

Table with columns: UT, ARIES, VENUS -4.5, MARS +1.5, JUPITER -2.5, SATURN -0.4, STARS. Rows include planetary data and star lists with GHA, Dec, and Name/SHA/Dec.

Table with columns: UT, SUN, MOON, Lat., Twilight (Naut., Civil), Sunrise, Moonrise (7, 8, 9, 10), Sunset, Moonset (7, 8, 9, 10), Day, Eqn. of Time, Mer. Pass., Mer. Pass. Upper/Lower, Age, Phase. Includes planetary and lunar data.

UT	ARIES		VENUS -4.0		MARS +0.5		JUPITER -2.3		SATURN +0.1		STARS		
	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec
00	185 59.1	212 13.4	311 35.9	259 22.3	S23 07.7	55 12.3	N19 05.0	103 17.7	N22 16.1	Acamar	315 24.7	S40 17.7	
01	201 01.6	227 12.9	34.9	274 23.0	07.6	70 14.8	05.1	118 20.0	16.1	Achernar	335 33.1	S57 13.4	
02	216 04.0	242 12.5	34.9	289 23.8	07.5	85 17.4	05.1	133 22.3	16.1	Acruz	275 18.0	S63 07.0	
03	231 06.5	257 12.1	33.0	304 24.6	07.4	100 19.9	05.1	148 24.6	16.1	Adhara	255 18.9	S28 58.8	
04	246 08.9	272 11.6	32.0	319 25.3	07.2	115 22.4	05.1	163 26.9	16.2	Aldebaran	290 58.8	N16 30.9	
05	261 11.4	287 11.2	31.1	334 26.1	07.1	130 24.9	05.1	178 29.2	16.2				
06	276 13.9	302 10.8	S11 30.1	349 26.9	S23 07.0	145 27.4	N19 05.1	193 31.5	N22 16.2	Alloth	166 27.0	N55 56.5	
07	291 16.3	317 10.3	29.2	4 27.7	06.9	160 29.9	05.1	208 33.8	16.2	Alkaid	153 04.6	N49 17.7	
08	306 18.8	332 09.9	28.2	19 28.4	06.8	175 32.4	05.1	223 36.1	16.2	Al Na'ir	27 54.0	S46 56.8	
09	321 21.3	347 09.4	27.2	34 29.2	06.6	190 34.9	05.1	238 38.4	16.2	Alnilam	275 54.6	S 11 12.1	
10	336 23.7	2 09.0	26.3	49 30.0	06.5	205 37.5	05.1	253 40.7	16.3	Alphard	218 03.8	S 8 40.4	
11	351 26.2	17 08.6	25.3	64 30.7	06.4	220 40.0	05.2	268 43.0	16.3				
12	6 28.7	32 08.1	S11 24.4	79 31.5	S23 06.3	235 42.5	N19 05.2	283 45.3	N22 16.3	Alphecca	126 17.5	N26 42.0	
13	21 31.1	47 07.7	23.4	94 32.3	06.1	250 45.0	05.2	298 47.6	16.3	Alpheratz	257 52.3	N29 06.3	
14	36 33.6	62 07.3	22.4	109 33.0	06.0	265 47.5	05.2	313 49.9	16.3	Altair	62 16.2	N 8 52.3	
15	51 36.0	77 06.8	21.5	124 33.8	05.9	280 50.0	05.2	328 52.2	16.3	Ankaa	353 23.9	S42 17.5	
16	66 38.5	92 06.4	20.5	139 34.6	05.8	295 52.5	05.2	343 54.5	16.3	Antares	112 36.0	S26 26.4	
17	81 41.0	107 06.0	19.5	154 35.3	05.6	310 55.0	05.2	358 56.8	16.4				
18	96 43.4	122 05.5	S11 18.6	169 36.1	S23 05.5	325 57.5	N19 05.2	373 59.0	N22 16.4	Arcturus	146 02.7	N19 09.8	
19	111 45.9	137 05.1	17.6	184 36.9	05.4	341 00.0	05.2	390 01.3	16.4	Atria	107 45.0	S69 01.8	
20	126 48.4	152 04.7	16.6	199 37.6	05.3	356 02.6	05.2	404 03.6	16.4	Avior	234 21.2	S59 31.4	
21	141 50.8	167 04.2	15.7	214 38.4	05.1	371 05.1	05.2	419 05.9	16.4	Bellatrix	278 40.8	N 6 21.1	
22	156 53.3	182 03.8	14.7	229 39.2	05.0	386 07.6	05.3	434 08.2	16.4	Beltegeuse	271 10.1	N 7 24.4	
