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Latitude 30° - 39°
Declination CONTRARY name to Latitude

Sight-Reduction Tables for Latitude 30° - 39°

Declination CONTRARY name to Latitude

Revision V1.2 - Apr2017

Warning and Terms of Usage:

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

Use these Tables only for training and exercising!

Compiled by Erik De Man (mail2erik@siranah.de) on Tue Apr 11 09:21:23 2017

Purpose and Scope

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

The tables on the following pages were calculated according to:

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

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

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

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

For practical Sight Reduction this manual is used as follows:

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

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

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

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	60 00.0 -60.0 180.0	59 59.1 -60.0 178.0	59 56.4 -59.9 176.0	59 51.9 -59.8 174.0	59 45.5 -59.5 172.0
1°	59 00.0 -60.0 180.0	58 59.1 -60.0 178.1	58 56.5 -59.9 176.1	58 52.1 -59.8 174.2	58 46.0 -59.6 172.3
2°	58 00.0 -60.0 180.0	57 59.1 -59.9 178.1	57 56.6 -59.9 176.2	57 52.3 -59.8 174.4	57 46.4 -59.7 172.5
3°	57 00.0 -60.0 180.0	56 59.2 -60.0 178.2	56 56.7 -59.9 176.3	56 52.5 -59.8 174.5	56 46.7 -59.6 172.7
4°	56 00.0 -60.0 180.0	55 59.2 -60.0 178.2	55 56.8 -59.9 176.4	55 52.7 -59.8 174.7	55 47.1 -59.7 172.9
5°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.3	54 56.9 -60.0 176.5	54 52.9 -59.8 174.8	54 47.4 -59.6 173.1
6°	54 00.0 -60.0 180.0	53 59.2 -59.9 178.3	53 56.9 -59.9 176.6	53 53.1 -59.8 174.9	53 47.8 -59.7 173.3
7°	53 00.0 -60.0 180.0	52 59.3 -60.0 178.4	52 57.0 -59.9 176.7	52 53.3 -59.9 175.1	52 48.1 -59.7 173.4
8°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.4	51 57.1 -59.9 176.8	51 53.4 -59.8 175.2	51 48.4 -59.8 173.6
9°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.4	50 57.2 -60.0 176.9	50 53.6 -59.8 175.3	50 48.6 -59.7 173.7
10°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.5	49 57.2 -59.9 176.9	49 53.8 -59.9 175.4	49 48.9 -59.7 173.9
11°	49 00.0 -60.0 180.0	48 59.3 -60.0 178.5	48 57.3 -60.0 177.0	48 53.9 -59.9 175.5	48 49.2 -59.8 174.0
12°	48 00.0 -60.0 180.0	47 59.3 -59.9 178.5	47 57.3 -59.9 177.1	47 54.0 -59.8 175.6	47 49.4 -59.7 174.2
13°	47 00.0 -60.0 180.0	46 59.4 -60.0 178.6	46 57.4 -59.9 177.1	46 54.2 -59.9 175.7	46 49.7 -59.8 174.3
14°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.6	45 57.5 -60.0 177.2	45 54.3 -59.9 175.8	45 49.9 -59.8 174.4
15°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.6	44 57.5 -59.9 177.3	44 54.4 -59.8 175.9	44 50.1 -59.8 174.5
16°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.7	43 57.6 -60.0 177.3	43 54.6 -59.9 176.0	43 50.3 -59.8 174.7
17°	43 00.0 -60.0 180.0	42 59.4 -60.0 178.7	42 57.6 -59.9 177.4	42 54.7 -59.9 176.1	42 50.5 -59.8 174.8
18°	42 00.0 -60.0 180.0	41 59.4 -60.0 178.7	41 57.7 -60.0 177.4	41 54.8 -59.9 176.2	41 50.7 -59.8 174.9
19°	41 00.0 -60.0 180.0	40 59.4 -60.0 178.7	40 57.7 -59.9 177.5	40 54.9 -59.9 176.2	40 50.9 -59.8 175.0
20°	40 00.0 -60.0 180.0	39 59.4 -59.9 178.8	39 57.8 -60.0 177.5	39 55.0 -59.9 176.3	39 51.1 -59.8 175.1
21°	39 00.0 -60.0 180.0	38 59.5 -60.0 178.8	38 57.8 -59.9 177.6	38 55.1 -59.9 176.4	38 51.3 -59.8 175.2
22°	38 00.0 -60.0 180.0	37 59.5 -60.0 178.8	37 57.9 -60.0 177.6	37 55.2 -59.9 176.5	37 51.5 -59.9 175.3
23°	37 00.0 -60.0 180.0	36 59.5 -60.0 178.8	36 57.9 -59.9 177.7	36 55.3 -59.9 176.5	36 51.6 -59.8 175.4
24°	36 00.0 -60.0 180.0	35 59.5 -60.0 178.9	35 58.0 -60.0 177.7	35 55.4 -59.9 176.6	35 51.8 -59.8 175.5
25°	35 00.0 -60.0 180.0	34 59.5 -60.0 178.9	34 58.0 -60.0 177.8	34 55.5 -59.9 176.7	34 52.0 -59.9 175.6
26°	34 00.0 -60.0 180.0	33 59.5 -60.0 178.9	33 58.0 -59.9 177.8	33 55.6 -59.9 176.8	33 52.1 -59.8 175.7
27°	33 00.0 -60.0 180.0	32 59.5 -60.0 178.9	32 58.1 -60.0 177.9	32 55.7 -59.9 176.8	32 52.3 -59.8 175.8
28°	32 00.0 -60.0 180.0	31 59.5 -60.0 179.0	31 58.1 -60.0 177.9	31 55.8 -60.0 176.9	31 52.5 -59.9 175.8
29°	31 00.0 -60.0 180.0	30 59.5 -60.0 179.0	30 58.1 -59.9 178.0	30 55.8 -59.9 176.9	30 52.6 -59.8 175.9

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	59 37.5 -59.4 170.1	59 27.6 -59.0 168.1	59 16.1 -58.7 166.2	59 02.9 -58.4 164.3	58 48.0 -58.0 162.4
1°	58 38.1 -59.4 170.4	58 28.6 -59.1 168.5	58 17.4 -58.9 166.6	58 04.5 -58.5 164.7	57 50.0 -58.1 162.9
2°	57 38.7 -59.4 170.6	57 29.5 -59.2 168.8	57 18.5 -58.8 167.0	57 06.0 -58.5 165.2	56 51.9 -58.1 163.4
3°	56 39.3 -59.4 170.9	56 30.3 -59.2 169.1	56 19.7 -59.0 167.3	56 07.5 -58.6 165.6	55 53.8 -58.3 163.8
4°	55 39.9 -59.5 171.1	55 31.1 -59.3 169.4	55 20.7 -58.9 167.7	55 08.9 -58.7 165.9	54 55.5 -58.3 164.2
5°	54 40.4 -59.5 171.4	54 31.8 -59.2 169.7	54 21.8 -59.1 168.0	54 10.2 -58.8 166.3	53 57.2 -58.5 164.6
6°	53 40.9 -59.5 171.6	53 32.6 -59.4 169.9	53 22.7 -59.0 168.3	53 11.4 -58.8 166.6	52 58.7 -58.5 165.0
7°	52 41.4 -59.6 171.8	52 33.2 -59.3 170.2	52 23.7 -59.2 168.6	52 12.6 -58.8 167.0	52 00.2 -58.5 165.4
8°	51 41.8 -59.5 172.0	51 33.9 -59.4 170.4	51 24.5 -59.1 168.8	51 13.8 -58.9 167.3	51 01.7 -58.6 165.7
9°	50 42.3 -59.6 172.2	50 34.5 -59.4 170.6	50 25.4 -59.2 169.1	50 14.9 -59.0 167.6	50 03.1 -58.7 166.1
10°	49 42.7 -59.6 172.4	49 35.1 -59.4 170.9	49 26.2 -59.2 169.4	49 15.9 -58.9 167.9	49 04.4 -58.8 166.4
11°	48 43.1 -59.6 172.5	48 35.7 -59.5 171.1	48 27.0 -59.3 169.6	48 17.0 -59.1 168.2	48 05.6 -58.7 166.7
12°	47 43.5 -59.6 172.7	47 36.2 -59.4 171.3	47 27.7 -59.3 169.8	47 17.9 -59.0 168.4	47 06.9 -58.8 167.0
13°	46 43.9 -59.7 172.9	46 36.8 -59.5 171.5	46 28.4 -59.3 170.1	46 18.9 -59.1 168.7	46 08.1 -58.9 167.3
14°	45 44.2 -59.6 173.0	45 37.3 -59.5 171.7	45 29.1 -59.3 170.3	45 19.8 -59.2 168.9	45 09.2 -58.9 167.6
15°	44 44.6 -59.7 173.2	44 37.8 -59.5 171.8	44 29.8 -59.3 170.5	44 20.6 -59.1 169.2	44 10.3 -59.0 167.8
16°	43 44.9 -59.7 173.3	43 38.3 -59.6 172.0	43 30.5 -59.4 170.7	43 21.5 -59.2 169.4	43 11.3 -58.9 168.1
17°	42 45.2 -59.7 173.5	42 38.7 -59.5 172.2	42 31.1 -59.4 170.9	42 22.3 -59.2 169.6	42 12.4 -59.0 168.3
18°	41 45.5 -59.7 173.6	41 39.2 -59.6 172.4	41 31.7 -59.4 171.1	41 23.1 -59.2 169.8	41 13.4 -59.1 168.6
19°	40 45.8 -59.7 173.8	40 39.6 -59.6 172.5	40 32.3 -59.4 171.3	40 23.9 -59.3 170.0	40 14.3 -59.0 168.8
20°	39 46.1 -59.7 173.9	39 40.0 -59.5 172.7	39 32.9 -59.5 171.5	39 24.6 -59.3 170.3	39 15.3 -59.1 169.1
21°	38 46.4 -59.7 174.0	38 40.5 -59.6 172.8	38 33.4 -59.4 171.6	38 25.3 -59.3 170.5	38 16.2 -59.1 169.3
22°	37 46.7 -59.7 174.1	37 40.9 -59.7 173.0	37 34.0 -59.5 171.8	37 26.0 -59.3 170.6	37 17.1 -59.2 169.5
23°	36 47.0 -59.8 174.3	36 41.2 -59.6 173.1	36 34.5 -59.5 172.0	36 26.7 -59.3 170.8	36 17.9 -59.1 169.7
24°	35 47.2 -59.7 174.4	35 41.6 -59.6 173.2	35 35.0 -59.5 172.1	35 27.4 -59.4 171.0	35 18.8 -59.2 169.9
25°	34 47.5 -59.8 174.5	34 42.0 -59.7 173.4	34 35.5 -59.5 172.3	34 28.0 -59.3 171.2	34 19.6 -59.2 170.1
26°	33 47.7 -59.7 174.6	33 42.3 -59.6 173.5	33 36.0 -59.5 172.4	33 28.7 -59.4 171.4	33 20.4 -59.2 170.3
27°	32 48.0 -59.8 174.7	32 42.7 -59.7 173.6	32 36.5 -59.6 172.6	32 29.3 -59.4 171.5	32 21.2 -59.2 170.5
28°	31 48.2 -59.7 174.8	31 43.0 -59.6 173.8	31 36.9 -59.5 172.7	31 29.9 -59.4 171.7	31 22.0 -59.3 170.7
29°	30 48.5 -59.8 174.9	30 43.4 -59.7 173.9	30 37.4 -59.6 172.9	30 30.5 -59.4 171.9	30 22.7 -59.2 170.9

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	58 31.5 -57.5 160.6	58 13.4 -57.0 158.8	57 53.9 -56.6 157.0	57 32.8 -56.0 155.2	57 10.3 -55.4 153.5
1°	57 34.0 -57.7 161.1	57 16.4 -57.2 159.3	56 57.3 -56.7 157.6	56 36.8 -56.2 155.9	56 14.9 -55.7 154.2
2°	56 36.3 -57.8 161.6	56 19.2 -57.4 159.9	56 00.6 -56.9 158.2	55 40.6 -56.4 156.5	55 19.2 -55.9 154.9
3°	55 38.5 -57.8 162.1	55 21.8 -57.4 160.4	55 03.7 -57.0 158.7	54 44.2 -56.6 157.1	54 23.3 -56.1 155.5
4°	54 40.7 -58.0 162.6	54 24.4 -57.6 160.9	54 06.7 -57.2 159.3	53 47.6 -56.7 157.7	53 27.2 -56.2 156.1
5°	53 42.7 -58.1 163.0	53 26.8 -57.7 161.4	53 09.5 -57.3 159.8	52 50.9 -56.9 158.2	52 31.0 -56.4 156.7
6°	52 44.6 -58.2 163.4	52 29.1 -57.8 161.8	52 12.2 -57.4 160.3	51 54.0 -57.0 158.7	51 34.6 -56.6 157.2
7°	51 46.4 -58.2 163.8	51 31.3 -57.9 162.3	51 14.8 -57.5 160.8	50 57.0 -57.1 159.2	50 38.0 -56.7 157.8
8°	50 48.2 -58.3 164.2	50 33.4 -58.0 162.7	50 17.3 -57.6 161.2	49 59.9 -57.2 159.7	49 41.3 -56.8 158.3
9°	49 49.9 -58.4 164.6	49 35.4 -58.0 163.1	49 19.7 -57.7 161.6	49 02.7 -57.3 160.2	48 44.5 -57.0 158.8
10°	48 51.5 -58.4 164.9	48 37.4 -58.2 163.5	48 22.0 -57.8 162.0	48 05.4 -57.5 160.6	47 47.5 -57.0 159.2
11°	47 53.1 -58.5 165.3	47 39.2 -58.2 163.9	47 24.2 -57.9 162.5	47 07.9 -57.5 161.1	46 50.5 -57.2 159.7
12°	46 54.6 -58.6 165.6	46 41.0 -58.2 164.2	46 26.3 -57.9 162.8	46 10.4 -57.6 161.5	45 53.3 -57.3 160.1
13°	45 56.0 -58.6 165.9	45 42.8 -58.3 164.6	45 28.4 -58.1 163.2	45 12.8 -57.7 161.9	44 56.0 -57.3 160.6
14°	44 57.4 -58.6 166.2	44 44.5 -58.4 164.9	44 30.3 -58.1 163.6	44 15.1 -57.8 162.3	43 58.7 -57.5 161.0
15°	43 58.8 -58.7 166.5	43 46.1 -58.5 165.2	43 32.2 -58.1 163.9	43 17.3 -57.9 162.6	43 01.2 -57.5 161.4
16°	43 00.1 -58.8 166.8	42 47.6 -58.4 165.5	42 34.1 -58.2 164.3	42 19.4 -57.9 163.0	42 03.7 -57.6 161.7
17°	42 01.3 -58.8 167.1	41 49.2 -58.6 165.8	41 35.9 -58.3 164.6	41 21.5 -57.9 163.3	41 06.1 -57.7 162.1
18°	41 02.5 -58.8 167.4	40 50.6 -58.5 166.1	40 37.6 -58.3 164.9	40 23.6 -58.1 163.7	40 08.4 -57.7 162.5
19°	40 03.7 -58.8 167.6	39 52.1 -58.7 166.4	39 39.3 -58.4 165.2	39 25.5 -58.1 164.0	39 10.7 -57.8 162.8
20°	39 04.9 -58.9 167.9	38 53.4 -58.6 166.7	38 40.9 -58.4 165.5	38 27.4 -58.1 164.3	38 12.9 -57.9 163.2
21°	38 06.0 -58.9 168.1	37 54.8 -58.7 167.0	37 42.5 -58.4 165.8	37 29.3 -58.2 164.7	37 15.0 -57.9 163.5
22°	37 07.1 -58.9 168.4	36 56.1 -58.7 167.2	36 44.1 -58.5 166.1	36 31.1 -58.2 165.0	36 17.1 -57.9 163.8
23°	36 08.2 -59.0 168.6	35 57.4 -58.8 167.5	35 45.6 -58.5 166.4	35 32.9 -58.3 165.3	35 19.2 -58.0 164.2
24°	35 09.2 -59.0 168.8	34 58.6 -58.8 167.7	34 47.1 -58.6 166.6	34 34.6 -58.3 165.5	34 21.2 -58.1 164.5
25°	34 10.2 -59.0 169.0	33 59.8 -58.8 168.0	33 48.5 -58.6 166.9	33 36.3 -58.4 165.8	33 23.1 -58.1 164.8
26°	33 11.2 -59.0 169.3	33 01.0 -58.8 168.2	32 49.9 -58.6 167.2	32 37.9 -58.4 166.1	32 25.0 -58.1 165.1
27°	32 12.2 -59.1 169.5	32 02.2 -58.9 168.4	31 51.3 -58.6 167.4	31 39.5 -58.4 166.4	31 26.9 -58.2 165.4
28°	31 13.1 -59.1 169.7	31 03.3 -58.8 168.7	30 52.7 -58.7 167.6	30 41.1 -58.4 166.6	30 28.7 -58.2 165.6
29°	30 14.0 -59.1 169.9	30 04.5 -59.0 168.9	29 54.0 -58.7 167.9	29 42.7 -58.5 166.9	29 30.5 -58.3 165.9

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°	56 46.4 -54.8 151.8	56 21.2 -54.2 150.2	55 54.8 -53.7 148.6	55 27.0 -53.0 147.0	54 58.1 -52.4 145.4
1°	55 51.6 -55.2 152.5	55 27.0 -54.6 150.9	55 01.1 -54.0 149.3	54 34.0 -53.4 147.8	54 05.7 -52.8 146.3
2°	54 56.4 -55.3 153.2	54 32.4 -54.8 151.7	54 07.1 -54.2 150.1	53 40.6 -53.7 148.6	53 12.9 -53.0 147.1
3°	54 01.1 -55.6 153.9	53 37.6 -55.0 152.3	53 12.9 -54.5 150.8	52 46.9 -53.9 149.3	52 19.9 -53.4 147.9
4°	53 05.5 -55.7 154.5	52 42.6 -55.3 153.0	52 18.4 -54.8 151.5	51 53.0 -54.2 150.0	51 26.5 -53.7 148.6
5°	52 09.8 -56.0 155.1	51 47.3 -55.4 153.6	51 23.6 -54.9 152.2	50 58.8 -54.4 150.7	50 32.8 -53.9 149.3
6°	51 13.8 -56.1 155.7	50 51.9 -55.7 154.3	50 28.7 -55.1 152.8	50 04.4 -54.7 151.4	49 38.9 -54.1 150.0
7°	50 17.7 -56.2 156.3	49 56.2 -55.8 154.8	49 33.6 -55.4 153.4	49 09.7 -54.8 152.0	48 44.8 -54.3 150.7
8°	49 21.5 -56.5 156.8	49 00.4 -55.9 155.4	48 38.2 -55.5 154.0	48 14.9 -55.0 152.6	47 50.5 -54.6 151.3
9°	48 25.0 -56.5 157.3	48 04.5 -56.2 156.0	47 42.7 -55.7 154.6	47 19.9 -55.3 153.2	46 55.9 -54.7 151.9
10°	47 28.5 -56.7 157.8	47 08.3 -56.2 156.5	46 47.0 -55.8 155.1	46 24.6 -55.3 153.8	46 01.2 -54.9 152.5
11°	46 31.8 -56.7 158.3	46 12.1 -56.4 157.0	45 51.2 -55.9 155.7	45 29.3 -55.6 154.4	45 06.3 -55.1 153.1
12°	45 35.1 -56.9 158.8	45 15.7 -56.5 157.5	44 55.3 -56.1 156.2	44 33.7 -55.6 154.9	44 11.2 -55.3 153.6
13°	44 38.2 -57.0 159.2	44 19.2 -56.6 158.0	43 59.2 -56.3 156.7	43 38.1 -55.9 155.4	43 15.9 -55.4 154.2
14°	43 41.2 -57.1 159.7	43 22.6 -56.7 158.4	43 02.9 -56.3 157.2	42 42.2 -55.9 155.9	42 20.5 -55.5 154.7
15°	42 44.1 -57.2 160.1	42 25.9 -56.9 158.9	42 06.6 -56.5 157.6	41 46.3 -56.1 156.4	41 25.0 -55.7 155.2
16°	41 46.9 -57.3 160.5	41 29.0 -56.9 159.3	41 10.1 -56.5 158.1	40 50.2 -56.1 156.9	40 29.3 -55.7 155.7
17°	40 49.6 -57.3 160.9	40 32.1 -57.0 159.7	40 13.6 -56.7 158.5	39 54.1 -56.3 157.3	39 33.6 -55.9 156.2
18°	39 52.3 -57.4 161.3	39 35.1 -57.1 160.1	39 16.9 -56.7 158.9	38 57.8 -56.4 157.8	38 37.7 -56.0 156.6
19°	38 54.9 -57.5 161.7	38 38.0 -57.1 160.5	38 20.2 -56.8 159.4	38 01.4 -56.5 158.2	37 41.7 -56.2 157.1
20°	37 57.4 -57.6 162.0	37 40.9 -57.3 160.9	37 23.4 -56.9 159.8	37 04.9 -56.5 158.7	36 45.5 -56.2 157.6
21°	36 59.8 -57.6 162.4	36 43.6 -57.3 161.3	36 26.5 -57.0 160.2	36 08.4 -56.7 159.1	35 49.3 -56.3 158.0
22°	36 02.2 -57.7 162.7	35 46.3 -57.4 161.6	35 29.5 -57.1 160.6	35 11.7 -56.7 159.5	34 53.0 -56.4 158.4
23°	35 04.5 -57.7 163.1	34 48.9 -57.4 162.0	34 32.4 -57.1 160.9	34 15.0 -56.8 159.9	33 56.6 -56.4 158.8
24°	34 06.8 -57.8 163.4	33 51.5 -57.5 162.3	33 35.3 -57.2 161.3	33 18.2 -56.9 160.3	33 00.2 -56.6 159.2
25°	33 09.0 -57.8 163.7	32 54.0 -57.6 162.7	32 38.1 -57.3 161.7	32 21.3 -57.0 160.6	32 03.6 -56.6 159.6
26°	32 11.2 -57.9 164.0	31 56.4 -57.6 163.0	31 40.8 -57.3 162.0	31 24.3 -57.0 161.0	31 07.0 -56.7 160.0
27°	31 13.3 -57.9 164.4	30 58.8 -57.6 163.4	30 43.5 -57.3 162.4	30 27.3 -57.0 161.4	30 10.3 -56.7 160.4
28°	30 15.4 -58.0 164.7	30 01.2 -57.7 163.7	29 46.2 -57.5 162.7	29 30.3 -57.1 161.7	29 13.6 -56.8 160.8
29°	29 17.4 -58.0 165.0	29 03.5 -57.8 164.0	28 48.7 -57.4 163.0	28 33.2 -57.2 162.1	28 16.8 -56.9 161.1

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°	54 28.1 -51.8 143.9	53 57.0 -51.2 142.5	53 24.8 -50.5 141.1	52 51.7 -49.9 139.7	52 17.6 -49.3 138.3
1°	53 36.3 -52.2 144.8	53 05.8 -51.5 143.4	52 34.3 -50.9 142.0	52 01.8 -50.3 140.6	51 28.3 -49.7 139.2
2°	52 44.1 -52.4 145.6	52 14.3 -51.9 144.2	51 43.4 -51.3 142.8	51 11.5 -50.7 141.5	50 38.6 -50.0 140.1
3°	51 51.7 -52.8 146.4	51 22.4 -52.2 145.0	50 52.1 -51.6 143.6	50 20.8 -51.0 142.3	49 48.6 -50.5 141.0
4°	50 58.9 -53.1 147.2	50 30.2 -52.5 145.8	50 00.5 -52.0 144.4	49 29.8 -51.4 143.1	48 58.1 -50.8 141.8
5°	50 05.8 -53.4 147.9	49 37.7 -52.8 146.6	49 08.5 -52.2 145.2	48 38.4 -51.7 143.9	48 07.3 -51.1 142.6
6°	49 12.4 -53.6 148.6	48 44.9 -53.1 147.3	48 16.3 -52.6 146.0	47 46.7 -52.0 144.7	47 16.2 -51.5 143.4
7°	48 18.8 -53.8 149.3	47 51.8 -53.3 148.0	47 23.7 -52.8 146.7	46 54.7 -52.2 145.4	46 24.7 -51.7 144.2
8°	47 25.0 -54.1 150.0	46 58.5 -53.6 148.7	46 30.9 -53.0 147.4	46 02.5 -52.6 146.1	45 33.0 -52.0 144.9
9°	46 30.9 -54.2 150.6	46 04.9 -53.7 149.3	45 37.9 -53.3 148.1	45 09.9 -52.7 146.8	44 41.0 -52.2 145.6
10°	45 36.7 -54.5 151.2	45 11.2 -54.0 150.0	44 44.6 -53.4 148.7	44 17.2 -53.0 147.5	43 48.8 -52.5 146.3
11°	44 42.2 -54.6 151.8	44 17.2 -54.2 150.6	43 51.2 -53.7 149.3	43 24.2 -53.2 148.1	42 56.3 -52.7 146.9
12°	43 47.6 -54.8 152.4	43 23.0 -54.3 151.2	42 57.5 -53.9 150.0	42 31.0 -53.4 148.8	42 03.6 -52.9 147.6
13°	42 52.8 -55.0 152.9	42 28.7 -54.5 151.7	42 03.6 -54.1 150.6	41 37.6 -53.6 149.4	41 10.7 -53.1 148.2
14°	41 57.8 -55.1 153.5	41 34.2 -54.7 152.3	41 09.5 -54.2 151.1	40 44.0 -53.8 150.0	40 17.6 -53.4 148.8
15°	41 02.7 -55.2 154.0	40 39.5 -54.8 152.9	40 15.3 -54.4 151.7	39 50.2 -53.9 150.6	39 24.2 -53.4 149.4
16°	40 07.5 -55.4 154.5	39 44.7 -55.0 153.4	39 20.9 -54.5 152.2	38 56.3 -54.1 151.1	38 30.8 -53.7 150.0
17°	39 12.1 -55.5 155.0	38 49.7 -55.1 153.9	38 26.4 -54.7 152.8	38 02.2 -54.3 151.7	37 37.1 -53.8 150.6
18°	38 16.6 -55.6 155.5	37 54.6 -55.2 154.4	37 31.7 -54.8 153.3	37 07.9 -54.4 152.2	36 43.3 -54.0 151.1
19°	37 21.0 -55.8 156.0	36 59.4 -55.4 154.9	36 36.9 -54.9 153.8	36 13.5 -54.5 152.7	35 49.3 -54.1 151.7
20°	36 25.2 -55.8 156.5	36 04.0 -55.4 155.4	35 42.0 -55.1 154.3	35 19.0 -54.7 153.3	34 55.2 -54.3 152.2
21°	35 29.4 -55.9 156.9	35 08.6 -55.6 155.8	34 46.9 -55.2 154.8	34 24.3 -54.7 153.8	34 00.9 -54.3 152.7
22°	34 33.5 -56.1 157.4	34 13.0 -55.6 156.3	33 51.7 -55.3 155.3	33 29.6 -54.9 154.3	33 06.6 -54.5 153.2
23°	33 37.4 -56.1 157.8	33 17.4 -55.8 156.8	32 56.4 -55.4 155.7	32 34.7 -55.0 154.7	32 12.1 -54.6 153.7
24°	32 41.3 -56.2 158.2	32 21.6 -55.8 157.2	32 01.0 -55.4 156.2	31 39.7 -55.1 155.2	31 17.5 -54.8 154.2
25°	31 45.1 -56.3 158.6	31 25.8 -56.0 157.6	31 05.6 -55.6 156.6	30 44.6 -55.2 155.7	30 22.7 -54.8 154.7
26°	30 48.8 -56.3 159.0	30 29.8 -56.0 158.0	30 10.0 -55.7 157.1	29 49.4 -55.3 156.1	29 27.9 -54.9 155.2
27°	29 52.5 -56.4 159.4	29 33.8 -56.1 158.5	29 14.3 -55.7 157.5	28 54.1 -55.4 156.6	28 33.0 -55.0 155.6
28°	28 56.1 -56.5 159.8	28 37.7 -56.1 158.9	28 18.6 -55.8 157.9	27 58.7 -55.5 157.0	27 38.0 -55.1 156.1
29°	27 59.6 -56.6 160.2	27 41.6 -56.3 159.3	27 22.8 -55.9 158.3	27 03.2 -55.5 157.4	26 42.9 -55.2 156.5

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°	51 42.6 -48.6 137.0	51 06.7 -48.0 135.7	50 30.1 -47.5 134.5	49 52.6 -46.8 133.2	49 14.4 -46.2 132.1
1°	50 54.0 -49.1 137.9	50 18.7 -48.4 136.7	49 42.6 -47.8 135.4	49 05.8 -47.3 134.2	48 28.2 -46.7 133.0
2°	50 04.9 -49.5 138.8	49 30.3 -48.9 137.6	48 54.8 -48.3 136.3	48 18.5 -47.7 135.1	47 41.5 -47.1 134.0
3°	49 15.4 -49.9 139.7	48 41.4 -49.3 138.5	48 06.5 -48.7 137.2	47 30.8 -48.1 136.0	46 54.4 -47.6 134.9
4°	48 25.5 -50.2 140.6	47 52.1 -49.7 139.3	47 17.8 -49.1 138.1	46 42.7 -48.5 136.9	46 06.8 -47.9 135.8
5°	47 35.3 -50.5 141.4	47 02.4 -50.0 140.1	46 28.7 -49.4 138.9	45 54.2 -48.9 137.8	45 18.9 -48.3 136.6
6°	46 44.8 -50.9 142.2	46 12.4 -50.3 141.0	45 39.3 -49.8 139.8	45 05.3 -49.2 138.6	44 30.6 -48.7 137.5
7°	45 53.9 -51.2 142.9	45 22.1 -50.6 141.7	44 49.5 -50.1 140.6	44 16.1 -49.5 139.4	43 41.9 -49.0 138.3
8°	45 02.7 -51.5 143.7	44 31.5 -50.9 142.5	43 59.4 -50.4 141.3	43 26.6 -49.9 140.2	42 52.9 -49.3 139.1
9°	44 11.2 -51.7 144.4	43 40.6 -51.3 143.2	43 09.0 -50.7 142.1	42 36.7 -50.2 140.9	42 03.6 -49.7 139.8
10°	43 19.5 -52.0 145.1	42 49.3 -51.4 143.9	42 18.3 -50.9 142.8	41 46.5 -50.4 141.7	41 13.9 -49.9 140.6
11°	42 27.5 -52.2 145.8	41 57.9 -51.7 144.6	41 27.4 -51.2 143.5	40 56.1 -50.7 142.4	40 24.0 -50.2 141.3
12°	41 35.3 -52.4 146.4	41 06.2 -52.0 145.3	40 36.2 -51.5 144.2	40 05.4 -50.9 143.1	39 33.8 -50.4 142.0
13°	40 42.9 -52.7 147.1	40 14.2 -52.1 146.0	39 44.7 -51.6 144.9	39 14.5 -51.2 143.8	38 43.4 -50.7 142.7
14°	39 50.2 -52.8 147.7	39 22.1 -52.4 146.6	38 53.1 -51.9 145.5	38 23.3 -51.4 144.5	37 52.7 -50.9 143.4
15°	38 57.4 -53.0 148.3	38 29.7 -52.6 147.2	38 01.2 -52.1 146.2	37 31.9 -51.7 145.1	37 01.8 -51.2 144.1
16°	38 04.4 -53.2 148.9	37 37.1 -52.7 147.9	37 09.1 -52.3 146.8	36 40.2 -51.8 145.8	36 10.6 -51.3 144.7
17°	37 11.2 -53.4 149.5	36 44.4 -52.9 148.5	36 16.8 -52.5 147.4	35 48.4 -52.0 146.4	35 19.3 -51.6 145.4
18°	36 17.8 -53.6 150.1	35 51.5 -53.1 149.0	35 24.3 -52.6 148.0	34 56.4 -52.2 147.0	34 27.7 -51.7 146.0
19°	35 24.2 -53.6 150.6	34 58.4 -53.3 149.6	34 31.7 -52.8 148.6	34 04.2 -52.3 147.6	33 36.0 -51.9 146.6
20°	34 30.6 -53.9 151.2	34 05.1 -53.4 150.2	33 38.9 -53.0 149.2	33 11.9 -52.6 148.2	32 44.1 -52.1 147.2
21°	33 36.7 -54.1 151.7	33 11.7 -53.5 150.7	32 45.9 -53.1 149.7	32 19.3 -52.6 148.8	31 52.0 -52.2 147.8
22°	32 42.8 -54.1 152.2	32 18.2 -53.7 151.3	31 52.8 -53.2 150.3	31 26.7 -52.8 149.3	30 59.8 -52.4 148.4
23°	31 48.7 -54.2 152.8	31 24.5 -53.8 151.8	30 59.6 -53.4 150.8	30 33.9 -53.0 149.9	30 07.4 -52.5 148.9
24°	30 54.5 -54.3 153.3	30 30.7 -53.9 152.3	30 06.2 -53.5 151.4	29 40.9 -53.1 150.4	29 14.9 -52.7 149.5
25°	30 00.2 -54.5 153.8	29 36.8 -54.0 152.8	29 12.7 -53.7 151.9	28 47.8 -53.2 151.0	28 22.2 -52.8 150.0
26°	29 05.7 -54.5 154.2	28 42.8 -54.2 153.3	28 19.0 -53.7 152.4	27 54.6 -53.3 151.5	27 29.4 -52.9 150.6
27°	28 11.2 -54.6 154.7	27 48.6 -54.2 153.8	27 25.3 -53.8 152.9	27 01.3 -53.5 152.0	26 36.5 -53.0 151.1
28°	27 16.6 -54.8 155.2	26 54.4 -54.4 154.3	26 31.5 -54.0 153.4	26 07.8 -53.5 152.5	25 43.5 -53.2 151.6
29°	26 21.8 -54.8 155.6	26 00.0 -54.4 154.7	25 37.5 -54.0 153.9	25 14.3 -53.7 153.0	24 50.3 -53.2 152.1

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°	48 35.4 -45.6 130.9	47 55.8 -45.0 129.8	47 15.6 -44.5 128.7	46 34.7 -43.9 127.6	45 53.2 -43.3 126.5
1°	47 49.8 -46.1 131.9	47 10.8 -45.5 130.7	46 31.1 -45.0 129.6	45 50.8 -44.4 128.6	45 09.9 -43.9 127.5
2°	47 03.7 -46.5 132.8	46 25.3 -46.0 131.7	45 46.1 -45.4 130.6	45 06.4 -44.9 129.5	44 26.0 -44.3 128.5
3°	46 17.2 -47.0 133.7	45 39.3 -46.4 132.6	45 00.7 -45.8 131.5	44 21.5 -45.3 130.5	43 41.7 -44.8 129.4
4°	45 30.2 -47.4 134.6	44 52.9 -46.8 133.5	44 14.9 -46.3 132.4	43 36.2 -45.7 131.4	42 56.9 -45.2 130.4
5°	44 42.8 -47.7 135.5	44 06.1 -47.3 134.4	43 28.6 -46.7 133.3	42 50.5 -46.2 132.3	42 11.7 -45.6 131.2
6°	43 55.1 -48.2 136.3	43 18.8 -47.5 135.3	42 41.9 -47.0 134.2	42 04.3 -46.5 133.1	41 26.1 -46.0 132.1
7°	43 06.9 -48.4 137.2	42 31.3 -48.0 136.1	41 54.9 -47.4 135.0	41 17.8 -46.9 134.0	40 40.1 -46.4 133.0
8°	42 18.5 -48.8 138.0	41 43.3 -48.2 136.9	41 07.5 -47.8 135.8	40 30.9 -47.2 134.8	39 53.7 -46.7 133.8
9°	41 29.7 -49.1 138.8	40 55.1 -48.6 137.7	40 19.7 -48.0 136.6	39 43.7 -47.5 135.6	39 07.0 -47.0 134.6
10°	40 40.6 -49.4 139.5	40 06.5 -48.9 138.5	39 31.7 -48.4 137.4	38 56.2 -47.9 136.4	38 20.0 -47.4 135.4
11°	39 51.2 -49.7 140.3	39 17.6 -49.2 139.2	38 43.3 -48.7 138.2	38 08.3 -48.2 137.2	37 32.6 -47.6 136.2
12°	39 01.5 -50.0 141.0	38 28.4 -49.4 139.9	37 54.6 -48.9 138.9	37 20.1 -48.4 137.9	36 45.0 -48.0 136.9
13°	38 11.5 -50.2 141.7	37 39.0 -49.7 140.7	37 05.7 -49.2 139.7	36 31.7 -48.7 138.7	35 57.0 -48.2 137.7
14°	37 21.3 -50.4 142.4	36 49.3 -50.0 141.4	36 16.5 -49.5 140.4	35 43.0 -49.0 139.4	35 08.8 -48.4 138.4
15°	36 30.9 -50.7 143.1	35 59.3 -50.2 142.1	35 27.0 -49.7 141.1	34 54.0 -49.2 140.1	34 20.4 -48.8 139.1
16°	35 40.2 -50.8 143.7	35 09.1 -50.3 142.7	34 37.3 -49.9 141.8	34 04.8 -49.4 140.8	33 31.6 -48.9 139.8
17°	34 49.4 -51.1 144.4	34 18.8 -50.7 143.4	33 47.4 -50.1 142.4	33 15.4 -49.7 141.5	32 42.7 -49.2 140.5
18°	33 58.3 -51.3 145.0	33 28.1 -50.8 144.0	32 57.3 -50.3 143.1	32 25.7 -49.8 142.1	31 53.5 -49.4 141.2
19°	33 07.0 -51.4 145.6	32 37.3 -50.9 144.7	32 07.0 -50.6 143.7	31 35.9 -50.1 142.8	31 04.1 -49.6 141.9
20°	32 15.6 -51.6 146.2	31 46.4 -51.2 145.3	31 16.4 -50.7 144.4	30 45.8 -50.2 143.4	30 14.5 -49.7 142.5
21°	31 24.0 -51.8 146.8	30 55.2 -51.3 145.9	30 25.7 -50.9 145.0	29 55.6 -50.4 144.1	29 24.8 -50.0 143.2
22°	30 32.2 -52.0 147.4	30 03.9 -51.5 146.5	29 34.8 -51.0 145.6	29 05.2 -50.6 144.7	28 34.8 -50.1 143.8
23°	29 40.2 -52.1 148.0	29 12.4 -51.7 147.1	28 43.8 -51.2 146.2	28 14.6 -50.8 145.3	27 44.7 -50.3 144.4
24°	28 48.1 -52.2 148.6	28 20.7 -51.8 147.7	27 52.6 -51.4 146.8	27 23.8 -50.9 145.9	26 54.4 -50.5 145.1
25°	27 55.9 -52.4 149.1	27 28.9 -51.9 148.3	27 01.2 -51.5 147.4	26 32.9 -51.1 146.5	26 03.9 -50.6 145.7
26°	27 03.5 -52.4 149.7	26 37.0 -52.1 148.8	26 09.7 -51.6 148.0	25 41.8 -51.2 147.1	25 13.3 -50.8 146.3
27°	26 11.1 -52.7 150.2	25 44.9 -52.2 149.4	25 18.1 -51.7 148.5	24 50.6 -51.3 147.7	24 22.5 -50.8 146.8
28°	25 18.4 -52.7 150.8	24 52.7 -52.3 149.9	24 26.4 -51.9 149.1	23 59.3 -51.4 148.2	23 31.7 -51.0 147.4
29°	24 25.7 -52.8 151.3	24 00.4 -52.4 150.5	23 34.5 -52.0 149.6	23 07.9 -51.6 148.8	22 40.7 -51.2 148.0

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	45 11.2 -42.8 125.5	44 28.7 -42.4 124.5	43 45.6 -41.8 123.6	43 02.1 -41.3 122.6	42 18.1 -40.8 121.7
1°	44 28.4 -43.3 126.5	43 46.3 -42.8 125.5	43 03.8 -42.3 124.6	42 20.8 -41.8 123.6	41 37.3 -41.4 122.7
2°	43 45.1 -43.8 127.5	43 03.5 -43.2 126.5	42 21.5 -42.8 125.5	41 39.0 -42.3 124.6	40 55.9 -41.7 123.6
3°	43 01.3 -44.3 128.4	42 20.3 -43.8 127.4	41 38.7 -43.2 126.5	40 56.7 -42.7 125.5	40 14.2 -42.3 124.6
4°	42 17.0 -44.7 129.3	41 36.5 -44.1 128.4	40 55.5 -43.6 127.4	40 14.0 -43.2 126.4	39 31.9 -42.6 125.5
5°	41 32.3 -45.0 130.2	40 52.4 -44.6 129.3	40 11.9 -44.1 128.3	39 30.8 -43.5 127.3	38 49.3 -43.1 126.4
6°	40 47.3 -45.5 131.1	40 07.8 -44.9 130.1	39 27.8 -44.5 129.2	38 47.3 -44.0 128.2	38 06.2 -43.5 127.3
7°	40 01.8 -45.9 132.0	39 22.9 -45.4 131.0	38 43.3 -44.8 130.0	38 03.3 -44.3 129.1	37 22.7 -43.8 128.2
8°	39 15.9 -46.2 132.8	38 37.5 -45.7 131.8	37 58.5 -45.2 130.9	37 19.0 -44.7 130.0	36 38.9 -44.3 129.0
9°	38 29.7 -46.5 133.6	37 51.8 -46.0 132.7	37 13.3 -45.5 131.7	36 34.3 -45.1 130.8	35 54.6 -44.5 129.9
10°	37 43.2 -46.8 134.4	37 05.8 -46.4 133.5	36 27.8 -45.9 132.5	35 49.2 -45.3 131.6	35 10.1 -44.9 130.7
11°	36 56.4 -47.2 135.2	36 19.4 -46.6 134.3	35 41.9 -46.1 133.3	35 03.9 -45.7 132.4	34 25.2 -45.2 131.5
12°	36 09.2 -47.4 136.0	35 32.8 -47.0 135.0	34 55.8 -46.5 134.1	34 18.2 -46.0 133.2	33 40.0 -45.5 132.3
13°	35 21.8 -47.8 136.7	34 45.8 -47.2 135.8	34 09.3 -46.7 134.9	33 32.2 -46.3 134.0	32 54.5 -45.8 133.1
14°	34 34.0 -47.9 137.5	33 58.6 -47.5 136.5	33 22.6 -47.0 135.6	32 45.9 -46.5 134.7	32 08.7 -46.0 133.8
15°	33 46.1 -48.3 138.2	33 11.1 -47.7 137.3	32 35.6 -47.3 136.4	31 59.4 -46.8 135.5	31 22.7 -46.3 134.6
16°	32 57.8 -48.5 138.9	32 23.4 -48.0 138.0	31 48.3 -47.5 137.1	31 12.6 -47.0 136.2	30 36.4 -46.6 135.3
17°	32 09.3 -48.7 139.6	31 35.4 -48.3 138.7	31 00.8 -47.8 137.8	30 25.6 -47.3 136.9	29 49.8 -46.8 136.1
18°	31 20.6 -48.9 140.3	30 47.1 -48.4 139.4	30 13.0 -47.9 138.5	29 38.3 -47.5 137.6	29 03.0 -47.0 136.8
19°	30 31.7 -49.1 141.0	29 58.7 -48.6 140.1	29 25.1 -48.2 139.2	28 50.8 -47.7 138.3	28 16.0 -47.2 137.5
20°	29 42.6 -49.3 141.6	29 10.1 -48.9 140.8	28 36.9 -48.4 139.9	28 03.1 -47.9 139.0	27 28.8 -47.5 138.2
21°	28 53.3 -49.5 142.3	28 21.2 -49.0 141.4	27 48.5 -48.6 140.6	27 15.2 -48.1 139.7	26 41.3 -47.6 138.9
22°	28 03.8 -49.7 142.9	27 32.2 -49.2 142.1	26 59.9 -48.7 141.2	26 27.1 -48.3 140.4	25 53.7 -47.8 139.6
23°	27 14.1 -49.8 143.6	26 43.0 -49.4 142.7	26 11.2 -49.0 141.9	25 38.8 -48.5 141.0	25 05.9 -48.1 140.2
24°	26 24.3 -50.0 144.2	25 53.6 -49.6 143.4	25 22.2 -49.0 142.5	24 50.3 -48.6 141.7	24 17.8 -48.1 140.9
25°	25 34.3 -50.2 144.8	25 04.0 -49.7 144.0	24 33.2 -49.3 143.2	24 01.7 -48.8 142.3	23 29.7 -48.4 141.5
26°	24 44.1 -50.3 145.4	24 14.3 -49.8 144.6	23 43.9 -49.4 143.8	23 12.9 -48.9 143.0	22 41.3 -48.5 142.2
27°	23 53.8 -50.4 146.0	23 24.5 -50.0 145.2	22 54.5 -49.5 144.4	22 24.0 -49.1 143.6	21 52.8 -48.6 142.8
28°	23 03.4 -50.6 146.6	22 34.5 -50.2 145.8	22 05.0 -49.7 145.0	21 34.9 -49.2 144.2	21 04.2 -48.8 143.5
29°	22 12.8 -50.7 147.2	21 44.3 -50.2 146.4	21 15.3 -49.8 145.6	20 45.7 -49.4 144.8	20 15.4 -48.9 144.1

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°	41 33.6 -40.3 120.8	40 48.8 -39.9 119.9	40 03.6 -39.5 119.0	39 18.0 -39.1 118.2	38 32.0 -38.6 117.4
1°	40 53.3 -40.8 121.8	40 08.9 -40.4 120.9	39 24.1 -39.9 120.0	38 38.9 -39.5 119.2	37 53.4 -39.1 118.3
2°	40 12.5 -41.3 122.7	39 28.5 -40.8 121.9	38 44.2 -40.4 121.0	37 59.4 -39.9 120.1	37 14.3 -39.5 119.3
3°	39 31.2 -41.8 123.7	38 47.7 -41.3 122.8	38 03.8 -40.8 121.9	37 19.5 -40.4 121.1	36 34.8 -40.0 120.2
4°	38 49.4 -42.2 124.6	38 06.4 -41.7 123.7	37 23.0 -41.3 122.9	36 39.1 -40.8 122.0	35 54.8 -40.3 121.2
5°	38 07.2 -42.6 125.5	37 24.7 -42.2 124.6	36 41.7 -41.7 123.8	35 58.3 -41.2 122.9	35 14.5 -40.8 122.1
6°	37 24.6 -43.0 126.4	36 42.5 -42.5 125.5	36 00.0 -42.0 124.7	35 17.1 -41.6 123.8	34 33.7 -41.2 123.0
7°	36 41.6 -43.4 127.3	36 00.0 -42.9 126.4	35 18.0 -42.5 125.5	34 35.5 -42.0 124.7	33 52.5 -41.5 123.9
8°	35 58.2 -43.7 128.1	35 17.1 -43.2 127.3	34 35.5 -42.8 126.4	33 53.5 -42.4 125.6	33 11.0 -41.9 124.7
9°	35 14.5 -44.1 129.0	34 33.9 -43.6 128.1	33 52.7 -43.1 127.2	33 11.1 -42.6 126.4	32 29.1 -42.2 125.6
10°	34 30.4 -44.4 129.8	33 50.3 -44.0 128.9	33 09.6 -43.5 128.1	32 28.5 -43.0 127.2	31 46.9 -42.6 126.4
11°	33 46.0 -44.7 130.6	33 06.3 -44.2 129.8	32 26.1 -43.7 128.9	31 45.5 -43.3 128.1	31 04.3 -42.8 127.2
12°	33 01.3 -45.0 131.4	32 22.1 -44.5 130.6	31 42.4 -44.1 129.7	31 02.2 -43.7 128.9	30 21.5 -43.2 128.1
13°	32 16.3 -45.3 132.2	31 37.6 -44.9 131.3	30 58.3 -44.4 130.5	30 18.5 -43.9 129.7	29 38.3 -43.4 128.9
14°	31 31.0 -45.6 133.0	30 52.7 -45.1 132.1	30 13.9 -44.6 131.3	29 34.6 -44.1 130.5	28 54.9 -43.8 129.6
15°	30 45.4 -45.8 133.7	30 07.6 -45.4 132.9	29 29.3 -44.9 132.1	28 50.5 -44.5 131.2	28 11.1 -43.9 130.4
16°	29 59.6 -46.1 134.5	29 22.2 -45.6 133.6	28 44.4 -45.2 132.8	28 06.0 -44.7 132.0	27 27.2 -44.3 131.2
17°	29 13.5 -46.3 135.2	28 36.6 -45.8 134.4	27 59.2 -45.4 133.6	27 21.3 -44.9 132.8	26 42.9 -44.4 132.0
18°	28 27.2 -46.6 135.9	27 50.8 -46.1 135.1	27 13.8 -45.6 134.3	26 36.4 -45.2 133.5	25 58.5 -44.7 132.7
19°	27 40.6 -46.8 136.7	27 04.7 -46.3 135.8	26 28.2 -45.8 135.0	25 51.2 -45.3 134.2	25 13.8 -45.0 133.4
20°	26 53.8 -46.9 137.4	26 18.4 -46.5 136.6	25 42.4 -46.1 135.7	25 05.9 -45.6 135.0	24 28.8 -45.1 134.2
21°	26 06.9 -47.2 138.1	25 31.9 -46.7 137.3	24 56.3 -46.2 136.5	24 20.3 -45.8 135.7	23 43.7 -45.3 134.9
22°	25 19.7 -47.4 138.7	24 45.2 -46.9 137.9	24 10.1 -46.4 137.2	23 34.5 -46.0 136.4	22 58.4 -45.5 135.6
23°	24 32.3 -47.5 139.4	23 58.3 -47.1 138.6	23 23.7 -46.7 137.8	22 48.5 -46.1 137.1	22 12.9 -45.7 136.3
24°	23 44.8 -47.7 140.1	23 11.2 -47.3 139.3	22 37.0 -46.8 138.5	22 02.4 -46.4 137.8	21 27.2 -45.9 137.0
25°	22 57.1 -47.9 140.8	22 23.9 -47.4 140.0	21 50.2 -46.9 139.2	21 16.0 -46.5 138.5	20 41.3 -46.0 137.7
26°	22 09.2 -48.0 141.4	21 36.5 -47.6 140.6	21 03.3 -47.1 139.9	20 29.5 -46.6 139.1	19 55.3 -46.2 138.4
27°	21 21.2 -48.2 142.1	20 48.9 -47.7 141.3	20 16.2 -47.3 140.5	19 42.9 -46.8 139.8	19 09.1 -46.3 139.1
28°	20 33.0 -48.3 142.7	20 01.2 -47.8 141.9	19 28.9 -47.4 141.2	18 56.1 -46.9 140.5	18 22.8 -46.5 139.7
29°	19 44.7 -48.5 143.3	19 13.4 -48.0 142.6	18 41.5 -47.5 141.8	18 09.2 -47.1 141.1	17 36.3 -46.6 140.4

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	37 45.7 -38.2 116.6	36 59.0 -37.8 115.8	36 12.1 -37.4 115.0	35 24.9 -37.1 114.2	34 37.3 -36.6 113.5
1°	37 07.5 -38.7 117.5	36 21.2 -38.2 116.7	35 34.7 -37.9 116.0	34 47.8 -37.5 115.2	34 00.7 -37.2 114.5
2°	36 28.8 -39.1 118.5	35 43.0 -38.7 117.7	34 56.8 -38.3 116.9	34 10.3 -37.9 116.1	33 23.5 -37.5 115.4
3°	35 49.7 -39.5 119.4	35 04.3 -39.1 118.6	34 18.5 -38.7 117.8	33 32.4 -38.3 117.1	32 46.0 -38.0 116.3
4°	35 10.2 -40.0 120.4	34 25.2 -39.6 119.6	33 39.8 -39.1 118.8	32 54.1 -38.7 118.0	32 08.0 -38.3 117.2
5°	34 30.2 -40.3 121.3	33 45.6 -39.9 120.5	33 00.7 -39.5 119.7	32 15.4 -39.2 118.9	31 29.7 -38.7 118.1
6°	33 49.9 -40.7 122.2	33 05.7 -40.3 121.4	32 21.2 -39.9 120.6	31 36.2 -39.4 119.8	30 51.0 -39.1 119.0
7°	33 09.2 -41.1 123.0	32 25.4 -40.7 122.2	31 41.3 -40.3 121.5	30 56.8 -39.9 120.7	30 11.9 -39.4 119.9
8°	32 28.1 -41.5 123.9	31 44.7 -41.0 123.1	31 01.0 -40.6 122.3	30 16.9 -40.1 121.5	29 32.5 -39.8 120.8
9°	31 46.6 -41.8 124.8	31 03.7 -41.3 124.0	30 20.4 -40.9 123.2	29 36.8 -40.5 122.4	28 52.7 -40.1 121.6
10°	31 04.8 -42.1 125.6	30 22.4 -41.7 124.8	29 39.5 -41.2 124.0	28 56.3 -40.9 123.3	28 12.6 -40.4 122.5
11°	30 22.7 -42.4 126.4	29 40.7 -42.0 125.6	28 58.3 -41.6 124.9	28 15.4 -41.1 124.1	27 32.2 -40.7 123.3
12°	29 40.3 -42.7 127.2	28 58.7 -42.2 126.5	28 16.7 -41.8 125.7	27 34.3 -41.4 124.9	26 51.5 -41.0 124.2
13°	28 57.6 -43.0 128.1	28 16.5 -42.6 127.3	27 34.9 -42.1 126.5	26 52.9 -41.7 125.7	26 10.5 -41.2 125.0
14°	28 14.6 -43.3 128.8	27 33.9 -42.8 128.1	26 52.8 -42.4 127.3	26 11.2 -41.9 126.5	25 29.3 -41.5 125.8
15°	27 31.3 -43.5 129.6	26 51.1 -43.1 128.8	26 10.4 -42.6 128.1	25 29.3 -42.2 127.3	24 47.8 -41.8 126.6
16°	26 47.8 -43.8 130.4	26 08.0 -43.3 129.6	25 27.8 -42.9 128.9	24 47.1 -42.4 128.1	24 06.0 -42.0 127.4
17°	26 04.0 -44.0 131.2	25 24.7 -43.6 130.4	24 44.9 -43.1 129.6	24 04.7 -42.7 128.9	23 24.0 -42.2 128.1
18°	25 20.0 -44.2 131.9	24 41.1 -43.8 131.2	24 01.8 -43.4 130.4	23 22.0 -42.9 129.7	22 41.8 -42.5 128.9
19°	24 35.8 -44.5 132.7	23 57.3 -44.0 131.9	23 18.4 -43.5 131.2	22 39.1 -43.1 130.4	21 59.3 -42.6 129.7
20°	23 51.3 -44.6 133.4	23 13.3 -44.2 132.6	22 34.9 -43.8 131.9	21 56.0 -43.3 131.2	21 16.7 -42.9 130.4
21°	23 06.7 -44.9 134.1	22 29.1 -44.4 133.4	21 51.1 -43.9 132.6	21 12.7 -43.5 131.9	20 33.8 -43.1 131.2
22°	22 21.8 -45.1 134.9	21 44.7 -44.6 134.1	21 07.2 -44.2 133.4	20 29.2 -43.7 132.6	19 50.7 -43.2 131.9
23°	21 36.7 -45.2 135.6	21 00.1 -44.7 134.8	20 23.0 -44.3 134.1	19 45.5 -43.9 133.4	19 07.5 -43.4 132.7
24°	20 51.5 -45.4 136.3	20 15.4 -45.0 135.5	19 38.7 -44.5 134.8	19 01.6 -44.0 134.1	18 24.1 -43.6 133.4
25°	20 06.1 -45.6 137.0	19 30.4 -45.1 136.2	18 54.2 -44.6 135.5	18 17.6 -44.2 134.8	17 40.5 -43.7 134.1
26°	19 20.5 -45.7 137.7	18 45.3 -45.3 136.9	18 09.6 -44.8 136.2	17 33.4 -44.3 135.5	16 56.8 -43.9 134.8
27°	18 34.8 -45.9 138.3	18 00.0 -45.4 137.6	17 24.8 -45.0 136.9	16 49.1 -44.5 136.2	16 12.9 -44.0 135.5
28°	17 48.9 -46.0 139.0	17 14.6 -45.5 138.3	16 39.8 -45.0 137.6	16 04.6 -44.6 136.9	15 28.9 -44.2 136.3
29°	17 02.9 -46.1 139.7	16 29.1 -45.7 139.0	15 54.8 -45.3 138.3	15 20.0 -44.8 137.6	14 44.7 -44.3 137.0

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°	33 49.6 -36.4 112.8	33 01.5 -36.0 112.0	32 13.2 -35.6 111.3	31 24.7 -35.3 110.6	30 36.0 -35.1 110.0
1°	33 13.2 -36.7 113.7	32 25.5 -36.4 113.0	31 37.6 -36.1 112.3	30 49.4 -35.8 111.6	30 00.9 -35.4 110.9
2°	32 36.5 -37.2 114.7	31 49.1 -36.8 113.9	31 01.5 -36.5 113.2	30 13.6 -36.2 112.5	29 25.5 -35.9 111.8
3°	31 59.3 -37.6 115.6	31 12.3 -37.3 114.9	30 25.0 -36.9 114.1	29 37.4 -36.5 113.4	28 49.6 -36.2 112.8
4°	31 21.7 -38.0 116.5	30 35.0 -37.6 115.8	29 48.1 -37.2 115.1	29 00.9 -36.9 114.4	28 13.4 -36.5 113.7
5°	30 43.7 -38.3 117.4	29 57.4 -37.9 116.7	29 10.9 -37.6 116.0	28 24.0 -37.2 115.3	27 36.9 -36.9 114.6
6°	30 05.4 -38.7 118.3	29 19.5 -38.3 117.6	28 33.3 -38.0 116.8	27 46.8 -37.6 116.1	27 00.0 -37.3 115.4
7°	29 26.7 -39.0 119.2	28 41.2 -38.7 118.4	27 55.3 -38.3 117.7	27 09.2 -37.9 117.0	26 22.7 -37.5 116.3
8°	28 47.7 -39.4 120.0	28 02.5 -39.0 119.3	27 17.0 -38.5 118.6	26 31.3 -38.2 117.9	25 45.2 -37.9 117.2
9°	28 08.3 -39.7 120.9	27 23.5 -39.3 120.2	26 38.5 -38.9 119.5	25 53.1 -38.6 118.7	25 07.3 -38.1 118.0
10°	27 28.6 -40.0 121.8	26 44.2 -39.5 121.0	25 59.6 -39.2 120.3	25 14.5 -38.8 119.6	24 29.2 -38.4 118.9
11°	26 48.6 -40.3 122.6	26 04.7 -39.9 121.9	25 20.4 -39.5 121.1	24 35.7 -39.1 120.4	23 50.8 -38.7 119.7
12°	26 08.3 -40.5 123.4	25 24.8 -40.2 122.7	24 40.9 -39.8 122.0	23 56.6 -39.3 121.3	23 12.1 -39.0 120.6
13°	25 27.8 -40.9 124.2	24 44.6 -40.4 123.5	24 01.1 -40.0 122.8	23 17.3 -39.6 122.1	22 33.1 -39.2 121.4
14°	24 46.9 -41.0 125.0	24 04.2 -40.7 124.3	23 21.1 -40.2 123.6	22 37.7 -39.9 122.9	21 53.9 -39.5 122.2
15°	24 05.9 -41.4 125.8	23 23.5 -40.9 125.1	22 40.9 -40.5 124.4	21 57.8 -40.1 123.7	21 14.4 -39.7 123.0
16°	23 24.5 -41.6 126.6	22 42.6 -41.1 125.9	22 00.4 -40.8 125.2	21 17.7 -40.3 124.5	20 34.7 -39.9 123.8
17°	22 42.9 -41.8 127.4	22 01.5 -41.4 126.7	21 19.6 -40.9 126.0	20 37.4 -40.5 125.3	19 54.8 -40.1 124.6
18°	22 01.1 -42.0 128.2	21 20.1 -41.6 127.5	20 38.7 -41.2 126.8	19 56.9 -40.7 126.1	19 14.7 -40.3 125.4
19°	21 19.1 -42.2 129.0	20 38.5 -41.8 128.3	19 57.5 -41.3 127.6	19 16.2 -41.0 126.9	18 34.4 -40.5 126.2
20°	20 36.9 -42.4 129.7	19 56.7 -41.9 129.0	19 16.2 -41.6 128.3	18 35.2 -41.1 127.6	17 53.9 -40.7 127.0
21°	19 54.5 -42.6 130.5	19 14.8 -42.2 129.8	18 34.6 -41.7 129.1	17 54.1 -41.3 128.4	17 13.2 -40.9 127.7
22°	19 11.9 -42.8 131.2	18 32.6 -42.4 130.5	17 52.9 -41.9 129.9	17 12.8 -41.5 129.2	16 32.3 -41.0 128.5
23°	18 29.1 -43.0 132.0	17 50.2 -42.5 131.3	17 11.0 -42.1 130.6	16 31.3 -41.6 129.9	15 51.3 -41.2 129.3
24°	17 46.1 -43.1 132.7	17 07.7 -42.6 132.0	16 28.9 -42.2 131.3	15 49.7 -41.8 130.7	15 10.1 -41.3 130.0
25°	17 03.0 -43.3 133.4	16 25.1 -42.9 132.8	15 46.7 -42.4 132.1	15 07.9 -41.9 131.4	14 28.8 -41.5 130.8
26°	16 19.7 -43.4 134.2	15 42.2 -42.9 133.5	15 04.3 -42.5 132.8	14 26.0 -42.1 132.2	13 47.3 -41.6 131.5
27°	15 36.3 -43.6 134.9	14 59.3 -43.2 134.2	14 21.8 -42.6 133.5	13 43.9 -42.2 132.9	13 05.7 -41.8 132.3
28°	14 52.7 -43.7 135.6	14 16.1 -43.2 134.9	13 39.2 -42.8 134.3	13 01.7 -42.3 133.6	12 23.9 -41.8 133.0
29°	14 09.0 -43.8 136.3	13 32.9 -43.3 135.6	12 56.4 -42.9 135.0	12 19.4 -42.4 134.4	11 42.1 -42.0 133.7

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°	29 47.0 -34.7 109.3	28 57.9 -34.5 108.6	28 08.6 -34.2 108.0	27 19.1 -34.0 107.4	26 29.4 -33.7 106.7
1°	29 12.3 -35.2 110.2	28 23.4 -34.8 109.6	27 34.4 -34.6 108.9	26 45.1 -34.3 108.3	25 55.7 -34.1 107.6
2°	28 37.1 -35.5 111.2	27 48.6 -35.3 110.5	26 59.8 -34.9 109.8	26 10.8 -34.6 109.2	25 21.6 -34.3 108.6
3°	28 01.6 -35.9 112.1	27 13.3 -35.5 111.4	26 24.9 -35.3 110.7	25 36.2 -35.0 110.1	24 47.3 -34.7 109.5
4°	27 25.7 -36.2 113.0	26 37.8 -36.0 112.3	25 49.6 -35.6 111.6	25 01.2 -35.3 111.0	24 12.6 -35.1 110.4
5°	26 49.5 -36.6 113.9	26 01.8 -36.2 113.2	25 14.0 -35.9 112.5	24 25.9 -35.6 111.9	23 37.5 -35.3 111.2
6°	26 12.9 -36.9 114.8	25 25.6 -36.5 114.1	24 38.1 -36.3 113.4	23 50.3 -36.0 112.8	23 02.2 -35.6 112.1
7°	25 36.0 -37.2 115.6	24 49.1 -36.9 115.0	24 01.8 -36.5 114.3	23 14.3 -36.2 113.6	22 26.6 -35.9 113.0
8°	24 58.8 -37.5 116.5	24 12.2 -37.1 115.8	23 25.3 -36.8 115.2	22 38.1 -36.4 114.5	21 50.7 -36.1 113.9
9°	24 21.3 -37.7 117.4	23 35.1 -37.5 116.7	22 48.5 -37.1 116.0	22 01.7 -36.8 115.4	21 14.6 -36.4 114.7
10°	23 43.6 -38.1 118.2	22 57.6 -37.7 117.5	22 11.4 -37.3 116.9	21 24.9 -37.0 116.2	20 38.2 -36.7 115.6
11°	23 05.5 -38.3 119.1	22 19.9 -37.9 118.4	21 34.1 -37.6 117.7	20 47.9 -37.2 117.1	20 01.5 -36.9 116.4
12°	22 27.2 -38.6 119.9	21 42.0 -38.2 119.2	20 56.5 -37.9 118.6	20 10.7 -37.5 117.9	19 24.6 -37.1 117.3
13°	21 48.6 -38.8 120.7	21 03.8 -38.5 120.0	20 18.6 -38.0 119.4	19 33.2 -37.7 118.7	18 47.5 -37.3 118.1
14°	21 09.8 -39.1 121.5	20 25.3 -38.7 120.9	19 40.6 -38.3 120.2	18 55.5 -37.9 119.6	18 10.2 -37.6 118.9
15°	20 30.7 -39.3 122.3	19 46.6 -38.9 121.7	19 02.3 -38.5 121.0	18 17.6 -38.1 120.4	17 32.6 -37.8 119.7
16°	19 51.4 -39.5 123.2	19 07.7 -39.1 122.5	18 23.8 -38.8 121.8	17 39.5 -38.4 121.2	16 54.8 -37.9 120.5
17°	19 11.9 -39.7 124.0	18 28.6 -39.3 123.3	17 45.0 -38.9 122.6	17 01.1 -38.5 122.0	16 16.9 -38.1 121.4
18°	18 32.2 -39.9 124.7	17 49.3 -39.5 124.1	17 06.1 -39.1 123.4	16 22.6 -38.7 122.8	15 38.8 -38.3 122.2
19°	17 52.3 -40.1 125.5	17 09.8 -39.6 124.9	16 27.0 -39.2 124.2	15 43.9 -38.9 123.6	15 00.5 -38.5 123.0
20°	17 12.2 -40.3 126.3	16 30.2 -39.9 125.7	15 47.8 -39.5 125.0	15 05.0 -39.0 124.4	14 22.0 -38.6 123.7
21°	16 31.9 -40.4 127.1	15 50.3 -40.0 126.4	15 08.3 -39.6 125.8	14 26.0 -39.2 125.2	13 43.4 -38.8 124.5
22°	15 51.5 -40.6 127.9	15 10.3 -40.2 127.2	14 28.7 -39.7 126.6	13 46.8 -39.3 125.9	13 04.6 -38.9 125.3
23°	15 10.9 -40.8 128.6	14 30.1 -40.3 128.0	13 49.0 -39.9 127.3	13 07.5 -39.5 126.7	12 25.7 -39.1 126.1
24°	14 30.1 -40.9 129.4	13 49.8 -40.5 128.7	13 09.1 -40.0 128.1	12 28.0 -39.6 127.5	11 46.6 -39.1 126.9
25°	13 49.2 -41.0 130.1	13 09.3 -40.6 129.5	12 29.1 -40.2 128.9	11 48.4 -39.7 128.3	11 07.5 -39.3 127.7
26°	13 08.2 -41.2 130.9	12 28.7 -40.7 130.3	11 48.9 -40.3 129.6	11 08.7 -39.8 129.0	10 28.2 -39.4 128.4
27°	12 27.0 -41.3 131.6	11 48.0 -40.8 131.0	11 08.6 -40.4 130.4	10 28.9 -40.0 129.8	9 48.8 -39.6 129.2
28°	11 45.7 -41.4 132.4	11 07.2 -41.0 131.8	10 28.2 -40.5 131.1	9 48.9 -40.0 130.5	9 09.2 -39.6 130.0
29°	11 04.3 -41.5 133.1	10 26.2 -41.0 132.5	9 47.7 -40.6 131.9	9 08.9 -40.2 131.3	8 29.6 -39.6 130.7

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°	25 39.5 -33.4 106.1	24 49.5 -33.2 105.5	23 59.4 -33.0 104.9	23 09.1 -32.8 104.3	22 18.7 -32.6 103.7
1°	25 06.1 -33.8 107.0	24 16.3 -33.5 106.4	23 26.4 -33.3 105.8	22 36.3 -33.1 105.2	21 46.1 -32.9 104.6
2°	24 32.3 -34.1 107.9	23 42.8 -33.9 107.3	22 53.1 -33.6 106.7	22 03.2 -33.4 106.1	21 13.2 -33.1 105.5
3°	23 58.2 -34.5 108.8	23 08.9 -34.2 108.2	22 19.5 -34.0 107.6	21 29.8 -33.6 107.0	20 40.1 -33.4 106.4
4°	23 23.7 -34.7 109.7	22 34.7 -34.4 109.1	21 45.5 -34.1 108.5	20 56.2 -34.0 107.9	20 06.7 -33.7 107.3
5°	22 49.0 -35.0 110.6	22 00.3 -34.8 110.0	21 11.4 -34.5 109.4	20 22.2 -34.2 108.8	19 33.0 -34.0 108.2
6°	22 14.0 -35.3 111.5	21 25.5 -35.0 110.9	20 36.9 -34.7 110.3	19 48.0 -34.4 109.6	18 59.0 -34.2 109.0
7°	21 38.7 -35.6 112.4	20 50.5 -35.3 111.7	20 02.2 -35.0 111.1	19 13.6 -34.7 110.5	18 24.8 -34.4 109.9
8°	21 03.1 -35.8 113.2	20 15.2 -35.5 112.6	19 27.2 -35.3 112.0	18 38.9 -35.0 111.4	17 50.4 -34.7 110.8
9°	20 27.3 -36.1 114.1	19 39.7 -35.7 113.5	18 51.9 -35.4 112.8	18 03.9 -35.1 112.2	17 15.7 -34.8 111.6
10°	19 51.2 -36.3 114.9	19 04.0 -36.1 114.3	18 16.5 -35.7 113.7	17 28.8 -35.4 113.1	16 40.9 -35.1 112.5
11°	19 14.9 -36.6 115.8	18 27.9 -36.2 115.2	17 40.8 -35.9 114.5	16 53.4 -35.6 113.9	16 05.8 -35.3 113.3
12°	18 38.3 -36.8 116.6	17 51.7 -36.4 116.0	17 04.9 -36.1 115.4	16 17.8 -35.7 114.8	15 30.5 -35.4 114.2
13°	18 01.5 -37.0 117.5	17 15.3 -36.7 116.8	16 28.8 -36.3 116.2	15 42.1 -36.0 115.6	14 55.1 -35.7 115.0
14°	17 24.5 -37.2 118.3	16 38.6 -36.8 117.7	15 52.5 -36.5 117.0	15 06.1 -36.2 116.4	14 19.4 -35.8 115.8
15°	16 47.3 -37.3 119.1	16 01.8 -37.0 118.5	15 16.0 -36.7 117.9	14 29.9 -36.3 117.3	13 43.6 -36.0 116.7
16°	16 10.0 -37.6 119.9	15 24.8 -37.2 119.3	14 39.3 -36.8 118.7	13 53.6 -36.5 118.1	13 07.6 -36.1 117.5
17°	15 32.4 -37.8 120.7	14 47.6 -37.4 120.1	14 02.5 -37.0 119.5	13 17.1 -36.6 118.9	12 31.5 -36.3 118.3
18°	14 54.6 -37.9 121.5	14 10.2 -37.5 120.9	13 25.5 -37.2 120.3	12 40.5 -36.8 119.7	11 55.2 -36.4 119.1
19°	14 16.7 -38.1 122.3	13 32.7 -37.7 121.7	12 48.3 -37.3 121.1	12 03.7 -36.9 120.5	11 18.8 -36.6 119.9
20°	13 38.6 -38.2 123.1	12 55.0 -37.9 122.5	12 11.0 -37.4 121.9	11 26.8 -37.1 121.3	10 42.2 -36.6 120.7
21°	13 00.4 -38.4 123.9	12 17.1 -37.9 123.3	11 33.6 -37.6 122.7	10 49.7 -37.2 122.1	10 05.6 -36.8 121.5
22°	12 22.0 -38.5 124.7	11 39.2 -38.1 124.1	10 56.0 -37.7 123.5	10 12.5 -37.3 122.9	9 28.8 -36.9 122.3
23°	11 43.5 -38.6 125.5	11 01.1 -38.2 124.9	10 18.3 -37.8 124.3	9 35.2 -37.4 123.7	8 51.9 -37.0 123.1
24°	11 04.9 -38.8 126.3	10 22.9 -38.4 125.7	9 40.5 -37.9 125.1	8 57.8 -37.5 124.5	8 14.9 -37.1 123.9
25°	10 26.1 -38.8 127.1	9 44.5 -38.4 126.5	9 02.6 -38.1 125.9	8 20.3 -37.6 125.3	7 37.8 -37.2 124.7
26°	9 47.3 -39.0 127.8	9 06.1 -38.6 127.2	8 24.5 -38.1 126.7	7 42.7 -37.7 126.1	7 00.6 -37.3 125.5
27°	9 08.3 -39.1 128.6	8 27.5 -38.6 128.0	7 46.4 -38.2 127.4	7 05.0 -37.7 126.9	6 23.3 -37.3 126.3
28°	8 29.2 -39.1 129.4	7 48.9 -38.7 128.8	7 08.2 -38.2 128.2	6 27.3 -37.9 127.7	5 46.0 -37.4 127.1
29°	7 50.1 -39.3 130.1	7 10.2 -38.8 129.6	6 30.0 -38.4 129.0	5 49.4 -37.9 128.4	5 08.6 -37.5 127.9

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°	21 28.1 -32.3 103.1	20 37.5 -32.2 102.6	19 46.7 -32.0 102.0	18 55.8 -31.8 101.4	18 04.8 -31.6 100.9
1°	20 55.8 -32.7 104.0	20 05.3 -32.5 103.5	19 14.7 -32.3 102.9	18 24.0 -32.1 102.3	17 33.2 -32.0 101.8
2°	20 23.1 -32.9 104.9	19 32.8 -32.7 104.3	18 42.4 -32.5 103.8	17 51.9 -32.3 103.2	17 01.2 -32.1 102.6
3°	19 50.2 -33.2 105.8	19 00.1 -33.0 105.2	18 09.9 -32.8 104.7	17 19.6 -32.6 104.1	16 29.1 -32.4 103.5
4°	19 17.0 -33.5 106.7	18 27.1 -33.2 106.1	17 37.1 -33.0 105.5	16 47.0 -32.8 105.0	15 56.7 -32.6 104.4
5°	18 43.5 -33.7 107.6	17 53.9 -33.5 107.0	17 04.1 -33.2 106.4	16 14.2 -33.0 105.8	15 24.1 -32.7 105.3
6°	18 09.8 -33.9 108.4	17 20.4 -33.6 107.9	16 30.9 -33.4 107.3	15 41.2 -33.2 106.7	14 51.4 -33.0 106.1
7°	17 35.9 -34.2 109.3	16 46.8 -33.9 108.7	15 57.5 -33.7 108.1	15 08.0 -33.4 107.6	14 18.4 -33.2 107.0
8°	17 01.7 -34.4 110.2	16 12.9 -34.1 109.6	15 23.8 -33.8 109.0	14 34.6 -33.6 108.4	13 45.2 -33.3 107.9
9°	16 27.3 -34.5 111.0	15 38.8 -34.4 110.4	14 50.0 -34.1 109.9	14 01.0 -33.8 109.3	13 11.9 -33.5 108.7
10°	15 52.8 -34.8 111.9	15 04.4 -34.4 111.3	14 15.9 -34.2 110.7	13 27.2 -33.9 110.1	12 38.4 -33.7 109.6
11°	15 18.0 -35.0 112.7	14 30.0 -34.7 112.1	13 41.7 -34.4 111.6	12 53.3 -34.1 111.0	12 04.7 -33.8 110.4
12°	14 43.0 -35.1 113.6	13 55.3 -34.9 113.0	13 07.3 -34.5 112.4	12 19.2 -34.2 111.8	11 30.9 -34.0 111.3
13°	14 07.9 -35.4 114.4	13 20.4 -35.0 113.8	12 32.8 -34.7 113.2	11 45.0 -34.4 112.7	10 56.9 -34.1 112.1
14°	13 32.5 -35.4 115.2	12 45.4 -35.1 114.7	11 58.1 -34.9 114.1	11 10.6 -34.6 113.5	10 22.8 -34.2 112.9
15°	12 57.1 -35.7 116.1	12 10.3 -35.3 115.5	11 23.2 -34.9 114.9	10 36.0 -34.7 114.3	9 48.6 -34.4 113.8
16°	12 21.4 -35.8 116.9	11 35.0 -35.5 116.3	10 48.3 -35.2 115.7	10 01.3 -34.8 115.2	9 14.2 -34.5 114.6
17°	11 45.6 -35.9 117.7	10 59.5 -35.6 117.1	10 13.1 -35.2 116.6	9 26.5 -34.9 116.0	8 39.7 -34.5 115.4
18°	11 09.7 -36.1 118.5	10 23.9 -35.7 118.0	9 37.9 -35.4 117.4	8 51.6 -35.0 116.8	8 05.2 -34.7 116.3
19°	10 33.6 -36.2 119.3	9 48.2 -35.8 118.8	9 02.5 -35.4 118.2	8 16.6 -35.1 117.6	7 30.5 -34.8 117.1
20°	9 57.4 -36.3 120.2	9 12.4 -36.0 119.6	8 27.1 -35.6 119.0	7 41.5 -35.2 118.5	6 55.7 -34.9 117.9
21°	9 21.1 -36.4 121.0	8 36.4 -36.0 120.4	7 51.5 -35.7 119.8	7 06.3 -35.3 119.3	6 20.8 -34.9 118.7
22°	8 44.7 -36.5 121.8	8 00.4 -36.1 121.2	7 15.8 -35.7 120.6	6 31.0 -35.4 120.1	5 45.9 -35.0 119.5
23°	8 08.2 -36.6 122.6	7 24.3 -36.2 122.0	6 40.1 -35.8 121.4	5 55.6 -35.4 120.9	5 10.9 -35.0 120.4
24°	7 31.6 -36.7 123.4	6 48.1 -36.3 122.8	6 04.3 -35.9 122.3	5 20.2 -35.5 121.7	4 35.9 -35.2 121.2
25°	6 54.9 -36.8 124.2	6 11.8 -36.4 123.6	5 28.4 -36.0 123.1	4 44.7 -35.6 122.5	4 00.7 -35.1 122.0
26°	6 18.1 -36.8 125.0	5 35.4 -36.4 124.4	4 52.4 -36.0 123.9	4 09.1 -35.6 123.3	3 25.6 -35.2 122.8
27°	5 41.3 -36.9 125.8	4 59.0 -36.5 125.2	4 16.4 -36.1 124.7	3 33.5 -35.7 124.1	2 50.4 -35.3 123.6
28°	5 04.4 -37.0 126.5	4 22.5 -36.6 126.0	3 40.3 -36.1 125.5	2 57.8 -35.6 124.9	2 15.1 -35.3 124.4
29°	4 27.4 -37.0 127.3	3 45.9 -36.5 126.8	3 04.2 -36.2 126.3	2 22.2 -35.8 125.7	1 39.8 -35.2 125.2

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°	17 13.8 -31.6 100.3	16 22.6 -31.4 99.8	15 31.3 -31.2 99.2	14 40.0 -31.1 98.7	13 48.6 -31.0 98.2
1°	16 42.2 -31.7 101.2	15 51.2 -31.6 100.7	15 00.1 -31.4 100.1	14 08.9 -31.3 99.6	13 17.6 -31.1 99.0
2°	16 10.5 -32.0 102.1	15 19.6 -31.8 101.5	14 28.7 -31.7 101.0	13 37.6 -31.5 100.5	12 46.5 -31.4 99.9
3°	15 38.5 -32.2 103.0	14 47.8 -32.0 102.4	13 57.0 -31.8 101.9	13 06.1 -31.6 101.3	12 15.1 -31.5 100.8
4°	15 06.3 -32.3 103.8	14 15.8 -32.2 103.3	13 25.2 -32.0 102.7	12 34.5 -31.9 102.2	11 43.6 -31.6 101.7
5°	14 34.0 -32.6 104.7	13 43.6 -32.3 104.2	12 53.2 -32.2 103.6	12 02.6 -32.0 103.1	11 12.0 -31.9 102.5
6°	14 01.4 -32.8 105.6	13 11.3 -32.6 105.0	12 21.0 -32.3 104.5	11 30.6 -32.1 103.9	10 40.1 -31.9 103.4
7°	13 28.6 -32.9 106.4	12 38.7 -32.7 105.9	11 48.7 -32.5 105.3	10 58.5 -32.3 104.8	10 08.2 -32.1 104.3
8°	12 55.7 -33.1 107.3	12 06.0 -32.9 106.7	11 16.2 -32.7 106.2	10 26.2 -32.4 105.6	9 36.1 -32.2 105.1
9°	12 22.6 -33.3 108.2	11 33.1 -33.0 107.6	10 43.5 -32.8 107.0	9 53.8 -32.6 106.5	9 03.9 -32.3 106.0
10°	11 49.3 -33.4 109.0	11 00.1 -33.1 108.5	10 10.7 -32.9 107.9	9 21.2 -32.6 107.4	8 31.6 -32.5 106.8
11°	11 15.9 -33.5 109.9	10 27.0 -33.3 109.3	9 37.8 -33.0 108.8	8 48.6 -32.8 108.2	7 59.1 -32.5 107.7
12°	10 42.4 -33.7 110.7	9 53.7 -33.5 110.1	9 04.8 -33.2 109.6	8 15.8 -32.9 109.1	7 26.6 -32.7 108.5
13°	10 08.7 -33.9 111.5	9 20.2 -33.5 111.0	8 31.6 -33.2 110.4	7 42.9 -33.0 109.9	6 53.9 -32.7 109.4
14°	9 34.8 -33.9 112.4	8 46.7 -33.6 111.8	7 58.4 -33.4 111.3	7 09.9 -33.1 110.7	6 21.2 -32.8 110.2
15°	9 00.9 -34.0 113.2	8 13.1 -33.8 112.7	7 25.0 -33.4 112.1	6 36.8 -33.2 111.6	5 48.4 -32.9 111.0
16°	8 26.9 -34.2 114.0	7 39.3 -33.8 113.5	6 51.6 -33.6 113.0	6 03.6 -33.2 112.4	5 15.5 -33.0 111.9
17°	7 52.7 -34.3 114.9	7 05.5 -34.0 114.3	6 18.0 -33.6 113.8	5 30.4 -33.4 113.3	4 42.5 -33.0 112.7
18°	7 18.4 -34.3 115.7	6 31.5 -34.0 115.2	5 44.4 -33.7 114.6	4 57.0 -33.3 114.1	4 09.5 -33.1 113.6
19°	6 44.1 -34.4 116.5	5 57.5 -34.1 116.0	5 10.7 -33.8 115.5	4 23.7 -33.5 114.9	3 36.4 -33.1 114.4
20°	6 09.7 -34.5 117.4	5 23.4 -34.2 116.8	4 36.9 -33.8 116.3	3 50.2 -33.5 115.8	3 03.3 -33.1 115.2
21°	5 35.2 -34.6 118.2	4 49.2 -34.2 117.6	4 03.1 -33.9 117.1	3 16.7 -33.5 116.6	2 30.2 -33.2 116.1
22°	5 00.6 -34.6 119.0	4 15.0 -34.2 118.5	3 29.2 -33.9 117.9	2 43.2 -33.5 117.4	1 57.0 -33.2 116.9
23°	4 26.0 -34.7 119.8	3 40.8 -34.4 119.3	2 55.3 -33.9 118.8	2 09.7 -33.6 118.2	1 23.8 -33.3 117.7
24°	3 51.3 -34.8 120.6	3 06.4 -34.3 120.1	2 21.4 -34.0 119.6	1 36.1 -33.6 119.1	0 50.5 -33.2 118.6
25°	3 16.5 -34.7 121.5	2 32.1 -34.4 120.9	1 47.4 -34.0 120.4	1 02.5 -33.7 119.9	0 17.3 -33.2 119.4
26°	2 41.8 -34.9 122.3	1 57.7 -34.4 121.8	1 13.4 -34.0 121.2	0 28.8 -33.6 120.7	-0 15.9 -33.3
27°	2 06.9 -34.8 123.1	1 23.3 -34.4 122.6	0 39.4 -34.1 122.1	-0 04.8 -33.6	-0 49.2 -33.2
28°	1 32.1 -34.8 123.9	0 48.9 -34.5 123.4	0 05.3 -34.0 122.9	-0 38.4 -33.6	-1 22.4 -33.2
29°	0 57.3 -34.9 124.7	0 14.4 -34.4 124.2	-0 28.7 -34.0	-1 12.0 -33.6	-1 55.6 -33.2

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°	12 57.2 -30.9 97.6	12 05.6 -30.7 97.1	11 14.0 -30.6 96.6	10 22.4 -30.6 96.1	9 30.7 -30.5 95.6
1°	12 26.3 -31.1 98.5	11 34.9 -31.0 98.0	10 43.4 -30.8 97.5	9 51.8 -30.7 96.9	9 00.2 -30.6 96.4
2°	11 55.2 -31.2 99.4	11 03.9 -31.0 98.9	10 12.6 -31.0 98.3	9 21.1 -30.8 97.8	8 29.6 -30.7 97.3
3°	11 24.0 -31.3 100.3	10 32.9 -31.2 99.7	9 41.6 -31.1 99.2	8 50.3 -31.0 98.7	7 58.9 -30.8 98.2
4°	10 52.7 -31.5 101.1	10 01.7 -31.4 100.6	9 10.5 -31.2 100.1	8 19.3 -31.0 99.5	7 28.1 -31.0 99.0
5°	10 21.2 -31.7 102.0	9 30.3 -31.5 101.5	8 39.3 -31.3 100.9	7 48.3 -31.2 100.4	6 57.1 -31.0 99.9
6°	9 49.5 -31.7 102.9	8 58.8 -31.6 102.3	8 08.0 -31.4 101.8	7 17.1 -31.3 101.3	6 26.1 -31.1 100.8
7°	9 17.8 -31.9 103.7	8 27.2 -31.7 103.2	7 36.6 -31.5 102.7	6 45.8 -31.3 102.1	5 55.0 -31.2 101.6
8°	8 45.9 -32.0 104.6	7 55.5 -31.8 104.0	7 05.1 -31.7 103.5	6 14.5 -31.5 103.0	5 23.8 -31.3 102.5
9°	8 13.9 -32.1 105.4	7 23.7 -31.9 104.9	6 33.4 -31.7 104.4	5 43.0 -31.5 103.8	4 52.5 -31.3 103.3
10°	7 41.8 -32.3 106.3	6 51.8 -32.0 105.8	6 01.7 -31.8 105.2	5 11.5 -31.6 104.7	4 21.2 -31.4 104.2
11°	7 09.5 -32.3 107.1	6 19.8 -32.1 106.6	5 29.9 -31.8 106.1	4 39.9 -31.6 105.6	3 49.8 -31.4 105.0
12°	6 37.2 -32.4 108.0	5 47.7 -32.1 107.5	4 58.1 -31.9 106.9	4 08.3 -31.7 106.4	3 18.4 -31.5 105.9
13°	6 04.8 -32.5 108.8	5 15.6 -32.3 108.3	4 26.2 -32.0 107.8	3 36.6 -31.7 107.3	2 46.9 -31.5 106.7
14°	5 32.3 -32.5 109.7	4 43.3 -32.3 109.1	3 54.2 -32.1 108.6	3 04.9 -31.8 108.1	2 15.4 -31.5 107.6
15°	4 59.8 -32.6 110.5	4 11.0 -32.3 110.0	3 22.1 -32.0 109.5	2 33.1 -31.8 109.0	1 43.9 -31.6 108.4
16°	4 27.2 -32.7 111.4	3 38.7 -32.4 110.8	2 50.1 -32.2 110.3	2 01.3 -31.9 109.8	1 12.3 -31.6 109.3
17°	3 54.5 -32.7 112.2	3 06.3 -32.4 111.7	2 17.9 -32.1 111.2	1 29.4 -31.9 110.7	0 40.7 -31.6 110.1
18°	3 21.8 -32.8 113.0	2 33.9 -32.5 112.5	1 45.8 -32.2 112.0	0 57.5 -31.8 111.5	0 09.1 -31.6 111.0
19°	2 49.0 -32.8 113.9	2 01.4 -32.5 113.4	1 13.6 -32.2 112.9	0 25.7 -31.9 112.3	-0 22.5 -31.6
20°	2 16.2 -32.8 114.7	1 28.9 -32.5 114.2	0 41.4 -32.2 113.7	-0 06.2 -31.9	-0 54.1 -31.6
21°	1 43.4 -32.9 115.6	0 56.4 -32.5 115.0	0 09.2 -32.1 114.5	-0 38.1 -31.9	-1 25.7 -31.5
22°	1 10.5 -32.8 116.4	0 23.9 -32.5 115.9	-0 22.9 -32.2	-1 10.0 -31.8	-1 57.2 -31.6
23°	0 37.7 -32.9 117.2	-0 08.6 -32.6	-0 55.1 -32.2	-1 41.8 -31.9	-2 28.8 -31.5
24°	0 04.8 -32.9 118.1	-0 41.2 -32.5	-1 27.3 -32.2	-2 13.7 -31.8	-3 00.3 -31.4
25°	-0 28.1 -32.8	-1 13.7 -32.5	-1 59.5 -32.1	-2 45.5 -31.8	-3 31.7 -31.4
26°	-1 00.9 -32.9	-1 46.2 -32.4	-2 31.6 -32.1	-3 17.3 -31.7	-4 03.1 -31.4
27°	-1 33.8 -32.8	-2 18.6 -32.5	-3 03.7 -32.1	-3 49.0 -31.7	-4 34.5 -31.3
28°	-2 06.6 -32.8	-2 51.1 -32.4	-3 35.8 -32.0	-4 20.7 -31.6	-5 05.8 -31.2
29°	-2 39.4 -32.8	-3 23.5 -32.4	-4 07.8 -32.0	-4 52.3 -31.6	-5 37.0 -31.2

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°	8 38.9 -30.4 95.0	7 47.2 -30.4 94.5	6 55.4 -30.3 94.0	6 03.5 -30.2 93.5	5 11.6 -30.1 93.0
1°	8 08.5 -30.5 95.9	7 16.8 -30.4 95.4	6 25.1 -30.4 94.9	5 33.3 -30.3 94.4	4 41.5 -30.3 93.9
2°	7 38.0 -30.6 96.8	6 46.4 -30.5 96.3	5 54.7 -30.4 95.8	5 03.0 -30.3 95.2	4 11.2 -30.2 94.7
3°	7 07.4 -30.7 97.6	6 15.9 -30.6 97.1	5 24.3 -30.5 96.6	4 32.7 -30.5 96.1	3 41.0 -30.4 95.6
4°	6 36.7 -30.8 98.5	5 45.3 -30.7 98.0	4 53.8 -30.6 97.5	4 02.2 -30.4 97.0	3 10.6 -30.3 96.5
5°	6 05.9 -30.9 99.4	5 14.6 -30.8 98.9	4 23.2 -30.6 98.4	3 31.8 -30.5 97.8	2 40.3 -30.4 97.3
6°	5 35.0 -31.0 100.2	4 43.8 -30.8 99.7	3 52.6 -30.7 99.2	3 01.3 -30.6 98.7	2 09.9 -30.5 98.2
7°	5 04.0 -31.0 101.1	4 13.0 -30.9 100.6	3 21.9 -30.7 100.1	2 30.7 -30.6 99.6	1 39.4 -30.4 99.1
8°	4 33.0 -31.1 102.0	3 42.1 -30.9 101.4	2 51.2 -30.8 100.9	2 00.1 -30.6 100.4	1 09.0 -30.5 99.9
9°	4 01.9 -31.1 102.8	3 11.2 -31.0 102.3	2 20.4 -30.8 101.8	1 29.5 -30.7 101.3	0 38.5 -30.5 100.8
10°	3 30.8 -31.2 103.7	2 40.2 -31.0 103.2	1 49.6 -30.8 102.7	0 58.8 -30.6 102.1	0 08.0 -30.5 101.6
11°	2 59.6 -31.2 104.5	2 09.2 -31.0 104.0	1 18.8 -30.9 103.5	0 28.2 -30.7 103.0	-0 22.5 -30.5
12°	2 28.4 -31.3 105.4	1 38.2 -31.1 104.9	0 47.9 -30.8 104.4	-0 02.5 -30.6	-0 53.0 -30.4
13°	1 57.1 -31.3 106.2	1 07.1 -31.0 105.7	0 17.1 -30.9 105.2	-0 33.1 -30.7	-1 23.4 -30.5
14°	1 25.8 -31.3 107.1	0 36.1 -31.1 106.6	-0 13.8 -30.9	-1 03.8 -30.6	-1 53.9 -30.4
15°	0 54.5 -31.3 107.9	0 05.0 -31.1 107.4	-0 44.7 -30.8	-1 34.4 -30.6	-2 24.3 -30.4
16°	0 23.2 -31.4 108.8	-0 26.1 -31.1	-1 15.5 -30.8	-2 05.0 -30.6	-2 54.7 -30.4
17°	-0 08.2 -31.3	-0 57.2 -31.0	-1 46.3 -30.8	-2 35.6 -30.6	-3 25.1 -30.3
18°	-0 39.5 -31.3	-1 28.2 -31.1	-2 17.1 -30.8	-3 06.2 -30.5	-3 55.4 -30.2
19°	-1 10.8 -31.3	-1 59.3 -31.0	-2 47.9 -30.7	-3 36.7 -30.5	-4 25.6 -30.2
20°	-1 42.1 -31.3	-2 30.3 -31.0	-3 18.6 -30.7	-4 07.2 -30.4	-4 55.8 -30.1
21°	-2 13.4 -31.2	-3 01.3 -30.9	-3 49.3 -30.7	-4 37.6 -30.3	-5 25.9 -30.1
22°	-2 44.6 -31.2	-3 32.2 -30.9	-4 20.0 -30.6	-5 07.9 -30.3	-5 56.0 -30.0
23°	-3 15.8 -31.2	-4 03.1 -30.9	-4 50.6 -30.5	-5 38.2 -30.2	-6 26.0 -29.8
24°	-3 47.0 -31.1	-4 34.0 -30.7	-5 21.1 -30.4	-6 08.4 -30.1	-6 55.8 -29.8
25°	-4 18.1 -31.1	-5 04.7 -30.7	-5 51.5 -30.4	-6 38.5 -30.0	-7 25.6 -29.7
26°	-4 49.2 -31.0	-5 35.4 -30.7	-6 21.9 -30.3	-7 08.5 -29.9	-7 55.3 -29.6
27°	-5 20.2 -30.9	-6 06.1 -30.5	-6 52.2 -30.1	-7 38.4 -29.8	-8 24.9 -29.4
28°	-5 51.1 -30.8	-6 36.6 -30.5	-7 22.3 -30.1	-8 08.2 -29.7	-8 54.3 -29.4
29°	-6 21.9 -30.8	-7 07.1 -30.3	-7 52.4 -30.0	-8 37.9 -29.6	-9 23.7 -29.2

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°	4 19.7 -30.1 92.5	3 27.8 -30.1 92.0	2 35.9 -30.1 91.5	1 43.9 -30.0 91.0	0 52.0 -30.0 90.5
1°	3 49.6 -30.2 93.4	2 57.7 -30.1 92.9	2 05.8 -30.1 92.4	1 13.9 -30.0 91.9	0 22.0 -30.1 91.4
2°	3 19.4 -30.2 94.2	2 27.6 -30.1 93.7	1 35.7 -30.1 93.2	0 43.9 -30.1 92.7	-0 08.1 -30.0
3°	2 49.2 -30.2 95.1	1 57.5 -30.2 94.6	1 05.6 -30.1 94.1	0 13.8 -30.1 93.6	-0 38.1 -30.0
4°	2 19.0 -30.3 96.0	1 27.3 -30.2 95.5	0 35.5 -30.1 95.0	-0 16.3 -30.0	-1 08.1 -30.0
5°	1 48.7 -30.3 96.8	0 57.1 -30.2 96.3	0 05.4 -30.1 95.8	-0 46.3 -30.0	-1 38.1 -29.9
6°	1 18.4 -30.3 97.7	0 26.9 -30.2 97.2	-0 24.7 -30.1	-1 16.3 -30.1	-2 08.0 -30.0
7°	0 48.1 -30.4 98.6	-0 03.3 -30.3	-0 54.8 -30.1	-1 46.4 -30.0	-2 38.0 -29.9
8°	0 17.7 -30.3 99.4	-0 33.6 -30.2	-1 24.9 -30.1	-2 16.4 -29.9	-3 07.9 -29.8
9°	-0 12.6 -30.3	-1 03.8 -30.2	-1 55.0 -30.1	-2 46.3 -30.0	-3 37.7 -29.8
10°	-0 42.9 -30.4	-1 34.0 -30.1	-2 25.1 -30.0	-3 16.3 -29.8	-4 07.5 -29.8
11°	-1 13.3 -30.3	-2 04.1 -30.2	-2 55.1 -30.0	-3 46.1 -29.9	-4 37.3 -29.7
12°	-1 43.6 -30.3	-2 34.3 -30.1	-3 25.1 -29.9	-4 16.0 -29.8	-5 07.0 -29.6
13°	-2 13.9 -30.2	-3 04.4 -30.1	-3 55.0 -29.9	-4 45.8 -29.7	-5 36.6 -29.5
14°	-2 44.1 -30.2	-3 34.5 -30.0	-4 24.9 -29.8	-5 15.5 -29.6	-6 06.1 -29.5
15°	-3 14.3 -30.2	-4 04.5 -29.9	-4 54.7 -29.8	-5 45.1 -29.5	-6 35.6 -29.3
16°	-3 44.5 -30.1	-4 34.4 -29.9	-5 24.5 -29.7	-6 14.6 -29.5	-7 04.9 -29.3
17°	-4 14.6 -30.1	-5 04.3 -29.9	-5 54.2 -29.6	-6 44.1 -29.4	-7 34.2 -29.1
18°	-4 44.7 -30.0	-5 34.2 -29.7	-6 23.8 -29.5	-7 13.5 -29.3	-8 03.3 -29.1
19°	-5 14.7 -29.9	-6 03.9 -29.7	-6 53.3 -29.4	-7 42.8 -29.1	-8 32.4 -28.9
20°	-5 44.6 -29.9	-6 33.6 -29.6	-7 22.7 -29.3	-8 11.9 -29.1	-9 01.3 -28.8
21°	-6 14.5 -29.7	-7 03.2 -29.5	-7 52.0 -29.2	-8 41.0 -28.9	-9 30.1 -28.6
22°	-6 44.2 -29.7	-7 32.7 -29.3	-8 21.2 -29.1	-9 09.9 -28.8	-9 58.7 -28.6
23°	-7 13.9 -29.6	-8 02.0 -29.3	-8 50.3 -28.9	-9 38.7 -28.7	
24°	-7 43.5 -29.4	-8 31.3 -29.1	-9 19.2 -28.9		
25°	-8 12.9 -29.4	-9 00.4 -29.0	-9 48.1 -28.7		
26°	-8 42.3 -29.2	-9 29.4 -28.9			
27°	-9 11.5 -29.1	-9 58.3 -28.8			
28°	-9 40.6 -29.0				
29°					

Latitude 30°

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 -30.0 90.0	-0 52.0 -30.0			
1°	-0 30.0 -30.0	-1 22.0 -29.9			
2°	-1 00.0 -30.0	-1 51.9 -30.0			
3°	-1 30.0 -29.9	-2 21.9 -29.9			
4°	-1 59.9 -30.0	-2 51.8 -29.9			
5°	-2 29.9 -29.9	-3 21.7 -29.8			
6°	-2 59.8 -29.8	-3 51.5 -29.8			
7°	-3 29.6 -29.8	-4 21.3 -29.7			
8°	-3 59.4 -29.8	-4 51.0 -29.7			
9°	-4 29.2 -29.7	-5 20.7 -29.6			
10°	-4 58.9 -29.6	-5 50.3 -29.5			
11°	-5 28.5 -29.5	-6 19.8 -29.4			
12°	-5 58.0 -29.5	-6 49.2 -29.3			
13°	-6 27.5 -29.4	-7 18.5 -29.2			
14°	-6 56.9 -29.2	-7 47.7 -29.1			
15°	-7 26.1 -29.2	-8 16.8 -29.0			
16°	-7 55.3 -29.1	-8 45.8 -28.8			
17°	-8 24.4 -28.9	-9 14.6 -28.8			
18°	-8 53.3 -28.8	-9 43.4 -28.6			
19°	-9 22.1 -28.7				
20°	-9 50.8 -28.5				
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

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

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

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	59 00.0 -60.0 180.0	58 59.1 -59.9 178.1	58 56.5 -59.9 176.1	58 52.2 -59.8 174.2	58 46.1 -59.6 172.3
1°	58 00.0 -60.0 180.0	57 59.2 -60.0 178.1	57 56.6 -59.9 176.2	57 52.4 -59.8 174.4	57 46.5 -59.6 172.5
2°	57 00.0 -60.0 180.0	56 59.2 -60.0 178.2	56 56.7 -59.9 176.3	56 52.6 -59.8 174.5	56 46.9 -59.7 172.7
3°	56 00.0 -60.0 180.0	55 59.2 -60.0 178.2	55 56.8 -59.9 176.4	55 52.8 -59.8 174.7	55 47.2 -59.7 172.9
4°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.3	54 56.9 -59.9 176.5	54 53.0 -59.8 174.8	54 47.5 -59.6 173.1
5°	54 00.0 -60.0 180.0	53 59.2 -59.9 178.3	53 57.0 -60.0 176.6	53 53.2 -59.9 174.9	53 47.9 -59.7 173.2
6°	53 00.0 -60.0 180.0	52 59.3 -60.0 178.3	52 57.0 -59.9 176.7	52 53.3 -59.8 175.1	52 48.2 -59.7 173.4
7°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.4	51 57.1 -59.9 176.8	51 53.5 -59.8 175.2	51 48.5 -59.8 173.6
8°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.4	50 57.2 -60.0 176.9	50 53.7 -59.9 175.3	50 48.7 -59.7 173.7
9°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.5	49 57.2 -59.9 176.9	49 53.8 -59.9 175.4	49 49.0 -59.8 173.9
10°	49 00.0 -60.0 180.0	48 59.3 -60.0 178.5	48 57.3 -59.9 177.0	48 53.9 -59.8 175.5	48 49.2 -59.7 174.0
11°	48 00.0 -60.0 180.0	47 59.3 -59.9 178.5	47 57.4 -60.0 177.1	47 54.1 -59.9 175.6	47 49.5 -59.8 174.1
12°	47 00.0 -60.0 180.0	46 59.4 -60.0 178.6	46 57.4 -59.9 177.1	46 54.2 -59.9 175.7	46 49.7 -59.8 174.3
13°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.6	45 57.5 -60.0 177.2	45 54.3 -59.8 175.8	45 49.9 -59.7 174.4
14°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.6	44 57.5 -59.9 177.3	44 54.5 -59.9 175.9	44 50.2 -59.8 174.5
15°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.7	43 57.6 -60.0 177.3	43 54.6 -59.9 176.0	43 50.4 -59.8 174.6
16°	43 00.0 -60.0 180.0	42 59.4 -60.0 178.7	42 57.6 -59.9 177.4	42 54.7 -59.9 176.1	42 50.6 -59.8 174.8
17°	42 00.0 -60.0 180.0	41 59.4 -60.0 178.7	41 57.7 -60.0 177.4	41 54.8 -59.9 176.1	41 50.8 -59.8 174.9
18°	41 00.0 -60.0 180.0	40 59.4 -60.0 178.7	40 57.7 -59.9 177.5	40 54.9 -59.9 176.2	40 51.0 -59.9 175.0
19°	40 00.0 -60.0 180.0	39 59.4 -59.9 178.8	39 57.8 -60.0 177.5	39 55.0 -59.9 176.3	39 51.1 -59.8 175.1
20°	39 00.0 -60.0 180.0	38 59.5 -60.0 178.8	38 57.8 -59.9 177.6	38 55.1 -59.9 176.4	38 51.3 -59.8 175.2
21°	38 00.0 -60.0 180.0	37 59.5 -60.0 178.8	37 57.9 -60.0 177.6	37 55.2 -59.9 176.4	37 51.5 -59.8 175.3
22°	37 00.0 -60.0 180.0	36 59.5 -60.0 178.8	36 57.9 -59.9 177.7	36 55.3 -59.9 176.5	36 51.7 -59.9 175.4
23°	36 00.0 -60.0 180.0	35 59.5 -60.0 178.9	35 58.0 -60.0 177.7	35 55.4 -59.9 176.6	35 51.8 -59.8 175.5
24°	35 00.0 -60.0 180.0	34 59.5 -60.0 178.9	34 58.0 -60.0 177.8	34 55.5 -59.9 176.7	34 52.0 -59.8 175.5
25°	34 00.0 -60.0 180.0	33 59.5 -60.0 178.9	33 58.0 -59.9 177.8	33 55.6 -59.9 176.7	33 52.2 -59.9 175.6
26°	33 00.0 -60.0 180.0	32 59.5 -60.0 178.9	32 58.1 -60.0 177.9	32 55.7 -59.9 176.8	32 52.3 -59.8 175.7
27°	32 00.0 -60.0 180.0	31 59.5 -60.0 178.9	31 58.1 -59.9 177.9	31 55.8 -60.0 176.9	31 52.5 -59.9 175.8
28°	31 00.0 -60.0 180.0	30 59.5 -60.0 179.0	30 58.2 -60.0 177.9	30 55.8 -59.9 176.9	30 52.6 -59.8 175.9
29°	30 00.0 -60.0 180.0	29 59.5 -59.9 179.0	29 58.2 -60.0 178.0	29 55.9 -59.9 177.0	29 52.8 -59.9 176.0

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	58 38.3 -59.4 170.4	58 28.9 -59.1 168.5	58 17.8 -58.9 166.6	58 05.0 -58.4 164.7	57 50.7 -58.1 162.9
1°	57 38.9 -59.4 170.6	57 29.8 -59.2 168.8	57 18.9 -58.8 167.0	57 06.6 -58.6 165.2	56 52.6 -58.2 163.4
2°	56 39.5 -59.4 170.9	56 30.6 -59.3 169.1	56 20.1 -59.0 167.3	56 08.0 -58.7 165.5	55 54.4 -58.3 163.8
3°	55 40.1 -59.5 171.1	55 31.3 -59.2 169.4	55 21.1 -59.0 167.6	55 09.3 -58.7 165.9	54 56.1 -58.4 164.2
4°	54 40.6 -59.5 171.4	54 32.1 -59.3 169.6	54 22.1 -59.1 168.0	54 10.6 -58.7 166.3	53 57.7 -58.5 164.6
5°	53 41.1 -59.6 171.6	53 32.8 -59.3 169.9	53 23.0 -59.0 168.3	53 11.9 -58.9 166.6	52 59.2 -58.5 165.0
6°	52 41.5 -59.5 171.8	52 33.5 -59.4 170.2	52 24.0 -59.2 168.5	52 13.0 -58.8 166.9	52 00.7 -58.6 165.4
7°	51 42.0 -59.6 172.0	51 34.1 -59.4 170.4	51 24.8 -59.2 168.8	51 14.2 -59.0 167.3	51 02.1 -58.6 165.7
8°	50 42.4 -59.6 172.2	50 34.7 -59.4 170.6	50 25.6 -59.2 169.1	50 15.2 -58.9 167.6	50 03.5 -58.7 166.0
9°	49 42.8 -59.6 172.3	49 35.3 -59.4 170.8	49 26.4 -59.2 169.3	49 16.3 -59.0 167.8	49 04.8 -58.8 166.4
10°	48 43.2 -59.6 172.5	48 35.9 -59.5 171.0	48 27.2 -59.3 169.6	48 17.3 -59.1 168.1	48 06.0 -58.8 166.7
11°	47 43.6 -59.6 172.7	47 36.4 -59.5 171.2	47 27.9 -59.2 169.8	47 18.2 -59.1 168.4	47 07.2 -58.8 167.0
12°	46 44.0 -59.7 172.9	46 36.9 -59.5 171.4	46 28.7 -59.4 170.0	46 19.1 -59.1 168.6	46 08.4 -58.9 167.2
13°	45 44.3 -59.7 173.0	45 37.4 -59.5 171.6	45 29.3 -59.3 170.2	45 20.0 -59.1 168.9	45 09.5 -58.9 167.5
14°	44 44.6 -59.6 173.2	44 37.9 -59.5 171.8	44 30.0 -59.4 170.5	44 20.9 -59.2 169.1	44 10.6 -59.0 167.8
15°	43 45.0 -59.7 173.3	43 38.4 -59.6 172.0	43 30.6 -59.4 170.7	43 21.7 -59.2 169.3	43 11.6 -59.0 168.0
16°	42 45.3 -59.7 173.4	42 38.8 -59.5 172.1	42 31.2 -59.4 170.9	42 22.5 -59.2 169.6	42 12.6 -59.0 168.3
17°	41 45.6 -59.7 173.6	41 39.3 -59.6 172.3	41 31.8 -59.4 171.0	41 23.3 -59.3 169.8	41 13.6 -59.1 168.5
18°	40 45.9 -59.7 173.7	40 39.7 -59.6 172.5	40 32.4 -59.4 171.2	40 24.0 -59.2 170.0	40 14.5 -59.0 168.8
19°	39 46.2 -59.7 173.8	39 40.1 -59.6 172.6	39 33.0 -59.5 171.4	39 24.8 -59.3 170.2	39 15.5 -59.1 169.0
20°	38 46.5 -59.8 174.0	38 40.5 -59.6 172.8	38 33.5 -59.4 171.6	38 25.5 -59.3 170.4	38 16.4 -59.2 169.2
21°	37 46.7 -59.7 174.1	37 40.9 -59.6 172.9	37 34.1 -59.5 171.7	37 26.2 -59.4 170.6	37 17.2 -59.1 169.4
22°	36 47.0 -59.7 174.2	36 41.3 -59.6 173.1	36 34.6 -59.5 171.9	36 26.8 -59.3 170.8	36 18.1 -59.2 169.6
23°	35 47.3 -59.8 174.3	35 41.7 -59.7 173.2	35 35.1 -59.5 172.1	35 27.5 -59.4 171.0	35 18.9 -59.2 169.8
24°	34 47.5 -59.7 174.4	34 42.0 -59.6 173.3	34 35.6 -59.6 172.2	34 28.1 -59.4 171.1	34 19.7 -59.2 170.0
25°	33 47.8 -59.8 174.5	33 42.4 -59.7 173.5	33 36.0 -59.5 172.4	33 28.7 -59.3 171.3	33 20.5 -59.2 170.2
26°	32 48.0 -59.8 174.7	32 42.7 -59.6 173.6	32 36.5 -59.5 172.5	32 29.4 -59.4 171.5	32 21.3 -59.3 170.4
27°	31 48.2 -59.7 174.8	31 43.1 -59.7 173.7	31 37.0 -59.6 172.7	31 30.0 -59.5 171.6	31 22.0 -59.2 170.6
28°	30 48.5 -59.8 174.9	30 43.4 -59.7 173.8	30 37.4 -59.5 172.8	30 30.5 -59.4 171.8	30 22.8 -59.3 170.8
29°	29 48.7 -59.8 175.0	29 43.7 -59.7 174.0	29 37.9 -59.6 173.0	29 31.1 -59.4 172.0	29 23.5 -59.3 171.0

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°	57 34.8 -57.7 161.1	57 17.4 -57.2 159.3	56 58.5 -56.8 157.6	56 38.2 -56.3 155.9	56 16.5 -55.8 154.2
1°	56 37.1 -57.8 161.6	56 20.2 -57.4 159.9	56 01.7 -56.9 158.2	55 41.9 -56.5 156.5	55 20.7 -56.0 154.8
2°	55 39.3 -57.9 162.1	55 22.8 -57.6 160.4	55 04.8 -57.1 158.7	54 45.4 -56.6 157.1	54 24.7 -56.1 155.5
3°	54 41.4 -58.0 162.5	54 25.2 -57.6 160.9	54 07.7 -57.2 159.2	53 48.8 -56.8 157.6	53 28.6 -56.3 156.1
4°	53 43.4 -58.2 163.0	53 27.6 -57.7 161.4	53 10.5 -57.4 159.8	52 52.0 -56.9 158.2	52 32.3 -56.5 156.6
5°	52 45.2 -58.2 163.4	52 29.9 -57.9 161.8	52 13.1 -57.4 160.2	51 55.1 -57.1 158.7	51 35.8 -56.7 157.2
6°	51 47.0 -58.2 163.8	51 32.0 -57.9 162.2	51 15.7 -57.6 160.7	50 58.0 -57.1 159.2	50 39.1 -56.7 157.7
7°	50 48.8 -58.4 164.2	50 34.1 -58.0 162.7	50 18.1 -57.7 161.2	50 00.9 -57.3 159.7	49 42.4 -56.9 158.2
8°	49 50.4 -58.4 164.5	49 36.1 -58.1 163.0	49 20.4 -57.7 161.6	49 03.6 -57.4 160.1	48 45.5 -57.0 158.7
9°	48 52.0 -58.5 164.9	48 38.0 -58.2 163.4	48 22.7 -57.9 162.0	48 06.2 -57.5 160.6	47 48.5 -57.2 159.2
10°	47 53.5 -58.5 165.2	47 39.8 -58.2 163.8	47 24.8 -57.9 162.4	47 08.7 -57.6 161.0	46 51.3 -57.2 159.6
11°	46 55.0 -58.6 165.5	46 41.6 -58.3 164.2	46 26.9 -58.0 162.8	46 11.1 -57.7 161.4	45 54.1 -57.3 160.0
12°	45 56.4 -58.6 165.9	45 43.3 -58.4 164.5	45 28.9 -58.0 163.1	45 13.4 -57.7 161.8	44 56.8 -57.4 160.5
13°	44 57.8 -58.7 166.2	44 44.9 -58.4 164.8	44 30.9 -58.2 163.5	44 15.7 -57.8 162.2	43 59.4 -57.5 160.9
14°	43 59.1 -58.7 166.5	43 46.5 -58.5 165.1	43 32.7 -58.1 163.8	43 17.9 -57.9 162.5	43 01.9 -57.6 161.3
15°	43 00.4 -58.8 166.7	42 48.0 -58.5 165.5	42 34.6 -58.3 164.2	42 20.0 -58.0 162.9	42 04.3 -57.6 161.7
16°	42 01.6 -58.8 167.0	41 49.5 -58.5 165.8	41 36.3 -58.3 164.5	41 22.0 -58.0 163.3	41 06.7 -57.7 162.0
17°	41 02.8 -58.8 167.3	40 51.0 -58.7 166.0	40 38.0 -58.3 164.8	40 24.0 -58.1 163.6	40 09.0 -57.8 162.4
18°	40 04.0 -58.9 167.5	39 52.3 -58.6 166.3	39 39.7 -58.4 165.1	39 25.9 -58.1 163.9	39 11.2 -57.9 162.7
19°	39 05.1 -58.9 167.8	38 53.7 -58.7 166.6	38 41.3 -58.5 165.4	38 27.8 -58.2 164.2	38 13.3 -57.9 163.1
20°	38 06.2 -58.9 168.0	37 55.0 -58.7 166.9	37 42.8 -58.4 165.7	37 29.6 -58.2 164.5	37 15.4 -57.9 163.4
21°	37 07.3 -59.0 168.3	36 56.3 -58.7 167.1	36 44.4 -58.6 166.0	36 31.4 -58.3 164.9	36 17.5 -58.0 163.7
22°	36 08.3 -59.0 168.5	35 57.6 -58.8 167.4	35 45.8 -58.5 166.3	35 33.1 -58.3 165.1	35 19.5 -58.1 164.0
23°	35 09.3 -59.0 168.7	34 58.8 -58.8 167.6	34 47.3 -58.6 166.5	34 34.8 -58.3 165.4	34 21.4 -58.1 164.4
24°	34 10.3 -59.0 168.9	34 00.0 -58.8 167.9	33 48.7 -58.6 166.8	33 36.5 -58.4 165.7	33 23.3 -58.1 164.7
25°	33 11.3 -59.1 169.2	33 01.2 -58.9 168.1	32 50.1 -58.7 167.0	32 38.1 -58.4 166.0	32 25.2 -58.2 164.9
26°	32 12.2 -59.0 169.4	32 02.3 -58.9 168.3	31 51.4 -58.6 167.3	31 39.7 -58.5 166.3	31 27.0 -58.2 165.2
27°	31 13.2 -59.1 169.6	31 03.4 -58.9 168.6	30 52.8 -58.8 167.5	30 41.2 -58.5 166.5	30 28.8 -58.3 165.5
28°	30 14.1 -59.1 169.8	30 04.5 -58.9 168.8	29 54.0 -58.7 167.8	29 42.7 -58.5 166.8	29 30.5 -58.3 165.8
29°	29 15.0 -59.2 170.0	29 05.6 -59.0 169.0	28 55.3 -58.7 168.0	28 44.2 -58.5 167.0	28 32.2 -58.3 166.1

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°	55 53.4 -55.2 152.5	55 29.0 -54.7 150.9	55 03.4 -54.1 149.3	54 36.5 -53.5 147.8	54 08.5 -52.9 146.2
1°	54 58.2 -55.5 153.2	54 34.3 -54.9 151.6	54 09.3 -54.4 150.1	53 43.0 -53.8 148.5	53 15.6 -53.2 147.0
2°	54 02.7 -55.6 153.9	53 39.4 -55.1 152.3	53 14.9 -54.6 150.8	52 49.2 -54.0 149.3	52 22.4 -53.5 147.8
3°	53 07.1 -55.9 154.5	52 44.3 -55.4 153.0	52 20.3 -54.8 151.5	51 55.2 -54.4 150.0	51 28.9 -53.8 148.5
4°	52 11.2 -56.0 155.1	51 48.9 -55.5 153.6	51 25.5 -55.1 152.1	51 00.8 -54.5 150.7	50 35.1 -54.0 149.2
5°	51 15.2 -56.2 155.7	50 53.4 -55.7 154.2	50 30.4 -55.2 152.7	50 06.3 -54.7 151.3	49 41.1 -54.3 149.9
6°	50 19.0 -56.3 156.2	49 57.7 -55.9 154.8	49 35.2 -55.4 153.4	49 11.6 -55.0 151.9	48 46.8 -54.4 150.6
7°	49 22.7 -56.5 156.8	49 01.8 -56.0 155.3	48 39.8 -55.6 153.9	48 16.6 -55.1 152.6	47 52.4 -54.7 151.2
8°	48 26.2 -56.6 157.3	48 05.8 -56.2 155.9	47 44.2 -55.8 154.5	47 21.5 -55.3 153.1	46 57.7 -54.8 151.8
9°	47 29.6 -56.7 157.8	47 09.6 -56.4 156.4	46 48.4 -55.9 155.0	46 26.2 -55.5 153.7	46 02.9 -55.1 152.4
10°	46 32.9 -56.9 158.2	46 13.2 -56.4 156.9	45 52.5 -56.0 155.6	45 30.7 -55.6 154.3	45 07.8 -55.1 153.0
11°	45 36.0 -56.9 158.7	45 16.8 -56.6 157.4	44 56.5 -56.2 156.1	44 35.1 -55.8 154.8	44 12.7 -55.4 153.5
12°	44 39.1 -57.1 159.2	44 20.2 -56.7 157.9	44 00.3 -56.3 156.6	43 39.3 -55.9 155.3	43 17.3 -55.5 154.1
13°	43 42.0 -57.2 159.6	43 23.5 -56.8 158.3	43 04.0 -56.4 157.0	42 43.4 -56.0 155.8	42 21.8 -55.6 154.6
14°	42 44.8 -57.2 160.0	42 26.7 -56.9 158.8	42 07.6 -56.6 157.5	41 47.4 -56.2 156.3	41 26.2 -55.7 155.1
15°	41 47.6 -57.3 160.4	41 29.8 -56.9 159.2	41 11.0 -56.6 158.0	40 51.2 -56.2 156.8	40 30.5 -55.9 155.6
16°	40 50.3 -57.4 160.8	40 32.9 -57.1 159.6	40 14.4 -56.7 158.4	39 55.0 -56.4 157.2	39 34.6 -56.0 156.0
17°	39 52.9 -57.5 161.2	39 35.8 -57.2 160.0	39 17.7 -56.8 158.8	38 58.6 -56.4 157.7	38 38.6 -56.1 156.5
18°	38 55.4 -57.5 161.6	38 38.6 -57.2 160.4	38 20.9 -56.9 159.2	38 02.2 -56.6 158.1	37 42.5 -56.2 157.0
19°	37 57.9 -57.6 161.9	37 41.4 -57.3 160.8	37 24.0 -57.0 159.6	37 05.6 -56.6 158.5	36 46.3 -56.3 157.4
20°	37 00.3 -57.7 162.3	36 44.1 -57.4 161.1	36 27.0 -57.0 160.0	36 09.0 -56.7 158.9	35 50.0 -56.3 157.8
21°	36 02.6 -57.7 162.6	35 46.7 -57.4 161.5	35 30.0 -57.2 160.4	35 12.3 -56.8 159.3	34 53.7 -56.5 158.2
22°	35 04.9 -57.8 162.9	34 49.3 -57.5 161.9	34 32.8 -57.1 160.8	34 15.5 -56.9 159.7	33 57.2 -56.5 158.7
23°	34 07.1 -57.8 163.3	33 51.8 -57.5 162.2	33 35.7 -57.3 161.1	33 18.6 -56.9 160.1	33 00.7 -56.7 159.1
24°	33 09.3 -57.9 163.6	32 54.3 -57.6 162.5	32 38.4 -57.3 161.5	32 21.7 -57.1 160.5	32 04.0 -56.7 159.5
25°	32 11.4 -58.0 163.9	31 56.7 -57.7 162.9	31 41.1 -57.4 161.9	31 24.6 -57.0 160.8	31 07.3 -56.7 159.8
26°	31 13.4 -57.9 164.2	30 59.0 -57.7 163.2	30 43.7 -57.4 162.2	30 27.6 -57.1 161.2	30 10.6 -56.8 160.2
27°	30 15.5 -58.0 164.5	30 01.3 -57.7 163.5	29 46.3 -57.5 162.5	29 30.5 -57.2 161.6	29 13.8 -56.9 160.6
28°	29 17.5 -58.1 164.8	29 03.6 -57.8 163.8	28 48.8 -57.5 162.9	28 33.3 -57.3 161.9	28 16.9 -56.9 160.9
29°	28 19.4 -58.0 165.1	28 05.8 -57.8 164.1	27 51.3 -57.5 163.2	27 36.0 -57.2 162.2	27 20.0 -57.0 161.3

