10.1 -57.4 145.8	19 52.5 -57.2 144.8	19 34.5 -57.1 143.8
7°	19 46.2 -57.7 148.2	19 29.7 -57.6 147.2	19 12.7 -57.5 146.2	18 55.3 -57.4 145.1	18 37.4 -57.2 144.1
8°	18 48.5 -57.8 148.5	18 32.1 -57.6 147.5	18 15.2 -57.4 146.5	17 57.9 -57.3 145.5	17 40.2 -57.2 144.5
9°	17 50.7 -57.7 148.7	17 34.5 -57.7 147.8	17 17.8 -57.5 146.8	17 00.6 -57.4 145.8	16 43.0 -57.2 144.8
10°	16 53.0 -57.8 149.0	16 36.8 -57.6 148.0	16 20.3 -57.6 147.1	16 03.2 -57.4 146.1	15 45.8 -57.3 145.1
11°	15 55.2 -57.9 149.3	15 39.2 -57.7 148.3	15 22.7 -57.5 147.4	15 05.8 -57.4 146.4	14 48.5 -57.3 145.4
12°	14 57.3 -57.8 149.6	14 41.5 -57.7 148.6	14 25.2 -57.6 147.6	14 08.4 -57.4 146.7	13 51.2 -57.3 145.7
13°	13 59.5 -57.8 149.9	13 43.8 -57.8 148.9	13 27.6 -57.6 147.9	13 11.0 -57.5 147.0	12 53.9 -57.3 146.0
14°	13 01.7 -57.9 150.1	12 46.0 -57.7 149.2	12 30.0 -57.6 148.2	12 13.5 -57.5 147.3	11 56.6 -57.4 146.3
15°	12 03.8 -57.9 150.4	11 48.3 -57.8 149.5	11 32.4 -57.7 148.5	11 16.0 -57.5 147.6	10 59.2 -57.4 146.6
16°	11 05.9 -57.9 150.7	10 50.5 -57.7 149.7	10 34.7 -57.6 148.8	10 18.5 -57.5 147.9	10 01.8 -57.3 146.9
17°	10 08.0 -57.9 150.9	9 52.8 -57.8 150.0	9 37.1 -57.7 149.1	9 21.0 -57.5 148.1	9 04.5 -57.4 147.2
18°	9 10.1 -58.0 151.2	8 55.0 -57.8 150.3	8 39.4 -57.6 149.4	8 23.5 -57.6 148.4	8 07.1 -57.4 147.5
19°	8 12.1 -57.9 151.5	7 57.2 -57.9 150.5	7 41.8 -57.7 149.6	7 25.9 -57.5 148.7	7 09.7 -57.5 147.8
20°	7 14.2 -57.9 151.7	6 59.3 -57.8 150.8	6 44.1 -57.7 149.9	6 28.4 -57.6 149.0	6 12.2 -57.4 148.1
21°	6 16.3 -58.0 152.0	6 01.5 -57.8 151.1	5 46.4 -57.7 150.2	5 30.8 -57.6 149.3	5 14.8 -57.4 148.4
22°	5 18.3 -58.0 152.3	5 03.7 -57.8 151.4	4 48.7 -57.7 150.5	4 33.2 -57.6 149.6	4 17.4 -57.5 148.7
23°	4 20.3 -57.9 152.5	4 05.9 -57.9 151.6	3 51.0 -57.8 150.7	3 35.6 -57.5 149.8	3 19.9 -57.4 149.0
24°	3 22.4 -58.0 152.8	3 08.0 -57.8 151.9	2 53.2 -57.7 151.0	2 38.1 -57.6 150.1	2 22.5 -57.5 149.3
25°	2 24.4 -58.0 153.0	2 10.2 -57.9 152.2	1 55.5 -57.7 151.3	1 40.5 -57.6 150.4	1 25.0 -57.4 149.5
26°	1 26.4 -58.0 153.3	1 12.3 -57.8 152.4	0 57.8 -57.7 151.6	0 42.9 -57.6 150.7	0 27.6 -57.5 149.8
27°	0 28.4 -57.9 153.5	0 14.5 -57.9 152.7	0 00.1 -57.7 151.8	-0 14.7 -57.6	-0 29.9 -57.5
28°	-0 29.5 -58.0	-0 43.4 -57.8	-0 57.6 -57.8	-1 12.3 -57.6	-1 27.4 -57.4
29°	-1 27.5 -58.0	-1 41.2 -57.9	-1 55.4 -57.7	-2 09.9 -57.6	-2 24.8 -57.5

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°	24 57.3 -56.8 140.8	24 37.5 -56.6 139.7	24 17.3 -56.5 138.7	23 56.7 -56.3 137.7	23 35.7 -56.2 136.6
1°	24 00.5 -56.8 141.1	23 40.9 -56.7 140.1	23 20.8 -56.5 139.1	23 00.4 -56.4 138.0	22 39.5 -56.2 137.0
2°	23 03.7 -56.8 141.5	22 44.2 -56.7 140.4	22 24.3 -56.5 139.4	22 04.0 -56.4 138.4	21 43.3 -56.2 137.4
3°	22 06.9 -56.9 141.8	21 47.5 -56.7 140.8	21 27.8 -56.6 139.8	21 07.6 -56.4 138.8	20 47.1 -56.3 137.8
4°	21 10.0 -57.0 142.2	20 50.8 -56.8 141.1	20 31.2 -56.6 140.1	20 11.2 -56.5 139.1	19 50.8 -56.4 138.1
5°	20 13.0 -56.9 142.5	19 54.0 -56.8 141.5	19 34.6 -56.7 140.5	19 14.7 -56.6 139.5	18 54.4 -56.4 138.5
6°	19 16.1 -57.0 142.8	18 57.2 -56.9 141.8	18 37.9 -56.7 140.8	18 18.1 -56.5 139.8	17 58.0 -56.4 138.9
7°	18 19.1 -57.1 143.2	18 00.3 -56.9 142.2	17 41.2 -56.8 141.2	17 21.6 -56.6 140.2	17 01.6 -56.5 139.2
8°	17 22.0 -57.0 143.5	17 03.4 -56.9 142.5	16 44.4 -56.8 141.5	16 25.0 -56.7 140.5	16 05.1 -56.5 139.6
9°	16 25.0 -57.1 143.8	16 06.5 -57.0 142.8	15 47.6 -56.8 141.8	15 28.3 -56.7 140.9	15 08.6 -56.5 139.9
10°	15 27.9 -57.2 144.1	15 09.5 -56.9 143.1	14 50.8 -56.8 142.2	14 31.6 -56.7 141.2	14 12.1 -56.6 140.3
11°	14 30.7 -57.1 144.4	14 12.6 -57.1 143.5	13 54.0 -56.9 142.5	13 34.9 -56.7 141.6	13 15.5 -56.6 140.6