23	171 55.8	197 03.4	13.7	244 40.0	04.9	401 10.1	05.3	449 10.5	16.5				
30	186 58.2	212 02.9	S11 12.8	259 40.7	S23 04.8	416 12.6	N19 05.3	464 12.8	N22 16.5	Canopus	263 59.8	S52 42.1	
01	202 00.7	227 02.5	11.8	274 41.5	04.6	431 15.1	05.3	479 15.1	16.5	Capella	280 46.6	N46 00.0	
02	217 03.2	242 02.1	10.8	289 42.3	04.5	446 17.6	05.3	494 17.4	16.5	Deneb	49 37.3	N45 17.1	
03	232 05.6	257 01.6	9.8	304 43.0	04.4	461 20.1	05.3	509 19.7	16.5	Denebola	182 41.5	N14 33.2	
04	247 08.1	272 01.2	08.9	319 43.8	04.3	476 22.6	05.3	524 22.0	16.5	Diphda	349 04.2	S17 58.3	
05	262 10.5	287 00.8	07.9	334 44.6	04.1	491 25.1	05.3	539 24.3	16.6				
06	277 13.0	302 00.3	S11 06.9	349 45.3	S23 04.0	506 27.6	N19 05.3	561 28.6	N22 16.6	Dubhe	194 00.6	N61 44.2	
07	292 15.5	316 59.9	06.0	4 46.1	03.9	521 30.1	05.3	576 30.9	16.6	Elnath	209 28.9	S16 36.7	
08	307 17.9	331 59.5	05.0	19 46.9	03.7	536 32.6	05.3	591 33.2	16.6	Eltanin	90 49.8	N51 28.9	
09	322 20.4	346 59.0	04.0	34 47.7	03.6	551 35.1	05.3	606 35.5	16.6	Enif	33 55.3	N 9 53.1	
10	337 22.9	1 58.6	03.0	49 48.4	03.5	566 37.6	05.4	621 38.0	16.6	Fomalhaut	15 33.1	S29 36.5	
11	352 25.3	16 58.2	02.1	64 49.2	03.4	581 40.1	05.4	636 40.0	16.6				
12	7 27.8	31 57.8	S11 01.1	79 50.0	S23 03.2	596 42.6	N19 05.4	651 44.3	N22 16.7	Gacrux	172 09.6	S57 07.9	
13	22 30.3	46 57.3	11 00.1	94 50.7	03.1	611 45.1	05.4	666 46.6	16.7	Gienah	176 00.0	S17 33.6	
14	37 32.7	61 56.9	10 59.1	109 51.5	03.0	626 47.6	05.4	681 48.9	16.7	Hadar	148 50.0	S60 23.2	
15	52 35.2	76 56.5	9 58.2	124 52.3	02.8	641 50.1	05.4	696 51.2	16.7	Harnal	328 10.2	N23 28.5	
16	67 37.7	91 56.0	8 57.2	139 53.1	02.7	656 52.6	05.4	711 53.5	16.7	Kaus Aust.	83 54.5	S34 23.0	
17	82 40.1	106 55.6	7 56.2	154 53.8	02.6	671 55.1	05.4	726 55.8	16.7				
18	97 42.6	121 55.2	S10 55.2	169 54.6	S23 02.4	686 57.6	N19 05.4	741 59.1	N22 16.8	Kochab	137 18.3	N74 08.3	
19	112 45.0	136 54.8	54.2	184 55.4	02.3	701 60.1	05.4	756 61.5	16.8	Markab	13 46.7	N15 13.1	
20	127 47.5	151 54.3	53.3	199 56.1	02.2	716 62.6	05.4	771 63.8	16.8	Menkar	314 23.8	N 4 06.0	
21	142 50.0	166 53.9	52.3	214 56.9	02.0	731 65.1	05.4	786 65.1	16.8	Menkent	148 16.8	S36 23.1	
22	157 52.4	181 53.5	51.3	229 57.7	01.9	746 67.6	05.4	801 68.0	16.8	Miaplacidus	221 41.1	S69 44.0	
23	172 54.9	196 53.1	50.3	244 58.5	01.8	761 70.1	05.4	816 70.5	16.8				
31	187 57.4	211 52.6	S10 49.3	259 59.2	S23 01.6	776 72.6	N19 05.4	831 75.1	N22 16.9	Mirfak	308 52.4	N49 52.4	
01	202 59.8	226 52.2	48.3	275 00.0	01.5	791 75.1	05.5	846 77.6	16.9	Nunki	76 08.3	S26 17.6	
02	218 02.3	241 51.8	47.4	290 00.8	01.4	806 77.6	05.5	861 80.1	16.9	Peacock	53 32.0	S56 43.4	
03	233 04.8	256 51.4	46.4	305 01.6	01.2	821 80.1	05.5	876 82.6	16.9	Pollux	243 37.4	N28 01.1	
