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Latitude 10° - 19°
Declination CONTRARY name to Latitude

Sight-Reduction Tables for Latitude 10° - 19°

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 09:20:27 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°	80 00.0 -60.0 180.0	79 57.0 -59.7 174.3	79 48.2 -58.9 168.6	79 33.8 -57.7 163.2	79 14.2 -56.1 158.1
1°	79 00.0 -60.0 180.0	78 57.3 -59.8 174.8	78 49.3 -59.1 169.6	78 36.1 -58.1 164.6	78 18.1 -56.7 159.9
2°	78 00.0 -60.0 180.0	77 57.5 -59.8 175.2	77 50.2 -59.3 170.5	77 38.0 -58.3 165.9	77 21.4 -57.2 161.4
3°	77 00.0 -60.0 180.0	76 57.7 -59.8 175.6	76 50.9 -59.4 171.2	76 39.7 -58.6 166.9	76 24.2 -57.6 162.8
4°	76 00.0 -60.0 180.0	75 57.9 -59.9 175.9	75 51.5 -59.4 171.8	75 41.1 -58.8 167.8	75 26.6 -57.8 163.9
5°	75 00.0 -60.0 180.0	74 58.0 -59.9 176.2	74 52.1 -59.5 172.3	74 42.3 -58.9 168.6	74 28.8 -58.1 164.9
6°	74 00.0 -60.0 180.0	73 58.1 -59.8 176.4	73 52.6 -59.6 172.8	73 43.4 -59.0 169.3	73 30.7 -58.3 165.9
7°	73 00.0 -60.0 180.0	72 58.3 -60.0 176.6	72 53.0 -59.6 173.2	72 44.4 -59.2 169.9	72 32.4 -58.5 166.7
8°	72 00.0 -60.0 180.0	71 58.3 -59.9 176.8	71 53.4 -59.6 173.6	71 45.2 -59.2 170.5	71 33.9 -58.7 167.4
9°	71 00.0 -60.0 180.0	70 58.4 -59.9 177.0	70 53.8 -59.7 174.0	70 46.0 -59.3 171.0	70 35.2 -58.7 168.0
10°	70 00.0 -60.0 180.0	69 58.5 -59.9 177.1	69 54.1 -59.7 174.3	69 46.7 -59.3 171.4	69 36.5 -58.9 168.6
11°	69 00.0 -60.0 180.0	68 58.6 -59.9 177.3	68 54.4 -59.8 174.5	68 47.4 -59.5 171.8	68 37.6 -59.0 169.2
12°	68 00.0 -60.0 180.0	67 58.7 -60.0 177.4	67 54.6 -59.7 174.8	67 47.9 -59.4 172.2	67 38.6 -59.0 169.7
13°	67 00.0 -60.0 180.0	66 58.7 -59.9 177.5	66 54.9 -59.8 175.0	66 48.5 -59.5 172.6	66 39.6 -59.1 170.1
14°	66 00.0 -60.0 180.0	65 58.8 -60.0 177.6	65 55.1 -59.8 175.2	65 49.0 -59.6 172.9	65 40.5 -59.2 170.5
15°	65 00.0 -60.0 180.0	64 58.8 -59.9 177.7	64 55.3 -59.8 175.4	64 49.4 -59.5 173.2	64 41.3 -59.3 170.9
16°	64 00.0 -60.0 180.0	63 58.9 -60.0 177.8	63 55.5 -59.8 175.6	63 49.9 -59.6 173.4	63 42.0 -59.3 171.3
17°	63 00.0 -60.0 180.0	62 58.9 -59.9 177.9	62 55.7 -59.9 175.8	62 50.3 -59.7 173.7	62 42.7 -59.3 171.6
18°	62 00.0 -60.0 180.0	61 59.0 -60.0 178.0	61 55.8 -59.8 176.0	61 50.6 -59.6 173.9	61 43.4 -59.4 171.9
19°	61 00.0 -60.0 180.0	60 59.0 -60.0 178.1	60 56.0 -59.9 176.1	60 51.0 -59.7 174.2	60 44.0 -59.4 172.2
20°	60 00.0 -60.0 180.0	59 59.0 -59.9 178.1	59 56.1 -59.8 176.2	59 51.3 -59.7 174.4	59 44.6 -59.5 172.5
21°	59 00.0 -60.0 180.0	58 59.1 -60.0 178.2	58 56.3 -59.9 176.4	58 51.6 -59.7 174.6	58 45.1 -59.5 172.8
22°	58 00.0 -60.0 180.0	57 59.1 -60.0 178.3	57 56.4 -59.9 176.5	57 51.9 -59.7 174.8	57 45.6 -59.5 173.0
23°	57 00.0 -60.0 180.0	56 59.1 -59.9 178.3	56 56.5 -59.9 176.6	56 52.2 -59.8 174.9	56 46.1 -59.5 173.3
24°	56 00.0 -60.0 180.0	55 59.2 -60.0 178.4	55 56.6 -59.9 176.7	55 52.4 -59.7 175.1	55 46.6 -59.6 173.5
25°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.4	54 56.7 -59.9 176.8	54 52.7 -59.8 175.3	54 47.0 -59.6 173.7
26°	54 00.0 -60.0 180.0	53 59.2 -60.0 178.5	53 56.8 -59.9 176.9	53 52.9 -59.8 175.4	53 47.4 -59.6 173.9
27°	53 00.0 -60.0 180.0	52 59.2 -59.9 178.5	52 56.9 -59.9 177.0	52 53.1 -59.7 175.6	52 47.8 -59.6 174.1
28°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.6	51 57.0 -59.9 177.1	51 53.4 -59.8 175.7	51 48.2 -59.6 174.3
29°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.6	50 57.1 -59.9 177.2	50 53.6 -59.8 175.8	50 48.6 -59.7 174.5

Dec	LHA 005° / 355°	LHA 006° / 354°	LHA 007° / 353°	LHA 008° / 352°	LHA 009° / 351°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	78 49.9 -54.3 153.3	78 21.2 -52.2 148.8	77 48.8 -50.1 144.7	77 13.2 -48.0 141.0	76 34.6 -45.8 137.6
1°	77 55.6 -55.1 155.4	77 29.0 -53.3 151.2	76 58.7 -51.3 147.3	76 25.2 -49.4 143.7	75 48.8 -47.4 140.3
2°	77 00.5 -55.8 157.2	76 35.7 -54.2 153.2	76 07.4 -52.5 149.5	75 35.8 -50.6 146.0	75 01.4 -48.8 142.8
3°	76 04.7 -56.3 158.8	75 41.5 -54.8 155.0	75 14.9 -53.3 151.4	74 45.2 -51.7 148.1	74 12.6 -50.1 145.0
4°	75 08.4 -56.7 160.2	74 46.7 -55.5 156.6	74 21.6 -54.1 153.2	73 53.5 -52.6 150.0	73 22.5 -51.0 146.9
5°	74 11.7 -57.1 161.4	73 51.2 -56.0 158.0	73 27.5 -54.7 154.8	73 00.9 -53.4 151.7	72 31.5 -51.9 148.7
6°	73 14.6 -57.5 162.5	72 55.2 -56.4 159.3	72 32.8 -55.2 156.2	72 07.5 -54.0 153.2	71 39.6 -52.7 150.4
7°	72 17.1 -57.6 163.5	71 58.8 -56.7 160.4	71 37.6 -55.7 157.4	71 13.5 -54.5 154.6	70 46.9 -53.3 151.9
8°	71 19.5 -58.0 164.4	71 02.1 -57.1 161.4	70 41.9 -56.1 158.6	70 19.0 -55.1 155.8	69 53.6 -54.0 153.2
9°	70 21.5 -58.1 165.2	70 05.0 -57.3 162.4	69 45.8 -56.5 159.6	69 23.9 -55.4 157.0	68 59.6 -54.4 154.5
10°	69 23.4 -58.2 165.9	69 07.7 -57.6 163.2	68 49.3 -56.7 160.6	68 28.5 -55.9 158.1	68 05.2 -54.8 155.6
11°	68 25.2 -58.4 166.5	68 10.1 -57.7 164.0	67 52.6 -57.0 161.5	67 32.6 -56.1 159.0	67 10.4 -55.3 156.7
12°	67 26.8 -58.6 167.2	67 12.4 -57.9 164.7	66 55.6 -57.2 162.3	66 36.5 -56.5 159.9	66 15.1 -55.6 157.7
13°	66 28.2 -58.6 167.7	66 14.5 -58.1 165.4	65 58.4 -57.5 163.0	65 40.0 -56.7 160.8	65 19.5 -55.9 158.6
14°	65 29.6 -58.8 168.2	65 16.4 -58.2 166.0	65 00.9 -57.6 163.7	64 43.3 -56.9 161.6	64 23.6 -56.2 159.4
15°	64 30.8 -58.8 168.7	64 18.2 -58.4 166.5	64 03.3 -57.8 164.4	63 46.4 -57.2 162.3	63 27.4 -56.4 160.2
16°	63 32.0 -58.9 169.2	63 19.8 -58.4 167.1	63 05.5 -57.9 165.0	62 49.2 -57.3 163.0	62 31.0 -56.7 161.0
17°	62 33.1 -59.0 169.6	62 21.4 -58.6 167.6	62 07.6 -58.0 165.6	61 51.9 -57.5 163.6	61 34.3 -56.9 161.7
18°	61 34.1 -59.1 170.0	61 22.8 -58.6 168.0	61 09.6 -58.2 166.1	60 54.4 -57.6 164.2	60 37.4 -57.0 162.3
19°	60 35.0 -59.1 170.3	60 24.2 -58.8 168.5	60 11.4 -58.3 166.6	59 56.8 -57.8 164.8	59 40.4 -57.3 163.0
20°	59 35.9 -59.1 170.7	59 25.4 -58.7 168.9	59 13.1 -58.3 167.1	58 59.0 -57.9 165.3	58 43.1 -57.3 163.6
21°	58 36.8 -59.2 171.0	58 26.7 -58.9 169.3	58 14.8 -58.5 167.5	58 01.1 -58.0 165.8	57 45.8 -57.5 164.1
22°	57 37.6 -59.3 171.3	57 27.8 -58.9 169.6	57 16.3 -58.6 167.9	57 03.1 -58.1 166.3	56 48.3 -57.7 164.6
23°	56 38.3 -59.3 171.6	56 28.9 -59.0 170.0	56 17.7 -58.6 168.3	56 05.0 -58.2 166.7	55 50.6 -57.7 165.1
24°	55 39.0 -59.3 171.9	55 29.9 -59.0 170.3	55 19.1 -58.7 168.7	55 06.8 -58.3 167.2	54 52.9 -57.9 165.6
25°	54 39.7 -59.3 172.2	54 30.9 -59.1 170.6	54 20.4 -58.7 169.1	54 08.5 -58.4 167.6	53 55.0 -57.9 166.1
26°	53 40.4 -59.4 172.4	53 31.8 -59.1 170.9	53 21.7 -58.8 169.4	53 10.1 -58.4 168.0	52 57.1 -58.1 166.5
27°	52 41.0 -59.4 172.6	52 32.7 -59.2 171.2	52 22.9 -58.9 169.8	52 11.7 -58.5 168.3	51 59.0 -58.1 166.9
28°	51 41.6 -59.4 172.9	51 33.5 -59.2 171.5	51 24.0 -58.9 170.1	51 13.2 -58.6 168.7	51 00.9 -58.2 167.3
29°	50 42.2 -59.5 173.1	50 34.3 -59.2 171.7	50 25.1 -58.9 170.4	50 14.6 -58.7 169.0	50 02.7 -58.3 167.7

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°	75 53.6 -43.7 134.6	75 10.5 -41.7 131.8	74 25.6 -39.9 129.2	73 39.1 -38.1 126.9	72 51.2 -36.4 124.9
1°	75 09.9 -45.5 137.3	74 28.8 -43.6 134.5	73 45.7 -41.7 132.0	73 01.0 -40.0 129.6	72 14.8 -38.4 127.5
2°	74 24.4 -47.0 139.8	73 45.2 -45.2 137.0	73 04.0 -43.5 134.5	72 21.0 -41.9 132.1	71 36.4 -40.2 130.0
3°	73 37.4 -48.3 142.0	73 00.0 -46.7 139.3	72 20.5 -45.0 136.8	71 39.1 -43.3 134.5	70 56.2 -41.8 132.3
4°	72 49.1 -49.5 144.1	72 13.3 -47.9 141.4	71 35.5 -46.3 138.9	70 55.8 -44.8 136.6	70 14.4 -43.3 134.5
5°	71 59.6 -50.4 146.0	71 25.4 -48.9 143.4	70 49.2 -47.5 140.9	70 11.0 -46.0 138.6	69 31.1 -44.6 136.5
6°	71 09.2 -51.4 147.7	70 36.5 -50.0 145.1	70 01.7 -48.5 142.7	69 25.0 -47.1 140.5	68 46.5 -45.7 138.3
7°	70 17.8 -52.0 149.3	69 46.5 -50.7 146.8	69 13.2 -49.5 144.4	68 37.9 -48.2 142.2	68 00.8 -46.8 140.1
8°	69 25.8 -52.8 150.7	68 55.8 -51.5 148.3	68 23.7 -50.2 146.0	67 49.7 -49.0 143.8	67 14.0 -47.7 141.8
9°	68 33.0 -53.3 152.0	68 04.3 -52.2 149.7	67 33.5 -51.0 147.5	67 00.7 -49.8 145.3	66 26.3 -48.6 143.3
10°	67 39.7 -53.8 153.3	67 12.1 -52.8 151.0	66 42.5 -51.7 148.8	66 10.9 -50.5 146.7	65 37.7 -49.4 144.7
11°	66 45.9 -54.3 154.4	66 19.3 -53.2 152.2	65 50.8 -52.2 150.1	65 20.4 -51.1 148.0	64 48.3 -50.1 146.1
12°	65 51.6 -54.7 155.5	65 26.1 -53.8 153.3	64 58.6 -52.8 151.3	64 29.3 -51.8 149.3	63 58.2 -50.6 147.4
13°	64 56.9 -55.1 156.4	64 32.3 -54.2 154.4	64 05.8 -53.2 152.4	63 37.5 -52.2 150.4	63 07.6 -51.3 148.6
14°	64 01.8 -55.4 157.4	63 38.1 -54.5 155.4	63 12.6 -53.7 153.4	62 45.3 -52.8 151.5	62 16.3 -51.8 149.7
15°	63 06.4 -55.6 158.2	62 43.6 -54.9 156.3	62 18.9 -54.0 154.4	61 52.5 -53.1 152.6	61 24.5 -52.3 150.8
16°	62 10.8 -56.0 159.0	61 48.7 -55.2 157.2	61 24.9 -54.4 155.3	60 59.4 -53.6 153.5	60 32.2 -52.7 151.8
17°	61 14.8 -56.2 159.8	60 53.5 -55.5 158.0	60 30.5 -54.7 156.2	60 05.8 -53.9 154.4	59 39.5 -53.1 152.7
18°	60 18.6 -56.4 160.5	59 58.0 -55.7 158.7	59 35.8 -55.0 157.0	59 11.9 -54.3 155.3	58 46.4 -53.4 153.7
19°	59 22.2 -56.6 161.2	59 02.3 -56.0 159.5	58 40.8 -55.3 157.8	58 17.6 -54.5 156.1	57 53.0 -53.8 154.5
20°	58 25.6 -56.8 161.8	58 06.3 -56.1 160.2	57 45.5 -55.5 158.5	57 23.1 -54.9 156.9	56 59.2 -54.2 155.3
21°	57 28.8 -57.0 162.4	57 10.2 -56.4 160.8	56 50.0 -55.8 159.2	56 28.2 -55.0 157.7	56 05.0 -54.3 156.1
22°	56 31.8 -57.1 163.0	56 13.8 -56.6 161.4	55 54.2 -55.9 159.9	55 33.2 -55.4 158.4	55 10.7 -54.7 156.9
23°	55 34.7 -57.3 163.6	55 17.2 -56.7 162.0	54 58.3 -56.2 160.5	54 37.8 -55.5 159.0	54 16.0 -54.9 157.6
24°	54 37.4 -57.3 164.1	54 20.5 -56.9 162.6	54 02.1 -56.3 161.1	53 42.3 -55.7 159.7	53 21.1 -55.1 158.3
25°	53 40.1 -57.6 164.6	53 23.6 -57.0 163.1	53 05.8 -56.5 161.7	52 46.6 -56.0 160.3	52 26.0 -55.4 158.9
26°	52 42.5 -57.6 165.1	52 26.6 -57.1 163.7	52 09.3 -56.6 162.3	51 50.6 -56.1 160.9	51 30.6 -55.5 159.6
27°	51 44.9 -57.7 165.5	51 29.5 -57.3 164.2	51 12.7 -56.8 162.8	50 54.5 -56.2 161.5	50 35.1 -55.7 160.2
28°	50 47.2 -57.8 166.0	50 32.2 -57.4 164.6	50 15.9 -56.9 163.3	49 58.3 -56.4 162.0	49 39.4 -55.9 160.7
29°	49 49.4 -57.9 166.4	49 34.8 -57.4 165.1	49 19.0 -57.0 163.8	49 01.9 -56.5 162.5	48 43.5 -56.0 161.3

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°	72 02.2 -34.9 122.9	71 12.1 -33.4 121.2	70 21.1 -32.0 119.6	69 29.4 -30.8 118.1	68 36.9 -29.6 116.8
1°	71 27.3 -36.8 125.5	70 38.7 -35.4 123.7	69 49.1 -34.0 122.1	68 58.6 -32.7 120.5	68 07.3 -31.5 119.1
2°	70 50.5 -38.7 128.0	70 03.3 -37.2 126.1	69 15.1 -35.9 124.4	68 25.9 -34.6 122.9	67 35.8 -33.3 121.4
3°	70 11.8 -40.3 130.3	69 26.1 -38.9 128.4	68 39.2 -37.5 126.7	67 51.3 -36.2 125.0	67 02.5 -35.0 123.5
4°	69 31.5 -41.9 132.4	68 47.2 -40.4 130.5	68 01.7 -39.1 128.8	67 15.1 -37.8 127.1	66 27.5 -36.5 125.6
5°	68 49.6 -43.1 134.4	68 06.8 -41.8 132.6	67 22.6 -40.4 130.8	66 37.3 -39.2 129.1	65 51.0 -38.0 127.6
6°	68 06.5 -44.4 136.3	67 25.0 -43.1 134.5	66 42.2 -41.8 132.7	65 58.1 -40.5 131.0	65 13.0 -39.3 129.4
7°	67 22.1 -45.5 138.1	66 41.9 -44.2 136.2	66 00.4 -42.9 134.5	65 17.6 -41.7 132.8	64 33.7 -40.5 131.2
8°	66 36.6 -46.5 139.8	65 57.7 -45.2 137.9	65 17.5 -44.0 136.2	64 35.9 -42.8 134.5	63 53.2 -41.7 132.9
9°	65 50.1 -47.3 141.4	65 12.5 -46.2 139.5	64 33.5 -45.1 137.8	63 53.1 -43.8 136.1	63 11.5 -42.7 134.5
10°	65 02.8 -48.3 142.8	64 26.3 -47.1 141.0	63 48.4 -45.9 139.3	63 09.3 -44.8 137.6	62 28.8 -43.6 136.1
11°	64 14.5 -48.9 144.2	63 39.2 -47.8 142.4	63 02.5 -46.7 140.7	62 24.5 -45.7 139.1	61 45.2 -44.6 137.5
12°	63 25.6 -49.7 145.5	62 51.4 -48.6 143.8	62 15.8 -47.5 142.1	61 38.8 -46.4 140.5	61 00.6 -45.4 138.9
13°	62 35.9 -50.2 146.8	62 02.8 -49.2 145.0	61 28.3 -48.2 143.4	60 52.4 -47.2 141.8	60 15.2 -46.2 140.3
14°	61 45.7 -50.8 147.9	61 13.6 -49.9 146.2	60 40.1 -48.9 144.6	60 05.2 -47.9 143.0	59 29.0 -46.8 141.5
15°	60 54.9 -51.4 149.1	60 23.7 -50.4 147.4	59 51.2 -49.4 145.8	59 17.3 -48.5 144.2	58 42.2 -47.6 142.7
16°	60 03.5 -51.8 150.1	59 33.3 -50.9 148.5	59 01.8 -50.0 146.9	58 28.8 -49.0 145.4	57 54.6 -48.1 143.9
17°	59 11.7 -52.2 151.1	58 42.4 -51.4 149.5	58 11.8 -50.5 148.0	57 39.8 -49.6 146.5	57 06.5 -48.7 145.0
18°	58 19.5 -52.7 152.0	57 51.0 -51.8 150.5	57 21.3 -51.0 149.0	56 50.2 -50.1 147.5	56 17.8 -49.2 146.1
19°	57 26.8 -53.0 152.9	56 59.2 -52.2 151.4	56 30.3 -51.4 149.9	56 00.1 -50.6 148.5	55 28.6 -49.8 147.1
20°	56 33.8 -53.4 153.8	56 07.0 -52.6 152.3	55 38.9 -51.8 150.9	55 09.5 -51.0 149.5	54 38.8 -50.1 148.1
21°	55 40.4 -53.7 154.6	55 14.4 -52.9 153.2	54 47.1 -52.2 151.7	54 18.5 -51.4 150.4	53 48.7 -50.6 149.0
22°	54 46.7 -53.9 155.4	54 21.5 -53.3 154.0	53 54.9 -52.5 152.6	53 27.1 -51.7 151.2	52 58.1 -51.0 149.9
23°	53 52.8 -54.2 156.2	53 28.2 -53.5 154.8	53 02.4 -52.8 153.4	52 35.4 -52.1 152.1	52 07.1 -51.3 150.8
24°	52 58.6 -54.5 156.9	52 34.7 -53.8 155.5	52 09.6 -53.1 154.2	51 43.3 -52.5 152.9	51 15.8 -51.7 151.6
25°	52 04.1 -54.7 157.6	51 40.9 -54.1 156.2	51 16.5 -53.4 154.9	50 50.8 -52.7 153.7	50 24.1 -52.0 152.4
26°	51 09.4 -55.0 158.2	50 46.8 -54.3 156.9	50 23.1 -53.7 155.7	49 58.1 -53.0 154.4	49 32.1 -52.4 153.2
27°	50 14.4 -55.1 158.9	49 52.5 -54.5 157.6	49 29.4 -53.9 156.4	49 05.1 -53.2 155.1	48 39.7 -52.6 153.9
28°	49 19.3 -55.3 159.5	48 58.0 -54.7 158.2	48 35.5 -54.1 157.0	48 11.9 -53.5 155.8	47 47.1 -52.8 154.7
29°	48 24.0 -55.5 160.1	48 03.3 -55.0 158.9	47 41.4 -54.4 157.7	47 18.4 -53.8 156.5	46 54.3 -53.1 155.4

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°	67 43.9 -28.5 115.5	66 50.3 -27.5 114.3	65 56.2 -26.5 113.3	65 01.7 -25.6 112.2	64 06.9 -24.8 111.3
1°	67 15.4 -30.4 117.8	66 22.8 -29.3 116.6	65 29.7 -28.3 115.4	64 36.1 -27.3 114.4	63 42.1 -26.5 113.4
2°	66 45.0 -32.1 120.0	65 53.5 -31.0 118.7	65 01.4 -30.0 117.5	64 08.8 -29.1 116.4	63 15.6 -28.1 115.4
3°	66 12.9 -33.9 122.1	65 22.5 -32.7 120.8	64 31.4 -31.7 119.6	63 39.7 -30.6 118.4	62 47.5 -29.7 117.3
4°	65 39.0 -35.3 124.2	64 49.8 -34.3 122.8	63 59.7 -33.1 121.5	63 09.1 -32.2 120.3	62 17.8 -31.2 119.2
5°	65 03.7 -36.8 126.1	64 15.5 -35.6 124.7	63 26.6 -34.6 123.4	62 36.9 -33.6 122.2	61 46.6 -32.6 121.0
6°	64 26.9 -38.1 127.9	63 39.9 -37.1 126.5	62 52.0 -36.0 125.2	62 03.3 -34.9 124.0	61 14.0 -33.9 122.8
7°	63 48.8 -39.4 129.7	63 02.8 -38.2 128.3	62 16.0 -37.1 127.0	61 28.4 -36.1 125.7	60 40.1 -35.2 124.5
8°	63 09.4 -40.5 131.4	62 24.6 -39.4 130.0	61 38.9 -38.4 128.6	60 52.3 -37.3 127.4	60 04.9 -36.3 126.1
9°	62 28.9 -41.6 133.0	61 45.2 -40.5 131.6	61 00.5 -39.4 130.2	60 15.0 -38.5 128.9	59 28.6 -37.4 127.7
10°	61 47.3 -42.6 134.6	61 04.7 -41.6 133.1	60 21.1 -40.5 131.8	59 36.5 -39.4 130.5	58 51.2 -38.5 129.2
11°	61 04.7 -43.5 136.0	60 23.1 -42.4 134.6	59 40.6 -41.4 133.3	58 57.1 -40.4 132.0	58 12.7 -39.4 130.7
12°	60 21.2 -44.4 137.4	59 40.7 -43.3 136.0	58 59.2 -42.4 134.7	58 16.7 -41.4 133.4	57 33.3 -40.4 132.1
13°	59 36.8 -45.1 138.8	58 57.4 -44.2 137.4	58 16.8 -43.1 136.0	57 35.3 -42.2 134.7	56 52.9 -41.2 133.5
14°	58 51.7 -45.9 140.1	58 13.2 -44.9 138.7	57 33.7 -44.0 137.3	56 53.1 -42.9 136.1	56 11.7 -42.1 134.8
15°	58 05.8 -46.6 141.3	57 28.3 -45.6 139.9	56 49.7 -44.6 138.6	56 10.2 -43.8 137.3	55 29.6 -42.8 136.1
16°	57 19.2 -47.2 142.5	56 42.7 -46.3 141.1	56 05.1 -45.4 139.8	55 26.4 -44.4 138.5	54 46.8 -43.5 137.3
17°	56 32.0 -47.8 143.6	55 56.4 -46.9 142.3	55 19.7 -46.0 141.0	54 42.0 -45.1 139.7	54 03.3 -44.2 138.5
18°	55 44.2 -48.3 144.7	55 09.5 -47.4 143.4	54 33.7 -46.5 142.1	53 56.9 -45.7 140.8	53 19.1 -44.8 139.6
19°	54 55.9 -48.9 145.7	54 22.1 -48.0 144.4	53 47.2 -47.2 143.2	53 11.2 -46.2 141.9	52 34.3 -45.4 140.7
20°	54 07.0 -49.3 146.7	53 34.1 -48.5 145.5	53 00.0 -47.6 144.2	52 25.0 -46.9 143.0	51 48.9 -46.0 141.8
21°	53 17.7 -49.8 147.7	52 45.6 -49.0 146.4	52 12.4 -48.2 145.2	51 38.1 -47.3 144.0	51 02.9 -46.5 142.8
22°	52 27.9 -50.2 148.6	51 56.6 -49.4 147.4	51 24.2 -48.6 146.2	50 50.8 -47.8 145.0	50 16.4 -47.0 143.8
23°	51 37.7 -50.6 149.5	51 07.2 -49.8 148.3	50 35.6 -49.0 147.1	50 03.0 -48.2 145.9	49 29.4 -47.4 144.8
24°	50 47.1 -50.9 150.4	50 17.4 -50.2 149.2	49 46.6 -49.5 148.0	49 14.8 -48.7 146.9	48 42.0 -47.9 145.7
25°	49 56.2 -51.3 151.2	49 27.2 -50.6 150.0	48 57.1 -49.8 148.9	48 26.1 -49.1 147.7	47 54.1 -48.4 146.6
26°	49 04.9 -51.7 152.0	48 36.6 -50.9 150.8	48 07.3 -50.2 149.7	47 37.0 -49.4 148.6	47 05.7 -48.7 147.5
27°	48 13.2 -51.9 152.8	47 45.7 -51.2 151.6	47 17.1 -50.5 150.5	46 47.6 -49.8 149.4	46 17.0 -49.0 148.4
28°	47 21.3 -52.2 153.5	46 54.5 -51.5 152.4	46 26.6 -50.8 151.3	45 57.8 -50.2 150.2	45 28.0 -49.5 149.2
29°	46 29.1 -52.4 154.2	46 03.0 -51.8 153.2	45 35.8 -51.2 152.1	45 07.6 -50.4 151.0	44 38.5 -49.7 150.0

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°	63 11.6 -23.9 110.4	62 16.1 -23.2 109.6	61 20.3 -22.5 108.8	60 24.3 -21.9 108.1	59 28.0 -21.3 107.4
1°	62 47.7 -25.7 112.4	61 52.9 -24.9 111.6	60 57.8 -24.2 110.7	60 02.4 -23.5 110.0	59 06.7 -22.8 109.2
2°	62 22.0 -27.3 114.4	61 28.0 -26.4 113.5	60 33.6 -25.6 112.6	59 38.9 -24.9 111.8	58 43.9 -24.2 111.0
3°	61 54.7 -28.8 116.3	61 01.6 -28.0 115.4	60 08.0 -27.2 114.4	59 14.0 -26.4 113.6	58 19.7 -25.7 112.8
4°	61 25.9 -30.2 118.2	60 33.6 -29.4 117.2	59 40.8 -28.6 116.2	58 47.6 -27.8 115.3	57 54.0 -27.0 114.5
5°	60 55.7 -31.7 120.0	60 04.2 -30.7 118.9	59 12.2 -29.8 117.9	58 19.8 -29.1 117.0	57 27.0 -28.3 116.2
6°	60 24.0 -32.9 121.7	59 33.5 -32.1 120.6	58 42.4 -31.2 119.6	57 50.7 -30.3 118.7	56 58.7 -29.5 117.8
7°	59 51.1 -34.2 123.4	59 01.4 -33.3 122.3	58 11.2 -32.4 121.3	57 20.4 -31.5 120.3	56 29.2 -30.8 119.4
8°	59 16.9 -35.4 125.0	58 28.1 -34.4 123.9	57 38.8 -33.5 122.8	56 48.9 -32.7 121.9	55 58.4 -31.8 120.9
9°	58 41.5 -36.5 126.6	57 53.7 -35.5 125.4	57 05.3 -34.7 124.4	56 16.2 -33.8 123.4	55 26.6 -32.9 122.4
10°	58 05.0 -37.5 128.1	57 18.2 -36.6 126.9	56 30.6 -35.7 125.9	55 42.4 -34.8 124.9	54 53.7 -34.0 123.9
11°	57 27.5 -38.5 129.5	56 41.6 -37.6 128.4	55 54.9 -36.6 127.3	55 07.6 -35.7 126.3	54 19.7 -34.9 125.3
12°	56 49.0 -39.4 130.9	56 04.0 -38.5 129.8	55 18.3 -37.6 128.7	54 31.9 -36.8 127.7	53 44.8 -35.9 126.7
13°	56 09.6 -40.3 132.3	55 25.5 -39.3 131.2	54 40.7 -38.5 130.1	53 55.1 -37.6 129.0	53 08.9 -36.7 128.0
14°	55 29.3 -41.1 133.6	54 46.2 -40.2 132.5	54 02.2 -39.3 131.4	53 17.5 -38.4 130.4	52 32.2 -37.6 129.3
15°	54 48.2 -41.9 134.9	54 06.0 -41.0 133.8	53 22.9 -40.1 132.7	52 39.1 -39.2 131.6	51 54.6 -38.4 130.6
16°	54 06.3 -42.6 136.1	53 25.0 -41.8 135.0	52 42.8 -40.9 133.9	51 59.9 -40.0 132.9	51 16.2 -39.2 131.9
17°	53 23.7 -43.3 137.3	52 43.2 -42.4 136.2	52 01.9 -41.5 135.1	51 19.9 -40.7 134.1	50 37.0 -39.8 133.1
18°	52 40.4 -43.9 138.5	52 00.8 -43.1 137.4	51 20.4 -42.3 136.3	50 39.2 -41.4 135.2	49 57.2 -40.6 134.2
19°	51 56.5 -44.6 139.6	51 17.7 -43.7 138.5	50 38.1 -42.8 137.4	49 57.8 -42.1 136.4	49 16.6 -41.2 135.4
20°	51 11.9 -45.1 140.7	50 34.0 -44.3 139.6	49 55.3 -43.5 138.5	49 15.7 -42.6 137.5	48 35.4 -41.8 136.5
21°	50 26.8 -45.7 141.7	49 49.7 -44.8 140.6	49 11.8 -44.0 139.6	48 33.1 -43.2 138.5	47 53.6 -42.4 137.5
22°	49 41.1 -46.2 142.7	49 04.9 -45.4 141.6	48 27.8 -44.6 140.6	47 49.9 -43.8 139.6	47 11.2 -43.0 138.6
23°	48 54.9 -46.7 143.7	48 19.5 -45.9 142.6	47 43.2 -45.1 141.6	47 06.1 -44.3 140.6	46 28.2 -43.5 139.6
24°	48 08.2 -47.1 144.7	47 33.6 -46.3 143.6	46 58.1 -45.5 142.6	46 21.8 -44.8 141.6	45 44.7 -44.0 140.6
25°	47 21.1 -47.5 145.6	46 47.3 -46.8 144.5	46 12.6 -46.1 143.5	45 37.0 -45.2 142.5	45 00.7 -44.5 141.6
26°	46 33.6 -48.0 146.5	46 00.5 -47.2 145.4	45 26.5 -46.4 144.4	44 51.8 -45.7 143.5	44 16.2 -45.0 142.5
27°	45 45.6 -48.3 147.3	45 13.3 -47.6 146.3	44 40.1 -46.9 145.3	44 06.1 -46.2 144.4	43 31.2 -45.3 143.4
28°	44 57.3 -48.7 148.2	44 25.7 -48.0 147.2	43 53.2 -47.2 146.2	43 19.9 -46.5 145.3	42 45.9 -45.8 144.3
29°	44 08.6 -49.1 149.0	43 37.7 -48.4 148.0	43 06.0 -47.7 147.1	42 33.4 -46.9 146.1	42 00.1 -46.2 145.2

Latitude 10°

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°	58 31.5 -20.7 106.7	57 34.8 -20.1 106.1	56 38.0 -19.7 105.5	55 41.0 -19.2 105.0	54 43.8 -18.7 104.4
1°	58 10.8 -22.2 108.5	57 14.7 -21.6 107.9	56 18.3 -21.0 107.2	55 21.8 -20.5 106.6	54 25.1 -20.0 106.1
2°	57 48.6 -23.6 110.3	56 53.1 -23.0 109.6	55 57.3 -22.4 108.9	55 01.3 -21.8 108.3	54 05.1 -21.3 107.7
3°	57 25.0 -25.0 112.0	56 30.1 -24.3 111.3	55 34.9 -23.7 110.6	54 39.5 -23.1 109.9	53 43.8 -22.5 109.3
4°	57 00.0 -26.2 113.7	56 05.8 -25.6 112.9	55 11.2 -24.9 112.2	54 16.4 -24.4 111.5	53 21.3 -23.8 110.8
5°	56 33.8 -27.6 115.3	55 40.2 -26.9 114.5	54 46.3 -26.2 113.8	53 52.0 -25.5 113.1	52 57.5 -24.9 112.4
6°	56 06.2 -28.8 116.9	55 13.3 -28.0 116.1	54 20.1 -27.3 115.3	53 26.5 -26.6 114.6	52 32.6 -26.0 113.9
7°	55 37.4 -29.9 118.5	54 45.3 -29.2 117.6	53 52.8 -28.5 116.8	52 59.9 -27.8 116.1	52 06.6 -27.1 115.3
8°	55 07.5 -31.0 120.0	54 16.1 -30.3 119.1	53 24.3 -29.5 118.3	52 32.1 -28.8 117.5	51 39.5 -28.1 116.8
9°	54 36.5 -32.2 121.5	53 45.8 -31.3 120.6	52 54.8 -30.6 119.8	52 03.3 -29.9 119.0	51 11.4 -29.2 118.2
10°	54 04.3 -33.1 122.9	53 14.5 -32.3 122.1	52 24.2 -31.6 121.2	51 33.4 -30.8 120.4	50 42.2 -30.1 119.6
11°	53 31.2 -34.1 124.4	52 42.2 -33.3 123.5	51 52.6 -32.5 122.6	51 02.6 -31.8 121.8	50 12.1 -31.0 121.0
12°	52 57.1 -35.0 125.7	52 08.9 -34.3 124.8	51 20.1 -33.4 123.9	50 30.8 -32.6 123.1	49 41.1 -31.9 122.3
13°	52 22.1 -35.9 127.1	51 34.6 -35.1 126.1	50 46.7 -34.4 125.3	49 58.2 -33.6 124.4	49 09.2 -32.8 123.6
14°	51 46.2 -36.8 128.4	50 59.5 -35.9 127.4	50 12.3 -35.1 126.5	49 24.6 -34.4 125.7	48 36.4 -33.7 124.9
15°	51 09.4 -37.6 129.6	50 23.6 -36.7 128.7	49 37.2 -36.0 127.8	48 50.2 -35.1 126.9	48 02.7 -34.4 126.1
16°	50 31.8 -38.3 130.9	49 46.9 -37.6 129.9	49 01.2 -36.7 129.0	48 15.1 -36.0 128.2	47 28.3 -35.1 127.3
17°	49 53.5 -39.0 132.1	49 09.3 -38.2 131.1	48 24.5 -37.4 130.2	47 39.1 -36.6 129.4	46 53.2 -35.9 128.5
18°	49 14.5 -39.8 133.3	48 31.1 -38.9 132.3	47 47.1 -38.1 131.4	47 02.5 -37.4 130.5	46 17.3 -36.6 129.7
19°	48 34.7 -40.4 134.4	47 52.2 -39.6 133.5	47 09.0 -38.8 132.5	46 25.1 -38.0 131.7	45 40.7 -37.3 130.8
20°	47 54.3 -41.0 135.5	47 12.6 -40.2 134.6	46 30.2 -39.5 133.7	45 47.1 -38.7 132.8	45 03.4 -37.9 131.9
21°	47 13.3 -41.6 136.6	46 32.4 -40.9 135.7	45 50.7 -40.0 134.7	45 08.4 -39.2 133.9	44 25.5 -38.5 133.0
22°	46 31.7 -42.2 137.6	45 51.5 -41.4 136.7	45 10.7 -40.6 135.8	44 29.2 -39.9 134.9	43 47.0 -39.0 134.1
23°	45 49.5 -42.7 138.7	45 10.1 -41.9 137.7	44 30.1 -41.2 136.8	43 49.3 -40.4 136.0	43 08.0 -39.7 135.1
24°	45 06.8 -43.2 139.7	44 28.2 -42.5 138.8	43 48.9 -41.7 137.9	43 08.9 -40.9 137.0	42 28.3 -40.2 136.2
25°	44 23.6 -43.7 140.6	43 45.7 -42.9 139.7	43 07.2 -42.2 138.9	42 28.0 -41.5 138.0	41 48.1 -40.7 137.2
26°	43 39.9 -44.2 141.6	43 02.8 -43.4 140.7	42 25.0 -42.7 139.8	41 46.5 -41.9 139.0	41 07.4 -41.1 138.1
27°	42 55.7 -44.7 142.5	42 19.4 -43.9 141.6	41 42.3 -43.1 140.8	41 04.6 -42.4 139.9	40 26.3 -41.7 139.1
28°	42 11.0 -45.0 143.4	41 35.5 -44.3 142.6	40 59.2 -43.6 141.7	40 22.2 -42.8 140.9	39 44.6 -42.1 140.0
29°	41 26.0 -45.4 144.3	40 51.2 -44.7 143.4	40 15.6 -43.9 142.6	39 39.4 -43.2 141.8	39 02.5 -42.5 141.0

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°	53 46.5 -18.3 103.9	52 49.1 -17.9 103.4	51 51.6 -17.5 103.0	50 54.0 -17.2 102.5	49 56.2 -16.7 102.1
1°	53 28.2 -19.5 105.5	52 31.2 -19.1 105.0	51 34.1 -18.7 104.5	50 36.8 -18.2 104.0	49 39.5 -17.9 103.6
2°	53 08.7 -20.8 107.1	52 12.1 -20.3 106.6	51 15.4 -19.8 106.0	50 18.6 -19.4 105.5	49 21.6 -19.0 105.1
3°	52 47.9 -22.0 108.7	51 51.8 -21.4 108.1	50 55.6 -21.0 107.5	49 59.2 -20.6 107.0	49 02.6 -20.1 106.5
4°	52 25.9 -23.1 110.2	51 30.4 -22.7 109.6	50 34.6 -22.1 109.0	49 38.6 -21.6 108.5	48 42.5 -21.1 107.9
5°	52 02.8 -24.3 111.7	51 07.7 -23.7 111.1	50 12.5 -23.2 110.5	49 17.0 -22.6 109.9	48 21.4 -22.2 109.4
6°	51 38.5 -25.4 113.2	50 44.0 -24.8 112.5	49 49.3 -24.2 111.9	48 54.4 -23.7 111.3	47 59.2 -23.1 110.8
7°	51 13.1 -26.5 114.6	50 19.2 -25.8 114.0	49 25.1 -25.2 113.3	48 30.7 -24.7 112.7	47 36.1 -24.1 112.1
8°	50 46.6 -27.5 116.1	49 53.4 -26.9 115.4	48 59.9 -26.3 114.7	48 06.0 -25.6 114.1	47 12.0 -25.1 113.5
9°	50 19.1 -28.4 117.5	49 26.5 -27.8 116.8	48 33.6 -27.1 116.1	47 40.4 -26.5 115.4	46 46.9 -26.0 114.8
10°	49 50.7 -29.4 118.8	48 58.7 -28.7 118.1	48 06.5 -28.1 117.4	47 13.9 -27.5 116.8	46 20.9 -26.8 116.1
11°	49 21.3 -30.4 120.2	48 30.0 -29.7 119.5	47 38.4 -29.0 118.7	46 46.4 -28.3 118.1	45 54.1 -27.7 117.4
12°	48 50.9 -31.2 121.5	48 00.3 -30.5 120.8	47 09.4 -29.9 120.0	46 18.1 -29.2 119.3	45 26.4 -28.6 118.7
13°	48 19.7 -32.1 122.8	47 29.8 -31.3 122.0	46 39.5 -30.6 121.3	45 48.9 -30.0 120.6	44 57.8 -29.3 119.9
14°	47 47.6 -32.8 124.1	46 58.5 -32.2 123.3	46 08.9 -31.5 122.6	45 18.9 -30.8 121.8	44 28.5 -30.1 121.2
15°	47 14.8 -33.7 125.3	46 26.3 -32.9 124.5	45 37.4 -32.2 123.8	44 48.1 -31.6 123.1	43 58.4 -30.9 122.4
16°	46 41.1 -34.4 126.5	45 53.4 -33.7 125.7	45 05.2 -33.0 125.0	44 16.5 -32.2 124.3	43 27.5 -31.6 123.6
17°	46 06.7 -35.2 127.7	45 19.7 -34.4 126.9	44 32.2 -33.7 126.2	43 44.3 -33.0 125.4	42 55.9 -32.3 124.7
18°	45 31.5 -35.8 128.9	44 45.3 -35.1 128.1	43 58.5 -34.4 127.3	43 11.3 -33.7 126.6	42 23.6 -32.9 125.9
19°	44 55.7 -36.5 130.0	44 10.2 -35.8 129.2	43 24.1 -35.0 128.4	42 37.6 -34.3 127.7	41 50.7 -33.7 127.0
20°	44 19.2 -37.1 131.1	43 34.4 -36.4 130.3	42 49.1 -35.6 129.6	42 03.3 -34.9 128.8	41 17.0 -34.2 128.1
21°	43 42.1 -37.8 132.2	42 58.0 -37.0 131.4	42 13.5 -36.3 130.6	41 28.4 -35.6 129.9	40 42.8 -34.8 129.2
22°	43 04.3 -38.3 133.3	42 21.0 -37.6 132.5	41 37.2 -36.9 131.7	40 52.8 -36.1 131.0	40 08.0 -35.5 130.3
23°	42 26.0 -38.9 134.3	41 43.4 -38.1 133.5	41 00.3 -37.4 132.8	40 16.7 -36.7 132.0	39 32.5 -35.9 131.3
24°	41 47.1 -39.4 135.4	41 05.3 -38.7 134.6	40 22.9 -38.0 133.8	39 40.0 -37.2 133.1	38 56.6 -36.6 132.3
25°	41 07.7 -40.0 136.4	40 26.6 -39.2 135.6	39 44.9 -38.4 134.8	39 02.8 -37.8 134.1	38 20.0 -37.0 133.4
26°	40 27.7 -40.4 137.3	39 47.4 -39.7 136.6	39 06.5 -39.0 135.8	38 25.0 -38.2 135.1	37 43.0 -37.5 134.4
27°	39 47.3 -40.9 138.3	39 07.7 -40.2 137.5	38 27.5 -39.5 136.8	37 46.8 -38.8 136.0	37 05.5 -38.0 135.3
28°	39 06.4 -41.4 139.3	38 27.5 -40.6 138.5	37 48.0 -39.9 137.7	37 08.0 -39.2 137.0	36 27.5 -38.5 136.3
29°	38 25.0 -41.8 140.2	37 46.9 -41.1 139.4	37 08.1 -40.3 138.7	36 28.8 -39.6 138.0	35 49.0 -38.9 137.3

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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°	48 58.4 -16.4 101.7	48 00.5 -16.1 101.3	47 02.5 -15.8 100.9	46 04.5 -15.6 100.5	45 06.3 -15.2 100.2
1°	48 42.0 -17.5 103.2	47 44.4 -17.2 102.7	46 46.7 -16.8 102.3	45 48.9 -16.5 101.9	44 51.1 -16.2 101.6
2°	48 24.5 -18.6 104.6	47 27.2 -18.2 104.2	46 29.9 -17.9 103.7	45 32.4 -17.5 103.3	44 34.9 -17.2 102.9
3°	48 05.9 -19.7 106.0	47 09.0 -19.2 105.6	46 12.0 -18.8 105.1	45 14.9 -18.5 104.7	44 17.7 -18.1 104.3
4°	47 46.2 -20.7 107.4	46 49.8 -20.3 106.9	45 53.2 -19.8 106.5	44 56.4 -19.4 106.0	43 59.6 -19.0 105.6
5°	47 25.5 -21.6 108.8	46 29.5 -21.2 108.3	45 33.4 -20.8 107.8	44 37.0 -20.3 107.4	43 40.6 -19.9 106.9
6°	47 03.9 -22.7 110.2	46 08.3 -22.1 109.7	45 12.6 -21.7 109.2	44 16.7 -21.2 108.7	43 20.7 -20.8 108.2
7°	46 41.2 -23.5 111.6	45 46.2 -23.1 111.0	44 50.9 -22.6 110.5	43 55.5 -22.1 110.0	42 59.9 -21.7 109.5
8°	46 17.7 -24.6 112.9	45 23.1 -24.0 112.3	44 28.3 -23.4 111.8	43 33.4 -23.0 111.3	42 38.2 -22.5 110.8
9°	45 53.1 -25.3 114.2	44 59.1 -24.8 113.6	44 04.9 -24.3 113.1	43 10.4 -23.8 112.5	42 15.7 -23.3 112.0
10°	45 27.8 -26.3 115.5	44 34.3 -25.7 114.9	43 40.6 -25.2 114.3	42 46.6 -24.6 113.8	41 52.4 -24.0 113.3
11°	45 01.5 -27.1 116.8	44 08.6 -26.5 116.2	43 15.4 -25.9 115.6	42 22.0 -25.4 115.0	41 28.4 -24.9 114.5
12°	44 34.4 -27.9 118.0	43 42.1 -27.3 117.4	42 49.5 -26.7 116.8	41 56.6 -26.1 116.3	41 03.5 -25.6 115.7
13°	44 06.5 -28.7 119.3	43 14.8 -28.1 118.6	42 22.8 -27.5 118.0	41 30.5 -26.9 117.5	40 37.9 -26.3 116.9
14°	43 37.8 -29.5 120.5	42 46.7 -28.9 119.9	41 55.3 -28.3 119.2	41 03.6 -27.7 118.6	40 11.6 -27.1 118.1
15°	43 08.3 -30.2 121.7	42 17.8 -29.5 121.0	41 27.0 -28.9 120.4	40 35.9 -28.3 119.8	39 44.5 -27.7 119.2
16°	42 38.1 -31.0 122.9	41 48.3 -30.3 122.2	40 58.1 -29.6 121.6	40 07.6 -29.0 121.0	39 16.8 -28.4 120.4
17°	42 07.1 -31.6 124.0	41 18.0 -31.0 123.4	40 28.5 -30.4 122.7	39 38.6 -29.7 122.1	38 48.4 -29.1 121.5
18°	41 35.5 -32.3 125.2	40 47.0 -31.6 124.5	39 58.1 -30.9 123.9	39 08.9 -30.3 123.2	38 19.3 -29.7 122.6
19°	41 03.2 -32.9 126.3	40 15.4 -32.2 125.6	39 27.2 -31.6 125.0	38 38.6 -30.9 124.3	37 49.6 -30.3 123.7
20°	40 30.3 -33.5 127.4	39 43.2 -32.9 126.7	38 55.6 -32.2 126.1	38 07.7 -31.6 125.4	37 19.3 -30.8 124.8
21°	39 56.8 -34.2 128.5	39 10.3 -33.4 127.8	38 23.4 -32.8 127.2	37 36.1 -32.1 126.5	36 48.5 -31.5 125.9
22°	39 22.6 -34.7 129.6	38 36.9 -34.1 128.9	37 50.6 -33.3 128.2	37 04.0 -32.7 127.6	36 17.0 -32.0 127.0
23°	38 47.9 -35.3 130.6	38 02.8 -34.5 129.9	37 17.3 -33.9 129.3	36 31.3 -33.2 128.6	35 45.0 -32.6 128.0
24°	38 12.6 -35.8 131.6	37 28.3 -35.2 131.0	36 43.4 -34.4 130.3	35 58.1 -33.7 129.7	35 12.4 -33.0 129.0
25°	37 36.8 -36.3 132.7	36 53.1 -35.6 132.0	36 09.0 -34.9 131.3	35 24.4 -34.2 130.7	34 39.4 -33.6 130.1
26°	37 00.5 -36.8 133.7	36 17.5 -36.1 133.0	35 34.1 -35.5 132.3	34 50.2 -34.8 131.7	34 05.8 -34.0 131.1
27°	36 23.7 -37.3 134.6	35 41.4 -36.6 134.0	34 58.6 -35.9 133.3	34 15.4 -35.2 132.7	33 31.8 -34.6 132.1
28°	35 46.4 -37.8 135.6	35 04.8 -37.0 134.9	34 22.7 -36.3 134.3	33 40.2 -35.6 133.7	32 57.2 -35.9 133.0
29°	35 08.6 -38.2 136.6	34 27.8 -37.5 135.9	33 46.4 -36.8 135.2	33 04.6 -36.1 134.6	32 22.3 -35.4 134.0

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°	44 08.2 -15.0 99.9	43 09.9 -14.7 99.5	42 11.6 -14.5 99.2	41 13.3 -14.3 98.9	40 14.9 -14.1 98.6
1°	43 53.2 -16.0 101.2	42 55.2 -15.7 100.8	41 57.1 -15.4 100.5	40 59.0 -15.2 100.2	40 00.8 -14.9 99.9
2°	43 37.2 -16.8 102.5	42 39.5 -16.5 102.2	41 41.7 -16.2 101.8	40 43.8 -15.9 101.5	39 45.9 -15.7 101.1
3°	43 20.4 -17.8 103.9	42 23.0 -17.5 103.5	41 25.5 -17.2 103.1	40 27.9 -16.8 102.7	39 30.2 -16.5 102.4
4°	43 02.6 -18.6 105.2	42 05.5 -18.3 104.8	41 08.3 -17.9 104.4	40 11.1 -17.7 104.0	39 13.7 -17.3 103.6
5°	42 44.0 -19.6 106.5	41 47.2 -19.1 106.0	40 50.4 -18.8 105.6	39 53.4 -18.4 105.2	38 56.4 -18.1 104.8
6°	42 24.4 -20.3 107.7	41 28.1 -20.0 107.3	40 31.6 -19.6 106.9	39 35.0 -19.2 106.5	38 38.3 -18.8 106.1
7°	42 04.1 -21.2 109.0	41 08.1 -20.7 108.6	40 12.0 -20.3 108.1	39 15.8 -19.9 107.7	38 19.5 -19.6 107.3
8°	41 42.9 -22.0 110.3	40 47.4 -21.6 109.8	39 51.7 -21.1 109.4	38 55.9 -20.7 108.9	37 59.9 -20.3 108.5
9°	41 20.9 -22.8 111.5	40 25.8 -22.3 111.0	39 30.6 -21.9 110.6	38 35.2 -21.5 110.1	37 39.6 -21.0 109.7
10°	40 58.1 -23.6 112.7	40 03.5 -23.1 112.2	39 08.7 -22.6 111.8	38 13.7 -22.1 111.3	37 18.6 -21.7 110.9
11°	40 34.5 -24.4 114.0	39 40.4 -23.9 113.5	38 46.1 -23.4 113.0	37 51.6 -22.9 112.5	36 56.9 -22.4 112.0
12°	40 10.1 -25.0 115.2	39 16.5 -24.5 114.6	38 22.7 -24.0 114.1	37 28.7 -23.5 113.7	36 34.5 -23.1 113.2
13°	39 45.1 -25.8 116.3	38 52.0 -25.2 115.8	37 58.7 -24.7 115.3	37 05.2 -24.2 114.8	36 11.4 -23.7 114.3
14°	39 19.3 -26.5 117.5	38 26.8 -26.0 117.0	37 34.0 -25.4 116.5	36 41.0 -24.9 116.0	35 47.7 -24.3 115.5
15°	38 52.8 -27.1 118.7	38 00.8 -26.6 118.1	37 08.6 -26.0 117.6	36 16.1 -25.5 117.1	35 23.4 -25.0 116.6
16°	38 25.7 -27.9 119.8	37 34.2 -27.2 119.3	36 42.6 -26.7 118.7	35 50.6 -26.1 118.2	34 58.4 -25.5 117.7
17°	37 57.8 -28.4 120.9	37 07.0 -27.8 120.4	36 15.9 -27.3 119.8	35 24.5 -26.7 119.3	34 32.9 -26.2 118.8
18°	37 29.4 -29.1 122.1	36 39.2 -28.5 121.5	35 48.6 -27.8 120.9	34 57.8 -27.3 120.4	34 06.7 -26.7 119.9
19°	37 00.3 -29.6 123.2	36 10.7 -29.1 122.6	35 20.8 -28.5 122.0	34 30.5 -27.8 121.5	33 40.0 -27.3 121.0
20°	36 30.7 -30.3 124.2	35 41.6 -29.6 123.7	34 52.3 -29.0 123.1	34 02.7 -28.5 122.6	33 12.7 -27.8 122.0
21°	36 00.4 -30.8 125.3	35 12.0 -30.2 124.7	34 23.3 -29.6 124.2	33 34.2 -28.9 123.6	32 44.9 -28.3 123.1
22°	35 29.6 -31.4 126.4	34 41.8 -30.7 125.8	33 53.7 -30.1 125.2	33 05.3 -29.5 124.7	32 16.6 -28.9 124.1
23°	34 58.2 -31.8 127.4	34 11.1 -31.2 126.8	33 23.6 -30.6 126.3	32 35.8 -29.9 125.7	31 47.7 -29.4 125.2
24°	34 26.4 -32.4 128.4	33 39.9 -31.8 127.9	32 53.0 -31.1 127.3	32 05.9 -30.5 126.7	31 18.3 -29.8 126.2
25°	33 54.0 -32.9 129.5	33 08.1 -32.2 128.9	32 21.9 -31.5 128.3	31 35.4 -30.9 127.8	30 48.5 -30.3 127.2
26°	33 21.1 -33.4 130.5	32 35.9 -32.7 129.9	31 50.4 -32.1 129.3	31 04.5 -31.4 128.8	30 18.2 -30.7 128.2
27°	32 47.7 -33.9 131.5	32 03.2 -33.2 130.9	31 18.3 -32.5 130.3	30 33.1 -31.9 129.7	29 47.5 -31.2 129.2
28°	32 13.8 -34.2 132.4	31 30.0 -33.6 131.8	30 45.8 -32.9 131.3	30 01.2 -32.3 130.7	29 16.3 -31.7 130.2
29°	31 39.6 -34.8 133.4	30 56.4 -34.0 132.8	30 12.9 -33.4 132.3	29 28.9 -32.6 131.7	28 44.6 -32.0 131.2

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°	39 16.4 -13.9 98.3	38 17.9 -13.7 98.0	37 19.4 -13.5 97.7	36 20.8 -13.3 97.5	35 22.2 -13.1 97.2
1°	39 02.5 -14.6 99.5	38 04.2 -14.4 99.2	37 05.9 -14.2 98.9	36 07.5 -14.0 98.7	35 09.1 -13.9 98.4
2°	38 47.9 -15.5 100.8	37 49.8 -15.2 100.5	36 51.7 -15.0 100.2	35 53.5 -14.8 99.9	34 55.2 -14.5 99.6
3°	38 32.4 -16.2 102.0	37 34.6 -16.0 101.7	36 36.7 -15.7 101.4	35 38.7 -15.4 101.1	34 40.7 -15.2 100.8
4°	38 16.2 -17.0 103.3	37 18.6 -16.7 102.9	36 21.0 -16.4 102.6	35 23.3 -16.1 102.2	34 25.5 -15.8 101.9
5°	37 59.2 -17.7 104.5	37 01.9 -17.4 104.1	36 04.6 -17.1 103.8	35 07.2 -16.9 103.4	34 09.7 -16.6 103.1
6°	37 41.5 -18.5 105.7	36 44.5 -18.1 105.3	35 47.5 -17.8 105.0	34 50.3 -17.4 104.6	33 53.1 -17.2 104.3
7°	37 23.0 -19.2 106.9	36 26.4 -18.8 106.5	35 29.7 -18.5 106.1	34 32.9 -18.2 105.8	33 35.9 -17.8 105.4
8°	37 03.8 -19.9 108.1	36 07.6 -19.6 107.7	35 11.2 -19.2 107.3	34 14.7 -18.8 106.9	33 18.1 -18.4 106.6
9°	36 43.9 -20.6 109.3	35 48.0 -20.2 108.8	34 52.0 -19.8 108.4	33 55.9 -19.4 108.1	32 59.7 -19.1 107.7
10°	36 23.3 -21.3 110.4	35 27.8 -20.8 110.0	34 32.2 -20.4 109.6	33 36.5 -20.0 109.2	32 40.6 -19.6 108.8
11°	36 02.0 -21.9 111.6	35 07.0 -21.5 111.2	34 11.8 -21.1 110.7	33 16.5 -20.7 110.3	32 21.0 -20.3 109.9
12°	35 40.1 -22.6 112.7	34 45.5 -22.1 112.3	33 50.7 -21.7 111.9	32 55.8 -21.2 111.5	32 00.7 -20.8 111.1
13°	35 17.5 -23.2 113.9	34 23.4 -22.8 113.4	33 29.0 -22.2 113.0	32 34.6 -21.9 112.6	31 39.9 -21.4 112.2
14°	34 54.3 -23.9 115.0	34 00.6 -23.3 114.5	33 06.8 -22.9 114.1	32 12.7 -22.4 113.7	31 18.5 -21.9 113.3
15°	34 30.4 -24.4 116.1	33 37.3 -24.0 115.6	32 43.9 -23.4 115.2	31 50.3 -22.9 114.8	30 56.6 -22.5 114.3
16°	34 06.0 -25.0 117.2	33 13.3 -24.5 116.7	32 20.5 -24.0 116.3	31 27.4 -23.5 115.8	30 34.1 -23.0 115.4
17°	33 41.0 -25.6 118.3	32 48.8 -25.0 117.8	31 56.5 -24.6 117.4	31 03.9 -24.1 116.9	30 11.1 -23.5 116.5
18°	33 15.4 -26.2 119.4	32 23.8 -25.7 118.9	31 31.9 -25.1 118.4	30 39.8 -24.5 118.0	29 47.6 -24.1 117.6
19°	32 49.2 -26.7 120.5	31 58.1 -26.1 120.0	31 06.8 -25.6 119.5	30 15.3 -25.1 119.0	29 23.5 -24.5 118.6
20°	32 22.5 -27.2 121.5	31 32.0 -26.7 121.0	30 41.2 -26.1 120.6	29 50.2 -25.5 120.1	28 59.0 -25.0 119.6
21°	31 55.3 -27.8 122.6	31 05.3 -27.1 122.1	30 15.1 -26.6 121.6	29 24.7 -26.0 121.1	28 34.0 -25.5 120.7
22°	31 27.5 -28.3 123.6	30 38.2 -27.7 123.1	29 48.5 -27.0 122.6	28 58.7 -26.6 122.2	28 08.5 -26.9 121.7
23°	30 59.2 -28.7 124.7	30 10.5 -28.1 124.2	29 21.5 -27.6 123.7	28 32.1 -26.9 123.2	27 42.6 -26.4 122.7
24°	30 30.5 -29.2 125.7	29 42.4 -28.6 125.2	28 53.9 -28.0 124.7	28 05.2 -27.4 124.2	27 16.2 -26.8 123.7
25°	30 01.3 -29.7 126.7	29 13.8 -29.1 126.2	28 25.9 -28.4 125.7	27 37.8 -27.8 125.2	26 49.4 -27.3 124.8
26°	29 31.6 -30.1 127.7	28 44.7 -29.5 127.2	27 57.5 -28.9 126.7	27 10.0 -28.3 126.2	26 22.1 -27.6 125.7
27°	29 01.5 -30.5 128.7	28 15.2 -29.9 128.2	27 28.6 -29.3 127.7	26 41.7 -28.7 127.2	25 54.5 -28.1 126.7
28°	28 31.0 -31.0 129.7	27 45.3 -30.3 129.2	26 59.3 -29.7 128.7	26 13.0 -29.0 128.2	25 26.4 -28.4 127.7
29°	28 00.0 -31.4 130.6	27 15.0 -30.8 130.1	26 29.6 -30.0 129.6	25 44.0 -29.5 129.2	24 58.0 -28.8 128.7

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°	34 23.6 -13.0 96.9	33 24.9 -12.8 96.7	32 26.2 -12.7 96.4	31 27.5 -12.6 96.2	30 28.7 -12.4 96.0
1°	34 10.6 -13.6 98.1	33 12.1 -13.5 97.8	32 13.5 -13.3 97.6	31 14.9 -13.1 97.3	30 16.3 -12.9 97.1
2°	33 57.0 -14.4 99.3	32 58.6 -14.1 99.0	32 00.2 -13.9 98.7	31 01.8 -13.7 98.5	30 03.4 -13.6 98.2
3°	33 42.6 -14.9 100.5	32 44.5 -14.7 100.2	31 46.3 -14.5 99.9	30 48.1 -14.3 99.6	29 49.8 -14.1 99.3
4°	33 27.7 -15.6 101.6	32 29.8 -15.4 101.3	31 31.8 -15.1 101.0	30 33.8 -14.9 100.7	29 35.7 -14.7 100.5
5°	33 12.1 -16.3 102.8	32 14.4 -16.0 102.5	31 16.7 -15.7 102.2	30 18.9 -15.5 101.9	29 21.0 -15.2 101.6
6°	32 55.8 -16.9 103.9	31 58.4 -16.6 103.6	31 01.0 -16.4 103.3	30 03.4 -16.0 103.0	29 05.8 -15.8 102.7
7°	32 38.9 -17.5 105.1	31 41.8 -17.2 104.7	30 44.6 -16.8 104.4	29 47.4 -16.6 104.1	28 50.0 -16.3 103.8
8°	32 21.4 -18.1 106.2	31 24.6 -17.7 105.9	30 27.8 -17.5 105.5	29 30.8 -17.1 105.2	28 33.7 -16.8 104.9
9°	32 03.3 -18.7 107.3	31 06.9 -18.4 107.0	30 10.3 -18.0 106.6	29 13.7 -17.7 106.3	28 16.9 -17.4 106.0
10°	31 44.6 -19.2 108.4	30 48.5 -18.9 108.1	29 52.3 -18.5 107.7	28 56.0 -18.2 107.4	27 59.5 -17.8 107.1
11°	31 25.4 -19.9 109.6	30 29.6 -19.4 109.2	29 33.8 -19.1 108.8	28 37.8 -18.7 108.5	27 41.7 -18.4 108.1
12°	31 05.5 -20.4 110.7	30 10.2 -20.0 110.3	29 14.7 -19.6 109.9	28 19.1 -19.3 109.6	27 23.3 -18.8 109.2
13°	30 45.1 -20.9 111.8	29 50.2 -20.6 111.4	28 55.1 -20.2 111.0	27 59.8 -19.7 110.6	27 04.5 -19.3 110.3
14°	30 24.2 -21.5 112.8	29 29.6 -21.0 112.5	28 34.9 -20.6 112.1	27 40.1 -20.2 111.7	26 45.2 -19.8 111.3
15°	30 02.7 -22.1 113.9	29 08.6 -21.6 113.5	28 14.3 -21.1 113.1	27 19.9 -20.7 112.8	26 25.4 -20.3 112.4
16°	29 40.6 -22.5 115.0	28 47.0 -22.1 114.6	27 53.2 -21.6 114.2	26 59.2 -21.1 113.8	26 05.1 -20.7 113.5
17°	29 18.1 -23.0 116.1	28 24.9 -22.5 115.7	27 31.6 -22.1 115.3	26 38.1 -21.7 114.9	25 44.4 -21.2 114.5
18°	28 55.1 -23.6 117.1	28 02.4 -23.0 116.7	27 09.5 -22.5 116.3	26 16.4 -22.0 115.9	25 23.2 -21.6 115.5
19°	28 31.5 -24.0 118.2	27 39.4 -23.5 117.8	26 47.0 -23.0 117.3	25 54.4 -22.5 116.9	25 01.6 -22.0 116.6
20°	28 07.5 -24.4 119.2	27 15.9 -24.0 118.8	26 24.0 -23.5 118.4	25 31.9 -22.9 118.0	24 39.6 -22.4 117.6
21°	27 43.1 -25.0 120.2	26 51.9 -24.4 119.8	26 00.5 -23.8 119.4	25 09.0 -23.4 119.0	24 17.2 -22.9 118.6
22°	27 18.1 -25.4 121.3	26 27.5 -24.8 120.8	25 36.7 -24.3 120.4	24 45.6 -23.8 120.0	23 54.3 -23.2 119.6
23°	26 52.7 -25.8 122.3	26 02.7 -25.3 121.9	25 12.4 -24.7 121.4	24 21.8 -24.1 121.0	23 31.1 -23.6 120.6
24°	26 26.9 -26.2 123.3	25 37.4 -25.6 122.9	24 47.7 -25.1 122.4	23 57.7 -24.6 122.0	23 07.5 -24.0 121.6
25°	26 00.7 -26.7 124.3	25 11.8 -26.1 123.9	24 22.6 -25.5 123.4	23 33.1 -24.9 123.0	22 43.5 -24.4 122.6
26°	25 34.0 -27.0 125.3	24 45.7 -26.5 124.9	23 57.1 -25.9 124.4	23 08.2 -25.3 124.0	22 19.1 -24.7 123.6
27°	25 07.0 -27.4 126.3	24 19.2 -26.8 125.8	23 31.2 -26.2 125.4	22 42.9 -25.6 125.0	21 54.4 -25.1 124.6
28°	24 39.6 -27.9 127.3	23 52.4 -27.2 126.8	23 05.0 -26.6 126.4	22 17.3 -26.0 126.0	21 29.3 -25.4 125.6
29°	24 11.7 -28.1 128.2	23 25.2 -27.6 127.8	22 38.4 -27.0 127.4	21 51.3 -26.4 127.0	21 03.9 -25.7 126.5

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	29 29.9 -12.2 95.7	28 31.1 -12.1 95.5	27 32.3 -12.0 95.3	26 33.4 -11.9 95.1	25 34.6 -11.8 94.8
1°	29 17.7 -12.8 96.8	28 19.0 -12.7 96.6	27 20.3 -12.6 96.4	26 21.5 -12.4 96.2	25 22.8 -12.3 95.9
2°	29 04.9 -13.4 98.0	28 06.3 -13.2 97.7	27 07.7 -13.0 97.5	26 09.1 -12.8 97.2	25 10.5 -12.7 97.0
3°	28 51.5 -13.9 99.1	27 53.1 -13.7 98.8	26 54.7 -13.5 98.6	25 56.3 -13.4 98.3	24 57.8 -13.2 98.1
4°	28 37.6 -14.5 100.2	27 39.4 -14.3 99.9	26 41.2 -14.1 99.7	25 42.9 -13.9 99.4	24 44.6 -13.7 99.2
5°	28 23.1 -15.0 101.3	27 25.1 -14.7 101.0	26 27.1 -14.5 100.8	25 29.0 -14.3 100.5	24 30.9 -14.1 100.2
6°	28 08.1 -15.5 102.4	27 10.4 -15.3 102.1	26 12.6 -15.0 101.8	25 14.7 -14.8 101.6	24 16.8 -14.6 101.3
7°	27 52.6 -16.0 103.5	26 55.1 -15.7 103.2	25 57.6 -15.5 102.9	24 59.9 -15.2 102.6	24 02.2 -15.0 102.4
8°	27 36.6 -16.6 104.6	26 39.4 -16.3 104.3	25 42.1 -16.0 104.0	24 44.7 -15.7 103.7	23 47.2 -15.4 103.4
9°	27 20.0 -17.0 105.7	26 23.1 -16.7 105.4	25 26.1 -16.4 105.1	24 29.0 -16.2 104.8	23 31.8 -15.8 104.5
10°	27 03.0 -17.5 106.7	26 06.4 -17.2 106.4	25 09.7 -16.9 106.1	24 12.8 -16.5 105.8	23 16.0 -16.3 105.5
11°	26 45.5 -18.0 107.8	25 49.2 -17.7 107.5	24 52.8 -17.4 107.2	23 56.3 -17.0 106.9	22 59.7 -16.7 106.6
12°	26 27.5 -18.5 108.9	25 31.5 -18.1 108.6	24 35.4 -17.7 108.2	23 39.3 -17.5 107.9	22 43.0 -17.1 107.6
13°	26 09.0 -18.9 109.9	25 13.4 -18.6 109.6	24 17.7 -18.2 109.3	23 21.8 -17.8 109.0	22 25.9 -17.5 108.7
14°	25 50.1 -19.4 111.0	24 54.8 -19.0 110.7	23 59.5 -18.6 110.3	23 04.0 -18.2 110.0	22 08.4 -17.8 109.7
15°	25 30.7 -19.9 112.0	24 35.8 -19.4 111.7	23 40.9 -19.1 111.4	22 45.8 -18.7 111.0	21 50.6 -18.3 110.7
16°	25 10.8 -20.3 113.1	24 16.4 -19.9 112.7	23 21.8 -19.4 112.4	22 27.1 -19.0 112.1	21 32.3 -18.6 111.7
17°	24 50.5 -20.7 114.1	23 56.5 -20.2 113.8	23 02.4 -19.9 113.4	22 08.1 -19.4 113.1	21 13.7 -19.0 112.8
18°	24 29.8 -21.1 115.2	23 36.3 -20.7 114.8	22 42.5 -20.2 114.5	21 48.7 -19.8 114.1	20 54.7 -19.4 113.8
19°	24 08.7 -21.6 116.2	23 15.6 -21.1 115.8	22 22.3 -20.6 115.5	21 28.9 -20.2 115.1	20 35.3 -19.7 114.8
20°	23 47.1 -21.9 117.2	22 54.5 -21.5 116.8	22 01.7 -21.0 116.5	21 08.7 -20.5 116.1	20 15.6 -20.0 115.8
21°	23 25.2 -22.3 118.2	22 33.0 -21.8 117.9	21 40.7 -21.3 117.5	20 48.2 -20.8 117.1	19 55.6 -20.4 116.8
22°	23 02.9 -22.7 119.2	22 11.2 -22.2 118.9	21 19.4 -21.7 118.5	20 27.4 -21.2 118.1	19 35.2 -20.7 117.8
23°	22 40.2 -23.1 120.2	21 49.0 -22.6 119.9	20 57.7 -22.1 119.5	20 06.2 -21.6 119.1	19 14.5 -21.1 118.8
24°	22 17.1 -23.5 121.2	21 26.4 -22.9 120.9	20 35.6 -22.4 120.5	19 44.6 -21.9 120.1	18 53.4 -21.3 119.8
25°	21 53.6 -23.8 122.2	21 03.5 -23.2 121.9	20 13.2 -22.7 121.5	19 22.7 -22.1 121.1	18 32.1 -21.7 120.8
26°	21 29.8 -24.2 123.2	20 40.3 -23.6 122.8	19 50.5 -23.0 122.5	19 00.6 -22.5 122.1	18 10.4 -21.9 121.8
27°	21 05.6 -24.4 124.2	20 16.7 -24.0 123.8	19 27.5 -23.4 123.5	18 38.1 -22.8 123.1	17 48.5 -22.3 122.7
28°	20 41.2 -24.9 125.2	19 52.7 -24.2 124.8	19 04.1 -23.7 124.4	18 15.3 -23.1 124.1	17 26.2 -22.5 123.7
29°	20 16.3 -25.1 126.2	19 28.5 -24.5 125.8	18 40.4 -23.9 125.4	17 52.2 -23.4 125.0	17 03.7 -22.8 124.7

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	24 35.7 -11.7 94.6	23 36.8 -11.6 94.4	22 37.9 -11.5 94.2	21 38.9 -11.4 94.0	20 40.0 -11.4 93.8
1°	24 24.0 -12.1 95.7	23 25.2 -12.0 95.5	22 26.4 -12.0 95.3	21 27.5 -11.8 95.1	20 28.6 -11.7 94.9
2°	24 11.9 -12.6 96.8	23 13.2 -12.5 96.6	22 14.4 -12.3 96.3	21 15.7 -12.2 96.1	20 16.9 -12.0 95.9
3°	23 59.3 -13.1 97.9	23 00.7 -12.9 97.6	22 02.1 -12.7 97.4	21 03.5 -12.6 97.2	20 04.9 -12.5 97.0
4°	23 46.2 -13.5 98.9	22 47.8 -13.3 98.7	21 49.4 -13.1 98.4	20 50.9 -12.9 98.2	19 52.4 -12.8 98.0
5°	23 32.7 -13.9 100.0	22 34.5 -13.7 99.7	21 36.3 -13.6 99.5	20 38.0 -13.4 99.3	19 39.6 -13.1 99.0
6°	23 18.8 -14.3 101.0	22 20.8 -14.1 100.8	21 22.7 -13.9 100.5	20 24.6 -13.7 100.3	19 26.5 -13.5 100.1
7°	23 04.5 -14.8 102.1	22 06.7 -14.5 101.8	21 08.8 -14.3 101.6	20 10.9 -14.1 101.3	19 13.0 -13.9 101.1
8°	22 49.7 -15.1 103.2	21 52.2 -15.0 102.9	20 54.5 -14.6 102.6	19 56.8 -14.4 102.4	18 59.1 -14.2 102.1
9°	22 34.6 -15.6 104.2	21 37.2 -15.3 103.9	20 39.9 -15.1 103.7	19 42.4 -14.8 103.4	18 44.9 -14.5 103.2
10°	22 19.0 -16.0 105.2	21 21.9 -15.7 105.0	20 24.8 -15.4 104.7	19 27.6 -15.1 104.4	18 30.4 -14.9 104.2
11°	22 03.0 -16.4 106.3	21 06.2 -16.0 106.0	20 09.4 -15.8 105.7	19 12.5 -15.5 105.5	18 15.5 -15.2 105.2
12°	21 46.6 -16.7 107.3	20 50.2 -16.5 107.0	19 53.6 -16.1 106.8	18 57.0 -15.8 106.5	18 00.3 -15.5 106.2
13°	21 29.9 -17.2 108.4	20 33.7 -16.7 108.1	19 37.5 -16.4 107.8	18 41.2 -16.1 107.5	17 44.8 -15.8 107.2
14°	21 12.7 -17.5 109.4	20 17.0 -17.2 109.1	19 21.1 -16.8 108.8	18 25.1 -16.5 108.5	17 29.0 -16.1 108.2
15°	20 55.2 -17.8 110.4	19 59.8 -17.5 110.1	19 04.3 -17.2 109.8	18 08.6 -16.8 109.5	17 12.9 -16.4 109.3
16°	20 37.4 -18.3 111.4	19 42.3 -17.8 111.1	18 47.1 -17.4 110.8	17 51.8 -17.0 110.5	16 56.5 -16.8 110.3
17°	20 19.1 -18.6 112.4	19 24.5 -18.2 112.1	18 29.7 -17.8 111.8	17 34.8 -17.4 111.5	16 39.7 -17.0 111.3
18°	20 00.5 -18.9 113.5	19 06.3 -18.5 113.2	18 11.9 -18.1 112.8	17 17.4 -17.7 112.6	16 22.7 -17.2 112.3
19°	19 41.6 -19.3 114.5	18 47.8 -18.9 114.2	17 53.8 -18.4 113.8	16 59.7 -18.0 113.6	16 05.5 -17.6 113.3
20°	19 22.3 -19.6 115.5	18 28.9 -19.1 115.2	17 35.4 -18.7 114.8	16 41.7 -18.3 114.5	15 47.9 -17.8 114.3
21°	19 02.7 -19.9 116.5	18 09.8 -19.5 116.2	17 16.7 -19.0 115.8	16 23.4 -18.5 115.5	15 30.1 -18.1 115.2
22°	18 42.8 -20.2 117.5	17 50.3 -19.7 117.2	16 57.7 -19.3 116.8	16 04.9 -18.8 116.5	15 12.0 -18.4 116.2
23°	18 22.6 -20.5 118.5	17 30.6 -20.1 118.1	16 38.4 -19.6 117.8	15 46.1 -19.1 117.5	14 53.6 -18.6 117.2
24°	18 02.1 -20.9 119.5	17 10.5 -20.3 119.1	16 18.8 -19.8 118.8	15 27.0 -19.4 118.5	14 35.0 -18.9 118.2
25°	17 41.2 -21.1 120.4	16 50.2 -20.6 120.1	15 59.0 -20.1 119.8	15 07.6 -19.6 119.5	14 16.1 -19.1 119.2
26°	17 20.1 -21.4 121.4	16 29.6 -20.9 121.1	15 38.9 -20.4 120.8	14 48.0 -19.8 120.5	13 57.0 -19.3 120.2
27°	16 58.7 -21.7 122.4	16 08.7 -21.2 122.1	15 18.5 -20.6 121.8	14 28.2 -20.1 121.4	13 37.7 -19.6 121.1
28°	16 37.0 -22.0 123.4	15 47.5 -21.4 123.0	14 57.9 -20.9 122.7	14 08.1 -20.3 122.4	13 18.1 -19.7 122.1
29°	16 15.0 -22.2 124.3	15 26.1 -21.7 124.0	14 37.0 -21.1 123.7	13 47.8 -20.6 123.4	12 58.4 -20.0 123.1

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°	19 41.0 -11.2 93.6	18 42.0 -11.1 93.4	17 43.0 -11.1 93.2	16 44.0 -11.0 93.0	15 45.0 -10.9 92.9
1°	19 29.8 -11.6 94.7	18 30.9 -11.5 94.5	17 31.9 -11.4 94.3	16 33.0 -11.3 94.1	15 34.1 -11.3 93.9
2°	19 18.2 -12.0 95.7	18 19.4 -11.9 95.5	17 20.5 -11.7 95.3	16 21.7 -11.6 95.1	15 22.8 -11.5 94.9
3°	19 06.2 -12.3 96.7	18 07.5 -12.2 96.5	17 08.8 -12.0 96.3	16 10.1 -12.0 96.1	15 11.3 -11.8 95.9
4°	18 53.9 -12.6 97.8	17 55.3 -12.5 97.6	16 56.8 -12.4 97.3	15 58.1 -12.2 97.1	14 59.5 -12.1 96.9
5°	18 41.3 -13.0 98.8	17 42.8 -12.8 98.6	16 44.4 -12.6 98.4	15 45.9 -12.5 98.1	14 47.4 -12.3 97.9
6°	18 28.3 -13.3 99.8	17 30.0 -13.1 99.6	16 31.8 -13.0 99.4	15 33.4 -12.7 99.2	14 35.1 -12.6 98.9
7°	18 15.0 -13.7 100.9	17 16.9 -13.4 100.6	16 18.8 -13.2 100.4	15 20.7 -13.1 100.2	14 22.5 -12.9 100.0
8°	18 01.3 -14.0 101.9	17 03.5 -13.8 101.6	16 05.6 -13.6 101.4	15 07.6 -13.3 101.2	14 09.6 -13.1 101.0
9°	17 47.3 -14.2 102.9	16 49.7 -14.0 102.7	15 52.0 -13.8 102.4	14 54.3 -13.6 102.2	13 56.5 -13.3 102.0
10°	17 33.1 -14.6 103.9	16 35.7 -14.4 103.7	15 38.2 -14.1 103.4	14 40.7 -13.8 103.2	13 43.2 -13.6 103.0
11°	17 18.5 -14.9 104.9	16 21.3 -14.6 104.7	15 24.1 -14.3 104.5	14 26.9 -14.1 104.2	13 29.6 -13.8 104.0
12°	17 03.6 -15.3 106.0	16 06.7 -14.9 105.7	15 09.8 -14.6 105.5	14 12.8 -14.3 105.2	13 15.8 -14.1 105.0
13°	16 48.3 -15.5 107.0	15 51.8 -15.2 106.7	14 55.2 -14.9 106.5	13 58.5 -14.6 106.2	13 01.7 -14.3 106.0
14°	16 32.8 -15.7 108.0	15 36.6 -15.5 107.7	14 40.3 -15.2 107.5	13 43.9 -14.9 107.2	12 47.4 -14.5 107.0
15°	16 17.1 -16.1 109.0	15 21.1 -15.7 108.7	14 25.1 -15.4 108.5	13 29.0 -15.0 108.2	12 32.9 -14.8 108.0
16°	16 01.0 -16.4 110.0	15 05.4 -16.0 109.7	14 09.7 -15.6 109.5	13 14.0 -15.3 109.2	12 18.1 -14.9 109.0
17°	15 44.6 -16.6 111.0	14 49.4 -16.2 110.7	13 54.1 -15.9 110.5	12 58.7 -15.5 110.2	12 03.2 -15.2 110.0
18°	15 28.0 -16.9 112.0	14 33.2 -16.5 111.7	13 38.2 -16.1 111.4	12 43.2 -15.8 111.2	11 48.0 -15.3 110.9
19°	15 11.1 -17.1 113.0	14 16.7 -16.8 112.7	13 22.1 -16.4 112.4	12 27.4 -15.9 112.2	11 32.7 -15.6 111.9
20°	14 54.0 -17.5 114.0	13 59.9 -17.0 113.7	13 05.7 -16.5 113.4	12 11.5 -16.2 113.2	11 17.1 -15.8 112.9
21°	14 36.5 -17.6 115.0	13 42.9 -17.2 114.7	12 49.2 -16.8 114.4	11 55.3 -16.4 114.2	11 01.3 -15.9 113.9
22°	14 18.9 -17.9 115.9	13 25.7 -17.5 115.7	12 32.4 -17.0 115.4	11 38.9 -16.5 115.1	10 45.4 -16.1 114.9
23°	14 01.0 -18.2 116.9	13 08.2 -17.6 116.7	12 15.4 -17.3 116.4	11 22.4 -16.8 116.1	10 29.3 -16.4 115.9
24°	13 42.8 -18.3 117.9	12 50.6 -17.9 117.6	11 58.1 -17.4 117.4	11 05.6 -17.0 117.1	10 12.9 -16.5 116.8
25°	13 24.5 -18.6 118.9	12 32.7 -18.1 118.6	11 40.7 -17.6 118.3	10 48.6 -17.1 118.1	9 56.4 -16.6 117.8
26°	13 05.9 -18.9 119.9	12 14.6 -18.4 119.6	11 23.1 -17.8 119.3	10 31.5 -17.3 119.0	9 39.8 -16.8 118.8
27°	12 47.0 -19.0 120.8	11 56.2 -18.5 120.6	11 05.3 -18.0 120.3	10 14.2 -17.5 120.0	9 23.0 -17.0 119.8
28°	12 28.0 -19.2 121.8	11 37.7 -18.7 121.5	10 47.3 -18.2 121.3	9 56.7 -17.7 121.0	9 06.0 -17.2 120.7
29°	12 08.8 -19.5 122.8	11 19.0 -18.9 122.5	10 29.1 -18.4 122.2	9 39.0 -17.8 122.0	8 48.8 -17.2 121.7

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°	14 46.0 -10.9 92.7	13 47.0 -10.9 92.5	12 47.9 -10.8 92.3	11 48.9 -10.7 92.1	10 49.9 -10.8 91.9
1°	14 35.1 -11.2 93.7	13 36.1 -11.1 93.5	12 37.1 -11.0 93.3	11 38.2 -11.0 93.1	10 39.1 -10.8 92.9
2°	14 23.9 -11.4 94.7	13 25.0 -11.3 94.5	12 26.1 -11.2 94.3	11 27.2 -11.2 94.1	10 28.3 -11.1 93.9
3°	14 12.5 -11.7 95.7	13 13.7 -11.6 95.5	12 14.9 -11.5 95.3	11 16.0 -11.3 95.1	10 17.2 -11.3 94.9
4°	14 00.8 -11.9 96.7	13 02.1 -11.8 96.5	12 03.4 -11.7 96.3	11 04.7 -11.6 96.1	10 05.9 -11.4 95.9
5°	13 48.9 -12.2 97.7	12 50.3 -12.0 97.5	11 51.7 -11.9 97.3	10 53.1 -11.8 97.1	9 54.5 -11.7 96.9
6°	13 36.7 -12.4 98.7	12 38.3 -12.3 98.5	11 39.8 -12.1 98.3	10 41.3 -11.9 98.1	9 42.8 -11.8 97.9
7°	13 24.3 -12.7 99.7	12 26.0 -12.5 99.5	11 27.7 -12.3 99.3	10 29.4 -12.1 99.1	9 31.0 -11.9 98.9
8°	13 11.6 -12.9 100.7	12 13.5 -12.7 100.5	11 15.4 -12.5 100.3	10 17.3 -12.3 100.1	9 19.1 -12.1 99.9
9°	12 58.7 -13.1 101.8	12 00.8 -12.9 101.5	11 02.9 -12.7 101.3	10 05.0 -12.5 101.1	9 07.0 -12.3 100.9
10°	12 45.6 -13.4 102.8	11 47.9 -13.1 102.5	10 50.2 -12.9 102.3	9 52.5 -12.7 102.1	8 54.7 -12.5 101.9
11°	12 32.2 -13.6 103.8	11 34.8 -13.3 103.5	10 37.3 -13.1 103.3	9 39.8 -12.8 103.1	8 42.2 -12.6 102.9
12°	12 18.6 -13.7 104.7	11 21.5 -13.6 104.5	10 24.2 -13.2 104.3	9 27.0 -13.0 104.1	8 29.6 -12.7 103.9
13°	12 04.9 -14.1 105.7	11 07.9 -13.7 105.5	10 11.0 -13.5 105.3	9 14.0 -13.2 105.1	8 16.9 -12.9 104.9
14°	11 50.8 -14.2 106.7	10 54.2 -13.9 106.5	9 57.5 -13.6 106.3	9 00.8 -13.3 106.1	8 04.0 -13.1 105.8
15°	11 36.6 -14.4 107.7	10 40.3 -14.1 107.5	9 43.9 -13.8 107.3	8 47.5 -13.5 107.0	7 50.9 -13.1 106.8
16°	11 22.2 -14.6 108.7	10 26.2 -14.3 108.5	9 30.1 -13.9 108.3	8 34.0 -13.6 108.0	7 37.8 -13.3 107.8
17°	11 07.6 -14.8 109.7	10 11.9 -14.4 109.5	9 16.2 -14.1 109.2	8 20.4 -13.8 109.0	7 24.5 -13.5 108.8
18°	10 52.8 -15.0 110.7	9 57.5 -14.7 110.5	9 02.1 -14.3 110.2	8 06.6 -13.9 110.0	7 11.0 -13.5 109.8
19°	10 37.8 -15.2 111.7	9 42.8 -14.8 111.4	8 47.8 -14.4 111.2	7 52.7 -14.1 111.0	6 57.5 -13.7 110.8
20°	10 22.6 -15.3 112.7	9 28.0 -14.9 112.4	8 33.4 -14.6 112.2	7 38.6 -14.2 112.0	6 43.8 -13.8 111.7
21°	10 07.3 -15.6 113.6	9 13.1 -15.1 113.4	8 18.8 -14.7 113.2	7 24.4 -14.3 112.9	6 30.0 -13.9 112.7
22°	9 51.7 -15.7 114.6	8 58.0 -15.3 114.4	8 04.1 -14.9 114.2	7 10.1 -14.4 113.9	6 16.1 -14.0 113.7
23°	9 36.0 -15.8 115.6	8 42.7 -15.4 115.4	7 49.2 -14.9 115.1	6 55.7 -14.6 114.9	6 02.1 -14.2 114.7
24°	9 20.2 -16.1 116.6	8 27.3 -15.6 116.3	7 34.3 -15.2 116.1	6 41.1 -14.6 115.9	5 47.9 -14.2 115.7
25°	9 04.1 -16.2 117.6	8 11.7 -15.7 117.3	7 19.1 -15.2 117.1	6 26.5 -14.8 116.9	5 33.7 -14.3 116.6
26°	8 47.9 -16.3 118.5	7 56.0 -15.9 118.3	7 03.9 -15.4 118.1	6 11.7 -14.9 117.8	5 19.4 -14.4 117.6
27°	8 31.6 -16.5 119.5	7 40.1 -16.0 119.3	6 48.5 -15.5 119.0	5 56.8 -15.0 118.8	5 05.0 -14.5 118.6
28°	8 15.1 -16.6 120.5	7 24.1 -16.1 120.2	6 33.0 -15.6 120.0	5 41.8 -15.1 119.8	4 50.5 -14.6 119.6
29°	7 58.5 -16.7 121.5	7 08.0 -16.2 121.2	6 17.4 -15.7 121.0	5 26.7 -15.2 120.8	4 35.9 -14.7 120.5

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°	9 50.8 -10.7 91.8	8 51.7 -10.6 91.6	7 52.7 -10.6 91.4	6 53.6 -10.6 91.2	5 54.5 -10.5 91.0
1°	9 40.1 -10.8 92.8	8 41.1 -10.8 92.6	7 42.1 -10.8 92.4	6 43.0 -10.6 92.2	5 44.0 -10.6 92.0
2°	9 29.3 -11.0 93.7	8 30.3 -10.9 93.6	7 31.3 -10.8 93.4	6 32.4 -10.8 93.2	5 33.4 -10.8 93.0
3°	9 18.3 -11.2 94.7	8 19.4 -11.1 94.6	7 20.5 -11.0 94.4	6 21.6 -10.9 94.2	5 22.6 -10.8 94.0
4°	9 07.1 -11.3 95.7	8 08.3 -11.2 95.6	7 09.5 -11.1 95.4	6 10.7 -11.1 95.2	5 11.8 -10.9 95.0
5°	8 55.8 -11.5 96.7	7 57.1 -11.4 96.5	6 58.4 -11.3 96.4	5 59.6 -11.1 96.2	5 00.9 -11.0 96.0
6°	8 44.3 -11.6 97.7	7 45.7 -11.5 97.5	6 47.1 -11.3 97.3	5 48.5 -11.2 97.2	4 49.9 -11.1 97.0
7°	8 32.7 -11.8 98.7	7 34.2 -11.6 98.5	6 35.8 -11.5 98.3	5 37.3 -11.3 98.1	4 38.8 -11.2 98.0
8°	8 20.9 -12.0 99.7	7 22.6 -11.8 99.5	6 24.3 -11.6 99.3	5 26.0 -11.4 99.1	4 27.6 -11.2 98.9
9°	8 08.9 -12.1 100.7	7 10.8 -11.9 100.5	6 12.7 -11.7 100.3	5 14.6 -11.5 100.1	4 16.4 -11.3 99.9
10°	7 56.8 -12.2 101.7	6 58.9 -12.0 101.5	6 01.0 -11.8 101.3	5 03.1 -11.6 101.1	4 05.1 -11.4 100.9
11°	7 44.6 -12.4 102.7	6 46.9 -12.1 102.5	5 49.2 -11.9 102.3	4 51.5 -11.7 102.1	3 53.7 -11.5 101.9
12°	7 32.2 -12.5 103.7	6 34.8 -12.3 103.5	5 37.3 -12.0 103.3	4 39.8 -11.8 103.1	3 42.2 -11.5 102.9
13°	7 19.7 -12.6 104.7	6 22.5 -12.3 104.5	5 25.3 -12.1 104.3	4 28.0 -11.8 104.1	3 30.7 -11.6 103.9
14°	7 07.1 -12.7 105.6	6 10.2 -12.5 105.4	5 13.2 -12.2 105.2	4 16.2 -12.0 105.0	3 19.1 -11.7 104.8
15°	6 54.4 -12.9 106.6	5 57.7 -12.6 106.4	5 01.0 -12.3 106.2	4 04.2 -12.0 106.0	3 07.4 -11.7 105.8
16°	6 41.5 -13.0 107.6	5 45.1 -12.6 107.4	4 48.7 -12.4 107.2	3 52.2 -12.0 107.0	2 55.7 -11.8 106.8
17°	6 28.5 -13.1 108.6	5 32.5 -12.8 108.4	4 36.3 -12.4 108.2	3 40.2 -12.1 108.0	2 43.9 -11.8 107.8
18°	6 15.4 -13.2 109.6	5 19.7 -12.9 109.4	4 23.9 -12.5 109.2	3 28.1 -12.2 109.0	2 32.1 -11.8 108.8
19°	6 02.2 -13.3 110.6	5 06.8 -12.9 110.3	4 11.4 -12.6 110.1	3 15.9 -12.3 109.9	2 20.3 -11.9 109.8
20°	5 48.9 -13.5 111.5	4 53.9 -13.1 111.3	3 58.8 -12.7 111.1	3 03.6 -12.3 110.9	2 08.4 -11.9 110.7
21°	5 35.4 -13.5 112.5	4 40.8 -13.1 112.3	3 46.1 -12.7 112.1	2 51.3 -12.3 111.9	1 56.5 -12.0 111.7
22°	5 21.9 -13.6 113.5	4 27.7 -13.2 113.3	3 33.4 -12.8 113.1	2 39.0 -12.4 112.9	1 44.5 -12.0 112.7
23°	5 08.3 -13.7 114.5	4 14.5 -13.3 114.3	3 20.6 -12.9 114.1	2 26.6 -12.5 113.9	1 32.5 -12.0 113.7
24°	4 54.6 -13.8 115.4	4 01.2 -13.3 115.2	3 07.7 -12.9 115.0	2 14.1 -12.4 114.8	1 20.5 -12.1 114.7
25°	4 40.8 -13.8 116.4	3 47.9 -13.4 116.2	2 54.8 -12.9 116.0	2 01.7 -12.5 115.8	1 08.4 -12.0 115.6
26°	4 27.0 -14.0 117.4	3 34.5 -13.5 117.2	2 41.9 -13.0 117.0	1 49.2 -12.6 116.8	0 56.4 -12.1 116.6
27°	4 13.0 -14.0 118.4	3 21.0 -13.5 118.2	2 28.9 -13.1 118.0	1 36.6 -12.6 117.8	0 44.3 -12.1 117.6
28°	3 59.0 -14.1 119.4	3 07.5 -13.6 119.1	2 15.8 -13.1 119.0	1 24.0 -12.5 118.8	0 32.2 -12.1 118.6
29°	3 44.9 -14.1 120.3	2 53.9 -13.7 120.1	2 02.7 -13.1 119.9	1 11.5 -12.7 119.7	0 20.1 -12.1 119.6

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 55.4 -10.5 90.9	3 56.3 -10.4 90.7	2 57.3 -10.5 90.5	1 58.2 -10.5 90.3	0 59.1 -10.4 90.2
1°	4 44.9 -10.6 91.9	3 45.9 -10.6 91.7	2 46.8 -10.5 91.5	1 47.7 -10.4 91.3	0 48.7 -10.5 91.2
2°	4 34.3 -10.6 92.8	3 35.3 -10.6 92.7	2 36.3 -10.6 92.5	1 37.3 -10.5 92.3	0 38.2 -10.4 92.1
3°	4 23.7 -10.8 93.8	3 24.7 -10.7 93.7	2 25.7 -10.6 93.5	1 26.8 -10.6 93.3	0 27.8 -10.5 93.1
4°	4 12.9 -10.8 94.8	3 14.0 -10.7 94.6	2 15.1 -10.6 94.5	1 16.2 -10.5 94.3	0 17.3 -10.5 94.1
5°	4 02.1 -10.9 95.8	3 03.3 -10.8 95.6	2 04.5 -10.7 95.4	1 05.7 -10.6 95.3	0 06.8 -10.4 95.1
6°	3 51.2 -10.9 96.8	2 52.5 -10.8 96.6	1 53.8 -10.7 96.4	0 55.1 -10.6 96.3	-0 03.6 -10.5
7°	3 40.3 -11.1 97.8	2 41.7 -10.9 97.6	1 43.1 -10.7 97.4	0 44.5 -10.6 97.2	-0 14.1 -10.5
8°	3 29.2 -11.0 98.8	2 30.8 -10.9 98.6	1 32.4 -10.8 98.4	0 33.9 -10.6 98.2	-0 24.6 -10.4
9°	3 18.2 -11.2 99.7	2 19.9 -11.0 99.6	1 21.6 -10.8 99.4	0 23.3 -10.6 99.2	-0 35.0 -10.5
10°	3 07.0 -11.2 100.7	2 08.9 -11.0 100.5	1 10.8 -10.8 100.4	0 12.7 -10.6 100.2	-0 45.5 -10.4
11°	2 55.8 -11.2 101.7	1 57.9 -11.0 101.5	1 00.0 -10.8 101.4	0 02.1 -10.6 101.2	-0 55.9 -10.4
12°	2 44.6 -11.3 102.7	1 46.9 -11.1 102.5	0 49.2 -10.8 102.3	-0 08.5 -10.7	-1 06.3 -10.4
13°	2 33.3 -11.4 103.7	1 35.8 -11.1 103.5	0 38.4 -10.9 103.3	-0 19.2 -10.6	-1 16.7 -10.4
14°	2 21.9 -11.4 104.7	1 24.7 -11.1 104.5	0 27.5 -10.9 104.3	-0 29.8 -10.6	-1 27.1 -10.3
15°	2 10.5 -11.4 105.6	1 13.6 -11.1 105.5	0 16.6 -10.8 105.3	-0 40.4 -10.6	-1 37.4 -10.4
16°	1 59.1 -11.4 106.6	1 02.5 -11.2 106.4	0 05.8 -10.9 106.3	-0 51.0 -10.5	-1 47.8 -10.3
17°	1 47.7 -11.5 107.6	0 51.3 -11.2 107.4	-0 05.1 -10.9	-1 01.5 -10.6	-1 58.1 -10.2
18°	1 36.2 -11.6 108.6	0 40.1 -11.2 108.4	-0 16.0 -10.8	-1 12.1 -10.5	-2 08.3 -10.2
19°	1 24.6 -11.5 109.6	0 28.9 -11.2 109.4	-0 26.8 -10.9	-1 22.6 -10.6	-2 18.5 -10.2
20°	1 13.1 -11.6 110.6	0 17.7 -11.2 110.4	-0 37.7 -10.8	-1 33.2 -10.4	-2 28.7 -10.1
21°	1 01.5 -11.5 111.5	0 06.5 -11.2 111.4	-0 48.5 -10.8	-1 43.6 -10.5	-2 38.8 -10.1
22°	0 50.0 -11.6 112.5	-0 04.7 -11.2	-0 59.3 -10.9	-1 54.1 -10.4	-2 48.9 -10.0
23°	0 38.4 -11.6 113.5	-0 15.9 -11.2	-1 10.2 -10.7	-2 04.5 -10.4	-2 58.9 -10.0
24°	0 26.8 -11.7 114.5	-0 27.1 -11.2	-1 20.9 -10.8	-2 14.9 -10.3	-3 08.9 -09.9
25°	0 15.1 -11.6 115.5	-0 38.3 -11.1	-1 31.7 -10.8	-2 25.2 -10.3	-3 18.8 -09.9
26°	0 03.5 -11.6 116.4	-0 49.4 -11.2	-1 42.5 -10.7	-2 35.5 -10.3	-3 28.7 -09.8
27°	-0 08.1 -11.6	-1 00.6 -11.1	-1 53.2 -10.6	-2 45.8 -10.2	-3 38.5 -09.8
28°	-0 19.7 -11.6	-1 11.7 -11.2	-2 03.8 -10.7	-2 56.0 -10.2	-3 48.3 -09.6
29°	-0 31.3 -11.6	-1 22.9 -11.1	-2 14.5 -10.6	-3 06.2 -10.1	-3 57.9 -09.6

Latitude 10°

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 -10.4 90.0	-0 59.1 -10.4			
1°	-0 10.4 -10.4	-1 09.5 -10.4			
2°	-0 20.8 -10.4	-1 19.9 -10.4			
3°	-0 31.2 -10.4	-1 30.3 -10.3			
4°	-0 41.6 -10.4	-1 40.6 -10.3			
5°	-0 52.0 -10.4	-1 50.9 -10.3			
6°	-1 02.4 -10.4	-2 01.2 -10.2			
7°	-1 12.8 -10.3	-2 11.4 -10.2			
8°	-1 23.1 -10.3	-2 21.6 -10.2			
9°	-1 33.4 -10.3	-2 31.8 -10.1			
10°	-1 43.7 -10.2	-2 41.9 -10.1			
11°	-1 53.9 -10.2	-2 52.0 -10.0			
12°	-2 04.1 -10.2	-3 02.0 -10.0			
13°	-2 14.3 -10.2	-3 12.0 -09.9			
14°	-2 24.5 -10.1	-3 21.9 -09.8			
15°	-2 34.6 -10.0	-3 31.7 -09.8			
16°	-2 44.6 -10.0	-3 41.5 -09.7			
17°	-2 54.6 -10.0	-3 51.2 -09.7			
18°	-3 04.6 -09.9	-4 00.9 -09.5			
19°	-3 14.5 -09.8	-4 10.4 -09.5			
20°	-3 24.3 -09.8	-4 19.9 -09.5			
21°	-3 34.1 -09.7	-4 29.4 -09.3			
22°	-3 43.8 -09.6	-4 38.7 -09.3			
23°	-3 53.4 -09.6	-4 48.0 -09.2			
24°	-4 03.0 -09.5	-4 57.2 -09.0			
25°	-4 12.5 -09.4	-5 06.2 -09.0			
26°	-4 21.9 -09.4	-5 15.2 -08.9			
27°	-4 31.3 -09.3	-5 24.1 -08.8			
28°	-4 40.6 -09.2	-5 32.9 -08.8			
29°	-4 49.8 -09.1	-5 41.7 -08.6			

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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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°	79 00.0 -60.0 180.0	78 57.3 -59.8 174.8	78 49.3 -59.1 169.6	78 36.2 -58.1 164.6	78 18.2 -56.7 159.9
1°	78 00.0 -60.0 180.0	77 57.5 -59.8 175.2	77 50.2 -59.3 170.5	77 38.1 -58.4 165.9	77 21.5 -57.2 161.4
2°	77 00.0 -60.0 180.0	76 57.7 -59.8 175.6	76 50.9 -59.3 171.2	76 39.7 -58.6 166.9	76 24.3 -57.6 162.7
3°	76 00.0 -60.0 180.0	75 57.9 -59.9 175.9	75 51.6 -59.5 171.8	75 41.1 -58.8 167.8	75 26.7 -57.9 163.9
4°	75 00.0 -60.0 180.0	74 58.0 -59.9 176.2	74 52.1 -59.5 172.3	74 42.3 -58.9 168.6	74 28.8 -58.1 164.9
5°	74 00.0 -60.0 180.0	73 58.1 -59.8 176.4	73 52.6 -59.6 172.8	73 43.4 -59.0 169.3	73 30.7 -58.3 165.8
6°	73 00.0 -60.0 180.0	72 58.3 -59.9 176.6	72 53.0 -59.6 173.2	72 44.4 -59.2 169.9	72 32.4 -58.5 166.6
7°	72 00.0 -60.0 180.0	71 58.4 -60.0 176.8	71 53.4 -59.6 173.6	71 45.2 -59.2 170.4	71 33.9 -58.6 167.4
8°	71 00.0 -60.0 180.0	70 58.4 -59.9 177.0	70 53.8 -59.7 173.9	70 46.0 -59.3 170.9	70 35.3 -58.8 168.0
9°	70 00.0 -60.0 180.0	69 58.5 -59.9 177.1	69 54.1 -59.7 174.2	69 46.7 -59.3 171.4	69 36.5 -58.9 168.6
10°	69 00.0 -60.0 180.0	68 58.6 -59.9 177.3	68 54.4 -59.8 174.5	68 47.4 -59.5 171.8	68 37.6 -59.0 169.1
11°	68 00.0 -60.0 180.0	67 58.7 -60.0 177.4	67 54.6 -59.7 174.8	67 47.9 -59.4 172.2	67 38.6 -59.0 169.6
12°	67 00.0 -60.0 180.0	66 58.7 -59.9 177.5	66 54.9 -59.8 175.0	66 48.5 -59.5 172.5	66 39.6 -59.2 170.1
13°	66 00.0 -60.0 180.0	65 58.8 -60.0 177.6	65 55.1 -59.8 175.2	65 49.0 -59.6 172.8	65 40.4 -59.2 170.5
14°	65 00.0 -60.0 180.0	64 58.8 -59.9 177.7	64 55.3 -59.8 175.4	64 49.4 -59.6 173.1	64 41.2 -59.2 170.9
15°	64 00.0 -60.0 180.0	63 58.9 -60.0 177.8	63 55.5 -59.8 175.6	63 49.8 -59.6 173.4	63 42.0 -59.3 171.3
16°	63 00.0 -60.0 180.0	62 58.9 -59.9 177.9	62 55.7 -59.9 175.8	62 50.2 -59.6 173.7	62 42.7 -59.4 171.6
17°	62 00.0 -60.0 180.0	61 59.0 -60.0 178.0	61 55.8 -59.8 175.9	61 50.6 -59.7 173.9	61 43.3 -59.4 171.9
18°	61 00.0 -60.0 180.0	60 59.0 -60.0 178.0	60 56.0 -59.9 176.1	60 50.9 -59.6 174.1	60 43.9 -59.4 172.2
19°	60 00.0 -60.0 180.0	59 59.0 -59.9 178.1	59 56.1 -59.8 176.2	59 51.3 -59.7 174.3	59 44.5 -59.4 172.5
20°	59 00.0 -60.0 180.0	58 59.1 -60.0 178.2	58 56.3 -59.9 176.4	58 51.6 -59.7 174.5	58 45.1 -59.5 172.7
21°	58 00.0 -60.0 180.0	57 59.1 -60.0 178.2	57 56.4 -59.9 176.5	57 51.9 -59.8 174.7	57 45.6 -59.6 173.0
22°	57 00.0 -60.0 180.0	56 59.1 -59.9 178.3	56 56.5 -59.9 176.6	56 52.1 -59.7 174.9	56 46.0 -59.5 173.2
23°	56 00.0 -60.0 180.0	55 59.2 -60.0 178.4	55 56.6 -59.9 176.7	55 52.4 -59.8 175.1	55 46.5 -59.6 173.4
24°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.4	54 56.7 -59.9 176.8	54 52.6 -59.7 175.2	54 46.9 -59.5 173.7
25°	54 00.0 -60.0 180.0	53 59.2 -60.0 178.5	53 56.8 -59.9 176.9	53 52.9 -59.8 175.4	53 47.4 -59.6 173.9
26°	53 00.0 -60.0 180.0	52 59.2 -59.9 178.5	52 56.9 -59.9 177.0	52 53.1 -59.8 175.5	52 47.8 -59.7 174.0
27°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.6	51 57.0 -59.9 177.1	51 53.3 -59.8 175.7	51 48.1 -59.6 174.2
28°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.6	50 57.1 -59.9 177.2	50 53.5 -59.8 175.8	50 48.5 -59.7 174.4
29°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.6	49 57.2 -59.9 177.3	49 53.7 -59.8 175.9	49 48.8 -59.6 174.6

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°	77 55.8 -55.1 155.4	77 29.3 -53.4 151.2	76 59.1 -51.4 147.2	76 25.7 -49.5 143.6	75 49.4 -47.6 140.3
1°	77 00.7 -55.8 157.2	76 35.9 -54.2 153.2	76 07.7 -52.5 149.5	75 36.2 -50.7 146.0	75 01.8 -48.9 142.7
2°	76 04.9 -56.4 158.8	75 41.7 -54.9 155.0	75 15.2 -53.4 151.4	74 45.5 -51.8 148.1	74 12.9 -50.1 144.9
3°	75 08.5 -56.7 160.2	74 46.8 -55.5 156.6	74 21.8 -54.1 153.2	73 53.7 -52.6 149.9	73 22.8 -51.1 146.9
4°	74 11.8 -57.2 161.4	73 51.3 -56.0 158.0	73 27.7 -54.8 154.7	73 01.1 -53.4 151.6	72 31.7 -51.9 148.7
5°	73 14.6 -57.4 162.5	72 55.3 -56.4 159.2	72 32.9 -55.2 156.1	72 07.7 -54.0 153.1	71 39.8 -52.7 150.3
6°	72 17.2 -57.7 163.4	71 58.9 -56.8 160.4	71 37.7 -55.8 157.4	71 13.7 -54.6 154.5	70 47.1 -53.4 151.8
7°	71 19.5 -57.9 164.3	71 02.1 -57.1 161.4	70 41.9 -56.1 158.5	70 19.1 -55.1 155.8	69 53.7 -54.0 153.1
8°	70 21.6 -58.2 165.1	70 05.0 -57.3 162.3	69 45.8 -56.4 159.6	69 24.0 -55.5 156.9	68 59.7 -54.4 154.4
9°	69 23.4 -58.2 165.8	69 07.7 -57.6 163.2	68 49.4 -56.8 160.5	68 28.5 -55.9 158.0	68 05.3 -54.9 155.5
10°	68 25.2 -58.5 166.5	68 10.1 -57.7 163.9	67 52.6 -57.0 161.4	67 32.6 -56.2 159.0	67 10.4 -55.3 156.6
11°	67 26.7 -58.5 167.1	67 12.4 -58.0 164.6	66 55.6 -57.3 162.2	66 36.4 -56.4 159.9	66 15.1 -55.7 157.6
12°	66 28.2 -58.7 167.7	66 14.4 -58.1 165.3	65 58.3 -57.4 163.0	65 40.0 -56.8 160.7	65 19.4 -55.9 158.5
13°	65 29.5 -58.7 168.2	65 16.3 -58.2 165.9	65 00.9 -57.6 163.7	64 43.2 -56.9 161.5	64 23.5 -56.2 159.3
14°	64 30.8 -58.9 168.7	64 18.1 -58.4 166.5	64 03.3 -57.8 164.3	63 46.3 -57.2 162.2	63 27.3 -56.5 160.1
15°	63 31.9 -58.9 169.1	63 19.7 -58.4 167.0	63 05.5 -58.0 164.9	62 49.1 -57.3 162.9	62 30.8 -56.7 160.9
16°	62 33.0 -59.0 169.5	62 21.3 -58.6 167.5	62 07.5 -58.0 165.5	61 51.8 -57.5 163.5	61 34.1 -56.9 161.6
17°	61 34.0 -59.0 169.9	61 22.7 -58.6 168.0	61 09.5 -58.2 166.0	60 54.3 -57.7 164.1	60 37.2 -57.0 162.2
18°	60 35.0 -59.1 170.3	60 24.1 -58.8 168.4	60 11.3 -58.3 166.5	59 56.6 -57.8 164.7	59 40.2 -57.3 162.9
19°	59 35.9 -59.2 170.6	59 25.3 -58.8 168.8	59 13.0 -58.4 167.0	58 58.8 -57.9 165.2	58 42.9 -57.4 163.5
20°	58 36.7 -59.2 171.0	58 26.5 -58.8 169.2	58 14.6 -58.5 167.4	58 00.9 -58.0 165.7	57 45.5 -57.5 164.0
21°	57 37.5 -59.3 171.3	57 27.7 -59.0 169.5	57 16.1 -58.5 167.9	57 02.9 -58.1 166.2	56 48.0 -57.6 164.5
22°	56 38.2 -59.2 171.6	56 28.7 -58.9 169.9	56 17.6 -58.6 168.3	56 04.8 -58.2 166.6	55 50.4 -57.8 165.0
23°	55 39.0 -59.4 171.8	55 29.8 -59.1 170.2	55 19.0 -58.7 168.6	55 06.6 -58.4 167.1	54 52.6 -57.9 165.5
24°	54 39.6 -59.3 172.1	54 30.7 -59.0 170.5	54 20.3 -58.8 169.0	54 08.2 -58.3 167.5	53 54.7 -58.0 166.0
25°	53 40.3 -59.4 172.3	53 31.7 -59.2 170.8	53 21.5 -58.8 169.3	53 09.9 -58.5 167.9	52 56.7 -58.0 166.4
26°	52 40.9 -59.4 172.6	52 32.5 -59.1 171.1	52 22.7 -58.9 169.7	52 11.4 -58.5 168.2	51 58.7 -58.2 166.8
27°	51 41.5 -59.5 172.8	51 33.4 -59.2 171.4	51 23.8 -58.9 170.0	51 12.9 -58.6 168.6	51 00.5 -58.2 167.2
28°	50 42.0 -59.4 173.0	50 34.2 -59.2 171.6	50 24.9 -58.9 170.3	50 14.3 -58.6 168.9	50 02.3 -58.3 167.6
29°	49 42.6 -59.5 173.2	49 35.0 -59.3 171.9	49 26.0 -59.0 170.6	49 15.7 -58.7 169.3	49 04.0 -58.4 167.9

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°	75 10.5 -45.6 137.3	74 29.5 -43.7 134.5	73 46.6 -41.9 131.9	73 01.9 -40.2 129.6	72 15.8 -38.5 127.4
1°	74 24.9 -47.0 139.7	73 45.8 -45.3 137.0	73 04.7 -43.6 134.4	72 21.7 -41.9 132.1	71 37.3 -40.4 129.9
2°	73 37.9 -48.4 142.0	73 00.5 -46.7 139.3	72 21.1 -45.1 136.7	71 39.8 -43.5 134.4	70 56.9 -41.9 132.2
3°	72 49.5 -49.6 144.0	72 13.8 -48.0 141.4	71 36.0 -46.4 138.9	70 56.3 -44.8 136.5	70 15.0 -43.4 134.4
4°	71 59.9 -50.5 145.9	71 25.8 -49.1 143.3	70 49.6 -47.6 140.8	70 11.5 -46.1 138.5	69 31.6 -44.6 136.4
5°	71 09.4 -51.4 147.6	70 36.7 -49.9 145.1	70 02.0 -48.6 142.7	69 25.4 -47.3 140.4	68 47.0 -45.9 138.2
6°	70 18.0 -52.1 149.2	69 46.8 -50.9 146.7	69 13.4 -49.5 144.3	68 38.1 -48.1 142.1	68 01.1 -46.9 140.0
7°	69 25.9 -52.8 150.6	68 55.9 -51.5 148.2	68 23.9 -50.3 145.9	67 50.0 -49.1 143.7	67 14.2 -47.8 141.6
8°	68 33.1 -53.3 151.9	68 04.4 -52.3 149.6	67 33.6 -51.1 147.4	67 00.9 -49.9 145.2	66 26.4 -48.7 143.2
9°	67 39.8 -53.9 153.2	67 12.1 -52.8 150.9	66 42.5 -51.7 148.7	66 11.0 -50.6 146.6	65 37.7 -49.4 144.6
10°	66 45.9 -54.3 154.3	66 19.3 -53.3 152.1	65 50.8 -52.3 150.0	65 20.4 -51.2 147.9	64 48.3 -50.1 146.0
11°	65 51.6 -54.8 155.4	65 26.0 -53.8 153.2	64 58.5 -52.8 151.2	64 29.2 -51.8 149.2	63 58.2 -50.8 147.2
12°	64 56.8 -55.1 156.4	64 32.2 -54.2 154.3	64 05.7 -53.3 152.3	63 37.4 -52.3 150.3	63 07.4 -51.3 148.4
13°	64 01.7 -55.4 157.3	63 38.0 -54.6 155.3	63 12.4 -53.7 153.3	62 45.1 -52.8 151.4	62 16.1 -51.9 149.6
14°	63 06.3 -55.7 158.1	62 43.4 -54.9 156.2	62 18.7 -54.0 154.3	61 52.3 -53.2 152.4	61 24.2 -52.3 150.6
15°	62 10.6 -56.0 158.9	61 48.5 -55.2 157.0	61 24.7 -54.5 155.2	60 59.1 -53.6 153.4	60 31.9 -52.7 151.6
16°	61 14.6 -56.2 159.7	60 53.3 -55.5 157.9	60 30.2 -54.7 156.1	60 05.5 -54.0 154.3	59 39.2 -53.2 152.6
17°	60 18.4 -56.5 160.4	59 57.8 -55.8 158.6	59 35.5 -55.1 156.9	59 11.5 -54.3 155.2	58 46.0 -53.5 153.5
18°	59 21.9 -56.6 161.1	59 02.0 -56.0 159.3	58 40.4 -55.3 157.6	58 17.2 -54.6 156.0	57 52.5 -53.9 154.4
19°	58 25.3 -56.8 161.7	58 06.0 -56.2 160.0	57 45.1 -55.6 158.4	57 22.6 -54.8 156.8	56 58.6 -54.1 155.2
20°	57 28.5 -57.0 162.3	57 09.8 -56.4 160.7	56 49.5 -55.7 159.1	56 27.8 -55.2 157.5	56 04.5 -54.4 156.0
21°	56 31.5 -57.1 162.9	56 13.4 -56.6 161.3	55 53.8 -56.0 159.7	55 32.6 -55.3 158.2	55 10.1 -54.7 156.7
22°	55 34.4 -57.3 163.5	55 16.8 -56.7 161.9	54 57.8 -56.2 160.4	54 37.3 -55.6 158.9	54 15.4 -55.0 157.4
23°	54 37.1 -57.4 164.0	54 20.1 -56.9 162.5	54 01.6 -56.3 161.0	53 41.7 -55.8 159.5	53 20.4 -55.1 158.1
24°	53 39.7 -57.5 164.5	53 23.2 -57.0 163.0	53 05.3 -56.5 161.6	52 45.9 -55.9 160.1	52 25.3 -55.4 158.8
25°	52 42.2 -57.7 164.9	52 26.2 -57.2 163.5	52 08.8 -56.7 162.1	51 50.0 -56.1 160.7	51 29.9 -55.6 159.4
26°	51 44.5 -57.7 165.4	51 29.0 -57.3 164.0	51 12.1 -56.8 162.6	50 53.9 -56.3 161.3	50 34.3 -55.7 160.0
27°	50 46.8 -57.8 165.8	50 31.7 -57.4 164.5	50 15.3 -56.9 163.2	49 57.6 -56.4 161.8	49 38.6 -55.9 160.6
28°	49 49.0 -57.9 166.3	49 34.3 -57.5 164.9	49 18.4 -57.1 163.6	49 01.2 -56.6 162.4	48 42.7 -56.0 161.1
29°	48 51.1 -58.0 166.7	48 36.8 -57.6 165.4	48 21.3 -57.1 164.1	48 04.6 -56.7 162.9	47 46.7 -56.2 161.6

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°	71 28.4 -37.0 125.5	70 39.9 -35.5 123.6	69 50.4 -34.2 122.0	69 00.0 -32.9 120.4	68 08.9 -31.7 119.0
1°	70 51.4 -38.8 127.9	70 04.4 -37.4 126.0	69 16.2 -36.0 124.3	68 27.1 -34.7 122.7	67 37.2 -33.5 121.2
2°	70 12.6 -40.4 130.2	69 27.0 -39.0 128.3	68 40.2 -37.6 126.6	67 52.4 -36.4 124.9	67 03.7 -35.2 123.4
3°	69 32.2 -42.0 132.3	68 48.0 -40.6 130.4	68 02.6 -39.2 128.7	67 16.0 -37.9 127.0	66 28.5 -36.7 125.5
4°	68 50.2 -43.2 134.3	68 07.4 -41.9 132.4	67 23.4 -40.7 130.7	66 38.1 -39.3 129.0	65 51.8 -38.1 127.4
5°	68 07.0 -44.5 136.2	67 25.5 -43.2 134.3	66 42.7 -41.8 132.5	65 58.8 -40.7 130.9	65 13.7 -39.4 129.3
6°	67 22.5 -45.6 138.0	66 42.3 -44.3 136.1	66 00.9 -43.1 134.3	65 18.1 -41.8 132.6	64 34.3 -40.7 131.1
7°	66 36.9 -46.6 139.7	65 58.0 -45.3 137.8	65 17.8 -44.1 136.0	64 36.3 -43.0 134.3	63 53.6 -41.8 132.7
8°	65 50.3 -47.5 141.2	65 12.7 -46.3 139.4	64 33.7 -45.2 137.6	63 53.3 -43.9 135.9	63 11.8 -42.8 134.4
9°	65 02.8 -48.3 142.7	64 26.4 -47.2 140.9	63 48.5 -46.0 139.1	63 09.4 -44.9 137.5	62 29.0 -43.8 135.9
10°	64 14.5 -49.0 144.1	63 39.2 -47.9 142.3	63 02.5 -46.8 140.6	62 24.5 -45.8 138.9	61 45.2 -44.7 137.4
11°	63 25.5 -49.7 145.4	62 51.3 -48.6 143.6	62 15.7 -47.6 141.9	61 38.7 -46.5 140.3	61 00.5 -45.5 138.7
12°	62 35.8 -50.3 146.6	62 02.7 -49.4 144.9	61 28.1 -48.3 143.2	60 52.2 -47.3 141.6	60 15.0 -46.3 140.1
13°	61 45.5 -50.9 147.8	61 13.3 -49.9 146.1	60 39.8 -49.0 144.4	60 04.9 -48.0 142.9	59 28.7 -47.0 141.3
14°	60 54.6 -51.4 148.9	60 23.4 -50.5 147.2	59 50.8 -49.5 145.6	59 16.9 -48.6 144.1	58 41.7 -47.6 142.6
15°	60 03.2 -51.9 149.9	59 32.9 -50.9 148.3	59 01.3 -50.1 146.7	58 28.3 -49.1 145.2	57 54.1 -48.2 143.7
16°	59 11.3 -52.3 150.9	58 42.0 -51.5 149.3	58 11.2 -50.5 147.8	57 39.2 -49.7 146.3	57 05.9 -48.8 144.8
17°	58 19.0 -52.7 151.9	57 50.5 -51.9 150.3	57 20.7 -51.1 148.8	56 49.5 -50.2 147.3	56 17.1 -49.3 145.9
18°	57 26.3 -53.1 152.8	56 58.6 -52.2 151.2	56 29.6 -51.4 149.8	55 59.3 -50.6 148.3	55 27.8 -49.8 146.9
19°	56 33.2 -53.4 153.6	56 06.4 -52.7 152.1	55 38.2 -51.9 150.7	55 08.7 -51.1 149.3	54 38.0 -50.3 147.9
20°	55 39.8 -53.7 154.5	55 13.7 -53.0 153.0	54 46.3 -52.2 151.6	54 17.6 -51.4 150.2	53 47.7 -50.6 148.8
21°	54 46.1 -54.0 155.2	54 20.7 -53.3 153.8	53 54.1 -52.6 152.4	53 26.2 -51.8 151.0	52 57.1 -51.1 149.7
22°	53 52.1 -54.3 156.0	53 27.4 -53.6 154.6	53 01.5 -52.9 153.2	52 34.4 -52.2 151.9	52 06.0 -51.4 150.6
23°	52 57.8 -54.5 156.7	52 33.8 -53.8 155.3	52 08.6 -53.1 154.0	51 42.2 -52.5 152.7	51 14.6 -51.8 151.4
24°	52 03.3 -54.8 157.4	51 40.0 -54.1 156.0	51 15.5 -53.5 154.7	50 49.7 -52.7 153.5	50 22.8 -52.1 152.2
25°	51 08.5 -54.9 158.0	50 45.9 -54.4 156.7	50 22.0 -53.7 155.5	49 57.0 -53.1 154.2	49 30.7 -52.3 153.0
26°	50 13.6 -55.2 158.7	49 51.5 -54.5 157.4	49 28.3 -54.0 156.1	49 03.9 -53.3 154.9	48 38.4 -52.7 153.7
27°	49 18.4 -55.4 159.3	48 57.0 -54.8 158.0	48 34.3 -54.1 156.8	48 10.6 -53.6 155.6	47 45.7 -52.9 154.4
28°	48 23.0 -55.5 159.9	48 02.2 -55.0 158.7	47 40.2 -54.4 157.5	47 17.0 -53.7 156.3	46 52.8 -53.1 155.1
29°	47 27.5 -55.7 160.4	47 07.2 -55.1 159.3	46 45.8 -54.6 158.1	46 23.3 -54.0 156.9	45 59.7 -53.4 155.8

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°	67 17.0 -30.6 117.7	66 24.6 -29.6 116.4	65 31.6 -28.6 115.3	64 38.1 -27.6 114.2	63 44.1 -26.7 113.2
1°	66 46.4 -32.3 119.9	65 55.0 -31.2 118.6	65 03.0 -30.2 117.4	64 10.5 -29.3 116.3	63 17.4 -28.4 115.2
2°	66 14.1 -34.0 122.0	65 23.8 -32.9 120.7	64 32.8 -31.8 119.4	63 41.2 -30.9 118.2	62 49.0 -29.9 117.2
3°	65 40.1 -35.5 124.0	64 50.9 -34.4 122.6	64 01.0 -33.4 121.4	63 10.3 -32.3 120.2	62 19.1 -31.4 119.0
4°	65 04.6 -37.0 125.9	64 16.5 -35.9 124.6	63 27.6 -34.8 123.2	62 38.0 -33.8 122.0	61 47.7 -32.8 120.9
5°	64 27.6 -38.3 127.8	63 40.6 -37.1 126.4	62 52.8 -36.1 125.1	62 04.2 -35.1 123.8	61 14.9 -34.1 122.6
6°	63 49.3 -39.5 129.6	63 03.5 -38.5 128.1	62 16.7 -37.4 126.8	61 29.1 -36.3 125.5	60 40.8 -35.3 124.3
7°	63 09.8 -40.7 131.2	62 25.0 -39.5 129.8	61 39.3 -38.5 128.5	60 52.8 -37.5 127.2	60 05.5 -36.5 125.9
8°	62 29.1 -41.7 132.8	61 45.5 -40.7 131.4	61 00.8 -39.6 130.0	60 15.3 -38.6 128.8	59 29.0 -37.6 127.5
9°	61 47.4 -42.7 134.4	61 04.8 -41.7 133.0	60 21.2 -40.6 131.6	59 36.7 -39.6 130.3	58 51.4 -38.7 129.0
10°	61 04.7 -43.6 135.9	60 23.1 -42.6 134.4	59 40.6 -41.6 133.1	58 57.1 -40.6 131.7	58 12.7 -39.6 130.5
11°	60 21.1 -44.5 137.3	59 40.5 -43.4 135.8	58 59.0 -42.5 134.5	58 16.5 -41.5 133.2	57 33.1 -40.5 131.9
12°	59 36.6 -45.3 138.6	58 57.1 -44.3 137.2	58 16.5 -43.2 135.8	57 35.0 -42.3 134.5	56 52.6 -41.4 133.3
13°	58 51.3 -46.0 139.9	58 12.8 -45.0 138.5	57 33.3 -44.1 137.1	56 52.7 -43.1 135.8	56 11.2 -42.2 134.6
14°	58 05.3 -46.7 141.1	57 27.8 -45.7 139.7	56 49.2 -44.8 138.4	56 09.6 -43.9 137.1	55 29.0 -42.9 135.9
15°	57 18.6 -47.3 142.3	56 42.1 -46.4 140.9	56 04.4 -45.5 139.6	55 25.7 -44.5 138.3	54 46.1 -43.7 137.1
16°	56 31.3 -47.9 143.4	55 55.7 -47.0 142.1	55 18.9 -46.1 140.7	54 41.2 -45.3 139.5	54 02.4 -44.3 138.3
17°	55 43.4 -48.4 144.5	55 08.7 -47.6 143.2	54 32.8 -46.7 141.9	53 55.9 -45.8 140.6	53 18.1 -45.0 139.4
18°	54 55.0 -48.9 145.5	54 21.1 -48.1 144.2	53 46.1 -47.2 142.9	53 10.1 -46.4 141.7	52 33.1 -45.5 140.5
19°	54 06.1 -49.5 146.5	53 33.0 -48.6 145.2	52 58.9 -47.8 144.0	52 23.7 -46.9 142.7	51 47.6 -46.1 141.6
20°	53 16.6 -49.8 147.5	52 44.4 -49.0 146.2	52 11.1 -48.2 145.0	51 36.8 -47.4 143.8	51 01.5 -46.6 142.6
21°	52 26.8 -50.3 148.4	51 55.4 -49.5 147.1	51 22.9 -48.7 145.9	50 49.4 -47.9 144.7	50 14.9 -47.1 143.6
22°	51 36.5 -50.7 149.3	51 05.9 -49.9 148.1	50 34.2 -49.2 146.8	50 01.5 -48.4 145.7	49 27.8 -47.6 144.5
23°	50 45.8 -51.0 150.1	50 16.0 -50.3 148.9	49 45.0 -49.5 147.7	49 13.1 -48.8 146.6	48 40.2 -48.0 145.5
24°	49 54.8 -51.4 151.0	49 25.7 -50.7 149.8	48 55.5 -49.9 148.6	48 24.3 -49.1 147.5	47 52.2 -48.4 146.4
25°	49 03.4 -51.7 151.8	48 35.0 -50.9 150.6	48 05.6 -50.3 149.4	47 35.2 -49.6 148.3	47 03.8 -48.8 147.2
26°	48 11.7 -51.9 152.5	47 44.1 -51.3 151.4	47 15.3 -50.5 150.3	46 45.6 -49.8 149.2	46 15.0 -49.2 148.1
27°	47 19.8 -52.3 153.3	46 52.8 -51.6 152.2	46 24.8 -51.0 151.0	45 55.8 -50.3 150.0	45 25.8 -49.5 148.9
28°	46 27.5 -52.5 154.0	46 01.2 -51.9 152.9	45 33.8 -51.2 151.8	45 05.5 -50.5 150.7	44 36.3 -49.8 149.7
29°	45 35.0 -52.8 154.7	45 09.3 -52.1 153.6	44 42.6 -51.4 152.5	44 15.0 -50.8 151.5	43 46.5 -50.2 150.5

