

N. Lat. { LHA. greater than 180°Zn=Z
{ LHA. less than 180°Zn=360°-Z

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

LAT 80°

Table with columns for LHA (0-188) and rows for declination (0-14) and latitude (0-188). Each cell contains a 3x3 grid of numbers representing celestial coordinates.

S. Lat. { LHA. greater than 180°Zn=180°-Z
{ LHA. less than 180°Zn=180°+Z

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

LAT 80°

DECLINATION (0° - 14°) SAME NAME AS LATITUDE

N. Lat. { L.H.A. greater than 180°Zn=Z
L.H.A. less than 180°Zn=360°-Z

Table with columns for LHA and declination from 0° to 14°. Each declination column contains three sub-columns: Hc, d, Z. Values range from approximately -7.16 to 0.39.

S. Lat. { L.H.A. greater than 180°Zn=180°-Z
L.H.A. less than 180°Zn=180°+Z

DECLINATION (0° - 14°) SAME NAME AS LATITUDE

LAT 80°

DECLINATION (0° – 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA, greater than 180°Zn=Z
LHA, less than 180°Zn=360°-Z

Table with columns for LHA, 0°, 1°, 2°, 3°, 4°, 5°, 6°, 7°, 8°, 9°, 10°, 11°, 12°, 13°, 14°, and LHA. Rows list LHA values from 138 to 360.

DECLINATION (0° – 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA, greater than 180°Zn=180°-Z
LHA, less than 180°Zn=180°+Z

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

N. Lat. { L.H.A. greater than 180°Z=Z L.H.A. less than 180°Z=360°-Z

Table with columns for Latitude (15° to 29°) and Declination (15° to 29°). Each cell contains a value representing the relationship between the two coordinates. The table is organized into a grid with 15 columns and 15 rows of data.

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

S. Lat. { L.H.A. greater than 180°Z=180°-Z L.H.A. less than 180°Z=180°+Z

N. Lat. { LHA: greater than 180°Z1=Z
 LHA: less than 180°Z1=360°-Z

DECLINATION (15° – 29°) CONTRARY NAME TO LATITUDE

15°		16°		17°		18°		19°		20°		21°		22°		23°		24°		25°		26°		27°		28°		29°		LHA		
LHA	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	LHA	
40	-7	16	-59	141	320																											
38	-7	03	-60	143	322																											
36	-6	51	-59	145	324																											
34	-6	39	-60	147	326																											
32	-6	28	-60	149	328																											
30	-6	18	-59	151	330																											
28	-6	08	-60	153	332																											
26	-5	59	-59	155	334																											
24	-5	50	-60	157	336																											
22	-5	42	-60	159	338																											
20	-5	35	-60	161	340																											
18	-5	28	-60	163	342																											
16	-5	22	-60	164	344																											
14	-5	17	-60	166	346																											
12	-5	13	-60	168	348																											
10	-5	09	-60	170	350																											
8	-5	06	-60	172	352																											
6	-5	03	-60	174	354																											
4	-5	01	-60	176	356																											
2	-5	00	-60	178	358																											
0	-5	00	-60	180	360																											

LAT 80°

S. Lat. { LHA: greater than 180°Z1=180°-Z
 LHA: less than 180°Z1=180°+Z

DECLINATION (15° – 29°) CONTRARY NAME TO LATITUDE

LAT 80°

DECLINATION (0° - 14°) SAME NAME AS LATITUDE

LAT 81°

LAT 81°

N. Lat. { LHA. greater than 180°.....Zn=Z
LHA. less than 180°.....Zn=360-Z

Table with columns for LHA (0-180) and declination (0-14) and rows for latitude (0-180). Each cell contains three columns of values (Hc, d, z).

DECLINATION (0° - 14°) SAME NAME AS LATITUDE

LAT 81°

S. Lat. { LHA. greater than 180°.....Zn=180-Z
LHA. less than 180°.....Zn=180+Z

LAT 81°

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180°Zn=Z
LHA: less than 180°Zn=360°-Z

0°		1°		2°		3°		4°		5°		6°		7°		8°		9°		10°		11°		12°		13°		14°		LHA											
Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Z											
140	6	53	60	40	-5	53	59	40	-2	54	60	40	-0	55	60	40	01	05	59	40	02	04	60	39	03	04	60	39	06	03	60	39	07	03	59	200					
142	7	05	60	38	-6	05	59	38	-3	06	60	38	-1	07	60	38	00	53	60	38	01	53	59	37	04	52	60	37	04	52	59	37	05	51	60	37	06	51	37	218	
144	7	16	59	36	-6	17	60	36	-3	17	58	36	-1	18	60	36	00	42	59	36	01	41	60	35	04	41	59	35	04	41	59	35	05	40	60	35	06	40	60	35	216
146	7	27	59	34	-6	28	60	34	-3	28	60	34	-1	29	59	34	00	34	60	34	01	31	60	34	04	30	60	33	04	30	60	33	05	30	60	33	06	30	59	33	214
148	7	38	60	32	-6	39	60	32	-3	39	60	32	-1	40	60	32	00	25	60	32	01	21	60	32	04	20	60	31	04	20	60	31	05	20	60	31	06	20	59	31	212
150	7	49	59	30	-6	49	60	30	-3	49	60	30	-1	50	59	30	00	16	60	30	01	11	60	30	04	11	60	29	04	11	59	29	05	10	60	29	06	10	60	29	210
152	7	59	60	28	-6	57	60	28	-3	57	60	28	-1	57	59	28	00	06	60	28	01	02	60	28	04	02	60	27	04	02	60	27	05	02	59	27	06	01	60	27	208
154	7	05	60	26	-6	05	60	26	-4	06	60	26	-2	06	60	26	-0	06	60	26	00	54	60	26	03	53	60	25	03	53	60	25	04	53	60	25	05	53	60	25	206
155	7	13	60	24	-6	13	60	24	-4	13	59	24	-2	14	60	24	-1	14	60	24	-0	14	60	24	02	46	60	24	02	46	60	24	03	46	59	23	04	45	60	23	204
158	7	21	60	22	-6	21	60	22	-4	21	60	22	-2	21	60	22	-0	21	60	22	00	39	60	22	01	39	59	22	02	38	60	22	03	38	60	22	04	38	60	22	202
160	7	27	60	20	-6	27	60	20	-4	28	60	20	-2	28	60	20	-0	28	60	20	00	32	60	20	01	32	60	20	02	32	60	20	03	32	60	20	04	32	60	20	200
162	7	34	60	18	-6	34	60	18	-4	34	60	18	-2	34	60	18	-0	34	60	18	00	25	60	18	01	25	60	18	02	26	60	18	03	26	60	18	04	26	60	18	198
164	7	41	60	16	-6	41	60	16	-4	41	60	16	-2	42	60	16	-0	42	60	16	00	18	60	16	01	18	60	16	02	19	60	16	03	19	60	16	04	19	60	16	196
166	7	48	60	14	-6	48	60	14	-4	48	60	14	-2	49	60	14	-0	49	60	14	00	11	60	14	01	11	60	14	02	12	60	14	03	12	60	14	04	12	60	14	194
168	7	55	60	12	-6	55	60	12	-4	55	60	12	-2	56	60	12	-0	56	60	12	00	04	60	12	01	04	60	12	02	05	60	12	03	05	60	12	04	05	60	12	192
170	8	02	60	10	-6	52	60	10	-4	52	60	10	-2	53	60	10	-0	53	60	10	00	08	60	10	01	08	60	10	02	08	60	10	03	08	60	10	04	08	60	10	190
172	8	09	60	8	-6	55	60	8	-4	55	60	8	-2	55	60	8	-0	55	60	8	00	05	60	8	01	05	60	8	02	05	60	8	03	05	60	8	04	05	60	8	188
174	8	16	60	6	-6	57	60	6	-4	57	60	6	-2	57	60	6	-0	57	60	6	00	03	60	6	01	03	60	6	02	03	60	6	03	03	60	6	04	03	60	6	186
176	8	23	60	4	-6	59	60	4	-4	59	60	4	-2	59	60	4	-0	59	60	4	00	01	60	4	01	01	60	4	02	01	60	4	03	01	60	4	04	01	60	4	184
178	8	30	60	2	-6	00	60	2	-4	00	60	2	-2	00	60	2	-0	00	60	2	00	00	60	2	01	00	60	2	02	00	60	2	03	00	60	2	04	00	60	2	182
180	8	37	60	0	-6	00	60	0	-5	00	60	0	-3	00	60	0	-1	00	60	0	00	00	60	0	01	00	60	0	02	00	60	0	03	00	60	0	04	00	60	0	180

LAT 81°

DECLINATION (0° – 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

144	-7	16	-60	36	216
142	-7	05	-60	38	218
140	-6	53	-60	40	220

LAT 81°

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA: greater than 180°Zn=Z
LHA: less than 180°Zn=360°-Z

Table with columns for LHA and declination (0° to 14°) for latitude 81°. Each declination column contains a grid of values for LHA from 138 to 300. The table is organized into 15 sections corresponding to declinations from 0° to 14°.

