For this Year: a: b:

Date: d: m: y:

GMT: hrs: min: sec:

Aries GHA:		: .
a inc		: .
Hours inc:		: .
Mins. Inc:		: .
Secs. Inc:		: .
Final GHA Aries:		: .
If GHA > 360	- 360	: .
SHA star :	+	: .
Final GHA star:		: .
If GHA > 360	- 360	: .
Sun GHA:		: .
Hourly accn:		: .
Quad corr:		: .
Hours inc:		: .
Mins. Inc:		: .
Secs. Inc:		: .
Final GHA Sun:		: .
If GHA > 360	- 360	: .

LHA = GHA +/- assumed lon. + If lon. east, - if lon. West

GHA Sun/star:		: .
Assumed lon:	+ \ -	: .
LHA		: .

If LHA = N*90 +\- 1, assume other lon.

Declination:	N / S	: .
Hrly rate		: .
Ann/quad corr:		: .
Final dec:	N / S	: .

Sextant alt:		: .
Index error:		: .
Dip corr:		: .
Refract. corr:		: .
Ho (T)		: .
Hc = (A)		: .
a = T / A		: .

If 1 > H > 90, assume other lon.

Take lable from larger

TABLES OF GHA INCREMENTS

No	SUN HOURS	SUN MINUTES	SUN SECONDS	ARIES a	ARIES HOURS	ARIES MINUTES	ARIES SECONDS
1	15°	0° 15′	0.2′	1.8′	15° 02.5′	0° 15.0′	0.2′
2	30	0 30	0.5	3.7	30 04.9	0 30.1	0.5
3	45	0 45	0.8	5.5	45 07.4	0 45.1	0.8
4	60	1 00	1.0	7.4	60 09.9	1 00.2	1.0
5	75	1 15	1.2	9.2	75 12.3	1 15.2	1.2
6	90	1 30	1.5	11.0	90 14.8	1 30.2	1.5
7	105	1 45	1.8	12.9	105 17.2	1 45.3	1.8
8	120	2 00	2.0	14.7	120 19.7	2 00.3	2.0
9	135	2 15	2.2	16.6	135 22.2	2 15.4	2.2
10	150	2 30	2.5	18.4	150 24.6	2 30.4	2.5
11	165	2 45	2.8	20.2	165 27.1	2 45.5	2.8
12	180	3 00	3.0	22.1	180 29.6	3 00.5	3.0
13	195	3 15	3.2	23.9	195 32.0	3 15.5	3.2
14	210	3 30	3.5	25.8	210 34.5	3 30.6	3.5
15	225	3 45	3.8	27.6	225 37.0	3 45.6	3.8
16	240	4 00	4.0		240 39.4	4 00.7	4.0
17	255	4 15	4.2		255 41.9	4 15.7	4.2
18	270	4 30	4.5		270 44.4	4 30.7	4.5
19	285	4 45	4.8		285 46.8	4 45.8	4.8
20	300	5 00	5.0		300 49.3	5 00.8	5.0
21	315	5 15	5.2		315 51.7	5 15.9	5.2
22	330	5 30	5.5		330 54.2	5 30.9	5.5
23	345	5 45	5.8		345 56.7	5 45.9	5.8
24	360	6 00	6.0		360 59.1	6 01.0	6.0
25		6 15	6.2			6 16.0	6.2
26		6 30	6.5			6 31.1	6.5
27		6 45	6.8			6 46.1	6.8
28		7 00	7.0			7 01.1	7.0
29		7 15	7.2			7 16.2	7.2
30		7 30	7.5			7 31.2	7.5
31		7 45	7.8			7 46.3	7.8
32		8 00	8.0			8 01.3	8.0
33		8 15	8.2			8 16.4	8.2
34		8 30	8.5			8 31.4	8.5
35		8 45	8.8			8 46.4	8.8
36		9 00	9.0			9 01.5	9.0
37		9 15	9.2			9 16.5	9.2
38		9 30	9.5			9 31.6	9.5
39		9 45	9.8			9 46.6	9.8
40		10 00	10.0			10 01.6	10.0
41		10 15	10.2			10 16.7	10.2
42		10 30	10.5			10 31.7	10.5
43		10 45	10.8			10 46.8	10.8
44		11 00	11.0			11 01.8	11.0
45		11 15	11.2			11 16.8	11.2
46		11 30	11.5			11 31.9	11.5
47		11 45	11.8			11 46.9	11.8
48		12 00	12.0			12 02.0	12.0
49		12 15	12.2			12 17.0	12.2
50		12 30	12.5			12 32.1	12.5
51		12 45	12.8			12 47.1	12.8
52		13 00	13.0			13 02.1	13.0
53		13 15	13.2			13 17.2	13.2
54		13 30	13.5			13 32.2	13.5
55		13 45	13.8			13 47.3	13.8
56		14 00	14.0			14 02.3	14.0
57		14 15	14.2			14 17.3	14.2
58		14 30	14.5			14 32.4	14.5
59		14 45	14.8			14 47.4	14.8
60		15 00	15.0			15 02.5	15.0

0 < LHA < 90	< LHA < 180	< LHA < 270	< LHA < 360
	180	LHA:	360
LHA:	-LHA:	-180	-LHA:
H=	H=	H=	H=
Same W: +	W: -	W: -	W: +
Contrary W: -	W: -	W: -	W: -

(90) (89: 60)

Assumed lat: -		: . N / S
Co-lat. =		: .
W : + / -		: .

(180) (179: 60)

X=|Co-lat +/- W|		: .
| Y | =		: .
If obs. body S		(180)(179: 60)
If obs. body N		(360)(359: 60)
Az: + / -		: .
Zn =		: .

If X<90, Y=X
If X> 90, Y= 180-X
If 0:54' > Y > 89:15' assume other lat.

Az/Zn Rules: 0 < LHA < 180 < LHA: < 360

N Lat.	If X > 90, Zn=360-Az	Zn=Az
	If X < 90, Zn=180+Az	Zn=180-Az
S Lat.	If X > 90, Zn=180+Az	Zn=180-Az
	If X < 90, Zn=360-Az	Zn=Az

Cos Cotan

Step 1: Set 0 → Set dec. → Set H → **Read W**

If dec. < 0:54' See rules

Step 2: Set W → Set H → Set Y → **Read Az**

If Az > 85 See rules

Step 3: Set Az → Set Y → Set 0 → **Read Hc**

Rules:

If dec. Is less than 0:54' omit step one and set W = dec. If lat. also < 1 assume lat. = 1 compute Az, then interchange dec. and lat. and compute Hc

If Az greater than 85 use it to compute Zn, but interchange dec. and lat. to compute Hc.