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°	62 49.8 -25.9 112.3	61 55.1 -25.1 111.4	61 00.1 -24.4 110.5	60 04.8 -23.7 109.7	59 09.3 -23.1 109.0
1°	62 23.9 -27.5 114.2	61 30.0 -26.7 113.3	60 35.7 -25.9 112.4	59 41.1 -25.2 111.6	58 46.2 -24.6 110.8
2°	61 56.4 -29.0 116.1	61 03.3 -28.2 115.1	60 09.8 -27.4 114.2	59 15.9 -26.7 113.4	58 21.6 -25.9 112.5
3°	61 27.4 -30.5 118.0	60 35.1 -29.6 117.0	59 42.4 -28.8 116.0	58 49.2 -28.0 115.1	57 55.7 -27.3 114.2
4°	60 56.9 -31.9 119.8	60 05.5 -31.0 118.7	59 13.6 -30.2 117.7	58 21.2 -29.3 116.8	57 28.4 -28.5 115.9
5°	60 25.0 -33.1 121.5	59 34.5 -32.3 120.4	58 43.4 -31.4 119.4	57 51.9 -30.6 118.4	56 59.9 -29.8 117.5
6°	59 51.9 -34.4 123.2	59 02.2 -33.4 122.1	58 12.0 -32.6 121.0	57 21.3 -31.7 120.1	56 30.1 -31.0 119.1
7°	59 17.5 -35.6 124.8	58 28.8 -34.7 123.7	57 39.4 -33.7 122.6	56 49.6 -33.0 121.6	55 59.1 -32.1 120.7
8°	58 41.9 -36.7 126.3	57 54.1 -35.7 125.2	57 05.7 -34.9 124.2	56 16.6 -33.9 123.1	55 27.0 -33.1 122.2
9°	58 05.2 -37.7 127.8	57 18.4 -36.8 126.7	56 30.8 -35.9 125.6	55 42.7 -35.1 124.6	54 53.9 -34.2 123.6
10°	57 27.5 -38.6 129.3	56 41.6 -37.8 128.2	55 54.9 -36.8 127.1	55 07.6 -36.0 126.0	54 19.7 -35.1 125.0
11°	56 48.9 -39.6 130.7	56 03.8 -38.6 129.6	55 18.1 -37.8 128.5	54 31.6 -36.9 127.4	53 44.6 -36.1 126.4
12°	56 09.3 -40.5 132.1	55 25.2 -39.6 130.9	54 40.3 -38.7 129.8	53 54.7 -37.8 128.8	53 08.5 -37.0 127.8
13°	55 28.8 -41.3 133.4	54 45.6 -40.4 132.2	54 01.6 -39.5 131.1	53 16.9 -38.6 130.1	52 31.5 -37.8 129.1
14°	54 47.5 -42.0 134.7	54 05.2 -41.1 133.5	53 22.1 -40.2 132.4	52 38.3 -39.4 131.4	51 53.7 -38.6 130.3
15°	54 05.5 -42.8 135.9	53 24.1 -41.9 134.7	52 41.9 -41.1 133.6	51 58.9 -40.2 132.6	51 15.1 -39.3 131.6
16°	53 22.7 -43.4 137.1	52 42.2 -42.6 135.9	52 00.8 -41.7 134.8	51 18.7 -40.9 133.8	50 35.8 -40.1 132.8
17°	52 39.3 -44.1 138.2	51 59.6 -43.2 137.1	51 19.1 -42.4 136.0	50 37.8 -41.6 134.9	49 55.7 -40.7 133.9
18°	51 55.2 -44.7 139.3	51 16.4 -43.9 138.2	50 36.7 -43.0 137.1	49 56.2 -42.2 136.1	49 15.0 -41.4 135.1
19°	51 10.5 -45.3 140.4	50 32.5 -44.4 139.3	49 53.7 -43.6 138.2	49 14.0 -42.8 137.2	48 33.6 -42.0 136.2
20°	50 25.2 -45.8 141.4	49 48.1 -45.0 140.3	49 10.1 -44.2 139.3	48 31.2 -43.3 138.2	47 51.6 -42.6 137.2
21°	49 39.4 -46.3 142.4	49 03.1 -45.5 141.4	48 25.9 -44.7 140.3	47 47.9 -44.0 139.3	47 09.0 -43.1 138.3
22°	48 53.1 -46.8 143.4	48 17.6 -46.0 142.3	47 41.2 -45.2 141.3	47 03.9 -44.4 140.3	46 25.9 -43.6 139.3
23°	48 06.3 -47.2 144.4	47 31.6 -46.5 143.3	46 56.0 -45.7 142.3	46 19.5 -44.9 141.3	45 42.3 -44.2 140.3
24°	47 19.1 -47.7 145.3	46 45.1 -46.9 144.2	46 10.3 -46.2 143.2	45 34.6 -45.4 142.2	44 58.1 -44.6 141.2
25°	46 31.4 -48.0 146.2	45 58.2 -47.3 145.1	45 24.1 -46.6 144.1	44 49.2 -45.8 143.1	44 13.5 -45.1 142.2
26°	45 43.4 -48.5 147.0	45 10.9 -47.7 146.0	44 37.5 -46.9 145.0	44 03.4 -46.3 144.0	43 28.4 -45.5 143.1
27°	44 54.9 -48.8 147.9	44 23.2 -48.1 146.9	43 50.6 -47.4 145.9	43 17.1 -46.6 144.9	42 42.9 -45.9 144.0
28°	44 06.1 -49.1 148.7	43 35.1 -48.4 147.7	43 03.2 -47.7 146.7	42 30.5 -47.0 145.8	41 57.0 -46.3 144.9
29°	43 17.0 -49.5 149.5	42 46.7 -48.8 148.5	42 15.5 -48.1 147.6	41 43.5 -47.4 146.6	41 10.7 -46.7 145.7

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°	58 13.4 -22.4 108.3	57 17.4 -21.9 107.6	56 21.2 -21.4 107.0	55 24.8 -20.9 106.4	54 28.2 -20.4 105.8
1°	57 51.0 -23.9 110.0	56 55.5 -23.2 109.3	55 59.8 -22.7 108.7	55 03.9 -22.1 108.0	54 07.8 -21.6 107.4
2°	57 27.1 -25.3 111.8	56 32.3 -24.7 111.0	55 37.1 -24.0 110.3	54 41.8 -23.4 109.6	53 46.2 -22.9 109.0
3°	57 01.8 -26.5 113.4	56 07.6 -25.8 112.7	55 13.1 -25.2 111.9	54 18.4 -24.7 111.2	53 23.3 -24.0 110.6
4°	56 35.3 -27.8 115.1	55 41.8 -27.2 114.3	54 47.9 -26.4 113.5	53 53.7 -25.8 112.8	52 59.3 -25.2 112.1
5°	56 07.5 -29.1 116.7	55 14.6 -28.3 115.8	54 21.5 -27.7 115.1	53 27.9 -26.9 114.3	52 34.1 -26.3 113.6
6°	55 38.4 -30.2 118.2	54 46.3 -29.4 117.4	53 53.8 -28.7 116.6	53 01.0 -28.1 115.8	52 07.8 -27.4 115.1
7°	55 08.2 -31.3 119.8	54 16.9 -30.6 118.9	53 25.1 -29.8 118.0	52 32.9 -29.1 117.3	51 40.4 -28.4 116.5
8°	54 36.9 -32.3 121.2	53 46.3 -31.5 120.3	52 55.3 -30.9 119.5	52 03.8 -30.1 118.7	51 12.0 -29.5 117.9
9°	54 04.6 -33.4 122.7	53 14.8 -32.6 121.8	52 24.4 -31.8 120.9	51 33.7 -31.1 120.1	50 42.5 -30.4 119.3
10°	53 31.2 -34.3 124.1	52 42.2 -33.6 123.2	51 52.6 -32.8 122.3	51 02.6 -32.0 121.5	50 12.1 -31.3 120.6
11°	52 56.9 -35.3 125.5	52 08.6 -34.4 124.5	51 19.8 -33.7 123.6	50 30.6 -33.0 122.8	49 40.8 -32.2 122.0
12°	52 21.6 -36.1 126.8	51 34.2 -35.4 125.9	50 46.1 -34.5 125.0	49 57.6 -33.8 124.1	49 08.6 -33.0 123.3
13°	51 45.5 -37.0 128.1	50 58.8 -36.1 127.1	50 11.6 -35.4 126.2	49 23.8 -34.6 125.4	48 35.6 -33.9 124.5
14°	51 08.5 -37.8 129.4	50 22.7 -37.0 128.4	49 36.2 -36.2 127.5	48 49.2 -35.4 126.6	48 01.7 -34.7 125.8
15°	50 30.7 -38.5 130.6	49 45.7 -37.7 129.6	49 00.0 -36.9 128.7	48 13.8 -36.2 127.8	47 27.0 -35.4 127.0
16°	49 52.2 -39.2 131.8	49 08.0 -38.5 130.8	48 23.1 -37.7 129.9	47 37.6 -36.9 129.0	46 51.6 -36.1 128.2
17°	49 13.0 -39.9 132.9	48 29.5 -39.1 132.0	47 45.4 -38.3 131.1	47 00.7 -37.5 130.2	46 15.5 -36.8 129.3
18°	48 33.1 -40.6 134.1	47 50.4 -39.8 133.1	47 07.1 -39.0 132.2	46 23.2 -38.3 131.3	45 38.7 -37.5 130.5
19°	47 52.5 -41.2 135.2	47 10.6 -40.4 134.2	46 28.1 -39.6 133.3	45 44.9 -38.8 132.4	45 01.2 -38.1 131.6
20°	47 11.3 -41.8 136.3	46 30.2 -41.0 135.3	45 48.5 -40.3 134.4	45 06.1 -39.5 133.5	44 23.1 -38.8 132.7
21°	46 29.5 -42.4 137.3	45 49.2 -41.6 136.4	45 08.2 -40.8 135.5	44 26.6 -40.1 134.6	43 44.3 -39.3 133.7
22°	45 47.1 -42.9 138.3	45 07.6 -42.1 137.4	44 27.4 -41.3 136.5	43 46.5 -40.6 135.6	43 05.0 -39.8 134.8
23°	45 04.2 -43.3 139.3	44 25.5 -42.6 138.4	43 46.1 -41.9 137.5	43 05.9 -41.1 136.6	42 25.2 -40.4 135.8
24°	44 20.9 -43.9 140.3	43 42.9 -43.2 139.4	43 04.2 -42.4 138.5	42 24.8 -41.6 137.6	41 44.8 -40.9 136.8
25°	43 37.0 -44.4 141.2	42 59.7 -43.5 140.3	42 21.8 -42.8 139.5	41 43.2 -42.1 138.6	41 03.9 -41.3 137.8
26°	42 52.6 -44.7 142.2	42 16.2 -44.1 141.3	41 39.0 -43.3 140.4	41 01.1 -42.6 139.5	40 22.6 -41.9 138.7
27°	42 07.9 -45.2 143.1	41 32.1 -44.4 142.2	40 55.7 -43.8 141.3	40 18.5 -43.0 140.5	39 40.7 -42.3 139.7
28°	41 22.7 -45.6 144.0	40 47.7 -44.9 143.1	40 11.9 -44.1 142.2	39 35.5 -43.4 141.4	38 58.4 -42.7 140.6
29°	40 37.1 -45.9 144.8	40 02.8 -45.2 144.0	39 27.8 -44.5 143.1	38 52.1 -43.8 142.3	38 15.7 -43.1 141.5

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	53 31.4 -19.9 105.2	52 34.5 -19.4 104.7	51 37.5 -19.0 104.2	50 40.3 -18.6 103.7	49 43.1 -18.3 103.3
1°	53 11.5 -21.1 106.8	52 15.1 -20.7 106.3	51 18.5 -20.2 105.7	50 21.7 -19.8 105.2	49 24.8 -19.4 104.7
2°	52 50.4 -22.3 108.4	51 54.4 -21.8 107.8	50 58.3 -21.4 107.2	50 01.9 -20.9 106.7	49 05.4 -20.4 106.2
3°	52 28.1 -23.5 109.9	51 32.6 -23.0 109.3	50 36.9 -22.4 108.7	49 41.0 -21.9 108.1	48 45.0 -21.5 107.6
4°	52 04.6 -24.6 111.4	51 09.6 -24.0 110.8	50 14.5 -23.6 110.2	49 19.1 -23.0 109.6	48 23.5 -22.5 109.0
5°	51 40.0 -25.7 112.9	50 45.6 -25.1 112.2	49 50.9 -24.5 111.6	48 56.1 -24.1 111.0	48 01.0 -23.5 110.4
6°	51 14.3 -26.8 114.3	50 20.5 -26.2 113.7	49 26.4 -25.6 113.0	48 32.0 -25.0 112.4	47 37.5 -24.5 111.8
7°	50 47.5 -27.8 115.8	49 54.3 -27.1 115.1	49 00.8 -26.5 114.4	48 07.0 -25.9 113.7	47 13.0 -25.4 113.1
8°	50 19.7 -28.7 117.2	49 27.2 -28.2 116.4	48 34.3 -27.5 115.8	47 41.1 -26.9 115.1	46 47.6 -26.3 114.5
9°	49 51.0 -29.7 118.5	48 59.0 -29.0 117.8	48 06.8 -28.4 117.1	47 14.2 -27.8 116.4	46 21.3 -27.2 115.8
10°	49 21.3 -30.7 119.9	48 30.0 -30.0 119.1	47 38.4 -29.3 118.4	46 46.4 -28.7 117.7	45 54.1 -28.1 117.1
11°	48 50.6 -31.5 121.2	48 00.0 -30.8 120.4	47 09.1 -30.2 119.7	46 17.7 -29.5 119.0	45 26.0 -28.8 118.3
12°	48 19.1 -32.3 122.5	47 29.2 -31.6 121.7	46 38.9 -30.9 121.0	45 48.2 -30.3 120.2	44 57.2 -29.7 119.6
13°	47 46.8 -33.2 123.7	46 57.6 -32.5 123.0	46 08.0 -31.8 122.2	45 17.9 -31.1 121.5	44 27.5 -30.4 120.8
14°	47 13.6 -33.9 125.0	46 25.1 -33.2 124.2	45 36.2 -32.5 123.4	44 46.8 -31.8 122.7	43 57.1 -31.2 122.0
15°	46 39.7 -34.7 126.2	45 51.9 -33.9 125.4	45 03.7 -33.3 124.6	44 15.0 -32.6 123.9	43 25.9 -31.9 123.2
16°	46 05.0 -35.3 127.4	45 18.0 -34.7 126.6	44 30.4 -33.9 125.8	43 42.4 -33.2 125.0	42 54.0 -32.6 124.3
17°	45 29.7 -36.1 128.5	44 43.3 -35.3 127.7	43 56.5 -34.7 126.9	43 09.2 -34.0 126.2	42 21.4 -33.2 125.5
18°	44 53.6 -36.8 129.6	44 08.0 -36.1 128.8	43 21.8 -35.3 128.1	42 35.2 -34.6 127.3	41 48.2 -33.9 126.6
19°	44 16.8 -37.3 130.8	43 31.9 -36.6 130.0	42 46.5 -35.9 129.2	42 00.6 -35.2 128.4	41 14.3 -34.6 127.7
20°	43 39.5 -38.0 131.8	42 55.3 -37.2 131.0	42 10.6 -36.5 130.3	41 25.4 -35.8 129.5	40 39.7 -35.1 128.8
21°	43 01.5 -38.6 132.9	42 18.1 -37.9 132.1	41 34.1 -37.1 131.3	40 49.6 -36.4 130.6	40 04.6 -35.7 129.8
22°	42 22.9 -39.1 133.9	41 40.2 -38.3 133.1	40 57.0 -37.7 132.4	40 13.2 -36.9 131.6	39 28.9 -36.2 130.9
23°	41 43.8 -39.6 135.0	41 01.9 -39.0 134.2	40 19.3 -38.2 133.4	39 36.3 -37.5 132.6	38 52.7 -36.8 131.9
24°	41 04.2 -40.2 136.0	40 22.9 -39.4 135.2	39 41.1 -38.7 134.4	38 58.8 -38.0 133.7	38 15.9 -37.3 132.9
25°	40 24.0 -40.6 137.0	39 43.5 -39.9 136.2	39 02.4 -39.2 135.4	38 20.8 -38.5 134.6	37 38.6 -37.7 133.9
26°	39 43.4 -41.1 137.9	39 03.6 -40.4 137.1	38 23.2 -39.6 136.4	37 42.3 -38.9 135.6	37 00.9 -38.3 134.9
27°	39 02.3 -41.6 138.9	38 23.2 -40.8 138.1	37 43.6 -40.1 137.3	37 03.4 -39.4 136.6	36 22.6 -38.7 135.9
28°	38 20.7 -42.0 139.8	37 42.4 -41.3 139.0	37 03.5 -40.6 138.3	36 24.0 -39.9 137.5	35 43.9 -39.1 136.8
29°	37 38.7 -42.3 140.7	37 01.1 -41.7 139.9	36 22.9 -41.0 139.2	35 44.1 -40.2 138.4	35 04.8 -39.6 137.7

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°	48 45.7 -17.9 102.8	47 48.2 -17.6 102.4	46 50.6 -17.2 102.0	45 53.0 -17.0 101.6	44 55.2 -16.6 101.2
1°	48 27.8 -19.0 104.3	47 30.6 -18.6 103.8	46 33.4 -18.3 103.4	45 36.0 -17.9 102.9	44 38.6 -17.6 102.5
2°	48 08.8 -20.0 105.7	47 12.0 -19.6 105.2	46 15.1 -19.2 104.7	45 18.1 -18.9 104.3	44 21.0 -18.6 103.9
3°	47 48.8 -21.1 107.1	46 52.4 -20.6 106.6	45 55.9 -20.2 106.1	44 59.2 -19.8 105.6	44 02.4 -19.4 105.2
4°	47 27.7 -22.0 108.5	46 31.8 -21.6 108.0	45 35.7 -21.2 107.5	44 39.4 -20.7 107.0	43 43.0 -20.3 106.5
5°	47 05.7 -23.0 109.8	46 10.2 -22.5 109.3	45 14.5 -22.1 108.8	44 18.7 -21.7 108.3	43 22.7 -21.2 107.8
6°	46 42.7 -24.0 111.2	45 47.7 -23.5 110.6	44 52.4 -22.9 110.1	43 57.0 -22.5 109.6	43 01.5 -22.1 109.1
7°	46 18.7 -24.8 112.5	45 24.2 -24.3 112.0	44 29.5 -23.9 111.4	43 34.5 -23.3 110.9	42 39.4 -22.9 110.4
8°	45 53.9 -25.8 113.8	44 59.9 -25.3 113.3	44 05.6 -24.7 112.7	43 11.2 -24.2 112.1	42 16.5 -23.7 111.6
9°	45 28.1 -26.6 115.1	44 34.6 -26.0 114.5	43 40.9 -25.5 114.0	42 47.0 -25.0 113.4	41 52.8 -24.4 112.9
10°	45 01.5 -27.5 116.4	44 08.6 -26.9 115.8	43 15.4 -26.3 115.2	42 22.0 -25.8 114.6	41 28.4 -25.3 114.1
11°	44 34.0 -28.2 117.7	43 41.7 -27.6 117.0	42 49.1 -27.1 116.4	41 56.2 -26.5 115.8	41 03.1 -26.0 115.3
12°	44 05.8 -29.1 118.9	43 14.1 -28.5 118.3	42 22.0 -27.8 117.6	41 29.7 -27.3 117.0	40 37.1 -26.7 116.5
13°	43 36.7 -29.8 120.1	42 45.6 -29.2 119.5	41 54.2 -28.6 118.8	41 02.4 -28.0 118.2	40 10.4 -27.4 117.6
14°	43 06.9 -30.5 121.3	42 16.4 -29.9 120.6	41 25.6 -29.3 120.0	40 34.4 -28.6 119.4	39 43.0 -28.1 118.8
15°	42 36.4 -31.2 122.5	41 46.5 -30.6 121.8	40 56.3 -30.0 121.2	40 05.8 -29.4 120.6	39 14.9 -28.8 120.0
16°	42 05.2 -32.0 123.6	41 15.9 -31.2 123.0	40 26.3 -30.6 122.3	39 36.4 -30.0 121.7	38 46.1 -29.4 121.1
17°	41 33.2 -32.5 124.8	40 44.7 -32.0 124.1	39 55.7 -31.3 123.4	39 06.4 -30.7 122.8	38 16.7 -30.0 122.2
18°	41 00.7 -33.3 125.9	40 12.7 -32.5 125.2	39 24.4 -31.9 124.6	38 35.7 -31.2 123.9	37 46.7 -30.7 123.3
19°	40 27.4 -33.8 127.0	39 40.2 -33.2 126.3	38 52.5 -32.5 125.6	38 04.5 -31.9 125.0	37 16.0 -31.2 124.4
20°	39 53.6 -34.4 128.1	39 07.0 -33.7 127.4	38 20.0 -33.1 126.7	37 32.6 -32.4 126.1	36 44.8 -31.8 125.4
21°	39 19.2 -35.0 129.1	38 33.3 -34.4 128.4	37 46.9 -33.6 127.8	37 00.2 -33.0 127.1	36 13.0 -32.3 126.5
22°	38 44.2 -35.6 130.2	37 58.9 -34.8 129.5	37 13.3 -34.2 128.8	36 27.2 -33.5 128.2	35 40.7 -32.9 127.5
23°	38 08.6 -36.0 131.2	37 24.1 -35.4 130.5	36 39.1 -34.7 129.8	35 53.7 -34.1 129.2	35 07.8 -33.4 128.6
24°	37 32.6 -36.6 132.2	36 48.7 -35.9 131.5	36 04.4 -35.2 130.9	35 19.6 -34.5 130.2	34 34.4 -33.8 129.6
25°	36 56.0 -37.1 133.2	36 12.8 -36.4 132.5	35 29.2 -35.7 131.9	34 45.1 -35.1 131.2	34 00.6 -34.4 130.6
26°	36 18.9 -37.6 134.2	35 36.4 -36.8 133.5	34 53.5 -36.2 132.8	34 10.0 -35.4 132.2	33 26.2 -34.8 131.6
27°	35 41.3 -38.0 135.2	34 59.6 -37.4 134.5	34 17.3 -36.6 133.8	33 34.6 -36.0 133.2	32 51.4 -35.3 132.5
28°	35 03.9 -38.4 136.1	34 22.2 -37.7 135.4	33 40.7 -37.1 134.8	32 58.6 -36.3 134.1	32 16.1 -35.7 133.5
29°	34 24.9 -38.9 137.0	33 44.5 -38.2 136.4	33 03.6 -37.5 135.7	32 22.3 -36.8 135.1	31 40.4 -36.1 134.4

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°	43 57.4 -16.4 100.8	42 59.5 -16.1 100.4	42 01.6 -15.9 100.1	41 03.5 -15.6 99.7	40 05.5 -15.4 99.4
1°	43 41.0 -17.3 102.1	42 43.4 -17.0 101.8	41 45.7 -16.7 101.4	40 47.9 -16.4 101.0	39 50.1 -16.2 100.7
2°	43 23.7 -18.2 103.5	42 26.4 -17.9 103.1	41 29.0 -17.6 102.7	40 31.5 -17.3 102.3	39 33.9 -17.0 101.9
3°	43 05.5 -19.0 104.8	42 08.5 -18.7 104.3	41 11.4 -18.4 103.9	40 14.2 -18.1 103.6	39 16.9 -17.8 103.2
4°	42 46.5 -20.0 106.1	41 49.8 -19.6 105.6	40 53.0 -19.2 105.2	39 56.1 -18.8 104.8	38 59.1 -18.5 104.4
5°	42 26.5 -20.8 107.3	41 30.2 -20.4 106.9	40 33.8 -20.0 106.5	39 37.3 -19.7 106.0	38 40.6 -19.3 105.6
6°	42 05.7 -21.6 108.6	41 09.8 -21.2 108.1	40 13.8 -20.8 107.7	39 17.6 -20.4 107.3	38 21.3 -20.0 106.8
7°	41 44.1 -22.4 109.9	40 48.6 -22.0 109.4	39 53.0 -21.6 108.9	38 57.2 -21.2 108.5	38 01.3 -20.8 108.0
8°	41 21.7 -23.2 111.1	40 26.6 -22.7 110.6	39 31.4 -22.3 110.1	38 36.0 -21.8 109.7	37 40.5 -21.5 109.2
9°	40 58.5 -24.0 112.3	40 03.9 -23.5 111.8	39 09.1 -23.0 111.3	38 14.2 -22.6 110.9	37 19.0 -22.1 110.4
10°	40 34.5 -24.8 113.5	39 40.4 -24.3 113.0	38 46.1 -23.8 112.5	37 51.6 -23.3 112.0	36 56.9 -22.9 111.6
11°	40 09.7 -25.4 114.7	39 16.1 -24.9 114.2	38 22.3 -24.5 113.7	37 28.3 -24.0 113.2	36 34.0 -23.5 112.7
12°	39 44.3 -26.2 115.9	38 51.2 -25.7 115.4	37 57.8 -25.1 114.9	37 04.3 -24.6 114.4	36 10.5 -24.1 113.9
13°	39 18.1 -26.9 117.1	38 25.5 -26.3 116.5	37 32.7 -25.8 116.0	36 39.7 -25.3 115.5	35 46.4 -24.8 115.0
14°	38 51.2 -27.5 118.2	37 59.2 -27.0 117.7	37 06.9 -26.4 117.1	36 14.4 -25.9 116.6	35 21.6 -25.4 116.1
15°	38 23.7 -28.2 119.4	37 32.2 -27.6 118.8	36 40.5 -27.1 118.3	35 48.5 -26.5 117.7	34 56.2 -26.0 117.2
16°	37 55.5 -28.8 120.5	37 04.6 -28.2 119.9	36 13.4 -27.6 119.4	35 22.0 -27.1 118.8	34 30.2 -26.5 118.3
17°	37 26.7 -29.4 121.6	36 36.4 -28.9 121.0	35 45.8 -28.3 120.5	34 54.9 -27.7 119.9	34 03.7 -27.2 119.4
18°	36 57.3 -30.1 122.7	36 07.5 -29.4 122.1	35 17.5 -28.8 121.6	34 27.2 -28.3 121.0	33 36.5 -27.6 120.5
19°	36 27.2 -30.6 123.8	35 38.1 -30.0 123.2	34 48.7 -29.4 122.6	33 58.9 -28.8 122.1	33 08.9 -28.3 121.5
20°	35 56.6 -31.1 124.8	35 08.1 -30.5 124.3	34 19.3 -29.9 123.7	33 30.1 -29.3 123.1	32 40.6 -28.7 122.6
21°	35 25.5 -31.7 125.9	34 37.6 -31.1 125.3	33 49.4 -30.5 124.7	33 00.8 -29.9 124.2	32 11.9 -29.2 123.6
22°	34 53.8 -32.2 126.9	34 06.5 -31.6 126.3	33 18.9 -31.0 125.8	32 30.9 -30.3 125.2	31 42.7 -29.8 124.7
23°	34 21.6 -32.8 128.0	33 34.9 -32.1 127.4	32 47.9 -31.4 126.8	32 00.6 -30.8 126.2	31 12.9 -30.2 125.7
24°	33 48.8 -33.2 129.0	33 02.8 -32.5 128.4	32 16.5 -31.9 127.8	31 29.8 -31.3 127.2	30 42.7 -30.7 126.7
25°	33 15.6 -33.7 130.0	32 30.3 -33.1 129.4	31 44.6 -32.4 128.8	30 58.5 -31.8 128.2	30 12.0 -31.1 127.7
26°	32 41.9 -34.1 131.0	31 57.2 -33.4 130.4	31 12.2 -32.9 129.8	30 26.7 -32.2 129.2	29 40.9 -31.5 128.7
27°	32 07.8 -34.6 131.9	31 23.8 -34.0 131.3	30 39.3 -33.2 130.8	29 54.5 -32.6 130.2	29 09.4 -32.0 129.6
28°	31 33.2 -35.0 132.9	30 49.8 -34.3 132.3	30 06.1 -33.7 131.7	29 21.9 -33.0 131.2	28 37.4 -32.4 130.6
29°	30 58.2 -35.5 133.8	30 15.5 -34.8 133.2	29 32.4 -34.1 132.7	28 48.9 -33.5 132.1	28 05.0 -32.8 131.6

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°	39 07.3 -15.1 99.1	38 09.2 -15.0 98.8	37 10.9 -14.7 98.5	36 12.6 -14.5 98.2	35 14.3 -14.3 97.9
1°	38 52.2 -16.0 100.3	37 54.2 -15.7 100.0	36 56.2 -15.5 99.7	35 58.1 -15.3 99.4	35 00.0 -15.1 99.1
2°	38 36.2 -16.7 101.6	37 38.5 -16.4 101.2	36 40.7 -16.2 100.9	35 42.8 -15.9 100.6	34 44.9 -15.7 100.3
3°	38 19.5 -17.5 102.8	37 22.1 -17.2 102.4	36 24.5 -16.9 102.1	35 26.9 -16.7 101.8	34 29.2 -16.4 101.4
4°	38 02.0 -18.2 104.0	37 04.9 -18.0 103.6	36 07.6 -17.6 103.3	35 10.2 -17.3 102.9	34 12.8 -17.1 102.6
5°	37 43.8 -18.9 105.2	36 46.9 -18.6 104.8	35 50.0 -18.3 104.5	34 52.9 -18.0 104.1	33 55.7 -17.7 103.8
6°	37 24.9 -19.7 106.4	36 28.3 -19.3 106.0	35 31.7 -19.0 105.6	34 34.9 -18.7 105.3	33 38.0 -18.3 104.9
7°	37 05.2 -20.4 107.6	36 09.0 -20.0 107.2	35 12.7 -19.7 106.8	34 16.2 -19.3 106.4	33 19.7 -19.0 106.0
8°	36 44.8 -21.1 108.8	35 49.0 -20.7 108.4	34 53.0 -20.3 108.0	33 56.9 -19.9 107.6	33 00.7 -19.5 107.2
9°	36 23.7 -21.7 110.0	35 28.3 -21.3 109.5	34 32.7 -20.9 109.1	33 37.0 -20.5 108.7	32 41.2 -20.2 108.3
10°	36 02.0 -22.4 111.1	35 07.0 -22.0 110.7	34 11.8 -21.6 110.2	33 16.5 -21.2 109.8	32 21.0 -20.8 109.4
11°	35 39.6 -23.0 112.3	34 45.0 -22.6 111.8	33 50.2 -22.1 111.4	32 55.3 -21.7 110.9	32 00.2 -21.3 110.5
12°	35 16.6 -23.7 113.4	34 22.4 -23.2 112.9	33 28.1 -22.8 112.5	32 33.6 -22.3 112.1	31 38.9 -21.9 111.6
13°	34 52.9 -24.3 114.5	33 59.2 -23.8 114.0	33 05.3 -23.3 113.6	32 11.3 -22.9 113.1	31 17.0 -22.4 112.7
14°	34 28.6 -24.9 115.6	33 35.4 -24.4 115.1	32 42.0 -23.9 114.7	31 48.4 -23.5 114.2	30 54.6 -23.0 113.8
15°	34 03.7 -25.4 116.7	33 11.0 -24.9 116.2	32 18.1 -24.5 115.8	31 24.9 -23.9 115.3	30 31.6 -23.5 114.9
16°	33 38.3 -26.1 117.8	32 46.1 -25.6 117.3	31 53.6 -25.0 116.9	31 01.0 -24.5 116.4	30 08.1 -24.0 115.9
17°	33 12.2 -26.6 118.9	32 20.5 -26.0 118.4	31 28.6 -25.5 117.9	30 36.5 -25.1 117.5	29 44.1 -24.5 117.0
18°	32 45.6 -27.1 120.0	31 54.5 -26.6 119.5	31 03.1 -26.1 119.0	30 11.4 -25.5 118.5	29 19.6 -25.0 118.1
19°	32 18.5 -27.6 121.0	31 27.9 -27.1 120.5	30 37.0 -26.5 120.0	29 45.9 -26.0 119.6	28 54.6 -25.5 119.1
20°	31 50.9 -28.2 122.1	31 00.8 -27.6 121.6	30 10.5 -27.0 121.1	29 19.9 -26.5 120.6	28 29.1 -25.9 120.1
21°	31 22.7 -28.6 123.1	30 33.2 -28.0 122.6	29 43.5 -27.5 122.1	28 53.4 -26.9 121.6	28 03.2 -26.4 121.1
22°	30 54.1 -29.2 124.1	30 05.2 -28.6 123.6	29 16.0 -28.0 123.1	28 26.5 -27.4 122.6	27 36.8 -26.9 122.2
23°	30 24.9 -29.6 125.1	29 36.6 -29.0 124.6	28 48.0 -28.4 124.1	27 59.1 -27.8 123.6	27 09.9 -27.2 123.2
24°	29 55.3 -30.0 126.2	29 07.6 -29.5 125.6	28 19.6 -28.9 125.1	27 31.3 -28.3 124.6	26 42.7 -27.7 124.2
25°	29 25.3 -30.5 127.1	28 38.1 -29.8 126.6	27 50.7 -29.3 126.1	27 03.0 -28.7 125.6	26 15.0 -28.1 125.2
26°	28 54.8 -31.0 128.1	28 08.3 -30.3 127.6	27 21.4 -29.6 127.1	26 34.3 -29.0 126.6	25 46.9 -28.5 126.1
27°	28 23.8 -31.3 129.1	27 38.0 -30.8 128.6	26 51.8 -30.1 128.1	26 05.3 -29.5 127.6	25 18.4 -28.8 127.1
28°	27 52.5 -31.8 130.1	27 07.2 -31.1 129.6	26 21.7 -30.5 129.1	25 35.8 -29.9 128.6	24 49.6 -29.3 128.1
29°	27 20.7 -32.1 131.0	26 36.1 -31.4 130.5	25 51.2 -30.8 130.0	25 05.9 -30.2 129.5	24 20.3 -29.5 129.0

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°	34 16.0 -14.2 97.6	33 17.6 -14.0 97.3	32 19.1 -13.8 97.1	31 20.7 -13.7 96.8	30 22.2 -13.6 96.5
1°	34 01.8 -14.9 98.8	33 03.6 -14.7 98.5	32 05.3 -14.5 98.2	31 07.0 -14.3 97.9	30 08.6 -14.1 97.7
2°	33 46.9 -15.5 100.0	32 48.9 -15.3 99.7	31 50.8 -15.1 99.4	30 52.7 -14.9 99.1	29 54.5 -14.7 98.8
3°	33 31.4 -16.1 101.1	32 33.6 -15.9 100.8	31 35.7 -15.7 100.5	30 37.8 -15.5 100.2	29 39.8 -15.3 99.9
4°	33 15.3 -16.8 102.3	32 17.7 -16.6 101.9	31 20.0 -16.3 101.6	30 22.3 -16.1 101.3	29 24.5 -15.8 101.0
5°	32 58.5 -17.4 103.4	32 01.1 -17.1 103.1	31 03.7 -16.8 102.8	30 06.2 -16.6 102.4	29 08.7 -16.4 102.1
6°	32 41.1 -18.1 104.6	31 44.0 -17.7 104.2	30 46.9 -17.5 103.9	29 49.6 -17.1 103.5	28 52.3 -16.8 103.2
7°	32 23.0 -18.6 105.7	31 26.3 -18.3 105.3	30 29.4 -18.0 105.0	29 32.5 -17.7 104.6	28 35.5 -17.5 104.3
8°	32 04.4 -19.2 106.8	31 08.0 -18.9 106.4	30 11.4 -18.5 106.1	29 14.8 -18.3 105.7	28 18.0 -17.9 105.4
9°	31 45.2 -19.8 107.9	30 49.1 -19.5 107.5	29 52.9 -19.1 107.2	28 56.5 -18.7 106.8	28 00.1 -18.4 106.5
10°	31 25.4 -20.4 109.0	30 29.6 -20.0 108.6	29 33.8 -19.7 108.3	28 37.8 -19.3 107.9	27 41.7 -18.9 107.6
11°	31 05.0 -20.9 110.1	30 09.6 -20.5 109.7	29 14.1 -20.1 109.4	28 18.5 -19.8 109.0	27 22.8 -19.5 108.6
12°	30 44.1 -21.5 111.2	29 49.1 -21.1 110.8	28 54.0 -20.7 110.4	27 58.7 -20.2 110.1	27 03.3 -19.9 109.7
13°	30 22.6 -22.0 112.3	29 28.0 -21.5 111.9	28 33.3 -21.1 111.5	27 38.5 -20.8 111.1	26 43.4 -20.3 110.8
14°	30 00.6 -22.5 113.4	29 06.5 -22.1 113.0	28 12.2 -21.7 112.6	27 17.7 -21.2 112.2	26 23.1 -20.8 111.8
15°	29 38.1 -23.1 114.5	28 44.4 -22.6 114.0	27 50.5 -22.1 113.6	26 56.5 -21.7 113.2	26 02.3 -21.3 112.9
16°	29 15.0 -23.5 115.5	28 21.8 -23.1 115.1	27 28.4 -22.6 114.7	26 34.8 -22.2 114.3	25 41.0 -21.7 113.9
17°	28 51.5 -24.0 116.6	27 58.7 -23.5 116.1	27 05.8 -23.1 115.7	26 12.6 -22.6 115.3	25 19.3 -22.1 114.9
18°	28 27.5 -24.5 117.6	27 35.2 -24.0 117.2	26 42.7 -23.5 116.8	25 50.0 -23.0 116.4	24 57.2 -22.6 116.0
19°	28 03.0 -25.0 118.6	27 11.2 -24.4 118.2	26 19.2 -23.9 117.8	25 27.0 -23.5 117.4	24 34.6 -23.0 117.0
20°	27 38.0 -25.4 119.7	26 46.8 -24.9 119.2	25 55.3 -24.4 118.8	25 03.5 -23.8 118.4	24 11.6 -23.3 118.0
21°	27 12.6 -25.8 120.7	26 21.9 -25.3 120.3	25 30.9 -24.8 119.8	24 39.7 -24.3 119.4	23 48.3 -23.8 119.0
22°	26 46.8 -26.3 121.7	25 56.6 -25.8 121.3	25 06.1 -25.2 120.8	24 15.4 -24.7 120.4	23 24.5 -24.1 120.0
23°	26 20.5 -26.7 122.7	25 30.8 -26.1 122.3	24 40.9 -25.6 121.8	23 50.7 -25.0 121.4	23 00.4 -24.5 121.0
24°	25 53.8 -27.1 123.7	25 04.7 -26.5 123.3	24 15.3 -26.0 122.8	23 25.7 -25.4 122.4	22 35.9 -24.9 122.0
25°	25 26.7 -27.5 124.7	24 38.2 -27.0 124.2	23 49.3 -26.3 123.8	23 00.3 -25.8 123.4	22 11.0 -25.2 123.0
26°	24 59.2 -27.9 125.7	24 11.2 -27.3 125.2	23 23.0 -26.7 124.8	22 34.5 -26.1 124.4	21 45.8 -25.6 123.9
27°	24 31.3 -28.2 126.7	23 43.9 -27.6 126.2	22 56.3 -27.1 125.8	22 08.4 -26.5 125.3	21 20.2 -25.9 124.9
28°	24 03.1 -28.6 127.6	23 16.3 -28.0 127.2	22 29.2 -27.4 126.7	21 41.9 -26.8 126.3	20 54.3 -26.2 125.9
29°	23 34.5 -29.0 128.6	22 48.3 -28.4 128.1	22 01.8 -27.7 127.7	21 15.1 -27.2 127.3	20 28.1 -26.6 126.8

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°	29 23.6 -13.4 96.3	28 25.1 -13.3 96.0	27 26.5 -13.2 95.8	26 27.9 -13.0 95.6	25 29.3 -13.0 95.3
1°	29 10.2 -13.9 97.4	28 11.8 -13.8 97.1	27 13.3 -13.6 96.9	26 14.9 -13.6 96.6	25 16.3 -13.4 96.4
2°	28 56.3 -14.6 98.5	27 58.0 -14.4 98.2	26 59.7 -14.2 98.0	26 01.3 -14.0 97.7	25 02.9 -13.8 97.5
3°	28 41.7 -15.0 99.6	27 43.6 -14.8 99.3	26 45.5 -14.7 99.1	25 47.3 -14.5 98.8	24 49.1 -14.3 98.5
4°	28 26.7 -15.6 100.7	27 28.8 -15.4 100.4	26 30.8 -15.1 100.2	25 32.8 -14.9 99.9	24 34.8 -14.8 99.6
5°	28 11.1 -16.1 101.8	27 13.4 -15.9 101.5	26 15.7 -15.7 101.2	25 17.9 -15.5 101.0	24 20.0 -15.2 100.7
6°	27 55.0 -16.7 102.9	26 57.5 -16.3 102.6	26 00.0 -16.1 102.3	25 02.4 -15.8 102.0	24 04.8 -15.6 101.7
7°	27 38.3 -17.1 104.0	26 41.2 -16.9 103.7	25 43.9 -16.6 103.4	24 46.6 -16.4 103.1	23 49.2 -16.1 102.8
8°	27 21.2 -17.6 105.1	26 24.3 -17.3 104.8	25 27.3 -17.0 104.5	24 30.2 -16.7 104.1	23 33.1 -16.5 103.9
9°	27 03.6 -18.1 106.2	26 07.0 -17.8 105.8	25 10.3 -17.5 105.5	24 13.5 -17.2 105.2	23 16.6 -16.9 104.9
10°	26 45.5 -18.6 107.2	25 49.2 -18.3 106.9	24 52.8 -18.0 106.6	23 56.3 -17.7 106.3	22 59.7 -17.3 105.9
11°	26 26.9 -19.1 108.3	25 30.9 -18.7 107.9	24 34.8 -18.3 107.6	23 38.6 -18.0 107.3	22 42.4 -17.8 107.0
12°	26 07.8 -19.5 109.3	25 12.2 -19.2 109.0	24 16.5 -18.9 108.7	23 20.6 -18.5 108.3	22 24.6 -18.1 108.0
13°	25 48.3 -20.0 110.4	24 53.0 -19.6 110.0	23 57.6 -19.2 109.7	23 02.1 -18.8 109.4	22 06.5 -18.5 109.0
14°	25 28.3 -20.4 111.4	24 33.4 -20.0 111.1	23 38.4 -19.6 110.7	22 43.3 -19.3 110.4	21 48.0 -18.9 110.1
15°	25 07.9 -20.8 112.5	24 13.4 -20.4 112.1	23 18.8 -20.0 111.8	22 24.0 -19.6 111.4	21 29.1 -19.2 111.1
16°	24 47.1 -21.3 113.5	23 53.0 -20.9 113.2	22 58.8 -20.5 112.8	22 04.4 -20.0 112.4	21 09.9 -19.6 112.1
17°	24 25.8 -21.7 114.5	23 32.1 -21.2 114.2	22 38.3 -20.8 113.8	21 44.4 -20.4 113.5	20 50.3 -20.0 113.1
18°	24 04.1 -22.1 115.6	23 10.9 -21.6 115.2	22 17.5 -21.2 114.8	21 24.0 -20.8 114.5	20 30.3 -20.3 114.1
19°	23 42.0 -22.5 116.6	22 49.3 -22.1 116.2	21 56.3 -21.5 115.8	21 03.2 -21.1 115.5	20 10.0 -20.7 115.1
20°	23 19.5 -22.8 117.6	22 27.2 -22.4 117.2	21 34.8 -21.9 116.8	20 42.1 -21.4 116.5	19 49.3 -20.9 116.1
21°	22 56.7 -23.3 118.6	22 04.8 -22.7 118.2	21 12.9 -22.3 117.8	20 20.7 -21.8 117.5	19 28.4 -21.4 117.1
22°	22 33.4 -23.6 119.6	21 42.1 -23.1 119.2	20 50.6 -22.6 118.8	19 58.9 -22.1 118.5	19 07.0 -21.6 118.1
23°	22 09.8 -24.0 120.6	21 19.0 -23.5 120.2	20 28.0 -23.0 119.8	19 36.8 -22.5 119.5	18 45.4 -21.9 119.1
24°	21 45.8 -24.3 121.6	20 55.5 -23.8 121.2	20 05.0 -23.2 120.8	19 14.3 -22.7 120.4	18 23.5 -22.3 120.1
25°	21 21.5 -24.7 122.6	20 31.7 -24.1 122.2	19 41.8 -23.6 121.8	18 51.6 -23.1 121.4	18 01.2 -22.5 121.1
26°	20 56.8 -25.0 123.5	20 07.6 -24.5 123.2	19 18.2 -23.9 122.8	18 28.5 -23.3 122.4	17 38.7 -22.8 122.0
27°	20 31.8 -25.3 124.5	19 43.1 -24.7 124.1	18 54.3 -24.2 123.7	18 05.2 -23.7 123.4	17 15.9 -23.1 123.0
28°	20 06.5 -25.7 125.5	19 18.4 -25.1 125.1	18 30.1 -24.5 124.7	17 41.5 -23.9 124.3	16 52.8 -23.4 124.0
29°	19 40.8 -25.9 126.4	18 53.3 -25.4 126.1	18 05.6 -24.8 125.7	17 17.6 -24.2 125.3	16 29.4 -23.6 124.9

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°	24 30.6 -12.8 95.1	23 31.9 -12.7 94.9	22 33.2 -12.6 94.6	21 34.5 -12.5 94.4	20 35.8 -12.4 94.2
1°	24 17.8 -13.3 96.2	23 19.2 -13.1 95.9	22 20.6 -13.0 95.7	21 22.0 -12.9 95.5	20 23.4 -12.8 95.2
2°	24 04.5 -13.7 97.2	23 06.1 -13.6 97.0	22 07.6 -13.4 96.7	21 09.1 -13.3 96.5	20 10.6 -13.2 96.3
3°	23 50.8 -14.1 98.3	22 52.5 -13.9 98.0	21 54.2 -13.8 97.8	20 55.8 -13.6 97.6	19 57.4 -13.5 97.3
4°	23 36.7 -14.6 99.4	22 38.6 -14.4 99.1	21 40.4 -14.2 98.8	20 42.2 -14.1 98.6	19 43.9 -13.9 98.3
5°	23 22.1 -15.0 100.4	22 24.2 -14.8 100.1	21 26.2 -14.6 99.9	20 28.1 -14.4 99.6	19 30.0 -14.2 99.4
6°	23 07.1 -15.4 101.5	22 09.4 -15.2 101.2	21 11.6 -15.0 100.9	20 13.7 -14.8 100.7	19 15.8 -14.6 100.4
7°	22 51.7 -15.8 102.5	21 54.2 -15.6 102.2	20 56.6 -15.4 102.0	19 58.9 -15.1 101.7	19 01.2 -14.9 101.4
8°	22 35.9 -16.3 103.6	21 38.6 -16.0 103.3	20 41.2 -15.7 103.0	19 43.8 -15.5 102.7	18 46.3 -15.2 102.5
9°	22 19.6 -16.6 104.6	21 22.6 -16.4 104.3	20 25.5 -16.1 104.0	19 28.3 -15.8 103.8	18 31.1 -15.6 103.5
10°	22 03.0 -17.0 105.6	21 06.2 -16.7 105.3	20 09.4 -16.4 105.1	19 12.5 -16.2 104.8	18 15.5 -15.9 104.5
11°	21 46.0 -17.4 106.7	20 49.5 -17.1 106.4	19 53.0 -16.8 106.1	18 56.3 -16.5 105.8	17 59.6 -16.2 105.5
12°	21 28.6 -17.8 107.7	20 32.4 -17.4 107.4	19 36.2 -17.2 107.1	18 39.8 -16.8 106.8	17 43.4 -16.5 106.5
13°	21 10.8 -18.2 108.7	20 15.0 -17.8 108.4	19 19.0 -17.4 108.1	18 23.0 -17.1 107.8	17 26.9 -16.8 107.5
14°	20 52.6 -18.5 109.7	19 57.2 -18.2 109.4	19 01.6 -17.8 109.1	18 05.9 -17.5 108.8	17 10.1 -17.1 108.5
15°	20 34.1 -18.8 110.8	19 39.0 -18.5 110.4	18 43.8 -18.2 110.1	17 48.4 -17.8 109.8	16 53.0 -17.5 109.5
16°	20 15.3 -19.3 111.8	19 20.5 -18.8 111.5	18 25.6 -18.4 111.1	17 30.6 -18.0 110.8	16 35.5 -17.6 110.5
17°	19 56.0 -19.5 112.8	19 01.7 -19.2 112.5	18 07.2 -18.8 112.1	17 12.6 -18.4 111.8	16 17.9 -18.0 111.5
18°	19 36.5 -19.9 113.8	18 42.5 -19.4 113.5	17 48.4 -19.0 113.1	16 54.2 -18.6 112.8	15 59.9 -18.3 112.5
19°	19 16.6 -20.2 114.8	18 23.1 -19.8 114.5	17 29.4 -19.4 114.1	16 35.6 -19.0 113.8	15 41.6 -18.5 113.5
20°	18 56.4 -20.5 115.8	18 03.3 -20.1 115.5	17 10.0 -19.6 115.1	16 16.6 -19.2 114.8	15 23.1 -18.8 114.5
21°	18 35.9 -20.9 116.8	17 43.2 -20.4 116.4	16 50.4 -19.9 116.1	15 57.4 -19.4 115.8	15 04.3 -19.0 115.5
22°	18 15.0 -21.1 117.8	17 22.8 -20.7 117.4	16 30.5 -20.2 117.1	15 38.0 -19.8 116.8	14 45.3 -19.3 116.5
23°	17 53.9 -21.5 118.8	17 02.1 -20.9 118.4	16 10.3 -20.5 118.1	15 18.2 -20.0 117.8	14 26.0 -19.5 117.5
24°	17 32.4 -21.7 119.7	16 41.2 -21.2 119.4	15 49.8 -20.7 119.1	14 58.2 -20.2 118.7	14 06.5 -19.7 118.4
25°	17 10.7 -22.0 120.7	16 20.0 -21.5 120.4	15 29.1 -21.0 120.0	14 38.0 -20.5 119.7	13 46.8 -20.0 119.4
26°	16 48.7 -22.3 121.7	15 58.5 -21.8 121.3	15 08.1 -21.3 121.0	14 17.5 -20.7 120.7	13 26.8 -20.2 120.4
27°	16 26.4 -22.5 122.7	15 36.7 -22.0 122.3	14 46.8 -21.4 122.0	13 56.8 -20.9 121.7	13 06.6 -20.4 121.3
28°	16 03.9 -22.9 123.6	15 14.7 -22.2 123.3	14 25.4 -21.7 122.9	13 35.9 -21.2 122.6	12 46.2 -20.7 122.3
29°	15 41.0 -23.0 124.6	14 52.5 -22.5 124.2	14 03.7 -22.0 123.9	13 14.7 -21.4 123.6	12 25.5 -20.8 123.3

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°	19 37.0 -12.3 94.0	18 38.3 -12.3 93.8	17 39.5 -12.2 93.5	16 40.7 -12.1 93.3	15 41.9 -12.0 93.1
1°	19 24.7 -12.7 95.0	18 26.0 -12.6 94.8	17 27.3 -12.5 94.6	16 28.6 -12.4 94.4	15 29.9 -12.3 94.1
2°	19 12.0 -13.0 96.0	18 13.4 -12.9 95.8	17 14.8 -12.8 95.6	16 16.2 -12.7 95.4	15 17.6 -12.6 95.2
3°	18 59.0 -13.4 97.1	18 00.5 -13.2 96.8	17 02.0 -13.1 96.6	16 03.5 -13.0 96.4	15 05.0 -12.9 96.2
4°	18 45.6 -13.7 98.1	17 47.3 -13.6 97.9	16 48.9 -13.4 97.6	15 50.5 -13.2 97.4	14 52.1 -13.1 97.2
5°	18 31.9 -14.0 99.1	17 33.7 -13.8 98.9	16 35.5 -13.7 98.7	15 37.3 -13.6 98.4	14 39.0 -13.4 98.2
6°	18 17.9 -14.4 100.2	17 19.9 -14.2 99.9	16 21.8 -14.0 99.7	15 23.7 -13.8 99.4	14 25.6 -13.6 99.2
7°	18 03.5 -14.7 101.2	17 05.7 -14.5 100.9	16 07.8 -14.3 100.7	15 09.9 -14.1 100.4	14 12.0 -13.9 100.2
8°	17 48.8 -15.0 102.2	16 51.2 -14.8 101.9	15 53.5 -14.5 101.7	14 55.8 -14.3 101.5	13 58.1 -14.1 101.2
9°	17 33.8 -15.3 103.2	16 36.4 -15.1 103.0	15 39.0 -14.9 102.7	14 41.5 -14.6 102.5	13 44.0 -14.4 102.2
10°	17 18.5 -15.7 104.2	16 21.3 -15.3 104.0	15 24.1 -15.1 103.7	14 26.9 -14.9 103.5	13 29.6 -14.6 103.2
11°	17 02.8 -15.9 105.2	16 06.0 -15.7 105.0	15 09.0 -15.3 104.7	14 12.0 -15.1 104.5	13 15.0 -14.9 104.2
12°	16 46.9 -16.2 106.3	15 50.3 -15.9 106.0	14 53.7 -15.7 105.7	13 56.9 -15.3 105.5	13 00.1 -15.0 105.2
13°	16 30.7 -16.5 107.3	15 34.4 -16.2 107.0	14 38.0 -15.9 106.7	13 41.6 -15.6 106.5	12 45.1 -15.3 106.2
14°	16 14.2 -16.8 108.3	15 18.2 -16.4 108.0	14 22.1 -16.1 107.7	13 26.0 -15.8 107.4	12 29.8 -15.5 107.2
15°	15 57.4 -17.1 109.3	15 01.8 -16.8 109.0	14 06.0 -16.4 108.7	13 10.2 -16.1 108.4	12 14.3 -15.8 108.2
16°	15 40.3 -17.3 110.3	14 45.0 -16.9 110.0	13 49.6 -16.6 109.7	12 54.1 -16.2 109.4	11 58.5 -15.9 109.2
17°	15 23.0 -17.6 111.2	14 28.1 -17.3 111.0	13 33.0 -16.8 110.7	12 37.9 -16.5 110.4	11 42.6 -16.1 110.1
18°	15 05.4 -17.8 112.2	14 10.8 -17.4 112.0	13 16.2 -17.1 111.7	12 21.4 -16.7 111.4	11 26.5 -16.3 111.1
19°	14 47.6 -18.1 113.2	13 53.4 -17.7 112.9	12 59.1 -17.3 112.7	12 04.7 -16.9 112.4	11 10.2 -16.6 112.1
20°	14 29.5 -18.4 114.2	13 35.7 -17.9 113.9	12 41.8 -17.5 113.6	11 47.8 -17.1 113.4	10 53.6 -16.7 113.1
21°	14 11.1 -18.6 115.2	13 17.8 -18.2 114.9	12 24.3 -17.8 114.6	11 30.7 -17.3 114.3	10 36.9 -16.8 114.1
22°	13 52.5 -18.8 116.2	12 59.6 -18.4 115.9	12 06.5 -17.9 115.6	11 13.4 -17.5 115.3	10 20.1 -17.1 115.0
23°	13 33.7 -19.0 117.2	12 41.2 -18.6 116.9	11 48.6 -18.1 116.6	10 55.9 -17.7 116.3	10 03.0 -17.2 116.0
24°	13 14.7 -19.3 118.1	12 22.6 -18.8 117.8	11 30.5 -18.3 117.5	10 38.2 -17.9 117.3	9 45.8 -17.4 117.0
25°	12 55.4 -19.5 119.1	12 03.8 -19.0 118.8	11 12.2 -18.6 118.5	10 20.3 -18.0 118.2	9 28.4 -17.6 118.0
26°	12 35.9 -19.7 120.1	11 44.8 -19.1 119.8	10 53.6 -18.6 119.5	10 02.3 -18.2 119.2	9 10.8 -17.7 118.9
27°	12 16.2 -19.9 121.0	11 25.7 -19.4 120.7	10 35.0 -18.9 120.5	9 44.1 -18.4 120.2	8 53.1 -17.8 119.9
28°	11 56.3 -20.1 122.0	11 06.3 -19.6 121.7	10 16.1 -19.1 121.4	9 25.7 -18.5 121.1	8 35.3 -18.0 120.9
29°	11 36.2 -20.3 123.0	10 46.7 -19.7 122.7	9 57.0 -19.2 122.4	9 07.2 -18.6 122.1	8 17.3 -18.2 121.8

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°	14 43.1 -12.0 92.9	13 44.3 -11.9 92.7	12 45.4 -11.8 92.5	11 46.6 -11.8 92.3	10 47.7 -11.7 92.1
1°	14 31.1 -12.2 93.9	13 32.4 -12.2 93.7	12 33.6 -12.1 93.5	11 34.8 -12.0 93.3	10 36.0 -12.0 93.1
2°	14 18.9 -12.5 95.0	13 20.2 -12.4 94.7	12 21.5 -12.3 94.5	11 22.8 -12.2 94.3	10 24.0 -12.1 94.1
3°	14 06.4 -12.7 96.0	13 07.8 -12.6 95.7	12 09.2 -12.5 95.5	11 10.6 -12.4 95.3	10 11.9 -12.3 95.1
4°	13 53.7 -13.0 97.0	12 55.2 -12.9 96.7	11 56.7 -12.7 96.5	10 58.2 -12.6 96.3	9 59.6 -12.5 96.1
5°	13 40.7 -13.2 98.0	12 42.3 -13.0 97.7	11 44.0 -13.0 97.5	10 45.6 -12.8 97.3	9 47.1 -12.6 97.1
6°	13 27.5 -13.5 99.0	12 29.3 -13.3 98.7	11 31.0 -13.1 98.5	10 32.8 -13.0 98.3	9 34.5 -12.8 98.1
7°	13 14.0 -13.7 100.0	12 16.0 -13.5 99.7	11 17.9 -13.3 99.5	10 19.8 -13.2 99.3	9 21.7 -13.0 99.1
8°	13 00.3 -13.9 101.0	12 02.5 -13.8 100.7	11 04.6 -13.6 100.5	10 06.6 -13.3 100.3	9 08.7 -13.2 100.1
9°	12 46.4 -14.2 102.0	11 48.7 -13.9 101.7	10 51.0 -13.7 101.5	9 53.3 -13.5 101.3	8 55.5 -13.3 101.1
10°	12 32.2 -14.3 103.0	11 34.8 -14.1 102.7	10 37.3 -13.9 102.5	9 39.8 -13.7 102.3	8 42.2 -13.4 102.0
11°	12 17.9 -14.6 104.0	11 20.7 -14.4 103.7	10 23.4 -14.1 103.5	9 26.1 -13.8 103.3	8 28.8 -13.6 103.0
12°	12 03.3 -14.8 105.0	11 06.3 -14.5 104.7	10 09.3 -14.2 104.5	9 12.3 -14.0 104.2	8 15.2 -13.8 104.0
13°	11 48.5 -15.0 105.9	10 51.8 -14.7 105.7	9 55.1 -14.5 105.5	8 58.3 -14.2 105.2	8 01.4 -13.9 105.0
14°	11 33.5 -15.2 106.9	10 37.1 -14.9 106.7	9 40.6 -14.6 106.4	8 44.1 -14.3 106.2	7 47.5 -14.0 106.0
15°	11 18.3 -15.4 107.9	10 22.2 -15.1 107.7	9 26.0 -14.7 107.4	8 29.8 -14.5 107.2	7 33.5 -14.2 107.0
16°	11 02.9 -15.6 108.9	10 07.1 -15.2 108.7	9 11.3 -15.0 108.4	8 15.3 -14.6 108.2	7 19.3 -14.2 107.9
17°	10 47.3 -15.8 109.9	9 51.9 -15.5 109.6	8 56.3 -15.0 109.4	8 00.7 -14.7 109.2	7 05.1 -14.4 108.9
18°	10 31.5 -16.0 110.9	9 36.4 -15.6 110.6	8 41.3 -15.3 110.4	7 46.0 -14.9 110.1	6 50.7 -14.6 109.9
19°	10 15.5 -16.1 111.9	9 20.8 -15.7 111.6	8 26.0 -15.3 111.4	7 31.1 -15.0 111.1	6 36.1 -14.6 110.9
20°	9 59.4 -16.3 112.8	9 05.1 -15.9 112.6	8 10.7 -15.6 112.3	7 16.1 -15.1 112.1	6 21.5 -14.7 111.9
21°	9 43.1 -16.5 113.8	8 49.2 -16.1 113.6	7 55.1 -15.6 113.3	7 01.0 -15.3 113.1	6 06.8 -14.9 112.8
22°	9 26.6 -16.6 114.8	8 33.1 -16.2 114.5	7 39.5 -15.8 114.3	6 45.7 -15.3 114.0	5 51.9 -14.9 113.8
23°	9 10.0 -16.8 115.8	8 16.9 -16.3 115.5	7 23.7 -15.9 115.3	6 30.4 -15.5 115.0	5 37.0 -15.1 114.8
24°	8 53.2 -16.9 116.7	8 00.6 -16.5 116.5	7 07.8 -16.0 116.2	6 14.9 -15.6 116.0	5 21.9 -15.1 115.7
25°	8 36.3 -17.1 117.7	7 44.1 -16.6 117.4	6 51.8 -16.2 117.2	5 59.3 -15.7 117.0	5 06.8 -15.3 116.7
26°	8 19.2 -17.2 118.7	7 27.5 -16.8 118.4	6 35.6 -16.2 118.2	5 43.6 -15.8 117.9	4 51.5 -15.3 117.7
27°	8 02.0 -17.4 119.6	7 10.7 -16.8 119.4	6 19.4 -16.4 119.1	5 27.8 -15.8 118.9	4 36.2 -15.4 118.7
28°	7 44.6 -17.5 120.6	6 53.9 -17.0 120.3	6 03.0 -16.5 120.1	5 12.0 -16.0 119.9	4 20.8 -15.4 119.6
29°	7 27.1 -17.6 121.6	6 36.9 -17.1 121.3	5 46.5 -16.6 121.1	4 56.0 -16.1 120.8	4 05.4 -15.6 120.6

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°	9 48.9 -11.7 91.9	8 50.0 -11.7 91.7	7 51.1 -11.6 91.5	6 52.2 -11.5 91.3	5 53.4 -11.6 91.1
1°	9 37.2 -11.9 92.9	8 38.3 -11.8 92.7	7 39.5 -11.8 92.5	6 40.7 -11.8 92.3	5 41.8 -11.7 92.1
2°	9 25.3 -12.1 93.9	8 26.5 -11.9 93.7	7 27.7 -11.9 93.5	6 28.9 -11.8 93.3	5 30.1 -11.7 93.1
3°	9 13.2 -12.2 94.9	8 14.6 -12.2 94.7	7 15.8 -12.0 94.5	6 17.1 -11.9 94.3	5 18.4 -11.9 94.1
4°	9 01.0 -12.3 95.9	8 02.4 -12.2 95.7	7 03.8 -12.1 95.5	6 05.2 -12.1 95.3	5 06.5 -11.9 95.1
5°	8 48.7 -12.5 96.9	7 50.2 -12.4 96.7	6 51.7 -12.3 96.5	5 53.1 -12.1 96.3	4 54.6 -12.0 96.1
6°	8 36.2 -12.7 97.9	7 37.8 -12.5 97.7	6 39.4 -12.4 97.5	5 41.0 -12.2 97.3	4 42.6 -12.2 97.1
7°	8 23.5 -12.8 98.9	7 25.3 -12.7 98.7	6 27.0 -12.5 98.4	5 28.8 -12.4 98.2	4 30.4 -12.1 98.0
8°	8 10.7 -13.0 99.9	7 12.6 -12.8 99.6	6 14.5 -12.6 99.4	5 16.4 -12.4 99.2	4 18.3 -12.3 99.0
9°	7 57.7 -13.1 100.8	6 59.8 -12.9 100.6	6 01.9 -12.7 100.4	5 04.0 -12.5 100.2	4 06.0 -12.3 100.0
10°	7 44.6 -13.2 101.8	6 46.9 -13.0 101.6	5 49.2 -12.8 101.4	4 51.5 -12.7 101.2	3 53.7 -12.4 101.0
11°	7 31.4 -13.4 102.8	6 33.9 -13.1 102.6	5 36.4 -12.9 102.4	4 38.8 -12.6 102.2	3 41.3 -12.5 102.0
12°	7 18.0 -13.5 103.8	6 20.8 -13.3 103.6	5 23.5 -13.0 103.4	4 26.2 -12.8 103.2	3 28.8 -12.6 102.9
13°	7 04.5 -13.6 104.8	6 07.5 -13.3 104.6	5 10.5 -13.1 104.3	4 13.4 -12.9 104.1	3 16.2 -12.5 103.9
14°	6 50.9 -13.8 105.8	5 54.2 -13.5 105.5	4 57.4 -13.2 105.3	4 00.5 -12.9 105.1	3 03.7 -12.7 104.9
15°	6 37.1 -13.8 106.7	5 40.7 -13.6 106.5	4 44.2 -13.3 106.3	3 47.6 -12.9 106.1	2 51.0 -12.7 105.9
16°	6 23.3 -14.0 107.7	5 27.1 -13.6 107.5	4 30.9 -13.3 107.3	3 34.7 -13.1 107.1	2 38.3 -12.7 106.9
17°	6 09.3 -14.1 108.7	5 13.5 -13.8 108.5	4 17.6 -13.4 108.3	3 21.6 -13.1 108.0	2 25.6 -12.8 107.8
18°	5 55.2 -14.1 109.7	4 59.7 -13.8 109.5	4 04.2 -13.5 109.2	3 08.5 -13.1 109.0	2 12.8 -12.8 108.8
19°	5 41.1 -14.3 110.6	4 45.9 -13.9 110.4	3 50.7 -13.6 110.2	2 55.4 -13.2 110.0	2 00.0 -12.9 109.8
20°	5 26.8 -14.4 111.6	4 32.0 -14.0 111.4	3 37.1 -13.6 111.2	2 42.2 -13.3 111.0	1 47.1 -12.8 110.8
21°	5 12.4 -14.4 112.6	4 18.0 -14.1 112.4	3 23.5 -13.7 112.2	2 28.9 -13.3 112.0	1 34.3 -13.0 111.7
22°	4 58.0 -14.6 113.6	4 03.9 -14.1 113.4	3 09.8 -13.7 113.1	2 15.6 -13.3 112.9	1 21.3 -12.9 112.7
23°	4 43.4 -14.6 114.5	3 49.8 -14.2 114.3	2 56.1 -13.8 114.1	2 02.3 -13.4 113.9	1 08.4 -13.0 113.7
24°	4 28.8 -14.7 115.5	3 35.6 -14.3 115.3	2 42.3 -13.8 115.1	1 48.9 -13.4 114.9	0 55.4 -12.9 114.7
25°	4 14.1 -14.8 116.5	3 21.3 -14.3 116.3	2 28.5 -13.9 116.1	1 35.5 -13.4 115.9	0 42.5 -13.0 115.7
26°	3 59.3 -14.8 117.5	3 07.0 -14.4 117.2	2 14.6 -13.9 117.0	1 22.1 -13.5 116.8	0 29.5 -13.0 116.6
27°	3 44.5 -14.9 118.4	2 52.6 -14.4 118.2	2 00.7 -14.0 118.0	1 08.6 -13.4 117.8	0 16.5 -13.0 117.6
28°	3 29.6 -15.0 119.4	2 38.2 -14.5 119.2	1 46.7 -13.9 119.0	0 55.2 -13.5 118.8	0 03.5 -13.0 118.6
29°	3 14.6 -15.0 120.4	2 23.7 -14.5 120.2	1 32.8 -14.0 120.0	0 41.7 -13.5 119.8	-0 09.5 -13.0

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 54.5 -11.6 91.0	3 55.6 -11.5 90.8	2 56.7 -11.5 90.6	1 57.8 -11.5 90.4	0 58.9 -11.5 90.2
1°	4 42.9 -11.6 91.9	3 44.1 -11.6 91.7	2 45.2 -11.5 91.6	1 46.3 -11.5 91.4	0 47.4 -11.4 91.2
2°	4 31.3 -11.7 92.9	3 32.5 -11.6 92.7	2 33.7 -11.6 92.5	1 34.8 -11.5 92.3	0 36.0 -11.5 92.2
3°	4 19.6 -11.7 93.9	3 20.9 -11.7 93.7	2 22.1 -11.6 93.5	1 23.3 -11.6 93.3	0 24.5 -11.5 93.1
4°	4 07.9 -11.9 94.9	3 09.2 -11.8 94.7	2 10.5 -11.7 94.5	1 11.7 -11.5 94.3	0 13.0 -11.5 94.1
5°	3 56.0 -11.9 95.9	2 57.4 -11.8 95.7	1 58.8 -11.7 95.5	1 00.2 -11.6 95.3	0 01.5 -11.5 95.1
6°	3 44.1 -12.0 96.9	2 45.6 -11.8 96.7	1 47.1 -11.7 96.5	0 48.6 -11.6 96.3	-0 10.0 -11.5
7°	3 32.1 -12.0 97.8	2 33.8 -11.9 97.6	1 35.4 -11.8 97.4	0 37.0 -11.7 97.3	-0 21.5 -11.5
8°	3 20.1 -12.1 98.8	2 21.9 -12.0 98.6	1 23.6 -11.8 98.4	0 25.3 -11.6 98.2	-0 33.0 -11.4
9°	3 08.0 -12.2 99.8	2 09.9 -12.0 99.6	1 11.8 -11.8 99.4	0 13.7 -11.6 99.2	-0 44.4 -11.5
10°	2 55.8 -12.2 100.8	1 57.9 -12.0 100.6	1 00.0 -11.8 100.4	0 02.1 -11.7 100.2	-0 55.9 -11.5
11°	2 43.6 -12.2 101.8	1 45.9 -12.0 101.6	0 48.2 -11.8 101.4	-0 09.6 -11.6	-1 07.4 -11.4
12°	2 31.4 -12.3 102.7	1 33.9 -12.1 102.5	0 36.4 -11.9 102.3	-0 21.2 -11.6	-1 18.8 -11.4
13°	2 19.1 -12.4 103.7	1 21.8 -12.1 103.5	0 24.5 -11.8 103.3	-0 32.8 -11.6	-1 30.2 -11.4
14°	2 06.7 -12.4 104.7	1 09.7 -12.1 104.5	0 12.7 -11.9 104.3	-0 44.4 -11.6	-1 41.6 -11.3
15°	1 54.3 -12.4 105.7	0 57.6 -12.1 105.5	0 00.8 -11.8 105.3	-0 56.0 -11.6	-1 52.9 -11.3
16°	1 41.9 -12.4 106.7	0 45.5 -12.2 106.5	-0 11.0 -11.9	-1 07.6 -11.6	-2 04.2 -11.3
17°	1 29.5 -12.5 107.6	0 33.3 -12.1 107.4	-0 22.9 -11.8	-1 19.2 -11.5	-2 15.5 -11.2
18°	1 17.0 -12.5 108.6	0 21.2 -12.2 108.4	-0 34.7 -11.9	-1 30.7 -11.5	-2 26.7 -11.2
19°	1 04.5 -12.5 109.6	0 09.0 -12.1 109.4	-0 46.6 -11.8	-1 42.2 -11.5	-2 37.9 -11.2
20°	0 52.0 -12.5 110.6	-0 03.1 -12.2	-0 58.4 -11.8	-1 53.7 -11.5	-2 49.1 -11.1
21°	0 39.5 -12.5 111.6	-0 15.3 -12.2	-1 10.2 -11.8	-2 05.2 -11.4	-3 00.2 -11.0
22°	0 27.0 -12.6 112.5	-0 27.5 -12.1	-1 22.0 -11.7	-2 16.6 -11.3	-3 11.2 -11.0
23°	0 14.4 -12.5 113.5	-0 39.6 -12.2	-1 33.7 -11.8	-2 27.9 -11.4	-3 22.2 -10.9
24°	0 01.9 -12.6 114.5	-0 51.8 -12.1	-1 45.5 -11.7	-2 39.3 -11.3	-3 33.1 -10.9
25°	-0 10.7 -12.5	-1 03.9 -12.1	-1 57.2 -11.6	-2 50.6 -11.2	-3 44.0 -10.8
26°	-0 23.2 -12.5	-1 16.0 -12.1	-2 08.8 -11.7	-3 01.8 -11.2	-3 54.8 -10.7
27°	-0 35.7 -12.6	-1 28.1 -12.0	-2 20.5 -11.6	-3 13.0 -11.1	-4 05.5 -10.7
28°	-0 48.3 -12.5	-1 40.1 -12.0	-2 32.1 -11.5	-3 24.1 -11.0	-4 16.2 -10.6
29°	-1 00.8 -12.5	-1 52.1 -12.0	-2 43.6 -11.5	-3 35.1 -11.0	-4 26.8 -10.5

Latitude 11°

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 -11.4 90.0	-0 58.9 -11.4			
1°	-0 11.4 -11.5	-1 10.3 -11.5			
2°	-0 22.9 -11.4	-1 21.8 -11.4			
3°	-0 34.3 -11.5	-1 33.2 -11.3			
4°	-0 45.8 -11.4	-1 44.5 -11.4			
5°	-0 57.2 -11.4	-1 55.9 -11.3			
6°	-1 08.6 -11.3	-2 07.2 -11.2			
7°	-1 19.9 -11.4	-2 18.4 -11.3			
8°	-1 31.3 -11.3	-2 29.7 -11.1			
9°	-1 42.6 -11.3	-2 40.8 -11.2			
10°	-1 53.9 -11.3	-2 52.0 -11.1			
11°	-2 05.2 -11.2	-3 03.1 -11.0			
12°	-2 16.4 -11.2	-3 14.1 -11.0			
13°	-2 27.6 -11.1	-3 25.1 -10.9			
14°	-2 38.7 -11.1	-3 36.0 -10.8			
15°	-2 49.8 -11.1	-3 46.8 -10.8			
16°	-3 00.9 -11.0	-3 57.6 -10.7			
17°	-3 11.9 -10.9	-4 08.3 -10.7			
18°	-3 22.8 -10.9	-4 19.0 -10.5			
19°	-3 33.7 -10.8	-4 29.5 -10.5			
20°	-3 44.5 -10.8	-4 40.0 -10.4			
21°	-3 55.3 -10.6	-4 50.4 -10.3			
22°	-4 05.9 -10.6	-5 00.7 -10.2			
23°	-4 16.5 -10.6	-5 10.9 -10.2			
24°	-4 27.1 -10.4	-5 21.1 -10.0			
25°	-4 37.5 -10.4	-5 31.1 -09.9			
26°	-4 47.9 -10.3	-5 41.0 -09.9			
27°	-4 58.2 -10.2	-5 50.9 -09.7			
28°	-5 08.4 -10.1	-6 00.6 -09.6			
29°	-5 18.5 -10.0	-6 10.2 -09.6			

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°	78 00.0 -60.0 180.0	77 57.5 -59.8 175.2	77 50.2 -59.3 170.5	77 38.2 -58.4 165.9	77 21.6 -57.2 161.4
1°	77 00.0 -60.0 180.0	76 57.7 -59.8 175.6	76 50.9 -59.3 171.2	76 39.8 -58.6 166.9	76 24.4 -57.6 162.7
2°	76 00.0 -60.0 180.0	75 57.9 -59.9 175.9	75 51.6 -59.5 171.8	75 41.2 -58.8 167.8	75 26.8 -57.9 163.9
3°	75 00.0 -60.0 180.0	74 58.0 -59.9 176.1	74 52.1 -59.5 172.3	74 42.4 -58.9 168.6	74 28.9 -58.1 164.9
4°	74 00.0 -60.0 180.0	73 58.1 -59.8 176.4	73 52.6 -59.6 172.8	73 43.5 -59.1 169.3	73 30.8 -58.3 165.8
5°	73 00.0 -60.0 180.0	72 58.3 -59.9 176.6	72 53.0 -59.6 173.2	72 44.4 -59.1 169.9	72 32.5 -58.6 166.6
6°	72 00.0 -60.0 180.0	71 58.4 -60.0 176.8	71 53.4 -59.6 173.6	71 45.3 -59.3 170.4	71 33.9 -58.6 167.3
7°	71 00.0 -60.0 180.0	70 58.4 -59.9 177.0	70 53.8 -59.7 173.9	70 46.0 -59.3 170.9	70 35.3 -58.8 168.0
8°	70 00.0 -60.0 180.0	69 58.5 -59.9 177.1	69 54.1 -59.7 174.2	69 46.7 -59.3 171.4	69 36.5 -58.9 168.6
9°	69 00.0 -60.0 180.0	68 58.6 -59.9 177.2	68 54.4 -59.8 174.5	68 47.4 -59.5 171.8	68 37.6 -59.0 169.1
10°	68 00.0 -60.0 180.0	67 58.7 -60.0 177.4	67 54.6 -59.7 174.8	67 47.9 -59.4 172.2	67 38.6 -59.0 169.6
11°	67 00.0 -60.0 180.0	66 58.7 -59.9 177.5	66 54.9 -59.8 175.0	66 48.5 -59.5 172.5	66 39.6 -59.2 170.0
12°	66 00.0 -60.0 180.0	65 58.8 -60.0 177.6	65 55.1 -59.8 175.2	65 49.0 -59.6 172.8	65 40.4 -59.2 170.5
13°	65 00.0 -60.0 180.0	64 58.8 -59.9 177.7	64 55.3 -59.8 175.4	64 49.4 -59.6 173.1	64 41.2 -59.2 170.9
14°	64 00.0 -60.0 180.0	63 58.9 -60.0 177.8	63 55.5 -59.9 175.6	63 49.8 -59.6 173.4	63 42.0 -59.3 171.2
15°	63 00.0 -60.0 180.0	62 58.9 -59.9 177.9	62 55.6 -59.8 175.8	62 50.2 -59.6 173.6	62 42.7 -59.4 171.5
16°	62 00.0 -60.0 180.0	61 59.0 -60.0 178.0	61 55.8 -59.8 175.9	61 50.6 -59.7 173.9	61 43.3 -59.4 171.9
17°	61 00.0 -60.0 180.0	60 59.0 -60.0 178.0	60 56.0 -59.9 176.1	60 50.9 -59.6 174.1	60 43.9 -59.4 172.2
18°	60 00.0 -60.0 180.0	59 59.0 -59.9 178.1	59 56.1 -59.9 176.2	59 51.3 -59.7 174.3	59 44.5 -59.5 172.4
19°	59 00.0 -60.0 180.0	58 59.1 -60.0 178.2	58 56.2 -59.8 176.3	58 51.6 -59.8 174.5	58 45.0 -59.5 172.7
20°	58 00.0 -60.0 180.0	57 59.1 -60.0 178.2	57 56.4 -59.9 176.5	57 51.8 -59.7 174.7	57 45.5 -59.5 172.9
21°	57 00.0 -60.0 180.0	56 59.1 -59.9 178.3	56 56.5 -59.9 176.6	56 52.1 -59.7 174.9	56 46.0 -59.5 173.2
22°	56 00.0 -60.0 180.0	55 59.2 -60.0 178.3	55 56.6 -59.9 176.7	55 52.4 -59.8 175.0	55 46.5 -59.6 173.4
23°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.4	54 56.7 -59.9 176.8	54 52.6 -59.8 175.2	54 46.9 -59.6 173.6
24°	54 00.0 -60.0 180.0	53 59.2 -60.0 178.4	53 56.8 -59.9 176.9	53 52.8 -59.7 175.3	53 47.3 -59.6 173.8
25°	53 00.0 -60.0 180.0	52 59.2 -59.9 178.5	52 56.9 -59.9 177.0	52 53.1 -59.8 175.5	52 47.7 -59.6 174.0
26°	52 00.0 -60.0 180.0	51 59.3 -60.0 178.5	51 57.0 -59.9 177.1	51 53.3 -59.8 175.6	51 48.1 -59.7 174.2
27°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.6	50 57.1 -59.9 177.2	50 53.5 -59.8 175.8	50 48.4 -59.6 174.4
28°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.6	49 57.2 -59.9 177.3	49 53.7 -59.8 175.9	49 48.8 -59.7 174.5
29°	49 00.0 -60.0 180.0	48 59.3 -60.0 178.7	48 57.3 -60.0 177.3	48 53.9 -59.9 176.0	48 49.1 -59.7 174.7

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°	77 00.8 -55.8 157.2	76 36.2 -54.2 153.2	76 08.0 -52.5 149.4	75 36.6 -50.8 145.9	75 02.4 -49.0 142.7
1°	76 05.0 -56.3 158.8	75 42.0 -55.0 155.0	75 15.5 -53.5 151.4	74 45.8 -51.8 148.0	74 13.4 -50.1 144.9
2°	75 08.7 -56.8 160.1	74 47.0 -55.5 156.5	74 22.0 -54.1 153.1	73 54.0 -52.6 149.9	73 23.3 -51.2 146.8
3°	74 11.9 -57.2 161.4	73 51.5 -56.1 157.9	73 27.9 -54.8 154.7	73 01.4 -53.5 151.6	72 32.1 -52.0 148.6
4°	73 14.7 -57.4 162.4	72 55.4 -56.4 159.2	72 33.1 -55.3 156.1	72 07.9 -54.1 153.1	71 40.1 -52.8 150.3
5°	72 17.3 -57.7 163.4	71 59.0 -56.8 160.3	71 37.8 -55.8 157.3	71 13.8 -54.6 154.5	70 47.3 -53.4 151.7
6°	71 19.6 -58.0 164.3	71 02.2 -57.1 161.3	70 42.0 -56.1 158.5	70 19.2 -55.1 155.7	69 53.9 -54.0 153.1
7°	70 21.6 -58.1 165.1	70 05.1 -57.3 162.3	69 45.9 -56.5 159.5	69 24.1 -55.5 156.9	68 59.9 -54.5 154.3
8°	69 23.5 -58.3 165.8	69 07.8 -57.6 163.1	68 49.4 -56.8 160.5	68 28.6 -55.9 157.9	68 05.4 -55.0 155.5
9°	68 25.2 -58.4 166.5	68 10.2 -57.8 163.9	67 52.6 -57.0 161.4	67 32.7 -56.2 158.9	67 10.4 -55.3 156.5
10°	67 26.8 -58.6 167.1	67 12.4 -58.0 164.6	66 55.6 -57.3 162.2	66 36.5 -56.5 159.8	66 15.1 -55.7 157.5
11°	66 28.2 -58.7 167.6	66 14.4 -58.1 165.2	65 58.3 -57.4 162.9	65 40.0 -56.8 160.6	65 19.4 -55.9 158.4
12°	65 29.5 -58.7 168.1	65 16.3 -58.2 165.9	65 00.9 -57.7 163.6	64 43.2 -57.0 161.4	64 23.5 -56.3 159.3
13°	64 30.8 -58.9 168.6	64 18.1 -58.4 166.4	64 03.2 -57.8 164.3	63 46.2 -57.1 162.1	63 27.2 -56.5 160.1
14°	63 31.9 -58.9 169.1	63 19.7 -58.5 166.9	63 05.4 -57.9 164.9	62 49.1 -57.4 162.8	62 30.7 -56.7 160.8
15°	62 33.0 -59.0 169.5	62 21.2 -58.5 167.4	62 07.5 -58.1 165.4	61 51.7 -57.5 163.4	61 34.0 -56.9 161.5
16°	61 34.0 -59.1 169.9	61 22.7 -58.7 167.9	61 09.4 -58.2 165.9	60 54.2 -57.7 164.0	60 37.1 -57.1 162.2
17°	60 34.9 -59.1 170.2	60 24.0 -58.7 168.3	60 11.2 -58.3 166.4	59 56.5 -57.8 164.6	59 40.0 -57.2 162.8
18°	59 35.8 -59.2 170.6	59 25.3 -58.8 168.7	59 12.9 -58.4 166.9	58 58.7 -57.9 165.1	58 42.8 -57.5 163.4
19°	58 36.6 -59.2 170.9	58 26.5 -58.9 169.1	58 14.5 -58.5 167.4	58 00.8 -58.1 165.6	57 45.3 -57.5 163.9
20°	57 37.4 -59.2 171.2	57 27.6 -59.0 169.5	57 16.0 -58.6 167.8	57 02.7 -58.1 166.1	56 47.8 -57.7 164.4
21°	56 38.2 -59.3 171.5	56 28.6 -58.9 169.8	56 17.4 -58.6 168.2	56 04.6 -58.2 166.5	55 50.1 -57.8 164.9
22°	55 38.9 -59.3 171.8	55 29.7 -59.1 170.1	55 18.8 -58.7 168.5	55 06.4 -58.4 167.0	54 52.3 -57.9 165.4
23°	54 39.6 -59.4 172.0	54 30.6 -59.1 170.5	54 20.1 -58.8 168.9	54 08.0 -58.4 167.4	53 54.4 -57.9 165.9
24°	53 40.2 -59.4 172.3	53 31.5 -59.1 170.8	53 21.3 -58.8 169.2	53 09.6 -58.4 167.8	52 56.5 -58.1 166.3
25°	52 40.8 -59.4 172.5	52 32.4 -59.2 171.0	52 22.5 -58.8 169.6	52 11.2 -58.6 168.1	51 58.4 -58.2 166.7
26°	51 41.4 -59.5 172.7	51 33.2 -59.2 171.3	51 23.7 -59.0 169.9	51 12.6 -58.6 168.5	51 00.2 -58.2 167.1
27°	50 41.9 -59.4 173.0	50 34.0 -59.2 171.6	50 24.7 -58.9 170.2	50 14.0 -58.6 168.8	50 02.0 -58.3 167.5
28°	49 42.5 -59.5 173.2	49 34.8 -59.3 171.8	49 25.8 -59.0 170.5	49 15.4 -58.7 169.1	49 03.7 -58.4 167.8
29°	48 43.0 -59.5 173.4	48 35.5 -59.3 172.1	48 26.8 -59.1 170.8	48 16.7 -58.8 169.5	48 05.3 -58.4 168.2

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°	74 25.6 -47.2 139.7	73 46.6 -45.5 136.9	73 05.5 -43.7 134.4	72 22.7 -42.0 132.0	71 38.4 -40.5 129.8
1°	73 38.4 -48.5 141.9	73 01.1 -46.8 139.2	72 21.8 -45.2 136.7	71 40.7 -43.6 134.3	70 57.9 -42.1 132.1
2°	72 49.9 -49.6 144.0	72 14.3 -48.0 141.3	71 36.6 -46.5 138.8	70 57.1 -45.0 136.5	70 15.8 -43.5 134.3
3°	72 00.3 -50.6 145.9	71 26.3 -49.1 143.2	70 50.1 -47.6 140.8	69 32.3 -46.2 138.5	69 32.3 -44.7 136.3
4°	71 09.7 -51.4 147.6	70 37.2 -50.1 145.0	70 02.5 -48.7 142.6	69 25.9 -47.3 140.3	68 47.6 -46.0 138.2
5°	70 18.3 -52.2 149.1	69 47.1 -50.9 146.6	69 13.8 -49.6 144.3	68 38.6 -48.3 142.0	68 01.6 -47.0 139.9
6°	69 26.1 -52.8 150.6	68 56.2 -51.6 148.1	68 24.2 -50.4 145.8	67 50.3 -49.1 143.6	67 14.6 -47.9 141.5
7°	68 33.3 -53.4 151.9	68 04.6 -52.3 149.5	67 33.8 -51.1 147.3	67 01.2 -50.0 145.1	66 26.7 -48.7 143.1
8°	67 39.9 -53.9 153.1	67 12.3 -52.9 150.8	66 42.7 -51.8 148.6	66 11.2 -50.6 146.5	65 38.0 -49.5 144.5
9°	66 46.0 -54.4 154.2	66 19.4 -53.3 152.0	65 50.9 -52.3 149.9	65 20.6 -51.3 147.8	64 48.5 -50.3 145.9
10°	65 51.6 -54.8 155.3	65 26.1 -53.9 153.1	64 58.6 -52.9 151.0	64 29.3 -51.9 149.0	63 58.2 -50.8 147.1
11°	64 56.8 -55.1 156.3	64 32.2 -54.2 154.2	64 05.7 -53.3 152.1	63 37.4 -52.4 150.2	63 07.4 -51.4 148.3
12°	64 01.7 -55.5 157.2	63 38.0 -54.7 155.1	63 12.4 -53.8 153.2	62 45.0 -52.8 151.3	62 16.0 -51.9 149.4
13°	63 06.2 -55.7 158.0	62 43.3 -54.9 156.1	62 18.6 -54.1 154.2	61 52.2 -53.3 152.3	61 24.1 -52.4 150.5
14°	62 10.5 -56.0 158.8	61 48.4 -55.3 156.9	61 24.5 -54.5 155.1	60 58.9 -53.6 153.3	60 31.7 -52.8 151.5
15°	61 14.5 -56.3 159.6	60 53.1 -55.5 157.7	60 30.0 -54.8 155.9	60 05.3 -54.0 154.2	59 38.9 -53.2 152.5
16°	60 18.2 -56.4 160.3	59 57.6 -55.8 158.5	59 35.2 -55.1 156.7	59 11.3 -54.4 155.0	58 45.7 -53.6 153.4
17°	59 21.8 -56.7 161.0	59 01.8 -56.0 159.2	58 40.1 -55.3 157.5	58 16.9 -54.6 155.8	57 52.1 -53.9 154.2
18°	58 25.1 -56.9 161.6	58 05.8 -56.3 159.9	57 44.8 -55.6 158.3	57 22.3 -54.9 156.6	56 58.2 -54.2 155.0
19°	57 28.2 -57.0 162.2	57 09.5 -56.4 160.6	56 49.2 -55.8 158.9	56 27.4 -55.2 157.4	56 04.0 -54.4 155.8
20°	56 31.2 -57.1 162.8	56 13.1 -56.6 161.2	55 53.4 -56.0 159.6	55 32.2 -55.4 158.1	55 09.6 -54.8 156.6
21°	55 34.1 -57.3 163.3	55 16.5 -56.8 161.8	54 57.4 -56.2 160.2	54 36.8 -55.6 158.7	54 14.8 -54.9 157.3
22°	54 36.8 -57.4 163.9	54 19.7 -56.9 162.3	54 01.2 -56.4 160.8	53 41.2 -55.8 159.4	53 19.9 -55.2 157.9
23°	53 39.4 -57.6 164.4	53 22.8 -57.1 162.9	53 04.8 -56.5 161.4	52 45.4 -56.0 160.0	52 24.7 -55.4 158.6
24°	52 41.8 -57.6 164.8	52 25.7 -57.1 163.4	52 08.3 -56.7 162.0	51 49.4 -56.1 160.6	51 29.3 -55.6 159.2
25°	51 44.2 -57.8 165.3	51 28.6 -57.3 163.9	51 11.6 -56.8 162.5	50 53.3 -56.3 161.1	50 33.7 -55.8 159.8
26°	50 46.4 -57.8 165.7	50 31.3 -57.4 164.4	50 14.8 -57.0 163.0	49 57.0 -56.5 161.7	49 37.9 -55.9 160.4
27°	49 48.6 -57.9 166.1	49 33.9 -57.6 164.8	49 17.8 -57.0 163.5	49 00.5 -56.6 162.2	48 42.0 -56.1 160.9
28°	48 50.7 -58.1 166.5	48 36.3 -57.6 165.2	48 20.8 -57.2 164.0	48 03.9 -56.7 162.7	47 45.9 -56.2 161.5
29°	47 52.6 -58.0 166.9	47 38.7 -57.7 165.7	47 23.6 -57.3 164.4	47 07.2 -56.8 163.2	46 49.7 -56.4 162.0

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°	70 52.6 -38.9 127.8	70 05.7 -37.5 125.9	69 17.6 -36.1 124.2	68 28.7 -34.9 122.6	67 38.8 -33.7 121.1
1°	70 13.7 -40.6 130.1	69 28.2 -39.2 128.2	68 41.5 -37.8 126.4	67 53.8 -36.6 124.8	67 05.1 -35.3 123.3
2°	69 33.1 -42.1 132.2	68 49.0 -40.7 130.3	68 03.7 -39.4 128.6	67 17.2 -38.1 126.9	66 29.8 -36.9 125.3
3°	68 51.0 -43.4 134.2	68 08.3 -42.0 132.3	67 24.3 -40.7 130.5	66 39.1 -39.4 128.9	65 52.9 -38.2 127.3
4°	68 07.6 -44.6 136.1	67 26.3 -43.3 134.2	66 43.6 -42.1 132.4	65 59.7 -40.8 130.7	65 14.7 -39.7 129.1
5°	67 23.0 -45.7 137.9	66 43.0 -44.5 136.0	66 01.5 -43.2 134.2	65 18.9 -42.0 132.5	64 35.0 -40.8 130.9
6°	66 37.3 -46.6 139.6	65 58.5 -45.4 137.7	65 18.3 -44.2 135.9	64 36.9 -43.1 134.2	63 54.2 -41.9 132.6
7°	65 50.7 -47.6 141.1	65 13.1 -46.4 139.3	64 34.1 -45.2 137.5	63 53.8 -44.1 135.8	63 12.3 -43.0 134.2
8°	65 03.1 -48.4 142.6	64 26.7 -47.3 140.7	63 48.9 -46.2 139.0	63 09.7 -45.0 137.3	62 29.3 -43.9 135.7
9°	64 14.7 -49.1 144.0	63 39.4 -48.0 142.2	63 02.7 -46.9 140.4	62 24.7 -45.9 138.8	61 45.4 -44.8 137.2
10°	63 25.6 -49.8 145.3	62 51.4 -48.7 143.5	62 15.8 -47.7 141.8	61 38.8 -46.6 140.1	61 00.6 -45.6 138.6
11°	62 35.8 -50.4 146.5	62 02.7 -49.5 144.7	61 28.1 -48.4 143.1	60 52.2 -47.4 141.5	60 15.0 -46.4 139.9
12°	61 45.4 -51.0 147.7	61 13.2 -49.9 145.9	60 39.7 -49.0 144.3	60 04.8 -48.1 142.7	59 28.6 -47.1 141.2
13°	60 54.4 -51.4 148.8	60 23.3 -50.6 147.1	59 50.7 -49.7 145.5	59 16.7 -48.7 143.9	58 41.5 -47.7 142.4
14°	60 03.0 -52.0 149.8	59 32.7 -51.1 148.2	59 01.0 -50.1 146.6	58 28.0 -49.2 145.0	57 53.8 -48.4 143.5
15°	59 11.0 -52.4 150.8	58 41.6 -51.5 149.2	58 10.9 -50.7 147.6	57 38.8 -49.8 146.1	57 05.4 -48.8 144.6
16°	58 18.6 -52.7 151.7	57 50.1 -51.9 150.2	57 20.2 -51.1 148.6	56 49.0 -50.2 147.1	56 16.6 -49.4 145.7
17°	57 25.9 -53.1 152.6	56 58.2 -52.3 151.1	56 29.1 -51.5 149.6	55 58.8 -50.7 148.1	55 27.2 -49.9 146.7
18°	56 32.8 -53.5 153.5	56 05.9 -52.8 152.0	55 37.6 -51.9 150.5	55 08.1 -51.2 149.1	54 37.3 -50.4 147.7
19°	55 39.3 -53.8 154.3	55 13.1 -53.0 152.8	54 45.7 -52.3 151.4	54 16.9 -51.5 150.0	53 46.9 -50.7 148.6
20°	54 45.5 -54.0 155.1	54 20.1 -53.3 153.6	53 53.4 -52.6 152.2	53 25.4 -51.9 150.8	52 56.2 -51.1 149.5
21°	53 51.5 -54.4 155.8	53 26.8 -53.7 154.4	53 00.8 -53.0 153.0	52 33.5 -52.2 151.7	52 05.1 -51.5 150.4
22°	52 57.1 -54.5 156.5	52 33.1 -53.9 155.1	52 07.8 -53.2 153.8	51 41.3 -52.5 152.5	51 13.6 -51.8 151.2
23°	52 02.6 -54.8 157.2	51 39.2 -54.2 155.9	51 14.6 -53.5 154.5	50 48.8 -52.9 153.2	50 21.8 -52.2 152.0
24°	51 07.8 -55.0 157.9	50 45.0 -54.3 156.5	50 21.1 -53.8 155.3	49 55.9 -53.1 154.0	49 29.6 -52.4 152.7
25°	50 12.8 -55.2 158.5	49 50.7 -54.7 157.2	49 27.3 -54.0 155.9	49 02.8 -53.3 154.7	48 37.2 -52.7 153.5
26°	49 17.6 -55.4 159.1	48 56.0 -54.8 157.8	48 33.3 -54.2 156.6	48 09.5 -53.7 155.4	47 44.5 -53.0 154.2
27°	48 22.2 -55.6 159.7	48 01.2 -55.0 158.5	47 39.1 -54.4 157.2	47 15.8 -53.8 156.1	46 51.5 -53.2 154.9
28°	47 26.6 -55.7 160.3	47 06.2 -55.2 159.1	46 44.7 -54.6 157.9	46 22.0 -54.0 156.7	45 58.3 -53.5 155.6
29°	46 30.9 -55.8 160.8	46 11.0 -55.3 159.6	45 50.1 -54.8 158.5	45 28.0 -54.3 157.3	45 04.8 -53.6 156.2

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°	66 48.2 -32.5 119.7	65 56.9 -31.4 118.4	65 05.0 -30.4 117.2	64 12.6 -29.5 116.1	63 19.6 -28.6 115.0
1°	66 15.7 -34.2 121.8	65 25.5 -33.1 120.5	64 34.6 -32.1 119.3	63 43.1 -31.1 118.1	62 51.0 -30.1 117.0
2°	65 41.5 -35.7 123.9	64 52.4 -34.6 122.5	64 02.5 -33.5 121.2	63 12.0 -32.6 120.0	62 20.9 -31.6 118.9
3°	65 05.8 -37.2 125.8	64 17.8 -36.1 124.4	63 29.0 -35.0 123.1	62 39.4 -33.9 121.8	61 49.3 -33.0 120.7
4°	64 28.6 -38.4 127.6	63 41.7 -37.3 126.2	62 54.0 -36.3 124.9	62 05.5 -35.3 123.6	61 16.3 -34.4 122.4
5°	63 50.2 -39.7 129.4	63 04.4 -38.6 128.0	62 17.7 -37.6 126.6	61 30.2 -36.5 125.3	60 41.9 -35.5 124.1
6°	63 10.5 -40.8 131.1	62 25.8 -39.8 129.6	61 40.1 -38.6 128.3	60 53.7 -37.7 127.0	60 06.4 -36.7 125.7
7°	62 29.7 -41.9 132.7	61 46.0 -40.8 131.2	61 01.5 -39.8 129.9	60 16.0 -38.8 128.6	59 29.7 -37.8 127.3
8°	61 47.8 -42.8 134.2	61 05.2 -41.8 132.8	60 21.7 -40.8 131.4	59 37.2 -39.8 130.1	58 51.9 -38.8 128.8
9°	61 05.0 -43.8 135.7	60 23.4 -42.7 134.2	59 40.9 -41.7 132.9	58 57.4 -40.7 131.6	58 13.1 -39.8 130.3
10°	60 21.2 -44.6 137.1	59 40.7 -43.6 135.6	58 59.2 -42.7 134.3	58 16.7 -41.7 133.0	57 33.3 -40.7 131.7
11°	59 36.6 -45.4 138.4	58 57.1 -44.4 137.0	58 16.5 -43.4 135.6	57 35.0 -42.5 134.3	56 52.6 -41.6 133.1
12°	58 51.2 -46.1 139.7	58 12.7 -45.2 138.3	57 33.1 -44.2 136.9	56 52.5 -43.2 135.6	56 11.0 -42.3 134.4
13°	58 05.1 -46.8 140.9	57 27.5 -45.8 139.5	56 48.9 -44.9 138.2	56 09.3 -44.0 136.9	55 28.7 -43.1 135.6
14°	57 18.3 -47.4 142.1	56 41.7 -46.5 140.7	56 04.0 -45.6 139.4	55 25.3 -44.7 138.1	54 45.6 -43.8 136.8
15°	56 30.9 -48.0 143.2	55 55.2 -47.1 141.8	55 18.4 -46.2 140.5	54 40.6 -45.4 139.3	54 01.8 -44.5 138.0
16°	55 42.9 -48.6 144.3	55 08.1 -47.7 142.9	54 32.2 -46.8 141.6	53 55.2 -45.9 140.4	53 17.3 -45.1 139.2
17°	54 54.3 -49.0 145.3	54 20.4 -48.2 144.0	53 45.4 -47.4 142.7	53 09.3 -46.5 141.5	52 32.2 -45.6 140.2
18°	54 05.3 -49.5 146.3	53 32.2 -48.7 145.0	52 58.0 -47.9 143.7	52 22.8 -47.1 142.5	51 46.6 -46.3 141.3
19°	53 15.8 -50.0 147.3	52 43.5 -49.1 146.0	52 10.1 -48.3 144.7	51 35.7 -47.5 143.5	51 00.3 -46.7 142.3
20°	52 25.8 -50.3 148.2	51 54.4 -49.6 146.9	51 21.8 -48.8 145.7	50 48.2 -48.0 144.5	50 13.6 -47.2 143.3
21°	51 35.5 -50.8 149.1	51 04.8 -50.0 147.8	50 33.0 -49.2 146.6	50 00.2 -48.5 145.4	49 26.4 -47.7 144.3
22°	50 44.7 -51.1 149.9	50 14.8 -50.4 148.7	49 43.8 -49.7 147.5	49 11.7 -48.9 146.3	48 38.7 -48.1 145.2
23°	49 53.6 -51.4 150.7	49 24.4 -50.7 149.5	48 54.1 -50.0 148.4	48 22.8 -49.2 147.2	47 50.6 -48.5 146.1
24°	49 02.2 -51.8 151.5	48 33.7 -51.1 150.4	48 04.1 -50.3 149.2	47 33.6 -49.6 148.1	47 02.1 -48.9 147.0
25°	48 10.4 -52.0 152.3	47 42.6 -51.3 151.1	47 13.8 -50.7 150.0	46 44.0 -50.0 148.9	46 13.2 -49.3 147.8
26°	47 18.4 -52.3 153.0	46 51.3 -51.7 151.9	46 23.1 -51.0 150.8	45 54.0 -50.3 149.7	45 23.9 -49.6 148.6
27°	46 26.1 -52.6 153.8	45 59.6 -51.9 152.6	45 32.1 -51.3 151.5	45 03.7 -50.6 150.5	44 34.3 -49.9 149.4
28°	45 33.5 -52.8 154.5	45 07.7 -52.2 153.4	44 40.8 -51.5 152.3	44 13.1 -50.9 151.2	43 44.4 -50.3 150.2
29°	44 40.7 -53.1 155.1	44 15.5 -52.5 154.0	43 49.3 -51.8 153.0	43 22.2 -51.2 152.0	42 54.1 -50.5 150.9

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°	62 26.2 -27.7 114.0	61 32.4 -26.9 113.1	60 38.3 -26.2 112.2	59 43.8 -25.5 111.4	58 48.9 -24.8 110.6
1°	61 58.5 -29.3 115.9	61 05.5 -28.5 114.9	60 12.1 -27.7 114.0	59 18.3 -26.9 113.1	58 24.1 -26.2 112.3
2°	61 29.2 -30.7 117.8	60 37.0 -29.8 116.8	59 44.4 -29.0 115.8	58 51.4 -28.3 114.9	57 57.9 -27.5 114.0
3°	60 58.5 -32.1 119.6	60 07.2 -31.2 118.5	59 15.4 -30.4 117.5	58 23.1 -29.6 116.6	57 30.4 -28.8 115.7
4°	60 26.4 -33.4 121.3	59 36.0 -32.5 120.2	58 45.0 -31.7 119.2	57 53.5 -30.8 118.2	57 01.6 -30.1 117.3
5°	59 53.0 -34.6 123.0	59 03.5 -33.7 121.9	58 13.3 -32.8 120.8	57 22.7 -32.0 119.8	56 31.5 -31.2 118.9
6°	59 18.4 -35.8 124.6	58 29.8 -34.9 123.5	57 40.5 -34.0 122.4	56 50.7 -33.2 121.4	56 00.3 -32.3 120.4
7°	58 42.6 -36.8 126.1	57 54.9 -35.9 125.0	57 06.5 -35.1 123.9	56 17.5 -34.2 122.9	55 28.0 -33.4 121.9
8°	58 05.8 -37.9 127.6	57 19.0 -37.0 126.5	56 31.4 -36.0 125.4	55 43.3 -35.2 124.4	54 54.6 -34.4 123.4
9°	57 27.9 -38.9 129.1	56 42.0 -38.0 127.9	55 55.4 -37.1 126.8	55 08.1 -36.2 125.8	54 20.2 -35.4 124.8
10°	56 49.0 -39.7 130.5	56 04.0 -38.8 129.3	55 18.3 -38.0 128.2	54 31.9 -37.2 127.2	53 44.8 -36.3 126.2
11°	56 09.3 -40.7 131.9	55 25.2 -39.8 130.7	54 40.3 -38.9 129.6	53 54.7 -38.0 128.5	53 08.5 -37.2 127.5
12°	55 28.6 -41.4 133.2	54 45.4 -40.5 132.0	54 01.4 -39.6 130.9	53 16.7 -38.8 129.8	52 31.3 -38.0 128.8
13°	54 47.2 -42.2 134.4	54 04.9 -41.3 133.3	53 21.8 -40.5 132.2	52 37.9 -39.6 131.1	51 53.3 -38.8 130.1
14°	54 05.0 -42.9 135.6	53 23.6 -42.1 134.5	52 41.3 -41.2 133.4	51 58.3 -40.4 132.3	51 14.5 -39.5 131.3
15°	53 22.1 -43.6 136.8	52 41.5 -42.7 135.7	52 00.1 -41.9 134.6	51 17.9 -41.1 133.5	50 35.0 -40.3 132.5
16°	52 38.5 -44.3 138.0	51 58.8 -43.4 136.8	51 18.2 -42.6 135.7	50 36.8 -41.7 134.7	49 54.7 -40.9 133.6
17°	51 54.2 -44.8 139.1	51 15.4 -44.0 137.9	50 35.6 -43.1 136.9	49 55.1 -42.4 135.8	49 13.8 -41.6 134.8
18°	51 09.4 -45.4 140.1	50 31.4 -44.6 139.0	49 52.5 -43.8 137.9	49 12.7 -42.9 136.9	48 32.2 -42.1 135.9
19°	50 24.0 -45.9 141.2	49 46.8 -45.2 140.1	49 08.7 -44.3 139.0	48 29.8 -43.6 137.9	47 50.1 -42.8 136.9
20°	49 38.1 -46.5 142.2	49 01.6 -45.6 141.1	48 24.4 -44.9 140.0	47 46.2 -44.0 139.0	47 07.3 -43.3 138.0
21°	48 51.6 -46.9 143.2	48 16.0 -46.1 142.1	47 39.5 -45.4 141.0	47 02.2 -44.6 140.0	46 24.0 -43.8 139.0
22°	48 04.7 -47.3 144.1	47 29.9 -46.6 143.0	46 54.1 -45.8 142.0	46 17.6 -45.1 141.0	45 40.2 -44.3 140.0
23°	47 17.4 -47.8 145.0	46 43.3 -47.1 143.9	46 08.3 -46.3 142.9	45 32.5 -45.5 141.9	44 55.9 -44.8 140.9
24°	46 29.6 -48.2 145.9	45 56.2 -47.4 144.8	45 22.0 -46.7 143.8	44 47.0 -46.0 142.8	44 11.1 -45.2 141.9
25°	45 41.4 -48.5 146.7	45 08.8 -47.8 145.7	44 35.3 -47.1 144.7	44 01.0 -46.4 143.7	43 25.9 -45.7 142.8
26°	44 52.9 -48.9 147.6	44 21.0 -48.2 146.6	43 48.2 -47.5 145.6	43 14.6 -46.7 144.6	42 40.2 -46.0 143.7
27°	44 04.0 -49.3 148.4	43 32.8 -48.6 147.4	43 00.7 -47.8 146.4	42 27.9 -47.2 145.5	41 54.2 -46.4 144.5
28°	43 14.7 -49.5 149.2	42 44.2 -48.8 148.2	42 12.9 -48.2 147.2	41 40.7 -47.5 146.3	41 07.8 -46.8 145.4
29°	42 25.2 -49.9 150.0	41 55.4 -49.2 149.0	41 24.7 -48.5 148.0	40 53.2 -47.8 147.1	40 21.0 -47.2 146.2

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	57 53.9 -24.2 109.8	56 58.5 -23.5 109.1	56 02.9 -23.0 108.4	55 07.2 -22.5 107.8	54 11.2 -22.0 107.1
1°	57 29.7 -25.5 111.5	56 35.0 -24.9 110.8	55 39.9 -24.2 110.0	54 44.7 -23.7 109.4	53 49.2 -23.2 108.7
2°	57 04.2 -26.9 113.2	56 10.1 -26.2 112.4	55 15.7 -25.6 111.7	54 21.0 -25.0 111.0	53 26.0 -24.3 110.3
3°	56 37.3 -28.1 114.8	55 43.9 -27.4 114.0	54 50.1 -26.7 113.2	53 56.0 -26.1 112.5	53 01.7 -25.5 111.8
4°	56 09.2 -29.3 116.4	55 16.5 -28.6 115.6	54 23.4 -27.9 114.8	53 29.9 -27.2 114.0	52 36.2 -26.7 113.3
5°	55 39.9 -30.4 118.0	54 47.9 -29.7 117.1	53 55.5 -29.1 116.3	53 02.7 -28.4 115.5	52 09.5 -27.7 114.8
6°	55 09.5 -31.6 119.5	54 18.2 -30.9 118.6	53 26.4 -30.1 117.8	52 34.3 -29.4 117.0	51 41.8 -28.7 116.2
7°	54 37.9 -32.6 121.0	53 47.3 -31.8 120.1	52 56.3 -31.1 119.2	52 04.9 -30.4 118.4	51 13.1 -29.7 117.6
8°	54 05.3 -33.6 122.4	53 15.5 -32.8 121.5	52 25.2 -32.1 120.6	51 34.5 -31.4 119.8	50 43.4 -30.7 119.0
9°	53 31.7 -34.6 123.8	52 42.7 -33.8 122.9	51 53.1 -33.0 122.0	51 03.1 -32.3 121.2	50 12.7 -31.6 120.3
10°	52 57.1 -35.5 125.2	52 08.9 -34.7 124.3	51 20.1 -34.0 123.4	50 30.8 -33.2 122.5	49 41.1 -32.5 121.7
11°	52 21.6 -36.3 126.5	51 34.2 -35.6 125.6	50 46.1 -34.8 124.7	49 57.6 -34.0 123.8	49 08.6 -33.3 123.0
12°	51 45.3 -37.2 127.8	50 58.6 -36.4 126.9	50 11.3 -35.6 125.9	49 23.6 -34.9 125.1	48 35.3 -34.2 124.2
13°	51 08.1 -38.0 129.1	50 22.2 -37.2 128.1	49 35.7 -36.4 127.2	48 48.7 -35.7 126.3	48 01.1 -34.9 125.5
14°	50 30.1 -38.7 130.3	49 45.0 -37.9 129.3	48 59.3 -37.2 128.4	48 13.0 -36.4 127.5	47 26.2 -35.6 126.7
15°	49 51.4 -39.5 131.5	49 07.1 -38.7 130.5	48 22.1 -37.8 129.6	47 36.6 -37.1 128.7	46 50.6 -36.4 127.8
16°	49 11.9 -40.1 132.6	48 28.4 -39.3 131.7	47 44.3 -38.6 130.8	46 59.5 -37.8 129.9	46 14.2 -37.1 129.0
17°	48 31.8 -40.8 133.8	47 49.1 -40.0 132.8	47 05.7 -39.2 131.9	46 21.7 -38.5 131.0	45 37.1 -37.7 130.1
18°	47 51.0 -41.4 134.9	47 09.1 -40.6 133.9	46 26.5 -39.9 133.0	45 43.2 -39.0 132.1	44 59.4 -38.3 131.2
19°	47 09.6 -41.9 135.9	46 28.5 -41.2 135.0	45 46.6 -40.4 134.1	45 04.2 -39.7 133.2	44 21.1 -39.0 132.3
20°	46 27.7 -42.6 137.0	45 47.3 -41.8 136.0	45 06.2 -41.0 135.1	44 24.5 -40.3 134.2	43 42.1 -39.5 133.4
21°	45 45.1 -43.0 138.0	45 05.5 -42.3 137.1	44 25.2 -41.6 136.2	43 44.2 -40.8 135.3	43 02.6 -40.1 134.4
22°	45 02.1 -43.6 139.0	44 23.2 -42.8 138.1	43 43.6 -42.0 137.2	43 03.4 -41.3 136.3	42 22.5 -40.6 135.4
23°	44 18.5 -44.0 140.0	43 40.4 -43.3 139.0	43 01.6 -42.6 138.1	42 22.1 -41.8 137.3	41 41.9 -41.0 136.4
24°	43 34.5 -44.5 140.9	42 57.1 -43.7 140.0	42 19.0 -43.0 139.1	41 40.3 -42.3 138.2	41 00.9 -41.6 137.4
25°	42 50.0 -44.9 141.8	42 13.4 -44.2 140.9	41 36.0 -43.5 140.0	40 58.0 -42.8 139.2	40 19.3 -42.0 138.3
26°	42 05.1 -45.4 142.7	41 29.2 -44.6 141.8	40 52.5 -43.8 141.0	40 15.2 -43.1 140.1	39 37.3 -42.5 139.3
27°	41 19.7 -45.7 143.6	40 44.6 -45.1 142.7	40 08.7 -44.3 141.9	39 32.1 -43.6 141.0	38 54.8 -42.9 140.2
28°	40 34.0 -46.1 144.5	39 59.5 -45.3 143.6	39 24.4 -44.7 142.7	38 48.5 -44.0 141.9	38 11.9 -43.2 141.1
29°	39 47.9 -46.4 145.3	39 14.2 -45.8 144.4	38 39.7 -45.1 143.6	38 04.5 -44.4 142.8	37 28.7 -43.7 142.0

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°	53 15.0 -21.5 106.5	52 18.6 -21.0 106.0	51 22.1 -20.5 105.4	50 25.5 -20.1 104.9	49 28.7 -19.7 104.4
1°	52 53.5 -22.6 108.1	51 57.6 -22.1 107.5	51 01.6 -21.7 106.9	50 05.4 -21.3 106.4	49 09.0 -20.8 105.8
2°	52 30.9 -23.8 109.6	51 35.5 -23.3 109.0	50 39.9 -22.8 108.4	49 44.1 -22.3 107.8	48 48.2 -21.9 107.3
3°	52 07.1 -25.0 111.1	51 12.2 -24.4 110.5	50 17.1 -23.9 109.9	49 21.8 -23.4 109.3	48 26.3 -22.9 108.7
4°	51 42.1 -26.0 112.6	50 47.8 -25.5 111.9	49 53.2 -24.9 111.3	48 58.4 -24.3 110.7	48 03.4 -23.9 110.1
5°	51 16.1 -27.1 114.0	50 22.3 -26.4 113.4	49 28.3 -25.9 112.7	48 34.1 -25.4 112.1	47 39.5 -24.8 111.4
6°	50 49.0 -28.1 115.5	49 55.9 -27.5 114.8	49 02.4 -26.9 114.1	48 08.7 -26.3 113.4	47 14.7 -25.7 112.8
7°	50 20.9 -29.1 116.9	49 28.4 -28.4 116.1	48 35.5 -27.8 115.4	47 42.4 -27.2 114.8	46 49.0 -26.7 114.1
8°	49 51.8 -30.0 118.2	49 00.0 -29.4 117.5	48 07.7 -28.7 116.8	47 15.2 -28.2 116.1	46 22.3 -27.5 115.4
9°	49 21.8 -30.9 119.6	48 30.6 -30.3 118.8	47 39.0 -29.6 118.1	46 47.0 -28.9 117.4	45 54.8 -28.4 116.7
10°	48 50.9 -31.8 120.9	48 00.3 -31.1 120.1	47 09.4 -30.5 119.4	46 18.1 -29.9 118.6	45 26.4 -29.2 118.0
11°	48 19.1 -32.6 122.1	47 29.2 -31.9 121.4	46 38.9 -31.2 120.6	45 48.2 -30.6 119.9	44 57.2 -30.0 119.2
12°	47 46.5 -33.4 123.4	46 57.3 -32.7 122.6	46 07.7 -32.1 121.9	45 17.6 -31.4 121.1	44 27.2 -30.8 120.4
13°	47 13.1 -34.2 124.6	46 24.6 -33.5 123.8	45 35.6 -32.8 123.1	44 46.2 -32.1 122.3	43 56.4 -31.5 121.6
14°	46 38.9 -34.9 125.8	45 51.1 -34.3 125.0	45 02.8 -33.5 124.3	44 14.1 -32.9 123.5	43 24.9 -32.2 122.8
15°	46 04.0 -35.7 127.0	45 16.8 -34.9 126.2	44 29.3 -34.3 125.4	43 41.2 -33.6 124.7	42 52.7 -32.9 123.9
16°	45 28.3 -36.3 128.2	44 41.9 -35.6 127.4	43 55.0 -34.9 126.6	43 07.6 -34.2 125.8	42 19.8 -33.5 125.1
17°	44 52.0 -37.0 129.3	44 06.3 -36.3 128.5	43 20.1 -35.6 127.7	42 33.4 -34.8 126.9	41 46.3 -34.2 126.2
18°	44 15.0 -37.6 130.4	43 30.0 -36.9 129.6	42 44.5 -36.1 128.8	41 58.6 -35.5 128.0	41 12.1 -34.8 127.3
19°	43 37.4 -38.2 131.5	42 53.1 -37.5 130.7	42 08.4 -36.8 129.9	41 23.1 -36.1 129.1	40 37.3 -35.4 128.4
20°	42 59.2 -38.8 132.5	42 15.6 -38.0 131.7	41 31.6 -37.4 130.9	40 47.0 -36.7 130.2	40 01.9 -36.0 129.4
21°	42 20.4 -39.4 133.6	41 37.6 -38.6 132.8	40 54.2 -37.9 132.0	40 10.3 -37.2 131.2	39 25.9 -36.5 130.5
22°	41 41.0 -39.8 134.6	40 59.0 -39.2 133.8	40 16.3 -38.4 133.0	39 33.1 -37.7 132.2	38 49.4 -37.0 131.5
23°	41 01.2 -40.4 135.6	40 19.8 -39.6 134.8	39 37.9 -39.0 134.0	38 55.4 -38.2 133.2	38 12.4 -37.6 132.5
24°	40 20.8 -40.8 136.6	39 40.2 -40.2 135.8	38 58.9 -39.4 135.0	38 17.2 -38.8 134.2	37 34.8 -38.0 133.5
25°	39 40.0 -41.3 137.5	39 00.0 -40.6 136.7	38 19.5 -39.9 136.0	37 38.4 -39.2 135.2	36 56.8 -38.5 134.5
26°	38 58.7 -41.8 138.5	38 19.4 -41.0 137.7	37 39.6 -40.3 136.9	36 59.2 -39.6 136.2	36 18.3 -38.9 135.4
27°	38 16.9 -42.2 139.4	37 38.4 -41.5 138.6	36 59.3 -40.8 137.8	36 19.6 -40.1 137.1	35 39.4 -39.4 136.4
28°	37 34.7 -42.5 140.3	36 56.9 -41.8 139.5	36 18.5 -41.2 138.7	35 39.5 -40.4 138.0	35 00.0 -39.8 137.3
29°	36 52.2 -43.0 141.2	36 15.1 -42.3 140.4	35 37.3 -41.5 139.6	34 59.1 -40.9 138.9	34 20.2 -40.2 138.2

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°	48 31.8 -19.4 103.9	47 34.8 -19.0 103.5	46 37.7 -18.7 103.0	45 40.4 -18.3 102.6	44 43.1 -18.0 102.2
1°	48 12.4 -20.4 105.3	47 15.8 -20.0 104.9	46 19.0 -19.7 104.4	45 22.1 -19.3 103.9	44 25.1 -19.0 103.5
2°	47 52.0 -21.4 106.7	46 55.8 -21.1 106.2	45 59.3 -20.6 105.7	45 02.8 -20.2 105.3	44 06.1 -19.9 104.8
3°	47 30.6 -22.4 108.1	46 34.7 -21.9 107.6	45 38.7 -21.5 107.1	44 42.6 -21.2 106.6	43 46.2 -20.7 106.1
4°	47 08.2 -23.4 109.5	46 12.8 -22.9 109.0	45 17.2 -22.5 108.4	44 21.4 -22.0 107.9	43 25.5 -21.6 107.4
5°	46 44.8 -24.3 110.9	45 49.9 -23.9 110.3	44 54.7 -23.3 109.7	43 59.4 -22.9 109.2	43 03.9 -22.5 108.7
6°	46 20.5 -25.2 112.2	45 26.0 -24.7 111.6	44 31.4 -24.3 111.0	43 36.5 -23.8 110.5	42 41.4 -23.3 110.0
7°	45 55.3 -26.2 113.5	45 01.3 -25.6 112.9	44 07.1 -25.0 112.3	43 12.7 -24.5 111.8	42 18.1 -24.1 111.2
8°	45 29.1 -26.9 114.8	44 35.7 -26.4 114.2	43 42.1 -25.9 113.6	42 48.2 -25.4 113.0	41 54.0 -24.9 112.5
9°	45 02.2 -27.8 116.0	44 09.3 -27.2 115.4	43 16.2 -26.7 114.8	42 22.8 -26.2 114.2	41 29.1 -25.6 113.7
10°	44 34.4 -28.6 117.3	43 42.1 -28.0 116.7	42 49.5 -27.5 116.0	41 56.6 -26.9 115.4	41 03.5 -26.4 114.9
11°	44 05.8 -29.4 118.5	43 14.1 -28.8 117.9	42 22.0 -28.2 117.3	41 29.7 -27.6 116.6	40 37.1 -27.1 116.1
12°	43 36.4 -30.1 119.7	42 45.3 -29.6 119.1	41 53.8 -28.9 118.4	41 02.1 -28.4 117.8	40 10.0 -27.8 117.2
13°	43 06.3 -30.9 120.9	42 15.7 -30.2 120.3	41 24.9 -29.7 119.6	40 33.7 -29.0 119.0	39 42.2 -28.5 118.4
14°	42 35.4 -31.6 122.1	41 45.5 -30.9 121.4	40 55.2 -30.3 120.8	40 04.7 -29.8 120.1	39 13.7 -29.1 119.5
15°	42 03.8 -32.2 123.2	41 14.6 -31.6 122.6	40 24.9 -31.0 121.9	39 34.9 -30.3 121.3	38 44.6 -29.8 120.7
16°	41 31.6 -32.9 124.4	40 43.0 -32.3 123.7	39 53.9 -31.6 123.0	39 04.6 -31.0 122.4	38 14.8 -30.4 121.8
17°	40 58.7 -33.5 125.5	40 10.7 -32.9 124.8	39 22.3 -32.2 124.1	38 33.6 -31.6 123.5	37 44.4 -31.0 122.9
18°	40 25.2 -34.1 126.6	39 37.8 -33.4 125.9	38 50.1 -32.8 125.2	38 02.0 -32.2 124.6	37 13.4 -31.5 123.9
19°	39 51.1 -34.8 127.7	39 04.4 -34.1 127.0	38 17.3 -33.4 126.3	37 29.8 -32.8 125.6	36 41.9 -32.2 125.0
20°	39 16.3 -35.2 128.7	38 30.3 -34.6 128.0	37 43.9 -34.0 127.3	36 57.0 -33.3 126.7	36 09.7 -32.6 126.0
21°	38 41.1 -35.9 129.8	37 55.7 -35.2 129.1	37 09.9 -34.5 128.4	36 23.7 -33.8 127.7	35 37.1 -33.2 127.1
22°	38 05.2 -36.3 130.8	37 20.5 -35.6 130.1	36 35.4 -35.0 129.4	35 49.9 -34.4 128.7	35 03.9 -33.7 128.1
23°	37 28.9 -36.9 131.8	36 44.9 -36.2 131.1	36 00.4 -35.5 130.4	35 15.5 -34.8 129.8	34 30.2 -34.2 129.1
24°	36 52.0 -37.3 132.8	36 08.7 -36.7 132.1	35 24.9 -36.0 131.4	34 40.7 -35.4 130.7	33 56.0 -34.7 130.1
25°	36 14.7 -37.8 133.8	35 32.0 -37.1 133.1	34 48.9 -36.4 132.4	34 05.3 -35.7 131.7	33 21.3 -35.1 131.1
26°	35 36.9 -38.3 134.7	34 54.9 -37.6 134.0	34 12.5 -36.9 133.3	33 29.6 -36.3 132.7	32 46.2 -35.6 132.1
27°	34 58.6 -38.7 135.7	34 17.3 -38.0 135.0	33 35.6 -37.4 134.3	32 53.3 -36.6 133.6	32 10.6 -35.9 133.0
28°	34 19.9 -39.1 136.6	33 39.3 -38.4 135.9	32 58.2 -37.7 135.2	32 16.7 -37.1 134.6	31 34.7 -36.4 133.9
29°	33 40.8 -39.5 137.5	33 00.9 -38.8 136.8	32 20.5 -38.1 136.2	31 39.6 -37.4 135.5	30 58.3 -36.8 134.9