12°	13 33.6 -57.2 144.8	13 15.5 -57.0 143.8	12 57.1 -56.9 142.8	12 38.2 -56.7 141.9	12 18.9 -56.6 140.9
13°	12 36.4 -57.2 145.1	12 18.5 -57.1 144.1	12 00.2 -56.9 143.2	11 41.5 -56.8 142.2	11 22.3 -56.6 141.3
14°	11 39.2 -57.2 145.4	11 21.4 -57.0 144.4	11 03.3 -57.0 143.5	10 44.7 -56.8 142.6	10 25.7 -56.7 141.6
15°	10 42.0 -57.2 145.7	10 24.4 -57.1 144.7	10 06.3 -56.9 143.8	9 47.9 -56.8 142.9	9 29.0 -56.6 142.0
16°	9 44.8 -57.3 146.0	9 27.3 -57.1 145.1	9 09.4 -57.0 144.1	8 51.1 -56.9 143.2	8 32.4 -56.7 142.3
17°	8 47.5 -57.2 146.3	8 30.2 -57.2 145.4	8 12.4 -57.0 144.4	7 54.2 -56.8 143.5	7 35.7 -56.7 142.6
18°	7 50.3 -57.3 146.6	7 33.0 -57.1 145.7	7 15.4 -57.0 144.8	6 57.4 -56.9 143.9	6 39.0 -56.8 142.9
19°	6 53.0 -57.3 146.9	6 35.9 -57.2 146.0	6 18.4 -57.0 145.1	6 00.5 -56.9 144.2	5 42.2 -56.7 143.3
20°	5 55.7 -57.3 147.2	5 38.7 -57.1 146.3	5 21.4 -57.0 145.4	5 03.6 -56.8 144.5	4 45.5 -56.7 143.6
21°	4 58.4 -57.3 147.5	4 41.6 -57.2 146.6	4 24.4 -57.1 145.7	4 06.8 -56.9 144.8	3 48.8 -56.8 143.9
22°	4 01.1 -57.3 147.8	3 44.4 -57.2 146.9	3 27.3 -57.0 146.0	3 09.9 -56.9 145.1	2 52.0 -56.7 144.3
23°	3 03.8 -57.3 148.1	2 47.2 -57.1 147.2	2 30.3 -57.0 146.3	2 13.0 -56.9 145.4	1 55.3 -56.8 144.6
24°	2 06.5 -57.4 148.4	1 50.1 -57.2 147.5	1 33.3 -57.1 146.6	1 16.1 -56.9 145.8	0 58.5 -56.8 144.9
25°	1 09.1 -57.3 148.7	0 52.9 -57.2 147.8	0 36.2 -57.0 146.9	0 19.2 -56.9 146.1	0 01.7 -56.7 145.2
26°	0 11.8 -57.3 149.0	-0 04.3 -57.2	-0 20.8 -57.1	-0 37.7 -56.9	-0 55.0 -56.8
27°	-0 45.5 -57.3	-1 01.5 -57.2	-1 17.9 -57.0	-1 34.6 -56.9	-1 51.8 -56.7
28°	-1 42.8 -57.3	-1 58.7 -57.2	-2 14.9 -57.1	-2 31.5 -56.9	-2 48.5 -56.8
29°	-2 40.1 -57.4	-2 55.9 -57.1	-3 12.0 -57.0	-3 28.4 -56.9	-3 45.3 -56.7

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°	23 14.2 -56.0 135.6	22 52.4 -55.8 134.6	22 30.2 -55.7 133.6	22 07.7 -55.6 132.6	21 44.7 -55.4 131.6
1°	22 18.2 -56.0 136.0	21 56.6 -55.9 135.0	21 34.5 -55.7 134.0	21 12.1 -55.6 133.0	20 49.3 -55.4 132.0
2°	21 22.2 -56.1 136.4	21 00.7 -56.0 135.4	20 38.8 -55.8 134.4	20 16.5 -55.6 133.4	19 53.9 -55.5 132.4
3°	20 26.1 -56.2 136.8	20 04.7 -56.0 135.8	19 43.0 -55.9 134.8	19 20.9 -55.8 133.8	18 58.4 -55.6 132.8
4°	19 29.9 -56.2 137.1	19 08.7 -56.0 136.1	18 47.1 -55.9 135.2	18 25.1 -55.7 134.2	18 02.8 -55.6 133.2
5°	18 33.7 -56.2 137.5	18 12.7 -56.1 136.5	17 51.2 -55.9 135.5	17 29.4 -55.8 134.6	17 07.2 -55.7 133.6
6°	17 37.5 -56.3 137.9	17 16.6 -56.2 136.9	16 55.3 -56.0 135.9	16 33.6 -55.9 135.0	16 11.5 -55.7 134.0
7°	16 41.2 -56.3 138.2	16 20.4 -56.1 137.3	15 59.3 -56.1 136.3	15 37.7 -55.9 135.3	15 15.8 -55.7 134.4
8°	15 44.9 -56.4 138.6	15 24.3 -56.3 137.6	15 03.2 -56.0 136.7	14 41.8 -55.9 135.7	14 20.1 -55.8 134.8
9°	14 48.5 -56.4 139.0	14 28.0 -56.2 138.0	14 07.2 -56.1 137.0	13 45.9 -55.9 136.1	13 24.3 -55.8 135.1
10°	13 52.1 -56.4 139.3	13 31.8 -56.3 138.4	13 11.1 -56.2 137.4	12 50.0 -56.0 136.5	12 28.5 -55.8 135.5
11°	12 55.7 -56.4 139.7	12 35.5 -56.3 138.7	12 14.9 -56.1 137.8	11 54.0 -56.0 136.8	11 32.7 -55.9 135.9
12°	11 59.3 -56.5 140.0	11 39.2 -56.3 139.1	11 18.8 -56.2 138.1	10 58.0 -56.1 137.2	10 36.8 -55.9 136.3
13°	11 02.8 -56.5 140.3	10 42.9 -56.4 139.4	10 22.6 -56.2 138.5	10 01.9 -56.0 137.6	9 40.9 -55.9 136.6
14°	10 06.3 -56.5 140.7	9 46.5 -56.3 139.8	9 26.4 -56.2 138.8	9 05.9 -56.1 137.9	8 45.0 -56.0 137.0
15°	9 09.8 -56.5 141.0	8 50.2 -56.4 140.1	8 30.2 -56.3 139.2	8 09.8 -56.1 138.3	7 49.0 -55.9 137.4
16°	8 13.3 -56.6 141.4	7 53.8 -56.4 140.5	7 33.9 -56.3 139.5	7 13.7 -56.1 138.6	6 53.1 -56.0 137.7