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°	53 39.4 -52.4 144.8	53 09.2 -51.8 143.3	52 37.9 -51.1 141.9	52 05.7 -50.5 140.5	51 32.5 -49.9 139.2
1°	52 47.0 -52.6 145.6	52 17.4 -52.0 144.1	51 46.8 -51.5 142.7	51 15.2 -50.9 141.4	50 42.6 -50.3 140.0
2°	51 54.4 -52.9 146.4	51 25.4 -52.4 144.9	50 55.3 -51.8 143.6	50 24.3 -51.2 142.2	49 52.3 -50.6 140.9
3°	51 01.5 -53.3 147.1	50 33.0 -52.6 145.7	50 03.5 -52.1 144.4	49 33.1 -51.6 143.0	49 01.7 -51.0 141.7
4°	50 08.2 -53.4 147.8	49 40.4 -53.0 146.5	49 11.4 -52.4 145.1	48 41.5 -51.8 143.8	48 10.7 -51.3 142.5
5°	49 14.8 -53.8 148.5	48 47.4 -53.2 147.2	48 19.0 -52.6 145.9	47 49.7 -52.1 144.6	47 19.4 -51.6 143.3
6°	48 21.0 -53.9 149.2	47 54.2 -53.5 147.9	47 26.4 -53.0 146.6	46 57.6 -52.5 145.3	46 27.8 -51.9 144.0
7°	47 27.1 -54.2 149.9	47 00.7 -53.6 148.6	46 33.4 -53.1 147.3	46 05.1 -52.6 146.0	45 35.9 -52.1 144.8
8°	46 32.9 -54.4 150.5	46 07.1 -53.9 149.2	45 40.3 -53.4 147.9	45 12.5 -52.9 146.7	44 43.8 -52.4 145.5
9°	45 38.5 -54.5 151.1	45 13.2 -54.1 149.8	44 46.9 -53.7 148.6	44 19.6 -53.2 147.4	43 51.4 -52.7 146.1
10°	44 44.0 -54.8 151.7	44 19.1 -54.3 150.4	43 53.2 -53.8 149.2	43 26.4 -53.3 148.0	42 58.7 -52.8 146.8
11°	43 49.2 -54.9 152.3	43 24.8 -54.5 151.0	42 59.4 -54.0 149.8	42 33.1 -53.5 148.6	42 05.9 -53.1 147.4
12°	42 54.3 -55.0 152.8	42 30.3 -54.6 151.6	42 05.4 -54.2 150.4	41 39.6 -53.8 149.2	41 12.8 -53.3 148.1
13°	41 59.3 -55.2 153.4	41 35.7 -54.8 152.2	41 11.2 -54.3 151.0	40 45.8 -53.9 149.8	40 19.5 -53.4 148.7
14°	41 04.1 -55.4 153.9	40 40.9 -54.9 152.7	40 16.9 -54.5 151.5	39 51.9 -54.0 150.4	39 26.1 -53.6 149.3
15°	40 08.7 -55.5 154.4	39 46.0 -55.1 153.2	39 22.4 -54.7 152.1	38 57.9 -54.3 151.0	38 32.5 -53.8 149.8
16°	39 13.2 -55.6 154.9	38 50.9 -55.2 153.7	38 27.7 -54.7 152.6	38 03.6 -54.3 151.5	37 38.7 -54.0 150.4
17°	38 17.6 -55.7 155.4	37 55.7 -55.3 154.2	37 33.0 -55.0 153.1	37 09.3 -54.5 152.0	36 44.7 -54.1 151.0
18°	37 21.9 -55.8 155.8	37 00.4 -55.4 154.7	36 38.0 -55.0 153.6	36 14.8 -54.7 152.6	35 50.6 -54.2 151.5
19°	36 26.1 -55.9 156.3	36 05.0 -55.6 155.2	35 43.0 -55.2 154.1	35 20.1 -54.8 153.1	34 56.4 -54.4 152.0
20°	35 30.2 -56.0 156.7	35 09.4 -55.6 155.7	34 47.8 -55.3 154.6	34 25.3 -54.8 153.6	34 02.0 -54.5 152.5
21°	34 34.2 -56.2 157.2	34 13.8 -55.8 156.1	33 52.5 -55.3 155.1	33 30.5 -55.0 154.1	33 07.5 -54.6 153.0
22°	33 38.0 -56.2 157.6	33 18.0 -55.8 156.6	32 57.2 -55.5 155.5	32 35.5 -55.2 154.5	32 12.9 -54.7 153.5
23°	32 41.8 -56.2 158.0	32 22.2 -56.0 157.0	32 01.7 -55.6 156.0	31 40.3 -55.2 155.0	31 18.2 -54.8 154.0
24°	31 45.6 -56.4 158.4	31 26.2 -56.0 157.4	31 06.1 -55.7 156.4	30 45.1 -55.3 155.5	30 23.4 -55.0 154.5
25°	30 49.2 -56.4 158.8	30 30.2 -56.1 157.9	30 10.4 -55.7 156.9	29 49.8 -55.4 155.9	29 28.4 -55.0 154.9
26°	29 52.8 -56.5 159.2	29 34.1 -56.1 158.3	29 14.7 -55.8 157.3	28 54.4 -55.4 156.3	28 33.4 -55.1 155.4
27°	28 56.3 -56.6 159.6	28 38.0 -56.3 158.7	28 18.9 -56.0 157.7	27 59.0 -55.6 156.8	27 38.3 -55.2 155.9
28°	27 59.7 -56.6 160.0	27 41.7 -56.3 159.1	27 22.9 -55.9 158.1	27 03.4 -55.6 157.2	26 43.1 -55.3 156.3
29°	27 03.1 -56.7 160.4	26 45.4 -56.4 159.5	26 27.0 -56.1 158.5	26 07.8 -55.7 157.6	25 47.8 -55.3 156.7

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°	50 58.4 -49.3 137.8	50 23.5 -48.7 136.6	49 47.7 -48.1 135.3	49 11.2 -47.6 134.1	48 33.8 -46.9 132.9
1°	50 09.1 -49.6 138.7	49 34.8 -49.1 137.5	48 59.6 -48.5 136.2	48 23.6 -47.9 135.0	47 46.9 -47.4 133.8
2°	49 19.5 -50.1 139.6	48 45.7 -49.5 138.3	48 11.1 -48.9 137.1	47 35.7 -48.3 135.9	46 59.5 -47.7 134.7
3°	48 29.4 -50.4 140.4	47 56.2 -49.8 139.2	47 22.2 -49.3 138.0	46 47.4 -48.8 136.8	46 11.8 -48.2 135.6
4°	47 39.0 -50.8 141.3	47 06.4 -50.2 140.0	46 32.9 -49.6 138.8	45 58.6 -49.1 137.6	45 23.6 -48.6 136.5
5°	46 48.2 -51.0 142.0	46 16.2 -50.6 140.8	45 43.3 -50.0 139.6	45 09.5 -49.4 138.5	44 35.0 -48.9 137.3
6°	45 57.2 -51.4 142.8	45 25.6 -50.8 141.6	44 53.3 -50.3 140.4	44 20.1 -49.8 139.2	43 46.1 -49.2 138.1
7°	45 05.8 -51.6 143.5	44 34.8 -51.1 142.3	44 03.0 -50.6 141.2	43 30.3 -50.0 140.0	42 56.9 -49.5 138.9
8°	44 14.2 -51.9 144.3	43 43.7 -51.4 143.1	43 12.4 -50.9 141.9	42 40.3 -50.4 140.8	42 07.4 -49.9 139.7
9°	43 22.3 -52.2 145.0	42 52.3 -51.6 143.8	42 21.5 -51.1 142.6	41 49.9 -50.6 141.5	41 17.5 -50.1 140.4
10°	42 30.1 -52.3 145.6	42 00.7 -51.9 144.5	41 30.4 -51.4 143.3	40 59.3 -50.9 142.2	40 27.4 -50.4 141.1
11°	41 37.8 -52.6 146.3	41 08.8 -52.1 145.1	40 39.0 -51.6 144.0	40 08.4 -51.1 142.9	39 37.0 -50.6 141.8
12°	40 45.2 -52.8 146.9	40 16.7 -52.3 145.8	39 47.4 -51.9 144.7	39 17.3 -51.4 143.6	38 46.4 -50.9 142.5
13°	39 52.4 -53.0 147.6	39 24.4 -52.6 146.4	38 55.5 -52.0 145.3	38 25.9 -51.6 144.3	37 55.5 -51.1 143.2
14°	38 59.4 -53.2 148.2	38 31.8 -52.7 147.1	38 03.5 -52.3 146.0	37 34.3 -51.8 144.9	37 04.4 -51.4 143.9
15°	38 06.2 -53.3 148.8	37 39.1 -52.9 147.7	37 11.2 -52.4 146.6	36 42.5 -52.0 145.6	36 13.0 -51.5 144.5
16°	37 12.9 -53.5 149.3	36 46.2 -53.1 148.3	36 18.8 -52.7 147.2	35 50.5 -52.2 146.2	35 21.5 -51.7 145.1
17°	36 19.4 -53.7 149.9	35 53.1 -53.2 148.8	35 26.1 -52.8 147.8	34 58.3 -52.3 146.8	34 29.8 -51.9 145.8
18°	35 25.7 -53.8 150.4	34 59.9 -53.4 149.4	34 33.3 -52.9 148.4	34 06.0 -52.5 147.4	33 37.9 -52.1 146.4
19°	34 31.9 -54.0 151.0	34 06.5 -53.5 150.0	33 40.4 -53.1 148.9	33 13.5 -52.7 148.0	32 45.8 -52.2 147.0
20°	33 37.9 -54.1 151.5	33 13.0 -53.7 150.5	32 47.3 -53.3 149.5	32 20.8 -52.8 148.5	31 53.6 -52.4 147.5
21°	32 43.8 -54.2 152.0	32 19.3 -53.8 151.0	31 54.0 -53.4 150.1	31 28.0 -53.0 149.1	31 01.2 -52.6 148.1
22°	31 49.6 -54.3 152.5	31 25.5 -53.9 151.6	31 00.6 -53.5 150.6	30 35.0 -53.1 149.6	30 08.6 -52.7 148.7
23°	30 55.3 -54.5 153.0	30 31.6 -54.1 152.1	30 07.1 -53.6 151.1	29 41.9 -53.3 150.2	29 15.9 -52.8 149.2
24°	30 00.8 -54.5 153.5	29 37.5 -54.1 152.6	29 13.5 -53.8 151.6	28 48.6 -53.3 150.7	28 23.1 -52.9 149.8
25°	29 06.3 -54.7 154.0	28 43.4 -54.3 153.1	28 19.7 -53.9 152.1	27 55.3 -53.5 151.2	27 30.2 -53.1 150.3
26°	28 11.6 -54.7 154.5	27 49.1 -54.4 153.5	27 25.8 -54.0 152.6	27 01.8 -53.6 151.7	26 37.1 -53.2 150.8
27°	27 16.9 -54.8 154.9	26 54.7 -54.4 154.0	26 31.8 -54.0 153.1	26 08.2 -53.7 152.2	25 43.9 -53.3 151.3
28°	26 22.1 -55.0 155.4	26 00.3 -54.6 154.5	25 37.8 -54.2 153.6	25 14.5 -53.7 152.7	24 50.6 -53.4 151.9
29°	25 27.1 -55.0 155.8	25 05.7 -54.6 155.0	24 43.6 -54.3 154.1	24 20.8 -53.9 153.2	23 57.2 -53.4 152.4

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	47 55.8 -46.3 131.7	47 17.1 -45.8 130.6	46 37.7 -45.2 129.5	45 57.7 -44.7 128.4	45 17.1 -44.1 127.4
1°	47 09.5 -46.8 132.7	46 31.3 -46.2 131.5	45 52.5 -45.7 130.4	45 13.0 -45.1 129.4	44 33.0 -44.7 128.3
2°	46 22.7 -47.3 133.6	45 45.1 -46.7 132.5	45 06.8 -46.1 131.4	44 27.9 -45.6 130.3	43 48.3 -45.0 129.3
3°	45 35.4 -47.6 134.5	44 58.4 -47.1 133.4	44 20.7 -46.6 132.3	43 42.3 -46.0 131.2	43 03.3 -45.5 130.2
4°	44 47.8 -48.0 135.3	44 11.3 -47.5 134.2	43 34.1 -46.9 133.1	42 56.3 -46.5 132.1	42 17.8 -45.9 131.0
5°	43 59.8 -48.4 136.2	43 23.8 -47.8 135.1	42 47.2 -47.3 134.0	42 09.8 -46.7 132.9	41 31.9 -46.3 131.9
6°	43 11.4 -48.7 137.0	42 36.0 -48.2 135.9	41 59.9 -47.7 134.8	41 23.1 -47.2 133.8	40 45.6 -46.6 132.8
7°	42 22.7 -49.0 137.8	41 47.8 -48.5 136.7	41 12.2 -48.0 135.6	40 35.9 -47.5 134.6	39 59.0 -47.0 133.6
8°	41 33.7 -49.3 138.6	40 59.3 -48.8 137.5	40 24.2 -48.3 136.4	39 48.4 -47.8 135.4	39 12.0 -47.3 134.4
9°	40 44.4 -49.7 139.3	40 10.5 -49.1 138.3	39 35.9 -48.6 137.2	39 00.6 -48.1 136.2	38 24.7 -47.6 135.2
10°	39 54.7 -49.9 140.1	39 21.4 -49.4 139.0	38 47.3 -48.9 138.0	38 12.5 -48.4 137.0	37 37.1 -47.9 136.0
11°	39 04.8 -50.1 140.8	38 32.0 -49.7 139.7	37 58.4 -49.2 138.7	37 24.1 -48.7 137.7	36 49.2 -48.2 136.7
12°	38 14.7 -50.4 141.5	37 42.3 -49.9 140.4	37 09.2 -49.4 139.4	36 35.4 -48.9 138.4	36 01.0 -48.5 137.4
13°	37 24.3 -50.6 142.2	36 52.4 -50.2 141.1	36 19.8 -49.7 140.1	35 46.5 -49.2 139.1	35 12.5 -48.7 138.2
14°	36 33.7 -50.9 142.8	36 02.2 -50.3 141.8	35 30.1 -49.9 140.8	34 57.3 -49.5 139.9	34 23.8 -49.0 138.9
15°	35 42.8 -51.1 143.5	35 11.9 -50.6 142.5	34 40.2 -50.1 141.5	34 07.8 -49.6 140.5	33 34.8 -49.2 139.6
16°	34 51.7 -51.2 144.1	34 21.3 -50.8 143.2	33 50.1 -50.4 142.2	33 18.2 -49.9 141.2	32 45.6 -49.4 140.3
17°	34 00.5 -51.5 144.8	33 30.5 -51.0 143.8	32 59.7 -50.5 142.8	32 28.3 -50.1 141.9	31 56.2 -49.6 140.9
18°	33 09.0 -51.6 145.4	32 39.5 -51.2 144.4	32 09.2 -50.7 143.5	31 38.2 -50.2 142.5	31 06.6 -49.8 141.6
19°	32 17.4 -51.8 146.0	31 48.3 -51.4 145.0	31 18.5 -50.9 144.1	30 48.0 -50.5 143.2	30 16.8 -50.0 142.2
20°	31 25.6 -52.0 146.6	30 56.9 -51.5 145.6	30 27.6 -51.1 144.7	29 57.5 -50.6 143.8	29 26.8 -50.2 142.9
21°	30 33.6 -52.1 147.2	30 05.4 -51.7 146.2	29 36.5 -51.3 145.3	29 06.9 -50.8 144.4	28 36.6 -50.3 143.5
22°	29 41.5 -52.2 147.7	29 13.7 -51.8 146.8	28 45.2 -51.4 145.9	28 16.1 -51.0 145.0	27 46.3 -50.5 144.1
23°	28 49.3 -52.4 148.3	28 21.9 -52.0 147.4	27 53.8 -51.5 146.5	27 25.1 -51.1 145.6	26 55.8 -50.7 144.7
24°	27 56.9 -52.6 148.9	27 29.9 -52.1 148.0	27 02.3 -51.7 147.1	26 34.0 -51.2 146.2	26 05.1 -50.8 145.3
25°	27 04.3 -52.6 149.4	26 37.8 -52.2 148.5	26 10.6 -51.8 147.6	25 42.8 -51.4 146.8	25 14.3 -51.0 145.9
26°	26 11.7 -52.8 149.9	25 45.6 -52.4 149.1	25 18.8 -51.9 148.2	24 51.4 -51.5 147.4	24 23.3 -51.1 146.5
27°	25 18.9 -52.9 150.5	24 53.2 -52.4 149.6	24 26.9 -52.1 148.8	23 59.9 -51.7 147.9	23 32.2 -51.2 147.1
28°	24 26.0 -53.0 151.0	24 00.8 -52.6 150.1	23 34.8 -52.1 149.3	23 08.2 -51.7 148.5	22 41.0 -51.3 147.6
29°	23 33.0 -53.0 151.5	23 08.2 -52.7 150.7	22 42.7 -52.3 149.8	22 16.5 -51.9 149.0	21 49.7 -51.4 148.2

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°	44 36.0 -43.7 126.3	43 54.3 -43.1 125.3	43 12.1 -42.7 124.4	42 29.4 -42.2 123.4	41 46.2 -41.7 122.5
1°	43 52.3 -44.1 127.3	43 11.2 -43.6 126.3	42 29.4 -43.1 125.3	41 47.2 -42.6 124.4	41 04.5 -42.1 123.4
2°	43 08.2 -44.5 128.2	42 27.6 -44.1 127.2	41 46.3 -43.5 126.2	41 04.6 -43.1 125.3	40 22.4 -42.6 124.4
3°	42 23.7 -45.0 129.1	41 43.5 -44.5 128.1	41 02.8 -44.0 127.2	40 21.5 -43.4 126.2	39 39.8 -43.0 125.3
4°	41 38.7 -45.4 130.0	40 59.0 -44.8 129.0	40 18.8 -44.4 128.1	39 38.1 -43.9 127.1	38 56.8 -43.4 126.2
5°	40 53.3 -45.8 130.9	40 14.2 -45.3 129.9	39 34.4 -44.7 128.9	38 54.2 -44.3 128.0	38 13.4 -43.8 127.1
6°	40 07.5 -46.1 131.8	39 28.9 -45.6 130.8	38 49.7 -45.2 129.8	38 09.9 -44.7 128.9	37 29.6 -44.2 127.9
7°	39 21.4 -46.5 132.6	38 43.3 -46.0 131.6	38 04.5 -45.5 130.6	37 25.2 -45.0 129.7	36 45.4 -44.6 128.8
8°	38 34.9 -46.8 133.4	37 57.3 -46.4 132.4	37 19.0 -45.8 131.5	36 40.2 -45.4 130.5	36 00.8 -44.8 129.6
9°	37 48.1 -47.1 134.2	37 10.9 -46.6 133.2	36 33.2 -46.2 132.3	35 54.8 -45.6 131.3	35 16.0 -45.2 130.4
10°	37 01.0 -47.4 135.0	36 24.3 -46.9 134.0	35 47.0 -46.4 133.1	35 09.2 -46.0 132.1	34 30.8 -45.5 131.2
11°	36 13.6 -47.7 135.7	35 37.4 -47.3 134.8	35 00.6 -46.8 133.8	34 23.2 -46.3 132.9	33 45.3 -45.9 132.0
12°	35 25.9 -48.0 136.5	34 50.1 -47.5 135.5	34 13.8 -47.0 134.6	33 36.9 -46.5 133.7	32 59.4 -46.0 132.8
13°	34 37.9 -48.2 137.2	34 02.6 -47.7 136.3	33 26.8 -47.3 135.4	32 50.4 -46.9 134.4	32 13.4 -46.4 133.5
14°	33 49.7 -48.5 137.9	33 14.9 -48.0 137.0	32 39.5 -47.5 136.1	32 03.5 -47.0 135.2	31 27.0 -46.6 134.3
15°	33 01.2 -48.8 138.6	32 26.9 -48.3 137.7	31 52.0 -47.8 136.8	31 16.5 -47.3 135.9	30 40.4 -46.8 135.0
16°	32 12.4 -48.9 139.3	31 38.6 -48.5 138.4	31 04.2 -48.0 137.5	30 29.2 -47.6 136.6	29 53.6 -47.1 135.8
17°	31 23.5 -49.1 140.0	30 50.1 -48.6 139.1	30 16.2 -48.3 138.2	29 41.6 -47.8 137.3	29 06.5 -47.3 136.5
18°	30 34.4 -49.4 140.7	30 01.5 -48.9 139.8	29 27.9 -48.4 138.9	28 53.8 -47.9 138.0	28 19.2 -47.6 137.2
19°	29 45.0 -49.5 141.3	29 12.6 -49.1 140.5	28 39.5 -48.6 139.6	28 05.9 -48.2 138.7	27 31.6 -47.7 137.9
20°	28 55.5 -49.8 142.0	28 23.5 -49.3 141.1	27 50.9 -48.8 140.2	27 17.7 -48.4 139.4	26 43.9 -47.9 138.5
21°	28 05.7 -49.9 142.6	27 34.2 -49.5 141.8	27 02.1 -49.0 140.9	26 29.3 -48.5 140.0	25 56.0 -48.1 139.2
22°	27 15.8 -50.0 143.3	26 44.7 -49.6 142.4	26 13.1 -49.2 141.5	25 40.8 -48.8 140.7	25 07.9 -48.3 139.9
23°	26 25.8 -50.3 143.9	25 55.1 -49.8 143.0	25 23.9 -49.4 142.2	24 52.0 -48.8 141.3	24 19.6 -48.4 140.5
24°	25 35.5 -50.3 144.5	25 05.3 -49.9 143.6	24 34.5 -49.4 142.8	24 03.2 -49.1 142.0	23 31.2 -48.6 141.2
25°	24 45.2 -50.6 145.1	24 15.4 -50.1 144.2	23 45.1 -49.7 143.4	23 14.1 -49.2 142.6	22 42.6 -48.7 141.8
26°	23 54.6 -50.6 145.7	23 25.3 -50.2 144.8	22 55.4 -49.8 144.0	22 24.9 -49.3 143.2	21 53.9 -48.9 142.4
27°	23 04.0 -50.8 146.3	22 35.1 -50.3 145.4	22 05.6 -49.9 144.6	21 35.6 -49.5 143.8	21 05.0 -49.1 143.1
28°	22 13.2 -50.9 146.8	21 44.8 -50.5 146.0	21 15.7 -50.0 145.2	20 46.1 -49.6 144.5	20 15.9 -49.1 143.7
29°	21 22.3 -51.0 147.4	20 54.3 -50.6 146.6	20 25.7 -50.1 145.8	19 56.5 -49.7 145.1	19 26.8 -49.3 144.3

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°	41 02.6 -41.2 121.5	40 18.6 -40.8 120.6	39 34.1 -40.3 119.8	38 49.3 -39.9 118.9	38 04.1 -39.5 118.1
1°	40 21.4 -41.7 122.5	39 37.8 -41.2 121.6	38 53.8 -40.8 120.7	38 09.4 -40.4 119.9	37 24.6 -39.9 119.0
2°	39 39.7 -42.1 123.4	38 56.6 -41.7 122.5	38 13.0 -41.2 121.7	37 29.0 -40.8 120.8	36 44.7 -40.4 120.0
3°	38 57.6 -42.6 124.4	38 14.9 -42.1 123.5	37 31.8 -41.7 122.6	36 48.2 -41.2 121.7	36 04.3 -40.8 120.9
4°	38 15.0 -42.9 125.3	37 32.8 -42.5 124.4	36 50.1 -42.0 123.5	36 07.0 -41.6 122.6	35 23.5 -41.2 121.8
5°	37 32.1 -43.4 126.1	36 50.3 -42.9 125.3	36 08.1 -42.4 124.4	35 25.4 -42.0 123.5	34 42.3 -41.5 122.7
6°	36 48.7 -43.7 127.0	36 07.4 -43.2 126.1	35 25.7 -42.8 125.2	34 43.4 -42.3 124.4	34 00.8 -41.9 123.5
7°	36 05.0 -44.0 127.9	35 24.2 -43.6 127.0	34 42.9 -43.2 126.1	34 01.1 -42.7 125.2	33 18.9 -42.3 124.4
8°	35 21.0 -44.5 128.7	34 40.6 -44.0 127.8	33 59.7 -43.5 126.9	33 18.4 -43.1 126.1	32 36.6 -42.6 125.3
9°	34 36.5 -44.7 129.5	33 56.6 -44.2 128.6	33 16.2 -43.8 127.8	32 35.3 -43.3 126.9	31 54.0 -42.9 126.1
10°	33 51.8 -45.0 130.3	33 12.4 -44.6 129.4	32 32.4 -44.1 128.6	31 52.0 -43.7 127.7	31 11.1 -43.3 126.9
11°	33 06.8 -45.4 131.1	32 27.8 -44.9 130.2	31 48.3 -44.5 129.4	31 08.3 -44.0 128.5	30 27.8 -43.5 127.7
12°	32 21.4 -45.6 131.9	31 42.9 -45.2 131.0	31 03.8 -44.7 130.2	30 24.3 -44.2 129.3	29 44.3 -43.8 128.5
13°	31 35.8 -45.9 132.7	30 57.7 -45.4 131.8	30 19.1 -44.9 130.9	29 40.1 -44.6 130.1	29 00.5 -44.1 129.3
14°	30 49.9 -46.1 133.4	30 12.3 -45.7 132.6	29 34.2 -45.3 131.7	28 55.5 -44.8 130.9	28 16.4 -44.3 130.1
15°	30 03.8 -46.4 134.2	29 26.6 -45.9 133.3	28 48.9 -45.4 132.5	28 10.7 -45.0 131.6	27 32.1 -44.6 130.8
16°	29 17.4 -46.6 134.9	28 40.7 -46.2 134.0	28 03.5 -45.8 133.2	27 25.7 -45.2 132.4	26 47.5 -44.8 131.6
17°	28 30.8 -46.9 135.6	27 54.5 -46.4 134.8	27 17.7 -45.9 133.9	26 40.5 -45.5 133.1	26 02.7 -45.1 132.3
18°	27 43.9 -47.0 136.3	27 08.1 -46.6 135.5	26 31.8 -46.2 134.7	25 55.0 -45.7 133.9	25 17.6 -45.2 133.1
19°	26 56.9 -47.3 137.0	26 21.5 -46.8 136.2	25 45.6 -46.3 135.4	25 09.3 -45.9 134.6	24 32.4 -45.5 133.8
20°	26 09.6 -47.5 137.7	25 34.7 -47.0 136.9	24 59.3 -46.6 136.1	24 23.4 -46.2 135.3	23 46.9 -45.6 134.5
21°	25 22.1 -47.6 138.4	24 47.7 -47.2 137.6	24 12.7 -46.7 136.8	23 37.2 -46.2 136.0	23 01.3 -45.9 135.2
22°	24 34.5 -47.8 139.1	24 00.5 -47.4 138.2	23 26.0 -46.9 137.5	22 51.0 -46.5 136.7	22 15.4 -46.0 135.9
23°	23 46.7 -48.0 139.7	23 13.1 -47.5 138.9	22 39.1 -47.1 138.1	22 04.5 -46.7 137.4	21 29.4 -46.2 136.6
24°	22 58.7 -48.2 140.4	22 25.6 -47.7 139.6	21 52.0 -47.3 138.8	21 17.8 -46.8 138.0	20 43.2 -46.3 137.3
25°	22 10.5 -48.3 141.0	21 37.9 -47.9 140.2	21 04.7 -47.4 139.5	20 31.0 -46.9 138.7	19 56.9 -46.5 138.0
26°	21 22.2 -48.4 141.7	20 50.0 -47.9 140.9	20 17.3 -47.5 140.1	19 44.1 -47.1 139.4	19 10.4 -46.7 138.6
27°	20 33.8 -48.6 142.3	20 02.1 -48.2 141.5	19 29.8 -47.7 140.8	18 57.0 -47.2 140.0	18 23.7 -46.8 139.3
28°	19 45.2 -48.7 142.9	19 13.9 -48.2 142.2	18 42.1 -47.8 141.4	18 09.8 -47.4 140.7	17 36.9 -46.9 139.9
29°	18 56.5 -48.8 143.5	18 25.7 -48.4 142.8	17 54.3 -47.9 142.0	17 22.4 -47.5 141.3	16 50.0 -47.0 140.6

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°	37 18.5 -39.1 117.3	36 32.6 -38.7 116.4	35 46.4 -38.3 115.7	34 59.9 -37.9 114.9	34 13.1 -37.6 114.1
1°	36 39.4 -39.5 118.2	35 53.9 -39.1 117.4	35 08.1 -38.7 116.6	34 22.0 -38.4 115.8	33 35.5 -38.0 115.1
2°	35 59.9 -39.9 119.1	35 14.8 -39.5 118.3	34 29.4 -39.2 117.5	33 43.6 -38.8 116.7	32 57.5 -38.4 116.0
3°	35 20.0 -40.4 120.1	34 35.3 -40.0 119.2	33 50.2 -39.5 118.4	33 04.8 -39.1 117.7	32 19.1 -38.8 116.9
4°	34 39.6 -40.8 121.0	33 55.3 -40.3 120.1	33 10.7 -40.0 119.3	32 25.7 -39.6 118.6	31 40.3 -39.2 117.8
5°	33 58.8 -41.1 121.8	33 15.0 -40.8 121.0	32 30.7 -40.3 120.2	31 46.1 -39.9 119.5	31 01.1 -39.5 118.7
6°	33 17.7 -41.5 122.7	32 34.2 -41.0 121.9	31 50.4 -40.7 121.1	31 06.2 -40.3 120.3	30 21.6 -39.9 119.6
7°	32 36.2 -41.8 123.6	31 53.2 -41.5 122.8	31 09.7 -41.0 122.0	30 25.9 -40.6 121.2	29 41.7 -40.2 120.4
8°	31 54.4 -42.2 124.4	31 11.7 -41.7 123.6	30 28.7 -41.3 122.8	29 45.3 -40.9 122.0	29 01.5 -40.5 121.3
9°	31 12.2 -42.5 125.3	30 30.0 -42.1 124.5	29 47.4 -41.7 123.7	29 04.4 -41.2 122.9	28 21.0 -40.8 122.1
10°	30 29.7 -42.8 126.1	29 47.9 -42.3 125.3	29 05.7 -41.9 124.5	28 23.2 -41.6 123.7	27 40.2 -41.1 122.9
11°	29 46.9 -43.1 126.9	29 05.6 -42.7 126.1	28 23.8 -42.2 125.3	27 41.6 -41.8 124.5	26 59.1 -41.4 123.8
12°	29 03.8 -43.3 127.7	28 22.9 -42.9 126.9	27 41.6 -42.5 126.1	26 59.8 -42.1 125.3	26 17.7 -41.7 124.6
13°	28 20.5 -43.7 128.5	27 40.0 -43.2 127.7	26 59.1 -42.8 126.9	26 17.7 -42.3 126.1	25 36.0 -41.9 125.4
14°	27 36.8 -43.9 129.3	26 56.8 -43.5 128.5	26 16.3 -43.0 127.7	25 35.4 -42.6 126.9	24 54.1 -42.2 126.2
15°	26 52.9 -44.1 130.0	26 13.3 -43.7 129.2	25 33.3 -43.3 128.5	24 52.8 -42.9 127.7	24 11.9 -42.4 126.9
16°	26 08.8 -44.4 130.8	25 29.6 -43.9 130.0	24 50.0 -43.5 129.2	24 09.9 -43.0 128.5	23 29.5 -42.7 127.7
17°	25 24.4 -44.6 131.5	24 45.7 -44.2 130.8	24 06.5 -43.7 130.0	23 26.9 -43.3 129.2	22 46.8 -42.8 128.5
18°	24 39.8 -44.8 132.3	24 01.5 -44.4 131.5	23 22.8 -44.0 130.7	22 43.6 -43.5 130.0	22 04.0 -43.1 129.2
19°	23 55.0 -45.0 133.0	23 17.1 -44.5 132.2	22 38.8 -44.1 131.5	22 00.1 -43.7 130.7	21 20.9 -43.3 130.0
20°	23 10.0 -45.2 133.7	22 32.6 -44.8 133.0	21 54.7 -44.3 132.2	21 16.4 -43.9 131.5	20 37.6 -43.4 130.7
21°	22 24.8 -45.4 134.4	21 47.8 -44.9 133.7	21 10.4 -44.5 132.9	20 32.5 -44.1 132.2	19 54.2 -43.7 131.5
22°	21 39.4 -45.6 135.1	21 02.9 -45.2 134.4	20 25.9 -44.7 133.6	19 48.4 -44.2 132.9	19 10.5 -43.8 132.2
23°	20 53.8 -45.7 135.8	20 17.7 -45.3 135.1	19 41.2 -44.9 134.4	19 04.2 -44.4 133.6	18 26.7 -43.9 132.9
24°	20 08.1 -45.9 136.5	19 32.4 -45.4 135.8	18 56.3 -45.0 135.1	18 19.8 -44.6 134.3	17 42.8 -44.1 133.6
25°	19 22.2 -46.1 137.2	18 47.0 -45.6 136.5	18 11.3 -45.1 135.8	17 35.2 -44.7 135.0	16 58.7 -44.3 134.3
26°	18 36.1 -46.2 137.9	18 01.4 -45.8 137.2	17 26.2 -45.3 136.4	16 50.5 -44.8 135.7	16 14.4 -44.4 135.0
27°	17 49.9 -46.3 138.6	17 15.6 -45.9 137.8	16 40.9 -45.5 137.1	16 05.7 -45.0 136.4	15 30.0 -44.5 135.7
28°	17 03.6 -46.5 139.2	16 29.7 -46.0 138.5	15 55.4 -45.5 137.8	15 20.7 -45.1 137.1	14 45.5 -44.7 136.4
29°	16 17.1 -46.6 139.9	15 43.7 -46.1 139.2	15 09.9 -45.7 138.5	14 35.6 -45.3 137.8	14 00.8 -44.8 137.1

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°	33 26.0 -37.2 113.4	32 38.7 -36.9 112.6	31 51.1 -36.6 111.9	31 03.3 -36.3 111.2	30 15.2 -35.9 110.5
1°	32 48.8 -37.7 114.3	32 01.8 -37.3 113.6	31 14.5 -37.0 112.8	30 27.0 -36.6 112.1	29 39.3 -36.4 111.4
2°	32 11.1 -38.0 115.2	31 24.5 -37.7 114.5	30 37.5 -37.3 113.8	29 50.4 -37.1 113.1	29 02.9 -36.7 112.4
3°	31 33.1 -38.4 116.1	30 46.8 -38.1 115.4	30 00.2 -37.7 114.7	29 13.3 -37.4 114.0	28 26.2 -37.1 113.3
4°	30 54.7 -38.8 117.0	30 08.7 -38.4 116.3	29 22.5 -38.1 115.6	28 35.9 -37.7 114.9	27 49.1 -37.4 114.1
5°	30 15.9 -39.2 117.9	29 30.3 -38.8 117.2	28 44.4 -38.5 116.5	27 58.2 -38.1 115.7	27 11.7 -37.7 115.0
6°	29 36.7 -39.5 118.8	28 51.5 -39.1 118.1	28 05.9 -38.7 117.3	27 20.1 -38.4 116.6	26 34.0 -38.1 115.9
7°	28 57.2 -39.8 119.7	28 12.4 -39.5 118.9	27 27.2 -39.1 118.2	26 41.7 -38.7 117.5	25 55.9 -38.3 116.8
8°	28 17.4 -40.1 120.5	27 32.9 -39.7 119.8	26 48.1 -39.3 119.0	26 03.0 -39.0 118.3	25 17.6 -38.7 117.6
9°	27 37.3 -40.5 121.4	26 53.2 -40.1 120.6	26 08.8 -39.7 119.9	25 24.0 -39.3 119.2	24 38.9 -38.9 118.5
10°	26 56.8 -40.7 122.2	26 13.1 -40.3 121.4	25 29.1 -40.0 120.7	24 44.7 -39.6 120.0	24 00.0 -39.2 119.3
11°	26 16.1 -41.0 123.0	25 32.8 -40.6 122.3	24 49.1 -40.2 121.5	24 05.1 -39.8 120.8	23 20.8 -39.4 120.1
12°	25 35.1 -41.2 123.8	24 52.2 -40.9 123.1	24 08.9 -40.4 122.4	23 25.3 -40.1 121.6	22 41.4 -39.7 120.9
13°	24 53.9 -41.6 124.6	24 11.3 -41.1 123.9	23 28.5 -40.7 123.2	22 45.2 -40.3 122.5	22 01.7 -40.0 121.7
14°	24 12.3 -41.7 125.4	23 30.2 -41.3 124.7	22 47.8 -41.0 124.0	22 04.9 -40.5 123.3	21 21.7 -40.1 122.6
15°	23 30.6 -42.0 126.2	22 48.9 -41.6 125.5	22 06.8 -41.2 124.8	21 24.4 -40.8 124.0	20 41.6 -40.4 123.3
16°	22 48.6 -42.2 127.0	22 07.3 -41.8 126.3	21 25.6 -41.4 125.5	20 43.6 -41.0 124.8	20 01.2 -40.6 124.1
17°	22 06.4 -42.5 127.7	21 25.5 -42.0 127.0	20 44.2 -41.6 126.3	20 02.6 -41.2 125.6	19 20.6 -40.8 124.9
18°	21 23.9 -42.6 128.5	20 43.5 -42.2 127.8	20 02.6 -41.8 127.1	19 21.4 -41.4 126.4	18 39.8 -40.9 125.7
19°	20 41.3 -42.9 129.3	20 01.3 -42.5 128.5	19 20.8 -41.9 127.8	18 40.0 -41.5 127.2	17 58.9 -41.2 126.5
20°	19 58.4 -43.0 130.0	19 18.8 -42.5 129.3	18 38.9 -42.2 128.6	17 58.5 -41.8 127.9	17 17.7 -41.3 127.2
21°	19 15.4 -43.2 130.8	18 36.3 -42.8 130.0	17 56.7 -42.3 129.3	17 16.7 -41.9 128.7	16 36.4 -41.5 128.0
22°	18 32.2 -43.3 131.5	17 53.5 -42.9 130.8	17 14.4 -42.5 130.1	16 34.8 -42.1 129.4	15 54.9 -41.7 128.7
23°	17 48.9 -43.6 132.2	17 10.6 -43.1 131.5	16 31.9 -42.7 130.8	15 52.7 -42.2 130.2	15 13.2 -41.8 129.5
24°	17 05.3 -43.6 132.9	16 27.5 -43.3 132.2	15 49.2 -42.8 131.6	15 10.5 -42.3 130.9	14 31.4 -41.9 130.2
25°	16 21.7 -43.9 133.6	15 44.2 -43.3 133.0	15 06.4 -42.9 132.3	14 28.2 -42.5 131.6	13 49.5 -42.1 131.0
26°	15 37.8 -43.9 134.4	15 00.9 -43.5 133.7	14 23.5 -43.1 133.0	13 45.7 -42.7 132.4	13 07.4 -42.1 131.7
27°	14 53.9 -44.1 135.1	14 17.4 -43.7 134.4	13 40.4 -43.2 133.7	13 03.0 -42.7 133.1	12 25.3 -42.3 132.4
28°	14 09.8 -44.2 135.8	13 33.7 -43.7 135.1	12 57.2 -43.3 134.4	12 20.3 -42.9 133.8	11 43.0 -42.5 133.2
29°	13 25.6 -44.3 136.5	12 50.0 -43.9 135.8	12 13.9 -43.4 135.2	11 37.4 -42.9 134.5	11 00.5 -42.5 133.9

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°	29 26.9 -35.6 109.8	28 38.5 -35.4 109.2	27 49.8 -35.1 108.5	27 00.9 -34.8 107.8	26 11.9 -34.6 107.2
1°	28 51.3 -36.1 110.8	28 03.1 -35.8 110.1	27 14.7 -35.5 109.4	26 26.1 -35.2 108.8	25 37.3 -35.0 108.1
2°	28 15.2 -36.4 111.7	27 27.3 -36.1 111.0	26 39.2 -35.8 110.3	25 50.9 -35.6 109.7	25 02.3 -35.2 109.0
3°	27 38.8 -36.7 112.6	26 51.2 -36.4 111.9	26 03.4 -36.2 111.2	25 15.3 -35.8 110.5	24 27.1 -35.6 109.9
4°	27 02.1 -37.1 113.5	26 14.8 -36.8 112.8	25 27.2 -36.4 112.1	24 39.5 -36.2 111.4	23 51.5 -35.9 110.8
5°	26 25.0 -37.4 114.3	25 38.0 -37.1 113.6	24 50.8 -36.8 113.0	24 03.3 -36.5 112.3	23 15.6 -36.2 111.7
6°	25 47.6 -37.7 115.2	25 00.9 -37.4 114.5	24 14.0 -37.1 113.8	23 26.8 -36.7 113.2	22 39.4 -36.4 112.5
7°	25 09.9 -38.0 116.1	24 23.5 -37.6 115.4	23 36.9 -37.3 114.7	22 50.1 -37.0 114.0	22 03.0 -36.7 113.4
8°	24 31.9 -38.3 116.9	23 45.9 -38.0 116.2	22 59.6 -37.6 115.6	22 13.1 -37.3 114.9	21 26.3 -37.0 114.2
9°	23 53.6 -38.6 117.8	23 07.9 -38.2 117.1	22 22.0 -37.9 116.4	21 35.8 -37.5 115.7	20 49.3 -37.2 115.1
10°	23 15.0 -38.8 118.6	22 29.7 -38.5 117.9	21 44.1 -38.1 117.2	20 58.3 -37.8 116.6	20 12.1 -37.4 115.9
11°	22 36.2 -39.1 119.4	21 51.2 -38.7 118.7	21 06.0 -38.4 118.1	20 20.5 -38.0 117.4	19 34.7 -37.7 116.7
12°	21 57.1 -39.3 120.2	21 12.5 -38.9 119.6	20 27.6 -38.6 118.9	19 42.5 -38.3 118.2	18 57.0 -37.9 117.6
13°	21 17.8 -39.6 121.1	20 33.6 -39.2 120.4	19 49.0 -38.8 119.7	19 04.2 -38.4 119.0	18 19.1 -38.1 118.4
14°	20 38.2 -39.7 121.9	19 54.4 -39.4 121.2	19 10.2 -39.0 120.5	18 25.8 -38.7 119.8	17 41.0 -38.3 119.2
15°	19 58.5 -40.0 122.7	19 15.0 -39.6 122.0	18 31.2 -39.2 121.3	17 47.1 -38.8 120.7	17 02.7 -38.5 120.0
16°	19 18.5 -40.2 123.5	18 35.4 -39.8 122.8	17 52.0 -39.4 122.1	17 08.3 -39.1 121.5	16 24.2 -38.6 120.8
17°	18 38.3 -40.4 124.2	17 55.6 -40.0 123.6	17 12.6 -39.6 122.9	16 29.2 -39.2 122.2	15 45.6 -38.9 121.6
18°	17 57.9 -40.6 125.0	17 15.6 -40.2 124.3	16 33.0 -39.8 123.7	15 50.0 -39.4 123.0	15 06.7 -39.0 122.4
19°	17 17.3 -40.7 125.8	16 35.4 -40.3 125.1	15 53.2 -40.0 124.5	15 10.6 -39.5 123.8	14 27.7 -39.1 123.2
20°	16 36.6 -40.9 126.6	15 55.1 -40.5 125.9	15 13.2 -40.1 125.2	14 31.1 -39.7 124.6	13 48.6 -39.3 124.0
21°	15 55.7 -41.1 127.3	15 14.6 -40.7 126.7	14 33.1 -40.2 126.0	13 51.4 -39.9 125.4	13 09.3 -39.5 124.7
22°	15 14.6 -41.2 128.1	14 33.9 -40.8 127.4	13 52.9 -40.4 126.8	13 11.5 -40.0 126.1	12 29.8 -39.5 125.5
23°	14 33.4 -41.4 128.8	13 53.1 -40.9 128.2	13 12.5 -40.5 127.5	12 31.5 -40.1 126.9	11 50.3 -39.7 126.3
24°	13 52.0 -41.5 129.6	13 12.2 -41.1 128.9	12 32.0 -40.7 128.3	11 51.4 -40.2 127.7	11 10.6 -39.9 127.0
25°	13 10.5 -41.6 130.3	12 31.1 -41.2 129.7	11 51.3 -40.7 129.0	11 11.2 -40.3 128.4	10 30.7 -39.9 127.8
26°	12 28.9 -41.8 131.1	11 49.9 -41.3 130.4	11 10.6 -40.9 129.8	10 30.9 -40.5 129.2	9 50.8 -40.0 128.6
27°	11 47.1 -41.9 131.8	11 08.6 -41.4 131.2	10 29.7 -41.0 130.5	9 50.4 -40.5 129.9	9 10.8 -40.1 129.3
28°	11 05.2 -41.9 132.5	10 27.2 -41.6 131.9	9 48.7 -41.1 131.3	9 09.9 -40.7 130.7	8 30.7 -40.2 130.1
29°	10 23.3 -42.1 133.2	9 45.6 -41.6 132.6	9 07.6 -41.2 132.0	8 29.2 -40.7 131.4	7 50.5 -40.3 130.8

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°	25 22.7 -34.4 106.6	24 33.3 -34.1 105.9	23 43.8 -34.0 105.3	22 54.1 -33.7 104.7	22 04.3 -33.5 104.1
1°	24 48.3 -34.7 107.5	23 59.2 -34.5 106.8	23 09.8 -34.2 106.2	22 20.4 -34.0 105.6	21 30.8 -33.8 105.0
2°	24 13.6 -35.0 108.4	23 24.7 -34.8 107.7	22 35.6 -34.5 107.1	21 46.4 -34.3 106.5	20 57.0 -34.0 105.9
3°	23 38.6 -35.3 109.3	22 49.9 -35.0 108.6	22 01.1 -34.8 108.0	21 12.1 -34.5 107.4	20 23.0 -34.4 106.8
4°	23 03.3 -35.6 110.1	22 14.9 -35.3 109.5	21 26.3 -35.0 108.9	20 37.6 -34.8 108.2	19 48.6 -34.5 107.6
5°	22 27.7 -35.9 111.0	21 39.6 -35.6 110.4	20 51.3 -35.4 109.7	20 02.8 -35.1 109.1	19 14.1 -34.8 108.5
6°	21 51.8 -36.1 111.9	21 04.0 -35.9 111.2	20 15.9 -35.5 110.6	19 27.7 -35.3 110.0	18 39.3 -35.1 109.4
7°	21 15.7 -36.4 112.7	20 28.1 -36.1 112.1	19 40.4 -35.8 111.5	18 52.4 -35.5 110.8	18 04.2 -35.2 110.2
8°	20 39.3 -36.7 113.6	19 52.0 -36.3 112.9	19 04.6 -36.1 112.3	18 16.9 -35.8 111.7	17 29.0 -35.5 111.1
9°	20 02.6 -36.9 114.4	19 15.7 -36.6 113.8	18 28.5 -36.3 113.2	17 41.1 -36.0 112.5	16 53.5 -35.7 111.9
10°	19 25.7 -37.1 115.3	18 39.1 -36.8 114.6	17 52.2 -36.5 114.0	17 05.1 -36.2 113.4	16 17.8 -35.9 112.8
11°	18 48.6 -37.3 116.1	18 02.3 -37.0 115.5	17 15.7 -36.6 114.8	16 28.9 -36.3 114.2	15 41.9 -36.0 113.6
12°	18 11.3 -37.6 116.9	17 25.3 -37.2 116.3	16 39.1 -36.9 115.7	15 52.6 -36.6 115.0	15 05.9 -36.3 114.4
13°	17 33.7 -37.7 117.7	16 48.1 -37.4 117.1	16 02.2 -37.1 116.5	15 16.0 -36.7 115.9	14 29.6 -36.4 115.2
14°	16 56.0 -38.0 118.6	16 10.7 -37.6 117.9	15 25.1 -37.3 117.3	14 39.3 -37.0 116.7	13 53.2 -36.6 116.1
15°	16 18.0 -38.1 119.4	15 33.1 -37.8 118.7	14 47.8 -37.4 118.1	14 02.3 -37.0 117.5	13 16.6 -36.7 116.9
16°	15 39.9 -38.3 120.2	14 55.3 -37.9 119.5	14 10.4 -37.6 118.9	13 25.3 -37.3 118.3	12 39.9 -36.9 117.7
17°	15 01.6 -38.4 121.0	14 17.4 -38.1 120.3	13 32.8 -37.7 119.7	12 48.0 -37.3 119.1	12 03.0 -37.1 118.5
18°	14 23.2 -38.7 121.8	13 39.3 -38.3 121.1	12 55.1 -37.9 120.5	12 10.7 -37.6 119.9	11 25.9 -37.1 119.3
19°	13 44.5 -38.7 122.5	13 01.0 -38.4 121.9	12 17.2 -38.0 121.3	11 33.1 -37.6 120.7	10 48.8 -37.3 120.1
20°	13 05.8 -39.0 123.3	12 22.6 -38.5 122.7	11 39.2 -38.1 122.1	10 55.5 -37.8 121.5	10 11.5 -37.4 120.9
21°	12 26.8 -39.0 124.1	11 44.1 -38.6 123.5	11 01.1 -38.3 122.9	10 17.7 -37.8 122.3	9 34.1 -37.5 121.7
22°	11 47.8 -39.2 124.9	11 05.5 -38.8 124.3	10 22.8 -38.4 123.7	9 39.9 -38.0 123.1	8 56.6 -37.6 122.5
23°	11 08.6 -39.3 125.7	10 26.7 -38.9 125.0	9 44.4 -38.5 124.4	9 01.9 -38.1 123.9	8 19.0 -37.7 123.3
24°	10 29.3 -39.4 126.4	9 47.8 -39.0 125.8	9 05.9 -38.5 125.2	8 23.8 -38.2 124.6	7 41.3 -37.8 124.1
25°	9 49.9 -39.5 127.2	9 08.8 -39.1 126.6	8 27.4 -38.7 126.0	7 45.6 -38.3 125.4	7 03.5 -37.8 124.8
26°	9 10.4 -39.6 128.0	8 29.7 -39.2 127.4	7 48.7 -38.8 126.8	7 07.3 -38.3 126.2	6 25.7 -38.0 125.6
27°	8 30.8 -39.7 128.7	7 50.5 -39.2 128.1	7 09.9 -38.8 127.5	6 29.0 -38.4 127.0	5 47.7 -38.0 126.4
28°	7 51.1 -39.7 129.5	7 11.3 -39.4 128.9	6 31.1 -38.9 128.3	5 50.6 -38.5 127.7	5 09.7 -38.0 127.2
29°	7 11.4 -39.9 130.2	6 31.9 -39.4 129.6	5 52.2 -39.0 129.1	5 12.1 -38.5 128.5	4 31.7 -38.1 127.9

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°	21 14.3 -33.3 103.5	20 24.3 -33.2 102.9	19 34.1 -33.0 102.3	18 43.8 -32.8 101.8	17 53.4 -32.6 101.2
1°	20 41.0 -33.5 104.4	19 51.1 -33.3 103.8	19 01.1 -33.1 103.2	18 11.0 -33.0 102.6	17 20.8 -32.8 102.1
2°	20 07.5 -33.9 105.3	19 17.8 -33.6 104.7	18 28.0 -33.5 104.1	17 38.0 -33.2 103.5	16 48.0 -33.1 102.9
3°	19 33.6 -34.0 106.2	18 44.2 -33.9 105.6	17 54.5 -33.6 105.0	17 04.8 -33.5 104.4	16 14.9 -33.2 103.8
4°	18 59.6 -34.4 107.0	18 10.3 -34.1 106.4	17 20.9 -33.9 105.8	16 31.3 -33.6 105.3	15 41.7 -33.5 104.7
5°	18 25.2 -34.5 107.9	17 36.2 -34.3 107.3	16 47.0 -34.1 106.7	15 57.7 -33.9 106.1	15 08.2 -33.6 105.5
6°	17 50.7 -34.8 108.8	17 01.9 -34.6 108.2	16 12.9 -34.3 107.6	15 23.8 -34.0 107.0	14 34.6 -33.9 106.4
7°	17 15.9 -35.0 109.6	16 27.3 -34.7 109.0	15 38.6 -34.5 108.4	14 49.8 -34.3 107.8	14 00.7 -34.0 107.2
8°	16 40.9 -35.2 110.5	15 52.6 -34.9 109.9	15 04.1 -34.6 109.3	14 15.5 -34.4 108.7	13 26.7 -34.2 108.1
9°	16 05.7 -35.4 111.3	15 17.7 -35.2 110.7	14 29.5 -34.9 110.1	13 41.1 -34.6 109.5	12 52.5 -34.3 108.9
10°	15 30.3 -35.6 112.1	14 42.5 -35.3 111.5	13 54.6 -35.0 110.9	13 06.5 -34.8 110.4	12 18.2 -34.5 109.8
11°	14 54.7 -35.8 113.0	14 07.2 -35.5 112.4	13 19.6 -35.2 111.8	12 31.7 -34.9 111.2	11 43.7 -34.7 110.6
12°	14 18.9 -35.9 113.8	13 31.7 -35.6 113.2	12 44.4 -35.4 112.6	11 56.8 -35.1 112.0	11 09.0 -34.8 111.4
13°	13 43.0 -36.1 114.6	12 56.1 -35.8 114.0	12 09.0 -35.5 113.4	11 21.7 -35.2 112.9	10 34.2 -34.9 112.3
14°	13 06.9 -36.3 115.5	12 20.3 -35.9 114.9	11 33.5 -35.6 114.3	10 46.5 -35.3 113.7	9 59.3 -35.0 113.1
15°	12 30.6 -36.4 116.3	11 44.4 -36.1 115.7	10 57.9 -35.8 115.1	10 11.2 -35.4 114.5	9 24.3 -35.1 113.9
16°	11 54.2 -36.6 117.1	11 08.3 -36.2 116.5	10 22.1 -35.9 115.9	9 35.8 -35.6 115.3	8 49.2 -35.3 114.7
17°	11 17.6 -36.6 117.9	10 32.1 -36.4 117.3	9 46.2 -36.0 116.7	9 00.2 -35.7 116.1	8 13.9 -35.4 115.6
18°	10 41.0 -36.8 118.7	9 55.7 -36.4 118.1	9 10.2 -36.1 117.5	8 24.5 -35.8 117.0	7 38.5 -35.4 116.4
19°	10 04.2 -37.0 119.5	9 19.3 -36.6 118.9	8 34.1 -36.2 118.3	7 48.7 -35.8 117.8	7 03.1 -35.5 117.2
20°	9 27.2 -37.0 120.3	8 42.7 -36.7 119.7	7 57.9 -36.3 119.1	7 12.9 -36.0 118.6	6 27.6 -35.6 118.0
21°	8 50.2 -37.1 121.1	8 06.0 -36.7 120.5	7 21.6 -36.4 119.9	6 36.9 -36.0 119.4	5 52.0 -35.7 118.8
22°	8 13.1 -37.2 121.9	7 29.3 -36.9 121.3	6 45.2 -36.5 120.7	6 00.9 -36.1 120.2	5 16.3 -35.7 119.6
23°	7 35.9 -37.3 122.7	6 52.4 -36.9 122.1	6 08.7 -36.5 121.5	5 24.8 -36.2 121.0	4 40.6 -35.8 120.4
24°	6 58.6 -37.4 123.5	6 15.5 -37.0 122.9	5 32.2 -36.6 122.3	4 48.6 -36.2 121.8	4 04.8 -35.9 121.2
25°	6 21.2 -37.5 124.3	5 38.5 -37.0 123.7	4 55.6 -36.7 123.1	4 12.4 -36.3 122.6	3 28.9 -35.9 122.0
26°	5 43.7 -37.5 125.0	5 01.5 -37.2 124.5	4 18.9 -36.7 123.9	3 36.1 -36.3 123.4	2 53.0 -35.9 122.8
27°	5 06.2 -37.6 125.8	4 24.3 -37.1 125.3	3 42.2 -36.7 124.7	2 59.8 -36.3 124.2	2 17.1 -35.9 123.6
28°	4 28.6 -37.6 126.6	3 47.2 -37.2 126.1	3 05.5 -36.8 125.5	2 23.5 -36.4 125.0	1 41.2 -36.0 124.4
29°	3 51.0 -37.7 127.4	3 10.0 -37.3 126.8	2 28.7 -36.8 126.3	1 47.1 -36.4 125.8	1 05.2 -36.0 125.2

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°	17 02.9 -32.5 100.6	16 12.3 -32.3 100.1	15 21.6 -32.2 99.5	14 30.8 -32.0 98.9	13 40.0 -31.9 98.4
1°	16 30.4 -32.6 101.5	15 40.0 -32.5 100.9	14 49.4 -32.3 100.4	13 58.8 -32.2 99.8	13 08.1 -32.1 99.3
2°	15 57.8 -32.9 102.4	15 07.5 -32.7 101.8	14 17.1 -32.5 101.2	13 26.6 -32.4 100.7	12 36.0 -32.2 100.1
3°	15 24.9 -33.1 103.2	14 34.8 -32.9 102.7	13 44.6 -32.8 102.1	12 54.2 -32.5 101.6	12 03.8 -32.4 101.0
4°	14 51.8 -33.2 104.1	14 01.9 -33.1 103.5	13 11.8 -32.8 103.0	12 21.7 -32.7 102.4	11 31.4 -32.6 101.9
5°	14 18.6 -33.5 105.0	13 28.8 -33.2 104.4	12 39.0 -33.1 103.8	11 49.0 -32.9 103.3	10 58.8 -32.6 102.7
6°	13 45.1 -33.6 105.8	12 55.6 -33.4 105.2	12 05.9 -33.2 104.7	11 16.1 -33.0 104.1	10 26.2 -32.9 103.6
7°	13 11.5 -33.8 106.7	12 22.2 -33.6 106.1	11 32.7 -33.4 105.5	10 43.1 -33.2 105.0	9 53.3 -32.9 104.4
8°	12 37.7 -33.9 107.5	11 48.6 -33.7 106.9	10 59.3 -33.4 106.4	10 09.9 -33.2 105.8	9 20.4 -33.1 105.3
9°	12 03.8 -34.1 108.4	11 14.9 -33.9 107.8	10 25.9 -33.7 107.2	9 36.7 -33.4 106.7	8 47.3 -33.2 106.1
10°	11 29.7 -34.3 109.2	10 41.0 -34.0 108.6	9 52.2 -33.7 108.1	9 03.3 -33.6 107.5	8 14.1 -33.3 107.0
11°	10 55.4 -34.3 110.0	10 07.0 -34.1 109.5	9 18.5 -33.9 108.9	8 29.7 -33.6 108.4	7 40.8 -33.3 107.8
12°	10 21.1 -34.5 110.9	9 32.9 -34.2 110.3	8 44.6 -34.0 109.7	7 56.1 -33.7 109.2	7 07.5 -33.5 108.6
13°	9 46.6 -34.7 111.7	8 58.7 -34.4 111.1	8 10.6 -34.1 110.6	7 22.4 -33.8 110.0	6 34.0 -33.6 109.5
14°	9 11.9 -34.7 112.5	8 24.3 -34.4 112.0	7 36.5 -34.1 111.4	6 48.6 -33.9 110.9	6 00.4 -33.6 110.3
15°	8 37.2 -34.9 113.4	7 49.9 -34.6 112.8	7 02.4 -34.3 112.2	6 14.7 -34.0 111.7	5 26.8 -33.7 111.1
16°	8 02.3 -34.9 114.2	7 15.3 -34.6 113.6	6 28.1 -34.3 113.1	5 40.7 -34.1 112.5	4 53.1 -33.8 112.0
17°	7 27.4 -35.0 115.0	6 40.7 -34.7 114.4	5 53.8 -34.5 113.9	5 06.6 -34.1 113.3	4 19.3 -33.8 112.8
18°	6 52.4 -35.2 115.8	6 06.0 -34.8 115.3	5 19.3 -34.4 114.7	4 32.5 -34.1 114.2	3 45.5 -33.9 113.6
19°	6 17.2 -35.1 116.6	5 31.2 -34.9 116.1	4 44.9 -34.6 115.5	3 58.4 -34.3 115.0	3 11.6 -33.9 114.5
20°	5 42.1 -35.3 117.5	4 56.3 -34.9 116.9	4 10.3 -34.6 116.4	3 24.1 -34.2 115.8	2 37.7 -33.9 115.3
21°	5 06.8 -35.3 118.3	4 21.4 -35.0 117.7	3 35.7 -34.6 117.2	2 49.9 -34.3 116.6	2 03.8 -34.0 116.1
22°	4 31.5 -35.4 119.1	3 46.4 -35.0 118.5	3 01.1 -34.7 118.0	2 15.6 -34.4 117.5	1 29.8 -34.0 116.9
23°	3 56.1 -35.4 119.9	3 11.4 -35.1 119.3	2 26.4 -34.7 118.8	1 41.2 -34.3 118.3	0 55.8 -33.9 117.8
24°	3 20.7 -35.5 120.7	2 36.3 -35.1 120.2	1 51.7 -34.7 119.6	1 06.9 -34.4 119.1	0 21.9 -34.0 118.6
25°	2 45.2 -35.5 121.5	2 01.2 -35.1 121.0	1 17.0 -34.7 120.4	0 32.5 -34.3 119.9	-0 12.1 -34.0
26°	2 09.7 -35.5 122.3	1 26.1 -35.1 121.8	0 42.3 -34.8 121.3	-0 01.8 -34.4	-0 46.1 -34.0
27°	1 34.2 -35.6 123.1	0 51.0 -35.2 122.6	0 07.5 -34.7 122.1	-0 36.2 -34.3	-1 20.1 -34.0
28°	0 58.6 -35.5 123.9	0 15.8 -35.1 123.4	-0 27.2 -34.8	-1 10.5 -34.4	-1 54.1 -33.9
29°	0 23.1 -35.6 124.7	-0 19.3 -35.2	-1 02.0 -34.7	-1 44.9 -34.3	-2 28.0 -34.0

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°	12 49.1 -31.8 97.9	11 58.1 -31.7 97.3	11 07.0 -31.5 96.8	10 15.9 -31.4 96.2	9 24.8 -31.4 95.7
1°	12 17.3 -31.9 98.7	11 26.4 -31.8 98.2	10 35.5 -31.7 97.6	9 44.5 -31.6 97.1	8 53.4 -31.5 96.6
2°	11 45.4 -32.1 99.6	10 54.6 -32.0 99.0	10 03.8 -31.9 98.5	9 12.9 -31.8 98.0	8 21.9 -31.6 97.4
3°	11 13.3 -32.3 100.5	10 22.6 -32.1 99.9	9 31.9 -31.9 99.4	8 41.1 -31.8 98.8	7 50.3 -31.7 98.3
4°	10 41.0 -32.4 101.3	9 50.5 -32.2 100.8	9 00.0 -32.1 100.2	8 09.3 -31.9 99.7	7 18.6 -31.8 99.2
5°	10 08.6 -32.5 102.2	9 18.3 -32.4 101.6	8 27.9 -32.2 101.1	7 37.4 -32.1 100.5	6 46.8 -32.0 100.0
6°	9 36.1 -32.6 103.0	8 45.9 -32.4 102.5	7 55.7 -32.3 101.9	7 05.3 -32.1 101.4	6 14.8 -31.9 100.9
7°	9 03.5 -32.8 103.9	8 13.5 -32.6 103.3	7 23.4 -32.4 102.8	6 33.2 -32.3 102.2	5 42.9 -32.1 101.7
8°	8 30.7 -32.9 104.7	7 40.9 -32.7 104.2	6 51.0 -32.5 103.6	6 00.9 -32.3 103.1	5 10.8 -32.1 102.6
9°	7 57.8 -32.9 105.6	7 08.2 -32.7 105.0	6 18.5 -32.6 104.5	5 28.6 -32.3 103.9	4 38.7 -32.2 103.4
10°	7 24.9 -33.1 106.4	6 35.5 -32.9 105.9	5 45.9 -32.6 105.3	4 56.3 -32.5 104.8	4 06.5 -32.3 104.3
11°	6 51.8 -33.2 107.2	6 02.6 -32.9 106.7	5 13.3 -32.7 106.2	4 23.8 -32.5 105.6	3 34.2 -32.3 105.1
12°	6 18.6 -33.2 108.1	5 29.7 -33.0 107.5	4 40.6 -32.8 107.0	3 51.3 -32.5 106.5	3 01.9 -32.3 105.9
13°	5 45.4 -33.3 108.9	4 56.7 -33.1 108.4	4 07.8 -32.8 107.8	3 18.8 -32.6 107.3	2 29.6 -32.4 106.8
14°	5 12.1 -33.4 109.8	4 23.6 -33.1 109.2	3 35.0 -32.9 108.7	2 46.2 -32.6 108.2	1 57.2 -32.3 107.6
15°	4 38.7 -33.4 110.6	3 50.5 -33.2 110.1	3 02.1 -32.9 109.5	2 13.6 -32.7 109.0	1 24.9 -32.5 108.5
16°	4 05.3 -33.5 111.4	3 17.3 -33.2 110.9	2 29.2 -32.9 110.4	1 40.9 -32.7 109.8	0 52.4 -32.4 109.3
17°	3 31.8 -33.5 112.3	2 44.1 -33.2 111.7	1 56.3 -33.0 111.2	1 08.2 -32.7 110.7	0 20.0 -32.4 110.2
18°	2 58.3 -33.6 113.1	2 10.9 -33.3 112.6	1 23.3 -33.0 112.0	0 35.5 -32.7 111.5	-0 12.4 -32.4
19°	2 24.7 -33.6 113.9	1 37.6 -33.3 113.4	0 50.3 -33.0 112.9	0 02.8 -32.7 112.4	-0 44.8 -32.4
20°	1 51.1 -33.6 114.7	1 04.3 -33.3 114.2	0 17.3 -33.0 113.7	-0 29.9 -32.7	-1 17.2 -32.4
21°	1 17.5 -33.6 115.6	0 31.0 -33.3 115.1	-0 15.7 -33.0	-1 02.6 -32.6	-1 49.6 -32.4
22°	0 43.9 -33.7 116.4	-0 02.3 -33.3	-0 48.7 -33.0	-1 35.2 -32.7	-2 22.0 -32.3
23°	0 10.2 -33.6 117.2	-0 35.6 -33.3	-1 21.7 -32.9	-2 07.9 -32.6	-2 54.3 -32.3
24°	-0 23.4 -33.7	-1 08.9 -33.3	-1 54.6 -33.0	-2 40.5 -32.6	-3 26.6 -32.3
25°	-0 57.1 -33.6	-1 42.2 -33.3	-2 27.6 -32.9	-3 13.1 -32.6	-3 58.9 -32.2
26°	-1 30.7 -33.6	-2 15.5 -33.2	-3 00.5 -32.8	-3 45.7 -32.5	-4 31.1 -32.1
27°	-2 04.3 -33.6	-2 48.7 -33.2	-3 33.3 -32.9	-4 18.2 -32.4	-5 03.2 -32.1
28°	-2 37.9 -33.5	-3 21.9 -33.2	-4 06.2 -32.7	-4 50.6 -32.4	-5 35.3 -32.0
29°	-3 11.4 -33.6	-3 55.1 -33.1	-4 38.9 -32.8	-5 23.0 -32.3	-6 07.3 -31.9

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°	8 33.6 -31.3 95.2	7 42.4 -31.3 94.7	6 51.1 -31.2 94.1	5 59.8 -31.1 93.6	5 08.4 -31.0 93.1
1°	8 02.3 -31.4 96.1	7 11.1 -31.3 95.5	6 19.9 -31.2 95.0	5 28.7 -31.2 94.5	4 37.4 -31.2 94.0
2°	7 30.9 -31.5 96.9	6 39.8 -31.4 96.4	5 48.7 -31.4 95.9	4 57.5 -31.3 95.3	4 06.2 -31.1 94.8
3°	6 59.4 -31.6 97.8	6 08.4 -31.5 97.2	5 17.3 -31.4 96.7	4 26.2 -31.3 96.2	3 35.1 -31.3 95.7
4°	6 27.8 -31.7 98.6	5 36.9 -31.6 98.1	4 45.9 -31.4 97.6	3 54.9 -31.3 97.0	3 03.8 -31.2 96.5
5°	5 56.1 -31.8 99.5	5 05.3 -31.6 99.0	4 14.5 -31.6 98.4	3 23.6 -31.5 97.9	2 32.6 -31.3 97.4
6°	5 24.3 -31.8 100.3	4 33.7 -31.7 99.8	3 42.9 -31.5 99.3	2 52.1 -31.4 98.8	2 01.3 -31.3 98.2
7°	4 52.5 -32.0 101.2	4 02.0 -31.8 100.7	3 11.4 -31.6 100.1	2 20.7 -31.5 99.6	1 30.0 -31.4 99.1
8°	4 20.5 -31.9 102.0	3 30.2 -31.8 101.5	2 39.8 -31.7 101.0	1 49.2 -31.5 100.5	0 58.6 -31.4 99.9
9°	3 48.6 -32.0 102.9	2 58.4 -31.8 102.4	2 08.1 -31.7 101.8	1 17.7 -31.5 101.3	0 27.2 -31.3 100.8
10°	3 16.6 -32.1 103.7	2 26.6 -31.9 103.2	1 36.4 -31.7 102.7	0 46.2 -31.5 102.2	-0 04.1 -31.4
11°	2 44.5 -32.1 104.6	1 54.7 -31.9 104.1	1 04.7 -31.7 103.5	0 14.7 -31.6 103.0	-0 35.5 -31.3
12°	2 12.4 -32.1 105.4	1 22.8 -31.9 104.9	0 33.0 -31.7 104.4	-0 16.9 -31.5	-1 06.8 -31.4
13°	1 40.3 -32.1 106.3	0 50.9 -32.0 105.7	0 01.3 -31.7 105.2	-0 48.4 -31.5	-1 38.2 -31.3
14°	1 08.2 -32.2 107.1	0 18.9 -31.9 106.6	-0 30.4 -31.7	-1 19.9 -31.5	-2 09.5 -31.3
15°	0 36.0 -32.2 108.0	-0 13.0 -31.9	-1 02.1 -31.7	-1 51.4 -31.5	-2 40.8 -31.3
16°	0 03.8 -32.1 108.8	-0 44.9 -31.9	-1 33.8 -31.7	-2 22.9 -31.4	-3 12.1 -31.2
17°	-0 28.3 -32.2	-1 16.8 -31.9	-2 05.5 -31.7	-2 54.3 -31.4	-3 43.3 -31.1
18°	-1 00.5 -32.1	-1 48.7 -31.9	-2 37.2 -31.6	-3 25.7 -31.4	-4 14.4 -31.1
19°	-1 32.6 -32.2	-2 20.6 -31.9	-3 08.8 -31.5	-3 57.1 -31.3	-4 45.5 -31.1
20°	-2 04.8 -32.1	-2 52.5 -31.8	-3 40.3 -31.6	-4 28.4 -31.2	-5 16.6 -30.9
21°	-2 36.9 -32.0	-3 24.3 -31.7	-4 11.9 -31.4	-4 59.6 -31.2	-5 47.5 -30.9
22°	-3 08.9 -32.1	-3 56.0 -31.8	-4 43.3 -31.5	-5 30.8 -31.1	-6 18.4 -30.9
23°	-3 41.0 -31.9	-4 27.8 -31.6	-5 14.8 -31.3	-6 01.9 -31.0	-6 49.3 -30.7
24°	-4 12.9 -31.9	-4 59.4 -31.6	-5 46.1 -31.3	-6 32.9 -31.0	-7 20.0 -30.6
25°	-4 44.8 -31.9	-5 31.0 -31.5	-6 17.4 -31.1	-7 03.9 -30.8	-7 50.6 -30.5
26°	-5 16.7 -31.8	-6 02.5 -31.5	-6 48.5 -31.1	-7 34.7 -30.8	-8 21.1 -30.4
27°	-5 48.5 -31.7	-6 34.0 -31.3	-7 19.6 -31.0	-8 05.5 -30.6	-8 51.5 -30.3
28°	-6 20.2 -31.6	-7 05.3 -31.3	-7 50.6 -30.9	-8 36.1 -30.5	-9 21.8 -30.1
29°	-6 51.8 -31.6	-7 36.6 -31.1	-8 21.5 -30.7	-9 06.6 -30.4	-9 51.9 -30.0

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°	4 17.1 -31.1 92.6	3 25.7 -31.0 92.1	2 34.3 -31.0 91.5	1 42.9 -31.0 91.0	0 51.4 -30.9 90.5
1°	3 46.0 -31.0 93.4	2 54.7 -31.0 92.9	2 03.3 -31.0 92.4	1 11.9 -30.9 91.9	0 20.5 -30.9 91.4
2°	3 15.0 -31.1 94.3	2 23.7 -31.1 93.8	1 32.3 -31.0 93.3	0 41.0 -31.0 92.7	-0 10.4 -30.9
3°	2 43.9 -31.2 95.2	1 52.6 -31.0 94.6	1 01.3 -31.0 94.1	0 10.0 -30.9 93.6	-0 41.3 -30.9
4°	2 12.7 -31.2 96.0	1 21.6 -31.1 95.5	0 30.3 -31.0 95.0	-0 20.9 -31.0	-1 12.2 -30.9
5°	1 41.5 -31.2 96.9	0 50.5 -31.1 96.3	-0 00.7 -31.0	-0 51.9 -30.9	-1 43.1 -30.9
6°	1 10.3 -31.2 97.7	0 19.4 -31.2 97.2	-0 31.7 -31.0	-1 22.8 -30.9	-2 14.0 -30.8
7°	0 39.1 -31.2 98.6	-0 11.8 -31.1	-1 02.7 -31.0	-1 53.7 -30.9	-2 44.8 -30.8
8°	0 07.9 -31.2 99.4	-0 42.9 -31.1	-1 33.7 -31.0	-2 24.6 -30.9	-3 15.6 -30.7
9°	-0 23.3 -31.2	-1 14.0 -31.0	-2 04.7 -30.9	-2 55.5 -30.8	-3 46.3 -30.7
10°	-0 54.5 -31.2	-1 45.0 -31.1	-2 35.6 -30.9	-3 26.3 -30.8	-4 17.0 -30.7
11°	-1 25.7 -31.2	-2 16.1 -31.0	-3 06.5 -30.9	-3 57.1 -30.7	-4 47.7 -30.6
12°	-1 56.9 -31.2	-2 47.1 -31.0	-3 37.4 -30.8	-4 27.8 -30.7	-5 18.3 -30.5
13°	-2 28.1 -31.1	-3 18.1 -31.0	-4 08.2 -30.8	-4 58.5 -30.6	-5 48.8 -30.4
14°	-2 59.2 -31.1	-3 49.1 -30.9	-4 39.0 -30.7	-5 29.1 -30.5	-6 19.2 -30.4
15°	-3 30.3 -31.1	-4 20.0 -30.8	-5 09.7 -30.6	-5 59.6 -30.4	-6 49.6 -30.2
16°	-4 01.4 -30.9	-4 50.8 -30.8	-5 40.3 -30.6	-6 30.0 -30.4	-7 19.8 -30.1
17°	-4 32.3 -31.0	-5 21.6 -30.7	-6 10.9 -30.5	-7 00.4 -30.2	-7 49.9 -30.1
18°	-5 03.3 -30.8	-5 52.3 -30.6	-6 41.4 -30.4	-7 30.6 -30.2	-8 20.0 -29.9
19°	-5 34.1 -30.8	-6 22.9 -30.5	-7 11.8 -30.2	-8 00.8 -30.0	-8 49.9 -29.8
20°	-6 04.9 -30.7	-6 53.4 -30.4	-7 42.0 -30.2	-8 30.8 -29.9	-9 19.7 -29.7
21°	-6 35.6 -30.6	-7 23.8 -30.4	-8 12.2 -30.1	-9 00.7 -29.8	-9 49.4 -29.5
22°	-7 06.2 -30.6	-7 54.2 -30.2	-8 42.3 -29.9	-9 30.5 -29.7	
23°	-7 36.8 -30.4	-8 24.4 -30.1	-9 12.2 -29.8		
24°	-8 07.2 -30.3	-8 54.5 -30.0	-9 42.0 -29.7		
25°	-8 37.5 -30.1	-9 24.5 -29.9			
26°	-9 07.6 -30.1	-9 54.4 -29.7			
27°	-9 37.7 -29.9				
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 -30.9 90.0	-0 51.4 -30.9			
1°	-0 30.9 -30.9	-1 22.3 -30.9			
2°	-1 01.8 -30.9	-1 53.2 -30.9			
3°	-1 32.7 -30.8	-2 24.1 -30.8			
4°	-2 03.5 -30.9	-2 54.9 -30.8			
5°	-2 34.4 -30.8	-3 25.7 -30.7			
6°	-3 05.2 -30.7	-3 56.4 -30.7			
7°	-3 35.9 -30.7	-4 27.1 -30.6			
8°	-4 06.6 -30.7	-4 57.7 -30.6			
9°	-4 37.3 -30.6	-5 28.3 -30.5			
10°	-5 07.9 -30.5	-5 58.8 -30.4			
11°	-5 38.4 -30.4	-6 29.2 -30.3			
12°	-6 08.8 -30.4	-6 59.5 -30.2			
13°	-6 39.2 -30.3	-7 29.7 -30.1			
14°	-7 09.5 -30.1	-7 59.8 -30.0			
15°	-7 39.6 -30.1	-8 29.8 -29.9			
16°	-8 09.7 -29.9	-8 59.7 -29.7			
17°	-8 39.6 -29.9	-9 29.4 -29.7			
18°	-9 09.5 -29.7	-9 59.1 -29.5			
19°	-9 39.2 -29.5				
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°	58 00.0 -60.0 180.0	57 59.2 -60.0 178.1	57 56.7 -60.0 176.2	57 52.5 -59.8 174.4	57 46.6 -59.6 172.5
1°	57 00.0 -60.0 180.0	56 59.2 -60.0 178.2	56 56.7 -59.9 176.3	56 52.7 -59.8 174.5	56 47.0 -59.7 172.7
2°	56 00.0 -60.0 180.0	55 59.2 -60.0 178.2	55 56.8 -59.9 176.4	55 52.9 -59.8 174.6	55 47.3 -59.6 172.9
3°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.3	54 56.9 -59.9 176.5	54 53.1 -59.9 174.8	54 47.7 -59.7 173.1
4°	54 00.0 -60.0 180.0	53 59.2 -59.9 178.3	53 57.0 -59.9 176.6	53 53.2 -59.8 174.9	53 48.0 -59.7 173.2
5°	53 00.0 -60.0 180.0	52 59.3 -60.0 178.3	52 57.1 -60.0 176.7	52 53.4 -59.8 175.0	52 48.3 -59.7 173.4
6°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.4	51 57.1 -59.9 176.8	51 53.6 -59.9 175.2	51 48.6 -59.8 173.6
7°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.4	50 57.2 -59.9 176.8	50 53.7 -59.8 175.3	50 48.8 -59.7 173.7
8°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.5	49 57.3 -60.0 176.9	49 53.9 -59.9 175.4	49 49.1 -59.8 173.9
9°	49 00.0 -60.0 180.0	48 59.3 -60.0 178.5	48 57.3 -59.9 177.0	48 54.0 -59.9 175.5	48 49.3 -59.7 174.0
10°	48 00.0 -60.0 180.0	47 59.3 -59.9 178.5	47 57.4 -60.0 177.1	47 54.1 -59.8 175.6	47 49.6 -59.8 174.1
11°	47 00.0 -60.0 180.0	46 59.4 -60.0 178.6	46 57.4 -59.9 177.1	46 54.3 -59.9 175.7	46 49.8 -59.8 174.3
12°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.6	45 57.5 -59.9 177.2	45 54.4 -59.9 175.8	45 50.0 -59.8 174.4
13°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.6	44 57.6 -60.0 177.2	44 54.5 -59.9 175.9	44 50.2 -59.8 174.5
14°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.7	43 57.6 -59.9 177.3	43 54.6 -59.9 176.0	43 50.4 -59.8 174.6
15°	43 00.0 -60.0 180.0	42 59.4 -60.0 178.7	42 57.7 -60.0 177.4	42 54.7 -59.9 176.0	42 50.6 -59.8 174.7
16°	42 00.0 -60.0 180.0	41 59.4 -60.0 178.7	41 57.7 -59.9 177.4	41 54.8 -59.9 176.1	41 50.8 -59.8 174.8
17°	41 00.0 -60.0 180.0	40 59.4 -60.0 178.7	40 57.8 -60.0 177.5	40 54.9 -59.9 176.2	40 51.0 -59.8 174.9
18°	40 00.0 -60.0 180.0	39 59.4 -59.9 178.8	39 57.8 -60.0 177.5	39 55.0 -59.9 176.3	39 51.2 -59.8 175.0
19°	39 00.0 -60.0 180.0	38 59.5 -60.0 178.8	38 57.8 -59.9 177.6	38 55.1 -59.9 176.4	38 51.4 -59.9 175.1
20°	38 00.0 -60.0 180.0	37 59.5 -60.0 178.8	37 57.9 -60.0 177.6	37 55.2 -59.9 176.4	37 51.5 -59.8 175.2
21°	37 00.0 -60.0 180.0	36 59.5 -60.0 178.8	36 57.9 -59.9 177.7	36 55.3 -59.9 176.5	36 51.7 -59.8 175.3
22°	36 00.0 -60.0 180.0	35 59.5 -60.0 178.9	35 58.0 -60.0 177.7	35 55.4 -59.9 176.6	35 51.9 -59.9 175.4
23°	35 00.0 -60.0 180.0	34 59.5 -60.0 178.9	34 58.0 -60.0 177.8	34 55.5 -59.9 176.6	34 52.0 -59.8 175.5
24°	34 00.0 -60.0 180.0	33 59.5 -60.0 178.9	33 58.0 -59.9 177.8	33 55.6 -59.9 176.7	33 52.2 -59.9 175.6
25°	33 00.0 -60.0 180.0	32 59.5 -60.0 178.9	32 58.1 -60.0 177.8	32 55.7 -59.9 176.8	32 52.3 -59.8 175.7
26°	32 00.0 -60.0 180.0	31 59.5 -60.0 178.9	31 58.1 -59.9 177.9	31 55.8 -60.0 176.8	31 52.5 -59.9 175.8
27°	31 00.0 -60.0 180.0	30 59.5 -60.0 179.0	30 58.2 -60.0 177.9	30 55.8 -59.9 176.9	30 52.6 -59.8 175.8
28°	30 00.0 -60.0 180.0	29 59.5 -59.9 179.0	29 58.2 -60.0 178.0	29 55.9 -59.9 176.9	29 52.8 -59.9 175.9
29°	29 00.0 -60.0 180.0	28 59.6 -60.0 179.0	28 58.2 -59.9 178.0	28 56.0 -59.9 177.0	28 52.9 -59.9 176.0

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	57 39.2 -59.5 170.6	57 30.1 -59.2 168.8	57 19.4 -58.9 167.0	57 07.1 -58.6 165.1	56 53.3 -58.3 163.4
1°	56 39.7 -59.4 170.9	56 30.9 -59.3 169.1	56 20.5 -59.0 167.3	56 08.5 -58.7 165.5	55 55.0 -58.3 163.8
2°	55 40.3 -59.5 171.1	55 31.6 -59.2 169.4	55 21.5 -59.0 167.6	55 09.8 -58.7 165.9	54 56.7 -58.4 164.2
3°	54 40.8 -59.6 171.3	54 32.4 -59.4 169.6	54 22.5 -59.1 167.9	54 11.1 -58.8 166.3	53 58.3 -58.5 164.6
4°	53 41.2 -59.5 171.6	53 33.0 -59.3 169.9	53 23.4 -59.1 168.2	53 12.3 -58.8 166.6	52 59.8 -58.6 165.0
5°	52 41.7 -59.6 171.8	52 33.7 -59.4 170.1	52 24.3 -59.2 168.5	52 13.5 -58.9 166.9	52 01.2 -58.6 165.3
6°	51 42.1 -59.5 172.0	51 34.3 -59.4 170.4	51 25.1 -59.2 168.8	51 14.6 -59.0 167.2	51 02.6 -58.6 165.7
7°	50 42.6 -59.6 172.1	50 34.9 -59.4 170.6	50 25.9 -59.2 169.1	50 15.6 -59.0 167.5	50 04.0 -58.8 166.0
8°	49 43.0 -59.7 172.3	49 35.5 -59.4 170.8	49 26.7 -59.2 169.3	49 16.6 -59.0 167.8	49 05.2 -58.8 166.3
9°	48 43.3 -59.6 172.5	48 36.1 -59.5 171.0	48 27.5 -59.3 169.5	48 17.6 -59.1 168.1	48 06.4 -58.8 166.6
10°	47 43.7 -59.6 172.7	47 36.6 -59.5 171.2	47 28.2 -59.3 169.8	47 18.5 -59.1 168.3	47 07.6 -58.9 166.9
11°	46 44.1 -59.7 172.8	46 37.1 -59.5 171.4	46 28.9 -59.4 170.0	46 19.4 -59.1 168.6	46 08.7 -58.9 167.2
12°	45 44.4 -59.7 173.0	45 37.6 -59.5 171.6	45 29.5 -59.3 170.2	45 20.3 -59.2 168.8	45 09.8 -58.9 167.5
13°	44 44.7 -59.6 173.1	44 38.1 -59.6 171.8	44 30.2 -59.4 170.4	44 21.1 -59.2 169.1	44 10.9 -59.0 167.7
14°	43 45.1 -59.7 173.3	43 38.5 -59.5 171.9	43 30.8 -59.4 170.6	43 21.9 -59.2 169.3	43 11.9 -59.0 168.0
15°	42 45.4 -59.7 173.4	42 39.0 -59.6 172.1	42 31.4 -59.4 170.8	42 22.7 -59.2 169.5	42 12.9 -59.1 168.2
16°	41 45.7 -59.7 173.6	41 39.4 -59.6 172.3	41 32.0 -59.4 171.0	41 23.5 -59.3 169.7	41 13.8 -59.0 168.5
17°	40 46.0 -59.8 173.7	40 39.8 -59.6 172.4	40 32.6 -59.5 171.2	40 24.2 -59.3 169.9	40 14.8 -59.1 168.7
18°	39 46.2 -59.7 173.8	39 40.2 -59.6 172.6	39 33.1 -59.5 171.4	39 24.9 -59.3 170.1	39 15.7 -59.1 168.9
19°	38 46.5 -59.7 173.9	38 40.6 -59.6 172.7	38 33.6 -59.4 171.5	38 25.6 -59.3 170.3	38 16.6 -59.2 169.1
20°	37 46.8 -59.8 174.1	37 41.0 -59.6 172.9	37 34.2 -59.5 171.7	37 26.3 -59.3 170.5	37 17.4 -59.2 169.4
21°	36 47.0 -59.7 174.2	36 41.4 -59.7 173.0	36 34.7 -59.5 171.9	36 27.0 -59.4 170.7	36 18.2 -59.2 169.6
22°	35 47.3 -59.8 174.3	35 41.7 -59.6 173.1	35 35.2 -59.6 172.0	35 27.6 -59.4 170.9	35 19.0 -59.2 169.8
23°	34 47.5 -59.7 174.4	34 42.1 -59.7 173.3	34 35.6 -59.5 172.2	34 28.2 -59.4 171.1	34 19.8 -59.2 170.0
24°	33 47.8 -59.8 174.5	33 42.4 -59.6 173.4	33 36.1 -59.5 172.3	33 28.8 -59.4 171.2	33 20.6 -59.2 170.1
25°	32 48.0 -59.7 174.6	32 42.8 -59.7 173.5	32 36.6 -59.6 172.5	32 29.4 -59.4 171.4	32 21.4 -59.3 170.3
26°	31 48.3 -59.8 174.7	31 43.1 -59.7 173.7	31 37.0 -59.5 172.6	31 30.0 -59.4 171.6	31 22.1 -59.3 170.5
27°	30 48.5 -59.8 174.8	30 43.4 -59.7 173.8	30 37.5 -59.6 172.8	30 30.6 -59.5 171.7	30 22.8 -59.3 170.7
28°	29 48.7 -59.8 174.9	29 43.7 -59.7 173.9	29 37.9 -59.6 172.9	29 31.1 -59.4 171.9	29 23.5 -59.3 170.9
29°	28 48.9 -59.8 175.0	28 44.0 -59.6 174.0	28 38.3 -59.6 173.0	28 31.7 -59.5 172.0	28 24.2 -59.3 171.1

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°	56 38.0 -57.9 161.6	56 21.2 -57.5 159.9	56 02.9 -57.0 158.1	55 43.3 -56.5 156.5	55 22.3 -56.0 154.8
1°	55 40.1 -58.0 162.1	55 23.7 -57.5 160.4	55 05.9 -57.1 158.7	54 46.8 -56.7 157.0	54 26.3 -56.3 155.4
2°	54 42.1 -58.0 162.5	54 26.2 -57.7 160.9	54 08.8 -57.3 159.2	53 50.1 -56.9 157.6	53 30.0 -56.4 156.0
3°	53 44.1 -58.2 163.0	53 28.5 -57.8 161.3	53 11.5 -57.4 159.7	52 53.2 -57.0 158.1	52 33.6 -56.5 156.6
4°	52 45.9 -58.2 163.4	52 30.7 -57.9 161.8	52 14.1 -57.5 160.2	51 56.2 -57.1 158.7	51 37.1 -56.7 157.1
5°	51 47.7 -58.3 163.8	51 32.8 -58.0 162.2	51 16.6 -57.6 160.7	50 59.1 -57.2 159.1	50 40.4 -56.9 157.6
6°	50 49.4 -58.4 164.1	50 34.8 -58.0 162.6	50 19.0 -57.7 161.1	50 01.9 -57.4 159.6	49 43.5 -56.9 158.1
7°	49 51.0 -58.4 164.5	49 36.8 -58.2 163.0	49 21.3 -57.8 161.5	49 04.5 -57.4 160.1	48 46.6 -57.1 158.6
8°	48 52.6 -58.6 164.8	48 38.6 -58.2 163.4	48 23.5 -57.9 161.9	48 07.1 -57.6 160.5	47 49.5 -57.2 159.1
9°	47 54.0 -58.5 165.2	47 40.4 -58.3 163.7	47 25.6 -58.0 162.3	47 09.5 -57.6 160.9	46 52.3 -57.3 159.5
10°	46 55.5 -58.6 165.5	46 42.1 -58.3 164.1	46 27.6 -58.0 162.7	46 11.9 -57.7 161.3	45 55.0 -57.3 160.0
11°	45 56.9 -58.7 165.8	45 43.8 -58.4 164.4	45 29.6 -58.1 163.1	45 14.2 -57.8 161.7	44 57.7 -57.5 160.4
12°	44 58.2 -58.7 166.1	44 45.4 -58.4 164.8	44 31.5 -58.2 163.4	44 16.4 -57.9 162.1	44 00.2 -57.6 160.8
13°	43 59.5 -58.8 166.4	43 47.0 -58.5 165.1	43 33.3 -58.2 163.8	43 18.5 -57.9 162.5	43 02.6 -57.6 161.2
14°	43 00.7 -58.7 166.7	42 48.5 -58.6 165.4	42 35.1 -58.3 164.1	42 20.6 -58.0 162.8	42 05.0 -57.7 161.6
15°	42 02.0 -58.9 166.9	41 49.9 -58.6 165.7	41 36.8 -58.3 164.4	41 22.6 -58.1 163.2	41 07.3 -57.7 161.9
16°	41 03.1 -58.8 167.2	40 51.3 -58.6 166.0	40 38.5 -58.4 164.7	40 24.5 -58.1 163.5	40 09.6 -57.9 162.3
17°	40 04.3 -58.9 167.5	39 52.7 -58.7 166.2	39 40.1 -58.5 165.0	39 26.4 -58.2 163.8	39 11.7 -57.9 162.6
18°	39 05.4 -59.0 167.7	38 54.0 -58.7 166.5	38 41.6 -58.4 165.3	38 28.2 -58.2 164.1	38 13.8 -57.9 163.0
19°	38 06.4 -58.9 168.0	37 55.3 -58.7 166.8	37 43.2 -58.5 165.6	37 30.0 -58.2 164.4	37 15.9 -58.0 163.3
20°	37 07.5 -59.0 168.2	36 56.6 -58.8 167.0	36 44.7 -58.6 165.9	36 31.8 -58.3 164.7	36 17.9 -58.0 163.6
21°	36 08.5 -59.0 168.4	35 57.8 -58.8 167.3	35 46.1 -58.6 166.2	35 33.5 -58.4 165.0	35 19.9 -58.1 163.9
22°	35 09.5 -59.0 168.6	34 59.0 -58.8 167.5	34 47.5 -58.6 166.4	34 35.1 -58.4 165.3	34 21.8 -58.2 164.2
23°	34 10.5 -59.1 168.9	34 00.2 -58.9 167.8	33 48.9 -58.6 166.7	33 36.7 -58.4 165.6	33 23.6 -58.2 164.5
24°	33 11.4 -59.1 169.1	33 01.3 -58.9 168.0	32 50.3 -58.7 166.9	32 38.3 -58.4 165.9	32 25.4 -58.2 164.8
25°	32 12.3 -59.0 169.3	32 02.4 -58.9 168.2	31 51.6 -58.7 167.2	31 39.9 -58.5 166.1	31 27.2 -58.2 165.1
26°	31 13.3 -59.2 169.5	31 03.5 -58.9 168.5	30 52.9 -58.7 167.4	30 41.4 -58.6 166.4	30 29.0 -58.3 165.4
27°	30 14.1 -59.1 169.7	30 04.6 -59.0 168.7	29 54.2 -58.8 167.7	29 42.8 -58.5 166.7	29 30.7 -58.4 165.7
28°	29 15.0 -59.1 169.9	29 05.6 -58.9 168.9	28 55.4 -58.8 167.9	28 44.3 -58.6 166.9	28 32.3 -58.3 165.9
29°	28 15.9 -59.2 170.1	28 06.7 -59.0 169.1	27 56.6 -58.8 168.1	27 45.7 -58.6 167.2	27 34.0 -58.4 166.2

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°	55 00.0 -55.5 153.2	54 36.4 -55.0 151.6	54 11.6 -54.5 150.0	53 45.6 -54.0 148.5	53 18.4 -53.4 147.0
1°	54 04.5 -55.8 153.8	53 41.4 -55.2 152.3	53 17.1 -54.7 150.7	52 51.6 -54.1 149.2	52 25.0 -53.6 147.7
2°	53 08.7 -55.9 154.5	52 46.2 -55.5 152.9	52 22.4 -54.9 151.4	51 57.5 -54.5 149.9	51 31.4 -53.9 148.5
3°	52 12.8 -56.1 155.1	51 50.7 -55.6 153.5	51 27.5 -55.2 152.1	51 03.0 -54.6 150.6	50 37.5 -54.1 149.2
4°	51 16.7 -56.3 155.6	50 55.1 -55.8 154.1	50 32.3 -55.3 152.7	50 08.4 -54.9 151.3	49 43.4 -54.4 149.8
5°	50 20.4 -56.4 156.2	49 59.3 -56.0 154.7	49 37.0 -55.6 153.3	49 13.5 -55.0 151.9	48 49.0 -54.6 150.5
6°	49 24.0 -56.5 156.7	49 03.3 -56.1 155.3	48 41.4 -55.6 153.9	48 18.5 -55.3 152.5	47 54.4 -54.7 151.1
7°	48 27.5 -56.7 157.2	48 07.2 -56.3 155.8	47 45.8 -55.9 154.4	47 23.2 -55.4 153.1	46 59.7 -55.0 151.7
8°	47 30.8 -56.8 157.7	47 10.9 -56.4 156.3	46 49.9 -56.0 155.0	46 27.8 -55.5 153.6	46 04.7 -55.1 152.3
9°	46 34.0 -56.9 158.2	46 14.5 -56.5 156.8	45 53.9 -56.1 155.5	45 32.3 -55.7 154.2	45 09.6 -55.3 152.9
10°	45 37.1 -57.1 158.6	45 18.0 -56.7 157.3	44 57.8 -56.3 156.0	44 36.6 -55.9 154.7	44 14.3 -55.4 153.4
11°	44 40.0 -57.1 159.1	44 21.3 -56.7 157.8	44 01.5 -56.3 156.5	43 40.7 -56.0 155.2	43 18.9 -55.6 153.9
12°	43 42.9 -57.2 159.5	43 24.6 -56.9 158.2	43 05.2 -56.5 156.9	42 44.7 -56.1 155.7	42 23.3 -55.7 154.5
13°	42 45.7 -57.3 159.9	42 27.7 -57.0 158.7	42 08.7 -56.6 157.4	41 48.6 -56.2 156.2	41 27.6 -55.9 155.0
14°	41 48.4 -57.4 160.3	41 30.7 -57.0 159.1	41 12.1 -56.7 157.8	40 52.4 -56.4 156.6	40 31.7 -55.9 155.4
15°	40 51.0 -57.4 160.7	40 33.7 -57.1 159.5	40 15.4 -56.8 158.3	39 56.0 -56.4 157.1	39 35.8 -56.1 155.9
16°	39 53.6 -57.6 161.1	39 36.6 -57.2 159.9	39 18.6 -56.9 158.7	38 59.6 -56.5 157.5	38 39.7 -56.2 156.4
17°	38 56.0 -57.6 161.4	38 39.4 -57.3 160.3	38 21.7 -57.0 159.1	38 03.1 -56.6 158.0	37 43.5 -56.3 156.8
18°	37 58.4 -57.6 161.8	37 42.1 -57.4 160.7	37 24.7 -57.0 159.5	37 06.5 -56.8 158.4	36 47.2 -56.3 157.3
19°	37 00.8 -57.7 162.2	36 44.7 -57.4 161.0	36 27.7 -57.1 159.9	36 09.7 -56.7 158.8	35 50.9 -56.5 157.7
20°	36 03.1 -57.8 162.5	35 47.3 -57.5 161.4	35 30.6 -57.2 160.3	35 13.0 -56.9 159.2	34 54.4 -56.5 158.1
21°	35 05.3 -57.8 162.8	34 49.8 -57.5 161.7	34 33.4 -57.3 160.6	34 16.1 -57.0 159.6	33 57.9 -56.6 158.5
22°	34 07.5 -57.9 163.1	33 52.3 -57.6 162.1	33 36.1 -57.3 161.0	33 19.1 -57.0 159.9	33 01.3 -56.7 158.9
23°	33 09.6 -57.9 163.5	32 54.7 -57.7 162.4	32 38.8 -57.3 161.4	32 22.1 -57.0 160.3	32 04.6 -56.8 159.3
24°	32 11.7 -58.0 163.8	31 57.0 -57.7 162.7	31 41.5 -57.5 161.7	31 25.1 -57.2 160.7	31 07.8 -56.8 159.7
25°	31 13.7 -58.0 164.1	30 59.3 -57.7 163.1	30 44.0 -57.4 162.0	30 27.9 -57.1 161.0	30 11.0 -56.9 160.0
26°	30 15.7 -58.1 164.4	30 01.6 -57.8 163.4	29 46.6 -57.6 162.4	29 30.8 -57.3 161.4	29 14.1 -56.9 160.4
27°	29 17.6 -58.0 164.7	29 03.8 -57.9 163.7	28 49.0 -57.5 162.7	28 33.5 -57.3 161.7	28 17.2 -57.0 160.8
28°	28 19.6 -58.2 165.0	28 05.9 -57.8 164.0	27 51.5 -57.6 163.0	27 36.2 -57.3 162.1	27 20.2 -57.1 161.1
29°	27 21.4 -58.1 165.2	27 08.1 -58.0 164.3	26 53.9 -57.7 163.3	26 38.9 -57.4 162.4	26 23.1 -57.1 161.5

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°	52 50.1 -52.8 145.5	52 20.8 -52.2 144.1	51 50.4 -51.6 142.7	51 19.1 -51.0 141.3	50 46.8 -50.4 140.0
1°	51 57.3 -53.0 146.3	51 28.6 -52.5 144.9	50 58.8 -52.0 143.5	50 28.1 -51.4 142.1	49 56.4 -50.9 140.8
2°	51 04.3 -53.4 147.0	50 36.1 -52.9 145.6	50 06.8 -52.2 144.3	49 36.7 -51.8 142.9	49 05.5 -51.1 141.6
3°	50 10.9 -53.6 147.8	49 43.2 -53.0 146.4	49 14.6 -52.6 145.0	48 44.9 -52.0 143.7	48 14.4 -51.5 142.4
4°	49 17.3 -53.9 148.5	48 50.2 -53.4 147.1	48 22.0 -52.8 145.8	47 52.9 -52.3 144.5	47 22.9 -51.8 143.2
5°	48 23.4 -54.1 149.1	47 56.8 -53.6 147.8	47 29.2 -53.1 146.5	47 00.6 -52.6 145.2	46 31.1 -52.0 143.9
6°	47 29.3 -54.3 149.8	47 03.2 -53.8 148.5	46 36.1 -53.3 147.2	46 08.0 -52.8 145.9	45 39.1 -52.4 144.6
7°	46 35.0 -54.4 150.4	46 09.4 -54.0 149.1	45 42.8 -53.5 147.8	45 15.2 -53.0 146.6	44 46.7 -52.5 145.3
8°	45 40.6 -54.7 151.0	45 15.4 -54.2 149.7	44 49.3 -53.8 148.5	44 22.2 -53.3 147.2	43 54.2 -52.8 146.0
9°	44 45.9 -54.9 151.6	44 21.2 -54.4 150.3	43 55.5 -53.9 149.1	43 28.9 -53.5 147.9	43 01.4 -53.0 146.7
10°	43 51.0 -55.0 152.2	43 26.8 -54.6 150.9	43 01.6 -54.2 149.7	42 35.4 -53.6 148.5	42 08.4 -53.2 147.3
11°	42 56.0 -55.2 152.7	42 32.2 -54.7 151.5	42 07.4 -54.3 150.3	41 41.8 -53.9 149.1	41 15.2 -53.4 147.9
12°	42 00.8 -55.3 153.2	41 37.5 -54.9 152.0	41 13.1 -54.4 150.8	40 47.9 -54.0 149.7	40 21.8 -53.6 148.5
13°	41 05.5 -55.4 153.8	40 42.6 -55.1 152.6	40 18.7 -54.7 151.4	39 53.9 -54.2 150.2	39 28.2 -53.8 149.1
14°	40 10.1 -55.6 154.3	39 47.5 -55.1 153.1	39 24.0 -54.7 151.9	38 59.7 -54.4 150.8	38 34.4 -53.9 149.7
15°	39 14.5 -55.7 154.8	38 52.4 -55.3 153.6	38 29.3 -54.9 152.5	38 05.3 -54.5 151.3	37 40.5 -54.1 150.2
16°	38 18.8 -55.8 155.2	37 57.1 -55.5 154.1	37 34.4 -55.1 153.0	37 10.8 -54.6 151.9	36 46.4 -54.2 150.8
17°	37 23.0 -55.9 155.7	37 01.6 -55.5 154.6	36 39.3 -55.1 153.5	36 16.2 -54.8 152.4	35 52.2 -54.4 151.3
18°	36 27.1 -56.0 156.1	36 06.1 -55.7 155.0	35 44.2 -55.3 154.0	35 21.4 -54.9 152.9	34 57.8 -54.5 151.8
19°	35 31.1 -56.1 156.6	35 10.4 -55.7 155.5	34 48.9 -55.4 154.4	34 26.5 -55.0 153.4	34 03.3 -54.6 152.3
20°	34 35.0 -56.2 157.0	34 14.7 -55.9 156.0	33 53.5 -55.4 154.9	33 31.5 -55.1 153.9	33 08.7 -54.7 152.8
21°	33 38.8 -56.3 157.4	33 18.8 -55.9 156.4	32 58.1 -55.6 155.4	32 36.4 -55.2 154.3	32 14.0 -54.8 153.3
22°	32 42.5 -56.3 157.9	32 22.9 -56.0 156.8	32 02.5 -55.7 155.8	31 41.2 -55.3 154.8	31 19.2 -55.0 153.8
23°	31 46.2 -56.5 158.3	31 26.9 -56.1 157.3	31 06.8 -55.8 156.2	30 45.9 -55.4 155.3	30 24.2 -55.0 154.3
24°	30 49.7 -56.5 158.7	30 30.8 -56.2 157.7	30 11.0 -55.8 156.7	29 50.5 -55.5 155.7	29 29.2 -55.2 154.7
25°	29 53.2 -56.6 159.1	29 34.6 -56.2 158.1	29 15.2 -55.9 157.1	28 55.0 -55.6 156.1	28 34.0 -55.2 155.2
26°	28 56.6 -56.6 159.4	28 38.4 -56.4 158.5	28 19.3 -56.0 157.5	27 59.4 -55.6 156.6	27 38.8 -55.3 155.6
27°	28 00.0 -56.7 159.8	27 42.0 -56.4 158.9	27 23.3 -56.1 157.9	27 03.8 -55.7 157.0	26 43.5 -55.4 156.1
28°	27 03.3 -56.8 160.2	26 45.6 -56.4 159.2	26 27.2 -56.1 158.3	26 08.1 -55.8 157.4	25 48.1 -55.4 156.5
29°	26 06.5 -56.8 160.5	25 49.2 -56.5 159.6	25 31.1 -56.2 158.7	25 12.3 -55.9 157.8	24 52.7 -55.6 156.9

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°	50 13.7 -49.9 138.7	49 39.6 -49.3 137.4	49 04.8 -48.8 136.1	48 29.1 -48.2 134.9	47 52.7 -47.6 133.7
1°	49 23.8 -50.3 139.5	48 50.3 -49.7 138.2	48 16.0 -49.1 137.0	47 40.9 -48.6 135.8	47 05.1 -48.1 134.6
2°	48 33.5 -50.6 140.3	48 00.6 -50.1 139.1	47 26.9 -49.5 137.9	46 52.3 -48.9 136.7	46 17.0 -48.4 135.5
3°	47 42.9 -50.9 141.2	47 10.5 -50.4 139.9	46 37.4 -49.9 138.7	46 03.4 -49.3 137.5	45 28.6 -48.8 136.3
4°	46 52.0 -51.3 141.9	46 20.1 -50.7 140.7	45 47.5 -50.2 139.5	45 14.1 -49.7 138.3	44 39.8 -49.1 137.2
5°	46 00.7 -51.5 142.7	45 29.4 -51.0 141.5	44 57.3 -50.5 140.3	44 24.4 -50.0 139.1	43 50.7 -49.4 138.0
6°	45 09.2 -51.8 143.4	44 38.4 -51.3 142.2	44 06.8 -50.8 141.0	43 34.4 -50.2 139.9	43 01.3 -49.8 138.7
7°	44 17.4 -52.1 144.1	43 47.1 -51.5 142.9	43 16.0 -51.0 141.8	42 44.2 -50.6 140.6	42 11.5 -50.1 139.5
8°	43 25.3 -52.3 144.8	42 55.6 -51.9 143.6	42 25.0 -51.3 142.5	41 53.6 -50.8 141.4	41 21.4 -50.3 140.2
9°	42 33.0 -52.5 145.5	42 03.7 -52.0 144.3	41 33.7 -51.6 143.2	41 02.8 -51.1 142.1	40 31.1 -50.6 141.0
10°	41 40.5 -52.8 146.1	41 11.7 -52.3 145.0	40 42.1 -51.8 143.9	40 11.7 -51.3 142.8	39 40.5 -50.8 141.7
11°	40 47.7 -52.9 146.8	40 19.4 -52.5 145.6	39 50.3 -52.0 144.5	39 20.4 -51.6 143.4	38 49.7 -51.1 142.3
12°	39 54.8 -53.2 147.4	39 26.9 -52.7 146.3	38 58.3 -52.3 145.2	38 28.8 -51.8 144.1	37 58.6 -51.3 143.0
13°	39 01.6 -53.3 148.0	38 34.2 -52.8 146.9	38 06.0 -52.4 145.8	37 37.0 -51.9 144.7	37 07.3 -51.5 143.7
14°	38 08.3 -53.5 148.6	37 41.4 -53.1 147.5	37 13.6 -52.6 146.4	36 45.1 -52.2 145.4	36 15.8 -51.8 144.3
15°	37 14.8 -53.6 149.1	36 48.3 -53.2 148.1	36 21.0 -52.8 147.0	35 52.9 -52.3 146.0	35 24.0 -51.9 144.9
16°	36 21.2 -53.8 149.7	35 55.1 -53.4 148.6	35 28.2 -52.9 147.6	35 00.6 -52.6 146.6	34 32.1 -52.0 145.5
17°	35 27.4 -54.0 150.3	35 01.7 -53.5 149.2	34 35.3 -53.2 148.2	34 08.0 -52.6 147.2	33 40.1 -52.3 146.1
18°	34 33.4 -54.1 150.8	34 08.2 -53.7 149.8	33 42.1 -53.2 148.7	33 15.4 -52.9 147.7	32 47.8 -52.4 146.7
19°	33 39.3 -54.2 151.3	33 14.5 -53.8 150.3	32 48.9 -53.4 149.3	32 22.5 -53.0 148.3	31 55.4 -52.6 147.3
20°	32 45.1 -54.3 151.8	32 20.7 -54.0 150.8	31 55.5 -53.6 149.8	31 29.5 -53.1 148.8	31 02.8 -52.7 147.9
21°	31 50.8 -54.5 152.3	31 26.7 -54.0 151.3	31 01.9 -53.6 150.4	30 36.4 -53.3 149.4	30 10.1 -52.8 148.4
22°	30 56.3 -54.6 152.8	30 32.7 -54.2 151.8	30 08.3 -53.8 150.9	29 43.1 -53.3 149.9	29 17.3 -53.0 149.0
23°	30 01.7 -54.6 153.3	29 38.5 -54.3 152.3	29 14.5 -53.9 151.4	28 49.8 -53.5 150.4	28 24.3 -53.1 149.5
24°	29 07.1 -54.8 153.8	28 44.2 -54.4 152.8	28 20.6 -54.0 151.9	27 56.3 -53.7 151.0	27 31.2 -53.2 150.0
25°	28 12.3 -54.9 154.2	27 49.8 -54.5 153.3	27 26.6 -54.1 152.4	27 02.6 -53.7 151.5	26 38.0 -53.4 150.6
26°	27 17.4 -54.9 154.7	26 55.3 -54.6 153.8	26 32.5 -54.2 152.9	26 08.9 -53.8 152.0	25 44.6 -53.4 151.1
27°	26 22.5 -55.0 155.1	26 00.7 -54.6 154.2	25 38.3 -54.3 153.3	25 15.1 -53.9 152.5	24 51.2 -53.5 151.6
28°	25 27.5 -55.1 155.6	25 06.1 -54.8 154.7	24 44.0 -54.4 153.8	24 21.2 -54.0 152.9	23 57.7 -53.7 152.1
29°	24 32.4 -55.2 156.0	24 11.3 -54.8 155.1	23 49.6 -54.5 154.3	23 27.2 -54.1 153.4	23 04.0 -53.7 152.6

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	47 15.6 -47.1 132.5	46 37.7 -46.5 131.4	45 59.2 -45.9 130.3	45 20.1 -45.4 129.2	44 40.4 -44.9 128.2
1°	46 28.5 -47.5 133.5	45 51.2 -46.9 132.3	45 13.3 -46.5 131.2	44 34.7 -45.9 130.1	43 55.5 -45.4 129.1
2°	45 41.0 -47.9 134.3	45 04.3 -47.4 133.2	44 26.8 -46.8 132.1	43 48.8 -46.3 131.0	43 10.1 -45.8 130.0
3°	44 53.1 -48.2 135.2	44 16.9 -47.7 134.1	43 40.0 -47.2 133.0	43 02.5 -46.7 131.9	42 24.3 -46.2 130.9
4°	44 04.9 -48.6 136.0	43 29.2 -48.1 134.9	42 52.8 -47.6 133.8	42 15.8 -47.1 132.8	41 38.1 -46.5 131.7
5°	43 16.3 -49.0 136.8	42 41.1 -48.4 135.7	42 05.2 -47.9 134.7	41 28.7 -47.4 133.6	40 51.6 -47.0 132.6
6°	42 27.3 -49.2 137.6	41 52.7 -48.8 136.5	41 17.3 -48.2 135.5	40 41.3 -47.7 134.4	40 04.6 -47.2 133.4
7°	41 38.1 -49.6 138.4	41 03.9 -49.0 137.3	40 29.1 -48.6 136.2	39 53.6 -48.1 135.2	39 17.4 -47.6 134.2
8°	40 48.5 -49.8 139.1	40 14.9 -49.4 138.1	39 40.5 -48.8 137.0	39 05.5 -48.4 136.0	38 29.8 -47.9 135.0
9°	39 58.7 -50.1 139.9	39 25.5 -49.6 138.8	38 51.7 -49.2 137.8	38 17.1 -48.6 136.7	37 41.9 -48.1 135.7
10°	39 08.6 -50.4 140.6	38 35.9 -49.9 139.5	38 02.5 -49.4 138.5	37 28.5 -49.0 137.5	36 53.8 -48.5 136.5
11°	38 18.2 -50.6 141.3	37 46.0 -50.1 140.2	37 13.1 -49.6 139.2	36 39.5 -49.1 138.2	36 05.3 -48.7 137.2
12°	37 27.6 -50.8 142.0	36 55.9 -50.4 140.9	36 23.5 -49.9 139.9	35 50.4 -49.5 138.9	35 16.6 -49.0 137.9
13°	36 36.8 -51.1 142.6	36 05.5 -50.6 141.6	35 33.6 -50.2 140.6	35 00.9 -49.6 139.6	34 27.6 -49.2 138.6
14°	35 45.7 -51.3 143.3	35 14.9 -50.8 142.3	34 43.4 -50.3 141.3	34 11.3 -49.9 140.3	33 38.4 -49.4 139.3
15°	34 54.4 -51.4 143.9	34 24.1 -51.0 142.9	33 53.1 -50.6 141.9	33 21.4 -50.1 141.0	32 49.0 -49.6 140.0
16°	34 03.0 -51.6 144.5	33 33.1 -51.2 143.6	33 02.5 -50.7 142.6	32 31.3 -50.3 141.6	31 59.4 -49.9 140.7
17°	33 11.4 -51.9 145.2	32 41.9 -51.3 144.2	32 11.8 -50.9 143.2	31 41.0 -50.5 142.3	31 09.5 -50.0 141.3
18°	32 19.5 -51.9 145.8	31 50.6 -51.6 144.8	31 20.9 -51.1 143.8	30 50.5 -50.7 142.9	30 19.5 -50.2 142.0
19°	31 27.6 -52.2 146.3	30 59.0 -51.7 145.4	30 29.8 -51.3 144.4	29 59.8 -50.8 143.5	29 29.3 -50.4 142.6
20°	30 35.4 -52.3 146.9	30 07.3 -51.9 146.0	29 38.5 -51.4 145.0	29 09.0 -51.0 144.1	28 38.9 -50.6 143.2
21°	29 43.1 -52.4 147.5	29 15.4 -52.0 146.6	28 47.1 -51.6 145.6	28 18.0 -51.2 144.7	27 48.3 -50.7 143.8
22°	28 50.7 -52.6 148.0	28 23.4 -52.1 147.1	27 55.5 -51.8 146.2	27 26.8 -51.3 145.3	26 57.6 -50.9 144.4
23°	27 58.1 -52.7 148.6	27 31.3 -52.3 147.7	27 03.7 -51.8 146.8	26 35.5 -51.4 145.9	26 06.7 -51.0 145.0
24°	27 05.4 -52.8 149.1	26 39.0 -52.4 148.2	26 11.9 -52.0 147.3	25 44.1 -51.6 146.5	25 15.7 -51.2 145.6
25°	26 12.6 -52.9 149.7	25 46.6 -52.5 148.8	25 19.9 -52.1 147.9	24 52.5 -51.7 147.0	24 24.5 -51.3 146.2
26°	25 19.7 -53.1 150.2	24 54.1 -52.7 149.3	24 27.8 -52.3 148.4	24 00.8 -51.8 147.6	23 33.2 -51.4 146.8
27°	24 26.6 -53.1 150.7	24 01.4 -52.7 149.8	23 35.5 -52.3 149.0	23 09.0 -52.0 148.1	22 41.8 -51.5 147.3
28°	23 33.5 -53.2 151.2	23 08.7 -52.9 150.4	22 43.2 -52.5 149.5	22 17.0 -52.0 148.7	21 50.3 -51.6 147.9
29°	22 40.3 -53.4 151.7	22 15.8 -52.9 150.9	21 50.7 -52.5 150.0	21 25.0 -52.1 149.2	20 58.7 -51.8 148.4

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	44 00.1 -44.4 127.1	43 19.3 -44.0 126.1	42 37.9 -43.5 125.1	41 56.0 -42.9 124.1	41 13.7 -42.5 123.2
1°	43 15.7 -44.9 128.0	42 35.3 -44.3 127.0	41 54.4 -43.8 126.0	41 13.1 -43.5 125.1	40 31.2 -43.0 124.1
2°	42 30.8 -45.3 129.0	41 51.0 -44.8 127.9	41 10.6 -44.3 127.0	40 29.6 -43.8 126.0	39 48.2 -43.3 125.0
3°	41 45.5 -45.7 129.8	41 06.2 -45.2 128.8	40 26.3 -44.8 127.8	39 45.8 -44.2 126.9	39 04.9 -43.8 125.9
4°	40 59.8 -46.0 130.7	40 21.0 -45.6 129.7	39 41.5 -45.0 128.7	39 01.6 -44.6 127.8	38 21.1 -44.2 126.8
5°	40 13.8 -46.5 131.5	39 35.4 -45.9 130.6	38 56.5 -45.5 129.6	38 17.0 -45.0 128.6	37 36.9 -44.5 127.7
6°	39 27.3 -46.7 132.4	38 49.5 -46.3 131.4	38 11.0 -45.8 130.4	37 32.0 -45.4 129.5	36 52.4 -44.8 128.5
7°	38 40.6 -47.1 133.2	38 03.2 -46.6 132.2	37 25.2 -46.1 131.2	36 46.6 -45.6 130.3	36 07.6 -45.2 129.3
8°	37 53.5 -47.4 134.0	37 16.6 -47.0 133.0	36 39.1 -46.5 132.0	36 01.0 -46.0 131.1	35 22.4 -45.6 130.2
9°	37 06.1 -47.7 134.7	36 29.6 -47.2 133.8	35 52.6 -46.7 132.8	35 15.0 -46.3 131.9	34 36.8 -45.8 131.0
10°	36 18.4 -48.0 135.5	35 42.4 -47.5 134.5	35 05.9 -47.1 133.6	34 28.7 -46.6 132.6	33 51.0 -46.1 131.7
11°	35 30.4 -48.2 136.2	34 54.9 -47.7 135.3	34 18.8 -47.3 134.3	33 42.1 -46.8 133.4	33 04.9 -46.4 132.5
12°	34 42.2 -48.5 137.0	34 07.2 -48.1 136.0	33 31.5 -47.6 135.1	32 55.3 -47.1 134.2	32 18.5 -46.6 133.3
13°	33 53.7 -48.7 137.7	33 19.1 -48.3 136.7	32 43.9 -47.8 135.8	32 08.2 -47.4 134.9	31 31.9 -46.9 134.0
14°	33 05.0 -49.0 138.4	32 30.8 -48.5 137.4	31 56.1 -48.0 136.5	31 20.8 -47.6 135.6	30 45.0 -47.2 134.7
15°	32 16.0 -49.2 139.1	31 42.3 -48.7 138.1	31 08.1 -48.3 137.2	30 33.2 -47.8 136.3	29 57.8 -47.4 135.4
16°	31 26.8 -49.4 139.7	30 53.6 -48.9 138.8	30 19.8 -48.5 137.9	29 45.4 -48.0 137.0	29 10.4 -47.6 136.1
17°	30 37.4 -49.6 140.4	30 04.7 -49.2 139.5	29 31.3 -48.7 138.6	28 57.4 -48.3 137.7	28 22.8 -47.8 136.8
18°	29 47.8 -49.8 141.1	29 15.5 -49.3 140.2	28 42.6 -48.9 139.3	28 09.1 -48.4 138.4	27 35.0 -48.0 137.5
19°	28 58.0 -49.9 141.7	28 26.2 -49.5 140.8	27 53.7 -49.1 139.9	27 20.7 -48.7 139.1	26 47.0 -48.2 138.2
20°	28 08.1 -50.2 142.3	27 36.7 -49.7 141.4	27 04.6 -49.2 140.6	26 32.0 -48.8 139.7	25 58.8 -48.3 138.9
21°	27 17.9 -50.3 142.9	26 47.0 -49.9 142.1	26 15.4 -49.4 141.2	25 43.2 -49.0 140.4	25 10.5 -48.6 139.5
22°	26 27.6 -50.4 143.6	25 57.1 -50.0 142.7	25 26.0 -49.6 141.8	24 54.2 -49.1 141.0	24 21.9 -48.7 140.2
23°	25 37.2 -50.6 144.2	25 07.1 -50.2 143.3	24 36.4 -49.7 142.5	24 05.1 -49.3 141.6	23 33.2 -48.8 140.8
24°	24 46.6 -50.7 144.8	24 16.9 -50.3 143.9	23 46.7 -49.9 143.1	23 15.8 -49.4 142.3	22 44.4 -49.0 141.4
25°	23 55.9 -50.9 145.3	23 26.6 -50.4 144.5	22 56.8 -50.0 143.7	22 26.4 -49.6 142.9	21 55.4 -49.2 142.1
26°	23 05.0 -51.0 145.9	22 36.2 -50.6 145.1	22 06.8 -50.2 144.3	21 36.8 -49.7 143.5	21 06.2 -49.3 142.7
27°	22 14.0 -51.1 146.5	21 45.6 -50.7 145.7	21 16.6 -50.2 144.9	20 47.1 -49.9 144.1	20 16.9 -49.4 143.3
28°	21 22.9 -51.2 147.1	20 54.9 -50.8 146.2	20 26.4 -50.4 145.5	19 57.2 -49.9 144.7	19 27.5 -49.5 143.9
29°	20 31.7 -51.3 147.6	20 04.1 -50.9 146.8	19 36.0 -50.5 146.0	19 07.3 -50.1 145.3	18 38.0 -49.6 144.5