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	43 45.7 -17.8 101.7	42 48.2 -17.5 101.4	41 50.6 -17.2 101.0	40 52.9 -16.9 100.6	39 55.2 -16.6 100.2
1°	43 27.9 -18.6 103.1	42 30.7 -18.3 102.7	41 33.4 -18.0 102.3	40 36.0 -17.7 101.9	39 38.6 -17.5 101.5
2°	43 09.3 -19.5 104.4	42 12.4 -19.2 103.9	41 15.4 -18.9 103.5	40 18.3 -18.6 103.1	39 21.1 -18.3 102.7
3°	42 49.8 -20.4 105.7	41 53.2 -20.0 105.2	40 56.5 -19.6 104.8	39 59.7 -19.3 104.4	39 02.8 -19.0 104.0
4°	42 29.4 -21.2 106.9	41 33.2 -20.8 106.5	40 36.9 -20.5 106.0	39 40.4 -20.1 105.6	38 43.8 -19.7 105.2
5°	42 08.2 -22.0 108.2	41 12.4 -21.7 107.7	40 16.4 -21.2 107.3	39 20.3 -20.9 106.8	38 24.1 -20.6 106.4
6°	41 46.2 -22.9 109.5	40 50.7 -22.4 109.0	39 55.2 -22.1 108.5	38 59.4 -21.6 108.0	38 03.5 -21.2 107.6
7°	41 23.3 -23.6 110.7	40 28.3 -23.2 110.2	39 33.1 -22.7 109.7	38 37.8 -22.3 109.2	37 42.3 -21.9 108.8
8°	40 59.7 -24.4 111.9	40 05.1 -23.9 111.4	39 10.4 -23.5 110.9	38 15.5 -23.1 110.4	37 20.4 -22.6 109.9
9°	40 35.3 -25.2 113.1	39 41.2 -24.7 112.6	38 46.9 -24.2 112.1	37 52.4 -23.7 111.6	36 57.8 -23.3 111.1
10°	40 10.1 -25.8 114.3	39 16.5 -25.3 113.8	38 22.7 -24.9 113.3	37 28.7 -24.4 112.7	36 34.5 -24.0 112.3
11°	39 44.3 -26.6 115.5	38 51.2 -26.1 114.9	37 57.8 -25.5 114.4	37 04.3 -25.1 113.9	36 10.5 -24.6 113.4
12°	39 17.7 -27.3 116.7	38 25.1 -26.7 116.1	37 32.3 -26.2 115.6	36 39.2 -25.7 115.0	35 45.9 -25.2 114.5
13°	38 50.4 -27.9 117.8	37 58.4 -27.4 117.2	37 06.1 -26.9 116.7	36 13.5 -26.3 116.2	35 20.7 -25.8 115.6
14°	38 22.5 -28.5 118.9	37 31.0 -28.0 118.4	36 39.9 -27.4 117.8	35 47.2 -26.9 117.3	34 54.9 -26.4 116.7
15°	37 54.0 -29.2 120.1	37 03.0 -28.6 119.5	36 11.8 -28.1 118.9	35 20.3 -27.6 118.4	34 28.5 -27.0 117.8
16°	37 24.8 -29.8 121.2	36 34.4 -29.2 120.6	35 43.7 -28.6 120.0	34 52.7 -28.1 119.5	34 01.5 -27.5 118.9
17°	36 55.0 -30.4 122.2	36 05.2 -29.8 121.7	35 15.1 -29.3 121.1	34 24.6 -28.6 120.5	33 34.0 -28.1 120.0
18°	36 24.6 -31.0 123.3	35 35.4 -30.4 122.7	34 45.8 -29.7 122.1	33 56.0 -29.2 121.6	33 05.9 -28.7 121.0
19°	35 53.6 -31.5 124.4	35 05.0 -30.9 123.8	34 16.1 -30.3 123.2	33 26.8 -29.7 122.6	32 37.2 -29.1 122.1
20°	35 22.1 -32.0 125.4	34 34.1 -31.4 124.8	33 45.8 -30.9 124.2	32 57.1 -30.2 123.7	32 08.1 -29.7 123.1
21°	34 50.1 -32.6 126.5	34 02.7 -32.0 125.9	33 14.9 -31.3 125.3	32 26.9 -30.8 124.7	31 38.4 -30.1 124.1
22°	34 17.5 -33.1 127.5	33 30.7 -32.4 126.9	32 43.6 -31.8 126.3	31 56.1 -31.2 125.7	31 08.3 -30.6 125.2
23°	33 44.4 -33.5 128.5	32 58.3 -32.9 127.9	32 11.8 -32.3 127.3	31 24.9 -31.6 126.7	30 37.7 -31.0 126.2
24°	33 10.9 -34.0 129.5	32 25.4 -33.4 128.9	31 39.5 -32.7 128.3	30 53.3 -32.1 127.7	30 06.7 -31.5 127.2
25°	32 36.9 -34.5 130.5	31 52.0 -33.8 129.9	31 06.8 -33.2 129.3	30 21.2 -32.6 128.7	29 35.2 -32.0 128.1
26°	32 02.4 -34.9 131.4	31 18.2 -34.3 130.8	30 33.6 -33.6 130.2	29 48.6 -33.0 129.7	29 03.2 -32.3 129.1
27°	31 27.5 -35.3 132.4	30 43.9 -34.6 131.8	30 00.0 -34.0 131.2	29 15.6 -33.3 130.6	28 30.9 -32.7 130.1
28°	30 52.2 -35.8 133.3	30 09.3 -35.1 132.7	29 26.0 -34.5 132.1	28 42.3 -33.8 131.6	27 58.2 -33.2 131.0
29°	30 16.4 -36.1 134.3	29 34.2 -35.5 133.7	28 51.5 -34.8 133.1	28 08.5 -34.2 132.5	27 25.0 -33.5 132.0

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°	38 57.4 -16.4 99.9	37 59.6 -16.2 99.6	37 01.7 -16.0 99.2	36 03.7 -15.8 98.9	35 05.7 -15.6 98.6
1°	38 41.0 -17.2 101.1	37 43.4 -17.0 100.8	36 45.7 -16.7 100.4	35 47.9 -16.4 100.1	34 50.1 -16.2 99.8
2°	38 23.8 -18.0 102.4	37 26.4 -17.7 102.0	36 29.0 -17.4 101.6	35 31.5 -17.2 101.3	34 33.9 -17.0 100.9
3°	38 05.8 -18.7 103.6	37 08.7 -18.4 103.2	36 11.6 -18.2 102.8	35 14.3 -17.9 102.5	34 16.9 -17.5 102.1
4°	37 47.1 -19.4 104.8	36 50.3 -19.1 104.4	35 53.4 -18.8 104.0	34 56.4 -18.5 103.6	33 59.4 -18.3 103.3
5°	37 27.7 -20.2 106.0	36 31.2 -19.8 105.6	35 34.6 -19.5 105.2	34 37.9 -19.1 104.8	33 41.1 -18.8 104.4
6°	37 07.5 -20.8 107.2	36 11.4 -20.5 106.7	35 15.1 -20.1 106.3	34 18.8 -19.9 105.9	33 22.3 -19.5 105.5
7°	36 46.7 -21.6 108.3	35 50.9 -21.2 107.9	34 55.0 -20.8 107.5	33 58.9 -20.4 107.1	33 02.8 -20.1 106.7
8°	36 25.1 -22.2 109.5	35 29.7 -21.8 109.0	34 34.2 -21.4 108.6	33 38.5 -21.0 108.2	32 42.7 -20.7 107.8
9°	36 02.9 -22.8 110.6	35 07.9 -22.4 110.2	34 12.8 -22.1 109.8	33 17.5 -21.7 109.3	32 22.0 -21.3 108.9
10°	35 40.1 -23.5 111.8	34 45.5 -23.1 111.3	33 50.7 -22.6 110.9	32 55.8 -22.2 110.4	32 00.7 -21.8 110.0
11°	35 16.6 -24.2 112.9	34 22.4 -23.7 112.4	33 28.1 -23.3 112.0	32 33.6 -22.8 111.5	31 38.9 -22.4 111.1
12°	34 52.4 -24.7 114.0	33 58.7 -24.2 113.6	33 04.8 -23.8 113.1	32 10.8 -23.4 112.6	31 16.5 -22.9 112.2
13°	34 27.7 -25.3 115.1	33 34.5 -24.9 114.7	32 41.0 -24.3 114.2	31 47.4 -23.9 113.7	30 53.6 -23.5 113.3
14°	34 02.4 -25.9 116.2	33 09.6 -25.4 115.7	32 16.7 -25.0 115.3	31 23.5 -24.5 114.8	30 30.1 -24.0 114.3
15°	33 36.5 -26.5 117.3	32 44.2 -25.9 116.8	31 51.7 -25.4 116.3	30 59.0 -25.0 115.9	30 06.1 -24.5 115.4
16°	33 10.0 -27.0 118.4	32 18.3 -26.5 117.9	31 26.3 -26.0 117.4	30 34.0 -25.4 116.9	29 41.6 -25.0 116.5
17°	32 43.0 -27.6 119.5	31 51.8 -27.1 118.9	31 00.3 -26.5 118.5	30 08.6 -26.0 118.0	29 16.6 -25.5 117.5
18°	32 15.4 -28.0 120.5	31 24.7 -27.5 120.0	30 33.8 -27.0 119.5	29 42.6 -26.5 119.0	28 51.1 -25.9 118.5
19°	31 47.4 -28.6 121.6	30 57.2 -28.0 121.0	30 06.8 -27.5 120.5	29 16.1 -26.9 120.0	28 25.2 -26.4 119.6
20°	31 18.8 -29.1 122.6	30 29.2 -28.5 122.1	29 39.3 -27.9 121.6	28 49.2 -27.4 121.1	27 58.8 -26.9 120.6
21°	30 49.7 -29.5 123.6	30 00.7 -29.0 123.1	29 11.4 -28.4 122.6	28 21.8 -27.9 122.1	27 31.9 -27.3 121.6
22°	30 20.2 -30.0 124.6	29 31.7 -29.4 124.1	28 43.0 -28.9 123.6	27 53.9 -28.2 123.1	27 04.6 -27.7 122.6
23°	29 50.2 -30.5 125.6	29 02.3 -29.9 125.1	28 14.1 -29.2 124.6	27 25.7 -28.7 124.1	26 36.9 -28.1 123.6
24°	29 19.7 -30.9 126.6	28 32.4 -30.2 126.1	27 44.9 -29.7 125.6	26 57.0 -29.1 125.1	26 08.8 -28.5 124.6
25°	28 48.8 -31.3 127.6	28 02.2 -30.7 127.1	27 15.2 -30.1 126.5	26 27.9 -29.5 126.0	25 40.3 -28.9 125.6
26°	28 17.5 -31.7 128.6	27 31.5 -31.1 128.0	26 45.1 -30.5 127.5	25 58.4 -29.9 127.0	25 11.4 -29.3 126.5
27°	27 45.8 -32.1 129.5	27 00.4 -31.5 129.0	26 14.6 -30.9 128.5	25 28.5 -30.3 128.0	24 42.1 -29.7 127.5
28°	27 13.7 -32.5 130.5	26 28.9 -31.9 129.9	25 43.7 -31.2 129.4	24 58.2 -30.6 128.9	24 12.4 -30.0 128.4
29°	26 41.2 -32.9 131.4	25 57.0 -32.2 130.9	25 12.5 -31.6 130.4	24 27.6 -31.0 129.9	23 42.4 -30.3 129.4

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°	34 07.7 -15.4 98.3	33 09.6 -15.2 98.0	32 11.4 -15.0 97.7	31 13.3 -14.9 97.4	30 15.0 -14.7 97.1
1°	33 52.3 -16.1 99.4	32 54.4 -15.9 99.1	31 56.4 -15.7 98.8	30 58.4 -15.5 98.5	30 00.3 -15.3 98.2
2°	33 36.2 -16.7 100.6	32 38.5 -16.5 100.3	31 40.7 -16.2 100.0	30 42.9 -16.1 99.7	29 45.0 -15.8 99.4
3°	33 19.5 -17.3 101.8	32 22.0 -17.1 101.4	31 24.5 -16.9 101.1	30 26.8 -16.6 100.8	29 29.2 -16.4 100.5
4°	33 02.2 -18.0 102.9	32 04.9 -17.6 102.6	31 07.6 -17.4 102.2	30 10.2 -17.2 101.9	29 12.8 -17.0 101.6
5°	32 44.2 -18.5 104.0	31 47.3 -18.3 103.7	30 50.2 -18.0 103.3	29 53.0 -17.7 103.0	28 55.8 -17.5 102.7
6°	32 25.7 -19.2 105.2	31 29.0 -18.9 104.8	30 32.2 -18.6 104.4	29 35.3 -18.3 104.1	28 38.3 -17.9 103.8
7°	32 06.5 -19.8 106.3	31 10.1 -19.4 105.9	30 13.6 -19.1 105.5	29 17.0 -18.8 105.2	28 20.4 -18.6 104.8
8°	31 46.7 -20.3 107.4	30 50.7 -20.0 107.0	29 54.5 -19.6 106.6	28 58.2 -19.3 106.3	28 01.8 -19.0 105.9
9°	31 26.4 -20.9 108.5	30 30.7 -20.5 108.1	29 34.9 -20.2 107.7	28 38.9 -19.8 107.4	27 42.8 -19.5 107.0
10°	31 05.5 -21.4 109.6	30 10.2 -21.1 109.2	29 14.7 -20.7 108.8	28 19.1 -20.4 108.4	27 23.3 -20.0 108.1
11°	30 44.1 -22.0 110.7	29 49.1 -21.6 110.3	28 54.0 -21.2 109.9	27 58.7 -20.8 109.5	27 03.3 -20.4 109.1
12°	30 22.1 -22.5 111.8	29 27.5 -22.1 111.4	28 32.8 -21.7 111.0	27 37.9 -21.3 110.6	26 42.9 -20.9 110.2
13°	29 59.6 -23.1 112.8	29 05.4 -22.6 112.4	28 11.1 -22.2 112.0	27 16.6 -21.8 111.6	26 22.0 -21.4 111.2
14°	29 36.5 -23.5 113.9	28 42.8 -23.1 113.5	27 48.9 -22.7 113.1	26 54.8 -22.2 112.7	26 00.6 -21.9 112.3
15°	29 13.0 -24.0 115.0	28 19.7 -23.6 114.5	27 26.2 -23.1 114.1	26 32.6 -22.7 113.7	25 38.7 -22.2 113.3
16°	28 49.0 -24.5 116.0	27 56.1 -24.0 115.6	27 03.1 -23.6 115.1	26 09.9 -23.2 114.7	25 16.5 -22.7 114.3
17°	28 24.5 -25.0 117.1	27 32.1 -24.5 116.6	26 39.5 -24.0 116.2	25 46.7 -23.5 115.8	24 53.8 -23.1 115.4
18°	27 59.5 -25.5 118.1	27 07.6 -25.0 117.6	26 15.5 -24.5 117.2	25 23.2 -24.0 116.8	24 30.7 -23.5 116.4
19°	27 34.0 -25.9 119.1	26 42.6 -25.3 118.7	25 51.0 -24.9 118.2	24 59.2 -24.4 117.8	24 07.2 -23.9 117.4
20°	27 08.1 -26.3 120.1	26 17.3 -25.8 119.7	25 26.1 -25.2 119.2	24 34.8 -24.8 118.8	23 43.3 -24.3 118.4
21°	26 41.8 -26.7 121.1	25 51.5 -26.3 120.7	25 00.9 -25.7 120.2	24 10.0 -25.1 119.8	23 19.0 -24.7 119.4
22°	26 15.1 -27.2 122.1	25 25.2 -26.6 121.7	24 35.2 -26.1 121.2	23 44.9 -25.6 120.8	22 54.3 -25.0 120.4
23°	25 47.9 -27.6 123.1	24 58.6 -27.0 122.7	24 09.1 -26.5 122.2	23 19.3 -25.9 121.8	22 29.3 -25.4 121.4
24°	25 20.3 -27.9 124.1	24 31.6 -27.4 123.6	23 42.6 -26.8 123.2	22 53.4 -26.3 122.8	22 03.9 -25.7 122.3
25°	24 52.4 -28.3 125.1	24 04.2 -27.7 124.6	23 15.8 -27.2 124.2	22 27.1 -26.6 123.7	21 38.2 -26.1 123.3
26°	24 24.1 -28.7 126.1	23 36.5 -28.1 125.6	22 48.6 -27.5 125.1	22 00.5 -27.0 124.7	21 12.1 -26.4 124.3
27°	23 55.4 -29.1 127.0	23 08.4 -28.5 126.6	22 21.1 -27.9 126.1	21 33.5 -27.3 125.7	20 45.7 -26.7 125.3
28°	23 26.3 -29.4 128.0	22 39.9 -28.8 127.5	21 53.2 -28.2 127.1	21 06.2 -27.6 126.6	20 19.0 -27.0 126.2
29°	22 56.9 -29.7 128.9	22 11.1 -29.1 128.5	21 25.0 -28.5 128.0	20 38.6 -27.9 127.6	19 52.0 -27.4 127.1

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°	29 16.8 -14.6 96.8	28 18.5 -14.4 96.6	27 20.2 -14.3 96.3	26 21.8 -14.1 96.0	25 23.5 -14.1 95.8
1°	29 02.2 -15.1 98.0	28 04.1 -15.0 97.7	27 05.9 -14.8 97.4	26 07.7 -14.7 97.1	25 09.4 -14.5 96.9
2°	28 47.1 -15.7 99.1	27 49.1 -15.5 98.8	26 51.1 -15.3 98.5	25 53.0 -15.1 98.2	24 54.9 -15.0 97.9
3°	28 31.4 -16.2 100.2	27 33.6 -16.0 99.9	26 35.8 -15.8 99.6	25 37.9 -15.6 99.3	24 39.9 -15.4 99.0
4°	28 15.2 -16.7 101.3	27 17.6 -16.4 100.9	26 20.0 -16.3 100.6	25 22.3 -16.1 100.4	24 24.5 -15.8 100.1
5°	27 58.5 -17.2 102.3	27 01.2 -17.0 102.0	26 03.7 -16.7 101.7	25 06.2 -16.5 101.4	24 08.7 -16.3 101.1
6°	27 41.3 -17.7 103.4	26 44.2 -17.5 103.1	25 47.0 -17.2 102.8	24 49.7 -16.9 102.5	23 52.4 -16.7 102.2
7°	27 23.6 -18.2 104.5	26 26.7 -17.9 104.2	25 29.8 -17.7 103.9	24 32.8 -17.4 103.5	23 35.7 -17.2 103.2
8°	27 05.4 -18.7 105.6	26 08.8 -18.4 105.2	25 12.1 -18.1 104.9	24 15.4 -17.9 104.6	23 18.5 -17.5 104.3
9°	26 46.7 -19.2 106.6	25 50.4 -18.9 106.3	24 54.0 -18.6 106.0	23 57.5 -18.2 105.6	23 01.0 -18.0 105.3
10°	26 27.5 -19.7 107.7	25 31.5 -19.3 107.4	24 35.4 -18.9 107.0	23 39.3 -18.7 106.7	22 43.0 -18.4 106.3
11°	26 07.8 -20.1 108.8	25 12.2 -19.8 108.4	24 16.5 -19.5 108.1	23 20.6 -19.1 107.7	22 24.6 -18.7 107.4
12°	25 47.7 -20.5 109.8	24 52.4 -20.1 109.4	23 57.0 -19.8 109.1	23 01.5 -19.5 108.7	22 05.9 -19.1 108.4
13°	25 27.2 -21.0 110.8	24 32.3 -20.6 110.5	23 37.2 -20.2 110.1	22 42.0 -19.8 109.8	21 46.8 -19.6 109.4
14°	25 06.2 -21.4 111.9	24 11.7 -21.1 111.5	23 17.0 -20.6 111.1	22 22.2 -20.3 110.8	21 27.2 -19.8 110.4
15°	24 44.8 -21.9 112.9	23 50.6 -21.4 112.5	22 56.4 -21.1 112.2	22 01.9 -20.6 111.8	21 07.4 -20.3 111.5
16°	24 22.9 -22.2 113.9	23 29.2 -21.8 113.6	22 35.3 -21.4 113.2	21 41.3 -21.0 112.8	20 47.1 -20.5 112.5
17°	24 00.7 -22.7 115.0	23 07.4 -22.2 114.6	22 13.9 -21.7 114.2	21 20.3 -21.3 113.8	20 26.6 -21.0 113.5
18°	23 38.0 -23.0 116.0	22 45.2 -22.6 115.6	21 52.2 -22.2 115.2	20 59.0 -21.7 114.8	20 05.6 -21.2 114.5
19°	23 15.0 -23.4 117.0	22 22.6 -23.0 116.6	21 30.0 -22.5 116.2	20 37.3 -22.1 115.8	19 44.4 -21.6 115.5
20°	22 51.6 -23.8 118.0	21 59.6 -23.3 117.6	21 07.5 -22.8 117.2	20 15.2 -22.3 116.8	19 22.8 -21.9 116.5
21°	22 27.8 -24.2 119.0	21 36.3 -23.7 118.6	20 44.7 -23.2 118.2	19 52.9 -22.7 117.8	19 00.9 -22.3 117.4
22°	22 03.6 -24.5 120.0	21 12.6 -24.0 119.6	20 21.5 -23.5 119.2	19 30.2 -23.1 118.8	18 38.6 -22.5 118.4
23°	21 39.1 -24.9 120.9	20 48.6 -24.3 120.5	19 58.0 -23.8 120.1	19 07.1 -23.3 119.8	18 16.1 -22.8 119.4
24°	21 14.2 -25.2 121.9	20 24.3 -24.7 121.5	19 34.2 -24.2 121.1	18 43.8 -23.6 120.7	17 53.3 -23.1 120.4
25°	20 49.0 -25.5 122.9	19 59.6 -25.0 122.5	19 10.0 -24.4 122.1	18 20.2 -23.9 121.7	17 30.2 -23.4 121.3
26°	20 23.5 -25.8 123.9	19 34.6 -25.2 123.5	18 45.6 -24.8 123.1	17 56.3 -24.2 122.7	17 06.8 -23.7 122.3
27°	19 57.7 -26.2 124.8	19 09.4 -25.6 124.4	18 20.8 -25.0 124.0	17 32.1 -24.5 123.6	16 43.1 -23.9 123.3
28°	19 31.5 -26.5 125.8	18 43.8 -25.9 125.4	17 55.8 -25.3 125.0	17 07.6 -24.8 124.6	16 19.2 -24.2 124.2
29°	19 05.0 -26.7 126.7	18 17.9 -26.2 126.3	17 30.5 -25.6 125.9	16 42.8 -25.0 125.5	15 55.0 -24.5 125.2

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°	24 25.1 -14.0 95.5	23 26.6 -13.8 95.3	22 28.2 -13.7 95.0	21 29.7 -13.6 94.8	20 31.2 -13.5 94.6
1°	24 11.1 -14.3 96.6	23 12.8 -14.2 96.3	22 14.5 -14.1 96.1	21 16.1 -14.0 95.8	20 17.7 -13.9 95.6
2°	23 56.8 -14.8 97.7	22 58.6 -14.7 97.4	22 00.4 -14.5 97.1	21 02.1 -14.4 96.9	20 03.8 -14.2 96.6
3°	23 42.0 -15.3 98.7	22 43.9 -15.0 98.5	21 45.9 -14.9 98.2	20 47.7 -14.7 97.9	19 49.6 -14.6 97.7
4°	23 26.7 -15.6 99.8	22 28.9 -15.5 99.5	21 31.0 -15.3 99.2	20 33.0 -15.1 99.0	19 35.0 -14.9 98.7
5°	23 11.1 -16.1 100.8	22 13.4 -15.9 100.6	21 15.7 -15.7 100.3	20 17.9 -15.5 100.0	19 20.1 -15.3 99.7
6°	22 55.0 -16.5 101.9	21 57.5 -16.2 101.6	21 00.0 -16.0 101.3	20 02.4 -15.8 101.0	19 04.8 -15.6 100.8
7°	22 38.5 -16.9 102.9	21 41.3 -16.7 102.6	20 44.0 -16.5 102.3	19 46.6 -16.2 102.1	18 49.2 -16.0 101.8
8°	22 21.6 -17.3 104.0	21 24.6 -17.0 103.7	20 27.5 -16.7 103.4	19 30.4 -16.5 103.1	18 33.2 -16.3 102.8
9°	22 04.3 -17.7 105.0	21 07.6 -17.4 104.7	20 10.8 -17.2 104.4	19 13.9 -16.9 104.1	18 16.9 -16.6 103.8
10°	21 46.6 -18.0 106.0	20 50.2 -17.8 105.7	19 53.6 -17.4 105.4	18 57.0 -17.2 105.1	18 00.3 -16.9 104.8
11°	21 28.6 -18.5 107.1	20 32.4 -18.1 106.7	19 36.2 -17.8 106.4	18 39.8 -17.5 106.1	17 43.4 -17.2 105.8
12°	21 10.1 -18.7 108.1	20 14.3 -18.5 107.8	19 18.4 -18.2 107.4	18 22.3 -17.8 107.1	17 26.2 -17.5 106.8
13°	20 51.4 -19.2 109.1	19 55.8 -18.8 108.8	19 00.2 -18.5 108.4	18 04.5 -18.2 108.1	17 08.7 -17.8 107.8
14°	20 32.2 -19.5 110.1	19 37.0 -19.1 109.8	18 41.7 -18.8 109.5	17 46.3 -18.4 109.1	16 50.9 -18.2 108.8
15°	20 12.7 -19.9 111.1	19 17.9 -19.5 110.8	18 22.9 -19.1 110.5	17 27.9 -18.7 110.1	16 32.7 -18.3 109.8
16°	19 52.8 -20.2 112.1	18 58.4 -19.8 111.8	18 03.8 -19.4 111.5	17 09.2 -19.1 111.1	16 14.4 -18.7 110.8
17°	19 32.6 -20.5 113.1	18 38.6 -20.1 112.8	17 44.4 -19.7 112.4	16 50.1 -19.3 112.1	15 55.7 -18.9 111.8
18°	19 12.1 -20.8 114.1	18 18.5 -20.4 113.8	17 24.7 -20.0 113.4	16 30.8 -19.6 113.1	15 36.8 -19.2 112.8
19°	18 51.3 -21.2 115.1	17 58.1 -20.7 114.8	17 04.7 -20.3 114.4	16 11.2 -19.9 114.1	15 17.6 -19.5 113.8
20°	18 30.1 -21.4 116.1	17 37.4 -21.1 115.7	16 44.4 -20.6 115.4	15 51.3 -20.1 115.1	14 58.1 -19.7 114.8
21°	18 08.7 -21.8 117.1	17 16.3 -21.3 116.7	16 23.8 -20.8 116.4	15 31.2 -20.4 116.1	14 38.4 -19.9 115.7
22°	17 46.9 -22.0 118.1	16 55.0 -21.5 117.7	16 03.0 -21.1 117.4	15 10.8 -20.6 117.0	14 18.5 -20.2 116.7
23°	17 24.9 -22.4 119.0	16 33.5 -21.9 118.7	15 41.9 -21.4 118.3	14 50.2 -20.9 118.0	13 58.3 -20.4 117.7
24°	17 02.5 -22.6 120.0	16 11.6 -22.1 119.7	15 20.5 -21.6 119.3	14 29.3 -21.1 119.0	13 37.9 -20.7 118.6
25°	16 39.9 -22.8 121.0	15 49.5 -22.3 120.6	14 58.9 -21.8 120.3	14 08.2 -21.4 119.9	13 17.2 -20.8 119.6
26°	16 17.1 -23.2 121.9	15 27.2 -22.7 121.6	14 37.1 -22.1 121.2	13 46.8 -21.6 120.9	12 56.4 -21.1 120.6
27°	15 53.9 -23.4 122.9	15 04.5 -22.8 122.5	14 15.0 -22.3 122.2	13 25.2 -21.8 121.9	12 35.3 -21.3 121.5
28°	15 30.5 -23.6 123.9	14 41.7 -23.1 123.5	13 52.7 -22.6 123.2	13 03.4 -22.0 122.8	12 14.0 -21.5 122.5
29°	15 06.9 -23.9 124.8	14 18.6 -23.3 124.5	13 30.1 -22.8 124.1	12 41.4 -22.2 123.8	11 52.5 -21.6 123.4

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°	19 32.7 -13.4 94.3	18 34.2 -13.4 94.1	17 35.6 -13.2 93.9	16 37.1 -13.2 93.6	15 38.5 -13.1 93.4
1°	19 19.3 -13.8 95.4	18 20.8 -13.6 95.1	17 22.4 -13.6 94.9	16 23.9 -13.5 94.7	15 25.4 -13.4 94.4
2°	19 05.5 -14.1 96.4	18 07.2 -14.0 96.1	17 08.8 -13.8 95.9	16 10.4 -13.7 95.7	15 12.0 -13.6 95.4
3°	18 51.4 -14.4 97.4	17 53.2 -14.3 97.2	16 55.0 -14.2 96.9	15 56.7 -14.0 96.7	14 58.4 -13.9 96.4
4°	18 37.0 -14.8 98.4	17 38.9 -14.6 98.2	16 40.8 -14.5 97.9	15 42.7 -14.4 97.7	14 44.5 -14.2 97.5
5°	18 22.2 -15.1 99.5	17 24.3 -14.9 99.2	16 26.3 -14.7 99.0	15 28.3 -14.5 98.7	14 30.3 -14.4 98.5
6°	18 07.1 -15.4 100.5	17 09.4 -15.3 100.2	16 11.6 -15.0 100.0	15 13.8 -14.9 99.7	14 15.9 -14.7 99.5
7°	17 51.7 -15.8 101.5	16 54.1 -15.5 101.2	15 56.6 -15.4 101.0	14 58.9 -15.1 100.7	14 01.2 -14.9 100.5
8°	17 35.9 -16.0 102.5	16 38.6 -15.8 102.2	15 41.2 -15.6 102.0	14 43.8 -15.4 101.7	13 46.3 -15.2 101.5
9°	17 19.9 -16.3 103.5	16 22.8 -16.1 103.2	15 25.6 -15.8 103.0	14 28.4 -15.6 102.7	13 31.1 -15.3 102.5
10°	17 03.6 -16.7 104.5	16 06.7 -16.4 104.3	15 09.8 -16.1 104.0	14 12.8 -15.9 103.7	13 15.8 -15.7 103.4
11°	16 46.9 -16.9 105.5	15 50.3 -16.6 105.3	14 53.7 -16.4 105.0	13 56.9 -16.1 104.7	13 00.1 -15.8 104.4
12°	16 30.0 -17.2 106.5	15 33.7 -17.0 106.3	14 37.3 -16.6 106.0	13 40.8 -16.3 105.7	12 44.3 -16.1 105.4
13°	16 12.8 -17.5 107.5	15 16.7 -17.1 107.2	14 20.7 -16.9 107.0	13 24.5 -16.6 106.7	12 28.2 -16.3 106.4
14°	15 55.3 -17.8 108.5	14 59.6 -17.5 108.2	14 03.8 -17.1 108.0	13 07.9 -16.8 107.7	12 11.9 -16.5 107.4
15°	15 37.5 -18.1 109.5	14 42.1 -17.7 109.2	13 46.7 -17.4 108.9	12 51.1 -17.0 108.7	11 55.4 -16.7 108.4
16°	15 19.4 -18.3 110.5	14 24.4 -17.9 110.2	13 29.3 -17.6 109.9	12 34.1 -17.3 109.6	11 38.7 -16.8 109.4
17°	15 01.1 -18.5 111.5	14 06.5 -18.2 111.2	13 11.7 -17.8 110.9	12 16.8 -17.4 110.6	11 21.9 -17.1 110.3
18°	14 42.6 -18.8 112.5	13 48.3 -18.4 112.2	12 53.9 -18.0 111.9	11 59.4 -17.7 111.6	11 04.8 -17.3 111.3
19°	14 23.8 -19.1 113.5	13 29.9 -18.6 113.2	12 35.9 -18.3 112.9	11 41.7 -17.8 112.6	10 47.5 -17.5 112.3
20°	14 04.7 -19.2 114.4	13 11.3 -18.9 114.1	12 17.6 -18.4 113.8	11 23.9 -18.1 113.5	10 30.0 -17.6 113.3
21°	13 45.5 -19.5 115.4	12 52.4 -19.1 115.1	11 59.2 -18.7 114.8	11 05.8 -18.2 114.5	10 12.4 -17.8 114.2
22°	13 26.0 -19.8 116.4	12 33.3 -19.3 116.1	11 40.5 -18.8 115.8	10 47.6 -18.4 115.5	9 54.6 -18.0 115.2
23°	13 06.2 -19.9 117.4	12 14.0 -19.5 117.1	11 21.7 -19.0 116.8	10 29.2 -18.6 116.5	9 36.6 -18.1 116.2
24°	12 46.3 -20.2 118.3	11 54.5 -19.7 118.0	11 02.7 -19.3 117.7	10 10.6 -18.7 117.4	9 18.5 -18.3 117.1
25°	12 26.1 -20.4 119.3	11 34.8 -19.8 119.0	10 43.4 -19.4 118.7	9 51.9 -18.9 118.4	9 00.2 -18.5 118.1
26°	12 05.7 -20.5 120.3	11 15.0 -20.1 119.9	10 24.0 -19.5 119.6	9 33.0 -19.1 119.4	8 41.7 -18.6 119.1
27°	11 45.2 -20.8 121.2	10 54.9 -20.2 120.9	10 04.5 -19.8 120.6	9 13.9 -19.2 120.3	8 23.1 -18.7 120.0
28°	11 24.4 -20.9 122.2	10 34.7 -20.5 121.9	9 44.7 -19.9 121.6	8 54.7 -19.4 121.3	8 04.4 -18.8 121.0
29°	11 03.5 -21.1 123.1	10 14.2 -20.5 122.8	9 24.8 -20.0 122.5	8 35.3 -19.5 122.2	7 45.6 -19.0 122.0

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°	14 39.9 -13.0 93.2	13 41.3 -13.0 93.0	12 42.7 -12.9 92.7	11 44.0 -12.8 92.5	10 45.4 -12.8 92.3
1°	14 26.9 -13.3 94.2	13 28.3 -13.2 94.0	12 29.8 -13.2 93.7	11 31.2 -13.1 93.5	10 32.6 -13.0 93.3
2°	14 13.6 -13.6 95.2	13 15.1 -13.4 95.0	12 16.6 -13.3 94.7	11 18.1 -13.2 94.5	10 19.6 -13.1 94.3
3°	14 00.0 -13.7 96.2	13 01.7 -13.7 96.0	12 03.3 -13.5 95.7	11 04.9 -13.4 95.5	10 06.5 -13.4 95.3
4°	13 46.3 -14.1 97.2	12 48.0 -13.9 97.0	11 49.8 -13.8 96.7	10 51.5 -13.7 96.5	9 53.1 -13.5 96.3
5°	13 32.2 -14.2 98.2	12 34.1 -14.1 98.0	11 36.0 -14.0 97.7	10 37.8 -13.8 97.5	9 39.6 -13.7 97.3
6°	13 18.0 -14.5 99.2	12 20.0 -14.3 99.0	11 22.0 -14.1 98.7	10 24.0 -14.0 98.5	9 25.9 -13.8 98.3
7°	13 03.5 -14.7 100.2	12 05.7 -14.5 100.0	11 07.9 -14.4 99.7	10 10.0 -14.2 99.5	9 12.1 -14.0 99.2
8°	12 48.8 -15.0 101.2	11 51.2 -14.8 101.0	10 53.5 -14.5 100.7	9 55.8 -14.3 100.5	8 58.1 -14.2 100.2
9°	12 33.8 -15.2 102.2	11 36.4 -14.9 101.9	10 39.0 -14.8 101.7	9 41.5 -14.5 101.5	8 43.9 -14.3 101.2
10°	12 18.6 -15.3 103.2	11 21.5 -15.2 102.9	10 24.2 -14.9 102.7	9 27.0 -14.7 102.4	8 29.6 -14.4 102.2
11°	12 03.3 -15.6 104.2	11 06.3 -15.3 103.9	10 09.3 -15.1 103.7	9 12.3 -14.9 103.4	8 15.2 -14.6 103.2
12°	11 47.7 -15.8 105.2	10 51.0 -15.5 104.9	9 54.2 -15.2 104.6	8 57.4 -15.0 104.4	8 00.6 -14.8 104.2
13°	11 31.9 -16.0 106.1	10 35.5 -15.7 105.9	9 39.0 -15.4 105.6	8 42.4 -15.1 105.4	7 45.8 -14.9 105.1
14°	11 15.9 -16.2 107.1	10 19.8 -15.9 106.9	9 23.6 -15.6 106.6	8 27.3 -15.3 106.4	7 30.9 -15.0 106.1
15°	10 59.7 -16.4 108.1	10 03.9 -16.1 107.8	9 08.0 -15.8 107.6	8 12.0 -15.4 107.3	7 15.9 -15.1 107.1
16°	10 43.3 -16.5 109.1	9 47.8 -16.2 108.8	8 52.2 -15.9 108.6	7 56.6 -15.6 108.3	7 00.8 -15.2 108.1
17°	10 26.8 -16.8 110.1	9 31.6 -16.4 109.8	8 36.3 -16.0 109.5	7 41.0 -15.7 109.3	6 45.6 -15.4 109.0
18°	10 10.0 -16.9 111.0	9 15.2 -16.5 110.8	8 20.3 -16.2 110.5	7 25.3 -15.8 110.3	6 30.2 -15.5 110.0
19°	9 53.1 -17.0 112.0	8 58.7 -16.7 111.7	8 04.1 -16.3 111.5	7 09.5 -16.0 111.2	6 14.7 -15.6 111.0
20°	9 36.1 -17.3 113.0	8 42.0 -16.9 112.7	7 47.8 -16.5 112.5	6 53.5 -16.1 112.2	5 59.1 -15.7 112.0
21°	9 18.8 -17.4 114.0	8 25.1 -17.0 113.7	7 31.3 -16.5 113.4	6 37.4 -16.1 113.2	5 43.4 -15.8 112.9
22°	9 01.4 -17.5 114.9	8 08.1 -17.1 114.7	7 14.8 -16.8 114.4	6 21.3 -16.3 114.1	5 27.6 -15.8 113.9
23°	8 43.9 -17.7 115.9	7 51.0 -17.2 115.6	6 58.0 -16.8 115.4	6 05.0 -16.4 115.1	5 11.8 -16.0 114.9
24°	8 26.2 -17.9 116.9	7 33.8 -17.4 116.6	6 41.2 -16.9 116.3	5 48.6 -16.5 116.1	4 55.8 -16.1 115.8
25°	8 08.3 -17.9 117.8	7 16.4 -17.5 117.6	6 24.3 -17.1 117.3	5 32.1 -16.6 117.0	4 39.7 -16.1 116.8
26°	7 50.4 -18.1 118.8	6 58.9 -17.7 118.5	6 07.2 -17.1 118.3	5 15.5 -16.7 118.0	4 23.6 -16.2 117.8
27°	7 32.3 -18.3 119.8	6 41.2 -17.7 119.5	5 50.1 -17.2 119.2	4 58.8 -16.7 119.0	4 07.4 -16.3 118.7
28°	7 14.0 -18.3 120.7	6 23.5 -17.8 120.4	5 32.9 -17.4 120.2	4 42.1 -16.9 119.9	3 51.1 -16.3 119.7
29°	6 55.7 -18.5 121.7	6 05.7 -18.0 121.4	5 15.5 -17.4 121.2	4 25.2 -16.9 120.9	3 34.8 -16.4 120.7

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°	9 46.8 -12.8 92.1	8 48.1 -12.7 91.9	7 49.4 -12.6 91.7	6 50.8 -12.6 91.5	5 52.1 -12.6 91.3
1°	9 34.0 -12.9 93.1	8 35.4 -12.8 92.9	7 36.8 -12.8 92.7	6 38.2 -12.8 92.4	5 39.5 -12.7 92.2
2°	9 21.1 -13.1 94.1	8 22.6 -13.0 93.9	7 24.0 -12.9 93.6	6 25.4 -12.8 93.4	5 26.8 -12.8 93.2
3°	9 08.0 -13.2 95.1	8 09.6 -13.2 94.8	7 11.1 -13.1 94.6	6 12.6 -13.0 94.4	5 14.0 -12.8 94.2
4°	8 54.8 -13.4 96.1	7 56.4 -13.3 95.8	6 58.0 -13.2 95.6	5 59.6 -13.1 95.4	5 01.2 -13.0 95.2
5°	8 41.4 -13.6 97.0	7 43.1 -13.4 96.8	6 44.8 -13.2 96.6	5 46.5 -13.1 96.4	4 48.2 -13.1 96.2
6°	8 27.8 -13.6 98.0	7 29.7 -13.5 97.8	6 31.6 -13.4 97.6	5 33.4 -13.3 97.4	4 35.1 -13.1 97.1
7°	8 14.2 -13.9 99.0	7 16.2 -13.7 98.8	6 18.2 -13.6 98.6	5 20.1 -13.4 98.3	4 22.0 -13.2 98.1
8°	8 00.3 -14.0 100.0	7 02.5 -13.8 99.8	6 04.6 -13.6 99.5	5 06.7 -13.4 99.3	4 08.8 -13.3 99.1
9°	7 46.3 -14.1 101.0	6 48.7 -13.9 100.7	5 51.0 -13.7 100.5	4 53.3 -13.5 100.3	3 55.5 -13.3 100.1
10°	7 32.2 -14.2 102.0	6 34.8 -14.0 101.7	5 37.3 -13.8 101.5	4 39.8 -13.6 101.3	3 42.2 -13.4 101.0
11°	7 18.0 -14.4 102.9	6 20.8 -14.2 102.7	5 23.5 -13.9 102.5	4 26.2 -13.7 102.2	3 28.8 -13.5 102.0
12°	7 03.6 -14.5 103.9	6 06.6 -14.2 103.7	5 09.6 -14.0 103.5	4 12.5 -13.8 103.2	3 15.3 -13.5 103.0
13°	6 49.1 -14.6 104.9	5 52.4 -14.4 104.7	4 55.6 -14.1 104.4	3 58.7 -13.8 104.2	3 01.8 -13.6 104.0
14°	6 34.5 -14.7 105.9	5 38.0 -14.4 105.6	4 41.5 -14.2 105.4	3 44.9 -13.9 105.2	2 48.2 -13.6 105.0
15°	6 19.8 -14.8 106.8	5 23.6 -14.5 106.6	4 27.3 -14.2 106.4	3 31.0 -14.0 106.2	2 34.6 -13.7 105.9
16°	6 05.0 -15.0 107.8	5 09.1 -14.7 107.6	4 13.1 -14.3 107.4	3 17.0 -14.0 107.1	2 20.9 -13.7 106.9
17°	5 50.0 -15.0 108.8	4 54.4 -14.7 108.6	3 58.8 -14.4 108.3	3 03.0 -14.1 108.1	2 07.2 -13.8 107.9
18°	5 35.0 -15.1 109.8	4 39.7 -14.8 109.5	3 44.4 -14.5 109.3	2 48.9 -14.1 109.1	1 53.4 -13.7 108.9
19°	5 19.9 -15.3 110.7	4 24.9 -14.8 110.5	3 29.9 -14.5 110.3	2 34.8 -14.1 110.0	1 39.7 -13.9 109.8
20°	5 04.6 -15.3 111.7	4 10.1 -15.0 111.5	3 15.4 -14.6 111.2	2 20.7 -14.2 111.0	1 25.8 -13.8 110.8
21°	4 49.3 -15.4 112.7	3 55.1 -15.0 112.4	3 00.8 -14.6 112.2	2 06.5 -14.3 112.0	1 12.0 -13.9 111.8
22°	4 33.9 -15.4 113.7	3 40.1 -15.0 113.4	2 46.2 -14.6 113.2	1 52.2 -14.2 113.0	0 58.1 -13.8 112.7
23°	4 18.5 -15.6 114.6	3 25.1 -15.2 114.4	2 31.6 -14.8 114.2	1 38.0 -14.3 113.9	0 44.3 -13.9 113.7
24°	4 02.9 -15.6 115.6	3 09.9 -15.1 115.4	2 16.8 -14.7 115.1	1 23.7 -14.4 114.9	0 30.4 -13.9 114.7
25°	3 47.3 -15.7 116.6	2 54.8 -15.3 116.3	2 02.1 -14.8 116.1	1 09.3 -14.3 115.9	0 16.5 -13.9 115.7
26°	3 31.6 -15.7 117.5	2 39.5 -15.2 117.3	1 47.3 -14.8 117.1	0 55.0 -14.4 116.8	0 02.6 -13.9 116.6
27°	3 15.9 -15.8 118.5	2 24.3 -15.4 118.3	1 32.5 -14.8 118.0	0 40.6 -14.3 117.8	-0 11.3 -13.9
28°	3 00.1 -15.9 119.5	2 08.9 -15.3 119.2	1 17.7 -14.9 119.0	0 26.3 -14.4 118.8	-0 25.2 -13.9
29°	2 44.2 -15.8 120.4	1 53.6 -15.4 120.2	1 02.8 -14.9 120.0	0 11.9 -14.4 119.8	-0 39.1 -13.9

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 53.4 -12.5 91.0	3 54.7 -12.5 90.8	2 56.1 -12.6 90.6	1 57.4 -12.5 90.4	0 58.7 -12.5 90.2
1°	4 40.9 -12.7 92.0	3 42.2 -12.6 91.8	2 43.5 -12.5 91.6	1 44.9 -12.6 91.4	0 46.2 -12.5 91.2
2°	4 28.2 -12.7 93.0	3 29.6 -12.7 92.8	2 31.0 -12.6 92.6	1 32.3 -12.5 92.4	0 33.7 -12.5 92.2
3°	4 15.5 -12.8 94.0	3 16.9 -12.7 93.8	2 18.4 -12.7 93.6	1 19.8 -12.6 93.4	0 21.2 -12.5 93.1
4°	4 02.7 -12.9 95.0	3 04.2 -12.8 94.8	2 05.7 -12.7 94.5	1 07.2 -12.6 94.3	0 08.7 -12.5 94.1
5°	3 49.8 -12.9 95.9	2 51.4 -12.8 95.7	1 53.0 -12.7 95.5	0 54.6 -12.6 95.3	-0 03.8 -12.5
6°	3 36.9 -13.0 96.9	2 38.6 -12.8 96.7	1 40.3 -12.7 96.5	0 42.0 -12.6 96.3	-0 16.3 -12.6
7°	3 23.9 -13.1 97.9	2 25.8 -13.0 97.7	1 27.6 -12.8 97.5	0 29.4 -12.7 97.3	-0 28.9 -12.5
8°	3 10.8 -13.1 98.9	2 12.8 -12.9 98.7	1 14.8 -12.8 98.4	0 16.7 -12.6 98.2	-0 41.4 -12.5
9°	2 57.7 -13.1 99.9	1 59.9 -13.0 99.6	1 02.0 -12.8 99.4	0 04.1 -12.6 99.2	-0 53.9 -12.4
10°	2 44.6 -13.2 100.8	1 46.9 -13.0 100.6	0 49.2 -12.8 100.4	-0 08.5 -12.7	-1 06.3 -12.5
11°	2 31.4 -13.3 101.8	1 33.9 -13.1 101.6	0 36.4 -12.9 101.4	-0 21.2 -12.6	-1 18.8 -12.4
12°	2 18.1 -13.3 102.8	1 20.8 -13.0 102.6	0 23.5 -12.8 102.4	-0 33.8 -12.6	-1 31.2 -12.4
13°	2 04.8 -13.3 103.8	1 07.8 -13.1 103.5	0 10.7 -12.9 103.3	-0 46.4 -12.6	-1 43.6 -12.4
14°	1 51.5 -13.4 104.7	0 54.7 -13.1 104.5	-0 02.2 -12.8	-0 59.0 -12.6	-1 56.0 -12.3
15°	1 38.1 -13.4 105.7	0 41.6 -13.1 105.5	-0 15.0 -12.8	-1 11.6 -12.6	-2 08.3 -12.3
16°	1 24.7 -13.4 106.7	0 28.5 -13.2 106.5	-0 27.8 -12.9	-1 24.2 -12.6	-2 20.6 -12.3
17°	1 11.3 -13.4 107.7	0 15.3 -13.1 107.4	-0 40.7 -12.8	-1 36.8 -12.5	-2 32.9 -12.2
18°	0 57.9 -13.5 108.6	0 02.2 -13.1 108.4	-0 53.5 -12.8	-1 49.3 -12.5	-2 45.1 -12.2
19°	0 44.4 -13.5 109.6	-0 10.9 -13.1	-1 06.3 -12.8	-2 01.8 -12.4	-2 57.3 -12.1
20°	0 30.9 -13.4 110.6	-0 24.0 -13.2	-1 19.1 -12.8	-2 14.2 -12.4	-3 09.4 -12.1
21°	0 17.5 -13.5 111.6	-0 37.2 -13.1	-1 31.9 -12.7	-2 26.6 -12.4	-3 21.5 -12.0
22°	0 04.0 -13.5 112.5	-0 50.3 -13.1	-1 44.6 -12.7	-2 39.0 -12.3	-3 33.5 -11.9
23°	-0 09.5 -13.5	-1 03.4 -13.0	-1 57.3 -12.7	-2 51.3 -12.3	-3 45.4 -11.9
24°	-0 23.0 -13.5	-1 16.4 -13.1	-2 10.0 -12.6	-3 03.6 -12.2	-3 57.3 -11.8
25°	-0 36.5 -13.4	-1 29.5 -13.0	-2 22.6 -12.6	-3 15.8 -12.2	-4 09.1 -11.7
26°	-0 49.9 -13.5	-1 42.5 -13.0	-2 35.2 -12.6	-3 28.0 -12.1	-4 20.8 -11.7
27°	-1 03.4 -13.4	-1 55.5 -13.0	-2 47.8 -12.4	-3 40.1 -12.0	-4 32.5 -11.6
28°	-1 16.8 -13.4	-2 08.5 -12.9	-3 00.2 -12.5	-3 52.1 -12.0	-4 44.1 -11.5
29°	-1 30.2 -13.4	-2 21.4 -12.9	-3 12.7 -12.4	-4 04.1 -11.9	-4 55.6 -11.4

Latitude 12°

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 -12.5 90.0	-0 58.7 -12.5			
1°	-0 12.5 -12.4	-1 11.2 -12.4			
2°	-0 24.9 -12.5	-1 23.6 -12.4			
3°	-0 37.4 -12.5	-1 36.0 -12.4			
4°	-0 49.9 -12.4	-1 48.4 -12.4			
5°	-1 02.3 -12.4	-2 00.8 -12.3			
6°	-1 14.7 -12.4	-2 13.1 -12.3			
7°	-1 27.1 -12.4	-2 25.4 -12.2			
8°	-1 39.5 -12.3	-2 37.6 -12.2			
9°	-1 51.8 -12.3	-2 49.8 -12.2			
10°	-2 04.1 -12.3	-3 02.0 -12.1			
11°	-2 16.4 -12.3	-3 14.1 -12.0			
12°	-2 28.7 -12.1	-3 26.1 -12.0			
13°	-2 40.8 -12.2	-3 38.1 -11.9			
14°	-2 53.0 -12.1	-3 50.0 -11.9			
15°	-3 05.1 -12.0	-4 01.9 -11.8			
16°	-3 17.1 -12.0	-4 13.7 -11.7			
17°	-3 29.1 -11.9	-4 25.4 -11.6			
18°	-3 41.0 -11.9	-4 37.0 -11.5			
19°	-3 52.9 -11.8	-4 48.5 -11.5			
20°	-4 04.7 -11.7	-5 00.0 -11.4			
21°	-4 16.4 -11.6	-5 11.4 -11.2			
22°	-4 28.0 -11.6	-5 22.6 -11.2			
23°	-4 39.6 -11.5	-5 33.8 -11.1			
24°	-4 51.1 -11.4	-5 44.9 -11.0			
25°	-5 02.5 -11.3	-5 55.9 -10.9			
26°	-5 13.8 -11.2	-6 06.8 -10.7			
27°	-5 25.0 -11.1	-6 17.5 -10.7			
28°	-5 36.1 -11.0	-6 28.2 -10.5			
29°	-5 47.1 -10.9	-6 38.7 -10.5			

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°					
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Dec	LHA 000° / 360°	LHA 001° / 359°	LHA 002° / 358°	LHA 003° / 357°	LHA 004° / 356°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	77 00.0 -60.0 180.0	76 57.7 -59.8 175.6	76 51.0 -59.4 171.2	76 39.8 -58.6 166.9	76 24.5 -57.6 162.7
1°	76 00.0 -60.0 180.0	75 57.9 -59.9 175.9	75 51.6 -59.4 171.8	75 41.2 -58.8 167.8	75 26.9 -57.9 163.9
2°	75 00.0 -60.0 180.0	74 58.0 -59.8 176.1	74 52.2 -59.6 172.3	74 42.4 -58.9 168.6	74 29.0 -58.1 164.9
3°	74 00.0 -60.0 180.0	73 58.2 -59.9 176.4	73 52.6 -59.5 172.8	73 43.5 -59.0 169.3	73 30.9 -58.4 165.8
4°	73 00.0 -60.0 180.0	72 58.3 -59.9 176.6	72 53.1 -59.7 173.2	72 44.5 -59.2 169.9	72 32.5 -58.5 166.6
5°	72 00.0 -60.0 180.0	71 58.4 -60.0 176.8	71 53.4 -59.6 173.6	71 45.3 -59.2 170.4	71 34.0 -58.7 167.3
6°	71 00.0 -60.0 180.0	70 58.4 -59.9 176.9	70 53.8 -59.7 173.9	70 46.1 -59.4 170.9	70 35.3 -58.8 168.0
7°	70 00.0 -60.0 180.0	69 58.5 -59.9 177.1	69 54.1 -59.7 174.2	69 46.7 -59.3 171.4	69 36.5 -58.9 168.5
8°	69 00.0 -60.0 180.0	68 58.6 -59.9 177.2	68 54.4 -59.8 174.5	68 47.4 -59.5 171.8	68 37.6 -58.9 169.1
9°	68 00.0 -60.0 180.0	67 58.7 -60.0 177.4	67 54.6 -59.7 174.7	67 47.9 -59.4 172.1	67 38.7 -59.1 169.6
10°	67 00.0 -60.0 180.0	66 58.7 -59.9 177.5	66 54.9 -59.8 175.0	66 48.5 -59.5 172.5	66 39.6 -59.2 170.0
11°	66 00.0 -60.0 180.0	65 58.8 -60.0 177.6	65 55.1 -59.8 175.2	65 49.0 -59.6 172.8	65 40.4 -59.2 170.4
12°	65 00.0 -60.0 180.0	64 58.8 -59.9 177.7	64 55.3 -59.8 175.4	64 49.4 -59.6 173.1	64 41.2 -59.2 170.8
13°	64 00.0 -60.0 180.0	63 58.9 -60.0 177.8	63 55.5 -59.9 175.6	63 49.8 -59.6 173.4	63 42.0 -59.4 171.2
14°	63 00.0 -60.0 180.0	62 58.9 -59.9 177.9	62 55.6 -59.8 175.7	62 50.2 -59.6 173.6	62 42.6 -59.3 171.5
15°	62 00.0 -60.0 180.0	61 59.0 -60.0 177.9	61 55.8 -59.8 175.9	61 50.6 -59.7 173.9	61 43.3 -59.4 171.8
16°	61 00.0 -60.0 180.0	60 59.0 -60.0 178.0	60 56.0 -59.9 176.0	60 50.9 -59.7 174.1	60 43.9 -59.4 172.1
17°	60 00.0 -60.0 180.0	59 59.0 -59.9 178.1	59 56.1 -59.9 176.2	59 51.2 -59.7 174.3	59 44.5 -59.5 172.4
18°	59 00.0 -60.0 180.0	58 59.1 -60.0 178.2	58 56.2 -59.8 176.3	58 51.5 -59.7 174.5	58 45.0 -59.5 172.7
19°	58 00.0 -60.0 180.0	57 59.1 -60.0 178.2	57 56.4 -59.9 176.4	57 51.8 -59.7 174.7	57 45.5 -59.5 172.9
20°	57 00.0 -60.0 180.0	56 59.1 -60.0 178.3	56 56.5 -59.9 176.6	56 52.1 -59.8 174.8	56 46.0 -59.6 173.1
21°	56 00.0 -60.0 180.0	55 59.1 -59.9 178.3	55 56.6 -59.9 176.7	55 52.3 -59.7 175.0	55 46.4 -59.6 173.4
22°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.4	54 56.7 -59.9 176.8	54 52.6 -59.8 175.2	54 46.8 -59.5 173.6
23°	54 00.0 -60.0 180.0	53 59.2 -60.0 178.4	53 56.8 -59.9 176.9	53 52.8 -59.8 175.3	53 47.3 -59.7 173.8
24°	53 00.0 -60.0 180.0	52 59.2 -60.0 178.5	52 56.9 -59.9 177.0	52 53.0 -59.7 175.5	52 47.6 -59.6 174.0
25°	52 00.0 -60.0 180.0	51 59.2 -59.9 178.5	51 57.0 -59.9 177.1	51 53.3 -59.8 175.6	51 48.0 -59.6 174.1
26°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.6	50 57.1 -59.9 177.1	50 53.5 -59.9 175.7	50 48.4 -59.7 174.3
27°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.6	49 57.2 -59.9 177.2	49 53.6 -59.8 175.8	49 48.7 -59.7 174.5
28°	49 00.0 -60.0 180.0	48 59.3 -60.0 178.7	48 57.3 -60.0 177.3	48 53.8 -59.8 176.0	48 49.0 -59.6 174.6
29°	48 00.0 -60.0 180.0	47 59.3 -59.9 178.7	47 57.3 -59.9 177.4	47 54.0 -59.8 176.1	47 49.4 -59.7 174.8

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°	76 05.2 -56.4 158.7	75 42.2 -55.0 155.0	75 15.8 -53.4 151.4	74 46.3 -51.9 148.0	74 14.0 -50.3 144.9
1°	75 08.8 -56.8 160.1	74 47.2 -55.5 156.5	74 22.4 -54.2 153.1	73 54.4 -52.7 149.9	73 23.7 -51.2 146.8
2°	74 12.0 -57.1 161.3	73 51.7 -56.1 157.9	73 28.2 -54.9 154.7	73 01.7 -53.5 151.5	72 32.5 -52.1 148.6
3°	73 14.9 -57.5 162.4	72 55.6 -56.5 159.2	72 33.3 -55.3 156.0	72 08.2 -54.1 153.1	71 40.4 -52.8 150.2
4°	72 17.4 -57.8 163.4	71 59.1 -56.8 160.3	71 38.0 -55.8 157.3	71 14.1 -54.7 154.4	70 47.6 -53.5 151.7
5°	71 19.6 -57.9 164.3	71 02.3 -57.1 161.3	70 42.2 -56.2 158.4	70 19.4 -55.1 155.7	69 54.1 -54.0 153.0
6°	70 21.7 -58.2 165.1	70 05.2 -57.4 162.2	69 46.0 -56.5 159.5	69 24.3 -55.6 156.8	69 00.1 -54.6 154.3
7°	69 23.5 -58.3 165.8	69 07.8 -57.6 163.1	68 49.5 -56.8 160.4	68 28.7 -55.9 157.9	68 05.5 -54.9 155.4
8°	68 25.2 -58.4 166.4	68 10.2 -57.8 163.8	67 52.7 -57.0 161.3	67 32.8 -56.3 158.8	67 10.6 -55.4 156.5
9°	67 26.8 -58.6 167.0	67 12.4 -57.9 164.5	66 55.7 -57.3 162.1	66 36.5 -56.5 159.7	66 15.2 -55.7 157.4
10°	66 28.2 -58.7 167.6	66 14.5 -58.2 165.2	65 58.4 -57.5 162.9	65 40.0 -56.8 160.6	65 19.5 -56.0 158.3
11°	65 29.5 -58.7 168.1	65 16.3 -58.2 165.8	65 00.9 -57.7 163.5	64 43.2 -57.0 161.3	64 23.5 -56.3 159.2
12°	64 30.8 -58.9 168.6	64 18.1 -58.4 166.4	64 03.2 -57.8 164.2	63 46.2 -57.2 162.1	63 27.2 -56.5 160.0
13°	63 31.9 -58.9 169.0	63 19.7 -58.5 166.9	63 05.4 -58.0 164.8	62 49.0 -57.3 162.7	62 30.7 -56.7 160.7
14°	62 33.0 -59.0 169.4	62 21.2 -58.6 167.4	62 07.4 -58.1 165.4	61 51.7 -57.6 163.4	61 34.0 -57.0 161.4
15°	61 34.0 -59.1 169.8	61 22.6 -58.6 167.8	61 09.3 -58.2 165.9	60 54.1 -57.7 164.0	60 37.0 -57.1 162.1
16°	60 34.9 -59.1 170.2	60 24.0 -58.8 168.3	60 11.1 -58.3 166.4	59 56.4 -57.8 164.5	59 39.9 -57.3 162.7
17°	59 35.8 -59.2 170.5	59 25.2 -58.8 168.7	59 12.8 -58.4 166.8	58 58.6 -57.9 165.0	58 42.6 -57.4 163.3
18°	58 36.6 -59.2 170.8	58 26.4 -58.9 169.1	58 14.4 -58.5 167.3	58 00.7 -58.1 165.5	57 45.2 -57.6 163.8
19°	57 37.4 -59.3 171.1	57 27.5 -58.9 169.4	57 15.9 -58.6 167.7	57 02.6 -58.2 166.0	56 47.6 -57.7 164.3
20°	56 38.1 -59.3 171.4	56 28.6 -59.0 169.8	56 17.3 -58.6 168.1	56 04.4 -58.2 166.4	55 49.9 -57.8 164.8
21°	55 38.8 -59.3 171.7	55 29.6 -59.1 170.1	55 18.7 -58.7 168.5	55 06.2 -58.3 166.9	54 52.1 -57.9 165.3
22°	54 39.5 -59.4 172.0	54 30.5 -59.1 170.4	54 20.0 -58.8 168.8	54 07.9 -58.4 167.3	53 54.2 -58.0 165.7
23°	53 40.1 -59.4 172.2	53 31.4 -59.1 170.7	53 21.2 -58.8 169.2	53 09.5 -58.5 167.7	52 56.2 -58.1 166.2
24°	52 40.7 -59.4 172.5	52 32.3 -59.2 171.0	52 22.4 -58.9 169.5	52 11.0 -58.6 168.0	51 58.1 -58.1 166.6
25°	51 41.3 -59.4 172.7	51 33.1 -59.2 171.2	51 23.5 -58.9 169.8	51 12.4 -58.6 168.4	51 00.0 -58.3 167.0
26°	50 41.9 -59.5 172.9	50 33.9 -59.2 171.5	50 24.6 -59.0 170.1	50 13.8 -58.6 168.7	50 01.7 -58.3 167.4
27°	49 42.4 -59.5 173.1	49 34.7 -59.3 171.7	49 25.6 -59.0 170.4	49 15.2 -58.8 169.0	49 03.4 -58.4 167.7
28°	48 42.9 -59.5 173.3	48 35.4 -59.3 172.0	48 26.6 -59.1 170.7	48 16.4 -58.7 169.4	48 05.0 -58.4 168.1
29°	47 43.4 -59.5 173.5	47 36.1 -59.3 172.2	47 27.5 -59.1 170.9	47 17.7 -58.8 169.7	47 06.6 -58.5 168.4

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°	73 39.1 -48.6 141.9	73 01.9 -46.9 139.2	72 22.7 -45.3 136.6	71 41.7 -43.7 134.3	70 59.0 -42.2 132.1
1°	72 50.5 -49.7 143.9	72 15.0 -48.1 141.3	71 37.4 -46.6 138.7	70 58.0 -45.1 136.4	70 16.8 -43.6 134.2
2°	72 00.8 -50.6 145.8	71 26.9 -49.2 143.2	70 50.8 -47.7 140.7	70 12.9 -46.3 138.4	69 33.2 -44.9 136.2
3°	71 10.2 -51.5 147.5	70 37.7 -50.2 144.9	70 03.1 -48.8 142.5	69 26.6 -47.4 140.2	68 48.3 -46.0 138.1
4°	70 18.7 -52.3 149.1	69 47.5 -50.9 146.6	69 14.3 -49.7 144.2	68 39.2 -48.4 141.9	68 02.3 -47.1 139.8
5°	69 26.4 -52.8 150.5	68 56.6 -51.7 148.1	68 24.6 -50.4 145.7	67 50.8 -49.2 143.5	67 15.2 -48.0 141.4
6°	68 33.6 -53.5 151.8	68 04.9 -52.4 149.4	67 34.2 -51.2 147.2	67 01.6 -50.1 145.0	66 27.2 -48.9 143.0
7°	67 40.1 -54.0 153.0	67 12.5 -52.9 150.7	66 43.0 -51.9 148.5	66 11.5 -50.7 146.4	65 38.3 -49.6 144.4
8°	66 46.1 -54.4 154.2	66 19.6 -53.4 151.9	65 51.1 -52.4 149.8	65 20.8 -51.3 147.7	64 48.7 -50.2 145.7
9°	65 51.7 -54.8 155.2	65 26.2 -53.9 153.0	64 58.7 -52.9 151.0	64 29.5 -52.0 148.9	63 58.5 -50.9 147.0
10°	64 56.9 -55.2 156.2	64 32.3 -54.3 154.1	64 05.8 -53.4 152.0	63 37.5 -52.4 150.1	63 07.6 -51.5 148.2
11°	64 01.7 -55.5 157.1	63 38.0 -54.7 155.1	63 12.4 -53.8 153.1	62 45.1 -52.9 151.2	62 16.1 -52.0 149.3
12°	63 06.2 -55.8 157.9	62 43.3 -55.0 156.0	62 18.6 -54.1 154.0	61 52.2 -53.3 152.2	61 24.1 -52.4 150.4
13°	62 10.4 -56.0 158.7	61 48.3 -55.3 156.8	61 24.5 -54.6 155.0	60 58.9 -53.7 153.1	60 31.7 -52.9 151.4
14°	61 14.4 -56.3 159.5	60 53.0 -55.5 157.6	60 29.9 -54.8 155.8	60 05.2 -54.1 154.0	59 38.8 -53.3 152.3
15°	60 18.1 -56.5 160.2	59 57.5 -55.9 158.4	59 35.1 -55.1 156.6	59 11.1 -54.4 154.9	58 45.5 -53.6 153.2
16°	59 21.6 -56.7 160.9	59 01.6 -56.0 159.1	58 40.0 -55.4 157.4	58 16.7 -54.7 155.7	57 51.9 -53.9 154.1
17°	58 24.9 -56.8 161.5	58 05.6 -56.3 159.8	57 44.6 -55.6 158.1	57 22.0 -54.9 156.5	56 58.0 -54.3 154.9
18°	57 28.1 -57.1 162.1	57 09.3 -56.5 160.5	56 49.0 -55.9 158.8	56 27.1 -55.2 157.2	56 03.7 -54.5 155.7
19°	56 31.0 -57.1 162.7	56 12.8 -56.6 161.1	55 53.1 -56.0 159.5	55 31.9 -55.5 157.9	55 09.2 -54.8 156.4
20°	55 33.9 -57.4 163.2	55 16.2 -56.8 161.7	54 57.1 -56.3 160.1	54 36.4 -55.6 158.6	54 14.4 -55.0 157.1
21°	54 36.5 -57.4 163.7	54 19.4 -56.9 162.2	54 00.8 -56.4 160.7	53 40.8 -55.8 159.2	53 19.4 -55.2 157.8
22°	53 39.1 -57.6 164.2	53 22.5 -57.1 162.7	53 04.4 -56.5 161.3	52 45.0 -56.0 159.8	52 24.2 -55.5 158.4
23°	52 41.5 -57.6 164.7	52 25.4 -57.2 163.3	52 07.9 -56.7 161.8	51 49.0 -56.2 160.4	51 28.7 -55.6 159.0
24°	51 43.9 -57.8 165.2	51 28.2 -57.3 163.7	51 11.2 -56.9 162.4	50 52.8 -56.4 161.0	50 33.1 -55.8 159.6
25°	50 46.1 -57.9 165.6	50 30.9 -57.5 164.2	50 14.3 -57.0 162.9	49 56.4 -56.4 161.5	49 37.3 -56.0 160.2
26°	49 48.2 -57.9 166.0	49 33.4 -57.5 164.7	49 17.3 -57.1 163.4	49 00.0 -56.7 162.1	48 41.3 -56.1 160.8
27°	48 50.3 -58.0 166.4	48 35.9 -57.6 165.1	48 20.2 -57.2 163.8	48 03.3 -56.7 162.6	47 45.2 -56.3 161.3
28°	47 52.3 -58.1 166.8	47 38.3 -57.7 165.5	47 23.0 -57.3 164.3	47 06.6 -56.9 163.0	46 48.9 -56.4 161.8
29°	46 54.2 -58.2 167.2	46 40.6 -57.8 165.9	46 25.7 -57.3 164.7	46 09.7 -56.9 163.5	45 52.5 -56.5 162.3

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°	70 14.9 -40.7 130.0	69 29.5 -39.3 128.1	68 43.0 -38.0 126.3	67 55.4 -36.7 124.7	67 06.9 -35.5 123.2
1°	69 34.2 -42.2 132.2	68 50.2 -40.8 130.2	68 05.0 -39.5 128.4	67 18.7 -38.3 126.8	66 31.4 -37.1 125.2
2°	68 52.0 -43.5 134.2	68 09.4 -42.2 132.2	67 25.5 -40.9 130.4	66 40.4 -39.6 128.7	65 54.3 -38.4 127.2
3°	68 08.5 -44.7 136.0	67 27.2 -43.4 134.1	66 44.6 -42.2 132.3	66 00.8 -41.0 130.6	65 15.9 -39.8 129.0
4°	67 23.8 -45.8 137.8	66 43.8 -44.6 135.9	66 02.4 -43.3 134.1	65 19.8 -42.1 132.4	64 36.1 -41.0 130.8
5°	66 38.0 -46.8 139.5	65 59.2 -45.5 137.6	65 19.1 -44.4 135.8	64 37.7 -43.2 134.1	63 55.1 -42.0 132.5
6°	65 51.2 -47.7 141.0	65 13.7 -46.5 139.1	64 34.7 -45.3 137.4	63 54.5 -44.2 135.7	63 13.1 -43.2 134.1
7°	65 03.5 -48.5 142.5	64 27.2 -47.4 140.6	63 49.4 -46.3 138.9	63 10.3 -45.2 137.2	62 29.9 -44.0 135.6
8°	64 15.0 -49.2 143.8	63 39.8 -48.1 142.0	63 03.1 -47.0 140.3	62 25.1 -46.0 138.6	61 45.9 -45.0 137.0
9°	63 25.8 -49.9 145.1	62 51.7 -48.9 143.4	62 16.1 -47.8 141.6	61 39.1 -46.7 140.0	61 00.9 -45.7 138.4
10°	62 35.9 -50.4 146.4	62 02.8 -49.5 144.6	61 28.3 -48.5 142.9	60 52.4 -47.5 141.3	60 15.2 -46.5 139.7
11°	61 45.5 -51.1 147.5	61 13.3 -50.0 145.8	60 39.8 -49.1 144.1	60 04.9 -48.2 142.5	59 28.7 -47.2 141.0
12°	60 54.4 -51.5 148.6	60 23.3 -50.7 146.9	59 50.7 -49.7 145.3	59 16.7 -48.8 143.7	58 41.5 -47.8 142.2
13°	60 02.9 -52.0 149.7	59 32.6 -51.1 148.0	59 01.0 -50.3 146.4	58 27.9 -49.3 144.9	57 53.7 -48.5 143.4
14°	59 10.9 -52.5 150.6	58 41.5 -51.6 149.0	58 10.7 -50.7 147.5	57 38.6 -49.9 145.9	57 05.2 -49.0 144.5
15°	58 18.4 -52.8 151.6	57 49.9 -52.0 150.0	57 20.0 -51.2 148.5	56 48.7 -50.3 147.0	56 16.2 -49.4 145.5
16°	57 25.6 -53.2 152.5	56 57.9 -52.4 150.9	56 28.8 -51.6 149.4	55 58.4 -50.8 147.9	55 26.8 -50.0 146.5
17°	56 32.4 -53.5 153.3	56 05.5 -52.8 151.8	55 37.2 -52.0 150.3	55 07.6 -51.2 148.9	54 36.8 -50.4 147.5
18°	55 38.9 -53.8 154.1	55 12.7 -53.1 152.6	54 45.2 -52.4 151.2	54 16.4 -51.6 149.8	53 46.4 -50.9 148.4
19°	54 45.1 -54.1 154.9	54 19.6 -53.4 153.5	53 52.8 -52.6 152.0	53 24.8 -52.0 150.6	52 55.5 -51.2 149.3
20°	53 51.0 -54.4 155.7	53 26.2 -53.7 154.2	53 00.2 -53.0 152.8	52 32.8 -52.2 151.5	52 04.3 -51.5 150.2
21°	52 56.6 -54.6 156.4	52 32.5 -53.9 155.0	52 07.2 -53.3 153.6	51 40.6 -52.6 152.3	51 12.8 -51.9 151.0
22°	52 02.0 -54.8 157.0	51 38.6 -54.3 155.7	51 13.9 -53.6 154.3	50 48.0 -52.9 153.0	50 20.9 -52.2 151.8
23°	51 07.2 -55.1 157.7	50 44.3 -54.4 156.4	50 20.3 -53.8 155.1	49 55.1 -53.2 153.8	49 28.7 -52.6 152.5
24°	50 12.1 -55.2 158.3	49 49.9 -54.7 157.0	49 26.5 -54.1 155.7	49 01.9 -53.4 154.5	48 36.1 -52.7 153.3
25°	49 16.9 -55.5 158.9	48 55.2 -54.8 157.7	48 32.4 -54.2 156.4	48 08.5 -53.7 155.2	47 43.4 -53.1 154.0
26°	48 21.4 -55.5 159.5	48 00.4 -55.1 158.3	47 38.2 -54.5 157.0	47 14.8 -53.9 155.8	46 50.3 -53.2 154.7
27°	47 25.9 -55.8 160.1	47 05.3 -55.2 158.9	46 43.7 -54.7 157.7	46 20.9 -54.1 156.5	45 57.1 -53.5 155.3
28°	46 30.1 -55.9 160.6	46 10.1 -55.4 159.4	45 49.0 -54.8 158.3	45 26.8 -54.3 157.1	45 03.6 -53.8 156.0
29°	45 34.2 -56.0 161.1	45 14.7 -55.5 160.0	44 54.2 -55.0 158.8	44 32.5 -54.4 157.7	44 09.8 -53.9 156.6

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°	66 17.5 -34.3 121.7	65 27.4 -33.2 120.4	64 36.7 -32.3 119.1	63 45.3 -31.3 117.9	62 53.4 -30.4 116.8
1°	65 43.2 -35.9 123.7	64 54.2 -34.8 122.4	64 04.4 -33.7 121.1	63 14.0 -32.8 119.8	62 23.0 -31.8 118.7
2°	65 07.3 -37.3 125.7	64 19.4 -36.3 124.3	63 30.7 -35.2 122.9	62 41.2 -34.1 121.7	61 51.2 -33.3 120.5
3°	64 30.0 -38.7 127.5	63 43.1 -37.5 126.1	62 55.5 -36.5 124.7	62 07.1 -35.5 123.5	61 17.9 -34.5 122.2
4°	63 51.3 -39.8 129.3	63 05.6 -38.8 127.8	62 19.0 -37.7 126.5	61 31.6 -36.7 125.2	60 43.4 -35.7 123.9
5°	63 11.5 -41.0 130.9	62 26.8 -39.9 129.5	61 41.3 -38.9 128.1	60 54.9 -37.9 126.8	60 07.7 -36.9 125.6
6°	62 30.5 -42.0 132.5	61 46.9 -40.9 131.1	61 02.4 -40.0 129.7	60 17.0 -39.0 128.4	59 30.8 -38.0 127.1
7°	61 48.5 -43.0 134.1	61 06.0 -42.0 132.6	60 22.4 -40.9 131.2	59 38.0 -39.9 129.9	58 52.8 -39.0 128.6
8°	61 05.5 -43.9 135.5	60 24.0 -42.9 134.1	59 41.5 -41.9 132.7	58 58.1 -41.0 131.4	58 13.8 -40.0 130.1
9°	60 21.6 -44.8 136.9	59 41.1 -43.7 135.5	58 59.6 -42.8 134.1	58 17.1 -41.8 132.8	57 33.8 -40.9 131.5
10°	59 36.8 -45.5 138.2	58 57.4 -44.6 136.8	58 16.8 -43.5 135.4	57 35.3 -42.6 134.1	56 52.9 -41.7 132.9
11°	58 51.3 -46.2 139.5	58 12.8 -45.3 138.1	57 33.3 -44.4 136.7	56 52.7 -43.4 135.4	56 11.2 -42.5 134.2
12°	58 05.1 -46.9 140.7	57 27.5 -45.9 139.3	56 48.9 -45.1 138.0	56 09.3 -44.2 136.7	55 28.7 -43.3 135.4
13°	57 18.2 -47.5 141.9	56 41.6 -46.7 140.5	56 03.8 -45.7 139.2	55 25.1 -44.8 137.9	54 45.4 -43.9 136.6
14°	56 30.7 -48.2 143.0	55 54.9 -47.2 141.6	55 18.1 -46.3 140.3	54 40.3 -45.5 139.0	54 01.5 -44.6 137.8
15°	55 42.5 -48.6 144.1	55 07.7 -47.8 142.7	54 31.8 -47.0 141.4	53 54.8 -46.1 140.2	53 16.9 -45.3 138.9
16°	54 53.9 -49.1 145.1	54 19.9 -48.3 143.8	53 44.8 -47.4 142.5	53 08.7 -46.6 141.2	52 31.6 -45.8 140.0
17°	54 04.8 -49.6 146.1	53 31.6 -48.8 144.8	52 57.4 -48.0 143.5	52 22.1 -47.2 142.3	51 45.8 -46.3 141.1
18°	53 15.2 -50.1 147.1	52 42.8 -49.2 145.8	52 09.4 -48.5 144.5	51 34.9 -47.6 143.3	50 59.5 -46.9 142.1
19°	52 25.1 -50.4 148.0	51 53.6 -49.7 146.7	51 20.9 -48.9 145.5	50 47.3 -48.2 144.2	50 12.6 -47.3 143.1
20°	51 34.7 -50.9 148.9	51 03.9 -50.1 147.6	50 32.0 -49.3 146.4	49 59.1 -48.5 145.2	49 25.3 -47.8 144.0
21°	50 43.8 -51.1 149.7	50 13.8 -50.5 148.5	49 42.7 -49.7 147.3	49 10.6 -49.0 146.1	48 37.5 -48.3 144.9
22°	49 52.7 -51.6 150.5	49 23.3 -50.8 149.3	48 53.0 -50.1 148.1	48 21.6 -49.4 147.0	47 49.2 -48.6 145.8
23°	49 01.1 -51.8 151.3	48 32.5 -51.1 150.1	48 02.9 -50.4 148.9	47 32.2 -49.7 147.8	47 00.6 -49.0 146.7
24°	48 09.3 -52.1 152.1	47 41.4 -51.4 150.9	47 12.5 -50.8 149.8	46 42.5 -50.1 148.6	46 11.6 -49.4 147.5
25°	47 17.2 -52.4 152.8	46 50.0 -51.8 151.7	46 21.7 -51.1 150.5	45 52.4 -50.4 149.4	45 22.2 -49.7 148.4
26°	46 24.8 -52.7 153.5	45 58.2 -52.0 152.4	45 30.6 -51.3 151.3	45 02.0 -50.7 150.2	44 32.5 -50.0 149.1
27°	45 32.1 -52.8 154.2	45 06.2 -52.3 153.1	44 39.3 -51.7 152.0	44 11.3 -50.9 151.0	43 42.5 -50.3 149.9
28°	44 39.3 -53.2 154.9	44 13.9 -52.5 153.8	43 47.6 -51.9 152.7	43 20.4 -51.3 151.7	42 52.2 -50.6 150.7
29°	43 46.1 -53.3 155.5	43 21.4 -52.7 154.5	42 55.7 -52.1 153.4	42 29.1 -51.5 152.4	42 01.6 -50.9 151.4

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°	62 01.0 -29.5 115.8	61 08.1 -28.7 114.8	60 14.8 -27.9 113.8	59 21.1 -27.1 112.9	58 27.1 -26.5 112.1
1°	61 31.5 -31.0 117.6	60 39.4 -30.1 116.6	59 46.9 -29.3 115.6	58 54.0 -28.6 114.7	58 00.6 -27.8 113.8
2°	61 00.5 -32.3 119.4	60 09.3 -31.5 118.3	59 17.6 -30.6 117.3	58 25.4 -29.8 116.4	57 32.8 -29.1 115.5
3°	60 28.2 -33.6 121.1	59 37.8 -32.7 120.0	58 47.0 -31.9 119.0	57 55.6 -31.1 118.0	57 03.7 -30.3 117.1
4°	59 54.6 -34.8 122.8	59 05.1 -33.9 121.7	58 15.1 -33.1 120.6	57 24.5 -32.3 119.6	56 33.4 -31.5 118.7
5°	59 19.8 -36.0 124.4	58 31.2 -35.1 123.3	57 42.0 -34.2 122.2	56 52.2 -33.4 121.2	56 01.9 -32.5 120.2
6°	58 43.8 -37.1 125.9	57 56.1 -36.2 124.8	57 07.8 -35.3 123.7	56 18.8 -34.4 122.7	55 29.4 -33.7 121.7
7°	58 06.7 -38.1 127.4	57 19.9 -37.1 126.3	56 32.5 -36.3 125.2	55 44.4 -35.5 124.1	54 55.7 -34.6 123.1
8°	57 28.6 -39.0 128.9	56 42.8 -38.2 127.7	55 56.2 -37.3 126.6	55 08.9 -36.4 125.6	54 21.1 -35.7 124.5
9°	56 49.6 -40.0 130.3	56 04.6 -39.1 129.1	55 18.9 -38.2 128.0	54 32.5 -37.4 126.9	53 45.4 -36.5 125.9
10°	56 09.6 -40.8 131.6	55 25.5 -39.9 130.5	54 40.7 -39.1 129.3	53 55.1 -38.2 128.3	53 08.9 -37.4 127.2
11°	55 28.8 -41.6 132.9	54 45.6 -40.7 131.8	54 01.6 -39.8 130.7	53 16.9 -39.0 129.6	52 31.5 -38.2 128.5
12°	54 47.2 -42.4 134.2	54 04.9 -41.5 133.0	53 21.8 -40.7 131.9	52 37.9 -39.8 130.8	51 53.3 -39.0 129.8
13°	54 04.8 -43.0 135.4	53 23.4 -42.2 134.3	52 41.1 -41.4 133.1	51 58.1 -40.6 132.1	51 14.3 -39.7 131.0
14°	53 21.8 -43.8 136.6	52 41.2 -43.0 135.4	51 59.7 -42.1 134.3	51 17.5 -41.2 133.2	50 34.6 -40.5 132.2
15°	52 38.0 -44.4 137.7	51 58.2 -43.5 136.6	51 17.6 -42.7 135.5	50 36.3 -42.0 134.4	49 54.1 -41.1 133.4
16°	51 53.6 -45.0 138.8	51 14.7 -44.2 137.7	50 34.9 -43.3 136.6	49 54.3 -42.5 135.5	49 13.0 -41.7 134.5
17°	51 08.6 -45.5 139.9	50 30.5 -44.7 138.8	49 51.6 -44.0 137.7	49 11.8 -43.1 136.6	48 31.3 -42.4 135.6
18°	50 23.1 -46.1 140.9	49 45.8 -45.3 139.8	49 07.6 -44.4 138.7	48 28.7 -43.7 137.7	47 48.9 -42.9 136.6
19°	49 37.0 -46.5 141.9	49 00.5 -45.8 140.8	48 23.2 -45.1 139.7	47 45.0 -44.3 138.7	47 06.0 -43.5 137.7
20°	48 50.5 -47.1 142.9	48 14.7 -46.2 141.8	47 38.1 -45.5 140.7	47 00.7 -44.7 139.7	46 22.5 -44.0 138.7
21°	48 03.4 -47.5 143.8	47 28.5 -46.8 142.7	46 52.6 -45.9 141.7	46 16.0 -45.2 140.7	45 38.5 -44.5 139.7
22°	47 15.9 -47.9 144.7	46 41.7 -47.1 143.7	46 06.7 -46.5 142.6	45 30.8 -45.7 141.6	44 54.0 -44.9 140.6
23°	46 28.0 -48.2 145.6	45 54.6 -47.6 144.6	45 20.2 -46.8 143.5	44 45.1 -46.1 142.5	44 09.1 -45.4 141.5
24°	45 39.8 -48.7 146.5	45 07.0 -47.9 145.4	44 33.4 -47.2 144.4	43 59.0 -46.5 143.4	43 23.7 -45.8 142.4
25°	44 51.1 -49.0 147.3	44 19.1 -48.3 146.3	43 46.2 -47.6 145.3	43 12.5 -46.9 144.3	42 37.9 -46.2 143.3
26°	44 02.1 -49.4 148.1	43 30.8 -48.7 147.1	42 58.6 -48.0 146.1	42 25.6 -47.3 145.1	41 51.7 -46.5 144.2
27°	43 12.7 -49.6 148.9	42 42.1 -49.0 147.9	42 10.6 -48.3 146.9	41 38.3 -47.6 146.0	41 05.2 -47.0 145.0
28°	42 23.1 -50.0 149.7	41 53.1 -49.3 148.7	41 22.3 -48.6 147.7	40 50.7 -48.0 146.8	40 18.2 -47.2 145.9
29°	41 33.1 -50.2 150.4	41 03.8 -49.6 149.4	40 33.7 -49.0 148.5	40 02.7 -48.2 147.6	39 31.0 -47.6 146.7

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°	57 32.8 -25.8 111.3	56 38.2 -25.2 110.5	55 43.3 -24.6 109.8	54 48.2 -24.1 109.1	53 52.8 -23.5 108.4
1°	57 07.0 -27.1 113.0	56 13.0 -26.5 112.2	55 18.7 -25.8 111.4	54 24.1 -25.2 110.7	53 29.3 -24.7 110.0
2°	56 39.9 -28.4 114.6	55 46.5 -27.7 113.8	54 52.9 -27.1 113.0	53 58.9 -26.4 112.2	53 04.6 -25.8 111.5
3°	56 11.5 -29.6 116.2	55 18.8 -28.8 115.3	54 25.8 -28.2 114.5	53 32.5 -27.6 113.8	52 38.8 -26.9 113.0
4°	55 41.9 -30.7 117.7	54 50.0 -30.1 116.9	53 57.6 -29.3 116.0	53 04.9 -28.6 115.2	52 11.9 -28.1 114.5
5°	55 11.2 -31.8 119.3	54 19.9 -31.0 118.4	53 28.3 -30.4 117.5	52 36.3 -29.7 116.7	51 43.8 -29.0 115.9
6°	54 39.4 -32.9 120.7	53 48.9 -32.2 119.8	52 57.9 -31.4 119.0	52 06.6 -30.7 118.1	51 14.8 -30.0 117.3
7°	54 06.5 -33.9 122.2	53 16.7 -33.1 121.2	52 26.5 -32.3 120.4	51 35.9 -31.7 119.5	50 44.8 -31.0 118.7
8°	53 32.6 -34.8 123.6	52 43.6 -34.0 122.6	51 54.2 -33.3 121.7	51 04.2 -32.6 120.9	50 13.8 -31.9 120.0
9°	52 57.8 -35.7 124.9	52 09.6 -35.0 124.0	51 20.9 -34.2 123.1	50 31.6 -33.4 122.2	49 41.9 -32.7 121.4
10°	52 22.1 -36.6 126.3	51 34.6 -35.8 125.3	50 46.7 -35.1 124.4	49 58.2 -34.4 123.5	49 09.2 -33.6 122.6
11°	51 45.5 -37.4 127.5	50 58.8 -36.6 126.6	50 11.6 -35.9 125.7	49 23.8 -35.1 124.8	48 35.6 -34.5 123.9
12°	51 08.1 -38.2 128.8	50 22.2 -37.4 127.8	49 35.7 -36.6 126.9	48 48.7 -35.9 126.0	48 01.1 -35.1 125.1
13°	50 29.9 -39.0 130.0	49 44.8 -38.2 129.0	48 59.1 -37.4 128.1	48 12.8 -36.7 127.2	47 26.0 -36.0 126.3
14°	49 50.9 -39.6 131.2	49 06.6 -38.9 130.2	48 21.7 -38.1 129.3	47 36.1 -37.3 128.4	46 50.0 -36.6 127.5
15°	49 11.3 -40.4 132.4	48 27.7 -39.5 131.4	47 43.6 -38.8 130.5	46 58.8 -38.1 129.5	46 13.4 -37.3 128.7
16°	48 30.9 -40.9 133.5	47 48.2 -40.2 132.5	47 04.8 -39.5 131.6	46 20.7 -38.7 130.7	45 36.1 -38.0 129.8
17°	47 50.0 -41.6 134.6	47 08.0 -40.8 133.6	46 25.3 -40.0 132.7	45 42.0 -39.3 131.8	44 58.1 -38.5 130.9
18°	47 08.4 -42.2 135.6	46 27.2 -41.4 134.7	45 45.3 -40.7 133.8	45 02.7 -39.9 132.9	44 19.6 -39.2 132.0
19°	46 26.2 -42.7 136.7	45 45.8 -42.0 135.7	45 04.6 -41.2 134.8	44 22.8 -40.5 133.9	43 40.4 -39.8 133.0
20°	45 43.5 -43.2 137.7	45 03.8 -42.5 136.7	44 23.4 -41.7 135.8	43 42.3 -41.0 134.9	43 00.6 -40.2 134.1
21°	45 00.3 -43.7 138.7	44 21.3 -43.0 137.7	43 41.7 -42.3 136.8	43 01.3 -41.5 135.9	42 20.4 -40.8 135.1
22°	44 16.6 -44.2 139.6	43 38.3 -43.4 138.7	42 59.4 -42.7 137.8	42 19.8 -42.0 136.9	41 39.6 -41.3 136.1
23°	43 32.4 -44.7 140.6	42 54.9 -43.9 139.7	42 16.7 -43.2 138.8	41 37.8 -42.5 137.9	40 58.3 -41.8 137.0
24°	42 47.7 -45.1 141.5	42 11.0 -44.4 140.6	41 33.5 -43.7 139.7	40 55.3 -42.9 138.8	40 16.5 -42.2 138.0
25°	42 02.6 -45.4 142.4	41 26.6 -44.8 141.5	40 49.8 -44.0 140.6	40 12.4 -43.4 139.7	39 34.3 -42.7 138.9
26°	41 17.2 -45.9 143.3	40 41.8 -45.1 142.4	40 05.8 -44.5 141.5	39 29.0 -43.7 140.6	38 51.6 -43.0 139.8
27°	40 31.3 -46.3 144.1	39 56.7 -45.6 143.2	39 21.3 -44.8 142.4	38 45.3 -44.2 141.5	38 08.6 -43.5 140.7
28°	39 45.0 -46.5 145.0	39 11.1 -45.9 144.1	38 36.5 -45.3 143.2	38 01.1 -44.5 142.4	37 25.1 -43.9 141.6
29°	38 58.5 -47.0 145.8	38 25.2 -46.2 144.9	37 51.2 -45.5 144.1	37 16.6 -44.9 143.2	36 41.2 -44.2 142.4

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°	52 57.3 -23.0 107.8	52 01.5 -22.5 107.2	51 05.6 -22.1 106.6	50 09.5 -21.6 106.1	49 13.2 -21.2 105.5
1°	52 34.3 -24.2 109.3	51 39.0 -23.6 108.7	50 43.5 -23.1 108.1	49 47.9 -22.7 107.5	48 52.0 -22.2 107.0
2°	52 10.1 -25.2 110.8	51 15.4 -24.8 110.2	50 20.4 -24.2 109.5	49 25.2 -23.7 108.9	48 29.8 -23.3 108.4
3°	51 44.9 -26.4 112.3	50 50.6 -25.8 111.6	49 56.2 -25.3 111.0	49 01.5 -24.8 110.3	48 06.5 -24.2 109.7
4°	51 18.5 -27.4 113.8	50 24.8 -26.8 113.1	49 30.9 -26.2 112.4	48 36.7 -25.7 111.7	47 42.3 -25.2 111.1
5°	50 51.1 -28.4 115.2	49 58.0 -27.8 114.4	49 04.7 -27.3 113.8	48 11.0 -26.6 113.1	47 17.1 -26.1 112.5
6°	50 22.7 -29.4 116.6	49 30.2 -28.7 115.8	48 37.4 -28.1 115.1	47 44.4 -27.6 114.4	46 51.0 -27.0 113.8
7°	49 53.3 -30.3 117.9	49 01.5 -29.7 117.2	48 09.3 -29.1 116.4	47 16.8 -28.5 115.7	46 24.0 -27.9 115.1
8°	49 23.0 -31.2 119.2	48 31.8 -30.6 118.5	47 40.2 -29.9 117.7	46 48.3 -29.3 117.0	45 56.1 -28.7 116.4
9°	48 51.8 -32.1 120.6	48 01.2 -31.4 119.8	47 10.3 -30.8 119.0	46 19.0 -30.1 118.3	45 27.4 -29.6 117.6
10°	48 19.7 -32.9 121.8	47 29.8 -32.2 121.0	46 39.5 -31.5 120.3	45 48.9 -31.0 119.6	44 57.8 -30.3 118.8
11°	47 46.8 -33.7 123.1	46 57.6 -33.0 122.3	46 08.0 -32.4 121.5	45 17.9 -31.7 120.8	44 27.5 -31.1 120.1
12°	47 13.1 -34.5 124.3	46 24.6 -33.8 123.5	45 35.6 -33.1 122.7	44 46.2 -32.4 122.0	43 56.4 -31.8 121.3
13°	46 38.6 -35.2 125.5	45 50.8 -34.5 124.7	45 02.5 -33.8 123.9	44 13.8 -33.2 123.2	43 24.6 -32.5 122.4
14°	46 03.4 -35.9 126.7	45 16.3 -35.2 125.9	44 28.7 -34.6 125.1	43 40.6 -33.9 124.3	42 52.1 -33.2 123.6
15°	45 27.5 -36.6 127.8	44 41.1 -35.9 127.0	43 54.1 -35.2 126.2	43 06.7 -34.5 125.5	42 18.9 -33.9 124.7
16°	44 50.9 -37.2 129.0	44 05.2 -36.6 128.1	43 18.9 -35.8 127.3	42 32.2 -35.1 126.6	41 45.0 -34.5 125.8
17°	44 13.7 -37.9 130.1	43 28.6 -37.1 129.2	42 43.1 -36.5 128.4	41 57.1 -35.8 127.7	41 10.5 -35.1 126.9
18°	43 35.8 -38.4 131.1	42 51.5 -37.7 130.3	42 06.6 -37.0 129.5	41 21.3 -36.4 128.7	40 35.4 -35.6 128.0
19°	42 57.4 -39.1 132.2	42 13.8 -38.4 131.4	41 29.6 -37.6 130.6	40 44.9 -36.9 129.8	39 59.8 -36.3 129.0
20°	42 18.3 -39.5 133.2	41 35.4 -38.8 132.4	40 52.0 -38.2 131.6	40 08.0 -37.5 130.8	39 23.5 -36.8 130.1
21°	41 38.8 -40.1 134.2	40 56.6 -39.4 133.4	40 13.8 -38.6 132.6	39 30.5 -37.9 131.8	38 46.7 -37.3 131.1
22°	40 58.7 -40.6 135.2	40 17.2 -39.9 134.4	39 35.2 -39.2 133.6	38 52.6 -38.5 132.8	38 09.4 -37.8 132.1
23°	40 18.1 -41.1 136.2	39 37.3 -40.3 135.4	38 56.0 -39.7 134.6	38 14.1 -39.0 133.8	37 31.6 -38.3 133.1
24°	39 37.0 -41.5 137.1	38 57.0 -40.8 136.3	38 16.3 -40.1 135.5	37 35.1 -39.4 134.8	36 53.3 -38.7 134.0
25°	38 55.5 -41.9 138.1	38 16.2 -41.3 137.3	37 36.2 -40.6 136.5	36 55.7 -39.9 135.7	36 14.6 -39.2 135.0
26°	38 13.6 -42.4 139.0	37 34.9 -41.7 138.2	36 55.6 -41.0 137.4	36 15.8 -40.3 136.7	35 35.4 -39.6 135.9
27°	37 31.2 -42.8 139.9	36 53.2 -42.1 139.1	36 14.6 -41.4 138.3	35 35.5 -40.7 137.6	34 55.8 -40.1 136.8
28°	36 48.4 -43.1 140.8	36 11.1 -42.4 140.0	35 33.2 -41.7 139.2	34 54.8 -41.1 138.5	34 15.7 -40.4 137.8
29°	36 05.3 -43.5 141.6	35 28.7 -42.9 140.9	34 51.5 -42.2 140.1	34 13.7 -41.5 139.4	33 35.3 -40.8 138.6

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°	48 16.8 -20.8 105.0	47 20.3 -20.4 104.5	46 23.6 -20.0 104.0	45 26.9 -19.8 103.6	44 30.0 -19.4 103.1
1°	47 56.0 -21.8 106.4	46 59.9 -21.4 105.9	46 03.6 -21.0 105.4	45 07.1 -20.6 104.9	44 10.6 -20.3 104.4
2°	47 34.2 -22.8 107.8	46 38.5 -22.4 107.3	45 42.6 -22.0 106.7	44 46.5 -21.6 106.2	43 50.3 -21.2 105.7
3°	47 11.4 -23.7 109.2	46 16.1 -23.3 108.6	45 20.6 -22.9 108.1	44 24.9 -22.4 107.5	43 29.1 -22.0 107.0
4°	46 47.7 -24.7 110.5	45 52.8 -24.2 109.9	44 57.7 -23.7 109.4	44 02.5 -23.3 108.8	43 07.1 -22.9 108.3
5°	46 23.0 -25.6 111.8	45 28.6 -25.1 111.2	44 34.0 -24.6 110.7	43 39.2 -24.2 110.1	42 44.2 -23.7 109.6
6°	45 57.4 -26.5 113.1	45 03.5 -26.0 112.5	44 09.4 -25.5 111.9	43 15.0 -24.9 111.4	42 20.5 -24.5 110.8
7°	45 30.9 -27.3 114.4	44 37.5 -26.8 113.8	43 43.9 -26.3 113.2	42 50.1 -25.8 112.6	41 56.0 -25.3 112.1
8°	45 03.6 -28.2 115.7	44 10.7 -27.6 115.1	43 17.6 -27.0 114.4	42 24.3 -26.5 113.8	41 30.7 -26.0 113.3
9°	44 35.4 -28.9 116.9	43 43.1 -28.3 116.3	42 50.6 -27.8 115.7	41 57.8 -27.3 115.1	41 04.7 -26.8 114.5
10°	44 06.5 -29.8 118.2	43 14.8 -29.2 117.5	42 22.8 -28.6 116.9	41 30.5 -28.1 116.3	40 37.9 -27.5 115.7
11°	43 36.7 -30.4 119.4	42 45.6 -29.9 118.7	41 54.2 -29.3 118.1	41 02.4 -28.7 117.4	40 10.4 -28.2 116.8
12°	43 06.3 -31.2 120.6	42 15.7 -30.5 119.9	41 24.9 -30.0 119.2	40 33.7 -29.4 118.6	39 42.2 -28.8 118.0
13°	42 35.1 -31.9 121.7	41 45.2 -31.3 121.0	40 54.9 -30.7 120.4	40 04.3 -30.1 119.7	39 13.4 -29.5 119.1
14°	42 03.2 -32.6 122.9	41 13.9 -31.9 122.2	40 24.2 -31.3 121.5	39 34.2 -30.7 120.9	38 43.9 -30.2 120.2
15°	41 30.6 -33.2 124.0	40 42.0 -32.6 123.3	39 52.9 -32.0 122.6	39 03.5 -31.4 122.0	38 13.7 -30.7 121.3
16°	40 57.4 -33.8 125.1	40 09.4 -33.2 124.4	39 20.9 -32.5 123.7	38 32.1 -31.9 123.1	37 43.0 -31.4 122.4
17°	40 23.6 -34.5 126.2	39 36.2 -33.8 125.5	38 48.4 -33.2 124.8	38 00.2 -32.6 124.1	37 11.6 -31.9 123.5
18°	39 49.1 -35.0 127.3	39 02.4 -34.4 126.6	38 15.2 -33.7 125.9	37 27.6 -33.0 125.2	36 39.7 -32.5 124.6
19°	39 14.1 -35.6 128.3	38 28.0 -34.9 127.6	37 41.5 -34.3 126.9	36 54.6 -33.7 126.2	36 07.2 -33.0 125.6
20°	38 38.5 -36.1 129.3	37 53.1 -35.4 128.6	37 07.2 -34.8 127.9	36 20.9 -34.2 127.3	35 34.2 -33.5 126.6
21°	38 02.4 -36.6 130.4	37 17.7 -36.0 129.7	36 32.4 -35.3 129.0	35 46.7 -34.6 128.3	35 00.7 -34.1 127.6
22°	37 25.8 -37.1 131.4	36 41.7 -36.5 130.7	35 57.1 -35.8 130.0	35 12.1 -35.2 129.3	34 26.6 -34.5 128.6
23°	36 48.7 -37.6 132.4	36 05.2 -36.9 131.6	35 21.3 -36.3 131.0	34 36.9 -35.6 130.3	33 52.1 -35.0 129.6
24°	36 11.1 -38.1 133.3	35 28.3 -37.4 132.6	34 45.0 -36.7 131.9	34 01.3 -36.1 131.3	33 17.1 -35.4 130.6
25°	35 33.0 -38.5 134.3	34 50.9 -37.9 133.6	34 08.3 -37.2 132.9	33 25.2 -36.5 132.2	32 41.7 -35.9 131.6
26°	34 54.5 -39.0 135.2	34 13.0 -38.2 134.5	33 31.1 -37.6 133.8	32 48.7 -37.0 133.2	32 05.8 -36.3 132.5
27°	34 15.5 -39.3 136.1	33 34.8 -38.7 135.4	32 53.5 -38.0 134.8	32 11.7 -37.3 134.1	31 29.5 -36.7 133.5
28°	33 36.2 -39.8 137.0	32 56.1 -39.1 136.4	32 15.5 -38.4 135.7	31 34.4 -37.7 135.0	30 52.8 -37.0 134.4
29°	32 56.4 -40.1 137.9	32 17.0 -39.4 137.3	31 37.1 -38.8 136.6	30 56.7 -38.2 135.9	30 15.8 -37.5 135.3

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°	43 33.0 -19.1 102.7	42 35.9 -18.8 102.3	41 38.7 -18.5 101.8	40 41.5 -18.2 101.5	39 44.1 -17.9 101.1
1°	43 13.9 -19.9 104.0	42 17.1 -19.6 103.5	41 20.2 -19.3 103.1	40 23.3 -19.1 102.7	39 26.2 -18.7 102.3
2°	42 54.0 -20.8 105.3	41 57.5 -20.5 104.8	41 00.9 -20.1 104.4	40 04.2 -19.8 103.9	39 07.5 -19.5 103.5
3°	42 33.2 -21.7 106.6	41 37.0 -21.2 106.1	40 40.8 -20.9 105.6	39 44.4 -20.5 105.2	38 48.0 -20.3 104.7
4°	42 11.5 -22.5 107.8	41 15.8 -22.1 107.3	40 19.9 -21.7 106.9	39 23.9 -21.4 106.4	38 27.7 -21.0 106.0
5°	41 49.0 -23.2 109.1	40 53.7 -22.9 108.6	39 58.2 -22.5 108.1	39 02.5 -22.0 107.6	38 06.7 -21.7 107.1
6°	41 25.8 -24.1 110.3	40 30.8 -23.6 109.8	39 35.7 -23.2 109.3	38 40.5 -22.8 108.8	37 45.0 -22.3 108.3
7°	41 01.7 -24.8 111.5	40 07.2 -24.3 111.0	39 12.5 -23.9 110.5	38 17.7 -23.5 110.0	37 22.7 -23.1 109.5
8°	40 36.9 -25.6 112.7	39 42.9 -25.1 112.2	38 48.6 -24.6 111.7	37 54.2 -24.2 111.1	36 59.6 -23.8 110.7
9°	40 11.3 -26.2 113.9	39 17.8 -25.8 113.4	38 24.0 -25.3 112.8	37 30.0 -24.8 112.3	36 35.8 -24.4 111.8
10°	39 45.1 -27.0 115.1	38 52.0 -26.5 114.5	37 58.7 -26.0 114.0	37 05.2 -25.5 113.4	36 11.4 -25.0 112.9
11°	39 18.1 -27.7 116.2	38 25.5 -27.1 115.7	37 32.7 -26.6 115.1	36 39.7 -26.2 114.6	35 46.4 -25.7 114.1
12°	38 50.4 -28.3 117.4	37 58.4 -27.8 116.8	37 06.1 -27.3 116.2	36 13.5 -26.7 115.7	35 20.7 -26.2 115.2
13°	38 22.1 -28.9 118.5	37 30.6 -28.4 117.9	36 38.8 -27.9 117.4	35 46.8 -27.4 116.8	34 54.5 -26.9 116.3
14°	37 53.2 -29.6 119.6	37 02.2 -29.0 119.0	36 10.9 -28.4 118.5	35 19.4 -27.9 117.9	34 27.6 -27.4 117.4
15°	37 23.6 -30.2 120.7	36 33.2 -29.6 120.1	35 42.5 -29.1 119.5	34 51.5 -28.5 119.0	34 00.2 -28.0 118.4
16°	36 53.4 -30.7 121.8	36 03.6 -30.2 121.2	35 13.4 -29.6 120.6	34 23.0 -29.1 120.0	33 32.2 -28.5 119.5
17°	36 22.7 -31.3 122.9	35 33.4 -30.7 122.3	34 43.8 -30.1 121.7	33 53.9 -29.6 121.1	33 03.7 -29.0 120.6
18°	35 51.4 -31.9 123.9	35 02.7 -31.3 123.3	34 13.7 -30.7 122.7	33 24.3 -30.1 122.2	32 34.7 -29.6 121.6
19°	35 19.5 -32.4 125.0	34 31.4 -31.8 124.4	33 43.0 -31.2 123.8	32 54.2 -30.6 123.2	32 05.1 -30.0 122.6
20°	34 47.1 -32.9 126.0	33 59.6 -32.3 125.4	33 11.8 -31.7 124.8	32 23.6 -31.1 124.2	31 35.1 -30.6 123.6
21°	34 14.2 -33.4 127.0	33 27.3 -32.8 126.4	32 40.1 -32.2 125.8	31 52.5 -31.6 125.2	31 04.5 -30.9 124.6
22°	33 40.8 -33.9 128.0	32 54.5 -33.2 127.4	32 07.9 -32.7 126.8	31 20.9 -32.0 126.2	30 33.6 -31.5 125.6
23°	33 06.9 -34.4 129.0	32 21.3 -33.8 128.4	31 35.2 -33.1 127.8	30 48.9 -32.5 127.2	30 02.1 -31.9 126.6
24°	32 32.5 -34.8 130.0	31 47.5 -34.1 129.4	31 02.1 -33.5 128.8	30 16.4 -32.9 128.2	29 30.2 -32.3 127.6
25°	31 57.7 -35.2 130.9	31 13.4 -34.6 130.3	30 28.6 -33.9 129.7	29 43.5 -33.4 129.1	28 57.9 -32.7 128.6
26°	31 22.5 -35.6 131.9	30 38.8 -35.0 131.3	29 54.7 -34.4 130.7	29 10.1 -33.7 130.1	28 25.2 -33.1 129.5
27°	30 46.9 -36.1 132.8	30 03.8 -35.4 132.2	29 20.3 -34.8 131.6	28 36.4 -34.1 131.0	27 52.1 -33.5 130.5
28°	30 10.8 -36.4 133.8	29 28.4 -35.8 133.2	28 45.5 -35.1 132.6	28 02.3 -34.5 132.0	27 18.6 -33.8 131.4
29°	29 34.4 -36.8 134.7	28 52.6 -36.1 134.1	28 10.4 -35.5 133.5	27 27.8 -34.9 132.9	26 44.8 -34.3 132.3

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°	38 46.7 -17.7 100.7	37 49.2 -17.4 100.3	36 51.7 -17.2 100.0	35 54.1 -17.0 99.6	34 56.4 -16.8 99.3
1°	38 29.0 -18.4 101.9	37 31.8 -18.2 101.5	36 34.5 -18.0 101.2	35 37.1 -17.7 100.8	34 39.6 -17.5 100.5
2°	38 10.6 -19.2 103.1	37 13.6 -18.9 102.7	36 16.5 -18.6 102.3	35 19.4 -18.4 102.0	34 22.1 -18.1 101.6
3°	37 51.4 -20.0 104.3	36 54.7 -19.6 103.9	35 57.9 -19.3 103.5	35 01.0 -19.0 103.1	34 04.0 -18.7 102.8
4°	37 31.4 -20.6 105.5	36 35.1 -20.3 105.1	35 38.6 -20.0 104.7	34 42.0 -19.7 104.3	33 45.3 -19.4 103.9
5°	37 10.8 -21.3 106.7	36 14.8 -21.0 106.3	35 18.6 -20.7 105.9	34 22.3 -20.3 105.4	33 25.9 -20.0 105.0
6°	36 49.5 -22.0 107.9	35 53.8 -21.7 107.4	34 57.9 -21.3 107.0	34 02.0 -21.0 106.6	33 05.9 -20.6 106.2
7°	36 27.5 -22.7 109.0	35 32.1 -22.3 108.6	34 36.6 -21.9 108.1	33 41.0 -21.5 107.7	32 45.3 -21.2 107.3
8°	36 04.8 -23.3 110.2	35 09.8 -22.9 109.7	34 14.7 -22.5 109.3	33 19.5 -22.2 108.8	32 24.1 -21.8 108.4
9°	35 41.5 -24.0 111.3	34 46.9 -23.5 110.8	33 52.2 -23.2 110.4	32 57.3 -22.7 109.9	32 02.3 -22.4 109.5
10°	35 17.5 -24.6 112.4	34 23.4 -24.2 112.0	33 29.0 -23.7 111.5	32 34.6 -23.3 111.0	31 39.9 -22.9 110.6
11°	34 52.9 -25.2 113.6	33 59.2 -24.7 113.1	33 05.3 -24.3 112.6	32 11.3 -23.9 112.1	31 17.0 -23.4 111.7
12°	34 27.7 -25.8 114.7	33 34.5 -25.3 114.2	32 41.0 -24.8 113.7	31 47.4 -24.4 113.2	30 53.6 -24.0 112.8
13°	34 01.9 -26.3 115.8	33 09.2 -25.9 115.2	32 16.2 -25.4 114.8	31 23.0 -25.0 114.3	30 29.6 -24.5 113.8
14°	33 35.6 -26.9 116.8	32 43.3 -26.4 116.3	31 50.8 -26.0 115.8	30 58.0 -25.4 115.3	30 05.1 -25.0 114.9
15°	33 08.7 -27.5 117.9	32 16.9 -27.0 117.4	31 24.8 -26.4 116.9	30 32.6 -26.0 116.4	29 40.1 -25.5 115.9
16°	32 41.2 -28.0 119.0	31 49.9 -27.4 118.4	30 58.4 -27.0 117.9	30 06.6 -26.4 117.4	29 14.6 -25.9 117.0
17°	32 13.2 -28.5 120.0	31 22.5 -28.0 119.5	30 31.4 -27.4 119.0	29 40.2 -27.0 118.5	28 48.7 -26.5 118.0
18°	31 44.7 -29.0 121.0	30 54.5 -28.5 120.5	30 04.0 -27.9 120.0	29 13.2 -27.3 119.5	28 22.2 -26.8 119.0
19°	31 15.7 -29.5 122.1	30 26.0 -28.9 121.5	29 36.1 -28.4 121.0	28 45.9 -27.9 120.5	27 55.4 -27.4 120.0
20°	30 46.2 -29.9 123.1	29 57.1 -29.4 122.6	29 07.7 -28.8 122.0	28 18.0 -28.3 121.5	27 28.0 -27.7 121.0
21°	30 16.3 -30.4 124.1	29 27.7 -29.8 123.6	28 38.9 -29.3 123.0	27 49.7 -28.7 122.5	27 00.3 -28.2 122.0
22°	29 45.9 -30.9 125.1	28 57.9 -30.3 124.6	28 09.6 -29.7 124.0	27 21.0 -29.1 123.5	26 32.1 -28.6 123.0
23°	29 15.0 -31.3 126.1	28 27.6 -30.7 125.5	27 39.9 -30.1 125.0	26 51.9 -29.6 124.5	26 03.5 -28.9 124.0
24°	28 43.7 -31.6 127.1	27 56.9 -31.1 126.5	27 09.8 -30.5 126.0	26 22.3 -29.9 125.5	25 34.6 -29.4 125.0
25°	28 12.1 -32.1 128.0	27 25.8 -31.5 127.5	26 39.3 -30.9 127.0	25 52.4 -30.3 126.4	25 05.2 -29.7 125.9
26°	27 40.0 -32.5 129.0	26 54.3 -31.8 128.4	26 08.4 -31.3 127.9	25 22.1 -30.7 127.4	24 35.5 -30.1 126.9
27°	27 07.5 -32.9 129.9	26 22.5 -32.3 129.4	25 37.1 -31.6 128.9	24 51.4 -31.0 128.3	24 05.4 -30.4 127.9
28°	26 34.6 -33.2 130.9	25 50.2 -32.6 130.3	25 05.5 -32.0 129.8	24 20.4 -31.4 129.3	23 35.0 -30.8 128.8
29°	26 01.4 -33.6 131.8	25 17.6 -33.0 131.3	24 33.5 -32.4 130.7	23 49.0 -31.7 130.2	23 04.2 -31.1 129.7

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°	33 58.7 -16.6 99.0	33 00.9 -16.4 98.6	32 03.1 -16.2 98.3	31 05.2 -16.0 98.0	30 07.3 -15.9 97.7
1°	33 42.1 -17.3 100.1	32 44.5 -17.0 99.8	31 46.9 -16.9 99.4	30 49.2 -16.7 99.1	29 51.4 -16.4 98.8
2°	33 24.8 -17.8 101.3	32 27.5 -17.7 100.9	31 30.0 -17.4 100.6	30 32.5 -17.2 100.2	29 35.0 -17.0 99.9
3°	33 07.0 -18.5 102.4	32 09.8 -18.2 102.0	31 12.6 -18.0 101.7	30 15.3 -17.7 101.4	29 18.0 -17.6 101.0
4°	32 48.5 -19.1 103.5	31 51.6 -18.8 103.2	30 54.6 -18.5 102.8	29 57.6 -18.3 102.5	29 00.4 -18.0 102.1
5°	32 29.4 -19.7 104.7	31 32.8 -19.5 104.3	30 36.1 -19.2 103.9	29 39.3 -18.9 103.6	28 42.4 -18.6 103.2
6°	32 09.7 -20.3 105.8	31 13.3 -19.9 105.4	30 16.9 -19.6 105.0	29 20.4 -19.4 104.6	28 23.8 -19.1 104.3
7°	31 49.4 -20.9 106.9	30 53.4 -20.6 106.5	29 57.3 -20.2 106.1	29 01.0 -19.9 105.7	28 04.7 -19.6 105.4
8°	31 28.5 -21.4 108.0	30 32.8 -21.0 107.6	29 37.1 -20.8 107.2	28 41.1 -20.4 106.8	27 45.1 -20.1 106.4
9°	31 07.1 -22.0 109.1	30 11.8 -21.6 108.7	29 16.3 -21.2 108.3	28 20.7 -20.9 107.9	27 25.0 -20.5 107.5
10°	30 45.1 -22.5 110.2	29 50.2 -22.2 109.7	28 55.1 -21.8 109.3	27 59.8 -21.3 108.9	27 04.5 -21.1 108.6
11°	30 22.6 -23.0 111.2	29 28.0 -22.6 110.8	28 33.3 -22.2 110.4	27 38.5 -21.9 110.0	26 43.4 -21.4 109.6
12°	29 59.6 -23.6 112.3	29 05.4 -23.1 111.9	28 11.1 -22.8 111.5	27 16.6 -22.3 111.0	26 22.0 -22.0 110.6
13°	29 36.0 -24.0 113.4	28 42.3 -23.6 112.9	27 48.3 -23.2 112.5	26 54.3 -22.8 112.1	26 00.0 -22.4 111.7
14°	29 12.0 -24.6 114.4	28 18.7 -24.1 114.0	27 25.1 -23.6 113.5	26 31.5 -23.3 113.1	25 37.6 -22.8 112.7
15°	28 47.4 -25.0 115.5	27 54.6 -24.6 115.0	27 01.5 -24.1 114.6	26 08.2 -23.6 114.2	25 14.8 -23.2 113.7
16°	28 22.4 -25.5 116.5	27 30.0 -25.0 116.0	26 37.4 -24.6 115.6	25 44.6 -24.1 115.2	24 51.6 -23.7 114.8
17°	27 56.9 -25.9 117.5	27 05.0 -25.5 117.1	26 12.8 -24.9 116.6	25 20.5 -24.5 116.2	24 27.9 -24.0 115.8
18°	27 31.0 -26.4 118.5	26 39.5 -25.8 118.1	25 47.9 -25.4 117.6	24 56.0 -25.0 117.2	24 03.9 -24.5 116.8
19°	27 04.6 -26.8 119.6	26 13.7 -26.3 119.1	25 22.5 -25.8 118.6	24 31.0 -25.3 118.2	23 39.4 -24.8 117.8
20°	26 37.8 -27.2 120.6	25 47.4 -26.7 120.1	24 56.7 -26.2 119.6	24 05.7 -25.7 119.2	23 14.6 -25.2 118.8
21°	26 10.6 -27.6 121.6	25 20.7 -27.1 121.1	24 30.5 -26.6 120.6	23 40.0 -26.0 120.2	22 49.4 -25.6 119.7
22°	25 43.0 -28.1 122.5	24 53.6 -27.5 122.1	24 03.9 -27.0 121.6	23 14.0 -26.4 121.2	22 23.8 -25.9 120.7
23°	25 14.9 -28.4 123.5	24 26.1 -27.9 123.0	23 36.9 -27.3 122.6	22 47.6 -26.8 122.1	21 57.9 -26.2 121.7
24°	24 46.5 -28.8 124.5	23 58.2 -28.2 124.0	23 09.6 -27.7 123.6	22 20.8 -27.2 123.1	21 31.7 -26.6 122.7
25°	24 17.7 -29.1 125.5	23 30.0 -28.6 125.0	22 41.9 -28.0 124.5	21 53.6 -27.4 124.1	21 05.1 -26.9 123.6
26°	23 48.6 -29.5 126.4	23 01.4 -28.9 125.9	22 13.9 -28.3 125.5	21 26.2 -27.8 125.0	20 38.2 -27.2 124.6
27°	23 19.1 -29.9 127.4	22 32.5 -29.3 126.9	21 45.6 -28.7 126.4	20 58.4 -28.1 126.0	20 11.0 -27.6 125.5
28°	22 49.2 -30.1 128.3	22 03.2 -29.6 127.8	21 16.9 -29.0 127.4	20 30.3 -28.4 126.9	19 43.4 -27.8 126.5
29°	22 19.1 -30.5 129.2	21 33.6 -29.8 128.8	20 47.9 -29.3 128.3	20 01.9 -28.7 127.9	19 15.6 -28.1 127.4

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°	29 09.3 -15.7 97.4	28 11.3 -15.5 97.1	27 13.3 -15.4 96.8	26 15.3 -15.3 96.5	25 17.2 -15.2 96.3
1°	28 53.6 -16.2 98.5	27 55.8 -16.1 98.2	26 57.9 -15.9 97.9	26 00.0 -15.8 97.6	25 02.0 -15.6 97.3
2°	28 37.4 -16.8 99.6	27 39.7 -16.6 99.3	26 42.0 -16.4 99.0	25 44.2 -16.2 98.7	24 46.4 -16.1 98.4
3°	28 20.6 -17.3 100.7	27 23.1 -17.1 100.4	26 25.6 -16.9 100.1	25 28.0 -16.7 99.8	24 30.3 -16.5 99.5
4°	28 03.3 -17.9 101.8	27 06.0 -17.6 101.5	26 08.7 -17.4 101.1	25 11.3 -17.2 100.8	24 13.8 -16.9 100.5
5°	27 45.4 -18.3 102.9	26 48.4 -18.1 102.5	25 51.3 -17.8 102.2	24 54.1 -17.6 101.9	23 56.9 -17.4 101.6
6°	27 27.1 -18.8 103.9	26 30.3 -18.5 103.6	25 33.5 -18.3 103.3	24 36.5 -18.0 102.9	23 39.5 -17.8 102.6
7°	27 08.3 -19.3 105.0	26 11.8 -19.0 104.7	25 15.2 -18.8 104.3	24 18.5 -18.5 104.0	23 21.7 -18.2 103.6
8°	26 49.0 -19.8 106.1	25 52.8 -19.5 105.7	24 56.4 -19.1 105.4	24 00.0 -18.9 105.0	23 03.5 -18.6 104.7
9°	26 29.2 -20.2 107.1	25 33.3 -19.9 106.8	24 37.3 -19.6 106.4	23 41.1 -19.3 106.1	22 44.9 -19.0 105.7
10°	26 09.0 -20.7 108.2	25 13.4 -20.4 107.8	24 17.7 -20.1 107.4	23 21.8 -19.7 107.1	22 25.9 -19.4 106.7
11°	25 48.3 -21.1 109.2	24 53.0 -20.7 108.8	23 57.6 -20.4 108.5	23 02.1 -20.1 108.1	22 06.5 -19.7 107.8
12°	25 27.2 -21.6 110.3	24 32.3 -21.2 109.9	23 37.2 -20.8 109.5	22 42.0 -20.4 109.1	21 46.8 -20.2 108.8
13°	25 05.6 -22.0 111.3	24 11.1 -21.6 110.9	23 16.4 -21.3 110.5	22 21.6 -20.9 110.2	21 26.6 -20.5 109.8
14°	24 43.6 -22.4 112.3	23 49.5 -22.1 111.9	22 55.1 -21.6 111.5	22 00.7 -21.2 111.2	21 06.1 -20.8 110.8
15°	24 21.2 -22.8 113.3	23 27.4 -22.4 112.9	22 33.5 -22.0 112.6	21 39.5 -21.6 112.2	20 45.3 -21.3 111.8
16°	23 58.4 -23.2 114.3	23 05.0 -22.7 113.9	22 11.5 -22.3 113.6	21 17.9 -22.0 113.2	20 24.0 -21.5 112.8
17°	23 35.2 -23.6 115.4	22 42.3 -23.2 115.0	21 49.2 -22.8 114.6	20 55.9 -22.3 114.2	20 02.5 -21.9 113.8
18°	23 11.6 -24.0 116.4	22 19.1 -23.5 116.0	21 26.4 -23.0 115.6	20 33.6 -22.6 115.2	19 40.6 -22.2 114.8
19°	22 47.6 -24.4 117.4	21 55.6 -23.9 116.9	21 03.4 -23.5 116.5	20 11.0 -23.0 116.2	19 18.4 -22.5 115.8
20°	22 23.2 -24.7 118.3	21 31.7 -24.2 117.9	20 39.9 -23.7 117.5	19 48.0 -23.3 117.1	18 55.9 -22.8 116.8
21°	21 58.5 -25.0 119.3	21 07.5 -24.6 118.9	20 16.2 -24.1 118.5	19 24.7 -23.6 118.1	18 33.1 -23.2 117.7
22°	21 33.5 -25.4 120.3	20 42.9 -24.9 119.9	19 52.1 -24.4 119.5	19 01.1 -23.9 119.1	18 09.9 -23.4 118.7
23°	21 08.1 -25.8 121.3	20 18.0 -25.2 120.9	19 27.7 -24.7 120.5	18 37.2 -24.2 120.1	17 46.5 -23.7 119.7
24°	20 42.3 -26.0 122.2	19 52.8 -25.5 121.8	19 03.0 -25.0 121.4	18 13.0 -24.5 121.0	17 22.8 -24.0 120.6
25°	20 16.3 -26.4 123.2	19 27.3 -25.9 122.8	18 38.0 -25.3 122.4	17 48.5 -24.7 122.0	16 58.8 -24.2 121.6
26°	19 49.9 -26.6 124.2	19 01.4 -26.1 123.7	18 12.7 -25.6 123.3	17 23.8 -25.1 122.9	16 34.6 -24.5 122.6
27°	19 23.3 -27.0 125.1	18 35.3 -26.4 124.7	17 47.1 -25.8 124.3	16 58.7 -25.3 123.9	16 10.1 -24.8 123.5
28°	18 56.3 -27.2 126.1	18 08.9 -26.7 125.6	17 21.3 -26.1 125.2	16 33.4 -25.5 124.8	15 45.3 -25.0 124.5
29°	18 29.1 -27.6 127.0	17 42.2 -26.9 126.6	16 55.2 -26.4 126.2	16 07.9 -25.8 125.8	15 20.3 -25.2 125.4

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°	24 19.0 -15.0 96.0	23 20.9 -14.9 95.7	22 22.7 -14.8 95.5	21 24.5 -14.7 95.2	20 26.2 -14.5 94.9
1°	24 04.0 -15.5 97.0	23 06.0 -15.4 96.8	22 07.9 -15.2 96.5	21 09.8 -15.1 96.2	20 11.7 -15.0 96.0
2°	23 48.5 -15.9 98.1	22 50.6 -15.7 97.8	21 52.7 -15.6 97.5	20 54.7 -15.4 97.3	19 56.7 -15.3 97.0
3°	23 32.6 -16.3 99.2	22 34.9 -16.2 98.9	21 37.1 -16.0 98.6	20 39.3 -15.8 98.3	19 41.4 -15.7 98.0
4°	23 16.3 -16.7 100.2	22 18.7 -16.5 99.9	21 21.1 -16.3 99.6	20 23.5 -16.2 99.3	19 25.7 -16.0 99.1
5°	22 59.6 -17.2 101.3	22 02.2 -16.9 100.9	21 04.8 -16.8 100.7	20 07.3 -16.5 100.4	19 09.7 -16.3 100.1
6°	22 42.4 -17.5 102.3	21 45.3 -17.4 102.0	20 48.0 -17.1 101.7	19 50.8 -16.9 101.4	18 53.4 -16.7 101.1
7°	22 24.9 -18.0 103.3	21 27.9 -17.7 103.0	20 30.9 -17.4 102.7	19 33.9 -17.2 102.4	18 36.7 -16.9 102.1
8°	22 06.9 -18.3 104.4	21 10.2 -18.0 104.0	20 13.5 -17.8 103.7	19 16.7 -17.6 103.4	18 19.8 -17.4 103.1
9°	21 48.6 -18.7 105.4	20 52.2 -18.5 105.1	19 55.7 -18.2 104.7	18 59.1 -17.9 104.4	18 02.4 -17.6 104.1
10°	21 29.9 -19.1 106.4	20 33.7 -18.7 106.1	19 37.5 -18.5 105.8	18 41.2 -18.2 105.4	17 44.8 -17.9 105.1
11°	21 10.8 -19.4 107.4	20 15.0 -19.2 107.1	19 19.0 -18.8 106.8	18 23.0 -18.5 106.4	17 26.9 -18.2 106.1
12°	20 51.4 -19.9 108.4	19 55.8 -19.4 108.1	19 00.2 -19.1 107.8	18 04.5 -18.8 107.4	17 08.7 -18.5 107.1
13°	20 31.5 -20.1 109.4	19 36.4 -19.8 109.1	18 41.1 -19.5 108.8	17 45.7 -19.2 108.4	16 50.2 -18.9 108.1
14°	20 11.4 -20.5 110.5	19 16.6 -20.2 110.1	18 21.6 -19.8 109.8	17 26.5 -19.4 109.4	16 31.3 -19.0 109.1
15°	19 50.9 -20.8 111.5	18 56.4 -20.4 111.1	18 01.8 -20.1 110.8	17 07.1 -19.7 110.4	16 12.3 -19.4 110.1
16°	19 30.1 -21.2 112.4	18 36.0 -20.8 112.1	17 41.7 -20.3 111.8	16 47.4 -20.0 111.4	15 52.9 -19.6 111.1
17°	19 08.9 -21.4 113.4	18 15.2 -21.0 113.1	17 21.4 -20.7 112.7	16 27.4 -20.3 112.4	15 33.3 -19.9 112.1
18°	18 47.5 -21.8 114.4	17 54.2 -21.4 114.1	17 00.7 -20.9 113.7	16 07.1 -20.5 113.4	15 13.4 -20.1 113.0
19°	18 25.7 -22.1 115.4	17 32.8 -21.6 115.1	16 39.8 -21.3 114.7	15 46.6 -20.8 114.4	14 53.3 -20.4 114.0
20°	18 03.6 -22.4 116.4	17 11.2 -22.0 116.0	16 18.5 -21.4 115.7	15 25.8 -21.1 115.3	14 32.9 -20.7 115.0
21°	17 41.2 -22.6 117.4	16 49.2 -22.2 117.0	15 57.1 -21.8 116.6	15 04.7 -21.3 116.3	14 12.2 -20.8 116.0
22°	17 18.6 -23.0 118.3	16 27.0 -22.4 118.0	15 35.3 -22.0 117.6	14 43.4 -21.5 117.3	13 51.4 -21.1 116.9
23°	16 55.6 -23.2 119.3	16 04.6 -22.8 118.9	15 13.3 -22.2 118.6	14 21.9 -21.8 118.2	13 30.3 -21.3 117.9
24°	16 32.4 -23.5 120.3	15 41.8 -22.9 119.9	14 51.1 -22.5 119.5	14 00.1 -22.0 119.2	13 09.0 -21.5 118.9
25°	16 08.9 -23.7 121.2	15 18.9 -23.3 120.9	14 28.6 -22.7 120.5	13 38.1 -22.2 120.2	12 47.5 -21.8 119.8
26°	15 45.2 -24.0 122.2	14 55.6 -23.4 121.8	14 05.9 -23.0 121.5	13 15.9 -22.4 121.1	12 25.7 -21.9 120.8
27°	15 21.2 -24.2 123.1	14 32.2 -23.7 122.8	13 42.9 -23.2 122.4	12 53.5 -22.7 122.1	12 03.8 -22.1 121.7
28°	14 57.0 -24.4 124.1	14 08.5 -23.9 123.7	13 19.7 -23.3 123.4	12 30.8 -22.8 123.0	11 41.7 -22.3 122.7
29°	14 32.6 -24.7 125.0	13 44.6 -24.2 124.7	12 56.4 -23.6 124.3	12 08.0 -23.0 124.0	11 19.4 -22.5 123.6