17°	7 16.7 -56.6 141.7	6 57.4 -56.5 140.8	6 37.6 -56.2 139.9	6 17.6 -56.2 139.0	6 57.1 -56.0 138.1
18°	6 20.1 -56.5 142.0	6 00.9 -56.4 141.1	5 41.4 -56.3 140.2	5 21.4 -56.1 139.3	5 01.1 -56.0 138.5
19°	5 23.6 -56.6 142.4	5 04.5 -56.4 141.5	4 45.1 -56.3 140.6	4 25.3 -56.2 139.7	4 05.1 -56.0 138.8
20°	4 27.0 -56.6 142.7	4 08.1 -56.5 141.8	3 48.8 -56.3 140.9	3 29.1 -56.2 140.1	3 09.1 -56.0 139.2
21°	3 30.4 -56.6 143.0	3 11.6 -56.5 142.2	2 52.5 -56.4 141.3	2 32.9 -56.1 140.4	2 13.1 -56.1 139.5
22°	2 33.8 -56.7 143.4	2 15.1 -56.4 142.5	1 56.1 -56.3 141.6	1 36.8 -56.2 140.8	1 17.0 -56.0 139.9
23°	1 37.1 -56.6 143.7	1 18.7 -56.5 142.8	0 59.8 -56.3 142.0	0 40.6 -56.2 141.1	0 21.0 -56.0 140.2
24°	0 40.5 -56.6 144.0	0 22.2 -56.5 143.2	0 03.5 -56.3 142.3	-0 15.6 -56.2	-0 35.0 -56.0
25°	-0 16.1 -56.6	-0 34.3 -56.4	-0 52.8 -56.4	-1 11.8 -56.1	-1 31.0 -56.1
26°	-1 12.7 -56.6	-1 30.7 -56.5	-1 49.2 -56.3	-2 07.9 -56.2	-2 27.1 -56.0
27°	-2 09.3 -56.6	-2 27.2 -56.5	-2 45.5 -56.3	-3 04.1 -56.2	-3 23.1 -56.0
28°	-3 05.9 -56.6	-3 23.7 -56.4	-3 41.8 -56.3	-4 00.3 -56.1	-4 19.1 -56.0
29°	-4 02.5 -56.6	-4 20.1 -56.5	-4 38.1 -56.3	-4 56.4 -56.2	-5 15.1 -56.0

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°	21 21.5 -55.3 130.6	20 57.8 -55.1 129.6	20 33.8 -54.9 128.6	20 09.5 -54.8 127.7	19 44.9 -54.7 126.7
1°	20 26.2 -55.3 131.0	20 02.7 -55.2 130.0	19 38.9 -55.0 129.1	19 14.7 -54.9 128.1	18 50.2 -54.7 127.1
2°	19 30.9 -55.4 131.4	19 07.5 -55.2 130.5	18 43.9 -55.1 129.5	18 19.8 -54.9 128.5	17 55.5 -54.8 127.6
3°	18 35.5 -55.4 131.8	18 12.3 -55.3 130.9	17 48.8 -55.1 129.9	17 24.9 -55.0 128.9	17 00.7 -54.8 128.0
4°	17 40.1 -55.5 132.2	17 17.0 -55.3 131.3	16 53.7 -55.2 130.3	16 29.9 -55.0 129.4	16 05.9 -54.9 128.4
5°	16 44.6 -55.5 132.6	16 21.7 -55.3 131.7	15 58.5 -55.2 130.7	15 34.9 -55.1 129.8	15 11.0 -55.0 128.8
6°	15 49.1 -55.5 133.0	15 26.4 -55.5 132.1	15 03.3 -55.3 131.1	14 39.8 -55.1 130.2	14 16.0 -54.9 129.2
7°	14 53.6 -55.6 133.4	14 30.9 -55.4 132.5	14 08.0 -55.3 131.5	13 44.7 -55.2 130.6	13 21.1 -55.1 129.7
8°	13 58.0 -55.7 133.8	13 35.5 -55.5 132.9	13 12.7 -55.4 131.9	12 49.5 -55.2 131.0	12 26.0 -55.0 130.1
9°	13 02.3 -55.6 134.2	12 40.0 -55.5 133.3	12 17.3 -55.3 132.3	11 54.3 -55.2 131.4	11 31.0 -55.1 130.5
10°	12 06.7 -55.7 134.6	11 44.5 -55.6 133.7	11 22.0 -55.5 132.7	10 59.1 -55.3 131.8	10 35.9 -55.1 130.9
11°	11 11.0 -55.8 135.0	10 48.9 -55.6 134.0	10 26.5 -55.4 133.1	10 03.8 -55.3 132.2	9 40.8 -55.2 131.3
12°	10 15.2 -55.7 135.3	9 53.3 -55.6 134.4	9 31.1 -55.5 133.5	9 08.5 -55.3 132.6	8 45.6 -55.2 131.7
13°	9 19.5 -55.8 135.7	8 57.7 -55.6 134.8	8 35.6 -55.4 133.9	8 13.2 -55.3 133.0	7 50.4 -55.2 132.1
14°	8 23.7 -55.8 136.1	8 02.1 -55.6 135.2	7 40.2 -55.6 134.3	7 17.9 -55.4 133.4	6 55.2 -55.2 132.5
15°	7 27.9 -55.8 136.5	7 06.5 -55.7 135.6	6 44.6 -55.5 134.7	6 22.5 -55.4 133.8	6 00.0 -55.2 132.9
16°	6 32.1 -55.8 136.8	6 10.8 -55.7 135.9	5 49.1 -55.5 135.0	5 27.1 -55.4 134.1	5 04.8 -55.3 133.3
17°	5 36.3 -55.9 137.2	5 15.1 -55.7 136.3	4 53.6 -55.6 135.4	4 31.7 -55.4 134.5	4 09.5 -55.2 133.6
18°	4 40.4 -55.8 137.6	4 19.4 -55.7 136.7	3 58.0 -55.5 135.8	3 36.3 -55.4 134.9	3 14.3 -55.3 134.0
19°	3 44.6 -55.9 137.9	3 23.7 -55.7 137.1	3 02.5 -55.6 136.2	2 40.9 -55.4 135.3	2 19.0 -55.3 134.4
20°	2 48.7 -55.9 138.3	2 28.0 -55.8 137.4	2 06.9 -55.6 136.6	1 45.5 -55.5 135.7	1 23.7 -55.3 134.8
21°	1 52.8 -55.8 138.7	1 32.2 -55.7 137.8	1 11.3 -55.6 136.9	0 50.0 -55.4 136.1	0 28.4 -55.2 135.2
22°	0 57.0 -55.9 139.0	0 36.5 -55.7 138.2	0 15.7 -55.5 137.3	-0 05.4 -55.4	-0 26.8 -55.3
23°	0 01.1 -55.9 139.4	-0 19.2 -55.7	-0 39.8 -55.6	-1 00.8 -55.4	-1 22.1 -55.3