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°	40 30.9 -42.1 122.3	39 47.6 -41.6 121.4	39 04.0 -41.2 120.5	38 19.9 -40.7 119.6	37 35.5 -40.3 118.8
1°	39 48.8 -42.5 123.2	39 06.0 -42.0 122.3	38 22.8 -41.6 121.4	37 39.2 -41.2 120.5	36 55.2 -40.8 119.7
2°	39 06.3 -42.9 124.1	38 24.0 -42.5 123.2	37 41.2 -42.0 122.3	36 58.0 -41.6 121.5	36 14.4 -41.2 120.6
3°	38 23.4 -43.3 125.0	37 41.5 -42.8 124.1	36 59.2 -42.4 123.2	36 16.4 -42.0 122.4	35 33.2 -41.6 121.5
4°	37 40.1 -43.7 125.9	36 58.7 -43.3 125.0	36 16.8 -42.8 124.1	35 34.4 -42.4 123.2	34 51.6 -41.9 122.4
5°	36 56.4 -44.0 126.8	36 15.4 -43.6 125.9	35 34.0 -43.2 125.0	34 52.0 -42.7 124.1	34 09.7 -42.3 123.2
6°	36 12.4 -44.4 127.6	35 31.8 -43.9 126.7	34 50.8 -43.5 125.8	34 09.3 -43.1 125.0	33 27.4 -42.7 124.1
7°	35 28.0 -44.8 128.4	34 47.9 -44.3 127.5	34 07.3 -43.9 126.7	33 26.2 -43.4 125.8	32 44.7 -43.0 124.9
8°	34 43.2 -45.0 129.2	34 03.6 -44.7 128.4	33 23.4 -44.2 127.5	32 42.8 -43.7 126.6	32 01.7 -43.3 125.8
9°	33 58.2 -45.4 130.0	33 18.9 -44.9 129.2	32 39.2 -44.4 128.3	31 59.1 -44.1 127.4	31 18.4 -43.6 126.6
10°	33 12.8 -45.7 130.8	32 34.0 -45.2 129.9	31 54.8 -44.8 129.1	31 15.0 -44.3 128.2	30 34.8 -43.9 127.4
11°	32 27.1 -45.9 131.6	31 48.8 -45.5 130.7	31 10.0 -45.0 129.9	30 30.7 -44.6 129.0	29 50.9 -44.1 128.2
12°	31 41.2 -46.2 132.4	31 03.3 -45.7 131.5	30 25.0 -45.4 130.6	29 46.1 -44.9 129.8	29 06.8 -44.5 128.9
13°	30 55.0 -46.5 133.1	30 17.6 -46.0 132.2	29 39.6 -45.5 131.4	29 01.2 -45.1 130.5	28 22.3 -44.7 129.7
14°	30 08.5 -46.7 133.8	29 31.6 -46.3 133.0	28 54.1 -45.8 132.1	28 16.1 -45.4 131.3	27 37.6 -44.9 130.5
15°	29 21.8 -46.9 134.6	28 45.3 -46.5 133.7	28 08.3 -46.1 132.9	27 30.7 -45.6 132.0	26 52.7 -45.2 131.2
16°	28 34.9 -47.1 135.3	27 58.8 -46.7 134.4	27 22.2 -46.2 133.6	26 45.1 -45.8 132.8	26 07.5 -45.4 131.9
17°	27 47.8 -47.4 136.0	27 12.1 -46.9 135.1	26 36.0 -46.5 134.3	25 59.3 -46.0 133.5	25 22.1 -45.6 132.7
18°	27 00.4 -47.6 136.7	26 25.2 -47.1 135.8	25 49.5 -46.7 135.0	25 13.3 -46.3 134.2	24 36.5 -45.8 133.4
19°	26 12.8 -47.7 137.4	25 38.1 -47.3 136.5	25 02.8 -46.8 135.7	24 27.0 -46.4 134.9	23 50.7 -46.0 134.1
20°	25 25.1 -47.9 138.0	24 50.8 -47.5 137.2	24 16.0 -47.1 136.4	23 40.6 -46.6 135.6	23 04.7 -46.1 134.8
21°	24 37.2 -48.1 138.7	24 03.3 -47.7 137.9	23 28.9 -47.2 137.1	22 54.0 -46.8 136.3	22 18.6 -46.4 135.5
22°	23 49.1 -48.3 139.3	23 15.6 -47.8 138.5	22 41.7 -47.4 137.7	22 07.2 -46.9 137.0	21 32.2 -46.5 136.2
23°	23 00.8 -48.4 140.0	22 27.8 -48.0 139.2	21 54.3 -47.6 138.4	21 20.3 -47.2 137.6	20 45.7 -46.7 136.9
24°	22 12.4 -48.6 140.6	21 39.8 -48.1 139.8	21 06.7 -47.7 139.1	20 33.1 -47.2 138.3	19 59.0 -46.8 137.5
25°	21 23.8 -48.7 141.3	20 51.7 -48.3 140.5	20 19.0 -47.8 139.7	19 45.9 -47.4 138.9	19 12.2 -46.9 138.2
26°	20 35.1 -48.9 141.9	20 03.4 -48.4 141.1	19 31.2 -48.0 140.4	18 58.5 -47.6 139.6	18 25.3 -47.1 138.8
27°	19 46.2 -48.9 142.5	19 15.0 -48.5 141.7	18 43.2 -48.1 141.0	18 10.9 -47.6 140.2	17 38.2 -47.3 139.5
28°	18 57.3 -49.1 143.1	18 26.5 -48.7 142.4	17 55.1 -48.2 141.6	17 23.3 -47.8 140.9	16 50.9 -47.3 140.1
29°	18 08.2 -49.2 143.7	17 37.8 -48.8 143.0	17 06.9 -48.3 142.2	16 35.5 -47.9 141.5	16 03.6 -47.5 140.8

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°	36 50.7 -39.9 117.9	36 05.6 -39.6 117.1	35 20.1 -39.1 116.3	34 34.4 -38.8 115.5	33 48.3 -38.5 114.7
1°	36 10.8 -40.4 118.8	35 26.0 -39.9 118.0	34 41.0 -39.6 117.2	33 55.6 -39.3 116.4	33 09.8 -38.8 115.7
2°	35 30.4 -40.8 119.8	34 46.1 -40.4 118.9	34 01.4 -40.0 118.1	33 16.3 -39.6 117.3	32 31.0 -39.3 116.6
3°	34 49.6 -41.1 120.7	34 05.7 -40.8 119.8	33 21.4 -40.4 119.0	32 36.7 -40.0 118.2	31 51.7 -39.6 117.5
4°	34 08.5 -41.6 121.5	33 24.9 -41.1 120.7	32 41.0 -40.7 119.9	31 56.7 -40.3 119.1	31 12.1 -40.0 118.3
5°	33 26.9 -41.9 122.4	32 43.8 -41.5 121.6	32 00.3 -41.1 120.8	31 16.4 -40.7 120.0	30 32.1 -40.3 119.2
6°	32 45.0 -42.2 123.3	32 02.3 -41.8 122.4	31 19.2 -41.5 121.6	30 35.7 -41.1 120.8	29 51.8 -40.7 120.1
7°	32 02.8 -42.6 124.1	31 20.5 -42.2 123.3	30 37.7 -41.7 122.5	29 54.6 -41.3 121.7	29 11.1 -40.9 120.9
8°	31 20.2 -42.8 124.9	30 38.3 -42.5 124.1	29 56.0 -42.1 123.3	29 13.3 -41.7 122.5	28 30.2 -41.3 121.7
9°	30 37.4 -43.2 125.7	29 55.8 -42.7 124.9	29 13.9 -42.3 124.1	28 31.6 -41.9 123.3	27 48.9 -41.5 122.6
10°	29 54.2 -43.5 126.6	29 13.1 -43.1 125.7	28 31.6 -42.7 124.9	27 49.7 -42.3 124.2	27 07.4 -41.9 123.4
11°	29 10.7 -43.7 127.3	28 30.0 -43.3 126.5	27 48.9 -42.9 125.7	27 07.4 -42.5 125.0	26 25.5 -42.1 124.2
12°	28 27.0 -44.1 128.1	27 46.7 -43.6 127.3	27 06.0 -43.1 126.5	26 24.9 -42.7 125.7	25 43.4 -42.3 125.0
13°	27 42.9 -44.2 128.9	27 03.1 -43.8 128.1	26 22.9 -43.5 127.3	25 42.2 -43.0 126.5	25 01.1 -42.6 125.8
14°	26 58.7 -44.5 129.7	26 19.3 -44.1 128.9	25 39.4 -43.6 128.1	24 59.2 -43.3 127.3	24 18.5 -42.8 126.5
15°	26 14.2 -44.8 130.4	25 35.2 -44.3 129.6	24 55.8 -43.9 128.8	24 15.9 -43.4 128.1	23 35.7 -43.1 127.3
16°	25 29.4 -44.9 131.1	24 50.9 -44.5 130.4	24 11.9 -44.1 129.6	23 32.5 -43.7 128.8	22 52.6 -43.3 128.1
17°	24 44.5 -45.2 131.9	24 06.4 -44.8 131.1	23 27.8 -44.3 130.3	22 48.8 -43.9 129.6	22 09.3 -43.4 128.8
18°	23 59.3 -45.3 132.6	23 21.6 -44.9 131.8	22 43.5 -44.5 131.1	22 04.9 -44.1 130.3	21 25.9 -43.7 129.5
19°	23 14.0 -45.6 133.3	22 36.7 -45.1 132.5	21 59.0 -44.7 131.8	21 20.8 -44.3 131.0	20 42.2 -43.8 130.3
20°	22 28.4 -45.7 134.0	21 51.6 -45.3 133.3	21 14.3 -44.9 132.5	20 36.5 -44.4 131.7	19 58.4 -44.1 131.0
21°	21 42.7 -46.0 134.7	21 06.3 -45.5 134.0	20 29.4 -45.0 133.2	19 52.1 -44.6 132.5	19 14.3 -44.2 131.7
22°	20 56.7 -46.0 135.4	20 20.8 -45.7 134.7	19 44.4 -45.3 133.9	19 07.5 -44.8 133.2	18 30.1 -44.3 132.4
23°	20 10.7 -46.3 136.1	19 35.1 -45.8 135.3	18 59.1 -45.3 134.6	18 22.7 -44.9 133.9	17 45.8 -44.5 133.2
24°	19 24.4 -46.4 136.8	18 49.3 -45.9 136.0	18 13.8 -45.5 135.3	17 37.8 -45.1 134.6	17 01.3 -44.7 133.9
25°	18 38.0 -46.5 137.4	18 03.4 -46.1 136.7	17 28.3 -45.7 136.0	16 52.7 -45.2 135.3	16 16.6 -44.7 134.6
26°	17 51.5 -46.6 138.1	17 17.3 -46.2 137.4	16 42.6 -45.8 136.7	16 07.5 -45.4 135.9	15 31.9 -44.9 135.2
27°	17 04.9 -46.8 138.8	16 31.1 -46.4 138.0	15 56.8 -45.9 137.3	15 22.1 -45.5 136.6	14 47.0 -45.1 135.9
28°	16 18.1 -46.9 139.4	15 44.7 -46.4 138.7	15 10.9 -46.0 138.0	14 36.6 -45.5 137.3	14 01.9 -45.1 136.6
29°	15 31.2 -47.1 140.1	14 58.3 -46.6 139.4	14 24.9 -46.1 138.7	13 51.1 -45.7 138.0	13 16.8 -45.3 137.3

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°	33 02.0 -38.2 114.0	32 15.3 -37.8 113.2	31 28.4 -37.4 112.5	30 41.3 -37.2 111.8	29 53.9 -36.8 111.1
1°	32 23.8 -38.5 114.9	31 37.5 -38.2 114.1	30 51.0 -37.9 113.4	30 04.1 -37.5 112.7	29 17.1 -37.3 112.0
2°	31 45.3 -38.9 115.8	30 59.3 -38.5 115.0	30 13.1 -38.2 114.3	29 26.6 -37.9 113.6	28 39.8 -37.5 112.9
3°	31 06.4 -39.3 116.7	30 20.8 -38.9 115.9	29 34.9 -38.6 115.2	28 48.7 -38.2 114.5	28 02.3 -37.9 113.7
4°	30 27.1 -39.6 117.6	29 41.9 -39.3 116.8	28 56.3 -38.9 116.1	28 10.5 -38.6 115.3	27 24.4 -38.3 114.6
5°	29 47.5 -39.9 118.4	29 02.6 -39.6 117.7	28 17.4 -39.2 116.9	27 31.9 -38.9 116.2	26 46.1 -38.5 115.5
6°	29 07.6 -40.3 119.3	28 23.0 -39.9 118.5	27 38.2 -39.6 117.8	26 53.0 -39.2 117.1	26 07.6 -38.9 116.3
7°	28 27.3 -40.6 120.1	27 43.1 -40.2 119.4	26 58.6 -39.8 118.6	26 13.8 -39.5 117.9	25 28.7 -39.1 117.2
8°	27 46.7 -40.9 121.0	27 02.9 -40.5 120.2	26 18.8 -40.1 119.5	25 34.3 -39.7 118.7	24 49.6 -39.4 118.0
9°	27 05.8 -41.1 121.8	26 22.4 -40.8 121.0	25 38.7 -40.4 120.3	24 54.6 -40.1 119.6	24 10.2 -39.7 118.9
10°	26 24.7 -41.5 122.6	25 41.6 -41.0 121.9	24 58.3 -40.7 121.1	24 14.5 -40.3 120.4	23 30.5 -40.0 119.7
11°	25 43.2 -41.7 123.4	25 00.6 -41.3 122.7	24 17.6 -40.9 121.9	23 34.2 -40.5 121.2	22 50.5 -40.1 120.5
12°	25 01.5 -41.9 124.2	24 19.3 -41.6 123.5	23 36.7 -41.2 122.7	22 53.7 -40.8 122.0	22 10.4 -40.4 121.3
13°	24 19.6 -42.2 125.0	23 37.7 -41.8 124.3	22 55.5 -41.4 123.5	22 12.9 -41.0 122.8	21 30.0 -40.7 122.1
14°	23 37.4 -42.4 125.8	22 55.9 -42.0 125.0	22 14.1 -41.6 124.3	21 31.9 -41.3 123.6	20 49.3 -40.8 122.9
15°	22 55.0 -42.7 126.5	22 13.9 -42.2 125.8	21 32.5 -41.9 125.1	20 50.6 -41.4 124.4	20 08.5 -41.1 123.7
16°	22 12.3 -42.8 127.3	21 31.7 -42.5 126.6	20 50.6 -42.0 125.9	20 09.2 -41.7 125.1	19 27.4 -41.3 124.4
17°	21 29.5 -43.1 128.1	20 49.2 -42.6 127.3	20 08.6 -42.3 126.6	19 27.5 -41.8 125.9	18 46.1 -41.4 125.2
18°	20 46.4 -43.2 128.8	20 06.6 -42.8 128.1	19 26.3 -42.4 127.4	18 45.7 -42.0 126.7	18 04.7 -41.6 126.0
19°	20 03.2 -43.4 129.6	19 23.8 -43.1 128.8	18 43.9 -42.6 128.1	18 03.7 -42.2 127.4	17 23.1 -41.8 126.7
20°	19 19.8 -43.6 130.3	18 40.7 -43.1 129.6	18 01.3 -42.8 128.9	17 21.5 -42.4 128.2	16 41.3 -41.9 127.5
21°	18 36.2 -43.8 131.0	17 57.6 -43.4 130.3	17 18.5 -42.9 129.6	16 39.1 -42.5 128.9	15 59.4 -42.2 128.2
22°	17 52.4 -43.9 131.7	17 14.2 -43.5 131.0	16 35.6 -43.1 130.3	15 56.6 -42.6 129.6	15 17.2 -42.2 129.0
23°	17 08.5 -44.1 132.4	16 30.7 -43.6 131.7	15 52.5 -43.2 131.1	15 14.0 -42.8 130.4	14 35.0 -42.4 129.7
24°	16 24.4 -44.2 133.2	15 47.1 -43.8 132.5	15 09.3 -43.3 131.8	14 31.2 -43.0 131.1	13 52.6 -42.5 130.4
25°	15 40.2 -44.4 133.9	15 03.3 -43.9 133.2	14 26.0 -43.5 132.5	13 48.2 -43.0 131.8	13 10.1 -42.6 131.1
26°	14 55.8 -44.5 134.6	14 19.4 -44.1 133.9	13 42.5 -43.6 133.2	13 05.2 -43.2 132.5	12 27.5 -42.8 131.9
27°	14 11.3 -44.6 135.2	13 35.3 -44.2 134.6	12 58.9 -43.8 133.9	12 22.0 -43.3 133.2	11 44.7 -42.8 132.6
28°	13 26.7 -44.7 135.9	12 51.1 -44.2 135.3	12 15.1 -43.8 134.6	11 38.7 -43.4 133.9	11 01.9 -43.0 133.3
29°	12 42.0 -44.8 136.6	12 06.9 -44.4 136.0	11 31.3 -43.9 135.3	10 55.3 -43.5 134.7	10 18.9 -43.0 134.0

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°	29 06.3 -36.5 110.4	28 18.5 -36.3 109.7	27 30.5 -36.0 109.0	26 42.3 -35.8 108.3	25 53.9 -35.5 107.7
1°	28 29.8 -37.0 111.3	27 42.2 -36.6 110.6	26 54.5 -36.4 109.9	26 06.5 -36.0 109.2	25 18.4 -35.8 108.6
2°	27 52.8 -37.2 112.2	27 05.6 -37.0 111.5	26 18.1 -36.7 110.8	25 30.5 -36.5 110.1	24 42.6 -36.2 109.4
3°	27 15.6 -37.6 113.0	26 28.6 -37.3 112.3	25 41.4 -37.0 111.7	24 54.0 -36.7 111.0	24 06.4 -36.4 110.3
4°	26 38.0 -38.0 113.9	25 51.3 -37.6 113.2	25 04.4 -37.3 112.5	24 17.3 -37.0 111.9	23 30.0 -36.7 111.2
5°	26 00.0 -38.2 114.8	25 13.7 -37.9 114.1	24 27.1 -37.5 113.4	23 40.3 -37.3 112.7	22 53.3 -37.0 112.0
6°	25 21.8 -38.5 115.6	24 35.8 -38.2 114.9	23 49.6 -37.9 114.2	23 03.0 -37.5 113.6	22 16.3 -37.3 112.9
7°	24 43.3 -38.8 116.5	23 57.6 -38.4 115.8	23 11.7 -38.2 115.1	22 25.5 -37.9 114.4	21 39.0 -37.5 113.7
8°	24 04.5 -39.1 117.3	23 19.2 -38.8 116.6	22 33.5 -38.4 115.9	21 47.6 -38.0 115.3	21 01.5 -37.8 114.6
9°	23 25.4 -39.3 118.1	22 40.4 -38.9 117.4	21 55.1 -38.6 116.8	21 09.6 -38.3 116.1	20 23.7 -38.0 115.4
10°	22 46.1 -39.6 119.0	22 01.5 -39.3 118.3	21 16.5 -38.9 117.6	20 31.3 -38.6 116.9	19 45.7 -38.2 116.2
11°	22 06.5 -39.8 119.8	21 22.2 -39.4 119.1	20 37.6 -39.1 118.4	19 52.7 -38.8 117.7	19 07.5 -38.4 117.1
12°	21 26.7 -40.0 120.6	20 42.8 -39.7 119.9	19 58.5 -39.3 119.2	19 13.9 -38.9 118.5	18 29.1 -38.6 117.9
13°	20 46.7 -40.3 121.4	20 03.1 -39.9 120.7	19 19.2 -39.6 120.0	18 35.0 -39.2 119.3	17 50.5 -38.9 118.7
14°	20 06.4 -40.5 122.2	19 23.2 -40.1 121.5	18 39.9 -39.7 120.8	17 55.8 -39.4 120.1	17 11.6 -39.0 119.5
15°	19 25.9 -40.6 123.0	18 43.1 -40.3 122.3	17 59.9 -39.9 121.6	17 16.4 -39.6 120.9	16 32.6 -39.2 120.3
16°	18 45.3 -40.9 123.7	18 02.8 -40.5 123.1	17 20.0 -40.1 122.4	16 36.8 -39.7 121.7	15 53.4 -39.4 121.1
17°	18 04.4 -41.1 124.5	17 22.3 -40.7 123.8	16 39.9 -40.3 123.2	15 57.1 -39.9 122.5	15 14.0 -39.5 121.8
18°	17 23.3 -41.2 125.3	16 41.6 -40.8 124.6	15 59.6 -40.5 123.9	15 17.2 -40.1 123.3	14 34.5 -39.7 122.6
19°	16 42.1 -41.4 126.0	16 00.8 -41.0 125.4	15 19.1 -40.6 124.7	14 37.1 -40.2 124.0	13 54.8 -39.8 123.4
20°	16 00.7 -41.5 126.8	15 19.8 -41.1 126.1	14 38.5 -40.7 125.5	13 56.9 -40.3 124.8	13 15.0 -40.0 124.2
21°	15 19.2 -41.7 127.5	14 38.7 -41.3 126.9	13 57.8 -40.9 126.2	13 16.6 -40.5 125.6	12 35.0 -40.1 124.9
22°	14 37.5 -41.8 128.3	13 57.4 -41.5 127.6	13 16.9 -41.0 127.0	12 36.1 -40.7 126.3	11 54.9 -40.2 125.7
23°	13 55.7 -42.0 129.0	13 15.9 -41.5 128.4	12 35.9 -41.2 127.7	11 55.4 -40.7 127.1	11 14.7 -40.4 126.4
24°	13 13.7 -42.1 129.8	12 34.4 -41.7 129.1	11 54.7 -41.2 128.5	11 14.7 -40.8 127.8	10 34.3 -40.4 127.2
25°	12 31.6 -42.2 130.5	11 52.7 -41.8 129.8	11 13.5 -41.4 129.2	10 33.9 -41.0 128.6	9 53.9 -40.5 127.9
26°	11 49.4 -42.3 131.2	11 10.9 -41.9 130.6	10 32.1 -41.5 129.9	9 52.9 -41.1 129.3	9 13.4 -40.7 128.7
27°	11 07.1 -42.5 131.9	10 29.0 -42.0 131.3	9 50.6 -41.6 130.7	9 11.8 -41.1 130.1	8 32.7 -40.7 129.4
28°	10 24.6 -42.5 132.7	9 47.0 -42.1 132.0	9 09.0 -41.6 131.4	8 30.7 -41.2 130.8	7 52.0 -40.8 130.2
29°	9 42.1 -42.6 133.4	9 04.9 -42.1 132.8	8 27.4 -41.7 132.1	7 49.5 -41.3 131.5	7 11.2 -40.9 130.9

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°	25 05.3 -35.2 107.0	24 16.6 -35.0 106.4	23 27.7 -34.8 105.7	22 38.6 -34.5 105.1	21 49.5 -34.4 104.5
1°	24 30.1 -35.6 107.9	23 41.6 -35.4 107.3	22 52.9 -35.1 106.6	22 04.1 -34.9 106.0	21 15.1 -34.7 105.4
2°	23 54.5 -35.9 108.8	23 06.2 -35.6 108.1	22 17.8 -35.4 107.5	21 29.2 -35.2 106.9	20 40.4 -34.9 106.2
3°	23 18.6 -36.2 109.7	22 30.6 -35.9 109.0	21 42.4 -35.7 108.4	20 54.0 -35.4 107.7	20 05.5 -35.2 107.1
4°	22 42.4 -36.4 110.5	21 54.7 -36.2 109.9	21 06.7 -35.9 109.2	20 18.6 -35.7 108.6	19 30.3 -35.4 108.0
5°	22 06.0 -36.7 111.4	21 18.5 -36.4 110.7	20 30.8 -36.1 110.1	19 42.9 -35.9 109.5	18 54.9 -35.7 108.8
6°	21 29.3 -37.0 112.2	20 42.1 -36.7 111.6	19 54.7 -36.4 110.9	19 07.0 -36.1 110.3	18 19.2 -35.8 109.7
7°	20 52.3 -37.2 113.1	20 05.4 -36.9 112.4	19 18.3 -36.7 111.8	18 30.9 -36.4 111.2	17 43.4 -36.1 110.5
8°	20 15.1 -37.4 113.9	19 28.5 -37.2 113.3	18 41.6 -36.8 112.6	17 54.5 -36.5 112.0	17 07.3 -36.3 111.4
9°	19 37.7 -37.7 114.8	18 51.3 -37.3 114.1	18 04.8 -37.1 113.5	17 18.0 -36.8 112.8	16 31.0 -36.5 112.2
10°	19 00.0 -37.9 115.6	18 14.0 -37.6 114.9	17 27.7 -37.3 114.3	16 41.2 -37.0 113.6	15 54.5 -36.7 113.0
11°	18 22.1 -38.1 116.4	17 36.4 -37.8 115.7	16 50.4 -37.4 115.1	16 04.2 -37.1 114.5	15 17.8 -36.9 113.8
12°	17 44.0 -38.3 117.2	16 58.6 -38.0 116.6	16 13.0 -37.7 115.9	15 27.1 -37.4 115.3	14 40.9 -37.0 114.7
13°	17 05.7 -38.5 118.0	16 20.6 -38.1 117.4	15 35.3 -37.8 116.7	14 49.7 -37.5 116.1	14 03.9 -37.2 115.5
14°	16 27.2 -38.7 118.8	15 42.5 -38.4 118.2	14 57.5 -38.0 117.5	14 12.2 -37.6 116.9	13 26.7 -37.3 116.3
15°	15 48.5 -38.8 119.6	15 04.1 -38.5 119.0	14 19.5 -38.2 118.3	13 34.6 -37.9 117.7	12 49.4 -37.5 117.1
16°	15 09.7 -39.1 120.4	14 25.6 -38.6 119.8	13 41.3 -38.3 119.1	12 56.7 -37.9 118.5	12 11.9 -37.6 117.9
17°	14 30.6 -39.1 121.2	13 47.0 -38.8 120.5	13 03.0 -38.4 119.9	12 18.8 -38.1 119.3	11 34.3 -37.8 118.7
18°	13 51.5 -39.3 122.0	13 08.2 -39.0 121.3	12 24.6 -38.6 120.7	11 40.7 -38.3 120.1	10 56.5 -37.9 119.5
19°	13 12.2 -39.5 122.7	12 29.2 -39.1 122.1	11 46.0 -38.7 121.5	11 02.4 -38.3 120.9	10 18.6 -38.0 120.3
20°	12 32.7 -39.6 123.5	11 50.1 -39.2 122.9	11 07.3 -38.9 122.3	10 24.1 -38.5 121.7	9 40.6 -38.1 121.0
21°	11 53.1 -39.7 124.3	11 10.9 -39.3 123.7	10 28.4 -38.9 123.0	9 45.6 -38.5 122.4	9 02.5 -38.2 121.8
22°	11 13.4 -39.8 125.1	10 31.6 -39.4 124.4	9 49.5 -39.1 123.8	9 07.1 -38.7 123.2	8 24.3 -38.3 122.6
23°	10 33.6 -40.0 125.8	9 52.2 -39.6 125.2	9 10.4 -39.1 124.6	8 28.4 -38.8 124.0	7 46.0 -38.3 123.4
24°	9 53.6 -40.0 126.6	9 12.6 -39.6 126.0	8 31.3 -39.3 125.4	7 49.6 -38.8 124.8	7 07.7 -38.5 124.2
25°	9 13.6 -40.1 127.3	8 33.0 -39.7 126.7	7 52.0 -39.3 126.1	7 10.8 -38.9 125.5	6 29.2 -38.5 124.9
26°	8 33.5 -40.2 128.1	7 53.3 -39.8 127.5	7 12.7 -39.4 126.9	6 31.9 -39.0 126.3	5 50.7 -38.6 125.7
27°	7 53.3 -40.3 128.8	7 13.5 -39.9 128.2	6 33.3 -39.4 127.6	5 52.9 -39.1 127.1	5 12.1 -38.6 126.5
28°	7 13.0 -40.4 129.6	6 33.6 -40.0 129.0	5 53.9 -39.6 128.4	5 13.8 -39.1 127.8	4 33.5 -38.7 127.2
29°	6 32.6 -40.5 130.3	5 53.6 -40.0 129.7	5 14.3 -39.6 129.2	4 34.7 -39.1 128.6	3 54.8 -38.8 128.0

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°	21 00.1 -34.2 103.9	20 10.7 -34.0 103.3	19 21.1 -33.8 102.7	18 31.4 -33.7 102.1	17 41.6 -33.5 101.5
1°	20 25.9 -34.4 104.8	19 36.7 -34.3 104.2	18 47.3 -34.1 103.6	17 57.7 -33.9 103.0	17 08.1 -33.7 102.4
2°	19 51.5 -34.7 105.6	19 02.4 -34.5 105.0	18 13.2 -34.3 104.4	17 23.8 -34.1 103.8	16 34.4 -34.0 103.2
3°	19 16.8 -35.0 106.5	18 27.9 -34.7 105.9	17 38.9 -34.5 105.3	16 49.7 -34.3 104.7	16 00.4 -34.1 104.1
4°	18 41.8 -35.2 107.4	17 53.2 -35.0 106.7	17 04.4 -34.8 106.1	16 15.4 -34.5 105.5	15 26.3 -34.3 104.9
5°	18 06.6 -35.4 108.2	17 18.2 -35.2 107.6	16 29.6 -34.9 107.0	15 40.9 -34.7 106.4	14 52.0 -34.5 105.8
6°	17 31.2 -35.6 109.1	16 43.0 -35.3 108.4	15 54.7 -35.1 107.8	15 06.2 -34.9 107.2	14 17.5 -34.7 106.6
7°	16 55.6 -35.8 109.9	16 07.7 -35.6 109.3	15 19.6 -35.4 108.7	14 31.3 -35.1 108.1	13 42.8 -34.8 107.5
8°	16 19.8 -36.1 110.7	15 32.1 -35.8 110.1	14 44.2 -35.5 109.5	13 56.2 -35.3 108.9	13 08.0 -35.1 108.3
9°	15 43.7 -36.2 111.6	14 56.3 -35.9 111.0	14 08.7 -35.7 110.3	13 20.9 -35.4 109.7	12 32.9 -35.1 109.2
10°	15 07.5 -36.4 112.4	14 20.4 -36.1 111.8	13 33.0 -35.8 111.2	12 45.5 -35.6 110.6	11 57.8 -35.3 110.0
11°	14 31.1 -36.5 113.2	13 44.3 -36.3 112.6	12 57.2 -36.0 112.0	12 09.9 -35.7 111.4	11 22.5 -35.5 110.8
12°	13 54.6 -36.7 114.0	13 08.0 -36.4 113.4	12 21.2 -36.1 112.8	11 34.2 -35.9 112.2	10 47.0 -35.6 111.6
13°	13 17.9 -36.9 114.9	12 31.6 -36.6 114.2	11 45.1 -36.3 113.6	10 58.3 -35.9 113.0	10 11.4 -35.7 112.4
14°	12 41.0 -37.1 115.7	11 55.0 -36.7 115.1	11 08.8 -36.4 114.4	10 22.4 -36.2 113.9	9 35.7 -35.8 113.3
15°	12 03.9 -37.1 116.5	11 18.3 -36.9 115.9	10 32.4 -36.6 115.3	9 46.2 -36.2 114.7	8 59.9 -35.9 114.1
16°	11 26.8 -37.3 117.3	10 41.4 -36.9 116.7	9 55.8 -36.6 116.1	9 10.0 -36.3 115.5	8 24.0 -36.1 114.9
17°	10 49.5 -37.4 118.1	10 04.5 -37.1 117.5	9 19.2 -36.8 116.9	8 33.7 -36.4 116.3	7 47.9 -36.1 115.7
18°	10 12.1 -37.6 118.9	9 27.4 -37.2 118.3	8 42.4 -36.8 117.7	7 57.3 -36.6 117.1	7 11.8 -36.2 116.5
19°	9 34.5 -37.6 119.7	8 50.2 -37.3 119.1	8 05.6 -37.0 118.5	7 20.7 -36.6 117.9	6 35.6 -36.2 117.3
20°	8 56.9 -37.7 120.4	8 12.9 -37.4 119.8	7 28.6 -37.0 119.3	6 44.1 -36.7 118.7	5 59.4 -36.4 118.1
21°	8 19.2 -37.9 121.2	7 35.5 -37.5 120.6	6 51.6 -37.1 120.1	6 07.4 -36.7 119.5	5 23.0 -36.4 118.9
22°	7 41.3 -37.9 122.0	6 58.0 -37.5 121.4	6 14.5 -37.2 120.8	5 30.7 -36.8 120.3	4 46.6 -36.5 119.7
23°	7 03.4 -38.0 122.8	6 20.5 -37.6 122.2	5 37.3 -37.2 121.6	4 53.9 -36.9 121.1	4 10.1 -36.5 120.5
24°	6 25.4 -38.1 123.6	5 42.9 -37.7 123.0	5 00.1 -37.3 122.4	4 17.0 -36.9 121.9	3 33.6 -36.5 121.3
25°	5 47.3 -38.1 124.4	5 05.2 -37.7 123.8	4 22.8 -37.4 123.2	3 40.1 -37.0 122.6	2 57.1 -36.6 122.1
26°	5 09.2 -38.2 125.1	4 27.5 -37.8 124.6	3 45.4 -37.4 124.0	3 03.1 -37.0 123.4	2 20.5 -36.6 122.9
27°	4 31.0 -38.2 125.9	3 49.7 -37.9 125.3	3 08.0 -37.4 124.8	2 26.1 -37.0 124.2	1 43.9 -36.7 123.7
28°	3 52.8 -38.3 126.7	3 11.8 -37.8 126.1	2 30.6 -37.5 125.6	1 49.1 -37.1 125.0	1 07.2 -36.6 124.5
29°	3 14.5 -38.3 127.4	2 34.0 -37.9 126.9	1 53.1 -37.4 126.3	1 12.0 -37.1 125.8	0 30.6 -36.7 125.3

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°	16 51.7 -33.4 100.9	16 01.6 -33.1 100.3	15 11.5 -33.0 99.8	14 21.4 -33.0 99.2	13 31.1 -32.8 98.6
1°	16 18.3 -33.5 101.8	15 28.5 -33.4 101.2	14 38.5 -33.2 100.6	13 48.4 -33.0 100.1	12 58.3 -33.0 99.5
2°	15 44.8 -33.8 102.6	14 55.1 -33.6 102.1	14 05.3 -33.5 101.5	13 15.4 -33.3 100.9	12 25.3 -33.1 100.4
3°	15 11.0 -33.9 103.5	14 21.5 -33.8 102.9	13 31.8 -33.5 102.3	12 42.1 -33.4 101.8	11 52.2 -33.2 101.2
4°	14 37.1 -34.1 104.4	13 47.7 -33.9 103.8	12 58.3 -33.8 103.2	12 08.7 -33.6 102.6	11 19.0 -33.5 102.1
5°	14 03.0 -34.3 105.2	13 13.8 -34.1 104.6	12 24.5 -33.9 104.0	11 35.1 -33.7 103.5	10 45.5 -33.5 102.9
6°	13 28.7 -34.5 106.1	12 39.7 -34.3 105.5	11 50.6 -34.1 104.9	11 01.4 -33.9 104.3	10 12.0 -33.7 103.7
7°	12 54.2 -34.6 106.9	12 05.4 -34.4 106.3	11 16.5 -34.2 105.7	10 27.5 -34.0 105.2	9 38.3 -33.8 104.6
8°	12 19.6 -34.8 107.7	11 31.0 -34.5 107.1	10 42.3 -34.3 106.6	9 53.5 -34.1 106.0	9 04.5 -33.9 105.4
9°	11 44.8 -34.9 108.6	10 56.5 -34.7 108.0	10 08.0 -34.5 107.4	9 19.4 -34.3 106.8	8 30.6 -34.0 106.3
10°	11 09.9 -35.1 109.4	10 21.8 -34.8 108.8	9 33.5 -34.5 108.2	8 45.1 -34.3 107.7	7 56.6 -34.2 107.1
11°	10 34.8 -35.2 110.2	9 47.0 -35.0 109.6	8 59.0 -34.7 109.1	8 10.8 -34.5 108.5	7 22.4 -34.2 107.9
12°	9 59.6 -35.3 111.0	9 12.0 -35.0 110.5	8 24.3 -34.8 109.9	7 36.3 -34.5 109.3	6 48.2 -34.3 108.8
13°	9 24.3 -35.4 111.9	8 37.0 -35.2 111.3	7 49.5 -34.9 110.7	7 01.8 -34.6 110.1	6 13.9 -34.3 109.6
14°	8 48.9 -35.6 112.7	8 01.8 -35.2 112.1	7 14.6 -35.0 111.5	6 27.2 -34.8 111.0	5 39.6 -34.5 110.4
15°	8 13.3 -35.6 113.5	7 26.6 -35.4 112.9	6 39.6 -35.1 112.3	5 52.4 -34.7 111.8	5 05.1 -34.5 111.2
16°	7 37.7 -35.7 114.3	6 51.2 -35.4 113.7	6 04.5 -35.1 113.2	5 17.7 -34.9 112.6	4 30.6 -34.6 112.0
17°	7 02.0 -35.8 115.1	6 15.8 -35.5 114.5	5 29.4 -35.2 114.0	4 42.8 -34.9 113.4	3 56.0 -34.6 112.9
18°	6 26.2 -35.9 115.9	5 40.3 -35.6 115.4	4 54.2 -35.2 114.8	4 07.9 -34.9 114.2	3 21.4 -34.6 113.7
19°	5 50.3 -35.9 116.7	5 04.7 -35.6 116.2	4 19.0 -35.3 115.6	3 33.0 -35.0 115.0	2 46.8 -34.7 114.5
20°	5 14.4 -36.1 117.5	4 29.1 -35.7 117.0	3 43.7 -35.4 116.4	2 58.0 -35.0 115.9	2 12.1 -34.7 115.3
21°	4 38.3 -36.0 118.3	3 53.4 -35.7 117.8	3 08.3 -35.4 117.2	2 23.0 -35.1 116.7	1 37.4 -34.8 116.1
22°	4 02.3 -36.1 119.1	3 17.7 -35.7 118.6	2 32.9 -35.4 118.0	1 47.9 -35.1 117.5	1 02.6 -34.7 116.9
23°	3 26.2 -36.2 119.9	2 42.0 -35.8 119.4	1 57.5 -35.4 118.8	1 12.8 -35.1 118.3	0 27.9 -34.8 117.8
24°	2 50.0 -36.2 120.7	2 06.2 -35.9 120.2	1 22.1 -35.5 119.6	0 37.7 -35.1 119.1	-0 06.9 -34.7
25°	2 13.8 -36.2 121.5	1 30.3 -35.8 121.0	0 46.6 -35.5 120.5	0 02.6 -35.1 119.9	-0 41.6 -34.7
26°	1 37.6 -36.2 122.3	0 54.5 -35.8 121.8	0 11.1 -35.4 121.3	-0 32.5 -35.1	-1 16.3 -34.8
27°	1 01.4 -36.2 123.1	0 18.7 -35.9 122.6	-0 24.3 -35.5	-1 07.6 -35.1	-1 51.1 -34.7
28°	0 25.2 -36.3 123.9	-0 17.2 -35.8	-0 59.8 -35.5	-1 42.7 -35.0	-2 25.8 -34.6
29°	-0 11.1 -36.2	-0 53.0 -35.9	-1 35.3 -35.4	-2 17.7 -35.1	-3 00.4 -34.7

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°	12 40.7 -32.6 98.1	11 50.3 -32.5 97.5	10 59.9 -32.5 97.0	10 09.3 -32.3 96.4	9 18.7 -32.2 95.9
1°	12 08.1 -32.9 98.9	11 17.8 -32.7 98.4	10 27.4 -32.6 97.8	9 37.0 -32.5 97.3	8 46.5 -32.4 96.7
2°	11 35.2 -32.9 99.8	10 45.1 -32.9 99.2	9 54.8 -32.7 98.7	9 04.5 -32.6 98.1	8 14.1 -32.5 97.6
3°	11 02.3 -33.2 100.6	10 12.2 -33.0 100.1	9 22.1 -32.9 99.5	8 31.9 -32.8 99.0	7 41.6 -32.6 98.4
4°	10 29.1 -33.2 101.5	9 39.2 -33.1 100.9	8 49.2 -32.9 100.4	7 59.1 -32.8 99.8	7 09.0 -32.7 99.3
5°	9 55.9 -33.4 102.3	9 06.1 -33.2 101.8	8 16.3 -33.1 101.2	7 26.3 -32.9 100.7	6 36.3 -32.8 100.1
6°	9 22.5 -33.5 103.2	8 32.9 -33.3 102.6	7 43.2 -33.2 102.1	6 53.4 -33.0 101.5	6 03.5 -32.9 101.0
7°	8 49.0 -33.6 104.0	7 59.6 -33.5 103.5	7 10.0 -33.2 102.9	6 20.4 -33.1 102.4	5 30.6 -32.9 101.8
8°	8 15.4 -33.7 104.9	7 26.1 -33.5 104.3	6 36.8 -33.4 103.7	5 47.3 -33.2 103.2	4 57.7 -33.0 102.6
9°	7 41.7 -33.8 105.7	6 52.6 -33.6 105.1	6 03.4 -33.4 104.6	5 14.1 -33.2 104.0	4 24.7 -33.0 103.5
10°	7 07.9 -33.9 106.5	6 19.0 -33.7 106.0	5 30.0 -33.5 105.4	4 40.9 -33.3 104.9	3 51.7 -33.1 104.3
11°	6 34.0 -34.0 107.4	5 45.3 -33.8 106.8	4 56.5 -33.5 106.3	4 07.6 -33.3 105.7	3 18.6 -33.2 105.2
12°	6 00.0 -34.1 108.2	5 11.5 -33.8 107.6	4 23.0 -33.6 107.1	3 34.3 -33.4 106.5	2 45.4 -33.1 106.0
13°	5 25.9 -34.1 109.0	4 37.7 -33.9 108.5	3 49.4 -33.7 107.9	3 00.9 -33.4 107.4	2 12.3 -33.2 106.8
14°	4 51.8 -34.2 109.8	4 03.8 -33.9 109.3	3 15.7 -33.7 108.7	2 27.5 -33.5 108.2	1 39.1 -33.3 107.7
15°	4 17.6 -34.3 110.7	3 29.9 -34.0 110.1	2 42.0 -33.7 109.6	1 54.0 -33.5 109.0	1 05.8 -33.2 108.5
16°	3 43.3 -34.2 111.5	2 55.9 -34.0 110.9	2 08.3 -33.7 110.4	1 20.5 -33.5 109.9	0 32.6 -33.2 109.3
17°	3 09.1 -34.4 112.3	2 21.9 -34.1 111.8	1 34.6 -33.8 111.2	0 47.0 -33.5 110.7	-0 00.6 -33.3
18°	2 34.7 -34.3 113.1	1 47.8 -34.0 112.6	1 00.8 -33.8 112.1	0 13.5 -33.5 111.5	-0 33.9 -33.2
19°	2 00.4 -34.4 114.0	1 13.8 -34.1 113.4	0 27.0 -33.8 112.9	-0 20.0 -33.5	-1 07.1 -33.3
20°	1 26.0 -34.4 114.8	0 39.7 -34.1 114.2	-0 06.8 -33.8	-0 53.5 -33.5	-1 40.4 -33.2
21°	0 51.6 -34.4 115.6	0 05.6 -34.1 115.1	-0 40.6 -33.8	-1 27.0 -33.5	-2 13.6 -33.1
22°	0 17.2 -34.4 116.4	-0 28.5 -34.1	-1 14.4 -33.7	-2 00.5 -33.4	-2 46.7 -33.2
23°	-0 17.2 -34.4	-1 02.6 -34.1	-1 48.1 -33.8	-2 33.9 -33.4	-3 19.9 -33.1
24°	-0 51.6 -34.4	-1 36.7 -34.0	-2 21.9 -33.7	-3 07.3 -33.4	-3 53.0 -33.0
25°	-1 26.0 -34.4	-2 10.7 -34.0	-2 55.6 -33.7	-3 40.7 -33.3	-4 26.0 -33.0
26°	-2 00.4 -34.4	-2 44.7 -34.0	-3 29.3 -33.6	-4 14.0 -33.3	-4 59.0 -32.9
27°	-2 34.8 -34.3	-3 18.7 -34.0	-4 02.9 -33.6	-4 47.3 -33.2	-5 31.9 -32.9
28°	-3 09.1 -34.3	-3 52.7 -33.9	-4 36.5 -33.5	-5 20.5 -33.2	-6 04.8 -32.7
29°	-3 43.4 -34.2	-4 26.6 -33.8	-5 10.0 -33.5	-5 53.7 -33.0	-6 37.5 -32.7

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°	8 28.1 -32.2 95.3	7 37.4 -32.1 94.8	6 46.7 -32.1 94.3	5 55.9 -32.0 93.7	5 05.1 -31.9 93.2
1°	7 55.9 -32.3 96.2	7 05.3 -32.2 95.6	6 14.6 -32.1 95.1	5 23.9 -32.0 94.6	4 33.2 -32.0 94.0
2°	7 23.6 -32.4 97.0	6 33.1 -32.3 96.5	5 42.5 -32.2 96.0	4 51.9 -32.2 95.4	4 01.2 -32.1 94.9
3°	6 51.2 -32.5 97.9	6 00.8 -32.4 97.3	5 10.3 -32.3 96.8	4 19.7 -32.2 96.3	3 29.1 -32.1 95.7
4°	6 18.7 -32.6 98.7	5 28.4 -32.5 98.2	4 38.0 -32.4 97.7	3 47.5 -32.2 97.1	2 57.0 -32.2 96.6
5°	5 46.1 -32.6 99.6	4 55.9 -32.5 99.0	4 05.6 -32.4 98.5	3 15.3 -32.3 98.0	2 24.8 -32.1 97.4
6°	5 13.5 -32.7 100.4	4 23.4 -32.6 99.9	3 33.2 -32.4 99.3	2 43.0 -32.3 98.8	1 52.7 -32.2 98.3
7°	4 40.8 -32.8 101.3	3 50.8 -32.6 100.7	3 00.8 -32.5 100.2	2 10.7 -32.4 99.6	1 20.5 -32.3 99.1
8°	4 08.0 -32.8 102.1	3 18.2 -32.7 101.6	2 28.3 -32.5 101.0	1 38.3 -32.4 100.5	0 48.2 -32.2 100.0
9°	3 35.2 -32.9 102.9	2 45.5 -32.7 102.4	1 55.8 -32.6 101.9	1 05.9 -32.3 101.3	0 16.0 -32.2 100.8
10°	3 02.3 -32.9 103.8	2 12.8 -32.7 103.2	1 23.2 -32.5 102.7	0 33.6 -32.4 102.2	-0 16.2 -32.3
11°	2 29.4 -32.9 104.6	1 40.1 -32.8 104.1	0 50.7 -32.6 103.5	0 01.2 -32.4 103.0	-0 48.5 -32.2
12°	1 56.5 -33.0 105.5	1 07.3 -32.7 104.9	0 18.1 -32.6 104.4	-0 31.2 -32.4	-1 20.7 -32.2
13°	1 23.5 -33.0 106.3	0 34.6 -32.8 105.8	-0 14.5 -32.5	-1 03.6 -32.4	-1 52.9 -32.2
14°	0 50.5 -33.0 107.1	0 01.8 -32.8 106.6	-0 47.0 -32.6	-1 36.0 -32.3	-2 25.1 -32.1
15°	0 17.5 -33.0 108.0	-0 31.0 -32.7	-1 19.6 -32.5	-2 08.3 -32.4	-2 57.2 -32.1
16°	-0 15.5 -33.0	-1 03.7 -32.8	-1 52.1 -32.6	-2 40.7 -32.3	-3 29.3 -32.1
17°	-0 48.5 -33.0	-1 36.5 -32.7	-2 24.7 -32.4	-3 13.0 -32.2	-4 01.4 -32.0
18°	-1 21.5 -32.9	-2 09.2 -32.7	-2 57.1 -32.5	-3 45.2 -32.2	-4 33.4 -32.0
19°	-1 54.4 -33.0	-2 41.9 -32.7	-3 29.6 -32.4	-4 17.4 -32.1	-5 05.4 -31.8
20°	-2 27.4 -32.9	-3 14.6 -32.6	-4 02.0 -32.3	-4 49.5 -32.1	-5 37.2 -31.9
21°	-3 00.3 -32.9	-3 47.2 -32.6	-4 34.3 -32.3	-5 21.6 -32.0	-6 09.1 -31.7
22°	-3 33.2 -32.8	-4 19.8 -32.5	-5 06.6 -32.3	-5 53.6 -32.0	-6 40.8 -31.6
23°	-4 06.0 -32.8	-4 52.3 -32.5	-5 38.9 -32.1	-6 25.6 -31.8	-7 12.4 -31.6
24°	-4 38.8 -32.7	-5 24.8 -32.4	-6 11.0 -32.1	-6 57.4 -31.8	-7 44.0 -31.4
25°	-5 11.5 -32.7	-5 57.2 -32.3	-6 43.1 -32.0	-7 29.2 -31.6	-8 15.4 -31.4
26°	-5 44.2 -32.5	-6 29.5 -32.2	-7 15.1 -31.9	-8 00.8 -31.6	-8 46.8 -31.2
27°	-6 16.7 -32.5	-7 01.7 -32.2	-7 47.0 -31.7	-8 32.4 -31.4	-9 18.0 -31.1
28°	-6 49.2 -32.4	-7 33.9 -32.0	-8 18.7 -31.7	-9 03.8 -31.3	-9 49.1 -30.9
29°	-7 21.6 -32.3	-8 05.9 -32.0	-8 50.4 -31.6	-9 35.1 -31.2	

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°	4 14.3 -31.9 92.7	3 23.5 -31.9 92.1	2 32.6 -31.8 91.6	1 41.8 -31.9 91.1	0 50.9 -31.8 90.5
1°	3 42.4 -31.9 93.5	2 51.6 -31.9 93.0	2 00.8 -31.9 92.4	1 09.9 -31.8 91.9	0 19.1 -31.8 91.4
2°	3 10.5 -32.0 94.4	2 19.7 -31.9 93.8	1 28.9 -31.9 93.3	0 38.1 -31.8 92.8	-0 12.7 -31.8
3°	2 38.5 -32.1 95.2	1 47.8 -32.0 94.7	0 57.0 -31.9 94.1	0 06.3 -31.9 93.6	-0 44.5 -31.8
4°	2 06.4 -32.0 96.0	1 15.8 -32.0 95.5	0 25.1 -31.9 95.0	-0 25.6 -31.8	-1 16.3 -31.8
5°	1 34.4 -32.1 96.9	0 43.8 -32.0 96.4	-0 06.8 -31.9	-0 57.4 -31.8	-1 48.1 -31.8
6°	1 02.3 -32.1 97.7	0 11.8 -32.0 97.2	-0 38.7 -31.9	-1 29.2 -31.9	-2 19.9 -31.7
7°	0 30.2 -32.1 98.6	-0 20.2 -32.0	-1 10.6 -31.9	-2 01.1 -31.7	-2 51.6 -31.7
8°	-0 01.9 -32.1	-0 52.2 -31.9	-1 42.5 -31.8	-2 32.8 -31.8	-3 23.3 -31.6
9°	-0 34.0 -32.1	-1 24.1 -32.0	-2 14.3 -31.8	-3 04.6 -31.7	-3 54.9 -31.6
10°	-1 06.1 -32.1	-1 56.1 -31.9	-2 46.1 -31.8	-3 36.3 -31.6	-4 26.5 -31.5
11°	-1 38.2 -32.1	-2 28.0 -31.9	-3 17.9 -31.8	-4 07.9 -31.6	-4 58.0 -31.5
12°	-2 10.3 -32.0	-2 59.9 -31.9	-3 49.7 -31.7	-4 39.5 -31.6	-5 29.5 -31.4
13°	-2 42.3 -32.0	-3 31.8 -31.8	-4 21.4 -31.6	-5 11.1 -31.5	-6 00.9 -31.3
14°	-3 14.3 -31.9	-4 03.6 -31.8	-4 53.0 -31.6	-5 42.6 -31.4	-6 32.2 -31.2
15°	-3 46.2 -31.9	-4 35.4 -31.7	-5 24.6 -31.5	-6 14.0 -31.3	-7 03.4 -31.2
16°	-4 18.1 -31.9	-5 07.1 -31.6	-5 56.1 -31.4	-6 45.3 -31.2	-7 34.6 -31.0
17°	-4 50.0 -31.8	-5 38.7 -31.5	-6 27.5 -31.4	-7 16.5 -31.1	-8 05.6 -30.9
18°	-5 21.8 -31.7	-6 10.2 -31.5	-6 58.9 -31.2	-7 47.6 -31.0	-8 36.5 -30.8
19°	-5 53.5 -31.6	-6 41.7 -31.4	-7 30.1 -31.2	-8 18.6 -31.0	-9 07.3 -30.7
20°	-6 25.1 -31.6	-7 13.1 -31.3	-8 01.3 -31.0	-8 49.6 -30.7	-9 38.0 -30.5
21°	-6 56.7 -31.4	-7 44.4 -31.2	-8 32.3 -30.9	-9 20.3 -30.7	
22°	-7 28.1 -31.4	-8 15.6 -31.1	-8 15.6 -30.8	-9 03.2 -30.8	
23°	-7 59.5 -31.2	-8 46.7 -30.9	-9 34.0 -30.7		
24°	-8 30.7 -31.2	-9 17.6 -30.9			
25°	-9 01.9 -31.0	-9 48.5 -30.7			
26°	-9 32.9 -30.8				
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 -31.8 90.0	-0 50.9 -31.8			
1°	-0 31.8 -31.8	-1 22.7 -31.7			
2°	-1 03.6 -31.8	-1 54.4 -31.8			
3°	-1 35.4 -31.7	-2 26.2 -31.7			
4°	-2 07.1 -31.7	-2 57.9 -31.7			
5°	-2 38.8 -31.7	-3 29.6 -31.6			
6°	-3 10.5 -31.7	-4 01.2 -31.6			
7°	-3 42.2 -31.6	-4 32.8 -31.5			
8°	-4 13.8 -31.5	-5 04.3 -31.5			
9°	-4 45.3 -31.5	-5 35.8 -31.3			
10°	-5 16.8 -31.4	-6 07.1 -31.3			
11°	-5 48.2 -31.3	-6 38.4 -31.2			
12°	-6 19.5 -31.3	-7 09.6 -31.2			
13°	-6 50.8 -31.1	-7 40.8 -31.0			
14°	-7 21.9 -31.1	-8 11.8 -30.9			
15°	-7 53.0 -30.9	-8 42.7 -30.7			
16°	-8 23.9 -30.9	-9 13.4 -30.7			
17°	-8 54.8 -30.7	-9 44.1 -30.5			
18°	-9 25.5 -30.6				
19°	-9 56.1 -30.4				
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°	57 00.0 -60.0 180.0	56 59.2 -60.0 178.2	56 56.8 -59.9 176.3	56 52.8 -59.9 174.5	56 47.1 -59.6 172.7
1°	56 00.0 -60.0 180.0	55 59.2 -60.0 178.2	55 56.9 -60.0 176.4	55 52.9 -59.8 174.6	55 47.5 -59.7 172.9
2°	55 00.0 -60.0 180.0	54 59.2 -59.9 178.3	54 56.9 -59.9 176.5	54 53.1 -59.8 174.8	54 47.8 -59.7 173.1
3°	54 00.0 -60.0 180.0	53 59.3 -60.0 178.3	53 57.0 -59.9 176.6	53 53.3 -59.8 174.9	53 48.1 -59.7 173.2
4°	53 00.0 -60.0 180.0	52 59.3 -60.0 178.3	52 57.1 -59.9 176.7	52 53.5 -59.9 175.0	52 48.4 -59.7 173.4
5°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.4	51 57.2 -60.0 176.8	51 53.6 -59.8 175.2	51 48.7 -59.8 173.5
6°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.4	50 57.2 -59.9 176.8	50 53.8 -59.9 175.3	50 48.9 -59.7 173.7
7°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.5	49 57.3 -59.9 176.9	49 53.9 -59.9 175.4	49 49.2 -59.8 173.8
8°	49 00.0 -60.0 180.0	48 59.3 -59.9 178.5	48 57.4 -60.0 177.0	48 54.0 -59.8 175.5	48 49.4 -59.7 174.0
9°	48 00.0 -60.0 180.0	47 59.4 -60.0 178.5	47 57.4 -59.9 177.0	47 54.2 -59.9 175.6	47 49.7 -59.8 174.1
10°	47 00.0 -60.0 180.0	46 59.4 -60.0 178.6	46 57.5 -60.0 177.1	46 54.3 -59.9 175.7	46 49.9 -59.8 174.2
11°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.6	45 57.5 -59.9 177.2	45 54.4 -59.9 175.8	45 50.1 -59.8 174.4
12°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.6	44 57.6 -60.0 177.2	44 54.5 -59.8 175.9	44 50.3 -59.8 174.5
13°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.6	43 57.6 -59.9 177.3	43 54.7 -59.9 175.9	43 50.5 -59.8 174.6
14°	43 00.0 -60.0 180.0	42 59.4 -60.0 178.7	42 57.7 -60.0 177.3	42 54.8 -59.9 176.0	42 50.7 -59.8 174.7
15°	42 00.0 -60.0 180.0	41 59.4 -60.0 178.7	41 57.7 -59.9 177.4	41 54.9 -59.9 176.1	41 50.9 -59.8 174.8
16°	41 00.0 -60.0 180.0	40 59.4 -59.9 178.7	40 57.8 -60.0 177.5	40 55.0 -59.9 176.2	40 51.1 -59.9 174.9
17°	40 00.0 -60.0 180.0	39 59.5 -60.0 178.8	39 57.8 -59.9 177.5	39 55.1 -59.9 176.3	39 51.2 -59.8 175.0
18°	39 00.0 -60.0 180.0	38 59.5 -60.0 178.8	38 57.9 -60.0 177.6	38 55.2 -59.9 176.3	38 51.4 -59.8 175.1
19°	38 00.0 -60.0 180.0	37 59.5 -60.0 178.8	37 57.9 -60.0 177.6	37 55.3 -59.9 176.4	37 51.6 -59.9 175.2
20°	37 00.0 -60.0 180.0	36 59.5 -60.0 178.8	36 57.9 -59.9 177.6	36 55.4 -60.0 176.5	36 51.7 -59.8 175.3
21°	36 00.0 -60.0 180.0	35 59.5 -60.0 178.8	35 58.0 -60.0 177.7	35 55.4 -59.9 176.5	35 51.9 -59.8 175.4
22°	35 00.0 -60.0 180.0	34 59.5 -60.0 178.9	34 58.0 -59.9 177.7	34 55.5 -59.9 176.6	34 52.1 -59.9 175.5
23°	34 00.0 -60.0 180.0	33 59.5 -60.0 178.9	33 58.1 -60.0 177.8	33 55.6 -59.9 176.7	33 52.2 -59.8 175.6
24°	33 00.0 -60.0 180.0	32 59.5 -60.0 178.9	32 58.1 -60.0 177.8	32 55.7 -59.9 176.7	32 52.4 -59.9 175.6
25°	32 00.0 -60.0 180.0	31 59.5 -60.0 178.9	31 58.1 -59.9 177.9	31 55.8 -59.9 176.8	31 52.5 -59.9 175.7
26°	31 00.0 -60.0 180.0	30 59.5 -60.0 179.0	30 58.2 -60.0 177.9	30 55.9 -60.0 176.9	30 52.6 -59.8 175.8
27°	30 00.0 -60.0 180.0	29 59.5 -59.9 179.0	29 58.2 -60.0 177.9	29 55.9 -59.9 176.9	29 52.8 -59.9 175.9
28°	29 00.0 -60.0 180.0	28 59.6 -60.0 179.0	28 58.2 -59.9 177.0	28 56.0 -59.9 177.0	28 52.9 -59.9 176.0
29°	28 00.0 -60.0 180.0	27 59.6 -60.0 179.0	27 58.3 -60.0 178.0	27 56.1 -59.9 177.0	27 53.0 -59.8 176.0

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	56 39.9 -59.4 170.9	56 31.2 -59.3 169.1	56 20.9 -59.0 167.3	56 09.1 -58.7 165.5	55 55.7 -58.3 163.8
1°	55 40.5 -59.5 171.1	55 31.9 -59.3 169.4	55 21.9 -59.1 167.6	55 10.4 -58.8 165.9	54 57.4 -58.5 164.2
2°	54 41.0 -59.6 171.3	54 32.6 -59.3 169.6	54 22.8 -59.0 167.9	54 11.6 -58.8 166.2	53 58.9 -58.5 164.6
3°	53 41.4 -59.5 171.5	53 33.3 -59.3 169.9	53 23.8 -59.2 168.2	53 12.8 -58.9 166.6	53 00.4 -58.6 165.0
4°	52 41.9 -59.6 171.8	52 34.0 -59.4 170.1	52 24.6 -59.2 168.5	52 13.9 -58.9 166.9	52 01.8 -58.6 165.3
5°	51 42.3 -59.6 171.9	51 34.6 -59.4 170.4	51 25.4 -59.2 168.8	51 15.0 -59.0 167.2	51 03.2 -58.7 165.6
6°	50 42.7 -59.6 172.1	50 35.2 -59.5 170.6	50 26.2 -59.2 169.0	50 16.0 -59.0 167.5	50 04.5 -58.8 166.0
7°	49 43.1 -59.6 172.3	49 35.7 -59.4 170.8	49 27.0 -59.3 169.3	49 17.0 -59.1 167.8	49 05.7 -58.8 166.3
8°	48 43.5 -59.7 172.5	48 36.3 -59.5 171.0	48 27.7 -59.3 169.5	48 17.9 -59.0 168.0	48 06.9 -58.9 166.6
9°	47 43.8 -59.6 172.6	47 36.8 -59.5 171.2	47 28.4 -59.3 169.7	47 18.9 -59.2 168.3	47 08.0 -58.9 166.9
10°	46 44.2 -59.7 172.8	46 37.3 -59.5 171.4	46 29.1 -59.3 170.0	46 19.7 -59.1 168.6	46 09.1 -58.9 167.2
11°	45 44.5 -59.6 173.0	45 37.8 -59.6 171.6	45 29.8 -59.4 170.2	45 20.6 -59.2 168.8	45 10.2 -59.0 167.4
12°	44 44.9 -59.7 173.1	44 38.2 -59.5 171.7	44 30.4 -59.4 170.4	44 21.4 -59.2 169.0	44 11.2 -59.0 167.7
13°	43 45.2 -59.7 173.2	43 38.7 -59.6 171.9	43 31.0 -59.4 170.6	43 22.2 -59.2 169.2	43 12.2 -59.0 167.9
14°	42 45.5 -59.7 173.4	42 39.1 -59.6 172.1	42 31.6 -59.4 170.8	42 23.0 -59.3 169.5	42 13.2 -59.1 168.2
15°	41 45.8 -59.7 173.5	41 39.5 -59.6 172.2	41 32.2 -59.5 171.0	41 23.7 -59.3 169.7	41 14.1 -59.1 168.4
16°	40 46.1 -59.8 173.6	40 39.9 -59.6 172.4	40 32.7 -59.4 171.1	40 24.4 -59.3 169.9	40 15.0 -59.1 168.6
17°	39 46.3 -59.7 173.8	39 40.3 -59.6 172.5	39 33.3 -59.5 171.3	39 25.1 -59.3 170.1	39 15.9 -59.1 168.9
18°	38 46.6 -59.7 173.9	38 40.7 -59.6 172.7	38 33.8 -59.5 171.5	38 25.8 -59.3 170.3	38 16.8 -59.2 169.1
19°	37 46.9 -59.8 174.0	37 41.1 -59.6 172.8	37 34.3 -59.5 171.6	37 26.5 -59.4 170.5	37 17.6 -59.2 169.3
20°	36 47.1 -59.7 174.1	36 41.5 -59.7 173.0	36 34.8 -59.5 171.8	36 27.1 -59.4 170.6	36 18.4 -59.2 169.5
21°	35 47.4 -59.8 174.2	35 41.8 -59.6 173.1	35 35.3 -59.6 172.0	35 27.7 -59.4 170.8	35 19.2 -59.2 169.7
22°	34 47.6 -59.8 174.4	34 42.2 -59.7 173.2	34 35.7 -59.5 172.1	34 28.3 -59.4 171.0	34 20.0 -59.3 169.9
23°	33 47.8 -59.7 174.5	33 42.5 -59.7 173.4	33 36.2 -59.6 172.3	33 28.9 -59.4 171.2	33 20.7 -59.2 170.1
24°	32 48.1 -59.8 174.6	32 42.8 -59.7 173.5	32 36.6 -59.5 172.4	32 29.5 -59.4 171.3	32 21.5 -59.3 170.3
25°	31 48.3 -59.8 174.7	31 43.1 -59.6 173.6	31 37.1 -59.6 172.5	31 30.1 -59.4 171.5	31 22.2 -59.3 170.4
26°	30 48.5 -59.8 174.8	30 43.5 -59.7 173.7	30 37.5 -59.6 172.7	30 30.7 -59.5 171.7	30 22.9 -59.3 170.6
27°	29 48.7 -59.8 174.9	29 43.8 -59.7 173.8	29 37.9 -59.6 172.8	29 31.2 -59.5 171.8	29 23.6 -59.3 170.8
28°	28 48.9 -59.8 175.0	28 44.1 -59.7 174.0	28 38.3 -59.6 173.0	28 31.7 -59.4 172.0	28 24.3 -59.4 171.0
29°	27 49.1 -59.8 175.1	27 44.4 -59.7 174.1	27 38.7 -59.6 173.1	27 32.3 -59.5 172.1	27 24.9 -59.3 171.1

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°	55 41.0 -58.0 162.1	55 24.8 -57.7 160.4	55 07.2 -57.3 158.7	54 48.2 -56.8 157.0	54 27.9 -56.3 155.4
1°	54 43.0 -58.2 162.5	54 27.1 -57.7 160.8	54 09.9 -57.3 159.2	53 51.4 -56.9 157.6	53 31.6 -56.5 156.0
2°	53 44.8 -58.1 162.9	53 29.4 -57.8 161.3	53 12.6 -57.5 159.7	52 54.5 -57.1 158.1	52 35.1 -56.6 156.6
3°	52 46.7 -58.3 163.3	52 31.6 -58.0 161.7	52 15.1 -57.5 160.2	51 57.4 -57.1 158.6	51 38.5 -56.8 157.1
4°	51 48.4 -58.4 163.7	51 33.6 -58.0 162.2	51 17.6 -57.7 160.6	51 00.3 -57.3 159.1	50 41.7 -56.9 157.6
5°	50 50.0 -58.4 164.1	50 35.6 -58.1 162.6	50 19.9 -57.8 161.1	50 03.0 -57.4 159.6	49 44.8 -57.0 158.1
6°	49 51.6 -58.5 164.5	49 37.5 -58.2 163.0	49 22.1 -57.8 161.5	49 05.6 -57.6 160.0	48 47.8 -57.2 158.6
7°	48 53.1 -58.5 164.8	48 39.3 -58.2 163.3	48 24.3 -57.9 161.9	48 08.0 -57.5 160.5	47 50.6 -57.2 159.0
8°	47 54.6 -58.6 165.1	47 41.1 -58.3 163.7	47 26.4 -58.1 162.3	47 10.5 -57.7 160.9	46 53.4 -57.4 159.5
9°	46 56.0 -58.6 165.5	46 42.8 -58.4 164.0	46 28.3 -58.0 162.7	46 12.8 -57.8 161.3	45 56.0 -57.4 159.9
10°	45 57.4 -58.7 165.8	45 44.4 -58.4 164.4	45 30.3 -58.2 163.0	45 15.0 -57.8 161.7	44 58.6 -57.5 160.3
11°	44 58.7 -58.8 166.1	44 46.0 -58.5 164.7	44 32.1 -58.2 163.4	44 17.2 -58.0 162.0	44 01.1 -57.6 160.7
12°	43 59.9 -58.7 166.3	43 47.5 -58.5 165.0	43 33.9 -58.2 163.7	43 19.2 -57.9 162.4	43 03.5 -57.7 161.1
13°	43 01.2 -58.9 166.6	42 49.0 -58.6 165.3	42 35.7 -58.4 164.0	42 21.3 -58.1 162.7	42 05.8 -57.7 161.5
14°	42 02.3 -58.8 166.9	41 50.4 -58.6 165.6	41 37.3 -58.3 164.3	41 23.2 -58.1 163.1	41 08.1 -57.9 161.8
15°	41 03.5 -58.9 167.1	40 51.8 -58.7 165.9	40 39.0 -58.5 164.7	40 25.1 -58.1 163.4	40 10.2 -57.8 162.2
16°	40 04.6 -58.9 167.4	39 53.1 -58.7 166.2	39 40.5 -58.4 164.9	39 27.0 -58.2 163.7	39 12.4 -58.0 162.5
17°	39 05.7 -59.0 167.6	38 54.4 -58.7 166.4	38 42.1 -58.5 165.2	38 28.8 -58.3 164.0	38 14.4 -58.0 162.9
18°	38 06.7 -58.9 167.9	37 55.7 -58.8 166.7	37 43.6 -58.6 165.5	37 30.5 -58.3 164.4	37 16.4 -58.0 163.2
19°	37 07.8 -59.1 168.1	36 56.9 -58.8 167.0	36 45.0 -58.5 165.8	36 32.2 -58.3 164.6	36 18.4 -58.1 163.5
20°	36 08.7 -59.0 168.3	35 58.1 -58.8 167.2	35 46.5 -58.7 166.1	35 33.9 -58.4 164.9	35 20.3 -58.1 163.8
21°	35 09.7 -59.0 168.6	34 59.3 -58.9 167.4	34 47.8 -58.6 166.3	34 35.5 -58.4 165.2	34 22.2 -58.2 164.1
22°	34 10.7 -59.1 168.8	34 00.4 -58.9 167.7	33 49.2 -58.7 166.6	33 37.1 -58.5 165.5	33 24.0 -58.2 164.4
23°	33 11.6 -59.1 169.0	33 01.5 -58.9 167.9	32 50.5 -58.7 166.8	32 38.6 -58.5 165.8	32 25.8 -58.3 164.7
24°	32 12.5 -59.1 169.2	32 02.6 -58.9 168.1	31 51.8 -58.7 167.1	31 40.1 -58.5 166.0	31 27.5 -58.3 165.0
25°	31 13.4 -59.1 169.4	31 03.7 -59.0 168.4	30 53.1 -58.8 167.3	30 41.6 -58.6 166.3	30 29.2 -58.3 165.3
26°	30 14.3 -59.2 169.6	30 04.7 -59.0 168.6	29 54.3 -58.8 167.6	29 43.0 -58.6 166.5	29 30.9 -58.4 165.5
27°	29 15.1 -59.2 169.8	29 05.7 -58.9 168.8	28 55.5 -58.8 167.8	28 44.4 -58.6 166.8	28 32.5 -58.4 165.8
28°	28 15.9 -59.1 170.0	28 06.8 -59.1 169.0	27 56.7 -58.8 168.0	27 45.8 -58.6 167.0	27 34.1 -58.4 166.1
29°	27 16.8 -59.2 170.2	27 07.7 -59.0 169.2	26 57.9 -58.9 168.2	26 47.2 -58.6 167.3	26 35.7 -58.4 166.3

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°	54 06.3 -55.8 153.8	53 43.5 -55.4 152.2	53 19.4 -54.8 150.7	52 54.2 -54.3 149.2	52 27.9 -53.8 147.7
1°	53 10.5 -56.0 154.4	52 48.1 -55.5 152.9	52 24.6 -55.0 151.4	51 59.9 -54.5 149.9	51 34.1 -54.0 148.4
2°	52 14.5 -56.2 155.0	51 52.6 -55.7 153.5	51 29.6 -55.3 152.0	51 05.4 -54.8 150.5	50 40.1 -54.3 149.1
3°	51 18.3 -56.4 155.6	50 56.9 -55.9 154.1	50 34.3 -55.4 152.6	50 10.6 -55.0 151.2	49 45.8 -54.5 149.8
4°	50 21.9 -56.5 156.1	50 01.0 -56.1 154.7	49 38.9 -55.6 153.2	49 15.6 -55.1 151.8	48 51.3 -54.6 150.4
5°	49 25.4 -56.6 156.6	49 04.9 -56.2 155.2	48 43.3 -55.8 153.8	48 20.5 -55.4 152.4	47 56.7 -54.9 151.0
6°	48 28.8 -56.7 157.2	48 08.7 -56.4 155.7	47 47.5 -56.0 154.4	47 25.1 -55.5 153.0	47 01.8 -55.1 151.6
7°	47 32.1 -56.9 157.6	47 12.3 -56.4 156.3	46 51.5 -56.0 154.9	46 29.6 -55.6 153.5	46 06.7 -55.2 152.2
8°	46 35.2 -57.0 158.1	46 15.9 -56.6 156.7	45 55.5 -56.3 155.4	45 34.0 -55.8 154.1	45 11.5 -55.4 152.8
9°	45 38.2 -57.1 158.6	45 19.3 -56.8 157.2	44 59.2 -56.3 155.9	44 38.2 -56.0 154.6	44 16.1 -55.6 153.3
10°	44 41.1 -57.2 159.0	44 22.5 -56.8 157.7	44 02.9 -56.5 156.4	43 42.2 -56.0 155.1	43 20.5 -55.6 153.8
11°	43 43.9 -57.2 159.4	43 25.7 -56.9 158.1	43 06.4 -56.5 156.9	42 46.2 -56.2 155.6	42 24.9 -55.8 154.3
12°	42 46.7 -57.4 159.8	42 28.8 -57.0 158.6	42 09.9 -56.7 157.3	41 50.0 -56.4 156.1	41 29.1 -56.0 154.8
13°	41 49.3 -57.4 160.2	41 31.8 -57.2 159.0	41 13.2 -56.8 157.7	40 53.6 -56.4 156.5	40 33.1 -56.0 155.3
14°	40 51.9 -57.6 160.6	40 34.6 -57.1 159.4	40 16.4 -56.8 158.2	39 57.2 -56.5 157.0	39 37.1 -56.2 155.8
15°	39 54.3 -57.5 161.0	39 37.5 -57.3 159.8	39 19.6 -57.0 158.6	39 00.7 -56.6 157.4	38 40.9 -56.2 156.2
16°	38 56.8 -57.7 161.3	38 40.2 -57.4 160.2	38 22.6 -57.0 159.0	38 04.1 -56.7 157.8	37 44.7 -56.4 156.7
17°	37 59.1 -57.7 161.7	37 42.8 -57.4 160.5	37 25.6 -57.1 159.4	37 07.4 -56.8 158.2	36 48.3 -56.5 157.1
18°	37 01.4 -57.8 162.0	36 45.4 -57.5 160.9	36 28.5 -57.2 159.8	36 10.6 -56.8 158.6	35 51.8 -56.5 157.5
19°	36 03.6 -57.8 162.4	35 47.9 -57.5 161.3	35 31.3 -57.2 160.1	35 13.8 -57.0 159.0	34 55.3 -56.6 157.9
20°	35 05.8 -57.9 162.7	34 50.4 -57.6 161.6	34 34.1 -57.3 160.5	34 16.8 -57.0 159.4	33 58.7 -56.7 158.4
21°	34 07.9 -57.9 163.0	33 52.8 -57.7 161.9	33 36.8 -57.4 160.9	33 19.8 -57.1 159.8	33 02.0 -56.8 158.7
22°	33 10.0 -58.0 163.3	32 55.1 -57.7 162.3	32 39.4 -57.4 161.2	32 22.7 -57.1 160.2	32 05.2 -56.8 159.1
23°	32 12.0 -58.0 163.6	31 57.4 -57.7 162.6	31 42.0 -57.5 161.6	31 25.6 -57.2 160.5	31 08.4 -56.9 159.5
24°	31 14.0 -58.0 163.9	30 59.7 -57.8 162.9	30 44.5 -57.6 161.9	30 28.4 -57.2 160.9	30 11.5 -56.9 159.9
25°	30 16.0 -58.1 164.2	30 01.9 -57.9 163.2	29 46.9 -57.5 162.2	29 31.2 -57.3 161.2	29 14.6 -57.1 160.2
26°	29 17.9 -58.1 164.5	29 04.0 -57.8 163.5	28 49.4 -57.7 162.5	28 33.9 -57.4 161.6	28 17.5 -57.0 160.6
27°	28 19.8 -58.2 164.8	28 06.2 -58.0 163.8	27 51.7 -57.6 162.9	27 36.5 -57.4 161.9	27 20.5 -57.1 160.9
28°	27 21.6 -58.2 165.1	27 08.2 -57.9 164.1	26 54.1 -57.7 163.2	26 39.1 -57.4 162.2	26 23.4 -57.2 161.3
29°	26 23.4 -58.2 165.4	26 10.3 -58.0 164.4	25 56.4 -57.8 163.5	25 41.7 -57.5 162.5	25 26.2 -57.2 161.6

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°	52 00.5 -53.3 146.2	51 32.0 -52.7 144.8	51 02.5 -52.1 143.4	50 32.0 -51.5 142.1	50 00.6 -51.0 140.7
1°	51 07.2 -53.5 147.0	50 39.3 -53.0 145.6	50 10.4 -52.5 144.2	49 40.5 -51.9 142.9	49 09.6 -51.3 141.5
2°	50 13.7 -53.7 147.7	49 46.3 -53.2 146.3	49 17.9 -52.7 145.0	48 48.6 -52.2 143.6	48 18.3 -51.7 142.3
3°	49 20.0 -54.0 148.4	48 53.1 -53.5 147.0	48 25.2 -53.0 145.7	47 56.4 -52.5 144.4	47 26.6 -51.9 143.1
4°	48 26.0 -54.2 149.1	47 59.6 -53.7 147.7	47 32.2 -53.2 146.4	47 03.9 -52.7 145.1	46 34.7 -52.3 143.8
5°	47 31.8 -54.4 149.7	47 05.9 -54.0 148.4	46 39.0 -53.5 147.1	46 11.2 -53.0 145.8	45 42.4 -52.5 144.5
6°	46 37.4 -54.7 150.3	46 11.9 -54.1 149.0	45 45.5 -53.6 147.7	45 18.2 -53.2 146.5	44 49.9 -52.7 145.2
7°	45 42.7 -54.8 150.9	45 17.8 -54.4 149.6	44 51.9 -53.9 148.4	44 25.0 -53.4 147.1	43 57.2 -52.9 145.9
8°	44 47.9 -54.9 151.5	44 23.4 -54.5 150.2	43 58.0 -54.1 149.0	43 31.6 -53.6 147.7	43 04.3 -53.2 146.5
9°	43 53.0 -55.1 152.1	43 28.9 -54.7 150.8	43 03.9 -54.3 149.6	42 38.0 -53.9 148.4	42 11.1 -53.3 147.2
10°	42 57.9 -55.3 152.6	42 34.2 -54.8 151.4	42 09.6 -54.4 150.2	41 44.1 -53.9 149.0	41 17.8 -53.6 147.8
11°	42 02.6 -55.4 153.1	41 39.4 -55.0 151.9	41 15.2 -54.6 150.7	40 50.2 -54.2 149.5	40 24.2 -53.7 148.4
12°	41 07.2 -55.6 153.6	40 44.4 -55.2 152.4	40 20.6 -54.7 151.3	39 56.0 -54.3 150.1	39 30.5 -53.9 149.0
13°	40 11.6 -55.6 154.1	39 49.2 -55.3 153.0	39 25.9 -54.9 151.8	39 01.7 -54.5 150.7	38 36.6 -54.1 149.5
14°	39 16.0 -55.8 154.6	38 53.9 -55.4 153.5	38 31.0 -55.0 152.3	38 07.2 -54.6 151.2	37 42.5 -54.2 150.1
15°	38 20.2 -55.9 155.1	37 58.5 -55.5 154.0	37 36.0 -55.2 152.8	37 12.6 -54.8 151.7	36 48.3 -54.3 150.6
16°	37 24.3 -56.0 155.6	37 03.0 -55.6 154.4	36 40.8 -55.2 153.3	36 17.8 -54.9 152.2	35 54.0 -54.5 151.1
17°	36 28.3 -56.1 156.0	36 07.4 -55.8 154.9	35 45.6 -55.4 153.8	35 22.9 -55.0 152.7	34 59.5 -54.6 151.7
18°	35 32.2 -56.2 156.4	35 11.6 -55.8 155.4	34 50.2 -55.5 154.3	34 27.9 -55.1 153.2	34 04.9 -54.8 152.2
19°	34 36.0 -56.3 156.9	34 15.8 -56.0 155.8	33 54.7 -55.6 154.7	33 32.8 -55.2 153.7	33 10.1 -54.8 152.6
20°	33 39.7 -56.4 157.3	33 19.8 -56.0 156.2	32 59.1 -55.6 155.2	32 37.6 -55.3 154.2	32 15.3 -55.0 153.1
21°	32 43.3 -56.4 157.7	32 23.8 -56.1 156.7	32 03.5 -55.8 155.6	31 42.3 -55.4 154.6	31 20.3 -55.0 153.6
22°	31 46.9 -56.5 158.1	31 27.7 -56.2 157.1	31 07.7 -55.9 156.1	30 46.9 -55.5 155.1	30 25.3 -55.2 154.1
23°	30 50.4 -56.6 158.5	30 31.5 -56.3 157.5	30 11.8 -55.9 156.5	29 51.4 -55.6 155.5	29 30.1 -55.2 154.5
24°	29 53.8 -56.7 158.9	29 35.2 -56.3 157.9	29 15.9 -56.0 156.9	28 55.8 -55.7 155.9	28 34.9 -55.4 155.0
25°	28 57.1 -56.7 159.3	28 38.9 -56.4 158.3	28 19.9 -56.1 157.3	28 00.1 -55.8 156.4	27 39.5 -55.4 155.4
26°	28 00.4 -56.8 159.6	27 42.5 -56.5 158.7	27 23.8 -56.1 157.7	27 04.3 -55.8 156.8	26 44.1 -55.5 155.8
27°	27 03.6 -56.8 160.0	26 46.0 -56.5 159.0	26 27.7 -56.3 158.1	26 08.5 -55.9 157.2	25 48.6 -55.5 156.3
28°	26 06.8 -56.9 160.3	25 49.5 -56.6 159.4	25 31.4 -56.2 158.5	25 12.6 -55.9 157.6	24 53.1 -55.7 156.7
29°	25 09.9 -56.9 160.7	24 52.9 -56.6 159.8	24 35.2 -56.4 158.9	24 16.7 -56.1 158.0	23 57.4 -55.7 157.1

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°	49 28.3 -50.4 139.4	48 55.2 -49.9 138.2	48 21.2 -49.3 136.9	47 46.5 -48.9 135.7	47 10.9 -48.3 134.5
1°	48 37.9 -50.8 140.3	48 05.3 -50.3 139.0	47 31.9 -49.8 137.8	46 57.6 -49.2 136.5	46 22.6 -48.6 135.4
2°	47 47.1 -51.2 141.1	47 15.0 -50.6 139.8	46 42.1 -50.0 138.6	46 08.4 -49.5 137.4	45 34.0 -49.0 136.2
3°	46 55.9 -51.4 141.8	46 24.4 -50.9 140.6	45 52.1 -50.4 139.4	45 18.9 -49.9 138.2	44 45.0 -49.4 137.0
4°	46 04.5 -51.7 142.6	45 33.5 -51.2 141.4	45 01.7 -50.7 140.1	44 29.0 -50.2 139.0	43 55.6 -49.7 137.8
5°	45 12.8 -52.0 143.3	44 42.3 -51.5 142.1	44 11.0 -51.0 140.9	43 38.8 -50.5 139.7	43 05.9 -50.0 138.6
6°	44 20.8 -52.2 144.0	43 50.8 -51.7 142.8	43 20.0 -51.3 141.6	42 48.3 -50.7 140.5	42 15.9 -50.2 139.3
7°	43 28.6 -52.5 144.7	42 59.1 -52.0 143.5	42 28.7 -51.5 142.3	41 57.6 -51.0 141.2	41 25.7 -50.6 140.1
8°	42 36.1 -52.7 145.4	42 07.1 -52.3 144.2	41 37.2 -51.7 143.0	41 06.6 -51.3 141.9	40 35.1 -50.8 140.8
9°	41 43.4 -52.9 146.0	41 14.8 -52.4 144.8	40 45.5 -52.0 143.7	40 15.3 -51.5 142.6	39 44.3 -51.0 141.5
10°	40 50.5 -53.1 146.6	40 22.4 -52.7 145.5	39 53.5 -52.2 144.4	39 23.8 -51.8 143.3	38 53.3 -51.3 142.2
11°	39 57.4 -53.3 147.2	39 29.7 -52.8 146.1	39 01.3 -52.4 145.0	38 32.0 -51.9 143.9	38 02.0 -51.5 142.8
12°	39 04.1 -53.5 147.8	38 36.9 -53.0 146.7	38 08.9 -52.6 145.6	37 40.1 -52.2 144.5	37 10.5 -51.7 143.5
13°	38 10.6 -53.6 148.4	37 43.9 -53.2 147.3	37 16.3 -52.8 146.2	36 47.9 -52.3 145.2	36 18.8 -51.9 144.1
14°	37 17.0 -53.8 149.0	36 50.7 -53.4 147.9	36 23.5 -52.9 146.8	35 55.6 -52.5 145.8	35 26.9 -52.1 144.7
15°	36 23.2 -53.9 149.5	35 57.3 -53.6 148.5	35 30.6 -53.2 147.4	35 03.1 -52.7 146.4	34 34.8 -52.2 145.3
16°	35 29.3 -54.1 150.1	35 03.7 -53.6 149.0	34 37.4 -53.2 148.0	34 10.4 -52.9 146.9	33 42.6 -52.5 145.9
17°	34 35.2 -54.3 150.6	34 10.1 -53.9 149.6	33 44.2 -53.4 148.5	33 17.5 -53.0 147.5	32 50.1 -52.6 146.5
18°	33 40.9 -54.3 151.1	33 16.2 -53.9 150.1	32 50.8 -53.6 149.1	32 24.5 -53.1 148.1	31 57.5 -52.7 147.1
19°	32 46.6 -54.5 151.6	32 22.3 -54.1 150.6	31 57.2 -53.7 149.6	31 31.4 -53.3 148.6	31 04.8 -52.9 147.6
20°	31 52.1 -54.5 152.1	31 28.2 -54.2 151.1	31 03.5 -53.8 150.1	30 38.1 -53.4 149.2	30 11.9 -53.0 148.2
21°	30 57.6 -54.7 152.6	30 34.0 -54.3 151.6	30 09.7 -53.9 150.6	29 44.7 -53.6 149.7	29 18.9 -53.1 148.7
22°	30 02.9 -54.8 153.1	29 39.7 -54.4 152.1	29 15.8 -54.0 151.2	28 51.1 -53.6 150.2	28 25.8 -53.3 149.3
23°	29 08.1 -54.9 153.6	28 45.3 -54.5 152.6	28 21.8 -54.2 151.6	27 57.5 -53.8 150.7	27 32.5 -53.4 149.8
24°	28 13.2 -55.0 154.0	27 50.8 -54.6 153.1	27 27.6 -54.2 152.1	27 03.7 -53.8 151.2	26 39.1 -53.4 150.3
25°	27 18.2 -55.1 154.5	26 56.2 -54.8 153.5	26 33.4 -54.4 152.6	26 09.9 -54.0 151.7	25 45.7 -53.6 150.8
26°	26 23.1 -55.1 154.9	26 01.4 -54.7 154.0	25 39.0 -54.4 153.1	25 15.9 -54.1 152.2	24 52.1 -53.7 151.3
27°	25 28.0 -55.2 155.3	25 06.7 -54.9 154.4	24 44.6 -54.5 153.6	24 21.8 -54.1 152.7	23 58.4 -53.8 151.8
28°	24 32.8 -55.3 155.8	24 11.8 -55.0 154.9	23 50.1 -54.6 154.0	23 27.7 -54.2 153.1	23 04.6 -53.9 152.3
29°	23 37.5 -55.4 156.2	23 16.8 -55.0 155.3	22 55.5 -54.7 154.5	22 33.5 -54.4 153.6	22 10.7 -53.9 152.7

Latitude 33°

Declination CONTRARY name to Latitude

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°	46 34.7 -47.8 133.3	45 57.7 -47.2 132.2	45 20.1 -46.7 131.1	44 41.9 -46.2 130.0	44 03.0 -45.7 128.9
1°	45 46.9 -48.1 134.2	45 10.5 -47.6 133.1	44 33.4 -47.1 132.0	43 55.7 -46.6 130.9	43 17.3 -46.1 129.8
2°	44 58.8 -48.5 135.1	44 22.9 -48.0 133.9	43 46.3 -47.4 132.8	43 09.1 -47.0 131.7	42 31.2 -46.4 130.7
3°	44 10.3 -48.8 135.9	43 34.9 -48.3 134.8	42 58.9 -47.9 133.7	42 22.1 -47.3 132.6	41 44.8 -46.9 131.5
4°	43 21.5 -49.2 136.7	42 46.6 -48.7 135.6	42 11.0 -48.2 134.5	41 34.8 -47.7 133.4	40 57.9 -47.2 132.4
5°	42 32.3 -49.5 137.5	41 57.9 -49.0 136.4	41 22.8 -48.5 135.3	40 47.1 -48.0 134.2	40 10.7 -47.5 133.2
6°	41 42.8 -49.8 138.2	41 08.9 -49.3 137.1	40 34.3 -48.8 136.1	39 59.1 -48.3 135.0	39 23.2 -47.8 134.0
7°	40 53.0 -50.1 139.0	40 19.6 -49.6 137.9	39 45.5 -49.1 136.8	39 10.8 -48.7 135.8	38 35.4 -48.2 134.8
8°	40 02.9 -50.3 139.7	39 30.0 -49.8 138.6	38 56.4 -49.3 137.6	38 22.1 -48.9 136.5	37 47.2 -48.4 135.5
9°	39 12.6 -50.6 140.4	38 40.2 -50.1 139.3	38 07.1 -49.7 138.3	37 33.2 -49.1 137.3	36 58.8 -48.7 136.3
10°	38 22.0 -50.8 141.1	37 50.1 -50.4 140.0	37 17.4 -49.9 139.0	36 44.1 -49.5 138.0	36 10.1 -49.0 137.0
11°	37 31.2 -51.0 141.8	36 59.7 -50.6 140.7	36 27.5 -50.1 139.7	35 54.6 -49.6 138.7	35 21.1 -49.2 137.7
12°	36 40.2 -51.3 142.4	36 09.1 -50.8 141.4	35 37.4 -50.3 140.4	35 05.0 -49.9 139.4	34 31.9 -49.5 138.4
13°	35 48.9 -51.4 143.1	35 18.3 -51.0 142.1	34 47.1 -50.6 141.0	34 15.1 -50.1 140.1	33 42.4 -49.6 139.1
14°	34 57.5 -51.7 143.7	34 27.3 -51.2 142.7	33 56.5 -50.8 141.7	33 25.0 -50.4 140.7	32 52.8 -49.9 139.8
15°	34 05.8 -51.8 144.3	33 36.1 -51.4 143.3	33 05.7 -50.9 142.3	32 34.6 -50.5 141.4	32 02.9 -50.1 140.4
16°	33 14.0 -52.0 144.9	32 44.7 -51.5 143.9	32 14.8 -51.2 143.0	31 44.1 -50.7 142.0	31 12.8 -50.2 141.1
17°	32 22.0 -52.2 145.5	31 53.2 -51.8 144.5	31 23.6 -51.3 143.6	30 53.4 -50.9 142.6	30 22.6 -50.5 141.7
18°	31 29.8 -52.3 146.1	31 01.4 -51.9 145.1	30 32.3 -51.5 144.2	30 02.5 -51.0 143.2	29 32.1 -50.6 142.3
19°	30 37.5 -52.4 146.7	30 09.5 -52.0 145.7	29 40.8 -51.6 144.8	29 11.5 -51.2 143.9	28 41.5 -50.8 142.9
20°	29 45.1 -52.6 147.2	29 17.5 -52.2 146.3	28 49.2 -51.8 145.4	28 20.3 -51.4 144.4	27 50.7 -50.9 143.5
21°	28 52.5 -52.8 147.8	28 25.3 -52.4 146.9	27 57.4 -51.9 145.9	27 28.9 -51.5 145.0	26 59.8 -51.1 144.1
22°	27 59.7 -52.9 148.3	27 32.9 -52.4 147.4	27 05.5 -52.0 146.5	26 37.4 -51.6 145.6	26 08.7 -51.3 144.7
23°	27 06.8 -52.9 148.9	26 40.5 -52.6 148.0	26 13.5 -52.2 147.1	25 45.8 -51.8 146.2	25 17.4 -51.3 145.3
24°	26 13.9 -53.1 149.4	25 47.9 -52.7 148.5	25 21.3 -52.3 147.6	24 54.0 -51.9 146.7	24 26.1 -51.5 145.9
25°	25 20.8 -53.2 149.9	24 55.2 -52.8 149.0	24 29.0 -52.4 148.1	24 02.1 -52.0 147.3	23 34.6 -51.6 146.4
26°	24 27.6 -53.3 150.4	24 02.4 -52.9 149.5	23 36.6 -52.6 148.7	23 10.1 -52.1 147.8	22 43.0 -51.7 147.0
27°	23 34.3 -53.4 150.9	23 09.5 -53.0 150.1	22 44.0 -52.6 149.2	22 18.0 -52.3 148.4	21 51.3 -51.9 147.5
28°	22 40.9 -53.5 151.4	22 16.5 -53.1 150.6	21 51.4 -52.7 149.7	21 25.7 -52.3 148.9	20 59.4 -51.9 148.1
29°	21 47.4 -53.6 151.9	21 23.4 -53.2 151.1	20 58.7 -52.8 150.2	20 33.4 -52.4 149.4	20 07.5 -52.0 148.6

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°	43 23.6 -45.2 127.9	42 43.6 -44.7 126.9	42 03.1 -44.3 125.9	41 22.0 -43.7 124.9	40 40.5 -43.3 123.9
1°	42 38.4 -45.6 128.8	41 58.9 -45.1 127.8	41 18.8 -44.6 126.8	40 38.3 -44.2 125.8	39 57.2 -43.7 124.8
2°	41 52.8 -46.0 129.7	41 13.8 -45.5 128.6	40 34.2 -45.0 127.6	39 54.1 -44.6 126.7	39 13.5 -44.1 125.7
3°	41 06.8 -46.4 130.5	40 28.3 -45.9 129.5	39 49.2 -45.4 128.5	39 09.5 -44.9 127.5	38 29.4 -44.5 126.6
4°	40 20.4 -46.7 131.4	39 42.4 -46.3 130.3	39 03.8 -45.8 129.4	38 24.6 -45.3 128.4	37 44.9 -44.9 127.4
5°	39 33.7 -47.0 132.2	38 56.1 -46.5 131.2	38 18.0 -46.1 130.2	37 39.3 -45.7 129.2	37 00.0 -45.2 128.3
6°	38 46.7 -47.4 133.0	38 09.6 -46.9 132.0	37 31.9 -46.5 131.0	36 53.6 -46.0 130.0	36 14.8 -45.5 129.1
7°	37 59.3 -47.7 133.8	37 22.7 -47.2 132.8	36 45.4 -46.7 131.8	36 07.6 -46.3 130.8	35 29.3 -45.8 129.9
8°	37 11.6 -47.9 134.5	36 35.5 -47.6 133.5	35 58.7 -47.1 132.6	35 21.3 -46.5 131.6	34 43.5 -46.2 130.7
9°	36 23.7 -48.3 135.3	35 47.9 -47.7 134.3	35 11.6 -47.3 133.3	34 34.8 -46.9 132.4	33 57.3 -46.4 131.5
10°	35 35.4 -48.5 136.0	35 00.2 -48.1 135.0	34 24.3 -47.6 134.1	33 47.9 -47.2 133.1	33 10.9 -46.7 132.2
11°	34 46.9 -48.7 136.7	34 12.1 -48.3 135.8	33 36.7 -47.8 134.8	33 00.7 -47.4 133.9	32 24.2 -47.0 133.0
12°	33 58.2 -49.0 137.4	33 23.8 -48.5 136.5	32 48.9 -48.1 135.5	32 13.3 -47.6 134.6	31 37.2 -47.2 133.7
13°	33 09.2 -49.2 138.1	32 35.3 -48.8 137.2	32 00.8 -48.4 136.2	31 25.7 -47.9 135.3	30 50.0 -47.4 134.4
14°	32 20.0 -49.5 138.8	31 46.5 -49.0 137.9	31 12.4 -48.5 136.9	30 37.8 -48.1 136.0	30 02.6 -47.7 135.1
15°	31 30.5 -49.6 139.5	30 57.5 -49.2 138.5	30 23.9 -48.8 137.6	29 49.7 -48.3 136.7	29 14.9 -47.9 135.8
16°	30 40.9 -49.9 140.1	30 08.3 -49.4 139.2	29 35.1 -48.9 138.3	29 01.4 -48.6 137.4	28 27.0 -48.1 136.5
17°	29 51.0 -50.0 140.8	29 18.9 -49.6 139.9	28 46.2 -49.2 139.0	28 12.8 -48.7 138.1	27 38.9 -48.2 137.2
18°	29 01.0 -50.2 141.4	28 29.3 -49.7 140.5	27 57.0 -49.3 139.6	27 24.1 -48.9 138.7	26 50.7 -48.5 137.9
19°	28 10.8 -50.3 142.0	27 39.6 -50.0 141.1	27 07.7 -49.5 140.3	26 35.2 -49.0 139.4	26 02.2 -48.7 138.5
20°	27 20.5 -50.5 142.6	26 49.6 -50.1 141.8	26 18.2 -49.7 140.9	25 46.2 -49.3 140.0	25 13.5 -48.8 139.2
21°	26 30.0 -50.7 143.2	25 59.5 -50.2 142.4	25 28.5 -49.8 141.5	24 56.9 -49.4 140.7	24 24.7 -48.9 139.8
22°	25 39.3 -50.8 143.8	25 09.3 -50.4 143.0	24 38.7 -50.0 142.1	24 07.5 -49.5 141.3	23 35.8 -49.2 140.5
23°	24 48.5 -51.0 144.4	24 18.9 -50.5 143.6	23 48.7 -50.1 142.7	23 18.0 -49.7 141.9	22 46.6 -49.2 141.1
24°	23 57.5 -51.0 145.0	23 28.4 -50.7 144.2	22 58.6 -50.2 143.3	22 28.3 -49.8 142.5	21 57.4 -49.4 141.7
25°	23 06.5 -51.2 145.6	22 37.7 -50.8 144.8	22 08.4 -50.4 143.9	21 38.5 -50.0 143.1	21 08.0 -49.6 142.3
26°	22 15.3 -51.4 146.2	21 46.9 -50.9 145.3	21 18.0 -50.5 144.5	20 48.5 -50.1 143.7	20 18.4 -49.6 142.9
27°	21 23.9 -51.4 146.7	20 56.0 -51.0 145.9	20 27.5 -50.6 145.1	19 58.4 -50.2 144.3	19 28.8 -49.8 143.5
28°	20 32.5 -51.5 147.3	20 05.0 -51.1 146.5	19 36.9 -50.7 145.7	19 08.2 -50.3 144.9	18 39.0 -49.9 144.1
29°	19 41.0 -51.6 147.8	19 13.9 -51.2 147.0	18 46.2 -50.8 146.2	18 17.9 -50.4 145.4	17 49.1 -50.0 144.7

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°	39 58.5 -42.8 123.0	39 16.1 -42.4 122.1	38 33.2 -42.0 121.2	37 50.0 -41.6 120.3	37 06.3 -41.1 119.4
1°	39 15.7 -43.3 123.9	38 33.7 -42.9 123.0	37 51.2 -42.4 122.1	37 08.4 -42.0 121.2	36 25.2 -41.6 120.3
2°	38 32.4 -43.7 124.8	37 50.8 -43.2 123.9	37 08.8 -42.8 123.0	36 26.4 -42.4 122.1	35 43.6 -42.0 121.2
3°	37 48.7 -44.0 125.7	37 07.6 -43.6 124.7	36 26.0 -43.1 123.8	35 44.0 -42.7 123.0	35 01.6 -42.3 122.1
4°	37 04.7 -44.4 126.5	36 24.0 -44.0 125.6	35 42.9 -43.6 124.7	35 01.3 -43.1 123.8	34 19.3 -42.7 123.0
5°	36 20.3 -44.8 127.4	35 40.0 -44.3 126.4	34 59.3 -43.9 125.5	34 18.2 -43.5 124.7	33 36.6 -43.1 123.8
6°	35 35.5 -45.1 128.2	34 55.7 -44.6 127.3	34 15.4 -44.2 126.4	33 34.7 -43.8 125.5	32 53.5 -43.4 124.6
7°	34 50.4 -45.4 129.0	34 11.1 -45.0 128.1	33 31.2 -44.5 127.2	32 50.9 -44.1 126.3	32 10.1 -43.6 125.5
8°	34 05.0 -45.7 129.8	33 26.1 -45.2 128.9	32 46.7 -44.8 128.0	32 06.8 -44.4 127.1	31 26.5 -44.0 126.3
9°	33 19.3 -45.9 130.6	32 40.9 -45.6 129.7	32 01.9 -45.1 128.8	31 22.4 -44.7 127.9	30 42.5 -44.3 127.1
10°	32 33.4 -46.3 131.3	31 55.3 -45.8 130.4	31 16.8 -45.4 129.6	30 37.7 -44.9 128.7	29 58.2 -44.5 127.8
11°	31 47.1 -46.5 132.1	31 09.5 -46.1 131.2	30 31.4 -45.7 130.3	29 52.8 -45.3 129.5	29 13.7 -44.8 128.6
12°	31 00.6 -46.8 132.8	30 23.4 -46.3 131.9	29 45.7 -45.9 131.1	29 07.5 -45.4 130.2	28 28.9 -44.1 129.4
13°	30 13.8 -47.0 133.5	29 37.1 -46.6 132.7	28 59.8 -46.1 131.8	28 22.1 -45.8 131.0	27 43.8 -45.3 130.1
14°	29 26.8 -47.2 134.3	28 50.5 -46.8 133.4	28 13.7 -46.4 132.5	27 36.3 -45.9 131.7	26 58.5 -45.5 130.9
15°	28 39.6 -47.5 135.0	28 03.7 -47.0 134.1	27 27.3 -46.6 133.3	26 50.4 -46.2 132.4	26 13.0 -45.7 131.6
16°	27 52.1 -47.6 135.7	27 16.7 -47.2 134.8	26 40.7 -46.8 134.0	26 04.2 -46.3 133.1	25 27.3 -46.0 132.3
17°	27 04.5 -47.9 136.3	26 29.5 -47.5 135.5	25 53.9 -47.0 134.7	25 17.9 -46.6 133.8	24 41.3 -46.1 133.0
18°	26 16.6 -48.0 137.0	25 42.0 -47.6 136.2	25 06.9 -47.1 135.3	24 31.3 -46.7 134.5	23 55.2 -46.3 133.7
19°	25 28.6 -48.2 137.7	24 54.4 -47.7 136.8	24 19.8 -47.4 136.0	23 44.6 -47.0 135.2	23 08.9 -46.5 134.4
20°	24 40.4 -48.4 138.3	24 06.7 -48.0 137.5	23 32.4 -47.5 136.7	22 57.6 -47.1 135.9	22 22.4 -46.7 135.1
21°	23 52.0 -48.6 139.0	23 18.7 -48.1 138.2	22 44.9 -47.7 137.4	22 10.5 -47.2 136.6	21 35.7 -46.9 135.8
22°	23 03.4 -48.7 139.6	22 30.6 -48.3 138.8	21 57.2 -47.9 138.0	21 23.3 -47.5 137.2	20 48.8 -47.0 136.4
23°	22 14.7 -48.8 140.3	21 42.3 -48.4 139.5	21 09.3 -48.0 138.7	20 35.8 -47.5 137.9	20 01.8 -47.1 137.1
24°	21 25.9 -49.0 140.9	20 53.9 -48.6 140.1	20 21.3 -48.1 139.3	19 48.3 -47.7 138.5	19 14.7 -47.3 137.8
25°	20 36.9 -49.1 141.5	20 05.3 -48.7 140.7	19 33.2 -48.3 139.9	19 00.6 -47.9 139.2	18 27.4 -47.4 138.4
26°	19 47.8 -49.2 142.1	19 16.6 -48.8 141.3	18 44.9 -48.4 140.6	18 12.7 -47.9 139.8	17 40.0 -47.5 139.1
27°	18 58.6 -49.4 142.7	18 27.8 -48.9 142.0	17 56.5 -48.5 141.2	17 24.8 -48.1 140.4	16 52.5 -47.7 139.7
28°	18 09.2 -49.4 143.3	17 38.9 -49.1 142.6	17 08.0 -48.6 141.8	16 36.7 -48.2 141.1	16 04.8 -47.8 140.3
29°	17 19.8 -49.6 143.9	16 49.8 -49.1 143.2	16 19.4 -48.7 142.4	15 48.5 -48.3 141.7	15 17.0 -47.8 141.0

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°	36 22.3 -40.8 118.6	35 38.0 -40.4 117.7	34 53.3 -40.1 116.9	34 08.2 -39.6 116.1	33 22.9 -39.3 115.3
1°	35 41.5 -41.1 119.5	34 57.6 -40.8 118.6	34 13.2 -40.4 117.8	33 28.6 -40.1 117.0	32 43.6 -39.7 116.2
2°	35 00.4 -41.6 120.4	34 16.8 -41.2 119.5	33 32.8 -40.8 118.7	32 48.5 -40.4 117.9	32 03.9 -40.1 117.1
3°	34 18.8 -42.0 121.2	33 35.6 -41.6 120.4	32 52.0 -41.2 119.6	32 08.1 -40.8 118.8	31 23.8 -40.4 118.0
4°	33 36.8 -42.3 122.1	32 54.0 -41.9 121.3	32 10.8 -41.5 120.5	31 27.3 -41.2 119.7	30 43.4 -40.8 118.9
5°	32 54.5 -42.6 123.0	32 12.1 -42.2 122.1	31 29.3 -41.8 121.3	30 46.1 -41.4 120.5	30 02.6 -41.1 119.7
6°	32 11.9 -43.0 123.8	31 29.9 -42.6 123.0	30 47.5 -42.2 122.1	30 04.7 -41.8 121.3	29 21.5 -41.4 120.6
7°	31 28.9 -43.2 124.6	30 47.3 -42.8 123.8	30 05.3 -42.5 123.0	29 22.9 -42.1 122.2	28 40.1 -41.7 121.4
8°	30 45.7 -43.6 125.4	30 04.5 -43.2 124.6	29 22.8 -42.7 123.8	28 40.8 -42.4 123.0	27 58.4 -42.0 122.2
9°	30 02.1 -43.9 126.2	29 21.3 -43.5 125.4	28 40.1 -43.1 124.6	27 58.4 -42.6 123.8	27 16.4 -42.2 123.0
10°	29 18.2 -44.1 127.0	28 37.8 -43.7 126.2	27 57.0 -43.3 125.4	27 15.8 -42.9 124.6	26 34.2 -42.6 123.8
11°	28 34.1 -44.4 127.8	27 54.1 -43.9 127.0	27 13.7 -43.6 126.2	26 32.9 -43.2 125.4	25 51.6 -42.7 124.6
12°	27 49.7 -44.6 128.5	27 10.2 -44.3 127.7	26 30.1 -43.8 126.9	25 49.7 -43.4 126.1	25 08.9 -43.0 125.4
13°	27 05.1 -44.9 129.3	26 25.9 -44.4 128.5	25 46.3 -44.0 127.7	25 06.3 -43.6 126.9	24 25.9 -43.3 126.1
14°	26 20.2 -45.1 130.0	25 41.5 -44.7 129.2	25 02.3 -44.3 128.4	24 22.7 -43.9 127.7	23 42.6 -43.4 126.9
15°	25 35.1 -45.3 130.8	24 56.8 -44.9 130.0	24 18.0 -44.5 129.2	23 38.8 -44.1 128.4	22 59.2 -43.7 127.6
16°	24 49.8 -45.5 131.5	24 11.9 -45.1 130.7	23 33.5 -44.7 129.9	22 54.7 -44.3 129.1	22 15.5 -43.9 128.4
17°	24 04.3 -45.7 132.2	23 26.8 -45.3 131.4	22 48.8 -44.8 130.6	22 10.4 -44.4 129.9	21 31.6 -44.0 129.1
18°	23 18.6 -45.9 132.9	22 41.5 -45.5 132.1	22 04.0 -45.1 131.4	21 26.0 -44.7 130.6	20 47.6 -44.3 129.8
19°	22 32.7 -46.1 133.6	21 56.0 -45.6 132.8	21 18.9 -45.3 132.1	20 41.3 -44.8 131.3	20 03.3 -44.4 130.6
20°	21 46.6 -46.3 134.3	21 10.4 -45.9 133.5	20 33.6 -45.4 132.8	19 56.5 -45.0 132.0	19 18.9 -44.6 131.3
21°	21 00.3 -46.4 135.0	20 24.5 -46.0 134.2	19 48.2 -45.5 133.5	19 11.5 -45.2 132.7	18 34.3 -44.7 132.0
22°	20 13.9 -46.6 135.7	19 38.5 -46.1 134.9	19 02.7 -45.8 134.2	18 26.3 -45.3 133.4	17 49.6 -44.9 132.7
23°	19 27.3 -46.7 136.3	18 52.4 -46.3 135.6	18 16.9 -45.8 134.8	17 41.0 -45.4 134.1	17 04.7 -45.1 133.4
24°	18 40.6 -46.8 137.0	18 06.1 -46.5 136.3	17 31.1 -46.1 135.5	16 55.6 -45.6 134.8	16 19.6 -45.1 134.1
25°	17 53.8 -47.0 137.7	17 19.6 -46.5 136.9	16 45.0 -46.1 136.2	16 10.0 -45.7 135.5	15 34.5 -45.3 134.8
26°	17 06.8 -47.1 138.3	16 33.1 -46.7 137.6	15 58.9 -46.3 136.9	15 24.3 -45.9 136.1	14 49.2 -45.4 135.4
27°	16 19.7 -47.3 139.0	15 46.4 -46.8 138.2	15 12.6 -46.3 137.5	14 38.4 -45.9 136.8	14 03.8 -45.5 136.1
28°	15 32.4 -47.3 139.6	14 59.6 -46.9 138.9	14 26.3 -46.5 138.2	13 52.5 -46.1 137.5	13 18.3 -45.7 136.8
29°	14 45.1 -47.4 140.2	14 12.7 -47.0 139.5	13 39.8 -46.6 138.8	13 06.4 -46.1 138.1	12 32.6 -45.7 137.5

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	32 37.3 -39.0 114.6	31 51.4 -38.7 113.8	31 05.2 -38.3 113.1	30 18.8 -38.1 112.3	29 32.1 -37.7 111.6
1°	31 58.3 -39.4 115.5	31 12.7 -39.0 114.7	30 26.9 -38.7 113.9	29 40.7 -38.3 113.2	28 54.4 -38.1 112.5
2°	31 18.9 -39.7 116.3	30 33.7 -39.4 115.6	29 48.2 -39.1 114.8	29 02.4 -38.8 114.1	28 16.3 -38.4 113.4
3°	30 39.2 -40.1 117.2	29 54.3 -39.7 116.5	29 09.1 -39.4 115.7	28 23.6 -39.0 115.0	27 37.9 -38.8 114.2
4°	29 59.1 -40.4 118.1	29 14.6 -40.1 117.3	28 29.7 -39.7 116.6	27 44.6 -39.4 115.8	26 59.1 -39.0 115.1
5°	29 18.7 -40.7 118.9	28 34.5 -40.3 118.2	27 50.0 -40.0 117.4	27 05.2 -39.7 116.7	26 20.1 -39.4 115.9
6°	28 38.0 -41.0 119.8	27 54.2 -40.7 119.0	27 10.0 -40.3 118.3	26 25.5 -40.0 117.5	25 40.7 -39.6 116.8
7°	27 57.0 -41.4 120.6	27 13.5 -41.0 119.8	26 29.7 -40.6 119.1	25 45.5 -40.2 118.3	25 01.1 -39.9 117.6
8°	27 15.6 -41.6 121.4	26 32.5 -41.2 120.7	25 49.1 -40.9 119.9	25 05.3 -40.5 119.2	24 21.2 -40.2 118.4
9°	26 34.0 -41.8 122.2	25 51.3 -41.5 121.5	25 08.2 -41.1 120.7	24 24.8 -40.8 120.0	23 41.0 -40.4 119.2
10°	25 52.2 -42.2 123.0	25 09.8 -41.8 122.3	24 27.1 -41.4 121.5	23 44.0 -41.0 120.8	23 00.6 -40.7 120.0
11°	25 10.0 -42.4 123.8	24 28.0 -42.0 123.1	23 45.7 -41.6 122.3	23 03.0 -41.3 121.6	22 19.9 -40.9 120.8
12°	24 27.6 -42.6 124.6	23 46.0 -42.2 123.8	23 04.1 -41.9 123.1	22 21.7 -41.5 122.4	21 39.0 -41.1 121.6
13°	23 45.0 -42.8 125.4	23 03.8 -42.5 124.6	22 22.2 -42.1 123.9	21 40.2 -41.7 123.1	20 57.9 -41.3 122.4
14°	23 02.2 -43.1 126.1	22 21.3 -42.6 125.4	21 40.1 -42.3 124.6	20 58.5 -41.9 123.9	20 16.6 -41.5 123.2
15°	22 19.1 -43.3 126.9	21 38.7 -42.9 126.1	20 57.8 -42.5 125.4	20 16.6 -42.1 124.7	19 35.1 -41.7 124.0
16°	21 35.8 -43.4 127.6	20 55.8 -43.1 126.9	20 15.3 -42.6 126.2	19 34.5 -42.3 125.4	18 53.4 -42.0 124.7
17°	20 52.4 -43.7 128.4	20 12.7 -43.2 127.6	19 32.7 -42.9 126.9	18 52.2 -42.4 126.2	18 11.4 -42.0 125.5
18°	20 08.7 -43.8 129.1	19 29.5 -43.5 128.4	18 49.8 -43.0 127.6	18 09.8 -42.7 126.9	17 29.4 -42.3 126.2
19°	19 24.9 -44.0 129.8	18 46.0 -43.6 129.1	18 06.8 -43.2 128.4	17 27.1 -42.8 127.7	16 47.1 -42.4 127.0
20°	18 40.9 -44.2 130.5	18 02.4 -43.7 129.8	17 23.6 -43.4 129.1	16 44.3 -42.9 128.4	16 04.7 -42.6 127.7
21°	17 56.7 -44.3 131.3	17 18.7 -44.0 130.5	16 40.2 -43.5 129.8	16 01.4 -43.1 129.1	15 22.1 -42.7 128.4
22°	17 12.4 -44.5 132.0	16 34.7 -44.0 131.3	15 56.7 -43.7 130.5	15 18.3 -43.3 129.9	14 39.4 -42.8 129.2
23°	16 27.9 -44.6 132.7	15 50.7 -44.2 132.0	15 13.0 -43.7 131.3	14 35.0 -43.4 130.6	13 56.6 -43.0 129.9
24°	15 43.3 -44.8 133.4	15 06.5 -44.4 132.7	14 29.3 -43.9 132.0	13 51.6 -43.4 131.3	13 13.6 -43.0 130.6
25°	14 58.5 -44.8 134.1	14 22.1 -44.4 133.4	13 45.4 -44.1 132.7	13 08.2 -43.7 132.0	12 30.6 -43.2 131.3
26°	14 13.7 -45.0 134.7	13 37.7 -44.6 134.1	13 01.3 -44.1 133.4	12 24.5 -43.7 132.7	11 47.4 -43.3 132.0
27°	13 28.7 -45.1 135.4	12 53.1 -44.6 134.7	12 17.2 -44.3 134.1	11 40.8 -43.8 133.4	11 04.1 -43.4 132.7
28°	12 43.6 -45.2 136.1	12 08.5 -44.8 135.4	11 32.9 -44.3 134.8	10 57.0 -43.9 134.1	10 20.7 -43.5 133.4
29°	11 58.4 -45.3 136.8	11 23.7 -44.9 136.1	10 48.6 -44.4 135.4	10 13.1 -44.0 134.8	9 37.2 -43.6 134.1

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°	28 45.2 -37.4 110.9	27 58.1 -37.2 110.2	27 10.7 -36.9 109.5	26 23.2 -36.6 108.8	25 35.5 -36.4 108.1
1°	28 07.8 -37.8 111.8	27 20.9 -37.5 111.1	26 33.8 -37.2 110.4	25 46.6 -37.0 109.7	24 59.1 -36.7 109.0
2°	27 30.0 -38.1 112.6	26 43.4 -37.8 111.9	25 56.6 -37.5 111.2	25 09.6 -37.3 110.5	24 22.4 -37.0 109.9
3°	26 51.9 -38.5 113.5	26 05.6 -38.1 112.8	25 19.1 -37.9 112.1	24 32.3 -37.5 111.4	23 45.4 -37.3 110.7
4°	26 13.4 -38.7 114.4	25 27.5 -38.5 113.7	24 41.2 -38.1 113.0	23 54.8 -37.8 112.3	23 08.1 -37.5 111.6
5°	25 34.7 -39.0 115.2	24 49.0 -38.7 114.5	24 03.1 -38.4 113.8	23 17.0 -38.1 113.1	22 30.6 -37.8 112.4
6°	24 55.7 -39.3 116.1	24 10.3 -39.0 115.3	23 24.7 -38.6 114.6	22 38.9 -38.4 114.0	21 52.8 -38.1 113.3
7°	24 16.4 -39.6 116.9	23 31.3 -39.2 116.2	22 46.1 -39.0 115.5	22 00.5 -38.6 114.8	21 14.7 -38.3 114.1
8°	23 36.8 -39.8 117.7	22 52.1 -39.5 117.0	22 07.1 -39.1 116.3	21 21.9 -38.9 115.6	20 36.4 -38.6 114.9
9°	22 57.0 -40.1 118.5	22 12.6 -39.7 117.8	21 28.0 -39.4 117.1	20 43.0 -39.0 116.4	19 57.8 -38.7 115.7
10°	22 16.9 -40.3 119.3	21 32.9 -40.0 118.6	20 48.6 -39.7 117.9	20 04.0 -39.3 117.2	19 19.1 -39.0 116.6
11°	21 36.6 -40.6 120.1	20 52.9 -40.2 119.4	20 08.9 -39.8 118.7	19 24.7 -39.6 118.0	18 40.1 -39.2 117.4
12°	20 56.0 -40.7 120.9	20 12.7 -40.4 120.2	19 29.1 -40.1 119.5	18 45.1 -39.7 118.8	18 00.9 -39.4 118.2
13°	20 15.3 -41.0 121.7	19 32.3 -40.6 121.0	18 49.0 -40.2 120.3	18 05.4 -39.9 119.6	17 21.5 -39.5 118.9
14°	19 34.3 -41.1 122.5	18 51.7 -40.8 121.8	18 08.8 -40.5 121.1	17 25.5 -40.1 120.4	16 42.0 -39.8 119.7
15°	18 53.2 -41.4 123.3	18 10.9 -41.0 122.6	17 28.3 -40.6 121.9	16 45.4 -40.2 121.2	16 02.2 -39.9 120.5
16°	18 11.8 -41.5 124.0	17 29.9 -41.1 123.3	16 47.7 -40.8 122.6	16 05.2 -40.4 122.0	15 22.3 -40.0 121.3
17°	17 30.3 -41.7 124.8	16 48.8 -41.3 124.1	16 06.9 -40.9 123.4	15 24.8 -40.6 122.7	14 42.3 -40.2 122.1
18°	16 48.6 -41.9 125.5	16 07.5 -41.5 124.8	15 26.0 -41.1 124.2	14 44.2 -40.7 123.5	14 02.1 -40.4 122.8
19°	16 06.7 -42.0 126.3	15 26.0 -41.7 125.6	14 44.9 -41.3 124.9	14 03.5 -40.9 124.2	13 21.7 -40.5 123.6
20°	15 24.7 -42.2 127.0	14 44.3 -41.7 126.3	14 03.6 -41.3 125.7	13 22.6 -41.0 125.0	12 41.2 -40.6 124.3
21°	14 42.5 -42.3 127.8	14 02.6 -41.9 127.1	13 22.3 -41.6 126.4	12 41.6 -41.1 125.8	12 00.6 -40.8 125.1
22°	14 00.2 -42.4 128.5	13 20.7 -42.1 127.8	12 40.7 -41.6 127.2	12 00.5 -41.3 126.5	11 19.8 -40.8 125.9
23°	13 17.8 -42.6 129.2	12 38.6 -42.1 128.5	11 59.1 -41.8 127.9	11 19.2 -41.4 127.2	10 39.0 -41.0 126.6
24°	12 35.2 -42.6 129.9	11 56.5 -42.3 129.3	11 17.3 -41.8 128.6	10 37.8 -41.4 128.0	9 58.0 -41.0 127.3
25°	11 52.6 -42.8 130.7	11 14.2 -42.4 130.0	10 35.5 -42.0 129.4	9 56.4 -41.6 128.7	9 17.0 -41.2 128.1
26°	11 09.8 -42.9 131.4	10 31.8 -42.4 130.7	9 53.5 -42.0 130.1	9 14.8 -41.6 129.4	8 35.8 -41.2 128.8
27°	10 26.9 -43.0 132.1	9 49.4 -42.6 131.4	9 11.5 -42.2 130.8	8 33.2 -41.7 130.2	7 54.6 -41.3 129.5
28°	9 43.9 -43.0 132.8	9 06.8 -42.6 132.2	8 29.3 -42.2 131.5	7 51.5 -41.8 130.9	7 13.3 -41.4 130.3
29°	9 00.9 -43.2 133.5	8 24.2 -42.7 132.9	7 47.1 -42.3 132.2	7 09.7 -41.9 131.6	6 31.9 -41.5 131.0

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°	24 47.6 -36.2 107.5	23 59.5 -35.9 106.8	23 11.2 -35.7 106.2	22 22.8 -35.5 105.5	21 34.2 -35.2 104.9
1°	24 11.4 -36.4 108.3	23 23.6 -36.3 107.7	22 35.5 -36.0 107.0	21 47.3 -35.7 106.4	20 59.0 -35.6 105.7
2°	23 35.0 -36.8 109.2	22 47.3 -36.4 108.5	21 59.5 -36.2 107.9	21 11.6 -36.0 107.2	20 23.4 -35.8 106.6
3°	22 58.2 -37.0 110.1	22 10.9 -36.8 109.4	21 23.3 -36.5 108.7	20 35.6 -36.3 108.1	19 47.6 -36.0 107.5
4°	22 21.2 -37.3 110.9	21 34.1 -37.0 110.3	20 46.8 -36.8 109.6	19 59.3 -36.5 108.9	19 11.6 -36.2 108.3
5°	21 43.9 -37.5 111.8	20 57.1 -37.3 111.1	20 10.0 -36.9 110.4	19 22.8 -36.7 109.8	18 35.4 -36.5 109.2
6°	21 06.4 -37.8 112.6	20 19.8 -37.5 111.9	19 33.1 -37.3 111.3	18 46.1 -37.0 110.6	17 58.9 -36.7 110.0
7°	20 28.6 -38.0 113.4	19 42.3 -37.7 112.8	18 55.8 -37.4 112.1	18 09.1 -37.2 111.5	17 22.2 -36.9 110.8
8°	19 50.6 -38.2 114.3	19 04.6 -37.9 113.6	18 18.4 -37.7 112.9	17 31.9 -37.3 112.3	16 45.3 -37.1 111.6
9°	19 12.4 -38.5 115.1	18 26.7 -38.2 114.4	17 40.7 -37.8 113.8	16 54.6 -37.6 113.1	16 08.2 -37.3 112.5
10°	18 33.9 -38.6 115.9	17 48.5 -38.3 115.2	17 02.9 -38.1 114.6	16 17.0 -37.7 113.9	15 30.9 -37.5 113.3
11°	17 55.3 -38.9 116.7	17 10.2 -38.6 116.0	16 24.8 -38.2 115.4	15 39.3 -38.0 114.7	14 53.4 -37.6 114.1
12°	17 16.4 -39.0 117.5	16 31.6 -38.7 116.8	15 46.6 -38.4 116.2	15 01.3 -38.1 115.5	14 15.8 -37.8 114.9
13°	16 37.4 -39.3 118.3	15 52.9 -38.9 117.6	15 08.2 -38.6 117.0	14 23.2 -38.2 116.3	13 38.0 -37.9 115.7
14°	15 58.1 -39.3 119.1	15 14.0 -39.0 118.4	14 29.6 -38.7 117.8	13 45.0 -38.4 117.1	13 00.1 -38.1 116.5
15°	15 18.8 -39.6 119.9	14 35.0 -39.3 119.2	13 50.9 -38.9 118.6	13 06.6 -38.6 117.9	12 22.0 -38.3 117.3
16°	14 39.2 -39.7 120.6	13 55.7 -39.3 120.0	13 12.0 -39.0 119.3	12 28.0 -38.7 118.7	11 43.7 -38.3 118.1
17°	13 59.5 -39.9 121.4	13 16.4 -39.5 120.8	12 33.0 -39.2 120.1	11 49.3 -38.8 119.5	11 05.4 -38.5 118.9
18°	13 19.6 -40.0 122.2	12 36.9 -39.7 121.5	11 53.8 -39.2 120.9	11 10.5 -38.9 120.3	10 26.9 -38.6 119.6
19°	12 39.6 -40.1 122.9	11 57.2 -39.7 122.3	11 14.6 -39.4 121.7	10 31.6 -39.1 121.0	9 48.3 -38.7 120.4
20°	11 59.5 -40.3 123.7	11 17.5 -39.9 123.1	10 35.2 -39.6 122.4	9 52.5 -39.1 121.8	9 09.6 -38.8 121.2
21°	11 19.2 -40.3 124.5	10 37.6 -40.0 123.8	9 55.6 -39.6 123.2	9 13.4 -39.3 122.6	8 30.8 -38.9 122.0
22°	10 38.9 -40.5 125.2	9 57.6 -40.1 124.6	9 16.0 -39.7 124.0	8 34.1 -39.3 123.3	7 51.9 -38.9 122.7
23°	9 58.4 -40.6 126.0	9 17.5 -40.2 125.3	8 36.3 -39.8 124.7	7 54.8 -39.4 124.1	7 13.0 -39.1 123.5
24°	9 17.8 -40.6 126.7	8 37.3 -40.2 126.1	7 56.5 -39.9 125.5	7 15.4 -39.5 124.9	6 33.9 -39.1 124.3
25°	8 37.2 -40.8 127.5	7 57.1 -40.4 126.8	7 16.6 -39.9 126.2	6 35.9 -39.6 125.6	5 54.8 -39.2 125.0
26°	7 56.4 -40.8 128.2	7 16.7 -40.4 127.6	6 36.7 -40.1 127.0	5 56.3 -39.6 126.4	5 15.6 -39.2 125.8
27°	7 15.6 -40.9 128.9	6 36.3 -40.5 128.3	5 56.6 -40.0 127.7	5 16.7 -39.7 127.1	4 36.4 -39.3 126.5
28°	6 34.7 -41.0 129.7	5 55.8 -40.6 129.1	5 16.6 -40.2 128.5	4 37.0 -39.7 127.9	3 57.1 -39.3 127.3
29°	5 53.7 -41.0 130.4	5 15.2 -40.6 129.8	4 36.4 -40.2 129.2	3 57.3 -39.8 128.6	3 17.8 -39.4 128.1