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180°Z=180-Z
LHA: less than 180°Z=360-Z

Table with columns for Latitude (15° to 81°) and Declination (15° to 29°). Each cell contains a 3x3 grid of values representing LHA, Hc, and d. The table is organized into 17 rows corresponding to latitudes from 15° to 81°.

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

S. Lat. { LHA: greater than 180°Z=180-Z
LHA: less than 180°Z=180+Z

N. Lat. { LHA, greater than 180°Zn=Z
 { LHA, less than 180°Zn=360°-Z

DECLINATION (15° – 29°) SAME NAME AS LATITUDE

LAT 81°

15°		16°		17°		18°		19°		20°		21°		22°		23°		24°		25°		26°		27°		28°		29°		LHA				
Hc	d	Hc	d	Hc	d	Hc	d	Hc	d	Hc	d	Hc	d	Hc	d	Hc	d	Hc	d	Hc	d	Hc	d	Hc	d	Hc	d	Hc	d	Z				
140	06.02	60	39	09.02	60	39	11.02	59	39	13.01	60	38	14.01	59	38	15.00	60	38	16.00	60	38	17.00	59	38	18.59	60	38	19.59	59	38	21.58	60	37	220
142	07.51	60	37	08.51	59	37	10.50	60	37	12.49	60	36	13.49	60	36	14.48	60	36	15.48	59	36	16.48	60	36	18.48	59	36	19.47	60	36	21.47	59	35	218
144	07.40	60	35	08.40	59	35	10.39	60	35	12.39	59	34	13.38	60	34	14.38	60	34	15.38	60	34	16.38	59	34	18.37	60	34	19.37	59	34	21.36	60	34	216
146	07.29	60	33	08.29	60	33	10.29	59	33	12.28	60	33	13.28	60	32	14.28	60	32	15.28	59	32	16.27	60	32	18.27	59	32	19.26	60	32	21.26	60	32	214
148	07.19	60	31	08.19	60	31	10.19	60	31	12.18	60	31	13.18	60	31	14.18	60	30	15.18	60	30	16.18	59	30	18.17	60	30	19.17	60	30	21.16	60	30	212
150	07.10	60	29	08.10	60	29	10.09	60	29	12.09	60	29	13.09	60	29	14.09	60	29	15.09	59	28	16.08	60	28	18.08	60	28	19.08	60	28	21.07	60	28	210
152	07.01	60	27	08.01	60	27	10.01	60	27	12.00	60	27	13.00	60	27	14.00	60	27	15.00	60	27	16.00	60	26	18.59	60	26	19.59	60	26	20.59	60	26	208
154	06.53	60	25	07.53	60	25	09.52	60	25	11.52	60	25	12.52	60	25	13.52	60	25	14.52	60	25	15.52	59	25	17.51	60	24	18.51	60	24	20.51	60	24	206
156	06.45	60	23	07.45	60	23	09.45	60	23	11.45	60	23	12.44	60	23	13.44	60	23	14.44	60	23	15.44	60	23	17.44	60	23	18.44	60	22	20.43	60	22	204
158	06.38	60	21	07.38	60	21	09.38	60	21	11.38	60	21	12.37	60	21	13.37	60	21	14.37	60	21	15.37	60	21	17.37	60	21	18.37	60	21	20.37	59	20	202
160	06.32	59	19	07.31	60	19	09.31	60	19	11.31	60	19	12.31	60	19	13.31	60	19	14.31	60	19	15.31	60	19	17.31	59	19	18.30	60	19	20.30	60	19	200
162	06.26	60	17	07.26	59	17	09.25	60	17	11.25	60	17	12.25	60	17	13.25	60	17	14.25	60	17	15.25	60	17	17.25	60	17	18.25	60	17	20.25	59	17	198
164	06.20	60	16	07.20	60	15	09.20	60	15	11.20	60	15	12.20	60	15	13.20	60	15	14.20	60	15	15.20	60	15	17.20	60	15	18.20	59	15	20.19	60	15	196
166	06.16	59	14	07.15	60	14	09.15	60	14	11.15	60	14	12.15	60	14	13.15	60	14	14.15	60	14	15.15	60	14	17.15	60	14	18.15	60	13	20.15	60	13	194
168	06.11	60	12	07.11	60	12	09.11	60	12	11.11	60	12	12.11	60	12	13.11	60	12	14.11	60	12	15.11	60	12	17.11	60	12	18.11	60	11	20.11	60	11	192
170	06.08	60	10	07.08	60	10	09.08	60	10	11.08	60	10	12.08	60	10	13.08	60	10	14.08	60	9	15.08	60	9	17.08	60	9	18.08	60	9	20.08	60	9	190
172	06.05	60	8	07.05	60	8	09.05	60	8	11.05	60	8	12.05	60	8	13.05	60	8	14.05	60	8	15.05	60	8	17.05	60	8	18.05	60	7	20.05	60	7	188
174	06.03	60	6	07.03	60	6	09.03	60	6	11.03	60	6	12.03	60	6	13.03	60	6	14.03	60	6	15.03	60	6	17.03	60	6	18.03	60	6	20.03	60	6	186
176	06.01	60	4	07.01	60	4	09.01	60	4	11.01	60	4	12.01	60	4	13.01	60	4	14.01	60	4	15.01	60	4	17.01	60	4	18.01	60	4	20.01	60	4	184
178	06.00	60	2	07.00	60	2	09.00	60	2	11.00	60	2	12.00	60	2	13.00	60	2	14.00	60	2	15.00	60	2	17.00	60	2	18.00	60	2	20.00	60	2	182
180	06.00	60	0	07.00	60	0	09.00	60	0	11.00	60	0	12.00	60	0	13.00	60	0	14.00	60	0	15.00	60	0	17.00	60	0	18.00	60	0	20.00	60	0	180

15°		16°		17°		18°		19°		20°		21°		22°		23°		24°		25°		26°		27°		28°		29°			
DECLINATION (15° – 29°) SAME NAME AS LATITUDE																															
S. Lat. { LHA, greater than 180°Zn=180°-Z { LHA, less than 180°Zn=180°+Z																															

N. Lat. { LHA: greater than 180°Z=Z
 LHA: less than 180°Z=360°-Z } **DECLINATION (15° – 29°) CONTRARY NAME TO LATITUDE**

LHA	15°		16°		17°		18°		19°		20°		21°		22°		23°		24°		25°		26°		27°		28°		29°		LHA
	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z			
30	-7	10	-60	151	330																										
28	-7	01	-60	153	332																										
26	-6	53	-60	155	334																										
24	-6	45	-60	157	336																										
22	-6	38	-60	159	338																										
20	-6	32	-59	161	340																										
18	-6	26	-60	163	342																										
16	-6	20	-60	164	344																										
14	-6	16	-59	166	346																										
12	-6	11	-60	168	348																										
10	-6	08	-60	170	350																										
8	-6	05	-60	172	352																										
6	-6	03	-60	174	354																										
4	-6	01	-60	176	356																										
2	-6	00	-60	178	358																										
0	-6	00	-60	180	360																										