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°	19 28.0 -14.5 94.7	18 29.7 -14.4 94.4	17 31.4 -14.3 94.2	16 33.1 -14.2 93.9	15 34.8 -14.2 93.7
1°	19 13.5 -14.8 95.7	18 15.3 -14.7 95.5	17 17.1 -14.6 95.2	16 18.9 -14.5 94.9	15 20.6 -14.4 94.7
2°	18 58.7 -15.2 96.7	18 00.6 -15.1 96.5	17 02.5 -14.9 96.2	16 04.4 -14.8 96.0	15 06.2 -14.7 95.7
3°	18 43.5 -15.5 97.8	17 45.5 -15.3 97.5	16 47.6 -15.2 97.2	15 49.6 -15.1 97.0	14 51.5 -14.9 96.7
4°	18 28.0 -15.8 98.8	17 30.2 -15.7 98.5	16 32.4 -15.6 98.2	15 34.5 -15.4 98.0	14 36.6 -15.2 97.7
5°	18 12.2 -16.2 99.8	17 14.5 -15.9 99.5	16 16.8 -15.7 99.2	15 19.1 -15.6 99.0	14 21.4 -15.5 98.7
6°	17 56.0 -16.4 100.8	16 58.6 -16.3 100.5	16 01.1 -16.1 100.2	15 03.5 -15.9 100.0	14 05.9 -15.7 99.7
7°	17 39.6 -16.8 101.8	16 42.3 -16.6 101.5	15 45.0 -16.4 101.2	14 47.6 -16.1 101.0	13 50.2 -15.9 100.7
8°	17 22.8 -17.1 102.8	16 25.7 -16.8 102.5	15 28.6 -16.6 102.2	14 31.5 -16.4 102.0	13 34.3 -16.2 101.7
9°	17 05.7 -17.4 103.8	16 08.9 -17.1 103.5	15 12.0 -16.8 103.2	14 15.1 -16.6 103.0	13 18.1 -16.4 102.7
10°	16 48.3 -17.6 104.8	15 51.8 -17.4 104.5	14 55.2 -17.2 104.2	13 58.5 -16.9 104.0	13 01.7 -16.6 103.7
11°	16 30.7 -17.9 105.8	15 34.4 -17.7 105.5	14 38.0 -17.3 105.2	13 41.6 -17.1 104.9	12 45.1 -16.9 104.7
12°	16 12.8 -18.3 106.8	15 16.7 -17.9 106.5	14 20.7 -17.7 106.2	13 24.5 -17.4 105.9	12 28.2 -17.0 105.6
13°	15 54.5 -18.4 107.8	14 58.8 -18.1 107.5	14 03.0 -17.8 107.2	13 07.1 -17.5 106.9	12 11.2 -17.3 106.6
14°	15 36.1 -18.8 108.8	14 40.7 -18.5 108.5	13 45.2 -18.1 108.2	12 49.6 -17.8 107.9	11 53.9 -17.5 107.6
15°	15 17.3 -19.0 109.8	14 22.2 -18.6 109.5	13 27.1 -18.4 109.2	12 31.8 -18.0 108.9	11 36.4 -17.6 108.6
16°	14 58.3 -19.3 110.8	14 03.6 -18.9 110.5	13 08.7 -18.5 110.1	12 13.8 -18.2 109.8	11 18.8 -17.9 109.6
17°	14 39.0 -19.5 111.7	13 44.7 -19.2 111.4	12 50.2 -18.8 111.1	11 55.6 -18.4 110.8	11 00.9 -18.0 110.5
18°	14 19.5 -19.7 112.7	13 25.5 -19.3 112.4	12 31.4 -18.9 112.1	11 37.2 -18.6 111.8	10 42.9 -18.3 111.5
19°	13 59.8 -20.0 113.7	13 06.2 -19.6 113.4	12 12.5 -19.2 113.1	11 18.6 -18.8 112.8	10 24.6 -18.4 112.5
20°	13 39.8 -20.2 114.7	12 46.6 -19.8 114.3	11 53.3 -19.4 114.0	10 59.8 -18.9 113.7	10 06.2 -18.5 113.4
21°	13 19.6 -20.4 115.6	12 26.8 -20.0 115.3	11 33.9 -19.6 115.0	10 40.9 -19.2 114.7	9 47.7 -18.7 114.4
22°	12 59.2 -20.7 116.6	12 06.8 -20.2 116.3	11 14.3 -19.7 116.0	10 21.7 -19.3 115.7	9 29.0 -18.9 115.4
23°	12 38.5 -20.8 117.6	11 46.6 -20.3 117.2	10 54.6 -19.9 116.9	10 02.4 -19.5 116.6	9 10.1 -19.1 116.3
24°	12 17.7 -21.0 118.5	11 26.3 -20.6 118.2	10 34.7 -20.1 117.9	9 42.9 -19.6 117.6	8 51.0 -19.2 117.3
25°	11 56.7 -21.3 119.5	11 05.7 -20.8 119.2	10 14.6 -20.3 118.8	9 23.3 -19.8 118.5	8 31.8 -19.3 118.2
26°	11 35.4 -21.4 120.4	10 44.9 -20.9 120.1	9 54.3 -20.4 119.8	9 03.5 -20.0 119.5	8 12.5 -19.4 119.2
27°	11 14.0 -21.6 121.4	10 24.0 -21.1 121.1	9 33.9 -20.6 120.8	8 43.5 -20.1 120.5	7 53.1 -19.6 120.2
28°	10 52.4 -21.8 122.3	10 02.9 -21.2 122.0	9 13.3 -20.8 121.7	8 23.4 -20.2 121.4	7 33.5 -19.7 121.1
29°	10 30.6 -21.9 123.3	9 41.7 -21.5 123.0	8 52.5 -20.9 122.7	8 03.2 -20.3 122.4	7 13.8 -19.9 122.1

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°	14 36.4 -14.1 93.4	13 38.0 -14.0 93.2	12 39.7 -14.0 93.0	11 41.3 -13.9 92.7	10 42.9 -13.8 92.5
1°	14 22.3 -14.3 94.5	13 24.0 -14.2 94.2	12 25.7 -14.1 94.0	11 27.4 -14.1 93.7	10 29.1 -14.1 93.5
2°	14 08.0 -14.6 95.5	13 09.8 -14.5 95.2	12 11.6 -14.4 94.0	11 13.3 -14.3 94.7	10 15.0 -14.2 94.5
3°	13 53.4 -14.8 96.5	12 55.3 -14.7 96.2	11 57.2 -14.6 96.0	10 59.0 -14.4 95.7	10 00.8 -14.3 95.5
4°	13 38.6 -15.1 97.5	12 40.6 -14.9 97.2	11 42.6 -14.8 96.9	10 44.6 -14.7 96.7	9 46.5 -14.6 96.5
5°	13 23.5 -15.2 98.4	12 25.7 -15.1 98.2	11 27.8 -15.0 97.9	10 29.9 -14.8 97.7	9 31.9 -14.7 97.4
6°	13 08.3 -15.6 99.4	12 10.6 -15.4 99.2	11 12.8 -15.2 98.9	10 15.1 -15.1 98.7	9 17.2 -14.8 98.4
7°	12 52.7 -15.7 100.4	11 55.2 -15.5 100.2	10 57.6 -15.3 99.9	10 00.0 -15.2 99.7	9 02.4 -15.0 99.4
8°	12 37.0 -16.0 101.4	11 39.7 -15.8 101.2	10 42.3 -15.6 100.9	9 44.8 -15.3 100.6	8 47.4 -15.2 100.4
9°	12 21.0 -16.1 102.4	11 23.9 -16.0 102.1	10 26.7 -15.7 101.9	9 29.5 -15.5 101.6	8 32.2 -15.3 101.4
10°	12 04.9 -16.4 103.4	11 07.9 -16.1 103.1	10 11.0 -15.9 102.9	9 14.0 -15.7 102.6	8 16.9 -15.5 102.3
11°	11 48.5 -16.6 104.4	10 51.8 -16.3 104.1	9 55.1 -16.1 103.8	8 58.3 -15.9 103.6	8 01.4 -15.6 103.3
12°	11 31.9 -16.8 105.4	10 35.5 -16.5 105.1	9 39.0 -16.3 104.8	8 42.4 -16.0 104.6	7 45.8 -15.7 104.3
13°	11 15.1 -17.0 106.3	10 19.0 -16.7 106.1	9 22.7 -16.4 105.8	8 26.4 -16.1 105.5	7 30.1 -15.9 105.3
14°	10 58.1 -17.1 107.3	10 02.3 -16.9 107.0	9 06.3 -16.5 106.8	8 10.3 -16.3 106.5	7 14.2 -16.0 106.2
15°	10 41.0 -17.4 108.3	9 45.4 -17.0 108.0	8 49.8 -16.7 107.7	7 54.0 -16.4 107.5	6 58.2 -16.1 107.2
16°	10 23.6 -17.5 109.3	9 28.4 -17.2 109.0	8 33.1 -16.9 108.7	7 37.6 -16.5 108.4	6 42.1 -16.2 108.2
17°	10 06.1 -17.7 110.2	9 11.2 -17.3 110.0	8 16.2 -17.0 109.7	7 21.1 -16.6 109.4	6 25.9 -16.3 109.1
18°	9 48.4 -17.8 111.2	8 53.9 -17.5 110.9	7 59.2 -17.1 110.6	7 04.5 -16.8 110.4	6 09.6 -16.4 110.1
19°	9 30.6 -18.1 112.2	8 36.4 -17.7 111.9	7 42.1 -17.3 111.6	6 47.7 -16.9 111.3	5 53.2 -16.6 111.1
20°	9 12.5 -18.1 113.1	8 18.7 -17.7 112.9	7 24.8 -17.4 112.6	6 30.8 -17.0 112.3	5 36.6 -16.6 112.0
21°	8 54.4 -18.3 114.1	8 01.0 -17.9 113.8	7 07.4 -17.5 113.5	6 13.8 -17.1 113.3	5 20.0 -16.7 113.0
22°	8 36.1 -18.5 115.1	7 43.1 -18.1 114.8	6 49.9 -17.6 114.5	5 56.7 -17.2 114.2	5 03.3 -16.8 114.0
23°	8 17.6 -18.6 116.0	7 25.0 -18.2 115.8	6 32.3 -17.7 115.5	5 39.5 -17.3 115.2	4 46.5 -16.9 114.9
24°	7 59.0 -18.7 117.0	7 06.8 -18.2 116.7	6 14.6 -17.9 116.4	5 22.2 -17.4 116.2	4 29.6 -16.9 115.9
25°	7 40.3 -18.9 118.0	6 48.6 -18.4 117.7	5 56.7 -17.9 117.4	5 04.8 -17.5 117.1	4 12.7 -17.1 116.9
26°	7 21.4 -19.0 118.9	6 30.2 -18.5 118.6	5 38.8 -18.0 118.4	4 47.3 -17.6 118.1	3 55.6 -17.1 117.8
27°	7 02.4 -19.1 119.9	6 11.7 -18.6 119.6	5 20.8 -18.2 119.3	4 29.7 -17.6 119.0	3 38.5 -17.1 118.8
28°	6 43.3 -19.2 120.8	5 53.1 -18.7 120.5	5 02.6 -18.2 120.3	4 12.1 -17.7 120.0	3 21.4 -17.2 119.7
29°	6 24.1 -19.3 121.8	5 34.4 -18.8 121.5	4 44.4 -18.2 121.2	3 54.4 -17.8 121.0	3 04.2 -17.3 120.7

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°	9 44.5 -13.8 92.3	8 46.0 -13.7 92.0	7 47.6 -13.7 91.8	6 49.2 -13.7 91.6	5 50.7 -13.6 91.4
1°	9 30.7 -14.0 93.3	8 32.3 -13.9 93.0	7 33.9 -13.8 92.8	6 35.5 -13.7 92.6	5 37.1 -13.7 92.3
2°	9 16.7 -14.1 94.2	8 18.4 -14.0 94.0	7 20.1 -13.9 93.8	6 21.8 -13.9 93.5	5 23.4 -13.8 93.3
3°	9 02.6 -14.2 95.2	8 04.4 -14.2 95.0	7 06.2 -14.1 94.8	6 07.9 -14.0 94.5	5 09.6 -13.9 94.3
4°	8 48.4 -14.4 96.2	7 50.2 -14.3 96.0	6 52.1 -14.2 95.7	5 53.9 -14.1 95.5	4 55.7 -14.0 95.3
5°	8 34.0 -14.6 97.2	7 35.9 -14.4 97.0	6 37.9 -14.3 96.7	5 39.8 -14.2 96.5	4 41.7 -14.0 96.2
6°	8 19.4 -14.7 98.2	7 21.5 -14.6 97.9	6 23.6 -14.4 97.7	5 25.6 -14.2 97.5	4 27.7 -14.2 97.2
7°	8 04.7 -14.9 99.2	7 06.9 -14.6 98.9	6 09.2 -14.6 98.7	5 11.4 -14.4 98.4	4 13.5 -14.2 98.2
8°	7 49.8 -15.0 100.1	6 52.3 -14.8 99.9	5 54.6 -14.6 99.6	4 57.0 -14.5 99.4	3 59.3 -14.3 99.2
9°	7 34.8 -15.1 101.1	6 37.5 -15.0 100.9	5 40.0 -14.7 100.6	4 42.5 -14.5 100.4	3 45.0 -14.3 100.1
10°	7 19.7 -15.2 102.1	6 22.5 -15.0 101.8	5 25.3 -14.8 101.6	4 28.0 -14.6 101.3	3 30.7 -14.5 101.1
11°	7 04.5 -15.4 103.1	6 07.5 -15.1 102.8	5 10.5 -14.9 102.6	4 13.4 -14.7 102.3	3 16.2 -14.4 102.1
12°	6 49.1 -15.4 104.0	5 52.4 -15.3 103.8	4 55.6 -15.0 103.5	3 58.7 -14.7 103.3	3 01.8 -14.5 103.1
13°	6 33.7 -15.6 105.0	5 37.1 -15.3 104.8	4 40.6 -15.1 104.5	3 44.0 -14.9 104.3	2 47.3 -14.6 104.0
14°	6 18.1 -15.7 106.0	5 21.8 -15.4 105.7	4 25.5 -15.1 105.5	3 29.1 -14.8 105.2	2 32.7 -14.6 105.0
15°	6 02.4 -15.8 106.9	5 06.4 -15.5 106.7	4 10.4 -15.3 106.4	3 14.3 -15.0 106.2	2 18.1 -14.7 106.0
16°	5 46.6 -15.9 107.9	4 50.9 -15.6 107.7	3 55.1 -15.2 107.4	2 59.3 -15.0 107.2	2 03.4 -14.6 106.9
17°	5 30.7 -16.0 108.9	4 35.3 -15.7 108.6	3 39.9 -15.4 108.4	2 44.3 -15.0 108.1	1 48.8 -14.8 107.9
18°	5 14.7 -16.1 109.9	4 19.6 -15.7 109.6	3 24.5 -15.4 109.4	2 29.3 -15.1 109.1	1 34.0 -14.7 108.9
19°	4 58.6 -16.2 110.8	4 03.9 -15.8 110.6	3 09.1 -15.5 110.3	2 14.2 -15.1 110.1	1 19.3 -14.8 109.8
20°	4 42.4 -16.2 111.8	3 48.1 -15.9 111.5	2 53.6 -15.5 111.3	1 59.1 -15.1 111.1	1 04.5 -14.8 110.8
21°	4 26.2 -16.4 112.8	3 32.2 -15.9 112.5	2 38.1 -15.5 112.3	1 44.0 -15.2 112.0	0 49.7 -14.8 111.8
22°	4 09.8 -16.4 113.7	3 16.3 -16.0 113.5	2 22.6 -15.6 113.2	1 28.8 -15.2 113.0	0 34.9 -14.8 112.8
23°	3 53.4 -16.4 114.7	3 00.3 -16.1 114.4	2 07.0 -15.6 114.2	1 13.6 -15.2 114.0	0 20.1 -14.8 113.7
24°	3 37.0 -16.5 115.6	2 44.2 -16.1 115.4	1 51.4 -15.7 115.2	0 58.4 -15.2 114.9	0 05.3 -14.8 114.7
25°	3 20.5 -16.6 116.6	2 28.1 -16.1 116.4	1 35.7 -15.7 116.1	0 43.2 -15.3 115.9	-0 09.5 -14.8
26°	3 03.9 -16.7 117.6	2 12.0 -16.2 117.3	1 20.0 -15.7 117.1	0 27.9 -15.3 116.9	-0 24.3 -14.8
27°	2 47.2 -16.6 118.5	1 55.8 -16.2 118.3	1 04.3 -15.7 118.1	0 12.6 -15.2 117.8	-0 39.1 -14.8
28°	2 30.6 -16.8 119.5	1 39.6 -16.2 119.3	0 48.6 -15.8 119.0	-0 02.6 -15.3	-0 53.9 -14.8
29°	2 13.8 -16.7 120.5	1 23.4 -16.3 120.2	0 32.8 -15.7 120.0	-0 17.9 -15.2	-1 08.7 -14.7

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 52.3 -13.6 91.1	3 53.8 -13.5 90.9	2 55.4 -13.6 90.7	1 56.9 -13.5 90.5	0 58.5 -13.5 90.2
1°	4 38.7 -13.7 92.1	3 40.3 -13.6 91.9	2 41.8 -13.5 91.7	1 43.4 -13.5 91.4	0 45.0 -13.6 91.2
2°	4 25.0 -13.7 93.1	3 26.7 -13.7 92.9	2 28.3 -13.7 92.6	1 29.9 -13.6 92.4	0 31.4 -13.5 92.2
3°	4 11.3 -13.8 94.1	3 13.0 -13.8 93.8	2 14.6 -13.6 93.6	1 16.3 -13.6 93.4	0 17.9 -13.5 93.1
4°	3 57.5 -13.9 95.0	2 59.2 -13.8 94.8	2 01.0 -13.7 94.6	1 02.7 -13.6 94.3	0 04.4 -13.6 94.1
5°	3 43.6 -14.0 96.0	2 45.4 -13.8 95.8	1 47.3 -13.8 95.5	0 49.1 -13.7 95.3	-0 09.2 -13.5
6°	3 29.6 -14.0 97.0	2 31.6 -13.9 96.8	1 33.5 -13.7 96.5	0 35.4 -13.6 96.3	-0 22.7 -13.5
7°	3 15.6 -14.0 98.0	2 17.7 -13.9 97.7	1 19.8 -13.8 97.5	0 21.8 -13.7 97.3	-0 36.2 -13.5
8°	3 01.6 -14.2 98.9	2 03.8 -14.0 98.7	1 06.0 -13.8 98.5	0 08.1 -13.6 98.2	-0 49.7 -13.5
9°	2 47.4 -14.1 99.9	1 49.8 -14.0 99.7	0 52.2 -13.8 99.4	-0 05.5 -13.7	-1 03.2 -13.5
10°	2 33.3 -14.2 100.9	1 35.8 -14.0 100.6	0 38.4 -13.9 100.4	-0 19.2 -13.6	-1 16.7 -13.5
11°	2 19.1 -14.3 101.8	1 21.8 -14.0 101.6	0 24.5 -13.8 101.4	-0 32.8 -13.6	-1 30.2 -13.4
12°	2 04.8 -14.3 102.8	1 07.8 -14.1 102.6	0 10.7 -13.8 102.4	-0 46.4 -13.7	-1 43.6 -13.4
13°	1 50.5 -14.3 103.8	0 53.7 -14.1 103.6	-0 03.1 -13.9	-1 00.1 -13.6	-1 57.0 -13.4
14°	1 36.2 -14.4 104.8	0 39.6 -14.1 104.5	-0 17.0 -13.8	-1 13.7 -13.5	-2 10.4 -13.3
15°	1 21.8 -14.3 105.7	0 25.5 -14.0 105.5	-0 30.8 -13.8	-1 27.2 -13.6	-2 23.7 -13.3
16°	1 07.5 -14.4 106.7	0 11.5 -14.1 106.5	-0 44.6 -13.9	-1 40.8 -13.5	-2 37.0 -13.3
17°	0 53.1 -14.4 107.7	-0 02.6 -14.1	-0 58.5 -13.7	-1 54.3 -13.5	-2 50.3 -13.2
18°	0 38.7 -14.4 108.6	-0 16.7 -14.1	-1 12.2 -13.8	-2 07.8 -13.5	-3 03.5 -13.1
19°	0 24.3 -14.5 109.6	-0 30.8 -14.1	-1 26.0 -13.8	-2 21.3 -13.4	-3 16.6 -13.1
20°	0 09.8 -14.4 110.6	-0 44.9 -14.1	-1 39.8 -13.7	-2 34.7 -13.4	-3 29.7 -13.0
21°	-0 04.6 -14.4	-0 59.0 -14.1	-1 53.5 -13.7	-2 48.1 -13.3	-3 42.7 -13.0
22°	-0 19.0 -14.4	-1 13.1 -14.0	-2 07.2 -13.6	-3 01.4 -13.3	-3 55.7 -12.9
23°	-0 33.4 -14.4	-1 27.1 -14.0	-2 20.8 -13.6	-3 14.7 -13.2	-4 08.6 -12.8
24°	-0 47.8 -14.4	-1 41.1 -14.0	-2 34.4 -13.6	-3 27.9 -13.1	-4 21.4 -12.7
25°	-1 02.2 -14.4	-1 55.1 -13.9	-2 48.0 -13.5	-3 41.0 -13.1	-4 34.1 -12.7
26°	-1 16.6 -14.4	-2 09.0 -13.9	-3 01.5 -13.5	-3 54.1 -13.0	-4 46.8 -12.6
27°	-1 31.0 -14.3	-2 22.9 -13.9	-3 15.0 -13.4	-4 07.1 -13.0	-4 59.4 -12.5
28°	-1 45.3 -14.3	-2 36.8 -13.8	-3 28.4 -13.3	-4 20.1 -12.9	-5 11.9 -12.4
29°	-1 59.6 -14.3	-2 50.6 -13.8	-3 41.7 -13.3	-4 33.0 -12.8	-5 24.3 -12.3

Latitude 13°

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 -13.5 90.0	-0 58.5 -13.5			
1°	-0 13.5 -13.5	-1 12.0 -13.4			
2°	-0 27.0 -13.5	-1 25.4 -13.5			
3°	-0 40.5 -13.4	-1 38.9 -13.4			
4°	-0 53.9 -13.5	-1 52.3 -13.4			
5°	-1 07.4 -13.4	-2 05.7 -13.3			
6°	-1 20.8 -13.5	-2 19.0 -13.3			
7°	-1 34.3 -13.3	-2 32.3 -13.3			
8°	-1 47.6 -13.4	-2 45.6 -13.2			
9°	-2 01.0 -13.3	-2 58.8 -13.2			
10°	-2 14.3 -13.3	-3 12.0 -13.1			
11°	-2 27.6 -13.2	-3 25.1 -13.0			
12°	-2 40.8 -13.2	-3 38.1 -13.0			
13°	-2 54.0 -13.2	-3 51.1 -12.9			
14°	-3 07.2 -13.1	-4 04.0 -12.9			
15°	-3 20.3 -13.0	-4 16.9 -12.7			
16°	-3 33.3 -13.0	-4 29.6 -12.7			
17°	-3 46.3 -12.9	-4 42.3 -12.6			
18°	-3 59.2 -12.8	-4 54.9 -12.6			
19°	-4 12.0 -12.8	-5 07.5 -12.4			
20°	-4 24.8 -12.6	-5 19.9 -12.3			
21°	-4 37.4 -12.6	-5 32.2 -12.3			
22°	-4 50.0 -12.6	-5 44.5 -12.1			
23°	-5 02.6 -12.4	-5 56.6 -12.1			
24°	-5 15.0 -12.3	-6 08.7 -11.9			
25°	-5 27.3 -12.3	-6 20.6 -11.8			
26°	-5 39.6 -12.1	-6 32.4 -11.7			
27°	-5 51.7 -12.0	-6 44.1 -11.6			
28°	-6 03.7 -12.0	-6 55.7 -11.4			
29°	-6 15.7 -11.8	-7 07.1 -11.4			

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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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°	76 00.0 -60.0 180.0	75 57.9 -59.9 175.9	75 51.6 -59.4 171.8	75 41.3 -58.8 167.8	75 27.0 -57.9 163.9
1°	75 00.0 -60.0 180.0	74 58.0 -59.8 176.1	74 52.2 -59.5 172.3	74 42.5 -58.9 168.6	74 29.1 -58.1 164.9
2°	74 00.0 -60.0 180.0	73 58.2 -59.9 176.4	73 52.7 -59.6 172.8	73 43.6 -59.1 169.2	73 31.0 -58.4 165.8
3°	73 00.0 -60.0 180.0	72 58.3 -59.9 176.6	72 53.1 -59.6 173.2	72 44.5 -59.2 169.9	72 32.6 -58.5 166.6
4°	72 00.0 -60.0 180.0	71 58.4 -60.0 176.8	71 53.5 -59.7 173.6	71 45.3 -59.2 170.4	71 34.1 -58.7 167.3
5°	71 00.0 -60.0 180.0	70 58.4 -59.9 176.9	70 53.8 -59.7 173.9	70 46.1 -59.3 170.9	70 35.4 -58.8 167.9
6°	70 00.0 -60.0 180.0	69 58.5 -59.9 177.1	69 54.1 -59.7 174.2	69 46.8 -59.4 171.3	69 36.6 -58.9 168.5
7°	69 00.0 -60.0 180.0	68 58.6 -59.9 177.2	68 54.4 -59.8 174.5	68 47.4 -59.4 171.7	68 37.7 -59.0 169.0
8°	68 00.0 -60.0 180.0	67 58.7 -60.0 177.4	67 54.6 -59.7 174.7	67 48.0 -59.5 172.1	67 38.7 -59.1 169.5
9°	67 00.0 -60.0 180.0	66 58.7 -59.9 177.5	66 54.9 -59.8 175.0	66 48.5 -59.5 172.5	66 39.6 -59.1 170.0
10°	66 00.0 -60.0 180.0	65 58.8 -60.0 177.6	65 55.1 -59.8 175.2	65 49.0 -59.6 172.8	65 40.5 -59.3 170.4
11°	65 00.0 -60.0 180.0	64 58.8 -59.9 177.7	64 55.3 -59.8 175.4	64 49.4 -59.6 173.1	64 41.2 -59.2 170.8
12°	64 00.0 -60.0 180.0	63 58.9 -60.0 177.8	63 55.5 -59.9 175.5	63 49.8 -59.6 173.3	63 42.0 -59.4 171.1
13°	63 00.0 -60.0 180.0	62 58.9 -59.9 177.9	62 55.6 -59.8 175.7	62 50.2 -59.6 173.6	62 42.6 -59.3 171.5
14°	62 00.0 -60.0 180.0	61 59.0 -60.0 177.9	61 55.8 -59.8 175.9	61 50.6 -59.7 173.8	61 43.3 -59.4 171.8
15°	61 00.0 -60.0 180.0	60 59.0 -60.0 178.0	60 56.0 -59.9 176.0	60 50.9 -59.7 174.0	60 43.9 -59.5 172.1
16°	60 00.0 -60.0 180.0	59 59.0 -59.9 178.1	59 56.1 -59.9 176.2	59 51.2 -59.7 174.3	59 44.4 -59.4 172.4
17°	59 00.0 -60.0 180.0	58 59.1 -60.0 178.1	58 56.2 -59.8 176.3	58 51.5 -59.7 174.4	58 45.0 -59.5 172.6
18°	58 00.0 -60.0 180.0	57 59.1 -60.0 178.2	57 56.4 -59.9 176.4	57 51.8 -59.7 174.6	57 45.5 -59.6 172.9
19°	57 00.0 -60.0 180.0	56 59.1 -60.0 178.3	56 56.5 -59.9 176.5	56 52.1 -59.8 174.8	56 45.9 -59.5 173.1
20°	56 00.0 -60.0 180.0	55 59.1 -59.9 178.3	55 56.6 -59.9 176.6	55 52.3 -59.7 175.0	55 46.4 -59.6 173.3
21°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.4	54 56.7 -59.9 176.7	54 52.6 -59.8 175.1	54 46.8 -59.6 173.5
22°	54 00.0 -60.0 180.0	53 59.2 -60.0 178.4	53 56.8 -59.9 176.8	53 52.8 -59.8 175.3	53 47.2 -59.6 173.7
23°	53 00.0 -60.0 180.0	52 59.2 -60.0 178.5	52 56.9 -59.9 176.9	52 53.0 -59.8 175.4	52 47.6 -59.6 173.9
24°	52 00.0 -60.0 180.0	51 59.2 -59.9 178.5	51 57.0 -59.9 177.0	51 53.2 -59.8 175.6	51 48.0 -59.7 174.1
25°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.6	50 57.1 -59.9 177.1	50 53.4 -59.8 175.7	50 48.3 -59.6 174.3
26°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.6	49 57.2 -60.0 177.2	49 53.6 -59.8 175.8	49 48.7 -59.7 174.4
27°	49 00.0 -60.0 180.0	48 59.3 -60.0 178.6	48 57.2 -59.9 177.3	48 53.8 -59.8 175.9	48 49.0 -59.7 174.6
28°	48 00.0 -60.0 180.0	47 59.3 -60.0 178.7	47 57.3 -59.9 177.4	47 54.0 -59.9 176.0	47 49.3 -59.7 174.7
29°	47 00.0 -60.0 180.0	46 59.3 -59.9 178.7	46 57.4 -59.9 177.4	46 54.1 -59.8 176.2	46 49.6 -59.7 174.9

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°	75 09.0 -56.8 160.1	74 47.5 -55.6 156.5	74 22.7 -54.2 153.1	73 54.9 -52.8 149.8	73 24.3 -51.3 146.8
1°	74 12.2 -57.2 161.3	73 51.9 -56.1 157.9	73 28.5 -54.9 154.6	73 02.1 -53.5 151.5	72 33.0 -52.1 148.6
2°	73 15.0 -57.5 162.4	72 55.8 -56.5 159.2	72 33.6 -55.4 156.0	72 08.6 -54.2 153.0	71 40.9 -52.9 150.2
3°	72 17.5 -57.8 163.4	71 59.3 -56.8 160.3	71 38.2 -55.8 157.3	71 14.4 -54.7 154.4	70 48.0 -53.5 151.6
4°	71 19.7 -57.9 164.2	71 02.5 -57.2 161.3	70 42.4 -56.2 158.4	70 19.7 -55.2 155.6	69 54.5 -54.1 153.0
5°	70 21.8 -58.2 165.0	70 05.3 -57.4 162.2	69 46.2 -56.5 159.4	69 24.5 -55.6 156.8	69 00.4 -54.6 154.2
6°	69 23.6 -58.3 165.7	69 07.9 -57.6 163.0	68 49.7 -56.9 160.4	68 28.9 -55.9 157.8	68 05.8 -55.0 155.4
7°	68 25.3 -58.5 166.4	68 10.3 -57.8 163.8	67 52.8 -57.0 161.3	67 33.0 -56.3 158.8	67 10.8 -55.4 156.4
8°	67 26.8 -58.5 167.0	67 12.5 -58.0 164.5	66 55.8 -57.4 162.1	66 36.7 -56.6 159.7	66 15.4 -55.8 157.4
9°	66 28.3 -58.7 167.5	66 14.5 -58.1 165.2	65 58.4 -57.5 162.8	65 40.1 -56.8 160.5	65 19.6 -56.0 158.3
10°	65 29.6 -58.8 168.1	65 16.4 -58.3 165.8	65 00.9 -57.6 163.5	64 43.3 -57.0 161.3	64 23.6 -56.3 159.1
11°	64 30.8 -58.9 168.5	64 18.1 -58.4 166.3	64 03.3 -57.9 164.1	63 46.3 -57.2 162.0	63 27.3 -56.6 159.9
12°	63 31.9 -58.9 169.0	63 19.7 -58.5 166.8	63 05.4 -58.0 164.7	62 49.1 -57.4 162.7	62 30.7 -56.7 160.6
13°	62 33.0 -59.0 169.4	62 21.2 -58.6 167.3	62 07.4 -58.1 165.3	61 51.7 -57.6 163.3	61 34.0 -57.0 161.3
14°	61 34.0 -59.1 169.8	61 22.6 -58.7 167.8	61 09.3 -58.2 165.8	60 54.1 -57.7 163.9	60 37.0 -57.1 162.0
15°	60 34.9 -59.2 170.1	60 23.9 -58.7 168.2	60 11.1 -58.3 166.3	59 56.4 -57.9 164.4	59 39.9 -57.3 162.6
16°	59 35.7 -59.1 170.5	59 25.2 -58.9 168.6	59 12.8 -58.5 166.8	58 58.5 -57.9 165.0	58 42.6 -57.5 163.2
17°	58 36.6 -59.3 170.8	58 26.3 -58.8 169.0	58 14.3 -58.5 167.2	58 00.6 -58.1 165.5	57 45.1 -57.6 163.7
18°	57 37.3 -59.2 171.1	57 27.5 -59.0 169.4	57 15.8 -58.6 167.6	57 02.5 -58.2 165.9	56 47.5 -57.7 164.2
19°	56 38.1 -59.3 171.4	56 28.5 -59.0 169.7	56 17.2 -58.6 168.0	56 04.3 -58.2 166.4	55 49.8 -57.8 164.7
20°	55 38.8 -59.4 171.7	55 29.5 -59.1 170.0	55 18.6 -58.7 168.4	55 06.1 -58.4 166.8	54 52.0 -57.9 165.2
21°	54 39.4 -59.3 171.9	54 30.4 -59.1 170.3	54 19.9 -58.8 168.7	54 07.7 -58.4 167.2	53 54.1 -58.1 165.6
22°	53 40.1 -59.4 172.2	53 31.3 -59.1 170.6	53 21.1 -58.9 169.1	53 09.3 -58.5 167.6	52 56.0 -58.1 166.1
23°	52 40.7 -59.5 172.4	52 32.2 -59.2 170.9	52 22.2 -58.8 169.4	52 10.8 -58.5 167.9	51 57.9 -58.2 166.5
24°	51 41.2 -59.4 172.6	51 33.0 -59.2 171.2	51 23.4 -59.0 169.7	51 12.3 -58.7 168.3	50 59.7 -58.2 166.9
25°	50 41.8 -59.5 172.8	50 33.8 -59.2 171.4	50 24.4 -59.0 170.0	50 13.6 -58.6 168.6	50 01.5 -58.4 167.3
26°	49 42.3 -59.5 173.0	49 34.6 -59.3 171.7	49 25.4 -59.0 170.3	49 15.0 -58.8 169.0	49 03.1 -58.4 167.6
27°	48 42.8 -59.5 173.2	48 35.3 -59.3 171.9	48 26.4 -59.0 170.6	48 16.2 -58.7 169.3	48 04.7 -58.4 168.0
28°	47 43.3 -59.5 173.4	47 36.0 -59.3 172.1	47 27.4 -59.1 170.8	47 17.5 -58.9 169.6	47 06.3 -58.5 168.3
29°	46 43.8 -59.6 173.6	46 36.7 -59.4 172.4	46 28.3 -59.2 171.1	46 18.6 -58.8 169.9	46 07.8 -58.6 168.6

Latitude 14°

Declination CONTRARY name to Latitude

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°	72 51.2 -49.7 143.9	72 15.8 -48.2 141.2	71 38.4 -46.7 138.7	70 59.0 -45.2 136.3	70 18.0 -43.7 134.1
1°	72 01.5 -50.8 145.8	71 27.6 -49.3 143.1	70 51.7 -47.9 140.7	70 13.8 -46.4 138.3	69 34.3 -45.0 136.1
2°	71 10.7 -51.5 147.5	70 38.3 -50.2 144.9	70 03.8 -48.8 142.5	69 27.4 -47.5 140.2	68 49.3 -46.2 138.0
3°	70 19.2 -52.3 149.0	69 48.1 -51.0 146.5	69 15.0 -49.8 144.1	68 39.9 -48.5 141.9	68 03.1 -47.2 139.7
4°	69 26.9 -53.0 150.4	68 57.1 -51.8 148.0	68 25.2 -50.6 145.7	67 51.4 -49.3 143.5	67 15.9 -48.1 141.4
5°	68 33.9 -53.5 151.7	68 05.3 -52.4 149.4	67 34.6 -51.2 147.1	67 02.1 -50.1 144.9	66 27.8 -48.9 142.9
6°	67 40.4 -54.0 153.0	67 12.9 -53.0 150.7	66 43.4 -51.9 148.5	66 12.0 -50.8 146.3	65 38.9 -49.7 144.3
7°	66 46.4 -54.5 154.1	66 19.9 -53.5 151.9	65 51.5 -52.5 149.7	65 21.2 -51.4 147.6	64 49.2 -50.4 145.6
8°	65 51.9 -54.8 155.1	65 26.4 -53.9 153.0	64 59.0 -53.0 150.9	64 29.8 -52.0 148.8	63 58.8 -51.0 146.9
9°	64 57.1 -55.3 156.1	64 32.5 -54.4 154.0	64 06.0 -53.4 152.0	63 37.8 -52.5 150.0	63 07.8 -51.5 148.1
10°	64 01.8 -55.5 157.0	63 38.1 -54.7 155.0	63 12.6 -53.9 153.0	62 45.3 -53.0 151.1	62 16.3 -52.1 149.2
11°	63 06.3 -55.8 157.9	62 43.4 -55.0 155.9	62 18.7 -54.2 153.9	61 52.3 -53.4 152.1	61 24.2 -52.5 150.3
12°	62 10.5 -56.1 158.7	61 48.4 -55.4 156.7	61 24.5 -54.6 154.9	60 58.9 -53.7 153.0	60 31.7 -52.9 151.3
13°	61 14.4 -56.3 159.4	60 53.0 -55.6 157.5	60 29.9 -54.8 155.7	60 05.2 -54.2 153.9	59 38.8 -53.3 152.2
14°	60 18.1 -56.5 160.1	59 57.4 -55.8 158.3	59 35.1 -55.2 156.5	59 11.0 -54.4 154.8	58 45.5 -53.7 153.1
15°	59 21.6 -56.8 160.8	59 01.6 -56.1 159.0	58 39.9 -55.4 157.3	58 16.6 -54.7 155.6	57 51.8 -54.0 153.9
16°	58 24.8 -56.9 161.4	58 05.5 -56.3 159.7	57 44.5 -55.7 158.0	57 21.9 -55.0 156.4	56 57.8 -54.3 154.8
17°	57 27.9 -57.0 162.0	57 09.2 -56.5 160.3	56 48.8 -55.9 158.7	56 26.9 -55.3 157.1	56 03.5 -54.6 155.5
18°	56 30.9 -57.2 162.6	56 12.7 -56.7 161.0	55 52.9 -56.1 159.4	55 31.6 -55.4 157.8	55 08.9 -54.8 156.3
19°	55 33.7 -57.4 163.1	55 16.0 -56.8 161.5	54 56.8 -56.2 160.0	54 36.2 -55.7 158.5	54 14.1 -55.1 157.0
20°	54 36.3 -57.4 163.6	54 19.2 -57.0 162.1	54 00.6 -56.5 160.6	53 40.5 -55.9 159.1	53 19.0 -55.3 157.6
21°	53 38.9 -57.6 164.1	53 22.2 -57.1 162.6	53 04.1 -56.6 161.2	52 44.6 -56.0 159.7	52 23.7 -55.4 158.3
22°	52 41.3 -57.7 164.6	52 25.1 -57.2 163.1	52 07.5 -56.7 161.7	51 48.6 -56.2 160.3	51 28.3 -55.7 158.9
23°	51 43.6 -57.8 165.0	51 27.9 -57.4 163.6	51 10.8 -56.9 162.2	50 52.4 -56.4 160.8	50 32.6 -55.8 159.5
24°	50 45.8 -57.9 165.5	50 30.5 -57.4 164.1	50 13.9 -57.0 162.7	49 56.0 -56.5 161.4	49 36.8 -56.0 160.1
25°	49 47.9 -57.9 165.9	49 33.1 -57.6 164.5	49 16.9 -57.1 163.2	48 59.5 -56.7 161.9	48 40.8 -56.2 160.6
26°	48 50.0 -58.1 166.3	48 35.5 -57.6 165.0	48 19.8 -57.2 163.7	48 02.8 -56.8 162.4	47 44.6 -56.3 161.1
27°	47 51.9 -58.1 166.7	47 37.9 -57.7 165.4	47 22.6 -57.3 164.1	47 06.0 -56.8 162.9	46 48.3 -56.4 161.6
28°	46 53.8 -58.1 167.0	46 40.2 -57.9 165.8	46 25.3 -57.5 164.6	46 09.2 -57.0 163.3	45 51.9 -56.6 162.1
29°	45 55.7 -58.3 167.4	45 42.3 -57.8 166.2	45 27.8 -57.5 165.0	45 12.2 -57.1 163.8	44 55.3 -56.6 162.6

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°	69 35.5 -42.3 132.1	68 51.7 -41.0 130.2	68 06.6 -39.7 128.4	67 20.4 -38.4 126.7	66 33.2 -37.2 125.1
1°	68 53.2 -43.7 134.1	68 10.7 -42.3 132.1	67 26.9 -41.0 130.3	66 42.0 -39.8 128.6	65 56.0 -38.6 127.0
2°	68 09.5 -44.8 136.0	67 28.4 -43.6 134.0	66 45.9 -42.3 132.2	66 02.2 -41.1 130.5	65 17.4 -40.0 128.9
3°	67 24.7 -45.9 137.7	66 44.8 -44.7 135.8	66 03.6 -43.5 134.0	65 21.1 -42.3 132.3	64 37.4 -41.1 130.7
4°	66 38.8 -46.9 139.4	66 00.1 -45.7 137.5	65 20.1 -44.5 135.7	64 38.8 -43.4 134.0	63 56.3 -42.2 132.3
5°	65 51.9 -47.8 140.9	65 14.4 -46.6 139.0	64 35.6 -45.5 137.2	63 55.4 -44.3 135.5	63 14.1 -43.3 133.9
6°	65 04.1 -48.6 142.4	64 27.8 -47.5 140.5	63 50.1 -46.4 138.7	63 11.1 -45.3 137.1	62 30.8 -44.2 135.5
7°	64 15.5 -49.3 143.7	63 40.3 -48.2 141.9	63 03.7 -47.1 140.2	62 25.8 -46.1 138.5	61 46.6 -45.1 136.9
8°	63 26.2 -49.9 145.0	62 52.1 -48.9 143.2	62 16.6 -48.0 141.5	61 39.7 -46.9 139.9	61 01.5 -45.9 138.3
9°	62 36.3 -50.6 146.3	62 03.2 -49.6 144.5	61 28.6 -48.5 142.8	60 52.8 -47.6 141.2	60 15.6 -46.6 139.6
10°	61 45.7 -51.1 147.4	61 13.6 -50.2 145.7	60 40.1 -49.3 144.0	60 05.2 -48.3 142.4	59 29.0 -47.3 140.8
11°	60 54.6 -51.6 148.5	60 23.4 -50.7 146.8	59 50.8 -49.8 145.2	59 16.9 -48.9 143.6	58 41.7 -47.9 142.0
12°	60 03.0 -52.1 149.5	59 32.7 -51.2 147.9	59 01.0 -50.3 146.3	58 28.0 -49.4 144.7	57 53.8 -48.6 143.2
13°	59 10.9 -52.5 150.5	58 41.5 -51.7 148.9	58 10.7 -50.8 147.3	57 38.6 -49.9 145.8	57 05.2 -49.1 144.3
14°	58 18.4 -52.9 151.4	57 49.8 -52.1 149.8	57 19.9 -51.3 148.3	56 48.7 -50.5 146.8	56 16.1 -49.5 145.3
15°	57 25.5 -53.3 152.3	56 57.7 -52.4 150.8	56 28.6 -51.6 149.2	55 58.2 -50.9 147.8	55 26.6 -50.1 146.3
16°	56 32.2 -53.5 153.2	56 05.3 -52.9 151.6	55 37.0 -52.1 150.2	55 07.3 -51.2 148.7	54 36.5 -50.5 147.3
17°	55 38.7 -53.9 154.0	55 12.4 -53.1 152.5	54 44.9 -52.4 151.0	54 16.1 -51.7 149.6	53 46.0 -50.9 148.2
18°	54 44.8 -54.2 154.8	54 19.3 -53.5 153.3	53 52.5 -52.8 151.9	53 24.4 -52.1 150.5	52 55.1 -51.3 149.1
19°	53 50.6 -54.4 155.5	53 25.8 -53.7 154.1	52 59.7 -53.1 152.7	52 32.3 -52.3 151.3	52 03.8 -51.7 150.0
20°	52 56.2 -54.7 156.2	52 32.1 -54.1 154.8	52 06.6 -53.3 153.4	51 40.0 -52.7 152.1	51 12.1 -51.9 150.8
21°	52 01.5 -54.8 156.9	51 38.0 -54.2 155.5	51 13.3 -53.6 154.2	50 47.3 -53.0 152.8	50 20.2 -52.3 151.6
22°	51 06.7 -55.1 157.5	50 43.8 -54.5 156.2	50 19.7 -53.9 154.9	49 54.3 -53.2 153.6	49 27.9 -52.6 152.3
23°	50 11.6 -55.3 158.2	49 49.3 -54.7 156.8	49 25.8 -54.1 155.6	49 01.1 -53.5 154.3	48 35.3 -52.9 153.1
24°	49 16.3 -55.5 158.8	48 54.6 -54.9 157.5	48 31.7 -54.3 156.2	48 07.6 -53.7 155.0	47 42.4 -53.1 153.8
25°	48 20.8 -55.6 159.3	47 59.7 -55.1 158.1	47 37.4 -54.6 156.9	47 13.9 -53.9 155.6	46 49.3 -53.3 154.5
26°	47 25.2 -55.8 159.9	47 04.6 -55.3 158.7	46 42.8 -54.7 157.5	46 20.0 -54.2 156.3	45 56.0 -53.6 155.1
27°	46 29.4 -56.0 160.4	46 09.3 -55.4 159.2	45 48.1 -54.9 158.1	45 25.8 -54.3 156.9	45 02.4 -53.7 155.8
28°	45 33.4 -56.0 161.0	45 13.9 -55.6 159.8	44 53.2 -55.0 158.6	44 31.5 -54.6 157.5	44 08.7 -54.0 156.4
29°	44 37.4 -56.2 161.5	44 18.3 -55.7 160.3	43 58.2 -55.3 159.2	43 36.9 -54.7 158.1	43 14.7 -54.2 157.0

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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°	65 45.1 -36.0 123.6	64 56.3 -35.0 122.2	64 06.7 -34.0 120.9	63 16.4 -33.0 119.7	62 25.5 -32.0 118.5
1°	65 09.1 -37.5 125.5	64 21.3 -36.4 124.1	63 32.7 -35.4 122.8	62 43.4 -34.4 121.5	61 53.5 -33.5 120.3
2°	64 31.6 -38.8 127.4	63 44.9 -37.8 125.9	62 57.3 -36.7 124.6	62 09.0 -35.7 123.3	61 20.0 -34.7 122.1
3°	63 52.8 -40.1 129.1	63 07.1 -38.9 127.7	62 20.6 -37.9 126.3	61 33.3 -36.9 125.0	60 45.3 -36.0 123.8
4°	63 12.7 -41.1 130.8	62 28.2 -40.1 129.3	61 42.7 -39.0 128.0	60 56.4 -38.1 126.6	60 09.3 -37.1 125.4
5°	62 31.6 -42.2 132.4	61 48.1 -41.1 130.9	61 03.7 -40.2 129.5	60 18.3 -39.1 128.2	59 32.2 -38.2 126.9
6°	61 49.4 -43.1 133.9	61 07.0 -42.2 132.5	60 23.5 -41.1 131.1	59 39.2 -40.2 129.7	58 54.0 -39.2 128.5
7°	61 06.3 -44.1 135.4	60 24.8 -43.0 133.9	59 42.4 -42.1 132.5	58 59.0 -41.1 131.2	58 14.8 -40.2 129.9
8°	60 22.2 -44.9 136.8	59 41.8 -43.9 135.3	59 00.3 -42.9 133.9	58 17.9 -41.9 132.6	57 34.6 -41.0 131.3
9°	59 37.3 -45.6 138.1	58 57.9 -44.7 136.6	58 17.4 -43.7 135.3	57 36.0 -42.9 133.9	56 53.6 -41.9 132.7
10°	58 51.7 -46.4 139.4	58 13.2 -45.4 137.9	57 33.7 -44.5 136.5	56 53.1 -43.5 135.2	56 11.7 -42.7 134.0
11°	58 05.3 -47.0 140.6	57 27.8 -46.1 139.2	56 49.2 -45.2 137.8	56 09.6 -44.3 136.5	55 29.0 -43.4 135.2
12°	57 18.3 -47.6 141.7	56 41.7 -46.8 140.3	56 04.0 -45.9 139.0	55 25.3 -45.0 137.7	54 45.6 -44.1 136.4
13°	56 30.7 -48.3 142.8	55 54.9 -47.3 141.5	55 18.1 -46.5 140.1	54 40.3 -45.6 138.8	54 01.5 -44.8 137.6
14°	55 42.4 -48.7 143.9	55 07.6 -47.9 142.5	54 31.6 -47.0 141.2	53 54.7 -46.2 139.9	53 16.7 -45.4 138.7
15°	54 53.7 -49.3 144.9	54 19.7 -48.4 143.6	53 44.6 -47.6 142.3	53 08.5 -46.8 141.0	52 31.3 -45.9 139.8
16°	54 04.4 -49.7 145.9	53 31.3 -48.9 144.6	52 57.0 -48.1 143.3	52 21.7 -47.3 142.0	51 45.4 -46.5 140.8
17°	53 14.7 -50.1 146.9	52 42.4 -49.4 145.6	52 08.9 -48.6 144.3	51 34.4 -47.8 143.0	50 58.9 -47.0 141.8
18°	52 24.6 -50.5 147.8	51 53.0 -49.8 146.5	51 20.3 -49.0 145.2	50 46.6 -48.2 144.0	50 11.9 -47.5 142.8
19°	51 34.1 -51.0 148.7	51 03.2 -50.2 147.4	50 31.3 -49.4 146.1	49 58.4 -48.7 144.9	49 24.4 -47.9 143.8
20°	50 43.1 -51.2 149.5	50 13.0 -50.5 148.2	49 41.9 -49.8 147.0	49 09.7 -49.1 145.8	48 36.5 -48.3 144.7
21°	49 51.9 -51.6 150.3	49 22.5 -50.9 149.1	48 52.1 -50.2 147.9	48 20.6 -49.5 146.7	47 48.2 -48.8 145.6
22°	49 00.3 -51.9 151.1	48 31.6 -51.2 149.9	48 01.9 -50.6 148.7	47 31.1 -49.8 147.6	46 59.4 -49.1 146.4
23°	48 08.4 -52.2 151.8	47 40.4 -51.6 150.7	47 11.3 -50.8 149.5	46 41.3 -50.2 148.4	46 10.3 -49.5 147.3
24°	47 16.2 -52.5 152.6	46 48.8 -51.8 151.4	46 20.5 -51.2 150.3	45 51.1 -50.5 149.2	45 20.8 -49.8 148.1
25°	46 23.7 -52.7 153.3	45 57.0 -52.1 152.2	45 29.3 -51.4 151.0	45 00.6 -50.7 149.9	44 31.0 -50.1 148.9
26°	45 31.0 -53.0 154.0	45 04.9 -52.3 152.9	44 37.9 -51.7 151.8	44 09.9 -51.1 150.7	43 40.9 -50.4 149.6
27°	44 38.0 -53.2 154.6	44 12.6 -52.6 153.5	43 46.2 -52.0 152.5	43 18.8 -51.4 151.4	42 50.5 -50.7 150.4
28°	43 44.8 -53.4 155.3	43 20.0 -52.8 154.2	42 54.2 -52.2 153.2	42 27.4 -51.6 152.1	41 59.8 -51.0 151.1
29°	42 51.4 -53.6 155.9	42 27.2 -53.0 154.9	42 02.0 -52.5 153.8	41 35.8 -51.8 152.8	41 08.8 -51.2 151.8

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	61 34.1 -31.2 117.4	60 42.2 -30.4 116.4	59 49.8 -29.6 115.4	58 57.0 -28.8 114.5	58 03.8 -28.1 113.6
1°	61 02.9 -32.5 119.2	60 11.8 -31.7 118.1	59 20.2 -30.8 117.1	58 28.2 -30.1 116.2	57 35.7 -29.3 115.2
2°	60 30.4 -33.9 120.9	59 40.1 -32.9 119.8	58 49.4 -32.2 118.8	57 58.1 -31.3 117.8	57 06.4 -30.6 116.9
3°	59 56.5 -35.0 122.6	59 07.2 -34.2 121.5	58 17.2 -33.3 120.4	57 26.8 -32.6 119.4	56 35.8 -31.7 118.4
4°	59 21.5 -36.2 124.2	58 33.0 -35.3 123.1	57 43.9 -34.4 122.0	56 54.2 -33.6 120.9	56 04.1 -32.9 120.0
5°	58 45.3 -37.3 125.7	57 57.7 -36.4 124.6	57 09.5 -35.6 123.5	56 20.6 -34.7 122.4	55 31.2 -33.9 121.4
6°	58 08.0 -38.3 127.2	57 21.3 -37.4 126.1	56 33.9 -36.5 125.0	55 45.9 -35.7 123.9	54 57.3 -34.9 122.9
7°	57 29.7 -39.2 128.7	56 43.9 -38.3 127.5	55 57.4 -37.5 126.4	55 10.2 -36.7 125.3	54 22.4 -35.8 124.3
8°	56 50.5 -40.2 130.1	56 05.6 -39.3 128.9	55 19.9 -38.4 127.8	54 33.5 -37.5 126.7	53 46.6 -36.8 125.7
9°	56 10.3 -41.0 131.4	55 26.3 -40.1 130.3	54 41.5 -39.3 129.1	53 56.0 -38.5 128.0	53 09.8 -37.6 127.0
10°	55 29.3 -41.8 132.7	54 46.2 -41.0 131.6	54 02.2 -40.1 130.4	53 17.5 -39.2 129.3	52 32.2 -38.5 128.3
11°	54 47.5 -42.5 134.0	54 05.2 -41.6 132.8	53 22.1 -40.8 131.7	52 38.3 -40.0 130.6	51 53.7 -39.2 129.5
12°	54 05.0 -43.2 135.2	53 23.6 -42.4 134.0	52 41.3 -41.6 132.9	51 58.3 -40.8 131.8	51 14.5 -39.9 130.8
13°	53 21.8 -44.0 136.4	52 41.2 -43.1 135.2	51 59.7 -42.2 134.1	51 17.5 -41.4 133.0	50 34.6 -40.7 131.9
14°	52 37.8 -44.5 137.5	51 58.1 -43.8 136.3	51 17.5 -42.9 135.2	50 36.1 -42.1 134.1	49 53.9 -41.3 133.1
15°	51 53.3 -45.1 138.6	51 14.3 -44.3 137.4	50 34.6 -43.6 136.3	49 54.0 -42.8 135.3	49 12.6 -41.9 134.2
16°	51 08.2 -45.7 139.7	50 30.0 -44.9 138.5	49 51.0 -44.1 137.4	49 11.2 -43.3 136.3	48 30.7 -42.6 135.3
17°	50 22.5 -46.2 140.7	49 45.1 -45.4 139.5	49 06.9 -44.6 138.4	48 27.9 -43.9 137.4	47 48.1 -43.1 136.4
18°	49 36.3 -46.7 141.7	48 59.7 -45.9 140.5	48 22.3 -45.2 139.5	47 44.0 -44.4 138.4	47 05.0 -43.6 137.4
19°	48 49.6 -47.2 142.6	48 13.8 -46.4 141.5	47 37.1 -45.6 140.4	46 59.6 -44.9 139.4	46 21.4 -44.2 138.4
20°	48 02.4 -47.6 143.6	47 27.4 -46.9 142.5	46 51.5 -46.1 141.4	46 14.7 -45.3 140.4	45 37.2 -44.6 139.4
21°	47 14.8 -48.0 144.5	46 40.5 -47.3 143.4	46 05.4 -46.6 142.3	45 29.4 -45.9 141.3	44 52.6 -45.1 140.3
22°	46 26.8 -48.4 145.3	45 53.2 -47.7 144.3	45 18.8 -47.0 143.2	44 43.5 -46.2 142.2	44 07.5 -45.6 141.2
23°	45 38.4 -48.8 146.2	45 05.5 -48.0 145.1	44 31.8 -47.3 144.1	43 57.3 -46.7 143.1	43 21.9 -45.9 142.1
24°	44 49.6 -49.1 147.0	44 17.5 -48.5 146.0	43 44.5 -47.8 145.0	43 10.6 -47.0 144.0	42 36.0 -46.4 143.0
25°	44 00.5 -49.5 147.8	43 29.0 -48.8 146.8	42 56.7 -48.1 145.8	42 23.6 -47.4 144.8	41 49.6 -46.7 143.9
26°	43 11.0 -49.8 148.6	42 40.2 -49.1 147.6	42 08.6 -48.4 146.6	41 36.2 -47.8 145.6	41 02.9 -47.0 144.7
27°	42 21.2 -50.0 149.4	41 51.1 -49.4 148.4	41 20.2 -48.8 147.4	40 48.4 -48.1 146.5	40 15.9 -47.5 145.5
28°	41 31.2 -50.4 150.1	41 01.7 -49.7 149.1	40 31.4 -49.0 148.2	40 00.3 -48.3 147.2	39 28.4 -47.7 146.3
29°	40 40.8 -50.6 150.8	40 12.0 -49.9 149.9	39 42.4 -49.3 148.9	39 12.0 -48.7 148.0	38 40.7 -48.0 147.1

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°	57 10.3 -27.4 112.7	56 16.5 -26.8 111.9	55 22.3 -26.1 111.2	54 27.9 -25.6 110.4	53 33.2 -25.0 109.7
1°	56 42.9 -28.7 114.4	55 49.7 -28.0 113.5	54 56.2 -27.4 112.7	54 02.3 -26.7 112.0	53 08.2 -26.2 111.3
2°	56 14.2 -29.8 116.0	55 21.7 -29.2 115.1	54 28.8 -28.5 114.3	53 35.6 -27.9 113.5	52 42.0 -27.2 112.7
3°	55 44.4 -31.0 117.5	54 52.5 -30.3 116.6	54 00.3 -29.6 115.8	53 07.7 -28.9 115.0	52 14.8 -28.4 114.2
4°	55 13.4 -32.1 119.0	54 22.2 -31.3 118.1	53 30.7 -30.7 117.3	52 38.8 -30.0 116.4	51 46.4 -29.3 115.6
5°	54 41.3 -33.1 120.5	53 50.9 -32.4 119.6	53 00.0 -31.6 118.7	52 08.8 -31.0 117.9	51 17.1 -30.3 117.0
6°	54 08.2 -34.2 121.9	53 18.5 -33.4 121.0	52 28.4 -32.7 120.1	51 37.8 -32.0 119.2	50 46.8 -31.3 118.4
7°	53 34.0 -35.0 123.3	52 45.1 -34.3 122.4	51 55.7 -33.6 121.5	51 05.8 -32.9 120.6	50 15.5 -32.2 119.8
8°	52 59.0 -36.0 124.7	52 10.8 -35.2 123.7	51 22.1 -34.4 122.8	50 32.9 -33.7 121.9	49 43.3 -33.0 121.1
9°	52 23.0 -36.8 126.0	51 35.6 -36.1 125.0	50 47.7 -35.4 124.1	49 59.2 -34.6 123.2	49 10.3 -33.9 122.4
10°	51 46.2 -37.7 127.3	50 59.5 -36.8 126.3	50 12.3 -36.1 125.4	49 24.6 -35.4 124.5	48 36.4 -34.7 123.6
11°	51 08.5 -38.4 128.5	50 22.7 -37.7 127.6	49 36.2 -36.9 126.6	48 49.2 -36.2 125.7	48 01.7 -35.5 124.8
12°	50 30.1 -39.2 129.7	49 45.0 -38.4 128.8	48 59.3 -37.6 127.8	48 13.0 -36.9 126.9	47 26.2 -36.2 126.0
13°	49 50.9 -39.9 130.9	49 06.6 -39.1 129.9	48 21.7 -38.4 129.0	47 36.1 -37.6 128.1	46 50.0 -36.9 127.2
14°	49 11.0 -40.5 132.1	48 27.5 -39.8 131.1	47 43.3 -39.0 130.2	46 58.5 -38.3 129.2	46 13.1 -37.5 128.4
15°	48 30.5 -41.2 133.2	47 47.7 -40.4 132.2	47 04.3 -39.7 131.3	46 20.2 -38.9 130.4	45 35.6 -38.2 129.5
16°	47 49.3 -41.7 134.3	47 07.3 -41.0 133.3	46 24.6 -40.2 132.4	45 41.3 -39.5 131.5	44 57.4 -38.8 130.6
17°	47 07.6 -42.4 135.4	46 26.3 -41.6 134.4	45 44.4 -40.9 133.4	45 01.8 -40.2 132.5	44 18.6 -39.4 131.6
18°	46 25.2 -42.9 136.4	45 44.7 -42.1 135.4	45 03.5 -41.4 134.5	44 21.6 -40.6 133.6	43 39.2 -40.0 132.7
19°	45 42.3 -43.4 137.4	45 02.6 -42.7 136.4	44 22.1 -42.0 135.5	43 41.0 -41.3 134.6	42 59.2 -40.5 133.7
20°	44 58.9 -43.9 138.4	44 19.9 -43.2 137.4	43 40.1 -42.4 136.5	42 59.7 -41.7 135.6	42 18.7 -41.0 134.7
21°	44 15.0 -44.4 139.3	43 36.7 -43.6 138.4	42 57.7 -42.9 137.5	42 18.0 -42.2 136.6	41 37.7 -41.6 135.7
22°	43 30.6 -44.8 140.3	42 53.1 -44.2 139.3	42 14.8 -43.4 138.4	41 35.8 -42.7 137.5	40 56.1 -42.9 136.7
23°	42 45.8 -45.2 141.2	42 08.9 -44.5 140.2	41 31.4 -43.9 139.3	40 53.1 -43.1 138.5	40 14.2 -43.5 137.6
24°	42 00.6 -45.7 142.1	41 24.4 -44.9 141.1	40 47.5 -44.2 140.3	40 10.0 -43.6 139.4	39 31.7 -42.8 138.5
25°	41 14.9 -46.0 142.9	40 39.5 -45.4 142.0	40 03.3 -44.6 141.1	39 26.4 -43.9 140.3	38 48.9 -43.3 139.4
26°	40 28.9 -46.4 143.8	39 54.1 -45.7 142.9	39 18.7 -45.1 142.0	38 42.5 -44.4 141.1	38 05.6 -43.6 140.3
27°	39 42.5 -46.7 144.6	39 08.4 -46.0 143.7	38 33.6 -45.3 142.9	37 58.1 -44.7 142.0	37 22.0 -44.1 141.2
28°	38 55.8 -47.1 145.4	38 22.4 -46.4 144.5	37 48.3 -45.8 143.7	37 13.4 -45.0 142.8	36 37.9 -44.3 142.0
29°	38 08.7 -47.4 146.2	37 36.0 -46.7 145.4	37 02.5 -46.0 144.5	36 28.4 -45.4 143.7	35 53.6 -44.8 142.9

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	52 38.3 -24.5 109.1	51 43.2 -24.0 108.4	50 47.8 -23.5 107.8	49 52.3 -23.0 107.2	48 56.6 -22.6 106.6
1°	52 13.8 -25.6 110.6	51 19.2 -25.1 109.9	50 24.3 -24.6 109.2	49 29.3 -24.1 108.6	48 34.0 -23.6 108.0
2°	51 48.2 -26.7 112.0	50 54.1 -26.1 111.3	49 59.7 -25.5 110.7	49 05.2 -25.1 110.0	48 10.4 -24.6 109.4
3°	51 21.5 -27.7 113.5	50 28.0 -27.2 112.8	49 34.2 -26.6 112.1	48 40.1 -26.1 111.4	47 45.8 -25.6 110.8
4°	50 53.8 -28.7 114.9	50 00.8 -28.1 114.2	49 07.6 -27.6 113.5	48 14.0 -27.0 112.8	47 20.2 -26.5 112.1
5°	50 25.1 -29.7 116.3	49 32.7 -29.1 115.5	48 40.0 -28.5 114.8	47 47.0 -27.9 114.1	46 53.7 -27.4 113.4
6°	49 55.4 -30.7 117.6	49 03.6 -30.0 116.9	48 11.5 -29.4 116.1	47 19.1 -28.8 115.4	46 26.3 -28.2 114.7
7°	49 24.7 -31.5 119.0	48 33.6 -30.9 118.2	47 42.1 -30.2 117.4	46 50.3 -29.7 116.7	45 58.1 -29.1 116.0
8°	48 53.2 -32.4 120.3	48 02.7 -31.7 119.5	47 11.9 -31.1 118.7	46 20.6 -30.5 118.0	45 29.0 -29.8 117.3
9°	48 20.8 -33.2 121.5	47 31.0 -32.5 120.7	46 40.8 -31.9 120.0	45 50.1 -31.2 119.2	44 59.2 -30.7 118.5
10°	47 47.6 -34.0 122.8	46 58.5 -33.4 122.0	46 08.9 -32.7 121.2	45 18.9 -32.1 120.4	44 28.5 -31.4 119.7
11°	47 13.6 -34.7 124.0	46 25.1 -34.0 123.2	45 36.2 -33.4 122.4	44 46.8 -32.7 121.6	43 57.1 -32.2 120.9
12°	46 38.9 -35.5 125.2	45 51.1 -34.8 124.4	45 02.8 -34.1 123.6	44 14.1 -33.5 122.8	43 24.9 -32.8 122.1
13°	46 03.4 -36.2 126.4	45 16.3 -35.5 125.5	44 28.7 -34.9 124.7	43 40.6 -34.2 124.0	42 52.1 -33.5 123.2
14°	45 27.2 -36.8 127.5	44 40.8 -36.2 126.7	43 53.8 -35.4 125.9	43 06.4 -34.8 125.1	42 18.6 -34.2 124.3
15°	44 50.4 -37.5 128.6	44 04.6 -36.8 127.8	43 18.4 -36.2 127.0	42 31.6 -35.4 126.2	41 44.4 -34.8 125.4
16°	44 12.9 -38.1 129.7	43 27.8 -37.4 128.9	42 42.2 -36.7 128.1	41 56.2 -36.1 127.3	41 09.6 -35.4 126.5
17°	43 34.8 -38.7 130.8	42 50.4 -38.0 130.0	42 05.5 -37.3 129.1	41 20.1 -36.6 128.4	40 34.2 -36.0 127.6
18°	42 56.1 -39.3 131.8	42 12.4 -38.6 131.0	41 28.2 -37.9 130.2	40 43.5 -37.2 129.4	39 58.2 -36.5 128.6
19°	42 16.8 -39.8 132.9	41 33.8 -39.1 132.0	40 50.3 -38.4 131.2	40 06.3 -37.8 130.4	39 21.7 -37.1 129.7
20°	41 37.0 -40.3 133.9	40 54.7 -39.6 133.0	40 11.9 -38.9 132.2	39 28.5 -38.2 131.5	38 44.6 -37.5 130.7
21°	40 56.7 -40.8 134.9	40 15.1 -40.1 134.0	39 33.0 -39.5 133.2	38 50.3 -38.8 132.4	37 07.1 -38.1 131.7
22°	40 15.9 -41.3 135.8	39 35.0 -40.6 135.0	38 53.5 -39.9 134.2	38 11.5 -39.2 133.4	37 29.0 -38.6 132.7
23°	39 34.6 -41.7 136.8	38 54.4 -41.0 135.9	38 13.6 -40.3 135.2	37 32.3 -39.7 134.4	36 50.4 -39.0 133.6
24°	38 52.9 -42.2 137.7	38 13.4 -41.5 136.9	37 33.3 -40.8 136.1	36 52.6 -40.1 135.3	36 11.4 -39.4 134.6
25°	38 10.7 -42.6 138.6	37 31.9 -41.9 137.8	36 52.5 -41.2 137.0	36 12.5 -40.5 136.2	35 32.0 -39.9 135.5
26°	37 28.1 -43.0 139.5	36 50.0 -42.3 138.7	36 11.3 -41.6 137.9	35 32.0 -41.0 137.2	34 52.1 -40.3 136.4
27°	36 45.1 -43.3 140.4	36 07.7 -42.7 139.6	35 29.7 -42.0 138.8	34 51.0 -41.3 138.1	34 11.8 -40.6 137.3
28°	36 01.8 -43.7 141.2	35 25.0 -43.0 140.4	34 47.7 -42.4 139.7	34 09.7 -41.7 138.9	33 31.2 -41.1 138.2
29°	35 18.1 -44.1 142.1	34 42.0 -43.4 141.3	34 05.3 -42.7 140.5	33 28.0 -42.1 139.8	32 50.1 -41.4 139.1

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°	48 00.7 -22.2 106.1	47 04.7 -21.8 105.6	46 08.6 -21.4 105.0	45 12.3 -21.1 104.5	44 15.9 -20.7 104.1
1°	47 38.5 -23.1 107.5	46 42.9 -22.7 106.9	45 47.2 -22.4 106.4	44 51.2 -21.9 105.9	43 55.2 -21.6 105.4
2°	47 15.4 -24.2 108.8	46 20.2 -23.7 108.3	45 24.8 -23.3 107.7	44 29.3 -22.9 107.2	43 33.6 -22.5 106.7
3°	46 51.2 -25.0 110.2	45 56.5 -24.6 109.6	45 01.5 -24.1 109.0	44 06.4 -23.7 108.5	43 11.1 -23.3 107.9
4°	46 26.2 -26.0 111.5	45 31.9 -25.5 110.9	44 37.4 -25.0 110.3	43 42.7 -24.6 109.7	42 47.8 -24.1 109.2
5°	46 00.2 -26.9 112.8	45 06.4 -26.3 112.2	44 12.4 -25.9 111.6	43 18.1 -25.4 111.0	42 23.7 -24.9 110.4
6°	45 33.3 -27.7 114.1	44 40.1 -27.2 113.4	43 46.5 -26.6 112.8	42 52.7 -26.1 112.2	41 58.8 -25.7 111.7
7°	45 05.6 -28.5 115.3	44 12.9 -28.0 114.7	43 19.9 -27.5 114.1	42 26.6 -27.0 113.5	41 33.1 -26.5 112.9
8°	44 37.1 -29.3 116.6	43 44.9 -28.7 115.9	42 52.4 -28.2 115.3	41 59.6 -27.6 114.7	41 06.6 -27.2 114.1
9°	44 07.8 -30.0 117.8	43 16.2 -29.5 117.1	42 24.2 -28.9 116.5	41 32.0 -28.4 115.9	40 39.4 -27.8 115.3
10°	43 37.8 -30.9 119.0	42 46.7 -30.3 118.3	41 55.3 -29.7 117.7	41 03.6 -29.2 117.0	40 11.6 -28.6 116.4
11°	43 06.9 -31.5 120.2	42 16.4 -30.9 119.5	41 25.6 -30.4 118.8	40 34.4 -29.7 118.2	39 43.0 -29.3 117.6
12°	42 35.4 -32.2 121.3	41 45.5 -31.6 120.7	40 55.2 -31.0 120.0	40 04.7 -30.5 119.3	39 13.7 -29.8 118.7
13°	42 03.2 -32.9 122.5	41 13.9 -32.3 121.8	40 24.2 -31.7 121.1	39 34.2 -31.1 120.5	38 43.9 -30.6 119.8
14°	41 30.3 -33.5 123.6	40 41.6 -32.9 122.9	39 52.5 -32.3 122.2	39 03.1 -31.7 121.6	38 13.3 -31.1 120.9
15°	40 56.8 -34.2 124.7	40 08.7 -33.5 124.0	39 20.2 -32.9 123.3	38 31.4 -32.3 122.6	37 42.2 -31.7 122.0
16°	40 22.6 -34.7 125.8	39 35.2 -34.1 125.1	38 47.3 -33.4 124.4	37 59.1 -32.9 123.7	37 10.5 -32.3 123.1
17°	39 47.9 -35.4 126.9	39 01.1 -34.7 126.1	38 13.9 -34.1 125.5	37 26.2 -33.4 124.8	36 38.2 -32.8 124.1
18°	39 12.5 -35.8 127.9	38 26.4 -35.2 127.2	37 39.8 -34.6 126.5	36 52.8 -34.0 125.8	36 05.4 -33.4 125.2
19°	38 36.7 -36.4 128.9	37 51.2 -35.8 128.2	37 05.2 -35.1 127.5	36 18.8 -34.5 126.8	35 32.0 -33.8 126.2
20°	38 00.3 -37.0 130.0	37 15.4 -36.3 129.2	36 30.1 -35.6 128.5	35 44.3 -35.0 127.9	34 58.2 -34.4 127.2
21°	37 23.3 -37.4 131.0	36 39.1 -36.7 130.2	35 54.5 -36.2 129.5	35 09.3 -35.4 128.9	34 23.8 -34.9 128.2
22°	36 45.9 -37.9 131.9	36 02.4 -37.3 131.2	35 18.3 -36.5 130.5	34 33.9 -36.0 129.8	33 48.9 -35.3 129.2
23°	36 08.0 -38.3 132.9	35 25.1 -37.6 132.2	34 41.8 -37.1 131.5	33 57.9 -36.4 130.8	33 13.6 -35.7 130.1
24°	35 29.7 -38.8 133.8	34 47.5 -38.2 133.1	34 04.7 -37.4 132.4	33 21.5 -36.8 131.8	32 37.9 -36.2 131.1
25°	34 50.9 -39.2 134.8	34 09.3 -38.5 134.1	33 27.3 -37.9 133.4	32 44.7 -37.2 132.7	32 01.7 -36.6 132.0
26°	34 11.7 -39.6 135.7	33 30.8 -39.0 135.0	32 49.4 -38.3 134.3	32 07.5 -37.7 133.6	31 25.1 -37.0 133.0
27°	33 32.1 -40.0 136.6	32 51.8 -39.3 135.9	32 11.1 -38.7 135.2	31 29.8 -38.0 134.5	30 48.1 -37.4 133.9
28°	32 52.1 -40.4 137.5	32 12.5 -39.7 136.8	31 32.4 -39.1 136.1	30 51.8 -38.4 135.5	30 10.7 -37.7 134.8
29°	32 11.7 -40.7 138.4	31 32.8 -40.1 137.7	30 53.3 -39.4 137.0	30 13.4 -38.8 136.3	29 33.0 -38.1 135.7

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°	43 19.3 -20.3 103.6	42 22.7 -20.1 103.1	41 26.0 -19.8 102.7	40 29.1 -19.5 102.3	39 32.2 -19.2 101.9
1°	42 59.0 -21.3 104.9	42 02.6 -20.9 104.4	41 06.2 -20.6 104.0	40 09.6 -20.2 103.5	39 13.0 -20.0 103.1
2°	42 37.7 -22.1 106.2	41 41.7 -21.7 105.7	40 45.6 -21.4 105.2	39 49.4 -21.1 104.8	38 53.0 -20.7 104.3
3°	42 15.6 -22.9 107.4	41 20.0 -22.5 106.9	40 24.2 -22.1 106.4	39 28.3 -21.8 106.0	38 32.3 -21.5 105.5
4°	41 52.7 -23.7 108.7	40 57.5 -23.3 108.2	40 02.1 -22.9 107.7	39 06.5 -22.5 107.2	38 10.8 -22.1 106.7
5°	41 29.0 -24.5 109.9	40 34.2 -24.1 109.4	39 39.2 -23.7 108.9	38 44.0 -23.2 108.4	37 48.7 -22.9 107.9
6°	41 04.5 -25.2 111.1	40 10.1 -24.8 110.6	39 15.5 -24.3 110.1	38 20.8 -24.0 109.5	37 25.8 -23.5 109.1
7°	40 39.3 -26.0 112.3	39 45.3 -25.5 111.8	38 51.2 -25.1 111.2	37 56.8 -24.6 110.7	37 02.3 -24.2 110.2
8°	40 13.3 -26.6 113.5	39 19.8 -26.2 112.9	38 26.1 -25.7 112.4	37 32.2 -25.3 111.9	36 38.1 -24.9 111.4
9°	39 46.7 -27.4 114.7	38 53.6 -26.8 114.1	38 00.4 -26.4 113.5	37 06.9 -25.9 113.0	36 13.2 -25.5 112.5
10°	39 19.3 -28.1 115.8	38 26.8 -27.6 115.2	37 34.0 -27.1 114.7	36 41.0 -26.6 114.1	35 47.7 -26.1 113.6
11°	38 51.2 -28.7 117.0	37 59.2 -28.2 116.4	37 06.9 -27.7 115.8	36 14.4 -27.2 115.2	35 21.6 -26.7 114.7
12°	38 22.5 -29.3 118.1	37 31.0 -28.8 117.5	36 39.2 -28.3 116.9	35 47.2 -27.8 116.4	34 54.9 -27.3 115.8
13°	37 53.2 -30.0 119.2	37 02.2 -29.4 118.6	36 10.9 -28.8 118.0	35 19.4 -28.3 117.4	34 27.6 -27.8 116.9
14°	37 23.2 -30.5 120.3	36 32.8 -30.0 119.7	35 42.1 -29.5 119.1	34 51.1 -29.0 118.5	33 59.8 -28.4 118.0
15°	36 52.7 -31.2 121.4	36 02.8 -30.6 120.8	35 12.6 -30.0 120.2	34 22.1 -29.4 119.6	33 31.4 -29.0 119.0
16°	36 21.5 -31.7 122.4	35 32.2 -31.1 121.8	34 42.6 -30.6 121.2	33 52.7 -30.0 120.6	33 02.4 -29.4 120.1
17°	35 49.8 -32.2 123.5	35 01.1 -31.6 122.9	34 12.0 -31.0 122.3	33 22.7 -30.6 121.7	32 33.0 -30.0 121.1
18°	35 17.6 -32.8 124.5	34 29.5 -32.2 123.9	33 41.0 -31.6 123.3	32 52.1 -31.0 122.7	32 03.0 -30.5 122.1
19°	34 44.8 -33.2 125.5	33 57.3 -32.7 124.9	33 09.4 -32.1 124.3	32 21.1 -31.5 123.7	31 32.5 -30.9 123.1
20°	34 11.6 -33.8 126.6	33 24.6 -33.1 125.9	32 37.3 -32.5 125.3	31 49.6 -31.9 124.7	31 01.6 -31.4 124.1
21°	33 37.8 -34.2 127.5	32 51.5 -33.6 126.9	32 04.8 -33.1 126.3	31 17.7 -32.5 125.7	30 30.2 -31.8 125.1
22°	33 03.6 -34.7 128.5	32 17.9 -34.1 127.9	31 31.7 -33.4 127.3	30 45.2 -32.8 126.7	29 58.4 -32.3 126.1
23°	32 28.9 -35.1 129.5	31 43.8 -34.5 128.9	30 58.3 -33.9 128.3	30 12.4 -33.3 127.7	29 26.1 -32.7 127.1
24°	31 53.8 -35.6 130.5	31 09.3 -34.9 129.8	30 24.4 -34.3 129.2	29 39.1 -33.7 128.6	28 53.4 -33.1 128.1
25°	31 18.2 -35.9 131.4	30 34.4 -35.4 130.8	29 50.1 -34.7 130.2	29 05.4 -34.1 129.6	28 20.3 -33.4 129.0
26°	30 42.3 -36.4 132.3	29 59.0 -35.7 131.7	29 15.4 -35.1 131.1	28 31.3 -34.5 130.5	27 46.9 -33.9 129.9
27°	30 05.9 -36.7 133.3	29 23.3 -36.1 132.6	28 40.3 -35.5 132.0	27 56.8 -34.8 131.4	27 13.0 -34.2 130.9
28°	29 29.2 -37.1 134.2	28 47.2 -36.5 133.6	28 04.8 -35.8 133.0	27 22.0 -35.2 132.4	26 38.8 -34.6 131.8
29°	28 52.1 -37.5 135.1	28 10.7 -36.8 134.5	27 29.0 -36.2 133.9	26 46.8 -35.6 133.3	26 04.2 -34.9 132.7

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°	38 35.2 -19.0 101.5	37 38.1 -18.7 101.1	36 40.9 -18.4 100.7	35 43.7 -18.2 100.3	34 46.4 -18.0 100.0
1°	38 16.2 -19.6 102.7	37 19.4 -19.4 102.3	36 22.5 -19.2 101.9	35 25.5 -18.9 101.5	34 28.4 -18.7 101.1
2°	37 56.6 -20.5 103.9	37 00.0 -20.1 103.5	36 03.3 -19.8 103.1	35 06.6 -19.6 102.7	34 09.7 -19.3 102.3
3°	37 36.1 -21.1 105.1	36 39.9 -20.8 104.6	35 43.5 -20.5 104.2	34 47.0 -20.2 103.8	33 50.4 -19.9 103.4
4°	37 15.0 -21.8 106.3	36 19.1 -21.5 105.8	35 23.0 -21.2 105.4	34 26.8 -20.8 105.0	33 30.5 -20.5 104.6
5°	36 53.2 -22.5 107.4	35 57.6 -22.1 107.0	35 01.8 -21.7 106.5	34 06.0 -21.5 106.1	33 10.0 -21.2 105.7
6°	36 30.7 -23.1 108.6	35 35.5 -22.8 108.1	34 40.1 -22.5 107.7	33 44.5 -22.1 107.2	32 48.8 -21.7 106.8
7°	36 07.6 -23.8 109.7	35 12.7 -23.4 109.2	34 17.6 -23.0 108.8	33 22.4 -22.6 108.3	32 27.1 -22.3 107.9
8°	35 43.8 -24.5 110.9	34 49.3 -24.1 110.4	33 54.6 -23.6 109.9	32 59.8 -23.3 109.4	32 04.8 -22.9 109.0
9°	35 19.3 -25.0 112.0	34 25.2 -24.6 111.5	33 31.0 -24.2 111.0	32 36.5 -23.8 110.5	31 41.9 -23.4 110.1
10°	34 54.3 -25.7 113.1	34 00.6 -25.2 112.6	33 06.8 -24.8 112.1	32 12.7 -24.3 111.6	31 18.5 -23.9 111.2
11°	34 28.6 -26.2 114.2	33 35.4 -25.8 113.7	32 42.0 -25.3 113.2	31 48.4 -24.9 112.7	30 54.6 -24.5 112.2
12°	34 02.4 -26.8 115.3	33 09.6 -26.3 114.8	32 16.7 -25.9 114.3	31 23.5 -25.5 113.8	30 30.1 -25.0 113.3
13°	33 35.6 -27.4 116.4	32 43.3 -26.9 115.8	31 50.8 -26.4 115.3	30 58.0 -25.9 114.8	30 05.1 -25.5 114.4
14°	33 08.2 -27.9 117.4	32 16.4 -27.4 116.9	31 24.4 -26.9 116.4	30 32.1 -26.4 115.9	29 39.6 -26.0 115.4
15°	32 40.3 -28.4 118.5	31 49.0 -27.9 117.9	30 57.5 -27.5 117.4	30 05.7 -27.0 116.9	29 13.6 -26.4 116.4
16°	32 11.9 -28.9 119.5	31 21.1 -28.4 119.0	30 30.0 -27.9 118.5	29 38.7 -27.4 118.0	28 47.2 -26.9 117.5
17°	31 43.0 -29.5 120.6	30 52.7 -28.9 120.0	30 02.1 -28.3 119.5	29 11.3 -27.8 119.0	28 20.3 -27.4 118.5
18°	31 13.5 -29.9 121.6	30 23.8 -29.4 121.0	29 33.8 -28.9 120.5	28 43.5 -28.3 120.0	27 52.9 -27.8 119.5
19°	30 43.6 -30.3 122.6	29 54.4 -29.8 122.0	29 04.9 -29.2 121.5	28 15.2 -28.8 121.0	27 25.1 -28.2 120.5
20°	30 13.3 -30.9 123.6	29 24.6 -30.2 123.0	28 35.7 -29.7 122.5	27 46.4 -29.1 122.0	26 56.9 -28.6 121.5
21°	29 42.4 -31.2 124.6	28 54.4 -30.7 124.0	28 06.0 -30.2 123.5	27 17.3 -29.6 123.0	26 28.3 -29.1 122.5
22°	29 11.2 -31.7 125.6	28 23.7 -31.1 125.0	27 35.8 -30.5 124.5	26 47.7 -30.0 123.9	25 59.2 -29.4 123.4
23°	28 39.5 -32.1 126.5	27 52.6 -31.6 126.0	27 05.3 -31.0 125.4	26 17.7 -30.4 124.9	25 29.8 -29.8 124.4
24°	28 07.4 -32.5 127.5	27 21.0 -31.9 126.9	26 34.3 -31.3 126.4	25 47.3 -30.7 125.9	25 00.0 -30.2 125.4
25°	27 34.9 -32.9 128.4	26 49.1 -32.2 127.9	26 03.0 -31.7 127.4	25 16.6 -31.1 126.8	24 29.8 -30.5 126.3
26°	27 02.0 -33.2 129.4	26 16.9 -32.7 128.8	25 31.3 -32.0 128.3	24 45.5 -31.5 127.8	23 59.3 -30.9 127.3
27°	26 28.8 -33.6 130.3	25 44.2 -33.0 129.8	24 59.3 -32.4 129.2	24 14.0 -31.8 128.7	23 28.4 -31.2 128.2
28°	25 55.2 -34.0 131.2	25 11.2 -33.3 130.7	24 26.9 -32.7 130.2	23 42.2 -32.1 129.6	22 57.2 -31.5 129.1
29°	25 21.2 -34.3 132.1	24 37.9 -33.7 131.6	23 54.2 -33.1 131.1	23 10.1 -32.4 130.6	22 25.7 -31.8 130.0

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°	33 49.0 -17.8 99.6	32 51.6 -17.6 99.3	31 54.1 -17.4 98.9	30 56.6 -17.3 98.6	29 59.0 -17.1 98.3
1°	33 31.2 -18.4 100.8	32 34.0 -18.2 100.4	31 36.7 -18.0 100.1	30 39.3 -17.7 99.7	29 41.9 -17.6 99.4
2°	33 12.8 -19.0 101.9	32 15.8 -18.8 101.5	31 18.7 -18.5 101.2	30 21.6 -18.4 100.8	29 24.3 -18.1 100.5
3°	32 53.8 -19.7 103.0	31 57.0 -19.4 102.7	31 00.2 -19.2 102.3	30 03.2 -18.9 101.9	29 06.2 -18.6 101.6
4°	32 34.1 -20.2 104.2	31 37.6 -19.9 103.8	30 41.0 -19.7 103.4	29 44.3 -19.4 103.0	28 47.6 -19.2 102.7
5°	32 13.9 -20.9 105.3	31 17.7 -20.6 104.9	30 21.3 -20.2 104.5	29 24.9 -19.9 104.1	28 28.4 -19.7 103.7
6°	31 53.0 -21.4 106.4	30 57.1 -21.0 106.0	30 01.1 -20.8 105.6	29 05.0 -20.5 105.2	28 08.7 -20.1 104.8
7°	31 31.6 -21.9 107.5	30 36.1 -21.7 107.1	29 40.3 -21.2 106.7	28 44.5 -21.0 106.3	27 48.6 -20.7 105.9
8°	31 09.7 -22.5 108.6	30 14.4 -22.1 108.1	29 19.1 -21.9 107.7	28 23.5 -21.4 107.3	27 27.9 -21.1 106.9
9°	30 47.2 -23.0 109.6	29 52.3 -22.7 109.2	28 57.2 -22.3 108.8	28 02.1 -22.0 108.4	27 06.8 -21.6 108.0
10°	30 24.2 -23.6 110.7	29 29.6 -23.1 110.3	28 34.9 -22.7 109.9	27 40.1 -22.4 109.4	26 45.2 -22.1 109.0
11°	30 00.6 -24.1 111.8	29 06.5 -23.7 111.3	28 12.2 -23.3 110.9	27 17.7 -22.9 110.5	26 23.1 -22.5 110.1
12°	29 36.5 -24.5 112.8	28 42.8 -24.1 112.4	27 48.9 -23.8 112.0	26 54.8 -23.3 111.5	26 00.6 -23.0 111.1
13°	29 12.0 -25.1 113.9	28 18.7 -24.7 113.4	27 25.1 -24.1 113.0	26 31.5 -23.8 112.6	25 37.6 -23.4 112.1
14°	28 46.9 -25.5 114.9	27 54.0 -25.0 114.5	27 01.0 -24.7 114.0	26 07.7 -24.2 113.6	25 14.2 -23.8 113.2
15°	28 21.4 -26.0 116.0	27 29.0 -25.6 115.5	26 36.3 -25.1 115.0	25 43.5 -24.7 114.6	24 50.4 -24.2 114.2
16°	27 55.4 -26.4 117.0	27 03.4 -25.9 116.5	26 11.2 -25.5 116.1	25 18.8 -25.0 115.6	24 26.2 -24.6 115.2
17°	27 29.0 -26.9 118.0	26 37.5 -26.4 117.5	25 45.7 -25.9 117.1	24 53.8 -25.5 116.6	24 01.6 -25.0 116.2
18°	27 02.1 -27.3 119.0	26 11.1 -26.8 118.5	25 19.8 -26.3 118.1	24 28.3 -25.8 117.6	23 36.6 -25.3 117.2
19°	26 34.8 -27.7 120.0	25 44.3 -27.2 119.5	24 53.5 -26.7 119.1	24 02.5 -26.2 118.6	23 11.3 -25.7 118.2
20°	26 07.1 -28.1 121.0	25 17.1 -27.6 120.5	24 26.8 -27.1 120.0	23 36.3 -26.6 119.6	22 45.6 -26.1 119.1
21°	25 39.0 -28.5 122.0	24 49.5 -28.0 121.5	23 59.7 -27.4 121.0	23 09.7 -26.9 120.6	22 19.5 -26.5 120.1
22°	25 10.5 -28.9 122.9	24 21.5 -28.3 122.5	23 32.3 -27.8 122.0	22 42.8 -27.3 121.5	21 53.0 -26.8 121.1
23°	24 41.6 -29.2 123.9	23 53.2 -28.7 123.4	23 04.5 -28.2 123.0	22 15.5 -27.7 122.5	21 26.2 -27.1 122.0
24°	24 12.4 -29.6 124.9	23 24.5 -29.1 124.4	22 36.3 -28.5 123.9	21 47.8 -27.9 123.4	20 59.1 -27.4 123.0
25°	23 42.8 -30.0 125.8	22 55.4 -29.4 125.3	22 07.8 -28.8 124.9	21 19.9 -28.3 124.4	20 31.7 -27.7 123.9
26°	23 12.8 -30.3 126.8	22 26.0 -29.7 126.3	21 39.0 -29.2 125.8	20 51.6 -28.6 125.3	20 04.0 -28.0 124.9
27°	22 42.5 -30.6 127.7	21 56.3 -30.0 127.2	21 09.8 -29.4 126.7	20 23.0 -28.9 126.3	19 36.0 -28.4 125.8
28°	22 11.9 -30.9 128.6	21 26.3 -30.4 128.1	20 40.4 -29.8 127.7	19 54.1 -29.1 127.2	19 07.6 -28.6 126.8
29°	21 41.0 -31.2 129.6	20 55.9 -30.6 129.1	20 10.6 -30.0 128.6	19 25.0 -29.5 128.1	18 39.0 -28.8 127.7

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°	29 01.3 -16.8 98.0	28 03.6 -16.7 97.6	27 05.9 -16.5 97.3	26 08.2 -16.4 97.0	25 10.4 -16.3 96.7
1°	28 44.5 -17.4 99.0	27 46.9 -17.2 98.7	26 49.4 -17.1 98.4	25 51.8 -16.9 98.1	24 54.1 -16.7 97.8
2°	28 27.1 -17.9 100.1	27 29.7 -17.7 99.8	26 32.3 -17.5 99.5	25 34.9 -17.3 99.2	24 37.4 -17.2 98.8
3°	28 09.2 -18.5 101.2	27 12.0 -18.2 100.9	26 14.8 -18.0 100.5	25 17.6 -17.8 100.2	24 20.2 -17.6 99.9
4°	27 50.7 -18.9 102.3	26 53.8 -18.7 102.0	25 56.8 -18.4 101.6	24 59.8 -18.3 101.3	24 02.6 -18.0 101.0
5°	27 31.8 -19.4 103.4	26 35.1 -19.1 103.0	25 38.4 -18.9 102.7	24 41.5 -18.6 102.3	23 44.6 -18.4 102.0
6°	27 12.4 -19.9 104.4	26 16.0 -19.6 104.1	25 19.5 -19.4 103.7	24 22.9 -19.1 103.4	23 26.2 -18.9 103.0
7°	26 52.5 -20.4 105.5	25 56.4 -20.1 105.1	25 00.1 -19.8 104.8	24 03.8 -19.5 104.4	23 07.3 -19.2 104.1
8°	26 32.1 -20.8 106.5	25 36.3 -20.5 106.2	24 40.3 -20.2 105.8	23 44.3 -20.0 105.4	22 48.1 -19.6 105.1
9°	26 11.3 -21.2 107.6	25 15.8 -21.0 107.2	24 20.1 -20.6 106.8	23 24.3 -20.3 106.5	22 28.5 -20.1 106.1
10°	25 50.1 -21.8 108.6	24 54.8 -21.4 108.2	23 59.5 -21.1 107.9	23 04.0 -20.7 107.5	22 08.4 -20.4 107.1
11°	25 28.3 -22.1 109.7	24 33.4 -21.7 109.3	23 38.4 -21.4 108.9	22 43.3 -21.1 108.5	21 48.0 -20.8 108.2
12°	25 06.2 -22.6 110.7	24 11.7 -22.2 110.3	23 17.0 -21.9 109.9	22 22.2 -21.5 109.5	21 27.2 -21.1 109.2
13°	24 43.6 -23.0 111.7	23 49.5 -22.6 111.3	22 55.1 -22.2 110.9	22 00.7 -21.9 110.5	21 06.1 -21.5 110.2
14°	24 20.6 -23.4 112.7	23 26.9 -23.0 112.3	22 32.9 -22.6 111.9	21 38.8 -22.2 111.5	20 44.6 -21.8 111.2
15°	23 57.2 -23.7 113.7	23 03.9 -23.4 113.3	22 10.3 -22.9 112.9	21 16.6 -22.5 112.5	20 22.8 -22.2 112.2
16°	23 33.5 -24.2 114.7	22 40.5 -23.7 114.3	21 47.4 -23.3 113.9	20 54.1 -22.9 113.5	20 00.6 -22.5 113.1
17°	23 09.3 -24.5 115.7	22 16.8 -24.1 115.3	21 24.1 -23.7 114.9	20 31.2 -23.3 114.5	19 38.1 -22.8 114.1
18°	22 44.8 -24.9 116.7	21 52.7 -24.5 116.3	21 00.4 -24.0 115.9	20 07.9 -23.5 115.5	19 15.3 -23.1 115.1
19°	22 19.9 -25.3 117.7	21 28.2 -24.8 117.3	20 36.4 -24.3 116.9	19 44.4 -23.9 116.5	18 52.2 -23.5 116.1
20°	21 54.6 -25.6 118.7	21 03.4 -25.1 118.3	20 12.1 -24.7 117.9	19 20.5 -24.2 117.5	18 28.7 -23.7 117.1
21°	21 29.0 -26.0 119.7	20 38.3 -25.5 119.2	19 47.4 -25.0 118.8	18 56.3 -24.5 118.4	18 05.0 -24.0 118.0
22°	21 03.0 -26.2 120.6	20 12.8 -25.7 120.2	19 22.4 -25.2 119.8	18 31.8 -24.8 119.4	17 41.0 -24.3 119.0
23°	20 36.8 -26.6 121.6	19 47.1 -26.1 121.2	18 57.2 -25.6 120.8	18 07.0 -25.0 120.3	17 16.7 -24.6 120.0
24°	20 10.2 -26.9 122.6	19 21.0 -26.4 122.1	18 31.6 -25.9 121.7	17 42.0 -25.4 121.3	16 52.1 -24.8 120.9
25°	19 43.3 -27.2 123.5	18 54.6 -26.6 123.1	18 05.7 -26.1 122.7	17 16.6 -25.6 122.3	16 27.3 -25.1 121.9
26°	19 16.1 -27.5 124.5	18 28.0 -27.0 124.0	17 39.6 -26.4 123.6	16 51.0 -25.8 123.2	16 02.2 -25.3 122.8
27°	18 48.6 -27.7 125.4	18 01.0 -27.2 125.0	17 13.2 -26.6 124.5	16 25.2 -26.2 124.1	15 36.9 -25.6 123.7
28°	18 20.9 -28.1 126.3	17 33.8 -27.4 125.9	16 46.6 -27.0 125.5	15 59.0 -26.3 125.1	15 11.3 -25.8 124.7
29°	17 52.8 -28.3 127.3	17 06.4 -27.8 126.8	16 19.6 -27.1 126.4	15 32.7 -26.6 126.0	14 45.5 -26.1 125.6

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	24 12.5 -16.1 96.4	23 14.7 -16.0 96.1	22 16.8 -15.9 95.9	21 18.8 -15.7 95.6	20 20.9 -15.7 95.3
1°	23 56.4 -16.6 97.5	22 58.7 -16.5 97.2	22 00.9 -16.3 96.9	21 03.1 -16.2 96.6	20 05.2 -16.0 96.3
2°	23 39.8 -16.9 98.5	22 42.2 -16.8 98.2	21 44.6 -16.7 97.9	20 46.9 -16.5 97.6	19 49.2 -16.4 97.4
3°	23 22.9 -17.4 99.6	22 25.4 -17.2 99.3	21 27.9 -17.0 99.0	20 30.4 -16.9 98.7	19 32.8 -16.7 98.4
4°	23 05.5 -17.9 100.6	22 08.2 -17.6 100.3	21 10.9 -17.4 100.0	20 13.5 -17.2 99.7	19 16.1 -17.0 99.4
5°	22 47.6 -18.2 101.7	21 50.6 -18.0 101.3	20 53.5 -17.8 101.0	19 56.3 -17.6 100.7	18 59.1 -17.4 100.4
6°	22 29.4 -18.6 102.7	21 32.6 -18.4 102.4	20 35.7 -18.1 102.1	19 38.7 -17.9 101.7	18 41.7 -17.7 101.4
7°	22 10.8 -19.0 103.7	21 14.2 -18.7 103.4	20 17.6 -18.5 103.1	19 20.8 -18.2 102.7	18 24.0 -18.0 102.4
8°	21 51.8 -19.3 104.7	20 55.5 -19.1 104.4	19 59.1 -18.9 104.1	19 02.6 -18.6 103.8	18 06.0 -18.4 103.4
9°	21 32.5 -19.8 105.8	20 36.4 -19.4 105.4	19 40.2 -19.1 105.1	18 44.0 -18.9 104.8	17 47.6 -18.6 104.4
10°	21 12.7 -20.1 106.8	20 17.0 -19.8 106.4	19 21.1 -19.5 106.1	18 25.1 -19.2 105.8	17 29.0 -18.9 105.4
11°	20 52.6 -20.4 107.8	19 57.2 -20.2 107.4	19 01.6 -19.9 107.1	18 05.9 -19.6 106.8	17 10.1 -19.2 106.4
12°	20 32.2 -20.8 108.8	19 37.0 -20.4 108.4	18 41.7 -20.1 108.1	17 46.3 -19.8 107.8	16 50.9 -19.6 107.4
13°	20 11.4 -21.1 109.8	19 16.6 -20.8 109.4	18 21.6 -20.4 109.1	17 26.5 -20.1 108.7	16 31.3 -19.7 108.4
14°	19 50.3 -21.5 110.8	18 55.8 -21.1 110.4	18 01.2 -20.8 110.1	17 06.4 -20.4 109.7	16 11.6 -20.1 109.4
15°	19 28.8 -21.8 111.8	18 34.7 -21.4 111.4	17 40.4 -21.0 111.1	16 46.0 -20.7 110.7	15 51.5 -20.3 110.4
16°	19 07.0 -22.1 112.8	18 13.3 -21.7 112.4	17 19.4 -21.4 112.0	16 25.3 -20.9 111.7	15 31.2 -20.6 111.3
17°	18 44.9 -22.4 113.8	17 51.6 -22.0 113.4	16 58.0 -21.6 113.0	16 04.4 -21.2 112.7	15 10.6 -20.8 112.3
18°	18 22.5 -22.7 114.7	17 29.6 -22.3 114.4	16 36.4 -21.8 114.0	15 43.2 -21.5 113.6	14 49.8 -21.1 113.3
19°	17 59.8 -23.0 115.7	17 07.3 -22.6 115.3	16 14.6 -22.2 115.0	15 21.7 -21.7 114.6	14 28.7 -21.3 114.3
20°	17 36.8 -23.3 116.7	16 44.7 -22.8 116.3	15 52.4 -22.4 115.9	15 00.0 -22.0 115.6	14 07.4 -21.5 115.2
21°	17 13.5 -23.5 117.6	16 21.9 -23.1 117.3	15 30.0 -22.6 116.9	14 38.0 -22.2 116.5	13 45.9 -21.8 116.2
22°	16 50.0 -23.9 118.6	15 58.8 -23.4 118.2	15 07.4 -22.9 117.9	14 15.8 -22.4 117.5	13 24.1 -22.0 117.1
23°	16 26.1 -24.0 119.6	15 35.4 -23.6 119.2	14 44.5 -23.1 118.8	13 53.4 -22.7 118.5	13 02.1 -22.2 118.1
24°	16 02.1 -24.4 120.5	15 11.8 -23.8 120.1	14 21.4 -23.4 119.8	13 30.7 -22.8 119.4	12 39.9 -22.3 119.1
25°	15 37.7 -24.5 121.5	14 48.0 -24.1 121.1	13 58.0 -23.6 120.7	13 07.9 -23.1 120.4	12 17.6 -22.6 120.0
26°	15 13.2 -24.9 122.4	14 23.9 -24.3 122.0	13 34.4 -23.7 121.7	12 44.8 -23.3 121.3	11 55.0 -22.8 121.0
27°	14 48.3 -25.0 123.4	13 59.6 -24.5 123.0	13 10.7 -24.0 122.6	12 21.5 -23.4 122.3	11 32.2 -22.9 121.9
28°	14 23.3 -25.3 124.3	13 35.1 -24.7 123.9	12 46.7 -24.2 123.6	11 58.1 -23.7 123.2	11 09.2 -23.1 122.8
29°	13 58.0 -25.5 125.2	13 10.4 -25.0 124.9	12 22.5 -24.4 124.5	11 34.4 -23.8 124.1	10 46.1 -23.3 123.8

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°	19 22.9 -15.6 95.0	18 24.9 -15.5 94.8	17 26.9 -15.4 94.5	16 28.8 -15.3 94.2	15 30.8 -15.2 94.0
1°	19 07.3 -15.8 96.1	18 09.4 -15.7 95.8	17 11.5 -15.7 95.5	16 13.5 -15.5 95.2	15 15.6 -15.5 95.0
2°	18 51.5 -16.3 97.1	17 53.7 -16.1 96.8	16 55.8 -15.9 96.5	15 58.0 -15.9 96.2	15 00.1 -15.7 96.0
3°	18 35.2 -16.5 98.1	17 37.6 -16.4 97.8	16 39.9 -16.3 97.5	15 42.1 -16.1 97.2	14 44.4 -16.0 97.0
4°	18 18.7 -16.9 99.1	17 21.2 -16.7 98.8	16 23.6 -16.5 98.5	15 26.0 -16.4 98.2	14 28.4 -16.3 98.0
5°	18 01.8 -17.2 100.1	17 04.5 -17.0 99.8	16 07.1 -16.9 99.5	15 09.6 -16.6 99.2	14 12.1 -16.4 99.0
6°	17 44.6 -17.5 101.1	16 47.5 -17.3 100.8	15 50.2 -17.1 100.5	14 53.0 -16.9 100.2	13 55.7 -16.8 100.0
7°	17 27.1 -17.8 102.1	16 30.2 -17.6 101.8	15 33.1 -17.3 101.5	14 36.1 -17.2 101.2	13 38.9 -16.9 100.9
8°	17 09.3 -18.1 103.1	16 12.6 -17.9 102.8	15 15.8 -17.6 102.5	14 18.9 -17.4 102.2	13 22.0 -17.2 101.9
9°	16 51.2 -18.4 104.1	15 54.7 -18.1 103.8	14 58.2 -17.9 103.5	14 01.5 -17.6 103.2	13 04.8 -17.4 102.9
10°	16 32.8 -18.6 105.1	15 36.6 -18.4 104.8	14 40.3 -18.2 104.5	13 43.9 -17.9 104.2	12 47.4 -17.6 103.9
11°	16 14.2 -18.9 106.1	15 18.2 -18.6 105.8	14 22.1 -18.3 105.5	13 26.0 -18.1 105.2	12 29.8 -17.9 104.9
12°	15 55.3 -19.2 107.1	14 59.6 -18.9 106.8	14 03.8 -18.6 106.5	13 07.9 -18.3 106.2	12 11.9 -18.0 105.9
13°	15 36.1 -19.5 108.1	14 40.7 -19.2 107.8	13 45.2 -18.9 107.4	12 49.6 -18.6 107.1	11 53.9 -18.2 106.8
14°	15 16.6 -19.7 109.1	14 21.5 -19.4 108.7	13 26.3 -19.0 108.4	12 31.0 -18.7 108.1	11 35.7 -18.5 107.8
15°	14 56.9 -20.0 110.0	14 02.1 -19.6 109.7	13 07.3 -19.3 109.4	12 12.3 -19.0 109.1	11 17.2 -18.6 108.8
16°	14 36.9 -20.2 111.0	13 42.5 -19.9 110.7	12 48.0 -19.5 110.4	11 53.3 -19.1 110.0	10 58.6 -18.8 109.7
17°	14 16.7 -20.5 112.0	13 22.6 -20.0 111.7	12 28.5 -19.7 111.3	11 34.2 -19.4 111.0	10 39.8 -19.0 110.7
18°	13 56.2 -20.6 113.0	13 02.6 -20.3 112.6	12 08.8 -19.9 112.3	11 14.8 -19.5 112.0	10 20.8 -19.2 111.7
19°	13 35.6 -20.9 113.9	12 42.3 -20.5 113.6	11 48.9 -20.1 113.3	10 55.3 -19.7 112.9	10 01.6 -19.3 112.6
20°	13 14.7 -21.2 114.9	12 21.8 -20.7 114.6	11 28.8 -20.3 114.2	10 35.6 -19.9 113.9	9 42.3 -19.5 113.6
21°	12 53.5 -21.3 115.8	12 01.1 -20.9 115.5	11 08.5 -20.5 115.2	10 15.7 -20.0 114.9	9 22.8 -19.6 114.6
22°	12 32.2 -21.5 116.8	11 40.2 -21.1 116.5	10 48.0 -20.7 116.1	9 55.7 -20.3 115.8	9 03.2 -19.8 115.5
23°	12 10.7 -21.7 117.8	11 19.1 -21.3 117.4	10 27.3 -20.8 117.1	9 35.4 -20.3 116.8	8 43.4 -19.9 116.5
24°	11 49.0 -21.9 118.7	10 57.8 -21.4 118.4	10 06.5 -21.0 118.1	9 15.1 -20.6 117.7	8 23.5 -20.1 117.4
25°	11 27.1 -22.1 119.7	10 36.4 -21.6 119.3	9 45.5 -21.1 119.0	8 54.5 -20.6 118.7	8 03.4 -20.2 118.4
26°	11 05.0 -22.3 120.6	10 14.8 -21.8 120.3	9 24.4 -21.3 120.0	8 33.9 -20.8 119.6	7 43.2 -20.3 119.3
27°	10 42.7 -22.5 121.6	9 53.0 -22.0 121.2	9 03.1 -21.4 120.9	8 13.1 -21.0 120.6	7 22.9 -20.5 120.3
28°	10 20.2 -22.6 122.5	9 31.0 -22.1 122.2	8 41.7 -21.6 121.8	7 52.1 -21.0 121.5	7 02.4 -20.5 121.2
29°	9 57.6 -22.8 123.4	9 08.9 -22.2 123.1	8 20.1 -21.7 122.8	7 31.1 -21.2 122.5	6 41.9 -20.7 122.2

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°	14 32.7 -15.2 93.7	13 34.6 -15.1 93.5	12 36.4 -14.9 93.2	11 38.3 -14.9 92.9	10 40.2 -14.9 92.7
1°	14 17.5 -15.3 94.7	13 19.5 -15.3 94.4	12 21.5 -15.2 94.2	11 23.4 -15.1 93.9	10 25.3 -15.0 93.7
2°	14 02.2 -15.6 95.7	13 04.2 -15.5 95.4	12 06.3 -15.4 95.2	11 08.3 -15.3 94.9	10 10.3 -15.3 94.7
3°	13 46.6 -15.9 96.7	12 48.7 -15.7 96.4	11 50.9 -15.7 96.2	10 53.0 -15.5 95.9	9 55.0 -15.4 95.6
4°	13 30.7 -16.1 97.7	12 33.0 -16.0 97.4	11 35.2 -15.8 97.2	10 37.5 -15.7 96.9	9 39.6 -15.5 96.6
5°	13 14.6 -16.3 98.7	12 17.0 -16.1 98.4	11 19.4 -16.0 98.1	10 21.8 -15.9 97.9	9 24.1 -15.7 97.6
6°	12 58.3 -16.5 99.7	12 00.9 -16.4 99.4	11 03.4 -16.2 99.1	10 05.9 -16.0 98.8	9 08.4 -15.9 98.6
7°	12 41.8 -16.8 100.7	11 44.5 -16.6 100.4	10 47.2 -16.4 100.1	9 49.9 -16.2 99.8	8 52.5 -16.0 99.6
8°	12 25.0 -17.0 101.6	11 27.9 -16.7 101.4	10 30.8 -16.5 101.1	9 33.7 -16.4 100.8	8 36.5 -16.2 100.5
9°	12 08.0 -17.2 102.6	11 11.2 -17.0 102.3	10 14.3 -16.8 102.1	9 17.3 -16.5 101.8	8 20.3 -16.3 101.5
10°	11 50.8 -17.3 103.6	10 54.2 -17.1 103.3	9 57.5 -16.9 103.0	9 00.8 -16.7 102.8	8 04.0 -16.5 102.5
11°	11 33.5 -17.6 104.6	10 37.1 -17.3 104.3	9 40.6 -17.0 104.0	8 44.1 -16.8 103.7	7 47.5 -16.6 103.5
12°	11 15.9 -17.8 105.6	10 19.8 -17.5 105.3	9 23.6 -17.3 105.0	8 27.3 -17.0 104.7	7 30.9 -16.7 104.4
13°	10 58.1 -17.9 106.5	10 02.3 -17.7 106.2	9 06.3 -17.3 105.9	8 10.3 -17.1 105.7	7 14.2 -16.8 105.4
14°	10 40.2 -18.2 107.5	9 44.6 -17.8 107.2	8 49.0 -17.6 106.9	7 53.2 -17.2 106.6	6 57.4 -17.0 106.4
15°	10 22.0 -18.3 108.5	9 26.8 -18.0 108.2	8 31.4 -17.7 107.9	7 36.0 -17.4 107.6	6 40.4 -17.0 107.3
16°	10 03.7 -18.4 109.4	9 08.8 -18.1 109.1	8 13.7 -17.8 108.8	7 18.6 -17.5 108.6	6 23.4 -17.2 108.3
17°	9 45.3 -18.7 110.4	8 50.7 -18.3 110.1	7 55.9 -17.9 109.8	7 01.1 -17.6 109.5	6 06.2 -17.3 109.3
18°	9 26.6 -18.8 111.4	8 32.4 -18.5 111.1	7 38.0 -18.1 110.8	6 43.5 -17.7 110.5	5 48.9 -17.4 110.2
19°	9 07.8 -18.9 112.3	8 13.9 -18.5 112.0	7 19.9 -18.2 111.7	6 25.8 -17.9 111.5	5 31.5 -17.4 111.2
20°	8 48.9 -19.1 113.3	7 55.4 -18.7 113.0	7 01.7 -18.3 112.7	6 07.9 -17.9 112.4	5 14.1 -17.6 112.1
21°	8 29.8 -19.2 114.2	7 36.7 -18.9 113.9	6 43.4 -18.4 113.7	5 50.0 -18.0 113.4	4 56.5 -17.6 113.1
22°	8 10.6 -19.4 115.2	7 17.8 -18.9 114.9	6 25.0 -18.6 114.6	5 32.0 -18.1 114.3	4 38.9 -17.7 114.1
23°	7 51.2 -19.5 116.2	6 58.9 -19.1 115.9	6 06.4 -18.6 115.6	5 13.9 -18.2 115.3	4 21.2 -17.8 115.0
24°	7 31.7 -19.6 117.1	6 39.8 -19.1 116.8	5 47.8 -18.7 116.5	4 55.7 -18.3 116.2	4 03.4 -17.9 116.0
25°	7 12.1 -19.7 118.1	6 20.7 -19.3 117.8	5 29.1 -18.8 117.5	4 37.4 -18.4 117.2	3 45.5 -17.9 116.9
26°	6 52.4 -19.9 119.0	6 01.4 -19.4 118.7	5 10.3 -18.9 118.4	4 19.0 -18.4 118.2	3 27.6 -18.0 117.9
27°	6 32.5 -19.9 120.0	5 42.0 -19.5 119.7	4 51.4 -19.0 119.4	4 00.6 -18.6 119.1	3 09.6 -18.0 118.8
28°	6 12.6 -20.1 120.9	5 22.5 -19.5 120.6	4 32.4 -19.1 120.3	3 42.0 -18.5 120.1	2 51.6 -18.1 119.8
29°	5 52.5 -20.2 121.9	5 03.0 -19.7 121.6	4 13.3 -19.1 121.3	3 23.5 -18.6 121.0	2 33.5 -18.1 120.7

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°	9 42.0 -14.8 92.4	8 43.8 -14.7 92.2	7 45.7 -14.8 91.9	6 47.5 -14.7 91.7	5 49.3 -14.7 91.5
1°	9 27.2 -15.0 93.4	8 29.1 -14.9 93.2	7 30.9 -14.8 92.9	6 32.8 -14.8 92.7	5 34.6 -14.7 92.4
2°	9 12.2 -15.1 94.4	8 14.2 -15.1 94.2	7 16.1 -15.0 93.9	6 18.0 -14.9 93.7	5 19.9 -14.8 93.4
3°	8 57.1 -15.3 95.4	7 59.1 -15.2 95.1	7 01.1 -15.1 94.9	6 03.1 -15.0 94.6	5 05.1 -15.0 94.4
4°	8 41.8 -15.4 96.4	7 43.9 -15.3 96.1	6 46.0 -15.2 95.9	5 48.1 -15.1 95.6	4 50.1 -14.9 95.4
5°	8 26.4 -15.6 97.3	7 28.6 -15.4 97.1	6 30.8 -15.3 96.8	5 33.0 -15.2 96.6	4 35.2 -15.1 96.3
6°	8 10.8 -15.7 98.3	7 13.2 -15.6 98.1	6 15.5 -15.4 97.8	5 17.8 -15.3 97.5	4 20.1 -15.2 97.3
7°	7 55.1 -15.9 99.3	6 57.6 -15.7 99.0	6 00.1 -15.6 98.8	5 02.5 -15.4 98.5	4 04.9 -15.2 98.3
8°	7 39.2 -16.0 100.3	6 41.9 -15.8 100.0	5 44.5 -15.6 99.7	4 47.1 -15.4 99.5	3 49.7 -15.3 99.2
9°	7 23.2 -16.1 101.2	6 26.1 -15.9 101.0	5 28.9 -15.7 100.7	4 31.7 -15.5 100.5	3 34.4 -15.3 100.2
10°	7 07.1 -16.2 102.2	6 10.2 -16.0 101.9	5 13.2 -15.8 101.7	4 16.2 -15.7 101.4	3 19.1 -15.4 101.2
11°	6 50.9 -16.4 103.2	5 54.2 -16.2 102.9	4 57.4 -15.9 102.7	4 00.5 -15.6 102.4	3 03.7 -15.5 102.1
12°	6 34.5 -16.4 104.1	5 38.0 -16.2 103.9	4 41.5 -16.0 103.6	3 44.9 -15.8 103.4	2 48.2 -15.5 103.1
13°	6 18.1 -16.6 105.1	5 21.8 -16.3 104.8	4 25.5 -16.0 104.6	3 29.1 -15.8 104.3	2 32.7 -15.6 104.1
14°	6 01.5 -16.7 106.1	5 05.5 -16.4 105.8	4 09.5 -16.2 105.6	3 13.3 -15.8 105.3	2 17.1 -15.5 105.0
15°	5 44.8 -16.8 107.0	4 49.1 -16.5 106.8	3 53.3 -16.1 106.5	2 57.5 -15.9 106.3	2 01.6 -15.7 106.0
16°	5 28.0 -16.8 108.0	4 32.6 -16.5 107.7	3 37.2 -16.3 107.5	2 41.6 -16.0 107.2	1 45.9 -15.6 107.0
17°	5 11.2 -17.0 109.0	4 16.1 -16.6 108.7	3 20.9 -16.3 108.4	2 25.6 -16.0 108.2	1 30.3 -15.7 107.9
18°	4 54.2 -17.0 109.9	3 59.5 -16.7 109.7	3 04.6 -16.4 109.4	2 09.6 -16.0 109.2	1 14.6 -15.7 108.9
19°	4 37.2 -17.1 110.9	3 42.8 -16.8 110.6	2 48.2 -16.4 110.4	1 53.6 -16.0 110.1	0 58.9 -15.7 109.9
20°	4 20.1 -17.2 111.9	3 26.0 -16.8 111.6	2 31.8 -16.4 111.3	1 37.6 -16.1 111.1	0 43.2 -15.7 110.8
21°	4 02.9 -17.2 112.8	3 09.2 -16.9 112.6	2 15.4 -16.5 112.3	1 21.5 -16.1 112.0	0 27.5 -15.8 111.8
22°	3 45.7 -17.3 113.8	2 52.3 -16.9 113.5	1 58.9 -16.5 113.3	1 05.4 -16.2 113.0	0 11.7 -15.7 112.8
23°	3 28.4 -17.4 114.7	2 35.4 -16.9 114.5	1 42.4 -16.6 114.2	0 49.2 -16.1 114.0	-0 04.0 -15.7
24°	3 11.0 -17.4 115.7	2 18.5 -17.0 115.4	1 25.8 -16.5 115.2	0 33.1 -16.2 114.9	-0 19.7 -15.8
25°	2 53.6 -17.5 116.7	2 01.5 -17.1 116.4	1 09.3 -16.6 116.1	0 16.9 -16.1 115.9	-0 35.5 -15.7
26°	2 36.1 -17.5 117.6	1 44.4 -17.0 117.4	0 52.7 -16.6 117.1	0 00.8 -16.2 116.9	-0 51.2 -15.7
27°	2 18.6 -17.6 118.6	1 27.4 -17.1 118.3	0 36.1 -16.7 118.1	-0 15.4 -16.1	-1 06.9 -15.7
28°	2 01.0 -17.6 119.5	1 10.3 -17.1 119.3	0 19.4 -16.6 119.0	-0 31.5 -16.2	-1 22.6 -15.7
29°	1 43.4 -17.6 120.5	0 53.2 -17.1 120.2	0 02.8 -16.6 120.0	-0 47.7 -16.1	-1 38.3 -15.6

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 51.1 -14.6 91.2	3 52.9 -14.6 91.0	2 54.6 -14.5 90.7	1 56.4 -14.5 90.5	0 58.2 -14.5 90.2
1°	4 36.5 -14.7 92.2	3 38.3 -14.7 91.9	2 40.1 -14.6 91.7	1 41.9 -14.6 91.5	0 43.7 -14.5 91.2
2°	4 21.8 -14.8 93.2	3 23.6 -14.7 92.9	2 25.5 -14.7 92.7	1 27.3 -14.6 92.4	0 29.2 -14.6 92.2
3°	4 07.0 -14.8 94.1	3 08.9 -14.7 93.9	2 10.8 -14.6 93.6	1 12.7 -14.6 93.4	0 14.6 -14.5 93.2
4°	3 52.2 -14.9 95.1	2 54.2 -14.8 94.9	1 56.2 -14.8 94.6	0 58.1 -14.6 94.4	0 00.1 -14.6 94.1
5°	3 37.3 -15.0 96.1	2 39.4 -14.9 95.8	1 41.4 -14.7 95.6	0 43.5 -14.7 95.3	-0 14.5 -14.5
6°	3 22.3 -15.0 97.0	2 24.5 -14.9 96.8	1 26.7 -14.8 96.5	0 28.8 -14.6 96.3	-0 29.0 -14.6
7°	3 07.3 -15.1 98.0	2 09.6 -14.9 97.8	1 11.9 -14.8 97.5	0 14.2 -14.7 97.3	-0 43.6 -14.5
8°	2 52.2 -15.1 99.0	1 54.7 -15.0 98.7	0 57.1 -14.8 98.5	-0 00.5 -14.6	-0 58.1 -14.5
9°	2 37.1 -15.2 100.0	1 39.7 -15.0 99.7	0 42.3 -14.8 99.5	-0 15.1 -14.7	-1 12.6 -14.5
10°	2 21.9 -15.2 100.9	1 24.7 -15.0 100.7	0 27.5 -14.8 100.4	-0 29.8 -14.6	-1 27.1 -14.5
11°	2 06.7 -15.2 101.9	1 09.7 -15.0 101.6	0 12.7 -14.9 101.4	-0 44.4 -14.6	-1 41.6 -14.4
12°	1 51.5 -15.3 102.9	0 54.7 -15.1 102.6	-0 02.2 -14.8	-0 59.0 -14.7	-1 56.0 -14.4
13°	1 36.2 -15.3 103.8	0 39.6 -15.0 103.6	-0 17.0 -14.8	-1 13.7 -14.6	-2 10.4 -14.4
14°	1 20.9 -15.3 104.8	0 24.6 -15.1 104.5	-0 31.8 -14.8	-1 28.3 -14.5	-2 24.8 -14.3
15°	1 05.6 -15.4 105.8	0 09.5 -15.1 105.5	-0 46.6 -14.8	-1 42.8 -14.6	-2 39.1 -14.3
16°	0 50.2 -15.3 106.7	-0 05.6 -15.0	-1 01.4 -14.8	-1 57.4 -14.5	-2 53.4 -14.2
17°	0 34.9 -15.4 107.7	-0 20.6 -15.1	-1 16.2 -14.8	-2 11.9 -14.4	-3 07.6 -14.1
18°	0 19.5 -15.4 108.7	-0 35.7 -15.1	-1 31.0 -14.7	-2 26.3 -14.5	-3 21.7 -14.2
19°	0 04.1 -15.4 109.6	-0 50.8 -15.0	-1 45.7 -14.7	-2 40.8 -14.3	-3 35.9 -14.0
20°	-0 11.3 -15.3	-1 05.8 -15.0	-2 00.4 -14.7	-2 55.1 -14.4	-3 49.9 -14.0
21°	-0 26.6 -15.4	-1 20.8 -15.0	-2 15.1 -14.6	-3 09.5 -14.2	-4 03.9 -13.9
22°	-0 42.0 -15.4	-1 35.8 -15.0	-2 29.7 -14.6	-3 23.7 -14.2	-4 17.8 -13.9
23°	-0 57.4 -15.3	-1 50.8 -14.9	-2 44.3 -14.6	-3 37.9 -14.2	-4 31.7 -13.7
24°	-1 12.7 -15.3	-2 05.7 -14.9	-2 58.9 -14.5	-3 52.1 -14.1	-4 45.4 -13.7
25°	-1 28.0 -15.3	-2 20.6 -14.9	-3 13.4 -14.4	-4 06.2 -14.0	-4 59.1 -13.6
26°	-1 43.3 -15.3	-2 35.5 -14.8	-3 27.8 -14.4	-4 20.2 -13.9	-5 12.7 -13.5
27°	-1 58.6 -15.2	-2 50.3 -14.8	-3 42.2 -14.3	-4 34.1 -13.9	-5 26.2 -13.4
28°	-2 13.8 -15.2	-3 05.1 -14.7	-3 56.5 -14.2	-4 48.0 -13.8	-5 39.6 -13.3
29°	-2 29.0 -15.1	-3 19.8 -14.7	-4 10.7 -14.2	-5 01.8 -13.7	-5 52.9 -13.2

Latitude 14°

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 -14.5 90.0	-0 58.2 -14.5			
1°	-0 14.5 -14.5	-1 12.7 -14.5			
2°	-0 29.0 -14.5	-1 27.2 -14.5			
3°	-0 43.5 -14.5	-1 41.7 -14.4			
4°	-0 58.0 -14.5	-1 56.1 -14.4			
5°	-1 12.5 -14.4	-2 10.5 -14.4			
6°	-1 26.9 -14.5	-2 24.9 -14.3			
7°	-1 41.4 -14.4	-2 39.2 -14.3			
8°	-1 55.8 -14.3	-2 53.5 -14.2			
9°	-2 10.1 -14.4	-3 07.7 -14.2			
10°	-2 24.5 -14.2	-3 21.9 -14.1			
11°	-2 38.7 -14.3	-3 36.0 -14.0			
12°	-2 53.0 -14.2	-3 50.0 -14.0			
13°	-3 07.2 -14.1	-4 04.0 -13.9			
14°	-3 21.3 -14.1	-4 17.9 -13.9			
15°	-3 35.4 -14.0	-4 31.8 -13.7			
16°	-3 49.4 -14.0	-4 45.5 -13.7			
17°	-4 03.4 -13.8	-4 59.2 -13.6			
18°	-4 17.2 -13.8	-5 12.8 -13.5			
19°	-4 31.0 -13.8	-5 26.3 -13.4			
20°	-4 44.8 -13.6	-5 39.7 -13.3			
21°	-4 58.4 -13.6	-5 53.0 -13.2			
22°	-5 12.0 -13.4	-6 06.2 -13.1			
23°	-5 25.4 -13.4	-6 19.3 -13.0			
24°	-5 38.8 -13.3	-6 32.3 -12.9			
25°	-5 52.1 -13.2	-6 45.2 -12.7			
26°	-6 05.3 -13.0	-6 57.9 -12.7			
27°	-6 18.3 -13.0	-7 10.6 -12.5			
28°	-6 31.3 -12.8	-7 23.1 -12.3			
29°	-6 44.1 -12.8	-7 35.4 -12.3			