24°	-0 54.8 -55.9	-1 14.9 -55.8	-1 35.4 -55.6	-1 56.2 -55.5	-2 17.4 -55.3
25°	-1 50.7 -55.8	-2 10.7 -55.7	-2 31.0 -55.6	-2 51.7 -55.4	-3 12.7 -55.2
26°	-2 46.5 -55.9	-3 06.4 -55.7	-3 26.6 -55.5	-3 47.1 -55.4	-4 07.9 -55.3
27°	-3 42.4 -55.9	-4 02.1 -55.7	-4 22.1 -55.6	-4 42.5 -55.4	-5 03.2 -55.2
28°	-4 38.3 -55.8	-4 57.8 -55.7	-5 17.1 -55.5	-5 37.9 -55.4	-5 58.4 -55.2
29°	-5 34.1 -55.8	-5 53.5 -55.7	-6 13.2 -55.5	-6 33.3 -55.3	-6 53.6 -55.2

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°	19 20.0 -54.5 125.7	18 54.8 -54.4 124.8	18 29.2 -54.2 123.8	18 03.4 -54.1 122.9	17 37.3 -54.0 121.9
1°	18 25.5 -54.6 126.2	18 00.4 -54.5 125.2	17 35.0 -54.4 124.3	17 09.3 -54.2 123.3	16 43.3 -54.0 122.4
2°	17 30.9 -54.7 126.6	17 05.9 -54.5 125.7	16 40.6 -54.3 124.7	16 15.1 -54.3 123.8	15 49.3 -54.1 122.8
3°	16 36.2 -54.7 127.0	16 11.4 -54.6 126.1	15 46.3 -54.5 125.1	15 20.8 -54.2 124.2	14 55.2 -54.2 123.3
4°	15 41.5 -54.8 127.5	15 16.8 -54.6 126.5	14 51.8 -54.4 125.6	14 26.6 -54.4 124.6	14 01.0 -54.2 123.7
5°	14 46.7 -54.8 127.9	14 22.2 -54.7 126.9	13 57.4 -54.6 126.0	13 32.2 -54.4 125.1	13 06.8 -54.3 124.2
6°	13 51.9 -54.8 128.3	13 27.5 -54.7 127.4	13 02.8 -54.5 126.4	12 37.8 -54.4 125.5	12 12.5 -54.3 124.6
7°	12 57.1 -54.9 128.7	12 32.8 -54.7 127.8	12 08.3 -54.6 126.9	11 43.4 -54.5 125.9	11 18.2 -54.3 125.0
8°	12 02.2 -54.9 129.1	11 38.1 -54.8 128.2	11 13.7 -54.7 127.3	10 48.9 -54.5 126.4	10 23.9 -54.4 125.5
9°	11 07.3 -54.9 129.5	10 43.3 -54.8 128.6	10 19.0 -54.7 127.7	9 54.4 -54.5 126.8	9 29.5 -54.4 125.9
10°	10 12.4 -55.0 130.0	9 48.5 -54.8 129.0	9 24.3 -54.7 128.1	8 59.9 -54.6 127.2	8 35.1 -54.4 126.3
11°	9 17.4 -55.0 130.4	8 53.7 -54.9 129.5	8 29.6 -54.7 128.5	8 05.3 -54.6 127.6	7 40.7 -54.4 126.7
12°	8 22.4 -55.1 130.8	7 58.8 -54.9 129.9	7 34.9 -54.7 129.0	7 10.7 -54.6 128.1	6 46.3 -54.5 127.2
13°	7 27.3 -55.0 131.2	7 03.9 -54.9 130.3	6 40.2 -54.8 129.4	6 16.1 -54.6 128.5	5 51.8 -54.5 127.6
14°	6 32.3 -55.1 131.6	6 09.0 -54.9 130.7	5 45.4 -54.8 129.8	5 21.5 -54.7 128.9	4 57.3 -54.5 128.0
15°	5 37.2 -55.1 132.0	5 14.1 -55.0 131.1	4 50.6 -54.8 130.2	4 26.8 -54.6 129.3	4 02.8 -54.5 128.4
16°	4 42.1 -55.1 132.4	4 19.1 -55.0 131.5	3 55.8 -54.8 130.6	3 32.2 -54.7 129.7	3 08.3 -54.6 128.8
17°	3 47.0 -55.1 132.8	3 24.1 -54.9 131.9	3 01.0 -54.8 131.0	2 37.5 -54.7 130.1	2 13.7 -54.5 129.3
18°	2 51.9 -55.1 133.2	2 29.2 -55.0 132.3	2 06.2 -54.9 131.4	1 42.8 -54.7 130.5	1 19.2 -54.5 129.7
19°	1 56.8 -55.2 133.6	1 34.2 -55.0 132.7	1 11.3 -54.8 131.8	0 48.1 -54.6 131.0	0 24.7 -54.6 130.1
20°	1 01.6 -55.1 133.9	0 39.2 -55.0 133.1	0 16.5 -54.8 132.2	-0 06.5 -54.7	-0 29.9 -54.5
21°	0 06.5 -55.1 134.3	-0 15.8 -54.9	-0 38.3 -54.9	-1 01.2 -54.7	-1 24.4 -54.6
22°	-0 48.6 -55.2	-1 10.7 -55.0	-1 33.2 -54.8	-1 55.9 -54.7	-2 19.0 -54.5
23°	-1 43.8 -55.1	-2 05.7 -55.0	-2 28.0 -54.8	-2 50.6 -54.7	-3 13.5 -54.5
24°	-2 38.9 -55.1	-3 00.7 -55.0	-3 22.8 -54.8	-3 45.3 -54.6	-4 08.0 -54.5
25°	-3 34.0 -55.1	-3 55.7 -54.9	-4 17.6 -54.8	-4 39.9 -54.7	-5 02.5 -54.5
26°	-4 29.1 -55.1	-4 50.6 -55.0	-5 12.4 -54.8	-5 34.6 -54.6	-5 57.0 -54.5
27°	-5 24.2 -55.1	-5 45.6 -54.9	-6 07.2 -54.8	-6 29.2 -54.6	-6 51.5 -54.4
28°	-6 19.3 -55.0	-6 40.5 -54.9	-7 02.0 -54.7	-7 23.8 -54.6	-7 45.9 -54.5
29°	-7 14.3 -55.1	-7 35.4 -54.9	-7 56.7 -54.7	-8 18.4 -54.5	-8 40.4 -54.4

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°	17 10.9 -53.8 121.0	16 44.3 -53.7 120.0	16 17.4 -53.6 119.1	15 50.3 -53.5 118.2	15 23.0 -53.4 117.3
1°	16 17.1 -53.9 121.4	15 50.6 -53.8 120.5	15 23.8 -53.6 119.6	14 56.8 -53.5 118.6	14 29.6 -53.4 117.7
2°	15 23.2 -54.0 121.9	14 56.8 -53.9 121.0	14 30.2 -53.8 120.0	14 03.3 -53.6 119.1	13 36.2 -53.5 118.2