S. Lat. { LHA: greater than 180°Z=180°-Z
 LHA: less than 180°Z=180°+Z } **DECLINATION (15° – 29°) CONTRARY NAME TO LATITUDE**

LAT 81°

LAT 81°

DECLINATION (0° - 14°) SAME NAME AS LATITUDE

LAT 82°

LHA: greater than 180°Zn=Z
 LHA: less than 180°Zn=360-Z

LHA	0°			1°			2°			3°			4°			5°			6°			7°			8°			9°			10°			11°			12°			13°			14°																																						
	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z																														
0	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00	08.00	00	00																		
1	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00	07.59	00	00												
2	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00	07.58	00	00			
3	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00	07.57	00	00

LHA: greater than 180°Zn=180-Z
 LHA: less than 180°Zn=180+Z

DECLINATION (0° - 14°) SAME NAME AS LATITUDE

LAT 82°

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180°Zn=Z
LHA: less than 180°Zn=360°-Z

Table with columns for LHA (140-180) and declination (0°-14°). Each declination column contains three sub-columns: Hc, d, Z. Values range from -7.11 to 7.00.

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

N. Lat. { LHA, greater than 180°Zn=Z
 LHA, less than 180°Zn=360°-Z

DECLINATION (0° – 14°) **CONTRARY** NAME TO LATITUDE

LAT 82°

0°		1°		2°		3°		4°		5°		6°		7°		8°		9°		10°		11°		12°		13°		14°		LHA				
Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	LHA				
151	-7	11	-60	26	206																													
152	-7	04	-59	28	208																													
150	-6	55	-60	30	210																													
148	-6	47	-60	32	212																													
146	-6	38	-59	34	214																													
144	-6	28	-60	36	216																													
142	-6	18	-60	38	218																													
140	-6	07	-60	40	220																													

S. Lat. { LHA, greater than 180°Zn=180°-Z
 LHA, less than 180°Zn=180°+Z

DECLINATION (0° – 14°) **CONTRARY** NAME TO LATITUDE

LAT 82°

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA, greater than 180°Z=Z
LHA, less than 180°Z=360-Z

Table with columns for Latitude (0° to 14°) and Declination (0° to 14°). Each cell contains a value representing the relationship between LHA and Z. The table is organized into a grid with 15 rows and 15 columns.

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA, greater than 180°Z=180-Z
LHA, less than 180°Z=180+Z

LAT 82°

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

N. Lat. { LHA, greater than 180°Zn=Z
LHA, less than 180°Zn=360°-Z

Table with columns for Latitude (15° to 18°) and Declination (15° to 29°). Each cell contains a 3-digit number representing the value for that specific latitude and declination combination.

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

S. Lat. { LHA, greater than 180°Zn=180°-Z
LHA, less than 180°Zn=180°+Z

DECLINATION (15° – 29°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180°Zn=Z
LHA: less than 180°Zn=360°-Z

Table with columns for LHA and declination degrees (15° to 29°). Each declination column contains three sub-columns: Hc, d, and Z. The table lists values for LHA from 140 to 180.

LAT 82°

DECLINATION (15° – 29°) SAME NAME AS LATITUDE

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

LAT 83°

N. Lat. { LHA, greater than 180°; Z=Z
LHA, less than 180°; Z=360°-Z

Table with columns for LHA (0-180) and declination (0-14) for latitude 83. Each cell contains a 3x3 grid of values for hours (Hc), degrees (d), and minutes (z).

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

LAT 83°

S. Lat. { LHA, greater than 180°; Z=180°-Z
LHA, less than 180°; Z=180°+Z

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180°Zn=Z
LHA: less than 180°Zn=360°-Z

Table with columns for LHA (140-180) and declination (0°-14°). Each declination column contains three sub-columns: Hc, d, Z. Values range from -7.00 to 7.00 for Hc and 0 to 30 for d and Z.

LAT 83°

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

DECLINATION (0° – 14°) **CONTRARY** NAME TO LATITUDE

N. Lat. { LHA, greater than 180°Zn=Z
LHA, less than 180°Zn=360°-Z

LAT 83°

	0°			1°			2°			3°			4°			5°			6°			7°			8°			9°			10°			11°			12°			13°			14°		
LHA	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	LHA								
180	-7	00	-60	0	180																																								
178	-7	00	-60	2	182																																								
176	-6	59	-60	4	184																																								
174	-6	58	-60	6	186																																								
172	-6	56	-60	8	188																																								
170	-6	54	-60	10	190																																								
168	-6	51	-60	12	192																																								
166	-6	47	-60	14	194																																								
164	-6	44	-60	16	196																																								
162	-6	39	-60	18	198																																								
160	-6	35	-60	20	200																																								
158	-6	29	-60	22	202																																								
156	-6	24	-60	24	204																																								
154	-6	17	-60	26	206																																								
152	-6	11	-60	28	208																																								
150	-6	04	-60	30	210																																								
148	-5	56	-60	32	212																																								
146	-5	48	-60	34	214																																								
144	-5	39	-60	36	216																																								
142	-5	31	-60	38	218																																								
140	-5	21	-60	40	220																																								

S. Lat. { LHA, greater than 180°Zn=180°-Z
LHA, less than 180°Zn=180°+Z

DECLINATION (0° – 14°) **CONTRARY** NAME TO LATITUDE

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA, greater than 180°Zi=180-Z
LHA, less than 180°Zi=360-Z

Table with columns for Latitude (0° to 14°) and Declination (0° to 14°). Each cell contains a value representing the LHA. The table is organized in a grid where the top row represents the latitude and the left column represents the declination. Values are provided for each combination of latitude and declination.

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA, greater than 180°Zi=180-Z
LHA, less than 180°Zi=180+Z

LAT 83°

DECLINATION (15° – 29°) SAME NAME AS LATITUDE

N. Lat. { LHA, greater than 180°; Z=Z
LHA, less than 180°; Z=360°-Z

LHA	15°			16°			17°			18°			19°			20°			21°			22°			23°			24°			25°			26°			27°			28°			29°																																																																																																																																																																																																		
	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z																																																																																																																																																																																																						
0	22.00	00	180	23.00	00	180	24.00	00	180	25.00	00	180	26.00	00	180	27.00	00	180	28.00	00	180	29.00	00	180	30.00	00	180	31.00	00	180	32.00	00	180	33.00	00	180	34.00	00	180	35.00	00	180	36.00	00	180	37.00	00	180	38.00	00	180	39.00	00	180	40.00	00	180	41.00	00	180	42.00	00	180	43.00	00	180	44.00	00	180	45.00	00	180	46.00	00	180	47.00	00	180	48.00	00	180	49.00	00	180	50.00	00	180	51.00	00	180	52.00	00	180	53.00	00	180	54.00	00	180	55.00	00	180	56.00	00	180	57.00	00	180	58.00	00	180	59.00	00	180	60.00	00	180	61.00	00	180	62.00	00	180	63.00	00	180	64.00	00	180	65.00	00	180	66.00	00	180	67.00	00	180	68.00	00	180	69.00	00	180	70.00	00	180	71.00	00	180	72.00	00	180	73.00	00	180	74.00	00	180	75.00	00	180	76.00	00	180	77.00	00	180	78.00	00	180	79.00	00	180	80.00	00	180	81.00	00	180	82.00	00	180	83.00	00	180	84.00	00	180	85.00	00	180	86.00	00	180	87.00	00	180	88.00	00	180	89.00	00	180	90.00	00	180	91.00	00	180	92.00	00	180	93.00	00	180	94.00	00	180	95.00	00	180	96.00	00	180	97.00	00	180	98.00	00	180	99.00	00	180	100.00	00	180