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°	20 45.5 -35.0 104.3	19 56.7 -34.9 103.6	19 07.7 -34.7 103.0	18 18.6 -34.5 102.4	17 29.4 -34.3 101.8
1°	20 10.5 -35.4 105.1	19 21.8 -35.1 104.5	18 33.0 -34.9 103.9	17 44.1 -34.7 103.3	16 55.1 -34.6 102.7
2°	19 35.1 -35.5 106.0	18 46.7 -35.4 105.4	17 58.1 -35.2 104.7	17 09.4 -35.0 104.1	16 20.5 -34.8 103.5
3°	18 59.6 -35.8 106.8	18 11.3 -35.6 106.2	17 22.9 -35.4 105.6	16 34.4 -35.2 105.0	15 45.7 -35.0 104.4
4°	18 23.8 -36.1 107.7	17 35.7 -35.8 107.0	16 47.5 -35.5 106.4	15 59.2 -35.4 105.8	15 10.7 -35.2 105.2
5°	17 47.7 -36.2 108.5	16 59.9 -36.0 107.9	16 12.0 -35.8 107.3	15 23.8 -35.5 106.7	14 35.5 -35.3 106.0
6°	17 11.5 -36.5 109.4	16 23.9 -36.2 108.7	15 36.2 -36.0 108.1	14 48.3 -35.8 107.5	14 00.2 -35.5 106.9
7°	16 35.0 -36.6 110.2	15 47.7 -36.4 109.6	15 00.2 -36.1 108.9	14 12.5 -35.9 108.3	13 24.7 -35.7 107.7
8°	15 58.4 -36.8 111.0	15 11.3 -36.5 110.4	14 24.1 -36.4 109.8	13 36.6 -36.1 109.1	12 49.0 -35.8 108.5
9°	15 21.6 -37.0 111.8	14 34.8 -36.8 111.2	13 47.7 -36.4 110.6	13 00.5 -36.2 110.0	12 13.2 -36.0 109.4
10°	14 44.6 -37.2 112.6	13 58.0 -36.9 112.0	13 11.3 -36.7 111.4	12 24.3 -36.4 110.8	11 37.2 -36.2 110.2
11°	14 07.4 -37.4 113.5	13 21.1 -37.1 112.8	12 34.6 -36.8 112.2	11 47.9 -36.5 111.6	11 01.0 -36.2 111.0
12°	13 30.0 -37.5 114.3	12 44.0 -37.2 113.6	11 57.8 -36.9 113.0	11 11.4 -36.6 112.4	10 24.8 -36.4 111.8
13°	12 52.5 -37.6 115.1	12 06.8 -37.3 114.4	11 20.9 -37.0 113.8	10 34.8 -36.8 113.2	9 48.4 -36.5 112.6
14°	12 14.9 -37.8 115.9	11 29.5 -37.5 115.2	10 43.9 -37.2 114.6	9 58.0 -36.9 114.0	9 11.9 -36.5 113.4
15°	11 37.1 -37.9 116.7	10 52.0 -37.6 116.0	10 06.7 -37.3 115.4	9 21.1 -37.0 114.8	8 35.4 -36.7 114.2
16°	10 59.2 -38.0 117.4	10 14.4 -37.7 116.8	9 29.4 -37.4 116.2	8 44.1 -37.0 115.6	7 58.7 -36.8 115.0
17°	10 21.2 -38.2 118.2	9 36.7 -37.8 117.6	8 52.0 -37.5 117.0	8 07.1 -37.2 116.4	7 21.9 -36.9 115.8
18°	9 43.0 -38.2 119.0	8 58.9 -37.9 118.4	8 14.5 -37.6 117.8	7 29.9 -37.3 117.2	6 45.0 -36.9 116.6
19°	9 04.8 -38.4 119.8	8 21.0 -38.0 119.2	7 36.9 -37.6 118.6	6 52.6 -37.3 118.0	6 08.1 -37.1 117.4
20°	8 26.4 -38.4 120.6	7 43.0 -38.1 120.0	6 59.3 -37.8 119.4	6 15.3 -37.4 118.8	5 31.0 -37.0 118.2
21°	7 48.0 -38.5 121.3	7 04.9 -38.2 120.7	6 21.5 -37.8 120.2	5 37.9 -37.5 119.6	4 54.0 -37.2 119.0
22°	7 09.5 -38.6 122.1	6 26.7 -38.2 121.5	5 43.7 -37.9 120.9	5 00.4 -37.5 120.3	4 16.8 -37.1 119.8
23°	6 30.9 -38.7 122.9	5 48.5 -38.3 122.3	5 05.8 -37.9 121.7	4 22.9 -37.6 121.1	3 39.7 -37.3 120.6
24°	5 52.2 -38.7 123.7	5 10.2 -38.4 123.1	4 27.9 -38.0 122.5	3 45.3 -37.6 121.9	3 02.4 -37.2 121.3
25°	5 13.5 -38.8 124.4	4 31.8 -38.4 123.8	3 49.9 -38.1 123.3	3 07.7 -37.7 122.7	2 25.2 -37.3 122.1
26°	4 34.7 -38.9 125.2	3 53.4 -38.5 124.6	3 11.8 -38.0 124.0	2 30.0 -37.7 123.5	1 47.9 -37.3 122.9
27°	3 55.8 -38.9 126.0	3 14.9 -38.4 125.4	2 33.8 -38.1 124.8	1 52.3 -37.7 124.3	1 10.6 -37.3 123.7
28°	3 16.9 -38.9 126.7	2 36.5 -38.6 126.2	1 55.7 -38.1 125.6	1 14.6 -37.7 125.0	0 33.3 -37.3 124.5
29°	2 38.0 -38.9 127.5	1 57.9 -38.5 126.9	1 17.6 -38.2 126.4	0 36.9 -37.7 125.8	-0 04.0 -37.4

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°	16 40.1 -34.2 101.2	15 50.7 -34.0 100.6	15 01.2 -33.9 100.0	14 11.6 -33.8 99.5	13 22.0 -33.7 98.9
1°	16 05.9 -34.4 102.1	15 16.7 -34.3 101.5	14 27.3 -34.1 100.9	13 37.8 -33.9 100.3	12 48.3 -33.9 99.7
2°	15 31.5 -34.6 102.9	14 42.4 -34.4 102.3	13 53.2 -34.3 101.7	13 03.9 -34.2 101.2	12 14.4 -33.9 100.6
3°	14 56.9 -34.8 103.8	14 08.0 -34.7 103.2	13 18.9 -34.5 102.6	12 29.7 -34.3 102.0	11 40.5 -34.2 101.4
4°	14 22.1 -35.0 104.6	13 33.3 -34.8 104.0	12 44.4 -34.6 103.4	11 55.4 -34.4 102.8	11 06.3 -34.3 102.3
5°	13 47.1 -35.1 105.4	12 58.5 -34.9 104.8	12 09.8 -34.7 104.3	11 21.0 -34.6 103.7	10 32.0 -34.4 103.1
6°	13 12.0 -35.3 106.3	12 23.6 -35.1 105.7	11 35.1 -34.9 105.1	10 46.4 -34.7 104.5	9 57.6 -34.5 103.9
7°	12 36.7 -35.5 107.1	11 48.5 -35.3 106.5	11 00.2 -35.1 105.9	10 11.7 -34.8 105.3	9 23.1 -34.6 104.8
8°	12 01.2 -35.6 107.9	11 13.2 -35.3 107.3	10 25.1 -35.1 106.7	9 36.9 -35.0 106.2	8 48.5 -34.8 105.6
9°	11 25.6 -35.8 108.8	10 37.9 -35.6 108.2	9 50.0 -35.3 107.6	9 01.9 -35.1 107.0	8 13.7 -34.8 106.4
10°	10 49.8 -35.8 109.6	10 02.3 -35.6 109.0	9 14.7 -35.4 108.4	8 26.8 -35.1 107.8	7 38.9 -35.0 107.2
11°	10 14.0 -36.0 110.4	9 26.7 -35.7 109.8	8 39.3 -35.5 109.2	7 51.7 -35.3 108.6	7 03.9 -35.0 108.0
12°	9 38.0 -36.1 111.2	8 51.0 -35.9 110.6	8 03.8 -35.6 110.0	7 16.4 -35.3 109.4	6 28.9 -35.1 108.9
13°	9 01.9 -36.2 112.0	8 15.1 -35.9 111.4	7 28.2 -35.7 110.8	6 41.1 -35.5 110.3	5 53.8 -35.2 109.7
14°	8 25.7 -36.3 112.8	7 39.2 -36.1 112.2	6 52.5 -35.8 111.6	6 05.6 -35.5 111.1	5 18.6 -35.3 110.5
15°	7 49.4 -36.4 113.6	7 03.1 -36.1 113.0	6 16.7 -35.8 112.5	5 30.1 -35.5 111.9	4 43.3 -35.3 111.3
16°	7 13.0 -36.5 114.4	6 27.0 -36.2 113.8	5 40.9 -35.9 113.3	4 54.6 -35.7 112.7	4 08.0 -35.3 112.1
17°	6 36.5 -36.6 115.2	5 50.8 -36.2 114.6	5 05.0 -36.0 114.1	4 18.9 -35.6 113.5	3 32.7 -35.4 112.9
18°	5 59.9 -36.6 116.0	5 14.6 -36.3 115.4	4 29.0 -36.0 114.9	3 43.3 -35.8 114.3	2 57.3 -35.4 113.7
19°	5 23.3 -36.7 116.8	4 38.3 -36.4 116.2	3 53.0 -36.1 115.7	3 07.5 -35.7 115.1	2 21.9 -35.5 114.5
20°	4 46.6 -36.8 117.6	4 01.9 -36.4 117.0	3 16.9 -36.1 116.5	2 31.8 -35.8 115.9	1 46.4 -35.5 115.3
21°	4 09.8 -36.8 118.4	3 25.5 -36.5 117.8	2 40.8 -36.1 117.3	1 56.0 -35.8 116.7	1 10.9 -35.5 116.2
22°	3 33.0 -36.8 119.2	2 49.0 -36.5 118.6	2 04.7 -36.2 118.1	1 20.2 -35.8 117.5	0 35.4 -35.5 117.0
23°	2 56.2 -36.9 120.0	2 12.5 -36.5 119.4	1 28.5 -36.1 118.9	0 44.4 -35.9 118.3	-0 00.1 -35.5
24°	2 19.3 -36.9 120.8	1 36.0 -36.6 120.2	0 52.4 -36.2 119.7	0 08.5 -35.8 119.1	-0 35.6 -35.4
25°	1 42.4 -36.9 121.6	0 59.4 -36.5 121.0	0 16.2 -36.2 120.5	-0 27.3 -35.8	-1 11.0 -35.5
26°	1 05.5 -36.9 122.4	0 22.9 -36.6 121.8	-0 20.0 -36.2	-1 03.1 -35.9	-1 46.5 -35.5
27°	0 28.6 -36.9 123.1	-0 13.7 -36.5	-0 56.2 -36.2	-1 39.0 -35.8	-2 22.0 -35.4
28°	-0 08.3 -37.0	-0 50.2 -36.6	-1 32.4 -36.1	-2 14.8 -35.7	-2 57.4 -35.4
29°	-0 45.3 -36.9	-1 26.8 -36.5	-2 08.5 -36.2	-2 50.5 -35.8	-3 32.8 -35.4

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°	12 32.2 -33.6 98.3	11 42.4 -33.5 97.7	10 52.5 -33.4 97.2	10 02.5 -33.2 96.6	9 12.5 -33.2 96.0
1°	11 58.6 -33.7 99.2	11 08.9 -33.6 98.6	10 19.1 -33.4 98.0	9 29.3 -33.4 97.4	8 39.3 -33.2 96.9
2°	11 24.9 -33.8 100.0	10 35.3 -33.7 99.4	9 45.7 -33.6 98.9	8 55.9 -33.5 98.3	8 06.1 -33.4 97.7
3°	10 51.1 -34.0 100.8	10 01.6 -33.8 100.3	9 12.1 -33.8 99.7	8 22.4 -33.6 99.1	7 32.7 -33.5 98.6
4°	10 17.1 -34.1 101.7	9 27.8 -34.0 101.1	8 38.3 -33.8 100.5	7 48.8 -33.7 100.0	6 59.2 -33.5 99.4
5°	9 43.0 -34.3 102.5	8 53.8 -34.1 101.9	8 04.5 -33.9 101.4	7 15.1 -33.7 100.8	6 25.7 -33.7 100.2
6°	9 08.7 -34.3 103.3	8 19.7 -34.2 102.8	7 30.6 -34.0 102.2	6 41.4 -33.9 101.6	5 52.0 -33.7 101.1
7°	8 34.4 -34.5 104.2	7 45.5 -34.2 103.6	6 56.6 -34.1 103.0	6 07.5 -34.0 102.5	5 18.3 -33.8 101.9
8°	7 59.9 -34.5 105.0	7 11.3 -34.4 104.4	6 22.5 -34.2 103.9	5 33.5 -34.0 103.3	4 44.5 -33.8 102.7
9°	7 25.4 -34.7 105.8	6 36.9 -34.5 105.3	5 48.3 -34.3 104.7	4 59.5 -34.0 104.1	4 10.7 -33.9 103.6
10°	6 50.7 -34.7 106.6	6 02.4 -34.5 106.1	5 14.0 -34.3 105.5	4 25.5 -34.2 104.9	3 36.8 -34.0 104.4
11°	6 16.0 -34.8 107.5	5 27.9 -34.6 106.9	4 39.7 -34.4 106.3	3 51.3 -34.1 105.8	3 02.8 -33.9 105.2
12°	5 41.2 -34.9 108.3	4 53.3 -34.6 107.7	4 05.3 -34.4 107.2	3 17.2 -34.2 106.6	2 28.9 -34.0 106.0
13°	5 06.3 -34.9 109.1	4 18.7 -34.7 108.5	3 30.9 -34.5 108.0	2 43.0 -34.3 107.4	1 54.9 -34.1 106.9
14°	4 31.4 -35.0 109.9	3 44.0 -34.8 109.4	2 56.4 -34.5 108.8	2 08.7 -34.3 108.2	1 20.8 -34.0 107.7
15°	3 56.4 -35.1 110.7	3 09.2 -34.8 110.2	2 21.9 -34.5 109.6	1 34.4 -34.3 109.1	0 46.8 -34.1 108.5
16°	3 21.3 -35.0 111.5	2 34.4 -34.8 111.0	1 47.4 -34.6 110.4	1 00.1 -34.3 109.9	0 12.7 -34.0 109.3
17°	2 46.3 -35.2 112.4	1 59.6 -34.8 111.8	1 12.8 -34.6 111.3	0 25.8 -34.3 110.7	-0 21.3 -34.1
18°	2 11.1 -35.1 113.2	1 24.8 -34.9 112.6	0 38.2 -34.5 112.1	-0 08.5 -34.3	-0 55.4 -34.0
19°	1 36.0 -35.2 114.0	0 49.9 -34.8 113.4	0 03.7 -34.6 112.9	-0 42.8 -34.3	-1 29.4 -34.0
20°	1 00.8 -35.1 114.8	0 15.1 -34.9 114.2	-0 30.9 -34.6	-1 17.1 -34.3	-2 03.4 -34.0
21°	0 25.7 -35.2 115.6	-0 19.8 -34.9	-1 05.5 -34.6	-1 51.4 -34.2	-2 37.4 -34.0
22°	-0 09.5 -35.2	-0 54.7 -34.8	-1 40.1 -34.5	-2 25.6 -34.3	-3 11.4 -33.9
23°	-0 44.7 -35.2	-1 29.5 -34.9	-2 14.6 -34.5	-2 59.9 -34.2	-3 45.3 -33.9
24°	-1 19.9 -35.1	-2 04.4 -34.8	-2 49.1 -34.5	-3 34.1 -34.1	-4 19.2 -33.9
25°	-1 55.0 -35.1	-2 39.2 -34.8	-3 23.6 -34.4	-4 08.2 -34.1	-4 53.1 -33.7
26°	-2 30.1 -35.1	-3 14.0 -34.7	-3 58.0 -34.4	-4 42.3 -34.1	-5 26.8 -33.7
27°	-3 05.2 -35.1	-3 48.7 -34.7	-4 32.4 -34.4	-5 16.4 -33.9	-6 00.5 -33.6
28°	-3 40.3 -35.0	-4 23.4 -34.7	-5 06.8 -34.2	-5 50.3 -33.9	-6 34.1 -33.6
29°	-4 15.3 -35.0	-4 58.1 -34.5	-5 41.0 -34.2	-6 24.2 -33.9	-7 07.7 -33.4

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°	8 22.4 -33.0 95.5	7 32.3 -33.0 94.9	6 42.2 -33.0 94.4	5 52.0 -32.9 93.8	5 01.8 -32.9 93.3
1°	7 49.4 -33.2 96.3	6 59.3 -33.1 95.8	6 09.2 -33.0 95.2	5 19.1 -33.0 94.7	4 28.9 -32.9 94.1
2°	7 16.2 -33.3 97.2	6 26.2 -33.2 96.6	5 36.2 -33.1 96.1	4 46.1 -33.0 95.5	3 56.0 -32.9 95.0
3°	6 42.9 -33.4 98.0	5 53.0 -33.2 97.4	5 03.1 -33.2 96.9	4 13.1 -33.0 96.3	3 23.1 -33.0 95.8
4°	6 09.5 -33.4 98.8	5 19.8 -33.3 98.3	4 29.9 -33.2 97.7	3 40.1 -33.2 97.2	2 50.1 -33.0 96.6
5°	5 36.1 -33.5 99.7	4 46.5 -33.4 99.1	3 56.7 -33.2 98.6	3 06.9 -33.1 98.0	2 17.1 -33.1 97.5
6°	5 02.6 -33.6 100.5	4 13.1 -33.5 100.0	3 23.5 -33.3 99.4	2 33.8 -33.2 98.8	1 44.0 -33.1 98.3
7°	4 29.0 -33.6 101.3	3 39.6 -33.5 100.8	2 50.2 -33.4 100.2	2 00.6 -33.2 99.7	1 10.9 -33.0 99.1
8°	3 55.4 -33.7 102.2	3 06.1 -33.5 101.6	2 16.8 -33.4 101.1	1 27.4 -33.3 100.5	0 37.9 -33.1 100.0
9°	3 21.7 -33.7 103.0	2 32.6 -33.5 102.4	1 43.4 -33.4 101.9	0 54.1 -33.2 101.3	0 04.8 -33.1 100.8
10°	2 48.0 -33.8 103.8	1 59.1 -33.6 103.3	1 10.0 -33.4 102.7	0 20.9 -33.2 102.2	-0 28.3 -33.1
11°	2 14.2 -33.8 104.7	1 25.5 -33.6 104.1	0 36.6 -33.4 103.6	-0 12.3 -33.3	-1 01.4 -33.1
12°	1 40.4 -33.8 105.5	0 51.9 -33.6 104.9	0 03.2 -33.4 104.4	-0 45.6 -33.2	-1 34.5 -33.1
13°	1 06.6 -33.8 106.3	0 18.3 -33.6 105.8	-0 30.2 -33.4	-1 18.8 -33.2	-2 07.6 -33.0
14°	0 32.8 -33.8 107.1	-0 15.3 -33.6	-1 03.6 -33.4	-1 52.0 -33.2	-2 40.6 -33.0
15°	-0 01.0 -33.8	-0 48.9 -33.6	-1 37.0 -33.4	-2 25.2 -33.2	-3 13.6 -33.0
16°	-0 34.8 -33.8	-1 22.5 -33.6	-2 10.4 -33.4	-2 58.4 -33.1	-3 46.6 -32.9
17°	-1 08.6 -33.8	-1 56.1 -33.6	-2 43.8 -33.3	-3 31.5 -33.1	-4 19.5 -32.8
18°	-1 42.4 -33.8	-2 29.7 -33.5	-3 17.1 -33.2	-4 04.6 -33.1	-4 52.3 -32.8
19°	-2 16.2 -33.8	-3 03.2 -33.5	-3 50.3 -33.3	-4 37.7 -32.9	-5 25.1 -32.7
20°	-2 50.0 -33.7	-3 36.7 -33.4	-4 23.6 -33.1	-5 10.6 -32.9	-5 57.8 -32.7
21°	-3 23.7 -33.7	-4 10.1 -33.4	-4 56.7 -33.2	-5 43.5 -32.9	-6 30.5 -32.5
22°	-3 57.4 -33.6	-4 43.5 -33.4	-5 29.9 -33.0	-6 16.4 -32.7	-7 03.0 -32.5
23°	-4 31.0 -33.6	-5 16.9 -33.2	-6 02.9 -33.0	-6 49.1 -32.7	-7 35.5 -32.4
24°	-5 04.6 -33.5	-5 50.1 -33.2	-6 35.9 -32.8	-7 21.8 -32.5	-8 07.9 -32.2
25°	-5 38.1 -33.4	-6 23.3 -33.1	-7 08.7 -32.8	-7 54.3 -32.5	-8 40.1 -32.2
26°	-6 11.5 -33.4	-6 56.4 -33.0	-7 41.5 -32.7	-8 26.8 -32.4	-9 12.3 -32.0
27°	-6 44.9 -33.2	-7 29.4 -33.0	-8 14.2 -32.6	-8 59.2 -32.2	-9 44.3 -31.9
28°	-7 18.1 -33.2	-8 02.4 -32.8	-8 46.8 -32.4	-9 31.4 -32.1	
29°	-7 51.3 -33.1	-8 35.2 -32.7	-9 19.2 -32.4		

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°	4 11.5 -32.8 92.7	3 21.2 -32.7 92.2	2 30.9 -32.7 91.6	1 40.6 -32.7 91.1	0 50.3 -32.7 90.5
1°	3 38.7 -32.8 93.6	2 48.5 -32.8 93.0	1 58.2 -32.7 92.5	1 07.9 -32.7 91.9	0 17.6 -32.7 91.4
2°	3 05.9 -32.9 94.4	2 15.7 -32.8 93.9	1 25.5 -32.8 93.3	0 35.2 -32.7 92.8	-0 15.1 -32.6
3°	2 33.0 -32.9 95.2	1 42.9 -32.9 94.7	0 52.7 -32.8 94.1	0 02.5 -32.7 93.6	-0 47.7 -32.7
4°	2 00.1 -32.9 96.1	1 10.0 -32.8 95.5	0 19.9 -32.8 95.0	-0 30.2 -32.8	-1 20.4 -32.7
5°	1 27.2 -33.0 96.9	0 37.2 -32.9 96.4	-0 12.9 -32.7	-1 03.0 -32.7	-1 53.1 -32.6
6°	0 54.2 -33.0 97.8	0 04.3 -32.9 97.2	-0 45.6 -32.8	-1 35.7 -32.6	-2 25.7 -32.6
7°	0 21.2 -32.9 98.6	-0 28.6 -32.8	-1 18.4 -32.8	-2 08.3 -32.7	-2 58.3 -32.6
8°	-0 11.7 -33.0	-1 01.4 -32.9	-1 51.2 -32.7	-2 41.0 -32.6	-3 30.9 -32.5
9°	-0 44.7 -33.0	-1 34.3 -32.8	-2 23.9 -32.7	-3 13.6 -32.6	-4 03.4 -32.5
10°	-1 17.7 -32.9	-2 07.1 -32.8	-2 56.6 -32.7	-3 46.2 -32.5	-4 35.9 -32.4
11°	-1 50.6 -32.9	-2 39.9 -32.8	-3 29.3 -32.6	-4 18.7 -32.5	-5 08.3 -32.3
12°	-2 23.5 -32.9	-3 12.7 -32.7	-4 01.9 -32.5	-4 51.2 -32.4	-5 40.6 -32.3
13°	-2 56.4 -32.9	-3 45.4 -32.7	-4 34.4 -32.6	-5 23.6 -32.4	-6 12.9 -32.2
14°	-3 29.3 -32.8	-4 18.1 -32.6	-5 07.0 -32.4	-5 56.0 -32.2	-6 45.1 -32.1
15°	-4 02.1 -32.7	-4 50.7 -32.5	-5 39.4 -32.4	-6 28.2 -32.2	-7 17.2 -32.0
16°	-4 34.8 -32.7	-5 23.2 -32.5	-6 11.8 -32.2	-7 00.4 -32.1	-7 49.2 -31.9
17°	-5 07.5 -32.7	-5 55.7 -32.4	-6 44.0 -32.2	-7 32.5 -32.0	-8 21.1 -31.8
18°	-5 40.2 -32.5	-6 28.1 -32.4	-7 16.2 -32.1	-8 04.5 -31.9	-8 52.9 -31.6
19°	-6 12.7 -32.5	-7 00.5 -32.2	-7 48.3 -32.0	-8 36.4 -31.7	-9 24.5 -31.6
20°	-6 45.2 -32.4	-7 32.7 -32.1	-8 20.3 -31.9	-9 08.1 -31.7	-9 56.1 -31.4
21°	-7 17.6 -32.3	-8 04.8 -32.1	-8 52.2 -31.8	-9 39.8 -31.5	
22°	-7 49.9 -32.2	-8 36.9 -31.9	-9 24.0 -31.7		
23°	-8 22.1 -32.0	-9 08.8 -31.8	-9 55.7 -31.5		
24°	-8 54.1 -32.0	-9 40.6 -31.6			
25°	-9 26.1 -31.8				
26°	-9 57.9 -31.7				
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 -32.7 90.0	-0 50.3 -32.7			
1°	-0 32.7 -32.6	-1 23.0 -32.7			
2°	-1 05.3 -32.7	-1 55.7 -32.6			
3°	-1 38.0 -32.6	-2 28.3 -32.6			
4°	-2 10.6 -32.6	-3 00.9 -32.5			
5°	-2 43.2 -32.6	-3 33.4 -32.6			
6°	-3 15.8 -32.5	-4 06.0 -32.4			
7°	-3 48.3 -32.5	-4 38.4 -32.4			
8°	-4 20.8 -32.5	-5 10.8 -32.4			
9°	-4 53.3 -32.3	-5 43.2 -32.2			
10°	-5 25.6 -32.3	-6 15.4 -32.2			
11°	-5 57.9 -32.2	-6 47.6 -32.1			
12°	-6 30.1 -32.1	-7 19.7 -32.0			
13°	-7 02.2 -32.1	-7 51.7 -31.9			
14°	-7 34.3 -31.9	-8 23.6 -31.8			
15°	-8 06.2 -31.8	-8 55.4 -31.6			
16°	-8 38.0 -31.8	-9 27.0 -31.6			
17°	-9 09.8 -31.5	-9 58.6 -31.4			
18°	-9 41.3 -31.5				
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°	56 00.0 -60.0 180.0	55 59.2 -60.0 178.2	55 56.9 -59.9 176.4	55 53.0 -59.8 174.6	55 47.6 -59.7 172.9
1°	55 00.0 -60.0 180.0	54 59.2 -59.9 178.3	54 57.0 -60.0 176.5	54 53.2 -59.8 174.8	54 47.9 -59.7 173.1
2°	54 00.0 -60.0 180.0	53 59.3 -60.0 178.3	53 57.0 -59.9 176.6	53 53.4 -59.9 174.9	53 48.2 -59.7 173.2
3°	53 00.0 -60.0 180.0	52 59.3 -60.0 178.3	52 57.1 -59.9 176.7	52 53.5 -59.8 175.0	52 48.5 -59.7 173.4
4°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.4	51 57.2 -59.9 176.8	51 53.7 -59.9 175.1	51 48.8 -59.8 173.5
5°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.4	50 57.3 -60.0 176.8	50 53.8 -59.8 175.3	50 49.0 -59.7 173.7
6°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.5	49 57.3 -59.9 176.9	49 54.0 -59.9 175.4	49 49.3 -59.8 173.8
7°	49 00.0 -60.0 180.0	48 59.3 -59.9 178.5	48 57.4 -60.0 177.0	48 54.1 -59.9 175.5	48 49.5 -59.8 174.0
8°	48 00.0 -60.0 180.0	47 59.4 -60.0 178.5	47 57.4 -59.9 177.0	47 54.2 -59.9 175.6	47 49.7 -59.7 174.1
9°	47 00.0 -60.0 180.0	46 59.4 -60.0 178.6	46 57.5 -60.0 177.1	46 54.3 -59.8 175.7	46 50.0 -59.8 174.2
10°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.6	45 57.5 -59.9 177.2	45 54.5 -59.9 175.8	45 50.2 -59.8 174.3
11°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.6	44 57.6 -60.0 177.2	44 54.6 -59.9 175.8	44 50.4 -59.8 174.5
12°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.6	43 57.6 -59.9 177.3	43 54.7 -59.9 175.9	43 50.6 -59.8 174.6
13°	43 00.0 -60.0 180.0	42 59.4 -60.0 178.7	42 57.7 -60.0 177.3	42 54.8 -59.9 176.0	42 50.8 -59.9 174.7
14°	42 00.0 -60.0 180.0	41 59.4 -60.0 178.7	41 57.7 -59.9 177.4	41 54.9 -59.9 176.1	41 50.9 -59.8 174.8
15°	41 00.0 -60.0 180.0	40 59.4 -59.9 178.7	40 57.8 -60.0 177.4	40 55.0 -59.9 176.2	40 51.1 -59.8 174.9
16°	40 00.0 -60.0 180.0	39 59.5 -60.0 178.7	39 57.8 -59.9 177.5	39 55.1 -59.9 176.2	39 51.3 -59.8 175.0
17°	39 00.0 -60.0 180.0	38 59.5 -60.0 178.8	38 57.9 -60.0 177.5	38 55.2 -59.9 176.3	38 51.5 -59.9 175.1
18°	38 00.0 -60.0 180.0	37 59.5 -60.0 178.8	37 57.9 -60.0 177.6	37 55.3 -59.9 176.4	37 51.6 -59.8 175.2
19°	37 00.0 -60.0 180.0	36 59.5 -60.0 178.8	36 57.9 -59.9 177.6	36 55.4 -59.9 176.5	36 51.8 -59.9 175.3
20°	36 00.0 -60.0 180.0	35 59.5 -60.0 178.8	35 58.0 -60.0 177.7	35 55.5 -59.9 176.5	35 51.9 -59.8 175.4
21°	35 00.0 -60.0 180.0	34 59.5 -60.0 178.9	34 58.0 -59.9 177.7	34 55.6 -60.0 176.6	34 52.1 -59.9 175.4
22°	34 00.0 -60.0 180.0	33 59.5 -60.0 178.9	33 58.1 -60.0 177.8	33 55.6 -59.9 176.6	33 52.2 -59.8 175.5
23°	33 00.0 -60.0 180.0	32 59.5 -60.0 178.9	32 58.1 -60.0 177.8	32 55.7 -59.9 176.7	32 52.4 -59.9 175.6
24°	32 00.0 -60.0 180.0	31 59.5 -60.0 178.9	31 58.1 -59.9 177.8	31 55.8 -59.9 176.8	31 52.5 -59.8 175.7
25°	31 00.0 -60.0 180.0	30 59.5 -60.0 178.9	30 58.2 -60.0 177.9	30 55.9 -60.0 176.8	30 52.7 -59.9 175.8
26°	30 00.0 -60.0 180.0	29 59.5 -59.9 179.0	29 58.2 -60.0 177.9	29 55.9 -59.9 176.9	29 52.8 -59.9 175.9
27°	29 00.0 -60.0 180.0	28 59.6 -60.0 179.0	28 58.2 -59.9 178.0	28 56.0 -59.9 176.9	28 52.9 -59.8 175.9
28°	28 00.0 -60.0 180.0	27 59.6 -60.0 179.0	27 58.3 -60.0 178.0	27 56.1 -59.9 177.0	27 53.1 -59.9 176.0
29°	27 00.0 -60.0 180.0	26 59.6 -60.0 179.0	26 58.3 -60.0 178.0	26 56.2 -60.0 177.1	26 53.2 -59.9 176.1

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°	55 40.7 -59.5 171.1	55 32.2 -59.3 169.4	55 22.3 -59.1 167.6	55 10.9 -58.8 165.9	54 58.1 -58.5 164.2
1°	54 41.2 -59.6 171.3	54 32.9 -59.3 169.6	54 23.2 -59.1 167.9	54 12.1 -58.8 166.2	53 59.6 -58.6 164.6
2°	53 41.6 -59.5 171.5	53 33.6 -59.4 169.9	53 24.1 -59.1 168.2	53 13.3 -58.9 166.6	53 01.0 -58.6 164.9
3°	52 42.1 -59.6 171.7	52 34.2 -59.4 170.1	52 25.0 -59.2 168.5	52 14.4 -59.0 166.9	52 02.4 -58.7 165.3
4°	51 42.5 -59.6 171.9	51 34.8 -59.4 170.3	51 25.8 -59.2 168.8	51 15.4 -59.0 167.2	51 03.7 -58.7 165.6
5°	50 42.9 -59.6 172.1	50 35.4 -59.5 170.6	50 26.6 -59.3 169.0	50 16.4 -59.0 167.5	50 05.0 -58.8 165.9
6°	49 43.3 -59.7 172.3	49 35.9 -59.4 170.8	49 27.3 -59.3 169.3	49 17.4 -59.1 167.7	49 06.2 -58.8 166.3
7°	48 43.6 -59.6 172.5	48 36.5 -59.5 171.0	48 28.0 -59.3 169.5	48 18.3 -59.1 168.0	48 07.4 -58.9 166.5
8°	47 44.0 -59.7 172.6	47 37.0 -59.5 171.2	47 28.7 -59.3 169.7	47 19.2 -59.1 168.3	47 08.5 -58.9 166.8
9°	46 44.3 -59.6 172.8	46 37.5 -59.6 171.4	46 29.4 -59.4 169.9	46 20.1 -59.2 168.5	46 09.6 -59.0 167.1
10°	45 44.7 -59.7 172.9	45 37.9 -59.5 171.5	45 30.0 -59.4 170.1	45 20.9 -59.2 168.8	45 10.6 -59.0 167.4
11°	44 45.0 -59.7 173.1	44 38.4 -59.6 171.7	44 30.6 -59.4 170.3	44 21.7 -59.2 169.0	44 11.6 -59.0 167.6
12°	43 45.3 -59.7 173.2	43 38.8 -59.5 171.9	43 31.2 -59.4 170.5	43 22.5 -59.3 169.2	43 12.6 -59.1 167.9
13°	42 45.6 -59.7 173.4	42 39.3 -59.6 172.0	42 31.8 -59.4 170.7	42 23.2 -59.2 169.4	42 13.5 -59.0 168.1
14°	41 45.9 -59.8 173.5	41 39.7 -59.6 172.2	41 32.4 -59.5 170.9	41 24.0 -59.3 169.6	41 14.5 -59.2 168.4
15°	40 46.1 -59.7 173.6	40 40.1 -59.6 172.4	40 32.9 -59.5 171.1	40 24.7 -59.4 169.8	40 15.3 -59.1 168.6
16°	39 46.4 -59.7 173.7	39 40.5 -59.7 172.5	39 33.4 -59.5 171.3	39 25.3 -59.3 170.0	39 16.2 -59.2 168.8
17°	38 46.7 -59.8 173.9	38 40.8 -59.6 172.6	38 33.9 -59.5 171.4	38 26.0 -59.3 170.2	38 17.0 -59.1 169.0
18°	37 46.9 -59.7 174.0	37 41.2 -59.6 172.8	37 34.4 -59.5 171.6	37 26.7 -59.4 170.4	37 17.9 -59.3 169.2
19°	36 47.2 -59.8 174.1	36 41.6 -59.7 172.9	36 34.9 -59.5 171.7	36 27.3 -59.4 170.6	36 18.6 -59.2 169.4
20°	35 47.4 -59.7 174.2	35 41.9 -59.7 173.1	35 35.4 -59.6 171.9	35 27.9 -59.4 170.8	35 19.4 -59.2 169.6
21°	34 47.7 -59.8 174.3	34 42.2 -59.6 173.2	34 35.8 -59.5 172.1	34 28.5 -59.4 170.9	34 20.2 -59.3 169.8
22°	33 47.9 -59.8 174.4	33 42.6 -59.7 173.3	33 36.3 -59.6 172.2	33 29.1 -59.5 171.1	33 20.9 -59.3 170.0
23°	32 48.1 -59.8 174.5	32 42.9 -59.7 173.4	32 36.7 -59.5 172.3	32 29.6 -59.4 171.3	32 21.6 -59.3 170.2
24°	31 48.3 -59.8 174.6	31 43.2 -59.7 173.6	31 37.2 -59.6 172.5	31 30.2 -59.5 171.4	31 22.3 -59.3 170.4
25°	30 48.5 -59.7 174.7	30 43.5 -59.7 173.7	30 37.6 -59.6 172.6	30 30.7 -59.4 171.6	30 23.0 -59.3 170.5
26°	29 48.8 -59.8 174.8	29 43.8 -59.7 173.8	29 38.0 -59.6 172.8	29 31.3 -59.5 171.7	29 23.7 -59.3 170.7
27°	28 49.0 -59.8 174.9	28 44.1 -59.7 173.9	28 38.4 -59.6 172.9	28 31.8 -59.5 171.9	28 24.4 -59.4 170.9
28°	27 49.2 -59.8 175.0	27 44.4 -59.7 174.0	27 38.8 -59.6 173.0	27 32.3 -59.5 172.0	27 25.0 -59.4 171.0
29°	26 49.4 -59.8 175.1	26 44.7 -59.7 174.1	26 39.2 -59.6 173.2	26 32.8 -59.5 172.2	26 25.6 -59.3 171.2

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°	54 43.8 -58.1 162.5	54 28.2 -57.8 160.8	54 11.2 -57.4 159.2	53 52.8 -57.0 157.6	53 33.2 -56.5 156.0
1°	53 45.7 -58.3 162.9	53 30.4 -57.9 161.3	53 13.8 -57.6 159.7	52 55.8 -57.1 158.1	52 36.7 -56.8 156.5
2°	52 47.4 -58.3 163.3	52 32.5 -58.0 161.7	52 16.2 -57.6 160.2	51 58.7 -57.2 158.6	51 39.9 -56.8 157.1
3°	51 49.1 -58.4 163.7	51 34.5 -58.1 162.1	51 18.6 -57.7 160.6	51 01.5 -57.4 159.1	50 43.1 -57.0 157.6
4°	50 50.7 -58.4 164.1	50 36.4 -58.1 162.5	50 20.9 -57.8 161.0	50 04.1 -57.4 159.5	49 46.1 -57.1 158.1
5°	49 52.3 -58.5 164.4	49 38.3 -58.2 162.9	49 23.1 -57.9 161.4	49 06.7 -57.6 160.0	48 49.0 -57.2 158.5
6°	48 53.8 -58.6 164.8	48 40.1 -58.3 163.3	48 25.2 -58.0 161.8	48 09.1 -57.7 160.4	47 51.8 -57.3 159.0
7°	47 55.2 -58.6 165.1	47 41.8 -58.4 163.7	47 27.2 -58.0 162.2	47 11.4 -57.7 160.8	46 54.5 -57.4 159.4
8°	46 56.6 -58.7 165.4	46 43.4 -58.4 164.0	46 29.2 -58.2 162.6	46 13.7 -57.8 161.2	45 57.1 -57.5 159.8
9°	45 57.9 -58.7 165.7	45 45.0 -58.4 164.3	45 31.0 -58.2 163.0	45 15.9 -57.9 161.6	44 59.6 -57.5 160.3
10°	44 59.2 -58.8 166.0	44 46.6 -58.5 164.7	44 32.8 -58.2 163.3	44 18.0 -58.0 162.0	44 02.1 -57.7 160.6
11°	44 00.4 -58.8 166.3	43 48.1 -58.6 165.0	43 34.6 -58.3 163.6	43 20.0 -58.0 162.3	43 04.4 -57.7 161.0
12°	43 01.6 -58.8 166.6	42 49.5 -58.6 165.3	42 36.3 -58.4 164.0	42 22.0 -58.1 162.7	42 06.7 -57.8 161.4
13°	42 02.8 -58.9 166.8	41 50.9 -58.7 165.5	41 37.9 -58.4 164.3	41 23.9 -58.1 163.0	41 08.9 -57.9 161.8
14°	41 03.9 -58.9 167.1	40 52.2 -58.7 165.8	40 39.5 -58.4 164.6	40 25.8 -58.2 163.3	40 11.0 -57.9 162.1
15°	40 05.0 -59.0 167.3	39 53.5 -58.7 166.1	39 41.1 -58.5 164.9	39 27.6 -58.3 163.7	39 13.1 -58.0 162.4
16°	39 06.0 -59.0 167.6	38 54.8 -58.8 166.4	38 42.6 -58.6 165.2	38 29.3 -58.3 164.0	38 15.1 -58.0 162.8
17°	38 07.0 -59.0 167.8	37 56.0 -58.8 166.6	37 44.0 -58.5 165.4	37 31.0 -58.3 164.3	37 17.1 -58.1 163.1
18°	37 08.0 -59.0 168.0	36 57.2 -58.8 166.9	36 45.5 -58.7 165.7	36 32.7 -58.4 164.6	36 19.0 -58.2 163.4
19°	36 09.0 -59.0 168.3	35 58.4 -58.8 167.1	35 46.8 -58.6 166.0	35 34.3 -58.4 164.8	35 20.8 -58.1 163.7
20°	35 10.0 -59.1 168.5	34 59.6 -58.9 167.4	34 48.2 -58.7 166.2	34 35.9 -58.5 165.1	34 22.7 -58.3 164.0
21°	34 10.9 -59.1 168.7	34 00.7 -58.9 167.6	33 49.5 -58.7 166.5	33 37.4 -58.5 165.4	33 24.4 -58.2 164.3
22°	33 11.8 -59.1 168.9	33 01.8 -59.0 167.8	32 50.8 -58.7 166.7	32 38.9 -58.5 165.7	32 26.2 -58.3 164.6
23°	32 12.7 -59.1 169.1	32 02.8 -58.9 168.0	31 52.1 -58.8 167.0	31 40.4 -58.5 165.9	31 27.9 -58.4 164.9
24°	31 13.6 -59.2 169.3	31 03.9 -59.0 168.3	30 53.3 -58.8 167.2	30 41.9 -58.6 166.2	30 29.5 -58.3 165.1
25°	30 14.4 -59.2 169.5	30 04.9 -59.0 168.5	29 54.5 -58.8 167.4	29 43.3 -58.6 166.4	29 31.2 -58.4 165.4
26°	29 15.2 -59.2 169.7	29 05.9 -59.0 168.7	28 55.7 -58.8 167.7	28 44.7 -58.7 166.7	28 32.8 -58.5 165.7
27°	28 16.0 -59.2 169.9	28 06.9 -59.1 168.9	27 56.9 -58.9 167.9	27 46.0 -58.6 166.9	27 34.3 -58.4 165.9
28°	27 16.8 -59.2 170.1	27 07.8 -59.0 169.1	26 58.0 -58.9 168.1	26 47.4 -58.7 167.1	26 35.9 -58.4 166.2
29°	26 17.6 -59.2 170.2	26 08.8 -59.1 169.3	25 59.1 -58.9 168.3	25 48.7 -58.7 167.4	25 37.4 -58.5 166.4

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°	53 12.3 -56.1 154.4	52 50.2 -55.6 152.9	52 26.9 -55.1 151.3	52 02.5 -54.6 149.8	51 37.0 -54.2 148.4
1°	52 16.2 -56.2 155.0	51 54.6 -55.8 153.5	51 31.8 -55.4 152.0	51 07.9 -54.9 150.5	50 42.8 -54.4 149.1
2°	51 20.0 -56.5 155.5	50 58.8 -56.0 154.1	50 36.4 -55.5 152.6	50 13.0 -55.1 151.1	49 48.4 -54.6 149.7
3°	50 23.5 -56.5 156.1	50 02.8 -56.2 154.6	49 40.9 -55.7 153.2	49 17.9 -55.3 151.8	48 53.8 -54.8 150.4
4°	49 27.0 -56.7 156.6	49 06.6 -56.3 155.2	48 45.2 -55.9 153.7	48 22.6 -55.4 152.3	47 59.0 -55.0 151.0
5°	48 30.3 -56.9 157.1	48 10.3 -56.4 155.7	47 49.3 -56.0 154.3	47 27.2 -55.6 152.9	47 04.0 -55.2 151.6
6°	47 33.4 -56.9 157.6	47 13.9 -56.6 156.2	46 53.3 -56.2 154.8	46 31.6 -55.8 153.5	46 08.8 -55.3 152.1
7°	46 36.5 -57.1 158.0	46 17.3 -56.6 156.7	45 57.1 -56.3 155.3	45 35.8 -55.9 154.0	45 13.5 -55.5 152.7
8°	45 39.4 -57.1 158.5	45 20.7 -56.8 157.1	45 00.8 -56.4 155.8	44 39.9 -56.0 154.5	44 18.0 -55.6 153.2
9°	44 42.3 -57.3 158.9	44 23.9 -56.9 157.6	44 04.4 -56.6 156.3	43 43.9 -56.2 155.0	43 22.4 -55.8 153.7
10°	43 45.0 -57.3 159.3	43 27.0 -57.0 158.0	43 07.8 -56.6 156.8	42 47.7 -56.3 155.5	42 26.6 -55.9 154.2
11°	42 47.7 -57.4 159.7	42 30.0 -57.1 158.5	42 11.2 -56.8 157.2	41 51.4 -56.4 156.0	41 30.7 -56.0 154.7
12°	41 50.3 -57.5 160.1	41 32.9 -57.2 158.9	41 14.4 -56.8 157.6	40 55.0 -56.5 156.4	40 34.7 -56.2 155.2
13°	40 52.8 -57.6 160.5	40 35.7 -57.3 159.3	40 17.6 -56.9 158.1	39 58.5 -56.6 156.9	39 38.5 -56.2 155.7
14°	39 55.2 -57.6 160.9	39 38.4 -57.3 159.7	39 20.7 -57.0 158.5	39 01.9 -56.6 157.3	38 42.3 -56.4 156.1
15°	38 57.6 -57.7 161.2	38 41.1 -57.4 160.1	38 23.7 -57.1 158.9	38 05.3 -56.8 157.7	37 45.9 -56.4 156.6
16°	37 59.9 -57.8 161.6	37 43.7 -57.5 160.4	37 26.6 -57.2 159.3	37 08.5 -56.9 158.1	36 49.5 -56.5 157.0
17°	37 02.1 -57.8 161.9	36 46.2 -57.5 160.8	36 29.4 -57.3 159.6	36 11.6 -56.9 158.5	35 53.0 -56.7 157.4
18°	36 04.3 -57.9 162.3	35 48.7 -57.6 161.1	35 32.1 -57.3 160.0	35 14.7 -57.0 158.9	34 56.3 -56.6 157.8
19°	35 06.4 -57.9 162.6	34 51.1 -57.7 161.5	34 34.8 -57.3 160.4	34 17.7 -57.1 159.3	33 59.7 -56.8 158.2
20°	34 08.5 -58.0 162.9	33 53.4 -57.7 161.8	33 37.5 -57.5 160.7	33 20.6 -57.1 159.7	33 02.9 -56.9 158.6
21°	33 10.5 -58.0 163.2	32 55.7 -57.7 162.1	32 40.0 -57.5 161.1	32 23.5 -57.2 160.0	32 06.0 -56.9 159.0
22°	32 12.5 -58.1 163.5	31 58.0 -57.8 162.5	31 42.5 -57.5 161.4	31 26.3 -57.3 160.4	31 09.1 -56.9 159.3
23°	31 14.4 -58.1 163.8	31 00.2 -57.9 162.8	30 45.0 -57.6 161.8	30 29.0 -57.3 160.7	30 12.2 -57.1 159.7
24°	30 16.3 -58.1 164.1	30 02.3 -57.9 163.1	29 47.4 -57.6 162.1	29 31.7 -57.4 161.1	29 15.1 -57.0 160.1
25°	29 18.2 -58.2 164.4	29 04.4 -57.9 163.4	28 49.8 -57.7 162.4	28 34.3 -57.4 161.4	28 18.1 -57.2 160.4
26°	28 20.0 -58.2 164.7	28 06.5 -58.0 163.7	27 52.1 -57.7 162.7	27 36.9 -57.5 161.7	27 20.9 -57.2 160.8
27°	27 21.8 -58.2 164.9	27 08.5 -58.0 164.0	26 54.4 -57.8 163.0	26 39.4 -57.5 162.1	26 23.7 -57.2 161.1
28°	26 23.6 -58.3 165.2	26 10.5 -58.0 164.3	25 56.6 -57.8 163.3	25 41.9 -57.5 162.4	25 26.5 -57.3 161.4
29°	25 25.3 -58.3 165.5	25 12.5 -58.1 164.5	24 58.8 -57.8 163.6	24 44.4 -57.6 162.7	24 29.2 -57.3 161.8

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°	51 10.4 -53.7 146.9	50 42.7 -53.1 145.5	50 14.1 -52.6 144.2	49 44.5 -52.1 142.8	49 13.9 -51.5 141.5
1°	50 16.7 -53.9 147.6	49 49.6 -53.4 146.3	49 21.5 -52.9 144.9	48 52.4 -52.4 143.6	48 22.4 -51.8 142.3
2°	49 22.8 -54.1 148.3	48 56.2 -53.6 147.0	48 28.6 -53.1 145.6	48 00.0 -52.6 144.3	47 30.6 -52.2 143.0
3°	48 28.7 -54.3 149.0	48 02.6 -53.9 147.6	47 35.5 -53.4 146.3	47 07.4 -52.9 145.0	46 38.4 -52.4 143.7
4°	47 34.4 -54.6 149.6	47 08.7 -54.1 148.3	46 42.1 -53.6 147.0	46 14.5 -53.1 145.7	45 46.0 -52.6 144.4
5°	46 39.8 -54.7 150.2	46 14.6 -54.2 148.9	45 48.5 -53.8 147.6	45 21.4 -53.4 146.4	44 53.4 -52.9 145.1
6°	45 45.1 -54.9 150.8	45 20.4 -54.5 149.5	44 54.7 -54.1 148.3	44 28.0 -53.5 147.0	44 00.5 -53.1 145.8
7°	44 50.2 -55.1 151.4	44 25.9 -54.7 150.1	44 00.6 -54.2 148.9	43 34.5 -53.8 147.6	43 07.4 -53.3 146.4
8°	43 55.1 -55.2 152.0	43 31.2 -54.8 150.7	43 06.4 -54.4 149.5	42 40.7 -54.0 148.2	42 14.1 -53.5 147.0
9°	42 59.9 -55.4 152.5	42 36.4 -54.9 151.3	42 12.0 -54.5 150.0	41 46.7 -54.1 148.8	41 20.6 -53.7 147.7
10°	42 04.5 -55.5 153.0	41 41.5 -55.2 151.8	41 17.5 -54.7 150.6	40 52.6 -54.3 149.4	40 26.9 -53.9 148.2
11°	41 09.0 -55.7 153.5	40 46.3 -55.2 152.3	40 22.8 -54.9 151.1	39 58.3 -54.4 150.0	39 33.0 -54.0 148.8
12°	40 13.3 -55.7 154.0	39 51.1 -55.4 152.8	39 27.9 -55.0 151.7	39 03.9 -54.6 150.5	38 39.0 -54.2 149.4
13°	39 17.6 -55.9 154.5	38 55.7 -55.5 153.3	38 32.9 -55.1 152.2	38 09.3 -54.8 151.0	37 44.8 -54.4 149.9
14°	38 21.7 -56.0 155.0	38 00.2 -55.7 153.8	37 37.8 -55.3 152.7	37 14.5 -54.8 151.6	36 50.4 -54.5 150.5
15°	37 25.7 -56.1 155.4	37 04.5 -55.7 154.3	36 42.5 -55.3 153.2	36 19.7 -55.0 152.1	35 55.9 -54.6 151.0
16°	36 29.6 -56.2 155.9	36 08.8 -55.8 154.7	35 47.2 -55.5 153.6	35 24.7 -55.2 152.6	35 01.3 -54.7 151.5
17°	35 33.4 -56.3 156.3	35 13.0 -56.0 155.2	34 51.7 -55.6 154.1	34 29.5 -55.2 153.0	34 06.6 -54.9 152.0
18°	34 37.1 -56.4 156.7	34 17.0 -56.0 155.6	33 56.1 -55.7 154.6	33 34.3 -55.3 153.5	33 11.7 -54.9 152.5
19°	33 40.7 -56.4 157.1	33 21.0 -56.1 156.1	33 00.4 -55.8 155.0	32 39.0 -55.4 154.0	32 16.8 -55.1 152.9
20°	32 44.3 -56.5 157.5	32 24.9 -56.2 156.5	32 04.6 -55.8 155.5	31 43.6 -55.6 154.4	31 21.7 -55.2 153.4
21°	31 47.8 -56.6 157.9	31 28.7 -56.3 156.9	31 08.8 -56.0 155.9	30 48.0 -55.6 154.9	30 26.5 -55.3 153.9
22°	30 51.2 -56.7 158.3	30 32.4 -56.4 157.3	30 12.8 -56.0 156.3	29 52.4 -55.7 155.3	29 31.2 -55.3 154.3
23°	29 54.5 -56.7 158.7	29 36.0 -56.4 157.7	29 16.8 -56.1 156.7	28 56.7 -55.8 155.7	28 35.9 -55.5 154.8
24°	28 57.8 -56.8 159.1	28 39.6 -56.5 158.1	28 20.7 -56.2 157.1	28 00.9 -55.8 156.2	27 40.4 -55.5 155.2
25°	28 01.0 -56.9 159.4	27 43.1 -56.5 158.5	27 24.5 -56.2 157.5	27 05.1 -55.9 156.6	26 44.9 -55.6 155.6
26°	27 04.1 -56.9 159.8	26 46.6 -56.6 158.9	26 28.3 -56.4 157.9	26 09.2 -56.0 157.0	25 49.3 -55.6 156.0
27°	26 07.2 -56.9 160.2	25 50.0 -56.7 159.2	25 31.9 -56.3 158.3	25 13.2 -56.1 157.4	24 53.7 -55.8 156.5
28°	25 10.3 -57.0 160.5	24 53.3 -56.7 159.6	24 35.6 -56.4 158.7	24 17.1 -56.1 157.8	24 57.9 -55.8 156.9
29°	24 13.3 -57.1 160.9	23 56.6 -56.8 159.9	23 39.2 -56.5 159.0	23 21.0 -56.2 158.1	23 02.1 -55.8 157.3

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	48 42.5 -51.0 140.2	48 10.2 -50.4 138.9	47 37.1 -49.9 137.7	47 03.2 -49.4 136.4	46 28.6 -48.9 135.3
1°	47 51.5 -51.3 141.0	47 19.8 -50.8 139.7	46 47.2 -50.3 138.5	46 13.8 -49.8 137.3	45 39.7 -49.3 136.1
2°	47 00.2 -51.6 141.7	46 29.0 -51.2 140.5	45 56.9 -50.6 139.3	45 24.0 -50.1 138.1	44 50.4 -49.6 136.9
3°	46 08.6 -51.9 142.5	45 37.8 -51.4 141.2	45 06.3 -50.9 140.0	44 33.9 -50.4 138.8	44 00.8 -49.9 137.7
4°	45 16.7 -52.2 143.2	44 46.4 -51.6 142.0	44 15.4 -51.2 140.8	43 43.5 -50.7 139.6	43 10.9 -50.2 138.5
5°	44 24.5 -52.4 143.9	43 54.8 -52.0 142.7	43 24.2 -51.5 141.5	42 52.8 -50.9 140.3	42 20.7 -50.5 139.2
6°	43 32.1 -52.7 144.6	43 02.8 -52.1 143.4	42 32.7 -51.7 142.2	42 01.9 -51.3 141.1	41 30.2 -50.7 139.9
7°	42 39.4 -52.8 145.2	42 10.7 -52.4 144.0	41 41.0 -51.9 142.9	41 10.6 -51.4 141.8	40 39.5 -51.0 140.6
8°	41 46.6 -53.1 145.9	41 18.3 -52.7 144.7	40 49.1 -52.2 143.6	40 19.2 -51.7 142.4	39 48.5 -51.3 141.3
9°	40 53.5 -53.2 146.5	40 25.6 -52.8 145.3	39 56.9 -52.3 144.2	39 27.5 -52.0 143.1	38 57.2 -51.5 142.0
10°	40 00.3 -53.5 147.1	39 32.8 -53.0 146.0	39 04.6 -52.6 144.8	38 35.5 -52.1 143.7	38 05.7 -51.7 142.7
11°	39 06.8 -53.6 147.7	38 39.8 -53.2 146.6	38 12.0 -52.8 145.5	37 43.4 -52.3 144.4	37 14.0 -51.9 143.3
12°	38 13.2 -53.8 148.3	37 46.6 -53.4 147.1	37 19.2 -52.9 146.1	36 51.1 -52.5 145.0	36 22.1 -52.0 143.9
13°	37 19.4 -53.9 148.8	36 53.2 -53.5 147.7	36 26.3 -53.1 146.6	35 58.6 -52.7 145.6	35 30.1 -52.3 144.5
14°	36 25.5 -54.1 149.4	35 59.7 -53.7 148.3	35 33.3 -53.3 147.2	35 05.9 -52.9 146.2	34 37.8 -52.4 145.1
15°	35 31.4 -54.2 149.9	35 06.0 -53.8 148.8	34 39.9 -53.4 147.8	34 13.0 -53.0 146.7	33 45.4 -52.6 145.7
16°	34 37.2 -54.4 150.4	34 12.2 -54.0 149.4	33 46.5 -53.6 148.3	33 20.0 -53.2 147.3	32 52.8 -52.8 146.3
17°	33 42.8 -54.5 150.9	33 18.2 -54.0 149.9	32 52.9 -53.7 148.9	32 26.8 -53.3 147.9	32 00.0 -52.9 146.9
18°	32 48.3 -54.6 151.4	32 24.2 -54.3 150.4	31 59.2 -53.8 149.4	31 33.5 -53.4 148.4	31 07.1 -53.1 147.4
19°	31 53.7 -54.7 151.9	31 29.9 -54.3 150.9	31 05.4 -54.0 149.9	30 40.1 -53.6 148.9	30 14.0 -53.1 148.0
20°	30 59.0 -54.8 152.4	30 35.6 -54.4 151.4	30 11.4 -54.0 150.4	29 46.5 -53.7 149.5	29 20.9 -53.3 148.5
21°	30 04.2 -54.9 152.9	29 41.2 -54.6 151.9	29 17.4 -54.2 150.9	28 52.8 -53.8 150.0	28 27.6 -53.5 149.0
22°	29 09.3 -55.0 153.3	28 46.6 -54.6 152.4	28 23.2 -54.3 151.4	27 59.0 -53.9 150.5	27 34.1 -53.5 149.5
23°	28 14.3 -55.1 153.8	27 52.0 -54.8 152.8	27 28.9 -54.4 151.9	27 05.1 -54.0 151.0	26 40.6 -53.6 150.0
24°	27 19.2 -55.2 154.2	26 57.2 -54.8 153.3	26 34.5 -54.5 152.4	26 11.1 -54.1 151.4	25 47.0 -53.8 150.5
25°	26 24.0 -55.2 154.7	26 02.4 -54.9 153.8	25 40.0 -54.5 152.8	25 17.0 -54.2 151.9	24 53.2 -53.8 151.0
26°	25 28.8 -55.4 155.1	25 07.5 -55.0 154.2	24 45.5 -54.7 153.3	24 22.8 -54.3 152.4	23 59.4 -53.9 151.5
27°	24 33.4 -55.4 155.5	24 12.5 -55.1 154.6	23 50.8 -54.7 153.8	23 28.5 -54.4 152.9	23 05.5 -54.0 152.0
28°	23 38.0 -55.4 156.0	23 17.4 -55.1 155.1	22 56.1 -54.8 154.2	22 34.1 -54.4 153.3	22 11.5 -54.1 152.5
29°	22 42.6 -55.6 156.4	22 22.3 -55.2 155.5	22 01.3 -54.9 154.6	21 39.7 -54.6 153.8	21 17.4 -54.2 152.9

Latitude 34°

Declination CONTRARY name to Latitude

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°	45 53.2 -48.4 134.1	45 17.1 -47.8 132.9	44 40.4 -47.4 131.8	44 03.0 -46.9 130.7	43 25.0 -46.4 129.7
1°	45 04.8 -48.7 134.9	44 29.3 -48.3 133.8	43 53.0 -47.7 132.7	43 16.1 -47.2 131.6	42 38.6 -46.7 130.5
2°	44 16.1 -49.1 135.7	43 41.0 -48.6 134.6	43 05.3 -48.1 133.5	42 28.9 -47.6 132.4	41 51.9 -47.2 131.4
3°	43 27.0 -49.4 136.5	42 52.4 -48.9 135.4	42 17.2 -48.5 134.3	41 41.3 -48.0 133.3	41 04.7 -47.5 132.2
4°	42 37.6 -49.8 137.3	42 03.5 -49.2 136.2	41 28.7 -48.7 135.1	40 53.3 -48.3 134.1	40 17.2 -47.8 133.0
5°	41 47.8 -50.0 138.1	41 14.3 -49.6 137.0	40 40.0 -49.1 135.9	40 05.0 -48.6 134.8	39 29.4 -48.1 133.8
6°	40 57.8 -50.3 138.8	40 24.7 -49.8 137.7	39 50.9 -49.3 136.7	39 16.4 -48.8 135.6	38 41.3 -48.4 134.6
7°	40 07.5 -50.5 139.5	39 34.9 -50.1 138.4	39 01.6 -49.7 137.4	38 27.6 -49.2 136.3	37 52.9 -48.7 135.3
8°	39 17.0 -50.8 140.2	38 44.8 -50.3 139.2	38 11.9 -49.8 138.1	37 38.4 -49.4 137.1	37 04.2 -49.0 136.1
9°	38 26.2 -51.0 140.9	37 54.5 -50.6 139.9	37 22.1 -50.1 138.8	36 49.0 -49.7 137.8	36 15.2 -49.2 136.8
10°	37 35.2 -51.3 141.6	37 03.9 -50.8 140.5	36 32.0 -50.4 139.5	35 59.3 -49.9 138.5	35 26.0 -49.4 137.5
11°	36 43.9 -51.4 142.2	36 13.1 -51.0 141.2	35 41.6 -50.6 140.2	35 09.4 -50.1 139.2	34 36.6 -49.7 138.2
12°	35 52.5 -51.7 142.9	35 22.1 -51.2 141.8	34 51.0 -50.7 140.8	34 19.3 -50.4 139.8	33 46.9 -49.9 138.8
13°	35 00.8 -51.8 143.5	34 30.9 -51.4 142.5	34 00.3 -51.0 141.5	33 28.9 -50.5 140.5	32 57.0 -50.2 139.5
14°	34 09.0 -52.0 144.1	33 39.5 -51.6 143.1	33 09.3 -51.2 142.1	32 38.4 -50.8 141.1	32 06.8 -50.3 140.2
15°	33 17.0 -52.2 144.7	32 47.9 -51.8 143.7	32 18.1 -51.3 142.7	31 47.6 -50.9 141.8	31 16.5 -50.5 140.8
16°	32 24.8 -52.4 145.3	31 56.1 -51.9 144.3	31 26.8 -51.6 143.3	30 56.7 -51.1 142.4	30 26.0 -50.6 141.4
17°	31 32.4 -52.5 145.9	31 04.2 -52.1 144.9	30 35.2 -51.6 143.9	30 05.6 -51.2 143.0	29 35.4 -50.9 142.1
18°	30 39.9 -52.6 146.4	30 12.1 -52.2 145.5	29 43.6 -51.9 144.5	29 14.4 -51.5 143.6	28 44.5 -51.0 142.7
19°	29 47.3 -52.8 147.0	29 19.9 -52.4 146.0	28 51.7 -51.9 145.1	28 22.9 -51.5 144.2	27 53.5 -51.2 143.3
20°	28 54.5 -52.9 147.5	28 27.5 -52.5 146.6	27 59.8 -52.2 145.7	27 31.4 -51.7 144.8	27 02.3 -51.3 143.8
21°	28 01.6 -53.0 148.1	27 35.0 -52.7 147.1	27 07.6 -52.2 146.2	26 39.7 -51.9 145.3	26 11.0 -51.4 144.4
22°	27 08.6 -53.2 148.6	26 42.3 -52.7 147.7	26 15.4 -52.4 146.8	25 47.8 -52.0 145.9	25 19.6 -51.6 145.0
23°	26 15.4 -53.2 149.1	25 49.6 -52.9 148.2	25 23.0 -52.5 147.3	24 55.8 -52.0 146.4	24 28.0 -51.7 145.6
24°	25 22.2 -53.4 149.6	24 56.7 -53.0 148.7	24 30.5 -52.6 147.9	24 03.8 -52.3 147.0	23 36.3 -51.8 146.1
25°	24 28.8 -53.5 150.1	24 03.7 -53.1 149.3	23 37.9 -52.7 148.4	23 11.5 -52.3 147.5	22 44.5 -51.9 146.7
26°	23 35.3 -53.5 150.6	23 10.6 -53.2 149.8	22 45.2 -52.8 148.9	22 19.2 -52.4 148.1	21 52.6 -52.0 147.2
27°	22 41.8 -53.7 151.1	22 17.4 -53.2 150.3	21 52.4 -52.9 149.4	21 26.8 -52.5 148.6	21 00.6 -52.2 147.7
28°	21 48.1 -53.7 151.6	21 24.2 -53.4 150.8	20 59.5 -52.9 149.9	20 34.3 -52.6 149.1	20 08.4 -52.2 148.3
29°	20 54.4 -53.8 152.1	20 30.8 -53.4 151.3	20 06.6 -53.1 150.4	19 41.7 -52.7 149.6	19 16.2 -52.3 148.8

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	42 46.4 -45.9 128.6	42 07.3 -45.4 127.6	41 27.6 -45.0 126.6	40 47.4 -44.5 125.6	40 06.7 -44.1 124.6
1°	42 00.5 -46.3 129.5	41 21.9 -45.9 128.5	40 42.6 -45.3 127.5	40 02.9 -44.9 126.5	39 22.6 -44.4 125.5
2°	41 14.2 -46.6 130.3	40 36.0 -46.2 129.3	39 57.3 -45.8 128.3	39 18.0 -45.3 127.3	38 38.2 -44.9 126.4
3°	40 27.6 -47.0 131.2	39 49.8 -46.5 130.2	39 11.5 -46.0 129.2	38 32.7 -45.6 128.2	37 53.3 -45.2 127.2
4°	39 40.6 -47.4 132.0	39 03.3 -46.9 131.0	38 25.5 -46.5 130.0	37 47.1 -46.0 129.0	37 08.1 -45.5 128.0
5°	38 53.2 -47.6 132.8	38 16.4 -47.2 131.8	37 39.0 -46.7 130.8	37 01.1 -46.3 129.8	36 22.6 -45.8 128.9
6°	38 05.6 -48.0 133.5	37 29.2 -47.5 132.5	36 52.3 -47.1 131.6	36 14.8 -46.6 130.6	35 36.8 -46.2 129.7
7°	37 17.6 -48.2 134.3	36 41.7 -47.8 133.3	36 05.2 -47.3 132.3	35 28.2 -46.9 131.4	34 50.6 -46.5 130.4
8°	36 29.4 -48.5 135.0	35 53.9 -48.0 134.1	35 17.9 -47.6 133.1	34 41.3 -47.2 132.1	34 04.1 -46.7 131.2
9°	35 40.9 -48.8 135.8	35 05.9 -48.4 134.8	34 30.3 -47.9 133.8	33 54.1 -47.4 132.9	33 17.4 -47.0 132.0
10°	34 52.1 -49.0 136.5	34 17.5 -48.5 135.5	33 42.4 -48.2 134.6	33 06.7 -47.7 133.6	32 30.4 -47.3 132.7
11°	34 03.1 -49.3 137.2	33 29.0 -48.9 136.2	32 54.2 -48.3 135.3	32 19.0 -48.0 134.3	31 43.1 -47.5 133.4
12°	33 13.8 -49.5 137.9	32 40.1 -49.0 136.9	32 05.9 -48.6 136.0	31 31.0 -48.1 135.1	30 55.6 -47.7 134.1
13°	32 24.3 -49.6 138.6	31 51.1 -49.2 137.6	31 17.3 -48.8 136.7	30 42.9 -48.4 135.8	30 07.9 -48.0 134.8
14°	31 34.7 -49.9 139.2	31 01.9 -49.5 138.3	30 28.5 -49.1 137.3	29 54.5 -48.6 136.4	29 19.9 -48.2 135.5
15°	30 44.8 -50.1 139.9	30 12.4 -49.6 138.9	29 39.4 -49.2 138.0	29 05.9 -48.8 137.1	28 31.7 -48.3 136.2
16°	29 54.7 -50.2 140.5	29 22.8 -49.9 139.6	28 50.2 -49.4 138.7	28 17.1 -49.0 137.8	27 43.4 -48.6 136.9
17°	29 04.5 -50.5 141.1	28 32.9 -50.0 140.2	28 00.8 -49.6 139.3	27 28.1 -49.2 138.4	26 54.8 -48.8 137.6
18°	28 14.0 -50.6 141.7	27 42.9 -50.2 140.8	27 11.2 -49.7 140.0	26 38.9 -49.3 139.1	26 06.0 -48.9 138.2
19°	27 23.4 -50.7 142.4	26 52.7 -50.3 141.5	26 21.5 -50.0 140.6	25 49.6 -49.5 139.7	25 17.1 -49.1 138.8
20°	26 32.7 -50.9 143.0	26 02.4 -50.5 142.1	25 31.5 -50.0 141.2	25 00.1 -49.7 140.3	24 28.0 -49.2 139.5
21°	25 41.8 -51.0 143.5	25 11.9 -50.6 142.7	24 41.5 -50.3 141.8	24 10.4 -49.8 140.9	23 38.8 -49.4 140.1
22°	24 50.8 -51.2 144.1	24 21.3 -50.8 143.3	23 51.2 -50.3 142.4	23 20.6 -49.9 141.6	22 49.4 -49.5 140.7
23°	23 59.6 -51.3 144.7	23 30.5 -50.8 143.8	23 00.9 -50.5 143.0	22 30.7 -50.1 142.2	21 59.9 -49.7 141.3
24°	23 08.3 -51.4 145.3	22 39.7 -51.1 144.4	22 10.4 -50.6 143.6	21 40.6 -50.2 142.8	21 10.2 -49.8 141.9
25°	22 16.9 -51.5 145.8	21 48.6 -51.1 145.0	21 19.8 -50.7 144.2	20 50.4 -50.3 143.3	20 20.4 -49.9 142.5
26°	21 25.4 -51.7 146.4	20 57.5 -51.2 145.5	20 29.1 -50.9 144.7	20 00.1 -50.5 143.9	19 30.5 -50.0 143.1
27°	20 33.7 -51.7 146.9	20 06.3 -51.4 146.1	19 39.2 -50.9 145.3	19 09.6 -50.5 144.5	18 40.5 -50.2 143.7
28°	19 42.0 -51.8 147.5	19 14.9 -51.4 146.7	18 47.3 -51.0 145.9	18 19.1 -50.6 145.1	17 50.3 -50.2 144.3
29°	18 50.2 -52.0 148.0	18 23.5 -51.5 147.2	17 56.3 -51.2 146.4	17 28.5 -50.8 145.6	17 00.1 -50.3 144.9

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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°	39 25.6 -43.7 123.7	38 43.9 -43.2 122.8	38 01.9 -42.8 121.8	37 19.4 -42.4 120.9	36 36.6 -42.0 120.1
1°	38 41.9 -44.0 124.6	38 00.7 -43.6 123.6	37 19.1 -43.2 122.7	36 37.0 -42.7 121.8	35 54.6 -42.4 121.0
2°	37 57.9 -44.4 125.4	37 17.1 -43.9 124.5	36 35.9 -43.5 123.6	35 54.3 -43.2 122.7	35 12.2 -42.7 121.8
3°	37 13.5 -44.8 126.3	36 33.2 -44.4 125.4	35 52.4 -44.0 124.4	35 11.1 -43.5 123.6	34 29.5 -43.1 122.7
4°	36 28.7 -45.1 127.1	35 48.8 -44.7 126.2	35 08.4 -44.2 125.3	34 27.6 -43.8 124.4	33 46.4 -43.5 123.5
5°	35 43.6 -45.4 127.9	35 04.1 -44.9 127.0	34 24.2 -44.6 126.1	33 43.8 -44.2 125.2	33 02.9 -43.7 124.4
6°	34 58.2 -45.7 128.7	34 19.2 -45.4 127.8	33 39.6 -44.9 126.9	32 59.6 -44.4 126.0	32 19.2 -44.1 125.2
7°	34 12.5 -46.1 129.5	33 33.8 -45.6 128.6	32 54.7 -45.1 127.7	32 15.2 -44.8 126.8	31 35.1 -44.3 126.0
8°	33 26.4 -46.3 130.3	32 48.2 -45.8 129.4	32 09.6 -45.5 128.5	31 30.4 -45.1 127.6	30 50.8 -44.7 126.8
9°	32 40.1 -46.5 131.0	32 02.4 -46.2 130.1	31 24.1 -45.7 129.3	30 45.3 -45.3 128.4	30 06.1 -44.9 127.5
10°	31 53.6 -46.9 131.8	31 16.2 -46.4 130.9	30 38.4 -46.0 130.0	30 00.0 -45.6 129.1	29 21.2 -45.2 128.3
11°	31 06.7 -47.1 132.5	30 29.8 -46.7 131.6	29 52.4 -46.3 130.8	29 14.4 -45.8 129.9	28 36.0 -45.4 129.0
12°	30 19.6 -47.3 133.2	29 43.1 -46.8 132.4	29 06.1 -46.4 131.5	28 28.6 -46.0 130.6	27 50.6 -45.6 129.8
13°	29 32.3 -47.5 134.0	28 56.3 -47.2 133.1	28 19.7 -46.7 132.2	27 42.6 -46.3 131.4	27 05.0 -45.9 130.5
14°	28 44.8 -47.8 134.7	28 09.1 -47.3 133.8	27 33.0 -46.9 132.9	26 56.3 -46.5 132.1	26 19.1 -46.1 131.2
15°	27 57.0 -47.9 135.3	27 21.8 -47.5 134.5	26 46.1 -47.2 133.6	26 09.8 -46.7 132.8	25 33.0 -46.2 132.0
16°	27 09.1 -48.2 136.0	26 34.3 -47.8 135.2	25 58.9 -47.3 134.3	25 23.1 -46.9 133.5	24 46.8 -46.5 132.7
17°	26 20.9 -48.3 136.7	25 46.5 -47.9 135.8	25 11.6 -47.5 135.0	24 36.2 -47.1 134.2	24 00.3 -46.7 133.3
18°	25 32.6 -48.5 137.3	24 58.6 -48.0 136.5	24 24.1 -47.6 135.7	23 49.1 -47.2 134.8	23 13.6 -46.8 134.0
19°	24 44.1 -48.7 138.0	24 10.6 -48.3 137.2	23 36.5 -47.9 136.3	23 01.9 -47.5 135.5	22 26.8 -47.0 134.7
20°	23 55.4 -48.8 138.6	23 22.3 -48.4 137.8	22 48.6 -48.0 137.0	22 14.4 -47.5 136.2	21 39.8 -47.2 135.4
21°	23 06.6 -49.0 139.3	22 33.9 -48.6 138.5	22 00.6 -48.1 137.6	21 26.9 -47.8 136.8	20 52.6 -47.3 136.0
22°	22 17.6 -49.1 139.9	21 45.3 -48.7 139.1	21 12.5 -48.3 138.3	20 39.1 -47.9 137.5	20 05.3 -47.5 136.7
23°	21 28.5 -49.2 140.5	20 56.6 -48.8 139.7	20 24.2 -48.4 138.9	19 51.2 -48.0 138.1	19 17.8 -47.6 137.4
24°	20 39.3 -49.4 141.1	20 07.8 -49.0 140.3	19 35.8 -48.6 139.5	19 03.2 -48.1 138.8	18 30.2 -47.7 138.0
25°	19 49.9 -49.5 141.7	19 18.8 -49.1 140.9	18 47.2 -48.7 140.2	18 15.1 -48.3 139.4	17 42.5 -47.9 138.6
26°	19 00.4 -49.6 142.3	18 29.7 -49.2 141.6	17 58.5 -48.8 140.8	17 26.8 -48.4 140.0	16 54.6 -48.0 139.3
27°	18 10.8 -49.8 142.9	17 40.5 -49.3 142.2	17 09.7 -48.9 141.4	16 38.4 -48.5 140.6	16 06.6 -48.0 139.9
28°	17 21.0 -49.8 143.5	16 51.2 -49.4 142.8	16 20.8 -49.0 142.0	15 49.9 -48.6 141.3	15 18.6 -48.2 140.5
29°	16 31.2 -49.9 144.1	16 01.8 -49.5 143.3	15 31.8 -49.1 142.6	15 01.3 -48.6 141.9	14 30.4 -48.3 141.1

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	35 53.3 -41.6 119.2	35 09.8 -41.3 118.4	34 25.8 -40.9 117.5	33 41.5 -40.5 116.7	32 57.0 -40.2 115.9
1°	35 11.7 -42.0 120.1	34 28.5 -41.6 119.3	33 44.9 -41.2 118.4	33 01.0 -40.8 117.6	32 16.8 -40.5 116.8
2°	34 29.7 -42.3 121.0	33 46.9 -42.0 120.1	33 03.7 -41.6 119.3	32 20.2 -41.3 118.5	31 36.3 -40.9 117.7
3°	33 47.4 -42.7 121.8	33 04.9 -42.3 121.0	32 22.1 -41.9 120.2	31 38.9 -41.6 119.3	30 55.4 -41.2 118.5
4°	33 04.7 -43.0 122.7	32 22.6 -42.6 121.8	31 40.2 -42.3 121.0	30 57.3 -41.9 120.2	30 14.2 -41.6 119.4
5°	32 21.7 -43.4 123.5	31 40.0 -43.0 122.7	30 57.9 -42.6 121.8	30 15.4 -42.2 121.0	29 32.6 -41.8 120.2
6°	31 38.3 -43.7 124.3	30 57.0 -43.3 123.5	30 15.3 -42.9 122.6	29 33.2 -42.5 121.8	28 50.8 -42.1 121.0
7°	30 54.6 -43.9 125.1	30 13.7 -43.5 124.3	29 32.4 -43.1 123.5	28 50.7 -42.8 122.6	28 08.7 -42.5 121.8
8°	30 10.7 -44.3 125.9	29 30.2 -43.9 125.1	28 49.3 -43.5 124.2	28 07.9 -43.0 123.4	27 26.2 -42.6 122.6
9°	29 26.4 -44.5 126.7	28 46.3 -44.1 125.8	28 05.8 -43.7 125.0	27 24.9 -43.3 124.2	26 43.6 -43.0 123.4
10°	28 41.9 -44.7 127.4	28 02.2 -44.3 126.6	27 22.1 -44.0 125.8	26 41.6 -43.6 125.0	26 00.6 -43.2 124.2
11°	27 57.2 -45.0 128.2	27 17.9 -44.6 127.4	26 38.1 -44.2 126.6	25 58.0 -43.8 125.8	25 17.4 -43.4 125.0
12°	27 12.2 -45.3 129.0	26 33.3 -44.9 128.1	25 53.9 -44.4 127.3	25 14.2 -44.1 126.5	24 34.0 -43.7 125.7
13°	26 26.9 -45.4 129.7	25 48.4 -45.0 128.9	25 09.5 -44.7 128.1	24 30.1 -44.2 127.3	23 50.3 -43.8 126.5
14°	25 41.5 -45.7 130.4	25 03.4 -45.3 129.6	24 24.8 -44.8 128.8	23 45.9 -44.5 128.0	23 06.5 -44.1 127.2
15°	24 55.8 -45.9 131.1	24 18.1 -45.5 130.3	23 40.0 -45.1 129.5	23 01.4 -44.7 128.7	22 22.4 -44.3 128.0
16°	24 09.9 -46.0 131.8	23 32.6 -45.6 131.0	22 54.9 -45.3 130.2	22 16.7 -44.8 129.5	21 38.1 -44.5 128.7
17°	23 23.9 -46.3 132.5	22 47.0 -45.9 131.7	22 09.6 -45.4 131.0	21 31.9 -45.1 130.2	20 53.6 -44.6 129.4
18°	22 37.6 -46.4 133.2	22 01.1 -46.0 132.4	21 24.2 -45.6 131.7	20 46.8 -45.2 130.9	20 09.0 -44.8 130.1
19°	21 51.2 -46.6 133.9	21 15.1 -46.2 133.1	20 38.6 -45.8 132.4	20 01.6 -45.4 131.6	19 24.2 -45.0 130.8
20°	21 04.6 -46.8 134.6	20 28.9 -46.3 133.8	19 52.8 -45.9 133.0	19 16.2 -45.5 132.3	18 39.2 -45.1 131.5
21°	20 17.8 -46.9 135.3	19 42.6 -46.5 134.5	19 06.9 -46.1 133.7	18 30.7 -45.7 133.0	17 54.1 -45.3 132.2
22°	19 30.9 -47.1 135.9	18 56.1 -46.7 135.2	18 20.8 -46.3 134.4	17 45.0 -45.8 133.7	17 08.8 -45.4 132.9
23°	18 43.8 -47.1 136.6	18 09.4 -46.8 135.8	17 34.5 -46.3 135.1	16 59.2 -46.0 134.3	16 23.4 -45.6 133.6
24°	17 56.7 -47.4 137.2	17 22.6 -46.9 136.5	16 48.2 -46.5 135.7	16 13.2 -46.1 135.0	15 37.8 -45.6 134.3
25°	17 09.3 -47.4 137.9	16 35.7 -47.0 137.1	16 01.7 -46.6 136.4	15 27.1 -46.2 135.7	14 52.2 -45.8 135.0
26°	16 21.9 -47.6 138.5	15 48.7 -47.1 137.8	15 15.1 -46.8 137.1	14 40.9 -46.3 136.3	14 06.4 -45.9 135.6
27°	15 34.3 -47.6 139.2	15 01.6 -47.3 138.4	14 28.3 -46.8 137.7	13 54.6 -46.4 137.0	13 20.5 -46.0 136.3
28°	14 46.7 -47.8 139.8	14 14.3 -47.3 139.1	13 41.5 -46.9 138.3	13 08.2 -46.5 137.6	12 34.5 -46.1 136.9
29°	13 58.9 -47.8 140.4	13 27.0 -47.5 139.7	12 54.6 -47.1 139.0	12 21.7 -46.6 138.3	11 48.4 -46.2 137.6

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°	32 12.1 -39.9 115.1	31 26.9 -39.5 114.4	30 41.5 -39.2 113.6	29 55.7 -38.8 112.8	29 09.8 -38.6 112.1
1°	31 32.2 -40.1 116.0	30 47.4 -39.9 115.2	30 02.3 -39.6 114.5	29 16.9 -39.3 113.7	28 31.2 -38.9 113.0
2°	30 52.1 -40.6 116.9	30 07.5 -40.2 116.1	29 22.7 -39.8 115.3	28 37.6 -39.5 114.6	27 52.3 -39.3 113.8
3°	30 11.5 -40.8 117.7	29 27.3 -40.5 117.0	28 42.9 -40.2 116.2	27 58.1 -39.9 115.4	27 13.0 -39.5 114.7
4°	29 30.7 -41.2 118.6	28 46.8 -40.8 117.8	28 02.7 -40.5 117.0	27 18.2 -40.2 116.3	26 33.5 -39.9 115.5
5°	28 49.5 -41.5 119.4	28 06.0 -41.1 118.6	27 22.2 -40.8 117.9	26 38.0 -40.4 117.1	25 53.6 -40.1 116.4
6°	28 08.0 -41.8 120.2	27 24.9 -41.5 119.5	26 41.4 -41.1 118.7	25 57.6 -40.7 117.9	25 13.5 -40.4 117.2
7°	27 26.2 -42.0 121.1	26 43.4 -41.7 120.3	26 00.3 -41.3 119.5	25 16.9 -41.0 118.8	24 33.1 -40.7 118.0
8°	26 44.2 -42.3 121.9	26 01.7 -41.9 121.1	25 19.0 -41.6 120.3	24 35.9 -41.3 119.6	23 52.4 -40.9 118.8
9°	26 01.9 -42.6 122.6	25 19.8 -42.2 121.9	24 37.4 -41.9 121.1	23 54.6 -41.5 120.4	23 11.5 -41.1 119.6
10°	25 19.3 -42.8 123.4	24 37.6 -42.5 122.7	23 55.5 -42.0 121.9	23 13.1 -41.7 121.1	22 30.4 -41.4 120.4
11°	24 36.5 -43.1 124.2	23 55.1 -42.6 123.4	23 13.5 -42.4 122.7	22 31.4 -41.9 121.9	21 49.0 -41.6 121.2
12°	23 53.4 -43.3 125.0	23 12.5 -42.9 124.2	22 31.1 -42.5 123.4	21 49.5 -42.2 122.7	21 07.4 -41.8 122.0
13°	23 10.1 -43.4 125.7	22 29.6 -43.1 125.0	21 48.6 -42.7 124.2	21 07.3 -42.4 123.5	20 25.6 -42.0 122.7
14°	22 26.7 -43.7 126.5	21 46.5 -43.4 125.7	21 05.9 -43.0 125.0	20 24.9 -42.5 124.2	19 43.6 -42.2 123.5
15°	21 43.0 -43.9 127.2	21 03.1 -43.5 126.5	20 22.9 -43.1 125.7	19 42.4 -42.8 125.0	19 01.4 -42.3 124.2
16°	20 59.1 -44.1 127.9	20 19.6 -43.6 127.2	19 39.8 -43.3 126.4	18 59.6 -42.9 125.7	18 19.1 -42.6 125.0
17°	20 15.0 -44.2 128.7	19 36.0 -43.9 127.9	18 56.5 -43.4 127.2	18 16.7 -43.1 126.5	17 36.5 -42.7 125.7
18°	19 30.8 -44.5 129.4	18 52.1 -44.0 128.6	18 13.1 -43.7 127.9	17 33.6 -43.2 127.2	16 53.8 -42.9 126.5
19°	18 46.3 -44.5 130.1	18 08.1 -44.2 129.4	17 29.4 -43.8 128.6	16 50.4 -43.4 127.9	16 10.9 -43.0 127.2
20°	18 01.8 -44.8 130.8	17 23.9 -44.3 130.1	16 45.6 -43.9 129.3	16 07.0 -43.6 128.6	15 27.9 -43.1 127.9
21°	17 17.0 -44.9 131.5	16 39.6 -44.5 130.8	16 01.7 -44.1 130.1	15 23.4 -43.7 129.3	14 44.8 -43.3 128.6
22°	16 32.1 -45.0 132.2	15 55.1 -44.6 131.5	15 17.6 -44.2 130.8	14 39.7 -43.8 130.1	14 01.5 -43.4 129.4
23°	15 47.1 -45.1 132.9	15 10.5 -44.8 132.2	14 33.4 -44.3 131.5	13 55.9 -43.9 130.8	13 18.1 -43.6 130.1
24°	15 02.0 -45.3 133.6	14 25.7 -44.8 132.9	13 49.1 -44.5 132.2	13 12.0 -44.1 131.5	12 34.5 -43.6 130.8
25°	14 16.7 -45.3 134.2	13 40.9 -45.0 133.5	13 04.6 -44.5 132.8	12 27.9 -44.1 132.2	11 50.9 -43.8 131.5
26°	13 31.4 -45.5 134.9	12 55.9 -45.1 134.2	12 20.1 -44.7 133.5	11 43.8 -44.3 132.9	11 07.1 -43.8 132.2
27°	12 45.9 -45.6 135.6	12 10.8 -45.1 134.9	11 35.4 -44.8 134.2	10 59.5 -44.3 133.5	10 23.3 -43.9 132.9
28°	12 00.3 -45.7 136.3	11 25.7 -45.3 135.6	10 50.6 -44.8 134.9	10 15.2 -44.4 134.2	9 39.4 -44.1 133.6
29°	11 14.6 -45.8 136.9	10 40.4 -45.3 136.2	10 05.8 -44.9 135.6	9 30.8 -44.5 134.9	8 55.3 -44.0 134.3

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°	28 23.6 -38.3 111.4	27 37.1 -38.0 110.7	26 50.5 -37.8 110.0	26 03.6 -37.5 109.3	25 16.6 -37.3 108.6
1°	27 45.3 -38.7 112.3	26 59.1 -38.3 111.5	26 12.7 -38.0 110.8	25 26.1 -37.8 110.1	24 39.3 -37.5 109.4
2°	27 06.6 -38.9 113.1	26 20.8 -38.7 112.4	25 34.7 -38.4 111.7	24 48.3 -38.1 111.0	24 01.8 -37.8 110.3
3°	26 27.7 -39.2 114.0	25 42.1 -38.9 113.2	24 56.3 -38.7 112.5	24 10.2 -38.3 111.8	23 24.0 -38.2 111.1
4°	25 48.5 -39.6 114.8	25 03.2 -39.3 114.1	24 17.6 -38.9 113.4	23 31.9 -38.7 112.7	22 45.8 -38.3 112.0
5°	25 08.9 -39.8 115.6	24 23.9 -39.4 114.9	23 38.7 -39.2 114.2	22 53.2 -38.9 113.5	22 07.5 -38.6 112.8
6°	24 29.1 -40.1 116.5	23 44.5 -39.8 115.7	22 59.5 -39.4 115.0	22 14.3 -39.1 114.3	21 28.9 -38.9 113.6
7°	23 49.0 -40.3 117.3	23 04.7 -40.0 116.6	22 20.1 -39.7 115.9	21 35.2 -39.4 115.1	20 50.0 -39.1 114.5
8°	23 08.7 -40.6 118.1	22 24.7 -40.3 117.4	21 40.4 -40.0 116.7	20 55.8 -39.6 116.0	20 10.9 -39.3 115.3
9°	22 28.1 -40.8 118.9	21 44.4 -40.4 118.2	21 00.4 -40.1 117.5	20 16.2 -39.9 116.8	19 31.6 -39.5 116.1
10°	21 47.3 -41.0 119.7	21 04.0 -40.7 119.0	20 20.3 -40.4 118.3	19 36.3 -40.0 117.6	18 52.1 -39.7 116.9
11°	21 06.3 -41.2 120.5	20 23.3 -40.9 119.8	19 39.9 -40.5 119.0	18 56.3 -40.2 118.3	18 12.4 -39.9 117.7
12°	20 25.1 -41.5 121.2	19 42.4 -41.1 120.5	18 59.4 -40.8 119.8	18 16.1 -40.5 119.1	17 32.5 -40.1 118.4
13°	19 43.6 -41.6 122.0	19 01.3 -41.3 121.3	18 18.6 -40.9 120.6	17 35.6 -40.6 119.9	16 52.4 -40.3 119.2
14°	19 02.0 -41.9 122.8	18 20.0 -41.5 122.1	17 37.7 -41.2 121.4	16 55.0 -40.7 120.7	16 12.1 -40.4 120.0
15°	18 20.1 -42.0 123.5	17 38.5 -41.6 122.8	16 56.5 -41.2 122.1	16 14.3 -41.0 121.4	15 31.7 -40.6 120.8
16°	17 38.1 -42.1 124.3	16 56.9 -41.8 123.6	16 15.3 -41.5 122.9	15 33.3 -41.1 122.2	14 51.1 -40.8 121.5
17°	16 56.0 -42.4 125.0	16 15.1 -42.0 124.3	15 33.8 -41.6 123.6	14 52.2 -41.2 123.0	14 10.3 -40.9 122.3
18°	16 13.6 -42.5 125.8	15 33.1 -42.1 125.1	14 52.2 -41.7 124.4	14 11.0 -41.4 123.7	13 29.4 -41.0 123.0
19°	15 31.1 -42.6 126.5	14 51.0 -42.3 125.8	14 10.5 -41.9 125.1	13 29.6 -41.5 124.5	12 48.4 -41.1 123.8
20°	14 48.5 -42.8 127.2	14 08.7 -42.4 126.5	13 28.6 -42.0 125.9	12 48.1 -41.7 125.2	12 07.3 -41.3 124.5
21°	14 05.7 -42.9 128.0	13 26.3 -42.5 127.3	12 46.6 -42.2 126.6	12 06.4 -41.7 125.9	11 26.0 -41.4 125.3
22°	13 22.8 -43.0 128.7	12 43.8 -42.6 128.0	12 04.4 -42.2 127.3	11 24.7 -41.9 126.7	10 44.6 -41.5 126.0
23°	12 39.8 -43.1 129.4	12 01.2 -42.8 128.7	11 22.2 -42.4 128.1	10 42.8 -41.9 127.4	10 03.1 -41.5 126.7
24°	11 56.7 -43.3 130.1	11 18.4 -42.8 129.4	10 39.8 -42.4 128.8	10 00.9 -42.1 128.1	9 21.6 -41.7 127.5
25°	11 13.4 -43.3 130.8	10 35.6 -43.0 130.1	9 57.4 -42.6 129.5	9 18.8 -42.1 128.8	8 39.9 -41.8 128.2
26°	10 30.1 -43.5 131.5	9 52.6 -43.0 130.9	9 14.8 -42.6 130.2	8 36.7 -42.3 129.6	7 58.1 -41.8 128.9
27°	9 46.6 -43.5 132.2	9 09.6 -43.1 131.6	8 32.2 -42.7 130.9	7 54.4 -42.3 130.3	7 16.3 -41.9 129.7
28°	9 03.1 -43.6 132.9	8 26.5 -43.2 132.3	7 49.5 -42.8 131.6	7 12.1 -42.3 131.0	6 34.4 -41.9 130.4
29°	8 19.5 -43.7 133.6	7 43.3 -43.2 133.0	7 06.7 -42.8 132.3	6 29.8 -42.4 131.7	5 52.5 -42.0 131.1

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°	24 29.3 -37.0 107.9	23 41.9 -36.8 107.2	22 54.3 -36.5 106.6	22 06.6 -36.4 105.9	21 18.6 -36.1 105.3
1°	23 52.3 -37.3 108.8	23 05.1 -37.0 108.1	22 17.8 -36.9 107.4	21 30.2 -36.6 106.8	20 42.5 -36.4 106.1
2°	23 15.0 -37.5 109.6	22 28.1 -37.4 108.9	21 40.9 -37.1 108.3	20 53.6 -36.9 107.6	20 06.1 -36.6 107.0
3°	22 37.5 -37.9 110.5	21 50.7 -37.5 109.8	21 03.8 -37.3 109.1	20 16.7 -37.1 108.5	19 29.5 -36.9 107.8
4°	21 59.6 -38.1 111.3	21 13.2 -37.9 110.6	20 26.5 -37.6 110.0	19 39.6 -37.3 109.3	18 52.6 -37.1 108.6
5°	21 21.5 -38.3 112.1	20 35.3 -38.0 111.4	19 48.9 -37.8 110.8	19 02.3 -37.5 110.1	18 15.5 -37.3 109.5
6°	20 43.2 -38.6 113.0	19 57.3 -38.3 112.3	19 11.1 -38.0 111.6	18 24.8 -37.8 110.9	17 38.2 -37.5 110.3
7°	20 04.6 -38.8 113.8	19 19.0 -38.5 113.1	18 33.1 -38.2 112.4	17 47.0 -38.0 111.8	17 00.7 -37.7 111.1
8°	19 25.8 -39.0 114.6	18 40.5 -38.8 113.9	17 54.9 -38.5 113.2	17 09.0 -38.1 112.6	16 23.0 -37.9 111.9
9°	18 46.8 -39.2 115.4	18 01.7 -38.9 114.7	17 16.4 -38.6 114.0	16 30.9 -38.3 113.4	15 45.1 -38.0 112.7
10°	18 07.6 -39.4 116.2	17 22.8 -39.1 115.5	16 37.8 -38.8 114.8	15 52.6 -38.6 114.2	15 07.1 -38.3 113.5
11°	17 28.2 -39.6 117.0	16 43.7 -39.3 116.3	15 59.0 -39.0 115.6	15 14.0 -38.6 115.0	14 28.8 -38.4 114.3
12°	16 48.6 -39.8 117.8	16 04.4 -39.4 117.1	15 20.0 -39.1 116.4	14 35.4 -38.9 115.8	13 50.4 -38.5 115.1
13°	16 08.8 -39.9 118.5	15 25.0 -39.6 117.9	14 40.9 -39.3 117.2	13 56.5 -39.0 116.6	13 11.9 -38.7 115.9
14°	15 28.9 -40.1 119.3	14 45.4 -39.8 118.6	14 01.6 -39.5 118.0	13 17.5 -39.1 117.3	12 33.2 -38.8 116.7
15°	14 48.8 -40.3 120.1	14 05.6 -39.9 119.4	13 22.1 -39.6 118.8	12 38.4 -39.3 118.1	11 54.4 -39.0 117.5
16°	14 08.5 -40.4 120.9	13 25.7 -40.1 120.2	12 42.5 -39.7 119.5	11 59.1 -39.4 118.9	11 15.4 -39.0 118.2
17°	13 28.1 -40.5 121.6	12 45.6 -40.2 121.0	12 02.8 -39.8 120.3	11 19.7 -39.5 119.7	10 36.4 -39.2 119.0
18°	12 47.6 -40.7 122.4	12 05.4 -40.3 121.7	11 23.0 -40.0 121.1	10 40.2 -39.6 120.4	9 57.2 -39.3 119.8
19°	12 06.9 -40.8 123.1	11 25.1 -40.4 122.5	10 43.0 -40.1 121.8	10 00.6 -39.8 121.2	9 17.9 -39.4 120.6
20°	11 26.1 -40.9 123.9	10 44.7 -40.6 123.2	10 02.9 -40.2 122.6	9 20.8 -39.8 121.9	8 38.5 -39.5 121.3
21°	10 45.2 -41.0 124.6	10 04.1 -40.6 124.0	9 22.7 -40.2 123.3	8 41.0 -39.9 122.7	7 59.0 -39.5 122.1
22°	10 04.2 -41.1 125.4	9 23.5 -40.7 124.7	8 42.5 -40.4 124.1	8 01.1 -40.0 123.5	7 19.5 -39.7 122.8
23°	9 23.1 -41.2 126.1	8 42.8 -40.9 125.5	8 02.1 -40.5 124.8	7 21.1 -40.1 124.2	6 39.8 -39.7 123.6
24°	8 41.9 -41.3 126.8	8 01.9 -40.9 126.2	7 21.6 -40.5 125.6	6 41.0 -40.1 125.0	6 00.1 -39.8 124.3
25°	8 00.6 -41.3 127.6	7 21.0 -40.9 126.9	6 41.1 -40.6 126.3	6 00.9 -40.2 125.7	5 20.3 -39.8 125.1
26°	7 19.3 -41.5 128.3	6 40.1 -41.1 127.7	6 00.5 -40.6 127.1	5 20.7 -40.3 126.5	4 40.5 -39.8 125.9
27°	6 37.8 -41.4 129.0	5 59.0 -41.1 128.4	5 19.9 -40.7 127.8	4 40.4 -40.3 127.2	4 00.7 -40.0 126.6
28°	5 56.4 -41.6 129.8	5 17.9 -41.1 129.1	4 39.2 -40.7 128.5	4 00.1 -40.3 127.9	3 20.7 -39.9 127.4
29°	5 14.8 -41.6 130.5	4 36.8 -41.2 129.9	3 58.5 -40.8 129.3	3 19.8 -40.4 128.7	2 40.8 -40.0 128.1

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°	20 30.6 -36.0 104.6	19 42.4 -35.8 104.0	18 54.0 -35.5 103.4	18 05.6 -35.4 102.7	17 17.0 -35.2 102.1
1°	19 54.6 -36.2 105.5	19 06.6 -36.0 104.8	18 18.5 -35.8 104.2	17 30.2 -35.6 103.6	16 41.8 -35.5 103.0
2°	19 18.4 -36.4 106.3	18 30.6 -36.2 105.7	17 42.7 -36.1 105.0	16 54.6 -35.9 104.4	16 06.3 -35.6 103.8
3°	18 42.0 -36.6 107.2	17 54.4 -36.4 106.5	17 06.6 -36.2 105.9	16 18.7 -36.0 105.3	15 30.7 -35.9 104.6
4°	18 05.4 -36.9 108.0	17 18.0 -36.6 107.4	16 30.4 -36.4 106.7	15 42.7 -36.2 106.1	14 54.8 -36.0 105.5
5°	17 28.5 -37.0 108.8	16 41.4 -36.9 108.2	15 54.0 -36.6 107.5	15 06.5 -36.4 106.9	14 18.8 -36.2 106.3
6°	16 51.5 -37.3 109.6	16 04.5 -37.0 109.0	15 17.4 -36.8 108.4	14 30.1 -36.6 107.7	13 42.6 -36.3 107.1
7°	16 14.2 -37.4 110.5	15 27.5 -37.2 109.8	14 40.6 -36.9 109.2	13 53.5 -36.7 108.6	13 06.3 -36.5 107.9
8°	15 36.8 -37.7 111.3	14 50.3 -37.4 110.6	14 03.7 -37.2 110.0	13 16.8 -36.9 109.4	12 29.8 -36.6 108.8
9°	14 59.1 -37.8 112.1	14 12.9 -37.5 111.4	13 26.5 -37.2 110.8	12 39.9 -37.0 110.2	11 53.2 -36.8 109.6
10°	14 21.3 -37.9 112.9	13 35.4 -37.7 112.2	12 49.3 -37.5 111.6	12 02.9 -37.1 111.0	11 16.4 -36.9 110.4
11°	13 43.4 -38.1 113.7	12 57.7 -37.8 113.0	12 11.8 -37.5 112.4	11 25.8 -37.3 111.8	10 39.5 -37.1 111.2
12°	13 05.3 -38.3 114.5	12 19.9 -38.0 113.8	11 34.3 -37.7 113.2	10 48.5 -37.5 112.6	10 02.4 -37.1 112.0
13°	12 27.0 -38.4 115.3	11 41.9 -38.1 114.6	10 56.6 -37.8 114.0	10 11.0 -37.5 113.4	9 25.3 -37.3 112.8
14°	11 48.6 -38.5 116.1	11 03.8 -38.2 115.4	10 18.8 -37.9 114.8	9 33.5 -37.6 114.2	8 48.0 -37.3 113.6
15°	11 10.1 -38.6 116.8	10 25.6 -38.3 116.2	9 40.9 -38.1 115.6	8 55.9 -37.8 115.0	8 10.7 -37.5 114.4
16°	10 31.5 -38.8 117.6	9 47.3 -38.5 117.0	9 02.8 -38.1 116.4	8 18.1 -37.8 115.7	7 33.2 -37.5 115.1
17°	9 52.7 -38.8 118.4	9 08.8 -38.5 117.8	8 24.7 -38.2 117.1	7 40.3 -37.9 116.5	6 55.7 -37.6 115.9
18°	9 13.9 -39.0 119.2	8 30.3 -38.6 118.5	7 46.5 -38.3 117.9	7 02.4 -38.0 117.3	6 18.1 -37.7 116.7
19°	8 34.9 -39.0 119.9	7 51.7 -38.7 119.3	7 08.2 -38.4 118.7	6 24.4 -38.1 118.1	5 40.4 -37.7 117.5
20°	7 55.9 -39.2 120.7	7 13.0 -38.8 120.1	6 29.8 -38.5 119.5	5 46.3 -38.1 118.9	5 02.7 -37.8 118.3
21°	7 16.7 -39.2 121.5	6 34.2 -38.9 120.9	5 51.3 -38.5 120.2	5 08.2 -38.2 119.6	4 24.9 -37.9 119.1
22°	6 37.5 -39.3 122.2	5 55.3 -38.9 121.6	5 12.8 -38.6 121.0	4 30.0 -38.2 120.4	3 47.0 -37.9 119.8
23°	5 58.2 -39.3 123.0	5 16.4 -39.0 122.4	4 34.2 -38.6 121.8	3 51.8 -38.3 121.2	3 09.1 -37.9 120.6
24°	5 18.9 -39.4 123.7	4 37.4 -39.0 123.1	3 55.6 -38.7 122.6	3 13.5 -38.3 122.0	2 31.2 -37.9 121.4
25°	4 39.5 -39.4 124.5	3 58.4 -39.1 123.9	3 16.9 -38.7 123.3	2 35.2 -38.3 122.7	1 53.3 -38.0 122.2
26°	4 00.1 -39.5 125.3	3 19.3 -39.1 124.7	2 38.2 -38.7 124.1	1 56.9 -38.4 123.5	1 15.3 -38.0 122.9
27°	3 20.6 -39.6 126.0	2 40.2 -39.2 125.4	1 59.5 -38.7 124.8	1 18.5 -38.3 124.3	0 37.3 -38.0 123.7
28°	2 41.0 -39.5 126.8	2 01.0 -39.1 126.2	1 20.8 -38.8 125.6	0 40.2 -38.4 125.0	-0 00.7 -38.0
29°	2 01.5 -39.6 127.5	1 21.9 -39.2 126.9	0 42.0 -38.8 126.4	0 01.8 -38.4 125.8	-0 38.7 -38.0

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°	16 28.3 -35.1 101.5	15 39.5 -34.9 100.9	14 50.6 -34.8 100.3	14 01.6 -34.6 99.7	13 12.6 -34.6 99.1
1°	15 53.2 -35.2 102.3	15 04.6 -35.1 101.7	14 15.8 -34.9 101.1	13 27.0 -34.9 100.5	12 38.0 -34.7 99.9
2°	15 18.0 -35.5 103.2	14 29.5 -35.3 102.6	13 40.9 -35.2 102.0	12 52.1 -34.9 101.4	12 03.3 -34.8 100.8
3°	14 42.5 -35.7 104.0	13 54.2 -35.5 103.4	13 05.7 -35.3 102.8	12 17.2 -35.2 102.2	11 28.5 -35.0 101.6
4°	14 06.8 -35.8 104.9	13 18.7 -35.6 104.2	12 30.4 -35.4 103.6	11 42.0 -35.3 103.0	10 53.5 -35.1 102.4
5°	13 31.0 -36.0 105.7	12 43.1 -35.8 105.1	11 55.0 -35.6 104.5	11 06.7 -35.4 103.9	10 18.4 -35.3 103.3
6°	12 55.0 -36.1 106.5	12 07.3 -36.0 105.9	11 19.4 -35.8 105.3	10 31.3 -35.5 104.7	9 43.1 -35.3 104.1
7°	12 18.9 -36.3 107.3	11 31.3 -36.0 106.7	10 43.6 -35.8 106.1	9 55.8 -35.7 105.5	9 07.8 -35.5 104.9
8°	11 42.6 -36.4 108.1	10 55.3 -36.2 107.5	10 07.8 -36.0 106.9	9 20.1 -35.8 106.3	8 32.3 -35.6 105.7
9°	11 06.2 -36.5 108.9	10 19.1 -36.3 108.3	9 31.8 -36.1 107.7	8 44.3 -35.9 107.1	7 56.7 -35.7 106.5
10°	10 29.7 -36.7 109.8	9 42.8 -36.5 109.1	8 55.7 -36.2 108.5	8 08.4 -35.9 107.9	7 21.0 -35.7 107.3
11°	9 53.0 -36.8 110.6	9 06.3 -36.5 109.9	8 19.5 -36.3 109.3	7 32.5 -36.1 108.8	6 45.3 -35.9 108.2
12°	9 16.2 -36.9 111.4	8 29.8 -36.7 110.8	7 43.2 -36.4 110.2	6 56.4 -36.2 109.6	6 09.4 -35.9 109.0
13°	8 39.3 -37.0 112.2	7 53.1 -36.7 111.6	7 06.8 -36.5 111.0	6 20.2 -36.2 110.4	5 33.5 -36.0 109.8
14°	8 02.3 -37.1 113.0	7 16.4 -36.8 112.4	6 30.3 -36.5 111.8	5 44.0 -36.3 111.2	4 57.5 -36.0 110.6
15°	7 25.2 -37.1 113.7	6 39.6 -36.9 113.1	5 53.8 -36.6 112.6	5 07.7 -36.3 112.0	4 21.5 -36.1 111.4
16°	6 48.1 -37.3 114.5	6 02.7 -36.9 113.9	5 17.2 -36.7 113.3	4 31.4 -36.4 112.8	3 45.4 -36.1 112.2
17°	6 10.8 -37.3 115.3	5 25.8 -37.0 114.7	4 40.5 -36.7 114.1	3 55.0 -36.5 113.6	3 09.3 -36.2 113.0
18°	5 33.5 -37.3 116.1	4 48.8 -37.1 115.5	4 03.8 -36.8 114.9	3 18.5 -36.4 114.4	2 33.1 -36.2 113.8
19°	4 56.2 -37.5 116.9	4 11.7 -37.1 116.3	3 27.0 -36.8 115.7	2 42.1 -36.5 115.1	1 56.9 -36.2 114.6
20°	4 18.7 -37.4 117.7	3 34.6 -37.2 117.1	2 50.2 -36.9 116.5	2 05.6 -36.6 115.9	1 20.7 -36.2 115.4
21°	3 41.3 -37.6 118.5	2 57.4 -37.2 117.9	2 13.3 -36.8 117.3	1 29.0 -36.5 116.7	0 44.5 -36.3 116.2
22°	3 03.7 -37.5 119.2	2 20.2 -37.2 118.7	1 36.5 -36.9 118.1	0 52.5 -36.6 117.5	0 08.2 -36.2 117.0
23°	2 26.2 -37.6 120.0	1 43.0 -37.2 119.5	0 59.6 -36.9 118.9	0 15.9 -36.6 118.3	-0 28.0 -36.2
24°	1 48.6 -37.6 120.8	1 05.8 -37.3 120.2	0 22.7 -36.9 119.7	-0 20.7 -36.5	-1 04.2 -36.3
25°	1 11.0 -37.6 121.6	0 28.5 -37.2 121.0	-0 14.2 -36.9	-0 57.2 -36.6	-1 40.5 -36.2
26°	0 33.4 -37.6 122.4	-0 08.7 -37.3	-0 51.1 -36.9	-1 33.8 -36.5	-2 16.7 -36.2
27°	-0 04.2 -37.6	-0 46.0 -37.2	-1 28.0 -36.9	-2 10.3 -36.5	-2 52.9 -36.1
28°	-0 41.8 -37.6	-1 23.2 -37.3	-2 04.9 -36.9	-2 46.8 -36.5	-3 29.0 -36.1
29°	-1 19.4 -37.6	-2 00.5 -37.2	-2 41.8 -36.8	-3 23.3 -36.4	-4 05.1 -36.1

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°	12 23.4 -34.4 98.5	11 34.2 -34.3 97.9	10 44.9 -34.2 97.4	9 55.5 -34.1 96.8	9 06.1 -34.0 96.2
1°	11 49.0 -34.6 99.4	10 59.9 -34.5 98.8	10 10.7 -34.4 98.2	9 21.4 -34.2 97.6	8 32.1 -34.2 97.0
2°	11 14.4 -34.7 100.2	10 25.4 -34.6 99.6	9 36.3 -34.4 99.0	8 47.2 -34.4 98.4	7 57.9 -34.2 97.9
3°	10 39.7 -34.8 101.0	9 50.8 -34.7 100.4	9 01.9 -34.6 99.9	8 12.8 -34.4 99.3	7 23.7 -34.3 98.7
4°	10 04.9 -35.0 101.9	9 16.1 -34.8 101.3	8 27.3 -34.7 100.7	7 38.4 -34.6 100.1	6 49.4 -34.5 99.5
5°	9 29.9 -35.1 102.7	8 41.3 -34.9 102.1	7 52.6 -34.8 101.5	7 03.8 -34.6 100.9	6 14.9 -34.5 100.3
6°	8 54.8 -35.2 103.5	8 06.4 -35.0 102.9	7 17.8 -34.8 102.3	6 29.2 -34.7 101.7	5 40.4 -34.5 101.2
7°	8 19.6 -35.3 104.3	7 31.4 -35.2 103.7	6 43.0 -35.0 103.1	5 54.5 -34.8 102.6	5 05.9 -34.6 102.0
8°	7 44.3 -35.4 105.1	6 56.2 -35.2 104.5	6 08.0 -35.0 104.0	5 19.7 -34.8 103.4	4 31.3 -34.7 102.8
9°	7 08.9 -35.4 105.9	6 21.0 -35.2 105.4	5 33.0 -35.1 104.8	4 44.9 -34.9 104.2	3 56.6 -34.8 103.6
10°	6 33.5 -35.6 106.8	5 45.8 -35.4 106.2	4 57.9 -35.1 105.6	4 10.0 -35.0 105.0	3 21.8 -34.7 104.4
11°	5 57.9 -35.6 107.6	5 10.4 -35.4 107.0	4 22.8 -35.2 106.4	3 35.0 -35.0 105.8	2 47.1 -34.8 105.3
12°	5 22.3 -35.7 108.4	4 35.0 -35.4 107.8	3 47.6 -35.3 107.2	3 00.0 -35.0 106.6	2 12.3 -34.9 106.1
13°	4 46.6 -35.7 109.2	3 59.6 -35.5 108.6	3 12.3 -35.2 108.0	2 25.0 -35.1 107.5	1 37.4 -34.8 106.9
14°	4 10.9 -35.8 110.0	3 24.1 -35.6 109.4	2 37.1 -35.3 108.8	1 49.9 -35.1 108.3	1 02.6 -34.9 107.7
15°	3 35.1 -35.8 110.8	2 48.5 -35.6 110.2	2 01.8 -35.4 109.7	1 14.8 -35.1 109.1	0 27.7 -34.8 108.5
16°	2 59.3 -35.9 111.6	2 12.9 -35.6 111.0	1 26.4 -35.3 110.5	0 39.7 -35.1 109.9	-0 07.1 -34.9
17°	2 23.4 -35.9 112.4	1 37.3 -35.6 111.8	0 51.1 -35.4 111.3	0 04.6 -35.1 110.7	-0 42.0 -34.9
18°	1 47.5 -35.9 113.2	1 01.7 -35.6 112.6	0 15.7 -35.4 112.1	-0 30.5 -35.1	-1 16.9 -34.8
19°	1 11.6 -35.9 114.0	0 26.1 -35.7 113.4	-0 19.7 -35.3	-1 05.6 -35.1	-1 51.7 -34.8
20°	0 35.7 -36.0 114.8	-0 09.6 -35.6	-0 55.0 -35.4	-1 40.7 -35.1	-2 26.5 -34.8
21°	-0 00.3 -35.9	-0 45.2 -35.7	-1 30.4 -35.3	-2 15.8 -35.0	-3 01.3 -34.8
22°	-0 36.2 -35.9	-1 20.9 -35.6	-2 05.7 -35.3	-2 50.8 -35.0	-3 36.1 -34.7
23°	-1 12.1 -35.9	-1 56.5 -35.6	-2 41.0 -35.3	-3 25.8 -35.0	-4 10.8 -34.6
24°	-1 48.0 -35.9	-2 32.1 -35.5	-3 16.3 -35.3	-4 00.8 -34.9	-4 45.4 -34.6
25°	-2 23.9 -35.9	-3 07.6 -35.6	-3 51.6 -35.1	-4 35.7 -34.8	-5 20.0 -34.6
26°	-2 59.8 -35.8	-3 43.2 -35.4	-4 26.7 -35.2	-5 10.5 -34.8	-5 54.6 -34.4
27°	-3 35.6 -35.8	-4 18.6 -35.5	-5 01.9 -35.1	-5 45.3 -34.8	-6 29.0 -34.4
28°	-4 11.4 -35.8	-4 54.1 -35.3	-5 37.0 -35.0	-6 20.1 -34.6	-7 03.4 -34.3
29°	-4 47.2 -35.6	-5 29.4 -35.4	-6 12.0 -34.9	-6 54.7 -34.6	-7 37.7 -34.2

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°	8 16.6 -33.9 95.6	7 27.1 -33.9 95.1	6 37.5 -33.8 94.5	5 47.9 -33.7 93.9	4 58.3 -33.7 93.4
1°	7 42.7 -34.1 96.5	6 53.2 -34.0 95.9	6 03.7 -33.9 95.3	5 14.2 -33.9 94.8	4 24.6 -33.8 94.2
2°	7 08.6 -34.1 97.3	6 19.2 -34.0 96.7	5 29.8 -33.9 96.2	4 40.3 -33.8 95.6	3 50.8 -33.8 95.0
3°	6 34.5 -34.2 98.1	5 45.2 -34.1 97.6	4 55.9 -34.1 97.0	4 06.5 -34.0 96.4	3 17.0 -33.9 95.9
4°	6 00.3 -34.3 98.9	5 11.1 -34.2 98.4	4 21.8 -34.0 97.8	3 32.5 -34.0 97.2	2 43.1 -33.8 96.7
5°	5 26.0 -34.4 99.8	4 36.9 -34.2 99.2	3 47.8 -34.2 98.6	2 58.5 -34.0 98.1	2 09.3 -34.0 97.5
6°	4 51.6 -34.4 100.6	4 02.7 -34.3 100.0	3 13.6 -34.1 99.5	2 24.5 -34.0 98.9	1 35.3 -33.9 98.3
7°	4 17.2 -34.5 101.4	3 28.4 -34.4 100.8	2 39.5 -34.2 100.3	1 50.5 -34.1 99.7	1 01.4 -33.9 99.2
8°	3 42.7 -34.5 102.2	2 54.0 -34.3 101.7	2 05.3 -34.3 101.1	1 16.4 -34.1 100.5	0 27.5 -34.0 100.0
9°	3 08.2 -34.6 103.1	2 19.7 -34.4 102.5	1 31.0 -34.2 101.9	0 42.3 -34.1 101.4	-0 06.5 -33.9
10°	2 33.6 -34.6 103.9	1 45.3 -34.4 103.3	0 56.8 -34.2 102.7	0 08.2 -34.1 102.2	-0 40.4 -34.0
11°	1 59.0 -34.6 104.7	1 10.9 -34.5 104.1	0 22.6 -34.3 103.6	-0 25.9 -34.0	-1 14.4 -33.9
12°	1 24.4 -34.6 105.5	0 36.4 -34.4 104.9	-0 11.7 -34.3	-0 59.9 -34.1	-1 48.3 -33.9
13°	0 49.8 -34.7 106.3	0 02.0 -34.5 105.8	-0 46.0 -34.2	-1 34.0 -34.1	-2 22.2 -33.9
14°	0 15.1 -34.6 107.1	-0 32.5 -34.4	-1 20.2 -34.2	-2 08.1 -34.0	-2 56.1 -33.8
15°	-0 19.5 -34.6	-1 06.9 -34.4	-1 54.4 -34.2	-2 42.1 -34.0	-3 29.9 -33.8
16°	-0 54.1 -34.7	-1 41.3 -34.4	-2 28.6 -34.2	-3 16.1 -34.0	-4 03.7 -33.8
17°	-1 28.8 -34.6	-2 15.7 -34.4	-3 02.8 -34.2	-3 50.1 -33.9	-4 37.5 -33.6
18°	-2 03.4 -34.6	-2 50.1 -34.3	-3 37.0 -34.0	-4 24.0 -33.8	-5 11.1 -33.7
19°	-2 38.0 -34.5	-3 24.4 -34.3	-4 11.0 -34.1	-4 57.8 -33.8	-5 44.8 -33.5
20°	-3 12.5 -34.5	-3 58.7 -34.3	-4 45.1 -34.0	-5 31.6 -33.7	-6 18.3 -33.5
21°	-3 47.0 -34.5	-4 33.0 -34.2	-5 19.1 -33.9	-6 05.3 -33.7	-6 51.8 -33.4
22°	-4 21.5 -34.4	-5 07.2 -34.1	-5 53.0 -33.8	-6 39.0 -33.5	-7 25.2 -33.2
23°	-4 55.9 -34.4	-5 41.3 -34.0	-6 26.8 -33.8	-7 12.5 -33.5	-7 58.4 -33.2
24°	-5 30.3 -34.3	-6 15.3 -34.0	-7 00.6 -33.7	-7 46.0 -33.4	-8 31.6 -33.1
25°	-6 04.6 -34.2	-6 49.3 -33.9	-7 34.3 -33.5	-8 19.4 -33.3	-9 04.7 -33.0
26°	-6 38.8 -34.1	-7 23.2 -33.8	-8 07.8 -33.5	-8 52.7 -33.1	-9 37.7 -32.8
27°	-7 12.9 -34.1	-7 57.0 -33.7	-8 41.3 -33.4	-9 25.8 -33.0	
28°	-7 47.0 -33.9	-8 30.7 -33.6	-9 14.7 -33.2	-9 58.8 -32.9	
29°	-8 20.9 -33.8	-9 04.3 -33.5	-9 47.9 -33.1		