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°	75 00.0 -60.0 180.0	74 58.0 -59.8 176.1	74 52.2 -59.5 172.3	74 42.6 -59.0 168.6	74 29.3 -58.2 164.9
1°	74 00.0 -60.0 180.0	73 58.2 -59.9 176.4	73 52.7 -59.6 172.8	73 43.6 -59.0 169.2	73 31.1 -58.4 165.8
2°	73 00.0 -60.0 180.0	72 58.3 -59.9 176.6	72 53.1 -59.6 173.2	72 44.6 -59.2 169.8	72 32.7 -58.5 166.6
3°	72 00.0 -60.0 180.0	71 58.4 -59.9 176.8	71 53.5 -59.7 173.6	71 45.4 -59.3 170.4	71 34.2 -58.7 167.3
4°	71 00.0 -60.0 180.0	70 58.5 -60.0 176.9	70 53.8 -59.7 173.9	70 46.1 -59.3 170.9	70 35.5 -58.8 167.9
5°	70 00.0 -60.0 180.0	69 58.5 -59.9 177.1	69 54.1 -59.7 174.2	69 46.8 -59.4 171.3	69 36.7 -59.0 168.5
6°	69 00.0 -60.0 180.0	68 58.6 -59.9 177.2	68 54.4 -59.7 174.5	68 47.4 -59.4 171.7	68 37.7 -59.0 169.0
7°	68 00.0 -60.0 180.0	67 58.7 -60.0 177.4	67 54.7 -59.8 174.7	67 48.0 -59.5 172.1	67 38.7 -59.1 169.5
8°	67 00.0 -60.0 180.0	66 58.7 -59.9 177.5	66 54.9 -59.8 174.9	66 48.5 -59.5 172.4	66 39.6 -59.1 170.0
9°	66 00.0 -60.0 180.0	65 58.8 -60.0 177.6	65 55.1 -59.8 175.2	65 49.0 -59.6 172.8	65 40.5 -59.2 170.4
10°	65 00.0 -60.0 180.0	64 58.8 -59.9 177.7	64 55.3 -59.8 175.3	64 49.4 -59.6 173.0	64 41.3 -59.3 170.8
11°	64 00.0 -60.0 180.0	63 58.9 -60.0 177.8	63 55.5 -59.9 175.5	63 49.8 -59.6 173.3	63 42.0 -59.3 171.1
12°	63 00.0 -60.0 180.0	62 58.9 -59.9 177.8	62 55.6 -59.8 175.7	62 50.2 -59.6 173.6	62 42.7 -59.4 171.4
13°	62 00.0 -60.0 180.0	61 59.0 -60.0 177.9	61 55.8 -59.8 175.9	61 50.6 -59.7 173.8	61 43.3 -59.4 171.8
14°	61 00.0 -60.0 180.0	60 59.0 -60.0 178.0	60 56.0 -59.9 176.0	60 50.9 -59.7 174.0	60 43.9 -59.5 172.0
15°	60 00.0 -60.0 180.0	59 59.0 -59.9 178.1	59 56.1 -59.9 176.1	59 51.2 -59.7 174.2	59 44.4 -59.4 172.3
16°	59 00.0 -60.0 180.0	58 59.1 -60.0 178.1	58 56.2 -59.8 176.3	58 51.5 -59.7 174.4	58 45.0 -59.5 172.6
17°	58 00.0 -60.0 180.0	57 59.1 -60.0 178.2	57 56.4 -59.9 176.4	57 51.8 -59.7 174.6	57 45.5 -59.6 172.8
18°	57 00.0 -60.0 180.0	56 59.1 -60.0 178.3	56 56.5 -59.9 176.5	56 52.1 -59.8 174.8	56 45.9 -59.5 173.0
19°	56 00.0 -60.0 180.0	55 59.1 -59.9 178.3	55 56.6 -59.9 176.6	55 52.3 -59.7 174.9	55 46.4 -59.6 173.3
20°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.4	54 56.7 -59.9 176.7	54 52.6 -59.8 175.1	54 46.8 -59.6 173.5
21°	54 00.0 -60.0 180.0	53 59.2 -60.0 178.4	53 56.8 -59.9 176.8	53 52.8 -59.8 175.2	53 47.2 -59.6 173.7
22°	53 00.0 -60.0 180.0	52 59.2 -60.0 178.5	52 56.9 -59.9 176.9	52 53.0 -59.8 175.4	52 47.6 -59.7 173.9
23°	52 00.0 -60.0 180.0	51 59.2 -59.9 178.5	51 57.0 -59.9 177.0	51 53.2 -59.8 175.5	51 47.9 -59.6 174.0
24°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.5	50 57.1 -60.0 177.1	50 53.4 -59.8 175.7	50 48.3 -59.7 174.2
25°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.6	49 57.1 -59.9 177.2	49 53.6 -59.8 175.8	49 48.6 -59.7 174.4
26°	49 00.0 -60.0 180.0	48 59.3 -60.0 178.6	48 57.2 -59.9 177.3	48 53.8 -59.9 175.9	48 48.9 -59.7 174.5
27°	48 00.0 -60.0 180.0	47 59.3 -60.0 178.7	47 57.3 -59.9 177.3	47 53.9 -59.8 176.0	47 49.2 -59.7 174.7
28°	47 00.0 -60.0 180.0	46 59.3 -59.9 178.7	46 57.4 -59.9 177.4	46 54.1 -59.8 176.1	46 49.5 -59.7 174.8
29°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.7	45 57.5 -60.0 177.5	45 54.3 -59.9 176.2	45 49.8 -59.7 175.0

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°	74 12.4 -57.2 161.3	73 52.2 -56.1 157.9	73 28.9 -54.9 154.6	73 02.6 -53.6 151.5	72 33.6 -52.2 148.5
1°	73 15.2 -57.5 162.4	72 56.1 -56.5 159.1	72 34.0 -55.5 156.0	72 09.0 -54.2 153.0	71 41.4 -52.9 150.1
2°	72 17.7 -57.8 163.4	71 59.6 -56.9 160.2	71 38.5 -55.8 157.2	71 14.8 -54.8 154.4	70 48.5 -53.6 151.6
3°	71 19.9 -58.0 164.2	71 02.7 -57.2 161.3	70 42.7 -56.3 158.4	70 20.0 -55.2 155.6	69 54.9 -54.2 152.9
4°	70 21.9 -58.2 165.0	70 05.5 -57.4 162.2	69 46.4 -56.5 159.4	69 24.8 -55.6 156.7	69 00.7 -54.6 154.2
5°	69 23.7 -58.3 165.7	69 08.1 -57.7 163.0	68 49.9 -56.9 160.4	68 29.2 -56.0 157.8	68 06.1 -55.1 155.3
6°	68 25.4 -58.5 166.4	68 10.4 -57.8 163.8	67 53.0 -57.1 161.2	67 33.2 -56.3 158.7	67 11.0 -55.4 156.3
7°	67 26.9 -58.6 167.0	67 12.6 -58.0 164.5	66 55.9 -57.3 162.0	66 36.9 -56.6 159.6	66 15.6 -55.8 157.3
8°	66 28.3 -58.7 167.5	66 14.6 -58.2 165.1	65 58.6 -57.6 162.8	65 40.3 -56.9 160.5	65 19.8 -56.1 158.2
9°	65 29.6 -58.8 168.0	65 16.4 -58.2 165.7	65 01.0 -57.7 163.4	64 43.4 -57.0 161.2	64 23.7 -56.3 159.1
10°	64 30.8 -58.9 168.5	64 18.2 -58.5 166.3	64 03.3 -57.8 164.1	63 46.4 -57.3 161.9	63 27.4 -56.6 159.8
11°	63 31.9 -58.9 168.9	63 19.7 -58.5 166.8	63 05.5 -58.0 164.7	62 49.1 -57.4 162.6	62 30.8 -56.8 160.6
12°	62 33.0 -59.0 169.3	62 21.2 -58.6 167.3	62 07.5 -58.2 165.2	61 51.7 -57.6 163.2	61 34.0 -57.0 161.3
13°	61 34.0 -59.1 169.7	61 22.6 -58.7 167.7	61 09.3 -58.2 165.8	60 54.1 -57.7 163.8	60 37.0 -57.1 161.9
14°	60 34.9 -59.2 170.1	60 23.9 -58.7 168.2	60 11.1 -58.4 166.2	59 56.4 -57.9 164.4	59 39.9 -57.4 162.5
15°	59 35.7 -59.2 170.4	59 25.2 -58.9 168.6	59 12.7 -58.4 166.7	58 58.5 -58.0 164.9	58 42.5 -57.4 163.1
16°	58 36.5 -59.2 170.7	58 26.3 -58.9 168.9	58 14.3 -58.5 167.1	58 00.5 -58.0 165.4	57 45.1 -57.7 163.6
17°	57 37.3 -59.3 171.0	57 27.4 -58.9 169.3	57 15.8 -58.6 167.6	57 02.5 -58.2 165.8	56 47.4 -57.7 164.1
18°	56 38.0 -59.3 171.3	56 28.5 -59.1 169.6	56 17.2 -58.7 167.9	56 04.3 -58.3 166.3	55 49.7 -57.8 164.6
19°	55 38.7 -59.3 171.6	55 29.4 -59.0 170.0	55 18.5 -58.7 168.3	55 06.0 -58.4 166.7	54 51.9 -58.0 165.1
20°	54 39.4 -59.4 171.9	54 30.4 -59.1 170.3	54 19.8 -58.8 168.7	54 07.6 -58.4 167.1	53 53.9 -58.0 165.6
21°	53 40.0 -59.4 172.1	53 31.3 -59.2 170.6	53 21.0 -58.9 169.0	53 09.2 -58.5 167.5	52 55.9 -58.1 166.0
22°	52 40.6 -59.4 172.3	52 32.1 -59.2 170.8	52 22.1 -58.9 169.3	52 10.7 -58.6 167.9	51 57.8 -58.2 166.4
23°	51 41.2 -59.5 172.6	51 32.9 -59.2 171.1	51 23.2 -58.9 169.6	51 12.1 -58.6 168.2	50 59.6 -58.3 166.8
24°	50 41.7 -59.5 172.8	50 33.7 -59.2 171.4	50 24.3 -59.0 169.9	50 13.5 -58.7 168.5	50 01.3 -58.4 167.1
25°	49 42.2 -59.5 173.0	49 34.5 -59.3 171.6	49 25.3 -59.0 170.2	49 14.8 -58.8 168.9	49 02.9 -58.4 167.5
26°	48 42.7 -59.5 173.2	48 35.2 -59.3 171.8	48 26.3 -59.1 170.5	48 16.0 -58.7 169.2	48 04.5 -58.5 167.9
27°	47 43.2 -59.5 173.4	47 35.9 -59.4 172.1	47 27.2 -59.1 170.8	47 17.3 -58.9 169.5	47 06.0 -58.5 168.2
28°	46 43.7 -59.6 173.6	46 36.5 -59.3 172.3	46 28.1 -59.1 171.0	46 18.4 -58.8 169.8	46 07.5 -58.6 168.5
29°	45 44.1 -59.5 173.7	45 37.2 -59.4 172.5	45 29.0 -59.2 171.3	45 19.6 -59.0 170.0	45 08.9 -58.6 168.8

Dec	LHA 010° / 350°	LHA 011° / 349°	LHA 012° / 348°	LHA 013° / 347°	LHA 014° / 346°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	72 02.2 -50.8 145.7	71 28.4 -49.3 143.1	70 52.6 -47.9 140.6	70 14.9 -46.5 138.3	69 35.5 -45.1 136.1
1°	71 11.4 -51.7 147.4	70 39.1 -50.3 144.8	70 04.7 -49.0 142.4	69 28.4 -47.6 140.1	68 50.4 -46.3 137.9
2°	70 19.7 -52.3 149.0	69 48.8 -51.2 146.5	69 15.7 -49.8 144.1	68 40.8 -48.6 141.8	68 04.1 -47.3 139.7
3°	69 27.4 -53.1 150.4	68 57.6 -51.8 147.9	68 25.9 -50.7 145.6	67 52.2 -49.4 143.4	67 16.8 -48.2 141.3
4°	68 34.3 -53.5 151.7	68 05.8 -52.5 149.3	67 35.2 -51.3 147.0	67 02.8 -50.2 144.9	66 28.6 -49.1 142.8
5°	67 40.8 -54.1 152.9	67 13.3 -53.0 150.6	66 43.9 -52.0 148.4	66 12.6 -50.9 146.3	65 39.5 -49.7 144.2
6°	66 46.7 -54.5 154.0	66 20.3 -53.5 151.8	65 51.9 -52.5 149.6	65 21.7 -51.5 147.5	64 49.8 -50.5 145.5
7°	65 52.2 -54.9 155.1	65 26.8 -54.0 152.9	64 59.4 -53.0 150.8	64 30.2 -52.1 148.8	63 59.3 -51.1 146.8
8°	64 57.3 -55.3 156.0	64 32.8 -54.4 153.9	64 06.4 -53.5 151.9	63 38.1 -52.5 149.9	63 08.2 -51.6 148.0
9°	64 02.0 -55.6 156.9	63 38.4 -54.8 154.9	63 12.9 -54.0 152.9	62 45.6 -53.1 151.0	62 16.6 -52.1 149.1
10°	63 06.4 -55.8 157.8	62 43.6 -55.1 155.8	62 18.9 -54.2 153.9	61 52.5 -53.4 152.0	61 24.5 -52.6 150.1
11°	62 10.6 -56.1 158.6	61 48.5 -55.4 156.6	61 24.7 -54.7 154.8	60 59.1 -53.8 152.9	60 31.9 -53.0 151.1
12°	61 14.5 -56.4 159.3	60 53.1 -55.6 157.4	60 30.0 -54.9 155.6	60 05.3 -54.2 153.8	59 38.9 -53.4 152.1
13°	60 18.1 -56.5 160.0	59 57.5 -55.9 158.2	59 35.1 -55.2 156.4	59 11.1 -54.5 154.7	58 45.5 -53.7 153.0
14°	59 21.6 -56.8 160.7	59 01.6 -56.2 158.9	58 39.9 -55.5 157.2	58 16.6 -54.8 155.5	57 51.8 -54.1 153.8
15°	58 24.8 -56.9 161.3	58 05.4 -56.3 159.6	57 44.4 -55.7 157.9	57 21.8 -55.0 156.2	56 57.7 -54.3 154.6
16°	57 27.9 -57.1 161.9	57 09.1 -56.5 160.2	56 48.7 -55.9 158.6	56 26.8 -55.3 157.0	56 03.4 -54.6 155.4
17°	56 30.8 -57.2 162.5	56 12.6 -56.7 160.8	55 52.8 -56.1 159.2	55 31.5 -55.5 157.7	55 08.8 -54.9 156.1
18°	55 33.6 -57.4 163.0	55 15.9 -56.9 161.4	54 56.7 -56.3 159.9	54 36.0 -55.7 158.3	54 13.9 -55.1 156.8
19°	54 36.2 -57.5 163.5	54 19.0 -57.0 162.0	54 00.4 -56.5 160.5	53 40.3 -55.9 159.0	53 18.8 -55.4 157.5
20°	53 38.7 -57.6 164.0	53 22.0 -57.1 162.5	53 03.9 -56.6 161.0	52 44.4 -56.1 159.6	52 23.4 -55.5 158.1
21°	52 41.1 -57.7 164.5	52 24.9 -57.3 163.0	52 07.3 -56.8 161.6	51 48.3 -56.3 160.1	51 27.9 -55.7 158.7
22°	51 43.4 -57.8 164.9	51 27.6 -57.3 163.5	51 10.5 -56.9 162.1	50 52.0 -56.4 160.7	50 32.2 -55.9 159.3
23°	50 45.6 -57.9 165.4	50 30.3 -57.5 164.0	50 13.6 -57.0 162.6	49 55.6 -56.5 161.2	49 36.3 -56.0 159.9
24°	49 47.7 -58.0 165.8	49 32.8 -57.6 164.4	49 16.6 -57.2 163.1	48 59.1 -56.7 161.8	48 40.3 -56.2 160.4
25°	48 49.7 -58.0 166.2	48 35.2 -57.7 164.8	48 19.4 -57.2 163.5	48 02.4 -56.8 162.2	47 44.1 -56.3 161.0
26°	47 51.7 -58.2 166.5	47 37.5 -57.7 165.3	47 22.2 -57.4 164.0	47 05.6 -56.9 162.7	46 47.8 -56.5 161.5
27°	46 53.5 -58.2 166.9	46 39.8 -57.8 165.7	46 24.8 -57.4 164.4	46 08.7 -57.1 163.2	45 51.3 -56.6 162.0
28°	45 55.3 -58.2 167.3	45 42.0 -58.0 166.0	45 27.4 -57.5 164.8	45 11.6 -57.1 163.6	44 54.7 -56.7 162.4
29°	44 57.1 -58.3 167.6	44 44.0 -57.9 166.4	44 29.9 -57.7 165.2	44 14.5 -57.2 164.1	43 58.0 -56.8 162.9

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°	68 54.6 -43.8 134.0	68 12.2 -42.5 132.1	67 28.6 -41.2 130.2	66 43.8 -40.0 128.5	65 57.9 -38.8 126.9
1°	68 10.8 -45.0 135.9	67 29.7 -43.7 133.9	66 47.4 -42.5 132.1	66 03.8 -41.3 130.4	65 19.1 -40.1 128.8
2°	67 25.8 -46.0 137.6	66 46.0 -44.8 135.7	66 04.9 -43.6 133.9	65 22.5 -42.4 132.2	64 39.0 -41.3 130.5
3°	66 39.8 -47.1 139.3	66 01.2 -45.8 137.4	65 21.3 -44.7 135.6	64 40.1 -43.5 133.8	63 57.7 -42.4 132.2
4°	65 52.7 -47.8 140.8	65 15.4 -46.7 138.9	64 36.6 -45.6 137.1	63 56.6 -44.5 135.4	63 15.3 -43.4 133.8
5°	65 04.9 -48.7 142.3	64 28.7 -47.6 140.4	63 51.0 -46.5 138.6	63 12.1 -45.4 136.9	62 31.9 -44.3 135.3
6°	64 16.2 -49.4 143.6	63 41.1 -48.4 141.8	63 04.5 -47.3 140.0	62 26.7 -46.3 138.4	61 47.6 -45.2 136.8
7°	63 26.8 -50.1 144.9	62 52.7 -49.0 143.1	62 17.2 -48.0 141.4	61 40.4 -47.0 139.7	61 02.4 -46.1 138.1
8°	62 36.7 -50.6 146.1	62 03.7 -49.7 144.4	61 29.2 -48.7 142.7	60 53.4 -47.7 141.0	60 16.3 -46.7 139.4
9°	61 46.1 -51.2 147.3	61 14.0 -50.3 145.5	60 40.5 -49.3 143.9	60 05.7 -48.4 142.3	59 29.6 -47.4 140.7
10°	60 54.9 -51.7 148.4	60 23.7 -50.8 146.7	59 51.2 -49.9 145.0	59 17.3 -49.0 143.4	58 42.2 -48.1 141.9
11°	60 03.2 -52.2 149.4	59 32.9 -51.3 147.7	59 01.3 -50.4 146.1	58 28.3 -49.5 144.5	57 54.1 -48.7 143.0
12°	59 11.0 -52.6 150.4	58 41.6 -51.7 148.7	58 10.9 -50.9 147.2	57 38.8 -50.1 145.6	57 05.4 -49.2 144.1
13°	58 18.4 -52.9 151.3	57 49.9 -52.2 149.7	57 20.0 -51.4 148.1	56 48.7 -50.5 146.6	56 16.2 -49.6 145.2
14°	57 25.5 -53.3 152.2	56 57.7 -52.5 150.6	56 28.6 -51.7 149.1	55 58.2 -50.9 147.6	55 26.6 -50.2 146.2
15°	56 32.2 -53.7 153.0	56 05.2 -52.9 151.5	55 36.9 -52.2 150.0	55 07.3 -51.4 148.5	54 36.4 -50.6 147.1
16°	55 38.5 -53.9 153.8	55 12.3 -53.2 152.3	54 44.7 -52.5 150.9	54 15.9 -51.8 149.4	53 45.8 -51.0 148.0
17°	54 44.6 -54.2 154.6	54 19.1 -53.6 153.1	53 52.2 -52.8 151.7	53 24.1 -52.1 150.3	52 54.8 -51.4 148.9
18°	53 50.4 -54.5 155.3	53 25.5 -53.8 153.9	52 59.4 -53.1 152.5	52 32.0 -52.4 151.1	52 03.4 -51.7 149.8
19°	52 55.9 -54.7 156.0	52 31.7 -54.1 154.6	52 06.3 -53.5 153.3	51 39.6 -52.8 151.9	51 11.7 -52.1 150.6
20°	52 01.2 -54.9 156.7	51 37.6 -54.3 155.3	51 12.8 -53.6 154.0	50 46.8 -53.0 152.7	50 19.6 -52.3 151.4
21°	51 06.3 -55.2 157.4	50 43.3 -54.5 156.0	50 19.2 -54.0 154.7	49 53.8 -53.3 153.4	49 27.3 -52.7 152.1
22°	50 11.1 -55.3 158.0	49 48.8 -54.8 156.7	49 25.2 -54.1 155.4	49 00.5 -53.6 154.1	48 34.6 -52.9 152.9
23°	49 15.8 -55.5 158.6	48 54.0 -54.9 157.3	48 31.1 -54.4 156.0	48 06.9 -53.7 154.8	47 41.7 -53.2 153.6
24°	48 20.3 -55.7 159.2	47 59.1 -55.2 157.9	47 36.7 -54.6 156.7	47 13.2 -54.1 155.4	46 48.5 -53.4 154.2
25°	47 24.6 -55.8 159.7	47 03.9 -55.3 158.5	46 42.1 -54.8 157.3	46 19.1 -54.2 156.1	45 55.1 -53.6 154.9
26°	46 28.8 -56.0 160.3	46 08.6 -55.5 159.0	45 47.3 -54.9 157.9	45 24.9 -54.4 156.7	45 01.5 -53.9 155.5
27°	45 32.8 -56.1 160.8	45 13.1 -55.6 159.6	44 52.4 -55.1 158.4	44 30.5 -54.5 157.3	44 07.6 -54.0 156.2
28°	44 36.7 -56.3 161.3	44 17.5 -55.7 160.1	43 57.3 -55.3 159.0	43 36.0 -54.8 157.9	43 13.6 -54.2 156.8
29°	43 40.4 -56.3 161.8	43 21.8 -55.9 160.6	43 02.0 -55.4 159.5	42 41.2 -54.9 158.4	42 19.4 -54.4 157.3

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°	65 11.1 -37.6 125.4	64 23.5 -36.6 124.0	63 35.1 -35.6 122.6	62 45.9 -34.6 121.4	61 56.1 -33.7 120.2
1°	64 33.5 -39.0 127.2	63 46.9 -37.9 125.8	62 59.5 -36.9 124.4	62 11.3 -35.9 123.1	61 22.4 -34.9 121.9
2°	63 54.5 -40.2 129.0	63 09.0 -39.2 127.5	62 22.6 -38.1 126.2	61 35.4 -37.1 124.8	60 47.5 -36.2 123.6
3°	63 14.3 -41.3 130.7	62 29.8 -40.2 129.2	61 44.5 -39.3 127.8	60 58.3 -38.3 126.5	60 11.3 -37.3 125.2
4°	62 33.0 -42.4 132.3	61 49.6 -41.4 130.8	61 05.2 -40.3 129.4	60 20.0 -39.3 128.0	59 34.0 -38.4 126.8
5°	61 50.6 -43.3 133.8	61 08.2 -42.2 132.3	60 24.9 -41.3 130.9	59 40.7 -40.4 129.6	58 55.6 -39.4 128.3
6°	61 07.3 -44.2 135.2	60 26.0 -43.2 133.8	59 43.6 -42.2 132.4	59 00.3 -41.3 131.0	58 16.2 -40.4 129.7
7°	60 23.1 -45.0 136.6	59 42.8 -44.1 135.1	59 01.4 -43.1 133.7	58 19.0 -42.1 132.4	57 35.8 -41.2 131.1
8°	59 38.1 -45.8 137.9	58 58.7 -44.8 136.5	58 18.3 -43.9 135.1	57 36.9 -43.0 133.7	56 54.6 -42.1 132.5
9°	58 52.3 -46.5 139.2	58 13.9 -45.6 137.8	57 34.4 -44.7 136.4	56 53.9 -43.7 135.0	56 12.5 -42.9 133.8
10°	58 05.8 -47.2 140.4	57 28.3 -46.2 139.0	56 49.7 -45.3 137.6	56 10.2 -44.5 136.3	55 29.6 -43.5 135.0
11°	57 18.6 -47.7 141.6	56 42.1 -46.9 140.2	56 04.4 -46.0 138.8	55 25.7 -45.1 137.5	54 46.1 -44.3 136.2
12°	56 30.9 -48.4 142.7	55 55.2 -47.5 141.3	55 18.4 -46.6 139.9	54 40.6 -45.8 138.6	54 01.8 -44.9 137.4
13°	55 42.5 -48.8 143.7	55 07.7 -48.0 142.4	54 31.8 -47.2 141.0	53 54.8 -46.3 139.7	53 16.9 -45.6 138.5
14°	54 53.7 -49.4 144.8	54 19.7 -48.6 143.4	53 44.6 -47.7 142.1	53 08.5 -46.9 140.8	52 31.3 -46.0 139.6
15°	54 04.3 -49.8 145.7	53 31.1 -49.0 144.4	52 56.9 -48.3 143.1	52 21.6 -47.5 141.8	51 45.3 -46.7 140.6
16°	53 14.5 -50.2 146.7	52 42.1 -49.4 145.4	52 08.6 -48.6 144.1	51 34.1 -47.9 142.8	50 58.6 -47.1 141.6
17°	52 24.3 -50.6 147.6	51 52.7 -49.9 146.3	51 20.0 -49.2 145.0	50 46.2 -48.3 143.8	50 11.5 -47.6 142.6
18°	51 33.7 -51.1 148.5	51 02.8 -50.3 147.2	50 30.8 -49.5 145.9	49 57.9 -48.8 144.7	49 23.9 -48.1 143.5
19°	50 42.6 -51.3 149.3	50 12.5 -50.6 148.0	49 41.3 -49.9 146.8	49 09.1 -49.2 145.6	48 35.8 -48.4 144.4
20°	49 51.3 -51.7 150.1	49 21.9 -51.0 148.9	48 51.4 -50.3 147.7	48 19.9 -49.6 146.5	47 47.4 -48.9 145.3
21°	48 59.6 -52.0 150.9	48 30.9 -51.4 149.7	48 01.1 -50.7 148.5	47 30.3 -50.0 147.3	46 58.5 -49.2 146.2
22°	48 07.6 -52.3 151.6	47 39.5 -51.6 150.4	47 10.4 -50.9 149.3	46 40.3 -50.2 148.1	46 09.3 -49.6 147.0
23°	47 15.3 -52.5 152.4	46 47.9 -51.9 151.2	46 19.5 -51.3 150.0	45 50.1 -50.6 148.9	45 19.7 -50.0 147.8
24°	46 22.8 -52.8 153.1	45 56.0 -52.1 151.9	45 28.2 -51.5 150.8	44 59.5 -50.9 149.7	44 29.7 -50.2 148.6
25°	45 30.0 -53.0 153.8	45 03.9 -52.5 152.6	44 36.7 -51.8 151.5	44 08.6 -51.2 150.4	43 39.5 -50.5 149.4
26°	44 37.0 -53.3 154.4	44 11.4 -52.6 153.3	43 44.9 -52.0 152.2	43 17.4 -51.4 151.2	42 49.0 -50.8 150.1
27°	43 43.7 -53.5 155.1	43 18.8 -52.9 154.0	42 52.9 -52.3 152.9	42 26.0 -51.7 151.9	41 58.2 -51.1 150.8
28°	42 50.2 -53.6 155.7	42 25.9 -53.1 154.6	42 00.6 -52.6 153.6	41 34.3 -51.9 152.5	41 07.1 -51.3 151.5
29°	41 56.6 -53.9 156.3	41 32.8 -53.3 155.2	41 08.0 -52.7 154.2	40 42.4 -52.2 153.2	40 15.8 -51.6 152.2

Dec	LHA 025° / 335°	LHA 026° / 334°	LHA 027° / 333°	LHA 028° / 332°	LHA 029° / 331°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	61 05.7 -32.8 119.0	60 14.8 -32.0 118.0	59 23.4 -31.2 116.9	58 31.5 -30.4 116.0	57 39.1 -29.6 115.0
1°	60 32.9 -34.0 120.7	59 42.8 -33.2 119.6	58 52.2 -32.4 118.6	58 01.1 -31.6 117.6	57 09.5 -30.9 116.6
2°	59 58.9 -35.3 122.4	59 09.6 -34.4 121.3	58 19.8 -33.6 120.2	57 29.5 -32.8 119.2	56 38.6 -32.0 118.2
3°	59 23.6 -36.4 124.0	58 35.2 -35.5 122.9	57 46.2 -34.7 121.8	56 56.7 -33.9 120.7	56 06.6 -33.1 119.7
4°	58 47.2 -37.5 125.6	57 59.7 -36.6 124.4	57 11.5 -35.7 123.3	56 22.8 -34.9 122.2	55 33.5 -34.1 121.2
5°	58 09.7 -38.5 127.1	57 23.1 -37.6 125.9	56 35.8 -36.8 124.8	55 47.9 -36.0 123.7	54 59.4 -35.2 122.7
6°	57 31.2 -39.5 128.5	56 45.5 -38.6 127.3	55 59.0 -37.7 126.2	55 11.9 -36.9 125.1	54 24.2 -36.1 124.1
7°	56 51.7 -40.3 129.9	56 06.9 -39.5 128.7	55 21.3 -38.6 127.6	54 35.0 -37.8 126.5	53 48.1 -37.0 125.4
8°	56 11.4 -41.2 131.2	55 27.4 -40.3 130.0	54 42.7 -39.5 128.9	53 57.2 -38.6 127.8	53 11.1 -37.9 126.8
9°	55 30.2 -42.0 132.5	54 47.1 -41.1 131.3	54 03.2 -40.3 130.2	53 18.6 -39.5 129.1	52 33.2 -38.6 128.0
10°	54 48.2 -42.7 133.8	54 06.0 -41.9 132.6	53 22.9 -41.0 131.4	52 39.1 -40.2 130.3	51 54.6 -39.5 129.3
11°	54 05.5 -43.4 135.0	53 24.1 -42.6 133.8	52 41.9 -41.8 132.7	51 58.9 -41.0 131.6	51 15.1 -40.1 130.5
12°	53 22.1 -44.1 136.1	52 41.5 -43.3 135.0	52 00.1 -42.5 133.8	51 17.9 -41.6 132.7	50 35.0 -40.9 131.7
13°	52 38.0 -44.7 137.3	51 58.2 -43.9 136.1	51 17.6 -43.0 135.0	50 36.3 -42.3 133.9	49 54.1 -41.5 132.8
14°	51 53.3 -45.3 138.4	51 14.3 -44.4 137.2	50 34.6 -43.7 136.1	49 54.0 -43.0 135.0	49 12.6 -42.1 133.9
15°	51 08.0 -45.8 139.4	50 29.9 -45.1 138.3	49 50.9 -44.3 137.2	49 11.0 -43.5 136.1	48 30.5 -42.8 135.0
16°	50 22.2 -46.4 140.4	49 44.8 -45.6 139.3	49 06.6 -44.8 138.2	48 27.5 -44.0 137.1	47 47.7 -43.3 136.1
17°	49 35.8 -46.8 141.4	48 59.2 -46.1 140.3	48 21.8 -45.3 139.2	47 43.5 -44.6 138.1	47 04.4 -43.8 137.1
18°	48 49.0 -47.3 142.4	48 13.1 -46.5 141.3	47 36.5 -45.9 140.2	46 58.9 -45.0 139.1	46 20.6 -44.3 138.1
19°	48 01.7 -47.8 143.3	47 26.6 -47.0 142.2	46 50.6 -46.2 141.1	46 13.9 -45.6 140.1	45 36.3 -44.8 139.1
20°	47 13.9 -48.1 144.2	46 39.6 -47.4 143.1	46 04.4 -46.7 142.1	45 28.3 -46.0 141.0	44 51.5 -45.3 140.0
21°	46 25.8 -48.6 145.1	45 52.2 -47.9 144.0	45 17.7 -47.2 143.0	44 42.3 -46.4 141.9	44 06.2 -45.7 140.9
22°	45 37.2 -48.9 145.9	45 04.3 -48.2 144.9	44 30.5 -47.5 143.8	43 55.9 -46.8 142.8	43 20.5 -46.1 141.8
23°	44 48.3 -49.2 146.7	44 16.1 -48.5 145.7	43 43.0 -47.8 144.7	43 09.1 -47.2 143.7	42 34.4 -46.5 142.7
24°	43 59.1 -49.6 147.5	43 27.6 -48.9 146.5	42 55.2 -48.3 145.5	42 21.9 -47.5 144.5	41 47.9 -46.9 143.6
25°	43 09.5 -49.8 148.3	42 38.7 -49.3 147.3	42 06.9 -48.5 146.3	41 34.4 -47.9 145.3	41 01.0 -47.2 144.4
26°	42 19.7 -50.2 149.1	41 49.4 -49.5 148.1	41 18.4 -48.9 147.1	40 46.5 -48.2 146.1	40 13.8 -47.5 145.2
27°	41 29.5 -50.5 149.8	40 59.9 -49.8 148.8	40 29.5 -49.2 147.9	39 58.3 -48.5 146.9	39 26.3 -47.9 146.0
28°	40 39.0 -50.7 150.5	40 10.1 -50.1 149.6	39 40.3 -49.4 148.6	39 09.8 -48.9 147.7	38 38.4 -48.2 146.8
29°	39 48.3 -50.9 151.2	39 20.0 -50.3 150.3	38 50.9 -49.7 149.3	38 20.9 -49.0 148.4	37 50.2 -48.4 147.5

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	56 46.4 -28.9 114.1	55 53.4 -28.3 113.3	55 00.0 -27.7 112.5	54 06.3 -27.1 111.7	53 12.3 -26.5 111.0
1°	56 17.5 -30.2 115.7	55 25.1 -29.5 114.9	54 32.3 -28.8 114.0	53 39.2 -28.1 113.2	52 45.8 -27.5 112.5
2°	55 47.3 -31.2 117.3	54 55.6 -30.5 116.4	54 03.5 -29.9 115.5	53 11.1 -29.3 114.7	52 18.3 -28.7 113.9
3°	55 16.1 -32.4 118.8	54 25.1 -31.7 117.9	53 33.6 -30.9 117.0	52 41.8 -30.3 116.2	51 49.6 -29.7 115.4
4°	54 43.7 -33.4 120.3	53 53.4 -32.7 119.3	53 02.7 -32.0 118.4	52 11.5 -31.3 117.6	51 19.9 -30.6 116.8
5°	54 10.3 -34.4 121.7	53 20.7 -33.6 120.7	52 30.7 -32.9 119.8	51 40.2 -32.2 119.0	50 49.3 -31.6 118.1
6°	53 35.9 -35.3 123.1	52 47.1 -34.6 122.1	51 57.8 -33.9 121.2	51 08.0 -33.2 120.3	50 17.7 -32.5 119.5
7°	53 00.6 -36.2 124.4	52 12.5 -35.5 123.5	51 23.9 -34.7 122.5	50 34.8 -34.0 121.6	49 45.2 -33.3 120.8
8°	52 24.4 -37.1 125.7	51 37.0 -36.3 124.8	50 49.2 -35.6 123.8	50 00.8 -34.9 122.9	49 11.9 -34.2 122.1
9°	51 47.3 -37.9 127.0	51 00.7 -37.1 126.0	50 13.6 -36.4 125.1	49 25.9 -35.7 124.2	48 37.7 -35.0 123.3
10°	51 09.4 -38.7 128.3	50 23.6 -37.9 127.3	49 37.2 -37.2 126.3	48 50.2 -36.4 125.4	48 02.7 -35.7 124.5
11°	50 30.7 -39.3 129.5	49 45.7 -38.6 128.5	49 00.0 -37.9 127.5	48 13.8 -37.2 126.6	47 27.0 -36.4 125.7
12°	49 51.4 -40.1 130.7	49 07.1 -39.4 129.7	48 22.1 -38.5 128.7	47 36.6 -37.8 127.8	46 50.6 -37.2 126.9
13°	49 11.3 -40.8 131.8	48 27.7 -40.0 130.8	47 43.6 -39.3 129.9	46 58.8 -38.6 128.9	46 13.4 -37.8 128.0
14°	48 30.5 -41.4 132.9	47 47.7 -40.6 131.9	47 04.3 -39.9 131.0	46 20.2 -39.1 130.1	45 35.6 -38.5 129.2
15°	47 49.1 -41.9 134.0	47 07.1 -41.2 133.0	46 24.4 -40.5 132.1	45 41.1 -39.8 131.1	44 57.1 -39.0 130.2
16°	47 07.2 -42.6 135.1	46 25.9 -41.8 134.1	45 43.9 -41.1 133.1	45 01.3 -40.4 132.2	44 18.1 -39.7 131.3
17°	46 24.6 -43.1 136.1	45 44.1 -42.4 135.1	45 02.8 -41.6 134.2	44 20.9 -40.9 133.3	43 38.4 -40.2 132.4
18°	45 41.5 -43.6 137.1	45 01.7 -42.9 136.1	44 21.2 -42.2 135.2	43 40.0 -41.4 134.3	42 58.2 -40.7 133.4
19°	44 57.9 -44.1 138.1	44 18.8 -43.3 137.1	43 39.0 -42.6 136.2	42 58.6 -42.0 135.3	42 17.5 -41.3 134.4
20°	44 13.8 -44.5 139.0	43 35.5 -43.9 138.1	42 56.4 -43.1 137.1	42 16.6 -42.4 136.2	41 36.2 -41.7 135.4
21°	43 29.3 -45.0 140.0	42 51.6 -44.3 139.0	42 13.3 -43.6 138.1	41 34.2 -42.9 137.2	40 54.5 -42.2 136.3
22°	42 44.3 -45.4 140.9	42 07.3 -44.7 139.9	41 29.7 -44.0 139.0	40 51.3 -43.3 138.1	40 12.3 -42.6 137.2
23°	41 58.9 -45.8 141.7	41 22.6 -45.1 140.8	40 45.7 -44.5 139.9	40 08.0 -43.8 139.0	39 29.7 -43.1 138.2
24°	41 13.1 -46.2 142.6	40 37.5 -45.5 141.7	40 01.2 -44.8 140.8	39 24.2 -44.1 139.9	38 46.6 -43.5 139.1
25°	40 26.9 -46.6 143.5	39 52.0 -45.9 142.5	39 16.4 -45.2 141.7	38 40.1 -44.5 140.8	38 03.1 -43.8 139.9
26°	39 40.3 -46.8 144.3	39 06.1 -46.2 143.4	38 31.2 -45.5 142.5	37 55.6 -44.9 141.6	37 19.3 -44.2 140.8
27°	38 53.5 -47.3 145.1	38 19.9 -46.5 144.2	37 45.7 -45.9 143.3	37 10.7 -45.2 142.5	36 35.1 -44.6 141.6
28°	38 06.2 -47.5 145.9	37 33.4 -46.9 145.0	36 59.8 -46.3 144.1	36 25.5 -45.6 143.3	35 50.5 -44.9 142.5
29°	37 18.7 -47.8 146.6	36 46.5 -47.2 145.8	36 13.5 -46.5 144.9	35 39.9 -45.9 144.1	35 05.6 -45.2 143.3

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°	52 18.1 -26.0 110.3	51 23.6 -25.4 109.6	50 28.9 -24.9 109.0	49 34.0 -24.5 108.3	48 38.9 -24.0 107.7
1°	51 52.1 -27.0 111.8	50 58.2 -26.5 111.1	50 04.0 -26.0 110.4	49 09.5 -25.4 109.7	48 14.9 -25.0 109.1
2°	51 25.1 -28.0 113.2	50 31.7 -27.5 112.5	49 38.0 -26.9 111.8	48 44.1 -26.4 111.1	47 49.9 -25.9 110.5
3°	50 57.1 -29.1 114.6	50 04.2 -28.4 113.9	49 11.1 -27.9 113.2	48 17.7 -27.4 112.5	47 24.0 -26.9 111.8
4°	50 28.0 -30.0 116.0	49 35.8 -29.5 115.2	48 43.2 -28.9 114.5	47 50.3 -28.3 113.8	46 57.1 -27.7 113.1
5°	49 58.0 -30.9 117.3	49 06.3 -30.3 116.6	48 14.3 -29.7 115.8	47 22.0 -29.1 115.1	46 29.4 -28.6 114.4
6°	49 27.1 -31.9 118.7	48 36.0 -31.2 117.9	47 44.6 -30.6 117.1	46 52.9 -30.0 116.4	46 00.8 -29.4 115.7
7°	48 55.2 -32.6 120.0	48 04.8 -32.0 119.2	47 14.0 -31.4 118.4	46 22.9 -30.8 117.7	45 31.4 -30.3 116.9
8°	48 22.6 -33.5 121.2	47 32.8 -32.9 120.4	46 42.6 -32.2 119.6	45 52.1 -31.7 118.9	45 01.1 -31.0 118.2
9°	47 49.1 -34.3 122.5	46 59.9 -33.6 121.7	46 10.4 -33.0 120.9	45 20.4 -32.3 120.1	44 30.1 -31.7 119.4
10°	47 14.8 -35.1 123.7	46 26.3 -34.4 122.9	45 37.4 -33.7 122.1	44 48.1 -33.1 121.3	43 58.4 -32.5 120.6
11°	46 39.7 -35.7 124.9	45 51.9 -35.1 124.0	45 03.7 -34.4 123.2	44 15.0 -33.8 122.5	43 25.9 -33.2 121.7
12°	46 04.0 -36.5 126.0	45 16.8 -35.7 125.2	44 29.3 -35.2 124.4	43 41.2 -34.5 123.6	42 52.7 -33.8 122.9
13°	45 27.5 -37.1 127.2	44 41.1 -36.5 126.3	43 54.1 -35.7 125.5	43 06.7 -35.1 124.7	42 18.9 -34.5 124.0
14°	44 50.4 -37.8 128.3	44 04.6 -37.1 127.5	43 18.4 -36.4 126.6	42 31.6 -35.7 125.8	41 44.4 -35.1 125.1
15°	44 12.6 -38.4 129.4	43 27.5 -37.6 128.5	42 42.0 -37.1 127.7	41 55.9 -36.4 126.9	41 09.3 -35.7 126.2
16°	43 34.2 -38.9 130.4	42 49.9 -38.3 129.6	42 04.9 -37.5 128.8	41 19.5 -36.9 128.0	40 33.6 -36.3 127.2
17°	42 55.3 -39.5 131.5	42 11.6 -38.8 130.7	41 27.4 -38.2 129.8	40 42.6 -37.5 129.0	39 57.3 -36.8 128.3
18°	42 15.8 -40.1 132.5	41 32.8 -39.4 131.7	40 49.2 -38.7 130.9	40 05.1 -38.0 130.1	39 20.5 -37.3 129.3
19°	41 35.7 -40.5 133.5	40 53.4 -39.9 132.7	40 10.5 -39.2 131.9	39 27.1 -38.5 131.1	38 43.2 -37.9 130.3
20°	40 55.2 -41.1 134.5	40 13.5 -40.3 133.7	39 31.3 -39.6 132.9	38 48.6 -39.0 132.1	38 05.3 -38.4 131.3
21°	40 14.1 -41.5 135.5	39 33.2 -40.8 134.6	38 51.7 -40.2 133.8	38 09.6 -39.5 133.0	37 26.9 -38.8 132.3
22°	39 32.6 -41.9 136.4	38 52.4 -41.3 135.6	38 11.5 -40.6 134.8	37 30.1 -40.0 134.0	36 48.1 -39.3 133.2
23°	38 50.7 -42.4 137.3	38 11.1 -41.7 136.5	37 30.9 -41.0 135.7	36 50.1 -40.3 134.9	36 08.8 -39.7 134.2
24°	38 08.3 -42.8 138.2	37 29.4 -42.1 137.4	36 49.9 -41.5 136.6	36 09.8 -40.8 135.8	35 29.1 -40.1 135.1
25°	37 25.5 -43.2 139.1	36 47.3 -42.5 138.3	36 08.4 -41.8 137.5	35 29.0 -41.2 136.7	34 49.0 -40.5 136.0
26°	36 42.3 -43.5 140.0	36 04.8 -42.9 139.2	35 26.6 -42.3 138.4	34 47.8 -41.6 137.6	34 08.5 -40.9 136.9
27°	35 58.8 -43.9 140.8	35 21.9 -43.3 140.0	34 44.3 -42.5 139.3	34 06.2 -41.9 138.5	33 27.6 -41.3 137.8
28°	35 14.9 -44.3 141.7	34 38.6 -43.6 140.9	34 01.8 -43.0 140.1	33 24.3 -42.3 139.4	32 46.3 -41.6 138.6
29°	34 30.6 -44.5 142.5	33 55.0 -43.9 141.7	33 18.8 -43.2 141.0	32 42.0 -42.6 140.2	32 04.7 -42.0 139.5

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°	47 43.6 -23.6 107.1	46 48.1 -23.1 106.6	45 52.5 -22.8 106.0	44 56.7 -22.4 105.5	44 00.8 -22.0 105.0
1°	47 20.0 -24.5 108.5	46 25.0 -24.1 107.9	45 29.7 -23.6 107.4	44 34.3 -23.2 106.8	43 38.8 -22.9 106.3
2°	46 55.5 -25.5 109.8	46 00.9 -25.0 109.2	45 06.1 -24.6 108.7	44 11.1 -24.2 108.1	43 15.9 -23.7 107.6
3°	46 30.0 -26.3 111.2	45 35.9 -25.9 110.6	44 41.5 -25.4 110.0	43 46.9 -24.9 109.4	42 52.2 -24.6 108.8
4°	46 03.7 -27.2 112.5	45 10.0 -26.7 111.8	44 16.1 -26.2 111.2	43 22.0 -25.8 110.6	42 27.6 -25.3 110.1
5°	45 36.5 -28.1 113.7	44 43.3 -27.6 113.1	43 49.9 -27.1 112.5	42 56.2 -26.6 111.9	42 02.3 -26.1 111.3
6°	45 08.4 -28.9 115.0	44 15.7 -28.3 114.3	43 22.8 -27.8 113.7	42 29.6 -27.3 113.1	41 36.2 -26.9 112.5
7°	44 39.5 -29.6 116.2	43 47.4 -29.1 115.6	42 55.0 -28.6 114.9	42 02.3 -28.1 114.3	41 09.3 -27.5 113.7
8°	44 09.9 -30.5 117.5	43 18.3 -29.9 116.8	42 26.4 -29.3 116.1	41 34.2 -28.8 115.5	40 41.8 -28.3 114.9
9°	43 39.4 -31.1 118.7	42 48.4 -30.6 118.0	41 57.1 -30.1 117.3	41 05.4 -29.5 116.7	40 13.5 -29.0 116.0
10°	43 08.3 -31.9 119.8	42 17.8 -31.3 119.1	41 27.0 -30.7 118.5	40 35.9 -30.1 117.8	39 44.5 -29.6 117.2
11°	42 36.4 -32.6 121.0	41 46.5 -31.9 120.3	40 56.3 -31.4 119.6	40 05.8 -30.9 118.9	39 14.9 -30.3 118.3
12°	42 03.8 -33.2 122.1	41 14.6 -32.6 121.4	40 24.9 -32.0 120.7	39 34.9 -31.4 120.1	38 44.6 -30.9 119.4
13°	41 30.6 -33.8 123.2	40 42.0 -33.3 122.5	39 52.9 -32.7 121.8	39 03.5 -32.1 121.2	38 13.7 -31.5 120.5
14°	40 56.8 -34.5 124.3	40 08.7 -33.8 123.6	39 20.2 -33.2 122.9	38 31.4 -32.6 122.2	37 42.2 -32.1 121.6
15°	40 22.3 -35.1 125.4	39 34.9 -34.5 124.7	38 47.0 -33.8 124.0	37 58.8 -33.3 123.3	37 10.1 -32.6 122.6
16°	39 47.2 -35.6 126.5	39 00.4 -35.0 125.8	38 13.2 -34.4 125.0	37 25.5 -33.8 124.4	36 37.5 -33.2 123.7
17°	39 11.6 -36.2 127.5	38 25.4 -35.5 126.8	37 38.8 -34.9 126.1	36 51.7 -34.3 125.4	36 04.3 -33.7 124.7
18°	38 35.4 -36.7 128.5	37 49.9 -36.1 127.8	37 03.9 -35.5 127.1	36 17.4 -34.8 126.4	35 30.6 -34.2 125.7
19°	37 58.7 -37.2 129.6	37 13.8 -36.6 128.8	36 28.4 -35.9 128.1	35 42.6 -35.3 127.4	34 56.4 -34.7 126.8
20°	37 21.5 -37.7 130.5	36 37.2 -37.0 129.8	35 52.5 -36.5 129.1	35 07.3 -35.8 128.4	34 21.7 -35.2 127.7
21°	36 43.8 -38.2 131.5	36 00.2 -37.6 130.8	35 16.0 -36.8 130.1	34 31.5 -36.3 129.4	33 46.5 -35.7 128.7
22°	36 05.6 -38.6 132.5	35 22.6 -37.9 131.8	34 39.2 -37.4 131.0	33 55.2 -36.7 130.4	33 10.8 -36.0 129.7
23°	35 27.0 -39.1 133.4	34 44.7 -38.5 132.7	34 01.8 -37.8 132.0	33 18.5 -37.1 131.3	32 34.8 -36.6 130.6
24°	34 47.9 -39.4 134.3	34 06.2 -38.8 133.6	33 24.0 -38.1 132.9	32 41.4 -37.6 132.2	31 58.2 -36.9 131.6
25°	34 08.5 -39.9 135.3	33 27.4 -39.2 134.5	32 45.9 -38.6 133.8	32 03.8 -37.9 133.2	31 21.3 -37.3 132.5
26°	33 28.6 -40.3 136.2	32 48.2 -39.6 135.5	32 07.3 -39.0 134.8	31 25.9 -38.3 134.1	30 44.0 -37.7 133.4
27°	32 48.3 -40.6 137.0	32 08.6 -40.0 136.3	31 28.3 -39.3 135.7	30 47.6 -38.7 135.0	30 06.3 -38.0 134.3
28°	32 07.7 -41.0 137.9	31 28.6 -40.3 137.2	30 49.0 -39.7 136.5	30 08.9 -39.1 135.9	29 28.3 -38.4 135.2
29°	31 26.7 -41.3 138.8	30 48.3 -40.7 138.1	30 09.3 -40.0 137.4	29 29.8 -39.3 136.7	28 49.9 -38.8 136.1

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°	43 04.8 -21.7 104.5	42 08.6 -21.4 104.0	41 12.3 -21.0 103.6	40 15.9 -20.7 103.1	39 19.4 -20.4 102.7
1°	42 43.1 -22.5 105.8	41 47.2 -22.1 105.3	40 51.3 -21.9 104.8	39 55.2 -21.5 104.3	38 59.0 -21.2 103.9
2°	42 20.6 -23.4 107.0	41 25.1 -23.0 106.5	40 29.4 -22.6 106.0	39 33.7 -22.3 105.6	38 37.8 -21.9 105.1
3°	41 57.2 -24.1 108.3	41 02.1 -23.7 107.8	40 06.8 -23.3 107.3	39 11.4 -23.0 106.8	38 15.9 -22.7 106.3
4°	41 33.1 -24.9 109.5	40 38.4 -24.5 109.0	39 43.5 -24.1 108.5	38 48.4 -23.7 107.9	37 53.2 -23.3 107.5
5°	41 08.2 -25.7 110.7	40 13.9 -25.2 110.2	39 19.4 -24.8 109.6	38 24.7 -24.4 109.1	37 29.9 -24.0 108.6
6°	40 42.5 -26.3 111.9	39 48.7 -26.0 111.4	38 54.6 -25.5 110.8	38 00.3 -25.1 110.3	37 05.9 -24.7 109.8
7°	40 16.2 -27.1 113.1	39 22.7 -26.6 112.5	38 29.1 -26.2 112.0	37 35.2 -25.7 111.4	36 41.2 -25.3 110.9
8°	39 49.1 -27.8 114.3	38 56.1 -27.3 113.7	38 02.9 -26.8 113.1	37 09.5 -26.4 112.6	36 15.9 -26.0 112.0
9°	39 21.3 -28.5 115.4	38 28.8 -28.0 114.8	37 36.1 -27.5 114.3	36 43.1 -27.0 113.7	35 49.9 -26.5 113.2
10°	38 52.8 -29.1 116.6	38 00.8 -28.6 116.0	37 08.6 -28.1 115.4	36 16.1 -27.6 114.8	35 23.4 -27.2 114.3
11°	38 23.7 -29.7 117.7	37 32.2 -29.2 117.1	36 40.5 -28.7 116.5	35 48.5 -28.2 115.9	34 56.2 -27.7 115.4
12°	37 54.0 -30.4 118.8	37 03.0 -29.8 118.2	36 11.8 -29.3 117.6	35 20.3 -28.8 117.0	34 28.5 -28.3 116.4
13°	37 23.6 -30.9 119.9	36 33.2 -30.4 119.2	35 42.5 -29.9 118.6	34 51.5 -29.4 118.1	34 00.2 -28.8 117.5
14°	36 52.7 -31.5 120.9	36 02.8 -31.0 120.3	35 12.6 -30.4 119.7	34 22.1 -29.9 119.1	33 31.4 -29.4 118.6
15°	36 21.2 -32.1 122.0	35 31.8 -31.5 121.4	34 42.2 -31.0 120.8	33 52.2 -30.4 120.2	33 02.0 -29.9 119.6
16°	35 49.1 -32.6 123.0	35 00.3 -32.0 122.4	34 11.2 -31.4 121.8	33 21.8 -30.9 121.2	32 32.1 -30.4 120.6
17°	35 16.5 -33.1 124.1	34 28.3 -32.5 123.4	33 39.8 -32.0 122.8	32 50.9 -31.4 122.2	32 01.7 -30.9 121.6
18°	34 43.4 -33.7 125.1	33 55.8 -33.1 124.5	33 07.8 -32.5 123.8	32 19.5 -31.9 123.2	31 30.8 -31.3 122.7
19°	34 09.7 -34.1 126.1	33 22.7 -33.5 125.5	32 35.3 -32.9 124.8	31 47.6 -32.4 124.2	30 59.5 -31.8 123.7
20°	33 35.6 -34.6 127.1	32 49.2 -34.0 126.5	32 02.4 -33.4 125.8	31 15.2 -32.8 125.2	30 27.7 -32.2 124.6
21°	33 01.0 -35.0 128.1	32 15.2 -34.4 127.4	31 29.0 -33.8 126.8	30 42.4 -33.2 126.2	29 55.5 -32.7 125.6
22°	32 26.0 -35.4 129.0	31 40.8 -34.9 128.4	30 55.2 -34.3 127.8	30 09.2 -33.7 127.2	29 22.8 -33.1 126.6
23°	31 50.6 -35.9 130.0	31 05.9 -35.2 129.3	30 20.9 -34.6 128.7	29 35.5 -34.0 128.1	28 49.7 -33.4 127.5
24°	31 14.7 -36.3 130.9	30 30.7 -35.7 130.3	29 46.3 -35.1 129.7	29 01.5 -34.5 129.1	28 16.3 -33.9 128.5
25°	30 38.4 -36.7 131.9	29 55.0 -36.1 131.2	29 11.2 -35.4 130.6	28 27.0 -34.8 130.0	27 42.4 -34.2 129.4
26°	30 01.7 -37.1 132.8	29 18.9 -36.4 132.1	28 35.8 -35.9 131.5	27 52.2 -35.2 130.9	27 08.2 -34.6 130.3
27°	29 24.6 -37.4 133.7	28 42.5 -36.8 133.0	27 59.9 -36.1 132.4	27 17.0 -35.6 131.8	26 33.6 -34.9 131.3
28°	28 47.2 -37.7 134.6	28 05.7 -37.1 133.9	27 23.8 -36.5 133.3	26 41.4 -35.9 132.7	25 58.7 -35.3 132.2
29°	28 09.5 -38.2 135.5	27 28.6 -37.5 134.8	26 47.3 -36.9 134.2	26 05.5 -36.2 133.6	25 23.4 -35.6 133.1

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°	38 22.8 -20.1 102.3	37 26.2 -19.9 101.8	36 29.4 -19.7 101.4	35 32.6 -19.5 101.0	34 35.6 -19.2 100.6
1°	38 02.7 -20.9 103.5	37 06.3 -20.7 103.0	36 09.7 -20.3 102.6	35 13.1 -20.0 102.2	34 16.4 -19.8 101.8
2°	37 41.8 -21.6 104.6	36 45.6 -21.3 104.2	35 49.4 -21.0 103.8	34 53.1 -20.8 103.3	33 56.6 -20.4 102.9
3°	37 20.2 -22.3 105.8	36 24.3 -21.9 105.4	35 28.4 -21.7 104.9	34 32.3 -21.3 104.5	33 36.2 -21.1 104.1
4°	36 57.9 -23.0 107.0	36 02.4 -22.7 106.5	35 06.7 -22.3 106.1	34 11.0 -22.0 105.6	33 15.1 -21.7 105.2
5°	36 34.9 -23.6 108.1	35 39.7 -23.2 107.7	34 44.4 -22.9 107.2	33 49.0 -22.6 106.7	32 53.4 -22.2 106.3
6°	36 11.3 -24.3 109.3	35 16.5 -23.9 108.8	34 21.5 -23.5 108.3	33 26.4 -23.1 107.9	32 31.2 -22.8 107.4
7°	35 47.0 -24.9 110.4	34 52.6 -24.5 109.9	33 58.0 -24.1 109.4	33 03.3 -23.8 109.0	32 08.4 -23.4 108.5
8°	35 22.1 -25.6 111.5	34 28.1 -25.1 111.0	33 33.9 -24.7 110.5	32 39.5 -24.3 110.1	31 45.0 -23.9 109.6
9°	34 56.5 -26.1 112.6	34 03.0 -25.7 112.1	33 09.2 -25.3 111.6	32 15.2 -24.9 111.1	31 21.1 -24.5 110.7
10°	34 30.4 -26.7 113.7	33 37.3 -26.3 113.2	32 43.9 -25.8 112.7	31 50.3 -25.4 112.2	30 56.6 -25.0 111.7
11°	34 03.7 -27.2 114.8	33 11.0 -26.8 114.3	32 18.1 -26.4 113.8	31 24.9 -25.9 113.3	30 31.6 -25.5 112.8
12°	33 36.5 -27.8 115.9	32 44.2 -27.3 115.4	31 51.7 -26.9 114.8	30 59.0 -26.4 114.3	30 06.1 -26.0 113.8
13°	33 08.7 -28.4 116.9	32 16.9 -27.9 116.4	31 24.8 -27.3 115.9	30 32.6 -26.9 115.4	29 40.1 -26.5 114.9
14°	32 40.3 -28.8 118.0	31 49.0 -28.4 117.5	30 57.5 -27.9 116.9	30 05.7 -27.4 116.4	29 13.6 -26.9 115.9
15°	32 11.5 -29.4 119.0	31 20.6 -28.8 118.5	30 29.6 -28.4 118.0	29 38.3 -27.9 117.4	28 46.7 -27.4 116.9
16°	31 42.1 -29.9 120.1	30 51.8 -29.4 119.5	30 01.2 -28.8 119.0	29 10.4 -28.3 118.5	28 19.3 -27.8 117.9
17°	31 12.2 -30.3 121.1	30 22.4 -29.8 120.5	29 32.4 -29.3 120.0	28 42.1 -28.8 119.5	27 51.5 -28.3 118.9
18°	30 41.9 -30.8 122.1	29 52.6 -30.2 121.5	29 03.1 -29.7 121.0	28 13.3 -29.2 120.5	27 23.2 -28.7 119.9
19°	30 11.1 -31.2 123.1	29 22.4 -30.7 122.5	28 33.4 -30.2 122.0	27 44.1 -29.7 121.4	26 54.5 -29.1 120.9
20°	29 39.9 -31.7 124.1	28 51.7 -31.1 123.5	28 03.2 -30.5 123.0	27 14.4 -30.0 122.4	26 25.4 -29.5 121.9
21°	29 08.2 -32.1 125.0	28 20.6 -31.5 124.5	27 32.7 -31.0 123.9	26 44.4 -30.4 123.4	25 55.9 -29.9 122.9
22°	28 36.1 -32.5 126.0	27 49.1 -32.0 125.4	27 01.7 -31.4 124.9	26 14.0 -30.8 124.4	25 26.0 -30.3 123.8
23°	28 03.6 -32.9 127.0	27 17.1 -32.3 126.4	26 30.3 -31.7 125.8	25 43.2 -31.2 125.3	24 55.7 -30.6 124.8
24°	27 30.7 -33.2 127.9	26 44.8 -32.7 127.3	25 58.6 -32.1 126.8	25 12.0 -31.5 126.3	24 25.1 -31.0 125.7
25°	26 57.5 -33.7 128.8	26 12.1 -33.0 128.3	25 26.5 -32.5 127.7	24 40.5 -31.9 127.2	23 54.1 -31.3 126.7
26°	26 23.8 -34.0 129.8	25 39.1 -33.4 129.2	24 54.0 -32.8 128.7	24 08.6 -32.2 128.1	23 22.8 -31.6 127.6
27°	25 49.8 -34.3 130.7	25 05.7 -33.7 130.1	24 21.2 -33.1 129.6	23 36.4 -32.6 129.1	22 51.2 -32.0 128.5
28°	25 15.5 -34.7 131.6	24 32.0 -34.1 131.0	23 48.1 -33.5 130.5	23 03.8 -32.8 130.0	22 19.2 -32.2 129.5
29°	24 40.8 -34.9 132.5	23 57.9 -34.4 131.9	23 14.6 -33.7 131.4	22 31.0 -33.2 130.9	21 47.0 -32.6 130.4

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°	33 38.6 -18.9 100.3	32 41.6 -18.8 99.9	31 44.5 -18.6 99.5	30 47.3 -18.4 99.2	29 50.0 -18.1 98.8
1°	33 19.7 -19.6 101.4	32 22.8 -19.3 101.0	31 25.9 -19.1 100.7	30 28.9 -18.9 100.3	29 31.9 -18.7 99.9
2°	33 00.1 -20.2 102.5	32 03.5 -20.0 102.1	31 06.8 -19.7 101.8	30 10.0 -19.5 101.4	29 13.2 -19.3 101.0
3°	32 39.9 -20.8 103.7	31 43.5 -20.5 103.3	30 47.1 -20.3 102.9	29 50.5 -20.0 102.5	28 53.9 -19.7 102.1
4°	32 19.1 -21.3 104.8	31 23.0 -21.0 104.4	30 26.8 -20.8 104.0	29 30.5 -20.5 103.6	28 34.2 -20.3 103.2
5°	31 57.8 -22.0 105.9	31 02.0 -21.7 105.5	30 06.0 -21.3 105.0	29 10.0 -21.0 104.6	28 13.9 -20.8 104.3
6°	31 35.8 -22.5 107.0	30 40.3 -22.1 106.5	29 44.7 -21.8 106.1	28 49.0 -21.6 105.7	27 53.1 -21.2 105.3
7°	31 13.3 -23.0 108.1	30 18.2 -22.7 107.6	29 22.9 -22.4 107.2	28 27.4 -22.0 106.8	27 31.9 -21.7 106.4
8°	30 50.3 -23.6 109.1	29 55.5 -23.2 108.7	29 00.5 -22.8 108.3	28 05.4 -22.5 107.8	27 10.2 -22.2 107.4
9°	30 26.7 -24.0 110.2	29 32.3 -23.7 109.8	28 37.7 -23.4 109.3	27 42.9 -23.0 108.9	26 48.0 -22.6 108.5
10°	30 02.7 -24.6 111.3	29 08.6 -24.2 110.8	28 14.3 -23.8 110.4	27 19.9 -23.4 109.9	26 25.4 -23.1 109.5
11°	29 38.1 -25.1 112.3	28 44.4 -24.7 111.9	27 50.5 -24.3 111.4	26 56.5 -23.9 111.0	26 02.3 -23.6 110.5
12°	29 13.0 -25.6 113.4	28 19.7 -25.1 112.9	27 26.2 -24.7 112.4	26 32.6 -24.4 112.0	25 38.7 -23.9 111.6
13°	28 47.4 -26.0 114.4	27 54.6 -25.6 113.9	27 01.5 -25.2 113.5	26 08.2 -24.7 113.0	25 14.8 -24.4 112.6
14°	28 21.4 -26.5 115.4	27 29.0 -26.1 114.9	26 36.3 -25.6 114.5	25 43.5 -25.2 114.0	24 50.4 -24.7 113.6
15°	27 54.9 -26.9 116.4	27 02.9 -26.5 116.0	26 10.7 -26.0 115.5	25 18.3 -25.6 115.0	24 25.7 -25.2 114.6
16°	27 28.0 -27.4 117.4	26 36.4 -26.9 117.0	25 44.7 -26.5 116.5	24 52.7 -26.0 116.0	24 00.5 -25.5 115.6
17°	27 00.6 -27.8 118.4	26 09.5 -27.3 118.0	25 18.2 -26.8 117.5	24 26.7 -26.3 117.0	23 35.0 -25.9 116.6
18°	26 32.8 -28.2 119.4	25 42.2 -27.7 118.9	24 51.4 -27.2 118.5	24 00.4 -26.8 118.0	23 09.1 -26.3 117.5
19°	26 04.6 -28.6 120.4	25 14.5 -28.0 119.9	24 24.2 -27.6 119.5	23 33.6 -27.1 119.0	22 42.8 -26.6 118.5
20°	25 36.0 -28.9 121.4	24 46.5 -28.5 120.9	23 56.6 -28.0 120.4	23 06.5 -27.5 120.0	22 16.2 -27.0 119.5
21°	25 07.1 -29.4 122.4	24 18.0 -28.8 121.9	23 28.6 -28.3 121.4	22 39.0 -27.8 120.9	21 49.2 -27.3 120.5
22°	24 37.7 -29.7 123.3	23 49.2 -29.2 122.8	23 00.3 -28.6 122.4	22 11.2 -28.1 121.9	21 21.9 -27.6 121.4
23°	24 08.0 -30.1 124.3	23 20.0 -29.6 123.8	22 31.7 -29.0 123.3	21 43.1 -28.5 122.8	20 54.3 -28.0 122.4
24°	23 37.9 -30.4 125.2	22 50.4 -29.8 124.7	22 02.7 -29.3 124.2	21 14.6 -28.7 123.8	20 26.3 -28.2 123.3
25°	23 07.5 -30.7 126.2	22 20.6 -30.2 125.7	21 33.4 -29.7 125.2	20 45.9 -29.1 124.7	19 58.1 -28.6 124.3
26°	22 36.8 -31.1 127.1	21 50.4 -30.5 126.6	21 03.7 -29.9 126.1	20 16.8 -29.4 125.7	19 29.5 -28.8 125.2
27°	22 05.7 -31.4 128.0	21 19.9 -30.8 127.5	20 33.8 -30.2 127.0	19 47.4 -29.7 126.6	19 00.7 -29.1 126.1
28°	21 34.3 -31.6 128.9	20 49.1 -31.1 128.5	20 03.6 -30.6 128.0	19 17.7 -29.9 127.5	18 31.6 -29.4 127.0
29°	21 02.7 -32.0 129.9	20 18.0 -31.4 129.4	19 33.0 -30.7 128.9	18 47.8 -30.2 128.4	18 02.2 -29.6 128.0

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°	28 52.7 -18.0 98.5	27 55.4 -17.8 98.2	26 58.0 -17.7 97.8	26 00.6 -17.5 97.5	25 03.1 -17.4 97.2
1°	28 34.7 -18.5 99.6	27 37.6 -18.4 99.2	26 40.3 -18.1 98.9	25 43.1 -18.0 98.6	24 45.7 -17.8 98.3
2°	28 16.2 -19.0 100.7	27 19.2 -18.8 100.3	26 22.2 -18.6 100.0	25 25.1 -18.4 99.6	24 27.9 -18.2 99.3
3°	27 57.2 -19.5 101.7	27 00.4 -19.3 101.4	26 03.6 -19.1 101.0	25 06.7 -18.9 100.7	24 09.7 -18.7 100.3
4°	27 37.7 -20.0 102.8	26 41.1 -19.7 102.4	25 44.5 -19.5 102.1	24 47.8 -19.3 101.7	23 51.0 -19.1 101.4
5°	27 17.7 -20.5 103.9	26 21.4 -20.3 103.5	25 25.0 -20.0 103.1	24 28.5 -19.7 102.8	23 31.9 -19.5 102.4
6°	26 57.2 -21.0 104.9	26 01.1 -20.6 104.5	25 05.0 -20.4 104.2	24 08.8 -20.2 103.8	23 12.4 -19.8 103.5
7°	26 36.2 -21.4 106.0	25 40.5 -21.2 105.6	24 44.6 -20.8 105.2	23 48.6 -20.5 104.8	22 52.6 -20.3 104.5
8°	26 14.8 -21.8 107.0	25 19.3 -21.5 106.6	24 23.8 -21.3 106.2	23 28.1 -21.0 105.9	22 32.3 -20.7 105.5
9°	25 53.0 -22.3 108.1	24 57.8 -22.0 107.7	24 02.5 -21.6 107.3	23 07.1 -21.3 106.9	22 11.6 -21.0 106.5
10°	25 30.7 -22.8 109.1	24 35.8 -22.4 108.7	23 40.9 -22.1 108.3	22 45.8 -21.8 107.9	21 50.6 -21.5 107.5
11°	25 07.9 -23.1 110.1	24 13.4 -22.8 109.7	23 18.8 -22.4 109.3	22 24.0 -22.1 108.9	21 29.1 -21.7 108.5
12°	24 44.8 -23.6 111.1	23 50.6 -23.2 110.7	22 56.4 -22.9 110.3	22 01.9 -22.4 109.9	21 07.4 -22.1 109.5
13°	24 21.2 -24.0 112.1	23 27.4 -23.5 111.7	22 33.5 -23.2 111.3	21 39.5 -22.9 110.9	20 45.3 -22.5 110.5
14°	23 57.2 -24.3 113.1	23 03.9 -24.0 112.7	22 10.3 -23.5 112.3	21 16.6 -23.1 111.9	20 22.8 -22.8 111.5
15°	23 32.9 -24.7 114.1	22 39.9 -24.3 113.7	21 46.8 -23.9 113.3	20 53.5 -23.6 112.9	20 00.0 -23.1 112.5
16°	23 08.2 -25.1 115.1	22 15.6 -24.7 114.7	21 22.9 -24.3 114.3	20 29.9 -23.8 113.9	19 36.9 -23.5 113.5
17°	22 43.1 -25.5 116.1	21 50.9 -25.0 115.7	20 58.6 -24.6 115.3	20 06.1 -24.2 114.9	19 13.4 -23.7 114.5
18°	22 17.6 -25.8 117.1	21 25.9 -25.4 116.7	20 34.0 -24.9 116.2	19 41.9 -24.4 115.8	18 49.7 -24.1 115.4
19°	21 51.8 -26.2 118.1	21 00.5 -25.7 117.6	20 09.1 -25.2 117.2	19 17.5 -24.8 116.8	18 25.6 -24.3 116.4
20°	21 25.6 -26.5 119.0	20 34.8 -26.0 118.6	19 43.9 -25.6 118.2	18 52.7 -25.1 117.8	18 01.3 -24.6 117.4
21°	20 59.1 -26.8 120.0	20 08.8 -26.3 119.6	19 18.3 -25.8 119.1	18 27.6 -25.4 118.7	17 36.7 -24.9 118.3
22°	20 32.3 -27.1 121.0	19 42.5 -26.6 120.5	18 52.5 -26.2 120.1	18 02.2 -25.6 119.7	17 11.8 -25.2 119.3
23°	20 05.2 -27.4 121.9	19 15.9 -26.9 121.5	18 26.3 -26.4 121.0	17 36.6 -25.9 120.6	16 46.6 -25.4 120.2
24°	19 37.8 -27.7 122.9	18 49.0 -27.2 122.4	17 59.9 -26.7 122.0	17 10.7 -26.2 121.6	16 21.2 -25.7 121.2
25°	19 10.1 -28.1 123.8	18 21.8 -27.5 123.4	17 33.2 -26.9 122.9	16 44.5 -26.4 122.5	15 55.5 -25.9 122.1
26°	18 42.0 -28.2 124.7	17 54.3 -27.8 124.3	17 06.3 -27.2 123.9	16 18.1 -26.7 123.4	15 29.6 -26.2 123.0
27°	18 13.8 -28.6 125.7	17 26.5 -28.0 125.2	16 39.1 -27.5 124.8	15 51.4 -26.9 124.4	15 03.4 -26.4 124.0
28°	17 45.2 -28.8 126.6	16 58.5 -28.2 126.2	16 11.6 -27.7 125.7	15 24.5 -27.2 125.3	14 37.0 -26.6 124.9
29°	17 16.4 -29.1 127.5	16 30.3 -28.5 127.1	15 43.9 -27.9 126.6	14 57.3 -27.4 126.2	14 10.4 -26.8 125.8

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	24 05.6 -17.2 96.9	23 08.0 -17.1 96.6	22 10.4 -16.9 96.3	21 12.8 -16.8 96.0	20 15.1 -16.7 95.7
1°	23 48.4 -17.7 97.9	22 50.9 -17.5 97.6	21 53.5 -17.4 97.3	20 56.0 -17.3 97.0	19 58.4 -17.1 96.7
2°	23 30.7 -18.1 99.0	22 33.4 -17.9 98.7	21 36.1 -17.7 98.3	20 38.7 -17.5 98.0	19 41.3 -17.4 97.7
3°	23 12.6 -18.4 100.0	22 15.5 -18.2 99.7	21 18.4 -18.1 99.4	20 21.2 -18.0 99.0	19 23.9 -17.7 98.7
4°	22 54.2 -18.9 101.0	21 57.3 -18.7 100.7	21 00.3 -18.5 100.4	20 03.2 -18.2 100.1	19 06.2 -18.1 99.7
5°	22 35.3 -19.3 102.1	21 38.6 -19.1 101.7	20 41.8 -18.8 101.4	19 45.0 -18.6 101.1	18 48.1 -18.5 100.8
6°	22 16.0 -19.6 103.1	21 19.5 -19.4 102.8	20 23.0 -19.2 102.4	19 26.4 -19.0 102.1	18 29.6 -18.7 101.8
7°	21 56.4 -20.0 104.1	21 00.1 -19.7 103.8	20 03.8 -19.5 103.4	19 07.4 -19.3 103.1	18 10.9 -19.0 102.8
8°	21 36.4 -20.4 105.1	20 40.4 -20.1 104.8	19 44.3 -19.9 104.4	18 48.1 -19.6 104.1	17 51.9 -19.4 103.8
9°	21 16.0 -20.8 106.1	20 20.3 -20.5 105.8	19 24.4 -20.1 105.4	18 28.5 -19.9 105.1	17 32.5 -19.6 104.7
10°	20 55.2 -21.1 107.2	19 59.8 -20.8 106.8	19 04.3 -20.5 106.4	18 08.6 -20.2 106.1	17 12.9 -19.9 105.7
11°	20 34.1 -21.4 108.2	19 39.0 -21.1 107.8	18 43.8 -20.9 107.4	17 48.4 -20.5 107.1	16 53.0 -20.3 106.7
12°	20 12.7 -21.8 109.1	19 17.9 -21.5 108.8	18 22.9 -21.1 108.4	17 27.9 -20.8 108.1	16 32.7 -20.4 107.7
13°	19 50.9 -22.1 110.1	18 56.4 -21.7 109.8	18 01.8 -21.4 109.4	17 07.1 -21.1 109.0	16 12.3 -20.8 108.7
14°	19 28.8 -22.4 111.1	18 34.7 -22.1 110.7	17 40.4 -21.7 110.4	16 46.0 -21.3 110.0	15 51.5 -21.0 109.7
15°	19 06.4 -22.8 112.1	18 12.6 -22.4 111.7	17 18.7 -22.0 111.4	16 24.7 -21.7 111.0	15 30.5 -21.3 110.6
16°	18 43.6 -23.0 113.1	17 50.2 -22.6 112.7	16 56.7 -22.3 112.3	16 03.0 -21.9 112.0	15 09.2 -21.5 111.6
17°	18 20.6 -23.3 114.1	17 27.6 -22.9 113.7	16 34.4 -22.5 113.3	15 41.1 -22.1 112.9	14 47.7 -21.8 112.6
18°	17 57.3 -23.7 115.0	17 04.7 -23.2 114.6	16 11.9 -22.8 114.3	15 19.0 -22.4 113.9	14 25.9 -22.0 113.5
19°	17 33.6 -23.9 116.0	16 41.5 -23.5 115.6	15 49.1 -23.0 115.2	14 56.6 -22.6 114.9	14 03.9 -22.2 114.5
20°	17 09.7 -24.1 117.0	16 18.0 -23.7 116.6	15 26.1 -23.3 116.2	14 34.0 -22.9 115.8	13 41.7 -22.4 115.5
21°	16 45.6 -24.5 117.9	15 54.3 -24.0 117.5	15 02.8 -23.6 117.1	14 11.1 -23.1 116.8	13 19.3 -22.7 116.4
22°	16 21.1 -24.7 118.9	15 30.3 -24.3 118.5	14 39.2 -23.7 118.1	13 48.0 -23.3 117.7	12 56.6 -22.8 117.4
23°	15 56.4 -24.9 119.8	15 06.0 -24.4 119.4	14 15.5 -24.0 119.0	13 24.7 -23.5 118.7	12 33.8 -23.1 118.3
24°	15 31.5 -25.2 120.8	14 41.6 -24.7 120.4	13 51.5 -24.2 120.0	13 01.2 -23.7 119.6	12 10.7 -23.2 119.2
25°	15 06.3 -25.4 121.7	14 16.9 -24.9 121.3	13 27.3 -24.4 120.9	12 37.5 -24.0 120.6	11 47.5 -23.5 120.2
26°	14 40.9 -25.7 122.6	13 52.0 -25.1 122.2	13 02.9 -24.7 121.9	12 13.5 -24.1 121.5	11 24.0 -23.6 121.1
27°	14 15.2 -25.8 123.6	13 26.9 -25.4 123.2	12 38.2 -24.8 122.8	11 49.4 -24.3 122.4	11 00.4 -23.8 122.1
28°	13 49.4 -26.1 124.5	13 01.5 -25.5 124.1	12 13.4 -25.0 123.7	11 25.1 -24.4 123.4	10 36.6 -23.9 123.0
29°	13 23.3 -26.2 125.4	12 36.0 -25.7 125.0	11 48.4 -25.2 124.7	11 00.7 -24.7 124.3	10 12.7 -24.1 123.9

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°	19 17.5 -16.7 95.4	18 19.7 -16.5 95.1	17 22.0 -16.4 94.8	16 24.2 -16.3 94.5	15 26.5 -16.3 94.2
1°	19 00.8 -16.9 96.4	18 03.2 -16.8 96.1	17 05.6 -16.7 95.8	16 07.9 -16.6 95.5	15 10.2 -16.5 95.2
2°	18 43.9 -17.3 97.4	17 46.4 -17.1 97.1	16 48.9 -17.0 96.8	15 51.3 -16.9 96.5	14 53.7 -16.8 96.2
3°	18 26.6 -17.6 98.4	17 29.3 -17.5 98.1	16 31.9 -17.3 97.8	15 34.4 -17.1 97.5	14 36.9 -17.0 97.2
4°	18 09.0 -17.9 99.4	17 11.8 -17.7 99.1	16 14.6 -17.6 98.8	15 17.3 -17.4 98.5	14 19.9 -17.2 98.2
5°	17 51.1 -18.2 100.4	16 54.1 -18.1 100.1	15 57.0 -17.9 99.8	14 59.9 -17.7 99.5	14 02.7 -17.5 99.2
6°	17 32.9 -18.5 101.4	16 36.0 -18.3 101.1	15 39.1 -18.1 100.8	14 42.2 -17.9 100.5	13 45.2 -17.8 100.2
7°	17 14.4 -18.9 102.4	16 17.7 -18.6 102.1	15 21.0 -18.4 101.8	14 24.3 -18.2 101.5	13 27.4 -17.9 101.2
8°	16 55.5 -19.1 103.4	15 59.1 -18.8 103.1	15 02.6 -18.6 102.8	14 06.1 -18.4 102.5	13 09.5 -18.2 102.2
9°	16 36.4 -19.3 104.4	15 40.3 -19.2 104.1	14 44.0 -18.9 103.8	13 47.7 -18.7 103.4	12 51.3 -18.4 103.1
10°	16 17.1 -19.7 105.4	15 21.1 -19.3 105.1	14 25.1 -19.1 104.7	13 29.0 -18.8 104.4	12 32.9 -18.6 104.1
11°	15 57.4 -19.9 106.4	15 01.8 -19.7 106.1	14 06.0 -19.3 105.7	13 10.2 -19.1 105.4	12 14.3 -18.9 105.1
12°	15 37.5 -20.2 107.4	14 42.1 -19.9 107.0	13 46.7 -19.6 106.7	12 51.1 -19.3 106.4	11 55.4 -19.0 106.1
13°	15 17.3 -20.4 108.3	14 22.2 -20.1 108.0	13 27.1 -19.8 107.7	12 31.8 -19.5 107.3	11 36.4 -19.2 107.0
14°	14 56.9 -20.7 109.3	14 02.1 -20.3 109.0	13 07.3 -20.1 108.6	12 12.3 -19.7 108.3	11 17.2 -19.4 108.0
15°	14 36.2 -20.9 110.3	13 41.8 -20.6 109.9	12 47.2 -20.2 109.6	11 52.6 -19.9 109.3	10 57.8 -19.6 109.0
16°	14 15.3 -21.2 111.3	13 21.2 -20.8 110.9	12 27.0 -20.5 110.6	11 32.7 -20.1 110.2	10 38.2 -19.7 109.9
17°	13 54.1 -21.4 112.2	13 00.4 -21.0 111.9	12 06.5 -20.6 111.5	11 12.6 -20.3 111.2	10 18.5 -19.9 110.9
18°	13 32.7 -21.6 113.2	12 39.4 -21.2 112.8	11 45.9 -20.8 112.5	10 52.3 -20.5 112.2	9 58.6 -20.1 111.8
19°	13 11.1 -21.8 114.1	12 18.2 -21.4 113.8	11 25.1 -21.1 113.5	10 31.8 -20.6 113.1	9 38.5 -20.3 112.8
20°	12 49.3 -22.0 115.1	11 56.8 -21.7 114.7	11 04.0 -21.1 114.4	10 11.2 -20.8 114.1	9 18.2 -20.4 113.7
21°	12 27.3 -22.2 116.0	11 35.1 -21.7 115.7	10 42.9 -21.4 115.4	9 50.4 -20.9 115.0	8 57.8 -20.5 114.7
22°	12 05.1 -22.4 117.0	11 13.4 -22.0 116.7	10 21.5 -21.6 116.3	9 29.5 -21.2 116.0	8 37.3 -20.7 115.7
23°	11 42.7 -22.6 117.9	10 51.4 -22.2 117.6	9 59.9 -21.7 117.3	9 08.3 -21.2 116.9	8 16.6 -20.8 116.6
24°	11 20.1 -22.8 118.9	10 29.2 -22.3 118.5	9 38.2 -21.8 118.2	8 47.1 -21.4 117.9	7 55.8 -21.0 117.5
25°	10 57.3 -23.0 119.8	10 06.9 -22.5 119.5	9 16.4 -22.0 119.1	8 25.7 -21.5 118.8	7 34.8 -21.0 118.5
26°	10 34.3 -23.1 120.8	9 44.4 -22.6 120.4	8 54.4 -22.2 120.1	8 04.2 -21.7 119.8	7 13.8 -21.2 119.4
27°	10 11.2 -23.3 121.7	9 21.8 -22.8 121.4	8 32.2 -22.2 121.0	7 42.5 -21.8 120.7	6 52.6 -21.3 120.4
28°	9 47.9 -23.4 122.6	8 59.0 -22.9 122.3	8 10.0 -22.5 122.0	7 20.7 -21.9 121.6	6 31.3 -21.4 121.3
29°	9 24.5 -23.6 123.6	8 36.1 -23.0 123.2	7 47.5 -22.5 122.9	6 58.8 -22.0 122.6	6 09.9 -21.5 122.3

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°	14 28.7 -16.2 94.0	13 30.8 -16.1 93.7	12 33.0 -16.0 93.4	11 35.1 -15.9 93.1	10 37.2 -15.8 92.9
1°	14 12.5 -16.4 95.0	13 14.7 -16.3 94.7	12 17.0 -16.3 94.4	11 19.2 -16.2 94.1	10 21.4 -16.1 93.9
2°	13 56.1 -16.7 96.0	12 58.4 -16.5 95.7	12 00.7 -16.4 95.4	11 03.0 -16.3 95.1	10 05.3 -16.3 94.8
3°	13 39.4 -16.9 96.9	12 41.9 -16.8 96.7	11 44.3 -16.6 96.4	10 46.7 -16.5 96.1	9 49.0 -16.4 95.8
4°	13 22.5 -17.1 97.9	12 25.1 -16.9 97.6	11 27.7 -16.9 97.4	10 30.2 -16.7 97.1	9 32.6 -16.5 96.8
5°	13 05.4 -17.3 98.9	12 08.2 -17.2 98.6	11 10.8 -17.0 98.3	10 13.5 -16.9 98.0	9 16.1 -16.8 97.8
6°	12 48.1 -17.6 99.9	11 51.0 -17.4 99.6	10 53.8 -17.2 99.3	9 56.6 -17.0 99.0	8 59.3 -16.8 98.7
7°	12 30.5 -17.7 100.9	11 33.6 -17.6 100.6	10 36.6 -17.4 100.3	9 39.6 -17.3 100.0	8 42.5 -17.1 99.7
8°	12 12.8 -18.0 101.9	11 16.0 -17.7 101.6	10 19.2 -17.5 101.3	9 22.3 -17.3 101.0	8 25.4 -17.1 100.7
9°	11 54.8 -18.2 102.8	10 58.3 -18.0 102.5	10 01.7 -17.8 102.2	9 05.0 -17.5 101.9	8 08.3 -17.4 101.6
10°	11 36.6 -18.3 103.8	10 40.3 -18.1 103.5	9 43.9 -17.9 103.2	8 47.5 -17.7 102.9	7 50.9 -17.4 102.6
11°	11 18.3 -18.6 104.8	10 22.2 -18.3 104.5	9 26.0 -18.0 104.2	8 29.8 -17.8 103.9	7 33.5 -17.6 103.6
12°	10 59.7 -18.7 105.7	10 03.9 -18.5 105.4	9 08.0 -18.2 105.1	8 12.0 -18.0 104.8	7 15.9 -17.7 104.5
13°	10 41.0 -19.0 106.7	9 45.4 -18.6 106.4	8 49.8 -18.4 106.1	7 54.0 -18.0 105.8	6 58.2 -17.8 105.5
14°	10 22.0 -19.0 107.7	9 26.8 -18.8 107.4	8 31.4 -18.5 107.1	7 36.0 -18.2 106.8	6 40.4 -17.9 106.5
15°	10 03.0 -19.3 108.6	9 08.0 -19.0 108.3	8 12.9 -18.6 108.0	7 17.8 -18.4 107.7	6 22.5 -18.0 107.4
16°	9 43.7 -19.4 109.6	8 49.0 -19.0 109.3	7 54.3 -18.8 109.0	6 59.4 -18.4 108.7	6 04.5 -18.1 108.4
17°	9 24.3 -19.6 110.6	8 30.0 -19.3 110.2	7 35.5 -18.9 109.9	6 41.0 -18.6 109.6	5 46.4 -18.3 109.3
18°	9 04.7 -19.7 111.5	8 10.7 -19.3 111.2	7 16.6 -19.0 110.9	6 22.4 -18.6 110.6	5 28.1 -18.3 110.3
19°	8 45.0 -19.9 112.5	7 51.4 -19.5 112.2	6 57.6 -19.1 111.9	6 03.8 -18.8 111.6	5 09.8 -18.4 111.3
20°	8 25.1 -20.0 113.4	7 31.9 -19.7 113.1	6 38.5 -19.2 112.8	5 45.0 -18.8 112.5	4 51.4 -18.5 112.2
21°	8 05.1 -20.1 114.4	7 12.2 -19.7 114.1	6 19.3 -19.4 113.8	5 26.2 -19.0 113.5	4 32.9 -18.5 113.2
22°	7 45.0 -20.3 115.3	6 52.5 -19.8 115.0	5 59.9 -19.4 114.7	5 07.2 -19.0 114.4	4 14.4 -18.6 114.1
23°	7 24.7 -20.4 116.3	6 32.7 -20.0 116.0	5 40.5 -19.5 115.7	4 48.2 -19.1 115.4	3 55.8 -18.7 115.1
24°	7 04.3 -20.5 117.2	6 12.7 -20.0 116.9	5 21.0 -19.7 116.6	4 29.1 -19.2 116.3	3 37.1 -18.8 116.0
25°	6 43.8 -20.6 118.2	5 52.7 -20.2 117.9	5 01.3 -19.7 117.6	4 09.9 -19.2 117.3	3 18.3 -18.8 117.0
26°	6 23.2 -20.7 119.1	5 32.5 -20.2 118.8	4 41.6 -19.7 118.5	3 50.7 -19.4 118.2	2 59.5 -18.8 117.9
27°	6 02.5 -20.8 120.1	5 12.3 -20.4 119.8	4 21.9 -19.9 119.5	3 31.3 -19.3 119.2	2 40.7 -18.9 118.9
28°	5 41.7 -20.9 121.0	4 51.9 -20.4 120.7	4 02.0 -19.9 120.4	3 12.0 -19.5 120.1	2 21.8 -19.0 119.8
29°	5 20.8 -21.0 122.0	4 31.5 -20.5 121.6	3 42.1 -20.0 121.4	2 52.5 -19.4 121.1	2 02.8 -18.9 120.8

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°	9 39.4 -15.9 92.6	8 41.5 -15.8 92.3	7 43.5 -15.7 92.1	6 45.6 -15.7 91.8	5 47.7 -15.7 91.6
1°	9 23.5 -16.0 93.6	8 25.7 -16.0 93.3	7 27.8 -15.9 93.1	6 29.9 -15.8 92.8	5 32.0 -15.7 92.5
2°	9 07.5 -16.1 94.6	8 09.7 -16.0 94.3	7 11.9 -15.9 94.0	6 14.1 -15.9 93.8	5 16.3 -15.9 93.5
3°	8 51.4 -16.3 95.5	7 53.7 -16.2 95.3	6 56.0 -16.2 95.0	5 58.2 -16.0 94.7	5 00.4 -15.9 94.5
4°	8 35.1 -16.5 96.5	7 37.5 -16.4 96.2	6 39.8 -16.2 96.0	5 42.2 -16.1 95.7	4 44.5 -16.0 95.4
5°	8 18.6 -16.6 97.5	7 21.1 -16.4 97.2	6 23.6 -16.3 96.9	5 26.1 -16.2 96.7	4 28.5 -16.1 96.4
6°	8 02.0 -16.7 98.5	7 04.7 -16.6 98.2	6 07.3 -16.4 97.9	5 09.9 -16.3 97.6	4 12.4 -16.1 97.4
7°	7 45.3 -16.9 99.4	6 48.1 -16.7 99.2	5 50.9 -16.6 98.9	4 53.6 -16.4 98.6	3 56.3 -16.3 98.3
8°	7 28.4 -16.9 100.4	6 31.4 -16.8 100.1	5 34.3 -16.6 99.8	4 37.2 -16.4 99.6	3 40.0 -16.2 99.3
9°	7 11.5 -17.1 101.4	6 14.6 -16.9 101.1	5 17.7 -16.7 100.8	4 20.8 -16.6 100.5	3 23.8 -16.4 100.3
10°	6 54.4 -17.3 102.3	5 57.7 -17.0 102.0	5 01.0 -16.8 101.8	4 04.2 -16.6 101.5	3 07.4 -16.4 101.2
11°	6 37.1 -17.3 103.3	5 40.7 -17.1 103.0	4 44.2 -16.9 102.7	3 47.6 -16.6 102.5	2 51.0 -16.4 102.2
12°	6 19.8 -17.4 104.3	5 23.6 -17.2 104.0	4 27.3 -16.9 103.7	3 31.0 -16.7 103.4	2 34.6 -16.5 103.2
13°	6 02.4 -17.6 105.2	5 06.4 -17.3 104.9	4 10.4 -17.1 104.7	3 14.3 -16.8 104.4	2 18.1 -16.5 104.1
14°	5 44.8 -17.6 106.2	4 49.1 -17.3 105.9	3 53.3 -17.1 105.6	2 57.5 -16.8 105.3	2 01.6 -16.6 105.1
15°	5 27.2 -17.8 107.1	4 31.8 -17.5 106.9	3 36.2 -17.1 106.6	2 40.7 -16.9 106.3	1 45.0 -16.6 106.0
16°	5 09.4 -17.8 108.1	4 14.3 -17.5 107.8	3 19.1 -17.2 107.5	2 23.8 -16.9 107.3	1 28.4 -16.6 107.0
17°	4 51.6 -17.9 109.1	3 56.8 -17.6 108.8	3 01.9 -17.3 108.5	2 06.9 -17.0 108.2	1 11.8 -16.6 108.0
18°	4 33.7 -17.9 110.0	3 39.2 -17.6 109.7	2 44.6 -17.3 109.5	1 49.9 -16.9 109.2	0 55.2 -16.7 108.9
19°	4 15.8 -18.1 111.0	3 21.6 -17.7 110.7	2 27.3 -17.3 110.4	1 33.0 -17.0 110.1	0 38.5 -16.6 109.9
20°	3 57.7 -18.1 111.9	3 03.9 -17.7 111.7	2 10.0 -17.4 111.4	1 16.0 -17.1 111.1	0 21.9 -16.7 110.8
21°	3 39.6 -18.2 112.9	2 46.2 -17.8 112.6	1 52.6 -17.4 112.3	0 58.9 -17.0 112.1	0 05.2 -16.7 111.8
22°	3 21.4 -18.2 113.8	2 28.4 -17.9 113.6	1 35.2 -17.4 113.3	0 41.9 -17.0 113.0	-0 11.5 -16.6
23°	3 03.2 -18.3 114.8	2 10.5 -17.8 114.5	1 17.8 -17.5 114.2	0 24.9 -17.1 114.0	-0 28.1 -16.7
24°	2 44.9 -18.3 115.7	1 52.7 -17.9 115.5	1 00.3 -17.5 115.2	0 07.8 -17.1 114.9	-0 44.8 -16.7
25°	2 26.6 -18.4 116.7	1 34.8 -18.0 116.4	0 42.8 -17.5 116.2	-0 09.3 -17.0	-1 01.5 -16.6
26°	2 08.2 -18.4 117.7	1 16.8 -17.9 117.4	0 25.3 -17.5 117.1	-0 26.3 -17.1	-1 18.1 -16.6
27°	1 49.8 -18.4 118.6	0 58.9 -18.0 118.3	0 07.8 -17.5 118.1	-0 43.4 -17.0	-1 34.7 -16.6
28°	1 31.4 -18.4 119.6	0 40.9 -17.9 119.3	-0 09.7 -17.5	-1 00.4 -17.0	-1 51.3 -16.5
29°	1 13.0 -18.5 120.5	0 23.0 -18.0 120.2	-0 27.2 -17.5	-1 17.4 -17.0	-2 07.8 -16.5

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 49.8 -15.7 91.3	3 51.8 -15.6 91.0	2 53.9 -15.6 90.8	1 55.9 -15.5 90.5	0 58.0 -15.6 90.3
1°	4 34.1 -15.7 92.3	3 36.2 -15.6 92.0	2 38.3 -15.6 91.7	1 40.4 -15.6 91.5	0 42.4 -15.5 91.2
2°	4 18.4 -15.8 93.2	3 20.6 -15.8 93.0	2 22.7 -15.7 92.7	1 24.8 -15.6 92.5	0 26.9 -15.6 92.2
3°	4 02.6 -15.8 94.2	3 04.8 -15.7 93.9	2 07.0 -15.7 93.7	1 09.2 -15.7 93.4	0 11.3 -15.6 93.2
4°	3 46.8 -15.9 95.2	2 49.1 -15.8 94.9	1 51.3 -15.7 94.6	0 53.5 -15.6 94.4	-0 04.3 -15.5
5°	3 30.9 -16.0 96.1	2 33.3 -15.9 95.9	1 35.6 -15.8 95.6	0 37.9 -15.7 95.3	-0 19.8 -15.6
6°	3 14.9 -16.0 97.1	2 17.4 -15.9 96.8	1 19.8 -15.7 96.6	0 22.2 -15.6 96.3	-0 35.4 -15.5
7°	2 58.9 -16.1 98.1	2 01.5 -15.9 97.8	1 04.1 -15.8 97.5	0 06.6 -15.7 97.3	-0 50.9 -15.5
8°	2 42.8 -16.1 99.0	1 45.6 -16.0 98.8	0 48.3 -15.8 98.5	-0 09.1 -15.6	-1 06.4 -15.6
9°	2 26.7 -16.2 100.0	1 29.6 -16.0 99.7	0 32.5 -15.9 99.5	-0 24.7 -15.7	-1 22.0 -15.4
10°	2 10.5 -16.2 101.0	1 13.6 -16.0 100.7	0 16.6 -15.8 100.4	-0 40.4 -15.6	-1 37.4 -15.5
11°	1 54.3 -16.2 101.9	0 57.6 -16.0 101.7	0 00.8 -15.8 101.4	-0 56.0 -15.6	-1 52.9 -15.4
12°	1 38.1 -16.3 102.9	0 41.6 -16.1 102.6	-0 15.0 -15.8	-1 11.6 -15.6	-2 08.3 -15.4
13°	1 21.8 -16.2 103.8	0 25.5 -16.0 103.6	-0 30.8 -15.8	-1 27.2 -15.6	-2 23.7 -15.4
14°	1 05.6 -16.3 104.8	0 09.5 -16.0 104.5	-0 46.6 -15.8	-1 42.8 -15.6	-2 39.1 -15.3
15°	0 49.3 -16.4 105.8	-0 06.5 -16.1	-1 02.4 -15.8	-1 58.4 -15.5	-2 54.4 -15.2
16°	0 32.9 -16.3 106.7	-0 22.6 -16.0	-1 18.2 -15.8	-2 13.9 -15.5	-3 09.6 -15.2
17°	0 16.6 -16.3 107.7	-0 38.6 -16.1	-1 34.0 -15.7	-2 29.4 -15.4	-3 24.8 -15.2
18°	0 00.3 -16.3 108.7	-0 54.7 -16.0	-1 49.7 -15.7	-2 44.8 -15.4	-3 40.0 -15.1
19°	-0 16.0 -16.4	-1 10.7 -16.0	-2 05.4 -15.6	-3 00.2 -15.3	-3 55.1 -15.0
20°	-0 32.4 -16.3	-1 26.7 -15.9	-2 21.0 -15.7	-3 15.5 -15.3	-4 10.1 -14.9
21°	-0 48.7 -16.3	-1 42.6 -16.0	-2 36.7 -15.5	-3 30.8 -15.2	-4 25.0 -14.9
22°	-1 05.0 -16.3	-1 58.6 -15.9	-2 52.2 -15.6	-3 46.0 -15.2	-4 39.9 -14.8
23°	-1 21.3 -16.2	-2 14.5 -15.8	-3 07.8 -15.5	-4 01.2 -15.1	-4 54.7 -14.7
24°	-1 37.5 -16.3	-2 30.3 -15.9	-3 23.3 -15.4	-4 16.3 -15.0	-5 09.4 -14.6
25°	-1 53.8 -16.2	-2 46.2 -15.7	-3 38.7 -15.3	-4 31.3 -14.9	-5 24.0 -14.5
26°	-2 10.0 -16.1	-3 01.9 -15.8	-3 54.0 -15.3	-4 46.2 -14.9	-5 38.5 -14.4
27°	-2 26.1 -16.1	-3 17.7 -15.6	-4 09.3 -15.2	-5 01.1 -14.7	-5 52.9 -14.3
28°	-2 42.2 -16.1	-3 33.3 -15.6	-4 24.5 -15.2	-5 15.8 -14.7	-6 07.2 -14.3
29°	-2 58.3 -16.0	-3 48.9 -15.6	-4 39.7 -15.0	-5 30.5 -14.6	-6 21.5 -14.1

Latitude 15°

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 -15.5 90.0	-0 58.0 -15.5			
1°	-0 15.5 -15.6	-1 13.5 -15.5			
2°	-0 31.1 -15.5	-1 29.0 -15.5			
3°	-0 46.6 -15.5	-1 44.5 -15.4			
4°	-1 02.1 -15.5	-1 59.9 -15.4			
5°	-1 17.6 -15.4	-2 15.3 -15.4			
6°	-1 33.0 -15.5	-2 30.7 -15.3			
7°	-1 48.5 -15.4	-2 46.0 -15.3			
8°	-2 03.9 -15.3	-3 01.3 -15.2			
9°	-2 19.2 -15.4	-3 16.5 -15.2			
10°	-2 34.6 -15.2	-3 31.7 -15.1			
11°	-2 49.8 -15.3	-3 46.8 -15.1			
12°	-3 05.1 -15.2	-4 01.9 -15.0			
13°	-3 20.3 -15.1	-4 16.9 -14.9			
14°	-3 35.4 -15.1	-4 31.8 -14.8			
15°	-3 50.5 -15.0	-4 46.6 -14.7			
16°	-4 05.5 -14.9	-5 01.3 -14.7			
17°	-4 20.4 -14.8	-5 16.0 -14.6			
18°	-4 35.2 -14.8	-5 30.6 -14.5			
19°	-4 50.0 -14.7	-5 45.1 -14.3			
20°	-5 04.7 -14.6	-5 59.4 -14.3			
21°	-5 19.3 -14.5	-6 13.7 -14.2			
22°	-5 33.8 -14.5	-6 27.9 -14.0			
23°	-5 48.3 -14.3	-6 41.9 -14.0			
24°	-6 02.6 -14.2	-6 55.9 -13.8			
25°	-6 16.8 -14.1	-7 09.7 -13.7			
26°	-6 30.9 -14.0	-7 23.4 -13.5			
27°	-6 44.9 -13.8	-7 36.9 -13.4			
28°	-6 58.7 -13.8	-7 50.3 -13.3			
29°	-7 12.5 -13.6	-8 03.6 -13.2			

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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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°	74 00.0 -60.0 180.0	73 58.2 -59.9 176.4	73 52.7 -59.6 172.8	73 43.7 -59.1 169.2	73 31.2 -58.4 165.8
1°	73 00.0 -60.0 180.0	72 58.3 -59.9 176.6	72 53.1 -59.6 173.2	72 44.6 -59.2 169.8	72 32.8 -58.5 166.6
2°	72 00.0 -60.0 180.0	71 58.4 -59.9 176.8	71 53.5 -59.7 173.6	71 45.4 -59.2 170.4	71 34.3 -58.7 167.3
3°	71 00.0 -60.0 180.0	70 58.5 -60.0 176.9	70 53.8 -59.7 173.9	70 46.2 -59.3 170.9	70 35.6 -58.9 167.9
4°	70 00.0 -60.0 180.0	69 58.5 -59.9 177.1	69 54.1 -59.7 174.2	69 46.9 -59.4 171.3	69 36.7 -58.9 168.5
5°	69 00.0 -60.0 180.0	68 58.6 -59.9 177.2	68 54.4 -59.7 174.5	68 47.5 -59.5 171.7	68 37.8 -59.0 169.0
6°	68 00.0 -60.0 180.0	67 58.7 -60.0 177.3	67 54.7 -59.8 174.7	67 48.0 -59.5 172.1	67 38.8 -59.1 169.5
7°	67 00.0 -60.0 180.0	66 58.7 -59.9 177.5	66 54.9 -59.8 174.9	66 48.5 -59.5 172.4	66 39.7 -59.2 169.9
8°	66 00.0 -60.0 180.0	65 58.8 -60.0 177.6	65 55.1 -59.8 175.1	65 49.0 -59.5 172.7	65 40.5 -59.2 170.3
9°	65 00.0 -60.0 180.0	64 58.8 -59.9 177.7	64 55.3 -59.8 175.3	64 49.5 -59.6 173.0	64 41.3 -59.3 170.7
10°	64 00.0 -60.0 180.0	63 58.9 -60.0 177.8	63 55.5 -59.8 175.5	63 49.9 -59.7 173.3	63 42.0 -59.3 171.1
11°	63 00.0 -60.0 180.0	62 58.9 -59.9 177.8	62 55.7 -59.9 175.7	62 50.2 -59.6 173.5	62 42.7 -59.4 171.4
12°	62 00.0 -60.0 180.0	61 59.0 -60.0 177.9	61 55.8 -59.8 175.8	61 50.6 -59.7 173.8	61 43.3 -59.4 171.7
13°	61 00.0 -60.0 180.0	60 59.0 -60.0 178.0	60 56.0 -59.9 176.0	60 50.9 -59.7 174.0	60 43.9 -59.5 172.0
14°	60 00.0 -60.0 180.0	59 59.0 -59.9 178.1	59 56.1 -59.9 176.1	59 51.2 -59.7 174.2	59 44.4 -59.4 172.3
15°	59 00.0 -60.0 180.0	58 59.1 -60.0 178.1	58 56.2 -59.8 176.3	58 51.5 -59.7 174.4	58 45.0 -59.6 172.5
16°	58 00.0 -60.0 180.0	57 59.1 -60.0 178.2	57 56.4 -59.9 176.4	57 51.8 -59.7 174.6	57 45.4 -59.5 172.8
17°	57 00.0 -60.0 180.0	56 59.1 -60.0 178.2	56 56.5 -59.9 176.5	56 52.1 -59.8 174.7	56 45.9 -59.6 173.0
18°	56 00.0 -60.0 180.0	55 59.1 -59.9 178.3	55 56.6 -59.9 176.6	55 52.3 -59.8 174.9	55 46.3 -59.5 173.2
19°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.4	54 56.7 -59.9 176.7	54 52.5 -59.7 175.1	54 46.8 -59.6 173.4
20°	54 00.0 -60.0 180.0	53 59.2 -60.0 178.4	53 56.8 -59.9 176.8	53 52.8 -59.8 175.2	53 47.2 -59.7 173.6
21°	53 00.0 -60.0 180.0	52 59.2 -60.0 178.4	52 56.9 -59.9 176.9	52 53.0 -59.8 175.4	52 47.5 -59.6 173.8
22°	52 00.0 -60.0 180.0	51 59.2 -59.9 178.5	51 57.0 -59.9 177.0	51 53.2 -59.8 175.5	51 47.9 -59.6 174.0
23°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.5	50 57.1 -60.0 177.1	50 53.4 -59.8 175.6	50 48.3 -59.7 174.2
24°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.6	49 57.1 -59.9 177.2	49 53.6 -59.8 175.7	49 48.6 -59.7 174.3
25°	49 00.0 -60.0 180.0	48 59.3 -60.0 178.6	48 57.2 -59.9 177.2	48 53.8 -59.9 175.9	48 48.9 -59.7 174.5
26°	48 00.0 -60.0 180.0	47 59.3 -60.0 178.7	47 57.3 -59.9 177.3	47 53.9 -59.8 176.0	47 49.2 -59.7 174.6
27°	47 00.0 -60.0 180.0	46 59.3 -59.9 178.7	46 57.4 -60.0 177.4	46 54.1 -59.9 176.1	46 49.5 -59.7 174.8
28°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.7	45 57.4 -59.9 177.5	45 54.2 -59.8 176.2	45 49.8 -59.7 174.9
29°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.8	44 57.5 -59.9 177.5	44 54.4 -59.8 176.3	44 50.1 -59.8 175.1

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°	73 15.4 -57.6 162.4	72 56.4 -56.6 159.1	72 34.3 -55.4 156.0	72 09.5 -54.3 153.0	71 42.0 -53.0 150.1
1°	72 17.8 -57.8 163.3	71 59.8 -56.9 160.2	71 38.9 -55.9 157.2	71 15.2 -54.8 154.3	70 49.0 -53.7 151.6
2°	71 20.0 -58.0 164.2	71 02.9 -57.2 161.2	70 43.0 -56.3 158.4	70 20.4 -55.3 155.6	69 55.3 -54.2 152.9
3°	70 22.0 -58.2 165.0	70 05.7 -57.4 162.1	69 46.7 -56.6 159.4	69 25.1 -55.6 156.7	69 01.1 -54.6 154.1
4°	69 23.8 -58.3 165.7	69 08.3 -57.7 163.0	68 50.1 -56.9 160.3	68 29.5 -56.1 157.7	68 06.5 -55.1 155.3
5°	68 25.5 -58.5 166.3	68 10.6 -57.9 163.7	67 53.2 -57.1 161.2	67 33.4 -56.3 158.7	67 11.4 -55.5 156.3
6°	67 27.0 -58.6 166.9	67 12.7 -58.0 164.4	66 56.1 -57.4 162.0	66 37.1 -56.6 159.6	66 15.9 -55.8 157.3
7°	66 28.4 -58.7 167.5	66 14.7 -58.2 165.1	65 58.7 -57.5 162.7	65 40.5 -56.9 160.4	65 20.1 -56.2 158.2
8°	65 29.7 -58.8 168.0	65 16.5 -58.3 165.7	65 01.2 -57.8 163.4	64 43.6 -57.1 161.2	64 23.9 -56.3 159.0
9°	64 30.9 -58.9 168.5	64 18.2 -58.4 166.2	64 03.4 -57.9 164.0	63 46.5 -57.3 161.9	63 27.6 -56.6 159.8
10°	63 32.0 -59.0 168.9	63 19.8 -58.5 166.7	63 05.5 -58.0 164.6	62 49.2 -57.4 162.5	62 31.0 -56.9 160.5
11°	62 33.0 -59.0 169.3	62 21.3 -58.6 167.2	62 07.5 -58.1 165.2	61 51.8 -57.6 163.2	61 34.1 -57.0 161.2
12°	61 34.0 -59.1 169.7	61 22.7 -58.7 167.7	61 09.4 -58.3 165.7	60 54.2 -57.8 163.7	60 37.1 -57.2 161.8
13°	60 34.9 -59.2 170.0	60 24.0 -58.8 168.1	60 11.1 -58.3 166.2	59 56.4 -57.9 164.3	59 39.9 -57.3 162.4
14°	59 35.7 -59.2 170.4	59 25.2 -58.9 168.5	59 12.8 -58.5 166.6	58 58.5 -58.0 164.8	58 42.6 -57.5 163.0
15°	58 36.5 -59.2 170.7	58 26.3 -58.9 168.9	58 14.3 -58.5 167.1	58 00.5 -58.1 165.3	57 45.1 -57.7 163.6
16°	57 37.3 -59.3 171.0	57 27.4 -59.0 169.2	57 15.8 -58.6 167.5	57 02.4 -58.2 165.8	56 47.4 -57.7 164.1
17°	56 38.0 -59.3 171.3	56 28.4 -59.0 169.6	56 17.2 -58.7 167.9	56 04.2 -58.3 166.2	55 49.7 -57.9 164.6
18°	55 38.7 -59.3 171.6	55 29.4 -59.1 169.9	55 18.5 -58.8 168.3	55 05.9 -58.3 166.6	54 51.8 -58.0 165.0
19°	54 39.4 -59.4 171.8	54 30.3 -59.1 170.2	54 19.7 -58.8 168.6	54 07.6 -58.5 167.0	53 53.8 -58.0 165.5
20°	53 40.0 -59.4 172.1	53 31.2 -59.1 170.5	53 20.9 -58.8 168.9	53 09.1 -58.5 167.4	52 55.8 -58.2 165.9
21°	52 40.6 -59.5 172.3	52 32.1 -59.2 170.8	52 22.1 -58.9 169.3	52 10.6 -58.6 167.8	51 57.6 -58.2 166.3
22°	51 41.1 -59.4 172.5	51 32.9 -59.3 171.0	51 23.2 -59.0 169.6	51 12.0 -58.7 168.1	50 59.4 -58.3 166.7
23°	50 41.7 -59.5 172.7	50 33.6 -59.2 171.3	50 24.2 -59.0 169.9	50 13.3 -58.7 168.4	50 01.1 -58.4 167.0
24°	49 42.2 -59.5 172.9	49 34.4 -59.3 171.5	49 25.2 -59.0 170.1	49 14.6 -58.7 168.8	49 02.7 -58.4 167.4
25°	48 42.7 -59.5 173.1	48 35.1 -59.3 171.8	48 26.2 -59.1 170.4	48 15.9 -58.8 169.1	48 04.3 -58.5 167.7
26°	47 43.2 -59.6 173.3	47 35.8 -59.4 172.0	47 27.1 -59.1 170.7	47 17.1 -58.8 169.4	47 05.8 -58.5 168.1
27°	46 43.6 -59.5 173.5	46 36.4 -59.3 172.2	46 28.0 -59.2 170.9	46 18.3 -58.9 169.7	46 07.3 -58.6 168.4
28°	45 44.1 -59.6 173.7	45 37.1 -59.4 172.4	45 28.8 -59.1 171.2	45 19.4 -59.0 169.9	45 08.7 -58.7 168.7
29°	44 44.5 -59.6 173.8	44 37.7 -59.4 172.6	44 29.7 -59.2 171.4	44 20.4 -58.9 170.2	44 10.0 -58.7 169.0

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°	71 12.1 -51.7 147.4	70 39.9 -50.4 144.8	70 05.7 -49.1 142.4	69 29.5 -47.7 140.1	68 51.7 -46.4 137.9
1°	70 20.4 -52.5 148.9	69 49.5 -51.2 146.4	69 16.6 -49.9 144.0	68 41.8 -48.7 141.8	68 05.3 -47.5 139.6
2°	69 27.9 -53.0 150.3	68 58.3 -51.9 147.9	68 26.7 -50.7 145.6	67 53.1 -49.5 143.3	67 17.8 -48.3 141.2
3°	68 34.9 -53.7 151.7	68 06.4 -52.5 149.3	67 36.0 -51.5 147.0	67 03.6 -50.3 144.8	66 29.5 -49.1 142.7
4°	67 41.2 -54.1 152.9	67 13.9 -53.1 150.5	66 44.5 -52.0 148.3	66 13.3 -50.9 146.2	65 40.4 -49.9 144.1
5°	66 47.1 -54.6 154.0	66 20.8 -53.6 151.7	65 52.5 -52.6 149.6	65 22.4 -51.6 147.5	64 50.5 -50.6 145.5
6°	65 52.5 -54.9 155.0	65 27.2 -54.1 152.8	64 59.9 -53.1 150.7	64 30.8 -52.2 148.7	63 59.9 -51.1 146.7
7°	64 57.6 -55.3 156.0	64 33.1 -54.4 153.8	64 06.8 -53.6 151.8	63 38.6 -52.6 149.8	63 08.8 -51.7 147.9
8°	64 02.3 -55.6 156.9	63 38.7 -54.8 154.8	63 13.2 -54.0 152.8	62 46.0 -53.1 150.9	62 17.1 -52.2 149.0
9°	63 06.7 -55.9 157.7	62 43.9 -55.2 155.7	62 19.2 -54.3 153.8	61 52.9 -53.5 151.9	61 24.9 -52.7 150.0
10°	62 10.8 -56.2 158.5	61 48.7 -55.4 156.6	61 24.9 -54.7 154.7	60 59.4 -53.9 152.8	60 32.2 -53.0 151.0
11°	61 14.6 -56.4 159.2	60 53.3 -55.7 157.4	60 30.2 -55.0 155.5	60 05.5 -54.2 153.7	59 39.2 -53.5 152.0
12°	60 18.2 -56.6 159.9	59 57.6 -56.0 158.1	59 35.2 -55.2 156.3	59 11.3 -54.6 154.6	58 45.7 -53.8 152.9
13°	59 21.6 -56.8 160.6	59 01.6 -56.1 158.8	58 40.0 -55.5 157.1	58 16.7 -54.8 155.4	57 51.9 -54.1 153.7
14°	58 24.8 -56.9 161.2	58 05.5 -56.4 159.5	57 44.5 -55.8 157.8	57 21.9 -55.1 156.1	56 57.8 -54.4 154.5
15°	57 27.9 -57.1 161.8	57 09.1 -56.6 160.1	56 48.7 -56.0 158.5	56 26.8 -55.3 156.9	56 03.4 -54.7 155.3
16°	56 30.8 -57.3 162.4	56 12.5 -56.7 160.7	55 52.7 -56.1 159.1	55 31.5 -55.6 157.5	55 08.7 -54.9 156.0
17°	55 33.5 -57.4 162.9	55 15.8 -56.9 161.3	54 56.6 -56.3 159.7	54 35.9 -55.8 158.2	54 13.8 -55.2 156.7
18°	54 36.1 -57.5 163.4	54 18.9 -57.0 161.9	54 00.3 -56.6 160.3	53 40.1 -55.9 158.8	53 18.6 -55.4 157.4
19°	53 38.6 -57.6 163.9	53 21.9 -57.2 162.4	53 03.7 -56.6 160.9	52 44.2 -56.2 159.4	52 23.2 -55.5 158.0
20°	52 41.0 -57.7 164.4	52 24.7 -57.2 162.9	52 07.1 -56.8 161.4	51 48.0 -56.2 160.0	51 27.7 -55.8 158.6
21°	51 43.3 -57.9 164.8	51 27.5 -57.4 163.4	51 10.3 -57.0 162.0	50 51.8 -56.5 160.6	50 31.9 -55.9 159.2
22°	50 45.4 -57.9 165.3	50 30.1 -57.5 163.9	50 13.3 -57.0 162.5	49 55.3 -56.6 161.1	49 36.0 -56.1 159.8
23°	49 47.5 -58.0 165.7	49 32.6 -57.6 164.3	49 16.3 -57.2 162.9	48 58.7 -56.7 161.6	48 39.9 -56.2 160.3
24°	48 49.5 -58.1 166.1	48 35.0 -57.7 164.7	48 19.1 -57.3 163.4	48 02.0 -56.8 162.1	47 43.7 -56.4 160.8
25°	47 51.4 -58.1 166.4	47 37.3 -57.8 165.1	47 21.8 -57.3 163.8	47 05.2 -57.0 162.6	46 47.3 -56.5 161.3
26°	46 53.3 -58.2 166.8	46 39.5 -57.9 165.5	46 24.5 -57.5 164.3	46 08.2 -57.0 163.0	45 50.8 -56.6 161.8
27°	45 55.1 -58.3 167.1	45 41.6 -57.9 165.9	45 27.0 -57.6 164.7	45 11.2 -57.2 163.5	44 54.2 -56.7 162.3
28°	44 56.8 -58.3 167.5	44 43.7 -58.0 166.3	44 29.4 -57.6 165.1	44 14.0 -57.2 163.9	43 57.5 -56.9 162.7
29°	43 58.5 -58.4 167.8	43 45.7 -58.1 166.6	43 31.8 -57.7 165.5	43 16.8 -57.4 164.3	43 00.6 -56.9 163.2

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°	68 12.2 -45.1 135.8	67 31.3 -43.8 133.9	66 49.1 -42.6 132.0	66 05.7 -41.5 130.3	65 21.2 -40.3 128.7
1°	67 27.1 -46.2 137.6	66 47.5 -45.0 135.6	66 06.5 -43.8 133.8	65 24.2 -42.6 132.1	64 40.9 -41.5 130.4
2°	66 40.9 -47.1 139.2	66 02.5 -45.9 137.3	65 22.7 -44.8 135.5	64 41.6 -43.6 133.7	63 59.4 -42.6 132.1
3°	65 53.8 -48.0 140.7	65 16.6 -46.9 138.8	64 37.9 -45.7 137.0	63 58.0 -44.7 135.3	63 16.8 -43.5 133.7
4°	65 05.8 -48.8 142.2	64 29.7 -47.7 140.3	63 52.2 -46.7 138.5	63 13.3 -45.5 136.8	62 33.3 -44.5 135.2
5°	64 17.0 -49.5 143.5	63 42.0 -48.5 141.7	63 05.5 -47.4 139.9	62 27.8 -46.4 138.3	61 48.8 -45.4 136.6
6°	63 27.5 -50.2 144.8	62 53.5 -49.1 143.0	62 18.1 -48.1 141.3	61 41.4 -47.1 139.6	61 03.4 -46.1 138.0
7°	62 37.3 -50.7 146.0	62 04.4 -49.8 144.3	61 30.0 -48.8 142.5	60 54.3 -47.9 140.9	60 17.3 -46.9 139.3
8°	61 46.6 -51.3 147.2	61 14.6 -50.4 145.4	60 41.2 -49.5 143.7	60 06.4 -48.5 142.1	59 30.4 -47.6 140.6
9°	60 55.3 -51.8 148.3	60 24.2 -50.9 146.5	59 51.7 -49.9 144.9	59 17.9 -49.1 143.3	58 42.8 -48.2 141.7
10°	60 03.5 -52.2 149.3	59 33.3 -51.3 147.6	59 01.8 -50.6 146.0	58 28.8 -49.6 144.4	57 54.6 -48.7 142.9
11°	59 11.3 -52.7 150.3	58 42.0 -51.9 148.6	58 11.2 -51.0 147.0	57 39.2 -50.2 145.5	57 05.9 -49.3 144.0
12°	58 18.6 -53.0 151.2	57 50.1 -52.2 149.6	57 20.2 -51.4 148.0	56 49.0 -50.6 146.5	56 16.6 -49.8 145.0
13°	57 25.6 -53.4 152.1	56 57.9 -52.6 150.5	56 28.8 -51.8 148.9	55 58.4 -51.1 147.4	55 26.8 -50.3 146.0
14°	56 32.2 -53.7 152.9	56 05.3 -53.0 151.4	55 37.0 -52.3 149.8	55 07.3 -51.4 148.4	54 36.5 -50.7 146.9
15°	55 38.5 -54.0 153.7	55 12.3 -53.3 152.2	54 44.7 -52.6 150.7	54 15.9 -51.9 149.3	53 45.8 -51.1 147.9
16°	54 44.5 -54.2 154.5	54 19.0 -53.6 153.0	53 52.1 -52.9 151.5	53 24.0 -52.2 150.1	52 54.7 -51.5 148.7
17°	53 50.3 -54.6 155.2	53 25.4 -53.9 153.7	52 59.2 -53.2 152.3	52 31.8 -52.5 150.9	52 03.2 -51.8 149.6
18°	52 55.7 -54.7 155.9	52 31.5 -54.1 154.5	52 06.0 -53.5 153.1	51 39.3 -52.8 151.7	51 11.4 -52.1 150.4
19°	52 01.0 -55.0 156.6	51 37.4 -54.4 155.2	51 12.5 -53.7 153.8	50 46.5 -53.1 152.5	50 19.3 -52.5 151.2
20°	51 06.0 -55.2 157.2	50 43.0 -54.6 155.9	50 18.8 -54.0 154.5	49 53.4 -53.4 153.2	49 26.8 -52.7 151.9
21°	50 10.8 -55.4 157.8	49 48.4 -54.8 156.5	49 24.8 -54.2 155.2	49 00.0 -53.6 153.9	48 34.1 -53.0 152.7
22°	49 15.4 -55.6 158.4	48 53.6 -55.0 157.1	48 30.6 -54.5 155.8	48 06.4 -53.9 154.6	47 41.1 -53.3 153.4
23°	48 19.8 -55.7 159.0	47 58.6 -55.2 157.7	47 36.1 -54.6 156.5	47 12.5 -54.0 155.2	46 47.8 -53.4 154.0
24°	47 24.1 -55.8 159.6	47 03.4 -55.4 158.3	46 41.5 -54.8 157.1	46 18.5 -54.3 155.9	45 54.4 -53.7 154.7
25°	46 28.3 -56.1 160.1	46 08.0 -55.5 158.9	45 46.7 -55.0 157.7	45 24.2 -54.4 156.5	45 00.7 -53.9 155.3
26°	45 32.2 -56.1 160.6	45 12.5 -55.7 159.4	44 51.7 -55.2 158.2	44 29.8 -54.7 157.1	44 06.8 -54.1 155.9
27°	44 36.1 -56.3 161.1	44 16.8 -55.8 159.9	43 56.5 -55.3 158.8	43 35.1 -54.8 157.7	43 12.7 -54.3 156.5
28°	43 39.8 -56.4 161.6	43 21.0 -55.9 160.4	43 01.2 -55.5 159.3	42 40.3 -54.9 158.2	42 18.4 -54.4 157.1
29°	42 43.4 -56.5 162.1	42 25.1 -56.1 160.9	42 05.7 -55.6 159.8	41 45.4 -55.2 158.8	41 24.0 -54.7 157.7

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°	64 35.6 -39.1 127.1	63 49.2 -38.1 125.7	63 02.0 -37.1 124.3	62 14.0 -36.2 123.0	61 25.2 -35.2 121.8
1°	63 56.5 -40.4 128.9	63 11.1 -39.3 127.4	62 24.9 -38.4 126.0	61 37.8 -37.3 124.7	60 50.0 -36.4 123.4
2°	63 16.1 -41.5 130.5	62 31.8 -40.5 129.1	61 46.5 -39.4 127.7	61 00.5 -38.5 126.3	60 13.6 -37.5 125.1
3°	62 34.6 -42.5 132.1	61 51.3 -41.5 130.7	61 07.1 -40.5 129.2	60 22.0 -39.5 127.9	59 36.1 -38.6 126.6
4°	61 52.1 -43.5 133.6	61 09.8 -42.4 132.2	60 26.6 -41.5 130.8	59 42.5 -40.6 129.4	58 57.5 -39.6 128.1
5°	61 08.6 -44.4 135.1	60 27.4 -43.4 133.6	59 45.1 -42.4 132.2	59 01.9 -41.4 130.8	58 17.9 -40.6 129.6
6°	60 24.2 -45.1 136.5	59 44.0 -44.2 135.0	59 02.7 -43.3 133.6	58 20.5 -42.4 132.2	57 37.3 -41.4 130.9
7°	59 39.1 -46.0 137.8	58 59.8 -45.0 136.3	58 19.4 -44.0 134.9	57 38.1 -43.1 133.6	56 55.9 -42.3 132.3
8°	58 53.1 -46.6 139.0	58 14.8 -45.7 137.6	57 35.4 -44.8 136.2	56 55.0 -43.9 134.9	56 13.6 -43.0 133.6
9°	58 06.5 -47.3 140.3	57 29.1 -46.4 138.8	56 50.6 -45.5 137.4	56 11.1 -44.7 136.1	55 30.6 -43.8 134.8
10°	57 19.2 -47.9 141.4	56 42.7 -47.0 140.0	56 05.1 -46.2 138.6	55 26.4 -45.2 137.3	54 46.8 -44.4 136.0
11°	56 31.3 -48.4 142.5	55 55.7 -47.6 141.1	55 18.9 -46.7 139.7	54 41.2 -46.0 138.4	54 02.4 -45.1 137.2
12°	55 42.9 -49.0 143.6	55 08.1 -48.2 142.2	54 32.2 -47.4 140.8	53 55.2 -46.5 139.5	53 17.3 -45.7 138.3
13°	54 53.9 -49.5 144.6	54 19.9 -48.6 143.2	53 44.8 -47.8 141.9	53 08.7 -47.0 140.6	52 31.6 -46.2 139.4
14°	54 04.4 -49.9 145.6	53 31.3 -49.2 144.2	52 57.0 -48.4 142.9	52 21.7 -47.6 141.6	51 45.4 -46.8 140.4
15°	53 14.5 -50.3 146.5	52 42.1 -49.5 145.2	52 08.6 -48.8 143.9	51 34.1 -48.0 142.6	50 58.6 -47.3 141.4
16°	52 24.2 -50.8 147.4	51 52.6 -50.0 146.1	51 19.8 -49.2 144.8	50 46.1 -48.5 143.6	50 11.3 -47.7 142.4
17°	51 33.4 -51.1 148.3	51 02.6 -50.4 147.0	50 30.6 -49.7 145.7	49 57.6 -48.9 144.5	49 23.6 -48.2 143.3
18°	50 42.3 -51.4 149.1	50 12.2 -50.8 147.8	49 40.9 -50.0 146.6	49 08.7 -49.3 145.4	48 35.4 -48.6 144.2
19°	49 50.9 -51.8 149.9	49 21.4 -51.1 148.7	48 50.9 -50.4 147.4	48 19.4 -49.7 146.2	47 46.8 -49.0 145.1
20°	48 59.1 -52.1 150.7	48 30.3 -51.4 149.5	48 00.5 -50.7 148.3	47 29.7 -50.1 147.1	46 57.8 -49.3 145.9
21°	48 07.0 -52.3 151.4	47 38.9 -51.7 150.2	47 09.8 -51.1 149.0	46 39.6 -50.4 147.9	46 08.5 -49.7 146.8
22°	47 14.7 -52.6 152.2	46 47.2 -52.0 151.0	46 18.7 -51.3 149.8	45 49.2 -50.7 148.7	45 18.8 -50.1 147.6
23°	46 22.1 -52.9 152.9	45 55.2 -52.2 151.7	45 27.4 -51.7 150.6	44 58.5 -51.0 149.4	44 28.7 -50.3 148.3
24°	45 29.2 -53.1 153.5	45 03.0 -52.5 152.4	44 35.7 -51.8 151.3	44 07.5 -51.2 150.2	43 38.4 -50.6 149.1
25°	44 36.1 -53.3 154.2	44 10.5 -52.8 153.1	43 43.9 -52.2 152.0	43 16.3 -51.6 150.9	42 47.8 -50.9 149.8
26°	43 42.8 -53.6 154.8	43 17.7 -52.9 153.7	42 51.7 -52.4 152.7	42 24.7 -51.7 151.6	41 56.9 -51.2 150.6
27°	42 49.2 -53.7 155.5	42 24.8 -53.2 154.4	41 59.3 -52.6 153.3	41 33.0 -52.0 152.3	41 05.7 -51.4 151.3
28°	41 55.5 -53.9 156.1	41 31.6 -53.4 155.0	41 06.7 -52.8 154.0	40 41.0 -52.3 152.9	40 14.3 -51.7 151.9
29°	41 01.6 -54.1 156.6	40 38.2 -53.5 155.6	40 13.9 -53.0 154.6	39 48.7 -52.4 153.6	39 22.6 -51.8 152.6