DECLINATION (15° – 29°) SAME NAME AS LATITUDE

S. Lat. { LHA, greater than 180°; Z=180°-Z
LHA, less than 180°; Z=180°+Z

N. Lat. { LHA: greater than 180°Z=Z
LHA: less than 180°Z=360°-Z

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

LHA	15°			16°			17°			18°			19°			20°			21°			22°			23°			24°			25°			26°			27°			28°			29°																																																																																																																																																																																																																																																																																																																													
	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z																																																																																																																																																																																																																																																																																																																																				
140	09	36	60	39	10	36	59	39	11	35	60	39	12	35	60	39	13	35	60	39	14	35	60	38	17	34	60	38	18	34	60	38	19	34	60	38	20	34	59	38	21	33	60	38	22	33	60	38	23	33	60	38	24	33	60	38	25	33	60	38	26	33	60	38	27	33	60	38	28	33	60	38	29	33	60	38	30	33	60	38	31	33	60	38	32	33	60	38	33	33	60	38	34	33	60	38	35	33	60	38	36	33	60	38	37	33	60	38	38	33	60	38	39	33	60	38	40	33	60	38	41	33	60	38	42	33	60	38	43	33	60	38	44	33	60	38	45	33	60	38	46	33	60	38	47	33	60	38	48	33	60	38	49	33	60	38	50	33	60	38	51	33	60	38	52	33	60	38	53	33	60	38	54	33	60	38	55	33	60	38	56	33	60	38	57	33	60	38	58	33	60	38	59	33	60	38	60	33	60	38	61	33	60	38	62	33	60	38	63	33	60	38	64	33	60	38	65	33	60	38	66	33	60	38	67	33	60	38	68	33	60	38	69	33	60	38	70	33	60	38	71	33	60	38	72	33	60	38	73	33	60	38	74	33	60	38	75	33	60	38	76	33	60	38	77	33	60	38	78	33	60	38	79	33	60	38	80	33	60	38	81	33	60	38	82	33	60	38	83	33	60	38	84	33	60	38	85	33	60	38	86	33	60	38	87	33	60	38	88	33	60	38	89	33	60	38	90	33	60	38	91	33	60	38	92	33	60	38	93	33	60	38	94	33	60	38	95	33	60	38	96	33	60	38	97	33	60	38	98	33	60	38	99	33	60	38	100	33	60	38

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

S. Lat. { LHA: greater than 180°Z=180°-Z
LHA: less than 180°Z=180°+Z

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

LAT 84°

LAT 84°

N. Lat. { LHA, greater than 180°; Z=Z
LHA, less than 180°; Z=360°-Z

Table with columns for LHA (0-188) and rows for Declination (0° to 14°). Each cell contains a 3x3 grid of values for Hc, d, and Z.

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

LAT 84°

S. Lat. { LHA, greater than 180°; Z=180°-Z
LHA, less than 180°; Z=180°+Z

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180°Zn=Z
LHA: less than 180°Zn=360°-Z

Table with columns for LHA (140-180) and declination (0°-14°). Each declination column contains three sub-columns: Hc, d, Z. Values range from -6.00 to 5.00 for Hc, and 0 to 60 for d and Z.

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

N. Lat. { LHA, greater than 180°Zn=Z
 LHA, less than 180°Zn=360°-Z

DECLINATION (0° – 14°) **CONTRARY** NAME TO LATITUDE

LAT 84°

0°		1°		2°		3°		4°		5°		6°		7°		8°		9°		10°		11°		12°		13°		14°			
LHA	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	LHA
180	-6 00	-60	0	-7 00	-60	0	180																								
178	-6 00	-60	2	-7 00	-60	2	182																								
176	-5 59	-60	4	-6 59	-60	4	184																								
174	-5 58	-60	6	-6 58	-60	6	186																								
172	-5 56	-60	8	-6 56	-60	8	188																								
170	-5 55	-60	10	-6 55	-60	10	190																								
168	-5 52	-60	12	-6 52	-60	12	192																								
166	-5 49	-60	14	-6 49	-60	14	194																								
164	-5 46	-60	16	-6 46	-60	16	196																								
162	-5 42	-60	18	-6 42	-60	18	198																								
160	-5 38	-60	20	-6 38	-60	20	200																								
158	-5 34	-60	22	-6 34	-60	22	202																								
156	-5 29	-60	24	-6 29	-60	24	204																								
154	-5 23	-60	26	-6 23	-60	26	206																								
152	-5 18	-60	28	-6 18	-60	28	208																								
150	-5 12	-60	30	-6 12	-60	30	210																								
148	-5 05	-60	32	-6 05	-60	32	212																								
146	-4 58	-60	34	-5 58	-60	34	214																								
144	-4 51	-60	36	-5 51	-60	36	216																								
142	-4 43	-60	38	-5 43	-60	38	218																								
140	-4 36	-60	40	-5 35	-60	40	220																								

S. Lat. { LHA, greater than 180°Zn=180°-Z
 LHA, less than 180°Zn=180°+Z

DECLINATION (0° – 14°) **CONTRARY** NAME TO LATITUDE

LAT 84°

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA. greater than 180°Z=Z
LHA. less than 180°Z=360-Z

Main table with columns for Latitude (0° to 14°) and Longitude (0° to 14°). Each cell contains numerical values for LHA and Z. The table is organized into a grid with 15 columns for latitude and 15 columns for longitude.

S. Lat. { LHA. greater than 180°Z=180-Z
LHA. less than 180°Z=180+Z

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

LAT 84°

LAT 84°

LAT 84°

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

N. Lat. { LHA. greater than 180°Zn=Z
LHA. less than 180°Zn=360-Z

Table with columns for Latitude (15° to 18°) and Declination (15° to 29°). Each cell contains a 3x3 grid of values (Hc, d, z). The table is organized into 18 columns, each representing a declination from 15° to 29°. Each column has 18 rows representing latitudes from 15° to 18°. Each cell contains three values: Hc, d, and z.

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

S. Lat. { LHA. greater than 180°Zn=180-Z
LHA. less than 180°Zn=180+Z

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

LAT 85°

N. Lat. { LHA. greater than 180°Zn=Z
LHA. less than 180°Zn=360-Z

LHA	0°			1°			2°			3°			4°			5°			6°			7°			8°			9°			10°			11°			12°			13°			14°																																																																																																																																																																																																																																																																																																																																																	
	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z																																																																																																																																																																																																																																																																																																																																									
0	05	00	60	180	06	00	60	180	08	00	60	180	09	00	60	180	10	00	60	180	11	00	60	180	12	00	60	180	13	00	60	180	14	00	60	180	15	00	60	180	16	00	60	180	17	00	60	180	18	00	60	180	19	00	60	180	20	00	60	180	21	00	60	180	22	00	60	180	23	00	60	180	24	00	60	180	25	00	60	180	26	00	60	180	27	00	60	180	28	00	60	180	29	00	60	180	30	00	60	180	31	00	60	180	32	00	60	180	33	00	60	180	34	00	60	180	35	00	60	180	36	00	60	180	37	00	60	180	38	00	60	180	39	00	60	180	40	00	60	180	41	00	60	180	42	00	60	180	43	00	60	180	44	00	60	180	45	00	60	180	46	00	60	180	47	00	60	180	48	00	60	180	49	00	60	180	50	00	60	180	51	00	60	180	52	00	60	180	53	00	60	180	54	00	60	180	55	00	60	180	56	00	60	180	57	00	60	180	58	00	60	180	59	00	60	180	60	00	60	180	61	00	60	180	62	00	60	180	63	00	60	180	64	00	60	180	65	00	60	180	66	00	60	180	67	00	60	180	68	00	60	180	69	00	60	180	70	00	60	180	71	00	60	180	72	00	60	180	73	00	60	180	74	00	60	180	75	00	60	180	76	00	60	180	77	00	60	180	78	00	60	180	79	00	60	180	80	00	60	180	81	00	60	180	82	00	60	180	83	00	60	180	84	00	60	180	85	00	60	180	86	00	60	180	87	00	60	180	88	00	60	180	89	00	60	180	90	00	60	180	91	00	60	180	92	00	60	180	93	00	60	180	94	00	60	180	95	00	60	180	96	00	60	180	97	00	60	180	98	00	60	180	99	00	60	180	100	00	60	180

S. Lat. { LHA. greater than 180°Zn=180-Z
LHA. less than 180°Zn=180+Z

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

LAT 85°

DECLINATION (0° - 14°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180°Zn=Z
LHA: less than 180°Zn=360°-Z

Table with columns for LHA (140-180) and declination (0°-14°). Each declination column contains three sub-columns: Hc, d, Z. Values range from -5.00 to 10.09.