3°	14 29.2 -54.1 122.3	14 02.9 -53.9 121.4	13 36.4 -53.7 120.5	13 09.7 -53.7 119.6	12 42.7 -53.5 118.7
4°	13 35.1 -54.0 122.8	13 09.0 -53.9 121.9	12 42.7 -53.9 120.9	12 16.0 -53.7 120.0	11 49.2 -53.6 119.1
5°	12 41.1 -54.2 123.2	12 15.1 -54.0 122.3	11 48.8 -53.8 121.4	11 22.3 -53.7 120.5	10 55.6 -53.6 119.6
6°	11 46.9 -54.1 123.7	11 21.1 -54.0 122.8	10 55.0 -53.9 121.8	10 28.6 -53.8 120.9	10 02.0 -53.7 120.0
7°	10 52.8 -54.2 124.1	10 27.1 -54.1 123.2	10 01.1 -54.0 122.3	9 34.8 -53.8 121.4	9 08.3 -53.7 120.5
8°	9 58.6 -54.2 124.5	9 33.0 -54.1 123.6	9 07.1 -53.9 122.7	8 41.0 -53.8 121.8	8 14.6 -53.7 120.9
9°	9 04.4 -54.3 125.0	8 38.9 -54.1 124.1	8 13.2 -54.0 123.2	7 47.2 -53.9 122.3	7 20.9 -53.7 121.4
10°	8 10.1 -54.3 125.4	7 44.8 -54.2 124.5	7 19.2 -54.1 123.6	6 53.3 -53.9 122.7	6 27.2 -53.8 121.8
11°	7 15.8 -54.3 125.8	6 50.6 -54.2 125.0	6 25.1 -54.0 124.1	5 59.4 -53.9 123.2	5 33.4 -53.8 122.3
12°	6 21.5 -54.3 126.3	5 56.4 -54.2 125.4	5 31.1 -54.1 124.5	5 05.5 -53.9 123.6	4 39.6 -53.8 122.7
13°	5 27.2 -54.4 126.7	5 02.2 -54.2 125.8	4 37.0 -54.0 124.9	4 11.6 -54.0 124.1	3 45.8 -53.8 123.2
14°	4 32.8 -54.4 127.1	4 08.0 -54.2 126.2	3 43.0 -54.1 125.4	3 17.6 -53.9 124.5	2 52.0 -53.8 123.6
15°	3 38.4 -54.3 127.5	3 13.8 -54.3 126.7	2 48.9 -54.1 125.8	2 23.7 -54.0 124.9	1 58.2 -53.8 124.1
16°	2 44.1 -54.4 128.0	2 19.5 -54.2 127.1	1 54.8 -54.2 126.2	1 29.7 -54.0 125.4	1 04.4 -53.9 124.5
17°	1 49.7 -54.4 128.4	1 25.3 -54.3 127.5	1 00.6 -54.1 126.7	0 35.7 -54.0 125.8	0 10.5 -53.8 124.9
18°	0 55.3 -54.4 128.8	0 31.0 -54.2 128.0	0 06.5 -54.1 127.1	-0 18.3 -53.9	-0 43.3 -53.8
19°	0 00.9 -54.4 129.2	-0 23.2 -54.3	-0 47.6 -54.1	-1 12.2 -54.0	-1 37.1 -53.9
20°	-0 53.5 -54.4	-1 17.5 -54.2	-1 41.7 -54.1	-2 06.2 -54.0	-2 31.0 -53.8
21°	-1 47.9 -54.4	-2 11.7 -54.3	-2 35.8 -54.1	-3 00.2 -53.9	-3 24.8 -53.8
22°	-2 42.3 -54.4	-3 06.0 -54.2	-3 29.9 -54.1	-3 54.1 -53.9	-4 18.6 -53.8
23°	-3 36.7 -54.4	-4 00.2 -54.2	-4 24.0 -54.0	-4 48.0 -54.0	-5 12.4 -53.8
24°	-4 31.1 -54.3	-4 54.4 -54.2	-5 18.0 -54.1	-5 42.0 -53.9	-6 06.2 -53.7
25°	-5 25.4 -54.4	-5 48.6 -54.2	-6 12.1 -54.0	-6 35.9 -53.8	-6 59.9 -53.7
26°	-6 19.8 -54.3	-6 42.8 -54.2	-7 06.1 -54.0	-7 29.7 -53.9	-7 53.6 -53.7
27°	-7 14.1 -54.3	-7 37.0 -54.1	-8 00.1 -54.0	-8 23.6 -53.8	-8 47.3 -53.7
28°	-8 08.4 -54.2	-8 31.1 -54.1	-8 54.1 -53.9	-9 17.4 -53.8	-9 41.0 -53.6
29°	-9 02.6 -54.3	-9 25.2 -54.1	-9 48.0 -54.0		

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°	14 55.4 -53.3 116.3	14 27.6 -53.2 115.4	13 59.6 -53.1 114.5	13 31.3 -52.9 113.6	13 02.9 -52.8 112.7
1°	14 02.1 -53.3 116.8	13 34.4 -53.2 115.9	13 06.5 -53.1 115.0	12 38.4 -53.0 114.1	12 10.1 -52.9 113.2
2°	13 08.8 -53.4 117.3	12 41.2 -53.2 116.4	12 13.4 -53.1 115.5	11 45.4 -53.0 114.6	11 17.2 -52.9 113.7
3°	12 15.4 -53.4 117.7	11 48.0 -53.3 116.8	11 20.3 -53.2 115.9	10 52.4 -53.1 115.0	10 24.3 -53.0 114.1
4°	11 22.0 -53.4 118.2	10 54.7 -53.3 117.3	10 27.1 -53.2 116.4	9 59.3 -53.1 115.5	9 31.3 -52.9 114.6
5°	10 28.6 -53.5 118.7	10 01.4 -53.4 117.8	9 33.9 -53.2 116.9	9 06.2 -53.1 116.0	8 38.4 -53.1 115.1
6°	9 35.1 -53.5 119.1	9 08.0 -53.4 118.2	8 40.7 -53.3 117.3	8 13.1 -53.2 116.5	7 45.3 -53.0 115.6
7°	8 41.6 -53.6 119.6	8 14.6 -53.5 118.7	7 47.4 -53.4 117.8	7 19.9 -53.2 116.9	6 52.3 -53.1 116.0
8°	7 48.0 -53.6 120.0	7 21.1 -53.4 119.2	6 54.0 -53.3 118.3	6 26.7 -53.2 117.4	5 59.2 -53.2 116.5
9°	6 54.4 -53.6 120.5	6 27.7 -53.5 119.6	6 00.7 -53.4 118.7	5 33.5 -53.3 117.8	5 06.0 -53.1 117.0
10°	6 00.8 -53.6 121.0	5 34.2 -53.5 120.1	5 07.3 -53.4 119.2	4 40.2 -53.2 118.3	4 12.9 -53.1 117.4