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°	4 08.6 -33.7 92.8	3 18.9 -33.6 92.2	2 29.2 -33.6 91.7	1 39.5 -33.6 91.1	0 49.7 -33.5 90.6
1°	3 34.9 -33.7 93.6	2 45.3 -33.7 93.1	1 55.6 -33.6 92.5	1 05.9 -33.6 91.9	0 16.2 -33.6 91.4
2°	3 01.2 -33.7 94.5	2 11.6 -33.7 93.9	1 22.0 -33.7 93.3	0 32.3 -33.6 92.8	-0 17.4 -33.5
3°	2 27.5 -33.8 95.3	1 37.9 -33.7 94.7	0 48.3 -33.6 94.2	-0 01.3 -33.6	-0 50.9 -33.6
4°	1 53.7 -33.8 96.1	1 04.2 -33.7 95.6	0 14.7 -33.7 95.0	-0 34.9 -33.6	-1 24.5 -33.5
5°	1 19.9 -33.8 96.9	0 30.5 -33.7 96.4	-0 19.0 -33.6	-1 08.5 -33.5	-1 58.0 -33.5
6°	0 46.1 -33.8 97.8	-0 03.2 -33.8	-0 52.6 -33.6	-1 42.0 -33.6	-2 31.5 -33.5
7°	0 12.3 -33.9 98.6	-0 37.0 -33.7	-1 26.2 -33.7	-2 15.6 -33.5	-3 05.0 -33.4
8°	-0 21.6 -33.8	-1 10.7 -33.7	-1 59.9 -33.6	-2 49.1 -33.5	-3 38.4 -33.4
9°	-0 55.4 -33.8	-1 44.4 -33.7	-2 33.5 -33.5	-3 22.6 -33.4	-4 11.8 -33.4
10°	-1 29.2 -33.8	-2 18.1 -33.6	-3 07.0 -33.5	-3 56.0 -33.4	-4 45.2 -33.2
11°	-2 03.0 -33.8	-2 51.7 -33.6	-3 40.5 -33.5	-4 29.4 -33.4	-5 18.4 -33.2
12°	-2 36.8 -33.7	-3 25.3 -33.6	-4 14.0 -33.4	-5 02.8 -33.3	-5 51.6 -33.2
13°	-3 10.5 -33.7	-3 58.9 -33.5	-4 47.4 -33.4	-5 36.1 -33.2	-6 24.8 -33.0
14°	-3 44.2 -33.7	-4 32.4 -33.5	-5 20.8 -33.3	-6 09.3 -33.1	-6 57.8 -33.0
15°	-4 17.9 -33.6	-5 05.9 -33.4	-5 54.1 -33.2	-6 42.4 -33.0	-7 30.8 -32.9
16°	-4 51.5 -33.5	-5 39.3 -33.4	-6 27.3 -33.2	-7 15.4 -33.0	-8 03.7 -32.7
17°	-5 25.0 -33.5	-6 12.7 -33.2	-7 00.5 -33.0	-7 48.4 -32.8	-8 36.4 -32.7
18°	-5 58.5 -33.3	-6 45.9 -33.2	-7 33.5 -32.9	-8 21.2 -32.8	-9 09.1 -32.5
19°	-6 31.8 -33.4	-7 19.1 -33.1	-8 06.4 -32.9	-8 54.0 -32.6	-9 41.6 -32.4
20°	-7 05.2 -33.2	-7 52.2 -32.9	-8 39.3 -32.7	-9 26.6 -32.5	
21°	-7 38.4 -33.1	-8 25.1 -32.9	-9 12.0 -32.6	-9 59.1 -32.4	
22°	-8 11.5 -33.0	-8 58.0 -32.7	-9 44.6 -32.5		
23°	-8 44.5 -32.9	-9 30.7 -32.7			
24°	-9 17.4 -32.8				
25°	-9 50.2 -32.7				
26°					
27°					
28°					
29°					

Latitude 34°

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 -33.6 90.0	-0 49.7 -33.6			
1°	-0 33.6 -33.5	-1 23.3 -33.5			
2°	-1 07.1 -33.5	-1 56.8 -33.5			
3°	-1 40.6 -33.5	-2 30.3 -33.5			
4°	-2 14.1 -33.5	-3 03.8 -33.4			
5°	-2 47.6 -33.5	-3 37.2 -33.4			
6°	-3 21.1 -33.4	-4 10.6 -33.4			
7°	-3 54.5 -33.3	-4 44.0 -33.2			
8°	-4 27.8 -33.3	-5 17.2 -33.3			
9°	-5 01.1 -33.2	-5 50.5 -33.1			
10°	-5 34.3 -33.2	-6 23.6 -33.0			
11°	-6 07.5 -33.1	-6 56.6 -33.0			
12°	-6 40.6 -33.0	-7 29.6 -32.9			
13°	-7 13.6 -32.9	-8 02.5 -32.8			
14°	-7 46.5 -32.8	-8 35.3 -32.6			
15°	-8 19.3 -32.7	-9 07.9 -32.5			
16°	-8 52.0 -32.6	-9 40.4 -32.5			
17°	-9 24.6 -32.4				
18°	-9 57.0 -32.4				
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

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

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

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	55 00.0 -60.0 180.0	54 59.3 -60.0 178.3	54 57.0 -59.9 176.5	54 53.3 -59.9 174.8	54 48.1 -59.7 173.0
1°	54 00.0 -60.0 180.0	53 59.3 -60.0 178.3	53 57.1 -59.9 176.6	53 53.4 -59.8 174.9	53 48.4 -59.8 173.2
2°	53 00.0 -60.0 180.0	52 59.3 -60.0 178.3	52 57.2 -60.0 176.7	52 53.6 -59.9 175.0	52 48.6 -59.7 173.4
3°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.4	51 57.2 -59.9 176.8	51 53.7 -59.8 175.1	51 48.9 -59.8 173.5
4°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.4	50 57.3 -60.0 176.8	50 53.9 -59.9 175.3	50 49.1 -59.7 173.7
5°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.5	49 57.3 -59.9 176.9	49 54.0 -59.8 175.4	49 49.4 -59.8 173.8
6°	49 00.0 -60.0 180.0	48 59.3 -59.9 178.5	48 57.4 -59.9 177.0	48 54.2 -59.9 175.5	48 49.6 -59.8 174.0
7°	48 00.0 -60.0 180.0	47 59.4 -60.0 178.5	47 57.5 -60.0 177.0	47 54.3 -59.9 175.6	47 49.8 -59.7 174.1
8°	47 00.0 -60.0 180.0	46 59.4 -60.0 178.5	46 57.5 -59.9 177.1	46 54.4 -59.9 175.6	46 50.1 -59.8 174.2
9°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.6	45 57.6 -60.0 177.2	45 54.5 -59.9 175.7	45 50.3 -59.8 174.3
10°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.6	44 57.6 -59.9 177.2	44 54.6 -59.9 175.8	44 50.5 -59.8 174.4
11°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.6	43 57.7 -60.0 177.3	43 54.7 -59.9 175.9	43 50.7 -59.9 174.6
12°	43 00.0 -60.0 180.0	42 59.4 -60.0 178.7	42 57.7 -59.9 177.3	42 54.8 -59.9 176.0	42 50.8 -59.8 174.7
13°	42 00.0 -60.0 180.0	41 59.4 -60.0 178.7	41 57.8 -60.0 177.4	41 54.9 -59.9 176.1	41 51.0 -59.8 174.8
14°	41 00.0 -60.0 180.0	40 59.4 -59.9 178.7	40 57.8 -60.0 177.4	40 55.0 -59.9 176.1	40 51.2 -59.8 174.9
15°	40 00.0 -60.0 180.0	39 59.5 -60.0 178.7	39 57.8 -59.9 177.5	39 55.1 -59.9 176.2	39 51.4 -59.9 175.0
16°	39 00.0 -60.0 180.0	38 59.5 -60.0 178.8	38 57.9 -60.0 177.5	38 55.2 -59.9 176.3	38 51.5 -59.8 175.1
17°	38 00.0 -60.0 180.0	37 59.5 -60.0 178.8	37 57.9 -59.9 177.6	37 55.3 -59.9 176.4	37 51.7 -59.9 175.2
18°	37 00.0 -60.0 180.0	36 59.5 -60.0 178.8	36 58.0 -60.0 177.6	36 55.4 -59.9 176.4	36 51.8 -59.8 175.2
19°	36 00.0 -60.0 180.0	35 59.5 -60.0 178.8	35 58.0 -60.0 177.7	35 55.5 -59.9 176.5	35 52.0 -59.9 175.3
20°	35 00.0 -60.0 180.0	34 59.5 -60.0 178.9	34 58.0 -59.9 177.7	34 55.6 -59.9 176.6	34 52.1 -59.8 175.4
21°	34 00.0 -60.0 180.0	33 59.5 -60.0 178.9	33 58.1 -60.0 177.7	33 55.7 -60.0 176.6	33 52.3 -59.9 175.5
22°	33 00.0 -60.0 180.0	32 59.5 -60.0 178.9	32 58.1 -60.0 177.8	32 55.7 -59.9 176.7	32 52.4 -59.8 175.6
23°	32 00.0 -60.0 180.0	31 59.5 -60.0 178.9	31 58.1 -59.9 177.8	31 55.8 -59.9 176.7	31 52.6 -59.9 175.7
24°	31 00.0 -60.0 180.0	30 59.5 -59.9 178.9	30 58.2 -60.0 177.9	30 55.9 -59.9 176.8	30 52.7 -59.9 175.7
25°	30 00.0 -60.0 180.0	29 59.6 -60.0 179.0	29 58.2 -60.0 177.9	29 56.0 -60.0 176.9	29 52.8 -59.8 175.8
26°	29 00.0 -60.0 180.0	28 59.6 -60.0 179.0	28 58.2 -59.9 177.9	28 56.0 -59.9 176.9	28 53.0 -59.9 175.9
27°	28 00.0 -60.0 180.0	27 59.6 -60.0 179.0	27 58.3 -60.0 178.0	27 56.1 -59.9 177.0	27 53.1 -59.9 176.0
28°	27 00.0 -60.0 180.0	26 59.6 -60.0 179.0	26 58.3 -60.0 178.0	26 56.2 -60.0 177.0	26 53.2 -59.9 176.0
29°	26 00.0 -60.0 180.0	25 59.6 -60.0 179.0	25 58.3 -59.9 178.1	25 56.2 -59.9 177.1	25 53.3 -59.9 176.1

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°	54 41.4 -59.6 171.3	54 33.3 -59.4 169.6	54 23.7 -59.2 167.9	54 12.7 -58.9 166.2	54 00.3 -58.6 164.6
1°	53 41.8 -59.5 171.5	53 33.9 -59.4 169.9	53 24.5 -59.1 168.2	53 13.8 -58.9 166.6	53 01.7 -58.7 164.9
2°	52 42.3 -59.6 171.7	52 34.5 -59.4 170.1	52 25.4 -59.2 168.5	52 14.9 -59.0 166.9	52 03.0 -58.7 165.3
3°	51 42.7 -59.6 171.9	51 35.1 -59.4 170.3	51 26.2 -59.3 168.7	51 15.9 -59.0 167.2	51 04.3 -58.7 165.6
4°	50 43.1 -59.7 172.1	50 35.7 -59.5 170.5	50 26.9 -59.2 169.0	50 16.9 -59.1 167.5	50 05.6 -58.8 165.9
5°	49 43.4 -59.6 172.3	49 36.2 -59.5 170.8	49 27.7 -59.4 169.2	49 17.8 -59.1 167.7	49 06.8 -58.9 166.2
6°	48 43.8 -59.7 172.4	48 36.7 -59.5 171.0	48 28.3 -59.3 169.5	48 18.7 -59.1 168.0	48 07.9 -58.9 166.5
7°	47 44.1 -59.6 172.6	47 37.2 -59.5 171.1	47 29.0 -59.3 169.7	47 19.6 -59.1 168.2	47 09.0 -59.0 166.8
8°	46 44.5 -59.7 172.8	46 37.7 -59.6 171.3	46 29.7 -59.4 169.9	46 20.5 -59.2 168.5	46 10.0 -59.9 167.1
9°	45 44.8 -59.7 172.9	45 38.1 -59.5 171.5	45 30.3 -59.4 170.1	45 21.3 -59.3 168.7	45 11.1 -59.1 167.3
10°	44 45.1 -59.7 173.1	44 38.6 -59.6 171.7	44 30.9 -59.4 170.3	44 22.0 -59.2 168.9	44 12.0 -59.0 167.6
11°	43 45.4 -59.7 173.2	43 39.0 -59.6 171.8	43 31.5 -59.5 170.5	43 22.8 -59.3 169.2	43 13.0 -59.1 167.8
12°	42 45.7 -59.7 173.3	42 39.4 -59.6 172.0	42 32.0 -59.4 170.7	42 23.5 -59.3 169.4	42 13.9 -59.1 168.1
13°	41 46.0 -59.8 173.5	41 39.8 -59.6 172.2	41 32.6 -59.5 170.9	41 24.2 -59.3 169.6	41 14.8 -59.1 168.3
14°	40 46.2 -59.7 173.6	40 40.2 -59.6 172.3	40 33.1 -59.5 171.0	40 24.9 -59.3 169.8	40 15.7 -59.2 168.5
15°	39 46.5 -59.7 173.7	39 40.6 -59.6 172.5	39 33.6 -59.5 171.2	39 25.6 -59.4 170.0	39 16.5 -59.2 168.7
16°	38 46.8 -59.8 173.8	38 41.0 -59.7 172.6	38 34.1 -59.5 171.4	38 26.2 -59.3 170.2	38 17.3 -59.2 169.0
17°	37 47.0 -59.7 173.9	37 41.3 -59.6 172.7	37 34.6 -59.5 171.5	37 26.9 -59.4 170.3	37 18.1 -59.2 169.2
18°	36 47.3 -59.8 174.1	36 41.7 -59.7 172.9	36 35.1 -59.6 171.7	36 27.5 -59.4 170.5	36 18.9 -59.2 169.4
19°	35 47.5 -59.8 174.2	35 42.0 -59.7 173.0	35 35.5 -59.5 171.9	35 28.1 -59.4 170.7	35 19.7 -59.3 169.6
20°	34 47.7 -59.8 174.3	34 42.3 -59.6 173.1	34 36.0 -59.6 172.0	34 28.7 -59.5 170.9	34 20.4 -59.3 169.7
21°	33 47.9 -59.7 174.4	33 42.7 -59.7 173.3	33 36.4 -59.6 172.1	33 29.2 -59.4 171.0	33 21.1 -59.3 169.9
22°	32 48.2 -59.8 174.5	32 43.0 -59.7 173.4	32 36.8 -59.5 172.3	32 29.8 -59.5 171.2	32 21.8 -59.3 170.1
23°	31 48.4 -59.8 174.6	31 43.3 -59.7 173.5	31 37.3 -59.6 172.4	31 30.3 -59.4 171.4	31 22.5 -59.3 170.3
24°	30 48.6 -59.8 174.7	30 43.6 -59.7 173.6	30 37.7 -59.6 172.6	30 30.9 -59.5 171.5	30 23.2 -59.4 170.5
25°	29 48.8 -59.8 174.8	29 43.9 -59.7 173.7	29 38.1 -59.6 172.7	29 31.4 -59.5 171.7	29 23.8 -59.3 170.6
26°	28 49.0 -59.8 174.9	28 44.2 -59.7 173.8	28 38.5 -59.6 172.8	28 31.9 -59.5 171.8	28 24.5 -59.4 170.8
27°	27 49.2 -59.8 175.0	27 44.5 -59.8 174.0	27 38.9 -59.7 173.0	27 32.4 -59.5 172.0	27 25.1 -59.4 171.0
28°	26 49.4 -59.8 175.1	26 44.7 -59.7 174.1	26 39.2 -59.6 173.1	26 32.9 -59.5 172.1	26 25.7 -59.4 171.1
29°	25 49.6 -59.8 175.1	25 45.0 -59.7 174.2	25 39.6 -59.6 173.2	25 33.4 -59.5 172.2	25 26.3 -59.4 171.3

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°	53 46.5 -58.2 162.9	53 31.4 -57.9 161.3	53 15.0 -57.6 159.7	52 57.3 -57.2 158.1	52 38.3 -56.8 156.5
1°	52 48.3 -58.4 163.3	52 33.5 -58.0 161.7	52 17.4 -57.7 160.1	52 00.1 -57.3 158.6	51 41.5 -56.9 157.0
2°	51 49.9 -58.4 163.7	51 35.5 -58.2 162.1	51 19.7 -57.7 160.6	51 02.8 -57.4 159.0	50 44.6 -57.0 157.5
3°	50 51.5 -58.5 164.1	50 37.3 -58.1 162.5	50 22.0 -57.9 161.0	50 05.4 -57.6 159.5	49 47.6 -57.2 158.0
4°	49 53.0 -58.6 164.4	49 39.2 -58.3 162.9	49 24.1 -58.0 161.4	49 07.8 -57.6 159.9	48 50.4 -57.3 158.5
5°	48 54.4 -58.6 164.7	48 40.9 -58.3 163.3	48 26.1 -58.0 161.8	48 10.2 -57.7 160.4	47 53.1 -57.3 158.9
6°	47 55.8 -58.6 165.1	47 42.6 -58.4 163.6	47 28.1 -58.1 162.2	47 12.5 -57.8 160.8	46 55.8 -57.5 159.4
7°	46 57.2 -58.7 165.4	46 44.2 -58.5 164.0	46 30.0 -58.2 162.6	46 14.7 -57.9 161.2	45 58.3 -57.6 159.8
8°	45 58.5 -58.8 165.7	45 45.7 -58.5 164.3	45 31.8 -58.2 162.9	45 16.8 -57.9 161.5	45 00.7 -57.6 160.2
9°	44 59.7 -58.8 166.0	44 47.2 -58.5 164.6	44 33.6 -58.3 163.2	44 18.9 -58.0 161.9	44 03.1 -57.7 160.6
10°	44 00.9 -58.8 166.2	43 48.7 -58.6 164.9	43 35.3 -58.3 163.6	43 20.9 -58.1 162.3	43 05.4 -57.8 161.0
11°	43 02.1 -58.9 166.5	42 50.1 -58.7 165.2	42 37.0 -58.4 163.9	42 22.8 -58.2 162.6	42 07.6 -57.8 161.3
12°	42 03.2 -58.9 166.8	41 51.4 -58.6 165.5	41 38.6 -58.5 164.2	41 24.7 -58.2 162.9	41 09.8 -58.0 161.7
13°	41 04.3 -58.9 167.0	40 52.8 -58.8 165.8	40 40.1 -58.4 164.5	40 26.5 -58.2 163.3	40 11.8 -57.9 162.0
14°	40 05.4 -59.0 167.3	39 54.0 -58.7 166.0	39 41.7 -58.6 164.8	39 28.3 -58.3 163.6	39 13.9 -58.1 162.4
15°	39 06.4 -59.0 167.5	38 55.3 -58.8 166.3	38 43.1 -58.6 165.1	38 30.0 -58.4 163.9	38 15.8 -58.0 162.7
16°	38 07.4 -59.0 167.7	37 56.5 -58.8 166.6	37 44.5 -58.6 165.4	37 31.6 -58.3 164.2	37 17.8 -58.2 163.0
17°	37 08.4 -59.1 168.0	36 57.7 -58.9 166.8	36 45.9 -58.6 165.6	36 33.3 -58.5 164.5	36 19.6 -58.2 163.3
18°	36 09.3 -59.0 168.2	35 58.8 -58.9 167.0	35 47.3 -58.7 165.9	35 34.8 -58.4 164.7	35 21.4 -58.2 163.6
19°	35 10.3 -59.1 168.4	34 59.9 -58.9 167.3	34 48.6 -58.7 166.1	34 36.4 -58.5 165.0	34 23.2 -58.2 163.9
20°	34 11.2 -59.2 168.6	34 01.0 -58.9 167.5	33 49.9 -58.7 166.4	33 37.9 -58.5 165.3	33 25.0 -58.4 164.2
21°	33 12.0 -59.1 168.8	33 02.1 -59.0 167.7	32 51.2 -58.8 166.6	32 39.4 -58.6 165.6	32 26.6 -58.3 164.5
22°	32 12.9 -59.1 169.0	32 03.1 -59.0 168.0	31 52.4 -58.8 166.9	31 40.8 -58.6 165.8	31 28.3 -58.4 164.8
23°	31 13.8 -59.2 169.2	31 04.1 -59.0 168.2	30 53.6 -58.8 167.1	30 42.2 -58.6 166.1	30 29.9 -58.4 165.0
24°	30 14.6 -59.2 169.4	30 05.1 -59.0 168.4	29 54.8 -58.9 167.3	29 43.6 -58.7 166.3	29 31.5 -58.4 165.3
25°	29 15.4 -59.2 169.6	29 06.1 -59.0 168.6	28 55.9 -58.8 167.6	28 44.9 -58.6 166.6	28 33.1 -58.5 165.5
26°	28 16.2 -59.2 169.8	28 07.1 -59.1 168.8	27 57.1 -58.9 167.8	27 46.3 -58.7 166.8	27 34.6 -58.5 165.8
27°	27 17.0 -59.3 170.0	27 08.0 -59.1 169.0	26 58.2 -58.9 168.0	26 47.6 -58.8 167.0	26 36.1 -58.5 166.1
28°	26 17.7 -59.2 170.2	26 08.9 -59.1 169.2	25 59.3 -58.9 168.2	25 48.8 -58.7 167.3	25 37.6 -58.5 166.3
29°	25 18.5 -59.3 170.3	25 09.8 -59.1 169.4	25 00.4 -59.0 168.4	24 50.1 -58.8 167.5	24 39.1 -58.6 166.5

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°	52 18.1 -56.4 155.0	51 56.7 -55.9 153.4	51 34.1 -55.4 151.9	51 10.5 -55.0 150.5	50 45.7 -54.5 149.0
1°	51 21.7 -56.5 155.5	51 00.8 -56.1 154.0	50 38.7 -55.7 152.5	50 15.5 -55.2 151.1	49 51.2 -54.7 149.7
2°	50 25.2 -56.6 156.0	50 04.7 -56.2 154.6	49 43.0 -55.8 153.1	49 20.3 -55.4 151.7	48 56.5 -55.0 150.3
3°	49 28.6 -56.8 156.6	49 08.5 -56.4 155.1	48 47.2 -55.9 153.7	48 24.9 -55.5 152.3	48 01.5 -55.1 150.9
4°	48 31.8 -56.9 157.1	48 12.1 -56.5 155.6	47 51.3 -56.2 154.2	47 29.4 -55.7 152.9	47 06.4 -55.3 151.5
5°	47 34.9 -57.0 157.5	47 15.6 -56.7 156.1	46 55.1 -56.2 154.8	46 33.7 -55.9 153.4	46 11.1 -55.4 152.1
6°	46 37.9 -57.1 158.0	46 18.9 -56.7 156.6	45 58.9 -56.4 155.3	45 37.8 -56.0 153.9	45 15.7 -55.6 152.6
7°	45 40.8 -57.3 158.4	45 22.2 -56.9 157.1	45 02.5 -56.5 155.8	44 41.8 -56.1 154.4	44 20.1 -55.8 153.1
8°	44 43.5 -57.3 158.9	44 25.3 -57.0 157.5	44 06.0 -56.6 156.2	43 45.7 -56.3 154.9	43 24.3 -55.8 153.7
9°	43 46.2 -57.4 159.3	43 28.3 -57.1 158.0	43 09.4 -56.8 156.7	42 49.4 -56.4 155.4	42 28.5 -56.0 154.2
10°	42 48.8 -57.4 159.7	42 31.2 -57.1 158.4	42 12.6 -56.8 157.1	41 53.0 -56.4 155.9	41 32.5 -56.2 154.6
11°	41 51.4 -57.6 160.1	41 34.1 -57.3 158.8	41 15.8 -56.9 157.6	40 56.6 -56.6 156.3	40 36.3 -56.2 155.1
12°	40 53.8 -57.6 160.4	40 36.8 -57.3 159.2	40 18.9 -57.0 158.0	40 00.0 -56.7 156.8	39 40.1 -56.3 155.6
13°	39 56.2 -57.7 160.8	39 39.5 -57.4 159.6	39 21.9 -57.1 158.4	39 03.3 -56.8 157.2	38 43.8 -56.5 156.0
14°	38 58.5 -57.8 161.2	38 42.1 -57.5 160.0	38 24.8 -57.2 158.8	38 06.5 -56.8 157.6	37 47.3 -56.5 156.4
15°	38 00.7 -57.8 161.5	37 44.6 -57.5 160.3	37 27.6 -57.2 159.2	37 09.7 -57.0 158.0	36 50.8 -56.6 156.9
16°	37 02.9 -57.9 161.8	36 47.1 -57.6 160.7	36 30.4 -57.3 159.5	36 12.7 -57.0 158.4	35 54.2 -56.7 157.3
17°	36 05.0 -57.9 162.2	35 49.5 -57.6 161.0	35 33.1 -57.4 159.9	35 15.7 -57.0 158.8	34 57.5 -56.8 157.7
18°	35 07.1 -58.0 162.5	34 51.9 -57.7 161.4	34 35.7 -57.4 160.3	34 18.7 -57.2 159.2	34 00.7 -56.8 158.1
19°	34 09.1 -58.0 162.8	33 54.2 -57.8 161.7	33 38.3 -57.5 160.6	33 21.5 -57.2 159.5	33 03.9 -56.9 158.4
20°	33 11.1 -58.0 163.1	32 56.4 -57.8 162.0	32 40.8 -57.6 160.9	32 24.3 -57.3 159.9	32 07.0 -57.0 158.8
21°	32 13.1 -58.2 163.4	31 58.6 -57.9 162.3	31 43.2 -57.6 161.3	31 27.0 -57.3 160.2	31 10.0 -57.0 159.2
22°	31 14.9 -58.1 163.7	31 00.7 -57.9 162.7	30 45.6 -57.6 161.6	30 29.7 -57.4 160.6	30 13.0 -57.1 159.6
23°	30 16.8 -58.2 164.0	30 02.8 -57.9 163.0	29 48.0 -57.7 161.9	29 32.3 -57.4 160.9	29 15.9 -57.2 159.9
24°	29 18.6 -58.2 164.3	29 04.9 -58.0 163.3	28 50.3 -57.7 162.2	28 34.9 -57.5 161.2	28 18.7 -57.2 160.3
25°	28 20.4 -58.2 164.5	28 06.9 -58.0 163.5	27 52.6 -57.8 162.6	27 37.4 -57.5 161.6	27 21.5 -57.3 160.6
26°	27 22.2 -58.3 164.8	27 08.9 -58.1 163.8	26 54.8 -57.8 162.9	26 39.9 -57.6 161.9	26 24.2 -57.3 160.9
27°	26 23.9 -58.3 165.1	26 10.8 -58.1 164.1	25 57.0 -57.9 163.2	25 42.3 -57.6 162.2	25 26.9 -57.3 161.3
28°	25 25.6 -58.4 165.3	25 12.7 -58.1 164.4	24 59.1 -57.9 163.5	24 44.7 -57.6 162.5	24 29.6 -57.4 161.6
29°	24 27.2 -58.3 165.6	24 14.6 -58.1 164.7	24 01.2 -57.9 163.7	23 47.1 -57.7 162.8	23 32.2 -57.4 161.9

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°	50 19.9 -54.0 147.6	49 53.1 -53.6 146.2	49 25.2 -53.0 144.8	48 56.5 -52.6 143.5	48 26.8 -52.1 142.2
1°	49 25.9 -54.3 148.3	48 59.5 -53.8 146.9	48 32.2 -53.3 145.6	48 03.9 -52.8 144.2	47 34.7 -52.3 142.9
2°	48 31.6 -54.5 148.9	48 05.7 -54.0 147.6	47 38.9 -53.5 146.2	47 11.1 -53.0 144.9	46 42.4 -52.5 143.6
3°	47 37.1 -54.6 149.6	47 11.7 -54.2 148.2	46 45.4 -53.8 146.9	46 18.1 -53.3 145.6	45 49.9 -52.9 144.3
4°	46 42.5 -54.9 150.2	46 17.5 -54.4 148.8	45 51.6 -53.9 147.5	45 24.8 -53.5 146.3	44 57.0 -53.0 145.0
5°	45 47.6 -55.0 150.7	45 23.1 -54.6 149.4	44 57.7 -54.2 148.2	44 31.3 -53.7 146.9	44 04.0 -53.3 145.7
6°	44 52.6 -55.2 151.3	44 28.5 -54.8 150.0	44 03.5 -54.4 148.8	43 37.6 -54.0 147.5	43 10.7 -53.4 146.3
7°	43 57.4 -55.4 151.9	43 33.7 -54.9 150.6	43 09.1 -54.5 149.4	42 43.6 -54.0 148.1	42 17.3 -53.7 146.9
8°	43 02.0 -55.4 152.4	42 38.8 -55.1 151.2	42 14.6 -54.7 149.9	41 49.6 -54.3 148.7	41 23.6 -53.9 147.5
9°	42 06.6 -55.7 152.9	41 43.7 -55.2 151.7	41 19.9 -54.8 150.5	40 55.3 -54.4 149.3	40 29.7 -54.0 148.1
10°	41 10.9 -55.7 153.4	40 48.5 -55.4 152.2	40 25.1 -55.0 151.0	40 00.9 -54.6 149.8	39 35.7 -54.2 148.7
11°	40 15.2 -55.9 153.9	39 53.1 -55.5 152.7	39 30.1 -55.1 151.5	39 06.3 -54.8 150.4	38 41.5 -54.3 149.2
12°	39 19.3 -56.0 154.4	38 57.6 -55.6 153.2	38 35.0 -55.2 152.0	38 11.5 -54.8 150.9	37 47.2 -54.5 149.8
13°	38 23.3 -56.1 154.8	38 02.0 -55.7 153.7	37 39.8 -55.4 152.5	37 16.7 -55.0 151.4	36 52.7 -54.6 150.3
14°	37 27.2 -56.1 155.3	37 06.3 -55.9 154.2	36 44.4 -55.5 153.0	36 21.7 -55.1 151.9	35 58.1 -54.7 150.8
15°	36 31.1 -56.3 155.7	36 10.4 -55.9 154.6	35 48.9 -55.6 153.5	35 26.6 -55.3 152.4	35 03.4 -54.9 151.3
16°	35 34.8 -56.4 156.2	35 14.5 -56.1 155.1	34 53.3 -55.7 154.0	34 31.3 -55.3 152.9	34 08.5 -55.0 151.8
17°	34 38.4 -56.5 156.6	34 18.4 -56.1 155.5	33 57.6 -55.8 154.4	33 36.0 -55.5 153.3	33 13.5 -55.1 152.3
18°	33 41.9 -56.5 157.0	33 22.3 -56.2 155.9	33 01.8 -55.8 154.9	32 40.5 -55.5 153.8	32 18.4 -55.1 152.8
19°	32 45.4 -56.6 157.4	32 26.1 -56.3 156.3	32 06.0 -56.0 155.3	31 45.0 -55.6 154.2	31 23.3 -55.3 153.2
20°	31 48.8 -56.7 157.8	31 29.8 -56.4 156.7	31 10.0 -56.1 155.7	30 49.4 -55.8 154.7	30 28.0 -55.4 153.7
21°	30 52.1 -56.7 158.2	30 33.4 -56.4 157.1	30 13.9 -56.1 156.1	29 53.6 -55.8 155.1	29 32.6 -55.5 154.1
22°	29 55.4 -56.8 158.5	29 37.0 -56.5 157.5	29 17.8 -56.2 156.5	28 57.8 -55.8 155.5	28 37.1 -55.5 154.6
23°	28 58.6 -56.9 158.9	28 40.5 -56.6 157.9	28 21.6 -56.3 156.9	28 02.0 -56.0 156.0	27 41.6 -55.7 155.0
24°	28 01.7 -56.9 159.3	27 43.9 -56.6 158.3	27 25.3 -56.3 157.3	27 06.0 -56.0 156.4	26 45.9 -55.7 155.4
25°	27 04.8 -57.0 159.6	26 47.3 -56.7 158.7	26 29.0 -56.4 157.7	26 10.0 -56.1 156.8	25 50.2 -55.7 155.8
26°	26 07.8 -57.0 160.0	25 50.6 -56.8 159.0	25 32.6 -56.4 158.1	25 13.9 -56.1 157.2	24 54.5 -55.9 156.2
27°	25 10.8 -57.1 160.3	24 53.8 -56.8 159.4	24 36.2 -56.5 158.5	24 17.8 -56.2 157.5	23 58.6 -55.9 156.6
28°	24 13.7 -57.1 160.7	23 57.0 -56.8 159.7	23 39.7 -56.6 158.8	23 21.6 -56.3 157.9	23 02.7 -55.9 157.0
29°	23 16.6 -57.2 161.0	23 00.2 -56.9 160.1	22 43.1 -56.6 159.2	22 25.3 -56.3 158.3	22 06.8 -56.0 157.4

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°	47 56.2 -51.5 140.9	47 24.8 -51.0 139.6	46 52.5 -50.5 138.4	46 19.5 -50.0 137.2	45 45.7 -49.5 136.0
1°	47 04.7 -51.8 141.6	46 33.8 -51.4 140.4	46 02.0 -50.8 139.2	45 29.5 -50.3 138.0	44 56.2 -49.8 136.8
2°	46 12.9 -52.1 142.4	45 42.4 -51.6 141.1	45 11.2 -51.1 139.9	44 39.2 -50.7 138.7	44 06.4 -50.2 137.6
3°	45 20.8 -52.4 143.1	44 50.8 -51.8 141.9	44 20.1 -51.4 140.7	43 48.5 -50.9 139.5	43 16.2 -50.4 138.3
4°	44 28.4 -52.5 143.8	43 59.0 -52.1 142.6	43 28.7 -51.6 141.4	42 57.6 -51.1 140.2	42 25.8 -50.7 139.1
5°	43 35.9 -52.9 144.5	43 06.9 -52.4 143.3	42 37.1 -51.9 142.1	42 06.5 -51.5 140.9	41 35.1 -51.0 139.8
6°	42 43.0 -53.0 145.1	42 14.5 -52.6 143.9	41 45.2 -52.2 142.8	41 15.0 -51.7 141.6	40 44.1 -51.2 140.5
7°	41 50.0 -53.2 145.7	41 21.9 -52.8 144.6	40 53.0 -52.3 143.4	40 23.3 -51.9 142.3	39 52.9 -51.5 141.2
8°	40 56.8 -53.4 146.4	40 29.1 -53.0 145.2	40 00.7 -52.6 144.1	39 31.4 -52.1 142.9	39 01.4 -51.6 141.8
9°	40 03.4 -53.6 147.0	39 36.1 -53.1 145.8	39 08.1 -52.7 144.7	38 39.3 -52.3 143.6	38 09.8 -51.9 142.5
10°	39 09.8 -53.8 147.5	38 43.0 -53.4 146.4	38 15.4 -53.0 145.3	37 47.0 -52.5 144.2	37 17.9 -52.1 143.1
11°	38 16.0 -53.9 148.1	37 49.6 -53.5 147.0	37 22.4 -53.1 145.9	36 54.5 -52.7 144.8	36 25.8 -52.3 143.7
12°	37 22.1 -54.1 148.7	36 56.1 -53.7 147.6	36 29.3 -53.2 146.5	36 01.8 -52.9 145.4	35 33.5 -52.4 144.3
13°	36 28.0 -54.3 149.2	36 02.4 -53.8 148.1	35 36.1 -53.5 147.0	35 08.9 -53.0 146.0	34 41.1 -52.7 144.9
14°	35 33.7 -54.3 149.7	35 08.6 -54.0 148.7	34 42.6 -53.6 147.6	34 15.9 -53.2 146.6	33 48.4 -52.7 145.5
15°	34 39.4 -54.5 150.2	34 14.6 -54.1 149.2	33 49.0 -53.7 148.1	33 22.7 -53.3 147.1	32 55.7 -53.0 146.1
16°	33 44.9 -54.6 150.8	33 20.5 -54.2 149.7	32 55.3 -53.8 148.7	32 29.4 -53.5 147.7	32 02.7 -53.0 146.6
17°	32 50.3 -54.7 151.2	32 26.3 -54.4 150.2	32 01.5 -54.0 149.2	31 35.9 -53.6 148.2	31 09.7 -53.3 147.2
18°	31 55.6 -54.9 151.7	31 31.9 -54.5 150.7	31 07.5 -54.1 149.7	30 42.3 -53.7 148.7	30 16.4 -53.3 147.7
19°	31 00.7 -54.9 152.2	30 37.4 -54.6 151.2	30 13.4 -54.2 150.2	29 48.6 -53.8 149.2	29 23.1 -53.5 148.3
20°	30 05.8 -55.0 152.7	29 42.8 -54.6 151.7	29 19.2 -54.4 150.7	28 54.8 -54.0 149.7	28 29.6 -53.5 148.8
21°	29 10.8 -55.2 153.1	28 48.2 -54.8 152.2	28 24.8 -54.4 151.2	28 00.8 -54.1 150.2	27 36.1 -53.7 149.3
22°	28 15.6 -55.2 153.6	27 53.4 -54.9 152.6	27 30.4 -54.5 151.7	27 06.7 -54.1 150.7	26 42.4 -53.8 149.8
23°	27 20.4 -55.3 154.0	26 58.5 -54.9 153.1	26 35.9 -54.6 152.1	26 12.6 -54.3 151.2	25 48.6 -53.9 150.3
24°	26 25.1 -55.4 154.5	26 03.6 -55.1 153.5	25 41.3 -54.7 152.6	25 18.3 -54.3 151.7	24 54.7 -54.0 150.8
25°	25 29.7 -55.4 154.9	25 08.5 -55.1 154.0	24 46.6 -54.8 153.1	24 24.0 -54.4 152.1	24 00.7 -54.1 151.2
26°	24 34.3 -55.5 155.3	24 13.4 -55.2 154.4	23 51.8 -54.8 153.5	23 29.6 -54.6 152.6	23 06.6 -54.2 151.7
27°	23 38.8 -55.6 155.7	23 18.2 -55.2 154.8	22 57.0 -55.0 153.9	22 35.0 -54.5 153.1	22 12.4 -54.2 152.2
28°	22 43.2 -55.7 156.1	22 23.0 -55.4 155.3	22 02.0 -54.9 154.4	21 40.5 -54.7 153.5	21 18.2 -54.3 152.6
29°	21 47.5 -55.7 156.5	21 27.6 -55.3 155.7	21 07.1 -55.1 154.8	20 45.8 -54.7 154.0	20 23.9 -54.4 153.1

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°	45 11.2 -49.0 134.8	44 36.0 -48.5 133.7	44 00.1 -48.0 132.5	43 23.6 -47.6 131.5	42 46.4 -47.0 130.4
1°	44 22.2 -49.3 135.6	43 47.5 -48.9 134.5	43 12.1 -48.4 133.4	42 36.0 -47.9 132.3	41 59.4 -47.5 131.2
2°	43 32.9 -49.7 136.4	42 58.6 -49.2 135.3	42 23.7 -48.7 134.2	41 48.1 -48.2 133.1	41 11.9 -47.7 132.0
3°	42 43.2 -50.0 137.2	42 09.4 -49.4 136.1	41 35.0 -49.0 135.0	40 59.9 -48.5 133.9	40 24.2 -48.1 132.8
4°	41 53.2 -50.2 137.9	41 20.0 -49.8 136.8	40 46.0 -49.3 135.7	40 11.4 -48.9 134.7	39 36.1 -48.4 133.6
5°	41 03.0 -50.5 138.7	40 30.2 -50.1 137.6	39 56.7 -49.6 136.5	39 22.5 -49.1 135.4	38 47.7 -48.7 134.4
6°	40 12.5 -50.8 139.4	39 40.1 -50.3 138.3	39 07.1 -49.9 137.2	38 33.4 -49.4 136.2	37 59.0 -49.0 135.1
7°	39 21.7 -51.0 140.1	38 49.8 -50.5 139.0	38 17.2 -50.1 137.9	37 44.0 -49.7 136.9	37 10.0 -49.2 135.9
8°	38 30.7 -51.2 140.7	37 59.3 -50.8 139.7	37 27.1 -50.3 138.6	36 54.3 -49.9 137.6	36 20.8 -49.5 136.6
9°	37 39.5 -51.5 141.4	37 08.5 -51.1 140.3	36 36.8 -50.6 139.3	36 04.4 -50.2 138.3	35 31.3 -49.7 137.3
10°	36 48.0 -51.6 142.1	36 17.4 -51.2 141.0	35 46.2 -50.8 140.0	35 14.2 -50.3 139.0	34 41.6 -49.9 137.9
11°	35 56.4 -51.9 142.7	35 26.2 -51.4 141.6	34 55.4 -51.0 140.6	34 23.9 -50.6 139.6	33 51.7 -50.2 138.6
12°	35 04.5 -52.0 143.3	34 34.8 -51.6 142.3	34 04.4 -51.2 141.3	33 33.3 -50.8 140.3	33 01.5 -50.3 139.3
13°	34 12.5 -52.2 143.9	33 43.2 -51.8 142.9	33 13.2 -51.4 141.9	32 42.5 -51.0 140.9	32 11.2 -50.6 139.9
14°	33 20.3 -52.4 144.5	32 51.4 -52.0 143.5	32 21.8 -51.6 142.5	31 51.5 -51.1 141.5	31 20.6 -50.7 140.6
15°	32 27.9 -52.5 145.1	31 59.4 -52.1 144.1	31 30.2 -51.7 143.1	31 00.4 -51.3 142.1	30 29.9 -50.9 141.2
16°	31 35.4 -52.7 145.7	31 07.3 -52.3 144.7	30 38.5 -51.9 143.7	30 09.1 -51.5 142.7	29 39.0 -51.1 141.8
17°	30 42.7 -52.9 146.2	30 15.0 -52.4 145.2	29 46.6 -52.0 144.3	29 17.6 -51.6 143.3	28 47.9 -51.2 142.4
18°	29 49.8 -52.9 146.8	29 22.6 -52.6 145.8	28 54.6 -52.2 144.8	28 26.0 -51.8 143.9	27 56.7 -51.4 143.0
19°	28 56.9 -53.1 147.3	28 30.0 -52.7 146.3	28 02.4 -52.3 145.4	27 34.2 -51.9 144.5	27 05.3 -51.5 143.6
20°	28 03.8 -53.2 147.8	27 37.3 -52.8 146.9	27 10.1 -52.4 146.0	26 42.3 -52.1 145.0	26 13.8 -51.6 144.1
21°	27 10.6 -53.3 148.4	26 44.5 -53.0 147.4	26 17.7 -52.6 146.5	25 50.2 -52.1 145.6	25 22.2 -51.8 144.7
22°	26 17.3 -53.4 148.9	25 51.5 -53.0 147.9	25 25.1 -52.6 147.0	24 58.1 -52.3 146.1	24 30.4 -51.9 145.3
23°	25 23.9 -53.6 149.4	24 58.5 -53.2 148.5	24 32.5 -52.8 147.6	24 05.8 -52.4 146.7	23 38.5 -52.0 145.8
24°	24 30.3 -53.6 149.9	24 05.3 -53.2 149.0	23 39.7 -52.9 148.1	23 13.4 -52.5 147.2	22 46.5 -52.2 146.4
25°	23 36.7 -53.7 150.4	23 12.1 -53.4 149.5	22 46.8 -53.0 148.6	22 20.9 -52.6 147.7	21 54.3 -52.2 146.9
26°	22 43.0 -53.8 150.8	22 18.7 -53.4 150.0	21 53.8 -53.1 149.1	21 28.3 -52.7 148.3	21 02.1 -52.3 147.4
27°	21 49.2 -53.9 151.3	21 25.3 -53.6 150.5	21 00.7 -53.1 149.6	20 35.6 -52.8 148.8	20 09.8 -52.4 147.9
28°	20 55.3 -54.0 151.8	20 31.7 -53.6 150.9	20 07.6 -53.3 150.1	19 42.8 -52.9 149.3	19 17.4 -52.5 148.5
29°	20 01.3 -54.0 152.3	19 38.1 -53.6 151.4	19 14.3 -53.3 150.6	18 49.9 -53.0 149.8	18 24.9 -52.6 149.0

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	42 08.7 -46.6 129.3	41 30.4 -46.1 128.3	40 51.6 -45.7 127.3	40 12.2 -45.3 126.3	39 32.3 -44.8 125.3
1°	41 22.1 -47.0 130.2	40 44.3 -46.5 129.1	40 05.9 -46.1 128.1	39 26.9 -45.6 127.1	38 47.5 -45.2 126.2
2°	40 35.1 -47.3 131.0	39 57.8 -46.9 130.0	39 19.8 -46.4 129.0	38 41.3 -45.9 128.0	38 02.3 -45.5 127.0
3°	39 47.8 -47.6 131.8	39 10.9 -47.2 130.8	38 33.4 -46.7 129.8	37 55.4 -46.3 128.8	37 16.8 -45.9 127.8
4°	39 00.2 -47.9 132.6	38 23.7 -47.5 131.6	37 46.7 -47.1 130.6	37 09.1 -46.7 129.6	36 30.9 -46.2 128.6
5°	38 12.3 -48.3 133.4	37 36.2 -47.8 132.3	36 59.6 -47.3 131.4	36 22.4 -46.9 130.4	35 44.7 -46.5 129.4
6°	37 24.0 -48.5 134.1	36 48.4 -48.1 133.1	36 12.3 -47.7 132.1	35 35.5 -47.2 131.2	34 58.2 -46.7 130.2
7°	36 35.5 -48.8 134.8	36 00.3 -48.3 133.8	35 24.6 -47.9 132.9	34 48.3 -47.5 131.9	34 11.5 -47.1 131.0
8°	35 46.7 -49.0 135.6	35 12.0 -48.6 134.6	34 36.7 -48.2 133.6	34 00.8 -47.7 132.6	33 24.4 -47.3 131.7
9°	34 57.7 -49.3 136.3	34 23.4 -48.9 135.3	33 48.5 -48.4 134.3	33 13.1 -48.0 133.4	32 37.1 -47.6 132.4
10°	34 08.4 -49.5 137.0	33 34.5 -49.0 136.0	33 00.1 -48.7 135.0	32 25.1 -48.2 134.1	31 49.5 -47.8 133.2
11°	33 18.9 -49.7 137.6	32 45.5 -49.3 136.7	32 11.4 -48.8 135.7	31 36.9 -48.5 134.8	31 01.7 -48.0 133.9
12°	32 29.2 -50.0 138.3	31 56.2 -49.5 137.4	31 22.6 -49.1 136.4	30 48.4 -48.7 135.5	30 13.7 -48.3 134.6
13°	31 39.2 -50.1 139.0	31 06.7 -49.8 138.0	30 33.5 -49.3 137.1	29 59.7 -48.9 136.2	29 25.4 -48.5 135.3
14°	30 49.1 -50.3 139.6	30 16.9 -49.9 138.7	29 44.2 -49.5 137.7	29 10.8 -49.0 136.8	28 36.9 -48.6 135.9
15°	29 58.8 -50.5 140.2	29 27.0 -50.0 139.3	28 54.7 -49.7 138.4	28 21.8 -49.3 137.5	27 48.3 -48.9 136.6
16°	29 08.3 -50.7 140.9	28 37.0 -50.3 139.9	28 05.0 -49.8 139.0	27 32.5 -49.4 138.1	26 59.4 -49.0 137.2
17°	28 17.6 -50.8 141.5	27 46.7 -50.4 140.6	27 15.2 -50.0 139.7	26 43.1 -49.6 138.8	26 10.4 -49.2 137.9
18°	27 26.8 -51.0 142.1	26 56.3 -50.6 141.2	26 25.2 -50.2 140.3	25 53.5 -49.8 139.4	25 21.2 -49.4 138.5
19°	26 35.8 -51.1 142.7	26 05.7 -50.7 141.8	25 35.0 -50.3 140.9	25 03.7 -49.9 140.0	24 31.8 -49.5 139.2
20°	25 44.7 -51.3 143.2	25 15.0 -50.9 142.4	24 44.7 -50.5 141.5	24 13.8 -50.1 140.6	23 42.3 -49.6 139.8
21°	24 53.4 -51.3 143.8	24 24.1 -51.0 142.9	23 54.2 -50.6 142.1	23 23.7 -50.2 141.2	22 52.7 -49.8 140.4
22°	24 02.1 -51.6 144.4	23 33.1 -51.1 143.5	23 03.6 -50.7 142.7	22 33.5 -50.3 141.8	22 02.9 -50.0 141.0
23°	23 10.5 -51.6 144.9	22 42.0 -51.2 144.1	22 12.9 -50.8 143.2	21 43.2 -50.4 142.4	21 12.9 -50.0 141.6
24°	22 18.9 -51.7 145.5	21 50.8 -51.4 144.7	21 22.1 -51.0 143.8	20 52.8 -50.6 143.0	20 22.9 -50.2 142.2
25°	21 27.2 -51.9 146.0	20 59.4 -51.4 145.2	20 31.1 -51.1 144.4	20 02.2 -50.7 143.6	19 32.7 -50.3 142.8
26°	20 35.3 -51.9 146.6	20 08.0 -51.6 145.8	19 40.0 -51.1 144.9	19 11.5 -50.8 144.1	18 42.4 -50.3 143.3
27°	19 43.4 -52.0 147.1	19 16.4 -51.6 146.3	18 48.9 -51.3 145.5	18 20.7 -50.8 144.7	17 52.1 -50.5 143.9
28°	18 51.4 -52.2 147.6	18 24.8 -51.8 146.8	17 57.6 -51.4 146.0	17 29.9 -51.0 145.3	17 01.6 -50.6 144.5
29°	17 59.2 -52.2 148.2	17 33.0 -51.8 147.4	17 06.2 -51.4 146.6	16 38.9 -51.1 145.8	16 11.0 -50.7 145.0

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	38 52.0 -44.4 124.4	38 11.2 -44.0 123.4	37 29.9 -43.5 122.5	36 48.3 -43.2 121.6	36 06.2 -42.8 120.7
1°	38 07.6 -44.8 125.2	37 27.2 -44.3 124.3	36 46.4 -44.0 123.4	36 05.1 -43.5 122.5	35 23.4 -43.1 121.6
2°	37 22.8 -45.1 126.1	36 42.9 -44.7 125.1	36 02.4 -44.2 124.2	35 21.6 -43.9 123.3	34 40.3 -43.5 122.4
3°	36 37.7 -45.4 126.9	35 58.2 -45.1 126.0	35 18.2 -44.7 125.0	34 37.7 -44.2 124.1	33 56.8 -43.8 123.3
4°	35 52.3 -45.8 127.7	35 13.1 -45.3 126.8	34 33.5 -44.9 125.9	33 53.5 -44.6 125.0	33 13.0 -44.2 124.1
5°	35 06.5 -46.1 128.5	34 27.8 -45.7 127.6	33 48.6 -45.2 126.7	33 08.9 -44.8 125.8	32 28.8 -44.4 124.9
6°	34 20.4 -46.3 129.3	33 42.1 -45.9 128.3	33 03.4 -45.6 127.4	32 24.1 -45.1 126.6	31 44.4 -44.7 125.7
7°	33 34.1 -46.7 130.0	32 56.2 -46.2 129.1	32 17.8 -45.8 128.2	31 39.0 -45.4 127.3	30 59.7 -45.0 126.5
8°	32 47.4 -46.9 130.8	32 10.0 -46.5 129.9	31 32.0 -46.1 129.0	30 53.6 -45.7 128.1	30 14.7 -45.3 127.2
9°	32 00.5 -47.1 131.5	31 23.5 -46.7 130.6	30 45.9 -46.3 129.7	30 07.9 -45.9 128.8	29 29.4 -45.5 128.0
10°	31 13.4 -47.4 132.2	30 36.8 -47.0 131.3	29 59.6 -46.6 130.5	29 22.0 -46.2 129.6	28 43.9 -45.8 128.7
11°	30 26.0 -47.6 133.0	29 49.8 -47.2 132.1	29 13.0 -46.8 131.2	28 35.8 -46.4 130.3	27 58.1 -46.0 129.5
12°	29 38.4 -47.9 133.7	29 02.6 -47.5 132.8	28 26.2 -47.0 131.9	27 49.4 -46.6 131.0	27 12.1 -46.2 130.2
13°	28 50.5 -48.0 134.4	28 15.1 -47.6 133.5	27 39.2 -47.2 132.6	27 02.8 -46.9 131.7	26 25.9 -46.5 130.9
14°	28 02.5 -48.3 135.0	27 27.5 -47.9 134.2	26 52.0 -47.5 133.3	26 15.9 -47.0 132.4	25 39.4 -46.6 131.6
15°	27 14.2 -48.4 135.7	26 39.6 -48.0 134.8	26 04.5 -47.6 134.0	25 28.9 -47.2 133.1	24 52.8 -46.8 132.3
16°	26 25.8 -48.6 136.4	25 51.6 -48.2 135.5	25 16.9 -47.8 134.7	24 41.7 -47.4 133.8	24 06.0 -47.0 133.0
17°	25 37.2 -48.8 137.0	25 03.4 -48.4 136.2	24 29.1 -48.0 135.3	23 54.3 -47.6 134.5	23 19.0 -47.2 133.7
18°	24 48.4 -49.0 137.7	24 15.0 -48.5 136.8	23 41.1 -48.1 136.0	23 06.7 -47.7 135.2	22 31.8 -47.4 134.3
19°	23 59.4 -49.1 138.3	23 26.5 -48.8 137.5	22 53.0 -48.3 136.6	22 19.0 -47.9 135.8	21 44.4 -47.5 135.0
20°	23 10.3 -49.3 138.9	22 37.7 -48.8 138.1	22 04.7 -48.5 137.3	21 31.1 -48.1 136.5	20 56.9 -47.6 135.7
21°	22 21.0 -49.3 139.5	21 48.9 -49.0 138.7	21 16.2 -48.6 137.9	20 43.0 -48.2 137.1	20 09.3 -47.8 136.3
22°	21 31.7 -49.6 140.2	20 59.9 -49.1 139.3	20 27.6 -48.7 138.5	19 54.8 -48.3 137.7	19 21.5 -47.9 136.9
23°	20 42.1 -49.6 140.8	20 10.8 -49.3 140.0	19 38.9 -48.9 139.2	19 06.5 -48.5 138.4	18 33.6 -48.1 137.6
24°	19 52.5 -49.8 141.4	19 21.5 -49.4 140.6	18 50.0 -48.9 139.8	18 18.0 -48.5 139.0	17 45.5 -48.1 138.2
25°	19 02.7 -49.9 142.0	18 32.1 -49.4 141.2	18 01.1 -49.1 140.4	17 29.5 -48.7 139.6	16 57.4 -48.3 138.8
26°	18 12.8 -50.0 142.5	17 42.7 -49.6 141.8	17 12.0 -49.2 141.0	16 40.8 -48.8 140.2	16 09.1 -48.4 139.5
27°	17 22.8 -50.1 143.1	16 53.1 -49.7 142.3	16 22.8 -49.3 141.6	15 52.0 -48.9 140.8	15 20.7 -48.5 140.1
28°	16 32.7 -50.1 143.7	16 03.4 -49.8 142.9	15 33.5 -49.4 142.2	15 03.1 -49.0 141.4	14 32.2 -48.6 140.7
29°	15 42.6 -50.3 144.3	15 13.6 -49.9 143.5	14 44.1 -49.5 142.8	14 14.1 -49.1 142.0	13 43.6 -48.7 141.3

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°	35 23.8 -42.4 119.8	34 41.0 -42.1 119.0	33 57.8 -41.7 118.1	33 14.3 -41.3 117.3	32 30.5 -41.0 116.5
1°	34 41.4 -42.8 120.7	33 58.9 -42.4 119.8	33 16.1 -42.0 119.0	32 33.0 -41.7 118.2	31 49.5 -41.4 117.4
2°	33 58.6 -43.1 121.6	33 16.5 -42.7 120.7	32 34.1 -42.4 119.9	31 51.3 -42.0 119.0	31 08.1 -41.6 118.2
3°	33 15.5 -43.4 122.4	32 33.8 -43.1 121.5	31 51.7 -42.7 120.7	31 09.3 -42.3 119.9	30 26.5 -42.0 119.1
4°	32 32.1 -43.8 123.2	31 50.7 -43.3 122.4	31 09.0 -43.0 121.5	30 27.0 -42.7 120.7	29 44.5 -42.3 119.9
5°	31 48.3 -44.0 124.0	31 07.4 -43.7 123.2	30 26.0 -43.3 122.3	29 44.3 -42.9 121.5	29 02.2 -42.5 120.7
6°	31 04.3 -44.4 124.8	30 23.7 -44.0 124.0	29 42.7 -43.5 123.1	29 01.4 -43.2 122.3	28 19.7 -42.9 121.5
7°	30 19.9 -44.6 125.6	29 39.7 -44.2 124.7	28 59.2 -43.9 123.9	28 18.2 -43.5 123.1	27 36.8 -43.1 122.3
8°	29 35.3 -44.9 126.4	28 55.5 -44.5 125.5	28 15.3 -44.1 124.7	27 34.7 -43.7 123.9	26 53.7 -43.4 123.1
9°	28 50.4 -45.1 127.1	28 11.0 -44.7 126.3	27 31.2 -44.4 125.5	26 51.0 -44.0 124.6	26 10.3 -43.6 123.8
10°	28 05.3 -45.4 127.9	27 26.3 -45.0 127.0	26 46.8 -44.6 126.2	26 07.0 -44.3 125.4	25 26.7 -43.8 124.6
11°	27 19.9 -45.6 128.6	26 41.3 -45.2 127.8	26 02.2 -44.8 127.0	25 22.7 -44.4 126.2	24 42.9 -44.1 125.4
12°	26 34.3 -45.8 129.3	25 56.1 -45.5 128.5	25 17.4 -45.0 127.7	24 38.3 -44.7 126.9	23 58.8 -44.3 126.1
13°	25 48.5 -46.1 130.1	25 10.6 -45.6 129.2	24 32.4 -45.3 128.4	23 53.6 -44.8 127.6	23 14.5 -44.5 126.8
14°	25 02.4 -46.2 130.8	24 25.0 -45.8 130.0	23 47.1 -45.5 129.2	23 08.8 -45.1 128.4	22 30.0 -44.7 127.6
15°	24 16.2 -46.4 131.5	23 39.2 -46.1 130.7	23 01.6 -45.6 129.9	22 23.7 -45.2 129.1	21 45.3 -44.8 128.3
16°	23 29.8 -46.6 132.2	22 53.1 -46.2 131.4	22 16.0 -45.8 130.6	21 38.5 -45.5 129.8	21 00.5 -45.1 129.0
17°	22 43.2 -46.8 132.9	22 06.9 -46.4 132.1	21 30.2 -46.0 131.3	20 53.0 -45.6 130.5	20 15.4 -45.2 129.7
18°	21 56.4 -47.0 133.5	21 20.5 -46.5 132.7	20 44.2 -46.2 131.9	20 07.4 -45.7 131.2	19 30.2 -45.4 130.4
19°	21 09.4 -47.1 134.2	20 34.0 -46.7 133.4	19 58.0 -46.3 132.6	19 21.7 -46.0 131.9	18 44.8 -45.5 131.1
20°	20 22.3 -47.2 134.9	19 47.3 -46.9 134.1	19 11.7 -46.4 133.3	18 35.7 -46.0 132.5	17 59.3 -45.7 131.8
21°	19 35.1 -47.4 135.5	19 00.4 -47.0 134.7	18 25.3 -46.6 134.0	17 49.7 -46.2 133.2	17 13.6 -45.8 132.5
22°	18 47.7 -47.5 136.2	18 13.4 -47.1 135.4	17 38.7 -46.7 134.6	17 03.5 -46.3 133.9	16 27.8 -45.9 133.1
23°	18 00.2 -47.7 136.8	17 26.3 -47.2 136.0	16 52.0 -46.9 135.3	16 17.2 -46.5 134.5	15 41.9 -46.0 133.8
24°	17 12.5 -47.7 137.4	16 39.1 -47.4 136.7	16 05.1 -47.0 135.9	15 30.7 -46.6 135.2	14 55.9 -46.2 134.5
25°	16 24.8 -47.9 138.1	15 51.7 -47.5 137.3	15 18.1 -47.0 136.6	14 44.1 -46.6 135.9	14 09.7 -46.3 135.1
26°	15 36.9 -48.0 138.7	15 04.2 -47.6 138.0	14 31.1 -47.2 137.2	13 57.5 -46.8 136.5	13 23.4 -46.4 135.8
27°	14 48.9 -48.1 139.3	14 16.6 -47.7 138.6	13 43.9 -47.3 137.9	13 10.7 -46.9 137.2	12 37.0 -46.4 136.4
28°	14 00.8 -48.2 139.9	13 28.9 -47.7 139.2	12 56.6 -47.4 138.5	12 23.8 -46.9 137.8	11 50.6 -46.6 137.1
29°	13 12.6 -48.2 140.6	12 41.2 -47.9 139.8	12 09.2 -47.4 139.1	11 36.9 -47.1 138.4	11 04.0 -46.6 137.7

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°	31 46.3 -40.6 115.7	31 01.9 -40.3 114.9	30 17.2 -40.0 114.1	29 32.2 -39.7 113.4	28 46.9 -39.4 112.6
1°	31 05.7 -41.0 116.6	30 21.6 -40.7 115.8	29 37.2 -40.4 115.0	28 52.5 -40.1 114.2	28 07.5 -39.7 113.5
2°	30 24.7 -41.3 117.4	29 40.9 -41.0 116.6	28 56.8 -40.7 115.8	28 12.4 -40.3 115.1	27 27.8 -40.1 114.3
3°	29 43.4 -41.7 118.3	28 59.9 -41.3 117.5	28 16.1 -40.9 116.7	27 32.1 -40.7 115.9	26 47.7 -40.3 115.2
4°	29 01.7 -41.9 119.1	28 18.6 -41.6 118.3	27 35.2 -41.3 117.5	26 51.4 -40.9 116.7	26 07.4 -40.6 116.0
5°	28 19.8 -42.2 119.9	27 37.0 -41.9 119.1	26 53.9 -41.5 118.3	26 10.5 -41.2 117.6	25 26.8 -40.9 116.8
6°	27 37.6 -42.5 120.7	26 55.1 -42.1 119.9	26 12.4 -41.8 119.1	25 29.3 -41.5 118.4	24 45.9 -41.2 117.6
7°	26 55.1 -42.8 121.5	26 13.0 -42.4 120.7	25 30.6 -42.1 119.9	24 47.8 -41.7 119.2	24 04.7 -41.4 118.4
8°	26 12.3 -43.0 122.3	25 30.6 -42.7 121.5	24 48.5 -42.3 120.7	24 06.1 -42.0 120.0	23 23.3 -41.6 119.2
9°	25 29.3 -43.2 123.1	24 47.9 -42.9 122.3	24 06.2 -42.5 121.5	23 24.1 -42.2 120.7	22 41.7 -41.8 120.0
10°	24 46.1 -43.5 123.8	24 05.0 -43.1 123.0	23 23.7 -42.8 122.3	22 41.9 -42.4 121.5	21 59.9 -42.1 120.8
11°	24 02.6 -43.7 124.6	23 21.9 -43.3 123.8	22 40.9 -43.0 123.0	21 59.5 -42.6 122.3	21 17.8 -42.3 121.5
12°	23 18.9 -43.9 125.3	22 38.6 -43.6 124.5	21 57.9 -43.2 123.8	21 16.9 -42.8 123.0	20 35.5 -42.5 122.3
13°	22 35.0 -44.1 126.1	21 55.0 -43.7 125.3	21 14.7 -43.3 124.5	20 34.1 -43.0 123.8	19 53.0 -42.6 123.0
14°	21 50.9 -44.3 126.8	21 11.3 -43.9 126.0	20 31.4 -43.6 125.3	19 51.1 -43.2 124.5	19 10.4 -42.9 123.8
15°	21 06.6 -44.5 127.5	20 27.4 -44.1 126.8	19 47.8 -43.7 126.0	19 07.9 -43.4 125.3	18 27.5 -43.0 124.5
16°	20 22.1 -44.7 128.2	19 43.3 -44.3 127.5	19 04.1 -43.9 126.7	18 24.5 -43.6 126.0	17 44.5 -43.1 125.3
17°	19 37.4 -44.8 128.9	18 59.0 -44.5 128.2	18 20.2 -44.1 127.4	17 40.9 -43.7 126.7	17 01.4 -43.4 126.0
18°	18 52.6 -45.0 129.6	18 14.5 -44.6 128.9	17 36.1 -44.2 128.2	16 57.2 -43.8 127.4	16 18.0 -43.4 126.7
19°	18 07.6 -45.1 130.3	17 29.9 -44.7 129.6	16 51.9 -44.4 128.9	16 13.4 -44.0 128.1	15 34.6 -43.7 127.4
20°	17 22.5 -45.3 131.0	16 45.2 -44.9 130.3	16 07.5 -44.5 129.6	15 29.4 -44.1 128.9	14 50.9 -43.7 128.1
21°	16 37.2 -45.4 131.7	16 00.3 -45.0 131.0	15 23.0 -44.6 130.3	14 45.3 -44.3 129.6	14 07.2 -43.9 128.8
22°	15 51.8 -45.6 132.4	15 15.3 -45.2 131.7	14 38.4 -44.8 131.0	14 01.0 -44.3 130.3	13 23.3 -43.9 129.6
23°	15 06.2 -45.6 133.1	14 30.1 -45.2 132.4	13 53.6 -44.9 131.6	13 16.7 -44.5 130.9	12 39.4 -44.1 130.2
24°	14 20.6 -45.8 133.8	13 44.9 -45.4 133.0	13 08.7 -44.9 132.3	12 32.2 -44.6 131.6	11 55.3 -44.2 130.9
25°	13 34.8 -45.9 134.4	12 59.5 -45.5 133.7	12 23.8 -45.1 133.0	11 47.6 -44.7 132.3	11 11.1 -44.3 131.6
26°	12 48.9 -45.9 135.1	12 14.0 -45.6 134.4	11 38.7 -45.2 133.7	11 02.9 -44.7 133.0	10 26.8 -44.4 132.3
27°	12 03.0 -46.1 135.7	11 28.4 -45.6 135.0	10 53.5 -45.3 134.4	10 18.2 -44.9 133.7	9 42.4 -44.4 133.0
28°	11 16.9 -46.2 136.4	10 42.8 -45.8 135.7	10 08.2 -45.3 135.0	9 33.3 -44.9 134.4	8 58.0 -44.6 133.7
29°	10 30.7 -46.2 137.0	9 57.0 -45.8 136.4	9 22.9 -45.4 135.7	8 48.4 -45.0 135.0	8 13.4 -44.6 134.4

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°	28 01.5 -39.2 111.9	27 15.7 -38.8 111.2	26 29.8 -38.6 110.4	25 43.6 -38.3 109.7	24 57.3 -38.1 109.0
1°	27 22.3 -39.4 112.7	26 36.9 -39.2 112.0	25 51.2 -38.9 111.3	25 05.3 -38.7 110.6	24 19.2 -38.4 109.9
2°	26 42.9 -39.8 113.6	25 57.7 -39.5 112.8	25 12.3 -39.2 112.1	24 26.6 -38.9 111.4	23 40.8 -38.7 110.7
3°	26 03.1 -40.0 114.4	25 18.2 -39.7 113.7	24 33.1 -39.5 113.0	23 47.7 -39.2 112.2	23 02.1 -38.9 111.5
4°	25 23.1 -40.3 115.2	24 38.5 -40.0 114.5	23 53.6 -39.7 113.8	23 08.5 -39.4 113.1	22 23.2 -39.2 112.4
5°	24 42.8 -40.6 116.1	23 58.5 -40.3 115.3	23 13.9 -40.0 114.6	22 29.1 -39.7 113.9	21 44.0 -39.4 113.2
6°	24 02.2 -40.8 116.9	23 18.2 -40.5 116.1	22 33.9 -40.2 115.4	21 49.4 -39.9 114.7	21 04.6 -39.6 114.0
7°	23 21.4 -41.1 117.7	22 37.7 -40.8 116.9	21 53.7 -40.4 116.2	21 09.5 -40.1 115.5	20 25.0 -39.8 114.8
8°	22 40.3 -41.3 118.5	21 56.9 -40.9 117.7	21 13.3 -40.7 117.0	20 29.4 -40.4 116.3	19 45.2 -40.1 115.6
9°	21 59.0 -41.5 119.2	21 16.0 -41.2 118.5	20 32.6 -40.9 117.8	19 49.0 -40.6 117.1	19 05.1 -40.2 116.4
10°	21 17.5 -41.8 120.0	20 34.8 -41.4 119.3	19 51.7 -41.0 118.6	19 08.4 -40.7 117.9	18 24.9 -40.5 117.2
11°	20 35.7 -41.9 120.8	19 53.4 -41.6 120.1	19 10.7 -41.3 119.4	18 27.7 -41.0 118.6	17 44.4 -40.6 117.9
12°	19 53.8 -42.1 121.6	19 11.8 -41.8 120.8	18 29.4 -41.5 120.1	17 46.7 -41.1 119.4	17 03.8 -40.8 118.7
13°	19 11.7 -42.3 122.3	18 30.0 -42.0 121.6	17 47.9 -41.6 120.9	17 05.6 -41.3 120.2	16 23.0 -41.0 119.5
14°	18 29.4 -42.5 123.1	17 48.0 -42.1 122.3	17 06.3 -41.8 121.6	16 24.3 -41.4 120.9	15 42.0 -41.1 120.2
15°	17 46.9 -42.7 123.8	17 05.9 -42.3 123.1	16 24.5 -41.9 122.4	15 42.9 -41.7 121.7	15 00.9 -41.3 121.0
16°	17 04.2 -42.8 124.5	16 23.6 -42.5 123.8	15 42.6 -42.1 123.1	15 01.2 -41.7 122.4	14 19.6 -41.4 121.7
17°	16 21.4 -43.0 125.3	15 41.1 -42.6 124.6	15 00.5 -42.3 123.9	14 19.5 -41.9 123.2	13 38.2 -41.6 122.5
18°	15 38.4 -43.1 126.0	14 58.5 -42.7 125.3	14 18.2 -42.4 124.6	13 37.6 -42.0 123.9	12 56.6 -41.6 123.2
19°	14 55.3 -43.2 126.7	14 15.8 -42.9 126.0	13 35.8 -42.5 125.3	12 55.6 -42.2 124.6	12 15.0 -41.8 124.0
20°	14 12.1 -43.4 127.4	13 32.9 -43.0 126.7	12 53.3 -42.6 126.1	12 13.4 -42.2 125.4	11 33.2 -41.9 124.7
21°	13 28.7 -43.4 128.1	12 49.9 -43.1 127.5	12 10.7 -42.7 126.8	11 31.2 -42.4 126.1	10 51.3 -42.0 125.4
22°	12 45.3 -43.6 128.9	12 06.8 -43.2 128.2	11 28.0 -42.9 127.5	10 48.8 -42.5 126.8	10 09.3 -42.1 126.2
23°	12 01.7 -43.8 129.6	11 23.6 -43.3 128.9	10 45.1 -42.9 128.2	10 06.3 -42.5 127.5	9 27.2 -42.2 126.9
24°	11 17.9 -43.8 130.3	10 40.3 -43.5 129.6	10 02.2 -43.0 128.9	9 23.8 -42.7 128.3	8 45.0 -42.3 127.6
25°	10 34.1 -43.8 131.0	9 56.8 -43.5 130.3	9 19.2 -43.1 129.6	8 41.1 -42.7 129.0	8 02.7 -42.3 128.3
26°	9 50.3 -44.0 131.6	9 13.3 -43.5 131.0	8 36.1 -43.2 130.3	7 58.4 -42.8 129.7	7 20.4 -42.4 129.0
27°	9 06.3 -44.1 132.3	8 29.8 -43.7 131.7	7 52.9 -43.3 131.0	7 15.6 -42.9 130.4	6 38.0 -42.5 129.7
28°	8 22.2 -44.1 133.0	7 46.1 -43.7 132.4	7 09.6 -43.3 131.7	6 32.7 -42.9 131.1	5 55.5 -42.5 130.5
29°	7 38.1 -44.2 133.7	7 02.4 -43.8 133.1	6 26.3 -43.4 132.4	5 49.8 -43.0 131.8	5 13.0 -42.6 131.2

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°	24 10.7 -37.9 108.3	23 23.9 -37.6 107.6	22 37.0 -37.4 107.0	21 49.9 -37.2 106.3	21 02.7 -37.0 105.6
1°	23 32.8 -38.1 109.2	22 46.3 -37.9 108.5	21 59.6 -37.7 107.8	21 12.7 -37.4 107.1	20 25.7 -37.3 106.5
2°	22 54.7 -38.4 110.0	22 08.4 -38.1 109.3	21 21.9 -37.9 108.6	20 35.3 -37.7 108.0	19 48.4 -37.4 107.3
3°	22 16.3 -38.7 110.8	21 30.3 -38.4 110.2	20 44.0 -38.1 109.5	19 57.6 -37.9 108.8	19 11.0 -37.7 108.1
4°	21 37.6 -38.9 111.7	20 51.9 -38.7 111.0	20 05.9 -38.4 110.3	19 19.7 -38.2 109.6	18 33.3 -37.9 109.0
5°	20 58.7 -39.1 112.5	20 13.2 -38.8 111.8	19 27.5 -38.6 111.1	18 41.5 -38.3 110.4	17 55.4 -38.1 109.8
6°	20 19.6 -39.3 113.3	19 34.4 -39.1 112.6	18 48.9 -38.8 111.9	18 03.2 -38.6 111.3	17 17.3 -38.3 110.6
7°	19 40.3 -39.6 114.1	18 55.3 -39.3 113.4	18 10.1 -39.0 112.7	17 24.6 -38.7 112.1	16 39.0 -38.5 111.4
8°	19 00.7 -39.8 114.9	18 16.0 -39.5 114.2	17 31.1 -39.2 113.5	16 45.9 -38.9 112.9	16 00.5 -38.7 112.2
9°	18 20.9 -39.9 115.7	17 36.5 -39.6 115.0	16 51.9 -39.4 114.3	16 07.0 -39.1 113.6	15 21.8 -38.8 113.0
10°	17 41.0 -40.2 116.5	16 56.9 -39.9 115.8	16 12.5 -39.6 115.1	15 27.9 -39.3 114.4	14 43.0 -39.0 113.8
11°	17 00.8 -40.3 117.2	16 17.0 -40.0 116.6	15 32.9 -39.7 115.9	14 48.6 -39.4 115.2	14 04.0 -39.1 114.6
12°	16 20.5 -40.5 118.0	15 37.0 -40.2 117.3	14 53.2 -39.9 116.7	14 09.2 -39.6 116.0	13 24.9 -39.3 115.3
13°	15 40.0 -40.6 118.8	14 56.8 -40.3 118.1	14 13.3 -40.0 117.4	13 29.6 -39.7 116.8	12 45.6 -39.4 116.1
14°	14 59.4 -40.8 119.6	14 16.5 -40.5 118.9	13 33.3 -40.1 118.2	12 49.9 -39.9 117.5	12 06.2 -39.6 116.9
15°	14 18.6 -40.9 120.3	13 36.0 -40.6 119.6	12 53.2 -40.3 119.0	12 10.0 -40.0 118.3	11 26.6 -39.6 117.7
16°	13 37.7 -41.1 121.1	12 55.4 -40.7 120.4	12 12.9 -40.4 119.7	11 30.0 -40.0 119.1	10 47.0 -39.8 118.4
17°	12 56.6 -41.2 121.8	12 14.7 -40.9 121.1	11 32.5 -40.6 120.5	10 50.0 -40.2 119.8	10 07.2 -39.9 119.2
18°	12 15.4 -41.3 122.6	11 33.8 -41.0 121.9	10 51.9 -40.6 121.2	10 09.8 -40.4 120.6	9 27.3 -40.0 119.9
19°	11 34.1 -41.5 123.3	10 52.8 -41.1 122.6	10 11.3 -40.8 122.0	9 29.4 -40.4 121.3	8 47.3 -40.0 120.7
20°	10 52.6 -41.5 124.0	10 11.7 -41.2 123.4	9 30.5 -40.8 122.7	8 49.0 -40.5 122.1	8 07.3 -40.2 121.4
21°	10 11.1 -41.7 124.8	9 30.5 -41.2 124.1	8 49.7 -40.9 123.5	8 08.5 -40.5 122.8	7 27.1 -40.2 122.2
22°	9 29.4 -41.7 125.5	8 49.3 -41.4 124.9	8 08.8 -41.0 124.2	7 28.0 -40.7 123.6	6 46.9 -40.3 122.9
23°	8 47.7 -41.8 126.2	8 07.9 -41.4 125.6	7 27.8 -41.1 124.9	6 47.3 -40.7 124.3	6 06.6 -40.4 123.7
24°	8 05.9 -41.9 127.0	7 26.5 -41.6 126.3	6 46.7 -41.2 125.7	6 06.6 -40.8 125.1	5 26.2 -40.4 124.4
25°	7 24.0 -42.0 127.7	6 44.9 -41.5 127.0	6 05.5 -41.2 126.4	5 25.8 -40.8 125.8	4 45.8 -40.4 125.2
26°	6 42.0 -42.0 128.4	6 03.4 -41.7 127.8	5 24.3 -41.2 127.1	4 45.0 -40.9 126.5	4 05.4 -40.5 125.9
27°	6 00.0 -42.0 129.1	5 21.7 -41.7 128.5	4 43.1 -41.3 127.9	4 04.1 -40.9 127.3	3 24.9 -40.6 126.7
28°	5 18.0 -42.2 129.8	4 40.0 -41.7 129.2	4 01.8 -41.3 128.6	3 23.2 -40.9 128.0	2 44.3 -40.5 127.4
29°	4 35.8 -42.1 130.5	3 58.3 -41.8 129.9	3 20.5 -41.4 129.3	2 42.3 -41.0 128.7	2 03.8 -40.6 128.1

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°	20 15.3 -36.8 105.0	19 27.7 -36.6 104.3	18 40.0 -36.4 103.7	17 52.2 -36.3 103.0	17 04.3 -36.1 102.4
1°	19 38.5 -37.1 105.8	18 51.1 -36.8 105.2	18 03.6 -36.7 104.5	17 15.9 -36.4 103.9	16 28.2 -36.3 103.3
2°	19 01.4 -37.2 106.6	18 14.3 -37.1 106.0	17 26.9 -36.8 105.4	16 39.5 -36.7 104.7	15 51.9 -36.5 104.1
3°	18 24.2 -37.5 107.5	17 37.2 -37.3 106.8	16 50.1 -37.1 106.2	16 02.8 -36.9 105.5	15 15.4 -36.7 104.9
4°	17 46.7 -37.7 108.3	16 59.9 -37.4 107.6	16 13.0 -37.2 107.0	15 25.9 -37.0 106.4	14 38.7 -36.8 105.7
5°	17 09.0 -37.8 109.1	16 22.5 -37.6 108.5	15 35.8 -37.4 107.8	14 48.9 -37.2 107.2	14 01.9 -37.0 106.5
6°	16 31.2 -38.1 109.9	15 44.9 -37.9 109.3	14 58.4 -37.6 108.6	14 11.7 -37.4 108.0	13 24.9 -37.2 107.3
7°	15 53.1 -38.2 110.7	15 07.0 -38.0 110.1	14 20.8 -37.8 109.4	13 34.3 -37.5 108.8	12 47.7 -37.3 108.2
8°	15 14.9 -38.4 111.5	14 29.0 -38.1 110.9	13 43.0 -37.9 110.2	12 56.8 -37.7 109.6	12 10.4 -37.4 109.0
9°	14 36.5 -38.6 112.3	13 50.9 -38.3 111.7	13 05.1 -38.0 111.0	12 19.1 -37.8 110.4	11 33.0 -37.6 109.8
10°	13 57.9 -38.7 113.1	13 12.6 -38.5 112.5	12 27.1 -38.2 111.8	11 41.3 -37.9 111.2	10 55.4 -37.7 110.6
11°	13 19.2 -38.9 113.9	12 34.1 -38.6 113.3	11 48.9 -38.3 112.6	11 03.4 -38.1 112.0	10 17.7 -37.8 111.3
12°	12 40.3 -39.0 114.7	11 55.5 -38.7 114.0	11 10.6 -38.5 113.4	10 25.3 -38.1 112.8	9 39.9 -37.9 112.1
13°	12 01.3 -39.1 115.5	11 16.8 -38.8 114.8	10 32.1 -38.6 114.2	9 47.2 -38.3 113.5	9 02.0 -38.0 112.9
14°	11 22.2 -39.2 116.2	10 38.0 -39.0 115.6	9 53.5 -38.6 115.0	9 08.9 -38.4 114.3	8 24.0 -38.1 113.7
15°	10 43.0 -39.4 117.0	9 59.0 -39.0 116.4	9 14.9 -38.8 115.7	8 30.5 -38.5 115.1	7 45.9 -38.2 114.5
16°	10 03.6 -39.5 117.8	9 20.0 -39.2 117.1	8 36.1 -38.8 116.5	7 52.0 -38.5 115.9	7 07.7 -38.3 115.3
17°	9 24.1 -39.5 118.5	8 40.8 -39.2 117.9	7 57.3 -39.0 117.3	7 13.5 -38.7 116.6	6 29.4 -38.3 116.0
18°	8 44.6 -39.7 119.3	8 01.6 -39.4 118.7	7 18.3 -39.0 118.0	6 34.8 -38.7 117.4	5 51.1 -38.4 116.8
19°	8 04.9 -39.7 120.1	7 22.2 -39.4 119.4	6 39.3 -39.1 118.8	5 56.1 -38.8 118.2	5 12.7 -38.5 117.6
20°	7 25.2 -39.8 120.8	6 42.8 -39.4 120.2	6 00.2 -39.1 119.6	5 17.3 -38.8 119.0	4 34.2 -38.5 118.3
21°	6 45.4 -39.9 121.6	6 03.4 -39.6 120.9	5 21.1 -39.2 120.3	4 38.5 -38.9 119.7	3 55.7 -38.6 119.1
22°	6 05.5 -40.0 122.3	5 23.8 -39.6 121.7	4 41.9 -39.3 121.1	3 59.6 -38.9 120.5	3 17.1 -38.5 119.9
23°	5 25.5 -40.0 123.1	4 44.2 -39.6 122.5	4 02.6 -39.3 121.8	3 20.7 -38.9 121.2	2 38.6 -38.7 120.7
24°	4 45.5 -40.0 123.8	4 04.6 -39.7 123.2	3 23.3 -39.3 122.6	2 41.8 -39.0 122.0	1 59.9 -38.6 121.4
25°	4 05.5 -40.1 124.6	3 24.9 -39.8 124.0	2 44.0 -39.4 123.4	2 02.8 -39.0 122.8	1 21.3 -38.6 122.2
26°	3 25.4 -40.1 125.3	2 45.1 -39.7 124.7	2 04.6 -39.4 124.1	1 23.8 -39.1 123.5	0 42.7 -38.7 122.9
27°	2 45.3 -40.2 126.1	2 05.4 -39.8 125.5	1 25.2 -39.4 124.9	0 44.7 -39.0 124.3	0 04.0 -38.7 123.7
28°	2 05.1 -40.2 126.8	1 25.6 -39.8 126.2	0 45.8 -39.4 125.6	0 05.7 -39.0 125.0	-0 34.7 -38.6
29°	1 24.9 -40.1 127.5	0 45.8 -39.8 127.0	0 06.4 -39.4 126.4	-0 33.3 -39.0	-1 13.3 -38.7

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°	16 16.2 -35.9 101.8	15 28.0 -35.8 101.2	14 39.8 -35.7 100.6	13 51.4 -35.5 99.9	13 03.0 -35.4 99.3
1°	15 40.3 -36.2 102.6	14 52.2 -35.9 102.0	14 04.1 -35.8 101.4	13 15.9 -35.7 100.8	12 27.6 -35.6 100.2
2°	15 04.1 -36.3 103.5	14 16.3 -36.2 102.8	13 28.3 -36.0 102.2	12 40.2 -35.8 101.6	11 52.0 -35.7 101.0
3°	14 27.8 -36.5 104.3	13 40.1 -36.3 103.7	12 52.3 -36.1 103.0	12 04.4 -36.0 102.4	11 16.3 -35.8 101.8
4°	13 51.3 -36.6 105.1	13 03.8 -36.5 104.5	12 16.2 -36.3 103.9	11 28.4 -36.2 103.2	10 40.5 -36.0 102.6
5°	13 14.7 -36.8 105.9	12 27.3 -36.6 105.3	11 39.9 -36.5 104.7	10 52.2 -36.2 104.1	10 04.5 -36.1 103.4
6°	12 37.9 -37.0 106.7	11 50.7 -36.7 106.1	11 03.4 -36.5 105.5	10 16.0 -36.4 104.9	9 28.4 -36.2 104.3
7°	12 00.9 -37.1 107.5	11 14.0 -36.9 106.9	10 26.9 -36.7 106.3	9 39.6 -36.4 105.7	8 52.2 -36.3 105.1
8°	11 23.8 -37.2 108.3	10 37.1 -37.0 107.7	9 50.2 -36.8 107.1	9 03.2 -36.6 106.5	8 15.9 -36.3 105.9
9°	10 46.6 -37.3 109.1	10 00.1 -37.1 108.5	9 13.4 -36.9 107.9	8 26.6 -36.7 107.3	7 39.6 -36.5 106.7
10°	10 09.3 -37.5 109.9	9 23.0 -37.2 109.3	8 36.5 -37.0 108.7	7 49.9 -36.8 108.1	7 03.1 -36.6 107.5
11°	9 31.8 -37.5 110.7	8 45.8 -37.3 110.1	7 59.5 -37.1 109.5	7 13.1 -36.8 108.9	6 26.5 -36.6 108.3
12°	8 54.3 -37.7 111.5	8 08.5 -37.5 110.9	7 22.4 -37.1 110.3	6 36.3 -37.0 109.7	5 49.9 -36.7 109.1
13°	8 16.6 -37.7 112.3	7 31.0 -37.4 111.7	6 45.3 -37.3 111.1	5 59.3 -37.0 110.5	5 13.2 -36.8 109.9
14°	7 38.9 -37.9 113.1	6 53.6 -37.6 112.5	6 08.0 -37.3 111.9	5 22.3 -37.0 111.3	4 36.4 -36.8 110.7
15°	7 01.0 -37.9 113.9	6 16.0 -37.7 113.3	5 30.7 -37.4 112.6	4 45.3 -37.2 112.0	3 59.6 -36.9 111.4
16°	6 23.1 -38.0 114.6	5 38.3 -37.7 114.0	4 53.3 -37.4 113.4	4 08.1 -37.1 112.8	3 22.7 -36.8 112.2
17°	5 45.1 -38.0 115.4	5 00.6 -37.7 114.8	4 15.9 -37.5 114.2	3 31.0 -37.2 113.6	2 45.9 -37.0 113.0
18°	5 07.1 -38.1 116.2	4 22.9 -37.8 115.6	3 38.4 -37.5 115.0	2 53.8 -37.2 114.4	2 08.9 -36.9 113.8
19°	4 29.0 -38.2 117.0	3 45.1 -37.9 116.4	3 00.9 -37.5 115.8	2 16.6 -37.3 115.2	1 32.0 -37.0 114.6
20°	3 50.8 -38.2 117.7	3 07.2 -37.9 117.1	2 23.4 -37.6 116.6	1 39.3 -37.3 116.0	0 55.0 -37.0 115.4
21°	3 12.6 -38.2 118.5	2 29.3 -37.9 117.9	1 45.8 -37.6 117.3	1 02.0 -37.3 116.8	0 18.0 -37.0 116.2
22°	2 34.4 -38.2 119.3	1 51.4 -37.9 118.7	1 08.2 -37.6 118.1	0 24.7 -37.3 117.5	-0 19.0 -36.9
23°	1 56.2 -38.3 120.1	1 13.5 -38.0 119.5	0 30.6 -37.6 118.9	-0 12.6 -37.3	-0 55.9 -37.0
24°	1 17.9 -38.3 120.8	0 35.5 -37.9 120.3	-0 07.0 -37.7	-0 49.9 -37.2	-1 32.9 -37.0
25°	0 39.6 -38.3 121.6	-0 02.4 -38.0	-0 44.7 -37.6	-1 27.1 -37.3	-2 09.9 -36.9
26°	0 01.3 -38.3 122.4	-0 40.4 -37.9	-1 22.3 -37.6	-2 04.4 -37.3	-2 46.8 -36.9
27°	-0 37.0 -38.3	-1 18.3 -37.9	-1 59.9 -37.5	-2 41.7 -37.2	-3 23.7 -36.9
28°	-1 15.3 -38.3	-1 56.2 -37.9	-2 37.4 -37.6	-3 18.9 -37.1	-4 00.6 -36.8
29°	-1 53.6 -38.2	-2 34.1 -37.9	-3 15.0 -37.5	-3 56.0 -37.2	-4 37.4 -36.7

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°	12 14.4 -35.3 98.7	11 25.8 -35.2 98.1	10 37.1 -35.1 97.5	9 48.4 -35.0 97.0	8 59.5 -34.9 96.4
1°	11 39.1 -35.4 99.6	10 50.6 -35.3 99.0	10 02.0 -35.2 98.4	9 13.4 -35.1 97.8	8 24.6 -35.0 97.2
2°	11 03.7 -35.6 100.4	10 15.3 -35.4 99.8	9 26.8 -35.3 99.2	8 38.3 -35.2 98.6	7 49.6 -35.1 98.0
3°	10 28.1 -35.6 101.2	9 39.9 -35.6 100.6	8 51.5 -35.4 100.0	8 03.1 -35.3 99.4	7 14.5 -35.1 98.8
4°	9 52.5 -35.9 102.0	9 04.3 -35.6 101.4	8 16.1 -35.5 100.8	7 27.8 -35.4 100.2	6 39.4 -35.3 99.6
5°	9 16.6 -35.9 102.8	8 28.7 -35.8 102.2	7 40.6 -35.6 101.6	6 52.4 -35.5 101.0	6 04.1 -35.3 100.5
6°	8 40.7 -36.0 103.6	7 52.9 -35.8 103.0	7 05.0 -35.7 102.5	6 16.9 -35.5 101.9	5 28.8 -35.4 101.3
7°	8 04.7 -36.1 104.5	7 17.1 -36.0 103.9	6 29.3 -35.8 103.3	5 41.4 -35.6 102.7	4 53.4 -35.5 102.1
8°	7 28.6 -36.2 105.3	6 41.1 -36.0 104.7	5 53.5 -35.8 104.1	5 05.8 -35.7 103.5	4 17.9 -35.5 102.9
9°	6 52.4 -36.3 106.1	6 05.1 -36.1 105.5	5 17.7 -35.9 104.9	4 30.1 -35.7 104.3	3 42.4 -35.5 103.7
10°	6 16.1 -36.3 106.9	5 29.0 -36.1 106.3	4 41.8 -36.0 105.7	3 54.4 -35.8 105.1	3 06.9 -35.6 104.5
11°	5 39.8 -36.5 107.7	4 52.9 -36.3 107.1	4 05.8 -36.0 106.5	3 18.6 -35.8 105.9	2 31.3 -35.7 105.3
12°	5 03.3 -36.4 108.5	4 16.6 -36.2 107.9	3 29.8 -36.1 107.3	2 42.8 -35.9 106.7	1 55.6 -35.6 106.1
13°	4 26.9 -36.6 109.3	3 40.4 -36.3 108.7	2 53.7 -36.0 108.1	2 06.9 -35.8 107.5	1 20.0 -35.7 106.9
14°	3 50.3 -36.5 110.1	3 04.1 -36.3 109.5	2 17.7 -36.1 108.9	1 31.1 -35.9 108.3	0 44.3 -35.6 107.7
15°	3 13.8 -36.6 110.9	2 27.8 -36.4 110.3	1 41.6 -36.2 109.7	0 55.2 -35.9 109.1	0 08.7 -35.7 108.5
16°	2 37.2 -36.7 111.6	1 51.4 -36.4 111.1	1 05.4 -36.1 110.5	0 19.3 -35.9 109.9	-0 27.0 -35.7
17°	2 00.5 -36.6 112.4	1 15.0 -36.4 111.9	0 29.3 -36.2 111.3	-0 16.6 -35.9	-1 02.7 -35.6
18°	1 23.9 -36.7 113.2	0 38.6 -36.4 112.7	-0 06.9 -36.1	-0 52.5 -35.9	-1 38.3 -35.6
19°	0 47.2 -36.7 114.0	0 02.2 -36.4 113.4	-0 43.0 -36.1	-1 28.4 -35.8	-2 13.9 -35.6
20°	0 10.5 -36.7 114.8	-0 34.2 -36.4	-1 19.1 -36.2	-2 04.2 -35.9	-2 49.5 -35.6
21°	-0 26.2 -36.7	-1 10.6 -36.4	-1 55.3 -36.1	-2 40.1 -35.8	-3 25.1 -35.6
22°	-1 02.9 -36.7	-1 47.0 -36.4	-2 31.4 -36.0	-3 15.9 -35.8	-4 00.7 -35.4
23°	-1 39.6 -36.6	-2 23.4 -36.3	-3 07.4 -36.1	-3 51.7 -35.7	-4 36.1 -35.5
24°	-2 16.2 -36.6	-2 59.7 -36.3	-3 43.5 -36.0	-4 27.4 -35.7	-5 11.6 -35.3
25°	-2 52.8 -36.6	-3 36.0 -36.3	-4 19.5 -35.9	-5 03.1 -35.6	-5 46.9 -35.3
26°	-3 29.4 -36.6	-4 12.3 -36.2	-4 55.4 -35.9	-5 38.7 -35.5	-6 22.2 -35.2
27°	-4 06.0 -36.5	-4 48.5 -36.2	-5 31.3 -35.8	-6 14.2 -35.5	-6 57.4 -35.2
28°	-4 42.5 -36.4	-5 24.7 -36.1	-6 07.1 -35.7	-6 49.7 -35.4	-7 32.6 -35.0
29°	-5 18.9 -36.4	-6 00.8 -36.0	-6 42.8 -35.7	-7 25.1 -35.3	-8 07.6 -35.0

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°	8 10.7 -34.9 95.8	7 21.7 -34.7 95.2	6 32.8 -34.7 94.6	5 43.8 -34.7 94.0	4 54.7 -34.6 93.4
1°	7 35.8 -34.9 96.6	6 47.0 -34.8 96.0	5 58.1 -34.8 95.4	5 09.1 -34.6 94.8	4 20.1 -34.6 94.3
2°	7 00.9 -35.0 97.4	6 12.2 -34.9 96.8	5 23.3 -34.8 96.2	4 34.5 -34.8 95.7	3 45.5 -34.6 95.1
3°	6 25.9 -35.0 98.2	5 37.3 -35.0 97.6	4 48.5 -34.9 97.1	3 59.7 -34.8 96.5	3 10.9 -34.8 95.9
4°	5 50.9 -35.2 99.1	5 02.3 -35.0 98.5	4 13.6 -34.9 97.9	3 24.9 -34.8 97.3	2 36.1 -34.7 96.7
5°	5 15.7 -35.2 99.9	4 27.3 -35.1 99.3	3 38.7 -35.0 98.7	2 50.1 -34.9 98.1	2 01.4 -34.8 97.5
6°	4 40.5 -35.2 100.7	3 52.2 -35.2 100.1	3 03.7 -35.0 99.5	2 15.2 -34.9 98.9	1 26.6 -34.7 98.4
7°	4 05.3 -35.4 101.5	3 17.0 -35.1 100.9	2 28.7 -35.0 100.3	1 40.3 -34.9 99.7	0 51.9 -34.8 99.2
8°	3 29.9 -35.3 102.3	2 41.9 -35.2 101.7	1 53.7 -35.1 101.1	1 05.4 -34.9 100.6	0 17.1 -34.8 100.0
9°	2 54.6 -35.4 103.1	2 06.7 -35.3 102.5	1 18.6 -35.0 101.9	0 30.5 -34.9 101.4	-0 17.7 -34.8
10°	2 19.2 -35.4 103.9	1 31.4 -35.2 103.3	0 43.6 -35.1 102.8	-0 04.4 -35.0	-0 52.5 -34.8
11°	1 43.8 -35.4 104.7	0 56.2 -35.3 104.1	0 08.5 -35.1 103.6	-0 39.4 -34.9	-1 27.3 -34.8
12°	1 08.4 -35.5 105.5	0 20.9 -35.2 105.0	-0 26.6 -35.1	-1 14.3 -34.9	-2 02.1 -34.7
13°	0 32.9 -35.4 106.3	-0 14.3 -35.3	-1 01.7 -35.1	-1 49.2 -34.9	-2 36.8 -34.7
14°	-0 02.5 -35.5	-0 49.6 -35.2	-1 36.8 -35.0	-2 24.1 -34.8	-3 11.5 -34.7
15°	-0 38.0 -35.5	-1 24.8 -35.3	-2 11.8 -35.0	-2 58.9 -34.8	-3 46.2 -34.6
16°	-1 13.5 -35.4	-2 00.1 -35.2	-2 46.8 -35.0	-3 33.7 -34.8	-4 20.8 -34.6
17°	-1 48.9 -35.4	-2 35.3 -35.2	-3 21.8 -35.0	-4 08.5 -34.8	-4 55.4 -34.5
18°	-2 24.3 -35.4	-3 10.5 -35.1	-3 56.8 -34.9	-4 43.3 -34.6	-5 29.9 -34.4
19°	-2 59.7 -35.3	-3 45.6 -35.1	-4 31.7 -34.8	-5 17.9 -34.6	-6 04.3 -34.4
20°	-3 35.0 -35.3	-4 20.7 -35.0	-5 06.5 -34.8	-5 52.5 -34.6	-6 38.7 -34.3
21°	-4 10.3 -35.3	-4 55.7 -35.0	-5 41.3 -34.7	-6 27.1 -34.4	-7 13.0 -34.2
22°	-4 45.6 -35.2	-5 30.7 -34.9	-6 16.0 -34.7	-7 01.5 -34.4	-7 47.2 -34.1
23°	-5 20.8 -35.1	-6 05.6 -34.9	-6 50.7 -34.5	-7 35.9 -34.2	-8 21.3 -34.0
24°	-5 55.9 -35.1	-6 40.5 -34.7	-7 25.2 -34.5	-8 10.1 -34.2	-8 55.3 -33.8
25°	-6 31.0 -35.0	-7 15.2 -34.7	-7 59.7 -34.3	-8 44.3 -34.1	-9 29.1 -33.8
26°	-7 06.0 -34.9	-7 49.9 -34.6	-8 34.0 -34.3	-9 18.4 -33.9	
27°	-7 40.9 -34.8	-8 24.5 -34.5	-9 08.3 -34.1	-9 52.3 -33.8	
28°	-8 15.7 -34.7	-8 59.0 -34.3	-9 42.4 -34.1		
29°	-8 50.4 -34.6	-9 33.3 -34.3			

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°	4 05.6 -34.5 92.9	3 16.5 -34.4 92.3	2 27.4 -34.4 91.7	1 38.3 -34.4 91.1	0 49.1 -34.4 90.6
1°	3 31.1 -34.6 93.7	2 42.1 -34.6 93.1	1 53.0 -34.5 92.5	1 03.9 -34.5 92.0	0 14.7 -34.4 91.4
2°	2 56.5 -34.6 94.5	2 07.5 -34.5 93.9	1 18.5 -34.5 93.4	0 29.4 -34.5 92.8	-0 19.7 -34.4
3°	2 21.9 -34.6 95.3	1 33.0 -34.6 94.8	0 44.0 -34.5 94.2	-0 05.1 -34.4	-0 54.1 -34.4
4°	1 47.3 -34.6 96.1	0 58.4 -34.6 95.6	0 09.5 -34.5 95.0	-0 39.5 -34.5	-1 28.5 -34.4
5°	1 12.7 -34.7 97.0	0 23.8 -34.5 96.4	-0 25.0 -34.5	-1 14.0 -34.4	-2 02.9 -34.4
6°	0 38.0 -34.7 97.8	-0 10.7 -34.6	-0 59.5 -34.5	-1 48.4 -34.4	-2 37.3 -34.3
7°	0 03.3 -34.7 98.6	-0 45.3 -34.6	-1 34.0 -34.5	-2 22.8 -34.4	-3 11.6 -34.3
8°	-0 31.4 -34.7	-1 19.9 -34.6	-2 08.5 -34.5	-2 57.2 -34.3	-3 45.9 -34.3
9°	-1 06.1 -34.6	-1 54.5 -34.5	-2 43.0 -34.4	-3 31.5 -34.3	-4 20.2 -34.2
10°	-1 40.7 -34.6	-2 29.0 -34.5	-3 17.4 -34.3	-4 05.8 -34.3	-4 54.4 -34.1
11°	-2 15.3 -34.7	-3 03.5 -34.5	-3 51.7 -34.4	-4 40.1 -34.2	-5 28.5 -34.1
12°	-2 50.0 -34.5	-3 38.0 -34.4	-4 26.1 -34.2	-5 14.3 -34.1	-6 02.6 -34.0
13°	-3 24.5 -34.6	-4 12.4 -34.4	-5 00.3 -34.2	-5 48.4 -34.1	-6 36.6 -33.9
14°	-3 59.1 -34.5	-4 46.8 -34.3	-5 34.5 -34.2	-6 22.5 -33.9	-7 10.5 -33.8
15°	-4 33.6 -34.4	-5 21.1 -34.2	-6 08.7 -34.1	-6 56.4 -33.9	-7 44.3 -33.7
16°	-5 08.0 -34.4	-5 55.3 -34.2	-6 42.8 -33.9	-7 30.3 -33.8	-8 18.0 -33.6
17°	-5 42.4 -34.3	-6 29.5 -34.1	-7 16.7 -33.9	-8 04.1 -33.7	-8 51.6 -33.5
18°	-6 16.7 -34.2	-7 03.6 -34.0	-7 50.6 -33.8	-8 37.8 -33.6	-9 25.1 -33.4
19°	-6 50.9 -34.1	-7 37.6 -33.9	-8 24.4 -33.7	-9 11.4 -33.5	-9 58.5 -33.3
20°	-7 25.0 -34.1	-8 11.5 -33.8	-8 58.1 -33.6	-9 44.9 -33.3	
21°	-7 59.1 -33.9	-8 45.3 -33.7	-9 31.7 -33.4		
22°	-8 33.0 -33.8	-9 19.0 -33.6			
23°	-9 06.8 -33.7	-9 52.6 -33.4			
24°	-9 40.5 -33.6				
25°					
26°					
27°					
28°					
29°					

Latitude 35°

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 -34.4 90.0	-0 49.1 -34.5			
1°	-0 34.4 -34.4	-1 23.6 -34.4			
2°	-1 08.8 -34.4	-1 58.0 -34.3			
3°	-1 43.2 -34.4	-2 32.3 -34.4			
4°	-2 17.6 -34.3	-3 06.7 -34.3			
5°	-2 51.9 -34.3	-3 41.0 -34.2			
6°	-3 26.2 -34.3	-4 15.2 -34.2			
7°	-4 00.5 -34.2	-4 49.4 -34.2			
8°	-4 34.7 -34.2	-5 23.6 -34.0			
9°	-5 08.9 -34.1	-5 57.6 -34.0			
10°	-5 43.0 -34.0	-6 31.6 -34.0			
11°	-6 17.0 -33.9	-7 05.6 -33.8			
12°	-6 50.9 -33.9	-7 39.4 -33.7			
13°	-7 24.8 -33.8	-8 13.1 -33.7			
14°	-7 58.6 -33.6	-8 46.8 -33.5			
15°	-8 32.2 -33.6	-9 20.3 -33.4			
16°	-9 05.8 -33.4	-9 53.7 -33.3			
17°	-9 39.2 -33.4				
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

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

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

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	54 00.0 -60.0 180.0	53 59.3 -60.0 178.3	53 57.1 -59.9 176.6	53 53.5 -59.8 174.9	53 48.5 -59.7 173.2
1°	53 00.0 -60.0 180.0	52 59.3 -60.0 178.3	52 57.2 -59.9 176.7	52 53.7 -59.9 175.0	52 48.8 -59.8 173.4
2°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.4	51 57.3 -60.0 176.8	51 53.8 -59.8 175.1	51 49.0 -59.7 173.5
3°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.4	50 57.3 -59.9 176.8	50 54.0 -59.9 175.2	50 49.3 -59.8 173.7
4°	50 00.0 -60.0 180.0	49 59.3 -59.9 178.4	49 57.4 -60.0 176.9	49 54.1 -59.9 175.4	49 49.5 -59.8 173.8
5°	49 00.0 -60.0 180.0	48 59.4 -60.0 178.5	48 57.4 -59.9 177.0	48 54.2 -59.9 175.5	48 49.7 -59.8 173.9
6°	48 00.0 -60.0 180.0	47 59.4 -60.0 178.5	47 57.5 -60.0 177.0	47 54.3 -59.8 175.5	47 49.9 -59.7 174.1
7°	47 00.0 -60.0 180.0	46 59.4 -60.0 178.5	46 57.5 -59.9 177.1	46 54.5 -59.9 175.6	46 50.2 -59.8 174.2
8°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.6	45 57.6 -60.0 177.2	45 54.6 -59.9 175.7	45 50.4 -59.9 174.3
9°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.6	44 57.6 -59.9 177.2	44 54.7 -59.9 175.8	44 50.5 -59.8 174.4
10°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.6	43 57.7 -60.0 177.3	43 54.8 -59.9 175.9	43 50.7 -59.8 174.5
11°	43 00.0 -60.0 180.0	42 59.4 -60.0 178.7	42 57.7 -59.9 177.3	42 54.9 -59.9 176.0	42 50.9 -59.8 174.6
12°	42 00.0 -60.0 180.0	41 59.4 -59.9 178.7	41 57.8 -60.0 177.4	41 55.0 -59.9 176.1	41 51.1 -59.8 174.7
13°	41 00.0 -60.0 180.0	40 59.5 -60.0 178.7	40 57.8 -59.9 177.4	40 55.1 -59.9 176.1	40 51.3 -59.9 174.8
14°	40 00.0 -60.0 180.0	39 59.5 -60.0 178.7	39 57.9 -60.0 177.5	39 55.2 -59.9 176.2	39 51.4 -59.8 174.9
15°	39 00.0 -60.0 180.0	38 59.5 -60.0 178.8	38 57.9 -60.0 177.5	38 55.3 -59.9 176.3	38 51.6 -59.9 175.0
16°	38 00.0 -60.0 180.0	37 59.5 -60.0 178.8	37 57.9 -59.9 177.6	37 55.4 -60.0 176.3	37 51.7 -59.8 175.1
17°	37 00.0 -60.0 180.0	36 59.5 -60.0 178.8	36 58.0 -60.0 177.6	36 55.4 -59.9 176.4	36 51.9 -59.9 175.2
18°	36 00.0 -60.0 180.0	35 59.5 -60.0 178.8	35 58.0 -60.0 177.6	35 55.5 -59.9 176.5	35 52.0 -59.8 175.3
19°	35 00.0 -60.0 180.0	34 59.5 -60.0 178.8	34 58.0 -59.9 177.7	34 55.6 -59.9 176.5	34 52.2 -59.9 175.4
20°	34 00.0 -60.0 180.0	33 59.5 -60.0 178.9	33 58.1 -60.0 177.7	33 55.7 -59.9 176.6	33 52.3 -59.8 175.5
21°	33 00.0 -60.0 180.0	32 59.5 -60.0 178.9	32 58.1 -60.0 177.8	32 55.8 -60.0 176.7	32 52.5 -59.9 175.6
22°	32 00.0 -60.0 180.0	31 59.5 -60.0 178.9	31 58.1 -59.9 177.8	31 55.8 -59.9 176.7	31 52.6 -59.9 175.6
23°	31 00.0 -60.0 180.0	30 59.5 -59.9 178.9	30 58.2 -60.0 177.9	30 55.9 -59.9 176.8	30 52.7 -59.8 175.7
24°	30 00.0 -60.0 180.0	29 59.6 -60.0 178.9	29 58.2 -60.0 177.9	29 56.0 -59.9 176.8	29 52.9 -59.9 175.8
25°	29 00.0 -60.0 180.0	28 59.6 -60.0 179.0	28 58.2 -59.9 177.9	28 56.1 -60.0 176.9	28 53.0 -59.9 175.9
26°	28 00.0 -60.0 180.0	27 59.6 -60.0 179.0	27 58.3 -60.0 178.0	27 56.1 -59.9 176.9	27 53.1 -59.9 175.9
27°	27 00.0 -60.0 180.0	26 59.6 -60.0 179.0	26 58.3 -60.0 178.0	26 56.2 -59.9 177.0	26 53.2 -59.9 176.0
28°	26 00.0 -60.0 180.0	25 59.6 -60.0 179.0	25 58.3 -59.9 178.0	25 56.3 -60.0 177.1	25 53.3 -59.8 176.1
29°	25 00.0 -60.0 180.0	24 59.6 -60.0 179.0	24 58.4 -60.0 178.1	24 56.3 -59.9 177.1	24 53.5 -59.9 176.1

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°	53 42.1 -59.6 171.5	53 34.2 -59.4 169.9	53 25.0 -59.2 168.2	53 14.4 -59.0 166.6	53 02.4 -58.7 164.9
1°	52 42.5 -59.6 171.7	52 34.8 -59.4 170.1	52 25.8 -59.2 168.5	52 15.4 -59.0 166.9	52 03.7 -58.7 165.3
2°	51 42.9 -59.6 171.9	51 35.4 -59.5 170.3	51 26.6 -59.3 168.7	51 16.4 -59.0 167.2	51 05.0 -58.8 165.6
3°	50 43.3 -59.7 172.1	50 35.9 -59.4 170.5	50 27.3 -59.3 169.0	50 17.4 -59.1 167.4	50 06.2 -58.9 165.9
4°	49 43.6 -59.6 172.3	49 36.5 -59.5 170.7	49 28.0 -59.3 169.2	49 18.3 -59.1 167.7	49 07.3 -58.9 166.2
5°	48 44.0 -59.7 172.4	48 37.0 -59.6 170.9	48 28.7 -59.4 169.4	48 19.2 -59.2 168.0	48 08.4 -58.9 166.5
6°	47 44.3 -59.7 172.6	47 37.4 -59.5 171.1	47 29.3 -59.3 169.7	47 20.0 -59.2 168.2	47 09.5 -59.0 166.8
7°	46 44.6 -59.7 172.7	46 37.9 -59.5 171.3	46 30.0 -59.4 169.9	46 20.8 -59.2 168.5	46 10.5 -59.0 167.0
8°	45 44.9 -59.7 172.9	45 38.4 -59.6 171.5	45 30.6 -59.4 170.1	45 21.6 -59.2 168.7	45 11.5 -59.0 167.3
9°	44 45.2 -59.7 173.0	44 38.8 -59.6 171.7	44 31.2 -59.5 170.3	44 22.4 -59.3 168.9	44 12.5 -59.1 167.6
10°	43 45.5 -59.7 173.2	43 39.2 -59.6 171.8	43 31.7 -59.4 170.5	43 23.1 -59.3 169.1	43 13.4 -59.1 167.8
11°	42 45.8 -59.7 173.3	42 39.6 -59.6 172.0	42 32.3 -59.5 170.7	42 23.8 -59.3 169.3	42 14.3 -59.1 168.0
12°	41 46.1 -59.7 173.4	41 40.0 -59.6 172.1	41 32.8 -59.5 170.8	41 24.5 -59.3 169.5	41 15.2 -59.2 168.3
13°	40 46.4 -59.8 173.6	40 40.4 -59.7 172.3	40 33.3 -59.5 171.0	40 25.2 -59.3 169.7	40 16.0 -59.1 168.5
14°	39 46.6 -59.7 173.7	39 40.7 -59.6 172.4	39 33.8 -59.5 171.2	39 25.9 -59.4 169.9	39 16.9 -59.2 168.7
15°	38 46.9 -59.8 173.8	38 41.1 -59.6 172.6	38 34.3 -59.5 171.3	38 26.5 -59.4 170.1	38 17.7 -59.3 168.9
16°	37 47.1 -59.8 173.9	37 41.5 -59.7 172.7	37 34.8 -59.6 171.5	37 27.1 -59.4 170.3	37 18.4 -59.2 169.1
17°	36 47.3 -59.7 174.0	36 41.8 -59.7 172.8	36 35.2 -59.5 171.7	36 27.7 -59.4 170.5	36 19.2 -59.3 169.3
18°	35 47.6 -59.8 174.1	35 42.1 -59.7 173.0	35 35.7 -59.6 171.8	35 28.3 -59.4 170.6	35 19.9 -59.3 169.5
19°	34 47.8 -59.8 174.2	34 42.4 -59.6 173.1	34 36.1 -59.5 172.0	34 28.9 -59.5 170.8	34 20.6 -59.3 169.7
20°	33 48.0 -59.8 174.3	33 42.8 -59.7 173.2	33 36.6 -59.6 172.1	33 29.4 -59.4 171.0	33 21.3 -59.3 169.9
21°	32 48.2 -59.8 174.4	32 43.1 -59.7 173.3	32 37.0 -59.6 172.2	32 30.0 -59.5 171.1	32 22.0 -59.3 170.0
22°	31 48.4 -59.8 174.5	31 43.4 -59.7 173.5	31 37.4 -59.6 172.4	31 30.5 -59.5 171.3	31 22.7 -59.4 170.2
23°	30 48.6 -59.8 174.6	30 43.7 -59.8 173.6	30 37.8 -59.6 172.5	30 31.0 -59.5 171.4	30 23.3 -59.3 170.4
24°	29 48.8 -59.8 174.7	29 43.9 -59.7 173.7	29 38.2 -59.6 172.6	29 31.5 -59.5 171.6	29 24.0 -59.4 170.6
25°	28 49.0 -59.8 174.8	28 44.2 -59.7 173.8	28 38.6 -59.7 172.8	28 32.0 -59.5 171.7	28 24.6 -59.4 170.7
26°	27 49.2 -59.8 174.9	27 44.5 -59.7 173.9	27 38.9 -59.6 172.9	27 32.5 -59.5 171.9	27 25.2 -59.4 170.9
27°	26 49.4 -59.8 175.0	26 44.8 -59.8 174.0	26 39.3 -59.6 173.0	26 33.0 -59.5 172.0	26 25.8 -59.4 171.0
28°	25 49.6 -59.8 175.1	25 45.0 -59.7 174.1	25 39.7 -59.7 173.1	25 33.5 -59.6 172.2	25 26.4 -59.4 171.2
29°	24 49.8 -59.8 175.2	24 45.3 -59.7 174.2	24 40.0 -59.6 173.3	24 33.9 -59.5 172.3	24 27.0 -59.4 171.4

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°	52 49.1 -58.4 163.3	52 34.5 -58.1 161.7	52 18.6 -57.7 160.1	52 01.5 -57.4 158.6	51 43.2 -57.0 157.0
1°	51 50.7 -58.4 163.7	51 36.4 -58.1 162.1	51 20.9 -57.8 160.6	51 04.1 -57.4 159.0	50 46.2 -57.1 157.5
2°	50 52.3 -58.6 164.0	50 38.3 -58.2 162.5	50 23.1 -57.9 161.0	50 06.7 -57.6 159.5	49 49.1 -57.3 158.0
3°	49 53.7 -58.5 164.4	49 40.1 -58.3 162.9	49 25.2 -58.0 161.4	49 09.1 -57.7 159.9	48 51.8 -57.3 158.5
4°	48 55.2 -58.7 164.7	48 41.8 -58.4 163.2	48 27.2 -58.1 161.8	48 11.4 -57.8 160.3	47 54.5 -57.4 158.9
5°	47 56.5 -58.7 165.0	47 43.4 -58.4 163.6	47 29.1 -58.2 162.2	47 13.6 -57.8 160.7	46 57.1 -57.6 159.3
6°	46 57.8 -58.7 165.3	46 45.0 -58.5 163.9	46 30.9 -58.2 162.5	46 15.8 -57.9 161.1	45 59.5 -57.6 159.7
7°	45 59.1 -58.8 165.6	45 46.5 -58.6 164.2	45 32.7 -58.2 162.9	45 17.9 -58.0 161.5	45 01.9 -57.7 160.1
8°	45 00.3 -58.8 165.9	44 47.9 -58.6 164.6	44 34.5 -58.4 163.2	44 19.9 -58.1 161.9	44 04.2 -57.7 160.5
9°	44 01.5 -58.9 166.2	43 49.3 -58.6 164.9	43 36.1 -58.4 163.5	43 21.8 -58.1 162.2	43 06.5 -57.9 160.9
10°	43 02.6 -58.9 166.5	42 50.7 -58.7 165.1	42 37.7 -58.4 163.8	42 23.7 -58.2 162.5	42 08.6 -57.9 161.3
11°	42 03.7 -58.9 166.7	41 52.0 -58.7 165.4	41 39.3 -58.5 164.1	41 25.5 -58.2 162.9	41 10.7 -57.9 161.6
12°	41 04.8 -59.0 167.0	40 53.3 -58.7 165.7	40 40.8 -58.5 164.4	40 27.3 -58.3 163.2	40 12.8 -58.1 161.9
13°	40 05.8 -59.0 167.2	39 54.6 -58.8 166.0	39 42.3 -58.6 164.7	39 29.0 -58.3 163.5	39 14.7 -58.1 162.3
14°	39 06.8 -59.0 167.5	38 55.8 -58.8 166.2	38 43.7 -58.6 165.0	38 30.7 -58.4 163.8	38 16.6 -58.1 162.6
15°	38 07.8 -59.0 167.7	37 57.0 -58.9 166.5	37 45.1 -58.6 165.3	37 32.3 -58.4 164.1	37 18.5 -58.2 162.9
16°	37 08.8 -59.1 167.9	36 58.1 -58.9 166.7	36 46.5 -58.7 165.6	36 33.9 -58.5 164.4	36 20.3 -58.2 163.2
17°	36 09.7 -59.1 168.1	35 59.2 -58.9 167.0	35 47.8 -58.7 165.8	35 35.4 -58.5 164.7	35 22.1 -58.3 163.5
18°	35 10.6 -59.1 168.3	35 00.3 -58.9 167.2	34 49.1 -58.8 166.1	34 36.9 -58.5 164.9	34 23.8 -58.3 163.8
19°	34 11.5 -59.2 168.6	34 01.4 -59.0 167.4	33 50.3 -58.7 166.3	33 38.4 -58.6 165.2	33 25.5 -58.3 164.1
20°	33 12.3 -59.1 168.8	33 02.4 -59.0 167.6	32 51.6 -58.8 166.6	32 39.8 -58.6 165.5	32 27.2 -58.4 164.4
21°	32 13.2 -59.2 169.0	32 03.4 -59.0 167.9	31 52.8 -58.9 166.8	31 41.2 -58.6 165.7	31 28.8 -58.4 164.6
22°	31 14.0 -59.2 169.1	31 04.4 -59.0 168.1	30 53.9 -58.8 167.0	30 42.6 -58.6 166.0	30 30.4 -58.4 164.9
23°	30 14.8 -59.2 169.3	30 05.4 -59.1 168.3	29 55.1 -58.9 167.2	29 44.0 -58.7 166.2	29 32.0 -58.5 165.2
24°	29 15.6 -59.2 169.5	29 06.3 -59.0 168.5	28 56.2 -58.9 167.5	28 45.3 -58.7 166.4	28 33.5 -58.5 165.4
25°	28 16.4 -59.3 169.7	28 07.3 -59.1 168.7	27 57.3 -58.9 167.7	27 46.6 -58.8 166.7	27 35.0 -58.6 165.7
26°	27 17.1 -59.2 169.9	27 08.2 -59.1 168.9	26 58.4 -58.9 167.9	26 47.8 -58.7 166.9	26 36.4 -58.5 165.9
27°	26 17.9 -59.3 170.1	26 09.1 -59.1 169.1	25 59.5 -59.0 168.1	25 49.1 -58.8 167.1	25 37.9 -58.6 166.2
28°	25 18.6 -59.3 170.2	25 10.0 -59.1 169.3	25 00.5 -58.9 168.3	24 50.3 -58.8 167.4	24 39.3 -58.6 166.4
29°	24 19.3 -59.3 170.4	24 10.9 -59.2 169.5	24 01.6 -59.0 168.5	23 51.5 -58.8 167.6	23 40.7 -58.6 166.6

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°	51 23.6 -56.6 155.5	51 02.9 -56.2 154.0	50 41.1 -55.8 152.5	50 18.1 -55.3 151.1	49 54.1 -54.9 149.6
1°	50 27.0 -56.7 156.0	50 06.7 -56.3 154.5	49 45.3 -55.9 153.1	49 22.8 -55.5 151.7	48 59.2 -55.0 150.3
2°	49 30.3 -56.9 156.5	49 10.4 -56.5 155.1	48 49.4 -56.1 153.7	48 27.3 -55.6 152.2	48 04.2 -55.2 150.9
3°	48 33.4 -56.9 157.0	48 13.9 -56.6 155.6	47 53.3 -56.2 154.2	47 31.7 -55.8 152.8	47 09.0 -55.4 151.4
4°	47 36.5 -57.1 157.5	47 17.3 -56.7 156.1	46 57.1 -56.3 154.7	46 35.9 -56.0 153.3	46 13.6 -55.6 152.0
5°	46 39.4 -57.2 157.9	46 20.6 -56.8 156.6	46 00.8 -56.5 155.2	45 39.9 -56.1 153.9	45 18.0 -55.7 152.5
6°	45 42.2 -57.3 158.4	45 23.8 -57.0 157.0	45 04.3 -56.6 155.7	44 43.8 -56.2 154.4	44 22.3 -55.8 153.1
7°	44 44.9 -57.4 158.8	44 26.8 -57.0 157.5	44 07.7 -56.7 156.2	43 47.6 -56.4 154.9	43 26.5 -56.0 153.6
8°	43 47.5 -57.4 159.2	43 29.8 -57.2 157.9	43 11.0 -56.8 156.6	42 51.2 -56.4 155.3	42 30.5 -56.1 154.1
9°	42 50.1 -57.6 159.6	42 32.6 -57.2 158.3	42 14.2 -56.9 157.0	41 54.8 -56.6 155.8	41 34.4 -56.2 154.5
10°	41 52.5 -57.6 160.0	41 35.4 -57.3 158.7	41 17.3 -57.0 157.5	40 58.2 -56.7 156.2	40 38.2 -56.4 155.0
11°	40 54.9 -57.7 160.4	40 38.1 -57.4 159.1	40 20.3 -57.1 157.9	40 01.5 -56.7 156.7	39 41.8 -56.4 155.5
12°	39 57.2 -57.7 160.7	39 40.7 -57.5 159.5	39 23.2 -57.2 158.3	39 04.8 -56.9 157.1	38 45.4 -56.5 155.9
13°	38 59.5 -57.8 161.1	38 43.2 -57.5 159.9	38 26.0 -57.2 158.7	38 07.9 -56.9 157.5	37 48.9 -56.6 156.3
14°	38 01.7 -57.9 161.4	37 45.7 -57.6 160.2	37 28.8 -57.3 159.1	37 11.0 -57.0 157.9	36 52.3 -56.7 156.7
15°	37 03.8 -57.9 161.7	36 48.1 -57.6 160.6	36 31.5 -57.4 159.4	36 14.0 -57.1 158.3	35 55.6 -56.8 157.1
16°	36 05.9 -58.0 162.1	35 50.5 -57.8 160.9	35 34.1 -57.4 159.8	35 16.9 -57.1 158.7	34 58.8 -56.8 157.5
17°	35 07.9 -58.0 162.4	34 52.7 -57.7 161.3	34 36.7 -57.5 160.1	34 19.8 -57.3 159.0	34 02.0 -57.0 157.9
18°	34 09.9 -58.1 162.7	33 55.0 -57.8 161.6	33 39.2 -57.6 160.5	33 22.5 -57.2 159.4	33 05.0 -57.0 158.3
19°	33 11.8 -58.1 163.0	32 57.2 -57.9 161.9	32 41.6 -57.6 160.8	32 25.3 -57.4 159.7	32 08.0 -57.0 158.7
20°	32 13.7 -58.2 163.3	31 59.3 -57.9 162.2	31 44.0 -57.6 161.2	31 27.9 -57.4 160.1	31 11.0 -57.1 159.0
21°	31 15.5 -58.2 163.6	31 01.4 -58.0 162.5	30 46.4 -57.7 161.5	30 30.5 -57.4 160.4	30 13.9 -57.2 159.4
22°	30 17.3 -58.2 163.9	30 03.4 -58.0 162.8	29 48.7 -57.8 161.8	29 33.1 -57.5 160.8	29 16.7 -57.2 159.8
23°	29 19.1 -58.3 164.1	29 05.4 -58.0 163.1	28 50.9 -57.8 162.1	28 35.6 -57.5 161.1	28 19.5 -57.3 160.1
24°	28 20.8 -58.2 164.4	28 07.4 -58.1 163.4	27 53.1 -57.8 162.4	27 38.1 -57.6 161.4	27 22.2 -57.3 160.4
25°	27 22.6 -58.4 164.7	27 09.3 -58.1 163.7	26 55.3 -57.9 162.7	26 40.5 -57.6 161.7	26 24.9 -57.4 160.8
26°	26 24.2 -58.3 164.9	26 11.2 -58.1 164.0	25 57.4 -57.9 163.0	25 42.9 -57.7 162.0	25 27.5 -57.4 161.1
27°	25 25.9 -58.4 165.2	25 13.1 -58.2 164.2	24 59.5 -57.9 163.3	24 45.2 -57.7 162.4	24 30.1 -57.5 161.4
28°	24 27.5 -58.4 165.5	24 14.9 -58.2 164.5	24 01.6 -58.0 163.6	23 47.5 -57.7 162.7	23 32.6 -57.4 161.7
29°	23 29.1 -58.4 165.7	23 16.7 -58.2 164.8	23 03.6 -58.0 163.9	22 49.8 -57.8 162.9	22 35.2 -57.6 162.0