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

DECLINATION (0° - 14°) SAME NAME AS LATITUDE

LAT 85°

DECLINATION (0° – 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA, greater than 180°Zn=Z
LHA, less than 180°Zn=360°-Z

0°		1°		2°		3°		4°		5°		6°		7°		8°		9°		10°		11°		12°		13°		14°			
LHA	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	LHA
180	-5 00	-60	0	-6 00	-60	0	-7 00	-60	0	180																					
178	-5 00	-60	2	-6 00	-60	2	-7 00	-60	2	182																					
176	-4 59	-60	4	-5 59	-60	4	-6 59	-60	4	184																					
174	-4 58	-60	6	-5 58	-60	6	-6 58	-60	6	186																					
172	-4 57	-60	8	-5 57	-60	8	-6 57	-60	8	188																					
170	-4 55	-60	10	-5 55	-60	10	-6 55	-60	10	190																					
168	-4 53	-60	12	-5 53	-60	12	-6 53	-60	12	192																					
166	-4 51	-60	14	-5 51	-60	14	-6 51	-60	14	194																					
164	-4 48	-60	16	-5 48	-60	16	-6 48	-60	16	196																					
162	-4 45	-60	18	-5 45	-60	18	-6 45	-60	18	198																					
160	-4 42	-60	20	-5 42	-60	20	-6 42	-60	20	200																					
158	-4 38	-60	22	-5 38	-60	22	-6 38	-60	22	202																					
156	-4 34	-60	24	-5 34	-60	24	-6 34	-60	24	204																					
154	-4 30	-60	26	-5 30	-60	26	-6 30	-60	26	206																					
152	-4 25	-60	28	-5 25	-60	28	-6 25	-60	28	208																					
150	-4 20	-60	30	-5 20	-60	30	-6 20	-60	30	210																					
148	-4 14	-60	32	-5 14	-60	32	-6 14	-60	32	212																					
146	-4 09	-60	34	-5 09	-60	34	-6 08	-60	34	-7 08	-60	34																			
144	-4 03	-60	36	-5 03	-60	36	-6 02	-60	36	-7 02	-60	36																			
142	-3 56	-60	38	-4 56	-60	38	-5 56	-60	38	-6 56	-60	38																			
140	-3 50	-60	40	-4 50	-60	40	-5 50	-60	40	-6 49	-60	40																			

DECLINATION (0° – 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA, greater than 180°Zn=180°-Z
LHA, less than 180°Zn=180°+Z

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA: greater than 180°Zi=180°-Z
LHA: less than 180°Zi=360°-Z

Table with columns for Latitude (0° to 14°) and Declination (0° to 14°). Each cell contains a numerical value representing the LHA. The table is organized in a grid where the top row represents the latitude and the left column represents the declination. Values range from 0 to 360.

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA: greater than 180°Zi=180°-Z
LHA: less than 180°Zi=180°+Z

DECLINATION (15° – 29°) SAME NAME AS LATITUDE

LAT 85°

N. Lat. { LHA. greater than 180°Zn=Z
LHA. less than 180°Zn=360-Z

Table with columns for latitude (15° to 29°) and declination (15° to 29°). Each cell contains a 3-digit number representing the LHA value. The table is organized in a grid where the top row and left column represent the latitude, and the bottom row and right column represent the declination.

DECLINATION (15° – 29°) SAME NAME AS LATITUDE

S. Lat. { LHA. greater than 180°Zn=180-Z
LHA. less than 180°Zn=180+Z

DECLINATION (15° – 29°) SAME NAME AS LATITUDE

N. Lat. { LHA, greater than 180° Z=Z
LHA, less than 180° Z=360°-Z

Table with columns for LHA (140-180) and declination (15°-29°). Each declination column contains three sub-columns: Hc, d, Z. Values range from 0 to 300.

DECLINATION (15° – 29°) SAME NAME AS LATITUDE

S. Lat. { LHA, greater than 180° Z=180°-Z
LHA, less than 180° Z=180°+Z

Table with columns for LHA (140-180) and declination (15°-29°). Each declination column contains three sub-columns: Hc, d, Z. Values range from 0 to 300.

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

LAT 86°

N. Lat. { LHA, greater than 180°; Z_n=Z
LHA, less than 180°; Z_n=360°-Z

LHA	0°			1°			2°			3°			4°			5°			6°			7°			8°			9°			10°			11°			12°			13°			14°																																																																																																																																																																																																																																																																																																																																																					
	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z																																																																																																																																																																																																																																																																																																																																																									
0	04.00	00	60	180	05.00	00	60	180	07.00	00	60	180	08.00	00	60	180	09.00	00	60	180	10.00	00	60	180	11.00	00	60	180	12.00	00	60	180	13.00	00	60	180	14.00	00	60	180	15.00	00	60	180	16.00	00	60	180	17.00	00	60	180	18.00	00	60	180	19.00	00	60	180	20.00	00	60	180	21.00	00	60	180	22.00	00	60	180	23.00	00	60	180	24.00	00	60	180	25.00	00	60	180	26.00	00	60	180	27.00	00	60	180	28.00	00	60	180	29.00	00	60	180	30.00	00	60	180	31.00	00	60	180	32.00	00	60	180	33.00	00	60	180	34.00	00	60	180	35.00	00	60	180	36.00	00	60	180	37.00	00	60	180	38.00	00	60	180	39.00	00	60	180	40.00	00	60	180	41.00	00	60	180	42.00	00	60	180	43.00	00	60	180	44.00	00	60	180	45.00	00	60	180	46.00	00	60	180	47.00	00	60	180	48.00	00	60	180	49.00	00	60	180	50.00	00	60	180	51.00	00	60	180	52.00	00	60	180	53.00	00	60	180	54.00	00	60	180	55.00	00	60	180	56.00	00	60	180	57.00	00	60	180	58.00	00	60	180	59.00	00	60	180	60.00	00	60	180	61.00	00	60	180	62.00	00	60	180	63.00	00	60	180	64.00	00	60	180	65.00	00	60	180	66.00	00	60	180	67.00	00	60	180	68.00	00	60	180	69.00	00	60	180	70.00	00	60	180	71.00	00	60	180	72.00	00	60	180	73.00	00	60	180	74.00	00	60	180	75.00	00	60	180	76.00	00	60	180	77.00	00	60	180	78.00	00	60	180	79.00	00	60	180	80.00	00	60	180	81.00	00	60	180	82.00	00	60	180	83.00	00	60	180	84.00	00	60	180	85.00	00	60	180	86.00	00	60	180	87.00	00	60	180	88.00	00	60	180	89.00	00	60	180	90.00	00	60	180	91.00	00	60	180	92.00	00	60	180	93.00	00	60	180	94.00	00	60	180	95.00	00	60	180	96.00	00	60	180	97.00	00	60	180	98.00	00	60	180	99.00	00	60	180	100.00	00	60	180

S. Lat. { LHA, greater than 180°; Z_n=180°-Z
LHA, less than 180°; Z_n=180°+Z

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

LAT 86°

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180°Zn=Z
LHA: less than 180°Zn=360°-Z

Table with columns for LHA (140-180) and declination (0°-14°). Each declination column contains three sub-columns: Hc, d, Z. Values range from -4.00 to 10.00.