11°	5 07.2 -53.7 121.4	4 40.7 -53.6 120.5	4 13.9 -53.4 119.6	3 47.0 -53.3 118.8	3 19.8 -53.2 117.9
12°	4 13.5 -53.7 121.9	3 47.1 -53.5 121.0	3 20.5 -53.4 120.1	2 53.7 -53.3 119.2	2 26.6 -53.2 118.4
13°	3 19.8 -53.6 122.3	2 53.6 -53.6 121.4	2 27.1 -53.4 120.6	2 00.4 -53.3 119.7	1 33.4 -53.2 118.8
14°	2 26.2 -53.7 122.7	2 00.0 -53.5 121.9	1 33.7 -53.5 121.0	1 07.1 -53.3 120.2	0 40.2 -53.1 119.3
15°	1 32.5 -53.7 123.2	1 06.5 -53.6 122.3	0 40.2 -53.4 121.5	0 13.8 -53.3 120.6	-0 12.9 -53.2
16°	0 38.8 -53.7 123.6	0 12.9 -53.6 122.8	-0 13.2 -53.4	-0 39.5 -53.4	-1 06.1 -53.2
17°	-0 14.9 -53.7	-0 40.7 -53.5	-1 06.6 -53.5	-1 32.9 -53.3	-1 59.3 -53.2
18°	-1 08.6 -53.7	-1 34.2 -53.6	-2 00.1 -53.4	-2 26.2 -53.2	-2 52.5 -53.1
19°	-2 02.3 -53.7	-2 27.8 -53.5	-2 53.5 -53.4	-3 19.4 -53.3	-3 45.6 -53.2
20°	-2 56.0 -53.7	-3 21.3 -53.6	-3 46.9 -53.4	-4 12.7 -53.3	-4 38.8 -53.1
21°	-3 49.7 -53.7	-4 14.9 -53.5	-4 40.3 -53.4	-5 06.0 -53.2	-5 31.9 -53.1
22°	-4 43.4 -53.6	-5 08.4 -53.5	-5 33.7 -53.3	-5 59.2 -53.2	-6 25.0 -53.1
23°	-5 37.0 -53.6	-6 01.9 -53.5	-6 27.0 -53.4	-6 52.4 -53.2	-7 18.1 -53.0
24°	-6 30.6 -53.6	-6 55.4 -53.4	-7 20.4 -53.3	-7 45.6 -53.2	-8 11.1 -53.1
25°	-7 24.2 -53.6	-7 48.8 -53.4	-8 13.7 -53.3	-8 38.8 -53.1	-9 04.2 -52.9
26°	-8 17.8 -53.6	-8 42.2 -53.4	-9 07.0 -53.2	-9 31.9 -53.1	-9 57.1 -53.0
27°	-9 11.4 -53.5	-9 35.6 -53.4			
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 34.3 -52.7 111.8	12 05.5 -52.6 110.9	11 36.6 -52.6 110.0	11 07.5 -52.5 109.1	10 38.2 -52.4 108.2
1°	11 41.6 -52.8 112.3	11 12.9 -52.7 111.4	10 44.0 -52.5 110.5	10 15.0 -52.5 109.6	9 45.8 -52.4 108.7
2°	10 48.8 -52.8 112.8	10 20.2 -52.7 111.9	9 51.5 -52.6 111.0	9 22.5 -52.5 110.1	8 53.4 -52.4 109.2
3°	9 56.0 -52.8 113.2	9 27.5 -52.7 112.4	8 58.9 -52.7 111.5	8 30.0 -52.6 110.6	8 01.0 -52.5 109.7
4°	9 03.2 -52.9 113.7	8 34.8 -52.8 112.8	8 06.2 -52.7 111.9	7 37.4 -52.5 111.1	7 08.5 -52.5 110.2
5°	8 10.3 -53.0 114.2	7 42.0 -52.8 113.3	7 13.5 -52.7 112.4	6 44.9 -52.7 111.5	6 16.0 -52.5 110.7
6°	7 17.3 -52.9 114.7	6 49.2 -52.9 113.8	6 20.8 -52.8 112.9	5 52.2 -52.6 112.0	5 23.5 -52.5 111.2
7°	6 24.4 -53.0 115.1	5 56.3 -52.9 114.3	5 28.0 -52.7 113.4	4 59.6 -52.7 112.5	4 31.0 -52.6 111.6
8°	5 31.4 -53.0 115.6	5 03.4 -52.9 114.7	4 35.3 -52.8 113.9	4 06.9 -52.7 113.0	3 38.4 -52.6 112.1
9°	4 38.4 -53.0 116.1	4 10.5 -52.9 115.2	3 42.5 -52.8 114.3	3 14.2 -52.7 113.5	2 45.8 -52.6 112.6
10°	3 45.4 -53.1 116.6	3 17.6 -52.9 115.7	2 49.7 -52.8 114.8	2 21.5 -52.7 114.0	1 53.2 -52.6 113.1
11°	2 52.3 -53.0 117.0	2 24.7 -52.9 116.2	1 56.9 -52.9 115.3	1 28.8 -52.7 114.4	1 00.6 -52.6 113.6
12°	1 59.3 -53.1 117.5	1 31.8 -53.0 116.6	1 04.0 -52.8 115.8	0 36.1 -52.7 114.9	0 08.0 -52.6 114.1
13°	1 06.2 -53.0 118.0	0 38.8 -52.9 117.1	0 11.2 -52.8 116.2	-0 16.6 -52.7	-0 44.6 -52.6
14°	0 13.2 -53.1 118.4	-0 14.1 -53.0	-0 41.6 -52.8	-1 09.3 -52.7	-1 37.2 -52.6
15°	-0 39.9 -53.1	-1 07.1 -52.9	-1 34.4 -52.9	-2 02.0 -52.7	-2 29.8 -52.6
16°	-1 33.0 -53.0	-2 00.0 -52.9	-2 27.3 -52.8	-2 54.7 -52.7	-3 22.4 -52.6
17°	-2 26.0 -53.0	-2 52.9 -52.9	-3 20.1 -52.8	-3 47.4 -52.7	-4 15.0 -52.5
18°	-3 19.0 -53.1	-3 45.8 -52.9	-4 12.9 -52.7	-4 40.1 -52.6	-5 07.5 -52.6
19°	-4 12.1 -53.0	-4 38.7 -52.9	-5 05.6 -52.8	-5 32.7 -52.7	-6 00.1 -52.5
20°	-5 05.1 -53.0	-5 31.6 -52.9	-5 58.4 -52.7	-6 25.4 -52.6	-6 52.6 -52.5
21°	-5 58.1 -53.0	-6 24.5 -52.8	-6 51.1 -52.7	-7 18.0 -52.6	-7 45.1 -52.4
22°	-6 51.1 -52.9	-7 17.3 -52.8	-7 43.8 -52.7	-8 10.6 -52.5	-8 37.5 -52.4
23°	-7 44.0 -52.9	-8 10.1 -52.8	-8 36.5 -52.6	-9 03.1 -52.5	-9 29.9 -52.4
24°	-8 36.9 -52.9	-9 02.9 -52.7	-9 29.1 -52.6	-9 55.6 -52.4	