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°	49 29.1 -54.4 148.2	49 03.0 -53.9 146.9	48 36.0 -53.5 145.5	48 08.0 -53.0 144.2	47 39.2 -52.5 142.9
1°	48 34.7 -54.6 148.9	48 09.1 -54.2 147.5	47 42.5 -53.7 146.2	47 15.0 -53.2 144.9	46 46.7 -52.8 143.6
2°	47 40.1 -54.8 149.5	47 14.9 -54.3 148.2	46 48.8 -53.9 146.8	46 21.8 -53.4 145.5	45 53.9 -53.0 144.3
3°	46 45.3 -55.0 150.1	46 20.6 -54.6 148.8	45 54.9 -54.1 147.5	45 28.4 -53.7 146.2	45 00.9 -53.2 144.9
4°	45 50.3 -55.2 150.7	45 26.0 -54.7 149.4	45 00.8 -54.3 148.1	44 34.7 -53.8 146.8	44 07.7 -53.4 145.6
5°	44 55.1 -55.3 151.2	44 31.3 -54.9 150.0	44 06.5 -54.4 148.7	43 40.9 -54.1 147.4	43 14.3 -53.6 146.2
6°	43 59.8 -55.4 151.8	43 36.4 -55.1 150.5	43 12.1 -54.7 149.3	42 46.8 -54.2 148.0	42 20.7 -53.9 146.8
7°	43 04.4 -55.6 152.3	42 41.3 -55.2 151.1	42 17.4 -54.8 149.8	41 52.6 -54.5 148.6	41 26.8 -54.0 147.4
8°	42 08.8 -55.8 152.8	41 46.1 -55.3 151.6	41 22.6 -55.0 150.4	40 58.1 -54.5 149.2	40 32.8 -54.1 148.0
9°	41 13.0 -55.8 153.3	40 50.8 -55.5 152.1	40 27.6 -55.1 150.9	40 03.6 -54.7 149.7	39 38.7 -54.3 148.6
10°	40 17.2 -56.0 153.8	39 55.3 -55.6 152.6	39 32.5 -55.2 151.4	39 08.9 -54.9 150.3	38 44.4 -54.5 149.1
11°	39 21.2 -56.1 154.3	38 59.7 -55.7 153.1	38 37.3 -55.4 151.9	38 14.0 -55.0 150.8	37 49.9 -54.6 149.6
12°	38 25.1 -56.1 154.7	38 04.0 -55.9 153.6	37 41.9 -55.5 152.4	37 19.0 -55.1 151.3	36 55.3 -54.8 150.2
13°	37 29.0 -56.3 155.2	37 08.1 -55.9 154.0	36 46.4 -55.6 152.9	36 23.9 -55.2 151.8	36 00.5 -54.8 150.7
14°	36 32.7 -56.4 155.6	36 12.2 -56.1 154.5	35 50.8 -55.7 153.4	35 28.7 -55.4 152.3	35 05.7 -55.0 151.2
15°	35 36.3 -56.5 156.0	35 16.1 -56.1 154.9	34 55.1 -55.8 153.8	34 33.3 -55.4 152.7	34 10.7 -55.1 151.6
16°	34 39.8 -56.5 156.4	34 20.0 -56.2 155.3	33 59.3 -55.9 154.3	33 37.9 -55.6 153.2	33 15.6 -55.3 152.1
17°	33 43.3 -56.6 156.8	33 23.8 -56.3 155.8	33 03.4 -56.0 154.7	32 42.3 -55.7 153.6	32 20.3 -55.3 152.6
18°	32 46.7 -56.7 157.2	32 27.5 -56.4 156.2	32 07.5 -56.1 155.1	31 46.6 -55.7 154.1	31 25.0 -55.4 153.0
19°	31 50.0 -56.8 157.6	31 31.1 -56.5 156.6	31 11.4 -56.2 155.5	30 50.9 -55.8 154.5	30 29.6 -55.5 153.5
20°	30 53.2 -56.8 158.0	30 34.6 -56.5 157.0	30 15.2 -56.2 156.0	29 55.1 -55.9 154.9	29 34.1 -55.6 153.9
21°	29 56.4 -56.9 158.4	29 38.1 -56.6 157.4	29 19.0 -56.3 156.4	28 59.2 -56.0 155.4	28 38.5 -55.6 154.4
22°	28 59.5 -56.9 158.7	28 41.5 -56.7 157.7	28 22.7 -56.3 156.7	28 03.2 -56.1 155.8	27 42.9 -55.8 154.8
23°	28 02.6 -57.0 159.1	27 44.8 -56.7 158.1	27 26.4 -56.5 157.1	27 07.1 -56.1 156.2	26 47.1 -55.8 155.2
24°	27 05.6 -57.1 159.5	26 48.1 -56.7 158.5	26 29.9 -56.4 157.5	26 11.0 -56.2 156.6	25 51.3 -55.8 155.6
25°	26 08.5 -57.1 159.8	25 51.4 -56.9 158.8	25 33.5 -56.6 157.9	25 14.8 -56.2 157.0	24 55.5 -56.0 156.0
26°	25 11.4 -57.2 160.1	24 54.5 -56.8 159.2	24 36.9 -56.6 158.3	24 18.6 -56.3 157.3	23 59.5 -56.0 156.4
27°	24 14.2 -57.1 160.5	23 57.7 -57.0 159.5	23 40.3 -56.6 158.6	23 22.3 -56.4 157.7	23 03.5 -56.1 156.8
28°	23 17.1 -57.3 160.8	23 00.7 -56.9 159.9	22 43.7 -56.7 159.0	22 25.9 -56.4 158.1	22 07.4 -56.1 157.2
29°	22 19.8 -57.3 161.1	22 03.8 -57.0 160.2	21 47.0 -56.7 159.3	21 29.5 -56.4 158.5	21 11.3 -56.1 157.6

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°	47 09.4 -52.0 141.6	46 38.8 -51.5 140.3	46 07.4 -51.0 139.1	45 35.2 -50.5 137.9	45 02.3 -50.1 136.7
1°	46 17.4 -52.3 142.3	45 47.3 -51.8 141.1	45 16.4 -51.3 139.8	44 44.7 -50.8 138.6	44 12.2 -50.3 137.5
2°	45 25.1 -52.5 143.0	44 55.5 -52.0 141.8	44 25.1 -51.6 140.6	43 53.9 -51.2 139.4	43 21.9 -50.7 138.2
3°	44 32.6 -52.7 143.7	44 03.5 -52.4 142.5	43 33.5 -51.9 141.3	43 02.7 -51.4 140.1	42 31.2 -50.9 138.9
4°	43 39.9 -53.0 144.4	43 11.1 -52.5 143.1	42 41.6 -52.1 142.0	42 11.3 -51.6 140.8	41 40.3 -51.2 139.7
5°	42 46.9 -53.2 145.0	42 18.6 -52.7 143.8	41 49.5 -52.3 142.6	41 19.7 -51.9 141.5	40 49.1 -51.4 140.3
6°	41 53.7 -53.4 145.6	41 25.9 -53.0 144.4	40 57.2 -52.5 143.3	40 27.8 -52.1 142.1	39 57.7 -51.7 141.0
7°	41 00.3 -53.6 146.2	40 32.9 -53.2 145.1	40 04.7 -52.7 143.9	39 35.7 -52.3 142.8	39 06.0 -51.9 141.7
8°	40 06.7 -53.8 146.8	39 39.7 -53.3 145.7	39 12.0 -53.0 144.5	38 43.4 -52.5 143.4	38 14.1 -52.1 142.3
9°	39 12.9 -53.9 147.4	38 46.4 -53.5 146.3	38 19.0 -53.1 145.1	37 50.9 -52.7 144.0	37 22.0 -52.2 143.0
10°	38 19.0 -54.1 148.0	37 52.9 -53.7 146.8	37 25.9 -53.3 145.7	36 58.2 -52.9 144.6	36 29.8 -52.5 143.6
11°	37 24.9 -54.2 148.5	36 59.2 -53.9 147.4	36 32.6 -53.4 146.3	36 05.3 -53.0 145.2	35 37.3 -52.7 144.2
12°	36 30.7 -54.4 149.0	36 05.3 -53.9 148.0	35 39.2 -53.6 146.9	35 12.3 -53.2 145.8	34 44.6 -52.8 144.8
13°	35 36.3 -54.5 149.6	35 11.4 -54.2 148.5	34 45.6 -53.7 147.4	34 19.1 -53.4 146.4	33 51.8 -52.9 145.3
14°	34 41.8 -54.6 150.1	34 17.2 -54.2 149.0	33 51.9 -53.9 148.0	33 25.7 -53.5 146.9	32 58.9 -53.1 145.9
15°	33 47.2 -54.7 150.6	33 23.0 -54.4 149.5	32 58.0 -54.0 148.5	32 32.2 -53.6 147.5	32 05.8 -53.3 146.4
16°	32 52.5 -54.9 151.1	32 28.6 -54.5 150.0	32 04.0 -54.2 149.0	31 38.6 -53.8 148.0	31 12.5 -53.4 147.0
17°	31 57.6 -55.0 151.6	31 34.1 -54.6 150.5	31 09.8 -54.2 149.5	30 44.8 -53.8 148.5	30 19.1 -53.5 147.5
18°	31 02.6 -55.0 152.0	30 39.5 -54.7 151.0	30 15.6 -54.4 150.0	29 51.0 -54.0 149.0	29 25.6 -53.6 148.0
19°	30 07.6 -55.2 152.5	29 44.8 -54.8 151.5	29 21.2 -54.4 150.5	28 57.0 -54.1 149.5	28 32.0 -53.8 148.5
20°	29 12.4 -55.2 152.9	28 50.0 -54.9 152.0	28 26.8 -54.6 151.0	28 02.9 -54.2 150.0	27 38.2 -53.8 149.1
21°	28 17.2 -55.4 153.4	27 55.1 -55.0 152.4	27 32.2 -54.6 151.4	27 08.7 -54.4 150.5	26 44.4 -54.0 149.5
22°	27 21.8 -55.4 153.8	27 00.1 -55.1 152.9	26 37.6 -54.8 151.9	26 14.3 -54.4 151.0	25 50.4 -54.0 150.0
23°	26 26.4 -55.5 154.2	26 05.0 -55.2 153.3	25 42.8 -54.8 152.4	25 19.9 -54.4 151.4	24 56.4 -54.1 150.5
24°	25 30.9 -55.5 154.7	25 09.8 -55.2 153.7	24 48.0 -54.9 152.8	24 25.5 -54.6 151.9	24 02.3 -54.3 151.0
25°	24 35.4 -55.7 155.1	24 14.6 -55.3 154.2	23 53.1 -55.0 153.3	23 30.9 -54.7 152.4	23 08.0 -54.3 151.5
26°	23 39.7 -55.7 155.5	23 19.3 -55.4 154.6	22 58.1 -55.1 153.7	22 36.2 -54.7 152.8	22 13.7 -54.4 151.9
27°	22 44.0 -55.7 155.9	22 23.9 -55.5 155.0	22 03.0 -55.1 154.1	21 41.5 -54.8 153.2	21 19.3 -54.4 152.4
28°	21 48.3 -55.8 156.3	21 28.4 -55.5 155.4	21 07.9 -55.2 154.5	20 46.7 -54.8 153.7	20 24.9 -54.6 152.8
29°	20 52.5 -55.9 156.7	20 32.9 -55.5 155.8	20 12.7 -55.2 155.0	19 51.9 -55.0 154.1	19 30.3 -54.5 153.3

Latitude 36°

Declination CONTRARY name to Latitude

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°	44 28.7 -49.6 135.5	43 54.3 -49.1 134.4	43 19.3 -48.7 133.2	42 43.6 -48.2 132.1	42 07.3 -47.7 131.1
1°	43 39.1 -49.9 136.3	43 05.2 -49.5 135.2	42 30.6 -49.0 134.0	41 55.4 -48.5 133.0	41 19.6 -48.1 131.9
2°	42 49.2 -50.2 137.1	42 15.7 -49.7 135.9	41 41.6 -49.2 134.8	41 06.9 -48.8 133.7	40 31.5 -48.4 132.7
3°	41 59.0 -50.5 137.8	41 26.0 -50.0 136.7	40 52.4 -49.6 135.6	40 18.1 -49.1 134.5	39 43.1 -48.6 133.4
4°	41 08.5 -50.8 138.5	40 36.0 -50.3 137.4	40 02.8 -49.8 136.3	39 29.0 -49.4 135.3	38 54.5 -49.0 134.2
5°	40 17.7 -50.9 139.2	39 45.7 -50.5 138.1	39 13.0 -50.1 137.0	38 39.6 -49.7 136.0	38 05.5 -49.2 134.9
6°	39 26.8 -51.3 139.9	38 55.2 -50.8 138.8	38 22.9 -50.4 137.8	37 49.9 -49.9 136.7	37 16.3 -49.5 135.7
7°	38 35.5 -51.4 140.6	38 04.4 -51.1 139.5	37 32.5 -50.6 138.4	37 00.0 -50.2 137.4	36 26.8 -49.7 136.4
8°	37 44.1 -51.7 141.2	37 13.3 -51.2 140.2	36 41.9 -50.8 139.1	36 09.8 -50.4 138.1	35 37.1 -50.0 137.1
9°	36 52.4 -51.8 141.9	36 22.1 -51.4 140.8	35 51.1 -51.0 139.8	35 19.4 -50.6 138.8	34 47.1 -50.2 137.7
10°	36 00.6 -52.1 142.5	35 30.7 -51.7 141.5	35 00.1 -51.3 140.4	34 28.8 -50.8 139.4	33 56.9 -50.4 138.4
11°	35 08.5 -52.2 143.1	34 39.0 -51.8 142.1	34 08.8 -51.4 141.1	33 38.0 -51.0 140.0	33 06.5 -50.6 139.1
12°	34 16.3 -52.4 143.7	33 47.2 -52.0 142.7	33 17.4 -51.6 141.7	32 47.0 -51.2 140.7	32 15.9 -50.8 139.7
13°	33 23.9 -52.6 144.3	32 55.2 -52.2 143.3	32 25.8 -51.7 142.3	31 55.8 -51.4 141.3	31 25.1 -50.9 140.3
14°	32 31.3 -52.7 144.9	32 03.0 -52.3 143.9	31 34.1 -52.0 142.9	31 04.4 -51.5 141.9	30 34.2 -51.2 140.9
15°	31 38.6 -52.9 145.4	31 10.7 -52.5 144.4	30 42.1 -52.0 143.5	30 12.9 -51.7 142.5	29 43.0 -51.3 141.5
16°	30 45.7 -53.0 146.0	30 18.2 -52.6 145.0	29 50.1 -52.3 144.0	29 21.2 -51.8 143.1	28 51.7 -51.4 142.1
17°	29 52.7 -53.1 146.5	29 25.6 -52.8 145.6	28 57.8 -52.4 144.6	28 29.4 -52.0 143.7	28 00.3 -51.6 142.7
18°	28 59.6 -53.3 147.1	28 32.8 -52.8 146.1	28 05.4 -52.5 145.2	27 37.4 -52.1 144.2	27 08.7 -51.7 143.3
19°	28 06.3 -53.4 147.6	27 40.0 -53.0 146.6	27 12.9 -52.6 145.7	26 45.3 -52.3 144.8	26 17.0 -51.9 143.9
20°	27 12.9 -53.4 148.1	26 47.0 -53.2 147.2	26 20.3 -52.7 146.2	25 53.0 -52.3 145.3	25 25.1 -52.0 144.4
21°	26 19.5 -53.6 148.6	25 53.8 -53.2 147.7	25 27.6 -52.9 146.8	25 00.7 -52.5 145.9	24 33.1 -52.1 145.0
22°	25 25.9 -53.7 149.1	25 00.6 -53.3 148.2	24 34.7 -53.0 147.3	24 08.2 -52.6 146.4	23 41.0 -52.2 145.5
23°	24 32.2 -53.8 149.6	24 07.3 -53.5 148.7	23 41.7 -53.0 147.8	23 15.6 -52.7 146.9	22 48.8 -52.4 146.1
24°	23 38.4 -53.9 150.1	23 13.8 -53.5 149.2	22 48.7 -53.2 148.3	22 22.9 -52.8 147.4	21 56.4 -52.4 146.6
25°	22 44.5 -54.0 150.6	22 20.3 -53.6 149.7	21 55.5 -53.2 148.8	21 30.1 -52.9 148.0	21 04.0 -52.5 147.1
26°	21 50.5 -54.0 151.0	21 26.7 -53.7 150.2	21 02.3 -53.4 149.3	20 37.2 -53.0 148.5	20 11.5 -52.6 147.6
27°	20 56.5 -54.1 151.5	20 33.0 -53.7 150.7	20 08.9 -53.4 149.8	19 44.2 -53.1 149.0	19 18.9 -52.7 148.1
28°	20 02.4 -54.2 152.0	19 39.3 -53.9 151.1	19 15.5 -53.5 150.3	18 51.1 -53.1 149.5	18 26.2 -52.8 148.6
29°	19 08.2 -54.3 152.4	18 45.4 -53.9 151.6	18 22.0 -53.6 150.8	17 58.0 -53.2 149.9	17 33.4 -52.9 149.1

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°	41 30.4 -47.3 130.0	40 52.9 -46.8 129.0	40 14.9 -46.3 128.0	39 36.4 -46.0 127.0	38 57.4 -45.6 126.0
1°	40 43.1 -47.6 130.8	40 06.1 -47.1 129.8	39 28.6 -46.8 128.8	38 50.4 -46.2 127.8	38 11.8 -45.8 126.8
2°	39 55.5 -47.9 131.6	39 19.0 -47.5 130.6	38 41.8 -47.0 129.6	38 04.2 -46.7 128.6	37 26.0 -46.2 127.6
3°	39 07.6 -48.2 132.4	38 31.5 -47.8 131.4	37 54.8 -47.4 130.4	37 17.5 -46.9 129.4	36 39.8 -46.6 128.4
4°	38 19.4 -48.6 133.2	37 43.7 -48.1 132.2	37 07.4 -47.7 131.2	36 30.6 -47.3 130.2	35 53.2 -46.8 129.2
5°	37 30.8 -48.7 133.9	36 55.6 -48.4 132.9	36 19.7 -47.9 131.9	35 43.3 -47.5 130.9	35 06.4 -47.1 130.0
6°	36 42.1 -49.1 134.6	36 07.2 -48.6 133.6	35 31.8 -48.2 132.7	34 55.8 -47.8 131.7	34 19.3 -47.4 130.7
7°	35 53.0 -49.3 135.4	35 18.6 -48.9 134.4	34 43.6 -48.5 133.4	34 08.0 -48.0 132.4	33 31.9 -47.6 131.5
8°	35 03.7 -49.6 136.1	34 29.7 -49.1 135.1	33 55.1 -48.7 134.1	33 20.0 -48.3 133.1	32 44.3 -47.9 132.2
9°	34 14.1 -49.7 136.7	33 40.6 -49.4 135.8	33 06.4 -48.9 134.8	32 31.7 -48.5 133.8	31 56.4 -48.1 132.9
10°	33 24.4 -50.0 137.4	32 51.2 -49.5 136.4	32 17.5 -49.2 135.5	31 43.2 -48.8 134.5	31 08.3 -48.3 133.6
11°	32 34.4 -50.2 138.1	32 01.7 -49.8 137.1	31 28.3 -49.3 136.2	30 54.4 -48.9 135.2	30 20.0 -48.6 134.3
12°	31 44.2 -50.4 138.7	31 11.9 -50.0 137.8	30 39.0 -49.6 136.8	30 05.5 -49.2 135.9	29 31.4 -48.8 135.0
13°	30 53.8 -50.5 139.4	30 21.9 -50.1 138.4	29 49.4 -49.8 137.5	29 16.3 -49.3 136.6	28 42.6 -48.9 135.6
14°	30 03.3 -50.8 140.0	29 31.8 -50.4 139.0	28 59.6 -49.9 138.1	28 27.0 -49.6 137.2	27 53.7 -49.1 136.3
15°	29 12.5 -50.9 140.6	28 41.4 -50.5 139.7	28 09.7 -50.1 138.7	27 37.4 -49.7 137.8	27 04.6 -49.4 136.9
16°	28 21.6 -51.0 141.2	27 50.9 -50.6 140.3	27 19.6 -50.3 139.4	26 47.7 -49.9 138.5	26 15.2 -49.4 137.6
17°	27 30.6 -51.2 141.8	27 00.3 -50.9 140.9	26 29.3 -50.4 140.0	25 57.8 -50.0 139.1	25 25.8 -49.7 138.2
18°	26 39.4 -51.4 142.4	26 09.4 -50.9 141.5	25 38.9 -50.5 140.6	25 07.8 -50.2 139.7	24 36.1 -49.7 138.8
19°	25 48.0 -51.5 143.0	25 18.5 -51.1 142.1	24 48.4 -50.8 141.2	24 17.6 -50.3 140.3	23 46.4 -50.0 139.4
20°	24 56.5 -51.6 143.5	24 27.4 -51.2 142.6	23 57.6 -50.8 141.8	23 27.3 -50.4 140.9	22 56.4 -50.0 140.0
21°	24 04.9 -51.7 144.1	23 36.2 -51.4 143.2	23 06.8 -51.0 142.3	22 36.9 -50.6 141.5	22 06.2 -50.2 140.6
22°	23 13.2 -51.8 144.6	22 44.8 -51.5 143.8	22 15.8 -51.0 142.9	21 46.3 -50.7 142.1	21 16.2 -50.3 141.2
23°	22 21.4 -52.0 145.2	21 53.3 -51.5 144.3	21 24.8 -51.2 143.5	20 55.6 -50.8 142.6	20 25.9 -50.5 141.8
24°	21 29.4 -52.1 145.7	21 01.8 -51.7 144.9	20 33.6 -51.3 144.0	20 04.8 -50.9 143.2	19 35.4 -50.5 142.4
25°	20 37.3 -52.1 146.3	20 10.1 -51.8 145.4	19 42.3 -51.4 144.6	19 13.9 -51.1 143.8	18 44.9 -50.7 143.0
26°	19 45.2 -52.3 146.8	19 18.3 -51.9 146.0	18 50.9 -51.5 145.1	18 22.8 -51.1 144.3	17 54.2 -50.7 143.5
27°	18 52.9 -52.3 147.3	18 26.4 -51.9 146.5	17 59.4 -51.6 145.7	17 31.7 -51.2 144.9	17 03.5 -50.8 144.1
28°	18 00.6 -52.4 147.8	17 34.5 -52.1 147.0	17 07.8 -51.7 146.2	16 40.5 -51.3 145.4	16 12.7 -50.9 144.6
29°	17 08.2 -52.5 148.3	16 42.4 -52.1 147.5	16 16.1 -51.7 146.7	15 49.2 -51.4 146.0	15 21.8 -51.0 145.2

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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°	38 17.8 -45.1 125.0	37 37.9 -44.8 124.1	36 57.4 -44.3 123.1	36 16.6 -44.0 122.2	35 35.3 -43.5 121.3
1°	37 32.7 -45.4 125.8	36 53.1 -45.0 124.9	36 13.1 -44.6 124.0	35 32.6 -44.2 123.1	34 51.8 -43.9 122.2
2°	36 47.3 -45.8 126.7	36 08.1 -45.4 125.7	35 28.5 -45.0 124.8	34 48.4 -44.6 123.9	34 07.9 -44.2 123.0
3°	36 01.5 -46.1 127.5	35 22.7 -45.7 126.5	34 43.5 -45.3 125.6	34 03.8 -44.9 124.7	33 23.7 -44.6 123.8
4°	35 15.4 -46.4 128.3	34 37.0 -46.0 127.3	33 58.2 -45.6 126.4	33 18.9 -45.2 125.5	32 39.1 -44.8 124.6
5°	34 29.0 -46.7 129.0	33 51.0 -46.3 128.1	33 12.6 -45.9 127.2	32 33.7 -45.5 126.3	31 54.3 -45.1 125.4
6°	33 42.3 -47.0 129.8	33 04.7 -46.6 128.9	32 26.7 -46.2 127.9	31 48.2 -45.8 127.1	31 09.2 -45.4 126.2
7°	32 55.3 -47.2 130.5	32 18.1 -46.8 129.6	31 40.5 -46.4 128.7	31 02.4 -46.0 127.8	30 23.8 -45.6 126.9
8°	32 08.1 -47.5 131.3	31 31.3 -47.0 130.3	30 54.1 -46.7 129.4	30 16.4 -46.3 128.6	29 38.2 -45.9 127.7
9°	31 20.6 -47.7 132.0	30 44.3 -47.4 131.1	30 07.4 -46.9 130.2	29 30.1 -46.5 129.3	28 52.3 -46.2 128.4
10°	30 32.9 -48.0 132.7	29 56.9 -47.5 131.8	29 20.5 -47.1 130.9	28 43.6 -46.8 130.0	28 06.1 -46.3 129.1
11°	29 44.9 -48.1 133.4	29 09.4 -47.7 132.5	28 33.4 -47.4 131.6	27 56.8 -47.0 130.7	27 19.8 -46.6 129.9
12°	28 56.8 -48.4 134.1	28 21.7 -48.0 133.2	27 46.0 -47.6 132.3	27 09.8 -47.1 131.4	26 33.2 -46.8 130.6
13°	28 08.4 -48.5 134.7	27 33.7 -48.2 133.9	26 58.4 -47.7 133.0	26 22.7 -47.4 132.1	25 46.4 -46.9 131.3
14°	27 19.9 -48.8 135.4	26 45.5 -48.3 134.5	26 10.7 -48.0 133.7	25 35.3 -47.5 132.8	24 59.5 -47.2 132.0
15°	26 31.1 -48.9 136.1	25 57.2 -48.5 135.2	25 22.7 -48.1 134.3	24 47.8 -47.8 133.5	24 12.3 -47.4 132.6
16°	25 42.2 -49.1 136.7	25 08.7 -48.7 135.8	24 34.6 -48.3 135.0	24 00.0 -47.9 134.1	23 24.9 -47.5 133.3
17°	24 53.1 -49.2 137.3	24 20.0 -48.9 136.5	23 46.3 -48.4 135.6	23 12.1 -48.1 134.8	22 37.4 -47.7 134.0
18°	24 03.9 -49.4 138.0	23 31.1 -49.0 137.1	22 57.9 -48.7 136.3	22 24.0 -48.2 135.4	21 49.7 -47.8 134.6
19°	23 14.5 -49.5 138.6	22 42.1 -49.1 137.7	22 09.2 -48.7 136.9	21 35.8 -48.3 136.1	21 01.9 -48.0 135.3
20°	22 25.0 -49.7 139.2	21 53.0 -49.3 138.4	21 20.5 -48.9 137.5	20 47.5 -48.5 136.7	20 13.9 -48.1 135.9
21°	21 35.3 -49.8 139.8	21 03.7 -49.4 139.0	20 31.6 -49.0 138.2	19 59.0 -48.7 137.4	19 25.8 -48.2 136.6
22°	20 45.5 -49.9 140.4	20 14.3 -49.5 139.6	19 42.6 -49.2 138.8	19 10.3 -48.7 138.0	18 37.6 -48.4 137.2
23°	19 55.6 -50.1 141.0	19 24.8 -49.7 140.2	18 53.4 -49.2 139.4	18 21.6 -48.9 138.6	17 49.2 -48.5 137.8
24°	19 05.5 -50.1 141.6	18 35.1 -49.8 140.8	18 04.2 -49.4 140.0	17 32.7 -49.0 139.2	17 00.7 -48.6 138.4
25°	18 15.4 -50.3 142.2	17 45.3 -49.8 141.4	17 14.8 -49.5 140.6	16 43.7 -49.1 139.8	16 12.1 -48.7 139.0
26°	17 25.1 -50.3 142.7	16 55.5 -50.0 141.9	16 25.3 -49.6 141.2	15 54.6 -49.2 140.4	15 23.4 -48.8 139.6
27°	16 34.8 -50.5 143.3	16 05.5 -50.1 142.5	15 35.7 -49.7 141.8	15 05.4 -49.3 141.0	14 34.6 -48.9 140.2
28°	15 44.3 -50.5 143.9	15 15.4 -50.1 143.1	14 46.0 -49.7 142.3	14 16.1 -49.3 141.6	13 45.7 -49.0 140.8
29°	14 53.8 -50.6 144.4	14 25.3 -50.2 143.7	13 56.3 -49.9 142.9	13 26.8 -49.5 142.2	12 56.7 -49.0 141.4

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	34 53.6 -43.1 120.4	34 11.6 -42.8 119.6	33 29.2 -42.4 118.7	32 46.5 -42.1 117.9	32 03.4 -41.8 117.1
1°	34 10.5 -43.5 121.3	33 28.8 -43.1 120.4	32 46.8 -42.8 119.6	32 04.4 -42.5 118.7	31 21.6 -42.1 117.9
2°	33 27.0 -43.9 122.1	32 45.7 -43.5 121.3	32 04.0 -43.1 120.4	31 21.9 -42.7 119.6	30 39.5 -42.4 118.7
3°	32 43.1 -44.1 122.9	32 02.2 -43.8 122.1	31 20.9 -43.5 121.2	30 39.2 -43.1 120.4	29 57.1 -42.7 119.6
4°	31 59.0 -44.5 123.7	31 18.4 -44.1 122.9	30 37.4 -43.7 122.0	29 56.1 -43.4 121.2	29 14.4 -43.0 120.4
5°	31 14.5 -44.7 124.5	30 34.3 -44.3 123.7	29 53.7 -44.0 122.8	29 12.7 -43.6 122.0	28 31.4 -43.3 121.2
6°	30 29.8 -45.0 125.3	29 50.0 -44.7 124.4	29 09.7 -44.2 123.6	28 29.1 -43.9 122.8	27 48.1 -43.5 121.9
7°	29 44.8 -45.3 126.1	29 05.3 -44.8 125.2	28 25.5 -44.5 124.4	27 45.2 -44.1 123.5	27 04.6 -43.8 122.7
8°	28 59.5 -45.5 126.8	28 20.5 -45.2 126.0	27 41.0 -44.8 125.1	27 01.1 -44.4 124.3	26 20.8 -44.1 123.5
9°	28 14.0 -45.7 127.6	27 35.3 -45.3 126.7	26 56.2 -45.0 125.9	26 16.7 -44.7 125.1	25 36.7 -44.2 124.2
10°	27 28.3 -46.0 128.3	26 50.0 -45.6 127.4	26 11.2 -45.2 126.6	25 32.0 -44.8 125.8	24 52.5 -44.5 125.0
11°	26 42.3 -46.2 129.0	26 04.4 -45.9 128.2	25 26.0 -45.5 127.3	24 47.2 -45.1 126.5	24 08.0 -44.7 125.7
12°	25 56.1 -46.4 129.7	25 18.5 -46.0 128.9	24 40.5 -45.6 128.1	24 02.1 -45.2 127.3	23 23.3 -44.9 126.5
13°	25 09.7 -46.6 130.4	24 32.5 -46.2 129.6	23 54.9 -45.8 128.8	23 16.9 -45.5 128.0	22 38.4 -45.1 127.2
14°	24 23.1 -46.8 131.1	23 46.3 -46.4 130.3	23 09.1 -46.0 129.5	22 31.4 -45.6 128.7	21 53.3 -45.3 127.9
15°	23 36.3 -46.9 131.8	22 59.9 -46.6 131.0	22 23.1 -46.2 130.2	21 45.8 -45.9 129.4	21 08.0 -45.4 128.6
16°	22 49.4 -47.2 132.5	22 13.3 -46.7 131.7	21 36.9 -46.4 130.9	20 59.9 -45.9 130.1	20 22.6 -45.6 129.3
17°	22 02.2 -47.2 133.2	21 26.6 -46.9 132.3	20 50.5 -46.5 131.6	20 14.0 -46.2 130.8	19 37.0 -45.8 130.0
18°	21 15.0 -47.5 133.8	20 39.7 -47.1 133.0	20 04.0 -46.7 132.2	19 27.8 -46.3 131.4	18 51.2 -45.9 130.7
19°	20 27.5 -47.6 134.5	19 52.6 -47.2 133.7	19 17.3 -46.8 132.9	18 41.5 -46.4 132.1	18 05.3 -46.1 131.3
20°	19 39.9 -47.7 135.1	19 05.4 -47.3 134.3	18 30.5 -47.0 133.6	17 55.1 -46.6 132.8	17 19.2 -46.1 132.0
21°	18 52.2 -47.9 135.8	18 18.1 -47.5 135.0	17 43.5 -47.1 134.2	17 08.5 -46.7 133.4	16 33.1 -46.4 132.7
22°	18 04.3 -47.9 136.4	17 30.6 -47.6 135.6	16 56.4 -47.2 134.9	16 21.8 -46.8 134.1	15 46.7 -46.4 133.4
23°	17 16.4 -48.1 137.0	16 43.0 -47.7 136.3	16 09.2 -47.3 135.5	15 35.0 -46.9 134.8	15 00.3 -46.5 134.0
24°	16 28.3 -48.2 137.7	15 55.3 -47.8 136.9	15 21.9 -47.4 136.1	14 48.1 -47.1 135.4	14 13.8 -46.7 134.7
25°	15 40.1 -48.4 138.3	15 07.5 -47.9 137.5	14 34.5 -47.5 136.8	14 01.0 -47.1 136.0	13 27.1 -46.7 135.3
26°	14 51.7 -48.4 138.9	14 19.6 -48.0 138.1	13 47.0 -47.7 137.4	13 13.9 -47.3 136.7	12 40.4 -46.9 136.0
27°	14 03.3 -48.5 139.5	13 31.6 -48.1 138.8	12 59.3 -47.7 138.0	12 26.6 -47.3 137.3	11 53.5 -46.9 136.6
28°	13 14.8 -48.6 140.1	12 43.5 -48.2 139.4	12 11.6 -47.8 138.7	11 39.3 -47.4 137.9	11 06.6 -47.0 137.2
29°	12 26.2 -48.6 140.7	11 55.3 -48.3 140.0	11 23.8 -47.9 139.3	10 51.9 -47.5 138.6	10 19.6 -47.1 137.9

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°	31 20.0 -41.4 116.3	30 36.4 -41.2 115.5	29 52.4 -40.8 114.7	29 08.1 -40.5 113.9	28 23.6 -40.2 113.1
1°	30 38.6 -41.8 117.1	29 55.2 -41.4 116.3	29 11.6 -41.2 115.5	28 27.6 -40.8 114.7	27 43.4 -40.6 114.0
2°	29 56.8 -42.1 117.9	29 13.8 -41.8 117.1	28 30.4 -41.4 116.3	27 46.8 -41.2 115.6	27 02.8 -40.8 114.8
3°	29 14.7 -42.4 118.7	28 32.0 -42.0 117.9	27 49.0 -41.8 117.2	27 05.6 -41.4 116.4	26 22.0 -41.1 115.6
4°	28 32.3 -42.6 119.6	27 50.0 -42.4 118.8	27 07.2 -42.0 118.0	26 24.2 -41.7 117.2	25 40.9 -41.4 116.4
5°	27 49.7 -43.0 120.4	27 07.6 -42.6 119.6	26 25.2 -42.2 118.8	25 42.5 -41.9 118.0	24 59.5 -41.6 117.2
6°	27 06.7 -43.2 121.1	26 25.0 -42.8 120.3	25 43.0 -42.6 119.6	25 00.6 -42.2 118.8	24 17.9 -41.9 118.0
7°	26 23.5 -43.4 121.9	25 42.2 -43.1 121.1	25 00.4 -42.7 120.3	24 18.4 -42.4 119.6	23 36.0 -42.1 118.8
8°	25 40.1 -43.7 122.7	24 59.1 -43.4 121.9	24 17.7 -43.0 121.1	23 36.0 -42.7 120.3	22 53.9 -42.3 119.6
9°	24 56.4 -43.9 123.4	24 15.7 -43.5 122.7	23 34.7 -43.2 121.9	22 53.3 -42.9 121.1	22 11.6 -42.6 120.3
10°	24 12.5 -44.1 124.2	23 32.2 -43.8 123.4	22 51.5 -43.5 122.6	22 10.4 -43.1 121.9	21 29.0 -42.7 121.1
11°	23 28.4 -44.4 124.9	22 48.4 -44.0 124.2	22 08.0 -43.6 123.4	21 27.3 -43.3 122.6	20 46.3 -43.0 121.9
12°	22 44.0 -44.5 125.7	22 04.4 -44.2 124.9	21 24.4 -43.8 124.1	20 44.0 -43.4 123.4	20 03.3 -43.1 122.6
13°	21 59.5 -44.7 126.4	21 20.2 -44.3 125.6	20 40.6 -44.0 124.8	20 00.6 -43.7 124.1	19 20.2 -43.3 123.3
14°	21 14.8 -44.9 127.1	20 35.9 -44.6 126.3	19 56.6 -44.2 125.6	19 16.9 -43.8 124.8	18 36.9 -43.5 124.1
15°	20 29.9 -45.1 127.8	19 51.3 -44.7 127.0	19 12.4 -44.3 126.3	18 33.1 -44.0 125.5	17 53.4 -43.6 124.8
16°	19 44.8 -45.2 128.5	19 06.6 -44.8 127.8	18 28.1 -44.5 127.0	17 49.1 -44.1 126.3	17 09.8 -43.8 125.5
17°	18 59.6 -45.4 129.2	18 21.8 -45.1 128.5	17 43.6 -44.7 127.7	17 05.0 -44.3 127.0	16 26.0 -43.9 126.2
18°	18 14.2 -45.6 129.9	17 36.7 -45.1 129.2	16 58.9 -44.8 128.4	16 20.7 -44.5 127.7	15 42.1 -44.1 126.9
19°	17 28.6 -45.6 130.6	16 51.6 -45.3 129.8	16 14.1 -44.9 129.1	15 36.2 -44.5 128.4	14 58.0 -44.2 127.6
20°	16 43.0 -45.8 131.3	16 06.3 -45.5 130.5	15 29.2 -45.1 129.8	14 51.7 -44.7 129.1	14 13.8 -44.3 128.3
21°	15 57.2 -46.0 131.9	15 20.8 -45.5 131.2	14 44.1 -45.2 130.5	14 07.0 -44.8 129.8	13 29.5 -44.4 129.0
22°	15 11.2 -46.0 132.6	14 35.3 -45.7 131.9	13 58.9 -45.2 131.2	13 22.2 -44.9 130.4	12 45.1 -44.6 129.7
23°	14 25.2 -46.2 133.3	13 49.6 -45.8 132.5	13 13.7 -45.4 131.8	12 37.3 -45.0 131.1	12 00.5 -44.6 130.4
24°	13 39.0 -46.3 133.9	13 03.8 -45.8 133.2	12 28.3 -45.5 132.5	11 52.3 -45.1 131.8	11 15.9 -44.7 131.1
25°	12 52.7 -46.3 134.6	12 18.0 -46.0 133.9	11 42.8 -45.6 133.2	11 07.2 -45.2 132.5	10 31.2 -44.9 131.8
26°	12 06.4 -46.5 135.2	11 32.0 -46.1 134.5	10 57.2 -45.7 133.8	10 22.0 -45.3 133.1	9 46.3 -44.9 132.5
27°	11 19.9 -46.5 135.9	10 45.9 -46.1 135.2	10 11.5 -45.7 134.5	9 36.7 -45.4 133.8	9 01.4 -44.9 133.1
28°	10 33.4 -46.6 136.5	9 59.8 -46.2 135.8	9 25.8 -45.9 135.1	8 51.3 -45.4 134.5	8 16.5 -45.1 133.8
29°	9 46.8 -46.7 137.2	9 13.6 -46.3 136.5	8 39.9 -45.9 135.8	8 05.9 -45.5 135.1	7 31.4 -45.1 134.5

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°	27 38.9 -40.0 112.4	26 53.9 -39.7 111.6	26 08.6 -39.4 110.9	25 23.2 -39.2 110.2	24 37.5 -38.9 109.5
1°	26 58.9 -40.3 113.2	26 14.2 -40.0 112.5	25 29.2 -39.7 111.7	24 44.0 -39.5 111.0	23 58.6 -39.2 110.3
2°	26 18.6 -40.5 114.0	25 34.2 -40.3 113.3	24 49.5 -40.0 112.6	24 04.5 -39.7 111.8	23 19.4 -39.5 111.1
3°	25 38.1 -40.8 114.9	24 53.9 -40.5 114.1	24 09.5 -40.3 113.4	23 24.8 -40.0 112.7	22 39.9 -39.7 111.9
4°	24 57.3 -41.1 115.7	24 13.4 -40.8 114.9	23 29.2 -40.5 114.2	22 44.8 -40.2 113.5	22 00.2 -40.0 112.7
5°	24 16.2 -41.3 116.5	23 32.6 -41.0 115.7	22 48.7 -40.7 115.0	22 04.6 -40.4 114.3	21 20.2 -40.1 113.5
6°	23 34.9 -41.6 117.3	22 51.6 -41.3 116.5	22 08.0 -40.9 115.8	21 24.2 -40.7 115.1	20 40.1 -40.4 114.3
7°	22 53.3 -41.8 118.1	22 10.3 -41.4 117.3	21 27.1 -41.2 116.6	20 43.5 -40.9 115.8	19 59.7 -40.6 115.1
8°	22 11.5 -42.0 118.8	21 28.9 -41.7 118.1	20 45.9 -41.4 117.4	20 02.6 -41.1 116.6	19 19.1 -40.8 115.9
9°	21 29.5 -42.2 119.6	20 47.2 -41.9 118.9	20 04.5 -41.6 118.1	19 21.5 -41.2 117.4	18 38.3 -41.0 116.7
10°	20 47.3 -42.4 120.4	20 05.3 -42.1 119.6	19 22.9 -41.8 118.9	18 40.3 -41.5 118.2	17 57.3 -41.1 117.5
11°	20 04.9 -42.6 121.1	19 23.2 -42.3 120.4	18 41.1 -41.9 119.6	17 58.8 -41.7 118.9	17 16.2 -41.4 118.2
12°	19 22.3 -42.8 121.9	18 40.9 -42.5 121.1	17 59.2 -42.2 120.4	17 17.1 -41.8 119.7	16 34.8 -41.5 119.0
13°	18 39.5 -43.0 122.6	17 58.4 -42.6 121.9	17 17.0 -42.3 121.1	16 35.3 -41.9 120.4	15 53.3 -41.6 119.7
14°	17 56.5 -43.1 123.3	17 15.8 -42.8 122.6	16 34.7 -42.4 121.9	15 53.4 -42.2 121.2	15 11.7 -41.8 120.5
15°	17 13.4 -43.3 124.1	16 33.0 -42.9 123.3	15 52.3 -42.6 122.6	15 11.2 -42.2 121.9	14 29.9 -42.0 121.2
16°	16 30.1 -43.4 124.8	15 50.1 -43.1 124.1	15 09.7 -42.8 123.4	14 29.0 -42.4 122.7	13 47.9 -42.0 122.0
17°	15 46.7 -43.6 125.5	15 07.0 -43.3 124.8	14 26.9 -42.8 124.1	13 46.6 -42.6 123.4	13 05.9 -42.2 122.7
18°	15 03.1 -43.7 126.2	14 23.7 -43.3 125.5	13 44.1 -43.0 124.8	13 04.0 -42.6 124.1	12 23.7 -42.3 123.4
19°	14 19.4 -43.9 126.9	13 40.4 -43.5 126.2	13 01.1 -43.2 125.5	12 21.4 -42.8 124.8	11 41.4 -42.4 124.1
20°	13 35.5 -43.9 127.6	12 56.9 -43.6 126.9	12 17.9 -43.2 126.2	11 38.6 -42.8 125.5	10 59.0 -42.6 124.9
21°	12 51.6 -44.1 128.3	12 13.3 -43.7 127.6	11 34.7 -43.3 126.9	10 55.8 -43.0 126.3	10 16.4 -42.6 125.6
22°	12 07.5 -44.1 129.0	11 29.6 -43.7 128.3	10 51.4 -43.4 127.6	10 12.8 -43.1 127.0	9 33.8 -42.7 126.3
23°	11 23.4 -44.3 129.7	10 45.9 -43.9 129.0	10 08.0 -43.6 128.4	9 29.7 -43.1 127.7	8 51.1 -42.8 127.0
24°	10 39.1 -44.3 130.4	10 02.0 -44.0 129.7	9 24.4 -43.5 129.0	8 46.6 -43.3 128.4	8 08.3 -42.8 127.7
25°	9 54.8 -44.5 131.1	9 18.0 -44.1 130.4	8 40.9 -43.7 129.7	8 03.3 -43.2 129.1	7 25.5 -42.9 128.4
26°	9 10.3 -44.5 131.8	8 33.9 -44.1 131.1	7 57.2 -43.8 130.4	7 20.1 -43.4 129.8	6 42.6 -43.0 129.1
27°	8 25.8 -44.6 132.5	7 49.8 -44.2 131.8	7 13.4 -43.8 131.1	6 36.7 -43.4 130.5	5 59.6 -43.0 129.8
28°	7 41.2 -44.6 133.1	7 05.6 -44.2 132.5	6 29.6 -43.8 131.8	5 53.3 -43.5 131.2	5 16.6 -43.1 130.5
29°	6 56.6 -44.7 133.8	6 21.4 -44.3 133.1	5 45.8 -43.9 132.5	5 09.8 -43.5 131.9	4 33.5 -43.1 131.2

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°	23 51.6 -38.7 108.7	23 05.6 -38.5 108.0	22 19.3 -38.2 107.4	21 32.9 -38.0 106.7	20 46.3 -37.8 106.0
1°	23 12.9 -38.9 109.6	22 27.1 -38.7 108.9	21 41.1 -38.5 108.2	20 54.9 -38.3 107.5	20 08.5 -38.1 106.8
2°	22 34.0 -39.2 110.4	21 48.4 -39.0 109.7	21 02.6 -38.8 109.0	20 16.6 -38.5 108.3	19 30.4 -38.3 107.6
3°	21 54.8 -39.5 111.2	21 09.4 -39.2 110.5	20 23.8 -38.9 109.8	19 38.1 -38.7 109.1	18 52.1 -38.5 108.5
4°	21 15.3 -39.7 112.0	20 30.2 -39.4 111.3	19 44.9 -39.2 110.6	18 59.4 -39.0 110.0	18 13.6 -38.7 109.3
5°	20 35.6 -39.9 112.8	19 50.8 -39.7 112.1	19 05.7 -39.4 111.4	18 20.4 -39.1 110.8	17 34.9 -38.9 110.1
6°	19 55.7 -40.1 113.6	19 11.1 -39.8 112.9	18 26.3 -39.6 112.2	17 41.3 -39.3 111.6	16 56.0 -39.1 110.9
7°	19 15.6 -40.3 114.4	18 31.3 -40.0 113.7	17 46.7 -39.7 113.0	17 02.0 -39.6 112.3	16 16.9 -39.2 111.7
8°	18 35.3 -40.5 115.2	17 51.3 -40.3 114.5	17 07.0 -40.0 113.8	16 22.4 -39.6 113.1	15 37.7 -39.4 112.4
9°	17 54.8 -40.7 116.0	17 11.0 -40.4 115.3	16 27.0 -40.1 114.6	15 42.8 -39.9 113.9	14 58.3 -39.6 113.2
10°	17 14.1 -40.8 116.8	16 30.6 -40.5 116.1	15 46.9 -40.3 115.4	15 02.9 -40.0 114.7	14 18.7 -39.7 114.0
11°	16 33.3 -41.1 117.5	15 50.1 -40.8 116.8	15 06.6 -40.4 116.1	14 22.9 -40.1 115.5	13 39.0 -39.9 114.8
12°	15 52.2 -41.2 118.3	15 09.3 -40.8 117.6	14 26.2 -40.6 116.9	13 42.8 -40.3 116.2	12 59.1 -40.0 115.5
13°	15 11.0 -41.3 119.0	14 28.5 -41.1 118.3	13 45.6 -40.7 117.7	13 02.5 -40.5 117.0	12 19.1 -40.2 116.3
14°	14 29.7 -41.5 119.8	13 47.4 -41.1 119.1	13 04.9 -40.9 118.4	12 22.0 -40.5 117.7	11 38.9 -40.2 117.1
15°	13 48.2 -41.6 120.5	13 06.3 -41.3 119.8	12 24.0 -41.0 119.2	11 41.5 -40.7 118.5	10 58.7 -40.4 117.8
16°	13 06.6 -41.7 121.3	12 25.0 -41.4 120.6	11 43.0 -41.1 119.9	11 00.8 -40.8 119.2	10 18.3 -40.4 118.6
17°	12 24.9 -41.9 122.0	11 43.6 -41.6 121.3	11 01.9 -41.2 120.7	10 20.0 -40.8 120.0	9 37.9 -40.6 119.3
18°	11 43.0 -42.0 122.7	11 02.0 -41.6 122.1	10 20.7 -41.3 121.4	9 39.2 -41.0 120.7	8 57.3 -40.7 120.1
19°	11 01.0 -42.0 123.5	10 20.4 -41.7 122.8	9 39.4 -41.4 122.1	8 58.2 -41.1 121.5	8 16.6 -40.7 120.8
20°	10 19.0 -42.2 124.2	9 38.7 -41.9 123.5	8 58.0 -41.4 122.9	8 17.1 -41.1 122.2	7 35.9 -40.8 121.6
21°	9 36.8 -42.3 124.9	8 56.8 -41.9 124.3	8 16.6 -41.6 123.6	7 36.0 -41.2 122.9	6 55.1 -40.9 122.3
22°	8 54.5 -42.3 125.6	8 14.9 -42.0 125.0	7 35.0 -41.6 124.3	6 54.8 -41.3 123.7	6 14.2 -40.9 123.0
23°	8 12.2 -42.4 126.3	7 32.9 -42.0 125.7	6 53.4 -41.7 125.0	6 13.5 -41.4 124.4	5 33.3 -41.0 123.8
24°	7 29.8 -42.5 127.1	6 50.9 -42.1 126.4	6 11.7 -41.8 125.8	5 32.1 -41.4 125.1	4 52.3 -41.1 124.5
25°	6 47.3 -42.6 127.8	6 08.8 -42.2 127.1	5 29.9 -41.8 126.5	4 50.7 -41.4 125.9	4 11.2 -41.1 125.2
26°	6 04.7 -42.6 128.5	5 26.6 -42.2 127.8	4 48.1 -41.9 127.2	4 09.3 -41.5 126.6	3 30.1 -41.1 126.0
27°	5 22.1 -42.6 129.2	4 44.4 -42.3 128.6	4 06.2 -41.9 127.9	3 27.8 -41.5 127.3	2 49.0 -41.1 126.7
28°	4 39.5 -42.7 129.9	4 02.1 -42.3 129.3	3 24.3 -41.9 128.7	2 46.3 -41.6 128.0	2 07.9 -41.2 127.4
29°	3 56.8 -42.7 130.6	3 19.8 -42.4 130.0	2 42.4 -41.9 129.4	2 04.7 -41.5 128.8	1 26.7 -41.2 128.2

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°	19 59.6 -37.7 105.3	19 12.7 -37.5 104.7	18 25.7 -37.3 104.0	17 38.5 -37.1 103.4	16 51.2 -36.9 102.7
1°	19 21.9 -37.8 106.2	18 35.2 -37.6 105.5	17 48.4 -37.5 104.8	17 01.4 -37.3 104.2	16 14.3 -37.2 103.5
2°	18 44.1 -38.1 107.0	17 57.6 -37.9 106.3	17 10.9 -37.7 105.7	16 24.1 -37.5 105.0	15 37.1 -37.3 104.4
3°	18 06.0 -38.3 107.8	17 19.7 -38.1 107.1	16 33.2 -37.9 106.5	15 46.6 -37.7 105.8	14 59.8 -37.5 105.2
4°	17 27.7 -38.5 108.6	16 41.6 -38.2 107.9	15 55.3 -38.0 107.3	15 08.9 -37.8 106.6	14 22.3 -37.6 106.0
5°	16 49.2 -38.6 109.4	16 03.4 -38.5 108.7	15 17.3 -38.2 108.1	14 31.1 -38.0 107.4	13 44.7 -37.8 106.8
6°	16 10.6 -38.9 110.2	15 24.9 -38.6 109.5	14 39.1 -38.4 108.9	13 53.1 -38.2 108.2	13 06.9 -38.0 107.6
7°	15 31.7 -39.0 111.0	14 46.3 -38.8 110.3	14 00.7 -38.5 109.7	13 14.9 -38.3 109.0	12 28.9 -38.1 108.4
8°	14 52.7 -39.1 111.8	14 07.5 -38.9 111.1	13 22.2 -38.7 110.5	12 36.6 -38.5 109.8	11 50.8 -38.2 109.2
9°	14 13.6 -39.4 112.6	13 28.6 -39.0 111.9	12 43.5 -38.8 111.2	11 58.1 -38.5 110.6	11 12.6 -38.3 109.9
10°	13 34.2 -39.4 113.3	12 49.6 -39.2 112.7	12 04.7 -39.0 112.0	11 19.6 -38.7 111.4	10 34.3 -38.5 110.7
11°	12 54.8 -39.6 114.1	12 10.4 -39.4 113.5	11 25.7 -39.1 112.8	10 40.9 -38.9 112.2	9 55.8 -38.6 111.5
12°	12 15.2 -39.8 114.9	11 31.0 -39.4 114.2	10 46.6 -39.1 113.6	10 02.0 -38.9 112.9	9 17.2 -38.6 112.3
13°	11 35.4 -39.8 115.6	10 51.6 -39.6 115.0	10 07.5 -39.3 114.3	9 23.1 -39.0 113.7	8 38.6 -38.8 113.1
14°	10 55.6 -40.0 116.4	10 12.0 -39.7 115.8	9 28.2 -39.4 115.1	8 44.1 -39.1 114.5	7 59.8 -38.8 113.8
15°	10 15.6 -40.0 117.2	9 32.3 -39.7 116.5	8 48.8 -39.5 115.9	8 05.0 -39.2 115.2	7 21.0 -39.0 114.6
16°	9 35.6 -40.2 117.9	8 52.6 -39.9 117.3	8 09.3 -39.6 116.6	7 25.8 -39.3 116.0	6 42.0 -39.0 115.4
17°	8 55.4 -40.3 118.7	8 12.7 -40.0 118.0	7 29.7 -39.6 117.4	6 46.5 -39.4 116.8	6 03.0 -39.0 116.1
18°	8 15.1 -40.3 119.4	7 32.7 -40.0 118.8	6 50.1 -39.8 118.1	6 07.1 -39.4 117.5	5 24.0 -39.1 116.9
19°	7 34.8 -40.4 120.2	6 52.7 -40.1 119.5	6 10.3 -39.7 118.9	5 27.7 -39.4 118.3	4 44.9 -39.2 117.7
20°	6 54.4 -40.5 120.9	6 12.6 -40.1 120.3	5 30.6 -39.9 119.7	4 48.3 -39.6 119.0	4 05.7 -39.2 118.4
21°	6 13.9 -40.5 121.7	5 32.5 -40.3 121.0	4 50.7 -39.9 120.4	4 08.7 -39.5 119.8	3 26.5 -39.3 119.2
22°	5 33.4 -40.6 122.4	4 52.2 -40.2 121.8	4 10.8 -39.9 121.2	3 29.2 -39.6 120.5	2 47.2 -39.2 119.9
23°	4 52.8 -40.7 123.1	4 12.0 -40.3 122.5	3 30.9 -40.0 121.9	2 49.6 -39.7 121.3	2 08.0 -39.3 120.7
24°	4 12.1 -40.7 123.9	3 31.7 -40.4 123.3	2 50.9 -40.0 122.7	2 09.9 -39.6 122.0	1 28.7 -39.4 121.4
25°	3 31.4 -40.7 124.6	2 51.3 -40.3 124.0	2 10.9 -40.0 123.4	1 30.3 -39.7 122.8	0 49.3 -39.3 122.2
26°	2 50.7 -40.8 125.4	2 11.0 -40.4 124.7	1 30.9 -40.0 124.1	0 50.6 -39.7 123.5	0 10.0 -39.3 123.0
27°	2 09.9 -40.7 126.1	1 30.6 -40.4 125.5	0 50.9 -40.0 124.9	0 10.9 -39.6 124.3	-0 29.3 -39.3
28°	1 29.2 -40.8 126.8	0 50.2 -40.5 126.2	0 10.9 -40.1 125.6	-0 28.7 -39.7	-1 08.6 -39.3
29°	0 48.4 -40.8 127.6	0 09.7 -40.4 127.0	-0 29.2 -40.0	-1 08.4 -39.7	-1 47.9 -39.3

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°	16 03.8 -36.8 102.1	15 16.3 -36.7 101.4	14 28.7 -36.6 100.8	13 40.9 -36.4 100.2	12 53.1 -36.3 99.6
1°	15 27.0 -37.0 102.9	14 39.6 -36.8 102.3	13 52.1 -36.6 101.6	13 04.5 -36.5 101.0	12 16.8 -36.3 100.4
2°	14 50.0 -37.1 103.7	14 02.8 -37.0 103.1	13 15.5 -36.9 102.4	12 28.0 -36.7 101.8	11 40.5 -36.6 101.2
3°	14 12.9 -37.3 104.5	13 25.8 -37.1 103.9	12 38.6 -36.9 103.3	11 51.3 -36.8 102.6	11 03.9 -36.6 102.0
4°	13 35.6 -37.5 105.3	12 48.7 -37.3 104.7	12 01.7 -37.1 104.1	11 14.5 -36.9 103.4	10 27.3 -36.8 102.8
5°	12 58.1 -37.6 106.1	12 11.4 -37.4 105.5	11 24.6 -37.3 104.9	10 37.6 -37.1 104.2	9 50.5 -36.9 103.6
6°	12 20.5 -37.7 106.9	11 34.0 -37.6 106.3	10 47.3 -37.3 105.7	10 00.5 -37.2 105.0	9 13.6 -37.0 104.4
7°	11 42.8 -37.9 107.7	10 56.4 -37.6 107.1	10 10.0 -37.5 106.5	9 23.3 -37.2 105.8	8 36.6 -37.1 105.2
8°	11 04.9 -38.0 108.5	10 18.8 -37.8 107.9	9 32.5 -37.6 107.3	8 46.1 -37.4 106.6	7 59.5 -37.2 106.0
9°	10 26.9 -38.1 109.3	9 41.0 -37.9 108.7	8 54.9 -37.7 108.0	8 08.7 -37.5 107.4	7 22.3 -37.3 106.8
10°	9 48.8 -38.3 110.1	9 03.1 -38.0 109.5	8 17.2 -37.7 108.8	7 31.2 -37.6 108.2	6 45.0 -37.3 107.6
11°	9 10.5 -38.3 110.9	8 25.1 -38.1 110.2	7 39.5 -37.9 109.6	6 53.6 -37.6 109.0	6 07.7 -37.5 108.4
12°	8 32.2 -38.4 111.6	7 47.0 -38.2 111.0	7 01.6 -37.9 110.4	6 16.0 -37.7 109.8	5 30.2 -37.4 109.2
13°	7 53.8 -38.5 112.4	7 08.8 -38.2 111.8	6 23.7 -38.1 111.2	5 38.3 -37.8 110.6	4 52.8 -37.6 109.9
14°	7 15.3 -38.6 113.2	6 30.6 -38.4 112.6	5 45.6 -38.0 112.0	5 00.5 -37.8 111.3	4 15.2 -37.6 110.7
15°	6 36.7 -38.6 114.0	5 52.2 -38.3 113.3	5 07.6 -38.1 112.7	4 22.7 -37.9 112.1	3 37.6 -37.6 111.5
16°	5 58.1 -38.8 114.7	5 13.9 -38.5 114.1	4 29.5 -38.2 113.5	3 44.8 -37.9 112.9	3 00.0 -37.6 112.3
17°	5 19.3 -38.7 115.5	4 35.4 -38.5 114.9	3 51.3 -38.2 114.3	3 06.9 -37.9 113.7	2 22.4 -37.7 113.1
18°	4 40.6 -38.9 116.3	3 56.9 -38.5 115.7	3 13.1 -38.3 115.1	2 29.0 -38.0 114.4	1 44.7 -37.7 113.8
19°	4 01.7 -38.8 117.0	3 18.4 -38.6 116.4	2 34.8 -38.3 115.8	1 51.0 -38.0 115.2	1 07.0 -37.7 114.6
20°	3 22.9 -38.9 117.8	2 39.8 -38.6 117.2	1 56.5 -38.3 116.6	1 13.0 -38.0 116.0	0 29.3 -37.8 115.4
21°	2 44.0 -39.0 118.6	2 01.2 -38.6 118.0	1 18.2 -38.3 117.4	0 35.0 -38.0 116.8	-0 08.5 -37.7
22°	2 05.0 -38.9 119.3	1 22.6 -38.6 118.7	0 39.9 -38.3 118.1	-0 03.0 -38.0	-0 46.2 -37.7
23°	1 26.1 -39.0 120.1	0 44.0 -38.7 119.5	0 01.6 -38.3 118.9	-0 41.0 -38.0	-1 23.9 -37.7
24°	0 47.1 -39.0 120.8	0 05.3 -38.6 120.3	-0 36.7 -38.4	-1 19.0 -38.0	-2 01.6 -37.6
25°	0 08.1 -38.9 121.6	-0 33.3 -38.7	-1 15.1 -38.3	-1 57.0 -38.0	-2 39.2 -37.7
26°	-0 30.8 -39.0	-1 12.0 -38.6	-1 53.4 -38.2	-2 35.0 -37.9	-3 16.9 -37.6
27°	-1 09.8 -39.0	-1 50.6 -38.6	-2 31.6 -38.3	-3 12.9 -38.0	-3 54.5 -37.6
28°	-1 48.8 -38.9	-2 29.2 -38.6	-3 09.9 -38.2	-3 50.9 -37.8	-4 32.1 -37.5
29°	-2 27.7 -38.9	-3 07.8 -38.5	-3 48.1 -38.2	-4 28.7 -37.8	-5 09.6 -37.4

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°	12 05.2 -36.1 99.0	11 17.2 -36.0 98.3	10 29.1 -35.9 97.7	9 41.0 -35.8 97.1	8 52.8 -35.7 96.5
1°	11 29.1 -36.3 99.8	10 41.2 -36.2 99.2	9 53.2 -36.0 98.5	9 05.2 -36.0 97.9	8 17.1 -35.9 97.3
2°	10 52.8 -36.4 100.6	10 05.0 -36.3 100.0	9 17.2 -36.2 99.4	8 29.2 -36.0 98.7	7 41.2 -35.9 98.1
3°	10 16.4 -36.5 101.4	9 28.7 -36.3 100.8	8 41.0 -36.2 100.2	7 53.2 -36.1 99.6	7 05.3 -36.0 98.9
4°	9 39.9 -36.7 102.2	8 52.4 -36.5 101.6	8 04.8 -36.4 101.0	7 17.1 -36.3 100.4	6 29.3 -36.1 99.8
5°	9 03.2 -36.7 103.0	8 15.9 -36.6 102.4	7 28.4 -36.4 101.8	6 40.8 -36.3 101.2	5 53.2 -36.2 100.6
6°	8 26.5 -36.8 103.8	7 39.3 -36.7 103.2	6 52.0 -36.5 102.6	6 04.5 -36.3 102.0	5 17.0 -36.2 101.4
7°	7 49.7 -37.0 104.6	7 02.6 -36.7 104.0	6 15.5 -36.6 103.4	5 28.2 -36.5 102.8	4 40.8 -36.3 102.2
8°	7 12.7 -37.0 105.4	6 25.9 -36.9 104.8	5 38.9 -36.7 104.2	4 51.7 -36.4 103.6	4 04.5 -36.3 103.0
9°	6 35.7 -37.0 106.2	5 49.0 -36.8 105.6	5 02.2 -36.7 105.0	4 15.3 -36.6 104.4	3 28.2 -36.4 103.8
10°	5 58.7 -37.2 107.0	5 12.2 -37.0 106.4	4 25.5 -36.8 105.8	3 38.7 -36.6 105.2	2 51.8 -36.4 104.6
11°	5 21.5 -37.2 107.8	4 35.2 -37.0 107.2	3 48.7 -36.8 106.5	3 02.1 -36.6 105.9	2 15.4 -36.4 105.3
12°	4 44.3 -37.3 108.5	3 58.2 -37.0 107.9	3 11.9 -36.8 107.3	2 25.5 -36.6 106.7	1 39.0 -36.5 106.1
13°	4 07.0 -37.3 109.3	3 21.2 -37.1 108.7	2 35.1 -36.9 108.1	1 48.9 -36.7 107.5	1 02.5 -36.4 106.9
14°	3 29.7 -37.3 110.1	2 44.1 -37.1 109.5	1 58.2 -36.9 108.9	1 12.2 -36.6 108.3	0 26.1 -36.5 107.7
15°	2 52.4 -37.4 110.9	2 07.0 -37.2 110.3	1 21.3 -36.9 109.7	0 35.6 -36.7 109.1	-0 10.4 -36.5
16°	2 15.0 -37.4 111.7	1 29.8 -37.1 111.1	0 44.4 -36.9 110.5	-0 01.1 -36.7	-0 46.9 -36.4
17°	1 37.6 -37.4 112.5	0 52.7 -37.2 111.9	0 07.5 -36.9 111.3	-0 37.8 -36.7	-1 23.3 -36.4
18°	1 00.2 -37.5 113.3	0 15.5 -37.2 112.7	-0 29.4 -36.9	-1 14.5 -36.6	-1 59.7 -36.5
19°	0 22.7 -37.4 114.0	-0 21.7 -37.2	-1 06.3 -36.9	-1 51.1 -36.7	-2 36.2 -36.3
20°	-0 14.7 -37.4	-0 58.9 -37.1	-1 43.2 -36.9	-2 27.8 -36.6	-3 12.5 -36.4
21°	-0 52.1 -37.5	-1 36.0 -37.1	-2 20.1 -36.9	-3 04.4 -36.6	-3 48.9 -36.3
22°	-1 29.6 -37.4	-2 13.1 -37.2	-2 57.0 -36.8	-3 41.0 -36.5	-4 25.2 -36.2
23°	-2 07.0 -37.3	-2 50.3 -37.0	-3 33.8 -36.8	-4 17.5 -36.5	-5 01.4 -36.2
24°	-2 44.3 -37.4	-3 27.3 -37.1	-4 10.6 -36.7	-4 54.0 -36.4	-5 37.6 -36.1
25°	-3 21.7 -37.3	-4 04.4 -37.0	-4 47.3 -36.7	-5 30.4 -36.4	-6 13.7 -36.1
26°	-3 59.0 -37.3	-4 41.4 -36.9	-5 24.0 -36.6	-6 06.8 -36.3	-6 49.8 -36.0
27°	-4 36.3 -37.2	-5 18.3 -36.9	-6 00.6 -36.5	-6 43.1 -36.2	-7 25.8 -35.9
28°	-5 13.5 -37.2	-5 55.2 -36.8	-6 37.1 -36.5	-7 19.3 -36.1	-8 01.7 -35.7
29°	-5 50.7 -37.1	-6 32.0 -36.7	-7 13.6 -36.4	-7 55.4 -36.0	-8 37.4 -35.7

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°	8 04.6 -35.7 95.9	7 16.2 -35.6 95.3	6 27.9 -35.5 94.7	5 39.5 -35.5 94.1	4 51.1 -35.5 93.5
1°	7 28.9 -35.8 96.7	6 40.6 -35.6 96.1	5 52.4 -35.6 95.5	5 04.0 -35.5 94.9	4 15.6 -35.4 94.3
2°	6 53.1 -35.8 97.5	6 05.0 -35.8 96.9	5 16.8 -35.7 96.3	4 28.5 -35.6 95.7	3 40.2 -35.5 95.2
3°	6 17.3 -35.9 98.3	5 29.2 -35.8 97.7	4 41.1 -35.7 97.1	3 52.9 -35.6 96.6	3 04.7 -35.6 96.0
4°	5 41.4 -36.0 99.2	4 53.4 -35.9 98.6	4 05.4 -35.8 98.0	3 17.3 -35.7 97.4	2 29.1 -35.6 96.8
5°	5 05.4 -36.0 100.0	4 17.5 -35.9 99.4	3 29.6 -35.8 98.8	2 41.6 -35.7 98.2	1 53.5 -35.6 97.6
6°	4 29.4 -36.1 100.8	3 41.6 -35.9 100.2	2 53.8 -35.8 99.6	2 05.9 -35.7 99.0	1 17.9 -35.6 98.4
7°	3 53.3 -36.2 101.6	3 05.7 -36.0 101.0	2 18.0 -35.9 100.4	1 30.2 -35.8 99.8	0 42.3 -35.6 99.2
8°	3 17.1 -36.1 102.4	2 29.7 -36.1 101.8	1 42.1 -35.9 101.2	0 54.4 -35.7 100.6	0 06.7 -35.7 100.0
9°	2 41.0 -36.2 103.2	1 53.6 -36.0 102.6	1 06.2 -35.9 102.0	0 18.7 -35.8 101.4	-0 29.0 -35.6
10°	2 04.8 -36.3 104.0	1 17.6 -36.1 103.4	0 30.3 -35.9 102.8	-0 17.1 -35.7	-1 04.6 -35.6
11°	1 28.5 -36.2 104.8	0 41.5 -36.1 104.2	-0 05.6 -35.9	-0 52.8 -35.8	-1 40.2 -35.6
12°	0 52.3 -36.3 105.5	0 05.4 -36.0 105.0	-0 41.5 -35.9	-1 28.6 -35.7	-2 15.8 -35.6
13°	0 16.0 -36.2 106.3	-0 30.6 -36.1	-1 17.4 -35.9	-2 04.3 -35.7	-2 51.4 -35.5
14°	-0 20.2 -36.3	-1 06.7 -36.0	-1 53.3 -35.9	-2 40.0 -35.7	-3 26.9 -35.5
15°	-0 56.5 -36.2	-1 42.7 -36.1	-2 29.2 -35.8	-3 15.7 -35.6	-4 02.4 -35.4
16°	-1 32.7 -36.3	-2 18.8 -36.0	-3 05.0 -35.8	-3 51.3 -35.6	-4 37.8 -35.4
17°	-2 09.0 -36.2	-2 54.8 -36.0	-3 40.8 -35.7	-4 26.9 -35.6	-5 13.2 -35.3
18°	-2 45.2 -36.1	-3 30.8 -35.9	-4 16.5 -35.7	-5 02.5 -35.4	-5 48.5 -35.3
19°	-3 21.3 -36.2	-4 06.7 -35.9	-4 52.2 -35.7	-5 37.9 -35.4	-6 23.8 -35.2
20°	-3 57.5 -36.1	-4 42.6 -35.8	-5 27.9 -35.6	-6 13.3 -35.4	-6 59.0 -35.1
21°	-4 33.6 -36.0	-5 18.4 -35.8	-6 03.5 -35.5	-6 48.7 -35.2	-7 34.1 -35.0
22°	-5 09.6 -36.0	-5 54.2 -35.7	-6 39.0 -35.4	-7 23.9 -35.2	-8 09.1 -34.9
23°	-5 45.6 -35.9	-6 29.9 -35.6	-7 14.4 -35.3	-7 59.1 -35.1	-8 44.0 -34.8
24°	-6 21.5 -35.8	-7 05.5 -35.5	-7 49.7 -35.3	-8 34.2 -34.9	-9 18.8 -34.6
25°	-6 57.3 -35.7	-7 41.0 -35.5	-8 25.0 -35.1	-9 09.1 -34.9	-9 53.4 -34.6
26°	-7 33.0 -35.7	-8 16.5 -35.3	-9 00.1 -35.1	-9 44.0 -34.7	
27°	-8 08.7 -35.6	-8 51.8 -35.3	-9 35.2 -34.9		
28°	-8 44.3 -35.4	-9 27.1 -35.1			
29°	-9 19.7 -35.3				

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°	4 02.6 -35.4 92.9	3 14.1 -35.3 92.4	2 25.6 -35.3 91.8	1 37.1 -35.3 91.2	0 48.5 -35.2 90.6
1°	3 27.2 -35.4 93.8	2 38.8 -35.4 93.2	1 50.3 -35.3 92.6	1 01.8 -35.3 92.0	0 13.3 -35.3 91.4
2°	2 51.8 -35.5 94.6	2 03.4 -35.4 94.0	1 15.0 -35.4 93.4	0 26.5 -35.3 92.8	-0 22.0 -35.3
3°	2 16.3 -35.4 95.4	1 28.0 -35.4 94.8	0 39.6 -35.4 94.2	-0 08.8 -35.3	-0 57.3 -35.2
4°	1 40.9 -35.5 96.2	0 52.6 -35.4 95.6	0 04.2 -35.3 95.0	-0 44.1 -35.3	-1 32.5 -35.3
5°	1 05.4 -35.5 97.0	0 17.2 -35.5 96.4	-0 31.1 -35.4	-1 19.4 -35.3	-2 07.8 -35.2
6°	0 29.9 -35.6 97.8	-0 18.3 -35.4	-1 06.5 -35.3	-1 54.7 -35.3	-2 43.0 -35.2
7°	-0 05.7 -35.5	-0 53.7 -35.4	-1 41.8 -35.3	-2 30.0 -35.2	-3 18.2 -35.1
8°	-0 41.2 -35.5	-1 29.1 -35.4	-2 17.1 -35.3	-3 05.2 -35.2	-3 53.3 -35.1
9°	-1 16.7 -35.5	-2 04.5 -35.4	-2 52.4 -35.3	-3 40.4 -35.1	-4 28.4 -35.1
10°	-1 52.2 -35.5	-2 39.9 -35.3	-3 27.7 -35.2	-4 15.5 -35.1	-5 03.5 -35.0
11°	-2 27.7 -35.4	-3 15.2 -35.3	-4 02.9 -35.1	-4 50.6 -35.1	-5 38.5 -34.9
12°	-3 03.1 -35.4	-3 50.5 -35.3	-4 38.0 -35.2	-5 25.7 -34.9	-6 13.4 -34.8
13°	-3 38.5 -35.4	-4 25.8 -35.2	-5 13.2 -35.0	-6 00.6 -34.9	-6 48.2 -34.8
14°	-4 13.9 -35.3	-5 01.0 -35.1	-5 48.2 -35.0	-6 35.5 -34.9	-7 23.0 -34.6
15°	-4 49.2 -35.2	-5 36.1 -35.1	-6 23.2 -34.9	-7 10.4 -34.7	-7 57.6 -34.6
16°	-5 24.4 -35.2	-6 11.2 -35.0	-6 58.1 -34.8	-7 45.1 -34.6	-8 32.2 -34.5
17°	-5 59.6 -35.2	-6 46.2 -34.9	-7 32.9 -34.7	-8 19.7 -34.6	-9 06.7 -34.3
18°	-6 34.8 -35.0	-7 21.1 -34.8	-8 07.6 -34.6	-8 54.3 -34.4	-9 41.0 -34.2
19°	-7 09.8 -34.9	-7 55.9 -34.8	-8 42.2 -34.6	-9 28.7 -34.3	
20°	-7 44.7 -34.9	-8 30.7 -34.6	-9 16.8 -34.4		
21°	-8 19.6 -34.8	-9 05.3 -34.5	-9 51.2 -34.2		
22°	-8 54.4 -34.6	-9 39.8 -34.4			
23°	-9 29.0 -34.5				
24°					
25°					
26°					
27°					
28°					
29°					

Latitude 36°

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 -35.3 90.0	-0 48.5 -35.3			
1°	-0 35.3 -35.2	-1 23.8 -35.3			
2°	-1 10.5 -35.3	-1 59.1 -35.2			
3°	-1 45.8 -35.2	-2 34.3 -35.2			
4°	-2 21.0 -35.2	-3 09.5 -35.1			
5°	-2 56.2 -35.1	-3 44.6 -35.1			
6°	-3 31.3 -35.2	-4 19.7 -35.1			
7°	-4 06.5 -35.0	-4 54.8 -35.0			
8°	-4 41.5 -35.0	-5 29.8 -34.9			
9°	-5 16.5 -35.0	-6 04.7 -34.9			
10°	-5 51.5 -34.9	-6 39.6 -34.8			
11°	-6 26.4 -34.8	-7 14.4 -34.7			
12°	-7 01.2 -34.7	-7 49.1 -34.5			
13°	-7 35.9 -34.6	-8 23.6 -34.5			
14°	-8 10.5 -34.5	-8 58.1 -34.4			
15°	-8 45.0 -34.4	-9 32.5 -34.3			
16°	-9 19.4 -34.3				
17°	-9 53.7 -34.2				
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

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

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

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	53 00.0 -60.0 180.0	52 59.3 -60.0 178.3	52 57.2 -59.9 176.7	52 53.8 -59.9 175.0	52 48.9 -59.7 173.4
1°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.4	51 57.3 -60.0 176.8	51 53.9 -59.9 175.1	51 49.2 -59.8 173.5
2°	51 00.0 -60.0 180.0	50 59.3 -59.9 178.4	50 57.3 -59.9 176.8	50 54.0 -59.8 175.2	50 49.4 -59.8 173.7
3°	50 00.0 -60.0 180.0	49 59.4 -60.0 178.4	49 57.4 -59.9 176.9	49 54.2 -59.9 175.3	49 49.6 -59.8 173.8
4°	49 00.0 -60.0 180.0	48 59.4 -60.0 178.5	48 57.5 -60.0 177.0	48 54.3 -59.9 175.4	48 49.8 -59.7 173.9
5°	48 00.0 -60.0 180.0	47 59.4 -60.0 178.5	47 57.5 -59.9 177.0	47 54.4 -59.9 175.5	47 50.1 -59.8 174.1
6°	47 00.0 -60.0 180.0	46 59.4 -60.0 178.5	46 57.6 -60.0 177.1	46 54.5 -59.9 175.6	46 50.3 -59.8 174.2
7°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.6	45 57.6 -59.9 177.1	45 54.6 -59.9 175.7	45 50.5 -59.9 174.3
8°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.6	44 57.7 -60.0 177.2	44 54.7 -59.9 175.8	44 50.6 -59.8 174.4
9°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.6	43 57.7 -60.0 177.3	43 54.8 -59.9 175.9	43 50.8 -59.8 174.5
10°	43 00.0 -60.0 180.0	42 59.4 -60.0 178.7	42 57.7 -59.9 177.3	42 54.9 -59.9 176.0	42 51.0 -59.8 174.6
11°	42 00.0 -60.0 180.0	41 59.4 -59.9 178.7	41 57.8 -60.0 177.4	41 55.0 -59.9 176.0	41 51.2 -59.9 174.7
12°	41 00.0 -60.0 180.0	40 59.5 -60.0 178.7	40 57.8 -59.9 177.4	40 55.1 -59.9 176.1	40 51.3 -59.8 174.8
13°	40 00.0 -60.0 180.0	39 59.5 -60.0 178.7	39 57.9 -60.0 177.5	39 55.2 -59.9 176.2	39 51.5 -59.8 174.9
14°	39 00.0 -60.0 180.0	38 59.5 -60.0 178.8	38 57.9 -59.9 177.5	38 55.3 -59.9 176.3	38 51.7 -59.9 175.0
15°	38 00.0 -60.0 180.0	37 59.5 -60.0 178.8	37 58.0 -60.0 177.5	37 55.4 -59.9 176.3	37 51.8 -59.8 175.1
16°	37 00.0 -60.0 180.0	36 59.5 -60.0 178.8	36 58.0 -60.0 177.6	36 55.5 -59.9 176.4	36 52.0 -59.9 175.2
17°	36 00.0 -60.0 180.0	35 59.5 -60.0 178.8	35 58.0 -59.9 177.6	35 55.6 -60.0 176.5	35 52.1 -59.9 175.3
18°	35 00.0 -60.0 180.0	34 59.5 -60.0 178.8	34 58.1 -60.0 177.7	34 55.6 -59.9 176.5	34 52.2 -59.8 175.4
19°	34 00.0 -60.0 180.0	33 59.5 -60.0 178.9	33 58.1 -60.0 177.7	33 55.7 -59.9 176.6	33 52.4 -59.9 175.4
20°	33 00.0 -60.0 180.0	32 59.5 -60.0 178.9	32 58.1 -59.9 177.8	32 55.8 -59.9 176.6	32 52.5 -59.9 175.5
21°	32 00.0 -60.0 180.0	31 59.5 -60.0 178.9	31 58.2 -60.0 177.8	31 55.9 -60.0 176.7	31 52.6 -59.8 175.6
22°	31 00.0 -60.0 180.0	30 59.5 -59.9 178.9	30 58.2 -60.0 177.8	30 55.9 -59.9 176.8	30 52.8 -59.9 175.7
23°	30 00.0 -60.0 180.0	29 59.6 -60.0 178.9	29 58.2 -59.9 177.9	29 56.0 -59.9 176.8	29 52.9 -59.9 175.8
24°	29 00.0 -60.0 180.0	28 59.6 -60.0 179.0	28 58.3 -60.0 177.9	28 56.1 -60.0 176.9	28 53.0 -59.9 175.8
25°	28 00.0 -60.0 180.0	27 59.6 -60.0 179.0	27 58.3 -60.0 177.9	27 56.1 -59.9 176.9	27 53.1 -59.8 175.9
26°	27 00.0 -60.0 180.0	26 59.6 -60.0 179.0	26 58.3 -60.0 178.0	26 56.2 -59.9 177.0	26 53.3 -59.9 176.0
27°	26 00.0 -60.0 180.0	25 59.6 -60.0 179.0	25 58.3 -59.9 178.0	25 56.3 -60.0 177.0	25 53.4 -59.9 176.0
28°	25 00.0 -60.0 180.0	24 59.6 -60.0 179.0	24 58.4 -60.0 178.1	24 56.3 -59.9 177.1	24 53.5 -59.9 176.1
29°	24 00.0 -60.0 180.0	23 59.6 -60.0 179.0	23 58.4 -60.0 178.1	23 56.4 -59.9 177.1	23 53.6 -59.9 176.2

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°	52 42.7 -59.6 171.7	52 35.1 -59.4 170.1	52 26.2 -59.2 168.5	52 16.0 -59.0 166.9	52 04.4 -58.7 165.3
1°	51 43.1 -59.6 171.9	51 35.7 -59.5 170.3	51 27.0 -59.3 168.7	51 17.0 -59.1 167.1	51 05.7 -58.9 165.6
2°	50 43.5 -59.7 172.1	50 36.2 -59.5 170.5	50 27.7 -59.3 169.0	50 17.9 -59.1 167.4	50 06.8 -58.8 165.9
3°	49 43.8 -59.6 172.3	49 36.7 -59.5 170.7	49 28.4 -59.4 169.2	49 18.8 -59.2 167.7	49 08.0 -59.0 166.2
4°	48 44.2 -59.7 172.4	48 37.2 -59.5 170.9	48 29.0 -59.3 169.4	48 19.6 -59.1 167.9	48 09.0 -58.9 166.5
5°	47 44.5 -59.7 172.6	47 37.7 -59.6 171.1	47 29.7 -59.4 169.6	47 20.5 -59.2 168.2	47 10.1 -59.0 166.7
6°	46 44.8 -59.7 172.7	46 38.1 -59.5 171.3	46 30.3 -59.4 169.9	46 21.3 -59.3 168.4	46 11.1 -59.1 167.0
7°	45 45.1 -59.7 172.9	45 38.6 -59.6 171.5	45 30.9 -59.4 170.1	45 22.0 -59.2 168.7	45 12.0 -59.0 167.3
8°	44 45.4 -59.7 173.0	44 39.0 -59.6 171.6	44 31.5 -59.5 170.3	44 22.8 -59.3 168.9	44 13.0 -59.1 167.5
9°	43 45.7 -59.7 173.2	43 39.4 -59.6 171.8	43 32.0 -59.5 170.4	43 23.5 -59.3 169.1	43 13.9 -59.1 167.8
10°	42 46.0 -59.8 173.3	42 39.8 -59.6 172.0	42 32.5 -59.4 170.6	42 24.2 -59.3 169.3	42 14.8 -59.2 168.0
11°	41 46.2 -59.7 173.4	41 40.2 -59.6 172.1	41 33.1 -59.5 170.8	41 24.9 -59.4 169.5	41 15.6 -59.2 168.2
12°	40 46.5 -59.8 173.5	40 40.6 -59.7 172.3	40 33.6 -59.5 171.0	40 25.5 -59.3 169.7	40 16.4 -59.2 168.4
13°	39 46.7 -59.7 173.7	39 40.9 -59.6 172.4	39 34.1 -59.6 171.1	39 26.2 -59.4 169.9	39 17.2 -59.2 168.6
14°	38 47.0 -59.8 173.8	38 41.3 -59.7 172.5	38 34.5 -59.5 171.3	38 26.8 -59.4 170.1	38 18.0 -59.2 168.8
15°	37 47.2 -59.8 173.9	37 41.6 -59.7 172.7	37 35.0 -59.6 171.5	37 27.4 -59.4 170.3	37 18.8 -59.3 169.0
16°	36 47.4 -59.7 174.0	36 41.9 -59.6 172.8	36 35.4 -59.5 171.6	36 28.0 -59.5 170.4	36 19.5 -59.3 169.2
17°	35 47.7 -59.8 174.1	35 42.3 -59.7 172.9	35 35.9 -59.6 171.8	35 28.5 -59.4 170.6	35 20.2 -59.3 169.4
18°	34 47.9 -59.8 174.2	34 42.6 -59.7 173.1	34 36.3 -59.6 171.9	34 29.1 -59.5 170.8	34 20.9 -59.3 169.6
19°	33 48.1 -59.8 174.3	33 42.9 -59.7 173.2	33 36.7 -59.6 172.0	33 29.6 -59.5 170.9	33 21.6 -59.3 169.8
20°	32 48.3 -59.8 174.4	32 43.2 -59.7 173.3	32 37.1 -59.6 172.2	32 30.1 -59.4 171.1	32 22.3 -59.4 170.0
21°	31 48.5 -59.8 174.5	31 43.5 -59.7 173.4	31 37.5 -59.6 172.3	31 30.7 -59.5 171.2	31 22.9 -59.3 170.2
22°	30 48.7 -59.8 174.6	30 43.8 -59.8 173.5	30 37.9 -59.6 172.5	30 31.2 -59.5 171.4	30 23.6 -59.4 170.3
23°	29 48.9 -59.8 174.7	29 44.0 -59.7 173.6	29 38.3 -59.6 172.6	29 31.7 -59.5 171.5	29 24.2 -59.4 170.5
24°	28 49.1 -59.8 174.8	28 44.3 -59.7 173.7	28 38.7 -59.7 172.7	28 32.2 -59.6 171.7	28 24.8 -59.4 170.6
25°	27 49.3 -59.8 174.9	27 44.6 -59.8 173.9	27 39.0 -59.6 172.8	27 32.6 -59.5 171.8	27 25.4 -59.4 170.8
26°	26 49.5 -59.8 175.0	26 44.8 -59.7 174.0	26 39.4 -59.7 173.0	26 33.1 -59.5 172.0	26 26.0 -59.4 171.0
27°	25 49.7 -59.9 175.1	25 45.1 -59.7 174.1	25 39.7 -59.6 173.1	25 33.6 -59.6 172.1	25 26.6 -59.5 171.1
28°	24 49.8 -59.8 175.1	24 45.4 -59.8 174.2	24 40.1 -59.7 173.2	24 34.0 -59.5 172.2	24 27.1 -59.4 171.3
29°	23 50.0 -59.8 175.2	23 45.6 -59.7 174.3	23 40.4 -59.6 173.3	23 34.5 -59.6 172.4	23 27.7 -59.4 171.4

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°	51 51.6 -58.5 163.7	51 37.5 -58.2 162.1	51 22.1 -57.8 160.5	51 05.6 -57.6 159.0	50 47.8 -57.2 157.5
1°	50 53.1 -58.6 164.0	50 39.3 -58.3 162.5	50 24.3 -58.0 161.0	50 08.0 -57.6 159.5	49 50.6 -57.3 158.0
2°	49 54.5 -58.6 164.4	49 41.0 -58.3 162.9	49 26.3 -58.1 161.4	49 10.4 -57.7 159.9	48 53.3 -57.4 158.4
3°	48 55.9 -58.7 164.7	48 42.7 -58.4 163.2	48 28.2 -58.1 161.8	48 12.7 -57.9 160.3	47 55.9 -57.5 158.9
4°	47 57.2 -58.7 165.0	47 44.3 -58.5 163.6	47 30.1 -58.2 162.1	47 14.8 -57.9 160.7	46 58.4 -57.5 159.3
5°	46 58.5 -58.8 165.3	46 45.8 -58.5 163.9	46 31.9 -58.2 162.5	46 16.9 -57.9 161.1	46 00.9 -57.7 159.7
6°	45 59.7 -58.8 165.6	45 47.3 -58.6 164.2	45 33.7 -58.4 162.8	45 19.0 -58.1 161.4	45 03.2 -57.8 160.1
7°	45 00.9 -58.8 165.9	44 48.7 -58.6 164.5	44 35.3 -58.3 163.2	44 20.9 -58.1 161.8	44 05.4 -57.8 160.5
8°	44 02.1 -58.9 166.2	43 50.1 -58.7 164.8	43 37.0 -58.5 163.5	43 22.8 -58.2 162.2	43 07.6 -57.9 160.8
9°	43 03.2 -58.9 166.4	42 51.4 -58.7 165.1	42 38.5 -58.4 163.8	42 24.6 -58.2 162.5	42 09.7 -57.9 161.2
10°	42 04.3 -59.0 166.7	41 52.7 -58.8 165.4	41 40.1 -58.6 164.1	41 26.4 -58.3 162.8	41 11.8 -58.1 161.5
11°	41 05.3 -59.0 166.9	40 53.9 -58.7 165.7	40 41.5 -58.5 164.4	40 28.1 -58.3 163.1	40 13.7 -58.0 161.9
12°	40 06.3 -59.0 167.2	39 55.2 -58.9 165.9	39 43.0 -58.6 164.7	39 29.8 -58.4 163.4	39 15.7 -58.2 162.2
13°	39 07.3 -59.1 167.4	38 56.3 -58.8 166.2	38 44.4 -58.7 164.9	38 31.4 -58.4 163.7	38 17.5 -58.1 162.5
14°	38 08.2 -59.0 167.6	37 57.5 -58.9 166.4	37 45.7 -58.6 165.2	37 33.0 -58.4 164.0	37 19.4 -58.3 162.8
15°	37 09.2 -59.1 167.9	36 58.6 -58.9 166.7	36 47.1 -58.8 165.5	36 34.6 -58.5 164.3	36 21.1 -58.2 163.1
16°	36 10.1 -59.2 168.1	35 59.7 -59.0 166.9	35 48.3 -58.7 165.7	35 36.1 -58.6 164.6	35 22.9 -58.4 163.4
17°	35 10.9 -59.1 168.3	35 00.7 -58.9 167.1	34 49.6 -58.8 166.0	34 37.5 -58.5 164.8	34 24.5 -58.3 163.7
18°	34 11.8 -59.2 168.5	34 01.8 -59.0 167.4	33 50.8 -58.8 166.2	33 39.0 -58.6 165.1	33 26.2 -58.4 164.0
19°	33 12.6 -59.1 168.7	33 02.8 -59.0 167.6	32 52.0 -58.8 166.5	32 40.4 -58.7 165.4	32 27.8 -58.4 164.3
20°	32 13.5 -59.2 168.9	32 03.8 -59.1 167.8	31 53.2 -58.9 166.7	31 41.7 -58.6 165.6	31 29.4 -58.5 164.5
21°	31 14.3 -59.2 169.1	31 04.7 -59.0 168.0	30 54.3 -58.8 166.9	30 43.1 -58.7 165.9	30 30.9 -58.5 164.8
22°	30 15.1 -59.3 169.3	30 05.7 -59.1 168.2	29 55.5 -58.9 167.1	29 44.4 -58.7 166.1	29 32.4 -58.5 165.1
23°	29 15.8 -59.2 169.4	29 06.6 -59.1 168.4	28 56.6 -59.0 167.4	28 45.7 -58.8 166.3	28 33.9 -58.5 165.3
24°	28 16.6 -59.3 169.6	28 07.5 -59.1 168.6	27 57.6 -58.9 167.6	27 46.9 -58.7 166.6	27 35.4 -58.6 165.6
25°	27 17.3 -59.2 169.8	27 08.4 -59.1 168.8	26 58.7 -59.0 167.8	26 48.2 -58.8 166.8	26 36.8 -58.6 165.8
26°	26 18.1 -59.3 170.0	26 09.3 -59.1 169.0	25 59.7 -58.9 168.0	25 49.4 -58.8 167.0	25 38.2 -58.6 166.0
27°	25 18.8 -59.3 170.1	25 10.2 -59.2 169.2	25 00.8 -59.0 168.2	24 50.6 -58.8 167.2	24 39.6 -58.6 166.3
28°	24 19.5 -59.3 170.3	24 11.0 -59.1 169.4	24 01.8 -59.0 168.4	23 51.8 -58.9 167.5	23 41.0 -58.7 166.5
29°	23 20.2 -59.3 170.5	23 11.9 -59.2 169.5	23 02.8 -59.1 168.6	22 52.9 -58.8 167.7	22 42.3 -58.7 166.7

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°	50 28.9 -56.8 156.0	50 08.9 -56.5 154.5	49 47.7 -56.0 153.1	49 25.5 -55.6 151.6	49 02.2 -55.2 150.2
1°	49 32.1 -56.9 156.5	49 12.4 -56.5 155.0	48 51.7 -56.2 153.6	48 29.9 -55.8 152.2	48 07.0 -55.3 150.8
2°	48 35.2 -57.1 157.0	48 15.9 -56.7 155.6	47 55.5 -56.3 154.1	47 34.1 -55.9 152.8	47 11.7 -55.6 151.4
3°	47 38.1 -57.2 157.4	47 19.2 -56.8 156.0	46 59.2 -56.4 154.7	46 38.2 -56.1 153.3	46 16.1 -55.6 151.9
4°	46 40.9 -57.2 157.9	46 22.4 -56.9 156.5	46 02.8 -56.6 155.2	45 42.1 -56.2 153.8	45 20.5 -55.8 152.5
5°	45 43.7 -57.4 158.3	45 25.5 -57.1 157.0	45 06.2 -56.7 155.6	44 45.9 -56.3 154.3	44 24.7 -56.0 153.0
6°	44 46.3 -57.4 158.7	44 28.4 -57.1 157.4	44 09.5 -56.8 156.1	43 49.6 -56.4 154.8	43 28.7 -56.1 153.5
7°	43 48.9 -57.5 159.1	43 31.3 -57.2 157.8	43 12.7 -56.8 156.5	42 53.2 -56.6 155.3	42 32.6 -56.2 154.0
8°	42 51.4 -57.6 159.5	42 34.1 -57.3 158.2	42 15.9 -57.0 157.0	41 56.6 -56.6 155.7	41 36.4 -56.3 154.5
9°	41 53.8 -57.7 159.9	41 36.8 -57.4 158.6	41 18.9 -57.1 157.4	41 00.0 -56.8 156.1	40 40.1 -56.4 154.9
10°	40 56.1 -57.8 160.3	40 39.4 -57.4 159.0	40 21.8 -57.2 157.8	40 03.2 -56.8 156.6	39 43.7 -56.5 155.4
11°	39 58.3 -57.8 160.6	39 42.0 -57.6 159.4	39 24.6 -57.2 158.2	39 06.4 -57.0 157.0	38 47.2 -56.6 155.8
12°	39 00.5 -57.8 161.0	38 44.4 -57.5 159.8	38 27.4 -57.3 158.6	38 09.4 -57.0 157.4	37 50.6 -56.7 156.2
13°	38 02.7 -58.0 161.3	37 46.9 -57.7 160.1	37 30.1 -57.4 159.0	37 12.4 -57.0 157.8	36 53.9 -56.8 156.6
14°	37 04.7 -57.9 161.7	36 49.2 -57.7 160.5	36 32.7 -57.4 159.3	36 15.4 -57.2 158.2	35 57.1 -56.9 157.0
15°	36 06.8 -58.1 162.0	35 51.5 -57.8 160.8	35 35.3 -57.5 159.7	35 18.2 -57.2 158.5	35 00.2 -56.9 157.4
16°	35 08.7 -58.0 162.3	34 53.7 -57.8 161.2	34 37.8 -57.6 160.0	34 21.0 -57.3 158.9	34 03.3 -57.0 157.8
17°	34 10.7 -58.2 162.6	33 55.9 -57.9 161.5	33 40.2 -57.6 160.4	33 23.7 -57.4 159.3	33 06.3 -57.1 158.2
18°	33 12.5 -58.1 162.9	32 58.0 -57.9 161.8	32 42.6 -57.7 160.7	32 26.3 -57.4 159.6	32 09.2 -57.1 158.5
19°	32 14.4 -58.2 163.2	32 00.1 -58.0 162.1	31 44.9 -57.7 161.0	31 28.9 -57.4 160.0	31 12.1 -57.2 158.9
20°	31 16.2 -58.3 163.5	31 02.1 -58.0 162.4	30 47.2 -57.7 161.3	30 31.5 -57.5 160.3	30 14.9 -57.2 159.3
21°	30 17.9 -58.2 163.7	30 04.1 -58.0 162.7	29 49.5 -57.9 161.7	29 34.0 -57.6 160.6	29 17.7 -57.3 159.6
22°	29 19.7 -58.3 164.0	29 06.1 -58.1 163.0	28 51.6 -57.8 162.0	28 36.4 -57.6 161.0	28 20.4 -57.4 159.9
23°	28 21.4 -58.4 164.3	28 08.0 -58.1 163.3	27 53.8 -57.9 162.3	27 38.8 -57.6 161.3	27 23.0 -57.4 160.3
24°	27 23.0 -58.3 164.6	27 09.9 -58.2 163.6	26 55.9 -57.9 162.6	26 41.2 -57.7 161.6	26 25.6 -57.4 160.6
25°	26 24.7 -58.4 164.8	26 11.7 -58.2 163.8	25 58.0 -58.0 162.9	25 43.5 -57.7 161.9	25 28.2 -57.5 160.9
26°	25 26.3 -58.4 165.1	25 13.5 -58.2 164.1	25 00.0 -58.0 163.1	24 45.8 -57.8 162.2	24 30.7 -57.5 161.2
27°	24 27.9 -58.5 165.3	24 15.3 -58.2 164.4	24 02.0 -58.0 163.4	23 48.0 -57.8 162.5	23 33.2 -57.6 161.6
28°	23 29.4 -58.5 165.6	23 17.1 -58.3 164.6	23 04.0 -58.0 163.7	22 50.2 -57.8 162.8	22 35.6 -57.5 161.9
29°	22 30.9 -58.5 165.8	22 18.8 -58.3 164.9	22 06.0 -58.1 164.0	21 52.4 -57.9 163.1	21 38.1 -57.7 162.2

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°	48 37.9 -54.8 148.8	48 12.6 -54.3 147.5	47 46.3 -53.8 146.1	47 19.2 -53.4 144.8	46 51.1 -52.9 143.5
1°	47 43.1 -54.9 149.4	47 18.3 -54.5 148.1	46 52.5 -54.0 146.8	46 25.8 -53.6 145.5	45 58.2 -53.2 144.2
2°	46 48.2 -55.1 150.0	46 23.8 -54.7 148.7	45 58.5 -54.3 147.4	45 32.2 -53.8 146.1	45 05.0 -53.3 144.9
3°	45 53.1 -55.3 150.6	45 29.1 -54.8 149.3	45 04.2 -54.4 148.0	44 38.4 -54.0 146.7	44 11.7 -53.6 145.5
4°	44 57.8 -55.4 151.2	44 34.3 -55.1 149.9	44 09.8 -54.7 148.6	43 44.4 -54.3 147.4	43 18.1 -53.8 146.1
5°	44 02.4 -55.6 151.7	43 39.2 -55.1 150.4	43 15.1 -54.7 149.2	42 50.1 -54.3 147.9	42 24.3 -54.0 146.7
6°	43 06.8 -55.7 152.2	42 44.1 -55.4 151.0	42 20.4 -55.0 149.7	41 55.8 -54.6 148.5	41 30.3 -54.1 147.3
7°	42 11.1 -55.8 152.7	41 48.7 -55.4 151.5	41 25.4 -55.1 150.3	41 01.2 -54.7 149.1	40 36.2 -54.4 147.9
8°	41 15.3 -56.0 153.2	40 53.3 -55.6 152.0	40 30.3 -55.2 150.8	40 06.5 -54.8 149.6	39 41.8 -54.4 148.4
9°	40 19.3 -56.0 153.7	39 57.7 -55.8 152.5	39 35.1 -55.4 151.3	39 11.7 -55.0 150.1	38 47.4 -54.6 149.0
10°	39 23.3 -56.2 154.2	39 01.9 -55.8 153.0	38 39.7 -55.4 151.8	38 16.7 -55.2 150.6	37 52.8 -54.8 149.5
11°	38 27.1 -56.3 154.6	38 06.1 -55.9 153.4	37 44.3 -55.6 152.3	37 21.5 -55.2 151.1	36 58.0 -54.9 150.0
12°	37 30.8 -56.4 155.1	37 10.2 -56.1 153.9	36 48.7 -55.8 152.8	36 26.3 -55.4 151.6	36 03.1 -55.0 150.5
13°	36 34.4 -56.4 155.5	36 14.1 -56.1 154.3	35 52.9 -55.8 153.2	35 30.9 -55.4 152.1	35 08.1 -55.1 151.0
14°	35 38.0 -56.6 155.9	35 18.0 -56.3 154.8	34 57.1 -55.9 153.7	34 35.5 -55.6 152.6	34 13.0 -55.2 151.5
15°	34 41.4 -56.6 156.3	34 21.7 -56.3 155.2	34 01.2 -56.0 154.1	33 39.9 -55.7 153.0	33 17.8 -55.4 152.0
16°	33 44.8 -56.7 156.7	33 25.4 -56.4 155.6	33 05.2 -56.1 154.5	32 44.2 -55.7 153.5	32 22.4 -55.4 152.4
17°	32 48.1 -56.8 157.1	32 29.0 -56.5 156.0	32 09.1 -56.1 155.0	31 48.5 -55.9 153.9	31 27.0 -55.5 152.9
18°	31 51.3 -56.9 157.5	31 32.5 -56.5 156.4	31 13.0 -56.3 155.4	30 52.6 -55.9 154.3	30 31.5 -55.6 153.3
19°	30 54.4 -56.9 157.9	30 36.0 -56.6 156.8	30 16.7 -56.3 155.8	29 56.7 -56.0 154.8	29 35.9 -55.7 153.7
20°	29 57.5 -56.9 158.2	29 39.4 -56.7 157.2	29 20.4 -56.4 156.2	29 00.7 -56.1 155.2	28 40.2 -55.8 154.2
21°	29 00.6 -57.1 158.6	28 42.7 -56.8 157.6	28 24.0 -56.4 156.6	28 04.6 -56.2 155.6	27 44.4 -55.9 154.6
22°	28 03.5 -57.0 158.9	27 45.9 -56.8 157.9	27 27.6 -56.6 157.0	27 08.4 -56.2 156.0	26 48.5 -55.9 155.0
23°	27 06.5 -57.2 159.3	26 49.1 -56.8 158.3	26 31.0 -56.5 157.3	26 12.2 -56.3 156.4	25 52.6 -56.0 155.4
24°	26 09.3 -57.1 159.6	25 52.3 -56.9 158.7	25 34.5 -56.7 157.7	25 15.9 -56.3 156.8	24 56.6 -56.0 155.8
25°	25 12.2 -57.3 160.0	24 55.4 -57.0 159.0	24 37.8 -56.6 158.1	24 19.6 -56.4 157.1	24 00.6 -56.1 156.2
26°	24 14.9 -57.2 160.3	23 58.4 -57.0 159.4	23 41.2 -56.8 158.4	23 23.2 -56.5 157.5	23 04.5 -56.2 156.6
27°	23 17.7 -57.3 160.6	23 01.4 -57.0 159.7	22 44.4 -56.8 158.8	22 26.7 -56.5 157.9	22 08.3 -56.2 157.0
28°	22 20.4 -57.4 160.9	22 04.4 -57.1 160.0	21 47.6 -56.8 159.1	21 30.2 -56.5 158.2	21 12.1 -56.3 157.3
29°	21 23.0 -57.4 161.3	21 07.3 -57.2 160.4	20 50.8 -56.8 159.5	20 33.7 -56.6 158.6	20 15.8 -56.3 157.7

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°	46 22.2 -52.5 142.2	45 52.4 -52.0 141.0	45 21.9 -51.6 139.7	44 50.5 -51.1 138.5	44 18.4 -50.6 137.4
1°	45 29.7 -52.7 142.9	45 00.4 -52.2 141.7	44 30.3 -51.8 140.5	43 59.4 -51.3 139.3	43 27.8 -50.9 138.1
2°	44 37.0 -52.9 143.6	44 08.2 -52.5 142.4	43 38.5 -52.0 141.2	43 08.1 -51.6 140.0	42 36.9 -51.1 138.8
3°	43 44.1 -53.2 144.3	43 15.7 -52.7 143.0	42 46.5 -52.3 141.9	42 16.5 -51.8 140.7	41 45.8 -51.4 139.5
4°	42 50.9 -53.3 144.9	42 23.0 -53.0 143.7	41 54.2 -52.5 142.5	41 24.7 -52.1 141.4	40 54.4 -51.7 140.2
5°	41 57.6 -53.6 145.5	41 30.0 -53.1 144.3	41 01.7 -52.7 143.2	40 32.6 -52.3 142.0	40 02.7 -51.9 140.9
6°	41 04.0 -53.7 146.1	40 36.9 -53.3 144.9	40 09.0 -52.9 143.8	39 40.3 -52.5 142.7	39 10.8 -52.0 141.5
7°	40 10.3 -54.0 146.7	39 43.6 -53.6 145.5	39 16.1 -53.2 144.4	38 47.8 -52.7 143.3	38 18.8 -52.3 142.2
8°	39 16.3 -54.0 147.3	38 50.0 -53.6 146.1	38 22.9 -53.2 145.0	37 55.1 -52.9 143.9	37 26.5 -52.5 142.8
9°	38 22.3 -54.3 147.8	37 56.4 -53.9 146.7	37 29.7 -53.5 145.6	37 02.2 -53.1 144.5	36 34.0 -52.7 143.4
10°	37 28.0 -54.3 148.4	37 02.5 -54.0 147.3	36 36.2 -53.6 146.2	36 09.1 -53.2 145.1	35 41.3 -52.8 144.0
11°	36 33.7 -54.5 148.9	36 08.5 -54.1 147.8	35 42.6 -53.8 146.7	35 15.9 -53.3 145.6	34 48.5 -53.0 144.6
12°	35 39.2 -54.7 149.4	35 14.4 -54.3 148.3	34 48.8 -53.9 147.3	34 22.6 -53.6 146.2	33 55.5 -53.1 145.1
13°	34 44.5 -54.8 149.9	34 20.1 -54.4 148.9	33 54.9 -54.0 147.8	33 29.0 -53.6 146.7	33 02.4 -53.3 145.7
14°	33 49.7 -54.8 150.4	33 25.7 -54.5 149.4	33 00.9 -54.2 148.3	32 35.4 -53.8 147.3	32 09.1 -53.4 146.2
15°	32 54.9 -55.0 150.9	32 31.2 -54.7 149.9	32 06.7 -54.2 148.8	31 41.6 -54.0 147.8	31 15.7 -53.6 146.8
16°	31 59.9 -55.1 151.4	31 36.5 -54.7 150.3	31 12.5 -54.4 149.3	30 47.6 -54.0 148.3	30 22.1 -53.7 147.3
17°	31 04.8 -55.2 151.8	30 41.8 -54.9 150.8	30 18.1 -54.5 149.8	29 53.6 -54.2 148.8	29 28.4 -53.8 147.8
18°	30 09.6 -55.3 152.3	29 46.9 -54.9 151.3	29 23.6 -54.7 150.3	28 59.4 -54.2 149.3	28 34.6 -53.9 148.3
19°	29 14.3 -55.4 152.7	28 52.0 -55.1 151.8	28 28.9 -54.7 150.8	28 05.2 -54.4 149.8	27 40.7 -54.0 148.8
20°	28 18.9 -55.4 153.2	27 56.9 -55.1 152.2	27 34.2 -54.8 151.2	27 10.8 -54.4 150.3	26 46.7 -54.1 149.3
21°	27 23.5 -55.6 153.6	27 01.8 -55.2 152.6	26 39.4 -54.8 151.7	26 16.4 -54.6 150.7	25 52.6 -54.2 149.8
22°	26 27.9 -55.6 154.0	26 06.6 -55.3 153.1	25 44.6 -55.0 152.1	25 21.8 -54.6 151.2	24 58.4 -54.3 150.3
23°	25 32.3 -55.6 154.5	25 11.3 -55.4 153.5	24 49.6 -55.0 152.6	24 27.2 -54.7 151.7	24 04.1 -54.4 150.7
24°	24 36.7 -55.8 154.9	24 15.9 -55.4 153.9	23 54.6 -55.2 153.0	23 32.5 -54.8 152.1	23 09.7 -54.4 151.2
25°	23 40.9 -55.8 155.3	23 20.5 -55.5 154.4	22 59.4 -55.1 153.5	22 37.7 -54.9 152.6	22 15.3 -54.6 151.7
26°	22 45.1 -55.9 155.7	22 25.0 -55.5 154.8	22 04.3 -55.3 153.9	21 42.8 -54.9 153.0	21 20.7 -54.6 152.1
27°	21 49.2 -55.9 156.1	21 29.5 -55.7 155.2	21 09.0 -55.3 154.3	20 47.9 -55.0 153.4	20 26.1 -54.6 152.5
28°	20 53.3 -56.0 156.5	20 33.8 -55.6 155.6	20 13.7 -55.4 154.7	19 52.9 -55.1 153.8	19 31.5 -54.8 153.0
29°	19 57.3 -56.0 156.8	19 38.2 -55.8 156.0	19 18.3 -55.4 155.1	18 57.8 -55.1 154.3	18 36.7 -54.8 153.4

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	43 45.6 -50.1 136.2	43 12.1 -49.7 135.0	42 37.9 -49.2 133.9	42 03.1 -48.8 132.8	41 27.6 -48.3 131.7
1°	42 55.5 -50.5 136.9	42 22.4 -50.0 135.8	41 48.7 -49.6 134.7	41 14.3 -49.1 133.6	40 39.3 -48.7 132.5
2°	42 05.0 -50.7 137.7	41 32.4 -50.3 136.6	40 59.1 -49.8 135.4	40 25.2 -49.4 134.4	39 50.6 -48.9 133.3
3°	41 14.3 -51.0 138.4	40 42.1 -50.5 137.3	40 09.3 -50.1 136.2	39 35.8 -49.7 135.1	39 01.7 -49.3 134.0
4°	40 23.3 -51.2 139.1	39 51.6 -50.8 138.0	39 19.2 -50.4 136.9	38 46.1 -49.9 135.8	38 12.4 -49.5 134.8
5°	39 32.1 -51.4 139.8	39 00.8 -51.0 138.7	38 28.8 -50.5 137.6	37 56.2 -50.2 136.5	37 22.9 -49.7 135.5
6°	38 40.7 -51.7 140.4	38 09.8 -51.2 139.3	37 38.3 -50.9 138.3	37 06.0 -50.4 137.2	36 33.2 -50.0 136.2
7°	37 49.0 -51.9 141.1	37 18.6 -51.5 140.0	36 47.4 -51.0 138.9	36 15.6 -50.6 137.9	35 43.2 -50.2 136.9
8°	36 57.1 -52.0 141.7	36 27.1 -51.7 140.6	35 56.4 -51.3 139.6	35 25.0 -50.8 138.6	34 53.0 -50.5 137.5
9°	36 05.1 -52.3 142.3	35 35.4 -51.8 141.3	35 05.1 -51.4 140.2	34 34.2 -51.1 139.2	34 02.5 -50.6 138.2
10°	35 12.8 -52.4 142.9	34 43.6 -52.0 141.9	34 13.7 -51.7 140.9	33 43.1 -51.2 139.8	33 11.9 -50.8 138.8
11°	34 20.4 -52.6 143.5	33 51.6 -52.2 142.5	33 22.0 -51.8 141.5	32 51.9 -51.4 140.5	32 21.1 -51.1 139.5
12°	33 27.8 -52.8 144.1	32 59.4 -52.4 143.1	32 30.2 -51.9 142.1	32 00.5 -51.6 141.1	31 30.0 -51.2 140.1
13°	32 35.0 -52.9 144.7	32 07.0 -52.5 143.7	31 38.3 -52.2 142.7	31 08.9 -51.8 141.7	30 38.8 -51.3 140.7
14°	31 42.1 -53.0 145.2	31 14.5 -52.7 144.2	30 46.1 -52.3 143.2	30 17.1 -51.9 142.3	29 47.5 -51.6 141.3
15°	30 49.1 -53.2 145.8	30 21.8 -52.8 144.8	29 53.8 -52.4 143.8	29 25.2 -52.1 142.8	28 55.9 -51.6 141.9
16°	29 55.9 -53.3 146.3	29 29.0 -53.0 145.3	29 01.4 -52.6 144.4	28 33.1 -52.1 143.4	28 04.3 -51.8 142.5
17°	29 02.6 -53.5 146.8	28 36.0 -53.0 145.9	28 08.8 -52.7 144.9	27 41.0 -52.4 144.0	27 12.5 -52.0 143.0
18°	28 09.1 -53.5 147.4	27 43.0 -53.2 146.4	27 16.1 -52.8 145.5	26 48.6 -52.4 144.5	26 20.5 -52.1 143.6
19°	27 15.6 -53.7 147.9	26 49.8 -53.3 146.9	26 23.3 -52.9 146.0	25 56.2 -52.6 145.1	25 28.4 -52.2 144.2
20°	26 21.9 -53.7 148.4	25 56.5 -53.4 147.4	25 30.4 -53.1 146.5	25 03.6 -52.7 145.6	24 36.2 -52.3 144.7
21°	25 28.2 -53.9 148.9	25 03.1 -53.5 147.9	24 37.3 -53.1 147.0	24 10.9 -52.8 146.1	23 43.9 -52.4 145.2
22°	24 34.3 -53.9 149.4	24 09.6 -53.7 148.4	23 44.2 -53.3 147.5	23 18.1 -52.9 146.6	22 51.5 -52.6 145.8
23°	23 40.4 -54.1 149.8	23 15.9 -53.6 148.9	22 50.9 -53.3 148.0	22 25.2 -53.0 147.2	21 58.9 -52.6 146.3
24°	22 46.3 -54.1 150.3	22 22.3 -53.8 149.4	21 57.6 -53.5 148.5	21 32.2 -53.0 147.7	21 06.3 -52.7 146.8
25°	21 52.2 -54.2 150.8	21 28.5 -53.9 149.9	21 04.1 -53.5 149.0	20 39.2 -53.2 148.2	20 13.6 -52.8 147.3
26°	20 58.0 -54.3 151.2	20 34.6 -53.9 150.4	20 10.6 -53.6 149.5	19 46.0 -53.3 148.7	19 20.8 -52.9 147.8
27°	20 03.7 -54.3 151.7	19 40.7 -54.0 150.8	19 17.0 -53.7 150.0	18 52.7 -53.3 149.1	18 27.9 -53.0 148.3
28°	19 09.4 -54.4 152.1	18 46.7 -54.1 151.3	18 23.3 -53.7 150.5	17 59.4 -53.4 149.6	17 34.9 -53.0 148.8
29°	18 15.0 -54.5 152.6	17 52.6 -54.1 151.8	17 29.6 -53.8 150.9	17 06.0 -53.4 150.1	16 41.9 -53.2 149.3

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°	40 51.6 -47.9 130.7	40 14.9 -47.4 129.6	39 37.8 -47.1 128.6	39 00.1 -46.7 127.6	38 21.8 -46.2 126.6
1°	40 03.7 -48.3 131.5	39 27.5 -47.8 130.4	38 50.7 -47.4 129.4	38 13.4 -46.9 128.4	37 35.6 -46.5 127.4
2°	39 15.4 -48.5 132.2	38 39.7 -48.1 131.2	38 03.3 -47.6 130.2	37 26.5 -47.3 129.2	36 49.1 -46.9 128.2
3°	38 26.9 -48.8 133.0	37 51.6 -48.4 132.0	37 15.7 -48.0 131.0	36 39.2 -47.5 130.0	36 02.2 -47.1 129.0
4°	37 38.1 -49.1 133.7	37 03.2 -48.7 132.7	36 27.7 -48.2 131.7	35 51.7 -47.9 130.7	35 15.1 -47.4 129.8
5°	36 49.0 -49.3 134.5	36 14.5 -48.9 133.4	35 39.5 -48.6 132.5	35 03.8 -48.1 131.5	34 27.7 -47.7 130.5
6°	35 59.7 -49.6 135.2	35 25.6 -49.2 134.2	34 50.9 -48.7 133.2	34 15.7 -48.3 132.2	33 40.0 -48.0 131.2
7°	35 10.1 -49.8 135.9	34 36.4 -49.4 134.9	34 02.2 -49.0 133.9	33 27.4 -48.6 132.9	32 52.0 -48.2 132.0
8°	34 20.3 -50.0 136.5	33 47.0 -49.6 135.5	33 13.2 -49.2 134.6	32 38.8 -48.8 133.6	32 03.8 -48.4 132.7
9°	33 30.3 -50.3 137.2	32 57.4 -49.8 136.2	32 24.0 -49.5 135.3	31 50.0 -49.1 134.3	31 15.4 -48.7 133.4
10°	32 40.0 -50.4 137.9	32 07.6 -50.1 136.9	31 34.5 -49.6 135.9	31 00.9 -49.2 135.0	30 26.7 -48.8 134.0
11°	31 49.6 -50.6 138.5	31 17.5 -50.2 137.5	30 44.9 -49.8 136.6	30 11.7 -49.5 135.6	29 37.9 -49.1 134.7
12°	30 59.0 -50.8 139.1	30 27.3 -50.4 138.2	29 55.1 -50.1 137.2	29 22.2 -49.6 136.3	28 48.8 -49.2 135.4
13°	30 08.2 -51.0 139.7	29 36.9 -50.6 138.8	29 05.0 -50.2 137.9	28 32.6 -49.8 136.9	27 59.6 -49.4 136.0
14°	29 17.2 -51.1 140.3	28 46.3 -50.7 139.4	28 14.8 -50.3 138.5	27 42.8 -50.0 137.6	27 10.2 -49.6 136.7
15°	28 26.1 -51.3 140.9	27 55.6 -50.9 140.0	27 24.5 -50.5 139.1	26 52.8 -50.1 138.2	26 20.6 -49.8 137.3
16°	27 34.8 -51.5 141.5	27 04.7 -51.1 140.6	26 34.0 -50.7 139.7	26 02.7 -50.3 138.8	25 30.8 -49.9 137.9
17°	26 43.3 -51.5 142.1	26 13.6 -51.2 141.2	25 43.3 -50.8 140.3	25 12.4 -50.5 139.4	24 40.9 -50.0 138.5
18°	25 51.8 -51.8 142.7	25 22.4 -51.3 141.8	24 52.5 -51.0 140.9	24 21.9 -50.5 140.0	23 50.9 -50.2 139.1
19°	25 00.0 -51.8 143.2	24 31.1 -51.5 142.3	24 01.5 -51.1 141.5	23 31.4 -50.7 140.6	23 00.7 -50.4 139.7
20°	24 08.2 -51.9 143.8	23 39.6 -51.6 142.9	23 10.4 -51.2 142.0	22 40.7 -50.9 141.2	22 10.3 -50.4 140.3
21°	23 16.3 -52.1 144.3	22 48.0 -51.7 143.5	22 19.2 -51.3 142.6	21 49.8 -50.9 141.7	21 19.9 -50.6 140.9
22°	22 24.2 -52.2 144.9	21 56.3 -51.8 144.0	21 27.9 -51.4 143.2	20 58.9 -51.1 142.3	20 29.3 -50.7 141.5
23°	21 32.0 -52.2 145.4	21 04.5 -51.9 144.6	20 36.5 -51.6 143.7	20 07.8 -51.1 142.9	19 38.6 -50.8 142.0
24°	20 39.8 -52.4 145.9	20 12.6 -52.0 145.1	19 44.9 -51.6 144.3	19 16.7 -51.3 143.4	18 47.8 -50.9 142.6
25°	19 47.4 -52.5 146.5	19 20.6 -52.1 145.6	18 53.3 -51.7 144.8	18 25.4 -51.4 144.0	17 56.9 -51.0 143.2
26°	18 54.9 -52.5 147.0	18 28.5 -52.1 146.2	18 01.6 -51.9 145.3	17 34.0 -51.4 144.5	17 05.9 -51.0 143.7
27°	18 02.4 -52.6 147.5	17 36.4 -52.3 146.7	17 09.7 -51.8 145.9	16 42.6 -51.6 145.1	16 14.9 -51.2 144.3
28°	17 09.8 -52.7 148.0	16 44.1 -52.3 147.2	16 17.9 -52.0 146.4	15 51.0 -51.6 145.6	15 23.7 -51.2 144.8
29°	16 17.1 -52.8 148.5	15 51.8 -52.4 147.7	15 25.9 -52.1 146.9	14 59.4 -51.6 146.1	14 32.5 -51.4 145.3