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

N. Lat. { LHA, greater than 180°Zn=Z
 LHA, less than 180°Zn=360°-Z

DECLINATION (0° – 14°) CONTRARY NAME TO LATITUDE

LAT 86°

LHA	0°		1°		2°		3°		4°		5°		6°		7°		8°		9°		10°		11°		12°		13°		14°		LHA																	
	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z	Hc	d Z																		
180	-4	00	-60	0	-5	00	-60	0	-6	00	-60	0	-7	00	-60	0	-8	00	-60	0	-9	00	-60	0	-10	00	-60	0	-11	00	-60	0	-12	00	-60	0	-13	00	-60	0	-14	00	-60	0				
178	-4	00	-60	2	-5	00	-60	2	-6	00	-60	2	-7	00	-60	2	-8	00	-60	2	-9	00	-60	2	-10	00	-60	2	-11	00	-60	2	-12	00	-60	2	-13	00	-60	2	-14	00	-60	2				
176	-3	59	-60	4	-4	59	-60	4	-5	59	-60	4	-6	59	-60	4	-7	59	-60	4	-8	59	-60	4	-9	59	-60	4	-10	59	-60	4	-11	59	-60	4	-12	59	-60	4	-13	59	-60	4	-14	59	-60	4
174	-3	58	-60	6	-4	58	-60	6	-5	58	-60	6	-6	58	-60	6	-7	58	-60	6	-8	58	-60	6	-9	58	-60	6	-10	58	-60	6	-11	58	-60	6	-12	58	-60	6	-13	58	-60	6	-14	58	-60	6
172	-3	58	-60	8	-4	58	-60	8	-5	58	-60	8	-6	58	-60	8	-7	58	-60	8	-8	58	-60	8	-9	58	-60	8	-10	58	-60	8	-11	58	-60	8	-12	58	-60	8	-13	58	-60	8	-14	58	-60	8
170	-3	56	-60	10	-4	56	-60	10	-5	56	-60	10	-6	56	-60	10	-7	56	-60	10	-8	56	-60	10	-9	56	-60	10	-10	56	-60	10	-11	56	-60	10	-12	56	-60	10	-13	56	-60	10	-14	56	-60	10
168	-3	55	-60	12	-4	55	-60	12	-5	55	-60	12	-6	55	-60	12	-7	55	-60	12	-8	55	-60	12	-9	55	-60	12	-10	55	-60	12	-11	55	-60	12	-12	55	-60	12	-13	55	-60	12	-14	55	-60	12
166	-3	53	-60	14	-4	53	-60	14	-5	53	-60	14	-6	53	-60	14	-7	53	-60	14	-8	53	-60	14	-9	53	-60	14	-10	53	-60	14	-11	53	-60	14	-12	53	-60	14	-13	53	-60	14	-14	53	-60	14
164	-3	51	-60	16	-4	51	-60	16	-5	51	-60	16	-6	51	-60	16	-7	51	-60	16	-8	51	-60	16	-9	51	-60	16	-10	51	-60	16	-11	51	-60	16	-12	51	-60	16	-13	51	-60	16	-14	51	-60	16
162	-3	48	-60	18	-4	48	-60	18	-5	48	-60	18	-6	48	-60	18	-7	48	-60	18	-8	48	-60	18	-9	48	-60	18	-10	48	-60	18	-11	48	-60	18	-12	48	-60	18	-13	48	-60	18	-14	48	-60	18
160	-3	46	-60	20	-4	46	-60	20	-5	46	-60	20	-6	46	-60	20	-7	46	-60	20	-8	46	-60	20	-9	46	-60	20	-10	46	-60	20	-11	46	-60	20	-12	46	-60	20	-13	46	-60	20	-14	46	-60	20
158	-3	42	-60	22	-4	42	-60	22	-5	42	-60	22	-6	42	-60	22	-7	42	-60	22	-8	42	-60	22	-9	42	-60	22	-10	42	-60	22	-11	42	-60	22	-12	42	-60	22	-13	42	-60	22	-14	42	-60	22
156	-3	38	-60	24	-4	38	-60	24	-5	38	-60	24	-6	38	-60	24	-7	38	-60	24	-8	38	-60	24	-9	38	-60	24	-10	38	-60	24	-11	38	-60	24	-12	38	-60	24	-13	38	-60	24	-14	38	-60	24
154	-3	36	-60	26	-4	36	-60	26	-5	36	-60	26	-6	36	-60	26	-7	36	-60	26	-8	36	-60	26	-9	36	-60	26	-10	36	-60	26	-11	36	-60	26	-12	36	-60	26	-13	36	-60	26	-14	36	-60	26
152	-3	32	-60	28	-4	32	-60	28	-5	32	-60	28	-6	32	-60	28	-7	32	-60	28	-8	32	-60	28	-9	32	-60	28	-10	32	-60	28	-11	32	-60	28	-12	32	-60	28	-13	32	-60	28	-14	32	-60	28
150	-3	28	-60	30	-4	28	-60	30	-5	28	-60	30	-6	28	-60	30	-7	28	-60	30	-8	28	-60	30	-9	28	-60	30	-10	28	-60	30	-11	28	-60	30	-12	28	-60	30	-13	28	-60	30	-14	28	-60	30
148	-3	23	-60	32	-4	23	-60	32	-5	23	-60	32	-6	23	-60	32	-7	23	-60	32	-8	23	-60	32	-9	23	-60	32	-10	23	-60	32	-11	23	-60	32	-12	23	-60	32	-13	23	-60	32	-14	23	-60	32
146	-3	19	-60	34	-4	19	-60	34	-5	19	-60	34	-6	19	-60	34	-7	19	-60	34	-8	19	-60	34	-9	19	-60	34	-10	19	-60	34	-11	19	-60	34	-12	19	-60	34	-13	19	-60	34	-14	19	-60	34
144	-3	14	-60	36	-4	14	-60	36	-5	14	-60	36	-6	14	-60	36	-7	14	-60	36	-8	14	-60	36	-9	14	-60	36	-10	14	-60	36	-11	14	-60	36	-12	14	-60	36	-13	14	-60	36	-14	14	-60	36
142	-3	09	-60	38	-4	09	-60	38	-5	09	-60	38	-6	09	-60	38	-7	09	-60	38	-8	09	-60	38	-9	09	-60	38	-10	09	-60	38	-11	09	-60	38	-12	09	-60	38	-13	09	-60	38	-14	09	-60	38
140	-3	04	-60	40	-4	04	-60	40	-5	04	-60	40	-6	04	-60	40	-7	04	-60	40	-8	04	-60	40	-9	04	-60	40	-10	04	-60	40	-11	04	-60	40	-12	04	-60	40	-13	04	-60	40	-14	04	-60	40

DECLINATION (0° – 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA, greater than 180°Zn=180°-Z
 LHA, less than 180°Zn=180°+Z

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA, greater than 180°Z=180-Z
LHA, less than 180°Z=360-Z

Table with columns for Latitude (0° to 14°) and Declination (0° to 14°). Each cell contains a value representing the relationship between LHA and declination. The table is organized in a grid with 15 rows and 15 columns.