25°	-9 29.8 -52.8	-9 55.6 -52.7			
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°	10 08.7 -52.2 107.3	9 39.2 -52.2 106.4	9 09.5 -52.1 105.6	8 39.6 -52.0 104.7	8 09.7 -52.0 103.8
1°	9 16.5 -52.3 107.8	8 47.0 -52.2 106.9	8 17.4 -52.2 106.1	7 47.6 -52.1 105.2	7 17.7 -52.0 104.3
2°	8 24.2 -52.4 108.3	7 54.8 -52.3 107.4	7 25.2 -52.2 106.6	6 55.5 -52.1 105.7	6 25.7 -52.0 104.8
3°	7 31.8 -52.4 108.8	7 02.5 -52.3 107.9	6 33.0 -52.2 107.1	6 03.4 -52.1 106.2	5 33.7 -52.1 105.3
4°	6 39.4 -52.4 109.3	6 10.2 -52.3 108.4	5 40.8 -52.2 107.6	5 11.3 -52.2 106.7	4 41.6 -52.1 105.8
5°	5 47.0 -52.4 109.8	5 17.9 -52.4 108.9	4 48.6 -52.3 108.1	4 19.1 -52.2 107.2	3 49.5 -52.1 106.3
6°	4 54.6 -52.5 110.3	4 25.5 -52.3 109.4	3 56.3 -52.3 108.5	3 26.9 -52.2 107.7	2 57.4 -52.1 106.8
7°	4 02.1 -52.4 110.8	3 33.2 -52.4 109.9	3 04.0 -52.3 109.0	2 34.7 -52.2 108.2	2 05.3 -52.1 107.3
8°	3 09.7 -52.5 111.3	2 40.8 -52.4 110.4	2 11.7 -52.3 109.5	1 42.5 -52.2 108.7	1 13.2 -52.1 107.8
9°	2 17.2 -52.5 111.7	1 48.4 -52.4 110.9	1 19.4 -52.3 110.0	0 50.3 -52.2 109.2	0 21.1 -52.2 108.3
10°	1 24.7 -52.5 112.2	0 56.0 -52.4 111.4	0 27.1 -52.3 110.5	-0 01.9 -52.2	-0 31.1 -52.1
11°	0 32.2 -52.5 112.7	0 03.6 -52.4 111.9	-0 25.2 -52.3	-0 54.1 -52.2	-1 23.2 -52.1
12°	-0 20.3 -52.5	-0 48.8 -52.4	-1 17.5 -52.3	-1 46.3 -52.2	-2 15.3 -52.1
13°	-1 12.8 -52.5	-1 41.2 -52.4	-2 09.8 -52.3	-2 38.5 -52.2	-3 07.4 -52.1
14°	-2 05.3 -52.5	-2 33.6 -52.4	-3 02.1 -52.3	-3 30.7 -52.2	-3 59.5 -52.1
15°	-2 57.8 -52.5	-3 26.0 -52.4	-3 54.4 -52.2	-4 22.9 -52.2	-4 51.6 -52.1
16°	-3 50.3 -52.4	-4 18.4 -52.3	-4 46.6 -52.3	-5 15.1 -52.1	-5 43.7 -52.0
17°	-4 42.7 -52.5	-5 10.7 -52.3	-5 38.9 -52.2	-6 07.2 -52.1	-6 35.7 -52.0
18°	-5 35.2 -52.4	-6 03.0 -52.3	-6 31.1 -52.2	-6 59.3 -52.1	-7 27.7 -52.0
19°	-6 27.6 -52.4	-6 55.3 -52.3	-7 23.3 -52.1	-7 51.4 -52.0	-8 19.7 -51.9
20°	-7 20.0 -52.3	-7 47.6 -52.2	-8 15.4 -52.1	-8 43.4 -52.0	-9 11.6 -51.9
21°	-8 12.3 -52.4	-8 39.8 -52.2	-9 07.5 -52.1	-9 35.4 -52.0	
22°	-9 04.7 -52.2	-9 32.0 -52.2	-9 59.6 -52.0		
23°	-9 56.9 -52.3				
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 39.6 -51.9 102.9	7 09.5 -51.9 102.1	6 39.2 -51.8 101.2	6 08.8 -51.7 100.3	5 38.4 -51.7 99.5
1°	6 47.7 -51.9 103.4	6 17.6 -51.9 102.6	5 47.4 -51.8 101.7	5 17.1 -51.8 100.8	4 46.7 -51.7 100.0
2°	5 55.8 -52.0 103.9	5 25.7 -51.9 103.1	4 55.6 -51.9 102.2	4 25.3 -51.8 101.3	3 55.0 -51.8 100.5
3°	5 03.8 -52.0 104.4	4 33.8 -51.9 103.6	4 03.7 -51.8 102.7	3 33.5 -51.8 101.8	3 03.2 -51.7 101.0
4°	4 11.8 -52.0 104.9	3 41.9 -51.9 104.1	3 11.9 -51.9 103.2	2 41.7 -51.8 102.4	2 11.5 -51.8 101.5
5°	3 19.8 -52.0 105.4	2 50.0 -52.0 104.6	2 20.0 -51.9 103.7	1 49.9 -51.8 102.9	1 19.7 -51.7 102.0
6°	2 27.8 -52.1 105.9	1 58.0 -52.0 105.1	1 28.1 -51.9 104.2	0 58.1 -51.8 103.4	0 28.0 -51.8 102.5
7°	1 35.7 -52.0 106.4	1 06.0 -51.9 105.6	0 36.2 -51.9 104.7	0 06.3 -51.9 103.9	-0 23.8 -51.8
8°	0 43.7 -52.1 106.9	0 14.1 -52.0 106.1	-0 15.7 -51.9	-0 45.6 -51.8	-1 15.6 -51.7
9°	-0 08.4 -52.0	-0 37.9 -52.0	-1 07.6 -51.9	-1 37.4 -51.8	-2 07.3 -51.8
10°	-1 00.4 -52.0	-1 29.9 -51.9	-1 59.5 -51.9	-2 29.2 -51.8	-2 59.1 -51.7
11°	-1 52.4 -52.1	-2 21.8 -52.0	-2 51.4 -51.8	-3 21.0 -51.8	-3 50.8 -51.7
12°	-2 44.5 -52.0	-3 13.8 -51.9	-3 43.2 -51.9	-4 12.8 -51.8	-4 42.5 -51.7
13°	-3 36.5 -52.0	-4 05.7 -51.9	-4 35.1 -51.8	-5 04.6 -51.7	-5 34.2 -51.7
14°	-4 28.5 -52.0	-4 57.6 -51.9	-5 26.9 -51.8	-5 56.3 -51.7	-6 25.9 -51.6
15°	-5 20.5 -52.0	-5 49.5 -51.9	-6 18.7 -51.8	-6 48.0 -51.7	-7 17.5 -51.6
16°	-6 12.5 -51.9	-6 41.4 -51.8	-7 10.5 -51.7	-7 39.7 -51.7	-8 09.1 -51.6