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°	60 35.9 -34.3 120.6	59 46.0 -33.5 119.5	58 55.5 -32.7 118.4	58 04.5 -31.9 117.4	57 13.1 -31.1 116.4
1°	60 01.6 -35.5 122.2	59 12.5 -34.7 121.1	58 22.8 -33.8 120.0	57 32.6 -33.0 119.0	56 42.0 -32.3 118.0
2°	59 26.1 -36.7 123.8	58 37.8 -35.7 122.7	57 49.0 -34.9 121.6	56 59.6 -34.1 120.5	56 09.7 -33.4 119.5
3°	58 49.4 -37.7 125.4	58 02.1 -36.9 124.2	57 14.1 -36.0 123.1	56 25.5 -35.2 122.0	55 36.3 -34.4 121.0
4°	58 11.7 -38.7 126.9	57 25.2 -37.8 125.7	56 38.1 -37.1 124.6	55 50.3 -36.2 123.5	55 01.9 -35.4 122.5
5°	57 33.0 -39.7 128.3	56 47.4 -38.8 127.1	56 01.0 -37.9 126.0	55 14.1 -37.2 124.9	54 26.5 -36.4 123.9
6°	56 53.3 -40.5 129.7	56 08.6 -39.7 128.5	55 23.1 -38.9 127.4	54 36.9 -38.0 126.3	53 50.1 -37.2 125.2
7°	56 12.8 -41.4 131.0	55 28.9 -40.5 129.8	54 44.2 -39.7 128.7	53 58.9 -38.9 127.6	53 12.9 -38.1 126.5
8°	55 31.4 -42.2 132.3	54 48.4 -41.4 131.1	54 04.5 -40.4 130.0	53 20.0 -39.7 128.9	52 34.8 -38.9 127.8
9°	54 49.2 -42.9 133.6	54 07.0 -42.0 132.4	53 24.1 -41.3 131.2	52 40.3 -40.4 130.1	51 55.9 -39.7 129.1
10°	54 06.3 -43.6 134.8	53 25.0 -42.8 133.6	52 42.8 -42.0 132.4	51 59.9 -41.2 131.3	51 16.2 -40.4 130.3
11°	53 22.7 -44.2 135.9	52 42.2 -43.4 134.8	52 00.8 -42.6 133.6	51 18.7 -41.9 132.5	50 35.8 -41.1 131.4
12°	52 38.5 -44.9 137.1	51 58.8 -44.1 135.9	51 18.2 -43.3 134.7	50 36.8 -42.5 133.6	49 54.7 -41.7 132.6
13°	51 53.6 -45.4 138.1	51 14.7 -44.7 137.0	50 34.9 -43.9 135.8	49 54.3 -43.1 134.7	49 13.0 -42.3 133.7
14°	51 08.2 -46.0 139.2	50 30.0 -45.2 138.0	49 51.0 -44.4 136.9	49 11.2 -43.7 135.8	48 30.7 -43.0 134.8
15°	50 22.2 -46.5 140.2	49 44.8 -45.7 139.1	49 06.6 -45.0 137.9	48 27.5 -44.2 136.9	47 47.7 -43.5 135.8
16°	49 35.7 -47.0 141.2	48 59.1 -46.3 140.1	48 21.6 -45.5 138.9	47 43.3 -44.7 137.9	47 04.2 -44.0 136.8
17°	48 48.7 -47.5 142.1	48 12.8 -46.7 141.0	47 36.1 -46.0 139.9	46 58.6 -45.3 138.9	46 20.2 -44.5 137.8
18°	48 01.2 -47.9 143.1	47 26.1 -47.1 141.9	46 50.1 -46.4 140.9	46 13.3 -45.7 139.8	45 35.7 -45.0 138.8
19°	47 13.3 -48.2 144.0	46 39.0 -47.6 142.9	46 03.7 -46.8 141.8	45 27.6 -46.1 140.7	44 50.7 -45.4 139.7
20°	46 25.1 -48.7 144.8	45 51.4 -48.0 143.7	45 16.9 -47.3 142.7	44 41.5 -46.6 141.6	44 05.3 -45.9 140.6
21°	45 36.4 -49.0 145.7	45 03.4 -48.3 144.6	44 29.6 -47.7 143.5	43 54.9 -47.0 142.5	43 19.4 -46.3 141.5
22°	44 47.4 -49.4 146.5	44 15.1 -48.7 145.4	43 41.9 -48.0 144.4	43 07.9 -47.3 143.4	42 33.1 -46.6 142.4
23°	43 58.0 -49.7 147.3	43 26.4 -49.0 146.2	42 53.9 -48.3 145.2	42 20.6 -47.7 144.2	41 46.5 -47.0 143.2
24°	43 08.3 -50.0 148.1	42 37.4 -49.4 147.0	42 05.6 -48.7 146.0	41 32.9 -48.0 145.0	40 59.5 -47.4 144.1
25°	42 18.3 -50.2 148.8	41 48.0 -49.6 147.8	41 16.9 -49.0 146.8	40 44.9 -48.4 145.8	40 12.1 -47.7 144.9
26°	41 28.1 -50.6 149.5	40 58.4 -49.9 148.5	40 27.9 -49.3 147.6	39 56.5 -48.6 146.6	39 24.4 -48.0 145.7
27°	40 37.5 -50.8 150.3	40 08.5 -50.2 149.3	39 38.6 -49.6 148.3	39 07.9 -49.0 147.4	38 36.4 -48.3 146.4
28°	39 46.7 -51.1 151.0	39 18.3 -50.5 150.0	38 49.0 -49.8 149.0	38 18.9 -49.2 148.1	37 48.1 -48.6 147.2
29°	38 55.6 -51.2 151.6	38 27.8 -50.7 150.7	37 59.2 -50.1 149.7	37 29.7 -49.5 148.8	36 59.5 -48.9 147.9

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	56 21.2 -30.4 115.5	55 29.0 -29.8 114.6	54 36.4 -29.1 113.8	53 43.5 -28.5 113.0	52 50.2 -27.9 112.2
1°	55 50.8 -31.6 117.1	54 59.2 -30.8 116.2	54 07.3 -30.2 115.3	53 15.0 -29.6 114.5	52 22.3 -29.0 113.7
2°	55 19.2 -32.6 118.6	54 28.4 -32.0 117.7	53 37.1 -31.3 116.8	52 45.4 -30.6 115.9	51 53.3 -29.9 115.1
3°	54 46.6 -33.7 120.0	53 56.4 -32.9 119.1	53 05.8 -32.2 118.2	52 14.8 -31.6 117.3	51 23.4 -31.0 116.5
4°	54 12.9 -34.6 121.5	53 23.5 -33.9 120.5	52 33.6 -33.3 119.6	51 43.2 -32.6 118.7	50 52.4 -31.9 117.9
5°	53 38.3 -35.6 122.8	52 49.6 -34.9 121.9	52 00.3 -34.1 121.0	51 10.6 -33.4 120.1	50 20.5 -32.8 119.2
6°	53 02.7 -36.5 124.2	52 14.7 -35.7 123.2	51 26.2 -35.0 122.3	50 37.2 -34.3 121.4	49 47.7 -33.6 120.5
7°	52 26.2 -37.3 125.5	51 39.0 -36.6 124.5	50 51.2 -35.9 123.6	50 02.9 -35.2 122.7	49 14.1 -34.5 121.8
8°	51 48.9 -38.2 126.8	51 02.4 -37.4 125.8	50 15.3 -36.6 124.8	49 27.7 -35.9 123.9	48 39.6 -35.2 123.0
9°	51 10.7 -38.9 128.0	50 25.0 -38.1 127.0	49 38.7 -37.5 126.1	48 51.8 -36.7 125.1	48 04.4 -36.1 124.3
10°	50 31.8 -39.6 129.2	49 46.9 -38.9 128.2	49 01.2 -38.1 127.3	48 15.1 -37.5 126.3	47 28.3 -36.7 125.4
11°	49 52.2 -40.3 130.4	49 08.0 -39.6 129.4	48 23.1 -38.8 128.4	47 37.6 -38.1 127.5	46 51.6 -37.4 126.6
12°	49 11.9 -41.0 131.5	48 28.4 -40.2 130.5	47 44.3 -39.5 129.6	46 59.5 -38.8 128.6	46 14.2 -38.1 127.7
13°	48 30.9 -41.6 132.7	47 48.2 -40.9 131.7	47 04.8 -40.2 130.7	46 20.7 -39.4 129.8	45 36.1 -38.7 128.9
14°	47 49.3 -42.1 133.7	47 07.3 -41.4 132.7	46 24.6 -40.7 131.8	45 41.3 -40.0 130.8	44 57.4 -39.3 129.9
15°	47 07.2 -42.8 134.8	46 25.9 -42.1 133.8	45 43.9 -41.3 132.8	45 01.3 -40.6 131.9	44 18.1 -39.9 131.0
16°	46 24.4 -43.3 135.8	45 43.8 -42.5 134.8	45 02.6 -41.9 133.9	44 20.7 -41.1 132.9	43 38.2 -40.5 132.0
17°	45 41.1 -43.8 136.8	45 01.3 -43.1 135.8	44 20.7 -42.3 134.9	43 39.6 -41.7 134.0	42 57.7 -41.0 133.1
18°	44 57.3 -44.3 137.8	44 18.2 -43.6 136.8	43 38.4 -42.9 135.9	42 57.9 -42.2 134.9	42 16.7 -41.4 134.0
19°	44 13.0 -44.7 138.7	43 34.6 -44.0 137.8	42 55.5 -43.3 136.8	42 15.7 -42.6 135.9	41 35.3 -42.0 135.0
20°	43 28.3 -45.2 139.7	42 50.6 -44.5 138.7	42 12.2 -43.8 137.8	41 33.1 -43.1 136.9	40 53.3 -42.4 136.0
21°	42 43.1 -45.5 140.6	42 06.1 -44.9 139.6	41 28.4 -44.2 138.7	40 50.0 -43.6 137.8	40 10.9 -42.9 136.9
22°	41 57.6 -46.0 141.4	41 21.2 -45.3 140.5	40 44.2 -44.6 139.6	40 06.4 -43.9 138.7	39 28.0 -43.2 137.8
23°	41 11.6 -46.4 142.3	40 35.9 -45.6 141.4	39 59.6 -45.0 140.5	39 22.5 -44.3 139.6	38 44.8 -43.7 138.7
24°	40 25.2 -46.7 143.1	39 50.3 -46.1 142.2	39 14.6 -45.4 141.3	38 38.2 -44.7 140.4	38 01.1 -44.1 139.6
25°	39 38.5 -47.0 144.0	39 04.2 -46.4 143.0	38 29.2 -45.7 142.2	37 53.5 -45.1 141.3	37 17.0 -44.4 140.4
26°	38 51.5 -47.4 144.8	38 17.8 -46.7 143.9	37 43.5 -46.1 143.0	37 08.4 -45.4 142.1	36 32.6 -44.7 141.3
27°	38 04.1 -47.6 145.5	37 31.1 -47.0 144.6	36 57.4 -46.4 143.8	36 23.0 -45.8 142.9	35 47.9 -45.1 142.1
28°	37 16.5 -48.0 146.3	36 44.1 -47.3 145.4	36 11.0 -46.7 144.6	35 37.2 -46.0 143.7	35 02.8 -45.4 142.9
29°	36 28.5 -48.3 147.1	35 56.8 -47.7 146.2	35 24.3 -47.0 145.3	34 51.2 -46.4 144.5	34 17.4 -45.8 143.7

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	51 56.7 -27.4 111.5	51 02.9 -26.8 110.8	50 08.9 -26.4 110.1	49 14.6 -25.8 109.4	48 20.1 -25.4 108.8
1°	51 29.3 -28.3 112.9	50 36.1 -27.9 112.2	49 42.5 -27.3 111.5	48 48.8 -26.8 110.8	47 54.7 -26.3 110.2
2°	51 01.0 -29.4 114.3	50 08.2 -28.8 113.6	49 15.2 -28.2 112.9	48 22.0 -27.8 112.2	47 28.4 -27.2 111.5
3°	50 31.6 -30.4 115.7	49 39.4 -29.7 114.9	48 47.0 -29.2 114.2	47 54.2 -28.6 113.5	47 01.2 -28.1 112.8
4°	50 01.2 -31.2 117.1	49 09.7 -30.7 116.3	48 17.8 -30.1 115.5	47 25.6 -29.5 114.8	46 33.1 -29.0 114.1
5°	49 30.0 -32.2 118.4	48 39.0 -31.5 117.6	47 47.7 -30.9 116.8	46 56.1 -30.3 116.1	46 04.1 -29.8 115.4
6°	48 57.8 -33.0 119.7	48 07.5 -32.3 118.9	47 16.8 -31.7 118.1	46 25.8 -31.2 117.3	45 34.3 -30.5 116.6
7°	48 24.8 -33.8 120.9	47 35.2 -33.2 120.1	46 45.1 -32.6 119.3	45 54.6 -31.9 118.6	45 03.8 -31.4 117.8
8°	47 51.0 -34.6 122.2	47 02.0 -34.0 121.4	46 12.5 -33.3 120.6	45 22.7 -32.7 119.8	44 32.4 -32.1 119.0
9°	47 16.4 -35.3 123.4	46 28.0 -34.6 122.6	45 39.2 -34.0 121.7	44 50.0 -33.5 121.0	44 00.3 -32.8 120.2
10°	46 41.1 -36.1 124.6	45 53.4 -35.4 123.7	45 05.2 -34.8 122.9	44 16.5 -34.1 122.1	43 27.5 -33.5 121.4
11°	46 05.0 -36.7 125.7	45 18.0 -36.1 124.9	44 30.4 -35.4 124.1	43 42.4 -34.8 123.3	42 54.0 -34.2 122.5
12°	45 28.3 -37.4 126.9	44 41.9 -36.7 126.0	43 55.0 -36.1 125.2	43 07.6 -35.4 124.4	42 19.8 -34.8 123.6
13°	44 50.9 -38.0 128.0	44 05.2 -37.4 127.1	43 18.9 -36.7 126.3	42 32.2 -36.0 125.5	41 45.0 -35.4 124.7
14°	44 12.9 -38.7 129.1	43 27.8 -37.9 128.2	42 42.2 -37.3 127.4	41 56.2 -36.7 126.6	41 09.6 -36.0 125.8
15°	43 34.2 -39.2 130.1	42 49.9 -38.6 129.3	42 04.9 -37.8 128.4	41 19.5 -37.2 127.6	40 33.6 -36.6 126.9
16°	42 55.0 -39.7 131.2	42 11.3 -39.1 130.3	41 27.1 -38.4 129.5	40 42.3 -37.8 128.7	39 57.0 -37.1 127.9
17°	42 15.3 -40.3 132.2	41 32.2 -39.6 131.3	40 48.7 -39.0 130.5	40 04.5 -38.3 129.7	39 19.9 -37.6 128.9
18°	41 35.0 -40.8 133.2	40 52.6 -40.1 132.3	40 09.7 -39.5 131.5	39 26.2 -38.8 130.7	38 42.3 -38.2 129.9
19°	40 54.2 -41.3 134.1	40 12.5 -40.6 133.3	39 30.2 -39.9 132.5	38 47.4 -39.2 131.7	38 04.1 -38.6 130.9
20°	40 12.9 -41.7 135.1	39 31.9 -41.1 134.3	38 50.3 -40.4 133.4	38 08.2 -39.8 132.6	37 25.5 -39.1 131.9
21°	39 31.2 -42.2 136.0	38 50.8 -41.5 135.2	38 09.9 -40.9 134.4	37 28.4 -40.2 133.6	36 46.4 -39.6 132.8
22°	38 49.0 -42.6 137.0	38 09.3 -41.9 136.1	37 29.0 -41.2 135.3	36 48.2 -40.6 134.5	36 06.8 -40.0 133.8
23°	38 06.4 -43.0 137.9	37 27.4 -42.4 137.0	36 47.8 -41.7 136.2	36 07.6 -41.1 135.4	35 26.8 -40.3 134.7
24°	37 23.4 -43.4 138.7	36 45.0 -42.7 137.9	36 06.1 -42.1 137.1	35 26.5 -41.4 136.3	34 46.5 -40.8 135.6
25°	36 40.0 -43.8 139.6	36 02.3 -43.1 138.8	35 24.0 -42.5 138.0	34 45.1 -41.8 137.2	34 05.7 -41.2 136.5
26°	35 56.2 -44.1 140.5	35 19.2 -43.5 139.6	34 41.5 -42.8 138.9	34 03.3 -42.2 138.1	33 24.5 -41.5 137.3
27°	35 12.1 -44.4 141.3	34 35.7 -43.8 140.5	33 58.7 -43.1 139.7	33 21.1 -42.5 139.0	32 43.0 -41.9 138.2
28°	34 27.7 -44.8 142.1	33 51.9 -44.1 141.3	33 15.6 -43.5 140.5	32 38.6 -42.8 139.8	32 01.1 -42.2 139.1
29°	33 42.9 -45.1 142.9	33 07.8 -44.4 142.1	32 32.1 -43.8 141.4	31 55.8 -43.2 140.6	31 18.9 -42.5 139.9

Dec	LHA 040° / 320°	LHA 041° / 319°	LHA 042° / 318°	LHA 043° / 317°	LHA 044° / 316°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	47 25.4 -24.9 108.2	46 30.5 -24.5 107.6	45 35.4 -24.1 107.0	44 40.2 -23.7 106.5	43 44.8 -23.3 105.9
1°	47 00.5 -25.9 109.5	46 06.0 -25.4 108.9	45 11.3 -24.9 108.3	44 16.5 -24.5 107.8	43 21.5 -24.2 107.2
2°	46 34.6 -26.7 110.8	45 40.6 -26.2 110.2	44 46.4 -25.8 109.6	43 52.0 -25.4 109.0	42 57.3 -24.9 108.5
3°	46 07.9 -27.6 112.1	45 14.4 -27.2 111.5	44 20.6 -26.7 110.9	43 26.6 -26.2 110.3	42 32.4 -25.8 109.7
4°	45 40.3 -28.4 113.4	44 47.2 -27.9 112.8	43 53.9 -27.4 112.1	43 00.4 -27.0 111.5	42 06.6 -26.5 110.9
5°	45 11.9 -29.3 114.7	44 19.3 -28.7 114.0	43 26.5 -28.2 113.4	42 33.4 -27.7 112.7	41 40.1 -27.3 112.1
6°	44 42.6 -30.0 115.9	43 50.6 -29.5 115.2	42 58.3 -29.0 114.6	42 05.7 -28.5 113.9	41 12.8 -27.9 113.3
7°	44 12.6 -30.8 117.1	43 21.1 -30.2 116.4	42 29.3 -29.7 115.8	41 37.2 -29.2 115.1	40 44.9 -28.7 114.5
8°	43 41.8 -31.5 118.3	42 50.9 -31.0 117.6	41 59.6 -30.4 116.9	41 08.0 -29.9 116.3	40 16.2 -29.4 115.6
9°	43 10.3 -32.2 119.5	42 19.9 -31.6 118.8	41 29.2 -31.1 118.1	40 38.1 -30.5 117.4	39 46.8 -30.0 116.8
10°	42 38.1 -32.9 120.6	41 48.3 -32.4 119.9	40 58.1 -31.8 119.2	40 07.6 -31.2 118.6	39 16.8 -30.7 117.9
11°	42 05.2 -33.6 121.8	41 15.9 -32.9 121.0	40 26.3 -32.4 120.3	39 36.4 -31.8 119.7	38 46.1 -31.3 119.0
12°	41 31.6 -34.2 122.9	40 43.0 -33.6 122.2	39 53.9 -33.0 121.4	39 04.6 -32.5 120.8	38 14.8 -31.8 120.1
13°	40 57.4 -34.8 124.0	40 09.4 -34.2 123.2	39 20.9 -33.6 122.5	38 32.1 -33.0 121.8	37 43.0 -32.5 121.2
14°	40 22.6 -35.4 125.0	39 35.2 -34.8 124.3	38 47.3 -34.1 123.6	37 59.1 -33.6 122.9	37 10.5 -33.0 122.2
15°	39 47.2 -35.9 126.1	39 00.4 -35.3 125.4	38 13.2 -34.8 124.6	37 25.5 -34.1 124.0	36 37.5 -33.6 123.3
16°	39 11.3 -36.5 127.1	38 25.1 -35.9 126.4	37 38.4 -35.2 125.7	36 51.4 -34.7 125.0	36 03.9 -34.0 124.3
17°	38 34.8 -37.0 128.2	37 49.2 -36.4 127.4	37 03.2 -35.8 126.7	36 16.7 -35.1 126.0	35 29.9 -34.6 125.3
18°	37 57.8 -37.5 129.2	37 12.8 -36.9 128.4	36 27.4 -36.3 127.7	35 41.6 -35.7 127.0	34 55.3 -35.1 126.3
19°	37 20.3 -38.0 130.1	36 35.9 -37.3 129.4	35 51.1 -36.7 128.7	35 05.9 -36.1 128.0	34 20.2 -35.5 127.3
20°	36 42.3 -38.5 131.1	35 58.6 -37.9 130.4	35 14.4 -37.2 129.7	34 29.8 -36.6 129.0	33 44.7 -36.0 128.3
21°	36 03.8 -38.9 132.1	35 20.7 -38.2 131.3	34 37.2 -37.6 130.6	33 53.2 -37.0 129.9	33 08.7 -36.4 129.2
22°	35 24.9 -39.3 133.0	34 42.5 -38.7 132.3	33 59.6 -38.1 131.6	33 16.2 -37.5 130.9	32 32.3 -36.8 130.2
23°	34 45.6 -39.8 133.9	34 03.8 -39.1 133.2	33 21.5 -38.5 132.5	32 38.7 -37.8 131.8	31 55.5 -37.3 131.1
24°	34 05.8 -40.1 134.8	33 24.7 -39.5 134.1	32 43.0 -38.9 133.4	32 00.9 -38.3 132.7	31 18.2 -37.6 132.0
25°	33 25.7 -40.5 135.7	32 45.2 -39.9 135.0	32 04.1 -39.2 134.3	31 22.6 -38.6 133.6	30 40.6 -38.0 132.9
26°	32 45.2 -40.9 136.6	32 05.3 -40.3 135.9	31 24.9 -39.6 135.2	30 44.0 -39.0 134.5	30 02.6 -38.3 133.8
27°	32 04.3 -41.3 137.5	31 25.0 -40.6 136.8	30 45.3 -40.0 136.1	30 05.0 -39.3 135.4	29 24.3 -38.7 134.7
28°	31 23.0 -41.5 138.3	30 44.4 -40.9 137.6	30 05.3 -40.3 136.9	29 25.7 -39.7 136.3	28 45.6 -39.1 135.6
29°	30 41.5 -41.9 139.2	30 03.5 -41.3 138.5	29 25.0 -40.6 137.8	28 46.0 -40.0 137.1	28 06.5 -39.3 136.5

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	42 49.3 -23.0 105.4	41 53.6 -22.6 104.9	40 57.8 -22.3 104.4	40 01.9 -22.0 103.9	39 05.9 -21.7 103.5
1°	42 26.3 -23.8 106.7	41 31.0 -23.4 106.1	40 35.5 -23.0 105.6	39 39.9 -22.7 105.2	38 44.2 -22.4 104.7
2°	42 02.5 -24.5 107.9	41 07.6 -24.2 107.4	40 12.5 -23.9 106.9	39 17.2 -23.5 106.3	38 21.8 -23.1 105.9
3°	41 38.0 -25.4 109.1	40 43.4 -24.9 108.6	39 48.6 -24.5 108.1	38 53.7 -24.1 107.5	37 58.7 -23.8 107.0
4°	41 12.6 -26.0 110.3	40 18.5 -25.7 109.8	39 24.1 -25.2 109.2	38 29.6 -24.9 108.7	37 34.9 -24.5 108.2
5°	40 46.6 -26.8 111.5	39 52.8 -26.4 111.0	38 58.9 -26.0 110.4	38 04.7 -25.5 109.9	37 10.4 -25.2 109.3
6°	40 19.8 -27.6 112.7	39 26.4 -27.0 112.1	38 32.9 -26.6 111.6	37 39.2 -26.2 111.0	36 45.2 -25.8 110.5
7°	39 52.2 -28.2 113.9	38 59.4 -27.8 113.3	38 06.3 -27.3 112.7	37 13.0 -26.9 112.1	36 19.4 -26.4 111.6
8°	39 24.0 -28.8 115.0	38 31.6 -28.3 114.4	37 39.0 -27.9 113.8	36 46.1 -27.4 113.3	35 53.0 -27.0 112.7
9°	38 55.2 -29.5 116.1	38 03.3 -29.1 115.5	37 11.1 -28.5 114.9	36 18.7 -28.1 114.4	35 26.0 -27.6 113.8
10°	38 25.7 -30.2 117.3	37 34.2 -29.6 116.6	36 42.6 -29.2 116.0	35 50.6 -28.6 115.5	34 58.4 -28.2 114.9
11°	37 55.5 -30.7 118.4	37 04.6 -30.2 117.7	36 13.4 -29.7 117.1	35 22.0 -29.3 116.5	34 30.2 -28.7 116.0
12°	37 24.8 -31.4 119.4	36 34.4 -30.8 118.8	35 43.7 -30.3 118.2	34 52.7 -29.7 117.6	34 01.5 -29.3 117.0
13°	36 53.4 -31.9 120.5	36 03.6 -31.4 119.9	35 13.4 -30.8 119.3	34 23.0 -30.3 118.7	33 32.2 -29.8 118.1
14°	36 21.5 -32.4 121.6	35 32.2 -31.9 120.9	34 42.6 -31.4 120.3	33 52.7 -30.9 119.7	33 02.4 -30.3 119.1
15°	35 49.1 -33.0 122.6	35 00.3 -32.4 122.0	34 11.2 -31.8 121.4	33 21.8 -31.3 120.7	32 32.1 -30.8 120.2
16°	35 16.1 -33.5 123.6	34 27.9 -32.9 123.0	33 39.4 -32.4 122.4	32 50.5 -31.8 121.8	32 01.3 -31.3 121.2
17°	34 42.6 -34.0 124.7	33 55.0 -33.4 124.0	33 07.0 -32.9 123.4	32 18.7 -32.3 122.8	31 30.0 -31.7 122.2
18°	34 08.6 -34.4 125.7	33 21.6 -33.9 125.0	32 34.1 -33.3 124.4	31 46.4 -32.8 123.8	30 58.3 -32.3 123.2
19°	33 34.2 -35.0 126.6	32 47.7 -34.4 126.0	32 00.8 -33.7 125.4	31 13.6 -33.2 124.7	30 26.0 -32.6 124.1
20°	32 59.2 -35.4 127.6	32 13.3 -34.8 127.0	31 27.1 -34.2 126.3	30 40.4 -33.6 125.7	29 53.4 -33.1 125.1
21°	32 23.8 -35.8 128.6	31 38.5 -35.2 127.9	30 52.9 -34.7 127.3	30 06.8 -34.1 126.7	29 20.3 -33.4 126.1
22°	31 48.0 -36.2 129.5	31 03.3 -35.6 128.9	30 18.2 -35.0 128.2	29 32.7 -34.4 127.6	28 46.9 -33.9 127.0
23°	31 11.8 -36.6 130.5	30 27.7 -36.0 129.8	29 43.2 -35.4 129.2	28 58.3 -34.8 128.6	28 13.0 -34.2 128.0
24°	30 35.2 -37.0 131.4	29 51.7 -36.4 130.7	29 07.8 -35.8 130.1	28 23.5 -35.2 129.5	27 38.8 -34.6 128.9
25°	29 58.2 -37.4 132.3	29 15.3 -36.8 131.6	28 32.0 -36.2 131.0	27 48.3 -35.6 130.4	27 04.2 -35.0 129.8
26°	29 20.8 -37.7 133.2	28 38.5 -37.1 132.6	27 55.8 -36.5 131.9	27 12.7 -35.9 131.3	26 29.2 -35.3 130.7
27°	28 43.1 -38.1 134.1	28 01.4 -37.5 133.4	27 19.3 -36.8 132.8	26 36.8 -36.2 132.2	25 53.9 -35.7 131.6
28°	28 05.0 -38.4 135.0	27 23.9 -37.8 134.3	26 42.5 -37.2 133.7	26 00.6 -36.6 133.1	25 18.2 -35.9 132.5
29°	27 26.6 -38.8 135.8	26 46.1 -38.1 135.2	26 05.3 -37.5 134.6	25 24.0 -36.9 134.0	24 42.3 -36.3 133.4

Dec	LHA 050° / 310°	LHA 051° / 309°	LHA 052° / 308°	LHA 053° / 307°	LHA 054° / 306°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	38 09.7 -21.4 103.0	37 13.5 -21.1 102.6	36 17.1 -20.8 102.2	35 20.7 -20.6 101.7	34 24.2 -20.4 101.3
1°	37 48.3 -22.1 104.2	36 52.4 -21.8 103.8	35 56.3 -21.5 103.3	35 00.1 -21.2 102.9	34 03.8 -20.9 102.5
2°	37 26.2 -22.8 105.4	36 30.6 -22.5 104.9	35 34.8 -22.2 104.5	34 38.9 -21.9 104.0	33 42.9 -21.6 103.6
3°	37 03.4 -23.4 106.5	36 08.1 -23.1 106.1	35 12.6 -22.8 105.6	34 17.0 -22.5 105.2	33 21.3 -22.2 104.7
4°	36 40.0 -24.1 107.7	35 45.0 -23.8 107.2	34 49.8 -23.4 106.7	33 54.5 -23.1 106.3	32 59.1 -22.8 105.8
5°	36 15.9 -24.8 108.8	35 21.2 -24.4 108.3	34 26.4 -24.1 107.9	33 31.4 -23.7 107.4	32 36.3 -23.4 106.9
6°	35 51.1 -25.4 110.0	34 56.8 -25.0 109.5	34 02.3 -24.6 109.0	33 07.7 -24.2 108.5	32 12.9 -23.9 108.0
7°	35 25.7 -26.0 111.1	34 31.8 -25.6 110.6	33 37.7 -25.2 110.1	32 43.5 -24.9 109.6	31 49.0 -24.4 109.1
8°	34 59.7 -26.6 112.2	34 06.2 -26.1 111.7	33 12.5 -25.7 111.1	32 18.6 -25.3 110.6	31 24.6 -25.0 110.2
9°	34 33.1 -27.1 113.3	33 40.1 -26.8 112.7	32 46.8 -26.3 112.2	31 53.3 -25.9 111.7	30 59.6 -25.5 111.2
10°	34 06.0 -27.7 114.3	33 13.3 -27.2 113.8	32 20.5 -26.9 113.3	31 27.4 -26.4 112.8	30 34.1 -26.0 112.3
11°	33 38.3 -28.3 115.4	32 46.1 -27.8 114.9	31 53.6 -27.3 114.3	31 01.0 -27.0 113.8	30 08.1 -26.5 113.3
12°	33 10.0 -28.8 116.5	32 18.3 -28.4 115.9	31 26.3 -27.9 115.4	30 34.0 -27.4 114.9	29 41.6 -27.0 114.4
13°	32 41.2 -29.3 117.5	31 49.9 -28.8 117.0	30 58.4 -28.4 116.4	30 06.6 -27.9 115.9	29 14.6 -27.4 115.4
14°	32 11.9 -29.8 118.6	31 21.1 -29.3 118.0	30 30.0 -28.8 117.5	29 38.7 -28.3 116.9	28 47.2 -27.9 116.4
15°	31 42.1 -30.3 119.6	30 51.8 -29.8 119.0	30 01.2 -29.3 118.5	29 10.4 -28.8 117.9	28 19.3 -28.3 117.4
16°	31 11.8 -30.8 120.6	30 22.0 -30.3 120.0	29 31.9 -29.7 119.5	28 41.6 -29.3 118.9	27 51.0 -28.8 118.4
17°	30 41.0 -31.2 121.6	29 51.7 -30.6 121.0	29 02.2 -30.2 120.5	28 12.3 -29.6 119.9	27 22.2 -29.2 119.4
18°	30 09.8 -31.7 122.6	29 21.1 -31.2 122.0	28 32.0 -30.6 121.5	27 42.7 -30.1 120.9	26 53.0 -29.5 120.4
19°	29 38.1 -32.0 123.6	28 49.9 -31.5 123.0	28 01.4 -31.0 122.4	27 12.6 -30.5 121.9	26 23.5 -30.0 121.4
20°	29 06.1 -32.5 124.5	28 18.4 -32.0 124.0	27 30.4 -31.4 123.4	26 42.1 -30.9 122.9	25 53.5 -30.4 122.3
21°	28 33.6 -32.9 125.5	27 46.4 -32.3 124.9	26 59.0 -31.8 124.4	26 11.2 -31.2 123.8	25 23.1 -30.7 123.3
22°	28 00.7 -33.3 126.4	27 14.1 -32.7 125.9	26 27.2 -32.2 125.3	25 40.0 -31.7 124.8	24 52.4 -31.1 124.2
23°	27 27.4 -33.7 127.4	26 41.4 -33.1 126.8	25 55.0 -32.5 126.2	25 08.3 -31.9 125.7	24 21.3 -31.4 125.2
24°	26 53.7 -34.0 128.3	26 08.3 -33.5 127.7	25 22.5 -32.9 127.2	24 36.4 -32.4 126.6	23 49.9 -31.7 126.1
25°	26 19.7 -34.4 129.2	25 34.8 -33.8 128.7	24 49.6 -33.2 128.1	24 04.0 -32.6 127.6	23 18.2 -32.1 127.0
26°	25 45.3 -34.7 130.1	25 01.0 -34.1 129.6	24 16.4 -33.6 129.0	23 31.4 -33.0 128.5	22 46.1 -32.4 127.9
27°	25 10.6 -35.1 131.0	24 26.9 -34.5 130.5	23 42.8 -33.8 129.9	22 58.4 -33.2 129.4	22 13.7 -32.7 128.9
28°	24 35.5 -35.3 131.9	23 52.4 -34.7 131.4	23 09.0 -34.2 130.8	22 25.2 -33.6 130.3	21 41.0 -33.0 129.8
29°	24 00.2 -35.7 132.8	23 17.7 -35.1 132.3	22 34.8 -34.4 131.7	21 51.6 -33.9 131.2	21 08.0 -33.3 130.7

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°	33 27.6 -20.1 100.9	32 30.9 -19.9 100.5	31 34.2 -19.7 100.1	30 37.4 -19.5 99.8	29 40.5 -19.3 99.4
1°	33 07.5 -20.8 102.1	32 11.0 -20.5 101.6	31 14.5 -20.3 101.3	30 17.9 -20.0 100.9	29 21.2 -19.8 100.5
2°	32 46.7 -21.3 103.2	31 50.5 -21.0 102.8	30 54.2 -20.8 102.4	29 57.9 -20.6 102.0	29 01.4 -20.3 101.6
3°	32 25.4 -21.9 104.3	31 29.5 -21.7 103.9	30 33.4 -21.3 103.4	29 37.3 -21.1 103.0	28 41.1 -20.9 102.6
4°	32 03.5 -22.5 105.4	31 07.8 -22.1 104.9	30 12.1 -21.9 104.5	29 16.2 -21.6 104.1	28 20.2 -21.3 103.7
5°	31 41.0 -23.0 106.5	30 45.7 -22.7 106.0	29 50.2 -22.4 105.6	28 54.6 -22.1 105.2	27 58.9 -21.9 104.8
6°	31 18.0 -23.5 107.6	30 23.0 -23.3 107.1	29 27.8 -22.9 106.7	28 32.5 -22.6 106.2	27 37.0 -22.3 105.8
7°	30 54.5 -24.1 108.6	29 59.7 -23.7 108.2	29 04.9 -23.4 107.7	28 09.9 -23.1 107.3	27 14.7 -22.7 106.9
8°	30 30.4 -24.6 109.7	29 36.0 -24.3 109.2	28 41.5 -23.9 108.8	27 46.8 -23.6 108.3	26 52.0 -22.3 107.9
9°	30 05.8 -25.2 110.7	29 11.7 -24.7 110.3	28 17.6 -24.4 109.8	27 23.2 -24.0 109.4	26 28.7 -23.6 108.9
10°	29 40.6 -25.6 111.8	28 47.0 -25.2 111.3	27 53.2 -24.8 110.9	26 59.2 -24.4 110.4	26 05.1 -24.1 110.0
11°	29 15.0 -26.0 112.8	28 21.8 -25.7 112.4	27 28.4 -25.3 111.9	26 34.8 -24.9 111.4	25 41.0 -24.5 111.0
12°	28 49.0 -26.6 113.9	27 56.1 -26.1 113.4	27 03.1 -25.7 112.9	26 09.9 -25.3 112.4	25 16.5 -24.9 112.0
13°	28 22.4 -27.0 114.9	27 30.0 -26.6 114.4	26 37.4 -26.2 113.9	25 44.6 -25.8 113.5	24 51.6 -25.4 113.0
14°	27 55.4 -27.4 115.9	27 03.4 -27.0 115.4	26 11.2 -26.5 114.9	25 18.8 -26.1 114.5	24 26.2 -25.7 114.0
15°	27 28.0 -27.9 116.9	26 36.4 -27.4 116.4	25 44.7 -27.0 115.9	24 52.7 -26.5 115.5	24 00.5 -26.1 115.0
16°	27 00.1 -28.3 117.9	26 09.0 -27.8 117.4	25 17.7 -27.3 116.9	24 26.2 -26.9 116.4	23 34.4 -26.4 116.0
17°	26 31.8 -28.6 118.9	25 41.2 -28.2 118.4	24 50.4 -27.8 117.9	23 59.3 -27.3 117.4	23 08.0 -26.8 117.0
18°	26 03.2 -29.1 119.9	25 13.0 -28.6 119.4	24 22.6 -28.1 118.9	23 32.0 -27.6 118.4	22 41.2 -27.2 117.9
19°	25 34.1 -29.5 120.8	24 44.4 -28.9 120.3	23 54.5 -28.5 119.8	23 04.4 -28.0 119.4	22 14.0 -27.5 118.9
20°	25 04.6 -29.8 121.8	24 15.5 -29.4 121.3	23 26.0 -28.8 120.8	22 36.4 -28.3 120.3	21 46.5 -27.9 119.8
21°	24 34.8 -30.2 122.8	23 46.1 -29.6 122.3	22 57.2 -29.1 121.8	22 08.1 -28.7 121.3	21 18.6 -28.1 120.8
22°	24 04.6 -30.6 123.7	23 16.5 -30.1 123.2	22 28.1 -29.5 122.7	21 39.4 -29.0 122.2	20 50.5 -28.5 121.7
23°	23 34.0 -30.8 124.6	22 46.4 -30.3 124.1	21 58.6 -29.8 123.6	21 10.4 -29.3 123.2	20 22.0 -28.8 122.7
24°	23 03.2 -31.2 125.6	22 16.1 -30.7 125.1	21 28.8 -30.2 124.6	20 41.1 -29.5 124.1	19 53.2 -29.0 123.6
25°	22 32.0 -31.6 126.5	21 45.4 -30.9 126.0	20 58.6 -30.4 125.5	20 11.6 -29.9 125.0	19 24.2 -29.4 124.5
26°	22 00.4 -31.8 127.4	21 14.5 -31.3 126.9	20 28.2 -30.7 126.4	19 41.7 -30.2 125.9	18 54.8 -29.6 125.5
27°	21 28.6 -32.1 128.3	20 43.2 -31.5 127.8	19 57.5 -31.0 127.3	19 11.5 -30.4 126.9	18 25.8 -29.8 126.4
28°	20 56.5 -32.4 129.2	20 11.7 -31.9 128.7	19 26.5 -31.2 128.3	18 41.1 -30.7 127.8	17 55.4 -30.2 127.3
29°	20 24.1 -32.7 130.1	19 39.8 -32.1 129.6	18 55.3 -31.5 129.2	18 10.4 -30.9 128.7	17 25.2 -30.4 128.2

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°	28 43.6 -19.1 99.0	27 46.6 -18.9 98.7	26 49.6 -18.8 98.3	25 52.5 -18.6 98.0	24 55.3 -18.4 97.7
1°	28 24.5 -19.6 100.1	27 27.7 -19.5 99.8	26 30.8 -19.2 99.4	25 33.9 -19.1 99.0	24 36.9 -18.9 98.7
2°	28 04.9 -20.2 101.2	27 08.2 -19.9 100.8	26 11.6 -19.7 100.5	25 14.8 -19.5 100.1	24 18.0 -19.3 99.7
3°	27 44.7 -20.6 102.3	26 48.3 -20.3 101.9	25 51.9 -20.2 101.5	24 55.3 -19.9 101.1	23 58.7 -19.7 100.8
4°	27 24.1 -21.1 103.3	26 28.0 -20.9 102.9	25 31.7 -20.6 102.6	24 35.4 -20.4 102.2	23 39.0 -20.2 101.8
5°	27 03.0 -21.5 104.4	26 07.1 -21.3 104.0	25 11.1 -21.0 103.6	24 15.0 -20.8 103.2	23 18.8 -20.5 102.8
6°	26 41.5 -22.0 105.4	25 45.8 -21.7 105.0	24 50.1 -21.5 104.6	23 54.2 -21.2 104.2	22 58.3 -21.0 103.9
7°	26 19.5 -22.5 106.5	25 24.1 -22.2 106.1	24 28.6 -21.8 105.7	23 33.0 -21.5 105.3	22 37.3 -21.3 104.9
8°	25 57.0 -22.9 107.5	25 01.9 -22.5 107.1	24 06.8 -22.3 106.7	23 11.5 -22.0 106.3	22 16.0 -21.7 105.9
9°	25 34.1 -23.3 108.5	24 39.4 -23.0 108.1	23 44.5 -22.7 107.7	22 49.5 -22.4 107.3	21 54.3 -22.0 106.9
10°	25 10.8 -23.7 109.5	24 16.4 -23.4 109.1	23 21.8 -23.0 108.7	22 27.1 -22.7 108.3	21 32.3 -22.4 107.9
11°	24 47.1 -24.2 110.6	23 53.0 -23.8 110.1	22 58.8 -23.5 109.7	22 04.4 -23.1 109.3	21 09.9 -22.8 108.9
12°	24 22.9 -24.5 111.6	23 29.2 -24.2 111.1	22 35.3 -23.8 110.7	21 41.3 -23.4 110.3	20 47.1 -23.1 109.9
13°	23 58.4 -24.9 112.6	23 05.0 -24.5 112.1	22 11.5 -24.1 111.7	21 17.9 -23.8 111.3	20 24.0 -23.4 110.9
14°	23 33.5 -25.3 113.6	22 40.5 -24.9 113.1	21 47.4 -24.5 112.7	20 54.1 -24.2 112.3	20 00.6 -23.7 111.9
15°	23 08.2 -25.7 114.5	22 15.6 -25.3 114.1	21 22.9 -24.9 113.7	20 29.9 -24.4 113.2	19 36.9 -24.1 112.8
16°	22 42.5 -26.0 115.5	21 50.3 -25.6 115.1	20 58.0 -25.2 114.6	20 05.5 -24.8 114.2	19 12.8 -24.4 113.8
17°	22 16.5 -26.4 116.5	21 24.7 -25.9 116.0	20 32.8 -25.5 115.6	19 40.7 -25.1 115.2	18 48.4 -24.6 114.8
18°	21 50.1 -26.7 117.5	20 58.8 -26.3 117.0	20 07.3 -25.8 116.6	19 15.6 -25.3 116.2	18 23.8 -25.0 115.7
19°	21 23.4 -27.1 118.4	20 32.5 -26.5 118.0	19 41.5 -26.1 117.5	18 50.3 -25.7 117.1	17 58.8 -25.2 116.7
20°	20 56.3 -27.3 119.4	20 06.0 -26.9 118.9	19 15.4 -26.4 118.5	18 24.6 -26.0 118.1	17 33.6 -25.5 117.6
21°	20 29.0 -27.7 120.3	19 39.1 -27.2 119.9	18 49.0 -26.7 119.4	17 58.6 -26.2 119.0	17 08.1 -25.8 118.6
22°	20 01.3 -28.0 121.3	19 11.9 -27.5 120.8	18 22.3 -27.0 120.4	17 32.4 -26.5 120.0	16 42.3 -26.0 119.5
23°	19 33.3 -28.2 122.2	18 44.4 -27.7 121.8	17 55.3 -27.3 121.3	17 05.9 -26.8 120.9	16 16.3 -26.3 120.5
24°	19 05.1 -28.6 123.2	18 16.7 -28.0 122.7	17 28.0 -27.5 122.3	16 39.1 -27.0 121.8	15 50.0 -26.5 121.4
25°	18 36.5 -28.8 124.1	17 48.7 -28.3 123.6	17 00.5 -27.8 123.2	16 12.1 -27.2 122.8	15 23.5 -26.7 122.3
26°	18 07.7 -29.0 125.0	17 20.4 -28.6 124.6	16 32.7 -28.0 124.1	15 44.9 -27.5 123.7	14 56.8 -27.0 123.3
27°	17 38.7 -29.4 125.9	16 51.8 -28.8 125.5	16 04.7 -28.2 125.0	15 17.4 -27.7 124.6	14 29.8 -27.2 124.2
28°	17 09.3 -29.5 126.8	16 23.0 -29.0 126.4	15 36.5 -28.5 126.0	14 49.7 -28.0 125.5	14 02.6 -27.4 125.1
29°	16 39.8 -29.8 127.8	15 54.0 -29.2 127.3	15 08.0 -28.7 126.9	14 21.7 -28.1 126.4	13 35.2 -27.6 126.0

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°	23 58.2 -18.4 97.3	23 00.9 -18.1 97.0	22 03.7 -18.1 96.7	21 06.4 -17.9 96.4	20 09.0 -17.8 96.0
1°	23 39.8 -18.7 98.4	22 42.8 -18.6 98.0	21 45.6 -18.4 97.7	20 48.5 -18.3 97.4	19 51.2 -18.1 97.1
2°	23 21.1 -19.1 99.4	22 24.2 -19.0 99.1	21 27.2 -18.8 98.7	20 30.2 -18.6 98.4	19 33.1 -18.5 98.1
3°	23 02.0 -19.5 100.4	22 05.2 -19.3 100.1	21 08.4 -19.1 99.7	20 11.6 -19.0 99.4	19 14.6 -18.8 99.1
4°	22 42.5 -20.0 101.5	21 45.9 -19.7 101.1	20 49.3 -19.5 100.8	19 52.6 -19.3 100.4	18 55.8 -19.1 100.1
5°	22 22.5 -20.3 102.5	21 26.2 -20.1 102.1	20 29.8 -19.9 101.8	19 33.3 -19.7 101.4	18 36.7 -19.4 101.1
6°	22 02.2 -20.6 103.5	21 06.1 -20.4 103.1	20 09.9 -20.2 102.8	19 13.6 -20.0 102.4	18 17.3 -19.8 102.1
7°	21 41.6 -21.1 104.5	20 45.7 -20.8 104.1	19 49.7 -20.5 103.8	18 53.6 -20.2 103.4	17 57.5 -20.1 103.1
8°	21 20.5 -21.4 105.5	20 24.9 -21.1 105.1	19 29.2 -20.9 104.8	18 33.4 -20.6 104.4	17 37.4 -20.3 104.1
9°	20 59.1 -21.7 106.5	20 03.8 -21.5 106.1	19 08.3 -21.2 105.8	18 12.8 -21.0 105.4	17 17.1 -20.6 105.1
10°	20 37.4 -22.1 107.5	19 42.3 -21.8 107.1	18 47.1 -21.5 106.8	17 51.8 -21.2 106.4	16 56.5 -21.0 106.0
11°	20 15.3 -22.5 108.5	19 20.5 -22.1 108.1	18 25.6 -21.8 107.7	17 30.6 -21.4 107.4	16 35.5 -21.1 107.0
12°	19 52.8 -22.7 109.5	18 58.4 -22.4 109.1	18 03.8 -22.1 108.7	17 09.2 -21.8 108.4	16 14.4 -21.5 108.0
13°	19 30.1 -23.1 110.5	18 36.0 -22.7 110.1	17 41.7 -22.3 109.7	16 47.4 -22.1 109.3	15 52.9 -21.7 109.0
14°	19 07.0 -23.4 111.5	18 13.3 -23.1 111.1	17 19.4 -22.7 110.7	16 25.3 -22.3 110.3	15 31.2 -22.0 109.9
15°	18 43.6 -23.6 112.4	17 50.2 -23.3 112.0	16 56.7 -22.9 111.6	16 03.0 -22.5 111.3	15 09.2 -22.2 110.9
16°	18 20.0 -24.0 113.4	17 26.9 -23.5 113.0	16 33.8 -23.2 112.6	15 40.5 -22.9 112.2	14 47.0 -22.5 111.9
17°	17 56.0 -24.3 114.4	17 03.4 -23.9 114.0	16 10.6 -23.5 113.6	15 17.6 -23.0 113.2	14 24.5 -22.6 112.8
18°	17 31.7 -24.5 115.3	16 39.5 -24.1 114.9	15 47.1 -23.7 114.5	14 54.6 -23.3 114.1	14 01.9 -22.9 113.8
19°	17 07.2 -24.8 116.3	16 15.4 -24.4 115.9	15 23.4 -23.9 115.5	14 31.3 -23.6 115.1	13 39.0 -23.2 114.7
20°	16 42.4 -25.1 117.2	15 51.0 -24.6 116.8	14 59.5 -24.2 116.4	14 07.7 -23.7 116.0	13 15.8 -23.3 115.7
21°	16 17.3 -25.3 118.2	15 26.4 -24.8 117.8	14 35.3 -24.4 117.4	13 44.0 -24.0 117.0	12 52.5 -23.5 116.6
22°	15 52.0 -25.5 119.1	15 01.6 -25.1 118.7	14 10.9 -24.7 118.3	13 20.0 -24.2 117.9	12 29.0 -23.8 117.6
23°	15 26.5 -25.8 120.1	14 36.5 -25.4 119.7	13 46.2 -24.8 119.3	12 55.8 -24.4 118.9	12 05.2 -23.9 118.5
24°	15 00.7 -26.0 121.0	14 11.1 -25.5 120.6	13 21.4 -25.1 120.2	12 31.4 -24.5 119.8	11 41.3 -24.1 119.4
25°	14 34.7 -26.3 121.9	13 45.6 -25.7 121.5	12 56.3 -25.2 121.1	12 06.9 -24.8 120.7	11 17.2 -24.3 120.4
26°	14 08.4 -26.4 122.9	13 19.9 -26.0 122.5	12 31.1 -25.4 122.1	11 42.1 -24.9 121.7	10 52.9 -24.4 121.3
27°	13 42.0 -26.7 123.8	12 53.9 -26.1 123.4	12 05.7 -25.7 123.0	11 17.2 -25.1 122.6	10 28.5 -24.6 122.2
28°	13 15.3 -26.8 124.7	12 27.8 -26.3 124.3	11 40.0 -25.8 123.9	10 52.1 -25.3 123.5	10 03.9 -24.8 123.2
29°	12 48.5 -27.1 125.6	12 01.5 -26.5 125.2	11 14.2 -25.9 124.8	10 26.8 -25.5 124.5	9 39.1 -24.9 124.1

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°	19 11.7 -17.7 95.7	18 14.2 -17.5 95.4	17 16.8 -17.5 95.1	16 19.4 -17.4 94.8	15 21.9 -17.3 94.5
1°	18 54.0 -18.0 96.7	17 56.7 -17.9 96.4	16 59.3 -17.7 96.1	16 02.0 -17.7 95.8	15 04.6 -17.5 95.5
2°	18 36.0 -18.4 97.7	17 38.8 -18.2 97.4	16 41.6 -18.1 97.1	15 44.3 -17.9 96.8	14 47.1 -17.8 96.5
3°	18 17.6 -18.6 98.8	17 20.6 -18.5 98.4	16 23.5 -18.3 98.1	15 26.4 -18.2 97.8	14 29.3 -18.1 97.5
4°	17 59.0 -18.9 99.8	17 02.1 -18.7 99.4	16 05.2 -18.6 99.1	15 08.2 -18.4 98.8	14 11.2 -18.3 98.5
5°	17 40.1 -19.3 100.7	16 43.4 -19.1 100.4	15 46.6 -18.9 100.1	14 49.8 -18.7 99.8	13 52.9 -18.5 99.5
6°	17 20.8 -19.5 101.7	16 24.3 -19.3 101.4	15 27.7 -19.1 101.1	14 31.1 -18.9 100.8	13 34.4 -18.7 100.4
7°	17 01.3 -19.8 102.7	16 05.0 -19.6 102.4	15 08.6 -19.4 102.1	14 12.2 -19.2 101.7	13 15.7 -19.0 101.4
8°	16 41.5 -20.1 103.7	15 45.4 -19.9 103.4	14 49.2 -19.6 103.0	13 53.0 -19.4 102.7	12 56.7 -19.2 102.4
9°	16 21.4 -20.4 104.7	15 25.5 -20.1 104.4	14 29.6 -19.9 104.0	13 33.6 -19.6 103.7	12 37.5 -19.4 103.4
10°	16 01.0 -20.7 105.7	15 05.4 -20.4 105.3	14 09.7 -20.1 105.0	13 14.0 -19.9 104.7	12 18.1 -19.6 104.3
11°	15 40.3 -20.9 106.7	14 45.0 -20.6 106.3	13 49.6 -20.3 106.0	12 54.1 -20.0 105.6	11 58.5 -19.8 105.3
12°	15 19.4 -21.1 107.6	14 24.4 -20.8 107.3	13 29.3 -20.6 106.9	12 34.1 -20.3 106.6	11 38.7 -19.9 106.3
13°	14 58.3 -21.4 108.6	14 03.6 -21.1 108.2	13 08.7 -20.7 107.9	12 13.8 -20.5 107.6	11 18.8 -20.2 107.2
14°	14 36.9 -21.6 109.6	13 42.5 -21.3 109.2	12 48.0 -21.0 108.9	11 53.3 -20.6 108.5	10 58.6 -20.4 108.2
15°	14 15.3 -21.9 110.5	13 21.2 -21.5 110.2	12 27.0 -21.2 109.8	11 32.7 -20.9 109.5	10 38.2 -20.5 109.1
16°	13 53.4 -22.1 111.5	12 59.7 -21.8 111.1	12 05.8 -21.4 110.8	11 11.8 -21.0 110.4	10 17.7 -20.7 110.1
17°	13 31.3 -22.3 112.4	12 37.9 -21.9 112.1	11 44.4 -21.5 111.7	10 50.8 -21.2 111.4	9 57.0 -20.8 111.0
18°	13 09.0 -22.5 113.4	12 16.0 -22.1 113.0	11 22.9 -21.8 112.7	10 29.6 -21.4 112.3	9 36.2 -21.1 112.0
19°	12 46.5 -22.7 114.3	11 53.9 -22.4 114.0	11 01.1 -21.9 113.6	10 08.2 -21.5 113.3	9 15.1 -21.1 112.9
20°	12 23.8 -22.9 115.3	11 31.5 -22.5 114.9	10 39.2 -22.1 114.6	9 46.7 -21.7 114.2	8 54.0 -21.3 113.9
21°	12 00.9 -23.2 116.2	11 09.0 -22.6 115.9	10 17.1 -22.3 115.5	9 25.0 -21.9 115.2	8 32.7 -21.5 114.8
22°	11 37.7 -23.2 117.2	10 46.4 -22.9 116.8	9 54.8 -22.4 116.5	9 03.1 -22.0 116.1	8 11.2 -21.5 115.8
23°	11 14.5 -23.5 118.1	10 23.5 -23.0 117.8	9 32.4 -22.6 117.4	8 41.1 -22.1 117.1	7 49.7 -21.7 116.7
24°	10 51.0 -23.6 119.1	10 00.5 -23.2 118.7	9 09.8 -22.7 118.3	8 19.0 -22.3 118.0	7 28.0 -21.8 117.7
25°	10 27.4 -23.8 120.0	9 37.3 -23.3 119.6	8 47.1 -22.9 119.3	7 56.7 -22.4 118.9	7 06.2 -22.0 118.6
26°	10 03.6 -24.0 120.9	9 14.0 -23.5 120.6	8 24.2 -22.9 120.2	7 34.3 -22.5 119.9	6 44.2 -22.0 119.5
27°	9 39.6 -24.1 121.9	8 50.5 -23.6 121.5	8 01.3 -23.2 121.2	7 11.8 -22.6 120.8	6 22.2 -22.2 120.5
28°	9 15.5 -24.3 122.8	8 26.9 -23.7 122.4	7 38.1 -23.2 122.1	6 49.2 -22.8 121.7	6 00.0 -22.2 121.4
29°	8 51.2 -24.3 123.7	8 03.2 -23.9 123.4	7 14.9 -23.3 123.0	6 26.4 -22.8 122.7	5 37.8 -22.3 122.3

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°	14 24.4 -17.2 94.2	13 26.8 -17.1 93.9	12 29.3 -17.1 93.6	11 31.7 -17.0 93.4	10 34.1 -16.9 93.1
1°	14 07.2 -17.5 95.2	13 09.7 -17.3 94.9	12 12.2 -17.2 94.6	11 14.7 -17.1 94.3	10 17.2 -17.1 94.0
2°	13 49.7 -17.6 96.2	12 52.4 -17.6 95.9	11 55.0 -17.5 95.6	10 57.6 -17.4 95.3	10 00.1 -17.2 95.0
3°	13 32.1 -18.0 97.2	12 34.8 -17.8 96.9	11 37.5 -17.6 96.6	10 40.2 -17.5 96.3	9 42.9 -17.4 96.0
4°	13 14.1 -18.1 98.2	12 17.0 -17.9 97.9	11 19.9 -17.9 97.6	10 22.7 -17.7 97.3	9 25.5 -17.6 97.0
5°	12 56.0 -18.3 99.1	11 59.1 -18.2 98.8	11 02.0 -18.0 98.5	10 05.0 -17.9 98.2	9 07.9 -17.8 97.9
6°	12 37.7 -18.6 100.1	11 40.9 -18.4 99.8	10 44.0 -18.2 99.5	9 47.1 -18.0 99.2	8 50.1 -17.8 98.9
7°	12 19.1 -18.8 101.1	11 22.5 -18.6 100.8	10 25.8 -18.4 100.5	9 29.1 -18.2 100.2	8 32.3 -18.1 99.9
8°	12 00.3 -18.9 102.1	11 03.9 -18.7 101.7	10 07.4 -18.5 101.4	9 10.9 -18.4 101.1	8 14.2 -18.1 100.8
9°	11 41.4 -19.2 103.0	10 45.2 -19.0 102.7	9 48.9 -18.8 102.4	8 52.5 -18.5 102.1	7 56.1 -18.3 101.8
10°	11 22.2 -19.3 104.0	10 26.2 -19.1 103.7	9 30.1 -18.8 103.4	8 34.0 -18.7 103.1	7 37.8 -18.5 102.7
11°	11 02.9 -19.6 105.0	10 07.1 -19.3 104.6	9 11.3 -19.1 104.3	8 15.3 -18.7 104.0	7 19.3 -18.5 103.7
12°	10 43.3 -19.7 105.9	9 47.8 -19.4 105.6	8 52.2 -19.1 105.3	7 56.6 -19.0 105.0	7 00.8 -18.7 104.7
13°	10 23.6 -19.9 106.9	9 28.4 -19.6 106.6	8 33.1 -19.4 106.2	7 37.6 -19.0 105.9	6 42.1 -18.7 105.6
14°	10 03.7 -20.0 107.8	9 08.8 -19.8 107.5	8 13.7 -19.4 107.2	7 18.6 -19.2 106.9	6 23.4 -18.9 106.6
15°	9 43.7 -20.2 108.8	8 49.0 -19.8 108.5	7 54.3 -19.6 108.2	6 59.4 -19.2 107.8	6 04.5 -19.0 107.5
16°	9 23.5 -20.4 109.8	8 29.2 -20.1 109.4	7 34.7 -19.7 109.1	6 40.2 -19.4 108.8	5 45.5 -19.1 108.5
17°	9 03.1 -20.5 110.7	8 09.1 -20.1 110.4	7 15.0 -19.8 110.1	6 20.8 -19.5 109.8	5 26.4 -19.1 109.4
18°	8 42.6 -20.6 111.7	7 49.0 -20.3 111.3	6 55.2 -20.0 111.0	6 01.3 -19.6 110.7	5 07.3 -19.3 110.4
19°	8 22.0 -20.8 112.6	7 28.7 -20.4 112.3	6 35.2 -20.0 112.0	5 41.7 -19.7 111.7	4 48.0 -19.3 111.3
20°	8 01.2 -20.9 113.6	7 08.3 -20.6 113.2	6 15.2 -20.2 112.9	5 22.0 -19.8 112.6	4 28.7 -19.4 112.3
21°	7 40.3 -21.1 114.5	6 47.7 -20.6 114.2	5 55.0 -20.2 113.9	5 02.2 -19.8 113.5	4 09.3 -19.5 113.2
22°	7 19.2 -21.1 115.5	6 27.1 -20.8 115.1	5 34.8 -20.3 114.8	4 42.4 -19.9 114.5	3 49.8 -19.5 114.2
23°	6 58.1 -21.3 116.4	6 06.3 -20.8 116.1	5 14.5 -20.5 115.8	4 22.5 -20.1 115.4	3 30.3 -19.6 115.1
24°	6 36.8 -21.4 117.3	5 45.5 -20.9 117.0	4 54.0 -20.5 116.7	4 02.4 -20.0 116.4	3 10.7 -19.6 116.1
25°	6 15.4 -21.4 118.3	5 24.6 -21.1 118.0	4 33.5 -20.5 117.6	3 42.4 -20.1 117.3	2 51.1 -19.7 117.0
26°	5 54.0 -21.6 119.2	5 03.5 -21.1 118.9	4 13.0 -20.7 118.6	3 22.3 -20.2 118.3	2 31.4 -19.7 118.0
27°	5 32.4 -21.7 120.2	4 42.4 -21.1 119.8	3 52.3 -20.7 119.5	3 02.1 -20.3 119.2	2 11.7 -19.8 118.9
28°	5 10.7 -21.7 121.1	4 21.3 -21.3 120.8	3 31.6 -20.7 120.5	2 41.8 -20.2 120.2	1 51.9 -19.8 119.9
29°	4 49.0 -21.8 122.0	4 00.0 -21.3 121.7	3 10.9 -20.8 121.4	2 21.6 -20.3 121.1	1 32.1 -19.8 120.8

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°	9 36.5 -16.8 92.8	8 38.9 -16.8 92.5	7 41.3 -16.8 92.2	6 43.7 -16.8 91.9	5 46.0 -16.7 91.7
1°	9 19.7 -17.0 93.8	8 22.1 -16.9 93.5	7 24.5 -16.8 93.2	6 26.9 -16.8 92.9	5 29.3 -16.7 92.6
2°	9 02.7 -17.2 94.7	8 05.2 -17.1 94.4	7 07.7 -17.0 94.2	6 10.1 -16.9 93.9	5 12.6 -16.9 93.6
3°	8 45.5 -17.3 95.7	7 48.1 -17.2 95.4	6 50.7 -17.2 95.1	5 53.2 -17.0 94.8	4 55.7 -16.9 94.6
4°	8 28.2 -17.5 96.7	7 30.9 -17.4 96.4	6 33.5 -17.2 96.1	5 36.2 -17.1 95.8	4 38.8 -17.0 95.5
5°	8 10.7 -17.6 97.6	7 13.5 -17.4 97.3	6 16.3 -17.3 97.0	5 19.1 -17.2 96.8	4 21.8 -17.1 96.5
6°	7 53.1 -17.7 98.6	6 56.1 -17.6 98.3	5 59.0 -17.4 98.0	5 01.9 -17.3 97.7	4 04.7 -17.2 97.4
7°	7 35.4 -17.8 99.6	6 38.5 -17.7 99.3	5 41.6 -17.6 99.0	4 44.6 -17.4 98.7	3 47.5 -17.2 98.4
8°	7 17.6 -18.0 100.5	6 20.8 -17.8 100.2	5 24.0 -17.6 99.9	4 27.2 -17.4 99.6	3 30.3 -17.3 99.4
9°	6 59.6 -18.1 101.5	6 03.0 -17.9 101.2	5 06.4 -17.7 100.9	4 09.8 -17.6 100.6	3 13.0 -17.3 100.3
10°	6 41.5 -18.2 102.4	5 45.1 -18.0 102.1	4 48.7 -17.8 101.9	3 52.2 -17.5 101.6	2 55.7 -17.4 101.3
11°	6 23.3 -18.3 103.4	5 27.1 -18.0 103.1	4 30.9 -17.8 102.8	3 34.7 -17.7 102.5	2 38.3 -17.4 102.2
12°	6 05.0 -18.4 104.4	5 09.1 -18.2 104.1	4 13.1 -18.0 103.8	3 17.0 -17.7 103.5	2 20.9 -17.5 103.2
13°	5 46.6 -18.6 105.3	4 50.9 -18.3 105.0	3 55.1 -17.9 104.7	2 59.3 -17.7 104.4	2 03.4 -17.5 104.2
14°	5 28.0 -18.6 106.3	4 32.6 -18.3 106.0	3 37.2 -18.1 105.7	2 41.6 -17.8 105.4	1 45.9 -17.5 105.1
15°	5 09.4 -18.6 107.2	4 14.3 -18.4 106.9	3 19.1 -18.1 106.6	2 23.8 -17.8 106.3	1 28.4 -17.5 106.1
16°	4 50.8 -18.8 108.2	3 55.9 -18.4 107.9	3 01.0 -18.2 107.6	2 06.0 -17.9 107.3	1 10.9 -17.6 107.0
17°	4 32.0 -18.8 109.1	3 37.5 -18.6 108.8	2 42.8 -18.2 108.5	1 48.1 -17.9 108.3	0 53.3 -17.6 108.0
18°	4 13.2 -18.9 110.1	3 18.9 -18.5 109.8	2 24.6 -18.2 109.5	1 30.2 -17.9 109.2	0 35.7 -17.6 108.9
19°	3 54.3 -19.0 111.0	3 00.4 -18.7 110.7	2 06.4 -18.3 110.5	1 12.3 -17.9 110.2	0 18.1 -17.6 109.9
20°	3 35.3 -19.1 112.0	2 41.7 -18.6 111.7	1 48.1 -18.3 111.4	0 54.4 -18.0 111.1	0 00.5 -17.6 110.8
21°	3 16.2 -19.0 112.9	2 23.1 -18.7 112.6	1 29.8 -18.3 112.4	0 36.4 -18.0 112.1	-0 17.1 -17.6
22°	2 57.2 -19.2 113.9	2 04.4 -18.8 113.6	1 11.5 -18.4 113.3	0 18.4 -17.9 113.0	-0 34.7 -17.6
23°	2 38.0 -19.2 114.8	1 45.6 -18.7 114.5	0 53.1 -18.4 114.3	0 00.5 -18.0 114.0	-0 52.3 -17.6
24°	2 18.8 -19.2 115.8	1 26.9 -18.8 115.5	0 34.7 -18.3 115.2	-0 17.5 -18.0	-1 09.9 -17.5
25°	1 59.6 -19.2 116.7	1 08.1 -18.9 116.4	0 16.4 -18.4 116.2	-0 35.5 -17.9	-1 27.4 -17.5
26°	1 40.4 -19.3 117.7	0 49.2 -18.8 117.4	-0 02.0 -18.4	-0 53.4 -18.0	-1 44.9 -17.5
27°	1 21.1 -19.3 118.6	0 30.4 -18.8 118.3	-0 20.4 -18.4	-1 11.4 -17.9	-2 02.4 -17.5
28°	1 01.8 -19.3 119.6	0 11.6 -18.9 119.3	-0 38.8 -18.3	-1 29.3 -17.9	-2 19.9 -17.4
29°	0 42.5 -19.3 120.5	-0 07.3 -18.8	-0 57.1 -18.4	-1 47.2 -17.8	-2 37.3 -17.4

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 48.4 -16.7 91.4	3 50.7 -16.6 91.1	2 53.0 -16.6 90.8	1 55.3 -16.5 90.6	0 57.7 -16.6 90.3
1°	4 31.7 -16.7 92.3	3 34.1 -16.7 92.1	2 36.4 -16.6 91.8	1 38.8 -16.6 91.5	0 41.1 -16.5 91.2
2°	4 15.0 -16.8 93.3	3 17.4 -16.7 93.0	2 19.8 -16.7 92.8	1 22.2 -16.6 92.5	0 24.6 -16.6 92.2
3°	3 58.2 -16.8 94.3	3 00.7 -16.8 94.0	2 03.1 -16.7 93.7	1 05.6 -16.7 93.4	0 08.0 -16.6 93.2
4°	3 41.4 -16.9 95.2	2 43.9 -16.8 95.0	1 46.4 -16.7 94.7	0 48.9 -16.6 94.4	-0 08.6 -16.5
5°	3 24.5 -17.0 96.2	2 27.1 -16.9 95.9	1 29.7 -16.7 95.6	0 32.3 -16.7 95.4	-0 25.1 -16.6
6°	3 07.5 -17.0 97.2	2 10.2 -16.9 96.9	1 13.0 -16.8 96.6	0 15.6 -16.6 96.3	-0 41.7 -16.5
7°	2 50.5 -17.1 98.1	1 53.3 -16.9 97.8	0 56.2 -16.8 97.6	-0 01.0 -16.7	-0 58.2 -16.6
8°	2 33.4 -17.1 99.1	1 36.4 -16.9 98.8	0 39.4 -16.8 98.5	-0 17.7 -16.6	-1 14.8 -16.5
9°	2 16.3 -17.2 100.0	1 19.5 -17.0 99.8	0 22.6 -16.8 99.5	-0 34.3 -16.7	-1 31.3 -16.5
10°	1 59.1 -17.2 101.0	1 02.5 -17.0 100.7	0 05.8 -16.8 100.4	-0 51.0 -16.6	-1 47.8 -16.4
11°	1 41.9 -17.2 102.0	0 45.5 -17.0 101.7	-0 11.0 -16.8	-1 07.6 -16.6	-2 04.2 -16.4
12°	1 24.7 -17.2 102.9	0 28.5 -17.0 102.6	-0 27.8 -16.8	-1 24.2 -16.6	-2 20.6 -16.4
13°	1 07.5 -17.3 103.9	0 11.5 -17.1 103.6	-0 44.6 -16.8	-1 40.8 -16.6	-2 37.0 -16.4
14°	0 50.2 -17.3 104.8	-0 05.6 -17.0	-1 01.4 -16.8	-1 57.4 -16.5	-2 53.4 -16.2
15°	0 32.9 -17.2 105.8	-0 22.6 -17.0	-1 18.2 -16.7	-2 13.9 -16.5	-3 09.6 -16.3
16°	0 15.7 -17.3 106.7	-0 39.6 -17.0	-1 34.9 -16.8	-2 30.4 -16.4	-3 25.9 -16.1
17°	-0 01.6 -17.3	-0 56.6 -17.0	-1 51.7 -16.7	-2 46.8 -16.4	-3 42.0 -16.2
18°	-0 18.9 -17.3	-1 13.6 -17.0	-2 08.4 -16.6	-3 03.2 -16.4	-3 58.2 -16.0
19°	-0 36.2 -17.2	-1 30.6 -16.9	-2 25.0 -16.6	-3 19.6 -16.3	-4 14.2 -16.0
20°	-0 53.4 -17.3	-1 47.5 -16.9	-2 41.6 -16.6	-3 35.9 -16.2	-4 30.2 -15.9
21°	-1 10.7 -17.2	-2 04.4 -16.9	-2 58.2 -16.5	-3 52.1 -16.2	-4 46.1 -15.8
22°	-1 27.9 -17.2	-2 21.3 -16.8	-3 14.7 -16.5	-4 08.3 -16.0	-5 01.9 -15.7
23°	-1 45.1 -17.2	-2 38.1 -16.8	-3 31.2 -16.4	-4 24.3 -16.1	-5 17.6 -15.6
24°	-2 02.3 -17.2	-2 54.9 -16.7	-3 47.6 -16.3	-4 40.4 -15.9	-5 33.2 -15.6
25°	-2 19.5 -17.1	-3 11.6 -16.7	-4 03.9 -16.3	-4 56.3 -15.9	-5 48.8 -15.4
26°	-2 36.6 -17.0	-3 28.3 -16.7	-4 20.2 -16.2	-5 12.2 -15.7	-6 04.2 -15.4
27°	-2 53.6 -17.1	-3 45.0 -16.5	-4 36.4 -16.1	-5 27.9 -15.7	-6 19.6 -15.2
28°	-3 10.7 -16.9	-4 01.5 -16.5	-4 52.5 -16.0	-5 43.6 -15.6	-6 34.8 -15.1
29°	-3 27.6 -16.9	-4 18.0 -16.4	-5 08.5 -16.0	-5 59.2 -15.4	-6 49.9 -15.0

Latitude 16°

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 -16.5 90.0	-0 57.7 -16.5			
1°	-0 16.5 -16.6	-1 14.2 -16.5			
2°	-0 33.1 -16.5	-1 30.7 -16.5			
3°	-0 49.6 -16.5	-1 47.2 -16.5			
4°	-1 06.1 -16.5	-2 03.7 -16.4			
5°	-1 22.6 -16.5	-2 20.1 -16.4			
6°	-1 39.1 -16.4	-2 36.5 -16.3			
7°	-1 55.5 -16.4	-2 52.8 -16.3			
8°	-2 11.9 -16.4	-3 09.1 -16.2			
9°	-2 28.3 -16.3	-3 25.3 -16.2			
10°	-2 44.6 -16.3	-3 41.5 -16.1			
11°	-3 00.9 -16.2	-3 57.6 -16.1			
12°	-3 17.1 -16.2	-4 13.7 -15.9			
13°	-3 33.3 -16.1	-4 29.6 -15.9			
14°	-3 49.4 -16.1	-4 45.5 -15.8			
15°	-4 05.5 -15.9	-5 01.3 -15.8			
16°	-4 21.4 -15.9	-5 17.1 -15.6			
17°	-4 37.3 -15.9	-5 32.7 -15.6			
18°	-4 53.2 -15.7	-5 48.3 -15.4			
19°	-5 08.9 -15.7	-6 03.7 -15.4			
20°	-5 24.6 -15.5	-6 19.1 -15.2			
21°	-5 40.1 -15.5	-6 34.3 -15.1			
22°	-5 55.6 -15.4	-6 49.4 -15.0			
23°	-6 11.0 -15.2	-7 04.4 -14.9			
24°	-6 26.2 -15.2	-7 19.3 -14.7			
25°	-6 41.4 -15.0	-7 34.0 -14.7			
26°	-6 56.4 -14.9	-7 48.7 -14.5			
27°	-7 11.3 -14.8	-8 03.2 -14.3			
28°	-7 26.1 -14.7	-8 17.5 -14.2			
29°	-7 40.8 -14.5	-8 31.7 -14.1			

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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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°	73 00.0 -60.0 180.0	72 58.3 -59.9 176.6	72 53.2 -59.7 173.2	72 44.7 -59.2 169.8	72 33.0 -58.6 166.5
1°	72 00.0 -60.0 180.0	71 58.4 -59.9 176.8	71 53.5 -59.6 173.6	71 45.5 -59.3 170.4	71 34.4 -58.7 167.3
2°	71 00.0 -60.0 180.0	70 58.5 -60.0 176.9	70 53.9 -59.7 173.9	70 46.2 -59.3 170.9	70 35.7 -58.9 167.9
3°	70 00.0 -60.0 180.0	69 58.5 -59.9 177.1	69 54.2 -59.8 174.2	69 46.9 -59.4 171.3	69 36.8 -58.9 168.5
4°	69 00.0 -60.0 180.0	68 58.6 -59.9 177.2	68 54.4 -59.7 174.4	68 47.5 -59.4 171.7	68 37.9 -59.0 169.0
5°	68 00.0 -60.0 180.0	67 58.7 -60.0 177.3	67 54.7 -59.8 174.7	67 48.1 -59.5 172.1	67 38.9 -59.1 169.5
6°	67 00.0 -60.0 180.0	66 58.7 -59.9 177.5	66 54.9 -59.8 174.9	66 48.6 -59.6 172.4	66 39.8 -59.2 169.9
7°	66 00.0 -60.0 180.0	65 58.8 -60.0 177.6	65 55.1 -59.8 175.1	65 49.0 -59.5 172.7	65 40.6 -59.3 170.3
8°	65 00.0 -60.0 180.0	64 58.8 -59.9 177.7	64 55.3 -59.8 175.3	64 49.5 -59.6 173.0	64 41.3 -59.2 170.7
9°	64 00.0 -60.0 180.0	63 58.9 -60.0 177.7	63 55.5 -59.8 175.5	63 49.9 -59.6 173.3	63 42.1 -59.4 171.1
10°	63 00.0 -60.0 180.0	62 58.9 -59.9 177.8	62 55.7 -59.9 175.7	62 50.3 -59.7 173.5	62 42.7 -59.4 171.4
11°	62 00.0 -60.0 180.0	61 59.0 -60.0 177.9	61 55.8 -59.8 175.8	61 50.6 -59.7 173.7	61 43.3 -59.4 171.7
12°	61 00.0 -60.0 180.0	60 59.0 -60.0 178.0	60 56.0 -59.9 176.0	60 50.9 -59.7 174.0	60 43.9 -59.4 172.0
13°	60 00.0 -60.0 180.0	59 59.0 -59.9 178.1	59 56.1 -59.9 176.1	59 51.2 -59.7 174.2	59 44.5 -59.5 172.2
14°	59 00.0 -60.0 180.0	58 59.1 -60.0 178.1	58 56.2 -59.8 176.2	58 51.5 -59.7 174.4	58 45.0 -59.5 172.5
15°	58 00.0 -60.0 180.0	57 59.1 -60.0 178.2	57 56.4 -59.9 176.4	57 51.8 -59.7 174.5	57 45.5 -59.6 172.7
16°	57 00.0 -60.0 180.0	56 59.1 -60.0 178.2	56 56.5 -59.9 176.5	56 52.1 -59.8 174.7	56 45.9 -59.6 173.0
17°	56 00.0 -60.0 180.0	55 59.1 -59.9 178.3	55 56.6 -59.9 176.6	55 52.3 -59.8 174.9	55 46.3 -59.5 173.2
18°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.3	54 56.7 -59.9 176.7	54 52.5 -59.7 175.0	54 46.8 -59.6 173.4
19°	54 00.0 -60.0 180.0	53 59.2 -60.0 178.4	53 56.8 -59.9 176.8	53 52.8 -59.8 175.2	53 47.2 -59.7 173.6
20°	53 00.0 -60.0 180.0	52 59.2 -60.0 178.4	52 56.9 -59.9 176.9	52 53.0 -59.8 175.3	52 47.5 -59.6 173.8
21°	52 00.0 -60.0 180.0	51 59.2 -59.9 178.5	51 57.0 -59.9 177.0	51 53.2 -59.8 175.5	51 47.9 -59.7 174.0
22°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.5	50 57.1 -60.0 177.1	50 53.4 -59.8 175.6	50 48.2 -59.6 174.1
23°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.6	49 57.1 -59.9 177.1	49 53.6 -59.9 175.7	49 48.6 -59.7 174.3
24°	49 00.0 -60.0 180.0	48 59.3 -60.0 178.6	48 57.2 -59.9 177.2	48 53.7 -59.8 175.8	48 48.9 -59.7 174.4
25°	48 00.0 -60.0 180.0	47 59.3 -60.0 178.6	47 57.3 -59.9 177.3	47 53.9 -59.8 175.9	47 49.2 -59.7 174.6
26°	47 00.0 -60.0 180.0	46 59.3 -59.9 178.7	46 57.4 -60.0 177.4	46 54.1 -59.9 176.1	46 49.5 -59.8 174.7
27°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.7	45 57.4 -59.9 177.4	45 54.2 -59.8 176.2	45 49.7 -59.7 174.9
28°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.8	44 57.5 -59.9 177.5	44 54.4 -59.9 176.3	44 50.0 -59.7 175.0
29°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.8	43 57.6 -60.0 177.6	43 54.5 -59.8 176.4	43 50.3 -59.8 175.1

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°	72 18.0 -57.8 163.3	72 00.1 -56.9 160.2	71 39.3 -56.0 157.2	71 15.7 -54.8 154.3	70 49.6 -53.7 151.6
1°	71 20.2 -58.0 164.2	71 03.2 -57.3 161.2	70 43.3 -56.3 158.3	70 20.9 -55.4 155.6	69 55.9 -54.3 152.9
2°	70 22.2 -58.2 165.0	70 05.9 -57.4 162.1	69 47.0 -56.6 159.4	69 25.5 -55.7 156.7	69 01.6 -54.7 154.1
3°	69 24.0 -58.4 165.7	69 08.5 -57.7 163.0	68 50.4 -56.9 160.3	68 29.8 -56.1 157.7	68 06.9 -55.1 155.2
4°	68 25.6 -58.5 166.3	68 10.8 -57.9 163.7	67 53.5 -57.2 161.2	67 33.7 -56.3 158.7	67 11.8 -55.6 156.3
5°	67 27.1 -58.6 166.9	67 12.9 -58.0 164.4	66 56.3 -57.4 161.9	66 37.4 -56.7 159.5	66 16.2 -55.8 157.2
6°	66 28.5 -58.7 167.5	66 14.9 -58.2 165.0	65 58.9 -57.6 162.7	65 40.7 -56.9 160.4	65 20.4 -56.2 158.1
7°	65 29.8 -58.9 168.0	65 16.7 -58.4 165.6	65 01.3 -57.7 163.4	64 43.8 -57.1 161.1	64 24.2 -56.4 158.9
8°	64 30.9 -58.9 168.4	64 18.3 -58.4 166.2	64 03.6 -57.9 164.0	63 46.7 -57.3 161.8	63 27.8 -56.6 159.7
9°	63 32.0 -58.9 168.9	63 19.9 -58.5 166.7	63 05.7 -58.1 164.6	62 49.4 -57.5 162.5	62 31.2 -56.9 160.4
10°	62 33.1 -59.1 169.3	62 21.4 -58.7 167.2	62 07.6 -58.1 165.1	61 51.9 -57.6 163.1	61 34.3 -57.1 161.1
11°	61 34.0 -59.1 169.6	61 22.7 -58.7 167.6	61 09.5 -58.3 165.6	60 54.3 -57.8 163.7	60 37.2 -57.2 161.8
12°	60 34.9 -59.1 170.0	60 24.0 -58.8 168.1	60 11.2 -58.4 166.1	59 56.5 -57.9 164.2	59 40.0 -57.4 162.4
13°	59 35.8 -59.2 170.3	59 25.2 -58.9 168.5	59 12.8 -58.5 166.6	58 58.6 -58.0 164.7	58 42.6 -57.5 162.9
14°	58 36.6 -59.3 170.7	58 26.3 -58.9 168.8	58 14.3 -58.5 167.0	58 00.6 -58.1 165.2	57 45.1 -57.7 163.5
15°	57 37.3 -59.3 171.0	57 27.4 -59.0 169.2	57 15.8 -58.6 167.4	57 02.5 -58.3 165.7	56 47.4 -57.7 164.0
16°	56 38.0 -59.3 171.2	56 28.4 -59.0 169.5	56 17.2 -58.7 167.8	56 04.2 -58.3 166.1	55 49.7 -57.9 164.5
17°	55 38.7 -59.4 171.5	55 29.4 -59.1 169.8	55 18.5 -58.8 168.2	55 05.9 -58.4 166.5	54 51.8 -58.0 164.9
18°	54 39.3 -59.3 171.8	54 30.3 -59.1 170.1	54 19.7 -58.8 168.5	54 07.5 -58.4 166.9	53 53.8 -58.1 165.4
19°	53 40.0 -59.5 172.0	53 31.2 -59.2 170.4	53 20.9 -58.9 168.9	53 09.1 -58.6 167.3	52 55.7 -58.1 165.8
20°	52 40.5 -59.4 172.2	52 32.0 -59.2 170.7	52 22.0 -58.9 169.2	52 10.5 -58.6 167.7	51 57.6 -58.3 166.2
21°	51 41.1 -59.5 172.5	51 32.8 -59.2 171.0	51 23.1 -59.0 169.5	51 11.9 -58.6 168.0	50 59.3 -58.3 166.6
22°	50 41.6 -59.5 172.7	50 33.6 -59.3 171.2	50 24.1 -59.0 169.8	50 13.3 -58.8 168.4	50 01.0 -58.4 167.0
23°	49 42.1 -59.5 172.9	49 34.3 -59.3 171.5	49 25.1 -59.0 170.1	49 14.5 -58.7 168.7	49 02.6 -58.4 167.3
24°	48 42.6 -59.5 173.1	48 35.0 -59.3 171.7	48 26.1 -59.1 170.3	48 15.8 -58.8 169.0	48 04.2 -58.5 167.7
25°	47 43.1 -59.5 173.3	47 35.7 -59.3 171.9	47 27.0 -59.1 170.6	47 17.0 -58.9 169.3	47 05.7 -58.6 168.0
26°	46 43.6 -59.6 173.4	46 36.4 -59.4 172.1	46 27.9 -59.2 170.8	46 18.1 -58.9 169.6	46 07.1 -58.6 168.3
27°	45 44.0 -59.6 173.6	45 37.0 -59.4 172.3	45 28.7 -59.2 171.1	45 19.2 -58.9 169.8	45 08.5 -58.7 168.6
28°	44 44.4 -59.6 173.8	44 37.6 -59.4 172.5	44 29.5 -59.2 171.3	44 20.3 -59.0 170.1	44 09.8 -58.7 168.9
29°	43 44.8 -59.6 173.9	43 38.2 -59.5 172.7	43 30.3 -59.2 171.5	43 21.3 -59.0 170.4	43 11.1 -58.7 169.2

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°	70 21.1 -52.5 148.9	69 50.4 -51.3 146.4	69 17.6 -50.0 144.0	68 43.0 -48.8 141.7	68 06.6 -47.6 139.5
1°	69 28.6 -53.1 150.3	68 59.1 -52.0 147.9	68 27.6 -50.8 145.5	67 54.2 -49.6 143.3	67 19.0 -48.4 141.2
2°	68 35.5 -53.7 151.6	68 07.1 -52.6 149.2	67 36.8 -51.5 146.9	67 04.6 -50.4 144.7	66 30.6 -49.3 142.7
3°	67 41.8 -54.2 152.8	67 14.5 -53.2 150.5	66 45.3 -52.1 148.3	66 14.2 -51.1 146.1	65 41.3 -49.9 144.1
4°	66 47.6 -54.6 153.9	66 21.3 -53.6 151.7	65 53.2 -52.7 149.5	65 23.1 -51.6 147.4	64 51.4 -50.7 145.4
5°	65 53.0 -55.0 155.0	65 27.7 -54.1 152.8	65 00.5 -53.2 150.6	64 31.5 -52.3 148.6	64 00.7 -51.2 146.6
6°	64 58.0 -55.4 155.9	64 33.6 -54.5 153.8	64 07.3 -53.6 151.7	63 39.2 -52.7 149.7	63 09.5 -51.8 147.8
7°	64 02.6 -55.7 156.8	63 39.1 -54.9 154.7	63 13.7 -54.1 152.7	62 46.5 -53.2 150.8	62 17.7 -52.3 148.9
8°	63 06.9 -55.9 157.6	62 44.2 -55.2 155.6	62 19.6 -54.4 153.7	61 53.3 -53.5 151.8	61 25.4 -52.7 149.9
9°	62 11.0 -56.2 158.4	61 49.0 -55.5 156.5	61 25.2 -54.7 154.6	60 59.8 -54.0 152.7	60 32.7 -53.2 150.9
10°	61 14.8 -56.4 159.2	60 53.5 -55.7 157.3	60 30.5 -55.0 155.4	60 05.8 -54.3 153.6	59 39.5 -53.5 151.9
11°	60 18.4 -56.6 159.9	59 57.8 -56.0 158.0	59 35.5 -55.4 156.2	59 11.5 -54.6 154.5	58 46.0 -53.9 152.7
12°	59 21.8 -56.9 160.5	59 01.8 -56.2 158.7	58 40.1 -55.5 157.0	58 16.9 -54.9 155.3	57 52.1 -54.1 153.6
13°	58 24.9 -57.0 161.2	58 05.6 -56.4 159.4	57 44.6 -55.8 157.7	57 22.0 -55.1 156.0	56 58.0 -54.5 154.4
14°	57 27.9 -57.1 161.7	57 09.2 -56.6 160.0	56 48.8 -56.0 158.4	56 26.9 -55.4 156.7	56 03.5 -54.7 155.1
15°	56 30.8 -57.3 162.3	56 12.6 -56.8 160.6	55 52.8 -56.2 159.0	55 31.5 -55.6 157.4	55 08.8 -55.0 155.9
16°	55 33.5 -57.4 162.8	55 15.8 -56.9 161.2	54 56.6 -56.4 159.6	54 35.9 -55.8 158.1	54 13.8 -55.2 156.6
17°	54 36.1 -57.5 163.3	54 18.9 -57.1 161.8	54 00.2 -56.5 160.2	53 40.1 -56.0 158.7	53 18.6 -55.5 157.2
18°	53 38.6 -57.7 163.8	53 21.8 -57.2 162.3	53 03.7 -56.7 160.8	52 44.1 -56.2 159.3	52 23.1 -55.6 157.9
19°	52 40.9 -57.8 164.3	52 24.6 -57.3 162.8	52 07.0 -56.9 161.3	51 47.9 -56.3 159.9	51 27.5 -55.8 158.5
20°	51 43.1 -57.8 164.7	51 27.3 -57.4 163.3	51 10.1 -56.9 161.8	50 51.6 -56.5 160.4	50 31.7 -56.0 159.0
21°	50 45.3 -57.9 165.2	50 29.9 -57.5 163.7	50 13.2 -57.1 162.3	49 55.1 -56.6 161.0	49 35.7 -56.1 159.6
22°	49 47.4 -58.1 165.6	49 32.4 -57.6 164.2	49 16.1 -57.2 162.8	48 58.5 -56.8 161.5	48 39.6 -56.2 160.1
23°	48 49.3 -58.1 165.9	48 34.8 -57.8 164.6	48 18.9 -57.3 163.3	48 01.7 -56.8 162.0	47 43.4 -56.5 160.7
24°	47 51.2 -58.1 166.3	47 37.0 -57.8 165.0	47 21.6 -57.4 163.7	47 04.9 -57.0 162.4	46 46.9 -56.5 161.2
25°	46 53.1 -58.3 166.7	46 39.2 -57.8 165.4	46 24.2 -57.5 164.1	46 07.9 -57.1 162.9	45 50.4 -56.6 161.7
26°	45 54.8 -58.3 167.0	45 41.4 -58.0 165.8	45 26.7 -57.6 164.6	45 10.8 -57.2 163.3	44 53.8 -56.8 162.1
27°	44 56.5 -58.3 167.4	44 43.4 -58.0 166.2	44 29.1 -57.7 165.0	44 13.6 -57.3 163.8	43 57.0 -56.9 162.6
28°	43 58.2 -58.4 167.7	43 45.4 -58.1 166.5	43 31.4 -57.7 165.3	43 16.3 -57.3 164.2	43 00.1 -56.9 163.0
29°	42 59.8 -58.5 168.0	42 47.3 -58.1 166.9	42 33.7 -57.8 165.7	42 19.0 -57.5 164.6	42 03.2 -57.1 163.4

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°	67 28.6 -46.3 137.5	66 49.1 -45.1 135.6	66 08.2 -43.9 133.7	65 26.2 -42.8 132.0	64 43.0 -41.7 130.3
1°	66 42.3 -47.3 139.1	66 04.0 -46.1 137.2	65 24.3 -44.9 135.4	64 43.4 -43.8 133.6	64 01.3 -42.7 132.0
2°	65 55.0 -48.1 140.7	65 17.9 -47.0 138.8	64 39.4 -45.9 137.0	63 59.6 -44.8 135.2	63 18.6 -43.7 133.6
3°	65 06.9 -48.9 142.1	64 30.9 -47.8 140.2	63 53.5 -46.7 138.4	63 14.8 -45.7 136.7	62 34.9 -44.7 135.1
4°	64 18.0 -49.6 143.5	63 43.1 -48.6 141.6	63 06.8 -47.6 139.8	62 29.1 -46.5 138.1	61 50.2 -45.5 136.5
5°	63 28.4 -50.3 144.7	62 54.5 -49.3 142.9	62 19.2 -48.3 141.2	61 42.6 -47.3 139.5	61 04.7 -46.3 137.9
6°	62 38.1 -50.8 145.9	62 05.2 -49.8 144.2	61 30.9 -48.9 142.4	60 55.3 -48.0 140.8	60 18.4 -47.0 139.2
7°	61 47.3 -51.4 147.1	61 15.4 -50.5 145.3	60 42.0 -49.5 143.6	60 07.3 -48.6 142.0	59 31.4 -47.7 140.4
8°	60 55.9 -51.9 148.2	60 24.9 -51.0 146.4	59 52.5 -50.1 144.8	59 18.7 -49.2 143.2	58 43.7 -48.3 141.6
9°	60 04.0 -52.3 149.2	59 33.9 -51.5 147.5	59 02.4 -50.6 145.9	58 29.5 -49.7 144.3	57 55.4 -48.9 142.7
10°	59 11.7 -52.7 150.2	58 42.4 -51.9 148.5	58 11.8 -51.1 146.9	57 39.8 -50.3 145.3	57 06.5 -49.4 143.8
11°	58 19.0 -53.1 151.1	57 50.5 -52.3 149.4	57 20.7 -51.6 147.9	56 49.5 -50.7 146.3	56 17.1 -49.9 144.8
12°	57 25.9 -53.5 151.9	56 58.2 -52.7 150.4	56 29.1 -51.9 148.8	55 58.8 -51.2 147.3	55 27.2 -50.4 145.8
13°	56 32.4 -53.7 152.8	56 05.5 -53.1 151.2	55 37.2 -52.3 149.7	55 07.6 -51.5 148.2	54 36.8 -50.8 146.8
14°	55 38.7 -54.1 153.6	55 12.4 -53.3 152.0	54 44.9 -52.7 150.6	54 16.1 -52.0 149.1	53 46.0 -51.2 147.7
15°	54 44.6 -54.3 154.3	54 19.1 -53.7 152.8	53 52.2 -53.0 151.4	53 24.1 -52.3 150.0	52 54.8 -51.6 148.6
16°	53 50.3 -54.6 155.1	53 25.4 -53.9 153.6	52 59.2 -53.2 152.2	52 31.8 -52.6 150.8	52 03.2 -51.9 149.4
17°	52 55.7 -54.9 155.8	52 31.5 -54.2 154.3	52 06.0 -53.6 152.9	51 39.2 -52.9 151.6	51 11.3 -52.2 150.2
18°	52 00.8 -55.0 156.4	51 37.3 -54.5 155.0	51 12.4 -53.8 153.7	50 46.3 -53.2 152.3	50 19.1 -52.5 151.0
19°	51 05.8 -55.2 157.1	50 42.8 -54.7 155.7	50 18.6 -54.1 154.4	49 53.1 -53.4 153.0	49 26.6 -52.9 151.7
20°	50 10.6 -55.5 157.7	49 48.1 -54.8 156.3	49 24.5 -54.3 155.0	48 59.7 -53.7 153.7	48 33.7 -53.0 152.5
21°	49 15.1 -55.6 158.3	48 53.3 -55.1 157.0	48 30.2 -54.5 155.7	48 06.0 -53.9 154.4	47 40.7 -53.4 153.2
22°	48 19.5 -55.7 158.8	47 58.2 -55.2 157.6	47 35.7 -54.7 156.3	47 12.1 -54.1 155.1	46 47.3 -53.5 153.8
23°	47 23.8 -56.0 159.4	47 03.0 -55.4 158.1	46 41.0 -54.8 156.9	46 18.0 -54.4 155.7	45 53.8 -53.8 154.5
24°	46 27.8 -56.0 159.9	46 07.6 -55.6 158.7	45 46.2 -55.1 157.5	45 23.6 -54.5 156.3	45 00.0 -53.9 155.1
25°	45 31.8 -56.2 160.4	45 12.0 -55.7 159.2	44 51.1 -55.2 158.1	44 29.1 -54.7 156.9	44 06.1 -54.2 155.7
26°	44 35.6 -56.3 160.9	44 16.3 -55.9 159.8	43 55.9 -55.4 158.6	43 34.4 -54.8 157.5	43 11.9 -54.3 156.3
27°	43 39.3 -56.5 161.4	43 20.4 -56.0 160.3	43 00.5 -55.5 159.1	42 39.6 -55.1 158.0	42 17.6 -54.6 156.9
28°	42 42.8 -56.5 161.9	42 24.4 -56.1 160.8	42 05.0 -55.6 159.6	41 44.5 -55.1 158.6	41 23.0 -54.6 157.5
29°	41 46.3 -56.7 162.3	41 28.3 -56.2 161.2	41 09.4 -55.8 160.1	40 49.4 -55.3 159.1	40 28.4 -54.8 158.0

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°	63 58.7 -40.5 128.8	63 13.5 -39.5 127.3	62 27.5 -38.6 125.9	61 40.6 -37.6 124.6	60 53.0 -36.7 123.3
1°	63 18.2 -41.7 130.4	62 34.0 -40.6 128.9	61 48.9 -39.6 127.5	61 03.0 -38.7 126.2	60 16.3 -37.7 124.9
2°	62 36.5 -42.7 132.0	61 53.4 -41.7 130.5	61 09.3 -40.7 129.1	60 24.3 -39.7 127.7	59 38.6 -38.9 126.5
3°	61 53.8 -43.6 133.5	61 11.7 -42.7 132.0	60 28.6 -41.7 130.6	59 44.6 -40.7 129.3	58 59.7 -39.8 128.0
4°	61 10.2 -44.6 135.0	60 29.0 -43.5 133.5	59 46.9 -42.6 132.1	59 03.9 -41.7 130.7	58 19.9 -40.7 129.4
5°	60 25.6 -45.3 136.3	59 45.5 -44.4 134.9	59 04.3 -43.4 133.4	58 22.2 -42.5 132.1	57 39.2 -41.7 130.8
6°	59 40.3 -46.1 137.7	59 01.1 -45.1 136.2	58 20.9 -44.2 134.8	57 39.7 -43.4 133.4	56 57.5 -42.4 132.1
7°	58 54.2 -46.7 138.9	58 16.0 -45.9 137.4	57 36.7 -45.0 136.0	56 56.3 -44.0 134.7	56 15.1 -43.2 133.4
8°	58 07.5 -47.5 140.1	57 30.1 -46.5 138.7	56 51.7 -45.7 137.3	56 12.3 -44.8 135.9	55 31.9 -44.0 134.6
9°	57 20.0 -48.0 141.3	56 43.6 -47.2 139.8	56 06.0 -46.3 138.4	55 27.5 -45.5 137.1	54 47.9 -44.6 135.8
10°	56 32.0 -48.6 142.4	55 56.4 -47.7 140.9	55 19.7 -46.9 139.6	54 42.0 -46.1 138.2	54 03.3 -45.2 137.0
11°	55 43.4 -49.1 143.4	55 08.7 -48.3 142.0	54 32.8 -47.4 140.7	53 55.9 -46.6 139.3	53 18.1 -45.9 138.1
12°	54 54.3 -49.5 144.4	54 20.4 -48.8 143.0	53 45.4 -48.0 141.7	53 09.3 -47.2 140.4	52 32.2 -46.4 139.1
13°	54 04.8 -50.1 145.4	53 31.6 -49.2 144.0	52 57.4 -48.5 142.7	52 22.1 -47.7 141.4	51 45.8 -46.9 140.2
14°	53 14.7 -50.4 146.3	52 42.4 -49.7 145.0	52 08.9 -48.9 143.7	51 34.4 -48.2 142.4	50 58.9 -47.4 141.2
15°	52 24.3 -50.9 147.2	51 52.7 -50.1 145.9	51 20.0 -49.4 144.6	50 46.2 -48.6 143.4	50 11.5 -47.9 142.1
16°	51 33.4 -51.2 148.1	51 02.6 -50.5 146.8	50 30.6 -49.8 145.5	49 57.6 -49.1 144.3	49 23.6 -48.3 143.1
17°	50 42.2 -51.5 148.9	50 12.1 -50.9 147.6	49 40.8 -50.1 146.4	49 08.5 -49.4 145.2	48 35.3 -48.7 144.0
18°	49 50.7 -51.9 149.7	49 21.2 -51.2 148.5	48 50.7 -50.5 147.2	48 19.1 -49.8 146.0	47 46.6 -49.2 144.9
19°	48 58.8 -52.1 150.5	48 30.0 -51.5 149.2	48 00.2 -50.9 148.0	47 29.3 -50.2 146.9	46 57.4 -49.4 145.7
20°	48 06.7 -52.5 151.2	47 38.5 -51.8 150.0	47 09.3 -51.1 148.8	46 39.1 -50.5 147.7	46 08.0 -49.9 146.5
21°	47 14.2 -52.7 151.9	46 46.7 -52.1 150.8	46 18.2 -51.5 149.6	45 48.6 -50.8 148.4	45 18.1 -50.1 147.3
22°	46 21.5 -52.9 152.6	45 54.6 -52.3 151.5	45 26.7 -51.7 150.3	44 57.8 -51.1 149.2	44 28.0 -50.5 148.1
23°	45 28.6 -53.2 153.3	45 02.3 -52.6 152.2	44 35.0 -52.0 151.0	44 06.7 -51.3 149.9	43 37.5 -50.7 148.9
24°	44 35.4 -53.4 154.0	44 09.7 -52.8 152.8	43 43.0 -52.2 151.7	43 15.4 -51.7 150.7	42 46.8 -51.0 149.6
25°	43 42.0 -53.6 154.6	43 16.9 -53.1 153.5	42 50.8 -52.5 152.4	42 23.7 -51.8 151.3	41 55.8 -51.3 150.3
26°	42 48.4 -53.8 155.2	42 23.8 -53.2 154.1	41 58.3 -52.7 153.1	41 31.9 -52.1 152.0	41 04.5 -51.5 151.0
27°	41 54.6 -54.0 155.8	41 30.6 -53.5 154.8	41 05.6 -52.9 153.7	40 39.8 -52.4 152.7	40 13.0 -51.8 151.7
28°	41 00.6 -54.2 156.4	40 37.1 -53.6 155.4	40 12.7 -53.0 154.3	39 47.4 -52.5 153.3	39 21.2 -51.9 152.3
29°	40 06.4 -54.3 157.0	39 43.5 -53.8 156.0	39 19.7 -53.3 154.9	38 54.9 -52.7 153.9	38 29.3 -52.2 153.0

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°	60 04.7 -35.8 122.1	59 15.8 -34.9 120.9	58 26.3 -34.1 119.8	57 36.3 -33.4 118.8	56 45.7 -32.5 117.8
1°	59 28.9 -36.8 123.7	58 40.9 -36.1 122.5	57 52.2 -35.2 121.4	57 02.9 -34.4 120.3	56 13.2 -33.7 119.3
2°	58 52.1 -38.0 125.2	58 04.8 -37.0 124.0	57 17.0 -36.3 122.9	56 28.5 -35.4 121.8	55 39.5 -34.7 120.8
3°	58 14.1 -38.9 126.7	57 27.8 -38.1 125.5	56 40.7 -37.2 124.4	55 53.1 -36.5 123.3	55 04.8 -35.7 122.2
4°	57 35.2 -39.9 128.1	56 49.7 -39.0 126.9	56 03.5 -38.2 125.8	55 16.6 -37.4 124.7	54 29.1 -36.6 123.6
5°	56 55.3 -40.7 129.5	56 10.7 -39.9 128.3	55 25.3 -39.1 127.2	54 39.2 -38.2 126.1	53 52.5 -37.5 125.0
6°	56 14.6 -41.6 130.9	55 30.8 -40.8 129.6	54 46.2 -39.9 128.5	54 01.0 -39.2 127.4	53 15.0 -38.3 126.3
7°	55 33.0 -42.4 132.1	54 50.0 -41.5 130.9	54 06.3 -40.7 129.8	53 21.8 -39.9 128.7	52 36.7 -39.1 127.6
8°	54 50.6 -43.1 133.4	54 08.5 -42.3 132.2	53 25.6 -41.5 131.0	52 41.9 -40.7 129.9	51 57.6 -39.9 128.8
9°	54 07.5 -43.8 134.6	53 26.2 -43.0 133.4	52 44.1 -42.2 132.2	52 01.2 -41.3 131.1	51 17.7 -40.7 130.0
10°	53 23.7 -44.4 135.7	52 43.2 -43.6 134.5	52 01.9 -42.8 133.4	51 19.9 -42.1 132.3	50 37.0 -41.3 131.2
11°	52 39.3 -45.1 136.9	51 59.6 -44.2 135.7	51 19.1 -43.5 134.5	50 37.8 -42.7 133.4	49 55.7 -41.9 132.3
12°	51 54.2 -45.6 137.9	51 15.4 -44.9 136.8	50 35.6 -44.0 135.6	49 55.1 -43.3 134.5	49 13.8 -42.5 133.4
13°	51 08.6 -46.1 139.0	50 30.5 -45.4 137.8	49 51.6 -44.7 136.7	49 11.8 -43.9 135.6	48 31.3 -43.2 134.5
14°	50 22.5 -46.7 140.0	49 45.1 -45.9 138.8	49 06.9 -45.1 137.7	48 27.9 -44.4 136.6	47 48.1 -43.7 135.5
15°	49 35.8 -47.1 141.0	48 59.2 -46.4 139.8	48 21.8 -45.7 138.7	47 43.5 -44.9 137.6	47 04.4 -44.2 136.6
16°	48 48.7 -47.6 141.9	48 12.8 -46.8 140.8	47 36.1 -46.1 139.7	46 58.6 -45.5 138.6	46 20.2 -44.7 137.5
17°	48 01.1 -48.0 142.8	47 26.0 -47.3 141.7	46 50.0 -46.6 140.6	46 13.1 -45.8 139.5	45 35.5 -45.2 138.5
18°	47 13.1 -48.5 143.7	46 38.7 -47.8 142.6	46 03.4 -47.0 141.5	45 27.3 -46.3 140.5	44 50.3 -45.6 139.4
19°	46 24.6 -48.8 144.6	45 50.9 -48.1 143.5	45 16.4 -47.5 142.4	44 41.0 -46.8 141.4	44 04.7 -46.0 140.4
20°	45 35.8 -49.1 145.4	45 02.8 -48.4 144.3	44 28.9 -47.8 143.3	43 54.2 -47.1 142.2	43 18.7 -46.4 141.2
21°	44 46.7 -49.5 146.2	44 14.4 -48.9 145.2	43 41.1 -48.1 144.1	43 07.1 -47.5 143.1	42 32.3 -46.9 142.1
22°	43 57.2 -49.8 147.0	43 25.5 -49.1 146.0	42 53.0 -48.5 144.9	42 19.6 -47.8 143.9	41 45.4 -47.2 142.9
23°	43 07.4 -50.1 147.8	42 36.4 -49.5 146.8	42 04.5 -48.8 145.7	41 31.8 -48.2 144.7	40 58.2 -47.5 143.8
24°	42 17.3 -50.4 148.5	41 46.9 -49.8 147.5	41 15.7 -49.2 146.5	40 43.6 -48.5 145.5	40 10.7 -47.8 144.6
25°	41 26.9 -50.7 149.3	40 57.1 -50.0 148.3	40 26.5 -49.4 147.3	39 55.1 -48.8 146.3	39 22.9 -48.2 145.4
26°	40 36.2 -50.9 150.0	40 07.1 -50.3 149.0	39 37.1 -49.7 148.0	39 06.3 -49.1 147.1	38 34.7 -48.4 146.1
27°	39 45.3 -51.2 150.7	39 16.8 -50.6 149.7	38 47.4 -50.0 148.7	38 17.2 -49.3 147.8	37 46.3 -48.8 146.9
28°	38 54.1 -51.3 151.3	38 26.2 -50.8 150.4	37 57.4 -50.2 149.4	37 27.9 -49.6 148.5	36 57.5 -49.0 147.6
29°	38 02.8 -51.6 152.0	37 35.4 -51.0 151.1	37 07.2 -50.4 150.1	36 38.3 -49.9 149.2	36 08.5 -49.2 148.3

Dec	LHA 030° / 330°	LHA 031° / 329°	LHA 032° / 328°	LHA 033° / 327°	LHA 034° / 326°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	55 54.8 -31.9 116.9	55 03.4 -31.2 115.9	54 11.6 -30.5 115.1	53 19.4 -29.9 114.2	52 26.9 -29.3 113.4
1°	55 22.9 -32.9 118.4	54 32.2 -32.2 117.4	53 41.1 -31.6 116.5	52 49.5 -30.9 115.7	51 57.6 -30.3 114.9
2°	54 50.0 -34.0 119.8	54 00.0 -33.3 118.9	53 09.5 -32.6 118.0	52 18.6 -31.9 117.1	51 27.3 -31.2 116.3
3°	54 16.0 -34.9 121.2	53 26.7 -34.2 120.3	52 36.9 -33.5 119.4	51 46.7 -32.8 118.5	50 56.1 -32.2 117.6
4°	53 41.1 -35.9 122.6	52 52.5 -35.1 121.7	52 03.4 -34.4 120.7	51 13.9 -33.8 119.8	50 23.9 -33.1 118.9
5°	53 05.2 -36.7 124.0	52 17.4 -36.0 123.0	51 29.0 -35.3 122.0	50 40.1 -34.6 121.1	49 50.8 -34.0 120.2
6°	52 28.5 -37.6 125.3	51 41.4 -36.9 124.3	50 53.7 -36.1 123.3	50 05.5 -35.5 122.4	49 16.8 -34.8 121.5
7°	51 50.9 -38.4 126.5	51 04.5 -37.6 125.5	50 17.6 -37.0 124.6	49 30.0 -36.2 123.7	48 42.0 -35.5 122.8
8°	51 12.5 -39.1 127.8	50 26.9 -38.4 126.8	49 40.6 -37.7 125.8	48 53.8 -37.0 124.9	48 06.5 -36.3 124.0
9°	50 33.4 -39.9 129.0	49 48.5 -39.2 128.0	49 02.9 -38.4 127.0	48 16.8 -37.7 126.1	47 30.2 -37.0 125.2
10°	49 53.5 -40.5 130.2	49 09.3 -39.8 129.1	48 24.5 -39.1 128.2	47 39.1 -38.4 127.2	46 53.2 -37.7 126.3
11°	49 13.0 -41.2 131.3	48 29.5 -40.4 130.3	47 45.4 -39.7 129.3	47 00.7 -39.0 128.4	46 15.5 -38.4 127.4
12°	48 31.8 -41.8 132.4	47 49.1 -41.1 131.4	47 05.7 -40.4 130.4	46 21.7 -39.7 129.5	45 37.1 -39.0 128.6
13°	47 50.0 -42.4 133.5	47 08.0 -41.7 132.5	46 25.3 -40.9 131.5	45 42.0 -40.2 130.5	44 58.1 -39.5 129.6
14°	47 07.6 -43.0 134.5	46 26.3 -42.2 133.5	45 44.4 -41.6 132.5	45 01.8 -40.9 131.6	44 18.6 -40.2 130.7
15°	46 24.6 -43.5 135.5	45 44.1 -42.8 134.5	45 02.8 -42.1 133.6	44 20.9 -41.3 132.6	43 38.4 -40.7 131.7
16°	45 41.1 -44.0 136.5	45 01.3 -43.3 135.5	44 20.7 -42.5 134.6	43 39.6 -41.9 133.6	42 57.7 -41.2 132.7
17°	44 57.1 -44.4 137.5	44 18.0 -43.8 136.5	43 38.2 -43.1 135.6	42 57.7 -42.4 134.6	42 16.5 -41.7 133.7
18°	44 12.7 -45.0 138.4	43 34.2 -44.2 137.5	42 55.1 -43.6 136.5	42 15.3 -42.9 135.6	41 34.8 -42.2 134.7
19°	43 27.7 -45.3 139.4	42 50.0 -44.7 138.4	42 11.5 -43.9 137.4	41 32.4 -43.3 136.5	40 52.6 -42.6 135.6
20°	42 42.4 -45.8 140.3	42 05.3 -45.1 139.3	41 27.6 -44.5 138.4	40 49.1 -43.8 137.4	40 10.0 -43.1 136.6
21°	41 56.6 -46.1 141.1	41 20.2 -45.4 140.2	40 43.1 -44.8 139.3	40 05.3 -44.1 138.3	39 26.9 -43.5 137.5
22°	41 10.5 -46.5 142.0	40 34.8 -45.9 141.0	39 58.3 -45.2 140.1	39 21.2 -44.5 139.2	38 43.4 -43.9 138.4
23°	40 24.0 -46.9 142.8	39 48.9 -46.2 141.9	39 13.1 -45.5 141.0	38 36.7 -45.0 140.1	37 59.5 -44.2 139.2
24°	39 37.1 -47.2 143.6	39 02.7 -46.6 142.7	38 27.6 -45.9 141.8	37 51.7 -45.2 140.9	37 15.3 -44.7 140.1
25°	38 49.9 -47.6 144.4	38 16.1 -46.9 143.5	37 41.7 -46.3 142.6	37 06.5 -45.6 141.8	36 30.6 -44.9 140.9
26°	38 02.3 -47.8 145.2	37 29.2 -47.2 144.3	36 55.4 -46.6 143.4	36 20.9 -45.9 142.6	35 45.7 -45.3 141.7
27°	37 14.5 -48.1 146.0	36 42.0 -47.4 145.1	36 08.8 -46.8 144.2	35 35.0 -46.3 143.4	35 00.4 -45.6 142.5
28°	36 26.4 -48.4 146.7	35 54.6 -47.8 145.8	35 22.0 -47.2 145.0	34 48.7 -46.5 144.1	34 14.8 -45.9 143.3
29°	35 38.0 -48.6 147.4	35 06.8 -48.0 146.6	34 34.8 -47.4 145.7	34 02.2 -46.8 144.9	33 28.9 -46.2 144.1

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°	51 34.1 -28.7 112.7	50 41.1 -28.2 111.9	49 47.7 -27.7 111.2	48 54.1 -27.2 110.5	48 00.2 -26.7 109.9
1°	51 05.4 -29.7 114.1	50 12.9 -29.2 113.3	49 20.0 -28.6 112.6	48 26.9 -28.1 111.9	47 33.5 -27.6 111.2
2°	50 35.7 -30.7 115.4	49 43.7 -30.1 114.7	48 51.4 -29.5 113.9	47 58.8 -29.0 113.2	47 05.9 -28.4 112.5
3°	50 05.0 -31.6 116.8	49 13.6 -31.0 116.0	48 21.9 -30.4 115.2	47 29.8 -29.8 114.5	46 37.5 -29.4 113.8
4°	49 33.4 -32.4 118.1	48 42.6 -31.8 117.3	47 51.5 -31.3 116.5	47 00.0 -30.7 115.8	46 08.1 -30.1 115.0
5°	49 01.0 -33.3 119.4	48 10.8 -32.7 118.6	47 20.2 -32.1 117.8	46 29.3 -31.5 117.0	45 38.0 -30.9 116.3
6°	48 27.7 -34.1 120.7	47 38.1 -33.5 119.8	46 48.1 -32.8 119.0	45 57.8 -32.3 118.3	45 07.1 -31.8 117.5
7°	47 53.6 -34.9 121.9	47 04.6 -34.2 121.1	46 15.3 -33.7 120.2	45 25.5 -33.0 119.5	44 35.3 -32.4 118.7
8°	47 18.7 -35.7 123.1	46 30.4 -35.0 122.3	45 41.6 -34.3 121.4	44 52.5 -33.8 120.6	44 02.9 -33.2 119.9
9°	46 43.0 -36.3 124.3	45 55.4 -35.7 123.4	45 07.3 -35.1 122.6	44 18.7 -34.4 121.8	43 29.7 -33.8 121.0
10°	46 06.7 -37.0 125.4	45 19.7 -36.4 124.6	44 32.2 -35.7 123.8	43 44.3 -35.1 122.9	42 55.9 -34.5 122.2
11°	45 29.7 -37.7 126.6	44 43.3 -37.0 125.7	43 56.5 -36.4 124.9	43 09.2 -35.8 124.1	42 21.4 -35.1 123.3
12°	44 52.0 -38.3 127.7	44 06.3 -37.7 126.8	43 20.1 -37.0 126.0	42 33.4 -36.3 125.2	41 46.3 -35.8 124.4
13°	44 13.7 -38.9 128.7	43 28.6 -38.2 127.9	42 43.1 -37.6 127.0	41 57.1 -37.0 126.2	41 10.5 -36.3 125.4
14°	43 34.8 -39.5 129.8	42 50.4 -38.8 128.9	42 05.5 -38.1 128.1	41 20.1 -37.5 127.3	40 34.2 -36.9 126.5
15°	42 55.3 -40.0 130.8	42 11.6 -39.4 130.0	41 27.4 -38.7 129.1	40 42.6 -38.1 128.3	39 57.3 -37.4 127.5
16°	42 15.3 -40.6 131.8	41 32.2 -39.8 131.0	40 48.7 -39.3 130.2	40 04.5 -38.5 129.3	39 19.9 -37.9 128.5
17°	41 34.7 -41.0 132.8	40 52.4 -40.4 132.0	40 09.4 -39.7 131.1	39 26.0 -39.1 130.3	38 42.0 -38.5 129.5
18°	40 53.7 -41.5 133.8	40 12.0 -40.9 133.0	39 29.7 -40.2 132.1	38 46.9 -39.6 131.3	38 03.5 -38.9 130.5
19°	40 12.2 -42.0 134.8	39 31.1 -41.3 133.9	38 49.5 -40.7 133.1	38 07.3 -40.0 132.3	37 24.6 -39.4 131.5
20°	39 30.2 -42.4 135.7	38 49.8 -41.8 134.8	38 08.8 -41.1 134.0	37 27.3 -40.5 133.2	36 45.2 -39.8 132.4
21°	38 47.8 -42.9 136.6	38 08.0 -42.1 135.8	37 27.7 -41.5 134.9	36 46.8 -40.9 134.1	36 05.4 -40.3 133.4
22°	38 04.9 -43.2 137.5	37 25.9 -42.6 136.7	36 46.2 -41.9 135.8	36 05.9 -41.3 135.1	35 25.1 -40.6 134.3
23°	37 21.7 -43.6 138.4	36 43.3 -43.0 137.5	36 04.3 -42.4 136.7	35 24.6 -41.6 135.9	34 44.5 -41.1 135.2
24°	36 38.1 -44.0 139.2	36 00.3 -43.3 138.4	35 21.9 -42.7 137.6	34 43.0 -42.1 136.8	34 03.4 -41.4 136.1
25°	35 54.1 -44.3 140.1	35 17.0 -43.7 139.3	34 39.2 -43.0 138.5	34 00.9 -42.4 137.7	33 22.0 -41.8 136.9
26°	35 09.8 -44.6 140.9	34 33.3 -44.0 140.1	33 56.2 -43.4 139.3	33 18.5 -42.8 138.5	32 40.2 -42.1 137.8
27°	34 25.2 -45.0 141.7	33 49.3 -44.3 140.9	33 12.8 -43.7 140.1	32 35.7 -43.0 139.4	31 58.1 -42.4 138.6
28°	33 40.2 -45.3 142.5	33 05.0 -44.7 141.7	32 29.1 -44.0 141.0	31 52.7 -43.4 140.2	31 15.7 -42.8 139.5
29°	32 54.9 -45.6 143.3	32 20.3 -44.9 142.5	31 45.1 -44.3 141.8	31 09.3 -43.7 141.0	30 32.9 -43.1 140.3

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°	47 06.1 -26.2 109.2	46 11.9 -25.8 108.6	45 17.4 -25.4 108.0	44 22.7 -24.9 107.4	43 27.9 -24.6 106.8
1°	46 39.9 -27.1 110.5	45 46.1 -26.7 109.9	44 52.0 -26.2 109.3	43 57.8 -25.8 108.7	43 03.3 -25.4 108.1
2°	46 12.8 -28.0 111.8	45 19.4 -27.5 111.2	44 25.8 -27.0 110.5	43 32.0 -26.6 109.9	42 37.9 -26.2 109.3
3°	45 44.8 -28.8 113.1	44 51.9 -28.1 112.4	43 58.8 -27.9 111.8	43 05.4 -27.4 111.2	42 11.7 -26.9 110.6
4°	45 16.0 -29.6 114.3	44 23.6 -29.1 113.7	43 30.9 -28.6 113.0	42 38.0 -28.2 112.4	41 44.8 -27.7 111.8
5°	44 46.4 -30.4 115.6	43 54.5 -29.9 114.9	43 02.3 -29.4 114.2	42 09.8 -28.8 113.6	41 17.1 -28.4 112.9
6°	44 16.0 -31.2 116.8	43 24.6 -30.6 116.1	42 32.9 -30.1 115.4	41 41.0 -29.6 114.7	40 48.7 -29.1 114.1
7°	43 44.8 -31.8 118.0	42 54.0 -31.3 117.3	42 02.8 -30.8 116.6	41 11.4 -30.3 115.9	40 19.6 -29.7 115.3
8°	43 13.0 -32.6 119.1	42 22.7 -32.0 118.4	41 32.0 -31.4 117.7	40 41.1 -30.9 117.0	39 49.9 -30.5 116.4
9°	42 40.4 -33.3 120.3	41 50.7 -32.7 119.6	41 00.6 -32.1 118.9	40 10.2 -31.6 118.2	39 19.4 -31.0 117.5
10°	42 07.1 -33.9 121.4	41 18.0 -33.3 120.7	40 28.5 -32.8 120.0	39 38.6 -32.2 119.3	38 48.4 -31.7 118.6
11°	41 33.2 -34.5 122.5	40 44.7 -34.0 121.8	39 55.7 -33.4 121.1	39 06.4 -32.8 120.4	38 16.7 -32.3 119.7
12°	40 58.7 -35.1 123.6	40 10.7 -34.5 122.9	39 22.3 -33.9 122.1	38 33.6 -33.4 121.4	37 44.4 -32.8 120.8
13°	40 23.6 -35.7 124.7	39 36.2 -35.1 123.9	38 48.4 -34.5 123.2	38 00.2 -34.0 122.5	37 11.6 -33.4 121.8
14°	39 47.9 -36.3 125.7	39 01.1 -35.7 125.0	38 13.9 -35.1 124.3	37 26.2 -34.5 123.5	36 38.2 -33.9 122.9
15°	39 11.6 -36.8 126.8	38 25.4 -36.2 126.0	37 38.8 -35.6 125.3	36 51.7 -35.0 124.6	36 04.3 -34.4 123.9
16°	38 34.8 -37.3 127.8	37 49.2 -36.7 127.0	37 03.2 -36.1 126.3	36 16.7 -35.5 125.6	35 29.9 -35.0 124.9
17°	37 57.5 -37.9 128.8	37 12.5 -37.2 128.0	36 27.1 -36.6 127.3	35 41.2 -36.0 126.6	34 54.9 -35.4 125.9
18°	37 19.6 -38.3 129.8	36 35.3 -37.7 129.0	35 50.5 -37.1 128.3	35 05.2 -36.5 127.6	34 19.5 -35.9 126.9
19°	36 41.3 -38.7 130.7	35 57.6 -38.1 130.0	35 13.4 -37.5 129.2	34 28.7 -36.9 128.5	33 43.6 -36.3 127.8
20°	36 02.6 -39.2 131.7	35 19.5 -38.6 130.9	34 35.9 -38.0 130.2	33 51.8 -37.3 129.5	33 07.3 -36.7 128.8
21°	35 23.4 -39.6 132.6	34 40.9 -39.0 131.9	33 57.9 -38.3 131.1	33 14.5 -37.8 130.4	32 30.6 -37.2 129.7
22°	34 43.8 -40.0 133.5	34 01.9 -39.4 132.8	33 19.6 -38.8 132.1	32 36.7 -38.2 131.3	31 53.4 -37.6 130.7
23°	34 03.8 -40.5 134.4	33 22.5 -39.8 133.7	32 40.8 -39.2 133.0	31 58.5 -38.5 132.3	31 15.8 -37.9 131.6
24°	33 23.3 -40.8 135.3	32 42.7 -40.1 134.6	32 01.6 -39.5 133.9	31 20.0 -38.9 133.2	30 37.9 -38.3 132.5
25°	32 42.5 -41.1 136.2	32 02.6 -40.6 135.5	31 22.1 -39.9 134.7	30 41.1 -39.3 134.1	29 59.6 -38.7 133.4
26°	32 01.4 -41.5 137.0	31 22.0 -40.8 136.3	30 42.2 -40.3 135.6	30 01.8 -39.7 134.9	29 20.9 -39.0 134.3
27°	31 19.9 -41.8 137.9	30 41.2 -41.2 137.2	30 01.9 -40.6 136.5	29 22.1 -39.9 135.8	28 41.9 -39.3 135.1
28°	30 38.1 -42.2 138.7	30 00.0 -41.5 138.0	29 21.3 -40.9 137.3	28 42.2 -40.3 136.6	28 02.6 -39.7 136.0
29°	29 55.9 -42.4 139.6	29 18.5 -41.9 138.9	28 40.4 -41.2 138.2	28 01.9 -40.6 137.5	27 22.9 -40.0 136.8