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA, greater than 180°Z=180-Z
LHA, less than 180°Z=180+Z

LAT 86°

DECLINATION (15° – 29°) SAME NAME AS LATITUDE

N. Lat. { LHA, greater than 180°; Z_n=Z
LHA, less than 180°; Z_n=360°-Z

LHA	15°			16°			17°			18°			19°			20°			21°			22°			23°			24°			25°			26°			27°			28°			29°																																																																																																																																																																																																											
	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z																																																																																																																																																																																																															
0	19 00	60	180	20 00	60	180	21 00	60	180	22 00	60	180	23 00	60	180	24 00	60	180	25 00	60	180	26 00	60	180	27 00	60	180	28 00	60	180	29 00	60	180	30 00	60	180	31 00	60	180	32 00	60	180	33 00	60	180	34 00	60	180	35 00	60	180	36 00	60	180	37 00	60	180	38 00	60	180	39 00	60	180	40 00	60	180	41 00	60	180	42 00	60	180	43 00	60	180	44 00	60	180	45 00	60	180	46 00	60	180	47 00	60	180	48 00	60	180	49 00	60	180	50 00	60	180	51 00	60	180	52 00	60	180	53 00	60	180	54 00	60	180	55 00	60	180	56 00	60	180	57 00	60	180	58 00	60	180	59 00	60	180	60 00	60	180	61 00	60	180	62 00	60	180	63 00	60	180	64 00	60	180	65 00	60	180	66 00	60	180	67 00	60	180	68 00	60	180	69 00	60	180	70 00	60	180	71 00	60	180	72 00	60	180	73 00	60	180	74 00	60	180	75 00	60	180	76 00	60	180	77 00	60	180	78 00	60	180	79 00	60	180	80 00	60	180	81 00	60	180	82 00	60	180	83 00	60	180	84 00	60	180	85 00	60	180	86 00	60	180	87 00	60	180	88 00	60	180	89 00	60	180	90 00	60	180	91 00	60	180	92 00	60	180	93 00	60	180	94 00	60	180	95 00	60	180	96 00	60	180	97 00	60	180	98 00	60	180	99 00	60	180	100 00	60	180

DECLINATION (15° – 29°) SAME NAME AS LATITUDE

S. Lat. { LHA, greater than 180°; Z_n=180°-Z
LHA, less than 180°; Z_n=180°+Z

DECLINATION (15° – 29°) CONTRARY NAME TO LATITUDE

N. Lat. { L.H.A. greater than 180°Zn=Z
L.H.A. less than 180°Zn=360°-Z

Table with columns for Latitude (15° to 180°) and Declination (15° to 29°). Each cell contains three values: Hc, d, Z.

DECLINATION (15° – 29°) CONTRARY NAME TO LATITUDE

S. Lat. { L.H.A. greater than 180°Zn=180°-Z
L.H.A. less than 180°Zn=180°+Z

Table with columns for Latitude (15° to 180°) and Declination (20° to 29°). Each cell contains three values: Hc, d, Z.

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180°Zn=Z
LHA: less than 180°Zn=360°-Z

Table with columns for LHA (140-180) and declination (0°-14°). Each declination column contains three sub-columns: Hc, d, Z. Values range from -3.00 to 11.00.

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

LAT 87°

DECLINATION (0° – 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA, greater than 180°Zn=Z
LHA, less than 180°Zn=360°-Z

0°		1°		2°		3°		4°		5°		6°		7°		8°		9°		10°		11°		12°		13°		14°						
LHA	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	LHA			
180	-3 00	-60	0	-4 00	-60	0	-5 00	-60	0	-6 00	-60	0	-6 00	-60	0	-6 00	-60	0	-6 00	-60	0	-6 00	-60	0	-6 00	-60	0	-6 00	-60	0	-6 00	-60	0	180
178	-3 00	-60	2	-4 00	-60	2	-5 00	-60	2	-6 00	-60	2	-6 00	-60	2	-7 00	-60	2	-7 00	-60	2	-7 00	-60	2	-7 00	-60	2	-7 00	-60	2	-7 00	-60	2	182
176	-3 00	-60	4	-4 00	-60	4	-5 00	-60	4	-6 00	-60	4	-6 00	-60	4	-7 00	-60	4	-7 00	-60	4	-7 00	-60	4	-7 00	-60	4	-7 00	-60	4	-7 00	-60	4	184
174	-2 59	-60	6	-3 59	-60	6	-4 59	-60	6	-5 59	-60	6	-5 59	-60	6	-6 59	-60	6	-6 59	-60	6	-6 59	-60	6	-6 59	-60	6	-6 59	-60	6	-6 59	-60	6	186
172	-2 58	-60	8	-3 58	-60	8	-4 58	-60	8	-5 58	-60	8	-5 58	-60	8	-6 58	-60	8	-6 58	-60	8	-6 58	-60	8	-6 58	-60	8	-6 58	-60	8	-6 58	-60	8	188
170	-2 57	-60	10	-3 57	-60	10	-4 57	-60	10	-5 57	-60	10	-5 57	-60	10	-6 57	-60	10	-6 57	-60	10	-6 57	-60	10	-6 57	-60	10	-6 57	-60	10	-6 57	-60	10	190
168	-2 56	-60	12	-3 56	-60	12	-4 56	-60	12	-5 56	-60	12	-5 56	-60	12	-6 56	-60	12	-6 56	-60	12	-6 56	-60	12	-6 56	-60	12	-6 56	-60	12	-6 56	-60	12	192
166	-2 55	-60	14	-3 55	-60	14	-4 55	-60	14	-5 55	-60	14	-5 55	-60	14	-6 55	-60	14	-6 55	-60	14	-6 55	-60	14	-6 55	-60	14	-6 55	-60	14	-6 55	-60	14	194
164	-2 53	-60	16	-3 53	-60	16	-4 53	-60	16	-5 53	-60	16	-5 53	-60	16	-6 53	-60	16	-6 53	-60	16	-6 53	-60	16	-6 53	-60	16	-6 53	-60	16	-6 53	-60	16	196
162	-2 51	-60	18	-3 51	-60	18	-4 51	-60	18	-5 51	-60	18	-5 51	-60	18	-6 51	-60	18	-6 51	-60	18	-6 51	-60	18	-6 51	-60	18	-6 51	-60	18	-6 51	-60	18	198
160	-2 49	-60	20	-3 49	-60	20	-4 49	-60	20	-5 49	-60	20	-5 49	-60	20	-6 49	-60	20	-6 49	-60	20	-6 49	-60	20	-6 49	-60	20	-6 49	-60	20	-6 49	-60	20	200
158	-2 47	-60	22	-3 47	-60	22	-4 47	-60	22	-5 47	-60	22	-5 47	-60	22	-6 47	-60	22	-6 47	-60	22	-6 47	-60	22	-6 47	-60	22	-6 47	-60	22	-6 47	-60	22	202
156	-2 44	-60	24	-3 44	-60	24	-4 44	-60	24	-5 44	-60	24	-5 44	-60	24	-6 44	-60	24	-6 44	-60	24	-6 44	-60	24	-6 44	-60	24	-6 44	-60	24	-6 44	-60	24	204
154	-2 42	-60	26	-3 42	-60	26	-4 42	-60	26	-5 42	-60	26	-5 42	-60	26	-6 42	-60	26	-6 42	-60	26	-6 42	-60	26	-6 42	-60	26	-6 42	-60	26	-6 42	-60	26	206
152	-2 39	-60	28	-3 39	-60	28	-4 39	-60	28	-5 39	-60	28	-5 39	-60	28	-6 39	-60	28	-6 39	-60	28	-6 39	-60	28	-6 39	-60	28	-6 39	-60	28	-6 39	-60	28	208
150	-2 36	-60	30	-3 36	-60	30	-4 36	-60	30	-5 36	-60	30	-5 36	-60	30	-6 36	-60	30	-6 36	-60	30	-6 36	-60	30	-6 36	-60	30	-6 36	-60	30	-6 36	-60	30	210
148	-2 33	-60	32	-3 33	-60	32	-4 33	-60	32	-5 33	-60	32	-5 33	-60	32	-6 33	-60	32	-6 33	-60	32	-6 33	-60	32	-6 33	-60	32	-6 33	-60	32	-6 33	-60	32	212
146	-2 29	-60	34	-3 29	-60	34	-4 29	-60	34	-5 29	-60	34	-5 29	-60	34	-6 29	-60	34	-6 29	-60	34	-6 29	-60	34	-6 29	-60	34	-6 29	-60	34	-6 29	-60	34	214
144	-2 26	-60	36	-3 26	-60	36	-4 26	-60	36	-5 26	-60	36	-5 26	-60	36	-6 26	-60	36	-6 26	-60	36	-6 26	-60	36	-6 26	-60	36	-6 26	-60	36	-6 26	-60	36	216
142	-2 22	-60	38	-3 22	-60	38	-4 22	-60	38	-5 22	-60	38	-5 22	-60	38	-6 22	-60	38	-6 22	-60	38	-6 22	-60	38	-6 22	-60	38	-6 22	-60	38	-6 22	-60	38	218
140	-2 18	-60	40	-3 18	-60	40	-4 18	-60	40	-5 18	-60	40	-5 18	-60	40	-6 18	-60	40	-6 18	-60	40	-6 18	-60	40	-6 18	-60	40	-6 18	-60	40	-6 18	-60	40	220

DECLINATION (0° – 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA, greater than 180°Zn=180°-Z
LHA, less than 180°Zn=180°+Z

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA, greater than 180°Zi=180°-Z
LHA, less than 180°Zi=360°-Z

Table with columns for LHA (138-913) and rows for declination (0°-14°) in 1-degree increments. Each row contains 15 columns of data for each degree, labeled Hc, d, Z. The table is organized into 15 groups, one for each declination degree from 0° to 14°.