17°	-7 04.4 -51.9	-7 33.2 -51.8	-8 02.2 -51.7	-8 31.4 -51.6	-9 00.7 -51.5
18°	-7 56.3 -51.8	-8 25.0 -51.8	-8 53.9 -51.7	-9 23.0 -51.6	-9 52.2 -51.5
19°	-8 48.1 -51.9	-9 16.8 -51.7	-9 45.6 -51.6		
20°	-9 40.0 -51.7				
21°					
22°					
23°					
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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°	5 07.9 -51.7 98.6	4 37.3 -51.6 97.7	4 06.6 -51.5 96.9	3 35.9 -51.5 96.0	3 05.2 -51.5 95.1
1°	4 16.2 -51.6 99.1	3 45.7 -51.7 98.2	3 15.1 -51.6 97.4	2 44.4 -51.6 96.5	2 13.7 -51.6 95.7
2°	3 24.6 -51.7 99.6	2 54.0 -51.6 98.8	2 23.5 -51.6 97.9	1 52.8 -51.5 97.0	1 22.1 -51.5 96.2
3°	2 32.9 -51.7 100.1	2 02.4 -51.6 99.3	1 31.9 -51.6 98.4	1 01.3 -51.6 97.5	0 30.6 -51.5 96.7
4°	1 41.2 -51.7 100.6	1 10.8 -51.7 99.8	0 40.3 -51.6 98.9	0 09.7 -51.6 98.1	-0 20.9 -51.6
5°	0 49.5 -51.7 101.1	0 19.1 -51.7 100.3	-0 11.3 -51.7	-0 41.9 -51.5	-1 12.5 -51.5
6°	-0 02.2 -51.8	-0 32.6 -51.6	-1 03.0 -51.6	-1 33.4 -51.6	-2 04.0 -51.5
7°	-0 54.0 -51.7	-1 24.2 -51.7	-1 54.6 -51.6	-2 25.0 -51.5	-2 55.5 -51.5
8°	-1 45.7 -51.7	-2 15.9 -51.6	-2 46.2 -51.5	-3 16.5 -51.6	-3 47.0 -51.5
9°	-2 37.4 -51.6	-3 07.5 -51.6	-3 37.7 -51.6	-4 08.1 -51.5	-4 38.5 -51.4
10°	-3 29.0 -51.7	-3 59.1 -51.6	-4 29.3 -51.5	-4 59.6 -51.5	-5 29.9 -51.5
11°	-4 20.7 -51.7	-4 50.7 -51.6	-5 20.8 -51.6	-5 51.1 -51.4	-6 21.4 -51.4
12°	-5 12.4 -51.6	-5 42.3 -51.6	-6 12.4 -51.4	-6 42.5 -51.4	-7 12.8 -51.3
13°	-6 04.0 -51.6	-6 33.9 -51.5	-7 03.8 -51.5	-7 33.9 -51.4	-8 04.1 -51.4
14°	-6 55.6 -51.5	-7 25.4 -51.5	-7 55.3 -51.4	-8 25.3 -51.4	-8 55.5 -51.2
15°	-7 47.1 -51.5	-8 16.9 -51.4	-8 46.7 -51.4	-9 16.7 -51.3	-9 46.7 -51.3
16°	-8 38.6 -51.5	-9 08.3 -51.4	-9 38.1 -51.3		
17°	-9 30.1 -51.5	-9 59.7 -51.4			
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 34.4 -51.5 94.3	2 03.5 -51.4 93.4	1 32.7 -51.5 92.6	1 01.8 -51.4 91.7	0 30.9 -51.4 90.9
1°	1 42.9 -51.5 94.8	1 12.1 -51.5 93.9	0 41.2 -51.4 93.1	0 10.4 -51.5 92.2	-0 20.5 -51.5
2°	0 51.4 -51.5 95.3	0 20.6 -51.5 94.5	-0 10.2 -51.5	-0 41.1 -51.4	-1 12.0 -51.4
3°	-0 00.1 -51.5	-0 30.9 -51.5	-1 01.7 -51.4	-1 32.5 -51.5	-2 03.4 -51.4
4°	-0 51.6 -51.5	-1 22.4 -51.4	-1 53.1 -51.5	-2 24.0 -51.4	-2 54.8 -51.4
5°	-1 43.1 -51.5	-2 13.8 -51.5	-2 44.6 -51.4	-3 15.4 -51.4	-3 46.2 -51.4
6°	-2 34.6 -51.5	-3 05.3 -51.4	-3 36.0 -51.4	-4 06.8 -51.4	-4 37.6 -51.3
7°	-3 26.1 -51.4	-3 56.7 -51.4	-4 27.4 -51.4	-4 58.2 -51.3	-5 28.9 -51.4
8°	-4 17.5 -51.5	-4 48.1 -51.4	-5 18.8 -51.4	-5 49.5 -51.3	-6 20.3 -51.3
9°	-5 09.0 -51.4	-5 39.5 -51.4	-6 10.2 -51.3	-6 40.8 -51.3	-7 11.6 -51.2
10°	-6 00.4 -51.4	-6 30.9 -51.3	-7 01.5 -51.3	-7 32.1 -51.3	-8 02.8 -51.3
11°	-6 51.8 -51.3	-7 22.2 -51.3	-7 52.8 -51.2	-8 23.4 -51.2	-8 54.1 -51.2
12°	-7 43.1 -51.3	-8 13.5 -51.3	-8 44.0 -51.3	-9 14.6 -51.2	-9 45.3 -51.1
13°	-8 34.4 -51.3	-9 04.8 -51.2	-9 35.3 -51.1		
14°	-9 25.7 -51.2	-9 56.0 -51.2			
15°					
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Latitude 59°

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 -51.4 90.0	-0 30.9 -51.4			
1°	-0 51.4 -51.5	-1 22.3 -51.5			
2°	-1 42.9 -51.4	-2 13.8 -51.4			
3°	-2 34.3 -51.4	-3 05.2 -51.4			
4°	-3 25.7 -51.4	-3 56.6 -51.3			
5°	-4 17.1 -51.3	-4 47.9 -51.4			
6°	-5 08.4 -51.4	-5 39.3 -51.3			
7°	-5 59.8 -51.3	-6 30.6 -51.3			
8°	-6 51.1 -51.3	-7 21.9 -51.3			
9°	-7 42.4 -51.2	-8 13.2 -51.2			
10°	-8 33.6 -51.2	-9 04.4 -51.2			
11°	-9 24.8 -51.1	-9 55.6 -51.1			
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13°					
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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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