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°	42 32.9 -24.2 106.3	41 37.7 -23.8 105.8	40 42.5 -23.6 105.3	39 47.0 -23.2 104.7	38 51.5 -22.9 104.3
1°	42 08.7 -25.0 107.5	41 13.9 -24.6 107.0	40 18.9 -24.2 106.5	39 23.8 -23.9 105.9	38 28.6 -23.6 105.4
2°	41 43.7 -25.8 108.8	40 49.3 -25.4 108.2	39 54.7 -25.0 107.7	38 59.9 -24.6 107.1	38 05.0 -24.3 106.6
3°	41 17.9 -26.5 110.0	40 23.9 -26.1 109.4	39 29.7 -25.7 108.8	38 35.3 -25.4 108.3	37 40.7 -24.9 107.8
4°	40 51.4 -27.2 111.2	39 57.8 -26.8 110.6	39 04.0 -26.4 110.0	38 09.9 -25.9 109.5	37 15.8 -25.7 108.9
5°	40 24.2 -28.0 112.3	39 31.0 -27.5 111.7	38 37.6 -27.1 111.2	37 44.0 -26.7 110.6	36 50.1 -26.2 110.1
6°	39 56.2 -28.6 113.5	39 03.5 -28.2 112.9	38 10.5 -27.7 112.3	37 17.3 -27.3 111.7	36 23.9 -26.9 111.2
7°	39 27.6 -29.3 114.6	38 35.3 -28.8 114.0	37 42.8 -28.4 113.4	36 50.0 -27.9 112.8	35 57.0 -27.5 112.3
8°	38 58.3 -29.9 115.8	38 06.5 -29.4 115.1	37 14.4 -28.9 114.5	36 22.1 -28.5 113.9	35 29.5 -28.0 113.4
9°	38 28.4 -30.6 116.9	37 37.1 -30.1 116.2	36 45.5 -29.6 115.6	35 53.6 -29.1 115.0	35 01.5 -28.6 114.5
10°	37 57.8 -31.1 118.0	37 07.0 -30.6 117.3	36 15.9 -30.1 116.7	35 24.5 -29.6 116.1	34 32.9 -29.2 115.5
11°	37 26.7 -31.7 119.0	36 36.4 -31.2 118.4	35 45.8 -30.7 117.8	34 54.9 -30.3 117.2	34 03.7 -29.7 116.6
12°	36 55.0 -32.3 120.1	36 05.2 -31.8 119.5	35 15.1 -31.3 118.8	34 24.6 -30.7 118.2	33 34.0 -30.3 117.6
13°	36 22.7 -32.9 121.2	35 33.4 -32.3 120.5	34 43.8 -31.8 119.9	33 53.9 -31.2 119.3	33 03.7 -30.7 118.7
14°	35 49.8 -33.3 122.2	35 01.1 -32.8 121.5	34 12.0 -32.2 120.9	33 22.7 -31.8 120.3	32 33.0 -31.3 119.7
15°	35 16.5 -33.9 123.2	34 28.3 -33.3 122.6	33 39.8 -32.8 121.9	32 50.9 -32.2 121.3	32 01.7 -31.7 120.7
16°	34 42.6 -34.3 124.2	33 55.0 -33.8 123.6	33 07.0 -33.3 122.9	32 18.7 -32.7 122.3	31 30.0 -32.2 121.7
17°	34 08.3 -34.9 125.2	33 21.2 -34.3 124.6	32 33.7 -33.7 123.9	31 46.0 -33.2 123.3	30 57.8 -32.6 122.7
18°	33 33.4 -35.3 126.2	32 46.9 -34.7 125.5	32 00.0 -34.1 124.9	31 12.8 -33.6 124.3	30 25.2 -33.0 123.7
19°	32 58.1 -35.7 127.2	32 12.2 -35.2 126.5	31 25.9 -34.6 125.9	30 39.2 -34.0 125.2	29 52.2 -33.5 124.6
20°	32 22.4 -36.2 128.1	31 37.0 -35.5 127.5	30 51.3 -35.0 126.8	30 05.2 -34.4 126.2	29 18.7 -33.9 125.6
21°	31 46.2 -36.5 129.1	31 01.5 -36.0 128.4	30 16.3 -35.4 127.8	29 30.8 -34.9 127.1	28 44.8 -34.2 126.5
22°	31 09.7 -37.0 130.0	30 25.5 -36.4 129.3	29 40.9 -35.8 128.7	28 55.9 -35.2 128.1	28 10.6 -34.7 127.5
23°	30 32.7 -37.3 130.9	29 49.1 -36.7 130.3	29 05.1 -36.1 129.6	28 20.7 -35.6 129.0	27 35.9 -35.0 128.4
24°	29 55.4 -37.8 131.8	29 12.4 -37.1 131.2	28 29.0 -36.6 130.5	27 45.1 -35.9 129.9	27 00.9 -35.3 129.3
25°	29 17.6 -38.0 132.7	28 35.3 -37.5 132.1	27 52.4 -36.8 131.4	27 09.2 -36.3 130.8	26 25.6 -35.7 130.2
26°	28 39.6 -38.4 133.6	27 57.8 -37.8 132.9	27 15.6 -37.2 132.3	26 32.9 -36.6 131.7	25 49.9 -36.0 131.1
27°	28 01.2 -38.8 134.5	27 20.0 -38.1 133.8	26 38.0 -37.5 133.2	25 56.3 -36.9 132.6	25 13.9 -36.3 132.0
28°	27 22.4 -39.0 135.3	26 41.9 -38.5 134.7	26 00.9 -37.9 134.1	25 19.4 -37.2 133.5	24 37.6 -36.7 132.9
29°	26 43.4 -39.4 136.2	26 03.4 -38.7 135.5	25 23.0 -38.1 134.9	24 42.2 -37.5 134.3	24 00.9 -36.9 133.7

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°	37 55.8 -22.6 103.8	37 00.0 -22.3 103.3	36 04.1 -22.0 102.9	35 08.2 -21.8 102.4	34 12.1 -21.5 102.0
1°	37 33.2 -23.3 105.0	36 37.7 -22.9 104.5	35 42.1 -22.7 104.0	34 46.4 -22.4 103.6	33 50.6 -22.2 103.1
2°	37 09.9 -23.9 106.1	36 14.8 -23.7 105.6	35 19.4 -23.3 105.2	34 24.0 -23.0 104.7	33 28.4 -22.7 104.2
3°	36 46.0 -24.6 107.3	35 51.1 -24.2 106.8	34 56.1 -23.9 106.3	34 01.0 -23.6 105.8	33 05.7 -23.3 105.3
4°	36 21.4 -25.2 108.4	35 26.9 -24.9 107.9	34 32.2 -24.5 107.4	33 37.4 -24.2 106.9	32 42.4 -23.9 106.4
5°	35 56.2 -25.9 109.5	35 02.0 -25.5 109.0	34 07.7 -25.2 108.5	33 13.2 -24.8 108.0	32 18.5 -24.4 107.5
6°	35 30.3 -26.5 110.6	34 36.5 -26.1 110.1	33 42.5 -25.7 109.6	32 48.4 -25.3 109.1	31 54.1 -25.0 108.6
7°	35 03.8 -27.0 111.7	34 10.4 -26.6 111.2	33 16.8 -26.2 110.7	32 23.1 -25.9 110.2	31 29.1 -25.5 109.7
8°	34 36.8 -27.7 112.8	33 43.8 -27.2 112.3	32 50.6 -26.8 111.8	31 57.2 -26.4 111.2	31 03.6 -26.0 110.7
9°	34 09.1 -28.1 113.9	33 16.6 -27.8 113.3	32 23.8 -27.3 112.8	31 30.8 -26.9 112.3	30 37.6 -26.5 111.8
10°	33 41.0 -28.8 115.0	32 48.8 -28.3 114.4	31 56.5 -27.9 113.9	31 03.9 -27.4 113.3	30 11.1 -27.0 112.8
11°	33 12.2 -29.2 116.0	32 20.5 -28.7 115.5	31 28.6 -28.3 114.9	30 36.5 -27.9 114.4	29 44.1 -27.5 113.9
12°	32 43.0 -29.8 117.1	31 51.8 -29.3 116.5	31 00.3 -28.9 115.9	30 08.6 -28.4 115.4	29 16.6 -27.9 114.9
13°	32 13.2 -30.2 118.1	31 22.5 -29.8 117.5	30 31.4 -29.3 117.0	29 40.2 -28.9 116.4	28 48.7 -28.4 115.9
14°	31 43.0 -30.8 119.1	30 52.7 -30.3 118.5	30 02.1 -29.7 118.0	29 11.3 -29.2 117.4	28 20.3 -28.8 116.9
15°	31 12.2 -31.2 120.1	30 22.4 -30.7 119.5	29 32.4 -30.2 119.0	28 42.1 -29.8 118.4	27 51.5 -29.3 117.9
16°	30 41.0 -31.6 121.1	29 51.7 -31.1 120.5	29 02.2 -30.7 120.0	28 12.3 -30.1 119.4	27 22.2 -29.6 118.9
17°	30 09.4 -32.1 122.1	29 20.6 -31.6 121.5	28 31.5 -31.0 120.9	27 42.2 -30.6 120.4	26 52.6 -30.1 119.8
18°	29 37.3 -32.5 123.1	28 49.0 -31.9 122.5	28 00.5 -31.5 121.9	27 11.6 -30.9 121.4	26 22.5 -30.5 120.8
19°	29 04.8 -32.9 124.0	28 17.1 -32.4 123.4	27 29.0 -31.8 122.9	26 40.7 -31.4 122.3	25 52.0 -30.8 121.8
20°	28 31.9 -33.4 125.0	27 44.7 -32.8 124.4	26 57.2 -32.3 123.8	26 09.3 -31.7 123.3	25 21.2 -31.2 122.7
21°	27 58.5 -33.7 125.9	27 11.9 -33.1 125.3	26 24.9 -32.6 124.8	25 37.6 -32.0 124.2	24 50.0 -31.5 123.7
22°	27 24.8 -34.0 126.9	26 38.8 -33.6 126.3	25 52.3 -32.9 125.7	25 05.6 -32.4 125.1	24 18.5 -31.9 124.6
23°	26 50.8 -34.5 127.8	26 05.2 -33.8 127.2	25 19.4 -33.3 126.6	24 33.2 -32.8 126.1	23 46.6 -32.2 125.5
24°	26 16.3 -34.7 128.7	25 31.4 -34.2 128.1	24 46.1 -33.7 127.6	24 00.4 -33.1 127.0	23 14.4 -32.5 126.5
25°	25 41.6 -35.1 129.6	24 57.2 -34.5 129.0	24 12.4 -33.9 128.5	23 27.3 -33.4 127.9	22 41.9 -32.8 127.4
26°	25 06.5 -35.5 130.5	24 22.7 -34.9 129.9	23 38.5 -34.3 129.4	22 53.9 -33.7 128.8	22 09.1 -33.2 128.3
27°	24 31.0 -35.7 131.4	23 47.8 -35.1 130.8	23 04.2 -34.6 130.3	22 20.2 -34.0 129.7	21 35.9 -33.4 129.2
28°	23 55.3 -36.0 132.3	23 12.7 -35.5 131.7	22 29.6 -34.8 131.1	21 46.2 -34.2 130.6	21 02.5 -33.7 130.1
29°	23 19.3 -36.4 133.1	22 37.2 -35.7 132.6	21 54.8 -35.2 132.0	21 12.0 -34.6 131.5	20 28.8 -34.0 130.9

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°	33 15.9 -21.3 101.6	32 19.7 -21.1 101.2	31 23.3 -20.8 100.8	30 26.9 -20.6 100.4	29 30.4 -20.4 100.0
1°	32 54.6 -21.8 102.7	31 58.6 -21.6 102.3	31 02.5 -21.4 101.8	30 06.3 -21.2 101.4	29 10.0 -20.9 101.0
2°	32 32.8 -22.5 103.8	31 37.0 -22.2 103.4	30 41.1 -21.9 102.9	29 45.1 -21.6 102.5	28 49.1 -21.5 102.1
3°	32 10.3 -23.0 104.9	31 14.8 -22.7 104.4	30 19.2 -22.5 104.0	29 23.5 -22.2 103.6	28 27.6 -21.9 103.2
4°	31 47.3 -23.6 106.0	30 52.1 -23.3 105.5	29 56.7 -22.9 105.1	29 01.3 -22.7 104.7	28 05.7 -22.4 104.2
5°	31 23.7 -24.1 107.1	30 28.8 -23.8 106.6	29 33.8 -23.5 106.2	28 38.6 -23.2 105.7	27 43.3 -22.9 105.3
6°	30 59.6 -24.6 108.1	30 05.0 -24.3 107.7	29 10.3 -24.0 107.2	28 15.4 -23.6 106.8	27 20.4 -23.3 106.3
7°	30 35.0 -25.1 109.2	29 40.7 -24.7 108.7	28 46.3 -24.4 108.3	27 51.8 -24.1 107.8	26 57.1 -23.8 107.4
8°	30 09.9 -25.7 110.2	29 16.0 -25.3 109.8	28 21.9 -24.9 109.3	27 27.7 -24.6 108.8	26 33.3 -24.3 108.4
9°	29 44.2 -26.1 111.3	28 50.7 -25.8 110.8	27 57.0 -25.4 110.3	27 03.1 -25.0 109.9	26 09.0 -24.6 109.4
10°	29 18.1 -26.6 112.3	28 24.9 -26.2 111.8	27 31.6 -25.8 111.4	26 38.1 -25.5 110.9	25 44.4 -25.1 110.4
11°	28 51.5 -27.0 113.3	27 58.7 -26.6 112.9	27 05.8 -26.3 112.4	26 12.6 -25.9 111.9	25 19.3 -25.5 111.4
12°	28 24.5 -27.6 114.4	27 32.1 -27.1 113.9	26 39.5 -26.7 113.4	25 46.7 -26.2 112.9	24 53.8 -25.9 112.4
13°	27 56.9 -27.9 115.4	27 05.0 -27.5 114.9	26 12.8 -27.1 114.4	25 20.5 -26.7 113.9	24 27.9 -26.3 113.4
14°	27 29.0 -28.4 116.4	26 37.5 -28.0 115.9	25 45.7 -27.5 115.4	24 53.8 -27.1 114.9	24 01.6 -26.6 114.4
15°	27 00.6 -28.8 117.4	26 09.5 -28.3 116.9	25 18.2 -27.8 116.4	24 26.7 -27.4 115.9	23 35.0 -27.0 115.4
16°	26 31.8 -29.1 118.3	25 41.2 -28.7 117.8	24 50.4 -28.3 117.3	23 59.3 -27.8 116.8	23 08.0 -27.4 116.4
17°	26 02.7 -29.6 119.3	25 12.5 -29.1 118.8	24 22.1 -28.6 118.3	23 31.5 -28.2 117.8	22 40.6 -27.7 117.3
18°	25 33.1 -30.0 120.3	24 43.4 -29.5 119.8	23 53.5 -29.0 119.3	23 03.3 -28.5 118.8	22 12.9 -28.1 118.3
19°	25 03.1 -30.3 121.2	24 13.9 -29.8 120.7	23 24.5 -29.3 120.2	22 34.8 -28.9 119.7	21 44.8 -28.3 119.2
20°	24 32.8 -30.7 122.2	23 44.1 -30.1 121.7	22 55.2 -29.7 121.2	22 05.9 -29.1 120.7	21 16.5 -28.7 120.2
21°	24 02.1 -31.0 123.1	23 14.0 -30.5 122.6	22 25.5 -30.0 122.1	21 36.8 -29.5 121.6	20 47.8 -29.0 121.1
22°	23 31.1 -31.3 124.1	22 43.5 -30.9 123.6	21 55.5 -30.3 123.0	21 07.3 -29.8 122.5	20 18.8 -29.3 122.1
23°	22 59.8 -31.7 125.0	22 12.6 -31.1 124.5	21 25.2 -30.6 124.0	20 37.5 -30.1 123.5	19 49.5 -29.6 123.0
24°	22 28.1 -32.0 125.9	21 41.5 -31.5 125.4	20 54.6 -30.9 124.9	20 07.4 -30.4 124.4	19 19.9 -29.9 123.9
25°	21 56.1 -32.3 126.8	21 10.0 -31.7 126.3	20 23.7 -31.2 125.8	19 37.0 -30.7 125.3	18 50.0 -30.1 124.8
26°	21 23.8 -32.5 127.7	20 38.3 -32.0 127.2	19 52.5 -31.5 126.7	19 06.3 -30.9 126.2	18 19.9 -30.4 125.7
27°	20 51.3 -32.9 128.6	20 06.3 -32.3 128.1	19 21.0 -31.7 127.6	18 35.4 -31.2 127.1	17 49.5 -30.6 126.7
28°	20 18.4 -33.1 129.5	19 34.0 -32.6 129.0	18 49.3 -32.0 128.5	18 04.2 -31.4 128.0	17 18.9 -30.9 127.6
29°	19 45.3 -33.4 130.4	19 01.4 -32.8 129.9	18 17.3 -32.3 129.4	17 32.8 -31.7 128.9	16 48.0 -31.1 128.5

Dec	LHA 060° / 300°	LHA 061° / 299°	LHA 062° / 298°	LHA 063° / 297°	LHA 064° / 296°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	28 33.9 -20.2 99.6	27 37.3 -20.1 99.2	26 40.6 -19.9 98.8	25 43.9 -19.7 98.5	24 47.1 -19.5 98.1
1°	28 13.7 -20.8 100.7	27 17.2 -20.5 100.3	26 20.7 -20.3 99.9	25 24.2 -20.2 99.5	24 27.6 -20.0 99.2
2°	27 52.9 -21.2 101.7	26 56.7 -21.0 101.3	26 00.4 -20.8 100.9	25 04.0 -20.5 100.6	24 07.6 -20.4 100.2
3°	27 31.7 -21.7 102.8	26 35.7 -21.4 102.4	25 39.6 -21.2 102.0	24 43.5 -21.0 101.6	23 47.2 -20.8 101.2
4°	27 10.0 -22.1 103.8	26 14.3 -21.9 103.4	25 18.4 -21.6 103.0	24 22.5 -21.4 102.6	23 26.4 -21.1 102.2
5°	26 47.9 -22.6 104.9	25 52.4 -22.3 104.5	24 56.8 -22.1 104.0	24 01.1 -21.9 103.7	23 05.3 -21.6 103.3
6°	26 25.3 -23.1 105.9	25 30.1 -22.8 105.5	24 34.7 -22.5 105.1	23 39.2 -22.2 104.7	22 43.7 -22.0 104.3
7°	26 02.2 -23.4 106.9	25 07.3 -23.2 106.5	24 12.2 -22.9 106.1	23 17.0 -22.6 105.7	22 21.7 -22.3 105.3
8°	25 38.8 -24.0 108.0	24 44.1 -23.6 107.5	23 49.3 -23.3 107.1	22 54.4 -23.0 106.7	21 59.4 -22.7 106.3
9°	25 14.8 -24.3 109.0	24 20.5 -24.0 108.5	23 26.0 -23.6 108.1	22 31.4 -23.3 107.7	21 36.7 -23.0 107.3
10°	24 50.5 -24.7 110.0	23 56.5 -24.4 109.5	23 02.4 -24.1 109.1	22 08.1 -23.7 108.7	21 13.7 -23.4 108.3
11°	24 25.8 -25.1 111.0	23 32.1 -24.7 110.5	22 38.3 -24.4 110.1	21 44.4 -24.1 109.7	20 50.3 -23.7 109.3
12°	24 00.7 -25.5 112.0	23 07.4 -25.1 111.5	22 13.9 -24.7 111.1	21 20.3 -24.4 110.7	20 26.6 -24.1 110.2
13°	23 35.2 -25.9 113.0	22 42.3 -25.5 112.5	21 49.2 -25.1 112.1	20 55.9 -24.7 111.6	20 02.5 -24.4 111.2
14°	23 09.3 -26.2 113.9	22 16.8 -25.9 113.5	21 24.1 -25.5 113.0	20 31.2 -25.1 112.6	19 38.1 -24.7 112.2
15°	22 43.1 -26.6 114.9	21 50.9 -26.2 114.5	20 58.6 -25.8 114.0	20 06.1 -25.4 113.6	19 13.4 -25.0 113.2
16°	22 16.5 -27.0 115.9	21 24.7 -26.5 115.4	20 32.8 -26.1 115.0	19 40.7 -25.7 114.5	18 48.4 -25.2 114.1
17°	21 49.5 -27.3 116.9	20 58.2 -26.8 116.4	20 06.7 -26.4 115.9	19 15.0 -25.9 115.5	18 23.2 -25.6 115.1
18°	21 22.2 -27.5 117.8	20 31.4 -27.2 117.4	19 40.3 -26.7 116.9	18 49.1 -26.3 116.5	17 57.6 -25.9 116.0
19°	20 54.7 -28.0 118.8	20 04.2 -27.4 118.3	19 13.6 -27.0 117.9	18 22.8 -26.6 117.4	17 31.7 -26.1 117.0
20°	20 26.7 -28.2 119.7	19 36.8 -27.8 119.3	18 46.6 -27.3 118.8	17 56.2 -26.8 118.4	17 05.6 -26.3 117.9
21°	19 58.5 -28.5 120.7	19 09.0 -28.0 120.2	18 19.3 -27.5 119.7	17 29.4 -27.1 119.3	16 39.3 -26.7 118.9
22°	19 30.0 -28.8 121.6	18 41.0 -28.3 121.1	17 51.8 -27.8 120.7	17 02.3 -27.3 120.2	16 12.6 -26.8 119.8
23°	19 01.2 -29.1 122.5	18 12.7 -28.6 122.1	17 24.0 -28.1 121.6	16 35.0 -27.6 121.2	15 45.8 -27.2 120.7
24°	18 32.1 -29.3 123.4	17 44.1 -28.8 123.0	16 55.9 -28.3 122.5	16 07.4 -27.8 122.1	15 18.6 -27.3 121.6
25°	18 02.8 -29.6 124.4	17 15.3 -29.1 123.9	16 27.6 -28.6 123.4	15 39.6 -28.1 123.0	14 51.3 -27.5 122.6
26°	17 33.2 -29.9 125.3	16 46.2 -29.3 124.8	15 59.0 -28.8 124.4	15 11.5 -28.3 123.9	14 23.8 -27.8 123.5
27°	17 03.3 -30.0 126.2	16 16.9 -29.6 125.7	15 30.2 -29.0 125.3	14 43.2 -28.5 124.8	13 56.0 -28.0 124.4
28°	16 33.3 -30.4 127.1	15 47.3 -29.7 126.6	15 01.2 -29.3 126.2	14 14.7 -28.7 125.7	13 28.0 -28.1 125.3
29°	16 02.9 -30.5 128.0	15 17.6 -30.0 127.5	14 31.9 -29.4 127.1	13 46.0 -28.9 126.6	12 59.9 -28.4 126.2

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°	23 50.3 -19.4 97.8	22 53.4 -19.2 97.4	21 56.5 -19.1 97.1	20 59.5 -18.9 96.7	20 02.5 -18.8 96.4
1°	23 30.9 -19.8 98.8	22 34.2 -19.7 98.4	21 37.4 -19.5 98.1	20 40.6 -19.4 97.8	19 43.7 -19.2 97.4
2°	23 11.1 -20.2 99.8	22 14.5 -20.0 99.5	21 17.9 -19.8 99.1	20 21.2 -19.6 98.8	19 24.5 -19.5 98.4
3°	22 50.9 -20.6 100.8	21 54.5 -20.4 100.5	20 58.1 -20.2 100.1	20 01.6 -20.1 99.8	19 05.0 -19.9 99.4
4°	22 30.3 -20.9 101.9	21 34.1 -20.7 101.5	20 37.9 -20.6 101.1	19 41.5 -20.3 100.8	18 45.1 -20.1 100.4
5°	22 09.4 -21.4 102.9	21 13.4 -21.1 102.5	20 17.3 -20.8 102.1	19 21.2 -20.7 101.8	18 25.0 -20.5 101.4
6°	21 48.0 -21.7 103.9	20 52.3 -21.5 103.5	19 56.5 -21.3 103.1	19 00.5 -21.0 102.8	18 04.5 -20.7 102.4
7°	21 26.3 -22.0 104.9	20 30.8 -21.8 104.5	19 35.2 -21.5 104.1	18 39.5 -21.3 103.8	17 43.8 -21.1 103.4
8°	21 04.3 -22.4 105.9	20 09.0 -22.1 105.5	19 13.7 -21.9 105.1	18 18.2 -21.5 104.7	17 22.7 -21.3 104.4
9°	20 41.9 -22.8 106.9	19 46.9 -22.4 106.5	18 51.8 -22.1 106.1	17 56.7 -21.9 105.7	17 01.4 -21.7 105.3
10°	20 19.1 -23.1 107.9	19 24.5 -22.8 107.5	18 29.7 -22.5 107.1	17 34.8 -22.2 106.7	16 39.7 -21.8 106.3
11°	19 56.0 -23.4 108.9	19 01.7 -23.1 108.5	18 07.2 -22.8 108.1	17 12.6 -22.5 107.7	16 17.9 -22.2 107.3
12°	19 32.6 -23.7 109.8	18 38.6 -23.4 109.4	17 44.4 -23.0 109.0	16 50.1 -22.7 108.6	15 55.7 -22.4 108.3
13°	19 08.9 -24.0 110.8	18 15.2 -23.6 110.4	17 21.4 -23.4 110.0	16 27.4 -23.0 109.6	15 33.3 -22.7 109.2
14°	18 44.9 -24.3 111.8	17 51.6 -24.0 111.4	16 58.0 -23.6 111.0	16 04.4 -23.3 110.6	15 10.6 -22.9 110.2
15°	18 20.6 -24.6 112.7	17 27.6 -24.2 112.3	16 34.4 -23.8 111.9	15 41.1 -23.5 111.5	14 47.7 -23.2 111.1
16°	17 56.0 -24.9 113.7	17 03.4 -24.5 113.3	16 10.6 -24.1 112.9	15 17.6 -23.7 112.5	14 24.5 -23.3 112.1
17°	17 31.1 -25.2 114.7	16 38.9 -24.8 114.2	15 46.5 -24.4 113.8	14 53.9 -24.0 113.4	14 01.2 -23.6 113.0
18°	17 05.9 -25.4 115.6	16 14.1 -25.0 115.2	15 22.1 -24.6 114.8	14 29.9 -24.2 114.4	13 37.6 -23.8 114.0
19°	16 40.5 -25.7 116.5	15 49.1 -25.3 116.1	14 57.5 -24.8 115.7	14 05.7 -24.4 115.3	13 13.8 -24.1 114.9
20°	16 14.8 -25.9 117.5	15 23.8 -25.5 117.1	14 32.7 -25.1 116.7	13 41.3 -24.7 116.3	12 49.7 -24.2 115.9
21°	15 48.9 -26.2 118.4	14 58.3 -25.7 118.0	14 07.6 -25.3 117.6	13 16.6 -24.8 117.2	12 25.5 -24.4 116.8
22°	15 22.7 -26.4 119.4	14 32.6 -25.9 118.9	13 42.3 -25.5 118.5	12 51.8 -25.0 118.1	12 01.1 -24.6 117.7
23°	14 56.3 -26.6 120.3	14 06.7 -26.2 119.9	13 16.8 -25.7 119.5	12 26.8 -25.3 119.1	11 36.5 -24.8 118.7
24°	14 29.7 -26.9 121.2	13 40.5 -26.4 120.8	12 51.1 -25.9 120.4	12 01.5 -25.4 120.0	11 11.7 -24.9 119.6
25°	14 02.8 -27.0 122.1	13 14.1 -26.5 121.7	12 25.2 -26.0 121.3	11 36.1 -25.6 120.9	10 46.8 -25.1 120.5
26°	13 35.8 -27.3 123.1	12 47.6 -26.8 122.6	11 59.2 -26.3 122.2	11 10.5 -25.7 121.8	10 21.7 -25.3 121.5
27°	13 08.5 -27.4 124.0	12 20.8 -26.9 123.6	11 32.9 -26.4 123.2	10 44.8 -26.0 122.8	9 56.4 -25.4 122.4
28°	12 41.1 -27.7 124.9	11 53.9 -27.1 124.5	11 06.5 -26.6 124.1	10 18.8 -26.0 123.7	9 31.0 -25.6 123.3
29°	12 13.4 -27.8 125.8	11 26.8 -27.3 125.4	10 39.9 -26.8 125.0	9 52.8 -26.3 124.6	9 05.4 -25.7 124.2

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°	19 05.5 -18.7 96.1	18 08.4 -18.6 95.7	17 11.3 -18.5 95.4	16 14.2 -18.4 95.1	15 17.0 -18.3 94.8
1°	18 46.8 -19.1 97.1	17 49.8 -18.9 96.7	16 52.8 -18.8 96.4	15 55.8 -18.7 96.1	14 58.7 -18.6 95.8
2°	18 27.7 -19.4 98.1	17 30.9 -19.2 97.7	16 34.0 -19.1 97.4	15 37.1 -19.0 97.1	14 40.1 -18.8 96.8
3°	18 08.3 -19.6 99.1	17 11.7 -19.5 98.7	16 14.9 -19.3 98.4	15 18.1 -19.2 98.1	14 21.3 -19.1 97.7
4°	17 48.7 -20.0 100.1	16 52.2 -19.8 99.7	15 55.6 -19.6 99.4	14 58.9 -19.4 99.1	14 02.2 -19.2 98.7
5°	17 28.7 -20.2 101.1	16 32.4 -20.1 100.7	15 36.0 -19.9 100.4	14 39.5 -19.7 100.0	13 43.0 -19.6 99.7
6°	17 08.5 -20.6 102.0	16 12.3 -20.3 101.7	15 16.1 -20.2 101.3	14 19.8 -19.9 101.0	13 23.4 -19.7 100.7
7°	16 47.9 -20.8 103.0	15 52.0 -20.6 102.7	14 55.9 -20.3 102.3	13 59.9 -20.2 102.0	13 03.7 -20.0 101.6
8°	16 27.1 -21.1 104.0	15 31.4 -20.9 103.6	14 35.6 -20.7 103.3	13 39.7 -20.4 102.9	12 43.7 -20.1 102.6
9°	16 06.0 -21.4 105.0	15 10.5 -21.1 104.6	14 14.9 -20.8 104.3	13 19.3 -20.6 103.9	12 23.6 -20.4 103.6
10°	15 44.6 -21.6 106.0	14 49.4 -21.3 105.6	13 54.1 -21.1 105.2	12 58.7 -20.8 104.9	12 03.2 -20.6 104.5
11°	15 23.0 -21.9 106.9	14 28.1 -21.6 106.6	13 33.0 -21.3 106.2	12 37.9 -21.1 105.8	11 42.6 -20.7 105.5
12°	15 01.1 -22.1 107.9	14 06.5 -21.8 107.5	13 11.7 -21.5 107.2	12 16.8 -21.2 106.8	11 21.9 -21.0 106.5
13°	14 39.0 -22.3 108.8	13 44.7 -22.1 108.5	12 50.2 -21.7 108.1	11 55.6 -21.4 107.8	11 00.9 -21.1 107.4
14°	14 16.7 -22.6 109.8	13 22.6 -22.2 109.4	12 28.5 -22.0 109.1	11 34.2 -21.6 108.7	10 39.8 -21.3 108.4
15°	13 54.1 -22.8 110.8	13 00.4 -22.5 110.4	12 06.5 -22.1 110.0	11 12.6 -21.8 109.7	10 18.5 -21.5 109.3
16°	13 31.3 -23.0 111.7	12 37.9 -22.6 111.3	11 44.4 -22.3 111.0	10 50.8 -22.0 110.6	9 57.0 -21.6 110.3
17°	13 08.3 -23.2 112.7	12 15.3 -22.9 112.3	11 22.1 -22.5 111.9	10 28.8 -22.1 111.6	9 35.4 -21.8 111.2
18°	12 45.1 -23.4 113.6	11 52.4 -23.0 113.2	10 59.6 -22.6 112.9	10 06.7 -22.3 112.5	9 13.6 -21.9 112.2
19°	12 21.7 -23.7 114.6	11 29.4 -23.2 114.2	10 37.0 -22.9 113.8	9 44.4 -22.4 113.4	8 51.7 -22.1 113.1
20°	11 58.0 -23.8 115.5	11 06.2 -23.4 115.1	10 14.1 -23.0 114.7	9 22.0 -22.6 114.4	8 29.6 -22.2 114.0
21°	11 34.2 -24.0 116.4	10 42.8 -23.6 116.1	9 51.1 -23.1 115.7	8 59.4 -22.8 115.3	8 07.4 -22.3 115.0
22°	11 10.2 -24.1 117.4	10 19.2 -23.7 117.0	9 28.0 -23.3 116.6	8 36.6 -22.9 116.3	7 45.1 -22.5 115.9
23°	10 46.1 -24.3 118.3	9 55.5 -23.9 117.9	9 04.7 -23.4 117.6	8 13.7 -23.0 117.2	7 22.6 -22.5 116.8
24°	10 21.8 -24.5 119.2	9 31.6 -24.0 118.9	8 41.3 -23.6 118.5	7 50.7 -23.1 118.1	7 00.1 -22.7 117.8
25°	9 57.3 -24.7 120.2	9 07.6 -24.2 119.8	8 17.7 -23.7 119.4	7 27.6 -23.2 119.1	6 37.4 -22.8 118.7
26°	9 32.6 -24.7 121.1	8 43.4 -24.3 120.7	7 54.0 -23.8 120.3	7 04.4 -23.4 120.0	6 14.6 -22.9 119.6
27°	9 07.9 -25.0 122.0	8 19.1 -24.4 121.6	7 30.2 -24.0 121.3	6 41.0 -23.4 120.9	5 51.7 -23.0 120.6
28°	8 42.9 -25.0 122.9	7 54.7 -24.6 122.6	7 06.2 -24.0 122.2	6 17.6 -23.6 121.8	5 28.7 -23.0 121.5
29°	8 17.9 -25.2 123.8	7 30.1 -24.6 123.5	6 42.2 -24.2 123.1	5 54.0 -23.6 122.8	5 05.7 -23.2 122.4

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°	14 19.8 -18.2 94.5	13 22.6 -18.1 94.2	12 25.4 -18.1 93.9	11 28.1 -18.0 93.6	10 30.8 -17.9 93.3
1°	14 01.6 -18.5 95.5	13 04.5 -18.4 95.1	12 07.3 -18.3 94.8	11 10.1 -18.2 94.5	10 12.9 -18.1 94.2
2°	13 43.1 -18.7 96.4	12 46.1 -18.6 96.1	11 49.0 -18.4 95.8	10 51.9 -18.3 95.5	9 54.8 -18.3 95.2
3°	13 24.4 -18.9 97.4	12 27.5 -18.8 97.1	11 30.6 -18.7 96.8	10 33.6 -18.6 96.5	9 36.5 -18.4 96.2
4°	13 05.5 -19.1 98.4	12 08.7 -19.0 98.1	11 11.9 -18.9 97.8	10 15.0 -18.7 97.4	9 18.1 -18.6 97.1
5°	12 46.4 -19.4 99.4	11 49.7 -19.2 99.0	10 53.0 -19.0 98.7	9 56.3 -18.9 98.4	8 59.5 -18.7 98.1
6°	12 27.0 -19.5 100.3	11 30.5 -19.3 100.0	10 34.0 -19.2 99.7	9 37.4 -19.0 99.4	8 40.8 -18.9 99.0
7°	12 07.5 -19.8 101.3	11 11.2 -19.6 101.0	10 14.8 -19.4 100.6	9 18.4 -19.2 100.3	8 21.9 -19.0 100.0
8°	11 47.7 -20.0 102.3	10 51.6 -19.7 101.9	9 55.4 -19.5 101.6	8 59.2 -19.4 101.3	8 02.9 -19.2 101.0
9°	11 27.7 -20.1 103.2	10 31.9 -20.0 102.9	9 35.9 -19.7 102.6	8 39.8 -19.4 102.2	7 43.7 -19.2 101.9
10°	11 07.6 -20.3 104.2	10 11.9 -20.0 103.9	9 16.2 -19.9 103.5	8 20.4 -19.7 103.2	7 24.5 -19.4 102.9
11°	10 47.3 -20.5 105.2	9 51.9 -20.3 104.8	8 56.3 -20.0 104.5	8 00.7 -19.7 104.2	7 05.1 -19.5 103.8
12°	10 26.8 -20.7 106.1	9 31.6 -20.4 105.8	8 36.3 -20.1 105.4	7 41.0 -19.9 105.1	6 45.6 -19.7 104.8
13°	10 06.1 -20.8 107.1	9 11.2 -20.5 106.7	8 16.2 -20.3 106.4	7 21.1 -20.0 106.1	6 25.9 -19.7 105.7
14°	9 45.3 -21.0 108.0	8 50.7 -20.7 107.7	7 55.9 -20.4 107.3	7 01.1 -20.1 107.0	6 06.2 -19.8 106.7
15°	9 24.3 -21.2 109.0	8 30.0 -20.9 108.6	7 35.5 -20.5 108.3	6 41.0 -20.2 108.0	5 46.4 -20.0 107.6
16°	9 03.1 -21.3 109.9	8 09.1 -20.9 109.6	7 15.0 -20.6 109.2	6 20.8 -20.4 108.9	5 26.4 -20.0 108.6
17°	8 41.8 -21.4 110.9	7 48.2 -21.1 110.5	6 54.4 -20.8 110.2	6 00.4 -20.4 109.9	5 06.4 -20.1 109.5
18°	8 20.4 -21.6 111.8	7 27.1 -21.2 111.5	6 33.6 -20.9 111.1	5 40.0 -20.5 110.8	4 46.3 -20.1 110.5
19°	7 58.8 -21.7 112.7	7 05.9 -21.4 112.4	6 12.7 -20.9 112.1	5 19.5 -20.6 111.7	4 26.2 -20.3 111.4
20°	7 37.1 -21.8 113.7	6 44.5 -21.4 113.3	5 51.8 -21.1 113.0	4 58.9 -20.7 112.7	4 05.9 -20.3 112.4
21°	7 15.3 -21.9 114.6	6 23.1 -21.5 114.3	5 30.7 -21.1 114.0	4 38.2 -20.7 113.6	3 45.6 -20.4 113.3
22°	6 53.4 -22.0 115.6	6 01.6 -21.7 115.2	5 09.6 -21.2 114.9	4 17.5 -20.9 114.6	3 25.2 -20.4 114.2
23°	6 31.4 -22.2 116.5	5 39.9 -21.7 116.2	4 48.4 -21.3 115.8	3 56.6 -20.8 115.5	3 04.8 -20.5 115.2
24°	6 09.2 -22.2 117.4	5 18.2 -21.8 117.1	4 27.1 -21.4 116.8	3 35.8 -21.0 116.4	2 44.3 -20.5 116.1
25°	5 47.0 -22.4 118.4	4 56.4 -21.9 118.0	4 05.7 -21.5 117.7	3 14.8 -21.0 117.4	2 23.8 -20.6 117.1
26°	5 24.6 -22.4 119.3	4 34.5 -21.9 119.0	3 44.2 -21.5 118.6	2 53.8 -21.0 118.3	2 03.2 -20.6 118.0
27°	5 02.2 -22.5 120.2	4 12.6 -22.1 119.9	3 22.7 -21.5 119.6	2 32.8 -21.1 119.3	1 42.6 -20.6 119.0
28°	4 39.7 -22.5 121.2	3 50.5 -22.0 120.8	3 01.2 -21.6 120.5	2 11.7 -21.1 120.2	1 22.0 -20.6 119.9
29°	4 17.2 -22.7 122.1	3 28.5 -22.2 121.8	2 39.6 -21.7 121.4	1 50.6 -21.2 121.1	1 01.4 -20.7 120.8

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°	9 33.5 -17.8 93.0	8 36.2 -17.8 92.7	7 38.9 -17.8 92.4	6 41.6 -17.8 92.1	5 44.2 -17.7 91.8
1°	9 15.7 -18.1 93.9	8 18.4 -17.9 93.6	7 21.1 -17.9 93.3	6 23.8 -17.8 93.0	5 26.5 -17.7 92.7
2°	8 57.6 -18.1 94.9	8 00.5 -18.1 94.6	7 03.2 -18.0 94.3	6 06.0 -17.9 94.0	5 08.8 -17.9 93.7
3°	8 39.5 -18.4 95.8	7 42.4 -18.2 95.5	6 45.2 -18.1 95.2	5 48.1 -18.0 94.9	4 50.9 -17.9 94.6
4°	8 21.1 -18.4 96.8	7 24.2 -18.4 96.5	6 27.1 -18.2 96.2	5 30.1 -18.1 95.9	4 33.0 -18.0 95.6
5°	8 02.7 -18.6 97.8	7 05.8 -18.4 97.5	6 08.9 -18.3 97.2	5 12.0 -18.2 96.9	4 15.0 -18.1 96.6
6°	7 44.1 -18.7 98.7	6 47.4 -18.6 98.4	5 50.6 -18.4 98.1	4 53.8 -18.3 97.8	3 56.9 -18.2 97.5
7°	7 25.4 -18.9 99.7	6 28.8 -18.7 99.4	5 32.2 -18.6 99.1	4 35.5 -18.4 98.8	3 38.7 -18.2 98.5
8°	7 06.5 -18.9 100.6	6 10.1 -18.8 100.3	5 13.6 -18.6 100.0	4 17.1 -18.4 99.7	3 20.5 -18.2 99.4
9°	6 47.6 -19.1 101.6	5 51.3 -18.8 101.3	4 55.0 -18.7 101.0	3 58.7 -18.5 100.7	3 02.3 -18.4 100.4
10°	6 28.5 -19.2 102.6	5 32.5 -19.0 102.2	4 36.3 -18.7 101.9	3 40.2 -18.6 101.6	2 43.9 -18.3 101.3
11°	6 09.3 -19.3 103.5	5 13.5 -19.1 103.2	4 17.6 -18.8 102.9	3 21.6 -18.6 102.6	2 25.6 -18.4 102.3
12°	5 50.0 -19.3 104.5	4 54.4 -19.1 104.1	3 58.8 -18.9 103.8	3 03.0 -18.7 103.5	2 07.2 -18.4 103.2
13°	5 30.7 -19.5 105.4	4 35.3 -19.2 105.1	3 39.9 -19.0 104.8	2 44.3 -18.7 104.5	1 48.8 -18.5 104.2
14°	5 11.2 -19.6 106.4	4 16.1 -19.3 106.1	3 20.9 -19.0 105.7	2 25.6 -18.7 105.4	1 30.3 -18.5 105.1
15°	4 51.6 -19.6 107.3	3 56.8 -19.3 107.0	3 01.9 -19.1 106.7	2 06.9 -18.8 106.4	1 11.8 -18.5 106.1
16°	4 32.0 -19.7 108.3	3 37.5 -19.4 107.9	2 42.8 -19.1 107.6	1 48.1 -18.8 107.3	0 53.3 -18.5 107.0
17°	4 12.3 -19.8 109.2	3 18.1 -19.5 108.9	2 23.7 -19.1 108.6	1 29.3 -18.8 108.3	0 34.8 -18.6 108.0
18°	3 52.5 -19.8 110.2	2 58.6 -19.5 109.8	2 04.6 -19.2 109.5	1 10.5 -18.9 109.2	0 16.2 -18.5 108.9
19°	3 32.7 -19.9 111.1	2 39.1 -19.6 110.8	1 45.4 -19.2 110.5	0 51.6 -18.9 110.2	-0 02.3 -18.5
20°	3 12.8 -20.0 112.0	2 19.5 -19.5 111.7	1 26.2 -19.2 111.4	0 32.7 -18.9 111.1	-0 20.8 -18.6
21°	2 52.8 -20.0 113.0	2 00.0 -19.7 112.7	1 07.0 -19.3 112.4	0 13.8 -18.8 112.1	-0 39.4 -18.5
22°	2 32.8 -20.0 113.9	1 40.3 -19.6 113.6	0 47.7 -19.3 113.3	-0 05.0 -18.9	-0 57.9 -18.5
23°	2 12.8 -20.1 114.9	1 20.7 -19.7 114.6	0 28.4 -19.2 114.3	-0 23.9 -18.9	-1 16.4 -18.5
24°	1 52.7 -20.1 115.8	1 01.0 -19.7 115.5	0 09.2 -19.3 115.2	-0 42.8 -18.9	-1 34.9 -18.4
25°	1 32.6 -20.1 116.8	0 41.3 -19.7 116.5	-0 10.1 -19.3	-1 01.7 -18.8	-1 53.3 -18.5
26°	1 12.5 -20.2 117.7	0 21.6 -19.7 117.4	-0 29.4 -19.2	-1 20.5 -18.8	-2 11.8 -18.4
27°	0 52.3 -20.1 118.6	0 01.9 -19.7 118.4	-0 48.6 -19.3	-1 39.3 -18.8	-2 30.2 -18.3
28°	0 32.2 -20.2 119.6	-0 17.8 -19.7	-1 07.9 -19.2	-1 58.1 -18.8	-2 48.5 -18.3
29°	0 12.0 -20.2 120.5	-0 37.5 -19.7	-1 27.1 -19.2	-2 16.9 -18.7	-3 06.8 -18.3

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 46.9 -17.7 91.5	3 49.5 -17.6 91.2	2 52.1 -17.6 90.9	1 54.8 -17.6 90.6	0 57.4 -17.6 90.3
1°	4 29.2 -17.7 92.4	3 31.9 -17.7 92.1	2 34.5 -17.6 91.8	1 37.2 -17.6 91.5	0 39.8 -17.5 91.2
2°	4 11.5 -17.8 93.4	3 14.2 -17.7 93.1	2 16.9 -17.7 92.8	1 19.6 -17.6 92.5	0 22.3 -17.6 92.2
3°	3 53.7 -17.8 94.3	2 56.5 -17.8 94.0	1 59.2 -17.7 93.7	1 02.0 -17.7 93.5	0 04.7 -17.6 93.2
4°	3 35.9 -18.0 95.3	2 38.7 -17.8 95.0	1 41.5 -17.7 94.7	0 44.3 -17.6 94.4	-0 12.9 -17.5
5°	3 17.9 -17.9 96.3	2 20.9 -17.9 96.0	1 23.8 -17.7 95.7	0 26.7 -17.7 95.4	-0 30.4 -17.6
6°	3 00.0 -18.0 97.2	2 03.0 -17.9 96.9	1 06.1 -17.8 96.6	0 09.0 -17.6 96.3	-0 48.0 -17.5
7°	2 42.0 -18.1 98.2	1 45.1 -17.9 97.9	0 48.3 -17.8 97.6	-0 08.6 -17.7	-1 05.5 -17.6
8°	2 23.9 -18.1 99.1	1 27.2 -17.9 98.8	0 30.5 -17.8 98.5	-0 26.3 -17.6	-1 23.1 -17.5
9°	2 05.8 -18.1 100.1	1 09.3 -18.0 99.8	0 12.7 -17.8 99.5	-0 43.9 -17.6	-1 40.6 -17.5
10°	1 47.7 -18.2 101.0	0 51.3 -18.0 100.7	-0 05.1 -17.8	-1 01.5 -17.7	-1 58.1 -17.4
11°	1 29.5 -18.2 102.0	0 33.3 -18.0 101.7	-0 22.9 -17.8	-1 19.2 -17.6	-2 15.5 -17.4
12°	1 11.3 -18.2 102.9	0 15.3 -17.9 102.6	-0 40.7 -17.8	-1 36.8 -17.5	-2 32.9 -17.4
13°	0 53.1 -18.2 103.9	-0 02.6 -18.0	-0 58.5 -17.7	-1 54.3 -17.6	-2 50.3 -17.3
14°	0 34.9 -18.3 104.8	-0 20.6 -18.0	-1 16.2 -17.8	-2 11.9 -17.5	-3 07.6 -17.2
15°	0 16.6 -18.2 105.8	-0 38.6 -18.0	-1 34.0 -17.7	-2 29.4 -17.4	-3 24.8 -17.2
16°	-0 01.6 -18.3	-0 56.6 -18.0	-1 51.7 -17.7	-2 46.8 -17.4	-3 42.0 -17.2
17°	-0 19.9 -18.2	-1 14.6 -17.9	-2 09.4 -17.6	-3 04.2 -17.4	-3 59.2 -17.1
18°	-0 38.1 -18.2	-1 32.5 -17.9	-2 27.0 -17.6	-3 21.6 -17.3	-4 16.3 -17.0
19°	-0 56.3 -18.2	-1 50.4 -17.9	-2 44.6 -17.6	-3 38.9 -17.2	-4 33.3 -16.9
20°	-1 14.5 -18.2	-2 08.3 -17.8	-3 02.2 -17.5	-3 56.1 -17.2	-4 50.2 -16.8
21°	-1 32.7 -18.2	-2 26.1 -17.9	-3 19.7 -17.4	-4 13.3 -17.1	-5 07.0 -16.8
22°	-1 50.9 -18.1	-2 44.0 -17.7	-3 37.1 -17.4	-4 30.4 -17.0	-5 23.8 -16.7
23°	-2 09.0 -18.1	-3 01.7 -17.7	-3 54.5 -17.4	-4 47.4 -17.0	-5 40.5 -16.5
24°	-2 27.1 -18.1	-3 19.4 -17.7	-4 11.9 -17.2	-5 04.4 -16.9	-5 57.0 -16.5
25°	-2 45.2 -18.0	-3 37.1 -17.6	-4 29.1 -17.2	-5 21.3 -16.7	-6 13.5 -16.4
26°	-3 03.2 -17.9	-3 54.7 -17.5	-4 46.3 -17.1	-5 38.0 -16.7	-6 29.9 -16.2
27°	-3 21.1 -17.9	-4 12.2 -17.5	-5 03.4 -17.0	-5 54.7 -16.6	-6 46.1 -16.2
28°	-3 39.0 -17.9	-4 29.7 -17.3	-5 20.4 -16.9	-6 11.3 -16.5	-7 02.3 -16.0
29°	-3 56.9 -17.7	-4 47.0 -17.3	-5 37.3 -16.9	-6 27.8 -16.3	-7 18.3 -15.9

Latitude 17°

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 -17.5 90.0	-0 57.4 -17.5			
1°	-0 17.5 -17.6	-1 14.9 -17.5			
2°	-0 35.1 -17.5	-1 32.4 -17.5			
3°	-0 52.6 -17.5	-1 49.9 -17.5			
4°	-1 10.1 -17.5	-2 07.4 -17.4			
5°	-1 27.6 -17.5	-2 24.8 -17.4			
6°	-1 45.1 -17.4	-2 42.2 -17.3			
7°	-2 02.5 -17.4	-2 59.5 -17.3			
8°	-2 19.9 -17.4	-3 16.8 -17.2			
9°	-2 37.3 -17.3	-3 34.0 -17.2			
10°	-2 54.6 -17.3	-3 51.2 -17.1			
11°	-3 11.9 -17.2	-4 08.3 -17.1			
12°	-3 29.1 -17.2	-4 25.4 -16.9			
13°	-3 46.3 -17.1	-4 42.3 -16.9			
14°	-4 03.4 -17.0	-4 59.2 -16.8			
15°	-4 20.4 -16.9	-5 16.0 -16.7			
16°	-4 37.3 -16.9	-5 32.7 -16.6			
17°	-4 54.2 -16.8	-5 49.3 -16.6			
18°	-5 11.0 -16.7	-6 05.9 -16.4			
19°	-5 27.7 -16.6	-6 22.3 -16.3			
20°	-5 44.3 -16.6	-6 38.6 -16.2			
21°	-6 00.9 -16.4	-6 54.8 -16.0			
22°	-6 17.3 -16.3	-7 10.8 -16.0			
23°	-6 33.6 -16.2	-7 26.8 -15.8			
24°	-6 49.8 -16.1	-7 42.6 -15.7			
25°	-7 05.9 -15.9	-7 58.3 -15.6			
26°	-7 21.8 -15.9	-8 13.9 -15.4			
27°	-7 37.7 -15.7	-8 29.3 -15.3			
28°	-7 53.4 -15.5	-8 44.6 -15.1			
29°	-8 08.9 -15.5	-8 59.7 -14.9			

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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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°	72 00.0 -60.0 180.0	71 58.4 -59.9 176.8	71 53.6 -59.7 173.6	71 45.6 -59.3 170.4	71 34.5 -58.7 167.2
1°	71 00.0 -60.0 180.0	70 58.5 -60.0 176.9	70 53.9 -59.7 173.9	70 46.3 -59.3 170.9	70 35.8 -58.9 167.9
2°	70 00.0 -60.0 180.0	69 58.5 -59.9 177.1	69 54.2 -59.7 174.2	69 47.0 -59.4 171.3	69 36.9 -58.9 168.5
3°	69 00.0 -60.0 180.0	68 58.6 -59.9 177.2	68 54.5 -59.8 174.4	68 47.6 -59.5 171.7	68 38.0 -59.0 169.0
4°	68 00.0 -60.0 180.0	67 58.7 -60.0 177.3	67 54.7 -59.8 174.7	67 48.1 -59.5 172.1	67 39.0 -59.2 169.5
5°	67 00.0 -60.0 180.0	66 58.7 -59.9 177.5	66 54.9 -59.8 174.9	66 48.6 -59.5 172.4	66 39.8 -59.2 169.9
6°	66 00.0 -60.0 180.0	65 58.8 -60.0 177.6	65 55.1 -59.8 175.1	65 49.1 -59.6 172.7	65 40.6 -59.2 170.3
7°	65 00.0 -60.0 180.0	64 58.8 -59.9 177.7	64 55.3 -59.8 175.3	64 49.5 -59.6 173.0	64 41.4 -59.3 170.7
8°	64 00.0 -60.0 180.0	63 58.9 -60.0 177.7	63 55.5 -59.8 175.5	63 49.9 -59.6 173.3	63 42.1 -59.3 171.0
9°	63 00.0 -60.0 180.0	62 58.9 -59.9 177.8	62 55.7 -59.9 175.7	62 50.3 -59.7 173.5	62 42.8 -59.4 171.4
10°	62 00.0 -60.0 180.0	61 59.0 -60.0 177.9	61 55.8 -59.8 175.8	61 50.6 -59.7 173.7	61 43.4 -59.5 171.7
11°	61 00.0 -60.0 180.0	60 59.0 -60.0 178.0	60 56.0 -59.9 176.0	60 50.9 -59.6 173.9	60 43.9 -59.4 171.9
12°	60 00.0 -60.0 180.0	59 59.0 -59.9 178.0	59 56.1 -59.9 176.1	59 51.3 -59.8 174.1	59 44.5 -59.5 172.2
13°	59 00.0 -60.0 180.0	58 59.1 -60.0 178.1	58 56.2 -59.8 176.2	58 51.5 -59.7 174.3	58 45.0 -59.5 172.5
14°	58 00.0 -60.0 180.0	57 59.1 -60.0 178.2	57 56.4 -59.9 176.3	57 51.8 -59.7 174.5	57 45.5 -59.6 172.7
15°	57 00.0 -60.0 180.0	56 59.1 -60.0 178.2	56 56.5 -59.9 176.5	56 52.1 -59.8 174.7	56 45.9 -59.6 172.9
16°	56 00.0 -60.0 180.0	55 59.1 -59.9 178.3	55 56.6 -59.9 176.6	55 52.3 -59.8 174.9	55 46.3 -59.5 173.2
17°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.3	54 56.7 -59.9 176.7	54 52.5 -59.7 175.0	54 46.8 -59.7 173.4
18°	54 00.0 -60.0 180.0	53 59.2 -60.0 178.4	53 56.8 -59.9 176.8	53 52.8 -59.8 175.2	53 47.1 -59.6 173.6
19°	53 00.0 -60.0 180.0	52 59.2 -60.0 178.4	52 56.9 -59.9 176.9	52 53.0 -59.8 175.3	52 47.5 -59.6 173.7
20°	52 00.0 -60.0 180.0	51 59.2 -59.9 178.5	51 57.0 -60.0 176.9	51 53.2 -59.8 175.4	51 47.9 -59.7 173.9
21°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.5	50 57.0 -59.9 177.0	50 53.4 -59.9 175.6	50 48.2 -59.7 174.1
22°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.6	49 57.1 -59.9 177.1	49 53.5 -59.8 175.7	49 48.5 -59.7 174.2
23°	49 00.0 -60.0 180.0	48 59.3 -60.0 178.6	48 57.2 -59.9 177.2	48 53.7 -59.8 175.8	48 48.8 -59.7 174.4
24°	48 00.0 -60.0 180.0	47 59.3 -60.0 178.6	47 57.3 -59.9 177.3	47 53.9 -59.8 175.9	47 49.1 -59.7 174.6
25°	47 00.0 -60.0 180.0	46 59.3 -59.9 178.7	46 57.4 -60.0 177.3	46 54.1 -59.9 176.0	46 49.4 -59.7 174.7
26°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.7	45 57.4 -59.9 177.4	45 54.2 -59.8 176.1	45 49.7 -59.7 174.8
27°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.7	44 57.5 -59.9 177.5	44 54.4 -59.9 176.2	44 50.0 -59.8 175.0
28°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.8	43 57.6 -60.0 177.5	43 54.5 -59.9 176.3	43 50.2 -59.7 175.1
29°	43 00.0 -60.0 180.0	42 59.4 -60.0 178.8	42 57.6 -59.9 177.6	42 54.6 -59.8 176.4	42 50.5 -59.8 175.2

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°	71 20.4 -58.0 164.2	71 03.5 -57.3 161.2	70 43.7 -56.3 158.3	70 21.4 -55.4 155.5	69 56.5 -54.3 152.9
1°	70 22.4 -58.2 165.0	70 06.2 -57.5 162.1	69 47.4 -56.7 159.3	69 26.0 -55.8 156.7	69 02.2 -54.8 154.1
2°	69 24.2 -58.4 165.7	69 08.7 -57.7 162.9	68 50.7 -57.0 160.3	68 30.2 -56.1 157.7	68 07.4 -55.2 155.2
3°	68 25.8 -58.5 166.3	68 11.0 -57.9 163.7	67 53.7 -57.2 161.1	67 34.1 -56.4 158.6	67 12.2 -55.6 156.2
4°	67 27.3 -58.7 166.9	67 13.1 -58.1 164.4	66 56.5 -57.4 161.9	66 37.7 -56.7 159.5	66 16.6 -55.9 157.2
5°	66 28.6 -58.7 167.4	66 15.0 -58.2 165.0	65 59.1 -57.6 162.6	65 41.0 -56.9 160.3	65 20.7 -56.2 158.1
6°	65 29.9 -58.9 167.9	65 16.8 -58.3 165.6	65 01.5 -57.8 163.3	64 44.1 -57.2 161.1	64 24.5 -56.4 158.9
7°	64 31.0 -58.9 168.4	64 18.5 -58.5 166.2	64 03.7 -57.9 163.9	63 46.9 -57.3 161.8	63 28.1 -56.7 159.7
8°	63 32.1 -59.0 168.8	63 20.0 -58.5 166.7	63 05.8 -58.0 164.5	62 49.6 -57.5 162.4	62 31.4 -56.9 160.4
9°	62 33.1 -59.0 169.2	62 21.5 -58.7 167.1	62 07.8 -58.2 165.1	61 52.1 -57.7 163.1	61 34.5 -57.1 161.1
10°	61 34.1 -59.1 169.6	61 22.8 -58.7 167.6	61 09.6 -58.3 165.6	60 54.4 -57.8 163.6	60 37.4 -57.2 161.7
11°	60 35.0 -59.2 170.0	60 24.1 -58.8 168.0	60 11.3 -58.4 166.1	59 56.6 -57.9 164.2	59 40.2 -57.4 162.3
12°	59 35.8 -59.2 170.3	59 25.3 -58.9 168.4	59 12.9 -58.5 166.5	58 58.7 -58.0 164.7	58 42.8 -57.6 162.9
13°	58 36.6 -59.3 170.6	58 26.4 -58.9 168.8	58 14.4 -58.6 167.0	58 00.7 -58.2 165.2	57 45.2 -57.7 163.4
14°	57 37.3 -59.3 170.9	57 27.5 -59.0 169.1	57 15.8 -58.6 167.4	57 02.5 -58.2 165.6	56 47.5 -57.8 163.9
15°	56 38.0 -59.3 171.2	56 28.5 -59.1 169.5	56 17.2 -58.7 167.8	56 04.3 -58.4 166.1	55 49.7 -57.9 164.4
16°	55 38.7 -59.4 171.5	55 29.4 -59.1 169.8	55 18.5 -58.8 168.1	55 05.9 -58.4 166.5	54 51.8 -58.0 164.9
17°	54 39.3 -59.4 171.7	54 30.3 -59.1 170.1	54 19.7 -58.8 168.5	54 07.5 -58.5 166.9	53 53.8 -58.1 165.3
18°	53 39.9 -59.4 172.0	53 31.2 -59.2 170.4	53 20.9 -58.9 168.8	53 09.0 -58.5 167.2	52 55.7 -58.2 165.7
19°	52 40.5 -59.4 172.2	52 32.0 -59.2 170.6	52 22.0 -58.9 169.1	52 10.5 -58.6 167.6	51 57.5 -58.3 166.1
20°	51 41.1 -59.5 172.4	51 32.8 -59.2 170.9	51 23.1 -59.0 169.4	51 11.9 -58.7 168.0	50 59.2 -58.3 166.5
21°	50 41.6 -59.5 172.6	50 33.6 -59.3 171.2	50 24.1 -59.0 169.7	50 13.2 -58.7 168.3	50 00.9 -58.4 166.9
22°	49 42.1 -59.5 172.8	49 34.3 -59.3 171.4	49 25.1 -59.1 170.0	49 14.5 -58.8 168.6	49 02.5 -58.5 167.2
23°	48 42.6 -59.5 173.0	48 35.0 -59.4 171.6	48 26.0 -59.1 170.3	48 15.7 -58.8 168.9	48 04.0 -58.5 167.6
24°	47 43.1 -59.6 173.2	47 35.6 -59.3 171.9	47 26.9 -59.1 170.5	47 16.9 -58.9 169.2	47 05.5 -58.6 167.9
25°	46 43.5 -59.6 173.4	46 36.3 -59.4 172.1	46 27.8 -59.2 170.8	46 18.0 -58.9 169.5	46 06.9 -58.6 168.2
26°	45 43.9 -59.5 173.6	45 36.9 -59.4 172.3	45 28.6 -59.2 171.0	45 19.1 -59.0 169.8	45 08.3 -58.7 168.5
27°	44 44.4 -59.6 173.7	44 37.5 -59.4 172.5	44 29.4 -59.2 171.2	44 20.1 -58.9 170.0	44 09.6 -58.7 168.8
28°	43 44.8 -59.6 173.9	43 38.1 -59.5 172.7	43 30.2 -59.2 171.5	43 21.2 -59.1 170.3	43 10.9 -58.7 169.1
29°	42 45.2 -59.7 174.0	42 38.6 -59.4 172.9	42 31.0 -59.3 171.7	42 22.1 -59.0 170.5	42 12.2 -58.8 169.4

Latitude 18°

Declination CONTRARY name to Latitude

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°	69 29.4 -53.2 150.3	69 00.0 -52.1 147.8	68 28.7 -51.0 145.5	67 55.4 -49.7 143.2	67 20.4 -48.6 141.1
1°	68 36.2 -53.8 151.6	68 07.9 -52.6 149.2	67 37.7 -51.6 146.9	67 05.7 -50.5 144.7	66 31.8 -49.3 142.6
2°	67 42.4 -54.3 152.8	67 15.3 -53.3 150.4	66 46.1 -52.2 148.2	66 15.2 -51.2 146.1	65 42.5 -50.1 144.0
3°	66 48.1 -54.6 153.9	66 22.0 -53.7 151.6	65 53.9 -52.7 149.4	65 24.0 -51.7 147.3	64 52.4 -50.8 145.3
4°	65 53.5 -55.1 154.9	65 28.3 -54.2 152.7	65 01.2 -53.3 150.6	64 32.3 -52.3 148.5	64 01.6 -51.3 146.6
5°	64 58.4 -55.4 155.9	64 34.1 -54.6 153.7	64 07.9 -53.7 151.7	63 40.0 -52.8 149.7	63 10.3 -51.9 147.7
6°	64 03.0 -55.7 156.8	63 39.5 -54.9 154.7	63 14.2 -54.1 152.7	62 47.2 -53.3 150.7	62 18.4 -52.4 148.8
7°	63 07.3 -56.0 157.6	62 44.6 -55.2 155.6	62 20.1 -54.4 153.6	61 53.9 -53.6 151.7	61 26.0 -52.8 149.9
8°	62 11.3 -56.2 158.4	61 49.4 -55.6 156.4	61 25.7 -54.8 154.5	61 00.3 -54.1 152.6	60 33.2 -53.2 150.8
9°	61 15.1 -56.5 159.1	60 53.8 -55.8 157.2	60 30.9 -55.1 155.3	60 06.2 -54.3 153.5	59 40.0 -53.6 151.8
10°	60 18.6 -56.7 159.8	59 58.0 -56.0 157.9	59 35.8 -55.4 156.1	59 11.9 -54.7 154.4	58 46.4 -53.9 152.6
11°	59 21.9 -56.8 160.5	59 02.0 -56.2 158.7	58 40.4 -55.6 156.9	58 17.2 -54.9 155.2	57 52.5 -54.3 153.5
12°	58 25.1 -57.0 161.1	58 05.8 -56.5 159.3	57 44.8 -55.8 157.6	57 22.3 -55.2 155.9	56 58.2 -54.5 154.3
13°	57 28.1 -57.2 161.7	57 09.3 -56.6 160.0	56 49.0 -56.1 158.3	56 27.1 -55.5 156.6	56 03.7 -54.8 155.0
14°	56 30.9 -57.3 162.2	56 12.7 -56.8 160.6	55 52.9 -56.2 158.9	55 31.6 -55.6 157.3	55 08.9 -55.0 155.7
15°	55 33.6 -57.5 162.7	55 15.9 -57.0 161.1	54 56.7 -56.4 159.5	54 36.0 -55.9 158.0	54 13.9 -55.3 156.4
16°	54 36.1 -57.5 163.3	54 18.9 -57.1 161.7	54 00.3 -56.6 160.1	53 40.1 -56.0 158.6	53 18.6 -55.5 157.1
17°	53 38.6 -57.7 163.7	53 21.8 -57.2 162.2	53 03.7 -56.8 160.7	52 44.1 -56.2 159.2	52 23.1 -55.6 157.7
18°	52 40.9 -57.8 164.2	52 24.6 -57.3 162.7	52 06.9 -56.8 161.2	51 47.9 -56.4 159.8	51 27.5 -55.9 158.3
19°	51 43.1 -57.9 164.6	51 27.3 -57.5 163.2	51 10.1 -57.0 161.7	50 51.5 -56.5 160.3	50 31.6 -56.0 158.9
20°	50 45.2 -57.9 165.1	50 29.8 -57.5 163.6	50 13.1 -57.2 162.2	49 55.0 -56.7 160.8	49 35.6 -56.2 159.5
21°	49 47.3 -58.1 165.5	49 32.3 -57.7 164.1	49 15.9 -57.2 162.7	48 58.3 -56.8 161.3	48 39.4 -56.3 160.0
22°	48 49.2 -58.1 165.8	48 34.6 -57.7 164.5	48 18.7 -57.3 163.2	48 01.5 -56.9 161.8	47 43.1 -56.4 160.5
23°	47 51.1 -58.2 166.2	47 36.9 -57.9 164.9	47 21.4 -57.5 163.6	47 04.6 -57.0 162.3	46 46.7 -56.6 161.0
24°	46 52.9 -58.2 166.6	46 39.0 -57.9 165.3	46 23.9 -57.5 164.0	46 07.6 -57.1 162.8	45 50.1 -56.7 161.5
25°	45 54.7 -58.4 166.9	45 41.1 -57.9 165.7	45 26.4 -57.6 164.4	45 10.5 -57.2 163.2	44 53.4 -56.8 162.0
26°	44 56.3 -58.3 167.3	44 43.2 -58.1 166.0	44 28.8 -57.7 164.8	44 13.3 -57.3 163.6	43 56.6 -56.9 162.4
27°	43 58.0 -58.5 167.6	43 45.1 -58.1 166.4	43 31.1 -57.8 165.2	43 16.0 -57.4 164.0	42 59.7 -57.0 162.9
28°	42 59.5 -58.4 167.9	42 47.0 -58.2 166.7	42 33.3 -57.8 165.6	42 18.6 -57.5 164.4	42 02.7 -57.1 163.3
29°	42 01.1 -58.6 168.2	41 48.8 -58.2 167.1	41 35.5 -57.9 165.9	41 21.1 -57.5 164.8	41 05.6 -57.2 163.7

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°	66 43.8 -47.4 139.1	66 05.7 -46.3 137.1	65 26.2 -45.1 135.3	64 45.4 -44.0 133.6	64 03.5 -42.9 131.9
1°	65 56.4 -48.3 140.6	65 19.4 -47.1 138.7	64 41.1 -46.1 136.9	64 01.4 -44.9 135.1	63 20.6 -43.9 133.5
2°	65 08.1 -49.0 142.0	64 32.3 -48.0 140.2	63 55.0 -46.8 138.3	63 16.5 -45.9 136.6	62 36.7 -44.8 135.0
3°	64 19.1 -49.7 143.4	63 44.3 -48.7 141.5	63 08.2 -47.7 139.7	62 30.6 -46.6 138.0	61 51.9 -45.7 136.4
4°	63 29.4 -50.4 144.7	62 55.6 -49.3 142.8	62 20.5 -48.4 141.1	61 44.0 -47.4 139.4	61 06.2 -46.4 137.8
5°	62 39.0 -50.9 145.9	62 06.3 -50.0 144.1	61 32.1 -49.1 142.3	60 56.6 -48.1 140.7	60 19.8 -47.2 139.1
6°	61 48.1 -51.5 147.0	61 16.3 -50.6 145.2	60 43.0 -49.6 143.5	60 08.5 -48.8 141.9	59 32.6 -47.8 140.3
7°	60 56.6 -51.9 148.1	60 25.7 -51.1 146.3	59 53.4 -50.2 144.7	59 19.7 -49.3 143.0	58 44.8 -48.5 141.5
8°	60 04.7 -52.4 149.1	59 34.6 -51.5 147.4	59 03.2 -50.8 145.7	58 30.4 -49.9 144.1	57 56.3 -49.0 142.6
9°	59 12.3 -52.8 150.0	58 43.1 -52.1 148.4	58 12.4 -51.1 146.8	57 40.5 -50.3 145.2	57 07.3 -49.5 143.7
10°	58 19.5 -53.2 151.0	57 51.0 -52.4 149.3	57 21.3 -51.7 147.7	56 50.2 -50.9 146.2	56 17.8 -50.0 144.7
11°	57 26.3 -53.5 151.8	56 58.6 -52.7 150.2	56 29.6 -52.0 148.7	55 59.3 -51.2 147.2	55 27.8 -50.5 145.7
12°	56 32.8 -53.9 152.7	56 05.9 -53.2 151.1	55 37.6 -52.4 149.6	55 08.1 -51.7 148.1	54 37.3 -50.9 146.6
13°	55 38.9 -54.1 153.5	55 12.7 -53.4 151.9	54 45.2 -52.7 150.4	54 16.4 -52.0 149.0	53 46.4 -51.3 147.5
14°	54 44.8 -54.4 154.2	54 19.3 -53.8 152.7	53 52.5 -53.1 151.2	53 24.4 -52.4 149.8	52 55.1 -51.7 148.4
15°	53 50.4 -54.7 154.9	53 25.5 -54.0 153.5	52 59.4 -53.4 152.0	52 32.0 -52.7 150.6	52 03.4 -52.0 149.2
16°	52 55.7 -54.9 155.6	52 31.5 -54.2 154.2	52 06.0 -53.6 152.8	51 39.3 -53.0 151.4	51 11.4 -52.3 150.0
17°	52 00.8 -55.1 156.3	51 37.3 -54.6 154.9	51 12.4 -53.9 153.5	50 46.3 -53.2 152.1	50 19.1 -52.6 150.8
18°	51 05.7 -55.3 156.9	50 42.7 -54.7 155.5	50 18.5 -54.1 154.2	49 53.1 -53.6 152.9	49 26.5 -52.9 151.6
19°	50 10.4 -55.4 157.5	49 48.0 -54.9 156.2	49 24.4 -54.4 154.9	48 59.5 -53.7 153.6	48 33.6 -53.2 152.3
20°	49 15.0 -55.7 158.1	48 53.1 -55.1 156.8	48 30.0 -54.5 155.5	48 05.8 -54.0 154.2	47 40.4 -53.4 153.0
21°	48 19.3 -55.8 158.7	47 58.0 -55.3 157.4	47 35.5 -54.8 156.1	47 11.8 -54.2 154.9	46 47.0 -53.6 153.6
22°	47 23.5 -56.0 159.2	47 02.7 -55.5 158.0	46 40.7 -54.9 156.7	46 17.6 -54.4 155.5	45 53.4 -53.9 154.3
23°	46 27.5 -56.1 159.8	46 07.2 -55.6 158.5	45 45.8 -55.2 157.3	45 23.2 -54.6 156.1	44 59.5 -54.0 154.9
24°	45 31.4 -56.2 160.3	45 11.6 -55.8 159.1	44 50.6 -55.2 157.9	44 28.6 -54.7 156.7	44 05.5 -54.2 155.5
25°	44 35.2 -56.4 160.8	44 15.8 -55.9 159.6	43 55.4 -55.4 158.4	43 33.9 -55.0 157.3	43 11.3 -54.4 156.1
26°	43 38.8 -56.5 161.2	43 19.9 -56.0 160.1	43 00.0 -55.6 158.9	42 38.9 -55.0 157.8	42 16.9 -54.6 156.7
27°	42 42.3 -56.5 161.7	42 23.9 -56.2 160.6	42 04.4 -55.7 159.5	41 43.9 -55.3 158.3	41 22.3 -54.7 157.3
28°	41 45.8 -56.7 162.2	41 27.7 -56.2 161.0	41 08.7 -55.8 160.0	40 48.6 -55.3 158.9	40 27.6 -54.9 157.8
29°	40 49.1 -56.8 162.6	40 31.5 -56.4 161.5	40 12.9 -56.0 160.4	39 53.3 -55.5 159.4	39 32.7 -55.0 158.3

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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°	63 20.5 -41.8 130.3	62 36.5 -40.8 128.8	61 51.6 -39.8 127.4	61 05.9 -38.9 126.1	60 19.4 -38.0 124.8
1°	62 38.7 -42.9 131.9	61 55.7 -41.9 130.4	61 11.8 -40.9 129.0	60 27.0 -40.0 127.6	59 41.4 -39.0 126.3
2°	61 55.8 -43.8 133.4	61 13.8 -42.8 131.9	60 30.9 -41.9 130.5	59 47.0 -40.9 129.1	59 02.4 -40.1 127.8
3°	61 12.0 -44.7 134.8	60 31.0 -43.7 133.4	59 49.0 -42.8 131.9	59 06.1 -41.9 130.5	58 22.3 -40.9 129.2
4°	60 27.3 -45.5 136.2	59 47.3 -44.6 134.7	59 06.2 -43.6 133.3	58 24.2 -42.7 131.9	57 41.4 -41.9 130.6
5°	59 41.8 -46.2 137.5	59 02.7 -45.3 136.0	58 22.6 -44.4 134.6	57 41.5 -43.5 133.3	56 59.5 -42.6 131.9
6°	58 55.6 -46.9 138.8	58 17.4 -46.0 137.3	57 38.2 -45.1 135.9	56 58.0 -44.3 134.5	56 16.9 -43.4 133.2
7°	58 08.7 -47.6 140.0	57 31.4 -46.7 138.5	56 53.1 -45.8 137.1	56 13.7 -44.9 135.8	55 33.5 -44.2 134.5
8°	57 21.1 -48.2 141.1	56 44.7 -47.3 139.7	56 07.3 -46.5 138.3	55 28.8 -45.6 136.9	54 49.3 -44.7 135.6
9°	56 32.9 -48.7 142.2	55 57.4 -47.9 140.8	55 20.8 -47.1 139.4	54 43.2 -46.3 138.1	54 04.6 -45.5 136.8
10°	55 44.2 -49.2 143.3	55 09.5 -48.4 141.8	54 33.7 -47.6 140.5	53 56.9 -46.8 139.2	53 19.1 -46.0 137.9
11°	54 55.0 -49.7 144.3	54 21.1 -48.9 142.9	53 46.1 -48.1 141.5	53 10.1 -47.3 140.2	52 33.1 -46.5 139.0
12°	54 05.3 -50.1 145.2	53 32.2 -49.4 143.9	52 58.0 -48.6 142.5	52 22.8 -47.9 141.2	51 46.6 -47.1 140.0
13°	53 15.2 -50.6 146.2	52 42.8 -49.8 144.8	52 09.4 -49.1 143.5	51 34.9 -48.3 142.2	50 59.5 -47.6 141.0
14°	52 24.6 -50.9 147.0	51 53.0 -50.2 145.7	51 20.3 -49.5 144.4	50 46.6 -48.7 143.2	50 11.9 -48.0 141.9
15°	51 33.7 -51.4 147.9	51 02.8 -50.6 146.6	50 30.8 -49.9 145.3	49 57.9 -49.2 144.1	49 23.9 -48.5 142.9
16°	50 42.3 -51.6 148.7	50 12.2 -51.0 147.4	49 40.9 -50.2 146.2	49 08.7 -49.6 145.0	48 35.4 -48.8 143.8
17°	49 50.7 -52.0 149.5	49 21.2 -51.3 148.3	48 50.7 -50.7 147.0	48 19.1 -49.9 145.8	47 46.6 -49.3 144.6
18°	48 58.7 -52.2 150.3	48 29.9 -51.6 149.0	48 00.0 -50.9 147.8	47 29.2 -50.3 146.6	46 57.3 -49.6 145.5
19°	48 06.5 -52.6 151.0	47 38.3 -51.9 149.8	47 09.1 -51.3 148.6	46 38.9 -50.6 147.4	46 07.7 -50.0 146.3
20°	47 13.9 -52.8 151.8	46 46.4 -52.2 150.5	46 17.8 -51.5 149.4	45 48.3 -50.9 148.2	45 17.7 -50.2 147.1
21°	46 21.1 -53.0 152.4	45 54.2 -52.4 151.3	45 26.3 -51.8 150.1	44 57.4 -51.2 149.0	44 27.5 -50.6 147.9
22°	45 28.1 -53.3 153.1	45 01.8 -52.7 152.0	44 34.5 -52.1 150.8	44 06.2 -51.5 149.7	43 36.9 -50.9 148.6
23°	44 34.8 -53.4 153.8	44 09.1 -52.9 152.6	43 42.4 -52.3 151.5	43 14.7 -51.8 150.4	42 46.0 -51.1 149.3
24°	43 41.4 -53.7 154.4	43 16.2 -53.1 153.3	42 50.1 -52.6 152.2	42 22.9 -51.9 151.1	41 54.9 -51.4 150.0
25°	42 47.7 -53.9 155.0	42 23.1 -53.4 153.9	41 57.5 -52.8 152.8	41 31.0 -52.2 151.8	41 03.5 -51.6 150.7
26°	41 53.8 -54.1 155.6	41 29.7 -53.5 154.5	41 04.7 -52.9 153.5	40 38.8 -52.4 152.4	40 11.9 -51.8 151.4
27°	40 59.7 -54.2 156.2	40 36.2 -53.7 155.1	40 11.8 -53.2 154.1	39 46.4 -52.7 153.1	39 20.1 -52.1 152.1
28°	40 05.5 -54.4 156.7	39 42.5 -53.9 155.7	39 18.6 -53.4 154.7	38 53.7 -52.8 153.7	38 28.0 -52.3 152.7
29°	39 11.1 -54.5 157.3	38 48.6 -54.0 156.3	38 25.2 -53.5 155.3	38 00.9 -53.0 154.3	37 35.7 -52.4 153.3

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°	59 32.2 -37.1 123.5	58 44.3 -36.3 122.4	57 55.8 -35.5 121.2	57 06.7 -34.7 120.2	56 17.1 -33.9 119.1
1°	58 55.1 -38.2 125.1	58 08.0 -37.3 123.9	57 20.3 -36.5 122.7	56 32.0 -35.7 121.7	55 43.2 -35.0 120.6
2°	58 16.9 -39.2 126.5	57 30.7 -38.3 125.3	56 43.8 -37.5 124.2	55 56.3 -36.7 123.1	55 08.2 -35.9 122.0
3°	57 37.7 -40.1 128.0	56 52.4 -39.3 126.8	56 06.3 -38.4 125.6	55 19.6 -37.6 124.5	54 32.3 -36.9 123.4
4°	56 57.6 -40.9 129.4	56 13.1 -40.1 128.1	55 27.9 -39.3 127.0	54 42.0 -38.6 125.9	53 55.4 -37.7 124.8
5°	56 16.7 -41.8 130.7	55 33.0 -41.0 129.5	54 48.6 -40.2 128.3	54 03.4 -39.3 127.2	53 17.7 -38.6 126.1
6°	55 34.9 -42.6 132.0	54 52.0 -41.7 130.7	54 08.4 -40.9 129.6	53 24.1 -40.2 128.5	52 39.1 -39.4 127.4
7°	54 52.3 -43.3 133.2	54 10.3 -42.5 132.0	53 27.5 -41.7 130.8	52 43.9 -40.9 129.7	51 59.7 -40.2 128.6
8°	54 09.0 -44.0 134.4	53 27.8 -43.2 133.2	52 45.8 -42.4 132.0	52 03.0 -41.6 130.9	51 19.5 -40.8 129.8
9°	53 25.0 -44.6 135.5	52 44.6 -43.8 134.3	52 03.4 -43.0 133.2	51 21.4 -42.2 132.1	50 38.7 -41.5 131.0
10°	52 40.4 -45.2 136.7	52 00.8 -44.4 135.5	51 20.4 -43.7 134.3	50 39.2 -43.0 133.2	49 57.2 -42.2 132.1
11°	51 55.2 -45.8 137.7	51 16.4 -45.0 136.5	50 36.7 -44.2 135.4	49 56.2 -43.5 134.3	49 15.0 -42.8 133.2
12°	51 09.4 -46.3 138.8	50 31.4 -45.6 137.6	49 52.5 -44.9 136.4	49 12.7 -44.0 135.3	48 32.2 -43.3 134.3
13°	50 23.1 -46.8 139.8	49 45.8 -46.1 138.6	49 07.6 -45.3 137.5	48 28.7 -44.7 136.4	47 48.9 -43.9 135.3
14°	49 36.3 -47.3 140.7	48 59.7 -46.6 139.6	48 22.3 -45.8 138.5	47 44.0 -45.1 137.4	47 05.0 -44.4 136.3
15°	48 49.0 -47.8 141.7	48 13.1 -47.0 140.5	47 36.5 -46.4 139.4	46 58.9 -45.6 138.3	46 20.6 -44.9 137.3
16°	48 01.2 -48.1 142.6	47 26.1 -47.4 141.5	46 50.1 -46.7 140.4	46 13.3 -46.0 139.3	45 35.7 -45.4 138.2
17°	47 13.1 -48.6 143.5	46 38.7 -47.9 142.4	46 03.4 -47.2 141.3	45 27.3 -46.5 140.2	44 50.3 -45.8 139.2
18°	46 24.5 -48.9 144.3	45 50.8 -48.3 143.2	45 16.2 -47.6 142.2	44 40.8 -46.9 141.1	44 04.5 -46.2 140.1
19°	45 35.6 -49.3 145.2	45 02.5 -48.6 144.1	44 28.6 -47.9 143.0	43 53.9 -47.3 142.0	43 18.3 -46.6 141.0
20°	44 46.3 -49.6 146.0	44 13.9 -49.0 144.9	43 40.7 -48.3 143.9	43 06.6 -47.7 142.8	42 31.7 -47.0 141.8
21°	43 56.7 -50.0 146.8	43 24.9 -49.3 145.7	42 52.4 -48.7 144.7	42 18.9 -47.9 143.6	41 44.7 -47.3 142.7
22°	43 06.7 -50.2 147.5	42 35.6 -49.6 146.5	42 03.7 -49.0 145.5	41 31.0 -48.4 144.5	40 57.4 -47.7 143.5
23°	42 16.5 -50.5 148.3	41 46.0 -49.8 147.2	41 14.7 -49.2 146.2	40 42.6 -48.6 145.2	40 09.7 -48.0 144.3
24°	41 26.0 -50.8 149.0	40 56.2 -50.2 148.0	40 25.5 -49.6 147.0	39 54.0 -49.0 146.0	39 21.7 -48.3 145.1
25°	40 35.2 -51.0 149.7	40 06.0 -50.5 148.7	39 35.9 -49.8 147.7	39 05.0 -49.2 146.8	38 33.4 -48.6 145.8
26°	39 44.2 -51.3 150.4	39 15.5 -50.6 149.4	38 46.1 -50.1 148.4	38 15.8 -49.5 147.5	37 44.8 -48.9 146.6
27°	38 52.9 -51.5 151.1	38 24.9 -51.0 150.1	37 56.0 -50.3 149.1	37 26.3 -49.7 148.2	36 55.9 -49.2 147.3
28°	38 01.4 -51.7 151.7	37 33.9 -51.1 150.8	37 05.7 -50.6 149.8	36 36.6 -50.0 148.9	36 06.7 -49.3 148.0
29°	37 09.7 -51.9 152.4	36 42.8 -51.3 151.4	36 15.1 -50.8 150.5	35 46.6 -50.2 149.6	35 17.4 -49.7 148.7

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°	55 27.0 -33.2 118.2	54 36.5 -32.5 117.2	53 45.6 -31.9 116.3	52 54.2 -31.2 115.4	52 02.5 -30.6 114.6
1°	54 53.8 -34.2 119.6	54 04.0 -33.6 118.7	53 13.7 -32.9 117.7	52 23.0 -32.2 116.9	51 31.9 -31.6 116.0
2°	54 19.6 -35.2 121.0	53 30.4 -34.5 120.1	52 40.8 -33.8 119.1	51 50.8 -33.2 118.2	51 00.3 -32.5 117.4
3°	53 44.4 -36.2 122.4	52 55.9 -35.4 121.4	52 07.0 -34.7 120.5	51 17.6 -34.1 119.6	50 27.8 -33.5 118.7
4°	53 08.2 -37.0 123.8	52 20.5 -36.3 122.8	51 32.3 -35.6 121.8	50 43.5 -34.9 120.9	49 54.3 -34.2 120.0
5°	52 31.2 -37.8 125.1	51 44.2 -37.1 124.1	50 56.7 -36.4 123.1	50 08.6 -35.7 122.2	49 20.1 -35.1 121.3
6°	51 53.4 -38.6 126.3	51 07.1 -37.9 125.3	50 20.3 -37.2 124.3	49 32.9 -36.5 123.4	48 45.0 -35.8 122.5
7°	51 14.8 -39.4 127.6	50 29.2 -38.7 126.5	49 43.1 -38.0 125.6	48 56.4 -37.3 124.6	48 09.2 -36.6 123.7
8°	50 35.4 -40.1 128.7	49 50.5 -39.3 127.7	49 05.1 -38.7 126.8	48 19.1 -38.0 125.8	47 32.6 -37.3 124.9
9°	49 55.3 -40.8 129.9	49 11.2 -40.1 128.9	48 26.4 -39.3 127.9	47 41.1 -38.6 127.0	46 55.3 -38.0 126.0
10°	49 14.5 -41.4 131.0	48 31.1 -40.7 130.0	47 47.1 -40.0 129.0	47 02.5 -39.3 128.1	46 17.3 -38.6 127.2
11°	48 33.1 -42.1 132.1	47 50.4 -41.3 131.1	47 07.1 -40.6 130.1	46 23.2 -40.0 129.2	45 38.7 -39.3 128.3
12°	47 51.0 -42.6 133.2	47 09.1 -41.9 132.2	46 26.5 -41.2 131.2	45 43.2 -40.5 130.3	44 59.4 -39.8 129.3
13°	47 08.4 -43.2 134.3	46 27.2 -42.5 133.2	45 45.3 -41.8 132.3	45 02.7 -41.1 131.3	44 19.6 -40.4 130.4
14°	46 25.2 -43.7 135.3	45 44.7 -43.0 134.3	45 03.5 -42.3 133.3	44 21.6 -41.6 132.3	43 39.2 -41.0 131.4
15°	45 41.5 -44.2 136.3	45 01.7 -43.5 135.3	44 21.2 -42.8 134.3	43 40.0 -42.1 133.3	42 58.2 -41.5 132.4
16°	44 57.3 -44.6 137.2	44 18.2 -44.0 136.2	43 38.4 -43.3 135.3	42 57.9 -42.6 134.3	42 16.7 -41.9 133.4
17°	44 12.7 -45.2 138.2	43 34.2 -44.4 137.2	42 55.1 -43.8 136.2	42 15.3 -43.1 135.3	41 34.8 -42.4 134.4
18°	43 27.5 -45.5 139.1	42 49.8 -44.9 138.1	42 11.3 -44.2 137.1	41 32.2 -43.6 136.2	40 52.4 -42.9 135.3
19°	42 42.0 -45.9 140.0	42 04.9 -45.3 139.0	41 27.1 -44.6 138.0	40 48.6 -43.9 137.1	40 09.5 -43.3 136.2
20°	41 56.1 -46.4 140.8	41 19.6 -45.6 139.9	40 42.5 -45.0 138.9	40 04.7 -44.4 138.0	39 26.2 -43.7 137.1
21°	41 09.7 -46.7 141.7	40 34.0 -46.1 140.7	39 57.5 -45.4 139.8	39 20.3 -44.7 138.9	38 42.5 -44.1 138.0
22°	40 23.0 -47.0 142.5	39 47.9 -46.4 141.6	39 12.1 -45.8 140.7	38 35.6 -45.1 139.8	37 58.4 -44.5 138.9
23°	39 36.0 -47.4 143.3	39 01.5 -46.7 142.4	38 26.3 -46.1 141.5	37 50.5 -45.5 140.6	37 13.9 -44.8 139.7
24°	38 48.6 -47.7 144.1	38 14.8 -47.1 143.2	37 40.2 -46.4 142.3	37 05.0 -45.8 141.4	36 29.1 -45.2 140.6
25°	38 00.9 -48.0 144.9	37 27.7 -47.3 144.0	36 53.8 -46.7 143.1	36 19.2 -46.1 142.2	35 43.9 -45.5 141.4
26°	37 12.9 -48.2 145.6	36 40.4 -47.7 144.7	36 07.1 -47.1 143.9	35 33.1 -46.4 143.0	34 58.4 -45.8 142.2
27°	36 24.7 -48.6 146.4	35 52.7 -47.9 145.5	35 20.0 -47.3 144.6	34 46.7 -46.7 143.8	34 12.6 -46.1 143.0
28°	35 36.1 -48.8 147.1	35 04.8 -48.2 146.2	34 32.7 -47.6 145.4	34 00.0 -47.0 144.5	33 26.5 -46.3 143.7
29°	34 47.3 -49.0 147.8	34 16.6 -48.5 147.0	33 45.1 -47.8 146.1	33 13.0 -47.3 145.3	32 40.2 -46.7 144.5

Dec	LHA 035° / 325°	LHA 036° / 324°	LHA 037° / 323°	LHA 038° / 322°	LHA 039° / 321°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	51 10.5 -30.1 113.8	50 18.1 -29.5 113.0	49 25.5 -29.0 112.3	48 32.5 -28.4 111.6	47 39.3 -27.9 110.9
1°	50 40.4 -31.0 115.2	49 48.6 -30.4 114.4	48 56.5 -29.9 113.6	48 04.1 -29.4 112.9	47 11.4 -28.9 112.2
2°	50 09.4 -31.9 116.5	49 18.2 -31.4 115.7	48 26.6 -30.8 115.0	47 34.7 -30.2 114.2	46 42.5 -29.7 113.5
3°	49 37.5 -32.8 117.8	48 46.8 -32.1 117.0	47 55.8 -31.6 116.2	47 04.5 -31.1 115.5	46 12.8 -30.5 114.7
4°	49 04.7 -33.6 119.1	48 14.7 -33.1 118.3	47 24.2 -32.4 117.5	46 33.4 -31.8 116.7	45 42.3 -31.3 116.0
5°	48 31.1 -34.5 120.4	47 41.6 -33.8 119.5	46 51.8 -33.2 118.7	46 01.6 -32.7 118.0	45 11.0 -32.1 117.2
6°	47 56.6 -35.2 121.6	47 07.8 -34.5 120.8	46 18.6 -34.0 119.9	45 28.9 -33.3 119.2	44 38.9 -32.8 118.4
7°	47 21.4 -35.9 122.8	46 33.3 -35.3 122.0	45 44.6 -34.7 121.1	44 55.6 -34.1 120.3	44 06.1 -33.5 119.6
8°	46 45.5 -36.6 124.0	45 58.0 -36.1 123.1	45 09.9 -35.3 122.3	44 21.5 -34.8 121.5	43 32.6 -34.1 120.7
9°	46 08.9 -37.4 125.1	45 21.9 -36.6 124.3	44 34.6 -36.1 123.4	43 46.7 -35.4 122.6	42 58.5 -34.9 121.8
10°	45 31.5 -37.9 126.3	44 45.3 -37.3 125.4	43 58.5 -36.7 124.6	43 11.3 -36.1 123.7	42 23.6 -35.4 122.9
11°	44 53.6 -38.6 127.4	44 08.0 -38.0 126.5	43 21.8 -37.3 125.7	42 35.2 -36.6 124.8	41 48.2 -36.1 124.0
12°	44 15.0 -39.2 128.4	43 30.0 -38.5 127.6	42 44.5 -37.9 126.7	41 58.6 -37.3 125.9	41 12.1 -36.7 125.1
13°	43 35.8 -39.7 129.5	42 51.5 -39.1 128.6	42 06.6 -38.4 127.8	41 21.3 -37.8 126.9	40 35.4 -37.2 126.1
14°	42 56.1 -40.3 130.5	42 12.4 -39.6 129.7	41 28.2 -39.0 128.8	40 43.5 -38.4 128.0	39 58.2 -37.7 127.2
15°	42 15.8 -40.8 131.5	41 32.8 -40.2 130.7	40 49.2 -39.5 129.8	40 05.1 -38.9 129.0	39 20.5 -38.2 128.2
16°	41 35.0 -41.3 132.5	40 52.6 -40.6 131.6	40 09.7 -40.0 130.8	39 26.2 -39.3 130.0	38 42.3 -38.8 129.2
17°	40 53.7 -41.8 133.5	40 12.0 -41.1 132.6	39 29.7 -40.5 131.8	38 46.9 -39.9 131.0	38 03.5 -39.2 130.2
18°	40 11.9 -42.2 134.4	39 30.9 -41.6 133.6	38 49.2 -40.9 132.7	38 07.0 -40.3 131.9	37 24.3 -39.7 131.1
19°	39 29.7 -42.7 135.3	38 49.3 -42.0 134.5	38 08.3 -41.4 133.7	37 26.7 -40.7 132.8	36 44.6 -40.1 132.0
20°	38 47.0 -43.0 136.3	38 07.3 -42.4 135.4	37 26.9 -41.8 134.6	36 46.0 -41.2 133.8	36 04.5 -40.5 133.0
21°	38 04.0 -43.5 137.1	37 24.9 -42.9 136.3	36 45.1 -42.1 135.5	36 04.8 -41.5 134.7	35 24.0 -40.9 133.9
22°	37 20.5 -43.8 138.0	36 42.0 -43.2 137.2	36 03.0 -42.6 136.4	35 23.3 -42.0 135.6	34 43.1 -41.4 134.8
23°	36 36.7 -44.2 138.9	35 58.8 -43.5 138.0	35 20.4 -42.9 137.2	34 41.3 -42.3 136.4	34 01.7 -41.6 135.7
24°	35 52.5 -44.5 139.7	35 15.3 -43.9 138.9	34 37.5 -43.3 138.1	33 59.0 -42.6 137.3	33 20.1 -42.1 136.5
25°	35 08.0 -44.9 140.5	34 31.4 -44.3 139.7	33 54.2 -43.6 138.9	33 16.4 -43.0 138.1	32 38.0 -42.4 137.4
26°	34 23.1 -45.2 141.3	33 47.1 -44.5 140.5	33 10.6 -44.0 139.7	32 33.4 -43.3 139.0	31 55.6 -42.7 138.2
27°	33 37.9 -45.5 142.1	33 02.6 -44.9 141.3	32 26.6 -44.2 140.6	31 50.1 -43.7 139.8	31 12.9 -43.0 139.0
28°	32 52.4 -45.7 142.9	32 17.7 -45.1 142.1	31 42.4 -44.6 141.3	31 06.4 -43.9 140.6	30 29.9 -43.3 139.8
29°	32 06.7 -46.1 143.7	31 32.6 -45.5 142.9	30 57.8 -44.8 142.1	30 22.5 -44.2 141.4	29 46.6 -43.6 140.6

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°	46 45.9 -27.5 110.2	45 52.2 -27.0 109.6	44 58.4 -26.7 108.9	44 04.3 -26.2 108.3	43 10.0 -25.8 107.7
1°	46 18.4 -28.4 111.5	45 25.2 -27.9 110.8	44 31.7 -27.4 110.2	43 38.1 -27.0 109.6	42 44.2 -26.6 109.0
2°	45 50.0 -29.2 112.8	44 57.3 -28.7 112.1	44 04.3 -28.2 111.4	43 11.1 -27.8 110.8	42 17.6 -27.3 110.2
3°	45 20.8 -30.0 114.0	44 28.6 -29.5 113.3	43 36.1 -29.1 112.7	42 43.3 -28.6 112.0	41 50.3 -28.1 111.4
4°	44 50.8 -30.7 115.3	43 59.1 -30.3 114.6	43 07.0 -29.7 113.9	42 14.7 -29.3 113.2	41 22.2 -28.9 112.6
5°	44 20.1 -31.5 116.5	43 28.8 -31.0 115.7	42 37.3 -30.5 115.1	41 45.4 -29.9 114.4	40 53.3 -29.5 113.7
6°	43 48.6 -32.3 117.6	42 57.8 -31.7 116.9	42 06.8 -31.2 116.2	41 15.5 -30.7 115.5	40 23.8 -30.1 114.9
7°	43 16.3 -32.9 118.8	42 26.1 -32.3 118.1	41 35.6 -31.8 117.4	40 44.8 -31.3 116.7	39 53.7 -30.9 116.0
8°	42 43.4 -33.6 120.0	41 53.8 -33.1 119.2	41 03.8 -32.5 118.5	40 13.5 -32.0 117.8	39 22.8 -31.4 117.1
9°	42 09.8 -34.3 121.1	41 20.7 -33.7 120.3	40 31.3 -33.2 119.6	39 41.5 -32.6 118.9	38 51.4 -32.1 118.2
10°	41 35.5 -34.8 122.2	40 47.0 -34.3 121.4	39 58.1 -33.7 120.7	39 08.9 -33.2 120.0	38 19.3 -32.6 119.3
11°	41 00.7 -35.5 123.3	40 12.7 -34.9 122.5	39 24.4 -34.3 121.8	38 35.7 -33.7 121.1	37 46.7 -33.3 120.4
12°	40 25.2 -36.1 124.3	39 37.8 -35.4 123.6	38 50.1 -34.9 122.8	38 02.0 -34.4 122.1	37 13.4 -33.7 121.4
13°	39 49.1 -36.6 125.4	39 02.4 -36.0 124.6	38 15.2 -35.4 123.9	37 27.6 -34.8 123.2	36 39.7 -34.3 122.5
14°	39 12.5 -37.1 126.4	38 26.4 -36.5 125.6	37 39.8 -35.9 124.9	36 52.8 -35.4 124.2	36 05.4 -34.8 123.5
15°	38 35.4 -37.6 127.4	37 49.9 -37.1 126.6	37 03.9 -36.5 125.9	36 17.4 -35.8 125.2	35 30.6 -35.3 124.5
16°	37 57.8 -38.2 128.4	37 12.8 -37.5 127.6	36 27.4 -36.9 126.9	35 41.6 -36.4 126.2	34 55.3 -35.8 125.5
17°	37 19.6 -38.6 129.4	36 35.3 -38.0 128.6	35 50.5 -37.4 127.9	35 05.2 -36.8 127.2	34 19.5 -36.2 126.4
18°	36 41.0 -39.0 130.3	35 57.3 -38.4 129.6	35 13.1 -37.9 128.8	34 28.4 -37.2 128.1	33 43.3 -36.7 127.4
19°	36 02.0 -39.5 131.3	35 18.9 -38.9 130.5	34 35.2 -38.2 129.8	33 51.2 -37.7 129.1	33 06.6 -37.1 128.4
20°	35 22.5 -39.9 132.2	34 40.0 -39.3 131.4	33 57.0 -38.7 130.7	33 13.5 -38.1 130.0	32 29.5 -37.5 129.3
21°	34 42.6 -40.3 133.1	34 00.7 -39.7 132.4	33 18.3 -39.1 131.6	32 35.4 -38.5 130.9	31 52.0 -37.9 130.2
22°	34 02.3 -40.7 134.0	33 21.0 -40.1 133.3	32 39.2 -39.5 132.5	31 56.9 -38.9 131.8	31 14.1 -38.2 131.1
23°	33 21.6 -41.1 134.9	32 40.9 -40.5 134.2	31 59.7 -39.8 133.4	31 18.0 -39.2 132.7	30 35.9 -38.7 132.0
24°	32 40.5 -41.4 135.8	32 00.4 -40.8 135.0	31 19.9 -40.2 134.3	30 38.8 -39.6 133.6	29 57.2 -39.0 132.9
25°	31 59.1 -41.8 136.6	31 19.6 -41.1 135.9	30 39.7 -40.6 135.2	29 59.2 -39.9 134.5	29 18.2 -39.3 133.8
26°	31 17.3 -42.1 137.5	30 38.5 -41.5 136.7	29 59.1 -40.8 136.0	29 19.3 -40.3 135.3	28 38.9 -39.7 134.6
27°	30 35.2 -42.3 138.3	29 57.0 -41.8 137.6	29 18.3 -41.2 136.9	28 39.0 -40.6 136.2	27 59.2 -39.9 135.5
28°	29 52.9 -42.7 139.1	29 15.2 -42.1 138.4	28 37.1 -41.5 137.7	27 58.4 -40.8 137.0	27 19.3 -40.3 136.3
29°	29 10.2 -43.0 139.9	28 33.1 -42.3 139.2	27 55.6 -41.8 138.5	27 17.6 -41.2 137.8	26 39.0 -40.5 137.2

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	42 15.6 -25.4 107.2	41 21.0 -25.1 106.6	40 26.3 -24.8 106.1	39 31.3 -24.3 105.5	38 36.3 -24.1 105.0
1°	41 50.2 -26.2 108.4	40 55.9 -25.8 107.8	40 01.5 -25.4 107.3	39 07.0 -25.1 106.7	38 12.2 -24.7 106.2
2°	41 24.0 -27.0 109.6	40 30.1 -26.5 109.0	39 36.1 -26.2 108.4	38 41.9 -25.8 107.9	37 47.5 -25.5 107.4
3°	40 57.0 -27.6 110.8	40 03.6 -27.3 110.2	39 09.9 -26.8 109.6	38 16.1 -26.5 109.1	37 22.0 -26.1 108.5
4°	40 29.4 -28.4 112.0	39 36.3 -27.9 111.3	38 43.1 -27.6 110.8	37 49.6 -27.1 110.2	36 55.9 -26.7 109.6
5°	40 01.0 -29.1 113.1	39 08.4 -28.6 112.5	38 15.5 -28.1 111.9	37 22.5 -27.8 111.3	36 29.2 -27.3 110.8
6°	39 31.9 -29.7 114.2	38 39.8 -29.3 113.6	37 47.4 -28.8 113.0	36 54.7 -28.3 112.4	36 01.9 -27.9 111.9
7°	39 02.2 -30.3 115.4	38 10.5 -29.8 114.7	37 18.6 -29.4 114.1	36 26.4 -29.0 113.5	35 34.0 -28.6 112.9
8°	38 31.9 -31.0 116.5	37 40.7 -30.5 115.8	36 49.2 -30.0 115.2	35 57.4 -29.5 114.6	35 05.4 -29.1 114.0
9°	38 00.9 -31.5 117.6	37 10.2 -31.0 116.9	36 19.2 -30.6 116.3	35 27.9 -30.1 115.7	34 36.3 -29.6 115.1
10°	37 29.4 -32.1 118.6	36 39.2 -31.7 118.0	35 48.6 -31.1 117.4	34 57.8 -30.6 116.7	34 06.7 -30.2 116.1
11°	36 57.3 -32.7 119.7	36 07.5 -32.1 119.0	35 17.5 -31.7 118.4	34 27.2 -31.2 117.8	33 36.5 -30.6 117.2
12°	36 24.6 -33.2 120.7	35 35.4 -32.7 120.1	34 45.8 -32.1 119.4	33 56.0 -31.7 118.8	33 05.9 -31.2 118.2
13°	35 51.4 -33.8 121.8	35 02.7 -33.2 121.1	34 13.7 -32.7 120.5	33 24.3 -32.2 119.8	32 34.7 -31.7 119.2
14°	35 17.6 -34.2 122.8	34 29.5 -33.7 122.1	33 41.0 -33.2 121.5	32 52.1 -32.6 120.9	32 03.0 -32.2 120.2
15°	34 43.4 -34.8 123.8	33 55.8 -34.2 123.1	33 07.8 -33.7 122.5	32 19.5 -33.1 121.8	31 30.8 -32.5 121.2
16°	34 08.6 -35.2 124.8	33 21.6 -34.7 124.1	32 34.1 -34.1 123.5	31 46.4 -33.6 122.8	30 58.3 -33.1 122.2
17°	33 33.4 -35.6 125.8	32 46.9 -35.1 125.1	32 00.0 -34.5 124.4	31 12.8 -34.0 123.8	30 25.2 -33.5 123.2
18°	32 57.8 -36.1 126.7	32 11.8 -35.5 126.1	31 25.5 -35.0 125.4	30 38.8 -34.4 124.8	29 51.7 -33.8 124.1
19°	32 21.7 -36.5 127.7	31 36.3 -35.9 127.0	30 50.5 -35.3 126.4	30 04.4 -34.8 125.7	29 17.9 -34.3 125.1
20°	31 45.2 -37.0 128.6	31 00.4 -36.4 127.9	30 15.2 -35.8 127.3	29 29.6 -35.3 126.7	28 43.6 -34.7 126.0
21°	31 08.2 -37.3 129.5	30 24.0 -36.7 128.9	29 39.4 -36.2 128.2	28 54.3 -35.5 127.6	28 08.9 -35.0 127.0
22°	30 30.9 -37.7 130.4	29 47.3 -37.1 129.8	29 03.2 -36.5 129.1	28 18.8 -36.0 128.5	27 33.9 -35.4 127.9
23°	29 53.2 -38.0 131.3	29 10.2 -37.5 130.7	28 26.7 -36.9 130.0	27 42.8 -36.3 129.4	26 58.5 -35.7 128.8
24°	29 15.2 -38.4 132.2	28 32.7 -37.8 131.6	27 49.8 -37.2 130.9	27 06.5 -36.6 130.3	26 22.8 -36.1 129.7
25°	28 36.8 -38.7 133.1	27 54.9 -38.1 132.5	27 12.6 -37.6 131.8	26 29.9 -37.0 131.2	25 46.7 -36.4 130.6
26°	27 58.1 -39.1 134.0	27 16.8 -38.5 133.3	26 35.0 -37.8 132.7	25 52.9 -37.3 132.1	25 10.3 -36.7 131.5
27°	27 19.0 -39.4 134.8	26 38.3 -38.8 134.2	25 57.2 -38.2 133.6	25 15.6 -37.6 132.9	24 33.6 -37.0 132.3
28°	26 39.6 -39.6 135.7	25 59.5 -39.0 135.0	25 19.0 -38.5 134.4	24 38.0 -37.8 133.8	23 56.6 -37.3 133.2
29°	26 00.0 -40.0 136.5	25 20.5 -39.4 135.9	24 40.5 -38.7 135.3	24 00.2 -38.2 134.6	23 19.3 -37.5 134.0

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°	37 41.1 -23.7 104.5	36 45.8 -23.4 104.0	35 50.4 -23.2 103.6	34 54.9 -22.9 103.1	33 59.3 -22.7 102.7
1°	37 17.4 -24.5 105.7	36 22.4 -24.2 105.2	35 27.2 -23.8 104.7	34 32.0 -23.6 104.2	33 36.6 -23.2 103.8
2°	36 52.9 -25.1 106.8	35 58.2 -24.7 106.3	35 03.4 -24.4 105.8	34 08.4 -24.1 105.3	33 13.4 -23.9 104.9
3°	36 27.8 -25.7 108.0	35 33.5 -25.0 107.5	34 39.0 -25.1 106.9	33 44.3 -24.7 106.5	32 49.5 -24.4 106.0
4°	36 02.1 -26.3 109.1	35 08.1 -26.0 108.6	34 13.9 -25.6 108.0	33 19.6 -25.3 107.5	32 25.1 -24.9 107.1
5°	35 35.8 -27.0 110.2	34 42.1 -26.5 109.7	33 48.3 -26.2 109.1	32 54.3 -25.8 108.6	32 00.2 -25.5 108.1
6°	35 08.8 -27.5 111.3	34 15.6 -27.2 110.7	33 22.1 -26.7 110.2	32 28.5 -26.4 109.7	31 34.7 -26.1 109.2
7°	34 41.3 -28.1 112.4	33 48.4 -27.7 111.8	32 55.4 -27.3 111.3	32 02.1 -26.9 110.8	31 08.6 -26.5 110.2
8°	34 13.2 -28.7 113.5	33 20.7 -28.2 112.9	32 28.1 -27.9 112.3	31 35.2 -27.4 111.8	30 42.1 -27.0 111.3
9°	33 44.5 -29.1 114.5	32 52.5 -28.7 113.9	32 00.2 -28.3 113.4	31 07.8 -28.0 112.9	30 15.1 -27.5 112.3
10°	33 15.4 -29.8 115.6	32 23.8 -29.3 115.0	31 31.9 -28.8 114.4	30 39.8 -28.4 113.9	29 47.6 -28.0 113.4
11°	32 45.6 -30.2 116.6	31 54.5 -29.8 116.0	31 03.1 -29.3 115.5	30 11.4 -28.8 114.9	29 19.6 -28.5 114.4
12°	32 15.4 -30.7 117.6	31 24.7 -30.2 117.0	30 33.8 -29.8 116.5	29 42.6 -29.4 115.9	28 51.1 -28.9 115.4
13°	31 44.7 -31.2 118.6	30 54.5 -30.7 118.0	30 04.0 -30.2 117.5	29 13.2 -29.7 116.9	28 22.2 -29.3 116.4
14°	31 13.5 -31.6 119.6	30 23.8 -31.2 119.0	29 33.8 -30.7 118.5	28 43.5 -30.2 117.9	27 52.9 -29.7 117.4
15°	30 41.9 -32.1 120.6	29 52.6 -31.5 120.0	29 03.1 -31.1 119.5	28 13.3 -30.6 118.9	27 23.2 -30.2 118.3
16°	30 09.8 -32.5 121.6	29 21.1 -32.1 121.0	28 32.0 -31.5 120.4	27 42.7 -31.1 119.9	26 53.0 -30.5 119.3
17°	29 37.3 -33.0 122.6	28 49.0 -32.4 122.0	28 00.5 -31.9 121.4	27 11.6 -31.4 120.8	26 22.5 -30.9 120.3
18°	29 04.3 -33.3 123.5	28 16.6 -32.8 122.9	27 28.6 -32.3 122.4	26 40.2 -31.8 121.8	25 51.6 -31.3 121.2
19°	28 31.0 -33.7 124.5	27 43.8 -33.2 123.9	26 56.3 -32.7 123.3	26 08.4 -32.1 122.7	25 20.3 -31.7 122.2
20°	27 57.3 -34.1 125.4	27 10.6 -33.6 124.8	26 23.6 -33.1 124.2	25 36.3 -32.6 123.7	24 48.6 -32.0 123.1
21°	27 23.2 -34.5 126.3	26 37.0 -33.9 125.8	25 50.5 -33.4 125.2	25 03.7 -32.8 124.6	24 16.6 -32.3 124.0
22°	26 48.7 -34.9 127.3	26 03.1 -34.3 126.7	25 17.1 -33.7 126.1	24 30.9 -33.2 125.5	23 44.3 -32.7 125.0
23°	26 13.8 -35.1 128.2	25 28.8 -34.6 127.6	24 43.4 -34.1 127.0	23 57.7 -33.5 126.4	23 11.6 -33.0 125.9
24°	25 38.7 -35.5 129.1	24 54.2 -34.9 128.5	24 09.3 -34.3 127.9	23 24.2 -33.9 127.3	22 38.6 -33.3 126.8
25°	25 03.2 -35.8 130.0	24 19.3 -35.3 129.4	23 35.0 -34.7 128.8	22 50.3 -34.1 128.2	22 05.3 -33.5 127.7
26°	24 27.4 -36.2 130.9	23 44.0 -35.5 130.3	23 00.3 -35.0 129.7	22 16.2 -34.4 129.1	21 31.8 -33.9 128.6
27°	23 51.2 -36.4 131.7	23 08.5 -35.9 131.1	22 25.3 -35.3 130.6	21 41.8 -34.7 130.0	20 57.9 -34.1 129.5
28°	23 14.8 -36.7 132.6	22 32.6 -36.1 132.0	21 50.0 -35.5 131.4	21 07.1 -35.0 130.9	20 23.8 -34.4 130.4
29°	22 38.1 -37.0 133.5	21 56.5 -36.4 132.9	21 14.5 -35.8 132.3	20 32.1 -35.2 131.8	19 49.4 -34.7 131.2

Dec	LHA 055° / 305°	LHA 056° / 304°	LHA 057° / 303°	LHA 058° / 302°	LHA 059° / 301°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	33 03.5 -22.4 102.2	32 07.7 -22.1 101.8	31 11.8 -21.9 101.3	30 15.8 -21.7 100.9	29 19.8 -21.6 100.5
1°	32 41.1 -23.0 103.3	31 45.6 -22.8 102.9	30 49.9 -22.5 102.4	29 54.1 -22.3 102.0	28 58.2 -22.0 101.6
2°	32 18.1 -23.5 104.4	31 22.8 -23.3 104.0	30 27.4 -23.0 103.5	29 31.8 -22.7 103.1	28 36.2 -22.5 102.6
3°	31 54.6 -24.1 105.5	30 59.5 -23.8 105.0	30 04.4 -23.6 104.6	29 09.1 -23.3 104.1	28 13.7 -23.0 103.7
4°	31 30.5 -24.7 106.6	30 35.7 -24.3 106.1	29 40.8 -24.0 105.6	28 45.8 -23.7 105.2	27 50.7 -23.5 104.7
5°	31 05.8 -25.1 107.6	30 11.4 -24.8 107.2	29 16.8 -24.5 106.7	28 22.1 -24.2 106.2	27 27.2 -23.9 105.8
6°	30 40.7 -25.7 108.7	29 46.6 -25.4 108.2	28 52.3 -25.0 107.7	27 57.9 -24.7 107.3	27 03.3 -24.4 106.8
7°	30 15.0 -26.2 109.7	29 21.2 -25.8 109.3	28 27.3 -25.5 108.8	27 33.2 -25.2 108.3	26 38.9 -24.8 107.8
8°	29 48.8 -26.6 110.8	28 55.4 -26.3 110.3	28 01.8 -25.9 109.8	27 08.0 -25.5 109.3	26 14.1 -25.2 108.9
9°	29 22.2 -27.1 111.8	28 29.1 -26.7 111.3	27 35.9 -26.4 110.8	26 42.5 -26.1 110.3	25 48.9 -25.7 109.9
10°	28 55.1 -27.6 112.8	28 02.4 -27.2 112.3	27 09.5 -26.8 111.8	26 16.4 -26.4 111.3	25 23.2 -26.0 110.9
11°	28 27.5 -28.0 113.8	27 35.2 -27.6 113.3	26 42.7 -27.2 112.8	25 50.0 -26.8 112.3	24 57.2 -26.5 111.9
12°	27 59.5 -28.5 114.9	27 07.6 -28.1 114.3	26 15.5 -27.6 113.8	25 23.2 -27.2 113.3	24 30.7 -26.8 112.9
13°	27 31.0 -28.9 115.8	26 39.5 -28.4 115.3	25 47.9 -28.1 114.8	24 56.0 -27.7 114.3	24 03.9 -27.3 113.8
14°	27 02.1 -29.3 116.8	26 11.1 -28.9 116.3	25 19.8 -28.4 115.8	24 28.3 -27.9 115.3	23 36.6 -27.5 114.8
15°	26 32.8 -29.6 117.8	25 42.2 -29.2 117.3	24 51.4 -28.8 116.8	24 00.4 -28.4 116.3	23 09.1 -27.9 115.8
16°	26 03.2 -30.1 118.8	25 13.0 -29.6 118.3	24 22.6 -29.1 117.7	23 32.0 -28.7 117.2	22 41.2 -28.3 116.7
17°	25 33.1 -30.5 119.7	24 43.4 -30.0 119.2	23 53.5 -29.5 118.7	23 03.3 -29.1 118.2	22 12.9 -28.6 117.7
18°	25 02.6 -30.8 120.7	24 13.4 -30.3 120.2	23 24.0 -29.9 119.6	22 34.2 -29.3 119.1	21 44.3 -28.9 118.6
19°	24 31.8 -31.1 121.6	23 43.1 -30.7 121.1	22 54.1 -30.2 120.6	22 04.9 -29.7 120.1	21 15.4 -29.3 119.6
20°	24 00.7 -31.5 122.6	23 12.4 -30.9 122.0	22 23.9 -30.5 121.5	21 35.2 -30.0 121.0	20 46.1 -29.5 120.5
21°	23 29.2 -31.8 123.5	22 41.5 -31.4 123.0	21 53.4 -30.8 122.5	21 05.2 -30.4 121.9	20 16.6 -29.8 121.4
22°	22 57.4 -32.2 124.4	22 10.1 -31.6 123.9	21 22.6 -31.1 123.4	20 34.8 -30.6 122.9	19 46.8 -30.1 122.4
23°	22 25.2 -32.4 125.3	21 38.5 -31.9 124.8	20 51.5 -31.4 124.3	20 04.2 -30.9 123.8	19 16.7 -30.4 123.3
24°	21 52.8 -32.8 126.3	21 06.6 -32.2 125.7	20 20.1 -31.7 125.2	19 33.3 -31.1 124.7	18 46.3 -30.7 124.2
25°	21 20.0 -33.0 127.2	20 34.4 -32.5 126.6	19 48.4 -31.9 126.1	19 02.2 -31.4 125.6	18 15.6 -30.9 125.1
26°	20 47.0 -33.3 128.0	20 01.9 -32.8 127.5	19 16.5 -32.2 127.0	18 30.8 -31.7 126.5	17 44.7 -31.1 126.0
27°	20 13.7 -33.6 128.9	19 29.1 -33.0 128.4	18 44.3 -32.5 127.9	17 59.1 -31.9 127.4	17 13.6 -31.4 126.9
28°	19 40.1 -33.8 129.8	18 56.1 -33.3 129.3	18 11.8 -32.7 128.8	17 27.2 -32.2 128.3	16 42.2 -31.6 127.8
29°	19 06.3 -34.1 130.7	18 22.8 -33.5 130.2	17 39.1 -33.0 129.7	16 55.0 -32.4 129.2	16 10.6 -31.8 128.7

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°	28 23.6 -21.3 100.1	27 27.4 -21.1 99.7	26 31.1 -20.9 99.3	25 34.8 -20.8 98.9	24 38.4 -20.6 98.6
1°	28 02.3 -21.8 101.2	27 06.3 -21.6 100.8	26 10.2 -21.4 100.4	25 14.0 -21.2 100.0	24 17.8 -21.0 99.6
2°	27 40.5 -22.3 102.2	26 44.7 -22.1 101.8	25 48.8 -21.9 101.4	24 52.8 -21.6 101.0	23 56.8 -21.5 100.6
3°	27 18.2 -22.7 103.3	26 22.6 -22.5 102.9	25 26.9 -22.2 102.4	24 31.2 -22.1 102.0	23 35.3 -21.8 101.6
4°	26 55.5 -23.2 104.3	26 00.1 -22.9 103.9	25 04.7 -22.7 103.5	24 09.1 -22.4 103.1	23 13.5 -22.2 102.7
5°	26 32.3 -23.7 105.3	25 37.2 -23.4 104.9	24 42.0 -23.1 104.5	23 46.7 -22.9 104.1	22 51.3 -22.6 103.7
6°	26 08.6 -24.1 106.4	25 13.8 -23.8 105.9	24 18.9 -23.5 105.5	23 23.8 -23.2 105.1	22 28.7 -23.0 104.7
7°	25 44.5 -24.5 107.4	24 50.0 -24.2 107.0	23 55.4 -23.9 106.5	23 00.6 -23.6 106.1	22 05.7 -23.3 105.7
8°	25 20.0 -24.9 108.4	24 25.8 -24.6 108.0	23 31.5 -24.3 107.5	22 37.0 -24.0 107.1	21 42.4 -23.7 106.7
9°	24 55.1 -25.3 109.4	24 01.2 -24.9 109.0	23 07.2 -24.7 108.5	22 13.0 -24.3 108.1	21 18.7 -24.0 107.7
10°	24 29.8 -25.7 110.4	23 36.3 -25.4 110.0	22 42.5 -25.0 109.5	21 48.7 -24.7 109.1	20 54.7 -24.4 108.6
11°	24 04.1 -26.1 111.4	23 10.9 -25.7 110.9	22 17.5 -25.3 110.5	21 24.0 -25.0 110.0	20 30.3 -24.7 109.6
12°	23 38.0 -26.4 112.4	22 45.2 -26.1 111.9	21 52.2 -25.8 111.5	20 59.0 -25.4 111.0	20 05.6 -25.0 110.6
13°	23 11.6 -26.8 113.4	22 19.1 -26.4 112.9	21 26.4 -26.0 112.4	20 33.6 -25.7 112.0	19 40.6 -25.3 111.6
14°	22 44.8 -27.2 114.3	21 52.7 -26.8 113.9	21 00.4 -26.4 113.4	20 07.9 -26.0 113.0	19 15.3 -25.6 112.5
15°	22 17.6 -27.5 115.3	21 25.9 -27.1 114.8	20 34.0 -26.7 114.4	19 41.9 -26.3 113.9	18 49.7 -25.9 113.5
16°	21 50.1 -27.9 116.3	20 58.8 -27.4 115.8	20 07.3 -27.0 115.3	19 15.6 -26.5 114.9	18 23.8 -26.2 114.4
17°	21 22.2 -28.1 117.2	20 31.4 -27.7 116.7	19 40.3 -27.3 116.3	18 49.1 -26.9 115.8	17 57.6 -26.5 115.4
18°	20 54.1 -28.5 118.2	20 03.7 -28.1 117.7	19 13.0 -27.6 117.2	18 22.2 -27.2 116.8	17 31.1 -26.7 116.3
19°	20 25.6 -28.7 119.1	19 35.6 -28.3 118.6	18 45.4 -27.8 118.2	17 55.0 -27.4 117.7	17 04.4 -27.0 117.3
20°	19 56.9 -29.1 120.0	19 07.3 -28.6 119.6	18 17.6 -28.2 119.1	17 27.6 -27.7 118.6	16 37.4 -27.2 118.2
21°	19 27.8 -29.3 121.0	18 38.7 -28.8 120.5	17 49.4 -28.3 120.0	16 59.9 -27.9 119.6	16 10.2 -27.5 119.1
22°	18 58.5 -29.7 121.9	18 09.9 -29.2 121.4	17 21.1 -28.7 120.9	16 32.0 -28.2 120.5	15 42.7 -27.7 120.0
23°	18 28.8 -29.8 122.8	17 40.7 -29.3 122.3	16 52.4 -28.9 121.9	16 03.8 -28.4 121.4	15 15.0 -27.9 121.0
24°	17 59.0 -30.2 123.7	17 11.4 -29.7 123.2	16 23.5 -29.1 122.8	15 35.4 -28.6 122.3	14 47.1 -28.2 121.9
25°	17 28.8 -30.4 124.6	16 41.7 -29.8 124.2	15 54.4 -29.4 123.7	15 06.8 -28.9 123.2	14 18.9 -28.3 122.8
26°	16 58.4 -30.6 125.5	16 11.9 -30.1 125.1	15 25.0 -29.6 124.6	14 37.9 -29.0 124.1	13 50.6 -28.6 123.7
27°	16 27.8 -30.8 126.4	15 41.8 -30.3 126.0	14 55.4 -29.7 125.5	14 08.9 -29.3 125.0	13 22.0 -28.7 124.6
28°	15 57.0 -31.1 127.3	15 11.5 -30.6 126.9	14 25.7 -30.0 126.4	13 39.6 -29.5 125.9	12 53.3 -29.0 125.5
29°	15 25.9 -31.3 128.2	14 40.9 -30.7 127.7	13 55.7 -30.2 127.3	13 10.1 -29.6 126.8	12 24.3 -29.1 126.4

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°	23 41.9 -20.4 98.2	22 45.4 -20.3 97.8	21 48.9 -20.2 97.5	20 52.3 -20.0 97.1	19 55.6 -19.8 96.8
1°	23 21.5 -20.9 99.2	22 25.1 -20.6 98.9	21 28.7 -20.5 98.5	20 32.3 -20.4 98.1	19 35.8 -20.3 97.8
2°	23 00.6 -21.2 100.2	22 04.5 -21.1 99.9	21 08.2 -20.9 99.5	20 11.9 -20.7 99.1	19 15.5 -20.5 98.8
3°	22 39.4 -21.6 101.3	21 43.4 -21.4 100.9	20 47.3 -21.2 100.5	19 51.2 -21.0 100.1	18 55.0 -20.9 99.8
4°	22 17.8 -22.0 102.3	21 22.0 -21.8 101.9	20 26.1 -21.6 101.5	19 30.2 -21.4 101.1	18 34.1 -21.1 100.8
5°	21 55.8 -22.4 103.3	21 00.2 -22.1 102.9	20 04.5 -21.9 102.5	19 08.8 -21.7 102.1	18 13.0 -21.5 101.7
6°	21 33.4 -22.7 104.3	20 38.1 -22.5 103.9	19 42.6 -22.2 103.5	18 47.1 -22.0 103.1	17 51.5 -21.8 102.7
7°	21 10.7 -23.0 105.3	20 15.6 -22.8 104.9	19 20.4 -22.5 104.5	18 25.1 -22.3 104.1	17 29.7 -22.0 103.7
8°	20 47.7 -23.4 106.3	19 52.8 -23.1 105.8	18 57.9 -22.9 105.4	18 02.8 -22.6 105.1	17 07.7 -22.4 104.7
9°	20 24.3 -23.8 107.2	19 29.7 -23.4 106.8	18 35.0 -23.1 106.4	17 40.2 -22.8 106.0	16 45.3 -22.6 105.6
10°	20 00.5 -24.0 108.2	19 06.3 -23.8 107.8	18 11.9 -23.5 107.4	17 17.4 -23.2 107.0	16 22.7 -22.8 106.6
11°	19 36.5 -24.4 109.2	18 42.5 -24.0 108.8	17 48.4 -23.7 108.4	16 54.2 -23.4 108.0	15 59.9 -23.1 107.6
12°	19 12.1 -24.6 110.2	18 18.5 -24.3 109.7	17 24.7 -24.0 109.3	16 30.8 -23.7 108.9	15 36.8 -23.4 108.5
13°	18 47.5 -25.0 111.1	17 54.2 -24.6 110.7	17 00.7 -24.3 110.3	16 07.1 -23.9 109.9	15 13.4 -23.6 109.5
14°	18 22.5 -25.2 112.1	17 29.6 -24.9 111.7	16 36.4 -24.5 111.2	15 43.2 -24.2 110.8	14 49.8 -23.9 110.4
15°	17 57.3 -25.6 113.0	17 04.7 -25.2 112.6	16 11.9 -24.8 112.2	15 19.0 -24.4 111.8	14 25.9 -24.0 111.4
16°	17 31.7 -25.8 114.0	16 39.5 -25.4 113.6	15 47.1 -25.0 113.1	14 54.6 -24.7 112.7	14 01.9 -24.3 112.3
17°	17 05.9 -26.0 114.9	16 14.1 -25.7 114.5	15 22.1 -25.3 114.1	14 29.9 -24.9 113.7	13 37.6 -24.5 113.3
18°	16 39.9 -26.3 115.9	15 48.4 -25.9 115.4	14 56.8 -25.5 115.0	14 05.0 -25.1 114.6	13 13.1 -24.7 114.2
19°	16 13.6 -26.6 116.8	15 22.5 -26.1 116.4	14 31.3 -25.7 116.0	13 39.9 -25.3 115.5	12 48.4 -24.9 115.1
20°	15 47.0 -26.8 117.7	14 56.4 -26.3 117.3	14 05.6 -25.9 116.9	13 14.6 -25.5 116.5	12 23.5 -25.1 116.1
21°	15 20.2 -27.0 118.7	14 30.1 -26.6 118.2	13 39.7 -26.2 117.8	12 49.1 -25.7 117.4	11 58.4 -25.3 117.0
22°	14 53.2 -27.2 119.6	14 03.5 -26.8 119.2	13 13.5 -26.3 118.7	12 23.4 -25.9 118.3	11 33.1 -25.5 117.9
23°	14 26.0 -27.5 120.5	13 36.7 -27.0 120.1	12 47.2 -26.5 119.7	11 57.5 -26.0 119.3	11 07.6 -25.6 118.9
24°	13 58.5 -27.7 121.4	13 09.7 -27.2 121.0	12 20.7 -26.7 120.6	11 31.5 -26.3 120.2	10 42.0 -25.8 119.8
25°	13 30.8 -27.8 122.4	12 42.5 -27.4 121.9	11 54.0 -26.9 121.5	11 05.2 -26.4 121.1	10 16.2 -25.9 120.7
26°	13 03.0 -28.1 123.3	12 15.1 -27.5 122.8	11 27.1 -27.1 122.4	10 38.8 -26.6 122.0	9 50.3 -26.1 121.6
27°	12 34.9 -28.2 124.2	11 47.6 -27.7 123.7	11 00.0 -27.2 123.3	10 12.2 -26.7 122.9	9 24.2 -26.2 122.5
28°	12 06.7 -28.4 125.1	11 19.9 -27.9 124.6	10 32.8 -27.4 124.2	9 45.5 -26.9 123.8	8 58.0 -26.4 123.4
29°	11 38.3 -28.6 126.0	10 52.0 -28.1 125.6	10 05.4 -27.5 125.1	9 18.6 -27.0 124.7	8 31.6 -26.4 124.3