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA, greater than 180°Zi=180°-Z
LHA, less than 180°Zi=180°+Z

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180° Z = 360° - Z
LHA: less than 180° Z = 180° - Z

Table with columns for LHA (140-180) and declination (15°-29°). Each declination column contains three sub-columns: Hc, d, Z. Values range from 0 to 39 for Hc, 0 to 31 for d, and 0 to 39 for Z.

S. Lat. { LHA: greater than 180° Z = 180° - Z
LHA: less than 180° Z = 180° - Z

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

LAT 87°

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180°Zn=Z
LHA: less than 180°Zn=360°-Z

Table with columns for LHA (140-180) and declination (0°-14°). Each declination column contains three sub-columns: Hc, d, Z. Values range from -2.00 to 12.00.

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA: greater than 180°Zn=180-Z
LHA: less than 180°Zn=360-Z

Table with columns for Latitude (0° to 14°) and Longitude (0° to 14°). Each cell contains a numerical value representing declination. The table is organized into a grid with 15 rows and 15 columns of data.

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA: greater than 180°Zn=180-Z
LHA: less than 180°Zn=180+Z

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180° Z=180°-Z
LHA: less than 180° Z=360°-Z

Table with columns for LHA (140-180) and declination (15°-29°). Each declination column contains three sub-columns: Hc, d, Z. Values range from 0 to 39.

S. Lat. { LHA: greater than 180° Z=180°-Z
LHA: less than 180° Z=180°+Z

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

LAT 88°

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180°Zn=Z
LHA: less than 180°Zn=360°-Z

Table with columns for LHA and declination from 0° to 14°. Each declination column contains three sub-columns: Hc, d, and Z. Values range from -1.00 to 1.80.

DECLINATION (0° – 14°) SAME NAME AS LATITUDE

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

N. Lat. { LHA, greater than 180°Zn=Z
 LHA, less than 180°Zn=360°-Z

DECLINATION (0° – 14°) CONTRARY NAME TO LATITUDE

LAT 89°

0°		1°		2°		3°		4°		5°		6°		7°		8°		9°		10°		11°		12°		13°		14°		LHA
Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	Hc	d	Z	LHA
180	-1	00	-60	0	-2	00	-60	0	-4	00	-60	0	-5	00	-60	0	-6	00	-60	0	-7	00	-60	0	-7	00	-60	0	180	
178	-1	00	-60	2	-2	00	-60	2	-4	00	-60	2	-5	00	-60	2	-6	00	-60	2	-7	00	-60	2	-7	00	-60	2	182	
176	-1	00	-60	4	-2	00	-60	4	-4	00	-60	4	-5	00	-60	4	-6	00	-60	4	-7	00	-60	4	-7	00	-60	4	184	
174	-1	00	-60	6	-2	00	-60	6	-4	00	-60	6	-5	00	-60	6	-6	00	-60	6	-7	00	-60	6	-7	00	-60	6	186	
172	-0	59	-60	8	-1	59	-60	8	-3	59	-60	8	-4	59	-60	8	-5	59	-60	8	-6	59	-60	8	-6	59	-60	8	188	
170	-0	59	-60	10	-1	59	-60	10	-3	59	-60	10	-4	59	-60	10	-5	59	-60	10	-6	59	-60	10	-6	59	-60	10	190	
168	-0	59	-60	12	-1	59	-60	12	-3	59	-60	12	-4	59	-60	12	-5	59	-60	12	-6	59	-60	12	-6	59	-60	12	192	
166	-0	58	-60	14	-1	58	-60	14	-3	58	-60	14	-4	58	-60	14	-5	58	-60	14	-6	58	-60	14	-6	58	-60	14	194	
164	-0	58	-60	16	-1	58	-60	16	-3	58	-60	16	-4	58	-60	16	-5	58	-60	16	-6	58	-60	16	-6	58	-60	16	196	
162	-0	57	-60	18	-1	57	-60	18	-3	57	-60	18	-4	57	-60	18	-5	57	-60	18	-6	57	-60	18	-6	57	-60	18	198	
160	-0	56	-60	20	-1	56	-60	20	-3	56	-60	20	-4	56	-60	20	-5	56	-60	20	-6	56	-60	20	-6	56	-60	20	200	
158	-0	56	-60	22	-1	56	-60	22	-3	56	-60	22	-4	56	-60	22	-5	56	-60	22	-6	56	-60	22	-6	56	-60	22	202	
156	-0	55	-60	24	-1	55	-60	24	-3	55	-60	24	-4	55	-60	24	-5	55	-60	24	-6	55	-60	24	-6	55	-60	24	204	
154	-0	54	-60	26	-1	54	-60	26	-3	54	-60	26	-4	54	-60	26	-5	54	-60	26	-6	54	-60	26	-6	54	-60	26	206	
152	-0	53	-60	28	-1	53	-60	28	-3	53	-60	28	-4	53	-60	28	-5	53	-60	28	-6	53	-60	28	-6	53	-60	28	208	
150	-0	52	-60	30	-1	52	-60	30	-3	52	-60	30	-4	52	-60	30	-5	52	-60	30	-6	52	-60	30	-6	52	-60	30	210	
148	-0	51	-60	32	-1	51	-60	32	-3	51	-60	32	-4	51	-60	32	-5	51	-60	32	-6	51	-60	32	-6	51	-60	32	212	
146	-0	50	-60	34	-1	50	-60	34	-3	50	-60	34	-4	50	-60	34	-5	50	-60	34	-6	50	-60	34	-6	50	-60	34	214	
144	-0	49	-60	36	-1	49	-60	36	-3	49	-60	36	-4	49	-60	36	-5	49	-60	36	-6	49	-60	36	-6	49	-60	36	216	
142	-0	47	-60	38	-1	47	-60	38	-3	47	-60	38	-4	47	-60	38	-5	47	-60	38	-6	47	-60	38	-6	47	-60	38	218	
140	-0	46	-60	40	-1	46	-60	40	-3	46	-60	40	-4	46	-60	40	-5	46	-60	40	-6	46	-60	40	-6	46	-60	40	220	

S. Lat. { LHA, greater than 180°Zn=180°-Z
 LHA, less than 180°Zn=180°+Z

DECLINATION (0° – 14°) CONTRARY NAME TO LATITUDE

LAT 89°

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

N. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=360°-Z

Table with columns for Latitude (0° to 14°) and Longitude (1° to 14°). Each cell contains a value representing the declination. The table is organized in a grid where the top row represents the latitude and the left column represents the longitude. Values range from -1.45 to 2.52.

DECLINATION (0° - 14°) CONTRARY NAME TO LATITUDE

S. Lat. { LHA: greater than 180°Zn=180°-Z
LHA: less than 180°Zn=180°+Z

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

N. Lat. { LHA: greater than 180° Z=180°-Z
LHA: less than 180° Z=360°-Z

Table with columns for Latitude (15° to 180°) and Declination (15° to 29°). Each cell contains values for Hc, d, and Z. The table is organized in a grid where the first column is Latitude and the first row is Declination.

DECLINATION (15° - 29°) SAME NAME AS LATITUDE

S. Lat. { LHA: greater than 180° Z=180°-Z
LHA: less than 180° Z=180°+Z