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°	37 43.1 -45.8 125.6	37 04.0 -45.4 124.7	36 24.4 -45.1 123.8	35 44.3 -44.7 122.8	35 03.8 -44.2 121.9
1°	36 57.3 -46.1 126.5	36 18.6 -45.8 125.5	35 39.3 -45.3 124.6	34 59.6 -44.9 123.7	34 19.6 -44.6 122.8
2°	36 11.2 -46.5 127.3	35 32.8 -46.0 126.3	34 54.0 -45.7 125.4	34 14.7 -45.3 124.5	33 35.0 -45.0 123.6
3°	35 24.7 -46.7 128.0	34 46.8 -46.4 127.1	34 08.3 -46.0 126.2	33 29.4 -45.6 125.3	32 50.0 -45.2 124.4
4°	34 38.0 -47.0 128.8	34 00.4 -46.6 127.9	33 22.3 -46.2 126.9	32 43.8 -45.9 126.0	32 04.8 -45.5 125.1
5°	33 51.0 -47.3 129.6	33 13.8 -46.9 128.6	32 36.1 -46.5 127.7	31 57.9 -46.1 126.8	31 19.3 -45.7 125.9
6°	33 03.7 -47.6 130.3	32 26.9 -47.2 129.4	31 49.6 -46.8 128.4	31 11.8 -46.4 127.5	30 33.6 -46.0 126.7
7°	32 16.1 -47.8 131.0	31 39.7 -47.4 130.1	31 02.8 -47.0 129.2	30 25.4 -46.6 128.3	29 47.6 -46.3 127.4
8°	31 28.3 -48.0 131.7	30 52.3 -47.6 130.8	30 15.8 -47.3 129.9	29 38.8 -46.9 129.0	29 01.3 -46.5 128.1
9°	30 40.3 -48.3 132.4	30 04.7 -47.9 131.5	29 28.5 -47.4 130.6	28 51.9 -47.1 129.7	28 14.8 -46.7 128.8
10°	29 52.0 -48.4 133.1	29 16.8 -48.1 132.2	28 41.1 -47.7 131.3	28 04.8 -47.3 130.4	27 28.1 -46.9 129.6
11°	29 03.6 -48.7 133.8	28 28.7 -48.3 132.9	27 53.4 -47.9 132.0	27 17.5 -47.5 131.1	26 41.2 -47.2 130.3
12°	28 14.9 -48.8 134.5	27 40.4 -48.4 133.6	27 05.5 -48.1 132.7	26 30.0 -47.7 131.8	25 54.0 -47.3 130.9
13°	27 26.1 -49.1 135.1	26 52.0 -48.7 134.2	26 17.4 -48.3 133.3	25 42.3 -47.9 132.5	25 06.7 -47.5 131.6
14°	26 37.0 -49.2 135.8	26 03.3 -48.8 134.9	25 29.1 -48.4 134.0	24 54.4 -48.1 133.1	24 19.2 -47.7 132.3
15°	25 47.8 -49.4 136.4	25 14.5 -49.0 135.5	24 40.7 -48.6 134.7	24 06.3 -48.2 133.8	23 31.5 -47.8 133.0
16°	24 58.4 -49.5 137.0	24 25.5 -49.1 136.2	23 52.1 -48.8 135.3	23 18.1 -48.4 134.5	22 43.7 -48.0 133.6
17°	24 08.9 -49.7 137.7	23 36.4 -49.3 136.8	23 03.3 -48.9 135.9	22 29.7 -48.5 135.1	21 55.7 -48.2 134.3
18°	23 19.2 -49.8 138.3	22 47.1 -49.5 137.4	22 14.4 -49.1 136.6	21 41.2 -48.7 135.7	21 07.5 -48.3 134.9
19°	22 29.4 -49.9 138.9	21 57.6 -49.5 138.0	21 25.3 -49.2 137.2	20 52.5 -48.8 136.4	20 19.2 -48.5 135.5
20°	21 39.5 -50.1 139.5	21 08.1 -49.7 138.6	20 36.1 -49.3 137.8	20 03.7 -49.0 137.0	19 30.7 -48.5 136.2
21°	20 49.4 -50.2 140.1	20 18.4 -49.9 139.2	19 46.8 -49.4 138.4	19 14.7 -49.0 137.6	18 42.2 -48.7 136.8
22°	19 59.2 -50.3 140.6	19 28.5 -49.9 139.8	18 57.4 -49.6 139.0	18 25.7 -49.2 138.2	17 53.5 -48.8 137.4
23°	19 08.9 -50.4 141.2	18 38.6 -50.0 140.4	18 07.8 -49.7 139.6	17 36.5 -49.3 138.8	17 04.7 -48.9 138.0
24°	18 18.5 -50.6 141.8	17 48.6 -50.2 141.0	17 18.1 -49.7 140.2	16 47.2 -49.4 139.4	16 15.8 -49.1 138.6
25°	17 27.9 -50.6 142.4	16 58.4 -50.2 141.6	16 28.4 -49.9 140.8	15 57.8 -49.5 140.0	15 26.7 -49.1 139.2
26°	16 37.3 -50.7 142.9	16 08.2 -50.4 142.1	15 38.5 -50.0 141.4	15 08.3 -49.6 140.6	14 37.6 -49.2 139.8
27°	15 46.6 -50.8 143.5	15 17.8 -50.4 142.7	14 48.5 -50.0 141.9	14 18.7 -49.6 141.2	13 48.4 -49.3 140.4
28°	14 55.8 -50.9 144.0	14 27.4 -50.5 143.3	13 58.5 -50.1 142.5	13 29.1 -49.8 141.7	12 59.1 -49.3 141.0
29°	14 04.9 -50.9 144.6	13 36.9 -50.6 143.8	13 08.4 -50.2 143.1	12 39.3 -49.8 142.3	12 09.8 -49.5 141.6

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°	34 23.0 -43.9 121.0	33 41.7 -43.5 120.2	33 00.1 -43.2 119.3	32 18.2 -42.9 118.5	31 35.9 -42.6 117.6
1°	33 39.1 -44.3 121.9	32 58.2 -43.9 121.0	32 16.9 -43.5 120.1	31 35.3 -43.2 119.3	30 53.3 -42.9 118.4
2°	32 54.8 -44.5 122.7	32 14.3 -44.2 121.8	31 33.4 -43.9 120.9	30 52.1 -43.5 120.1	30 10.4 -43.1 119.3
3°	32 10.3 -44.9 123.5	31 30.1 -44.5 122.6	30 49.5 -44.1 121.7	30 08.6 -43.8 120.9	29 27.3 -43.5 120.1
4°	31 25.4 -45.1 124.2	30 45.6 -44.7 123.4	30 05.4 -44.4 122.5	29 24.8 -44.0 121.7	28 43.8 -43.7 120.8
5°	30 40.3 -45.4 125.0	30 00.9 -45.1 124.1	29 21.0 -44.7 123.3	28 40.8 -44.4 122.5	28 00.1 -43.9 121.6
6°	29 54.9 -45.6 125.8	29 15.8 -45.2 124.9	28 36.3 -44.9 124.1	27 56.4 -44.5 123.2	27 16.2 -44.3 122.4
7°	29 09.3 -45.9 126.5	28 30.6 -45.6 125.7	27 51.4 -45.1 124.8	27 11.9 -44.8 124.0	26 31.9 -44.4 123.1
8°	28 23.4 -46.1 127.3	27 45.0 -45.7 126.4	27 06.3 -45.4 125.6	26 27.1 -45.1 124.7	25 47.5 -44.7 123.9
9°	27 37.3 -46.4 128.0	26 59.3 -46.0 127.1	26 20.9 -45.6 126.3	25 42.0 -45.2 125.5	25 02.8 -44.9 124.6
10°	26 50.9 -46.5 128.7	26 13.3 -46.2 127.8	25 35.3 -45.9 127.0	24 56.8 -45.5 126.2	24 17.9 -45.1 125.4
11°	26 04.4 -46.8 129.4	25 27.1 -46.4 128.6	24 49.4 -46.0 127.7	24 11.3 -45.6 126.9	23 32.8 -45.3 126.1
12°	25 17.6 -46.9 130.1	24 40.7 -46.6 129.3	24 03.4 -46.2 128.4	23 25.7 -45.9 127.6	22 47.5 -45.5 126.8
13°	24 30.7 -47.2 130.8	23 54.1 -46.7 129.9	23 17.2 -46.4 129.1	22 39.8 -46.0 128.3	22 02.0 -45.7 127.5
14°	23 43.5 -47.3 131.5	23 07.4 -47.0 130.6	22 30.8 -46.6 129.8	21 53.8 -46.2 129.0	21 16.3 -45.8 128.2
15°	22 56.2 -47.5 132.1	22 20.4 -47.1 131.3	21 44.2 -46.7 130.5	21 07.6 -46.4 129.7	20 30.5 -46.0 128.9
16°	22 08.7 -47.6 132.8	21 33.3 -47.2 132.0	20 57.5 -46.9 131.2	20 21.2 -46.5 130.4	19 44.5 -46.2 129.6
17°	21 21.1 -47.8 133.4	20 46.1 -47.4 132.6	20 10.6 -47.0 131.8	19 34.7 -46.7 131.0	18 58.3 -46.3 130.3
18°	20 33.3 -47.9 134.1	19 58.7 -47.6 133.3	19 23.6 -47.2 132.5	18 48.0 -46.8 131.7	18 12.0 -46.4 130.9
19°	19 45.4 -48.1 134.7	19 11.1 -47.7 133.9	18 36.4 -47.3 133.1	18 01.2 -47.0 132.4	17 25.6 -46.6 131.6
20°	18 57.3 -48.2 135.4	18 23.4 -47.8 134.6	17 49.1 -47.5 133.8	17 14.2 -47.0 133.0	16 39.0 -46.7 132.2
21°	18 09.1 -48.3 136.0	17 35.6 -47.9 135.2	17 01.6 -47.6 134.4	16 27.2 -47.2 133.7	15 52.3 -46.8 132.9
22°	17 20.8 -48.4 136.6	16 47.7 -48.1 135.8	16 14.0 -47.6 135.1	15 40.0 -47.3 134.3	15 05.5 -47.0 133.6
23°	16 32.4 -48.6 137.2	15 59.6 -48.1 136.5	15 26.4 -47.8 135.7	14 52.7 -47.4 134.9	14 18.5 -47.0 134.2
24°	15 43.8 -48.6 137.8	15 11.5 -48.3 137.1	14 38.6 -47.9 136.3	14 05.3 -47.5 135.6	13 31.5 -47.1 134.8
25°	14 55.2 -48.7 138.5	14 23.2 -48.4 137.7	13 50.7 -48.0 136.9	13 17.8 -47.6 136.2	12 44.4 -47.2 135.5
26°	14 06.5 -48.8 139.1	13 34.8 -48.4 138.3	13 02.7 -48.0 137.6	12 30.2 -47.7 136.8	11 57.2 -47.3 136.1
27°	13 17.7 -49.0 139.7	12 46.4 -48.5 138.9	12 14.7 -48.2 138.2	11 42.5 -47.8 137.5	11 09.9 -47.4 136.7
28°	12 28.7 -48.9 140.2	11 57.9 -48.6 139.5	11 26.5 -48.2 138.8	10 54.7 -47.8 138.1	10 22.5 -47.5 137.4
29°	11 39.8 -49.1 140.8	11 09.3 -48.7 140.1	10 38.3 -48.3 139.4	10 06.9 -47.9 138.7	9 35.0 -47.5 138.0

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°	30 53.2 -42.2 116.8	30 10.3 -41.9 116.0	29 27.1 -41.6 115.2	28 43.6 -41.3 114.4	27 59.8 -41.0 113.6
1°	30 11.0 -42.5 117.6	29 28.4 -42.2 116.8	28 45.5 -41.9 116.0	28 02.3 -41.6 115.2	27 18.8 -41.3 114.4
2°	29 28.5 -42.9 118.4	28 46.2 -42.5 117.6	28 03.6 -42.2 116.8	27 20.7 -41.9 116.0	26 37.5 -41.6 115.3
3°	28 45.6 -43.1 119.2	28 03.7 -42.8 118.4	27 21.4 -42.5 117.6	26 38.8 -42.2 116.8	25 55.9 -41.9 116.1
4°	28 02.5 -43.3 120.0	27 20.9 -43.1 119.2	26 38.9 -42.7 118.4	25 56.6 -42.4 117.6	25 14.0 -42.1 116.9
5°	27 19.2 -43.7 120.8	26 37.8 -43.3 120.0	25 56.2 -43.0 119.2	25 14.2 -42.7 118.4	24 31.9 -42.4 117.6
6°	26 35.5 -43.9 121.6	25 54.5 -43.5 120.8	25 13.2 -43.2 120.0	24 31.5 -42.9 119.2	23 49.5 -42.6 118.4
7°	25 51.6 -44.1 122.3	25 11.0 -43.8 121.5	24 30.0 -43.5 120.7	23 48.6 -43.1 120.0	23 06.9 -42.8 119.2
8°	25 07.5 -44.3 123.1	24 27.2 -44.0 122.3	23 46.5 -43.7 121.5	23 05.5 -43.4 120.7	22 24.1 -43.0 119.9
9°	24 23.2 -44.6 123.8	23 43.2 -44.2 123.0	23 02.8 -43.8 122.2	22 22.1 -43.5 121.5	21 41.1 -43.2 120.7
10°	23 38.6 -44.7 124.6	22 59.0 -44.4 123.8	22 19.0 -44.1 123.0	21 38.6 -43.8 122.2	20 57.9 -43.4 121.4
11°	22 53.9 -45.0 125.3	22 14.6 -44.6 124.5	21 34.9 -44.3 123.7	20 54.8 -43.9 122.9	20 14.5 -43.6 122.2
12°	22 08.9 -45.1 126.0	21 30.0 -44.8 125.2	20 50.6 -44.4 124.4	20 10.9 -44.1 123.7	19 30.9 -43.8 122.9
13°	21 23.8 -45.3 126.7	20 45.2 -45.0 125.9	20 06.2 -44.6 125.2	19 26.8 -44.3 124.4	18 47.1 -43.9 123.6
14°	20 38.5 -45.5 127.4	20 00.2 -45.1 126.6	19 21.6 -44.8 125.9	18 42.5 -44.4 125.1	18 03.2 -44.1 124.3
15°	19 53.0 -45.7 128.1	19 15.1 -45.3 127.3	18 36.8 -45.0 126.6	17 58.1 -44.6 125.8	17 19.1 -44.3 125.1
16°	19 07.3 -45.8 128.8	18 29.8 -45.5 128.0	17 51.8 -45.0 127.3	17 13.5 -44.7 126.5	16 34.4 -44.4 125.8
17°	18 21.5 -45.9 129.5	17 44.3 -45.5 128.7	17 06.8 -45.3 128.0	16 28.8 -44.9 127.2	15 50.4 -44.5 126.5
18°	17 35.6 -46.1 130.2	16 58.8 -45.8 129.4	16 21.5 -45.3 128.6	15 43.9 -45.0 127.9	15 05.9 -44.6 127.2
19°	16 49.5 -46.2 130.8	16 13.0 -45.8 130.1	15 36.2 -45.5 129.3	14 58.9 -45.1 128.6	14 21.3 -44.8 127.9
20°	16 03.3 -46.3 131.5	15 27.2 -46.0 130.7	14 50.7 -45.6 130.0	14 13.8 -45.2 129.3	13 36.5 -44.9 128.5
21°	15 17.0 -46.5 132.2	14 41.2 -46.0 131.4	14 05.1 -45.7 130.7	13 28.6 -45.4 129.9	12 51.6 -45.0 129.2
22°	14 30.5 -46.5 132.8	13 55.2 -46.2 132.1	13 19.4 -45.8 131.3	12 43.2 -45.4 130.6	12 06.6 -45.0 129.9
23°	13 44.0 -46.7 133.5	13 09.0 -46.3 132.7	12 33.6 -45.9 132.0	11 57.8 -45.6 131.3	11 21.6 -45.2 130.6
24°	12 57.3 -46.7 134.1	12 22.7 -46.4 133.4	11 47.7 -46.0 132.7	11 12.2 -45.6 131.9	10 36.4 -45.3 131.2
25°	12 10.6 -46.9 134.7	11 36.3 -46.4 134.0	11 01.7 -46.1 133.3	10 26.6 -45.7 132.6	9 51.1 -45.3 131.9
26°	11 23.7 -46.9 135.4	10 49.9 -46.6 134.7	10 15.6 -46.2 134.0	9 40.9 -45.8 133.3	9 05.8 -45.4 132.6
27°	10 36.8 -47.0 136.0	10 03.3 -46.6 135.3	9 29.4 -46.2 134.6	8 55.1 -45.9 133.9	8 20.4 -45.5 133.2
28°	9 49.8 -47.1 136.6	9 16.7 -46.7 136.0	8 43.2 -46.3 135.3	8 09.2 -45.9 134.6	7 34.9 -45.5 133.9
29°	9 02.7 -47.1 137.3	8 30.0 -46.7 136.6	7 56.9 -46.4 135.9	7 23.3 -45.9 135.2	6 49.4 -45.6 134.6

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°	27 15.8 -40.8 112.9	26 31.5 -40.5 112.1	25 47.0 -40.2 111.3	25 02.3 -40.0 110.6	24 17.3 -39.8 109.9
1°	26 35.0 -41.0 113.7	25 51.0 -40.8 112.9	25 06.8 -40.6 112.2	24 22.3 -40.3 111.4	23 37.5 -40.0 110.7
2°	25 54.0 -41.3 114.5	25 10.2 -41.0 113.7	24 26.2 -40.7 113.0	23 42.0 -40.5 112.2	22 57.5 -40.2 111.5
3°	25 12.7 -41.6 115.3	24 29.2 -41.3 114.5	23 45.5 -41.0 113.8	23 01.5 -40.7 113.0	22 17.3 -40.5 112.3
4°	24 31.1 -41.8 116.1	23 47.9 -41.5 115.3	23 04.5 -41.3 114.6	22 20.8 -41.0 113.8	21 36.8 -40.7 113.1
5°	23 49.3 -42.1 116.9	23 06.4 -41.8 116.1	22 23.2 -41.5 115.4	21 39.8 -41.2 114.6	20 56.1 -40.9 113.9
6°	23 07.2 -42.3 117.6	22 24.6 -42.0 116.9	21 41.7 -41.6 116.1	20 58.6 -41.4 115.4	20 15.2 -41.1 114.7
7°	22 24.9 -42.5 118.4	21 42.6 -42.2 117.7	21 00.1 -41.9 116.9	20 17.2 -41.6 116.2	19 34.1 -41.4 115.5
8°	21 42.4 -42.7 119.2	21 00.4 -42.4 118.4	20 18.2 -42.1 117.7	19 35.6 -41.8 116.9	18 52.7 -41.5 116.2
9°	20 59.7 -42.9 119.9	20 18.0 -42.5 119.2	19 36.1 -42.3 118.4	18 53.8 -42.0 117.7	18 11.2 -41.7 117.0
10°	20 16.8 -43.1 120.7	19 35.5 -42.8 119.9	18 53.8 -42.5 119.2	18 11.8 -42.2 118.5	17 29.5 -41.8 117.7
11°	19 33.7 -43.2 121.4	18 52.7 -43.0 120.7	18 11.3 -42.6 119.9	17 29.6 -42.3 119.2	16 47.7 -42.1 118.5
12°	18 50.5 -43.5 122.2	18 09.7 -43.1 121.4	17 28.7 -42.8 120.7	16 47.3 -42.5 120.0	16 05.6 -42.1 119.2
13°	18 07.0 -43.6 122.9	17 26.6 -43.3 122.1	16 45.9 -43.0 121.4	16 04.8 -42.6 120.7	15 23.5 -42.4 120.0
14°	17 23.4 -43.7 123.6	16 43.3 -43.4 122.9	16 02.9 -43.1 122.1	15 22.2 -42.8 121.4	14 41.1 -42.4 120.7
15°	16 39.7 -43.9 124.3	15 59.9 -43.6 123.6	15 19.8 -43.2 122.9	14 39.4 -42.9 122.1	13 58.7 -42.6 121.4
16°	15 55.8 -44.1 125.0	15 16.3 -43.7 124.3	14 36.6 -43.4 123.6	13 56.5 -43.0 122.9	13 16.1 -42.7 122.2
17°	15 11.7 -44.2 125.7	14 32.6 -43.8 125.0	13 53.2 -43.5 124.3	13 13.5 -43.2 123.6	12 33.4 -42.8 122.9
18°	14 27.5 -44.3 126.4	13 48.8 -43.9 125.7	13 09.7 -43.6 125.0	12 30.3 -43.3 124.3	11 50.6 -43.0 123.6
19°	13 43.2 -44.4 127.1	13 04.9 -44.1 126.4	12 26.1 -43.7 125.7	11 47.0 -43.3 125.0	11 07.6 -43.0 124.3
20°	12 58.8 -44.5 127.8	12 20.8 -44.2 127.1	11 42.4 -43.8 126.4	11 03.7 -43.5 125.7	10 24.6 -43.1 125.0
21°	12 14.3 -44.6 128.5	11 36.6 -44.2 127.8	10 58.6 -43.9 127.1	10 20.2 -43.6 126.4	9 41.5 -43.2 125.7
22°	11 29.7 -44.7 129.2	10 52.4 -44.4 128.5	10 14.7 -44.0 127.8	9 36.6 -43.6 127.1	8 58.3 -43.3 126.4
23°	10 45.0 -44.8 129.9	10 08.0 -44.4 129.2	9 30.7 -44.1 128.5	8 53.0 -43.7 127.8	8 15.0 -43.4 127.1
24°	10 00.2 -44.9 130.5	9 23.6 -44.6 129.9	8 46.6 -44.2 129.2	8 09.3 -43.8 128.5	7 31.6 -43.4 127.8
25°	9 15.3 -45.0 131.2	8 39.0 -44.5 130.5	8 02.4 -44.2 129.9	7 25.5 -43.9 129.2	6 48.2 -43.5 128.5
26°	8 30.3 -45.0 131.9	7 54.5 -44.7 131.2	7 18.2 -44.3 130.5	6 41.6 -43.9 129.9	6 04.7 -43.6 129.2
27°	7 45.3 -45.1 132.6	7 09.8 -44.7 131.9	6 33.9 -44.3 131.2	5 57.7 -44.0 130.6	5 21.1 -43.6 129.9
28°	7 00.2 -45.2 133.2	6 25.1 -44.8 132.6	5 49.6 -44.4 131.9	5 13.7 -44.0 131.2	4 37.5 -43.6 130.6
29°	6 15.0 -45.2 133.9	5 40.3 -44.8 133.2	5 05.2 -44.4 132.6	4 29.7 -44.0 131.9	3 53.9 -43.7 131.3

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°	23 32.1 -39.5 109.2	22 46.8 -39.3 108.4	22 01.2 -39.0 107.7	21 15.5 -38.9 107.0	20 29.6 -38.7 106.4
1°	22 52.6 -39.7 110.0	22 07.5 -39.5 109.3	21 22.2 -39.4 108.6	20 36.6 -39.1 107.9	19 50.9 -38.8 107.2
2°	22 12.9 -40.0 110.8	21 28.0 -39.8 110.1	20 42.8 -39.5 109.4	19 57.5 -39.3 108.7	19 12.1 -39.1 108.0
3°	21 32.9 -40.3 111.6	20 48.2 -40.0 110.9	20 03.3 -39.7 110.2	19 18.2 -39.5 109.5	18 33.0 -39.3 108.8
4°	20 52.6 -40.4 112.4	20 08.2 -40.2 111.7	19 23.6 -40.0 111.0	18 38.7 -39.7 110.3	17 53.7 -39.5 109.6
5°	20 12.2 -40.7 113.2	19 28.0 -40.4 112.5	18 43.6 -40.1 111.8	17 59.0 -39.9 111.1	17 14.2 -39.7 110.4
6°	19 31.5 -40.8 114.0	18 47.6 -40.6 113.2	18 03.5 -40.4 112.5	17 19.1 -40.1 111.8	16 34.5 -39.8 111.2
7°	18 50.7 -41.1 114.7	18 07.0 -40.8 114.0	17 23.1 -40.5 113.3	16 39.0 -40.2 112.6	15 54.7 -40.0 111.9
8°	18 09.6 -41.2 115.5	17 26.2 -40.9 114.8	16 42.6 -40.7 114.1	15 58.8 -40.5 113.4	15 14.7 -40.2 112.7
9°	17 28.4 -41.4 116.3	16 45.3 -41.1 115.6	16 01.9 -40.8 114.9	15 18.3 -40.6 114.2	14 34.5 -40.3 113.5
10°	16 47.0 -41.6 117.0	16 04.2 -41.3 116.3	15 21.1 -41.0 115.6	14 37.7 -40.7 114.9	13 54.2 -40.5 114.2
11°	16 05.4 -41.7 117.8	15 22.9 -41.5 117.1	14 40.1 -41.2 116.4	13 57.0 -40.9 115.7	13 13.7 -40.6 115.0
12°	15 23.7 -41.9 118.5	14 41.4 -41.5 117.8	13 58.9 -41.3 117.1	13 16.1 -41.0 116.4	12 33.1 -40.7 115.8
13°	14 41.8 -42.0 119.3	13 59.9 -41.7 118.6	13 17.6 -41.4 117.9	12 35.1 -41.1 117.2	11 52.4 -40.8 116.5
14°	13 59.8 -42.2 120.0	13 18.2 -41.9 119.3	12 36.2 -41.5 118.6	11 54.0 -41.2 117.9	11 11.6 -41.0 117.3
15°	13 17.6 -42.2 120.7	12 36.3 -41.9 120.0	11 54.7 -41.7 119.4	11 12.8 -41.4 118.7	10 30.6 -41.0 118.0
16°	12 35.4 -42.4 121.5	11 54.4 -42.1 120.8	11 13.0 -41.7 120.1	10 31.4 -41.4 119.4	9 49.6 -41.2 118.7
17°	11 53.0 -42.5 122.2	11 12.3 -42.2 121.5	10 31.3 -41.9 120.8	9 50.0 -41.6 120.1	9 08.4 -41.2 119.5
18°	11 10.5 -42.6 122.9	10 30.1 -42.3 122.2	9 49.4 -41.9 121.5	9 08.4 -41.6 120.9	8 27.2 -41.4 120.2
19°	10 27.9 -42.7 123.6	9 47.8 -42.3 122.9	9 07.5 -42.1 122.3	8 26.8 -41.7 121.6	7 45.8 -41.4 120.9
20°	9 45.2 -42.8 124.3	9 05.5 -42.5 123.7	8 25.4 -42.1 123.0	7 45.1 -41.8 122.3	7 04.4 -41.4 121.7
21°	9 02.4 -42.9 125.0	8 23.0 -42.5 124.4	7 43.3 -42.2 123.7	7 03.3 -41.9 123.1	6 23.0 -41.5 122.4
22°	8 19.5 -42.9 125.8	7 40.5 -42.6 125.1	7 01.1 -42.2 124.4	6 21.4 -41.9 123.8	5 41.5 -41.6 123.1
23°	7 36.6 -43.0 126.5	6 57.9 -42.7 125.8	6 18.9 -42.4 125.1	5 39.5 -41.9 124.5	4 59.9 -41.7 123.8
24°	6 53.6 -43.1 127.2	6 15.2 -42.7 126.5	5 36.5 -42.3 125.9	4 57.6 -42.1 125.2	4 18.2 -41.6 124.6
25°	6 10.5 -43.1 127.9	5 32.5 -42.8 127.2	4 54.2 -42.4 126.6	4 15.5 -42.0 125.9	3 36.6 -41.7 125.3
26°	5 27.4 -43.2 128.6	4 49.7 -42.8 127.9	4 11.8 -42.5 127.3	3 33.5 -42.1 126.6	2 54.9 -41.8 126.0
27°	4 44.2 -43.2 129.3	4 06.9 -42.8 128.6	3 29.3 -42.5 128.0	2 51.4 -42.1 127.4	2 13.1 -41.7 126.7
28°	4 01.0 -43.3 130.0	3 24.1 -42.9 129.3	2 46.8 -42.5 128.7	2 09.3 -42.2 128.1	1 31.4 -41.8 127.5
29°	3 17.7 -43.3 130.7	2 41.2 -42.9 130.0	2 04.3 -42.5 129.4	1 27.1 -42.1 128.8	0 49.6 -41.7 128.2

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°	19 43.5 -38.4 105.7	18 57.3 -38.3 105.0	18 11.0 -38.1 104.3	17 24.5 -38.0 103.7	16 37.9 -37.8 103.0
1°	19 05.1 -38.7 106.5	18 19.0 -38.4 105.8	17 32.9 -38.3 105.1	16 46.5 -38.1 104.5	16 00.1 -38.0 103.8
2°	18 26.4 -38.9 107.3	17 40.6 -38.7 106.6	16 54.6 -38.5 105.9	16 08.4 -38.3 105.3	15 22.1 -38.1 104.6
3°	17 47.5 -39.1 108.1	17 01.9 -38.9 107.4	16 16.1 -38.7 106.7	15 30.1 -38.5 106.1	14 44.0 -38.3 105.4
4°	17 08.4 -39.2 108.9	16 23.0 -39.0 108.2	15 37.4 -38.8 107.5	14 51.6 -38.6 106.9	14 05.7 -38.5 106.2
5°	16 29.2 -39.5 109.7	15 44.0 -39.3 109.0	14 58.6 -39.1 108.3	14 13.0 -38.8 107.7	13 27.2 -38.6 107.0
6°	15 49.7 -39.6 110.5	15 04.7 -39.3 109.8	14 19.5 -39.1 109.1	13 34.2 -39.0 108.5	12 48.6 -38.7 107.8
7°	15 10.1 -39.8 111.2	14 25.4 -39.6 110.6	13 40.4 -39.3 109.9	12 55.2 -39.0 109.2	12 09.9 -38.9 108.6
8°	14 30.3 -39.9 112.0	13 45.8 -39.7 111.3	13 01.1 -39.5 110.7	12 16.2 -39.3 110.0	11 31.0 -39.0 109.4
9°	13 50.4 -40.0 112.8	13 06.1 -39.8 112.1	12 21.6 -39.5 111.4	11 36.9 -39.3 110.8	10 52.0 -39.1 110.1
10°	13 10.4 -40.2 113.6	12 26.3 -39.9 112.9	11 42.1 -39.7 112.2	10 57.6 -39.4 111.6	10 12.9 -39.2 110.9
11°	12 30.2 -40.4 114.3	11 46.4 -40.1 113.6	11 02.4 -39.8 113.0	10 18.2 -39.6 112.3	9 33.7 -39.3 111.7
12°	11 49.8 -40.4 115.1	11 06.3 -40.2 114.4	10 22.6 -40.0 113.7	9 38.6 -39.7 113.1	8 54.4 -39.4 112.4
13°	11 09.4 -40.6 115.8	10 26.1 -40.3 115.2	9 42.6 -40.0 114.5	8 58.9 -39.7 113.8	8 15.0 -39.5 113.2
14°	10 28.8 -40.6 116.6	9 45.8 -40.3 115.9	9 02.6 -40.1 115.3	8 19.2 -39.9 114.6	7 35.5 -39.6 114.0
15°	9 48.2 -40.8 117.3	9 05.5 -40.5 116.7	8 22.5 -40.2 116.0	7 39.3 -39.9 115.4	6 55.9 -39.6 114.7
16°	9 07.4 -40.9 118.1	8 25.0 -40.6 117.4	7 42.3 -40.2 116.8	6 59.4 -40.0 116.1	6 16.3 -39.7 115.5
17°	8 26.5 -40.9 118.8	7 44.4 -40.6 118.2	7 02.1 -40.4 117.5	6 19.4 -40.0 116.9	5 36.6 -39.8 116.2
18°	7 45.6 -41.0 119.6	7 03.8 -40.7 118.9	6 21.7 -40.4 118.3	5 39.4 -40.1 117.6	4 56.8 -39.8 117.0
19°	7 04.6 -41.1 120.3	6 23.1 -40.8 119.6	5 41.3 -40.5 119.0	4 59.3 -40.2 118.4	4 17.0 -39.9 117.7
20°	6 23.5 -41.1 121.0	5 42.3 -40.8 120.4	5 00.8 -40.5 119.7	4 19.1 -40.2 119.1	3 37.1 -39.9 118.5
21°	5 42.4 -41.2 121.8	5 01.5 -40.9 121.1	4 20.3 -40.5 120.5	3 38.9 -40.2 119.8	2 57.2 -39.9 119.2
22°	5 01.2 -41.3 122.5	4 20.6 -40.9 121.8	3 39.8 -40.6 121.2	2 58.7 -40.3 120.6	2 17.3 -40.0 120.0
23°	4 19.9 -41.3 123.2	3 39.7 -41.0 122.6	2 59.2 -40.6 122.0	2 18.4 -40.3 121.3	1 37.3 -40.0 120.7
24°	3 38.6 -41.3 123.9	2 58.7 -40.9 123.3	2 18.6 -40.7 122.7	1 38.1 -40.3 122.1	0 57.3 -39.9 121.5
25°	2 57.3 -41.3 124.7	2 17.8 -41.0 124.0	1 37.9 -40.7 123.4	0 57.8 -40.3 122.8	0 17.4 -40.0 122.2
26°	2 16.0 -41.4 125.4	1 36.8 -41.1 124.8	0 57.2 -40.6 124.2	0 17.5 -40.4 123.6	-0 22.6 -40.0
27°	1 34.6 -41.4 126.1	0 55.7 -41.0 125.5	0 16.6 -40.7 124.9	-0 22.9 -40.3	-1 02.6 -40.0
28°	0 53.2 -41.4 126.8	0 14.7 -41.0 126.2	-0 24.1 -40.7	-1 03.2 -40.3	-1 42.6 -39.9
29°	0 11.8 -41.4 127.6	-0 26.3 -41.1	-1 04.8 -40.6	-1 43.5 -40.3	-2 22.5 -39.9

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°	15 51.1 -37.6 102.4	15 04.2 -37.4 101.7	14 17.3 -37.4 101.1	13 30.2 -37.2 100.4	12 43.0 -37.1 99.8
1°	15 13.5 -37.8 103.2	14 26.8 -37.7 102.5	13 39.9 -37.5 101.9	12 53.0 -37.4 101.2	12 05.9 -37.2 100.6
2°	14 35.7 -38.0 104.0	13 49.1 -37.8 103.3	13 02.4 -37.6 102.7	12 15.6 -37.5 102.0	11 28.7 -37.4 101.4
3°	13 57.7 -38.1 104.8	13 11.3 -37.9 104.1	12 24.8 -37.8 103.5	11 38.1 -37.6 102.8	10 51.3 -37.4 102.2
4°	13 19.6 -38.3 105.6	12 33.4 -38.1 104.9	11 47.0 -37.9 104.3	11 00.5 -37.8 103.6	10 13.9 -37.6 103.0
5°	12 41.3 -38.4 106.4	11 55.3 -38.2 105.7	11 09.1 -38.1 105.1	10 22.7 -37.8 104.4	9 36.3 -37.7 103.8
6°	12 02.9 -38.5 107.1	11 17.1 -38.4 106.5	10 31.0 -38.1 105.8	9 44.9 -38.0 105.2	8 58.6 -37.8 104.6
7°	11 24.4 -38.7 107.9	10 38.7 -38.4 107.3	9 52.9 -38.3 106.6	9 06.9 -38.1 106.0	8 20.8 -37.9 105.4
8°	10 45.7 -38.7 108.7	10 00.3 -38.6 108.1	9 14.6 -38.3 107.4	8 28.8 -38.2 106.8	7 42.9 -38.0 106.1
9°	10 07.0 -38.9 109.5	9 21.7 -38.7 108.8	8 36.3 -38.5 108.2	7 50.6 -38.2 107.6	7 04.9 -38.1 106.9
10°	9 28.1 -39.0 110.2	8 43.0 -38.7 109.6	7 57.8 -38.5 109.0	7 12.4 -38.3 108.3	6 26.8 -38.1 107.7
11°	8 49.1 -39.1 111.0	8 04.3 -38.9 110.4	7 19.3 -38.7 109.7	6 34.1 -38.4 109.1	5 48.7 -38.2 108.5
12°	8 10.0 -39.2 111.8	7 25.4 -38.9 111.1	6 40.6 -38.7 110.5	5 55.7 -38.5 109.9	5 10.5 -38.2 109.2
13°	7 30.8 -39.2 112.6	6 46.5 -39.0 111.9	6 01.9 -38.7 111.3	5 17.2 -38.5 110.6	4 32.3 -38.3 110.0
14°	6 51.6 -39.3 113.3	6 07.5 -39.1 112.7	5 23.2 -38.8 112.0	4 38.7 -38.6 111.4	3 54.0 -38.4 110.8
15°	6 12.3 -39.4 114.1	5 28.4 -39.1 113.4	4 44.4 -38.9 112.8	4 00.1 -38.6 112.2	3 15.6 -38.4 111.6
16°	5 32.9 -39.4 114.8	4 49.3 -39.2 114.2	4 05.5 -38.9 113.6	3 21.5 -38.7 113.0	2 37.2 -38.4 112.3
17°	4 53.5 -39.5 115.6	4 10.1 -39.2 115.0	3 26.6 -39.0 114.3	2 42.8 -38.7 113.7	1 58.8 -38.4 113.1
18°	4 14.0 -39.6 116.3	3 30.9 -39.2 115.7	2 47.6 -38.9 115.1	2 04.1 -38.7 114.5	1 20.4 -38.4 113.9
19°	3 34.4 -39.5 117.1	2 51.7 -39.3 116.5	2 08.7 -39.0 115.9	1 25.4 -38.7 115.2	0 42.0 -38.5 114.6
20°	2 54.9 -39.6 117.9	2 12.4 -39.3 117.2	1 29.7 -39.1 116.6	0 46.7 -38.7 116.0	0 03.5 -38.4 115.4
21°	2 15.3 -39.7 118.6	1 33.1 -39.4 118.0	0 50.6 -39.0 117.4	0 08.0 -38.8 116.8	-0 34.9 -38.5
22°	1 35.6 -39.6 119.4	0 53.7 -39.3 118.7	0 11.6 -39.0 118.1	-0 30.8 -38.7	-1 13.4 -38.4
23°	0 56.0 -39.7 120.1	0 14.4 -39.3 119.5	-0 27.4 -39.0	-1 09.5 -38.7	-1 51.8 -38.4
24°	0 16.3 -39.6 120.9	-0 24.9 -39.4	-1 06.4 -39.0	-1 48.2 -38.7	-2 30.2 -38.4
25°	-0 23.3 -39.7	-1 04.3 -39.3	-1 45.4 -39.0	-2 26.9 -38.7	-3 08.6 -38.3
26°	-1 03.0 -39.6	-1 43.6 -39.3	-2 24.4 -39.0	-3 05.6 -38.6	-3 46.9 -38.3
27°	-1 42.6 -39.6	-2 22.9 -39.2	-3 03.4 -38.9	-3 44.2 -38.6	-4 25.2 -38.3
28°	-2 22.2 -39.6	-3 02.1 -39.3	-3 42.3 -38.9	-4 22.8 -38.5	-5 03.5 -38.2
29°	-3 01.8 -39.6	-3 41.4 -39.2	-4 21.2 -38.9	-5 01.3 -38.5	-5 41.7 -38.1

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°	11 55.7 -36.9 99.2	11 08.4 -36.9 98.5	10 21.0 -36.8 97.9	9 33.5 -36.7 97.3	8 45.9 -36.6 96.7
1°	11 18.8 -37.1 100.0	10 31.5 -37.0 99.3	9 44.2 -36.9 98.7	8 56.8 -36.8 98.1	8 09.3 -36.6 97.5
2°	10 41.7 -37.3 100.8	9 54.5 -37.0 100.1	9 07.3 -36.9 99.5	8 20.0 -36.8 98.9	7 32.7 -36.8 98.3
3°	10 04.4 -37.3 101.6	9 17.5 -37.3 100.9	8 30.4 -37.1 100.3	7 43.2 -37.0 99.7	6 55.9 -36.9 99.1
4°	9 27.1 -37.4 102.4	8 40.2 -37.3 101.7	7 53.3 -37.2 101.1	7 06.2 -37.0 100.5	6 19.0 -36.9 99.9
5°	8 49.7 -37.6 103.1	8 02.9 -37.4 102.5	7 16.1 -37.2 101.9	6 29.2 -37.1 101.3	5 42.1 -37.0 100.7
6°	8 12.1 -37.6 103.9	7 25.5 -37.4 103.3	6 38.9 -37.4 102.7	5 52.1 -37.2 102.1	5 05.1 -37.0 101.4
7°	7 34.5 -37.7 104.7	6 48.1 -37.6 104.1	6 01.5 -37.4 103.5	5 14.9 -37.3 102.9	4 28.1 -37.1 102.2
8°	6 56.8 -37.8 105.5	6 10.5 -37.6 104.9	5 24.1 -37.4 104.3	4 37.6 -37.3 103.6	3 51.0 -37.1 103.0
9°	6 19.0 -37.9 106.3	5 32.9 -37.7 105.7	4 46.7 -37.5 105.0	4 00.3 -37.3 104.4	3 13.9 -37.2 103.8
10°	5 41.1 -37.9 107.1	4 55.2 -37.7 106.4	4 09.2 -37.6 105.8	3 23.0 -37.4 105.2	2 36.7 -37.2 104.6
11°	5 03.2 -38.0 107.8	4 17.5 -37.8 107.2	3 31.6 -37.6 106.6	2 45.6 -37.4 106.0	1 59.5 -37.2 105.4
12°	4 25.2 -38.1 108.6	3 39.7 -37.8 108.0	2 54.0 -37.6 107.4	2 08.2 -37.4 106.8	1 22.3 -37.3 106.2
13°	3 47.1 -38.0 109.4	3 01.9 -37.9 108.8	2 16.4 -37.6 108.2	1 30.8 -37.4 107.6	0 45.0 -37.2 107.0
14°	3 09.1 -38.1 110.2	2 24.0 -37.9 109.6	1 38.8 -37.7 108.9	0 53.4 -37.5 108.3	0 07.8 -37.3 107.7
15°	2 31.0 -38.2 110.9	1 46.1 -37.9 110.3	1 01.1 -37.7 109.7	0 15.9 -37.5 109.1	-0 29.5 -37.2
16°	1 52.8 -38.1 111.7	1 08.2 -37.9 111.1	0 23.4 -37.7 110.5	-0 21.6 -37.4	-1 06.7 -37.2
17°	1 14.7 -38.2 112.5	0 30.3 -37.9 111.9	-0 14.3 -37.6	-0 59.0 -37.4	-1 43.9 -37.2
18°	0 36.5 -38.2 113.3	-0 07.6 -38.0	-0 51.9 -37.7	-1 36.4 -37.5	-2 21.1 -37.2
19°	-0 01.7 -38.2	-0 45.6 -37.9	-1 29.6 -37.7	-2 13.9 -37.4	-2 58.3 -37.2
20°	-0 39.9 -38.1	-1 23.5 -37.9	-2 07.3 -37.6	-2 51.3 -37.3	-3 35.5 -37.1
21°	-1 18.0 -38.2	-2 01.4 -37.8	-2 44.9 -37.6	-3 28.6 -37.4	-4 12.6 -37.0
22°	-1 56.2 -38.1	-2 39.2 -37.9	-3 22.5 -37.6	-4 06.0 -37.3	-4 49.6 -37.0
23°	-2 34.3 -38.1	-3 17.1 -37.8	-4 00.1 -37.5	-4 43.3 -37.2	-5 26.6 -37.0
24°	-3 12.4 -38.1	-3 54.9 -37.8	-4 37.6 -37.5	-5 20.5 -37.2	-6 03.6 -36.9
25°	-3 50.5 -38.0	-4 32.7 -37.7	-5 15.1 -37.4	-5 57.7 -37.1	-6 40.5 -36.8
26°	-4 28.5 -38.0	-5 10.4 -37.6	-5 52.5 -37.3	-6 34.8 -37.0	-7 17.3 -36.7
27°	-5 06.5 -37.9	-5 48.0 -37.6	-6 29.8 -37.3	-7 11.8 -36.9	-7 54.0 -36.6
28°	-5 44.4 -37.9	-6 25.6 -37.6	-7 07.1 -37.2	-7 48.7 -36.9	-8 30.6 -36.5
29°	-6 22.3 -37.8	-7 03.2 -37.4	-7 44.3 -37.1	-8 25.6 -36.7	-9 07.1 -36.5

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°	7 58.3 -36.5 96.1	7 10.6 -36.4 95.4	6 22.9 -36.4 94.8	5 35.1 -36.3 94.2	4 47.3 -36.2 93.6
1°	7 21.8 -36.6 96.9	6 34.2 -36.5 96.2	5 46.5 -36.4 95.6	4 58.8 -36.4 95.0	4 11.1 -36.4 94.4
2°	6 45.2 -36.7 97.7	5 57.7 -36.6 97.0	5 10.1 -36.5 96.4	4 22.4 -36.4 95.8	3 34.7 -36.3 95.2
3°	6 08.5 -36.7 98.5	5 21.1 -36.6 97.8	4 33.6 -36.6 97.2	3 46.0 -36.4 96.6	2 58.4 -36.4 96.0
4°	5 31.8 -36.8 99.2	4 44.5 -36.7 98.6	3 57.0 -36.6 98.0	3 09.6 -36.5 97.4	2 22.0 -36.4 96.8
5°	4 55.0 -36.9 100.0	4 07.8 -36.8 99.4	3 20.4 -36.6 98.8	2 33.1 -36.6 98.2	1 45.6 -36.4 97.6
6°	4 18.1 -36.9 100.8	3 31.0 -36.8 100.2	2 43.8 -36.7 99.6	1 56.5 -36.5 99.0	1 09.2 -36.5 98.4
7°	3 41.2 -36.9 101.6	2 54.2 -36.8 101.0	2 07.1 -36.6 100.4	1 20.0 -36.6 99.8	0 32.7 -36.4 99.2
8°	3 04.3 -37.0 102.4	2 17.4 -36.8 101.8	1 30.5 -36.7 101.2	0 43.4 -36.6 100.6	-0 03.7 -36.5
9°	2 27.3 -37.0 103.2	1 40.6 -36.9 102.6	0 53.8 -36.8 102.0	0 06.8 -36.5 101.4	-0 40.2 -36.4
10°	1 50.3 -37.1 104.0	1 03.7 -36.9 103.4	0 17.0 -36.7 102.8	-0 29.7 -36.6	-1 16.6 -36.5
11°	1 13.2 -37.0 104.8	0 26.8 -36.8 104.2	-0 19.7 -36.7	-1 06.3 -36.6	-1 53.1 -36.4
12°	0 36.2 -37.1 105.6	-0 10.0 -36.9	-0 56.4 -36.7	-1 42.9 -36.5	-2 29.5 -36.4
13°	-0 00.9 -37.0	-0 46.9 -36.9	-1 33.1 -36.7	-2 19.4 -36.5	-3 05.9 -36.3
14°	-0 37.9 -37.1	-1 23.8 -36.8	-2 09.8 -36.7	-2 55.9 -36.5	-3 42.2 -36.3
15°	-1 15.0 -37.0	-2 00.6 -36.9	-2 46.5 -36.6	-3 32.4 -36.4	-4 18.5 -36.3
16°	-1 52.0 -37.0	-2 37.5 -36.8	-3 23.1 -36.6	-4 08.8 -36.4	-4 54.8 -36.2
17°	-2 29.0 -37.0	-3 14.3 -36.7	-3 59.7 -36.5	-4 45.2 -36.4	-5 31.0 -36.1
18°	-3 06.0 -36.9	-3 51.0 -36.7	-4 36.2 -36.5	-5 21.6 -36.2	-6 07.1 -36.0
19°	-3 42.9 -36.9	-4 27.7 -36.7	-5 12.7 -36.4	-5 57.8 -36.2	-6 43.1 -36.0
20°	-4 19.8 -36.9	-5 04.4 -36.6	-5 49.1 -36.4	-6 34.0 -36.2	-7 19.1 -35.9
21°	-4 56.7 -36.8	-5 41.0 -36.6	-6 25.5 -36.3	-7 10.2 -36.0	-7 55.0 -35.8
22°	-5 33.5 -36.7	-6 17.6 -36.4	-7 01.8 -36.2	-7 46.2 -36.0	-8 30.8 -35.7
23°	-6 10.2 -36.7	-6 54.0 -36.4	-7 38.0 -36.1	-8 22.2 -35.8	-9 06.5 -35.6
24°	-6 46.9 -36.6	-7 30.4 -36.3	-8 14.1 -36.0	-8 58.0 -35.8	-9 42.1 -35.5
25°	-7 23.5 -36.5	-8 06.7 -36.2	-8 50.1 -36.0	-9 33.8 -35.6	
26°	-8 00.0 -36.4	-8 42.9 -36.1	-9 26.1 -35.8		
27°	-8 36.4 -36.3	-9 19.0 -36.0			
28°	-9 12.7 -36.2	-9 55.0 -35.9			
29°	-9 48.9 -36.1				

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 59.5 -36.2 93.0	3 11.6 -36.2 92.4	2 23.7 -36.1 91.8	1 35.8 -36.1 91.2	0 47.9 -36.1 90.6
1°	3 23.3 -36.3 93.8	2 35.4 -36.2 93.2	1 47.6 -36.2 92.6	0 59.7 -36.1 92.0	0 11.8 -36.1 91.4
2°	2 47.0 -36.3 94.6	1 59.2 -36.2 94.0	1 11.4 -36.2 93.4	0 23.6 -36.2 92.8	-0 24.3 -36.1
3°	2 10.7 -36.3 95.4	1 23.0 -36.3 94.8	0 35.2 -36.2 94.2	-0 12.6 -36.1	-1 00.4 -36.1
4°	1 34.4 -36.3 96.2	0 46.7 -36.2 95.6	-0 01.0 -36.2	-0 48.7 -36.2	-1 36.5 -36.1
5°	0 58.1 -36.4 97.0	0 10.5 -36.3 96.4	-0 37.2 -36.2	-1 24.9 -36.1	-2 12.6 -36.1
6°	0 21.7 -36.3 97.8	-0 25.8 -36.2	-1 13.4 -36.1	-2 01.0 -36.1	-2 48.7 -36.0
7°	-0 14.6 -36.4	-1 02.0 -36.3	-1 49.5 -36.2	-2 37.1 -36.1	-3 24.7 -36.0
8°	-0 51.0 -36.3	-1 38.3 -36.2	-2 25.7 -36.1	-3 13.2 -36.0	-4 00.7 -35.9
9°	-1 27.3 -36.3	-2 14.5 -36.2	-3 01.8 -36.1	-3 49.2 -36.0	-4 36.6 -35.9
10°	-2 03.6 -36.3	-2 50.7 -36.2	-3 37.9 -36.0	-4 25.2 -35.9	-5 12.5 -35.8
11°	-2 39.9 -36.3	-3 26.9 -36.1	-4 13.9 -36.0	-5 01.1 -35.9	-5 48.3 -35.8
12°	-3 16.2 -36.2	-4 03.0 -36.1	-4 49.9 -36.0	-5 37.0 -35.8	-6 24.1 -35.7
13°	-3 52.4 -36.2	-4 39.1 -36.0	-5 25.9 -35.9	-6 12.8 -35.7	-6 59.8 -35.5
14°	-4 28.6 -36.1	-5 15.1 -36.0	-6 01.8 -35.8	-6 48.5 -35.7	-7 35.3 -35.6
15°	-5 04.7 -36.1	-5 51.1 -35.9	-6 37.6 -35.7	-7 24.2 -35.5	-8 10.9 -35.4
16°	-5 40.8 -36.0	-6 27.0 -35.8	-7 13.3 -35.6	-7 59.7 -35.5	-8 46.3 -35.3
17°	-6 16.8 -35.9	-7 02.8 -35.7	-7 48.9 -35.6	-8 35.2 -35.3	-9 21.6 -35.1
18°	-6 52.7 -35.9	-7 38.5 -35.7	-8 24.5 -35.4	-9 10.5 -35.3	-9 56.7 -35.1
19°	-7 28.6 -35.7	-8 14.2 -35.5	-8 59.9 -35.4	-9 45.8 -35.1	
20°	-8 04.3 -35.7	-8 49.7 -35.5	-9 35.3 -35.2		
21°	-8 40.0 -35.6	-9 25.2 -35.3			
22°	-9 15.6 -35.4				
23°	-9 51.0 -35.4				
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 -36.1 90.0	-0 47.9 -36.1			
1°	-0 36.1 -36.1	-1 24.0 -36.1			
2°	-1 12.2 -36.1	-2 00.1 -36.1			
3°	-1 48.3 -36.1	-2 36.2 -36.0			
4°	-2 24.4 -36.0	-3 12.2 -36.0			
5°	-3 00.4 -36.0	-3 48.2 -36.0			
6°	-3 36.4 -36.0	-4 24.2 -35.9			
7°	-4 12.4 -35.9	-5 00.1 -35.8			
8°	-4 48.3 -35.8	-5 35.9 -35.8			
9°	-5 24.1 -35.8	-6 11.7 -35.7			
10°	-5 59.9 -35.7	-6 47.4 -35.6			
11°	-6 35.6 -35.7	-7 23.0 -35.6			
12°	-7 11.3 -35.5	-7 58.6 -35.4			
13°	-7 46.8 -35.5	-8 34.0 -35.3			
14°	-8 22.3 -35.4	-9 09.3 -35.3			
15°	-8 57.7 -35.2	-9 44.6 -35.1			
16°	-9 32.9 -35.1				
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°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.4	51 57.3 -59.9 176.8	51 54.0 -59.9 175.1	51 49.3 -59.8 173.5
1°	51 00.0 -60.0 180.0	50 59.3 -59.9 178.4	50 57.4 -60.0 176.8	50 54.1 -59.9 175.2	50 49.5 -59.7 173.7
2°	50 00.0 -60.0 180.0	49 59.4 -60.0 178.4	49 57.4 -59.9 176.9	49 54.2 -59.8 175.3	49 49.8 -59.8 173.8
3°	49 00.0 -60.0 180.0	48 59.4 -60.0 178.5	48 57.5 -60.0 177.0	48 54.4 -59.9 175.4	48 50.0 -59.8 173.9
4°	48 00.0 -60.0 180.0	47 59.4 -60.0 178.5	47 57.5 -59.9 177.0	47 54.5 -59.9 175.5	47 50.2 -59.8 174.0
5°	47 00.0 -60.0 180.0	46 59.4 -60.0 178.5	46 57.6 -60.0 177.1	46 54.6 -59.9 175.6	46 50.4 -59.8 174.2
6°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.6	45 57.6 -59.9 177.1	45 54.7 -59.9 175.7	45 50.6 -59.9 174.3
7°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.6	44 57.7 -60.0 177.2	44 54.8 -59.9 175.8	44 50.7 -59.8 174.4
8°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.6	43 57.7 -59.9 177.2	43 54.9 -59.9 175.9	43 50.9 -59.8 174.5
9°	43 00.0 -60.0 180.0	42 59.4 -59.9 178.6	42 57.8 -60.0 177.3	42 55.0 -59.9 176.0	42 51.1 -59.8 174.6
10°	42 00.0 -60.0 180.0	41 59.5 -60.0 178.7	41 57.8 -59.9 177.4	41 55.1 -59.9 176.0	41 51.3 -59.9 174.7
11°	41 00.0 -60.0 180.0	40 59.5 -60.0 178.7	40 57.9 -60.0 177.4	40 55.2 -59.9 176.1	40 51.4 -59.8 174.8
12°	40 00.0 -60.0 180.0	39 59.5 -60.0 178.7	39 57.9 -60.0 177.4	39 55.3 -60.0 176.2	39 51.6 -59.9 174.9
13°	39 00.0 -60.0 180.0	38 59.5 -60.0 178.7	38 57.9 -59.9 177.5	38 55.3 -59.9 176.2	38 51.7 -59.8 175.0
14°	38 00.0 -60.0 180.0	37 59.5 -60.0 178.8	37 58.0 -60.0 177.5	37 55.4 -59.9 176.3	37 51.9 -59.9 175.1
15°	37 00.0 -60.0 180.0	36 59.5 -60.0 178.8	36 58.0 -60.0 177.6	36 55.5 -59.9 176.4	36 52.0 -59.8 175.2
16°	36 00.0 -60.0 180.0	35 59.5 -60.0 178.8	35 58.0 -59.9 177.6	35 55.6 -59.9 176.4	35 52.2 -59.9 175.3
17°	35 00.0 -60.0 180.0	34 59.5 -60.0 178.8	34 58.1 -60.0 177.7	34 55.7 -60.0 176.5	34 52.3 -59.9 175.3
18°	34 00.0 -60.0 180.0	33 59.5 -60.0 178.9	33 58.1 -60.0 177.7	33 55.7 -59.9 176.6	33 52.4 -59.8 175.4
19°	33 00.0 -60.0 180.0	32 59.5 -60.0 178.9	32 58.1 -59.9 177.7	32 55.8 -59.9 176.6	32 52.6 -59.9 175.5
20°	32 00.0 -60.0 180.0	31 59.5 -59.9 178.9	31 58.2 -60.0 177.8	31 55.9 -59.9 176.7	31 52.7 -59.9 175.6
21°	31 00.0 -60.0 180.0	30 59.6 -60.0 178.9	30 58.2 -60.0 177.8	30 56.0 -60.0 176.7	30 52.8 -59.9 175.6
22°	30 00.0 -60.0 180.0	29 59.6 -60.0 178.9	29 58.2 -59.9 177.9	29 56.0 -59.9 176.8	29 52.9 -59.8 175.7
23°	29 00.0 -60.0 180.0	28 59.6 -60.0 178.9	28 58.3 -60.0 177.9	28 56.1 -59.9 176.8	28 53.1 -59.9 175.8
24°	28 00.0 -60.0 180.0	27 59.6 -60.0 179.0	27 58.3 -60.0 177.9	27 56.2 -60.0 176.9	27 53.2 -59.9 175.9
25°	27 00.0 -60.0 180.0	26 59.6 -60.0 179.0	26 58.3 -60.0 178.0	26 56.2 -59.9 177.0	26 53.3 -59.9 175.9
26°	26 00.0 -60.0 180.0	25 59.6 -60.0 179.0	25 58.3 -59.9 178.0	25 56.3 -59.9 177.0	25 53.4 -59.9 176.0
27°	25 00.0 -60.0 180.0	24 59.6 -60.0 179.0	24 58.4 -60.0 178.0	24 56.4 -60.0 177.1	24 53.5 -59.9 176.1
28°	24 00.0 -60.0 180.0	23 59.6 -60.0 179.0	23 58.4 -60.0 178.1	23 56.4 -59.9 177.1	23 53.6 -59.9 176.1
29°	23 00.0 -60.0 180.0	22 59.6 -60.0 179.0	22 58.4 -59.9 178.1	22 56.5 -60.0 177.2	22 53.7 -59.9 176.2

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°	51 43.3 -59.6 171.9	51 36.0 -59.5 170.3	51 27.4 -59.3 168.7	51 17.5 -59.1 167.1	51 06.4 -58.9 165.6
1°	50 43.7 -59.7 172.1	50 36.5 -59.5 170.5	50 28.1 -59.3 169.0	50 18.4 -59.1 167.4	50 07.5 -58.9 165.9
2°	49 44.0 -59.7 172.3	49 37.0 -59.5 170.7	49 28.8 -59.4 169.2	49 19.3 -59.2 167.7	49 08.6 -58.9 166.2
3°	48 44.3 -59.6 172.4	48 37.5 -59.5 170.9	48 29.4 -59.4 169.4	48 20.1 -59.2 167.9	48 09.7 -59.0 166.5
4°	47 44.7 -59.7 172.6	47 38.0 -59.6 171.1	47 30.0 -59.4 169.6	47 20.9 -59.2 168.2	47 10.7 -59.1 166.7
5°	46 45.0 -59.7 172.7	46 38.4 -59.6 171.3	46 30.6 -59.4 169.8	46 21.7 -59.2 168.4	46 11.6 -59.0 167.0
6°	45 45.3 -59.7 172.9	45 38.8 -59.6 171.4	45 31.2 -59.4 170.0	45 22.5 -59.3 168.6	45 12.6 -59.1 167.2
7°	44 45.6 -59.8 173.0	44 39.2 -59.6 171.6	44 31.8 -59.5 170.2	44 23.2 -59.3 168.9	44 13.5 -59.1 167.5
8°	43 45.8 -59.7 173.1	43 39.6 -59.6 171.8	43 32.3 -59.5 170.4	43 23.9 -59.3 169.1	43 14.4 -59.2 167.7
9°	42 46.1 -59.7 173.3	42 40.0 -59.6 171.9	42 32.8 -59.5 170.6	42 24.6 -59.4 169.3	42 15.2 -59.1 168.0
10°	41 46.4 -59.8 173.4	41 40.4 -59.7 172.1	41 33.3 -59.5 170.8	41 25.2 -59.3 169.5	41 16.1 -59.2 168.2
11°	40 46.6 -59.7 173.5	40 40.7 -59.6 172.2	40 33.8 -59.5 170.9	40 25.9 -59.4 169.7	40 16.9 -59.3 168.4
12°	39 46.9 -59.8 173.6	39 41.1 -59.7 172.4	39 34.3 -59.5 171.1	39 26.5 -59.4 169.8	39 17.6 -59.2 168.6
13°	38 47.1 -59.8 173.7	38 41.4 -59.6 172.5	38 34.8 -59.6 171.3	38 27.1 -59.4 170.0	38 18.4 -59.3 168.8
14°	37 47.3 -59.8 173.9	37 41.8 -59.7 172.6	37 35.2 -59.6 171.4	37 27.7 -59.5 170.2	37 19.1 -59.3 169.0
15°	36 47.5 -59.7 174.0	36 42.1 -59.7 172.8	36 35.6 -59.5 171.6	36 28.2 -59.4 170.4	36 19.8 -59.3 169.2
16°	35 47.8 -59.8 174.1	35 42.4 -59.7 172.9	35 36.1 -59.6 171.7	35 28.8 -59.5 170.5	35 20.5 -59.3 169.4
17°	34 48.0 -59.8 174.2	34 42.7 -59.7 173.0	34 36.5 -59.6 171.9	34 29.3 -59.5 170.7	34 21.2 -59.3 169.6
18°	33 48.2 -59.8 174.3	33 43.0 -59.7 173.1	33 36.9 -59.6 172.0	33 29.8 -59.4 170.9	33 21.9 -59.4 169.7
19°	32 48.4 -59.8 174.4	32 43.3 -59.7 173.3	32 37.3 -59.6 172.1	32 30.4 -59.5 171.0	32 22.5 -59.3 169.9
20°	31 48.6 -59.8 174.5	31 43.6 -59.7 173.4	31 37.7 -59.7 172.3	31 30.9 -59.5 171.2	31 23.2 -59.4 170.1
21°	30 48.8 -59.8 174.6	30 43.9 -59.8 173.5	30 38.0 -59.6 172.4	30 31.4 -59.6 171.3	30 23.8 -59.4 170.3
22°	29 49.0 -59.8 174.7	29 44.1 -59.7 173.6	29 38.4 -59.6 172.5	29 31.8 -59.5 171.5	29 24.4 -59.4 170.4
23°	28 49.2 -59.9 174.7	28 44.4 -59.7 173.7	28 38.8 -59.7 172.7	28 32.3 -59.5 171.6	28 25.0 -59.4 170.6
24°	27 49.3 -59.8 174.8	27 44.7 -59.8 173.8	27 39.1 -59.6 172.8	27 32.8 -59.6 171.8	27 25.6 -59.4 170.7
25°	26 49.5 -59.8 174.9	26 44.9 -59.7 173.9	26 39.5 -59.7 172.9	26 33.2 -59.5 171.9	26 26.2 -59.5 170.9
26°	25 49.7 -59.8 175.0	25 45.2 -59.8 174.0	25 39.8 -59.6 173.0	25 33.7 -59.6 172.0	25 26.7 -59.4 171.0
27°	24 49.9 -59.9 175.1	24 45.4 -59.7 174.1	24 40.2 -59.7 173.1	24 34.1 -59.5 172.2	24 27.3 -59.5 171.2
28°	23 50.0 -59.8 175.2	23 45.7 -59.8 174.2	23 40.5 -59.7 173.3	23 34.6 -59.6 172.3	23 27.8 -59.4 171.3
29°	22 50.2 -59.8 175.3	22 45.9 -59.7 174.3	22 40.8 -59.6 173.4	22 35.0 -59.6 172.4	22 28.4 -59.5 171.5

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°	50 54.0 -58.6 164.0	50 40.3 -58.3 162.5	50 25.5 -58.0 161.0	50 09.5 -57.7 159.4	49 52.3 -57.4 158.0
1°	49 55.4 -58.7 164.4	49 42.0 -58.4 162.8	49 27.5 -58.1 161.3	49 11.8 -57.8 159.9	48 54.9 -57.4 158.4
2°	48 56.7 -58.7 164.7	48 43.6 -58.4 163.2	48 29.4 -58.2 161.7	48 14.0 -57.9 160.3	47 57.5 -57.6 158.8
3°	47 58.0 -58.8 165.0	47 45.2 -58.5 163.5	47 31.2 -58.2 162.1	47 16.1 -57.9 160.7	46 59.9 -57.6 159.3
4°	46 59.2 -58.8 165.3	46 46.7 -58.6 163.9	46 33.0 -58.3 162.4	46 18.2 -58.1 161.0	46 02.3 -57.8 159.7
5°	46 00.4 -58.8 165.6	45 48.1 -58.6 164.2	45 34.7 -58.4 162.8	45 20.1 -58.1 161.4	45 04.5 -57.8 160.0
6°	45 01.6 -58.9 165.9	44 49.5 -58.7 164.5	44 36.3 -58.4 163.1	44 22.0 -58.1 161.8	44 06.7 -57.9 160.4
7°	44 02.7 -58.9 166.1	43 50.8 -58.7 164.8	43 37.9 -58.5 163.4	43 23.9 -58.2 162.1	43 08.8 -57.9 160.8
8°	43 03.8 -59.0 166.4	42 52.1 -58.7 165.1	42 39.4 -58.5 163.7	42 25.7 -58.3 162.4	42 10.9 -58.0 161.1
9°	42 04.8 -59.0 166.6	41 53.4 -58.8 165.3	41 40.9 -58.6 164.0	41 27.4 -58.3 162.8	41 12.9 -58.1 161.5
10°	41 05.8 -59.0 166.9	40 54.6 -58.8 165.6	40 42.3 -58.6 164.3	40 29.1 -58.4 163.1	40 14.8 -58.1 161.8
11°	40 06.8 -59.0 167.1	39 55.8 -58.9 165.9	39 43.7 -58.6 164.6	39 30.7 -58.4 163.4	39 16.7 -58.2 162.1
12°	39 07.8 -59.1 167.4	38 56.9 -58.9 166.1	38 45.1 -58.7 164.9	38 32.3 -58.5 163.7	38 18.5 -58.2 162.4
13°	38 08.7 -59.1 167.6	37 58.0 -58.9 166.4	37 46.4 -58.7 165.1	37 33.8 -58.5 163.9	37 20.3 -58.3 162.8
14°	37 09.6 -59.1 167.8	36 59.1 -58.9 166.6	36 47.7 -58.7 165.4	36 35.3 -58.5 164.2	36 22.0 -58.3 163.1
15°	36 10.5 -59.2 168.0	36 00.2 -59.0 166.8	35 49.0 -58.8 165.7	35 36.8 -58.6 164.5	35 23.7 -58.4 163.3
16°	35 11.3 -59.1 168.2	35 01.2 -59.0 167.1	34 50.2 -58.8 165.9	34 38.2 -58.6 164.8	34 25.3 -58.4 163.6
17°	34 12.2 -59.2 168.4	34 02.2 -59.0 167.3	33 51.4 -58.9 166.1	33 39.6 -58.6 165.0	33 26.9 -58.4 163.9
18°	33 13.0 -59.2 168.6	33 03.2 -59.0 167.5	32 52.5 -58.8 166.4	32 41.0 -58.7 165.3	32 28.5 -58.5 164.2
19°	32 13.8 -59.2 168.8	32 04.2 -59.1 167.7	31 53.7 -58.9 166.6	31 42.3 -58.7 165.5	31 30.0 -58.5 164.4
20°	31 14.6 -59.3 169.0	31 05.1 -59.1 167.9	30 54.8 -58.9 166.8	30 43.6 -58.7 165.8	30 31.5 -58.5 164.7
21°	30 15.3 -59.2 169.2	30 06.0 -59.1 168.1	29 55.9 -58.9 167.1	29 44.9 -58.8 166.0	29 33.0 -58.5 165.0
22°	29 16.1 -59.3 169.4	29 06.9 -59.1 168.3	28 57.0 -59.0 167.3	28 46.1 -58.8 166.2	28 34.5 -58.6 165.2
23°	28 16.8 -59.2 169.5	28 07.8 -59.1 168.5	27 58.0 -59.0 167.5	27 47.3 -58.7 166.5	27 35.9 -58.6 165.4
24°	27 17.6 -59.3 169.7	27 08.7 -59.1 168.7	26 59.0 -59.0 167.7	26 48.6 -58.9 166.7	26 37.3 -58.7 165.7
25°	26 18.3 -59.3 169.9	26 09.6 -59.2 168.9	26 00.0 -59.0 167.9	25 49.7 -58.8 166.9	25 38.6 -58.6 165.9
26°	25 19.0 -59.4 170.1	25 10.4 -59.2 169.1	25 01.0 -59.0 168.1	24 50.9 -58.9 167.1	24 40.0 -58.7 166.2
27°	24 19.6 -59.3 170.2	24 11.2 -59.2 169.3	24 02.0 -59.0 168.3	23 52.0 -58.8 167.3	23 41.3 -58.7 166.4
28°	23 20.3 -59.3 170.4	23 12.0 -59.2 169.4	23 03.0 -59.1 168.5	22 53.2 -58.9 167.5	22 42.6 -58.7 166.6
29°	22 21.0 -59.4 170.5	22 12.8 -59.2 169.6	22 03.9 -59.0 168.7	21 54.3 -58.9 167.8	21 43.9 -58.7 166.8

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°	49 34.0 -57.0 156.5	49 14.6 -56.7 155.0	48 54.1 -56.3 153.6	48 32.5 -55.8 152.2	48 10.0 -55.5 150.8
1°	48 37.0 -57.2 157.0	48 17.9 -56.7 155.5	47 57.8 -56.4 154.1	47 36.7 -56.1 152.7	47 14.5 -55.6 151.3
2°	47 39.8 -57.2 157.4	47 21.2 -56.9 156.0	47 01.4 -56.5 154.6	46 40.6 -56.1 153.2	46 18.9 -55.8 151.9
3°	46 42.6 -57.3 157.9	46 24.3 -57.0 156.5	46 04.9 -56.7 155.1	45 44.5 -56.3 153.8	45 23.1 -56.0 152.4
4°	45 45.3 -57.4 158.3	45 27.3 -57.1 156.9	45 08.2 -56.7 155.6	44 48.2 -56.4 154.2	44 27.1 -56.0 152.9
5°	44 47.9 -57.6 158.7	44 30.2 -57.2 157.4	44 11.5 -56.9 156.0	43 51.8 -56.6 154.7	43 31.1 -56.2 153.4
6°	43 50.3 -57.5 159.1	43 33.0 -57.3 157.8	43 14.6 -57.0 156.5	42 55.2 -56.6 155.2	42 34.9 -56.3 153.9
7°	42 52.8 -57.7 159.5	42 35.7 -57.4 158.2	42 17.6 -57.0 156.9	41 58.6 -56.7 155.6	41 38.6 -56.4 154.4
8°	41 55.1 -57.7 159.9	41 38.3 -57.4 158.6	41 20.6 -57.2 157.3	41 01.9 -56.9 156.1	40 42.2 -56.5 154.8
9°	40 57.4 -57.8 160.2	40 40.9 -57.6 159.0	40 23.4 -57.2 157.7	40 05.0 -56.9 156.5	39 45.7 -56.6 155.3
10°	39 59.6 -57.9 160.6	39 43.3 -57.5 159.3	39 26.2 -57.3 158.1	39 08.1 -57.0 156.9	38 49.1 -56.7 155.7
11°	39 01.7 -57.9 160.9	38 45.8 -57.7 159.7	38 28.9 -57.4 158.5	38 11.1 -57.1 157.3	37 52.4 -56.8 156.1
12°	38 03.8 -58.0 161.2	37 48.1 -57.7 160.0	37 31.5 -57.4 158.9	37 14.0 -57.2 157.7	36 55.6 -56.9 156.5
13°	37 05.8 -58.0 161.6	36 50.4 -57.8 160.4	36 34.1 -57.6 159.2	36 16.8 -57.2 158.1	35 58.7 -56.9 156.9
14°	36 07.8 -58.1 161.9	35 52.6 -57.8 160.7	35 36.5 -57.5 159.6	35 19.6 -57.3 158.4	35 01.8 -57.0 157.3
15°	35 09.7 -58.2 162.2	34 54.8 -57.9 161.1	34 39.0 -57.7 159.9	34 22.3 -57.4 158.8	34 04.8 -57.1 157.7
16°	34 11.5 -58.1 162.5	33 56.9 -57.9 161.4	33 41.3 -57.6 160.3	33 24.9 -57.4 159.2	33 07.7 -57.1 158.1
17°	33 13.4 -58.2 162.8	32 59.0 -58.0 161.7	32 43.7 -57.8 160.6	32 27.5 -57.4 159.5	32 10.6 -57.3 158.4
18°	32 15.2 -58.3 163.1	32 01.0 -58.0 162.0	31 45.9 -57.7 160.9	31 30.1 -57.6 159.8	31 13.3 -57.2 158.8
19°	31 16.9 -58.3 163.4	31 03.0 -58.1 162.3	30 48.2 -57.9 161.2	30 32.5 -57.5 160.2	30 16.1 -57.3 159.1
20°	30 18.6 -58.3 163.6	30 04.9 -58.1 162.6	29 50.3 -57.8 161.5	29 35.0 -57.7 160.5	29 18.8 -57.4 159.5
21°	29 20.3 -58.3 163.9	29 06.8 -58.1 162.9	28 52.5 -57.9 161.8	28 37.3 -57.6 160.8	28 21.4 -57.4 159.8
22°	28 22.0 -58.4 164.2	28 08.7 -58.2 163.2	27 54.6 -58.0 162.1	27 39.7 -57.7 161.1	27 24.0 -57.5 160.1
23°	27 23.6 -58.4 164.4	27 10.5 -58.2 163.4	26 56.6 -58.0 162.4	26 42.0 -57.8 161.4	26 26.5 -57.5 160.4
24°	26 25.2 -58.5 164.7	26 12.3 -58.2 163.7	25 58.6 -58.0 162.7	25 44.2 -57.8 161.7	25 29.0 -57.5 160.8
25°	25 26.7 -58.4 164.9	25 14.1 -58.3 164.0	25 00.6 -58.0 163.0	24 46.4 -57.8 162.0	24 31.5 -57.6 161.1
26°	24 28.3 -58.5 165.2	24 15.8 -58.3 164.2	24 02.6 -58.1 163.3	23 48.6 -57.8 162.3	23 33.9 -57.6 161.4
27°	23 29.8 -58.5 165.4	23 17.5 -58.3 164.5	23 04.5 -58.1 163.6	22 50.8 -57.9 162.6	22 36.3 -57.7 161.7
28°	22 31.3 -58.5 165.7	22 19.2 -58.3 164.7	22 06.4 -58.1 163.8	21 52.9 -57.9 162.9	21 38.6 -57.7 162.0
29°	21 32.8 -58.6 165.9	21 20.9 -58.4 165.0	21 08.3 -58.2 164.1	20 55.0 -58.0 163.2	20 40.9 -57.7 162.3

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°	47 46.4 -55.1 149.4	47 21.8 -54.6 148.1	46 56.4 -54.2 146.7	46 30.0 -53.8 145.4	46 02.7 -53.3 144.1
1°	46 51.3 -55.2 150.0	46 27.2 -54.8 148.7	46 02.2 -54.4 147.3	45 36.2 -54.0 146.1	45 09.4 -53.6 144.8
2°	45 56.1 -55.4 150.6	45 32.4 -55.0 149.2	45 07.8 -54.6 148.0	44 42.2 -54.2 146.7	44 15.8 -53.7 145.4
3°	45 00.7 -55.5 151.1	44 37.4 -55.2 149.8	44 13.2 -54.8 148.5	43 48.0 -54.3 147.3	43 22.1 -54.0 146.0
4°	44 05.2 -55.7 151.6	43 42.2 -55.3 150.4	43 18.4 -54.9 149.1	42 53.7 -54.5 147.9	42 28.1 -54.1 146.6
5°	43 09.5 -55.8 152.2	42 46.9 -55.4 150.9	42 23.5 -55.1 149.6	41 59.2 -54.7 148.4	41 34.0 -54.3 147.2
6°	42 13.7 -56.0 152.7	41 51.5 -55.6 151.4	41 28.4 -55.2 150.2	41 04.5 -54.9 149.0	40 39.7 -54.5 147.8
7°	41 17.7 -56.1 153.1	40 55.9 -55.7 151.9	40 33.2 -55.4 150.7	40 09.6 -55.0 149.5	39 45.2 -54.6 148.3
8°	40 21.6 -56.1 153.6	40 00.2 -55.8 152.4	39 37.8 -55.4 151.2	39 14.6 -55.1 150.0	38 50.6 -54.7 148.9
9°	39 25.5 -56.3 154.1	39 04.4 -56.0 152.9	38 42.4 -55.6 151.7	38 19.5 -55.2 150.5	37 55.9 -54.9 149.4
10°	38 29.2 -56.4 154.5	38 08.4 -56.0 153.3	37 46.8 -55.8 152.2	37 24.3 -55.4 151.0	37 01.0 -55.1 149.9
11°	37 32.8 -56.5 154.9	37 12.4 -56.2 153.8	36 51.0 -55.8 152.6	36 28.9 -55.5 151.5	36 05.9 -55.1 150.4
12°	36 36.3 -56.5 155.4	36 16.2 -56.2 154.2	35 55.2 -55.9 153.1	35 33.4 -55.6 152.0	35 10.8 -55.2 150.9
13°	35 39.8 -56.7 155.8	35 20.0 -56.4 154.7	34 59.3 -56.0 153.5	34 37.8 -55.7 152.4	34 15.6 -55.4 151.3
14°	34 43.1 -56.7 156.2	34 23.6 -56.4 155.1	34 03.3 -56.1 154.0	33 42.1 -55.7 152.9	33 20.2 -55.5 151.8
15°	33 46.4 -56.8 156.6	33 27.2 -56.5 155.5	33 07.2 -56.2 154.4	32 46.4 -55.9 153.3	32 24.7 -55.5 152.3
16°	32 49.6 -56.8 157.0	32 30.7 -56.6 155.9	32 11.0 -56.3 154.8	31 50.5 -56.0 153.8	31 29.2 -55.7 152.7
17°	31 52.8 -57.0 157.3	31 34.1 -56.6 156.3	31 14.7 -56.3 155.2	30 54.5 -56.0 154.2	30 33.5 -55.7 153.1
18°	30 55.8 -57.0 157.7	30 37.5 -56.7 156.7	30 18.4 -56.4 155.6	29 58.5 -56.1 154.6	29 37.8 -55.8 153.6
19°	29 58.8 -57.0 158.1	29 40.8 -56.8 157.0	29 22.0 -56.5 156.0	29 02.4 -56.2 155.0	28 42.0 -55.9 154.0
20°	29 01.8 -57.1 158.4	28 44.0 -56.8 157.4	28 25.5 -56.6 156.4	28 06.2 -56.3 155.4	27 46.1 -55.9 154.4
21°	28 04.7 -57.2 158.8	27 47.2 -56.9 157.8	27 28.9 -56.6 156.8	27 09.9 -56.3 155.8	26 50.2 -56.1 154.8
22°	27 07.5 -57.2 159.1	26 50.3 -57.0 158.1	26 32.3 -56.7 157.2	26 13.6 -56.4 156.2	25 54.1 -56.1 155.2
23°	26 10.3 -57.2 159.5	25 53.3 -56.9 158.5	25 35.6 -56.7 157.5	25 17.2 -56.4 156.6	24 58.0 -56.1 155.6
24°	25 13.1 -57.3 159.8	24 56.4 -57.1 158.8	24 38.9 -56.8 157.9	24 20.8 -56.5 156.9	24 01.9 -56.2 156.0
25°	24 15.8 -57.4 160.1	23 59.3 -57.1 159.2	23 42.1 -56.8 158.2	23 24.3 -56.6 157.3	23 05.7 -56.3 156.4
26°	23 18.4 -57.4 160.4	23 02.2 -57.1 159.5	22 45.3 -56.8 158.6	22 27.7 -56.6 157.7	22 09.4 -56.3 156.8
27°	22 21.0 -57.4 160.8	22 05.1 -57.2 159.8	21 48.5 -56.9 158.9	21 31.1 -56.6 158.0	21 13.1 -56.4 157.1
28°	21 23.6 -57.4 161.1	21 07.9 -57.2 160.2	20 51.6 -57.0 159.3	20 34.5 -56.7 158.4	20 16.7 -56.4 157.5
29°	20 26.2 -57.5 161.4	20 10.7 -57.2 160.5	19 54.6 -57.0 159.6	19 37.8 -56.7 158.7	19 20.3 -56.5 157.9

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°	45 34.6 -52.9 142.9	45 05.6 -52.4 141.6	44 35.9 -52.1 140.4	44 05.3 -51.5 139.2	43 34.1 -51.2 138.0
1°	44 41.7 -53.1 143.5	44 13.2 -52.7 142.3	43 43.8 -52.2 141.1	43 13.8 -51.8 139.9	42 42.9 -51.3 138.7
2°	43 48.6 -53.4 144.2	43 20.5 -52.9 143.0	42 51.6 -52.5 141.8	42 22.0 -52.1 140.6	41 51.6 -51.7 139.4
3°	42 55.2 -53.5 144.8	42 27.6 -53.2 143.6	41 59.1 -52.7 142.4	41 29.9 -52.3 141.2	40 59.9 -51.8 140.1
4°	42 01.7 -53.7 145.4	41 34.4 -53.3 144.2	41 06.4 -52.9 143.1	40 37.6 -52.5 141.9	40 08.1 -52.1 140.8
5°	41 08.0 -53.9 146.0	40 41.1 -53.5 144.8	40 13.5 -53.1 143.7	39 45.1 -52.7 142.5	39 16.0 -52.3 141.4
6°	40 14.1 -54.1 146.6	39 47.6 -53.7 145.4	39 20.4 -53.3 144.3	38 52.4 -52.9 143.2	38 23.7 -52.5 142.0
7°	39 20.0 -54.3 147.2	38 53.9 -53.8 146.0	38 27.1 -53.4 144.9	37 59.5 -53.0 143.8	37 31.2 -52.7 142.6
8°	38 25.7 -54.3 147.7	38 00.1 -54.0 146.6	37 33.7 -53.7 145.4	37 06.5 -53.3 144.3	36 38.5 -52.8 143.2
9°	37 31.4 -54.6 148.2	37 06.1 -54.2 147.1	36 40.0 -53.7 146.0	36 13.2 -53.4 144.9	35 45.7 -53.0 143.8
10°	36 36.8 -54.6 148.8	36 11.9 -54.3 147.7	35 46.3 -54.0 146.6	35 19.8 -53.5 145.5	34 52.7 -53.2 144.4
11°	35 42.2 -54.8 149.3	35 17.6 -54.4 148.2	34 52.3 -54.0 147.1	34 26.3 -53.7 146.0	33 59.5 -53.3 145.0
12°	34 47.4 -54.9 149.8	34 23.2 -54.5 148.7	33 58.3 -54.2 147.6	33 32.6 -53.8 146.6	33 06.2 -53.5 145.5
13°	33 52.5 -55.0 150.3	33 28.7 -54.7 149.2	33 04.1 -54.3 148.1	32 38.8 -54.0 147.1	32 12.7 -53.6 146.1
14°	32 57.5 -55.1 150.7	32 34.0 -54.8 149.7	32 09.8 -54.5 148.6	31 44.8 -54.1 147.6	31 19.1 -53.7 146.6
15°	32 02.4 -55.3 151.2	31 39.2 -54.9 150.2	31 15.3 -54.5 149.1	30 50.7 -54.2 148.1	30 25.4 -53.9 147.1
16°	31 07.1 -55.3 151.7	30 44.3 -55.0 150.6	30 20.8 -54.7 149.6	29 56.5 -54.3 148.6	29 31.5 -53.9 147.6
17°	30 11.8 -55.4 152.1	29 49.3 -55.1 151.1	29 26.1 -54.7 150.1	29 02.2 -54.4 149.1	28 37.6 -54.1 148.1
18°	29 16.4 -55.5 152.6	28 54.2 -55.1 151.6	28 31.4 -54.9 150.6	28 07.8 -54.5 149.6	27 43.5 -54.2 148.6
19°	28 20.9 -55.6 153.0	27 59.1 -55.3 152.0	27 36.5 -54.9 151.0	27 13.3 -54.6 150.1	26 49.3 -54.2 149.1
20°	27 25.3 -55.6 153.4	27 03.8 -55.3 152.4	26 41.6 -55.0 151.5	26 18.7 -54.7 150.5	25 55.1 -54.4 149.6
21°	26 29.7 -55.8 153.8	26 08.5 -55.4 152.9	25 46.6 -55.1 151.9	25 24.0 -54.8 151.0	25 00.7 -54.5 150.0
22°	25 33.9 -55.8 154.3	25 13.1 -55.5 153.3	24 51.5 -55.2 152.4	24 29.2 -54.9 151.4	24 06.2 -54.5 150.5
23°	24 38.1 -55.8 154.7	24 17.6 -55.6 153.7	23 56.3 -55.3 152.8	23 34.3 -54.9 151.9	23 11.7 -54.6 151.0
24°	23 42.3 -55.9 155.1	23 22.0 -55.6 154.1	23 01.0 -55.3 153.2	22 39.4 -55.0 152.3	22 17.1 -54.7 151.4
25°	22 46.4 -56.0 155.5	22 26.4 -55.7 154.5	22 05.7 -55.4 153.6	21 44.4 -55.1 152.7	21 22.4 -54.7 151.8
26°	21 50.4 -56.0 155.8	21 30.7 -55.7 154.9	21 10.3 -55.4 154.1	20 49.3 -55.1 153.2	20 27.7 -54.9 152.3
27°	20 54.4 -56.1 156.2	20 35.0 -55.8 155.3	20 14.9 -55.5 154.5	19 54.2 -55.2 153.6	19 32.8 -54.8 152.7
28°	19 58.3 -56.2 156.6	19 39.2 -55.9 155.7	19 19.4 -55.5 154.9	18 59.0 -55.2 154.0	18 38.0 -55.0 153.1
29°	19 02.1 -56.1 157.0	18 43.3 -55.9 156.1	18 23.9 -55.6 155.3	18 03.8 -55.3 154.4	17 43.0 -55.0 153.6

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	43 02.1 -50.7 136.8	42 29.4 -50.3 135.7	41 56.0 -49.8 134.6	41 22.0 -49.3 133.5	40 47.4 -48.9 132.4
1°	42 11.4 -51.0 137.6	41 39.1 -50.5 136.4	41 06.2 -50.1 135.3	40 32.7 -49.7 134.2	39 58.5 -49.3 133.1
2°	41 20.4 -51.2 138.3	40 48.6 -50.7 137.2	40 16.1 -50.3 136.0	39 43.0 -49.9 135.0	39 09.2 -49.5 133.9
3°	40 29.2 -51.4 139.0	39 57.9 -51.1 137.9	39 25.8 -50.6 136.8	38 53.1 -50.2 135.7	38 19.7 -49.7 134.6
4°	39 37.8 -51.7 139.6	39 06.8 -51.2 138.5	38 35.2 -50.8 137.4	38 02.9 -50.4 136.4	37 30.0 -50.1 135.3
5°	38 46.1 -51.8 140.3	38 15.6 -51.5 139.2	37 44.4 -51.1 138.1	37 12.5 -50.7 137.1	36 39.9 -50.2 136.0
6°	37 54.3 -52.1 140.9	37 24.1 -51.7 139.9	36 53.3 -51.3 138.8	36 21.8 -50.9 137.7	35 49.7 -50.5 136.7
7°	37 02.2 -52.3 141.6	36 32.4 -51.8 140.5	36 02.0 -51.5 139.4	35 30.9 -51.0 138.4	34 59.2 -50.7 137.4
8°	36 09.9 -52.5 142.2	35 40.6 -52.1 141.1	35 10.5 -51.6 140.1	34 39.9 -51.3 139.0	34 08.5 -50.9 138.0
9°	35 17.4 -52.6 142.8	34 48.5 -52.3 141.7	34 18.9 -51.9 140.7	33 48.6 -51.5 139.7	33 17.6 -51.0 138.6
10°	34 24.8 -52.8 143.4	33 56.2 -52.4 142.3	33 27.0 -52.0 141.3	32 57.1 -51.6 140.3	32 26.6 -51.3 139.3
11°	33 32.0 -52.9 143.9	33 03.8 -52.5 142.9	32 35.0 -52.2 141.9	32 05.5 -51.9 140.9	31 35.3 -51.4 139.9
12°	32 39.1 -53.1 144.5	32 11.3 -52.8 143.5	31 42.8 -52.4 142.5	31 13.6 -51.9 141.5	30 43.9 -51.6 140.5
13°	31 46.0 -53.3 145.0	31 18.5 -52.8 144.0	30 50.4 -52.5 143.0	30 21.7 -52.2 142.0	29 52.3 -51.8 141.1
14°	30 52.7 -53.3 145.6	30 25.7 -53.0 144.6	29 57.9 -52.6 143.6	29 29.5 -52.2 142.6	29 00.5 -51.9 141.7
15°	29 59.4 -53.5 146.1	29 32.7 -53.2 145.1	29 05.3 -52.8 144.1	28 37.3 -52.4 143.2	28 08.6 -52.0 142.2
16°	29 05.9 -53.6 146.6	28 39.5 -53.2 145.7	28 12.5 -52.9 144.7	27 44.9 -52.6 143.7	27 16.6 -52.2 142.8
17°	28 12.3 -53.8 147.1	27 46.3 -53.4 146.2	27 19.6 -53.0 145.2	26 52.3 -52.6 144.3	26 24.4 -52.3 143.3
18°	27 18.5 -53.8 147.6	26 52.9 -53.5 146.7	26 26.6 -53.1 145.7	25 59.7 -52.8 144.8	25 32.1 -52.4 143.9
19°	26 24.7 -53.9 148.1	25 59.4 -53.6 147.2	25 33.5 -53.3 146.3	25 06.9 -52.9 145.3	24 39.7 -52.5 144.4
20°	25 30.8 -54.1 148.6	25 05.8 -53.7 147.7	24 40.2 -53.3 146.8	24 14.0 -53.0 145.9	23 47.2 -52.7 145.0
21°	24 36.7 -54.1 149.1	24 12.1 -53.7 148.2	23 46.9 -53.4 147.3	23 21.0 -53.1 146.4	22 54.5 -52.7 145.5
22°	23 42.6 -54.2 149.6	23 18.4 -53.9 148.7	22 53.5 -53.6 147.8	22 27.9 -53.1 146.9	22 01.8 -52.8 146.0
23°	22 48.4 -54.3 150.0	22 24.5 -54.0 149.1	21 59.9 -53.6 148.3	21 34.8 -53.3 147.4	21 09.0 -53.0 146.5
24°	21 54.1 -54.3 150.5	21 30.5 -54.0 149.6	21 06.3 -53.7 148.7	20 41.5 -53.4 147.9	20 16.0 -53.0 147.0
25°	20 59.8 -54.4 151.0	20 36.5 -54.1 150.1	20 12.6 -53.7 149.2	19 48.1 -53.4 148.4	19 23.0 -53.1 147.5
26°	20 05.4 -54.5 151.4	19 42.4 -54.2 150.5	19 18.9 -53.9 149.7	18 54.7 -53.5 148.8	18 29.9 -53.1 148.0
27°	19 10.9 -54.6 151.9	18 48.2 -54.2 151.0	18 25.0 -53.9 150.2	18 01.2 -53.6 149.3	17 36.8 -53.3 148.5
28°	18 16.3 -54.6 152.3	17 54.0 -54.3 151.5	17 31.1 -54.0 150.6	17 07.6 -53.6 149.8	16 43.5 -53.3 149.0
29°	17 21.7 -54.7 152.7	16 59.7 -54.4 151.9	16 37.1 -54.0 151.1	16 14.0 -53.7 150.3	15 50.2 -53.3 149.4

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	40 12.2 -48.5 131.3	39 36.4 -48.1 130.3	39 00.1 -47.7 129.2	38 23.2 -47.3 128.2	37 45.8 -46.9 127.2
1°	39 23.7 -48.8 132.1	38 48.3 -48.4 131.0	38 12.4 -48.0 130.0	37 35.9 -47.6 129.0	36 58.9 -47.2 128.0
2°	38 34.9 -49.1 132.8	37 59.9 -48.7 131.8	37 24.4 -48.3 130.8	36 48.3 -47.9 129.8	36 11.7 -47.5 128.8
3°	37 45.8 -49.4 133.6	37 11.2 -48.9 132.5	36 36.1 -48.5 131.5	36 00.4 -48.1 130.5	35 24.2 -47.7 129.6
4°	36 56.4 -49.6 134.3	36 22.3 -49.2 133.3	35 47.6 -48.8 132.3	35 12.3 -48.4 131.3	34 36.5 -48.0 130.3
5°	36 06.8 -49.8 135.0	35 33.1 -49.5 134.0	34 58.8 -49.1 133.0	34 23.9 -48.7 132.0	33 48.5 -48.3 131.0
6°	35 17.0 -50.1 135.7	34 43.6 -49.7 134.7	34 09.7 -49.3 133.7	33 35.2 -48.9 132.7	33 00.2 -48.5 131.7
7°	34 26.9 -50.3 136.3	33 53.9 -49.9 135.3	33 20.4 -49.5 134.4	32 46.3 -49.1 133.4	32 11.7 -48.7 132.4
8°	33 36.6 -50.5 137.0	33 04.0 -50.1 136.0	32 30.9 -49.7 135.0	31 57.2 -49.3 134.1	31 23.0 -49.0 133.1
9°	32 46.1 -50.7 137.6	32 13.9 -50.3 136.7	31 41.2 -49.9 135.7	31 07.9 -49.5 134.7	30 34.0 -49.1 133.8
10°	31 55.4 -50.9 138.3	31 23.6 -50.5 137.3	30 51.3 -50.1 136.3	30 18.4 -49.8 135.4	29 44.9 -49.4 134.5
11°	31 04.5 -51.0 138.9	30 33.1 -50.6 137.9	30 01.2 -50.3 137.0	29 28.6 -49.9 136.0	28 55.5 -49.5 135.1
12°	30 13.5 -51.2 139.5	29 42.5 -50.9 138.6	29 10.9 -50.5 137.6	28 38.7 -50.1 136.7	28 06.0 -49.7 135.7
13°	29 22.3 -51.4 140.1	28 51.6 -51.0 139.2	28 20.4 -50.6 138.2	27 48.6 -50.2 137.3	27 16.3 -49.9 136.4
14°	28 30.9 -51.5 140.7	28 00.6 -51.1 139.8	27 29.8 -50.8 138.8	26 58.4 -50.4 137.9	26 26.4 -50.0 137.0
15°	27 39.4 -51.7 141.3	27 09.5 -51.3 140.3	26 39.0 -50.9 139.4	26 08.0 -50.6 138.5	25 36.4 -50.2 137.6
16°	26 47.7 -51.8 141.9	26 18.2 -51.5 140.9	25 48.1 -51.1 140.0	25 17.4 -50.7 139.1	24 46.2 -50.3 138.2
17°	25 55.9 -52.0 142.4	25 26.7 -51.5 141.5	24 57.0 -51.2 140.6	24 26.7 -50.8 139.7	23 55.9 -50.5 138.8
18°	25 03.9 -52.0 143.0	24 35.2 -51.7 142.1	24 05.8 -51.3 141.2	23 35.9 -51.0 140.3	23 05.4 -50.6 139.4
19°	24 11.9 -52.2 143.5	23 43.5 -51.8 142.6	23 14.5 -51.5 141.7	22 44.9 -51.1 140.9	22 14.8 -50.7 140.0
20°	23 19.7 -52.3 144.1	22 51.7 -52.0 143.2	22 23.0 -51.5 142.3	21 53.8 -51.2 141.4	21 24.1 -50.9 140.6
21°	22 27.4 -52.4 144.6	21 59.7 -52.0 143.7	21 31.5 -51.7 142.8	21 02.6 -51.3 142.0	20 33.2 -50.9 141.1
22°	21 35.0 -52.4 145.1	21 07.7 -52.1 144.2	20 39.8 -51.8 143.4	20 11.3 -51.4 142.5	19 42.3 -51.1 141.7
23°	20 42.6 -52.6 145.6	20 15.6 -52.2 144.8	19 48.0 -51.8 143.9	19 19.9 -51.5 143.1	18 51.2 -51.1 142.3
24°	19 50.0 -52.7 146.1	19 23.4 -52.4 145.3	18 56.2 -52.0 144.5	18 28.4 -51.6 143.6	18 00.1 -51.3 142.8
25°	18 57.3 -52.7 146.7	18 31.0 -52.3 145.8	18 04.2 -52.0 145.0	17 36.8 -51.7 144.2	17 08.8 -51.3 143.4
26°	18 04.6 -52.8 147.2	17 38.7 -52.5 146.3	17 12.2 -52.2 145.5	16 45.1 -51.8 144.7	16 17.5 -51.4 143.9
27°	17 11.8 -52.9 147.7	16 46.2 -52.6 146.8	16 20.0 -52.2 146.0	15 53.3 -51.8 145.2	15 26.1 -51.5 144.4
28°	16 18.9 -53.0 148.2	15 53.6 -52.6 147.3	15 27.8 -52.2 146.5	15 01.5 -51.9 145.7	14 34.6 -51.5 145.0
29°	15 25.9 -53.0 148.6	15 01.0 -52.7 147.8	14 35.6 -52.4 147.1	14 09.6 -52.0 146.3	13 43.1 -51.7 145.5

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°	37 07.9 -46.5 126.3	36 29.6 -46.1 125.3	35 50.7 -45.7 124.4	35 11.5 -45.4 123.4	34 31.8 -45.0 122.5
1°	36 21.4 -46.8 127.1	35 43.5 -46.5 126.1	35 05.0 -46.0 125.2	34 26.1 -45.6 124.2	33 46.8 -45.3 123.3
2°	35 34.6 -47.1 127.8	34 57.0 -46.7 126.9	34 19.0 -46.3 125.9	33 40.5 -46.0 125.0	33 01.5 -45.5 124.1
3°	34 47.5 -47.3 128.6	34 10.3 -46.9 127.6	33 32.7 -46.6 126.7	32 54.5 -46.2 125.8	32 16.0 -45.9 124.9
4°	34 00.2 -47.7 129.3	33 23.4 -47.3 128.4	32 46.1 -46.9 127.5	32 08.3 -46.5 126.5	31 30.1 -46.1 125.6
5°	33 12.5 -47.8 130.1	32 36.1 -47.5 129.1	31 59.2 -47.1 128.2	31 21.8 -46.8 127.3	30 44.0 -46.4 126.4
6°	32 24.7 -48.2 130.8	31 48.6 -47.7 129.8	31 12.1 -47.4 128.9	30 35.0 -46.9 128.0	29 57.6 -46.7 127.1
7°	31 36.5 -48.3 131.5	31 00.9 -48.0 130.6	30 24.7 -47.6 129.6	29 48.1 -47.3 128.7	29 10.9 -46.8 127.8
8°	30 48.2 -48.6 132.2	30 12.9 -48.2 131.3	29 37.1 -47.8 130.3	29 00.8 -47.4 129.4	28 24.1 -47.1 128.6
9°	29 59.6 -48.7 132.9	29 24.7 -48.4 131.9	28 49.3 -48.0 131.0	28 13.4 -47.7 130.1	27 37.0 -47.3 129.3
10°	29 10.9 -49.0 133.5	28 36.3 -48.6 132.6	28 01.3 -48.2 131.7	27 25.7 -47.8 130.8	26 49.7 -47.5 129.9
11°	28 21.9 -49.2 134.2	27 47.7 -48.7 133.3	27 13.1 -48.4 132.4	26 37.9 -48.0 131.5	26 02.2 -47.6 130.6
12°	27 32.7 -49.3 134.8	26 59.0 -49.0 133.9	26 24.7 -48.6 133.0	25 49.9 -48.3 132.2	25 14.6 -47.9 131.3
13°	26 43.4 -49.5 135.5	26 10.0 -49.1 134.6	25 36.1 -48.8 133.7	25 01.6 -48.4 132.8	24 26.7 -48.0 132.0
14°	25 53.9 -49.7 136.1	25 20.9 -49.3 135.2	24 47.3 -48.9 134.3	24 13.2 -48.5 133.5	23 38.7 -48.2 132.6
15°	25 04.2 -49.8 136.7	24 31.6 -49.5 135.8	23 58.4 -49.1 135.0	23 24.7 -48.7 134.1	22 50.5 -48.3 133.3
16°	24 14.4 -49.9 137.3	23 42.1 -49.6 136.5	23 09.3 -49.2 135.6	22 36.0 -48.9 134.8	22 02.2 -48.5 133.9
17°	23 24.5 -50.1 137.9	22 52.5 -49.7 137.1	22 20.1 -49.4 136.2	21 47.1 -49.0 135.4	21 13.7 -48.7 134.5
18°	22 34.4 -50.3 138.5	22 02.8 -49.9 137.7	21 30.7 -49.5 136.8	20 58.1 -49.1 136.0	20 25.0 -48.7 135.2
19°	21 44.1 -50.3 139.1	21 12.9 -50.0 138.3	20 41.2 -49.6 137.4	20 09.0 -49.3 136.6	19 36.3 -48.9 135.8
20°	20 53.8 -50.5 139.7	20 22.9 -50.1 138.9	19 51.6 -49.7 138.0	19 19.7 -49.3 137.2	18 47.4 -49.0 136.4
21°	20 03.3 -50.6 140.3	19 32.8 -50.2 139.5	19 01.9 -49.9 138.6	18 30.4 -49.5 137.8	17 58.4 -49.2 137.0
22°	19 12.7 -50.7 140.9	18 42.6 -50.3 140.0	18 12.0 -50.0 139.2	17 40.9 -49.6 138.4	17 09.2 -49.2 137.6
23°	18 22.0 -50.8 141.4	17 52.3 -50.4 140.6	17 22.0 -50.0 139.8	16 51.3 -49.7 139.0	16 20.0 -49.3 138.2
24°	17 31.2 -50.8 142.0	17 01.9 -50.6 141.2	16 32.0 -50.2 140.4	16 01.6 -49.8 139.6	15 30.7 -49.4 138.8
25°	16 40.4 -51.0 142.5	16 11.3 -50.6 141.7	15 41.8 -50.2 141.0	15 11.8 -49.9 140.2	14 41.3 -49.6 139.4
26°	15 49.4 -51.1 143.1	15 20.7 -50.6 142.3	14 51.6 -50.4 141.5	14 21.9 -50.0 140.7	13 51.7 -49.6 140.0
27°	14 58.3 -51.1 143.6	14 30.1 -50.8 142.9	14 01.2 -50.4 142.1	13 31.9 -50.0 141.3	13 02.1 -49.6 140.6
28°	14 07.2 -51.2 144.2	13 39.3 -50.9 143.4	13 10.8 -50.4 142.6	12 41.9 -50.1 141.9	12 12.5 -49.8 141.1
29°	13 16.0 -51.3 144.7	12 48.4 -50.9 144.0	12 20.4 -50.6 143.2	11 51.8 -50.2 142.4	11 22.7 -49.8 141.7

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°	33 51.8 -44.7 121.6	33 11.3 -44.3 120.7	32 30.5 -44.0 119.9	31 49.3 -43.6 119.0	31 07.8 -43.3 118.2
1°	33 07.1 -44.9 122.4	32 27.0 -44.6 121.5	31 46.5 -44.2 120.7	31 05.7 -43.9 119.8	30 24.5 -43.6 119.0
2°	32 22.2 -45.2 123.2	31 42.4 -44.9 122.3	31 02.3 -44.6 121.5	30 21.8 -44.2 120.6	29 40.9 -43.9 119.8
3°	31 37.0 -45.6 124.0	30 57.5 -45.1 123.1	30 17.7 -44.8 122.2	29 37.6 -44.5 121.4	28 57.0 -44.1 120.5
4°	30 51.4 -45.7 124.7	30 12.4 -45.4 123.9	29 32.9 -45.0 123.0	28 53.1 -44.7 122.1	28 12.9 -44.4 121.3
5°	30 05.7 -46.0 125.5	29 27.0 -45.7 124.6	28 47.9 -45.4 123.8	28 08.4 -45.0 122.9	27 28.5 -44.7 122.1
6°	29 19.7 -46.3 126.2	28 41.3 -45.9 125.4	28 02.5 -45.5 124.5	27 23.4 -45.2 123.7	26 43.8 -44.8 122.8
7°	28 33.4 -46.5 127.0	27 55.4 -46.1 126.1	27 17.0 -45.8 125.2	26 38.2 -45.5 124.4	25 59.0 -45.1 123.6
8°	27 46.9 -46.7 127.7	27 09.3 -46.4 126.8	26 31.2 -46.0 126.0	25 52.7 -45.6 125.1	25 13.9 -45.4 124.3
9°	27 00.2 -46.9 128.4	26 22.9 -46.6 127.5	25 45.2 -46.2 126.7	25 07.1 -45.9 125.8	24 28.5 -45.5 125.0
10°	26 13.3 -47.2 129.1	25 36.3 -46.7 128.2	24 59.0 -46.4 127.4	24 21.2 -46.1 126.6	23 43.0 -45.7 125.7
11°	25 26.1 -47.3 129.8	24 49.6 -47.0 128.9	24 12.6 -46.6 128.1	23 35.1 -46.2 127.3	22 57.3 -45.9 126.4
12°	24 38.8 -47.5 130.4	24 02.6 -47.1 129.6	23 26.0 -46.8 128.8	22 48.9 -46.4 127.9	22 11.4 -46.1 127.1
13°	23 51.3 -47.6 131.1	23 15.5 -47.3 130.3	22 39.2 -46.9 129.4	22 02.5 -46.6 128.6	21 25.3 -46.2 127.8
14°	23 03.7 -47.9 131.8	22 28.2 -47.5 130.9	21 52.3 -47.2 130.1	21 15.9 -46.8 129.3	20 39.1 -46.4 128.5
15°	22 15.8 -47.9 132.4	21 40.7 -47.6 131.6	21 05.1 -47.2 130.8	20 29.1 -46.9 130.0	19 52.7 -46.6 129.2
16°	21 27.9 -48.2 133.1	20 53.1 -47.8 132.3	20 17.9 -47.4 131.4	19 42.2 -47.0 130.6	19 06.1 -46.7 129.8
17°	20 39.7 -48.2 133.7	20 05.3 -47.9 132.9	19 30.5 -47.6 132.1	18 55.2 -47.2 131.3	18 19.4 -46.8 130.5
18°	19 51.5 -48.4 134.4	19 17.4 -48.0 133.5	18 42.9 -47.6 132.7	18 08.0 -47.3 132.0	17 32.6 -47.0 131.2
19°	19 03.1 -48.6 135.0	18 29.4 -48.2 134.2	17 55.3 -47.9 133.4	17 20.7 -47.5 132.6	16 45.6 -47.0 131.8
20°	18 14.5 -48.6 135.6	17 41.2 -48.3 134.8	17 07.4 -47.9 134.0	16 33.2 -47.5 133.2	15 58.6 -47.2 132.5
21°	17 25.9 -48.8 136.2	16 52.9 -48.4 135.4	16 19.5 -48.0 134.6	15 45.7 -47.7 133.9	15 11.4 -47.3 133.1
22°	16 37.1 -48.8 136.8	16 04.5 -48.5 136.0	15 31.5 -48.1 135.3	14 58.0 -47.8 134.5	14 24.1 -47.4 133.7
23°	15 48.3 -49.0 137.4	15 16.0 -48.6 136.7	14 43.4 -48.3 135.9	14 10.2 -47.8 135.1	13 36.7 -47.6 134.4
24°	14 59.3 -49.1 138.0	14 27.4 -48.6 137.3	13 55.1 -48.3 136.5	13 22.4 -48.0 135.7	12 49.1 -47.5 135.0
25°	14 10.2 -49.1 138.6	13 38.8 -48.8 137.9	13 06.8 -48.4 137.1	12 34.4 -48.0 136.4	12 01.6 -47.7 135.6
26°	13 21.1 -49.2 139.2	12 50.0 -48.9 138.5	12 18.4 -48.5 137.7	11 46.4 -48.2 137.0	11 13.9 -47.8 136.2
27°	12 31.9 -49.3 139.8	12 01.1 -48.9 139.1	11 29.9 -48.6 138.3	10 58.2 -48.1 137.6	10 26.1 -47.8 136.9
28°	11 42.6 -49.4 140.4	11 12.2 -49.0 139.6	10 41.3 -48.6 138.9	10 10.1 -48.3 138.2	9 38.3 -47.9 137.5
29°	10 53.2 -49.4 141.0	10 23.2 -49.1 140.2	9 52.7 -48.7 139.5	9 21.8 -48.3 138.8	8 50.4 -47.9 138.1

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°	30 26.0 -43.0 117.3	29 43.8 -42.7 116.5	29 01.3 -42.4 115.7	28 18.6 -42.1 114.9	27 35.6 -41.9 114.1
1°	29 43.0 -43.3 118.1	29 01.1 -43.0 117.3	28 18.9 -42.6 116.5	27 36.5 -42.4 115.7	26 53.7 -42.1 114.9
2°	28 59.7 -43.6 118.9	28 18.1 -43.2 118.1	27 36.3 -43.0 117.3	26 54.1 -42.6 116.5	26 11.6 -42.3 115.7
3°	28 16.1 -43.8 119.7	27 34.9 -43.5 118.9	26 53.3 -43.2 118.1	26 11.5 -42.9 117.3	25 29.3 -42.6 116.5
4°	27 32.3 -44.1 120.5	26 51.4 -43.8 119.7	26 10.1 -43.4 118.9	25 28.6 -43.2 118.1	24 46.7 -42.8 117.3
5°	26 48.2 -44.3 121.2	26 07.6 -44.0 120.4	25 26.7 -43.7 119.6	24 45.4 -43.3 118.8	24 03.9 -43.1 118.0
6°	26 03.9 -44.5 122.0	25 23.6 -44.2 121.2	24 43.0 -43.9 120.4	24 02.1 -43.6 119.6	23 20.8 -43.3 118.8
7°	25 19.4 -44.8 122.7	24 39.4 -44.4 121.9	23 59.1 -44.1 121.1	23 18.5 -43.8 120.3	22 37.5 -43.5 119.5
8°	24 34.6 -45.0 123.5	23 55.0 -44.7 122.7	23 15.0 -44.3 121.9	22 34.7 -44.0 121.1	21 54.0 -43.7 120.3
9°	23 49.6 -45.2 124.2	23 10.3 -44.8 123.4	22 30.7 -44.5 122.6	21 50.7 -44.2 121.8	21 10.3 -43.9 121.0
10°	23 04.4 -45.3 124.9	22 25.5 -45.1 124.1	21 46.2 -44.8 123.3	21 06.5 -44.4 122.5	20 26.4 -44.0 121.8
11°	22 19.1 -45.6 125.6	21 40.4 -45.2 124.8	21 01.4 -44.8 124.0	20 22.1 -44.6 123.3	19 42.4 -44.3 122.5
12°	21 33.5 -45.7 126.3	20 55.2 -45.4 125.5	20 16.6 -45.1 124.7	19 37.5 -44.7 124.0	18 58.1 -44.4 123.2
13°	20 47.8 -45.9 127.0	20 09.8 -45.5 126.2	19 31.5 -45.2 125.4	18 52.8 -44.9 124.7	18 13.7 -44.5 123.9
14°	20 01.9 -46.1 127.7	19 24.3 -45.7 126.9	18 46.3 -45.4 126.1	18 07.9 -45.0 125.4	17 29.2 -44.7 124.6
15°	19 15.8 -46.2 128.4	18 38.6 -45.9 127.6	18 00.9 -45.5 126.8	17 22.9 -45.2 126.1	16 44.5 -44.9 125.3
16°	18 29.6 -46.3 129.1	17 52.7 -46.0 128.3	17 15.4 -45.6 127.5	16 37.7 -45.3 126.8	15 59.6 -44.9 126.0
17°	17 43.3 -46.5 129.7	17 06.7 -46.1 129.0	16 29.8 -45.8 128.2	15 52.4 -45.4 127.4	15 14.7 -45.1 126.7
18°	16 56.8 -46.6 130.4	16 20.6 -46.3 129.6	15 44.0 -45.9 128.9	15 07.0 -45.6 128.1	14 29.6 -45.2 127.4
19°	16 10.2 -46.7 131.0	15 34.3 -46.3 130.3	14 58.1 -46.1 129.5	14 21.4 -45.7 128.8	13 44.4 -45.4 128.0
20°	15 23.5 -46.9 131.7	14 48.0 -46.5 130.9	14 12.0 -46.1 130.2	13 35.7 -45.7 129.5	12 59.0 -45.4 128.7
21°	14 36.6 -46.9 132.3	14 01.5 -46.6 131.6	13 25.9 -46.2 130.9	12 50.0 -45.9 130.1	12 13.6 -45.5 129.4
22°	13 49.7 -47.1 133.0	13 14.9 -46.7 132.2	12 39.7 -46.3 131.5	12 04.1 -46.0 130.8	11 28.1 -45.6 130.1
23°	13 02.6 -47.1 133.6	12 28.2 -46.8 132.9	11 53.4 -46.5 132.2	11 18.1 -46.0 131.4	10 42.5 -45.7 130.7
24°	12 15.5 -47.2 134.3	11 41.4 -46.8 133.5	11 06.9 -46.4 132.8	10 32.1 -46.2 132.1	9 56.8 -45.8 131.4
25°	11 28.3 -47.3 134.9	10 54.6 -47.0 134.2	10 20.5 -46.6 133.5	9 45.9 -46.2 132.7	9 11.0 -45.8 132.0
26°	10 41.0 -47.4 135.5	10 07.6 -47.0 134.8	9 33.9 -46.7 134.1	8 59.7 -46.3 133.4	8 25.2 -46.0 132.7
27°	9 53.6 -47.5 136.1	9 20.6 -47.1 135.4	8 47.2 -46.7 134.7	8 13.4 -46.3 134.0	7 39.2 -45.9 133.3
28°	9 06.1 -47.5 136.8	8 33.5 -47.1 136.1	8 00.5 -46.7 135.4	7 27.1 -46.4 134.7	6 53.3 -46.0 134.0
29°	8 18.6 -47.5 137.4	7 46.4 -47.2 136.7	7 13.8 -46.9 136.0	6 40.7 -46.4 135.3	6 07.3 -46.1 134.6

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°	26 52.3 -41.6 113.3	26 08.7 -41.3 112.6	25 24.9 -41.0 111.8	24 40.9 -40.8 111.0	23 56.7 -40.6 110.3
1°	26 10.7 -41.8 114.1	25 27.4 -41.5 113.4	24 43.9 -41.3 112.6	24 00.1 -41.0 111.8	23 16.1 -40.7 111.1
2°	25 28.9 -42.1 114.9	24 45.9 -41.8 114.2	24 02.6 -41.5 113.4	23 19.1 -41.3 112.6	22 35.4 -41.1 111.9
3°	24 46.8 -42.3 115.7	24 04.1 -42.0 114.9	23 21.1 -41.8 114.2	22 37.8 -41.5 113.4	21 54.3 -41.2 112.7
4°	24 04.5 -42.5 116.5	23 22.1 -42.3 115.7	22 39.3 -42.0 115.0	21 56.3 -41.7 114.2	21 13.1 -41.5 113.5
5°	23 22.0 -42.8 117.3	22 39.8 -42.5 116.5	21 57.3 -42.2 115.7	21 14.6 -41.9 115.0	20 31.6 -41.6 114.2
6°	22 39.2 -43.0 118.0	21 57.3 -42.7 117.3	21 15.1 -42.4 116.5	20 32.7 -42.1 115.8	19 50.0 -41.9 115.0
7°	21 56.2 -43.2 118.8	21 14.6 -42.9 118.0	20 32.7 -42.6 117.3	19 50.6 -42.4 116.5	19 08.1 -42.0 115.8
8°	21 13.0 -43.4 119.5	20 31.7 -43.1 118.8	19 50.1 -42.8 118.0	19 08.2 -42.5 117.3	18 26.1 -42.2 116.5
9°	20 29.6 -43.5 120.3	19 48.6 -43.2 119.5	19 07.3 -42.9 118.8	18 25.7 -42.6 118.0	17 43.9 -42.4 117.3
10°	19 46.1 -43.8 121.0	19 05.4 -43.5 120.2	18 24.4 -43.2 119.5	17 43.1 -42.9 118.7	17 01.5 -42.6 118.0
11°	19 02.3 -43.9 121.7	18 21.9 -43.6 121.0	17 41.2 -43.3 120.2	17 00.2 -43.0 119.5	16 18.9 -42.7 118.8
12°	18 18.4 -44.1 122.4	17 38.3 -43.7 121.7	16 57.9 -43.4 120.9	16 17.2 -43.1 120.2	15 36.2 -42.8 119.5
13°	17 34.3 -44.2 123.2	16 54.6 -43.9 122.4	16 14.5 -43.6 121.7	15 34.1 -43.3 120.9	14 53.4 -43.0 120.2
14°	16 50.1 -44.4 123.9	16 10.7 -44.1 123.1	15 30.9 -43.7 122.4	14 50.8 -43.4 121.6	14 10.4 -43.1 120.9
15°	16 05.7 -44.5 124.6	15 26.6 -44.2 123.8	14 47.2 -43.9 123.1	14 07.4 -43.5 122.4	13 27.3 -43.2 121.6
16°	15 21.2 -44.6 125.3	14 42.4 -44.3 124.5	14 03.3 -44.0 123.8	13 23.9 -43.7 123.1	12 44.1 -43.4 122.4
17°	14 36.6 -44.8 125.9	13 58.1 -44.4 125.2	13 19.3 -44.1 124.5	12 40.2 -43.8 123.8	12 00.7 -43.4 123.1
18°	13 51.8 -44.9 126.6	13 13.7 -44.5 125.9	12 35.2 -44.2 125.2	11 56.4 -43.8 124.5	11 17.3 -43.6 123.8
19°	13 06.9 -44.9 127.3	12 29.2 -44.7 126.6	11 51.0 -44.3 125.9	11 12.6 -44.0 125.2	10 33.7 -43.6 124.5
20°	12 22.0 -45.1 128.0	11 44.5 -44.7 127.3	11 06.7 -44.4 126.6	10 28.6 -44.1 125.9	9 50.1 -43.7 125.2
21°	11 36.9 -45.2 128.7	10 59.8 -44.8 128.0	10 22.3 -44.5 127.3	9 44.5 -44.1 126.6	9 06.4 -43.8 125.9
22°	10 51.7 -45.2 129.3	10 15.0 -44.9 128.6	9 37.8 -44.5 127.9	9 00.4 -44.2 127.2	8 22.6 -43.9 126.6
23°	10 06.5 -45.4 130.0	9 30.1 -45.0 129.3	8 53.3 -44.6 128.6	8 16.2 -44.3 127.9	7 38.7 -43.9 127.2
24°	9 21.1 -45.4 130.7	8 45.1 -45.1 130.0	8 08.7 -44.8 129.3	7 31.9 -44.4 128.6	6 54.8 -44.0 127.9
25°	8 35.7 -45.5 131.3	8 00.0 -45.1 130.6	7 23.9 -44.7 130.0	6 47.5 -44.4 129.3	6 10.8 -44.1 128.6
26°	7 50.2 -45.5 132.0	7 14.9 -45.2 131.3	6 39.2 -44.8 130.6	6 03.1 -44.4 130.0	5 26.7 -44.1 129.3
27°	7 04.7 -45.6 132.7	6 29.7 -45.2 132.0	5 54.4 -44.9 131.3	5 18.7 -44.5 130.6	4 42.6 -44.1 130.0
28°	6 19.1 -45.7 133.3	5 44.5 -45.3 132.6	5 09.5 -44.9 132.0	4 34.2 -44.6 131.3	3 58.5 -44.2 130.7
29°	5 33.4 -45.7 134.0	4 59.2 -45.3 133.3	4 24.6 -44.9 132.6	3 49.6 -44.5 132.0	3 14.3 -44.2 131.3

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°	23 12.2 -40.3 109.6	22 27.6 -40.1 108.8	21 42.7 -39.8 108.1	20 57.7 -39.6 107.4	20 12.5 -39.4 106.7
1°	22 31.9 -40.5 110.4	21 47.5 -40.3 109.6	21 02.9 -40.1 108.9	20 18.1 -39.9 108.2	19 33.1 -39.7 107.5
2°	21 51.4 -40.8 111.2	21 07.2 -40.6 110.4	20 22.8 -40.3 109.7	19 38.2 -40.1 109.0	18 53.4 -39.9 108.3
3°	21 10.6 -41.0 112.0	20 26.6 -40.7 111.2	19 42.5 -40.6 110.5	18 58.1 -40.3 109.8	18 13.5 -40.1 109.1
4°	20 29.6 -41.2 112.7	19 45.9 -41.0 112.0	19 01.9 -40.7 111.3	18 17.8 -40.5 110.6	17 33.4 -40.2 109.9
5°	19 48.4 -41.4 113.5	19 04.9 -41.1 112.8	18 21.2 -40.9 112.1	17 37.3 -40.7 111.4	16 53.2 -40.5 110.7
6°	19 07.0 -41.6 114.3	18 23.8 -41.4 113.6	17 40.3 -41.1 112.8	16 56.6 -40.8 112.1	16 12.7 -40.6 111.4
7°	18 25.4 -41.8 115.0	17 42.4 -41.5 114.3	16 59.2 -41.2 113.6	16 15.8 -41.0 112.9	15 32.1 -40.7 112.2
8°	17 43.6 -41.9 115.8	17 00.9 -41.6 115.1	16 18.0 -41.4 114.4	15 34.8 -41.2 113.7	14 51.4 -40.9 113.0
9°	17 01.7 -42.1 116.5	16 19.3 -41.9 115.8	15 36.6 -41.6 115.1	14 53.6 -41.3 114.4	14 10.5 -41.1 113.7
10°	16 19.6 -42.3 117.3	15 37.4 -41.9 116.6	14 55.0 -41.7 115.9	14 12.3 -41.4 115.2	13 29.4 -41.1 114.5
11°	15 37.3 -42.4 118.0	14 55.5 -42.2 117.3	14 13.3 -41.8 116.6	13 30.9 -41.6 115.9	12 48.3 -41.3 115.2
12°	14 54.9 -42.5 118.8	14 13.3 -42.2 118.0	13 31.5 -42.0 117.3	12 49.3 -41.7 116.6	12 07.0 -41.5 115.9
13°	14 12.4 -42.7 119.5	13 31.1 -42.4 118.8	12 49.5 -42.1 118.1	12 07.6 -41.8 117.4	11 25.5 -41.5 116.7
14°	13 29.7 -42.8 120.2	12 48.7 -42.5 119.5	12 07.4 -42.2 118.8	11 25.8 -41.9 118.1	10 44.0 -41.6 117.4
15°	12 46.9 -42.9 120.9	12 06.2 -42.6 120.2	11 25.2 -42.3 119.5	10 43.9 -42.0 118.8	10 02.4 -41.8 118.2
16°	12 04.0 -43.1 121.6	11 23.6 -42.7 120.9	10 42.9 -42.4 120.3	10 01.9 -42.1 119.6	9 20.6 -41.8 118.9
17°	11 20.9 -43.1 122.4	10 40.9 -42.9 121.7	10 00.5 -42.5 121.0	9 19.8 -42.2 120.3	8 38.8 -41.9 119.6
18°	10 37.8 -43.2 123.1	9 58.0 -42.9 122.4	9 18.0 -42.6 121.7	8 37.6 -42.3 121.0	7 56.9 -42.0 120.3
19°	9 54.6 -43.3 123.8	9 15.1 -43.0 123.1	8 35.4 -42.7 122.4	7 55.3 -42.4 121.7	7 14.9 -42.0 121.1
20°	9 11.3 -43.4 124.5	8 32.1 -43.0 123.8	7 52.7 -42.7 123.1	7 12.9 -42.4 122.4	6 32.9 -42.1 121.8
21°	8 27.9 -43.5 125.2	7 49.1 -43.2 124.5	7 10.0 -42.8 123.8	6 30.5 -42.5 123.2	5 50.8 -42.2 122.5
22°	7 44.4 -43.5 125.9	7 05.9 -43.2 125.2	6 27.2 -42.9 124.5	5 48.0 -42.5 123.9	5 08.6 -42.2 123.2
23°	7 00.9 -43.6 126.6	6 22.7 -43.2 125.9	5 44.3 -42.9 125.2	5 05.5 -42.6 124.6	4 26.4 -42.2 123.9
24°	6 17.3 -43.7 127.3	5 39.5 -43.3 126.6	5 01.4 -43.0 125.9	4 22.9 -42.6 125.3	3 44.2 -42.3 124.6
25°	5 33.6 -43.7 127.9	4 56.2 -43.4 127.3	4 18.4 -43.0 126.6	3 40.3 -42.6 126.0	3 01.9 -42.3 125.3
26°	4 49.9 -43.7 128.6	4 12.8 -43.3 128.0	3 35.4 -43.0 127.3	2 57.7 -42.7 126.7	2 19.6 -42.3 126.1
27°	4 06.2 -43.8 129.3	3 29.5 -43.5 128.7	2 52.4 -43.1 128.0	2 15.0 -42.7 127.4	1 37.3 -42.4 126.8
28°	3 22.4 -43.8 130.0	2 46.0 -43.4 129.4	2 09.3 -43.1 128.7	1 32.3 -42.7 128.1	0 54.9 -42.3 127.5
29°	2 38.6 -43.8 130.7	2 02.6 -43.5 130.1	1 26.2 -43.0 129.4	0 49.6 -42.8 128.8	0 12.6 -42.4 128.2