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°	18 59.0 -19.8 96.4	18 02.2 -19.6 96.1	17 05.5 -19.6 95.7	16 08.7 -19.5 95.4	15 11.8 -19.3 95.1
1°	18 39.2 -20.1 97.4	17 42.6 -20.0 97.1	16 45.9 -19.8 96.7	15 49.2 -19.7 96.4	14 52.5 -19.6 96.0
2°	18 19.1 -20.4 98.4	17 22.6 -20.2 98.1	16 26.1 -20.1 97.7	15 29.5 -19.9 97.4	14 32.9 -19.8 97.0
3°	17 58.7 -20.7 99.4	17 02.4 -20.5 99.0	16 06.0 -20.4 98.7	15 09.6 -20.2 98.3	14 13.1 -20.1 98.0
4°	17 38.0 -21.0 100.4	16 41.9 -20.8 100.0	15 45.6 -20.6 99.7	14 49.4 -20.5 99.3	13 53.0 -20.3 99.0
5°	17 17.0 -21.2 101.4	16 21.1 -21.1 101.0	15 25.0 -20.9 100.6	14 28.9 -20.7 100.3	13 32.7 -20.5 99.9
6°	16 55.8 -21.6 102.3	16 00.0 -21.3 102.0	15 04.1 -21.1 101.6	14 08.2 -20.9 101.3	13 12.2 -20.7 100.9
7°	16 34.2 -21.8 103.3	15 38.7 -21.6 102.9	14 43.0 -21.4 102.6	13 47.3 -21.2 102.2	12 51.5 -21.0 101.9
8°	16 12.4 -22.1 104.3	15 17.1 -21.9 103.9	14 21.6 -21.6 103.5	13 26.1 -21.3 103.2	12 30.5 -21.1 102.8
9°	15 50.3 -22.3 105.3	14 55.2 -22.0 104.9	14 00.0 -21.8 104.5	13 04.8 -21.6 104.1	12 09.4 -21.4 103.8
10°	15 28.0 -22.6 106.2	14 33.2 -22.4 105.8	13 38.2 -22.0 105.5	12 43.2 -21.8 105.1	11 48.0 -21.5 104.7
11°	15 05.4 -22.8 107.2	14 10.8 -22.5 106.8	13 16.2 -22.3 106.4	12 21.4 -22.0 106.1	11 26.5 -21.7 105.7
12°	14 42.6 -23.1 108.1	13 48.3 -22.8 107.8	12 53.9 -22.5 107.4	11 59.4 -22.2 107.0	11 04.8 -21.9 106.6
13°	14 19.5 -23.3 109.1	13 25.5 -22.9 108.7	12 31.4 -22.6 108.3	11 37.2 -22.4 108.0	10 42.9 -22.1 107.6
14°	13 56.2 -23.5 110.0	13 02.6 -23.2 109.7	12 08.8 -22.9 109.3	11 14.8 -22.5 108.9	10 20.8 -22.2 108.5
15°	13 32.7 -23.7 111.0	12 39.4 -23.4 110.6	11 45.9 -23.0 110.2	10 52.3 -22.7 109.8	9 58.6 -22.4 109.5
16°	13 09.0 -23.9 111.9	12 16.0 -23.6 111.5	11 22.9 -23.3 111.2	10 29.6 -22.9 110.8	9 36.2 -22.6 110.4
17°	12 45.1 -24.2 112.9	11 52.4 -23.7 112.5	10 59.6 -23.4 112.1	10 06.7 -23.1 111.7	9 13.6 -22.7 111.4
18°	12 20.9 -24.3 113.8	11 28.7 -24.0 113.4	10 36.2 -23.5 113.0	9 43.6 -23.2 112.7	8 50.9 -22.8 112.3
19°	11 56.6 -24.5 114.7	11 04.7 -24.1 114.4	10 12.7 -23.8 114.0	9 20.4 -23.3 113.6	8 28.1 -23.0 113.2
20°	11 32.1 -24.7 115.7	10 40.6 -24.3 115.3	9 48.9 -23.8 114.9	8 57.1 -23.5 114.5	8 05.1 -23.1 114.2
21°	11 07.4 -24.8 116.6	10 16.3 -24.4 116.2	9 25.1 -24.1 115.8	8 33.6 -23.6 115.5	7 42.0 -23.2 115.1
22°	10 42.6 -25.0 117.5	9 51.9 -24.6 117.1	9 01.0 -24.1 116.8	8 10.0 -23.7 116.4	7 18.8 -23.3 116.0
23°	10 17.6 -25.2 118.5	9 27.3 -24.7 118.1	8 36.9 -24.3 117.7	7 46.3 -23.9 117.3	6 55.5 -23.5 117.0
24°	9 52.4 -25.3 119.4	9 02.6 -24.9 119.0	8 12.6 -24.4 118.6	7 22.4 -24.0 118.2	6 32.0 -23.5 117.9
25°	9 27.1 -25.5 120.3	8 37.7 -25.0 119.9	7 48.2 -24.6 119.5	6 58.4 -24.1 119.2	6 08.5 -23.6 118.8
26°	9 01.6 -25.6 121.2	8 12.7 -25.1 120.8	7 23.6 -24.6 120.5	6 34.3 -24.2 120.1	5 44.9 -23.7 119.7
27°	8 36.0 -25.7 122.1	7 47.6 -25.3 121.8	6 59.0 -24.8 121.4	6 10.1 -24.2 121.0	5 21.2 -23.9 120.7
28°	8 10.3 -25.9 123.0	7 22.3 -25.3 122.7	6 34.2 -24.9 122.3	5 45.9 -24.4 121.9	4 57.3 -23.8 121.6
29°	7 44.4 -26.0 124.0	6 57.0 -25.5 123.6	6 09.3 -24.9 123.2	5 21.5 -24.5 122.9	4 33.5 -24.0 122.5

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°	14 15.0 -19.3 94.7	13 18.1 -19.2 94.4	12 21.2 -19.1 94.1	11 24.3 -19.0 93.8	10 27.3 -18.9 93.4
1°	13 55.7 -19.4 95.7	12 58.9 -19.3 95.4	12 02.1 -19.3 95.1	11 05.3 -19.2 94.7	10 08.4 -19.1 94.4
2°	13 36.3 -19.7 96.7	12 39.6 -19.6 96.3	11 42.8 -19.4 96.0	10 46.1 -19.4 95.7	9 49.3 -19.3 95.4
3°	13 16.6 -20.0 97.7	12 20.0 -19.8 97.3	11 23.4 -19.7 97.0	10 26.7 -19.5 96.7	9 30.0 -19.4 96.3
4°	12 56.6 -20.1 98.6	12 00.2 -20.0 98.3	11 03.7 -19.9 97.9	10 07.2 -19.8 97.6	9 10.6 -19.6 97.3
5°	12 36.5 -20.4 99.6	11 40.2 -20.2 99.2	10 43.8 -20.0 98.9	9 47.4 -19.8 98.6	8 51.0 -19.7 98.2
6°	12 16.1 -20.5 100.6	11 20.0 -20.4 100.2	10 23.8 -20.2 99.9	9 27.6 -20.1 99.5	8 31.3 -19.9 99.2
7°	11 55.6 -20.8 101.5	10 59.6 -20.5 101.2	10 03.6 -20.3 100.8	9 07.5 -20.1 100.5	8 11.4 -20.0 100.1
8°	11 34.8 -20.9 102.5	10 39.1 -20.7 102.1	9 43.3 -20.6 101.8	8 47.4 -20.4 101.4	7 51.4 -20.1 101.1
9°	11 13.9 -21.1 103.4	10 18.4 -20.9 103.1	9 22.7 -20.6 102.7	8 27.0 -20.4 102.4	7 31.3 -20.3 102.1
10°	10 52.8 -21.3 104.4	9 57.5 -21.1 104.0	9 02.1 -20.8 103.7	8 06.6 -20.6 103.3	7 11.0 -20.3 103.0
11°	10 31.5 -21.5 105.3	9 36.4 -21.2 105.0	8 41.3 -21.0 104.6	7 46.0 -20.7 104.3	6 50.7 -20.5 103.9
12°	10 10.0 -21.6 106.3	9 15.2 -21.3 105.9	8 20.3 -21.1 105.6	7 25.3 -20.8 105.2	6 30.2 -20.6 104.9
13°	9 48.4 -21.8 107.2	8 53.9 -21.5 106.9	7 59.2 -21.2 106.5	7 04.5 -21.0 106.2	6 09.6 -20.7 105.8
14°	9 26.6 -21.9 108.2	8 32.4 -21.7 107.8	7 38.0 -21.4 107.5	6 43.5 -21.1 107.1	5 48.9 -20.8 106.8
15°	9 04.7 -22.1 109.1	8 10.7 -21.7 108.8	7 16.6 -21.4 108.4	6 22.4 -21.1 108.1	5 28.1 -20.8 107.7
16°	8 42.6 -22.2 110.1	7 49.0 -21.9 109.7	6 55.2 -21.6 109.4	6 01.3 -21.3 109.0	5 07.3 -21.0 108.7
17°	8 20.4 -22.3 111.0	7 27.1 -22.0 110.6	6 33.6 -21.7 110.3	5 40.0 -21.3 109.9	4 46.3 -21.0 109.6
18°	7 58.1 -22.5 111.9	7 05.1 -22.2 111.6	6 11.9 -21.7 111.2	5 18.7 -21.5 110.9	4 25.3 -21.1 110.5
19°	7 35.6 -22.6 112.9	6 42.9 -22.2 112.5	5 50.2 -21.9 112.2	4 57.2 -21.5 111.8	4 04.2 -21.2 111.5
20°	7 13.0 -22.7 113.8	6 20.7 -22.3 113.5	5 28.3 -22.0 113.1	4 35.7 -21.6 112.8	3 43.0 -21.2 112.4
21°	6 50.3 -22.8 114.7	5 58.4 -22.5 114.4	5 06.3 -22.0 114.0	4 14.1 -21.6 113.7	3 21.8 -21.2 113.4
22°	6 27.5 -23.0 115.7	5 35.9 -22.5 115.3	4 44.3 -22.1 115.0	3 52.5 -21.7 114.6	3 00.6 -21.4 114.3
23°	6 04.5 -23.0 116.6	5 13.4 -22.6 116.2	4 22.2 -22.2 115.9	3 30.8 -21.8 115.6	2 39.2 -21.3 115.2
24°	5 41.5 -23.1 117.5	4 50.8 -22.6 117.2	4 00.0 -22.2 116.8	3 09.0 -21.8 116.5	2 17.9 -21.4 116.2
25°	5 18.4 -23.2 118.5	4 28.2 -22.8 118.1	3 37.8 -22.3 117.8	2 47.2 -21.9 117.4	1 56.5 -21.5 117.1
26°	4 55.2 -23.2 119.4	4 05.4 -22.8 119.0	3 15.5 -22.4 118.7	2 25.3 -21.9 118.4	1 35.0 -21.4 118.0
27°	4 32.0 -23.4 120.3	3 42.6 -22.8 120.0	2 53.1 -22.4 119.6	2 03.4 -21.9 119.3	1 13.6 -21.5 119.0
28°	4 08.6 -23.4 121.2	3 19.8 -23.0 120.9	2 30.7 -22.4 120.6	1 41.5 -22.0 120.2	0 52.1 -21.5 119.9
29°	3 45.2 -23.4 122.2	2 56.8 -22.9 121.8	2 08.3 -22.5 121.5	1 19.5 -22.0 121.2	0 30.6 -21.5 120.8

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°	9 30.4 -18.9 93.1	8 33.4 -18.9 92.8	7 36.4 -18.8 92.5	6 39.3 -18.7 92.2	5 42.3 -18.7 91.9
1°	9 11.5 -19.1 94.1	8 14.5 -18.9 93.8	7 17.6 -18.9 93.4	6 20.6 -18.8 93.1	5 23.6 -18.7 92.8
2°	8 52.4 -19.1 95.0	7 55.6 -19.1 94.7	6 58.7 -19.0 94.4	6 01.8 -18.9 94.1	5 04.9 -18.9 93.8
3°	8 33.3 -19.3 96.0	7 36.5 -19.2 95.7	6 39.7 -19.1 95.4	5 42.9 -19.0 95.0	4 46.0 -18.9 94.7
4°	8 14.0 -19.5 97.0	7 17.3 -19.3 96.6	6 20.6 -19.2 96.3	5 23.9 -19.2 96.0	4 27.1 -19.0 95.7
5°	7 54.5 -19.6 97.9	6 58.0 -19.5 97.6	6 01.4 -19.3 97.3	5 04.7 -19.1 96.9	4 08.1 -19.1 96.6
6°	7 34.9 -19.7 98.9	6 38.5 -19.5 98.5	5 42.1 -19.5 98.2	4 45.6 -19.3 97.9	3 49.0 -19.1 97.6
7°	7 15.2 -19.8 99.8	6 19.0 -19.7 99.5	5 22.6 -19.5 99.2	4 26.3 -19.4 98.8	3 29.9 -19.2 98.5
8°	6 55.4 -20.0 100.8	5 59.3 -19.8 100.4	5 03.1 -19.5 100.1	4 06.9 -19.4 99.8	3 10.7 -19.3 99.5
9°	6 35.4 -20.0 101.7	5 39.5 -19.8 101.4	4 43.6 -19.7 101.1	3 47.5 -19.4 100.7	2 51.4 -19.3 100.4
10°	6 15.4 -20.2 102.7	5 19.7 -20.0 102.3	4 23.9 -19.7 102.0	3 28.1 -19.6 101.7	2 32.1 -19.3 101.4
11°	5 55.2 -20.2 103.6	4 59.7 -20.0 103.3	4 04.2 -19.8 103.0	3 08.5 -19.6 102.6	2 12.8 -19.4 102.3
12°	5 35.0 -20.3 104.6	4 39.7 -20.1 104.2	3 44.4 -19.9 103.9	2 48.9 -19.6 103.6	1 53.4 -19.4 103.3
13°	5 14.7 -20.5 105.5	4 19.6 -20.1 105.2	3 24.5 -19.9 104.9	2 29.3 -19.7 104.5	1 34.0 -19.4 104.2
14°	4 54.2 -20.5 106.5	3 59.5 -20.3 106.1	3 04.6 -20.0 105.8	2 09.6 -19.7 105.5	1 14.6 -19.4 105.2
15°	4 33.7 -20.5 107.4	3 39.2 -20.3 107.1	2 44.6 -20.0 106.7	1 49.9 -19.7 106.4	0 55.2 -19.5 106.1
16°	4 13.2 -20.7 108.3	3 18.9 -20.3 108.0	2 24.6 -20.0 107.7	1 30.2 -19.7 107.4	0 35.7 -19.5 107.1
17°	3 52.5 -20.7 109.3	2 58.6 -20.4 108.9	2 04.6 -20.1 108.6	1 10.5 -19.8 108.3	0 16.2 -19.4 108.0
18°	3 31.8 -20.8 110.2	2 38.2 -20.4 109.9	1 44.5 -20.1 109.6	0 50.7 -19.8 109.3	-0 03.2 -19.5
19°	3 11.0 -20.8 111.2	2 17.8 -20.5 110.8	1 24.4 -20.1 110.5	0 30.9 -19.8 110.2	-0 22.7 -19.5
20°	2 50.2 -20.8 112.1	1 57.3 -20.5 111.8	1 04.3 -20.2 111.5	0 11.1 -19.8 111.1	-0 42.2 -19.4
21°	2 29.4 -20.9 113.0	1 36.8 -20.5 112.7	0 44.1 -20.2 112.4	-0 08.7 -19.8	-1 01.6 -19.5
22°	2 08.5 -21.0 114.0	1 16.3 -20.6 113.7	0 23.9 -20.1 113.3	-0 28.5 -19.8	-1 21.1 -19.4
23°	1 47.5 -20.9 114.9	0 55.7 -20.5 114.6	0 03.8 -20.2 114.3	-0 48.3 -19.8	-1 40.5 -19.4
24°	1 26.6 -21.0 115.8	0 35.2 -20.6 115.5	-0 16.4 -20.2	-1 08.1 -19.7	-1 59.9 -19.4
25°	1 05.6 -21.0 116.8	0 14.6 -20.6 116.5	-0 36.6 -20.1	-1 27.8 -19.8	-2 19.3 -19.3
26°	0 44.6 -21.0 117.7	-0 06.0 -20.6	-0 56.7 -20.2	-1 47.6 -19.7	-2 38.6 -19.3
27°	0 23.6 -21.0 118.7	-0 26.6 -20.5	-1 16.9 -20.1	-2 07.3 -19.7	-2 57.9 -19.2
28°	0 02.6 -21.1 119.6	-0 47.1 -20.6	-1 37.0 -20.1	-2 27.0 -19.6	-3 17.1 -19.2
29°	-0 18.5 -21.0	-1 07.7 -20.5	-1 57.1 -20.0	-2 46.6 -19.6	-3 36.3 -19.1

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 45.3 -18.7 91.5	3 48.2 -18.6 91.2	2 51.2 -18.6 90.9	1 54.1 -18.5 90.6	0 57.1 -18.6 90.3
1°	4 26.6 -18.7 92.5	3 29.6 -18.6 92.2	2 32.6 -18.6 91.9	1 35.6 -18.6 91.6	0 38.5 -18.5 91.3
2°	4 07.9 -18.8 93.5	3 11.0 -18.8 93.1	2 14.0 -18.7 92.8	1 17.0 -18.6 92.5	0 20.0 -18.6 92.2
3°	3 49.1 -18.8 94.4	2 52.2 -18.7 94.1	1 55.3 -18.7 93.8	0 58.4 -18.7 93.5	0 01.4 -18.6 93.2
4°	3 30.3 -18.9 95.4	2 33.5 -18.9 95.0	1 36.6 -18.7 94.7	0 39.7 -18.6 94.4	-0 17.2 -18.5
5°	3 11.4 -19.0 96.3	2 14.6 -18.8 96.0	1 17.9 -18.8 95.7	0 21.1 -18.7 95.4	-0 35.7 -18.6
6°	2 52.4 -19.0 97.3	1 55.8 -18.9 96.9	0 59.1 -18.7 96.6	0 02.4 -18.6 96.3	-0 54.3 -18.5
7°	2 33.4 -19.0 98.2	1 36.9 -18.9 97.9	0 40.4 -18.8 97.6	-0 16.2 -18.7	-1 12.8 -18.6
8°	2 14.4 -19.1 99.2	1 18.0 -18.9 98.8	0 21.6 -18.8 98.5	-0 34.9 -18.6	-1 31.4 -18.4
9°	1 55.3 -19.1 100.1	0 59.1 -19.0 99.8	0 02.8 -18.8 99.5	-0 53.5 -18.6	-1 49.8 -18.5
10°	1 36.2 -19.2 101.1	0 40.1 -18.9 100.7	-0 16.0 -18.7	-1 12.1 -18.6	-2 08.3 -18.4
11°	1 17.0 -19.1 102.0	0 21.2 -19.0 101.7	-0 34.7 -18.8	-1 30.7 -18.6	-2 26.7 -18.4
12°	0 57.9 -19.2 103.0	0 02.2 -18.9 102.6	-0 53.5 -18.7	-1 49.3 -18.5	-2 45.1 -18.4
13°	0 38.7 -19.2 103.9	-0 16.7 -19.0	-1 12.2 -18.8	-2 07.8 -18.5	-3 03.5 -18.2
14°	0 19.5 -19.2 104.8	-0 35.7 -19.0	-1 31.0 -18.7	-2 26.3 -18.5	-3 21.7 -18.3
15°	0 00.3 -19.2 105.8	-0 54.7 -18.9	-1 49.7 -18.7	-2 44.8 -18.4	-3 40.0 -18.2
16°	-0 18.9 -19.2	-1 13.6 -18.9	-2 08.4 -18.6	-3 03.2 -18.4	-3 58.2 -18.1
17°	-0 38.1 -19.2	-1 32.5 -18.9	-2 27.0 -18.6	-3 21.6 -18.3	-4 16.3 -18.0
18°	-0 57.3 -19.1	-1 51.4 -18.8	-2 45.6 -18.6	-3 39.9 -18.3	-4 34.3 -18.0
19°	-1 16.4 -19.2	-2 10.2 -18.9	-3 04.2 -18.5	-3 58.2 -18.2	-4 52.3 -17.8
20°	-1 35.6 -19.1	-2 29.1 -18.7	-3 22.7 -18.4	-4 16.4 -18.1	-5 10.1 -17.8
21°	-1 54.7 -19.1	-2 47.8 -18.8	-3 41.1 -18.4	-4 34.5 -18.0	-5 27.9 -17.7
22°	-2 13.8 -19.0	-3 06.6 -18.7	-3 59.5 -18.3	-4 52.5 -18.0	-5 45.6 -17.6
23°	-2 32.8 -19.0	-3 25.3 -18.6	-4 17.8 -18.3	-5 10.5 -17.8	-6 03.2 -17.5
24°	-2 51.8 -19.0	-3 43.9 -18.6	-4 36.1 -18.1	-5 28.3 -17.8	-6 20.7 -17.4
25°	-3 10.8 -18.9	-4 02.5 -18.5	-4 54.2 -18.1	-5 46.1 -17.7	-6 38.1 -17.3
26°	-3 29.7 -18.9	-4 21.0 -18.4	-5 12.3 -18.0	-6 03.8 -17.6	-6 55.4 -17.2
27°	-3 48.6 -18.7	-4 39.4 -18.3	-5 30.3 -17.9	-6 21.4 -17.5	-7 12.6 -17.0
28°	-4 07.3 -18.8	-4 57.7 -18.3	-5 48.2 -17.9	-6 38.9 -17.3	-7 29.6 -16.9
29°	-4 26.1 -18.6	-5 16.0 -18.2	-6 06.1 -17.7	-6 56.2 -17.3	-7 46.5 -16.8

Latitude 18°

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 -18.5 90.0	-0 57.1 -18.5			
1°	-0 18.5 -18.6	-1 15.6 -18.5			
2°	-0 37.1 -18.5	-1 34.1 -18.5			
3°	-0 55.6 -18.5	-1 52.6 -18.5			
4°	-1 14.1 -18.5	-2 11.1 -18.4			
5°	-1 32.6 -18.5	-2 29.5 -18.4			
6°	-1 51.1 -18.4	-2 47.9 -18.3			
7°	-2 09.5 -18.4	-3 06.2 -18.3			
8°	-2 27.9 -18.3	-3 24.5 -18.2			
9°	-2 46.2 -18.4	-3 42.7 -18.2			
10°	-3 04.6 -18.2	-4 00.9 -18.1			
11°	-3 22.8 -18.2	-4 19.0 -18.0			
12°	-3 41.0 -18.2	-4 37.0 -17.9			
13°	-3 59.2 -18.0	-4 54.9 -17.9			
14°	-4 17.2 -18.0	-5 12.8 -17.8			
15°	-4 35.2 -18.0	-5 30.6 -17.7			
16°	-4 53.2 -17.8	-5 48.3 -17.6			
17°	-5 11.0 -17.8	-6 05.9 -17.4			
18°	-5 28.8 -17.6	-6 23.3 -17.4			
19°	-5 46.4 -17.6	-6 40.7 -17.3			
20°	-6 04.0 -17.5	-6 58.0 -17.1			
21°	-6 21.5 -17.3	-7 15.1 -17.1			
22°	-6 38.8 -17.3	-7 32.2 -16.9			
23°	-6 56.1 -17.1	-7 49.1 -16.7			
24°	-7 13.2 -17.0	-8 05.8 -16.7			
25°	-7 30.2 -16.9	-8 22.5 -16.4			
26°	-7 47.1 -16.8	-8 38.9 -16.4			
27°	-8 03.9 -16.6	-8 55.3 -16.2			
28°	-8 20.5 -16.5	-9 11.5 -16.0			
29°	-8 37.0 -16.3	-9 27.5 -15.9			

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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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°	71 00.0 -60.0 180.0	70 58.5 -59.9 176.9	70 53.9 -59.7 173.9	70 46.4 -59.4 170.9	70 35.9 -58.8 167.9
1°	70 00.0 -60.0 180.0	69 58.6 -60.0 177.1	69 54.2 -59.7 174.2	69 47.0 -59.4 171.3	69 37.1 -59.0 168.4
2°	69 00.0 -60.0 180.0	68 58.6 -59.9 177.2	68 54.5 -59.8 174.4	68 47.6 -59.4 171.7	68 38.1 -59.0 169.0
3°	68 00.0 -60.0 180.0	67 58.7 -60.0 177.3	67 54.7 -59.7 174.7	67 48.2 -59.5 172.0	67 39.1 -59.2 169.4
4°	67 00.0 -60.0 180.0	66 58.7 -59.9 177.4	66 55.0 -59.8 174.9	66 48.7 -59.6 172.4	66 39.9 -59.2 169.9
5°	66 00.0 -60.0 180.0	65 58.8 -60.0 177.6	65 55.2 -59.9 175.1	65 49.1 -59.5 172.7	65 40.7 -59.2 170.3
6°	65 00.0 -60.0 180.0	64 58.8 -59.9 177.6	64 55.3 -59.8 175.3	64 49.6 -59.7 173.0	64 41.5 -59.3 170.7
7°	64 00.0 -60.0 180.0	63 58.9 -60.0 177.7	63 55.5 -59.8 175.5	63 49.9 -59.6 173.2	63 42.2 -59.4 171.0
8°	63 00.0 -60.0 180.0	62 58.9 -59.9 177.8	62 55.7 -59.9 175.6	62 50.3 -59.6 173.5	62 42.8 -59.4 171.3
9°	62 00.0 -60.0 180.0	61 59.0 -60.0 177.9	61 55.8 -59.8 175.8	61 50.7 -59.7 173.7	61 43.4 -59.4 171.6
10°	61 00.0 -60.0 180.0	60 59.0 -60.0 178.0	60 56.0 -59.9 175.9	60 51.0 -59.7 173.9	60 44.0 -59.5 171.9
11°	60 00.0 -60.0 180.0	59 59.0 -59.9 178.0	59 56.1 -59.9 176.1	59 51.3 -59.7 174.1	59 44.5 -59.5 172.2
12°	59 00.0 -60.0 180.0	58 59.1 -60.0 178.1	58 56.2 -59.8 176.2	58 51.6 -59.8 174.3	58 45.0 -59.5 172.4
13°	58 00.0 -60.0 180.0	57 59.1 -60.0 178.2	57 56.4 -59.9 176.3	57 51.8 -59.7 174.5	57 45.5 -59.6 172.7
14°	57 00.0 -60.0 180.0	56 59.1 -60.0 178.2	56 56.5 -59.9 176.4	56 52.1 -59.8 174.7	56 45.9 -59.5 172.9
15°	56 00.0 -60.0 180.0	55 59.1 -59.9 178.3	55 56.6 -59.9 176.5	55 52.3 -59.8 174.8	55 46.4 -59.6 173.1
16°	55 00.0 -60.0 180.0	54 59.2 -60.0 178.3	54 56.7 -59.9 176.7	54 52.5 -59.7 175.0	54 46.8 -59.6 173.3
17°	54 00.0 -60.0 180.0	53 59.2 -60.0 178.4	53 56.8 -59.9 176.7	53 52.8 -59.8 175.1	53 47.2 -59.7 173.5
18°	53 00.0 -60.0 180.0	52 59.2 -60.0 178.4	52 56.9 -59.9 176.8	52 53.0 -59.8 175.3	52 47.5 -59.6 173.7
19°	52 00.0 -60.0 180.0	51 59.2 -59.9 178.5	51 57.0 -60.0 176.9	51 53.2 -59.8 175.4	51 47.9 -59.7 173.9
20°	51 00.0 -60.0 180.0	50 59.3 -60.0 178.5	50 57.0 -59.9 177.0	50 53.4 -59.9 175.5	50 48.2 -59.7 174.0
21°	50 00.0 -60.0 180.0	49 59.3 -60.0 178.5	49 57.1 -59.9 177.1	49 53.5 -59.8 175.7	49 48.5 -59.7 174.2
22°	49 00.0 -60.0 180.0	48 59.3 -60.0 178.6	48 57.2 -59.9 177.2	48 53.7 -59.8 175.8	48 48.8 -59.7 174.4
23°	48 00.0 -60.0 180.0	47 59.3 -60.0 178.6	47 57.3 -60.0 177.3	47 53.9 -59.9 175.9	47 49.1 -59.7 174.5
24°	47 00.0 -60.0 180.0	46 59.3 -59.9 178.7	46 57.3 -59.9 177.3	46 54.0 -59.8 176.0	46 49.4 -59.7 174.7
25°	46 00.0 -60.0 180.0	45 59.4 -60.0 178.7	45 57.4 -59.9 177.4	45 54.2 -59.9 176.1	45 49.7 -59.7 174.8
26°	45 00.0 -60.0 180.0	44 59.4 -60.0 178.7	44 57.5 -60.0 177.5	44 54.3 -59.8 176.2	44 50.0 -59.8 174.9
27°	44 00.0 -60.0 180.0	43 59.4 -60.0 178.8	43 57.5 -59.9 177.5	43 54.5 -59.9 176.3	43 50.2 -59.7 175.1
28°	43 00.0 -60.0 180.0	42 59.4 -60.0 178.8	42 57.6 -59.9 177.6	42 54.6 -59.8 176.4	42 50.5 -59.8 175.2
29°	42 00.0 -60.0 180.0	41 59.4 -60.0 178.8	41 57.7 -60.0 177.6	41 54.8 -59.9 176.5	41 50.7 -59.8 175.3

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°	70 22.6 -58.3 165.0	70 06.5 -57.5 162.1	69 47.8 -56.7 159.3	69 26.5 -55.8 156.7	69 02.9 -54.9 154.1
1°	69 24.3 -58.4 165.7	69 09.0 -57.8 162.9	68 51.1 -57.0 160.3	68 30.7 -56.2 157.7	68 08.0 -55.3 155.2
2°	68 25.9 -58.5 166.3	68 11.2 -57.9 163.7	67 54.1 -57.3 161.1	67 34.5 -56.4 158.6	67 12.7 -55.6 156.2
3°	67 27.4 -58.6 166.9	67 13.3 -58.1 164.4	66 56.8 -57.4 161.9	66 38.1 -56.7 159.5	66 17.1 -55.9 157.1
4°	66 28.8 -58.8 167.4	66 15.2 -58.2 165.0	65 59.4 -57.6 162.6	65 41.4 -57.0 160.3	65 21.2 -56.3 158.0
5°	65 30.0 -58.8 167.9	65 17.0 -58.4 165.6	65 01.8 -57.8 163.3	64 44.4 -57.2 161.0	64 24.9 -56.5 158.8
6°	64 31.2 -59.0 168.4	64 18.6 -58.4 166.1	64 04.0 -58.0 163.9	63 47.2 -57.4 161.7	63 28.4 -56.7 159.6
7°	63 32.2 -59.0 168.8	63 20.2 -58.6 166.6	63 06.0 -58.1 164.5	62 49.8 -57.5 162.4	62 31.7 -56.9 160.3
8°	62 33.2 -59.0 169.2	62 21.6 -58.7 167.1	62 07.9 -58.2 165.0	61 52.3 -57.7 163.0	61 34.8 -57.1 161.0
9°	61 34.2 -59.2 169.6	61 22.9 -58.7 167.6	61 09.7 -58.3 165.5	60 54.6 -57.8 163.6	60 37.7 -57.3 161.6
10°	60 35.0 -59.1 169.9	60 24.2 -58.9 168.0	60 11.4 -58.4 166.0	59 56.8 -58.0 164.1	59 40.4 -57.5 162.2
11°	59 35.9 -59.3 170.3	59 25.3 -58.8 168.4	59 13.0 -58.5 166.5	58 58.8 -58.0 164.6	58 42.9 -57.6 162.8
12°	58 36.6 -59.2 170.6	58 26.5 -59.0 168.7	58 14.5 -58.6 166.9	58 00.8 -58.2 165.1	57 45.3 -57.7 163.3
13°	57 37.4 -59.3 170.9	57 27.5 -59.0 169.1	57 15.9 -58.7 167.3	57 02.6 -58.3 165.6	56 47.6 -57.8 163.8
14°	56 38.1 -59.4 171.2	56 28.5 -59.1 169.4	56 17.2 -58.7 167.7	56 04.3 -58.3 166.0	55 49.8 -57.9 164.3
15°	55 38.7 -59.3 171.4	55 29.4 -59.1 169.7	55 18.5 -58.8 168.1	55 06.0 -58.4 166.4	54 51.9 -58.1 164.8
16°	54 39.4 -59.4 171.7	54 30.3 -59.1 170.0	54 19.7 -58.8 168.4	54 07.6 -58.5 166.8	53 53.8 -58.1 165.2
17°	53 40.0 -59.5 171.9	53 31.2 -59.2 170.3	53 20.9 -58.9 168.7	53 09.1 -58.6 167.2	52 55.7 -58.2 165.6
18°	52 40.5 -59.4 172.1	52 32.0 -59.2 170.6	52 22.0 -59.0 169.1	52 10.5 -58.7 167.5	51 57.5 -58.3 166.0
19°	51 41.1 -59.5 172.4	51 32.8 -59.3 170.9	51 23.0 -58.9 169.4	51 11.8 -58.6 167.9	50 59.2 -58.3 166.4
20°	50 41.6 -59.5 172.6	50 33.5 -59.2 171.1	50 24.1 -59.1 169.6	50 13.2 -58.8 168.2	50 00.9 -58.5 166.8
21°	49 42.1 -59.5 172.8	49 34.3 -59.4 171.3	49 25.0 -59.0 169.9	49 14.4 -58.8 168.5	49 02.4 -58.4 167.1
22°	48 42.6 -59.6 173.0	48 34.9 -59.3 171.6	48 26.0 -59.2 170.2	48 15.6 -58.8 168.8	48 04.0 -58.6 167.5
23°	47 43.0 -59.5 173.2	47 35.6 -59.4 171.8	47 26.8 -59.1 170.5	47 16.8 -58.9 169.1	47 05.4 -58.6 167.8
24°	46 43.5 -59.6 173.3	46 36.2 -59.4 172.0	46 27.7 -59.2 170.7	46 17.9 -58.9 169.4	46 06.8 -58.6 168.1
25°	45 43.9 -59.6 173.5	45 36.8 -59.4 172.2	45 28.5 -59.2 170.9	45 19.0 -59.0 169.7	45 08.2 -58.7 168.4
26°	44 44.3 -59.6 173.7	44 37.4 -59.4 172.4	44 29.3 -59.2 171.2	44 20.0 -59.0 169.9	44 09.5 -58.7 168.7
27°	43 44.7 -59.6 173.8	43 38.0 -59.4 172.6	43 30.1 -59.2 171.4	43 21.0 -59.0 170.2	43 10.8 -58.8 169.0
28°	42 45.1 -59.6 174.0	42 38.6 -59.5 172.8	42 30.9 -59.3 171.6	42 22.0 -59.1 170.4	42 12.0 -58.8 169.3
29°	41 45.5 -59.7 174.1	41 39.1 -59.5 173.0	41 31.6 -59.3 171.8	41 22.9 -59.0 170.7	41 13.2 -58.9 169.5

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°	68 36.9 -53.8 151.6	68 08.9 -52.8 149.2	67 38.8 -51.7 146.9	67 06.9 -50.6 144.7	66 33.2 -49.5 142.6
1°	67 43.1 -54.3 152.7	67 16.1 -53.3 150.4	66 47.1 -52.3 148.2	66 16.3 -51.3 146.0	65 43.7 -50.2 144.0
2°	66 48.8 -54.8 153.8	66 22.8 -53.8 151.6	65 54.8 -52.8 149.4	65 25.0 -51.8 147.3	64 53.5 -50.8 145.3
3°	65 54.0 -55.1 154.9	65 29.0 -54.3 152.7	65 02.0 -53.4 150.5	64 33.2 -52.4 148.5	64 02.7 -51.5 146.5
4°	64 58.9 -55.4 155.8	64 34.7 -54.6 153.7	64 08.6 -53.7 151.6	63 40.8 -52.9 149.6	63 11.2 -51.9 147.7
5°	64 03.5 -55.8 156.7	63 40.1 -55.0 154.6	63 14.9 -54.2 152.6	62 47.9 -53.3 150.6	62 19.3 -52.5 148.7
6°	63 07.7 -56.0 157.5	62 45.1 -55.3 155.5	62 20.7 -54.5 153.5	61 54.6 -53.7 151.6	61 26.8 -52.9 149.8
7°	62 11.7 -56.3 158.3	61 49.8 -55.6 156.3	61 26.2 -54.9 154.4	61 00.9 -54.1 152.6	60 33.9 -53.3 150.8
8°	61 15.4 -56.5 159.0	60 54.2 -55.8 157.1	60 31.3 -55.1 155.3	60 06.8 -54.4 153.4	59 40.6 -53.6 151.7
9°	60 18.9 -56.7 159.7	59 58.4 -56.1 157.9	59 36.2 -55.4 156.1	59 12.4 -54.8 154.3	58 47.0 -54.0 152.5
10°	59 22.2 -56.9 160.4	59 02.3 -56.3 158.6	58 40.8 -55.7 156.8	58 17.6 -55.0 155.1	57 53.0 -54.4 153.4
11°	58 25.3 -57.1 161.0	58 06.0 -56.5 159.2	57 45.1 -55.9 157.5	57 22.6 -55.2 155.8	56 58.6 -54.6 154.2
12°	57 28.2 -57.2 161.6	57 09.5 -56.7 159.9	56 49.2 -56.1 158.2	56 27.4 -55.5 156.5	56 04.0 -54.8 154.9
13°	56 31.0 -57.3 162.1	56 12.8 -56.8 160.5	55 53.1 -56.3 158.8	55 31.9 -55.7 157.2	55 09.2 -55.1 155.6
14°	55 33.7 -57.5 162.7	55 16.0 -57.0 161.0	54 56.8 -56.4 159.4	54 36.2 -55.9 157.9	54 14.1 -55.3 156.3
15°	54 36.2 -57.6 163.2	54 19.0 -57.1 161.6	54 00.4 -56.7 160.0	53 40.3 -56.1 158.5	53 18.8 -55.6 157.0
16°	53 38.6 -57.7 163.6	53 21.9 -57.3 162.1	53 03.7 -56.7 160.6	52 44.2 -56.3 159.1	52 23.5 -55.7 157.6
17°	52 40.9 -57.8 164.1	52 24.6 -57.3 162.6	52 07.0 -56.9 161.1	51 47.9 -56.4 159.6	51 27.5 -55.9 158.2
18°	51 43.1 -57.9 164.5	51 27.3 -57.5 163.1	51 10.1 -57.1 161.6	50 51.5 -56.6 160.2	50 31.6 -56.0 158.8
19°	50 45.2 -58.0 165.0	50 29.8 -57.6 163.5	50 13.0 -57.1 162.1	49 54.9 -56.7 160.7	49 35.6 -56.3 159.3
20°	49 47.2 -58.1 165.4	49 32.2 -57.7 164.0	49 15.9 -57.3 162.6	48 58.2 -56.8 161.2	48 39.3 -56.3 159.9
21°	48 49.1 -58.1 165.7	48 34.5 -57.7 164.4	48 18.6 -57.4 163.0	48 01.4 -56.9 161.7	47 43.0 -56.5 160.4
22°	47 51.0 -58.2 166.1	47 36.8 -57.9 164.8	47 21.2 -57.4 163.5	47 04.5 -57.1 162.2	46 46.5 -56.6 160.9
23°	46 52.8 -58.3 166.5	46 38.9 -57.9 165.2	46 23.8 -57.6 163.9	46 07.4 -57.1 162.6	45 49.9 -56.8 161.4
24°	45 54.5 -58.3 166.8	45 41.0 -58.0 165.6	45 26.2 -57.6 164.3	45 10.3 -57.3 163.1	44 53.1 -56.8 161.8
25°	44 56.2 -58.4 167.2	44 43.0 -58.1 165.9	44 28.6 -57.7 164.7	44 13.0 -57.3 163.5	43 56.3 -56.9 162.3
26°	43 57.8 -58.5 167.5	43 44.9 -58.1 166.3	43 30.9 -57.8 165.1	43 15.7 -57.5 163.9	42 59.4 -57.1 162.7
27°	42 59.3 -58.4 167.8	42 46.8 -58.2 166.6	42 33.1 -57.9 165.4	42 18.2 -57.5 164.3	42 02.3 -57.1 163.1
28°	42 00.9 -58.6 168.1	41 48.6 -58.3 166.9	41 35.2 -57.9 165.8	41 20.7 -57.5 164.7	41 05.2 -57.2 163.5
29°	41 02.3 -58.6 168.4	40 50.3 -58.2 167.3	40 37.3 -58.0 166.1	40 23.2 -57.7 165.0	40 08.0 -57.3 163.9

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°	65 57.9 -48.3 140.5	65 21.2 -47.3 138.6	64 43.0 -46.2 136.8	64 03.5 -45.1 135.1	63 22.9 -44.1 133.4
1°	65 09.6 -49.2 142.0	64 33.9 -48.1 140.1	63 56.8 -47.0 138.3	63 18.4 -46.0 136.5	62 38.8 -45.0 134.9
2°	64 20.4 -49.8 143.3	63 45.8 -48.8 141.5	63 09.8 -47.9 139.7	62 32.4 -46.8 138.0	61 53.8 -45.8 136.3
3°	63 30.6 -50.5 144.6	62 57.0 -49.5 142.8	62 21.9 -48.5 141.0	61 45.6 -47.6 139.3	61 08.0 -46.6 137.7
4°	62 40.1 -51.0 145.8	62 07.5 -50.1 144.0	61 33.4 -49.2 142.2	60 58.0 -48.2 140.6	60 21.4 -47.3 139.0
5°	61 49.1 -51.6 146.9	61 17.4 -50.7 145.1	60 44.2 -49.7 143.4	60 09.8 -48.9 141.8	59 34.1 -48.0 140.2
6°	60 57.5 -52.1 148.0	60 26.7 -51.2 146.2	59 54.5 -50.4 144.6	59 20.9 -49.4 142.9	58 46.1 -48.6 141.4
7°	60 05.4 -52.4 149.0	59 35.5 -51.7 147.3	59 04.1 -50.8 145.6	58 31.5 -50.0 144.0	57 57.5 -49.1 142.5
8°	59 13.0 -52.9 149.9	58 43.8 -52.1 148.3	58 13.3 -51.3 146.6	57 41.5 -50.5 145.1	57 08.4 -49.7 143.5
9°	58 20.1 -53.3 150.9	57 51.7 -52.5 149.2	57 22.0 -51.7 147.6	56 51.0 -50.9 146.1	56 18.7 -50.1 144.6
10°	57 26.8 -53.6 151.7	56 59.2 -52.8 150.1	56 30.3 -52.1 148.6	56 00.1 -51.4 147.0	55 28.6 -50.6 145.5
11°	56 33.2 -53.9 152.6	56 06.4 -53.3 151.0	55 38.2 -52.5 149.4	55 08.7 -51.8 147.9	54 38.0 -51.1 146.5
12°	55 39.3 -54.2 153.3	55 13.1 -53.5 151.8	54 45.7 -52.9 150.3	54 16.9 -52.1 148.8	53 46.9 -51.4 147.4
13°	54 45.1 -54.5 154.1	54 19.6 -53.8 152.6	53 52.8 -53.1 151.1	53 24.8 -52.5 149.7	52 55.5 -51.7 148.3
14°	53 50.6 -54.7 154.8	53 25.8 -54.1 153.3	52 59.7 -53.4 151.9	52 32.3 -52.7 150.5	52 03.8 -52.1 149.1
15°	52 55.9 -54.9 155.5	52 31.7 -54.3 154.0	52 06.3 -53.8 152.6	51 39.6 -53.1 151.2	51 11.7 -52.4 149.9
16°	52 01.0 -55.2 156.2	51 37.4 -54.6 154.7	51 12.5 -53.9 153.3	50 46.5 -53.4 152.0	50 19.3 -52.7 150.6
17°	51 05.8 -55.4 156.8	50 42.8 -54.8 155.4	50 18.6 -54.2 154.0	49 53.1 -53.6 152.7	49 26.6 -53.0 151.4
18°	50 10.4 -55.5 157.4	49 48.0 -55.0 156.0	49 24.4 -54.4 154.7	48 59.5 -53.8 153.4	48 33.6 -53.3 152.1
19°	49 14.9 -55.7 158.0	48 53.0 -55.1 156.7	48 30.0 -54.7 155.3	48 05.7 -54.1 154.1	47 40.3 -53.5 152.8
20°	48 19.2 -55.9 158.5	47 57.9 -55.4 157.2	47 35.3 -54.8 156.0	47 11.6 -54.2 154.7	46 46.8 -53.7 153.5
21°	47 23.3 -56.0 159.1	47 02.5 -55.5 157.8	46 40.5 -55.0 156.6	46 17.4 -54.5 155.3	45 53.1 -53.9 154.1
22°	46 27.3 -56.1 159.6	46 07.0 -55.7 158.4	45 45.5 -55.2 157.1	45 22.9 -54.6 155.9	44 59.2 -54.1 154.7
23°	45 31.2 -56.3 160.1	45 11.3 -55.8 158.9	44 50.3 -55.3 157.7	44 28.3 -54.9 156.5	44 05.1 -54.3 155.3
24°	44 34.9 -56.4 160.6	44 15.5 -56.0 159.4	43 55.0 -55.5 158.2	43 33.4 -55.0 157.1	43 10.8 -54.5 155.9
25°	43 38.5 -56.5 161.1	43 19.5 -56.0 159.9	42 59.5 -55.6 158.8	42 38.4 -55.1 157.6	42 16.3 -54.6 156.5
26°	42 42.0 -56.7 161.5	42 23.5 -56.2 160.4	42 03.9 -55.7 159.3	41 43.3 -55.3 158.2	41 21.7 -54.8 157.1
27°	41 45.3 -56.7 162.0	41 27.3 -56.4 160.9	41 08.2 -55.9 159.8	40 48.0 -55.4 158.7	40 26.9 -55.0 157.6
28°	40 48.6 -56.8 162.4	40 30.9 -56.4 161.3	40 12.3 -56.0 160.2	39 52.6 -55.5 159.2	39 31.9 -55.0 158.1
29°	39 51.8 -56.9 162.8	39 34.5 -56.5 161.8	39 16.3 -56.1 160.7	38 57.1 -55.7 159.7	38 36.9 -55.2 158.6

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°	62 41.1 -43.1 131.8	61 58.3 -42.1 130.3	61 14.6 -41.1 128.9	60 30.0 -40.2 127.5	59 44.6 -39.3 126.2
1°	61 58.0 -44.0 133.3	61 16.2 -43.0 131.8	60 33.5 -42.1 130.4	59 49.8 -41.1 129.0	59 05.3 -40.3 127.7
2°	61 14.0 -44.8 134.7	60 33.2 -43.9 133.2	59 51.4 -43.0 131.8	59 08.7 -42.1 130.4	58 25.0 -41.1 129.1
3°	60 29.2 -45.7 136.1	59 49.3 -44.7 134.6	59 08.4 -43.8 133.2	58 26.6 -42.9 131.8	57 43.9 -42.1 130.5
4°	59 43.5 -46.3 137.4	59 04.6 -45.5 135.9	58 24.6 -44.6 134.5	57 43.7 -43.7 133.1	57 01.8 -42.8 131.8
5°	58 57.2 -47.1 138.7	58 19.1 -46.2 137.2	57 40.0 -45.3 135.8	57 00.0 -44.5 134.4	56 19.0 -43.6 133.1
6°	58 10.1 -47.7 139.8	57 32.9 -46.8 138.4	56 54.7 -45.9 137.0	56 15.5 -45.1 135.6	55 35.4 -44.3 134.3
7°	57 22.4 -48.3 141.0	56 46.1 -47.5 139.5	56 08.8 -46.7 138.1	55 30.4 -45.8 136.8	54 51.1 -45.0 135.5
8°	56 34.1 -48.9 142.1	55 58.6 -48.0 140.6	55 22.1 -47.2 139.2	54 44.6 -46.4 137.9	54 06.1 -45.6 136.6
9°	55 45.2 -49.3 143.1	55 10.6 -48.5 141.7	54 34.9 -47.7 140.3	53 58.2 -47.0 139.0	53 20.5 -46.2 137.7
10°	54 55.9 -49.8 144.1	54 22.1 -49.1 142.7	53 47.2 -48.3 141.4	53 11.2 -47.5 140.0	52 34.3 -46.7 138.8
11°	54 06.1 -50.3 145.1	53 33.0 -49.5 143.7	52 58.9 -48.8 142.4	52 23.7 -48.0 141.1	51 47.6 -47.3 139.8
12°	53 15.8 -50.7 146.0	52 43.5 -49.9 144.6	52 10.1 -49.2 143.3	51 35.7 -48.4 142.0	51 00.3 -47.7 140.8
13°	52 25.1 -51.0 146.9	51 53.6 -50.4 145.5	51 20.9 -49.6 144.2	50 47.3 -48.9 143.0	50 12.6 -48.2 141.7
14°	51 34.1 -51.5 147.7	51 03.2 -50.7 146.4	50 31.3 -50.0 145.1	49 58.4 -49.3 143.9	49 24.4 -48.6 142.7
15°	50 42.6 -51.7 148.6	50 12.5 -51.1 147.3	49 41.3 -50.4 146.0	49 09.1 -49.7 144.8	48 35.8 -49.0 143.6
16°	49 50.9 -52.1 149.3	49 21.4 -51.4 148.1	48 50.9 -50.7 146.8	48 19.4 -50.1 145.6	47 46.8 -49.4 144.4
17°	48 58.8 -52.3 150.1	48 30.0 -51.7 148.9	48 00.2 -51.1 147.6	47 29.3 -50.4 146.4	46 57.4 -49.7 145.3
18°	48 06.5 -52.6 150.8	47 38.3 -52.0 149.6	47 09.1 -51.4 148.4	46 38.9 -50.7 147.2	46 07.7 -50.1 146.1
19°	47 13.9 -52.9 151.6	46 46.3 -52.3 150.3	46 17.7 -51.6 149.2	45 48.2 -51.1 148.0	45 17.6 -50.4 146.9
20°	46 21.0 -53.2 152.3	45 54.0 -52.5 151.1	45 26.1 -52.0 149.9	44 57.1 -51.3 148.7	44 27.2 -50.7 147.6
21°	45 27.8 -53.3 152.9	45 01.5 -52.8 151.7	44 34.1 -52.1 150.6	44 05.8 -51.6 149.5	43 36.5 -51.0 148.4
22°	44 34.5 -53.6 153.6	44 08.7 -53.0 152.4	43 42.0 -52.5 151.3	43 14.2 -51.8 150.2	42 45.5 -51.2 149.1
23°	43 40.9 -53.7 154.2	43 15.7 -53.2 153.1	42 49.5 -52.6 152.0	42 22.4 -52.1 150.9	41 54.3 -51.5 149.8
24°	42 47.2 -54.0 154.8	42 22.5 -53.4 153.7	41 56.9 -52.9 152.6	41 30.3 -52.3 151.5	41 02.8 -51.7 150.5
25°	41 53.2 -54.1 155.4	41 29.1 -53.6 154.3	41 04.0 -53.0 153.2	40 38.0 -52.5 152.2	40 11.1 -52.0 151.1
26°	40 59.1 -54.3 156.0	40 35.5 -53.8 154.9	40 11.0 -53.3 153.9	39 45.5 -52.7 152.8	39 19.1 -52.1 151.8
27°	40 04.8 -54.5 156.5	39 41.7 -53.9 155.5	39 17.7 -53.4 154.5	38 52.8 -52.9 153.4	38 27.0 -52.4 152.4
28°	39 10.3 -54.6 157.1	38 47.8 -54.2 156.0	38 24.3 -53.6 155.0	37 59.9 -53.1 154.0	37 34.6 -52.6 153.1
29°	38 15.7 -54.7 157.6	37 53.6 -54.2 156.6	37 30.7 -53.8 155.6	37 06.8 -53.3 154.6	36 42.0 -52.7 153.7

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°	58 58.4 -38.4 124.9	58 11.6 -37.6 123.7	57 24.1 -36.8 122.6	56 36.0 -36.0 121.5	55 47.3 -35.2 120.4
1°	58 20.0 -39.4 126.4	57 34.0 -38.6 125.2	56 47.3 -37.7 124.0	56 00.0 -37.0 122.9	55 12.1 -36.2 121.9
2°	57 40.6 -40.3 127.8	56 55.4 -39.5 126.6	56 09.6 -38.7 125.4	55 23.0 -37.9 124.3	54 35.9 -37.2 123.2
3°	57 00.3 -41.2 129.2	56 15.9 -40.3 128.0	55 30.9 -39.6 126.8	54 45.1 -38.8 125.7	53 58.7 -38.0 124.6
4°	56 19.1 -42.0 130.5	55 35.6 -41.2 129.3	54 51.3 -40.4 128.1	54 06.3 -39.6 127.0	53 20.7 -38.8 125.9
5°	55 37.1 -42.8 131.8	54 54.4 -42.0 130.6	54 10.9 -41.1 129.4	53 26.7 -40.4 128.3	52 41.9 -39.7 127.2
6°	54 54.3 -43.5 133.0	54 12.4 -42.6 131.8	53 29.8 -41.9 130.6	52 46.3 -41.1 129.5	52 02.2 -40.4 128.4
7°	54 10.8 -44.1 134.2	53 29.8 -43.4 133.0	52 47.9 -42.6 131.8	52 05.2 -41.8 130.7	51 21.8 -41.0 129.6
8°	53 26.7 -44.8 135.4	52 46.4 -44.0 134.1	52 05.3 -43.3 133.0	51 23.4 -42.5 131.8	50 40.8 -41.8 130.7
9°	52 41.9 -45.4 136.5	52 02.4 -44.7 135.3	51 22.0 -43.9 134.1	50 40.9 -43.1 133.0	49 59.0 -42.4 131.9
10°	51 56.5 -46.0 137.5	51 17.7 -45.2 136.3	50 38.1 -44.4 135.2	49 57.8 -43.8 134.1	49 16.6 -43.0 133.0
11°	51 10.5 -46.5 138.6	50 32.5 -45.7 137.4	49 53.7 -45.0 136.2	49 14.0 -44.2 135.1	48 33.6 -43.5 134.0
12°	50 24.0 -47.0 139.6	49 46.8 -46.3 138.4	49 08.7 -45.5 137.2	48 29.8 -44.8 136.1	47 50.1 -44.1 135.1
13°	49 37.0 -47.4 140.5	49 00.5 -46.7 139.4	48 23.2 -46.1 138.2	47 45.0 -45.4 137.1	47 06.0 -44.6 136.1
14°	48 49.6 -47.9 141.5	48 13.8 -47.2 140.3	47 37.1 -46.5 139.2	46 59.6 -45.7 138.1	46 21.4 -45.1 137.0
15°	48 01.7 -48.4 142.4	47 26.6 -47.6 141.2	46 50.6 -46.9 140.1	46 13.9 -46.3 139.0	45 36.3 -45.6 138.0
16°	47 13.3 -48.7 143.3	46 39.0 -48.1 142.1	46 03.7 -47.3 141.0	45 27.6 -46.6 140.0	44 50.7 -46.0 138.9
17°	46 24.6 -49.0 144.1	45 50.9 -48.4 143.0	45 16.4 -47.8 141.9	44 41.0 -47.1 140.8	44 04.7 -46.4 139.8
18°	45 35.6 -49.5 144.9	45 02.5 -48.7 143.8	44 28.6 -48.1 142.8	43 53.9 -47.5 141.7	43 18.3 -46.8 140.7
19°	44 46.1 -49.7 145.7	44 13.8 -49.2 144.7	43 40.5 -48.4 143.6	43 06.4 -47.8 142.6	42 31.5 -47.1 141.5
20°	43 56.4 -50.1 146.5	43 24.6 -49.4 145.5	42 52.1 -48.8 144.4	42 18.6 -48.1 143.4	41 44.4 -47.5 142.4
21°	43 06.3 -50.3 147.3	42 35.2 -49.7 146.2	42 03.3 -49.2 145.2	41 30.5 -48.5 144.2	40 56.9 -47.9 143.2
22°	42 16.0 -50.7 148.0	41 45.5 -50.0 147.0	41 14.1 -49.4 146.0	40 42.0 -48.8 145.0	40 09.0 -48.2 144.0
23°	41 25.3 -50.9 148.7	40 55.5 -50.3 147.7	40 24.7 -49.7 146.7	39 53.2 -49.1 145.7	39 20.8 -48.4 144.8
24°	40 34.4 -51.1 149.5	40 05.2 -50.6 148.4	39 35.0 -49.9 147.4	39 04.1 -49.4 146.5	38 32.4 -48.8 145.5
25°	39 43.3 -51.4 150.1	39 14.6 -50.8 149.1	38 45.1 -50.2 148.2	38 14.7 -49.6 147.2	37 43.6 -49.0 146.3
26°	38 51.9 -51.6 150.8	38 23.8 -51.0 149.8	37 54.9 -50.5 148.9	37 25.1 -49.9 147.9	36 54.6 -49.3 147.0
27°	38 00.3 -51.8 151.5	37 32.8 -51.3 150.5	37 04.4 -50.7 149.5	36 35.2 -50.1 148.6	36 05.3 -49.5 147.7
28°	37 08.5 -52.0 152.1	36 41.5 -51.5 151.1	36 13.7 -50.9 150.2	35 45.1 -50.3 149.3	35 15.8 -49.8 148.4
29°	36 16.5 -52.3 152.7	35 50.0 -51.6 151.8	35 22.8 -51.1 150.9	34 54.8 -50.6 150.0	34 26.0 -50.0 149.1

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°	54 58.1 -34.5 119.4	54 08.5 -33.8 118.5	53 18.4 -33.2 117.5	52 27.9 -32.6 116.6	51 37.0 -32.0 115.8
1°	54 23.6 -35.5 120.8	53 34.7 -34.8 119.9	52 45.2 -34.1 118.9	51 55.3 -33.4 118.0	51 05.0 -32.8 117.1
2°	53 48.1 -36.4 122.2	52 59.9 -35.7 121.2	52 11.1 -35.0 120.3	51 21.9 -34.4 119.3	50 32.2 -33.7 118.4
3°	53 11.7 -37.3 123.5	52 24.2 -36.6 122.5	51 36.1 -35.9 121.6	50 47.5 -35.2 120.6	49 58.5 -34.6 119.7
4°	52 34.4 -38.1 124.8	51 47.6 -37.4 123.8	51 00.2 -36.7 122.9	50 12.3 -36.0 121.9	49 23.9 -35.4 121.0
5°	51 56.3 -38.9 126.1	51 10.2 -38.2 125.1	50 23.5 -37.5 124.1	49 36.3 -36.9 123.2	48 48.5 -36.1 122.2
6°	51 17.4 -39.6 127.3	50 32.0 -38.9 126.3	49 46.0 -38.2 125.3	48 59.4 -37.5 124.4	48 12.4 -36.9 123.4
7°	50 37.8 -40.4 128.5	49 53.1 -39.7 127.5	49 07.8 -39.0 126.5	48 21.9 -38.3 125.5	47 35.5 -37.6 124.6
8°	49 57.4 -41.0 129.7	49 13.4 -40.3 128.7	48 28.8 -39.6 127.7	47 43.6 -38.9 126.7	46 57.9 -38.3 125.8
9°	49 16.4 -41.7 130.8	48 33.1 -40.9 129.8	47 49.2 -40.2 128.8	47 04.7 -39.6 127.8	46 19.6 -38.9 126.9
10°	48 34.7 -42.2 131.9	47 52.2 -41.6 130.9	47 09.0 -40.9 129.9	46 25.1 -40.2 128.9	45 40.7 -39.5 128.0
11°	47 52.5 -42.9 133.0	47 10.6 -42.1 131.9	46 28.1 -41.5 131.0	45 44.9 -40.7 130.0	45 01.2 -40.1 129.1
12°	47 09.6 -43.4 134.0	46 28.5 -42.7 133.0	45 46.6 -42.0 132.0	45 04.2 -41.4 131.0	44 21.1 -40.7 130.1
13°	46 26.2 -43.9 135.0	45 45.8 -43.2 134.0	45 04.6 -42.5 133.0	44 22.8 -41.8 132.1	43 40.4 -41.2 131.1
14°	45 42.3 -44.4 136.0	45 02.6 -43.8 135.0	44 22.1 -43.1 134.0	43 41.0 -42.4 133.1	42 59.2 -41.7 132.1
15°	44 57.9 -44.9 137.0	44 18.8 -44.2 136.0	43 39.0 -43.5 135.0	42 58.6 -42.9 134.0	42 17.5 -42.2 133.1
16°	44 13.0 -45.3 137.9	43 34.6 -44.6 136.9	42 55.5 -44.0 135.9	42 15.7 -43.3 135.0	41 35.3 -42.7 134.1
17°	43 27.7 -45.7 138.8	42 50.0 -45.1 137.8	42 11.5 -44.4 136.8	41 32.4 -43.8 135.9	40 52.6 -42.1 135.0
18°	42 42.0 -46.1 139.7	42 04.9 -45.5 138.7	41 27.1 -44.8 137.7	40 48.6 -44.1 136.8	40 09.5 -43.5 135.9
19°	41 55.9 -46.5 140.5	41 19.4 -45.8 139.6	40 42.3 -45.2 138.6	40 04.5 -44.6 137.7	39 26.0 -44.0 136.8
20°	41 09.4 -46.9 141.4	40 33.6 -46.3 140.4	39 57.1 -45.6 139.5	39 19.9 -45.0 138.6	38 42.0 -44.3 137.7
21°	40 22.5 -47.2 142.2	39 47.3 -46.5 141.3	39 11.5 -46.0 140.3	38 34.9 -45.3 139.4	37 57.7 -44.7 138.5
22°	39 35.3 -47.6 143.0	39 00.8 -47.0 142.1	38 25.5 -46.3 141.2	37 49.6 -45.7 140.3	37 13.0 -45.0 139.4
23°	38 47.7 -47.8 143.8	38 13.8 -47.2 142.9	37 39.2 -46.6 142.0	37 03.9 -45.9 141.1	36 28.0 -45.4 140.2
24°	37 59.9 -48.2 144.6	37 26.6 -47.5 143.7	36 52.6 -46.9 142.8	36 18.0 -46.4 141.9	35 42.6 -45.7 141.0
25°	37 11.7 -48.4 145.3	36 39.1 -47.9 144.4	36 05.7 -47.2 143.5	35 31.6 -46.6 142.7	34 56.9 -46.0 141.8
26°	36 23.3 -48.7 146.1	35 51.2 -48.0 145.2	35 18.5 -47.5 144.3	34 45.0 -46.9 143.4	34 10.9 -46.3 142.6
27°	35 34.6 -49.0 146.8	35 03.2 -48.4 145.9	34 31.0 -47.8 145.0	33 58.1 -47.1 144.2	33 24.6 -46.6 143.4
28°	34 45.6 -49.1 147.5	34 14.8 -48.6 146.6	33 43.2 -48.0 145.8	33 11.0 -47.5 144.9	32 38.0 -46.8 144.1
29°	33 56.5 -49.5 148.2	33 26.2 -48.9 147.3	32 55.2 -48.2 146.5	32 23.5 -47.6 145.7	31 51.2 -47.1 144.8

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°	50 45.7 -31.3 114.9	49 54.1 -30.8 114.1	49 02.2 -30.3 113.4	48 10.0 -29.8 112.6	47 17.4 -29.2 111.9
1°	50 14.4 -32.3 116.3	49 23.3 -31.7 115.5	48 31.9 -31.1 114.7	47 40.2 -30.6 113.9	46 48.2 -30.1 113.2
2°	49 42.1 -33.1 117.6	48 51.6 -32.5 116.8	48 00.8 -32.0 116.0	47 09.6 -31.4 115.2	46 18.1 -30.8 114.4
3°	49 09.0 -34.0 118.9	48 19.1 -33.3 118.0	47 28.8 -32.7 117.2	46 38.2 -32.2 116.4	45 47.3 -31.7 115.7
4°	48 35.0 -34.7 120.1	47 45.8 -34.2 119.3	46 56.1 -33.6 118.5	46 06.0 -33.0 117.7	45 15.6 -32.4 116.9
5°	48 00.3 -35.5 121.3	47 11.6 -34.9 120.5	46 22.5 -34.3 119.7	45 33.0 -33.7 118.9	44 43.2 -33.2 118.1
6°	47 24.8 -36.3 122.5	46 36.7 -35.6 121.7	45 48.2 -35.0 120.8	44 59.3 -34.4 120.0	44 10.0 -33.8 119.2
7°	46 48.5 -36.9 123.7	46 01.1 -36.3 122.8	45 13.2 -35.7 122.0	44 24.9 -35.1 121.2	43 36.2 -34.6 120.4
8°	46 11.6 -37.6 124.9	45 24.8 -37.0 124.0	44 37.5 -36.4 123.1	43 49.8 -35.8 122.3	43 01.6 -35.1 121.5
9°	45 34.0 -38.3 126.0	44 47.8 -37.6 125.1	44 01.1 -37.0 124.3	43 14.0 -36.4 123.4	42 26.5 -35.8 122.6
10°	44 55.7 -38.9 127.1	44 10.2 -38.3 126.2	43 24.1 -37.6 125.3	42 37.6 -37.0 124.5	41 50.7 -36.4 123.7
11°	44 16.8 -39.4 128.1	43 31.9 -38.8 127.3	42 46.5 -38.1 126.4	42 00.6 -37.5 125.6	41 14.3 -37.0 124.8
12°	43 37.4 -40.0 129.2	42 53.1 -39.3 128.3	42 08.4 -38.8 127.5	41 23.1 -38.2 126.6	40 37.3 -37.5 125.8
13°	42 57.4 -40.6 130.2	42 13.8 -40.0 129.3	41 29.6 -39.3 128.5	40 44.9 -38.6 127.6	39 59.8 -38.1 126.8
14°	42 16.8 -41.1 131.2	41 33.8 -40.4 130.3	40 50.3 -39.8 129.5	40 06.3 -39.2 128.6	39 21.7 -38.5 127.8
15°	41 35.7 -41.5 132.2	40 53.4 -40.9 131.3	40 10.5 -40.3 130.5	39 27.1 -39.7 129.6	38 43.2 -39.1 128.8
16°	40 54.2 -42.0 133.2	40 12.5 -41.4 132.3	39 30.2 -40.7 131.4	38 47.4 -40.1 130.6	38 04.1 -39.5 129.8
17°	40 12.2 -42.5 134.1	39 31.1 -41.8 133.2	38 49.5 -41.2 132.4	38 07.3 -40.6 131.5	37 24.6 -40.0 130.7
18°	39 29.7 -42.9 135.0	38 49.3 -42.3 134.2	38 08.3 -41.6 133.3	37 26.7 -41.0 132.5	36 44.6 -40.4 131.7
19°	38 46.8 -43.3 135.9	38 07.0 -42.6 135.1	37 26.7 -42.1 134.2	36 45.7 -41.4 133.4	36 04.2 -40.8 132.6
20°	38 03.5 -43.7 136.8	37 24.4 -43.1 135.9	36 44.6 -42.4 135.1	36 04.3 -41.8 134.3	35 23.4 -41.2 133.5
21°	37 19.8 -44.1 137.7	36 41.3 -43.4 136.8	36 02.2 -42.8 136.0	35 22.5 -42.2 135.2	34 42.2 -41.6 134.4
22°	36 35.7 -44.4 138.5	35 57.9 -43.8 137.7	35 19.4 -43.2 136.9	34 40.3 -42.6 136.0	34 00.6 -41.9 135.3
23°	35 51.3 -44.7 139.4	35 14.1 -44.2 138.5	34 36.2 -43.5 137.7	33 57.7 -42.9 136.9	33 18.7 -42.3 136.1
24°	35 06.6 -45.1 140.2	34 29.9 -44.4 139.3	33 52.7 -43.9 138.5	33 14.8 -43.3 137.7	32 36.4 -42.7 137.0
25°	34 21.5 -45.4 141.0	33 45.5 -44.8 140.2	33 08.8 -44.2 139.4	32 31.5 -43.5 138.6	31 53.7 -42.9 137.8
26°	33 36.1 -45.7 141.8	33 00.7 -45.1 140.9	32 24.6 -44.4 140.2	31 48.0 -43.9 139.4	31 10.8 -43.3 138.6
27°	32 50.4 -45.9 142.5	32 15.6 -45.4 141.7	31 40.2 -44.8 140.9	31 04.1 -44.1 140.2	30 27.5 -43.6 139.4
28°	32 04.5 -46.3 143.3	31 30.2 -45.6 142.5	30 55.4 -45.0 141.7	30 20.0 -44.5 141.0	29 43.9 -43.8 140.2
29°	31 18.2 -46.5 144.0	30 44.6 -45.9 143.3	30 10.4 -45.3 142.5	29 35.5 -44.7 141.7	29 00.1 -44.1 141.0

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°	46 24.7 -28.8 111.2	45 31.7 -28.3 110.5	44 38.4 -27.8 109.9	43 45.0 -27.5 109.2	42 51.3 -27.0 108.6
1°	45 55.9 -29.6 112.5	45 03.4 -29.1 111.8	44 10.6 -28.7 111.1	43 17.5 -28.2 110.5	42 24.3 -27.8 109.8
2°	45 26.3 -30.3 113.7	44 34.3 -29.9 113.0	43 41.9 -29.4 112.3	42 49.3 -28.9 111.7	41 56.5 -28.5 111.0
3°	44 56.0 -31.2 114.9	44 04.4 -30.7 114.2	43 12.5 -30.1 113.5	42 20.4 -29.7 112.9	41 28.0 -29.3 112.2
4°	44 24.8 -31.9 116.1	43 33.7 -31.3 115.4	42 42.4 -30.9 114.7	41 50.7 -30.4 114.0	40 58.7 -29.9 113.4
5°	43 52.9 -32.6 117.3	43 02.4 -32.1 116.6	42 11.5 -31.6 115.9	41 20.3 -31.1 115.2	40 28.8 -30.6 114.5
6°	43 20.3 -33.3 118.5	42 30.3 -32.8 117.7	41 39.9 -32.2 117.0	40 49.2 -31.7 116.3	39 58.2 -31.2 115.7
7°	42 47.0 -33.9 119.6	41 57.5 -33.4 118.9	41 07.7 -32.9 118.2	40 17.5 -32.4 117.4	39 27.0 -31.9 116.8
8°	42 13.1 -34.6 120.7	41 24.1 -34.0 120.0	40 34.8 -33.5 119.3	39 45.1 -32.9 118.5	38 55.1 -32.4 117.9
9°	41 38.5 -35.3 121.8	40 50.1 -34.7 121.1	40 01.3 -34.1 120.3	39 12.2 -33.6 119.6	38 22.7 -33.1 118.9
10°	41 03.2 -35.8 122.9	40 15.4 -35.2 122.2	39 27.2 -34.7 121.4	38 38.6 -34.1 120.7	37 49.6 -33.6 120.0
11°	40 27.4 -36.3 124.0	39 40.2 -35.8 123.2	38 52.5 -35.2 122.5	38 04.5 -34.7 121.7	37 16.0 -34.1 121.0
12°	39 51.1 -37.0 125.0	39 04.4 -36.4 124.2	38 17.3 -35.8 123.5	37 29.8 -35.2 122.8	36 41.9 -34.7 122.1
13°	39 14.1 -37.4 126.0	38 28.0 -36.8 125.3	37 41.5 -36.3 124.5	36 54.6 -35.8 123.8	36 07.2 -35.2 123.1
14°	38 36.7 -38.0 127.0	37 51.2 -37.4 126.3	37 05.2 -36.8 125.5	36 18.8 -36.2 124.8	35 32.0 -35.6 124.1
15°	37 58.7 -38.4 128.0	37 13.8 -37.9 127.3	36 28.4 -37.3 126.5	35 42.6 -36.7 125.8	34 56.4 -36.2 125.1
16°	37 20.3 -39.0 129.0	36 35.9 -38.3 128.2	35 51.1 -37.7 127.5	35 05.9 -37.2 126.7	34 20.2 -36.6 126.0
17°	36 41.3 -39.3 130.0	35 57.6 -38.7 129.2	35 13.4 -38.2 128.4	34 28.7 -37.5 127.7	33 43.6 -37.0 127.0
18°	36 02.0 -39.8 130.9	35 18.9 -39.2 130.1	34 35.2 -38.6 129.4	33 51.2 -38.1 128.6	33 06.6 -37.4 127.9
19°	35 22.2 -40.2 131.8	34 39.7 -39.6 131.0	33 56.6 -39.0 130.3	33 13.1 -38.4 129.6	32 29.2 -37.9 128.9
20°	34 42.0 -40.6 132.7	34 00.1 -40.0 132.0	33 17.6 -39.4 131.2	32 34.7 -38.8 130.5	31 51.3 -38.2 129.8
21°	34 01.4 -41.0 133.6	33 20.1 -40.4 132.9	32 38.2 -39.8 132.1	31 55.9 -39.2 131.4	31 13.1 -38.6 130.7
22°	33 20.4 -41.3 134.5	32 39.7 -40.8 133.7	31 58.4 -40.1 133.0	31 16.7 -39.6 132.3	30 34.5 -39.0 131.6
23°	32 39.1 -41.7 135.4	31 58.9 -41.1 134.6	31 18.3 -40.5 133.9	30 37.1 -39.9 133.2	29 55.5 -39.3 132.5
24°	31 57.4 -42.1 136.2	31 17.8 -41.4 135.5	30 37.8 -40.8 134.7	29 57.2 -40.2 134.0	29 16.2 -39.6 133.3
25°	31 15.3 -42.3 137.0	30 36.4 -41.7 136.3	29 57.0 -41.2 135.6	29 17.0 -40.6 134.9	28 36.6 -40.0 134.2
26°	30 33.0 -42.7 137.9	29 54.7 -42.1 137.1	29 15.8 -41.5 136.4	28 36.4 -40.8 135.7	27 56.6 -40.3 135.0
27°	29 50.3 -42.9 138.7	29 12.6 -42.4 138.0	28 34.3 -41.7 137.2	27 55.6 -41.2 136.5	27 16.3 -40.6 135.9
28°	29 07.4 -43.3 139.5	28 30.2 -42.6 138.8	27 52.6 -42.1 138.1	27 14.4 -41.4 137.4	26 35.7 -40.8 136.7
29°	28 24.1 -43.5 140.3	27 47.6 -42.9 139.6	27 10.5 -42.3 138.9	26 33.0 -41.8 138.2	25 54.9 -41.1 137.5

Dec	LHA 045° / 315°	LHA 046° / 314°	LHA 047° / 313°	LHA 048° / 312°	LHA 049° / 311°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	41 57.5 -26.7 108.0	41 03.4 -26.2 107.5	40 09.2 -25.9 106.9	39 14.9 -25.6 106.3	38 20.4 -25.3 105.8
1°	41 30.8 -27.4 109.2	40 37.2 -27.0 108.6	39 43.3 -26.6 108.1	38 49.3 -26.3 107.5	37 55.1 -25.9 107.0
2°	41 03.4 -28.1 110.4	40 10.2 -27.7 109.8	39 16.7 -27.3 109.2	38 23.0 -26.9 108.7	37 29.2 -26.6 108.1
3°	40 35.3 -28.8 111.6	39 42.5 -28.4 111.0	38 49.4 -28.0 110.4	37 56.1 -27.6 109.8	37 02.6 -27.2 109.2
4°	40 06.5 -29.4 112.7	39 14.1 -29.0 112.1	38 21.4 -28.6 111.5	37 28.5 -28.2 110.9	36 35.4 -27.8 110.3
5°	39 37.1 -30.2 113.9	38 45.1 -29.7 113.2	37 52.8 -29.2 112.6	37 00.3 -28.8 112.0	36 07.6 -28.4 111.4
6°	39 06.9 -30.7 115.0	38 15.4 -30.3 114.3	37 23.6 -29.9 113.7	36 31.5 -29.4 113.1	35 39.2 -29.0 112.5
7°	38 36.2 -31.4 116.1	37 45.1 -30.9 115.4	36 53.7 -30.4 114.8	36 02.1 -30.0 114.2	35 10.2 -29.5 113.6
8°	38 04.8 -31.9 117.2	37 14.2 -31.5 116.5	36 23.3 -31.0 115.9	35 32.1 -30.5 115.3	34 40.7 -30.1 114.7
9°	37 32.9 -32.6 118.3	36 42.7 -32.0 117.6	35 52.3 -31.5 116.9	35 01.6 -31.1 116.3	34 10.6 -30.6 115.7
10°	37 00.3 -33.1 119.3	36 10.7 -32.6 118.6	35 20.8 -32.1 118.0	34 30.5 -31.6 117.4	33 40.0 -31.1 116.7
11°	36 27.2 -33.6 120.3	35 38.1 -33.1 119.7	34 48.7 -32.6 119.0	33 58.9 -32.1 118.4	33 08.9 -31.7 117.8
12°	35 53.6 -34.1 121.4	35 05.0 -33.6 120.7	34 16.1 -33.1 120.0	33 26.8 -32.6 119.4	32 37.2 -32.1 118.8
13°	35 19.5 -34.7 122.4	34 31.4 -34.1 121.7	33 43.0 -33.6 121.1	32 54.2 -33.1 120.4	32 05.1 -32.6 119.8
14°	34 44.8 -35.1 123.4	33 57.3 -34.6 122.7	33 09.4 -34.1 122.0	32 21.1 -33.5 121.4	31 32.5 -33.0 120.8
15°	34 09.7 -35.5 124.4	33 22.7 -35.0 123.7	32 35.3 -34.5 123.0	31 47.6 -34.0 122.4	30 59.5 -33.5 121.7
16°	33 34.2 -36.1 125.3	32 47.7 -35.5 124.7	32 00.8 -34.9 124.0	31 13.6 -34.4 123.3	30 26.0 -33.8 122.7
17°	32 58.1 -36.4 126.3	32 12.2 -35.9 125.6	31 25.9 -35.4 124.9	30 39.2 -34.8 124.3	29 52.2 -34.3 123.7
18°	32 21.7 -36.9 127.2	31 36.3 -36.3 126.6	30 50.5 -35.7 125.9	30 04.4 -35.2 125.2	29 17.9 -34.7 124.6
19°	31 44.8 -37.3 128.2	31 00.0 -36.7 127.5	30 14.8 -36.2 126.8	29 29.2 -35.6 126.2	28 43.2 -35.1 125.5
20°	31 07.5 -37.6 129.1	30 23.3 -37.1 128.4	29 38.6 -36.5 127.7	28 53.6 -36.0 127.1	28 08.1 -35.4 126.5
21°	30 29.9 -38.1 130.0	29 46.2 -37.5 129.3	29 02.1 -36.9 128.7	28 17.6 -36.4 128.0	27 32.7 -35.8 127.4
22°	29 51.8 -38.4 130.9	29 08.7 -37.8 130.2	28 25.2 -37.3 129.6	27 41.2 -36.6 128.9	26 56.9 -36.1 128.3
23°	29 13.4 -38.7 131.8	28 30.9 -38.2 131.1	27 47.9 -37.5 130.4	27 04.6 -37.1 129.8	26 20.8 -36.5 129.2
24°	28 34.7 -39.1 132.6	27 52.7 -38.4 132.0	27 10.4 -38.0 131.3	26 27.5 -37.3 130.7	25 44.3 -36.8 130.1
25°	27 55.6 -39.3 133.5	27 14.3 -38.8 132.8	26 32.4 -38.2 132.2	25 50.2 -37.6 131.6	25 07.5 -37.0 130.9
26°	27 16.3 -39.7 134.4	26 35.5 -39.1 133.7	25 54.2 -38.5 133.1	25 12.6 -38.0 132.4	24 30.5 -37.4 131.8
27°	26 36.6 -40.0 135.2	25 56.4 -39.4 134.5	25 15.7 -38.8 133.9	24 34.6 -38.2 133.3	23 53.1 -37.7 132.7
28°	25 56.6 -40.3 136.0	25 17.0 -39.7 135.4	24 36.9 -39.1 134.7	23 56.4 -38.5 134.1	23 15.4 -37.9 133.5
29°	25 16.3 -40.5 136.9	24 37.3 -40.0 136.2	23 57.8 -39.4 135.6	23 17.9 -38.8 135.0	22 37.5 -38.2 134.3

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°	37 25.7 -24.9 105.3	36 30.9 -24.6 104.8	35 36.0 -24.4 104.3	34 40.9 -24.0 103.8	33 45.8 -23.8 103.3
1°	37 00.8 -25.6 106.4	36 06.3 -25.3 105.9	35 11.6 -24.9 105.4	34 16.9 -24.7 104.9	33 22.0 -24.4 104.4
2°	36 35.2 -26.2 107.6	35 41.0 -25.9 107.0	34 46.7 -25.6 106.5	33 52.2 -25.2 106.0	32 57.6 -24.9 105.5
3°	36 09.0 -26.8 108.7	35 15.1 -26.4 108.1	34 21.1 -26.1 107.6	33 27.0 -25.8 107.1	32 32.7 -25.5 106.6
4°	35 42.2 -27.5 109.8	34 48.7 -27.1 109.2	33 55.0 -26.7 108.7	33 01.2 -26.4 108.2	32 07.2 -26.0 107.7
5°	35 14.7 -28.0 110.9	34 21.6 -27.6 110.3	33 28.3 -27.2 109.8	32 34.8 -26.9 109.2	31 41.2 -26.6 108.7
6°	34 46.7 -28.6 111.9	33 54.0 -28.2 111.4	33 01.1 -27.8 110.8	32 07.9 -27.4 110.3	31 14.6 -27.0 109.8
7°	34 18.1 -29.1 113.0	33 25.8 -28.7 112.4	32 33.3 -28.3 111.9	31 40.5 -27.9 111.3	30 47.6 -27.5 110.8
8°	33 49.0 -29.6 114.1	32 57.1 -29.2 113.5	32 05.0 -28.9 112.9	31 12.6 -28.4 112.4	30 20.1 -28.1 111.8
9°	33 19.4 -30.2 115.1	32 27.9 -29.8 114.5	31 36.1 -29.3 114.0	30 44.2 -28.9 113.4	29 52.0 -28.5 112.9
10°	32 49.2 -30.7 116.1	31 58.1 -30.2 115.6	31 06.8 -29.8 115.0	30 15.3 -29.4 114.4	29 23.5 -28.9 113.9
11°	32 18.5 -31.1 117.2	31 27.9 -30.7 116.6	30 37.0 -30.2 116.0	29 45.9 -29.8 115.4	28 54.6 -29.4 114.9
12°	31 47.4 -31.7 118.2	30 57.2 -31.2 117.6	30 06.8 -30.7 117.0	29 16.1 -30.2 116.4	28 25.2 -29.8 115.9
13°	31 15.7 -32.1 119.2	30 26.0 -31.6 118.6	29 36.1 -31.2 118.0	28 45.9 -30.7 117.4	27 55.4 -30.3 116.9
14°	30 43.6 -32.5 120.2	29 54.4 -32.0 119.6	29 04.9 -31.5 119.0	28 15.2 -31.1 118.4	27 25.1 -30.6 117.8
15°	30 11.1 -33.0 121.1	29 22.4 -32.5 120.5	28 33.4 -32.0 119.9	27 44.1 -31.5 119.4	26 54.5 -31.0 118.8
16°	29 38.1 -33.3 122.1	28 49.9 -32.8 121.5	28 01.4 -32.4 120.9	27 12.6 -31.9 120.3	26 23.5 -31.5 119.8
17°	29 04.8 -33.8 123.0	28 17.1 -33.3 122.4	27 29.0 -32.7 121.8	26 40.7 -32.3 121.3	25 52.0 -31.7 120.7
18°	28 31.0 -34.2 124.0	27 43.8 -33.6 123.4	26 56.3 -33.2 122.8	26 08.4 -32.6 122.2	25 20.3 -32.2 121.6
19°	27 56.8 -34.5 124.9	27 10.2 -34.0 124.3	26 23.1 -33.5 123.7	25 35.8 -33.0 123.1	24 48.1 -32.4 122.6
20°	27 22.3 -34.9 125.8	26 36.2 -34.4 125.2	25 49.6 -33.8 124.6	25 02.8 -33.3 124.1	24 15.7 -32.8 123.5
21°	26 47.4 -35.2 126.8	26 01.8 -34.7 126.2	25 15.8 -34.2 125.6	24 29.5 -33.7 125.0	23 42.9 -33.2 124.4
22°	26 12.2 -35.6 127.7	25 27.1 -35.0 127.1	24 41.6 -34.5 126.5	23 55.8 -33.9 125.9	23 09.7 -33.4 125.3
23°	25 36.6 -35.9 128.6	24 52.1 -35.4 128.0	24 07.1 -34.8 127.4	23 21.9 -34.3 126.8	22 36.3 -33.8 126.2
24°	25 00.7 -36.2 129.4	24 16.7 -35.7 128.8	23 32.3 -35.1 128.3	22 47.6 -34.6 127.7	22 02.5 -34.0 127.1
25°	24 24.5 -36.5 130.3	23 41.0 -35.9 129.7	22 57.2 -35.4 129.1	22 13.0 -34.8 128.6	21 28.5 -34.3 128.0
26°	23 48.0 -36.8 131.2	23 05.1 -36.2 130.6	22 21.8 -35.7 130.0	21 38.2 -35.1 129.4	20 54.2 -34.6 128.9
27°	23 11.2 -37.1 132.1	22 28.9 -36.6 131.5	21 46.1 -35.9 130.9	21 03.1 -35.4 130.3	20 19.6 -34.8 129.8
28°	22 34.1 -37.4 132.9	21 52.3 -36.7 132.3	21 10.2 -36.2 131.7	20 27.7 -35.7 131.2	19 44.8 -35.1 130.6
29°	21 56.7 -37.6 133.8	21 15.6 -37.1 133.2	20 34.0 -36.5 132.6	19 52.0 -35.8 132.0	19 09.7 -35.3 131.5

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°	32 50.5 -23.5 102.8	31 55.2 -23.3 102.4	30 59.7 -23.0 101.9	30 04.2 -22.9 101.5	29 08.5 -22.6 101.1
1°	32 27.0 -24.1 103.9	31 31.9 -23.9 103.5	30 36.7 -23.6 103.0	29 41.3 -23.3 102.6	28 45.9 -23.1 102.1
2°	32 02.9 -24.6 105.0	31 08.0 -24.3 104.5	30 13.1 -24.1 104.1	29 18.0 -23.8 103.6	28 22.8 -23.6 103.2
3°	31 38.3 -25.2 106.1	30 43.7 -24.9 105.6	29 49.0 -24.6 105.1	28 54.2 -24.4 104.7	27 59.2 -24.0 104.2
4°	31 13.1 -25.7 107.2	30 18.8 -25.4 106.7	29 24.4 -25.1 106.2	28 29.8 -24.8 105.7	27 35.2 -24.5 105.3
5°	30 47.4 -26.2 108.2	29 53.4 -25.9 107.7	28 59.3 -25.6 107.2	28 05.0 -25.2 106.8	27 10.7 -25.0 106.3
6°	30 21.2 -26.7 109.3	29 27.5 -26.3 108.8	28 33.7 -26.0 108.3	27 39.8 -25.7 107.8	26 45.7 -25.4 107.3
7°	29 54.5 -27.2 110.3	29 01.2 -26.8 109.8	28 07.7 -26.5 109.3	27 14.1 -26.2 108.8	26 20.3 -25.8 108.3
8°	29 27.3 -27.7 111.3	28 34.4 -27.3 110.8	27 41.2 -26.9 110.3	26 47.9 -26.5 109.8	25 54.5 -26.2 109.3
9°	28 59.6 -28.1 112.3	28 07.1 -27.7 111.8	27 14.3 -27.3 111.3	26 21.4 -27.0 110.8	25 28.3 -26.7 110.3
10°	28 31.5 -28.5 113.3	27 39.4 -28.2 112.8	26 47.0 -27.8 112.3	25 54.4 -27.4 111.8	25 01.6 -27.0 111.3
11°	28 03.0 -29.0 114.3	27 11.2 -28.6 113.8	26 19.2 -28.2 113.3	25 27.0 -27.8 112.8	24 34.6 -27.4 112.3
12°	27 34.0 -29.4 115.3	26 42.6 -28.9 114.8	25 51.0 -28.5 114.3	24 59.2 -28.2 113.8	24 07.2 -27.8 113.3
13°	27 04.6 -29.8 116.3	26 13.7 -29.4 115.8	25 22.5 -29.0 115.3	24 31.0 -28.5 114.7	23 39.4 -28.1 114.2
14°	26 34.8 -30.2 117.3	25 44.3 -29.8 116.7	24 53.5 -29.3 116.2	24 02.5 -28.9 115.7	23 11.3 -28.5 115.2
15°	26 04.6 -30.5 118.2	25 14.5 -30.1 117.7	24 24.2 -29.7 117.2	23 33.6 -29.2 116.7	22 42.8 -28.8 116.2
16°	25 34.1 -31.0 119.2	24 44.4 -30.5 118.7	23 54.5 -30.0 118.1	23 04.4 -29.6 117.6	22 14.0 -29.2 117.1
17°	25 03.1 -31.3 120.2	24 13.9 -30.8 119.6	23 24.5 -30.4 119.1	22 34.8 -29.9 118.6	21 44.8 -29.4 118.1
18°	24 31.8 -31.6 121.1	23 43.1 -31.2 120.5	22 54.1 -30.7 120.0	22 04.9 -30.3 119.5	21 15.4 -29.8 119.0
19°	24 00.2 -32.0 122.0	23 11.9 -31.4 121.5	22 23.4 -31.0 120.9	21 34.6 -30.5 120.4	20 45.6 -30.1 119.9
20°	23 28.2 -32.3 122.9	22 40.5 -31.9 122.4	21 52.4 -31.3 121.9	21 04.1 -30.8 121.4	20 15.5 -30.3 120.8
21°	22 55.9 -32.6 123.9	22 08.6 -32.1 123.3	21 21.1 -31.6 122.8	20 33.3 -31.2 122.3	19 45.2 -30.7 121.8
22°	22 23.3 -32.9 124.8	21 36.5 -32.4 124.2	20 49.5 -31.9 123.7	20 02.1 -31.4 123.2	19 14.5 -30.9 122.7
23°	21 50.4 -33.3 125.7	21 04.1 -32.7 125.1	20 17.6 -32.2 124.6	19 30.7 -31.6 124.1	18 43.6 -31.2 123.6
24°	21 17.1 -33.4 126.6	20 31.4 -32.9 126.0	19 45.4 -32.5 125.5	18 59.1 -32.0 125.0	18 12.4 -31.4 124.5
25°	20 43.7 -33.8 127.5	19 58.5 -33.3 126.9	19 12.9 -32.7 126.4	18 27.1 -32.1 125.9	17 41.0 -31.6 125.4
26°	20 09.9 -34.0 128.3	19 25.2 -33.5 127.8	18 40.2 -32.9 127.3	17 55.0 -32.5 126.8	17 09.4 -31.9 126.3
27°	19 35.9 -34.3 129.2	18 51.7 -33.7 128.7	18 07.3 -33.2 128.2	17 22.5 -32.6 127.7	16 37.5 -32.2 127.1
28°	19 01.6 -34.5 130.1	18 18.0 -34.0 129.6	17 34.1 -33.4 129.0	16 49.9 -32.9 128.5	16 05.3 -32.3 128.0
29°	18 27.1 -34.8 131.0	17 44.0 -34.2 130.4	17 00.7 -33.7 129.9	16 17.0 -33.1 129.4	15 33.0 -32.5 128.9

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°	28 12.8 -22.4 100.6	27 17.0 -22.2 100.2	26 21.2 -22.1 99.8	25 25.2 -21.8 99.4	24 29.2 -21.6 99.0
1°	27 50.4 -22.9 101.7	26 54.8 -22.7 101.3	25 59.1 -22.4 100.9	25 03.4 -22.3 100.4	24 07.6 -22.1 100.0
2°	27 27.5 -23.3 102.7	26 32.1 -23.1 102.3	25 36.7 -22.9 101.9	24 41.1 -22.7 101.5	23 45.5 -22.5 101.1
3°	27 04.2 -23.8 103.8	26 09.0 -23.5 103.3	25 13.8 -23.3 102.9	24 18.4 -23.1 102.5	23 23.0 -22.9 102.1
4°	26 40.4 -24.3 104.8	25 45.5 -24.0 104.4	24 50.5 -23.8 103.9	23 55.3 -23.4 103.5	23 00.1 -23.2 103.1
5°	26 16.1 -24.6 105.8	25 21.5 -24.4 105.4	24 26.7 -24.1 104.9	23 31.9 -23.9 104.5	22 36.9 -23.6 104.1
6°	25 51.5 -25.1 106.8	24 57.1 -24.8 106.4	24 02.6 -24.5 105.9	23 08.0 -24.2 105.5	22 13.3 -24.0 105.1
7°	25 26.4 -25.5 107.8	24 32.3 -25.2 107.4	23 38.1 -24.9 106.9	22 43.8 -24.6 106.5	21 49.3 -24.3 106.1
8°	25 00.9 -25.9 108.9	24 07.1 -25.6 108.4	23 13.2 -25.3 107.9	22 19.2 -25.0 107.5	21 25.0 -24.7 107.0
9°	24 35.0 -26.3 109.8	23 41.5 -25.9 109.4	22 47.9 -25.6 108.9	21 54.2 -25.3 108.5	21 00.3 -25.0 108.0
10°	24 08.7 -26.7 110.8	23 15.6 -26.3 110.4	22 22.3 -26.0 109.9	21 28.9 -25.7 109.4	20 35.3 -25.3 109.0
11°	23 42.0 -27.0 111.8	22 49.3 -26.7 111.3	21 56.3 -26.3 110.9	21 03.2 -25.9 110.4	20 10.0 -25.6 110.0
12°	23 15.0 -27.4 112.8	22 22.6 -27.0 112.3	21 30.0 -26.6 111.8	20 37.3 -26.3 111.4	19 44.4 -26.0 110.9
13°	22 47.6 -27.7 113.8	21 55.6 -27.4 113.3	21 03.4 -27.0 112.8	20 11.0 -26.6 112.3	19 18.4 -26.2 111.9
14°	22 19.9 -28.1 114.7	21 28.2 -27.7 114.2	20 36.4 -27.3 113.8	19 44.4 -26.9 113.3	18 52.2 -26.6 112.8
15°	21 51.8 -28.4 115.7	21 00.5 -28.0 115.2	20 09.1 -27.6 114.7	19 17.5 -27.2 114.2	18 25.6 -26.8 113.8
16°	21 23.4 -28.7 116.6	20 32.5 -28.3 116.1	19 41.5 -27.9 115.6	18 50.3 -27.5 115.2	17 58.8 -27.1 114.7
17°	20 54.7 -29.1 117.6	20 04.2 -28.6 117.1	19 13.6 -28.2 116.6	18 22.8 -27.8 116.1	17 31.7 -27.3 115.7
18°	20 25.6 -29.3 118.5	19 35.6 -28.8 118.0	18 45.4 -28.4 117.5	17 55.0 -28.0 117.1	17 04.4 -27.6 116.6
19°	19 56.3 -29.6 119.4	19 06.8 -29.2 118.9	18 17.0 -28.7 118.5	17 27.0 -28.3 118.0	16 36.8 -27.8 117.5
20°	19 26.7 -29.9 120.3	18 37.6 -29.4 119.9	17 48.3 -29.0 119.4	16 58.7 -28.5 118.9	16 09.0 -28.1 118.4
21°	18 56.8 -30.2 121.3	18 08.2 -29.7 120.8	17 19.3 -29.2 120.3	16 30.2 -28.8 119.8	15 40.9 -28.3 119.4
22°	18 26.6 -30.4 122.2	17 38.5 -30.0 121.7	16 50.1 -29.5 121.2	16 01.4 -29.0 120.7	15 12.6 -28.6 120.3
23°	17 56.2 -30.7 123.1	17 08.5 -30.1 122.6	16 20.6 -29.7 122.1	15 32.4 -29.2 121.6	14 44.0 -28.7 121.2
24°	17 25.5 -30.9 124.0	16 38.4 -30.5 123.5	15 50.9 -29.9 123.0	15 03.2 -29.4 122.6	14 15.3 -29.0 122.1
25°	16 54.6 -31.1 124.9	16 07.9 -30.6 124.4	15 21.0 -30.1 123.9	14 33.8 -29.6 123.5	13 46.3 -29.1 123.0
26°	16 23.5 -31.4 125.8	15 37.3 -30.9 125.3	14 50.9 -30.4 124.8	14 04.2 -29.9 124.4	13 17.2 -29.3 123.9
27°	15 52.1 -31.6 126.7	15 06.4 -31.0 126.2	14 20.5 -30.5 125.7	13 34.3 -30.0 125.2	12 47.9 -29.6 124.8
28°	15 20.5 -31.8 127.5	14 35.4 -31.3 127.1	13 50.0 -30.8 126.6	13 04.3 -30.2 126.1	12 18.3 -29.7 125.7
29°	14 48.7 -32.0 128.4	14 04.1 -31.4 127.9	13 19.2 -30.9 127.5	12 34.1 -30.4 127.0	11 48.6 -29.8 126.6

Dec	LHA 065° / 295°	LHA 066° / 294°	LHA 067° / 293°	LHA 068° / 292°	LHA 069° / 291°
	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °	H ° ' dH ' Z °
0°	23 33.2 -21.5 98.6	22 37.0 -21.3 98.2	21 40.9 -21.2 97.9	20 44.7 -21.1 97.5	19 48.4 -20.9 97.1
1°	23 11.7 -21.9 99.6	22 15.7 -21.7 99.3	21 19.7 -21.6 98.9	20 23.6 -21.4 98.5	19 27.5 -21.3 98.1
2°	22 49.8 -22.3 100.7	21 54.0 -22.1 100.3	20 58.1 -21.9 99.9	20 02.2 -21.7 99.5	19 06.2 -21.6 99.1
3°	22 27.5 -22.7 101.7	21 31.9 -22.5 101.3	20 36.2 -22.2 100.9	19 40.5 -22.1 100.5	18 44.6 -21.8 100.1
4°	22 04.8 -23.0 102.7	21 09.4 -22.8 102.3	20 14.0 -22.6 101.9	19 18.4 -22.4 101.5	18 22.8 -22.2 101.1
5°	21 41.8 -23.3 103.7	20 46.6 -23.1 103.3	19 51.4 -22.9 102.8	18 56.0 -22.7 102.4	18 00.6 -22.5 102.1
6°	21 18.5 -23.8 104.7	20 23.5 -23.5 104.2	19 28.5 -23.2 103.8	18 33.3 -22.9 103.4	17 38.1 -22.7 103.0
7°	20 54.7 -24.0 105.6	20 00.0 -23.7 105.2	19 05.3 -23.6 104.8	18 10.4 -23.3 104.4	17 15.4 -23.1 104.0
8°	20 30.7 -24.4 106.6	19 36.3 -24.1 106.2	18 41.7 -23.8 105.8	17 47.1 -23.6 105.4	16 52.3 -23.3 105.0
9°	20 06.3 -24.7 107.6	19 12.2 -24.4 107.2	18 17.9 -24.1 106.7	17 23.5 -23.8 106.3	16 29.0 -23.5 105.9
10°	19 41.6 -25.0 108.6	18 47.8 -24.7 108.1	17 53.8 -24.4 107.7	16 59.7 -24.1 107.3	16 05.5 -23.9 106.9
11°	19 16.6 -25.3 109.5	18 23.1 -25.0 109.1	17 29.4 -24.7 108.7	16 35.6 -24.4 108.3	15 41.6 -24.0 107.8
12°	18 51.3 -25.6 110.5	17 58.1 -25.3 110.0	17 04.7 -24.9 109.6	16 11.2 -24.6 109.2	15 17.6 -24.3 108.8
13°	18 25.7 -25.9 111.4	17 32.8 -25.5 111.0	16 39.8 -25.2 110.6	15 46.6 -24.9 110.2	14 53.3 -24.6 109.7
14°	17 59.8 -26.2 112.4	17 07.3 -25.8 111.9	16 14.6 -25.5 111.5	15 21.7 -25.1 111.1	14 28.7 -24.8 110.7
15°	17 33.6 -26.4 113.3	16 41.5 -26.1 112.9	15 49.1 -25.7 112.5	14 56.6 -25.3 112.0	14 03.9 -24.9 111.6
16°	17 07.2 -26.7 114.3	16 15.4 -26.3 113.8	15 23.4 -25.9 113.4	14 31.3 -25.6 113.0	13 39.0 -25.2 112.6
17°	16 40.5 -26.9 115.2	15 49.1 -26.6 114.8	14 57.5 -26.2 114.3	14 05.7 -25.8 113.9	13 13.8 -25.4 113.5
18°	16 13.6 -27.2 116.1	15 22.5 -26.7 115.7	14 31.3 -26.3 115.3	13 39.9 -25.9 114.8	12 48.4 -25.6 114.4
19°	15 46.4 -27.4 117.1	14 55.8 -27.0 116.6	14 05.0 -26.6 116.2	13 14.0 -26.2 115.8	12 22.8 -25.8 115.3
20°	15 19.0 -27.7 118.0	14 28.8 -27.2 117.5	13 38.4 -26.8 117.1	12 47.8 -26.4 116.7	11 57.0 -26.0 116.3
21°	14 51.3 -27.8 118.9	14 01.6 -27.5 118.5	13 11.6 -27.0 118.0	12 21.4 -26.5 117.6	11 31.0 -26.1 117.2
22°	14 23.5 -28.1 119.8	13 34.1 -27.6 119.4	12 44.6 -27.2 119.0	11 54.9 -26.8 118.5	11 04.9 -26.3 118.1
23°	13 55.4 -28.3 120.7	13 06.5 -27.8 120.3	12 17.4 -27.3 119.9	11 28.1 -26.9 119.4	10 38.6 -26.4 119.0
24°	13 27.1 -28.5 121.6	12 38.7 -28.0 121.2	11 50.1 -27.6 120.8	11 01.2 -27.1 120.4	10 12.2 -26.7 119.9
25°	12 58.6 -28.6 122.5	12 10.7 -28.2 122.1	11 22.5 -27.7 121.7	10 34.1 -27.2 121.3	9 45.5 -26.7 120.8
26°	12 30.0 -28.9 123.5	11 42.5 -28.3 123.0	10 54.8 -27.8 122.6	10 06.9 -27.3 122.2	9 18.8 -26.9 121.8
27°	12 01.1 -29.0 124.3	11 14.2 -28.5 123.9	10 27.0 -28.0 123.5	9 39.6 -27.6 123.1	8 51.9 -27.0 122.7
28°	11 32.1 -29.1 125.2	10 45.7 -28.7 124.8	9 59.0 -28.2 124.4	9 12.0 -27.6 124.0	8 24.9 -27.2 123.6
29°	11 03.0 -29.4 126.1	10 17.0 -28.8 125.7	9 30.8 -28.3 125.3	8 44.4 -27.8 124.9	7 57.7 -27.2 124.5

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°	18 52.1 -20.8 96.8	17 55.7 -20.7 96.4	16 59.3 -20.6 96.0	16 02.9 -20.5 95.7	15 06.4 -20.3 95.3
1°	18 31.3 -21.1 97.7	17 35.0 -20.9 97.4	16 38.7 -20.8 97.0	15 42.4 -20.7 96.7	14 46.1 -20.6 96.3
2°	18 10.2 -21.4 98.7	17 14.1 -21.3 98.4	16 17.9 -21.1 98.0	15 21.7 -21.0 97.6	14 25.5 -20.9 97.3
3°	17 48.8 -21.7 99.7	16 52.8 -21.5 99.3	15 56.8 -21.4 99.0	15 00.7 -21.2 98.6	14 04.6 -21.1 98.2
4°	17 27.1 -22.0 100.7	16 31.3 -21.8 100.3	15 35.4 -21.6 99.9	14 39.5 -21.4 99.6	13 43.5 -21.2 99.2
5°	17 05.1 -22.3 101.7	16 09.5 -22.1 101.3	15 13.8 -21.9 100.9	14 18.1 -21.7 100.5	13 22.3 -21.6 100.2
6°	16 42.8 -22.5 102.6	15 47.4 -22.3 102.3	14 51.9 -22.1 101.9	13 56.4 -21.9 101.5	13 00.7 -21.7 101.1
7°	16 20.3 -22.8 103.6	15 25.1 -22.6 103.2	14 29.8 -22.3 102.8	13 34.5 -22.2 102.5	12 39.0 -21.9 102.1
8°	15 57.5 -23.1 104.6	15 02.5 -22.8 104.2	14 07.5 -22.6 103.8	13 12.3 -22.3 103.4	12 17.1 -22.1 103.0
9°	15 34.4 -23.3 105.5	14 39.7 -23.0 105.1	13 44.9 -22.8 104.7	12 50.0 -22.6 104.4	11 55.0 -22.3 104.0
10°	15 11.1 -23.5 106.5	14 16.7 -23.3 106.1	13 22.1 -23.0 105.7	12 27.4 -22.7 105.3	11 32.7 -22.5 104.9
11°	14 47.6 -23.8 107.4	13 53.4 -23.5 107.0	12 59.1 -23.2 106.6	12 04.7 -23.0 106.3	11 10.2 -22.7 105.9
12°	14 23.8 -24.0 108.4	13 29.9 -23.7 108.0	12 35.9 -23.4 107.6	11 41.7 -23.1 107.2	10 47.5 -22.9 106.8
13°	13 59.8 -24.2 109.3	13 06.2 -23.9 108.9	12 12.5 -23.6 108.5	11 18.6 -23.3 108.1	10 24.6 -23.0 107.8
14°	13 35.6 -24.5 110.3	12 42.3 -24.1 109.9	11 48.9 -23.8 109.5	10 55.3 -23.5 109.1	10 01.6 -23.1 108.7
15°	13 11.1 -24.6 111.2	12 18.2 -24.3 110.8	11 25.1 -24.0 110.4	10 31.8 -23.6 110.0	9 38.5 -23.4 109.6
16°	12 46.5 -24.8 112.1	11 53.9 -24.5 111.7	11 01.1 -24.1 111.3	10 08.2 -23.8 111.0	9 15.1 -23.4 110.6
17°	12 21.7 -25.1 113.1	11 29.4 -24.7 112.7	10 37.0 -24.3 112.3	9 44.4 -24.0 111.9	8 51.7 -23.6 111.5
18°	11 56.6 -25.2 114.0	11 04.7 -24.8 113.6	10 12.7 -24.5 113.2	9 20.4 -24.0 112.8	8 28.1 -23.7 112.4
19°	11 31.4 -25.4 114.9	10 39.9 -25.0 114.5	9 48.2 -24.6 114.1	8 56.4 -24.3 113.7	8 04.4 -23.9 113.4
20°	11 06.0 -25.5 115.9	10 14.9 -25.1 115.5	9 23.6 -24.8 115.1	8 32.1 -24.3 114.7	7 40.5 -24.0 114.3
21°	10 40.5 -25.7 116.8	9 49.8 -25.3 116.4	8 58.8 -24.8 116.0	8 07.8 -24.5 115.6	7 16.5 -24.1 115.2
22°	10 14.8 -25.9 117.7	9 24.5 -25.5 117.3	8 34.0 -25.1 116.9	7 43.3 -24.6 116.5	6 52.4 -24.2 116.1
23°	9 48.9 -26.0 118.6	8 59.0 -25.6 118.2	8 08.9 -25.1 117.8	7 18.7 -24.7 117.4	6 28.2 -24.3 117.1
24°	9 22.9 -26.2 119.5	8 33.4 -25.7 119.1	7 43.8 -25.3 118.7	6 54.0 -24.9 118.4	6 03.9 -24.3 118.0
25°	8 56.7 -26.3 120.4	8 07.7 -25.8 120.0	7 18.5 -25.4 119.7	6 29.1 -24.9 119.3	5 39.6 -24.5 118.9
26°	8 30.4 -26.4 121.4	7 41.9 -25.9 121.0	6 53.1 -25.4 120.6	6 04.2 -25.0 120.2	5 15.1 -24.6 119.8
27°	8 04.0 -26.5 122.3	7 16.0 -26.1 121.9	6 27.7 -25.6 121.5	5 39.2 -25.1 121.1	4 50.5 -24.6 120.7
28°	7 37.5 -26.6 123.2	6 49.9 -26.2 122.8	6 02.1 -25.7 122.4	5 14.1 -25.2 122.0	4 25.9 -24.7 121.6
29°	7 10.9 -26.8 124.1	6 23.7 -26.2 123.7	5 36.4 -25.7 123.3	4 48.9 -25.2 122.9	4 01.2 -24.8 122.6

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°	14 09.9 -20.3 95.0	13 13.4 -20.2 94.6	12 16.8 -20.1 94.3	11 20.2 -20.0 94.0	10 23.6 -19.9 93.6
1°	13 49.6 -20.4 96.0	12 53.2 -20.4 95.6	11 56.7 -20.3 95.3	11 00.2 -20.2 94.9	10 03.7 -20.1 94.6
2°	13 29.2 -20.8 96.9	12 32.8 -20.6 96.6	11 36.4 -20.4 96.2	10 40.0 -20.3 95.9	9 43.6 -20.3 95.5
3°	13 08.4 -20.9 97.9	12 12.2 -20.8 97.5	11 16.0 -20.7 97.2	10 19.7 -20.6 96.8	9 23.3 -20.4 96.5
4°	12 47.5 -21.1 98.8	11 51.4 -21.0 98.5	10 55.3 -20.8 98.1	9 59.1 -20.7 97.8	9 02.9 -20.6 97.4
5°	12 26.4 -21.4 99.8	11 30.4 -21.1 99.4	10 34.5 -21.1 99.1	9 38.4 -20.8 98.7	8 42.3 -20.7 98.4
6°	12 05.0 -21.5 100.8	11 09.3 -21.4 100.4	10 13.4 -21.1 100.0	9 17.6 -21.1 99.7	8 21.6 -20.8 99.3
7°	11 43.5 -21.7 101.7	10 47.9 -21.5 101.4	9 52.3 -21.4 101.0	8 56.5 -21.1 100.6	8 00.8 -21.0 100.3
8°	11 21.8 -21.9 102.7	10 26.4 -21.7 102.3	9 30.9 -21.5 101.9	8 35.4 -21.3 101.6	7 39.8 -21.1 101.2
9°	10 59.9 -22.1 103.6	10 04.7 -21.9 103.3	9 09.4 -21.6 102.9	8 14.1 -21.4 102.5	7 18.7 -21.2 102.2
10°	10 37.8 -22.3 104.6	9 42.8 -22.0 104.2	8 47.8 -21.8 103.8	7 52.7 -21.6 103.5	6 57.5 -21.4 103.1
11°	10 15.5 -22.4 105.5	9 20.8 -22.1 105.1	8 26.0 -21.9 104.8	7 31.1 -21.6 104.4	6 36.1 -21.4 104.1
12°	9 53.1 -22.5 106.5	8 58.7 -22.3 106.1	8 04.1 -22.0 105.7	7 09.5 -21.8 105.4	6 14.7 -21.5 105.0
13°	9 30.6 -22.8 107.4	8 36.4 -22.5 107.0	7 42.1 -22.2 106.7	6 47.7 -21.9 106.3	5 53.2 -21.7 105.9
14°	9 07.8 -22.8 108.3	8 13.9 -22.5 108.0	7 19.9 -22.3 107.6	6 25.8 -22.0 107.2	5 31.5 -21.7 106.9
15°	8 45.0 -23.0 109.3	7 51.4 -22.7 108.9	6 57.6 -22.4 108.5	6 03.8 -22.1 108.2	5 09.8 -21.8 107.8
16°	8 22.0 -23.2 110.2	7 28.7 -22.8 109.8	6 35.2 -22.5 109.5	5 41.7 -22.2 109.1	4 48.0 -21.8 108.8
17°	7 58.8 -23.2 111.1	7 05.9 -23.0 110.8	6 12.7 -22.5 110.4	5 19.5 -22.3 110.0	4 26.2 -22.0 109.7
18°	7 35.6 -23.4 112.1	6 42.9 -23.0 111.7	5 50.2 -22.7 111.3	4 57.2 -22.3 111.0	4 04.2 -22.0 110.6
19°	7 12.2 -23.5 113.0	6 19.9 -23.1 112.6	5 27.5 -22.8 112.3	4 34.9 -22.4 111.9	3 42.2 -22.1 111.6
20°	6 48.7 -23.6 113.9	5 56.8 -23.2 113.5	5 04.7 -22.8 113.2	4 12.5 -22.5 112.8	3 20.1 -22.1 112.5
21°	6 25.1 -23.7 114.8	5 33.6 -23.4 114.5	4 41.9 -23.0 114.1	3 50.0 -22.5 113.8	2 58.0 -22.2 113.4
22°	6 01.4 -23.8 115.8	5 10.2 -23.3 115.4	4 18.9 -23.0 115.0	3 27.5 -22.6 114.7	2 35.8 -22.2 114.3
23°	5 37.6 -23.8 116.7	4 46.9 -23.5 116.3	3 55.9 -23.0 116.0	3 04.9 -22.7 115.6	2 13.6 -22.2 115.3
24°	5 13.8 -24.0 117.6	4 23.4 -23.5 117.2	3 32.9 -23.1 116.9	2 42.2 -22.7 116.5	1 51.4 -22.3 116.2
25°	4 49.8 -24.0 118.5	3 59.9 -23.6 118.2	3 09.8 -23.2 117.8	2 19.5 -22.7 117.5	1 29.1 -22.3 117.1
26°	4 25.8 -24.1 119.5	3 36.3 -23.7 119.1	2 46.6 -23.2 118.7	1 56.8 -22.8 118.4	1 06.8 -22.3 118.1
27°	4 01.7 -24.2 120.4	3 12.6 -23.7 120.0	2 23.4 -23.2 119.7	1 34.0 -22.7 119.3	0 44.5 -22.3 119.0
28°	3 37.5 -24.2 121.3	2 48.9 -23.7 120.9	2 00.2 -23.3 120.6	1 11.3 -22.8 120.2	0 22.2 -22.4 119.9
29°	3 13.3 -24.3 122.2	2 25.2 -23.8 121.9	1 36.9 -23.3 121.5	0 48.5 -22.8 121.2	-0 00.2 -22.3

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°	9 27.0 -19.9 93.3	8 30.4 -19.9 93.0	7 33.7 -19.8 92.6	6 37.0 -19.7 92.3	5 40.3 -19.7 92.0
1°	9 07.1 -20.0 94.2	8 10.5 -19.9 93.9	7 13.9 -19.9 93.6	6 17.3 -19.8 93.2	5 20.6 -19.7 92.9
2°	8 47.1 -20.2 95.2	7 50.6 -20.1 94.9	6 54.0 -20.0 94.5	5 57.5 -19.9 94.2	5 00.9 -19.9 93.9
3°	8 26.9 -20.3 96.1	7 30.5 -20.2 95.8	6 34.0 -20.1 95.5	5 37.6 -20.1 95.1	4 41.0 -19.9 94.8
4°	8 06.6 -20.4 97.1	7 10.3 -20.3 96.8	6 13.9 -20.2 96.4	5 17.5 -20.1 96.1	4 21.1 -20.0 95.8
5°	7 46.2 -20.6 98.0	6 50.0 -20.5 97.7	5 53.7 -20.3 97.4	4 57.4 -20.1 97.0	4 01.1 -20.0 96.7
6°	7 25.6 -20.7 99.0	6 29.5 -20.5 98.7	5 33.4 -20.4 98.3	4 37.3 -20.3 98.0	3 41.1 -20.2 97.6
7°	7 04.9 -20.8 99.9	6 09.0 -20.6 99.6	5 13.0 -20.4 99.3	4 17.0 -20.3 98.9	3 20.9 -20.1 98.6
8°	6 44.1 -20.9 100.9	5 48.4 -20.8 100.5	4 52.6 -20.6 100.2	3 56.7 -20.4 99.9	3 00.8 -20.2 99.5
9°	6 23.2 -21.0 101.8	5 27.6 -20.8 101.5	4 32.0 -20.6 101.1	3 36.3 -20.4 100.8	2 40.6 -20.3 100.5
10°	6 02.2 -21.1 102.8	5 06.8 -20.9 102.4	4 11.4 -20.7 102.1	3 15.9 -20.5 101.7	2 20.3 -20.3 101.4
11°	5 41.1 -21.2 103.7	4 45.9 -21.0 103.4	3 50.7 -20.8 103.0	2 55.4 -20.6 102.7	2 00.0 -20.3 102.4
12°	5 19.9 -21.3 104.7	4 24.9 -21.0 104.3	3 29.9 -20.8 104.0	2 34.8 -20.6 103.6	1 39.7 -20.4 103.3
13°	4 58.6 -21.4 105.6	4 03.9 -21.1 105.2	3 09.1 -20.9 104.9	2 14.2 -20.6 104.6	1 19.3 -20.4 104.2
14°	4 37.2 -21.4 106.5	3 42.8 -21.2 106.2	2 48.2 -20.9 105.8	1 53.6 -20.6 105.5	0 58.9 -20.4 105.2
15°	4 15.8 -21.5 107.5	3 21.6 -21.2 107.1	2 27.3 -20.9 106.8	1 33.0 -20.7 106.4	0 38.5 -20.4 106.1
16°	3 54.3 -21.6 108.4	3 00.4 -21.3 108.1	2 06.4 -21.0 107.7	1 12.3 -20.7 107.4	0 18.1 -20.4 107.1
17°	3 32.7 -21.7 109.3	2 39.1 -21.3 109.0	1 45.4 -21.0 108.7	0 51.6 -20.7 108.3	-0 02.3 -20.4
18°	3 11.0 -21.6 110.3	2 17.8 -21.4 109.9	1 24.4 -21.0 109.6	0 30.9 -20.7 109.3	-0 22.7 -20.4
19°	2 49.4 -21.8 111.2	1 56.4 -21.4 110.9	1 03.4 -21.1 110.5	0 10.2 -20.8 110.2	-0 43.1 -20.4
20°	2 27.6 -21.7 112.1	1 35.0 -21.4 111.8	0 42.3 -21.1 111.5	-0 10.6 -20.7	-1 03.5 -20.4
21°	2 05.9 -21.8 113.1	1 13.6 -21.4 112.7	0 21.2 -21.0 112.4	-0 31.3 -20.7	-1 23.9 -20.4
22°	1 44.1 -21.8 114.0	0 52.2 -21.5 113.7	0 00.2 -21.1 113.3	-0 52.0 -20.7	-1 44.3 -20.3
23°	1 22.3 -21.9 114.9	0 30.7 -21.4 114.6	-0 20.9 -21.1	-1 12.7 -20.7	-2 04.6 -20.3
24°	1 00.4 -21.9 115.9	0 09.3 -21.5 115.5	-0 42.0 -21.0	-1 33.4 -20.6	-2 24.9 -20.2
25°	0 38.5 -21.8 116.8	-0 12.2 -21.4	-1 03.0 -21.0	-1 54.0 -20.6	-2 45.1 -20.2
26°	0 16.7 -21.9 117.7	-0 33.6 -21.5	-1 24.0 -21.1	-2 14.6 -20.6	-3 05.3 -20.2
27°	-0 05.2 -21.9	-0 55.1 -21.4	-1 45.1 -20.9	-2 35.2 -20.6	-3 25.5 -20.1
28°	-0 27.1 -21.8	-1 16.5 -21.4	-2 06.0 -21.0	-2 55.8 -20.5	-3 45.6 -20.1
29°	-0 48.9 -21.9	-1 37.9 -21.4	-2 27.0 -20.9	-3 16.3 -20.4	-4 05.7 -19.9

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 43.6 -19.6 91.6	3 46.9 -19.6 91.3	2 50.2 -19.6 91.0	1 53.5 -19.6 90.7	0 56.7 -19.5 90.3
1°	4 24.0 -19.7 92.6	3 27.3 -19.7 92.3	2 30.6 -19.6 91.9	1 33.9 -19.6 91.6	0 37.2 -19.6 91.3
2°	4 04.3 -19.8 93.5	3 07.6 -19.7 93.2	2 11.0 -19.7 92.9	1 14.3 -19.6 92.5	0 17.6 -19.5 92.2
3°	3 44.5 -19.8 94.5	2 47.9 -19.7 94.1	1 51.3 -19.7 93.8	0 54.7 -19.6 93.5	-0 01.9 -19.6
4°	3 24.7 -19.9 95.4	2 28.2 -19.8 95.1	1 31.6 -19.7 94.8	0 35.1 -19.6 94.4	-0 21.5 -19.5
5°	3 04.8 -20.0 96.4	2 08.4 -19.9 96.0	1 11.9 -19.7 95.7	0 15.5 -19.7 95.4	-0 41.0 -19.6
6°	2 44.8 -20.0 97.3	1 48.5 -19.8 97.0	0 52.2 -19.8 96.6	-0 04.2 -19.6	-1 00.6 -19.5
7°	2 24.8 -20.0 98.3	1 28.7 -19.9 97.9	0 32.4 -19.7 97.6	-0 23.8 -19.6	-1 20.1 -19.5
8°	2 04.8 -20.1 99.2	1 08.8 -19.9 98.9	0 12.7 -19.8 98.5	-0 43.4 -19.6	-1 39.6 -19.5
9°	1 44.7 -20.1 100.1	0 48.9 -20.0 99.8	-0 07.1 -19.7	-1 03.0 -19.6	-1 59.1 -19.4
10°	1 24.6 -20.1 101.1	0 28.9 -19.9 100.8	-0 26.8 -19.8	-1 22.6 -19.6	-2 18.5 -19.4
11°	1 04.5 -20.1 102.0	0 09.0 -19.9 101.7	-0 46.6 -19.7	-1 42.2 -19.6	-2 37.9 -19.4
12°	0 44.4 -20.1 103.0	-0 10.9 -19.9	-1 06.3 -19.7	-2 01.8 -19.5	-2 57.3 -19.3
13°	0 24.3 -20.2 103.9	-0 30.8 -20.0	-1 26.0 -19.7	-2 21.3 -19.5	-3 16.6 -19.3
14°	0 04.1 -20.1 104.8	-0 50.8 -19.9	-1 45.7 -19.7	-2 40.8 -19.4	-3 35.9 -19.2
15°	-0 16.0 -20.2	-1 10.7 -19.9	-2 05.4 -19.6	-3 00.2 -19.4	-3 55.1 -19.1
16°	-0 36.2 -20.1	-1 30.6 -19.8	-2 25.0 -19.6	-3 19.6 -19.3	-4 14.2 -19.1
17°	-0 56.3 -20.1	-1 50.4 -19.8	-2 44.6 -19.6	-3 38.9 -19.3	-4 33.3 -19.0
18°	-1 16.4 -20.1	-2 10.2 -19.8	-3 04.2 -19.5	-3 58.2 -19.2	-4 52.3 -18.9
19°	-1 36.5 -20.1	-2 30.0 -19.8	-3 23.7 -19.4	-4 17.4 -19.1	-5 11.2 -18.8
20°	-1 56.6 -20.0	-2 49.8 -19.7	-3 43.1 -19.4	-4 36.5 -19.1	-5 30.0 -18.7
21°	-2 16.6 -20.1	-3 09.5 -19.7	-4 02.5 -19.3	-4 55.6 -18.9	-5 48.7 -18.7
22°	-2 36.7 -19.9	-3 29.2 -19.6	-4 21.8 -19.2	-5 14.5 -18.9	-6 07.4 -18.5
23°	-2 56.6 -19.9	-3 48.8 -19.5	-4 41.0 -19.2	-5 33.4 -18.8	-6 25.9 -18.4
24°	-3 16.5 -19.9	-4 08.3 -19.5	-5 00.2 -19.1	-5 52.2 -18.7	-6 44.3 -18.4
25°	-3 36.4 -19.8	-4 27.8 -19.4	-5 19.3 -19.0	-6 10.9 -18.6	-7 02.7 -18.2
26°	-3 56.2 -19.7	-4 47.2 -19.3	-5 38.3 -18.9	-6 29.5 -18.5	-7 20.9 -18.0
27°	-4 15.9 -19.7	-5 06.5 -19.2	-5 57.2 -18.8	-6 48.0 -18.4	-7 38.9 -18.0
28°	-4 35.6 -19.6	-5 25.7 -19.2	-6 16.0 -18.7	-7 06.4 -18.2	-7 56.9 -17.8
29°	-4 55.2 -19.5	-5 44.9 -19.0	-6 34.7 -18.6	-7 24.6 -18.2	-8 14.7 -17.7

Latitude 19°

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 -19.5 90.0	-0 56.7 -19.6			
1°	-0 19.5 -19.6	-1 16.3 -19.5			
2°	-0 39.1 -19.5	-1 35.8 -19.4			
3°	-0 58.6 -19.5	-1 55.2 -19.5			
4°	-1 18.1 -19.5	-2 14.7 -19.4			
5°	-1 37.6 -19.4	-2 34.1 -19.4			
6°	-1 57.0 -19.4	-2 53.5 -19.3			
7°	-2 16.4 -19.4	-3 12.8 -19.3			
8°	-2 35.8 -19.4	-3 32.1 -19.2			
9°	-2 55.2 -19.3	-3 51.3 -19.1			
10°	-3 14.5 -19.2	-4 10.4 -19.1			
11°	-3 33.7 -19.2	-4 29.5 -19.0			
12°	-3 52.9 -19.1	-4 48.5 -19.0			
13°	-4 12.0 -19.0	-5 07.5 -18.8			
14°	-4 31.0 -19.0	-5 26.3 -18.8			
15°	-4 50.0 -18.9	-5 45.1 -18.6			
16°	-5 08.9 -18.8	-6 03.7 -18.6			
17°	-5 27.7 -18.7	-6 22.3 -18.4			
18°	-5 46.4 -18.7	-6 40.7 -18.4			
19°	-6 05.1 -18.5	-6 59.1 -18.2			
20°	-6 23.6 -18.4	-7 17.3 -18.1			
21°	-6 42.0 -18.3	-7 35.4 -18.0			
22°	-7 00.3 -18.2	-7 53.4 -17.8			
23°	-7 18.5 -18.1	-8 11.2 -17.7			
24°	-7 36.6 -17.9	-8 28.9 -17.6			
25°	-7 54.5 -17.8	-8 46.5 -17.4			
26°	-8 12.3 -17.7	-9 03.9 -17.2			
27°	-8 30.0 -17.5	-9 21.1 -17.2			
28°	-8 47.5 -17.4	-9 38.3 -16.9			
29°	-9 04.9 -17.2	-9 55.2 -16.8			

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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