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°	19 27.2 -39.3 106.0	18 41.6 -39.1 105.3	17 56.0 -39.0 104.6	17 10.2 -38.8 104.0	16 24.2 -38.6 103.3
1°	18 47.9 -39.5 106.8	18 02.5 -39.3 106.1	17 17.0 -39.1 105.4	16 31.4 -38.9 104.8	15 45.6 -38.8 104.1
2°	18 08.4 -39.7 107.6	17 23.2 -39.4 106.9	16 37.9 -39.3 106.2	15 52.5 -39.1 105.6	15 06.8 -38.9 104.9
3°	17 28.7 -39.8 108.4	16 43.8 -39.7 107.7	15 58.6 -39.4 107.0	15 13.4 -39.3 106.3	14 27.9 -39.1 105.7
4°	16 48.9 -40.1 109.2	16 04.1 -39.8 108.5	15 19.2 -39.6 107.8	14 34.1 -39.4 107.1	13 48.8 -39.2 106.5
5°	16 08.8 -40.2 110.0	15 24.3 -40.0 109.3	14 39.6 -39.8 108.6	13 54.7 -39.6 107.9	13 09.6 -39.4 107.2
6°	15 28.6 -40.4 110.7	14 44.3 -40.1 110.0	13 59.8 -39.9 109.4	13 15.1 -39.7 108.7	12 30.2 -39.5 108.0
7°	14 48.2 -40.5 111.5	14 04.2 -40.3 110.8	13 19.9 -40.1 110.1	12 35.4 -39.9 109.4	11 50.7 -39.6 108.8
8°	14 07.7 -40.6 112.3	13 23.9 -40.5 111.6	12 39.8 -40.2 110.9	11 55.5 -39.9 110.2	11 11.1 -39.8 109.5
9°	13 27.1 -40.8 113.0	12 43.4 -40.5 112.3	11 59.6 -40.3 111.6	11 15.6 -40.1 111.0	10 31.3 -39.8 110.3
10°	12 46.3 -40.9 113.8	12 02.9 -40.7 113.1	11 19.3 -40.4 112.4	10 35.5 -40.2 111.7	9 51.5 -40.0 111.1
11°	12 05.4 -41.1 114.5	11 22.2 -40.8 113.8	10 38.9 -40.6 113.2	9 55.3 -40.3 112.5	9 11.5 -40.1 111.8
12°	11 24.3 -41.1 115.3	10 41.4 -40.9 114.6	9 58.3 -40.6 113.9	9 15.0 -40.4 113.2	8 31.4 -40.1 112.6
13°	10 43.2 -41.3 116.0	10 00.5 -40.9 115.3	9 17.7 -40.7 114.7	8 34.6 -40.5 114.0	7 51.3 -40.2 113.3
14°	10 01.9 -41.4 116.7	9 19.6 -41.1 116.1	8 37.0 -40.9 115.4	7 54.1 -40.5 114.7	7 11.1 -40.3 114.1
15°	9 20.5 -41.4 117.5	8 38.5 -41.2 116.8	7 56.1 -40.8 116.1	7 13.6 -40.6 115.5	6 30.8 -40.4 114.8
16°	8 39.1 -41.5 118.2	7 57.3 -41.2 117.5	7 15.3 -41.0 116.9	6 33.0 -40.7 116.2	5 50.4 -40.4 115.6
17°	7 57.6 -41.6 118.9	7 16.1 -41.3 118.3	6 34.3 -41.0 117.6	5 52.3 -40.8 117.0	5 10.0 -40.5 116.3
18°	7 16.0 -41.7 119.7	6 34.8 -41.4 119.0	5 53.3 -41.1 118.3	5 11.5 -40.8 117.7	4 29.5 -40.5 117.0
19°	6 34.3 -41.7 120.4	5 53.4 -41.5 119.7	5 12.2 -41.2 119.1	4 30.7 -40.8 118.4	3 49.0 -40.5 117.8
20°	5 52.6 -41.8 121.1	5 11.9 -41.4 120.5	4 31.0 -41.1 119.8	3 49.9 -40.9 119.2	3 08.5 -40.6 118.5
21°	5 10.8 -41.9 121.8	4 30.5 -41.6 121.2	3 49.9 -41.2 120.5	3 09.0 -40.9 119.9	2 27.9 -40.6 119.3
22°	4 28.9 -41.9 122.6	3 48.9 -41.5 121.9	3 08.7 -41.3 121.3	2 28.1 -40.9 120.6	1 47.3 -40.6 120.0
23°	3 47.0 -41.9 123.3	3 07.4 -41.6 122.6	2 27.4 -41.3 122.0	1 47.2 -41.0 121.4	1 06.7 -40.7 120.7
24°	3 05.1 -41.9 124.0	2 25.8 -41.6 123.4	1 46.1 -41.3 122.7	1 06.2 -40.9 122.1	0 26.0 -40.6 121.5
25°	2 23.2 -42.0 124.7	1 44.2 -41.7 124.1	1 04.8 -41.2 123.4	0 25.3 -41.0 122.8	-0 14.6 -40.6
26°	1 41.2 -42.0 125.4	1 02.5 -41.6 124.8	0 23.6 -41.4 124.2	-0 15.7 -41.0	-0 55.2 -40.7
27°	0 59.2 -42.0 126.1	0 20.9 -41.7 125.5	-0 17.8 -41.2	-0 56.7 -40.9	-1 35.9 -40.6
28°	0 17.2 -42.0 126.8	-0 20.8 -41.6	-0 59.0 -41.3	-1 37.6 -41.0	-2 16.5 -40.6
29°	-0 24.8 -42.0	-1 02.4 -41.6	-1 40.3 -41.3	-2 18.6 -40.9	-2 57.1 -40.5

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°	15 38.1 -38.4 102.6	14 51.9 -38.3 102.0	14 05.6 -38.1 101.3	13 19.2 -38.0 100.7	12 32.7 -37.9 100.0
1°	14 59.7 -38.6 103.4	14 13.6 -38.4 102.8	13 27.5 -38.4 102.1	12 41.2 -38.2 101.5	11 54.8 -38.1 100.8
2°	14 21.1 -38.8 104.2	13 35.2 -38.6 103.6	12 49.1 -38.4 102.9	12 03.0 -38.3 102.2	11 16.7 -38.1 101.6
3°	13 42.3 -38.9 105.0	12 56.6 -38.8 104.3	12 10.7 -38.6 103.7	11 24.7 -38.4 103.0	10 38.6 -38.3 102.4
4°	13 03.4 -39.1 105.8	12 17.8 -38.9 105.1	11 32.1 -38.7 104.5	10 46.3 -38.6 103.8	10 00.3 -38.4 103.2
5°	12 24.3 -39.1 106.6	11 38.9 -39.0 105.9	10 53.4 -38.8 105.2	10 07.7 -38.6 104.6	9 21.9 -38.5 103.9
6°	11 45.2 -39.4 107.3	10 59.9 -39.1 106.7	10 14.6 -39.0 106.0	9 29.1 -38.8 105.4	8 43.4 -38.6 104.7
7°	11 05.8 -39.4 108.1	10 20.8 -39.2 107.4	9 35.6 -39.0 106.8	8 50.3 -38.9 106.1	8 04.8 -38.7 105.5
8°	10 26.4 -39.5 108.9	9 41.6 -39.3 108.2	8 56.6 -39.1 107.6	8 11.4 -38.9 106.9	7 26.1 -38.7 106.3
9°	9 46.9 -39.7 109.6	9 02.3 -39.5 109.0	8 17.5 -39.3 108.3	7 32.5 -39.0 107.7	6 47.4 -38.9 107.0
10°	9 07.2 -39.7 110.4	8 22.8 -39.5 109.7	7 38.2 -39.3 109.1	6 53.5 -39.1 108.4	6 08.5 -38.9 107.8
11°	8 27.5 -39.8 111.2	7 43.3 -39.6 110.5	6 58.9 -39.3 109.9	6 14.4 -39.2 109.2	5 29.6 -38.9 108.6
12°	7 47.7 -39.9 111.9	7 03.7 -39.7 111.3	6 19.6 -39.5 110.6	5 35.2 -39.2 110.0	4 50.7 -39.0 109.3
13°	7 07.8 -40.0 112.7	6 24.0 -39.7 112.0	5 40.1 -39.5 111.4	4 56.0 -39.3 110.7	4 11.7 -39.1 110.1
14°	6 27.8 -40.0 113.4	5 44.3 -39.8 112.8	5 00.6 -39.5 112.1	4 16.7 -39.3 111.5	3 32.6 -39.1 110.9
15°	5 47.8 -40.1 114.2	5 04.5 -39.8 113.5	4 21.1 -39.6 112.9	3 37.4 -39.4 112.2	2 53.5 -39.1 111.6
16°	5 07.7 -40.2 114.9	4 24.7 -39.9 114.3	3 41.5 -39.7 113.6	2 58.0 -39.3 113.0	2 14.4 -39.1 112.4
17°	4 27.5 -40.2 115.7	3 44.8 -39.9 115.0	3 01.8 -39.6 114.4	2 18.7 -39.5 113.8	1 35.3 -39.2 113.1
18°	3 47.3 -40.2 116.4	3 04.9 -40.0 115.8	2 22.2 -39.7 115.1	1 39.2 -39.4 114.5	0 56.1 -39.1 113.9
19°	3 07.1 -40.3 117.2	2 24.9 -40.0 116.5	1 42.5 -39.7 115.9	0 59.8 -39.4 115.3	0 17.0 -39.2 114.6
20°	2 26.8 -40.3 117.9	1 44.9 -40.0 117.3	1 02.8 -39.8 116.6	0 20.4 -39.5 116.0	-0 22.2 -39.2
21°	1 46.5 -40.3 118.6	1 04.9 -40.0 118.0	0 23.0 -39.7 117.4	-0 19.1 -39.4	-1 01.4 -39.1
22°	1 06.2 -40.3 119.4	0 24.9 -40.0 118.8	-0 16.7 -39.7	-0 58.5 -39.4	-1 40.5 -39.2
23°	0 25.9 -40.3 120.1	-0 15.1 -40.0	-0 56.4 -39.7	-1 37.9 -39.4	-2 19.7 -39.1
24°	-0 14.4 -40.4	-0 55.1 -40.1	-1 36.1 -39.7	-2 17.3 -39.4	-2 58.8 -39.1
25°	-0 54.8 -40.3	-1 35.2 -39.9	-2 15.8 -39.7	-2 56.7 -39.4	-3 37.9 -39.0
26°	-1 35.1 -40.3	-2 15.1 -40.0	-2 55.5 -39.6	-3 36.1 -39.3	-4 16.9 -39.0
27°	-2 15.4 -40.2	-2 55.1 -39.9	-3 35.1 -39.6	-4 15.4 -39.3	-4 55.9 -39.0
28°	-2 55.6 -40.3	-3 35.0 -39.9	-4 14.7 -39.6	-4 54.7 -39.2	-5 34.9 -38.9
29°	-3 35.9 -40.2	-4 14.9 -39.9	-4 54.3 -39.5	-5 33.9 -39.2	-6 13.8 -38.8

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°	11 46.1 -37.8 99.4	10 59.4 -37.7 98.7	10 12.6 -37.6 98.1	9 25.8 -37.5 97.5	8 38.9 -37.4 96.8
1°	11 08.3 -37.9 100.2	10 21.7 -37.8 99.5	9 35.0 -37.7 98.9	8 48.3 -37.6 98.2	8 01.5 -37.5 97.6
2°	10 30.4 -38.1 100.9	9 43.9 -37.9 100.3	8 57.3 -37.8 99.7	8 10.7 -37.7 99.0	7 24.0 -37.6 98.4
3°	9 52.3 -38.1 101.7	9 06.0 -38.0 101.1	8 19.5 -37.8 100.5	7 33.0 -37.8 99.8	6 46.4 -37.7 99.2
4°	9 14.2 -38.3 102.5	8 28.0 -38.1 101.9	7 41.7 -38.0 101.2	6 55.2 -37.8 100.6	6 08.7 -37.7 100.0
5°	8 35.9 -38.3 103.3	7 49.9 -38.2 102.7	7 03.7 -38.1 102.0	6 17.4 -37.9 101.4	5 31.0 -37.8 100.8
6°	7 57.6 -38.4 104.1	7 11.7 -38.3 103.4	6 25.6 -38.1 102.8	5 39.5 -38.0 102.2	4 53.2 -37.9 101.5
7°	7 19.2 -38.5 104.8	6 33.4 -38.3 104.2	5 47.5 -38.2 103.6	5 01.5 -38.1 102.9	4 15.3 -37.8 102.3
8°	6 40.7 -38.6 105.6	5 55.1 -38.5 105.0	5 09.3 -38.2 104.3	4 23.4 -38.0 103.7	3 37.5 -38.0 103.1
9°	6 02.1 -38.7 106.4	5 16.6 -38.4 105.8	4 31.1 -38.3 105.1	3 45.4 -38.2 104.5	2 59.5 -37.9 103.9
10°	5 23.4 -38.7 107.2	4 38.2 -38.5 106.5	3 52.8 -38.3 105.9	3 07.2 -38.1 105.3	2 21.6 -38.0 104.6
11°	4 44.7 -38.7 107.9	3 59.7 -38.6 107.3	3 14.5 -38.4 106.7	2 29.1 -38.2 106.0	1 43.6 -38.0 105.4
12°	4 06.0 -38.8 108.7	3 21.1 -38.6 108.1	2 36.1 -38.4 107.4	1 50.9 -38.2 106.8	1 05.6 -38.1 106.2
13°	3 27.2 -38.8 109.5	2 42.5 -38.6 108.8	1 57.7 -38.4 108.2	1 12.7 -38.2 107.6	0 27.5 -38.0 107.0
14°	2 48.4 -38.9 110.2	2 03.9 -38.6 109.6	1 19.3 -38.5 109.0	0 34.5 -38.3 108.4	-0 10.5 -38.0
15°	2 09.5 -38.9 111.0	1 25.3 -38.7 110.4	0 40.8 -38.4 109.7	-0 03.8 -38.2	-0 48.5 -38.0
16°	1 30.6 -38.9 111.7	0 46.6 -38.7 111.1	0 02.4 -38.4 110.5	-0 42.0 -38.2	-1 26.5 -38.0
17°	0 51.7 -38.9 112.5	0 07.9 -38.6 111.9	-0 36.0 -38.5	-1 20.2 -38.2	-2 04.5 -38.0
18°	0 12.8 -38.9 113.3	-0 30.7 -38.7	-1 14.5 -38.4	-1 58.4 -38.2	-2 42.5 -37.9
19°	-0 26.1 -38.9	-1 09.4 -38.7	-1 52.9 -38.4	-2 36.6 -38.1	-3 20.4 -37.9
20°	-1 05.0 -38.9	-1 48.1 -38.6	-2 31.3 -38.4	-3 14.7 -38.1	-3 58.3 -37.9
21°	-1 43.9 -38.9	-2 26.7 -38.6	-3 09.7 -38.3	-3 52.8 -38.1	-4 36.2 -37.8
22°	-2 22.8 -38.9	-3 05.3 -38.6	-3 48.0 -38.3	-4 30.9 -38.0	-5 14.0 -37.8
23°	-3 01.7 -38.8	-3 43.9 -38.5	-4 26.3 -38.2	-5 08.9 -38.0	-5 51.8 -37.7
24°	-3 40.5 -38.8	-4 22.4 -38.5	-5 04.5 -38.2	-5 46.9 -37.9	-6 29.5 -37.6
25°	-4 19.3 -38.7	-5 00.9 -38.4	-5 42.7 -38.2	-6 24.8 -37.8	-7 07.1 -37.5
26°	-4 58.0 -38.7	-5 39.3 -38.4	-6 20.9 -38.0	-7 02.6 -37.8	-7 44.6 -37.5
27°	-5 36.7 -38.6	-6 17.7 -38.3	-6 58.9 -38.0	-7 40.4 -37.7	-8 22.1 -37.3
28°	-6 15.3 -38.6	-6 56.0 -38.2	-7 36.9 -37.9	-8 18.1 -37.5	-8 59.4 -37.3
29°	-6 53.9 -38.4	-7 34.2 -38.2	-8 14.8 -37.8	-8 55.6 -37.5	-9 36.7 -37.2

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°	7 51.9 -37.3 96.2	7 04.9 -37.3 95.6	6 17.8 -37.2 94.9	5 30.7 -37.2 94.3	4 43.5 -37.1 93.7
1°	7 14.6 -37.5 97.0	6 27.6 -37.3 96.4	5 40.6 -37.3 95.7	4 53.5 -37.2 95.1	4 06.4 -37.1 94.5
2°	6 37.1 -37.4 97.8	5 50.3 -37.4 97.1	5 03.3 -37.3 96.5	4 16.3 -37.2 95.9	3 29.3 -37.2 95.3
3°	5 59.7 -37.6 98.6	5 12.9 -37.5 97.9	4 26.0 -37.4 97.3	3 39.1 -37.3 96.7	2 52.1 -37.2 96.1
4°	5 22.1 -37.6 99.3	4 35.4 -37.5 98.7	3 48.6 -37.4 98.1	3 01.8 -37.3 97.5	2 14.9 -37.3 96.8
5°	4 44.5 -37.7 100.1	3 57.9 -37.6 99.5	3 11.2 -37.4 98.9	2 24.5 -37.4 98.3	1 37.6 -37.2 97.6
6°	4 06.8 -37.7 100.9	3 20.3 -37.6 100.3	2 33.8 -37.5 99.7	1 47.1 -37.3 99.0	1 00.4 -37.3 98.4
7°	3 29.1 -37.8 101.7	2 42.7 -37.6 101.1	1 56.3 -37.5 100.4	1 09.8 -37.4 99.8	0 23.1 -37.2 99.2
8°	2 51.3 -37.7 102.5	2 05.1 -37.6 101.8	1 18.8 -37.5 101.2	0 32.4 -37.4 100.6	-0 14.1 -37.3
9°	2 13.6 -37.8 103.2	1 27.5 -37.7 102.6	0 41.3 -37.5 102.0	-0 05.0 -37.4	-0 51.4 -37.3
10°	1 35.8 -37.9 104.0	0 49.8 -37.7 103.4	0 03.8 -37.6 102.8	-0 42.4 -37.4	-1 28.7 -37.2
11°	0 57.9 -37.8 104.8	0 12.1 -37.6 104.2	-0 33.8 -37.5	-1 19.8 -37.3	-2 05.9 -37.2
12°	0 20.1 -37.9 105.6	-0 25.5 -37.7	-1 11.3 -37.5	-1 57.1 -37.4	-2 43.1 -37.2
13°	-0 17.8 -37.8	-1 03.2 -37.6	-1 48.8 -37.5	-2 34.5 -37.3	-3 20.3 -37.2
14°	-0 55.6 -37.8	-1 40.8 -37.7	-2 26.3 -37.4	-3 11.8 -37.3	-3 57.5 -37.1
15°	-1 33.4 -37.8	-2 18.5 -37.6	-3 03.7 -37.4	-3 49.1 -37.2	-4 34.6 -37.0
16°	-2 11.2 -37.8	-2 56.1 -37.6	-3 41.1 -37.4	-4 26.3 -37.2	-5 11.6 -37.0
17°	-2 49.0 -37.8	-3 33.7 -37.5	-4 18.5 -37.3	-5 03.5 -37.1	-5 48.6 -36.9
18°	-3 26.8 -37.7	-4 11.2 -37.5	-4 55.8 -37.3	-5 40.6 -37.1	-6 25.5 -36.9
19°	-4 04.5 -37.7	-4 48.7 -37.4	-5 33.1 -37.2	-6 17.7 -37.0	-7 02.4 -36.8
20°	-4 42.2 -37.6	-5 26.1 -37.4	-6 10.3 -37.2	-6 54.7 -36.9	-7 39.2 -36.6
21°	-5 19.8 -37.5	-6 03.5 -37.3	-6 47.5 -37.0	-7 31.6 -36.8	-8 15.8 -36.6
22°	-5 57.3 -37.5	-6 40.8 -37.3	-7 24.5 -37.0	-8 08.4 -36.7	-8 52.4 -36.5
23°	-6 34.8 -37.5	-7 18.1 -37.1	-8 01.5 -36.9	-8 45.1 -36.7	-9 28.9 -36.4
24°	-7 12.3 -37.3	-7 55.2 -37.1	-8 38.4 -36.8	-9 21.8 -36.5	
25°	-7 49.6 -37.2	-8 32.3 -37.0	-9 15.2 -36.7	-9 58.3 -36.4	
26°	-8 26.8 -37.2	-9 09.3 -36.8	-9 51.9 -36.5		
27°	-9 04.0 -37.0	-9 46.1 -36.8			
28°	-9 41.0 -37.0				
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 56.3 -37.1 93.1	3 09.1 -37.0 92.5	2 21.8 -37.0 91.8	1 34.6 -37.0 91.2	0 47.3 -37.0 90.6
1°	3 19.2 -37.0 93.9	2 32.1 -37.1 93.3	1 44.8 -37.0 92.6	0 57.6 -37.0 92.0	0 10.3 -36.9 91.4
2°	2 42.2 -37.2 94.7	1 55.0 -37.1 94.0	1 07.8 -37.0 93.4	0 20.6 -37.0 92.8	-0 26.6 -37.0
3°	2 05.0 -37.1 95.4	1 17.9 -37.0 94.8	0 30.8 -37.0 94.2	-0 16.4 -36.9	-1 03.6 -36.9
4°	1 27.9 -37.2 96.2	0 40.9 -37.1 95.6	-0 06.2 -37.0	-0 53.3 -37.0	-1 40.5 -36.9
5°	0 50.7 -37.1 97.0	0 03.8 -37.1 96.4	-0 43.2 -37.0	-1 30.3 -36.9	-2 17.4 -36.9
6°	0 13.6 -37.2 97.8	-0 33.3 -37.1	-1 20.2 -37.0	-2 07.2 -37.0	-2 54.3 -36.8
7°	-0 23.6 -37.2	-1 10.4 -37.0	-1 57.2 -37.0	-2 44.2 -36.9	-3 31.1 -36.9
8°	-1 00.8 -37.1	-1 47.4 -37.1	-2 34.2 -37.0	-3 21.1 -36.8	-4 08.0 -36.7
9°	-1 37.9 -37.1	-2 24.5 -37.0	-3 11.2 -36.9	-3 57.9 -36.8	-4 44.7 -36.7
10°	-2 15.0 -37.2	-3 01.5 -37.0	-3 48.1 -36.8	-4 34.7 -36.8	-5 21.4 -36.7
11°	-2 52.2 -37.0	-3 38.5 -36.9	-4 24.9 -36.9	-5 11.5 -36.7	-5 58.1 -36.6
12°	-3 29.2 -37.1	-4 15.4 -36.9	-5 01.8 -36.7	-5 48.2 -36.6	-6 34.7 -36.5
13°	-4 06.3 -37.0	-4 52.3 -36.9	-5 38.5 -36.7	-6 24.8 -36.5	-7 11.2 -36.4
14°	-4 43.3 -36.9	-5 29.2 -36.7	-6 15.2 -36.6	-7 01.3 -36.5	-7 47.6 -36.3
15°	-5 20.2 -36.9	-6 05.9 -36.8	-6 51.8 -36.6	-7 37.8 -36.4	-8 23.9 -36.3
16°	-5 57.1 -36.8	-6 42.7 -36.6	-7 28.4 -36.4	-8 14.2 -36.3	-9 00.2 -36.1
17°	-6 33.9 -36.7	-7 19.3 -36.5	-8 04.8 -36.4	-8 50.5 -36.2	-9 36.3 -36.0
18°	-7 10.6 -36.7	-7 55.8 -36.5	-8 41.2 -36.2	-9 26.7 -36.1	
19°	-7 47.3 -36.5	-8 32.3 -36.3	-9 17.4 -36.2		
20°	-8 23.8 -36.5	-9 08.6 -36.3	-9 53.6 -36.0		
21°	-9 00.3 -36.3	-9 44.9 -36.1			
22°	-9 36.6 -36.3				
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Latitude 38°

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 -36.9 90.0	-0 47.3 -36.9			
1°	-0 36.9 -37.0	-1 24.2 -36.9			
2°	-1 13.9 -36.9	-2 01.1 -36.9			
3°	-1 50.8 -36.9	-2 38.0 -36.9			
4°	-2 27.7 -36.9	-3 14.9 -36.8			
5°	-3 04.6 -36.8	-3 51.7 -36.8			
6°	-3 41.4 -36.8	-4 28.5 -36.8			
7°	-4 18.2 -36.7	-5 05.3 -36.6			
8°	-4 54.9 -36.7	-5 41.9 -36.7			
9°	-5 31.6 -36.6	-6 18.6 -36.5			
10°	-6 08.2 -36.6	-6 55.1 -36.5			
11°	-6 44.8 -36.5	-7 31.6 -36.3			
12°	-7 21.3 -36.3	-8 07.9 -36.3			
13°	-7 57.6 -36.3	-8 44.2 -36.2			
14°	-8 33.9 -36.2	-9 20.4 -36.0			
15°	-9 10.1 -36.1	-9 56.4 -36.0			
16°	-9 46.2 -36.0				
17°					
18°					
19°					
20°					
21°					
22°					
23°					
24°					
25°					
26°					
27°					
28°					
29°					

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

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

Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	51 00.0 -60.0 180.0	50 59.4 -60.0 178.4	50 57.4 -59.9 176.8	50 54.2 -59.9 175.2	50 49.7 -59.8 173.7
1°	50 00.0 -60.0 180.0	49 59.4 -60.0 178.4	49 57.5 -60.0 176.9	49 54.3 -59.9 175.3	49 49.9 -59.8 173.8
2°	49 00.0 -60.0 180.0	48 59.4 -60.0 178.5	48 57.5 -59.9 177.0	48 54.4 -59.9 175.4	48 50.1 -59.8 173.9
3°	48 00.0 -60.0 180.0	47 59.4 -60.0 178.5	47 57.6 -60.0 177.0	47 54.5 -59.9 175.5	47 50.3 -59.8 174.0
4°	47 00.0 -60.0 180.0	46 59.4 -60.0 178.5	46 57.6 -59.9 177.1	46 54.6 -59.8 175.6	46 50.5 -59.8 174.2
5°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.6	45 57.7 -60.0 177.1	45 54.8 -59.9 175.7	45 50.7 -59.8 174.3
6°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.6	44 57.7 -59.9 177.2	44 54.9 -59.9 175.8	44 50.9 -59.9 174.4
7°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.6	43 57.8 -60.0 177.2	43 55.0 -60.0 175.9	43 51.0 -59.8 174.5
8°	43 00.0 -60.0 180.0	42 59.4 -59.9 178.6	42 57.8 -60.0 177.3	42 55.0 -59.9 175.9	42 51.2 -59.8 174.6
9°	42 00.0 -60.0 180.0	41 59.5 -60.0 178.7	41 57.8 -59.9 177.3	41 55.1 -59.9 176.0	41 51.4 -59.9 174.7
10°	41 00.0 -60.0 180.0	40 59.5 -60.0 178.7	40 57.9 -60.0 177.4	40 55.2 -59.9 176.1	40 51.5 -59.8 174.8
11°	40 00.0 -60.0 180.0	39 59.5 -60.0 178.7	39 57.9 -59.9 177.4	39 55.3 -59.9 176.2	39 51.7 -59.9 174.9
12°	39 00.0 -60.0 180.0	38 59.5 -60.0 178.7	38 58.0 -60.0 177.5	38 55.4 -59.9 176.2	38 51.8 -59.8 175.0
13°	38 00.0 -60.0 180.0	37 59.5 -60.0 178.8	37 58.0 -60.0 177.5	37 55.5 -59.9 176.3	37 52.0 -59.9 175.1
14°	37 00.0 -60.0 180.0	36 59.5 -60.0 178.8	36 58.0 -59.9 177.6	36 55.6 -60.0 176.4	36 52.1 -59.9 175.1
15°	36 00.0 -60.0 180.0	35 59.5 -60.0 178.8	35 58.1 -60.0 177.6	35 55.6 -59.9 176.4	35 52.2 -59.8 175.2
16°	35 00.0 -60.0 180.0	34 59.5 -60.0 178.8	34 58.1 -60.0 177.7	34 55.7 -59.9 176.5	34 52.4 -59.9 175.3
17°	34 00.0 -60.0 180.0	33 59.5 -60.0 178.8	33 58.1 -59.9 177.7	33 55.8 -60.0 176.5	33 52.5 -59.9 175.4
18°	33 00.0 -60.0 180.0	32 59.5 -60.0 178.9	32 58.2 -60.0 177.7	32 55.8 -59.9 176.6	32 52.6 -59.9 175.5
19°	32 00.0 -60.0 180.0	31 59.5 -59.9 178.9	31 58.2 -60.0 177.8	31 55.9 -59.9 176.7	31 52.7 -59.8 175.5
20°	31 00.0 -60.0 180.0	30 59.6 -60.0 178.9	30 58.2 -60.0 177.8	30 56.0 -59.9 176.7	30 52.9 -59.9 175.6
21°	30 00.0 -60.0 180.0	29 59.6 -60.0 178.9	29 58.2 -59.9 177.8	29 56.1 -60.0 176.8	29 53.0 -59.9 175.7
22°	29 00.0 -60.0 180.0	28 59.6 -60.0 178.9	28 58.3 -60.0 177.9	28 56.1 -59.9 176.8	28 53.1 -59.9 175.8
23°	28 00.0 -60.0 180.0	27 59.6 -60.0 179.0	27 58.3 -60.0 177.9	27 56.2 -60.0 176.9	27 53.2 -59.9 175.8
24°	27 00.0 -60.0 180.0	26 59.6 -60.0 179.0	26 58.3 -59.9 177.9	26 56.2 -59.9 176.9	26 53.3 -59.9 175.9
25°	26 00.0 -60.0 180.0	25 59.6 -60.0 179.0	25 58.4 -60.0 178.0	25 56.3 -59.9 177.0	25 53.4 -59.9 176.0
26°	25 00.0 -60.0 180.0	24 59.6 -60.0 179.0	24 58.4 -60.0 178.0	24 56.4 -60.0 177.0	24 53.5 -59.8 176.0
27°	24 00.0 -60.0 180.0	23 59.6 -60.0 179.0	23 58.4 -60.0 178.0	23 56.4 -59.9 177.1	23 53.7 -59.9 176.1
28°	23 00.0 -60.0 180.0	22 59.6 -60.0 179.0	22 58.4 -59.9 178.1	22 56.5 -60.0 177.1	22 53.8 -59.9 176.2
29°	22 00.0 -60.0 180.0	21 59.6 -60.0 179.1	21 58.5 -60.0 178.1	21 56.5 -59.9 177.2	21 53.9 -59.9 176.2

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°	50 43.9 -59.7 172.1	50 36.8 -59.5 170.5	50 28.5 -59.3 169.0	50 19.0 -59.2 167.4	50 08.2 -58.9 165.9
1°	49 44.2 -59.6 172.3	49 37.3 -59.5 170.7	49 29.2 -59.4 169.2	49 19.8 -59.1 167.7	49 09.3 -59.0 166.2
2°	48 44.6 -59.7 172.4	48 37.8 -59.6 170.9	48 29.8 -59.4 169.4	48 20.7 -59.3 167.9	48 10.3 -59.0 166.4
3°	47 44.9 -59.7 172.6	47 38.2 -59.5 171.1	47 30.4 -59.4 169.6	47 21.4 -59.2 168.2	47 11.3 -59.1 166.7
4°	46 45.2 -59.7 172.7	46 38.7 -59.6 171.3	46 31.0 -59.4 169.8	46 22.2 -59.3 168.4	46 12.2 -59.0 167.0
5°	45 45.5 -59.8 172.9	45 39.1 -59.6 171.4	45 31.6 -59.5 170.0	45 22.9 -59.3 168.6	45 13.2 -59.2 167.2
6°	44 45.7 -59.7 173.0	44 39.5 -59.6 171.6	44 32.1 -59.5 170.2	44 23.6 -59.3 168.8	44 14.0 -59.1 167.5
7°	43 46.0 -59.7 173.1	43 39.9 -59.7 171.8	43 32.6 -59.5 170.4	43 24.3 -59.3 169.0	43 14.9 -59.2 167.7
8°	42 46.3 -59.8 173.2	42 40.2 -59.6 171.9	42 33.1 -59.5 170.6	42 25.0 -59.4 169.2	42 15.7 -59.2 167.9
9°	41 46.5 -59.7 173.4	41 40.6 -59.7 172.1	41 33.6 -59.5 170.7	41 25.6 -59.4 169.4	41 16.5 -59.2 168.1
10°	40 46.8 -59.8 173.5	40 40.9 -59.6 172.2	40 34.1 -59.5 170.9	40 26.2 -59.4 169.6	40 17.3 -59.2 168.3
11°	39 47.0 -59.8 173.6	39 41.3 -59.7 172.3	39 34.6 -59.6 171.1	39 26.8 -59.4 169.8	39 18.1 -59.3 168.6
12°	38 47.2 -59.8 173.7	38 41.6 -59.7 172.5	38 35.0 -59.6 171.2	38 27.4 -59.4 170.0	38 18.8 -59.3 168.8
13°	37 47.4 -59.7 173.8	37 41.9 -59.6 172.6	37 35.4 -59.5 171.4	37 28.0 -59.5 170.2	37 19.5 -59.3 168.9
14°	36 47.7 -59.8 173.9	36 42.3 -59.7 172.7	36 35.9 -59.6 171.5	36 28.5 -59.4 170.3	36 20.2 -59.3 169.1
15°	35 47.9 -59.8 174.0	35 42.6 -59.7 172.9	35 36.3 -59.6 171.7	35 29.1 -59.5 170.5	35 20.9 -59.3 169.3
16°	34 48.1 -59.8 174.1	34 42.9 -59.8 173.0	34 36.7 -59.6 171.8	34 29.6 -59.5 170.7	34 21.6 -59.4 169.5
17°	33 48.3 -59.8 174.2	33 43.1 -59.7 173.1	33 37.1 -59.6 172.0	33 30.1 -59.5 170.8	33 22.2 -59.4 169.7
18°	32 48.5 -59.8 174.3	32 43.4 -59.7 173.2	32 37.5 -59.7 172.1	32 30.6 -59.5 171.0	32 22.8 -59.4 169.9
19°	31 48.7 -59.8 174.4	31 43.7 -59.7 173.3	31 37.8 -59.6 172.2	31 31.1 -59.5 171.1	31 23.4 -59.3 170.0
20°	30 48.9 -59.8 174.5	30 44.0 -59.8 173.4	30 38.2 -59.6 172.4	30 31.6 -59.6 171.3	30 24.1 -59.5 170.2
21°	29 49.1 -59.9 174.6	29 44.2 -59.7 173.5	29 38.6 -59.7 172.5	29 32.0 -59.5 171.4	29 24.6 -59.4 170.3
22°	28 49.2 -59.8 174.7	28 44.5 -59.7 173.7	28 38.9 -59.6 172.6	28 32.5 -59.5 171.6	28 25.2 -59.4 170.5
23°	27 49.4 -59.8 174.8	27 44.8 -59.8 173.8	27 39.3 -59.7 172.7	27 33.0 -59.6 171.7	27 25.8 -59.4 170.7
24°	26 49.6 -59.8 174.9	26 45.0 -59.7 173.9	26 39.6 -59.7 172.8	26 33.4 -59.6 171.8	26 26.4 -59.5 170.8
25°	25 49.8 -59.9 175.0	25 45.3 -59.8 174.0	25 39.9 -59.6 173.0	25 33.8 -59.5 172.0	25 26.9 -59.4 171.0
26°	24 49.9 -59.8 175.0	24 45.5 -59.8 174.1	24 40.3 -59.7 173.1	24 34.3 -59.6 172.1	24 27.5 -59.5 171.1
27°	23 50.1 -59.8 175.1	23 45.7 -59.7 174.2	23 40.6 -59.7 173.2	23 34.7 -59.6 172.2	23 28.0 -59.5 171.3
28°	22 50.3 -59.9 175.2	22 46.0 -59.8 174.3	22 40.9 -59.7 173.3	22 35.1 -59.6 172.4	22 28.5 -59.5 171.4
29°	21 50.4 -59.8 175.3	21 46.2 -59.8 174.4	21 41.2 -59.7 173.4	21 35.5 -59.6 172.5	21 29.0 -59.5 171.5

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°	49 56.2 -58.7 164.3	49 43.1 -58.5 162.8	49 28.7 -58.1 161.3	49 13.2 -57.8 159.9	48 56.6 -57.5 158.4
1°	48 57.5 -58.7 164.7	48 44.6 -58.5 163.2	48 30.6 -58.3 161.7	48 15.4 -58.0 160.3	47 59.1 -57.7 158.8
2°	47 58.8 -58.8 165.0	47 46.1 -58.5 163.5	47 32.3 -58.2 162.1	47 17.4 -58.0 160.6	47 01.4 -57.7 159.2
3°	47 00.0 -58.8 165.3	46 47.6 -58.6 163.8	46 34.1 -58.4 162.4	46 19.4 -58.1 161.0	46 03.7 -57.8 159.6
4°	46 01.2 -58.9 165.6	45 49.0 -58.7 164.2	45 35.7 -58.4 162.8	45 21.3 -58.1 161.4	45 05.9 -57.8 160.0
5°	45 02.3 -58.9 165.8	44 50.3 -58.7 164.5	44 37.3 -58.5 163.1	44 23.2 -58.2 161.7	44 08.1 -58.0 160.4
6°	44 03.4 -59.0 166.1	43 51.6 -58.7 164.7	43 38.8 -58.5 163.4	43 25.0 -58.3 162.1	43 10.1 -58.0 160.7
7°	43 04.4 -59.0 166.4	42 52.9 -58.8 165.0	42 40.3 -58.5 163.7	42 26.7 -58.3 162.4	42 12.1 -58.0 161.1
8°	42 05.4 -59.0 166.6	41 54.1 -58.8 165.3	41 41.8 -58.6 164.0	41 28.4 -58.4 162.7	41 14.1 -58.2 161.4
9°	41 06.4 -59.0 166.8	40 55.3 -58.8 165.6	40 43.2 -58.7 164.3	40 30.0 -58.4 163.0	40 15.9 -58.1 161.8
10°	40 07.4 -59.1 167.1	39 56.5 -58.9 165.8	39 44.5 -58.6 164.6	39 31.6 -58.4 163.3	39 17.8 -58.3 162.1
11°	39 08.3 -59.1 167.3	38 57.6 -58.9 166.1	38 45.9 -58.8 164.8	38 33.2 -58.5 163.6	38 19.5 -58.2 162.4
12°	38 09.2 -59.1 167.5	37 58.7 -59.0 166.3	37 47.1 -58.7 165.1	37 34.7 -58.6 163.9	37 21.3 -58.4 162.7
13°	37 10.1 -59.2 167.7	36 59.7 -59.0 166.5	36 48.4 -58.8 165.3	36 36.1 -58.6 164.2	36 22.9 -58.3 163.0
14°	36 10.9 -59.1 168.0	36 00.7 -58.9 166.8	35 49.6 -58.8 165.6	35 37.5 -58.6 164.4	35 24.6 -58.4 163.3
15°	35 11.8 -59.2 168.2	35 01.8 -59.1 167.0	34 50.8 -58.8 165.8	34 38.9 -58.6 164.7	34 26.2 -58.5 163.5
16°	34 12.6 -59.2 168.4	34 02.7 -59.0 167.2	33 52.0 -58.9 166.1	33 40.3 -58.7 164.9	33 27.7 -58.4 163.8
17°	33 13.4 -59.2 168.6	33 03.7 -59.1 167.4	32 53.1 -58.9 166.3	32 41.6 -58.7 165.2	32 29.3 -58.6 164.1
18°	32 14.2 -59.3 168.7	32 04.6 -59.1 167.6	31 54.2 -58.9 166.5	31 42.9 -58.7 165.4	31 30.7 -58.5 164.3
19°	31 14.9 -59.2 168.9	31 05.5 -59.1 167.8	30 55.3 -59.0 166.8	30 44.2 -58.8 165.7	30 32.2 -58.6 164.6
20°	30 15.7 -59.3 169.1	30 06.4 -59.1 168.0	29 56.3 -58.9 167.0	29 45.4 -58.8 165.9	29 33.6 -58.6 164.8
21°	29 16.4 -59.3 169.3	29 07.3 -59.1 168.2	28 57.4 -59.0 167.2	28 46.6 -58.8 166.1	28 35.0 -58.6 165.1
22°	28 17.1 -59.3 169.5	28 08.2 -59.2 168.4	27 58.4 -59.0 167.4	27 47.8 -58.8 166.4	27 36.4 -58.6 165.3
23°	27 17.8 -59.3 169.6	27 09.0 -59.1 168.6	26 59.4 -59.0 167.6	26 49.0 -58.8 166.6	26 37.8 -58.7 165.6
24°	26 18.5 -59.3 169.8	26 09.9 -59.2 168.8	26 00.4 -59.0 167.8	25 50.2 -58.9 166.8	25 39.1 -58.7 165.8
25°	25 19.2 -59.3 170.0	25 10.7 -59.2 169.0	25 01.4 -59.1 168.0	24 51.3 -58.9 167.0	24 40.4 -58.7 166.0
26°	24 19.9 -59.4 170.1	24 11.5 -59.2 169.2	24 02.3 -59.0 168.2	23 52.4 -58.9 167.2	23 41.7 -58.7 166.3
27°	23 20.5 -59.3 170.3	23 12.3 -59.2 169.3	23 03.3 -59.1 168.4	22 53.5 -58.9 167.4	22 43.0 -58.8 166.5
28°	22 21.2 -59.4 170.5	22 13.1 -59.3 169.5	22 04.2 -59.1 168.6	21 54.6 -59.0 167.6	21 44.2 -58.7 166.7
29°	21 21.8 -59.4 170.6	21 13.8 -59.2 169.7	21 05.1 -59.1 168.8	20 55.6 -58.9 167.8	20 45.5 -58.8 166.9

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°	48 38.9 -57.2 156.9	48 20.1 -56.9 155.5	48 00.2 -56.5 154.1	47 39.3 -56.1 152.7	47 17.4 -55.7 151.3
1°	47 41.7 -57.3 157.4	47 23.2 -57.0 156.0	47 03.7 -56.6 154.6	46 43.2 -56.3 153.2	46 21.7 -55.9 151.9
2°	46 44.4 -57.4 157.8	46 26.2 -57.0 156.4	46 07.1 -56.7 155.1	45 46.9 -56.3 153.7	45 25.8 -56.0 152.4
3°	45 47.0 -57.5 158.2	45 29.2 -57.2 156.9	45 10.4 -56.9 155.5	44 50.6 -56.6 154.2	44 29.8 -56.2 152.9
4°	44 49.5 -57.6 158.7	44 32.0 -57.3 157.3	44 13.5 -56.9 156.0	43 54.0 -56.6 154.7	43 33.6 -56.3 153.4
5°	43 51.9 -57.7 159.0	43 34.7 -57.3 157.7	43 16.6 -57.1 156.4	42 57.4 -56.7 155.1	42 37.3 -56.4 153.8
6°	42 54.2 -57.7 159.4	42 37.4 -57.5 158.1	42 19.5 -57.1 156.8	42 00.7 -56.8 155.6	41 40.9 -56.5 154.3
7°	41 56.5 -57.8 159.8	41 39.9 -57.5 158.5	41 22.4 -57.3 157.3	41 03.9 -57.0 156.0	40 44.4 -56.6 154.8
8°	40 58.7 -57.9 160.2	40 42.4 -57.6 158.9	40 25.1 -57.3 157.6	40 06.9 -57.0 156.4	39 47.8 -56.7 155.2
9°	40 00.8 -57.9 160.5	39 44.8 -57.7 159.3	39 27.8 -57.3 158.0	39 09.9 -57.1 156.8	38 51.1 -56.8 155.6
10°	39 02.9 -58.0 160.8	38 47.1 -57.7 159.6	38 30.5 -57.5 158.4	38 12.8 -57.1 157.2	37 54.3 -56.8 156.0
11°	38 04.9 -58.0 161.2	37 49.4 -57.8 160.0	37 33.0 -57.5 158.8	37 15.7 -57.3 157.6	36 57.5 -57.0 156.4
12°	37 06.9 -58.1 161.5	36 51.6 -57.8 160.3	36 35.5 -57.6 159.1	36 18.4 -57.3 158.0	36 00.5 -57.0 156.8
13°	36 08.8 -58.1 161.8	35 53.8 -57.9 160.6	35 37.9 -57.6 159.5	35 21.1 -57.3 158.3	35 03.5 -57.1 157.2
14°	35 10.7 -58.2 162.1	34 55.9 -57.9 161.0	34 40.3 -57.7 159.8	34 23.8 -57.5 158.7	34 06.4 -57.2 157.6
15°	34 12.5 -58.2 162.4	33 58.0 -58.0 161.3	33 42.6 -57.8 160.2	33 26.3 -57.5 159.0	33 09.2 -57.2 157.9
16°	33 14.3 -58.3 162.7	33 00.0 -58.0 161.6	32 44.8 -57.8 160.5	32 28.8 -57.5 159.4	32 12.0 -57.3 158.3
17°	32 16.0 -58.3 163.0	32 02.0 -58.1 161.9	31 47.0 -57.8 160.8	31 31.3 -57.6 159.7	31 14.7 -57.3 158.6
18°	31 17.7 -58.3 163.3	31 03.9 -58.1 162.2	30 49.2 -57.9 161.1	30 33.7 -57.6 160.0	30 17.4 -57.4 159.0
19°	30 19.4 -58.4 163.5	30 05.8 -58.2 162.5	29 51.3 -57.9 161.4	29 36.1 -57.7 160.4	29 20.0 -57.5 159.3
20°	29 21.0 -58.4 163.8	29 07.6 -58.2 162.8	28 53.4 -58.0 161.7	28 38.4 -57.8 160.7	28 22.5 -57.4 159.7
21°	28 22.6 -58.4 164.1	28 09.4 -58.2 163.0	27 55.4 -58.0 162.0	27 40.6 -57.7 161.0	27 25.1 -57.6 160.0
22°	27 24.2 -58.4 164.3	27 11.2 -58.2 163.3	26 57.4 -58.0 162.3	26 42.9 -57.8 161.3	26 27.5 -57.6 160.3
23°	26 25.8 -58.5 164.6	26 13.0 -58.3 163.6	25 59.4 -58.1 162.6	25 45.1 -57.9 161.6	25 29.9 -57.6 160.6
24°	25 27.3 -58.5 164.8	25 14.7 -58.3 163.8	25 01.3 -58.1 162.9	24 47.2 -57.9 161.9	24 32.3 -57.6 160.9
25°	24 28.8 -58.5 165.1	24 16.4 -58.3 164.1	24 03.2 -58.1 163.1	23 49.3 -57.9 162.2	23 34.7 -57.7 161.2
26°	23 30.3 -58.6 165.3	23 18.1 -58.4 164.4	23 05.1 -58.2 163.4	22 51.4 -57.9 162.5	22 37.0 -57.7 161.5
27°	22 31.7 -58.6 165.5	22 19.7 -58.4 164.6	22 06.9 -58.1 163.7	21 53.5 -58.0 162.7	21 39.3 -57.8 161.8
28°	21 33.1 -58.6 165.8	21 21.3 -58.4 164.9	21 08.8 -58.2 163.9	20 55.5 -58.0 163.0	20 41.5 -57.7 162.1
29°	20 34.5 -58.6 166.0	20 22.9 -58.4 165.1	20 10.6 -58.3 164.2	19 57.5 -58.0 163.3	19 43.8 -57.9 162.4

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°	46 54.6 -55.4 150.0	46 30.8 -55.0 148.6	46 06.0 -54.5 147.3	45 40.4 -54.1 146.0	45 13.9 -53.7 144.7
1°	45 59.2 -55.5 150.5	45 35.8 -55.1 149.2	45 11.5 -54.7 147.9	44 46.3 -54.4 146.6	44 20.2 -54.0 145.3
2°	45 03.7 -55.6 151.1	44 40.7 -55.3 149.8	44 16.8 -54.9 148.5	43 51.9 -54.5 147.2	43 26.2 -54.1 146.0
3°	44 08.1 -55.8 151.6	43 45.4 -55.4 150.3	43 21.9 -55.1 149.0	42 57.4 -54.7 147.8	42 32.1 -54.2 146.5
4°	43 12.3 -56.0 152.1	42 50.0 -55.6 150.8	42 26.8 -55.2 149.6	42 02.7 -54.8 148.3	41 37.9 -54.5 147.1
5°	42 16.3 -56.0 152.6	41 54.4 -55.7 151.3	41 31.6 -55.4 150.1	41 07.9 -55.0 148.9	40 43.4 -54.6 147.7
6°	41 20.3 -56.2 153.1	40 58.7 -55.8 151.8	40 36.2 -55.4 150.6	40 12.9 -55.1 149.4	39 48.8 -54.8 148.2
7°	40 24.1 -56.3 153.5	40 02.9 -56.0 152.3	39 40.8 -55.6 151.1	39 17.8 -55.2 149.9	38 54.0 -54.9 148.8
8°	39 27.8 -56.4 154.0	39 06.9 -56.0 152.8	38 45.2 -55.8 151.6	38 22.6 -55.4 150.4	37 59.1 -55.0 149.3
9°	38 31.4 -56.4 154.4	38 10.9 -56.2 153.2	37 49.4 -55.8 152.1	37 27.2 -55.5 150.9	37 04.1 -55.1 149.8
10°	37 35.0 -56.6 154.8	37 14.7 -56.3 153.7	36 53.6 -55.9 152.5	36 31.7 -55.6 151.4	36 09.0 -55.3 150.3
11°	36 38.4 -56.7 155.3	36 18.4 -56.3 154.1	35 57.7 -56.1 153.0	35 36.1 -55.7 151.9	35 13.7 -55.4 150.7
12°	35 41.7 -56.7 155.7	35 22.1 -56.4 154.5	35 01.6 -56.1 153.4	34 40.4 -55.8 152.3	34 18.3 -55.5 151.2
13°	34 45.0 -56.8 156.1	34 25.7 -56.6 155.0	34 05.5 -56.2 153.8	33 44.6 -55.9 152.8	33 22.8 -55.6 151.7
14°	33 48.2 -56.9 156.5	33 29.1 -56.5 155.4	33 09.3 -56.3 154.3	32 48.7 -56.0 153.2	32 27.2 -55.6 152.1
15°	32 51.3 -57.0 156.8	32 32.6 -56.7 155.8	32 13.0 -56.4 154.7	31 52.7 -56.1 153.6	31 31.6 -55.8 152.6
16°	31 54.3 -57.0 157.2	31 35.9 -56.7 156.1	31 16.6 -56.4 155.1	30 56.6 -56.2 154.0	30 35.8 -55.8 153.0
17°	30 57.3 -57.0 157.6	30 39.2 -56.8 156.5	30 20.2 -56.5 155.5	30 00.4 -56.2 154.4	29 40.0 -56.0 153.4
18°	30 00.3 -57.2 157.9	29 42.4 -56.9 156.9	29 23.7 -56.6 155.9	29 04.2 -56.3 154.8	28 44.0 -56.0 153.8
19°	29 03.1 -57.2 158.3	28 45.5 -56.9 157.3	28 27.1 -56.7 156.2	28 07.9 -56.3 155.2	27 48.0 -56.1 154.2
20°	28 05.9 -57.2 158.6	27 48.6 -57.0 157.6	27 30.4 -56.7 156.6	27 11.6 -56.5 155.6	26 51.9 -56.1 154.6
21°	27 08.7 -57.3 159.0	26 51.6 -57.0 158.0	26 33.7 -56.7 157.0	26 15.1 -56.4 156.0	25 55.8 -56.2 155.0
22°	26 11.4 -57.3 159.3	25 54.6 -57.1 158.3	25 37.0 -56.8 157.3	25 18.7 -56.6 156.4	24 59.6 -56.3 155.4
23°	25 14.1 -57.4 159.6	24 57.5 -57.1 158.7	24 40.2 -56.9 157.7	24 22.1 -56.6 156.7	24 03.3 -56.3 155.8
24°	24 16.7 -57.4 160.0	24 00.4 -57.2 159.0	23 43.3 -56.9 158.0	23 25.5 -56.6 157.1	23 07.0 -56.3 156.2
25°	23 19.3 -57.4 160.3	23 03.2 -57.2 159.3	22 46.4 -57.0 158.4	22 28.9 -56.7 157.5	22 10.7 -56.5 156.5
26°	22 21.9 -57.5 160.6	22 06.0 -57.2 159.7	21 49.4 -57.0 158.7	21 32.2 -56.8 157.8	21 14.2 -56.4 156.9
27°	21 24.4 -57.5 160.9	21 08.8 -57.3 160.0	20 52.4 -57.0 159.1	20 35.4 -56.7 158.2	20 17.8 -56.5 157.3
28°	20 26.9 -57.6 161.2	20 11.5 -57.3 160.3	19 55.4 -57.1 159.4	19 38.7 -56.8 158.5	19 21.3 -56.6 157.6
29°	19 29.3 -57.6 161.5	19 14.2 -57.4 160.6	18 58.3 -57.1 159.7	18 41.9 -56.9 158.9	18 24.7 -56.6 158.0

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°	44 46.5 -53.3 143.5	44 18.4 -52.9 142.2	43 49.4 -52.4 141.0	43 19.7 -52.0 139.8	42 49.2 -51.6 138.6
1°	43 53.2 -53.5 144.1	43 25.5 -53.1 142.9	42 57.0 -52.7 141.7	42 27.7 -52.3 140.5	41 57.6 -51.8 139.3
2°	42 59.7 -53.7 144.7	42 32.4 -53.3 143.5	42 04.3 -52.9 142.3	41 35.4 -52.5 141.1	41 05.8 -52.1 140.0
3°	42 06.0 -53.9 145.3	41 39.1 -53.5 144.1	41 11.4 -53.1 143.0	40 42.9 -52.7 141.8	40 13.7 -52.3 140.6
4°	41 12.1 -54.0 145.9	40 45.6 -53.7 144.7	40 18.3 -53.3 143.6	39 50.2 -52.9 142.4	39 21.4 -52.5 141.3
5°	40 18.1 -54.3 146.5	39 51.9 -53.8 145.3	39 25.0 -53.5 144.2	38 57.3 -53.0 143.0	38 28.9 -52.7 141.9
6°	39 23.8 -54.4 147.1	38 58.1 -54.0 145.9	38 31.5 -53.6 144.8	38 04.3 -53.3 143.6	37 36.2 -52.8 142.5
7°	38 29.4 -54.5 147.6	38 04.1 -54.2 146.4	37 37.9 -53.8 145.3	37 11.0 -53.4 144.2	36 43.4 -53.1 143.1
8°	37 34.9 -54.7 148.1	37 09.9 -54.3 147.0	36 44.1 -53.9 145.9	36 17.6 -53.6 144.8	35 50.3 -53.2 143.7
9°	36 40.2 -54.8 148.6	36 15.6 -54.5 147.5	35 50.2 -54.1 146.4	35 24.0 -53.7 145.3	34 57.1 -53.3 144.3
10°	35 45.4 -54.9 149.1	35 21.1 -54.5 148.0	34 56.1 -54.2 147.0	34 30.3 -53.9 145.9	34 03.8 -53.5 144.8
11°	34 50.5 -55.0 149.6	34 26.6 -54.7 148.5	34 01.9 -54.4 147.5	33 36.4 -54.0 146.4	33 10.3 -53.7 145.4
12°	33 55.5 -55.2 150.1	33 31.9 -54.9 149.0	33 07.5 -54.5 148.0	32 42.4 -54.1 146.9	32 16.6 -53.8 145.9
13°	33 00.3 -55.2 150.6	32 37.0 -54.9 149.5	32 13.0 -54.6 148.5	31 48.3 -54.3 147.4	31 22.8 -53.9 146.4
14°	32 05.1 -55.4 151.1	31 42.1 -55.0 150.0	31 18.4 -54.7 149.0	30 54.0 -54.3 147.9	30 28.9 -54.0 146.9
15°	31 09.7 -55.5 151.5	30 47.1 -55.1 150.5	30 23.7 -54.8 149.4	29 59.7 -54.5 148.4	29 34.9 -54.1 147.4
16°	30 14.2 -55.5 152.0	29 52.0 -55.3 150.9	29 28.9 -54.9 149.9	29 05.2 -54.6 148.9	28 40.8 -54.3 147.9
17°	29 18.7 -55.6 152.4	28 56.7 -55.3 151.4	28 34.0 -55.0 150.4	28 10.6 -54.6 149.4	27 46.5 -54.3 148.4
18°	28 23.1 -55.7 152.8	28 01.4 -55.4 151.8	27 39.0 -55.0 150.8	27 16.0 -54.8 149.8	26 52.2 -54.4 148.9
19°	27 27.4 -55.8 153.2	27 06.0 -55.4 152.3	26 44.0 -55.2 151.3	26 21.2 -54.8 150.3	25 57.8 -54.5 149.3
20°	26 31.6 -55.8 153.6	26 10.6 -55.6 152.7	25 48.8 -55.2 151.7	25 26.4 -55.0 150.8	25 03.3 -54.7 149.8
21°	25 35.8 -55.9 154.1	25 15.0 -55.6 153.1	24 53.6 -55.3 152.1	24 31.4 -55.0 151.2	24 08.6 -54.6 150.3
22°	24 39.9 -56.0 154.5	24 19.4 -55.7 153.5	23 58.3 -55.4 152.6	23 36.4 -55.0 151.6	23 14.0 -54.8 150.7
23°	23 43.9 -56.1 154.9	23 23.7 -55.7 153.9	23 02.9 -55.5 153.0	22 41.4 -55.2 152.1	22 19.2 -54.8 151.2
24°	22 47.8 -56.0 155.2	22 28.0 -55.8 154.3	22 07.4 -55.5 153.4	21 46.2 -55.2 152.5	21 24.4 -54.9 151.6
25°	21 51.8 -56.2 155.6	21 32.2 -55.9 154.7	21 11.9 -55.5 153.8	20 51.0 -55.3 152.9	20 29.5 -55.0 152.0
26°	20 55.6 -56.2 156.0	20 36.3 -55.9 155.1	20 16.4 -55.7 154.2	19 55.7 -55.3 153.3	19 34.5 -55.0 152.5
27°	19 59.4 -56.2 156.4	19 40.4 -56.0 155.5	19 20.7 -55.6 154.6	19 00.4 -55.4 153.7	18 39.5 -55.1 152.9
28°	19 03.2 -56.3 156.7	18 44.4 -56.0 155.9	18 25.1 -55.8 155.0	18 05.0 -55.4 154.1	17 44.4 -55.1 153.3
29°	18 06.9 -56.3 157.1	17 48.4 -56.0 156.3	17 29.3 -55.7 155.4	17 09.6 -55.5 154.5	16 49.3 -55.2 153.7

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°	42 18.1 -51.2 137.5	41 46.2 -50.8 136.3	41 13.7 -50.4 135.2	40 40.5 -49.9 134.1	40 06.7 -49.5 133.0
1°	41 26.9 -51.4 138.2	40 55.4 -51.0 137.0	40 23.3 -50.6 135.9	39 50.6 -50.2 134.8	39 17.2 -49.8 133.7
2°	40 35.5 -51.7 138.8	40 04.4 -51.2 137.7	39 32.7 -50.8 136.6	39 00.4 -50.4 135.5	38 27.4 -50.0 134.5
3°	39 43.8 -51.9 139.5	39 13.2 -51.5 138.4	38 41.9 -51.1 137.3	38 10.0 -50.7 136.2	37 37.4 -50.3 135.2
4°	38 51.9 -52.1 140.2	38 21.7 -51.7 139.1	37 50.8 -51.3 138.0	37 19.3 -50.9 136.9	36 47.1 -50.5 135.9
5°	37 59.8 -52.3 140.8	37 30.0 -51.9 139.7	36 59.5 -51.5 138.6	36 28.4 -51.2 137.6	35 56.6 -50.7 136.5
6°	37 07.5 -52.5 141.4	36 38.1 -52.1 140.3	36 08.0 -51.7 139.3	35 37.2 -51.3 138.2	35 05.9 -51.0 137.2
7°	36 15.0 -52.6 142.0	35 46.0 -52.3 140.9	35 16.3 -51.9 139.9	34 45.9 -51.5 138.8	34 14.9 -51.1 137.8
8°	35 22.4 -52.9 142.6	34 53.7 -52.4 141.6	34 24.4 -52.1 140.5	33 54.4 -51.7 139.5	33 23.8 -51.3 138.5
9°	34 29.5 -53.0 143.2	34 01.3 -52.7 142.1	33 32.3 -52.2 141.1	33 02.7 -51.9 140.1	32 32.5 -51.5 139.1
10°	33 36.5 -53.1 143.8	33 08.6 -52.7 142.7	32 40.1 -52.5 141.7	32 10.8 -52.0 140.7	31 41.0 -51.7 139.7
11°	32 43.4 -53.3 144.3	32 15.9 -53.0 143.3	31 47.6 -52.5 142.3	31 18.8 -52.2 141.3	30 49.3 -51.8 140.3
12°	31 50.1 -53.4 144.9	31 22.9 -53.0 143.8	30 55.1 -52.7 142.8	30 26.6 -52.4 141.8	29 57.5 -52.0 140.9
13°	30 56.7 -53.6 145.4	30 29.9 -53.2 144.4	30 02.4 -52.9 143.4	29 34.2 -52.4 142.4	29 05.5 -52.1 141.4
14°	30 03.1 -53.6 145.9	29 36.7 -53.4 144.9	29 09.5 -52.9 143.9	28 41.8 -52.7 143.0	28 13.4 -52.3 142.0
15°	29 09.5 -53.8 146.4	28 43.3 -53.4 145.4	28 16.6 -53.1 144.5	27 49.1 -52.7 143.5	27 21.1 -52.4 142.5
16°	28 15.7 -53.9 146.9	27 49.9 -53.6 146.0	27 23.5 -53.2 145.0	26 56.4 -52.9 144.0	26 28.7 -52.5 143.1
17°	27 21.8 -54.0 147.4	26 56.3 -53.6 146.5	26 30.3 -53.4 145.5	26 03.5 -52.9 144.6	25 36.2 -52.6 143.6
18°	26 27.8 -54.1 147.9	26 02.7 -53.8 147.0	25 36.9 -53.4 146.0	25 10.6 -53.1 145.1	24 43.6 -52.8 144.2
19°	25 33.7 -54.2 148.4	25 08.9 -53.9 147.5	24 43.5 -53.5 146.5	24 17.5 -53.2 145.6	23 50.8 -52.8 144.7
20°	24 39.5 -54.3 148.9	24 15.0 -53.9 147.9	23 50.0 -53.6 147.0	23 24.3 -53.3 146.1	22 58.0 -53.0 145.2
21°	23 45.2 -54.4 149.3	23 21.1 -54.0 148.4	22 56.4 -53.8 147.5	22 31.0 -53.4 146.6	22 05.0 -53.0 145.7
22°	22 50.8 -54.4 149.8	22 27.1 -54.2 148.9	22 02.6 -53.7 148.0	21 37.6 -53.4 147.1	21 12.0 -53.1 146.2
23°	21 56.4 -54.5 150.3	21 32.9 -54.2 149.4	21 08.9 -53.9 148.5	20 44.2 -53.6 147.6	20 18.9 -53.2 146.7
24°	21 01.9 -54.6 150.7	20 38.7 -54.2 149.8	20 15.0 -54.0 148.9	19 50.6 -53.6 148.1	19 25.7 -53.3 147.2
25°	20 07.3 -54.7 151.1	19 44.5 -54.4 150.3	19 21.0 -54.0 149.4	18 57.0 -53.7 148.5	18 32.4 -53.4 147.7
26°	19 12.6 -54.7 151.6	18 50.1 -54.4 150.7	18 27.0 -54.1 149.9	18 03.3 -53.8 149.0	17 39.0 -53.4 148.2
27°	18 17.9 -54.8 152.0	17 55.7 -54.4 151.2	17 32.9 -54.1 150.3	17 09.5 -53.8 149.5	16 45.6 -53.5 148.6
28°	17 23.1 -54.8 152.4	17 01.3 -54.6 151.6	16 38.8 -54.2 150.8	16 15.7 -53.9 149.9	15 52.1 -53.6 149.1
29°	16 28.3 -54.9 152.9	16 06.7 -54.5 152.0	15 44.6 -54.3 151.2	15 21.8 -53.9 150.4	14 58.5 -53.6 149.6

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°	39 32.3 -49.1 131.9	38 57.4 -48.7 130.9	38 21.8 -48.3 129.9	37 45.8 -47.9 128.9	37 09.2 -47.5 127.9
1°	38 43.2 -49.4 132.7	38 08.7 -49.0 131.6	37 33.5 -48.5 130.6	36 57.9 -48.2 129.6	36 21.7 -47.8 128.6
2°	37 53.8 -49.6 133.4	37 19.7 -49.3 132.4	36 45.0 -48.9 131.4	36 09.7 -48.5 130.4	35 33.9 -48.1 129.4
3°	37 04.2 -49.9 134.1	36 30.4 -49.4 133.1	35 56.1 -49.1 132.1	35 21.2 -48.7 131.1	34 45.8 -48.3 130.1
4°	36 14.3 -50.1 134.8	35 41.0 -49.8 133.8	35 07.0 -49.3 132.8	34 32.5 -48.9 131.8	33 57.5 -48.6 130.8
5°	35 24.2 -50.3 135.5	34 51.2 -49.9 134.5	34 17.7 -49.6 133.5	33 43.6 -49.2 132.5	33 08.9 -48.8 131.5
6°	34 33.9 -50.6 136.2	34 01.3 -50.2 135.1	33 28.1 -49.8 134.2	32 54.4 -49.5 133.2	32 20.1 -49.0 132.2
7°	33 43.3 -50.7 136.8	33 11.1 -50.4 135.8	32 38.3 -50.0 134.8	32 04.9 -49.6 133.8	31 31.1 -49.3 132.9
8°	32 52.6 -51.0 137.4	32 20.7 -50.5 136.5	31 48.3 -50.2 135.5	31 15.3 -49.8 134.5	30 41.8 -49.4 133.6
9°	32 01.6 -51.1 138.1	31 30.2 -50.8 137.1	30 58.1 -50.4 136.1	30 25.5 -50.0 135.2	29 52.4 -49.7 134.2
10°	31 10.5 -51.3 138.7	30 39.4 -50.9 137.7	30 07.7 -50.5 136.7	29 35.5 -50.2 135.8	29 02.7 -49.8 134.9
11°	30 19.2 -51.5 139.3	29 48.5 -51.1 138.3	29 17.2 -50.8 137.4	28 45.3 -50.4 136.4	28 12.9 -50.0 135.5
12°	29 27.7 -51.6 139.9	28 57.4 -51.3 138.9	28 26.4 -50.8 138.0	27 54.9 -50.5 137.0	27 22.9 -50.2 136.1
13°	28 36.1 -51.8 140.5	28 06.1 -51.4 139.5	27 35.6 -51.1 138.6	27 04.4 -50.7 137.6	26 32.7 -50.3 136.7
14°	27 44.3 -51.9 141.0	27 14.7 -51.5 140.1	26 44.5 -51.2 139.2	26 13.7 -50.8 138.2	25 42.4 -50.4 137.3
15°	26 52.4 -52.0 141.6	26 23.2 -51.7 140.7	25 53.3 -51.3 139.7	25 22.9 -50.9 138.8	24 52.0 -50.6 137.9
16°	26 00.4 -52.2 142.2	25 31.5 -51.8 141.2	25 02.0 -51.4 140.3	24 32.0 -51.1 139.4	24 01.4 -50.8 138.5
17°	25 08.2 -52.2 142.7	24 39.7 -51.9 141.8	24 10.6 -51.6 140.9	23 40.9 -51.3 140.0	23 10.6 -50.9 139.1
18°	24 16.0 -52.4 143.2	23 47.8 -52.1 142.3	23 19.0 -51.7 141.4	22 49.6 -51.3 140.6	22 19.7 -50.9 139.7
19°	23 23.6 -52.5 143.8	22 55.7 -52.1 142.9	22 27.3 -51.8 142.0	21 58.3 -51.5 141.1	21 28.8 -51.1 140.2
20°	22 31.1 -52.6 144.3	22 03.6 -52.3 143.4	21 35.5 -51.9 142.5	21 06.8 -51.5 141.7	20 37.7 -51.3 140.8
21°	21 38.5 -52.7 144.8	21 11.3 -52.3 143.9	20 43.6 -52.0 143.1	20 15.3 -51.7 142.2	19 46.4 -51.3 141.4
22°	20 45.8 -52.8 145.3	20 19.0 -52.5 144.5	19 51.6 -52.1 143.6	19 23.6 -51.7 142.8	18 55.1 -51.4 141.9
23°	19 53.0 -52.9 145.8	19 26.5 -52.5 145.0	18 59.5 -52.2 144.1	18 31.9 -51.9 143.3	18 03.7 -51.5 142.5
24°	19 00.1 -53.0 146.3	18 34.0 -52.6 145.5	18 07.3 -52.3 144.7	17 40.0 -51.9 143.8	17 12.2 -51.5 143.0
25°	18 07.1 -53.0 146.8	17 41.4 -52.7 146.0	17 15.0 -52.3 145.2	16 48.1 -52.0 144.3	16 20.7 -51.7 143.5
26°	17 14.1 -53.1 147.3	16 48.7 -52.8 146.5	16 22.7 -52.5 145.7	15 56.1 -52.1 144.9	15 29.0 -51.7 144.1
27°	16 21.0 -53.1 147.8	15 55.9 -52.8 147.0	15 30.2 -52.5 146.2	15 04.0 -52.1 145.4	14 37.3 -51.8 144.6
28°	15 27.9 -53.3 148.3	15 03.1 -52.9 147.5	14 37.7 -52.5 146.7	14 11.9 -52.3 145.9	13 45.5 -51.9 145.1
29°	14 34.6 -53.3 148.8	14 10.2 -53.0 148.0	13 45.2 -52.6 147.2	13 19.6 -52.2 146.4	12 53.6 -52.0 145.6

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°	36 32.2 -47.2 126.9	35 54.6 -46.7 125.9	35 16.6 -46.4 125.0	34 38.2 -46.0 124.0	33 59.3 -45.7 123.1
1°	35 45.0 -47.4 127.6	35 07.9 -47.1 126.7	34 30.2 -46.7 125.7	33 52.2 -46.4 124.8	33 13.6 -45.9 123.9
2°	34 57.6 -47.7 128.4	34 20.8 -47.3 127.4	33 43.5 -46.9 126.5	33 05.8 -46.6 125.6	32 27.7 -46.3 124.6
3°	34 09.9 -48.0 129.1	33 33.5 -47.6 128.2	32 56.6 -47.2 127.2	32 19.2 -46.8 126.3	31 41.4 -46.5 125.4
4°	33 21.9 -48.2 129.8	32 45.9 -47.8 128.9	32 09.4 -47.5 128.0	31 32.4 -47.1 127.0	30 54.9 -46.7 126.1
5°	32 33.7 -48.4 130.6	31 58.1 -48.1 129.6	31 21.9 -47.7 128.7	30 45.3 -47.4 127.8	30 08.2 -47.0 126.9
6°	31 45.3 -48.7 131.3	31 10.0 -48.3 130.3	30 34.2 -47.9 129.4	29 57.9 -47.6 128.5	29 21.2 -47.2 127.6
7°	30 56.6 -48.9 131.9	30 21.7 -48.5 131.0	29 46.3 -48.2 130.1	29 10.3 -47.8 129.2	28 34.0 -47.5 128.3
8°	30 07.7 -49.0 132.6	29 33.2 -48.7 131.7	28 58.1 -48.3 130.8	28 22.5 -47.9 129.9	27 46.5 -47.6 129.0
9°	29 18.7 -49.3 133.3	28 44.5 -48.9 132.4	28 09.8 -48.6 131.4	27 34.6 -48.2 130.5	26 58.9 -47.8 129.7
10°	28 29.4 -49.5 133.9	27 55.6 -49.1 133.0	27 21.2 -48.7 132.1	26 46.4 -48.4 131.2	26 11.1 -48.1 130.3
11°	27 39.9 -49.6 134.6	27 06.5 -49.3 133.7	26 32.5 -48.9 132.8	25 58.0 -48.6 131.9	25 23.0 -48.2 131.0
12°	26 50.3 -49.8 135.2	26 17.2 -49.4 134.3	25 43.6 -49.1 133.4	25 09.4 -48.7 132.5	24 34.8 -48.3 131.7
13°	26 00.5 -49.9 135.8	25 27.8 -49.6 134.9	24 54.5 -49.3 134.0	24 20.7 -48.9 133.2	23 46.5 -48.6 132.3
14°	25 10.6 -50.2 136.4	24 38.2 -49.8 135.5	24 05.2 -49.3 134.7	23 31.8 -49.0 133.8	22 57.9 -48.6 132.9
15°	24 20.4 -50.2 137.0	23 48.4 -49.9 136.2	23 15.9 -49.6 135.3	22 42.8 -49.2 134.4	22 09.3 -48.9 133.6
16°	23 30.2 -50.4 137.6	22 58.5 -50.0 136.8	22 26.3 -49.6 135.9	21 53.6 -49.3 135.0	21 20.4 -48.9 134.2
17°	22 39.8 -50.5 138.2	22 08.5 -50.2 137.4	21 36.7 -49.8 136.5	21 04.3 -49.4 135.7	20 30.5 -49.1 134.8
18°	21 49.3 -50.6 138.8	21 18.3 -50.2 138.0	20 46.9 -50.0 137.1	20 14.9 -49.6 136.3	19 42.4 -49.2 135.4
19°	20 58.7 -50.8 139.4	20 28.1 -50.4 138.5	19 56.9 -50.0 137.7	19 25.3 -49.7 136.9	18 53.2 -49.4 136.0
20°	20 07.9 -50.8 140.0	19 37.7 -50.5 139.1	19 06.9 -50.2 138.3	18 35.6 -49.8 137.5	18 03.8 -49.4 136.6
21°	19 17.1 -51.0 140.5	18 47.2 -50.6 139.7	18 16.7 -50.2 138.9	17 45.8 -49.9 138.0	17 14.4 -49.6 137.2
22°	18 26.1 -51.0 141.1	17 56.6 -50.7 140.3	17 26.5 -50.4 139.4	16 55.9 -50.0 138.6	16 24.8 -49.6 137.8
23°	17 35.1 -51.2 141.6	17 05.9 -50.8 140.8	16 36.1 -50.4 140.0	16 05.9 -50.1 139.2	15 35.2 -49.7 138.4
24°	16 43.9 -51.2 142.2	16 15.1 -50.9 141.4	15 45.7 -50.5 140.6	15 15.8 -50.2 139.8	14 45.5 -49.9 139.0
25°	15 52.7 -51.3 142.7	15 24.2 -51.0 141.9	14 55.2 -50.6 141.1	14 25.6 -50.2 140.3	13 55.6 -49.9 139.6
26°	15 01.4 -51.4 143.3	14 33.2 -51.0 142.5	14 04.6 -50.7 141.7	13 35.4 -50.3 140.9	13 05.7 -49.9 140.1
27°	14 10.0 -51.5 143.8	13 42.2 -51.1 143.0	13 13.9 -50.8 142.2	12 45.1 -50.4 141.5	12 15.8 -50.1 140.7
28°	13 18.5 -51.5 144.3	12 51.1 -51.2 143.5	12 23.1 -50.8 142.8	11 54.7 -50.5 142.0	11 25.7 -50.1 141.3
29°	12 27.0 -51.6 144.8	11 59.9 -51.2 144.1	11 32.3 -50.9 143.3	11 04.2 -50.5 142.6	10 35.6 -50.2 141.8

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°	33 20.1 -45.4 122.2	32 40.4 -45.0 121.3	32 00.4 -44.7 120.4	31 20.0 -44.4 119.5	30 39.2 -44.0 118.7
1°	32 34.7 -45.6 123.0	31 55.4 -45.3 122.1	31 15.7 -44.9 121.2	30 35.6 -44.6 120.3	29 55.2 -44.3 119.5
2°	31 49.1 -45.9 123.7	31 10.1 -45.5 122.8	30 30.8 -45.3 122.0	29 51.0 -44.9 121.1	29 10.9 -44.6 120.2
3°	31 03.2 -46.2 124.5	30 24.6 -45.9 123.6	29 45.5 -45.5 122.7	29 06.1 -45.1 121.9	28 26.3 -44.8 121.0
4°	30 17.0 -46.4 125.2	29 38.7 -46.0 124.3	29 00.0 -45.7 123.5	28 21.0 -45.4 122.6	27 41.5 -45.1 121.8
5°	29 30.6 -46.6 126.0	28 52.7 -46.3 125.1	28 14.3 -45.9 124.2	27 35.6 -45.7 123.4	26 56.4 -45.3 122.5
6°	28 44.0 -46.9 126.7	28 06.4 -46.5 125.8	27 28.4 -46.2 124.9	26 49.9 -45.8 124.1	26 11.1 -45.5 123.2
7°	27 57.1 -47.1 127.4	27 19.9 -46.8 126.5	26 42.2 -46.4 125.7	26 04.1 -46.1 124.8	25 25.6 -45.7 124.0
8°	27 10.0 -47.2 128.1	26 33.1 -46.9 127.2	25 55.8 -46.6 126.4	25 18.0 -46.2 125.5	24 39.9 -45.9 124.7
9°	26 22.8 -47.5 128.8	25 46.2 -47.1 127.9	25 09.2 -46.8 127.1	24 31.8 -46.5 126.2	23 54.0 -46.2 125.4
10°	25 35.3 -47.7 129.5	24 59.1 -47.4 128.6	24 22.4 -47.0 127.7	23 45.3 -46.6 126.9	23 07.8 -46.3 126.1
11°	24 47.6 -47.8 130.1	24 11.7 -47.5 129.3	23 35.4 -47.1 128.4	22 58.7 -46.8 127.6	22 21.5 -46.4 126.8
12°	23 59.8 -48.1 130.8	23 24.2 -47.6 129.9	22 48.3 -47.4 129.1	22 11.9 -47.0 128.3	21 35.1 -46.7 127.4
13°	23 11.7 -48.1 131.4	22 36.6 -47.9 130.6	22 00.9 -47.4 129.8	21 24.9 -47.1 128.9	20 48.4 -46.8 128.1
14°	22 23.6 -48.4 132.1	21 48.7 -47.9 131.3	21 13.5 -47.7 130.4	20 37.8 -47.3 129.6	20 01.6 -46.9 128.8
15°	21 35.2 -48.4 132.7	21 00.8 -48.2 131.9	20 25.8 -47.7 131.1	19 50.5 -47.5 130.3	19 14.7 -47.1 129.5
16°	20 46.8 -48.6 133.4	20 12.6 -48.2 132.5	19 38.1 -47.9 131.7	19 03.0 -47.5 130.9	18 27.6 -47.2 130.1
17°	19 58.2 -48.8 134.0	19 24.4 -48.4 133.2	18 50.2 -48.1 132.4	18 15.5 -47.7 131.6	17 40.4 -47.4 130.8
18°	19 09.4 -48.8 134.6	18 36.0 -48.5 133.8	18 02.1 -48.2 133.0	17 27.8 -47.8 132.2	16 53.0 -47.4 131.4
19°	18 20.6 -49.0 135.2	17 47.5 -48.6 134.4	17 13.9 -48.2 133.6	16 40.0 -48.0 132.8	16 05.6 -47.6 132.0
20°	17 31.6 -49.1 135.8	16 58.9 -48.8 135.0	16 25.7 -48.4 134.2	15 52.0 -48.0 133.4	15 18.0 -47.7 132.7
21°	16 42.5 -49.2 136.4	16 10.1 -48.8 135.6	15 37.3 -48.5 134.8	15 04.0 -48.1 134.1	14 30.3 -47.8 133.3
22°	15 53.3 -49.3 137.0	15 21.3 -49.0 136.2	14 48.8 -48.6 135.5	14 15.9 -48.3 134.7	13 42.5 -47.9 133.9
23°	15 04.0 -49.4 137.6	14 32.3 -49.0 136.8	14 00.2 -48.7 136.1	13 27.6 -48.3 135.3	12 54.6 -47.9 134.5
24°	14 14.6 -49.4 138.2	13 43.3 -49.1 137.4	13 11.5 -48.7 136.7	12 39.3 -48.4 135.9	12 06.7 -48.1 135.2
25°	13 25.2 -49.6 138.8	12 54.2 -49.2 138.0	12 22.8 -48.8 137.3	11 50.9 -48.5 136.5	11 18.6 -48.1 135.8
26°	12 35.6 -49.6 139.4	12 05.0 -49.2 138.6	11 34.0 -48.9 137.9	11 02.4 -48.5 137.1	10 30.5 -48.2 136.4
27°	11 46.0 -49.7 139.9	11 15.8 -49.4 139.2	10 45.1 -49.0 138.4	10 13.9 -48.6 137.7	9 42.3 -48.2 137.0
28°	10 56.3 -49.7 140.5	10 26.4 -49.4 139.8	9 56.1 -49.1 139.0	9 25.3 -48.7 138.3	8 54.1 -48.4 137.6
29°	10 06.6 -49.9 141.1	9 37.0 -49.4 140.3	9 07.0 -49.0 139.6	8 36.6 -48.7 138.9	8 05.7 -48.3 138.2

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°	29 58.2 -43.8 117.8	29 16.8 -43.4 117.0	28 35.1 -43.1 116.2	27 53.1 -42.9 115.4	27 10.8 -42.5 114.6
1°	29 14.4 -44.0 118.6	28 33.4 -43.7 117.8	27 52.0 -43.5 117.0	27 10.2 -43.1 116.2	26 28.3 -42.9 115.4
2°	28 30.4 -44.2 119.4	27 49.7 -44.0 118.6	27 08.5 -43.6 117.7	26 27.1 -43.3 116.9	25 45.4 -43.1 116.1
3°	27 46.2 -44.5 120.2	27 05.7 -44.2 119.3	26 24.9 -43.9 118.5	25 43.8 -43.6 117.7	25 02.3 -43.3 116.9
4°	27 01.7 -44.8 120.9	26 21.5 -44.4 120.1	25 41.0 -44.1 119.3	25 00.2 -43.9 118.5	24 19.0 -43.5 117.7
5°	26 16.9 -45.0 121.7	25 37.1 -44.7 120.8	24 56.9 -44.4 120.0	24 16.3 -44.0 119.2	23 35.5 -43.8 118.4
6°	25 31.9 -45.2 122.4	24 52.4 -44.9 121.6	24 12.5 -44.6 120.8	23 32.3 -44.3 120.0	22 51.7 -44.0 119.2
7°	24 46.7 -45.4 123.1	24 07.5 -45.1 122.3	23 27.9 -44.7 121.5	22 48.0 -44.5 120.7	22 07.7 -44.1 119.9
8°	24 01.3 -45.6 123.8	23 22.4 -45.2 123.0	22 43.2 -45.0 122.2	22 03.5 -44.6 121.4	21 23.6 -44.4 120.6
9°	23 15.7 -45.7 124.6	22 37.2 -45.5 123.7	21 58.2 -45.1 122.9	21 18.9 -44.8 122.1	20 39.2 -44.5 121.4
10°	22 30.0 -46.0 125.3	21 51.7 -45.7 124.4	21 13.1 -45.4 123.6	20 34.1 -45.1 122.9	19 54.7 -44.7 122.1
11°	21 44.0 -46.2 126.0	21 06.0 -45.8 125.1	20 27.7 -45.5 124.3	19 49.0 -45.1 123.6	19 10.0 -44.8 122.8
12°	20 57.8 -46.3 126.6	20 20.2 -45.9 125.8	19 42.2 -45.6 125.0	19 03.9 -45.3 124.3	18 25.2 -45.0 123.5
13°	20 11.5 -46.4 127.3	19 34.3 -46.2 126.5	18 56.6 -45.8 125.7	18 18.6 -45.5 124.9	17 40.2 -45.2 124.2
14°	19 25.1 -46.6 128.0	18 48.1 -46.2 127.2	18 10.8 -46.0 126.4	17 33.1 -45.6 125.6	16 55.0 -45.3 124.9
15°	18 38.5 -46.8 128.7	18 01.9 -46.5 127.9	17 24.8 -46.0 127.1	16 47.5 -45.8 126.3	16 09.7 -45.4 125.6
16°	17 51.7 -46.9 129.3	17 15.4 -46.5 128.5	16 38.8 -46.2 127.8	16 01.7 -45.9 127.0	15 24.3 -45.6 126.2
17°	17 04.8 -47.0 130.0	16 28.9 -46.7 129.2	15 52.6 -46.4 128.4	15 15.8 -46.0 127.7	14 38.7 -45.6 126.9
18°	16 17.8 -47.1 130.6	15 42.2 -46.7 129.8	15 06.2 -46.4 129.1	14 29.8 -46.1 128.3	13 53.1 -45.8 127.6
19°	15 30.7 -47.2 131.3	14 55.5 -46.9 130.5	14 19.8 -46.6 129.7	13 43.7 -46.2 129.0	13 07.3 -45.9 128.2
20°	14 43.5 -47.4 131.9	14 08.6 -47.0 131.1	13 33.2 -46.6 130.4	12 57.5 -46.3 129.6	12 21.4 -45.9 128.9
21°	13 56.1 -47.4 132.5	13 21.6 -47.1 131.8	12 46.6 -46.7 131.0	12 11.2 -46.4 130.3	11 35.5 -46.1 129.6
22°	13 08.7 -47.5 133.2	12 34.5 -47.2 132.4	11 59.9 -46.9 131.7	11 24.8 -46.4 130.9	10 49.4 -46.1 130.2
23°	12 21.2 -47.6 133.8	11 47.3 -47.2 133.0	11 13.0 -46.9 132.3	10 38.4 -46.6 131.6	10 03.3 -46.2 130.9
24°	11 33.6 -47.7 134.4	11 00.1 -47.4 133.7	10 26.1 -47.0 132.9	9 51.8 -46.6 132.2	9 17.1 -46.3 131.5
25°	10 45.9 -47.8 135.0	10 12.7 -47.4 134.3	9 39.1 -47.0 133.6	9 05.2 -46.7 132.9	8 30.8 -46.4 132.2
26°	9 58.1 -47.8 135.6	9 25.3 -47.5 134.9	8 52.1 -47.1 134.2	8 18.5 -46.8 133.5	7 44.4 -46.4 132.8
27°	9 10.3 -47.9 136.3	8 37.8 -47.5 135.5	8 05.0 -47.2 134.8	7 31.7 -46.8 134.1	6 58.0 -46.4 133.4
28°	8 22.4 -48.0 136.9	7 50.3 -47.6 136.2	7 17.8 -47.2 135.5	6 44.9 -46.9 134.8	6 11.6 -46.5 134.1
29°	7 34.4 -48.0 137.5	7 02.7 -47.6 136.8	6 30.6 -47.3 136.1	5 58.0 -46.9 135.4	5 25.1 -46.6 134.7

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°	26 28.3 -42.3 113.8	25 45.5 -42.1 113.0	25 02.4 -41.8 112.2	24 19.2 -41.6 111.5	23 35.7 -41.4 110.7
1°	25 46.0 -42.6 114.6	25 03.4 -42.3 113.8	24 20.6 -42.0 113.0	23 37.6 -41.8 112.3	22 54.3 -41.5 111.5
2°	25 03.4 -42.8 115.4	24 21.1 -42.5 114.6	23 38.6 -42.3 113.8	22 55.8 -42.0 113.0	22 12.8 -41.8 112.3
3°	24 20.6 -43.0 116.1	23 38.6 -42.8 115.3	22 56.3 -42.5 114.6	22 13.8 -42.2 113.8	21 31.0 -42.0 113.1
4°	23 37.6 -43.3 116.9	22 55.8 -42.9 116.1	22 13.8 -42.7 115.3	21 31.6 -42.5 114.6	20 49.0 -42.2 113.8
5°	22 54.3 -43.5 117.6	22 12.9 -43.2 116.9	21 31.1 -42.9 116.1	20 49.1 -42.6 115.3	20 06.8 -42.3 114.6
6°	22 10.8 -43.6 118.4	21 29.7 -43.4 117.6	20 48.2 -43.1 116.8	20 06.5 -42.9 116.1	19 24.5 -42.6 115.3
7°	21 27.2 -43.9 119.1	20 46.3 -43.6 118.4	20 05.1 -43.3 117.6	19 23.6 -43.0 116.8	18 41.9 -42.8 116.1
8°	20 43.3 -44.0 119.9	20 02.7 -43.7 119.1	19 21.8 -43.5 118.3	18 40.6 -43.2 117.6	17 59.1 -42.9 116.8
9°	19 59.3 -44.3 120.6	19 19.0 -44.0 119.8	18 38.3 -43.6 119.1	17 57.4 -43.3 118.3	17 16.2 -43.0 117.6
10°	19 15.0 -44.4 121.3	18 35.0 -44.1 120.5	17 54.7 -43.8 119.8	17 14.1 -43.5 119.0	16 33.2 -43.3 118.3
11°	18 30.6 -44.5 122.0	17 50.9 -44.2 121.2	17 10.9 -43.9 120.5	16 30.6 -43.7 119.7	15 49.9 -43.3 119.0
12°	17 46.1 -44.7 122.7	17 06.7 -44.4 122.0	16 27.0 -44.1 121.2	15 46.9 -43.8 120.5	15 06.6 -43.5 119.7
13°	17 01.4 -44.8 123.4	16 22.3 -44.5 122.7	15 42.9 -44.2 121.9	15 03.1 -43.9 121.2	14 23.1 -43.6 120.4
14°	16 16.6 -45.0 124.1	15 37.8 -44.7 123.4	14 58.7 -44.4 122.6	14 19.2 -44.0 121.9	13 39.5 -43.8 121.1
15°	15 31.6 -45.1 124.8	14 53.1 -44.8 124.0	14 14.3 -44.4 123.3	13 35.2 -44.2 122.6	12 55.7 -43.8 121.8
16°	14 46.5 -45.2 125.5	14 08.3 -44.9 124.7	13 29.9 -44.6 124.0	12 51.0 -44.2 123.3	12 11.9 -44.0 122.5
17°	14 01.3 -45.4 126.2	13 23.4 -45.0 125.4	12 45.3 -44.7 124.7	12 06.8 -44.4 124.0	11 27.9 -44.0 123.2
18°	13 15.9 -45.4 126.8	12 38.4 -45.1 126.1	12 00.6 -44.8 125.4	11 22.4 -44.5 124.6	10 43.9 -44.2 123.9
19°	12 30.5 -45.5 127.5	11 53.3 -45.2 126.8	11 15.8 -44.9 126.0	10 37.9 -44.5 125.3	9 59.7 -44.2 124.6
20°	11 45.0 -45.7 128.2	11 08.1 -45.3 127.4	10 30.9 -44.9 126.7	9 53.4 -44.7 126.0	9 15.5 -44.3 125.3
21°	10 59.3 -45.7 128.8	10 22.8 -45.4 128.1	9 46.0 -45.1 127.4	9 08.7 -44.7 126.7	8 31.2 -44.4 126.0
22°	10 13.6 -45.8 129.5	9 37.4 -45.4 128.8	9 00.9 -45.1 128.1	8 24.0 -44.8 127.4	7 46.8 -44.5 126.7
23°	9 27.8 -45.8 130.1	8 52.0 -45.5 129.4	8 15.8 -45.2 128.7	7 39.2 -44.8 128.0	7 02.3 -44.5 127.3
24°	8 42.0 -46.0 130.8	8 06.5 -45.6 130.1	7 30.6 -45.2 129.4	6 54.4 -44.9 128.7	6 17.8 -44.5 128.0
25°	7 56.0 -46.0 131.4	7 20.9 -45.7 130.7	6 45.4 -45.3 130.1	6 09.5 -44.9 129.4	5 33.3 -44.6 128.7
26°	7 10.0 -46.0 132.1	6 35.2 -45.7 131.4	6 00.1 -45.4 130.7	5 24.6 -45.0 130.0	4 48.7 -44.7 129.4
27°	6 24.0 -46.1 132.7	5 49.5 -45.7 132.1	5 14.7 -45.3 131.4	4 39.6 -45.1 130.7	4 04.0 -44.6 130.0
28°	5 37.9 -46.2 133.4	5 03.8 -45.8 132.7	4 29.4 -45.5 132.0	3 54.5 -45.0 131.4	3 19.4 -44.7 130.7
29°	4 51.7 -46.1 134.0	4 18.0 -45.8 133.4	3 43.9 -45.4 132.7	3 09.5 -45.1 132.0	2 34.7 -44.8 131.4

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°	22 51.9 -41.1 110.0	22 08.0 -40.9 109.2	21 23.9 -40.7 108.5	20 39.6 -40.5 107.8	19 55.1 -40.3 107.1
1°	22 10.8 -41.3 110.8	21 27.1 -41.1 110.0	20 43.2 -40.8 109.3	19 59.1 -40.6 108.6	19 14.8 -40.4 107.9
2°	21 29.5 -41.5 111.5	20 46.0 -41.3 110.8	20 02.4 -41.1 110.1	19 18.5 -40.9 109.3	18 34.4 -40.7 108.6
3°	20 48.0 -41.8 112.3	20 04.7 -41.5 111.6	19 21.3 -41.3 110.8	18 37.6 -41.1 110.1	17 53.7 -40.8 109.4
4°	20 06.2 -41.9 113.1	19 23.2 -41.7 112.3	18 40.0 -41.5 111.6	17 56.5 -41.2 110.9	17 12.9 -41.0 110.2
5°	19 24.3 -42.1 113.8	18 41.5 -41.8 113.1	17 58.5 -41.6 112.4	17 15.3 -41.4 111.7	16 31.9 -41.2 110.9
6°	18 42.2 -42.3 114.6	17 59.7 -42.1 113.9	17 16.9 -41.8 113.1	16 33.9 -41.6 112.4	15 50.7 -41.4 111.7
7°	17 59.9 -42.5 115.3	17 17.6 -42.2 114.6	16 35.1 -42.0 113.9	15 52.3 -41.7 113.2	15 09.3 -41.4 112.4
8°	17 17.4 -42.6 116.1	16 35.4 -42.4 115.3	15 53.1 -42.1 114.6	15 10.6 -41.9 113.9	14 27.9 -41.7 113.2
9°	16 34.8 -42.8 116.8	15 53.0 -42.5 116.1	15 11.0 -42.3 115.4	14 28.7 -42.0 114.6	13 46.2 -41.7 113.9
10°	15 52.0 -43.0 117.5	15 10.5 -42.7 116.8	14 28.7 -42.4 116.1	13 46.7 -42.1 115.4	13 04.5 -41.9 114.7
11°	15 09.0 -43.1 118.3	14 27.8 -42.8 117.5	13 46.3 -42.5 116.8	13 04.6 -42.3 116.1	12 22.6 -42.0 115.4
12°	14 25.9 -43.2 119.0	13 45.0 -42.9 118.3	13 03.8 -42.6 117.6	12 22.3 -42.3 116.8	11 40.6 -42.1 116.1
13°	13 42.7 -43.3 119.7	13 02.1 -43.0 119.0	12 21.2 -42.8 118.3	11 40.0 -42.5 117.6	10 58.5 -42.2 116.9
14°	12 59.4 -43.4 120.4	12 19.1 -43.2 119.7	11 38.4 -42.9 119.0	10 57.5 -42.6 118.3	10 16.3 -42.3 117.6
15°	12 16.0 -43.6 121.1	11 35.9 -43.3 120.4	10 55.5 -42.9 119.7	10 14.9 -42.7 119.0	9 34.0 -42.4 118.3
16°	11 32.4 -43.6 121.8	10 52.6 -43.3 121.1	10 12.6 -43.1 120.4	9 32.2 -42.7 119.7	8 51.6 -42.5 119.0
17°	10 48.8 -43.8 122.5	10 09.3 -43.5 121.8	9 29.5 -43.1 121.1	8 49.5 -42.9 120.4	8 09.1 -42.5 119.7
18°	10 05.0 -43.8 123.2	9 25.8 -43.5 122.5	8 46.4 -43.2 121.8	8 06.6 -42.9 121.1	7 26.6 -42.7 120.5
19°	9 21.2 -43.9 123.9	8 42.3 -43.6 123.2	8 03.2 -43.3 122.5	7 23.7 -43.0 121.8	6 43.9 -42.6 121.2
20°	8 37.3 -44.0 124.6	7 58.7 -43.6 123.9	7 19.9 -43.4 123.2	6 40.7 -43.0 122.5	6 01.3 -42.8 121.9
21°	7 53.3 -44.1 125.3	7 15.1 -43.8 124.6	6 36.5 -43.4 123.9	5 57.7 -43.1 123.2	5 18.5 -42.8 122.6
22°	7 09.2 -44.1 126.0	6 31.3 -43.8 125.3	5 53.1 -43.5 124.6	5 14.6 -43.2 123.9	4 35.7 -42.8 123.3
23°	6 25.1 -44.2 126.7	5 47.5 -43.8 126.0	5 09.6 -43.5 125.3	4 31.4 -43.1 124.6	3 52.9 -42.8 124.0
24°	5 40.9 -44.2 127.3	5 03.7 -43.9 126.7	4 26.1 -43.5 126.0	3 48.3 -43.3 125.3	3 10.1 -42.9 124.7
25°	4 56.7 -44.2 128.0	4 19.8 -43.9 127.4	3 42.6 -43.6 126.7	3 05.0 -43.2 126.0	2 27.2 -42.9 125.4
26°	4 12.5 -44.3 128.7	3 35.9 -44.0 128.0	2 59.0 -43.6 127.4	2 21.8 -43.3 126.7	1 44.3 -43.0 126.1
27°	3 28.2 -44.4 129.4	2 51.9 -43.9 128.7	2 15.4 -43.6 128.1	1 38.5 -43.3 127.4	1 01.3 -42.9 126.8
28°	2 43.8 -44.3 130.0	2 08.0 -44.0 129.4	1 31.8 -43.7 128.8	0 55.2 -43.2 128.1	0 18.4 -42.9 127.5
29°	1 59.5 -44.4 130.7	1 24.0 -44.0 130.1	0 48.1 -43.6 129.4	0 12.0 -43.3 128.8	-0 24.5 -43.0

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°	19 10.4 -40.0 106.4	18 25.6 -39.9 105.7	17 40.6 -39.7 105.0	16 55.5 -39.5 104.3	16 10.3 -39.4 103.6
1°	18 30.4 -40.3 107.1	17 45.7 -40.1 106.4	17 00.9 -39.9 105.7	16 16.0 -39.8 105.1	15 30.9 -39.6 104.4
2°	17 50.1 -40.5 107.9	17 05.6 -40.2 107.2	16 21.0 -40.1 106.5	15 36.2 -39.9 105.8	14 51.3 -39.7 105.1
3°	17 09.6 -40.6 108.7	16 25.4 -40.5 108.0	15 40.9 -40.2 107.3	14 56.3 -40.0 106.6	14 11.6 -39.9 105.9
4°	16 29.0 -40.8 109.5	15 44.9 -40.5 108.8	15 00.7 -40.4 108.1	14 16.3 -40.2 107.4	13 31.7 -40.0 106.7
5°	15 48.2 -41.0 110.2	15 04.4 -40.8 109.5	14 20.3 -40.5 108.8	13 36.1 -40.3 108.1	12 51.7 -40.2 107.5
6°	15 07.2 -41.1 111.0	14 23.6 -40.9 110.3	13 39.8 -40.7 109.6	12 55.8 -40.5 108.9	12 11.5 -40.2 108.2
7°	14 26.1 -41.2 111.7	13 42.7 -41.0 111.0	12 59.1 -40.8 110.3	12 15.3 -40.6 109.7	11 31.3 -40.4 109.0
8°	13 44.9 -41.4 112.5	13 01.7 -41.2 111.8	12 18.3 -40.9 111.1	11 34.7 -40.7 110.4	10 50.9 -40.5 109.7
9°	13 03.5 -41.5 113.2	12 20.5 -41.2 112.5	11 37.4 -41.1 111.8	10 54.0 -40.8 111.2	10 10.4 -40.6 110.5
10°	12 22.0 -41.6 114.0	11 39.3 -41.4 113.3	10 56.3 -41.1 112.6	10 13.2 -40.9 111.9	9 29.8 -40.7 111.2
11°	11 40.4 -41.8 114.7	10 57.9 -41.5 114.0	10 15.2 -41.3 113.3	9 32.3 -41.1 112.6	8 49.1 -40.8 112.0
12°	10 58.6 -41.8 115.4	10 16.4 -41.6 114.8	9 33.9 -41.3 114.1	8 51.2 -41.1 113.4	8 08.3 -40.8 112.7
13°	10 16.8 -42.0 116.2	9 34.8 -41.7 115.5	8 52.6 -41.4 114.8	8 10.1 -41.1 114.1	7 27.5 -41.0 113.4
14°	9 34.8 -42.0 116.9	8 53.1 -41.7 116.2	8 11.2 -41.5 115.5	7 29.0 -41.3 114.9	6 46.5 -40.9 114.2
15°	8 52.8 -42.1 117.6	8 11.4 -41.9 116.9	7 29.7 -41.6 116.3	6 47.7 -41.3 115.6	6 05.6 -41.1 114.9
16°	8 10.7 -42.2 118.3	7 29.5 -41.9 117.7	6 48.1 -41.7 117.0	6 06.4 -41.4 116.3	5 24.5 -41.1 115.7
17°	7 28.5 -42.3 119.1	6 47.6 -42.0 118.4	6 06.4 -41.7 117.7	5 25.0 -41.4 117.0	4 43.4 -41.2 116.4
18°	6 46.2 -42.3 119.8	6 05.6 -42.0 119.1	5 24.7 -41.7 118.4	4 43.6 -41.5 117.8	4 02.2 -41.2 117.1
19°	6 03.9 -42.4 120.5	5 23.6 -42.1 119.8	4 43.0 -41.8 119.2	4 02.1 -41.5 118.5	3 21.0 -41.2 117.8
20°	5 21.5 -42.4 121.2	4 41.5 -42.1 120.5	4 01.2 -41.8 119.9	3 20.6 -41.5 119.2	2 39.8 -41.3 118.6
21°	4 39.1 -42.5 121.9	3 59.4 -42.2 121.2	3 19.4 -41.9 120.6	2 39.1 -41.6 119.9	1 58.5 -41.2 119.3
22°	3 56.6 -42.5 122.6	3 17.2 -42.2 122.0	2 37.5 -41.9 121.3	1 57.5 -41.6 120.7	1 17.3 -41.3 120.0
23°	3 14.1 -42.5 123.3	2 35.0 -42.2 122.7	1 55.6 -41.9 122.0	1 15.9 -41.6 121.4	0 36.0 -41.3 120.7
24°	2 31.6 -42.6 124.0	1 52.8 -42.3 123.4	1 13.7 -41.9 122.7	0 34.3 -41.6 122.1	-0 05.3 -41.3
25°	1 49.0 -42.6 124.7	1 10.5 -42.2 124.1	0 31.8 -41.9 123.5	-0 07.3 -41.6	-0 46.6 -41.3
26°	1 06.4 -42.6 125.4	0 28.3 -42.3 124.8	-0 10.1 -42.0	-0 48.9 -41.6	-1 27.9 -41.2
27°	0 23.8 -42.6 126.1	-0 14.0 -42.2	-0 52.1 -41.9	-1 30.5 -41.5	-2 09.1 -41.3
28°	-0 18.8 -42.5	-0 56.2 -42.3	-1 34.0 -41.9	-2 12.0 -41.6	-2 50.4 -41.2
29°	-1 01.3 -42.6	-1 38.5 -42.2	-2 15.9 -41.9	-2 53.6 -41.5	-3 31.6 -41.2

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°	15 24.9 -39.3 102.9	14 39.4 -39.2 102.2	13 53.7 -38.9 101.6	13 08.0 -38.9 100.9	12 22.2 -38.8 100.2
1°	14 45.6 -39.4 103.7	14 00.2 -39.2 103.0	13 14.8 -39.2 102.3	12 29.1 -38.9 101.7	11 43.4 -38.8 101.0
2°	14 06.2 -39.5 104.5	13 21.0 -39.4 103.8	12 35.6 -39.2 103.1	11 50.2 -39.1 102.5	11 04.6 -39.0 101.8
3°	13 26.7 -39.7 105.2	12 41.6 -39.5 104.6	11 56.4 -39.4 103.9	11 11.1 -39.3 103.2	10 25.6 -39.1 102.6
4°	12 47.0 -39.9 106.0	12 02.1 -39.7 105.3	11 17.0 -39.5 104.7	10 31.8 -39.3 104.0	9 46.5 -39.1 103.3
5°	12 07.1 -39.9 106.8	11 22.4 -39.8 106.1	10 37.5 -39.6 105.4	9 52.5 -39.4 104.8	9 07.4 -39.3 104.1
6°	11 27.2 -40.1 107.5	10 42.6 -39.9 106.9	9 57.9 -39.7 106.2	9 13.1 -39.6 105.5	8 28.1 -39.4 104.9
7°	10 47.1 -40.2 108.3	10 02.7 -40.0 107.6	9 18.2 -39.8 107.0	8 33.5 -39.6 106.3	7 48.7 -39.4 105.6
8°	10 06.9 -40.3 109.0	9 22.7 -40.0 108.4	8 38.4 -39.9 107.7	7 53.9 -39.7 107.0	7 09.3 -39.6 106.4
9°	9 26.6 -40.4 109.8	8 42.7 -40.2 109.1	7 58.5 -40.0 108.5	7 14.2 -39.8 107.8	6 29.7 -39.6 107.1
10°	8 46.2 -40.4 110.6	8 02.5 -40.3 109.9	7 18.5 -40.0 109.2	6 34.4 -39.8 108.6	5 50.1 -39.6 107.9
11°	8 05.8 -40.6 111.3	7 22.2 -40.3 110.6	6 38.5 -40.1 110.0	5 54.6 -39.9 109.3	5 10.5 -39.7 108.7
12°	7 25.2 -40.6 112.0	6 41.9 -40.4 111.4	5 58.4 -40.2 110.7	5 14.7 -40.0 110.1	4 30.8 -39.8 109.4
13°	6 44.6 -40.7 112.8	6 01.5 -40.5 112.1	5 18.2 -40.2 111.5	4 34.7 -40.0 110.8	3 51.0 -39.8 110.2
14°	6 03.9 -40.7 113.5	5 21.0 -40.5 112.9	4 38.0 -40.3 112.2	3 54.7 -40.0 111.6	3 11.2 -39.8 110.9
15°	5 23.2 -40.9 114.3	4 40.5 -40.5 113.6	3 57.7 -40.3 112.9	3 14.7 -40.1 112.3	2 31.4 -39.8 111.7
16°	4 42.3 -40.8 115.0	4 00.0 -40.6 114.3	3 17.4 -40.4 113.7	2 34.6 -40.1 113.0	1 51.6 -39.9 112.4
17°	4 01.5 -40.9 115.7	3 19.4 -40.7 115.1	2 37.0 -40.3 114.4	1 54.5 -40.2 113.8	1 11.7 -39.9 113.2
18°	3 20.6 -40.9 116.5	2 38.7 -40.6 115.8	1 56.7 -40.4 115.2	1 14.3 -40.1 114.5	0 31.8 -39.9 113.9
19°	2 39.7 -41.0 117.2	1 58.1 -40.7 116.6	1 16.3 -40.4 115.9	0 34.2 -40.1 115.3	-0 08.1 -39.9
20°	1 58.7 -40.9 117.9	1 17.4 -40.7 117.3	0 35.9 -40.5 116.7	-0 05.9 -40.2	-0 48.0 -39.8
21°	1 17.8 -41.0 118.7	0 36.7 -40.7 118.0	-0 04.6 -40.4	-0 46.1 -40.1	-1 27.8 -39.9
22°	0 36.8 -41.0 119.4	-0 04.0 -40.7	-0 45.0 -40.4	-1 26.2 -40.1	-2 07.7 -39.8
23°	-0 04.2 -41.0	-0 44.7 -40.7	-1 25.4 -40.4	-2 06.3 -40.1	-2 47.5 -39.8
24°	-0 45.2 -41.0	-1 25.4 -40.6	-2 05.8 -40.3	-2 46.4 -40.1	-3 27.3 -39.8
25°	-1 26.2 -40.9	-2 06.0 -40.7	-2 46.1 -40.4	-3 26.5 -40.0	-4 07.1 -39.8
26°	-2 07.1 -41.0	-2 46.7 -40.6	-3 26.5 -40.3	-4 06.5 -40.0	-4 46.9 -39.6
27°	-2 48.1 -40.9	-3 27.3 -40.6	-4 06.8 -40.3	-4 46.5 -40.0	-5 26.5 -39.7
28°	-3 29.0 -40.9	-4 07.9 -40.6	-4 47.1 -40.2	-5 26.5 -39.9	-6 06.2 -39.5
29°	-4 09.9 -40.8	-4 48.5 -40.5	-5 27.3 -40.1	-6 06.4 -39.8	-6 45.7 -39.5

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°	11 36.2 -38.6 99.6	10 50.2 -38.5 98.9	10 04.1 -38.4 98.3	9 17.9 -38.3 97.6	8 31.7 -38.3 97.0
1°	10 57.6 -38.7 100.4	10 11.7 -38.6 99.7	9 25.7 -38.5 99.0	8 39.6 -38.4 98.4	7 53.4 -38.3 97.8
2°	10 18.9 -38.9 101.1	9 33.1 -38.7 100.5	8 47.2 -38.6 99.8	8 01.2 -38.5 99.2	7 15.1 -38.4 98.5
3°	9 40.0 -38.9 101.9	8 54.4 -38.8 101.2	8 08.6 -38.7 100.6	7 22.7 -38.6 99.9	6 36.7 -38.4 99.3
4°	9 01.1 -39.0 102.7	8 15.6 -38.9 102.0	7 29.9 -38.8 101.4	6 44.1 -38.6 100.7	5 58.3 -38.6 100.1
5°	8 22.1 -39.2 103.4	7 36.7 -39.0 102.8	6 51.1 -38.8 102.1	6 05.5 -38.7 101.5	5 19.7 -38.5 100.8
6°	7 42.9 -39.2 104.2	6 57.7 -39.1 103.6	6 12.3 -38.9 102.9	5 26.8 -38.8 102.3	4 41.2 -38.7 101.6
7°	7 03.7 -39.3 105.0	6 18.6 -39.1 104.3	5 33.4 -39.0 103.7	4 48.0 -38.8 103.0	4 02.5 -38.7 102.4
8°	6 24.4 -39.3 105.7	5 39.5 -39.2 105.1	4 54.4 -39.0 104.4	4 09.2 -38.9 103.8	3 23.8 -38.7 103.1
9°	5 45.1 -39.4 106.5	5 00.3 -39.2 105.8	4 15.4 -39.1 105.2	3 30.3 -38.9 104.6	2 45.1 -38.7 103.9
10°	5 05.7 -39.5 107.2	4 21.1 -39.3 106.6	3 36.3 -39.1 106.0	2 51.4 -38.9 105.3	2 06.4 -38.8 104.7
11°	4 26.2 -39.5 108.0	3 41.8 -39.3 107.4	2 57.2 -39.1 106.7	2 12.5 -39.0 106.1	1 27.6 -38.8 105.4
12°	3 46.7 -39.5 108.8	3 02.5 -39.4 108.1	2 18.1 -39.2 107.5	1 33.5 -38.9 106.8	0 48.8 -38.8 106.2
13°	3 07.2 -39.6 109.5	2 23.1 -39.3 108.9	1 38.9 -39.1 108.2	0 54.6 -39.0 107.6	0 10.0 -38.8 107.0
14°	2 27.6 -39.6 110.3	1 43.8 -39.4 109.6	0 59.8 -39.2 109.0	0 15.6 -39.0 108.4	-0 28.8 -38.7
15°	1 48.0 -39.6 111.0	1 04.4 -39.4 110.4	0 20.6 -39.2 109.7	-0 23.4 -39.0	-1 07.5 -38.8
16°	1 08.4 -39.7 111.8	0 25.0 -39.4 111.1	-0 18.6 -39.2	-1 02.4 -39.0	-1 46.3 -38.8
17°	0 28.7 -39.6 112.5	-0 14.4 -39.5	-0 57.8 -39.2	-1 41.4 -38.9	-2 25.1 -38.7
18°	-0 10.9 -39.7	-0 53.9 -39.3	-1 37.0 -39.1	-2 20.3 -38.9	-3 03.8 -38.7
19°	-0 50.6 -39.6	-1 33.2 -39.4	-2 16.1 -39.2	-2 59.2 -38.9	-3 42.5 -38.7
20°	-1 30.2 -39.6	-2 12.6 -39.4	-2 55.3 -39.1	-3 38.1 -38.9	-4 21.2 -38.6
21°	-2 09.8 -39.6	-2 52.0 -39.3	-3 34.4 -39.0	-4 17.0 -38.8	-4 59.8 -38.5
22°	-2 49.4 -39.6	-3 31.3 -39.3	-4 13.4 -39.1	-4 55.8 -38.7	-5 38.3 -38.5
23°	-3 29.0 -39.5	-4 10.6 -39.2	-4 52.5 -38.9	-5 34.5 -38.7	-6 16.8 -38.5
24°	-4 08.5 -39.5	-4 49.8 -39.2	-5 31.4 -38.9	-6 13.2 -38.7	-6 55.3 -38.3
25°	-4 48.0 -39.4	-5 29.0 -39.2	-6 10.3 -38.9	-6 51.9 -38.5	-7 33.6 -38.3
26°	-5 27.4 -39.4	-6 08.2 -39.1	-6 49.2 -38.8	-7 30.4 -38.5	-8 11.9 -38.2
27°	-6 06.8 -39.3	-6 47.3 -39.0	-7 28.0 -38.7	-8 08.9 -38.4	-8 50.1 -38.1
28°	-6 46.1 -39.2	-7 26.3 -38.9	-8 06.7 -38.6	-8 47.3 -38.3	-9 28.2 -37.9
29°	-7 25.3 -39.2	-8 05.2 -38.8	-8 45.3 -38.5	-9 25.6 -38.2	

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°	7 45.3 -38.1 96.3	6 59.0 -38.1 95.7	6 12.5 -38.0 95.1	5 26.1 -38.0 94.4	4 39.6 -37.9 93.8
1°	7 07.2 -38.2 97.1	6 20.9 -38.2 96.5	5 34.5 -38.0 95.8	4 48.1 -38.0 95.2	4 01.7 -38.0 94.6
2°	6 29.0 -38.3 97.9	5 42.7 -38.2 97.2	4 56.5 -38.2 96.6	4 10.1 -38.0 96.0	3 23.7 -38.0 95.3
3°	5 50.7 -38.4 98.7	5 04.5 -38.2 98.0	4 18.3 -38.2 97.4	3 32.1 -38.1 96.7	2 45.7 -38.0 96.1
4°	5 12.3 -38.4 99.4	4 26.3 -38.3 98.8	3 40.1 -38.2 98.2	2 54.0 -38.2 97.5	2 07.7 -38.0 96.9
5°	4 33.9 -38.5 100.2	3 48.0 -38.4 99.6	3 01.9 -38.2 98.9	2 15.8 -38.1 98.3	1 29.7 -38.1 97.7
6°	3 55.4 -38.5 101.0	3 09.6 -38.4 100.3	2 23.7 -38.3 99.7	1 37.7 -38.2 99.1	0 51.6 -38.1 98.4
7°	3 16.9 -38.5 101.7	2 31.2 -38.4 101.1	1 45.4 -38.3 100.5	0 59.5 -38.2 99.8	0 13.5 -38.0 99.2
8°	2 38.4 -38.6 102.5	1 52.8 -38.4 101.9	1 07.1 -38.3 101.2	0 21.3 -38.2 100.6	-0 24.5 -38.1
9°	1 59.8 -38.6 103.3	1 14.4 -38.5 102.6	0 28.8 -38.3 102.0	-0 16.9 -38.1	-1 02.6 -38.1
10°	1 21.2 -38.6 104.0	0 35.9 -38.4 103.4	-0 09.5 -38.3	-0 55.0 -38.2	-1 40.7 -38.0
11°	0 42.6 -38.6 104.8	-0 02.5 -38.5	-0 47.8 -38.3	-1 33.2 -38.2	-2 18.7 -38.0
12°	0 04.0 -38.6 105.6	-0 41.0 -38.5	-1 26.1 -38.3	-2 11.4 -38.1	-2 56.7 -38.0
13°	-0 34.6 -38.6	-1 19.5 -38.4	-2 04.4 -38.3	-2 49.5 -38.1	-3 34.7 -37.9
14°	-1 13.2 -38.6	-1 57.9 -38.4	-2 42.7 -38.2	-3 27.6 -38.1	-4 12.6 -37.9
15°	-1 51.8 -38.6	-2 36.3 -38.4	-3 20.9 -38.2	-4 05.7 -38.0	-4 50.5 -37.9
16°	-2 30.4 -38.6	-3 14.7 -38.3	-3 59.1 -38.2	-4 43.7 -37.9	-5 28.4 -37.8
17°	-3 09.0 -38.5	-3 53.0 -38.3	-4 37.3 -38.1	-5 21.6 -37.9	-6 06.2 -37.7
18°	-3 47.5 -38.5	-4 31.3 -38.3	-5 15.4 -38.0	-5 59.5 -37.9	-6 43.9 -37.6
19°	-4 26.0 -38.4	-5 09.6 -38.2	-5 53.4 -38.0	-6 37.4 -37.7	-7 21.5 -37.6
20°	-5 04.4 -38.4	-5 47.8 -38.1	-6 31.4 -37.9	-7 15.1 -37.7	-7 59.1 -37.4
21°	-5 42.8 -38.3	-6 25.9 -38.1	-7 09.3 -37.8	-7 52.8 -37.6	-8 36.5 -37.4
22°	-6 21.1 -38.2	-7 04.0 -38.0	-7 47.1 -37.8	-8 30.4 -37.5	-9 13.9 -37.3
23°	-6 59.3 -38.2	-7 42.0 -37.9	-8 24.9 -37.6	-9 07.9 -37.4	-9 51.2 -37.1
24°	-7 37.5 -38.1	-8 19.9 -37.8	-9 02.5 -37.6	-9 45.3 -37.3	
25°	-8 15.6 -38.0	-8 57.7 -37.7	-9 40.1 -37.4		
26°	-8 53.6 -37.9	-9 35.4 -37.6			
27°	-9 31.5 -37.7				
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 53.0 -37.8 93.2	3 06.5 -37.9 92.5	2 19.9 -37.8 91.9	1 33.3 -37.8 91.3	0 46.6 -37.7 90.6
1°	3 15.2 -37.9 93.9	2 28.6 -37.8 93.3	1 42.1 -37.9 92.7	0 55.5 -37.8 92.0	0 08.9 -37.8 91.4
2°	2 37.3 -38.0 94.7	1 50.8 -37.9 94.1	1 04.2 -37.8 93.4	0 17.7 -37.8 92.8	-0 28.9 -37.8
3°	1 59.3 -37.9 95.5	1 12.9 -37.9 94.8	0 26.4 -37.8 94.2	-0 20.1 -37.8	-1 06.7 -37.7
4°	1 21.4 -38.0 96.3	0 35.0 -37.9 95.6	-0 11.4 -37.9	-0 57.9 -37.8	-1 44.4 -37.7
5°	0 43.4 -38.0 97.0	-0 02.9 -37.9	-0 49.3 -37.8	-1 35.7 -37.7	-2 22.1 -37.8
6°	0 05.4 -37.9 97.8	-0 40.8 -37.9	-1 27.1 -37.8	-2 13.4 -37.8	-2 59.9 -37.6
7°	-0 32.5 -38.0	-1 18.7 -37.9	-2 04.9 -37.8	-2 51.2 -37.7	-3 37.5 -37.7
8°	-1 10.5 -38.0	-1 56.6 -37.8	-2 42.7 -37.7	-3 28.9 -37.7	-4 15.2 -37.5
9°	-1 48.5 -37.9	-2 34.4 -37.8	-3 20.4 -37.8	-4 06.6 -37.6	-4 52.7 -37.6
10°	-2 26.4 -37.9	-3 12.2 -37.8	-3 58.2 -37.6	-4 44.2 -37.5	-5 30.3 -37.4
11°	-3 04.3 -37.9	-3 50.0 -37.8	-4 35.8 -37.7	-5 21.7 -37.6	-6 07.7 -37.4
12°	-3 42.2 -37.8	-4 27.8 -37.7	-5 13.5 -37.5	-5 59.3 -37.4	-6 45.1 -37.4
13°	-4 20.0 -37.8	-5 05.5 -37.6	-5 51.0 -37.5	-6 36.7 -37.4	-7 22.5 -37.2
14°	-4 57.8 -37.8	-5 43.1 -37.6	-6 28.5 -37.5	-7 14.1 -37.3	-7 59.7 -37.1
15°	-5 35.6 -37.6	-6 20.7 -37.5	-7 06.0 -37.3	-7 51.4 -37.2	-8 36.8 -37.1
16°	-6 13.2 -37.6	-6 58.2 -37.4	-7 43.3 -37.3	-8 28.6 -37.1	-9 13.9 -36.9
17°	-6 50.8 -37.6	-7 35.6 -37.4	-8 20.6 -37.2	-9 05.7 -37.0	-9 50.8 -36.9
18°	-7 28.4 -37.4	-8 13.0 -37.2	-8 57.8 -37.0	-9 42.7 -36.8	
19°	-8 05.8 -37.4	-8 50.2 -37.2	-9 34.8 -37.0		
20°	-8 43.2 -37.2	-9 27.4 -37.0			
21°	-9 20.4 -37.2				
22°	-9 57.6 -37.0				
23°					
24°					
25°					
26°					
27°					
28°					
29°					

Latitude 39°

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 -37.8 90.0	-0 46.6 -37.8			
1°	-0 37.8 -37.7	-1 24.4 -37.7			
2°	-1 15.5 -37.7	-2 02.1 -37.7			
3°	-1 53.2 -37.8	-2 39.8 -37.7			
4°	-2 31.0 -37.7	-3 17.5 -37.7			
5°	-3 08.7 -37.6	-3 55.2 -37.6			
6°	-3 46.3 -37.6	-4 32.8 -37.6			
7°	-4 23.9 -37.6	-5 10.4 -37.5			
8°	-5 01.5 -37.5	-5 47.9 -37.4			
9°	-5 39.0 -37.4	-6 25.3 -37.4			
10°	-6 16.4 -37.4	-7 02.7 -37.2			
11°	-6 53.8 -37.3	-7 39.9 -37.2			
12°	-7 31.1 -37.2	-8 17.1 -37.1			
13°	-8 08.3 -37.1	-8 54.2 -37.1			
14°	-8 45.4 -37.0	-9 31.3 -36.8			
15°	-9 22.4 -37.0				
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	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
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 The data on this page is believed to be accurate but no warranty is given for it's correctness. Use it only for training and exercising!