04	248 07.2	271 50.9	45.4	320 02.3	01.1	836 82.6	05.5	891 85.1	16.9	Procyon	245 08.1	N 5 13.0	
05	263 09.7	286 50.5	44.4	335 03.1	01.0	851 85.1	05.5	906 87.6	16.9				
06	278 12.1	301 50.1	S10 43.4	350 03.9	S23 00.8	866 87.6	N19 05.5	921 90.1	N22 17.0	Rasalhague	96 13.8	N12 33.2	
07	293 14.6	316 49.7	42.4	5 04.7	00.7	881 90.1	05.5	936 92.6	17.0	Regulus	207 51.8	N11 57.1	
08	308 17.1	331 49.2	41.5	20 05.4	00.6	896 92.6	05.5	951 95.1	17.0	Rigel	281 19.9	S 8 12.0	
09	323 19.5	346 48.8	40.5	35 06.2	00.4	911 95.1	05.5	966 97.6	17.0	Rigel Kent.	104 02.5	S60 50.8	
10	338 22.0	1 48.4	39.5	50 07.0	00.3	926 97.6	05.5	981 100.1	17.0	Sabik	142 21.7	S15 43.8	
11	353 24.5	16 48.0	38.5	65 07.8	00.2	941 100.1	05.5	996 102.6	17.0				
12	8 26.9	31 47.6	S10 37.5	80 08.5	S23 00.0	956 102.6	N19 05.5	1011 105.1	N22 17.1	Schedar	349 50.6	N56 33.2	
13	23 29.4	46 47.1	36.5	95 09.3	22 59.9	971 105.1	05.5	1026 107.6	17.1	Shaula	96 32.8	S37 06.3	
14	38 31.9	61 46.7	35.5	110 10.1	59.8	986 107.6	05.5	1041 110.1	17.1	Sirius	258 40.9	S16 43.3	
15	53 34.3	76 46.3	34.5	125 10.9	59.6	1001 110.1	05.5	1056 112.6	17.1	Spica	158 39.5	S11 10.7	
16	68 36.8	91 45.9	33.5	140 11.6	59.5	1016 112.6	05.5	1071 115.1	17.1	Suhail	222 58.2	S43 26.9	
17	83 39.3	106 45.5	32.5	155 12.4	59.3	1031 115.1	05.5	1086 117.6	17.1				
18	98 41.7	121 45.0	S10 31.6	170 13.2	S22 59.2	1046 117.6	N19 05.5	1101 120.1	N22 17.1	Vega	80 44.4	N38 46.8	
19	113 44.2	136 44.6	30.6	185 14.0	59.1	1061 120.1	05.6	1116 122.6	17.2	Zubenubi	137 14.1	S16 03.4	
20	128 46.6	151 44.2	29.6	200 14.7	58.9	1076 122.6	05.6	1131 125.1	17.2				
21	143 49.1	166 43.8	28.6	215 15.5	58.8	1091 125.1	05.6	1146 127.6	17.2				
22	158 51.6	181 43.4	27.6	230 16.3	58.7	1106 127.6	05.6	1161 130.1	17.2	Venus	25 04.7	h m	
23	173 54.0	196 42.9	26.6	245 17.1	58.5	1121 130.1	05.6	1176 132.6	17.2	Mars	72 42.5	6 41	
										Jupiter	229 14.4	20 12	
										Saturn	277 14.6	17 01	

UT	SUN		MOON				Lat.	Twilight		Moonrise					
	GHA	Dec	GHA	v	Dec	d		HP	Naut.	Civil	h m	29	30	31	1
00	178 44.5	N 3 07.8	216 50.3	12.5	S17 56.0	10.5	55.6	N 72	02 05	03 56	05 09	08 13	07 14	06 40	06 12
01	193 44.7	08.8	231 51.8	12.6	17 45.5	10.6	55.6	N 70	02 40	04 25	05 15	07 29	06 54	06 30	06 10
02	208 44.9	09.7	246 53.2	12.7	17 34.9	10.6	55.6	68	03 04	04 22	05 20	06 59	06 38	06 22	06 08
03	223 45.0	10.7	261 54.6	12.8	17 24.3	10.7	55.5	66	03 22	04 31	05 24	06 57	06 25	06 15	06 06
04	238 45.2	11.7	276 56.0	12.9	17 13.6	10.8	55.5	64	03 36	04 38	05 27	06 19	06 14	06 09	06 05
05	253 45.4	12.7	289 28.8	12.9	17 02.8	10.8	55.5	62	03 48	04 45	05 30	06 04	06 05	06 04	06 03
06	268 45.6	N 3 13.6	304 00.7	13.0	S16 52.0	11.0	55.5	60	03 58	04 50	05 33	05 52	05 56	06 00	06 02
07	283 45.8	14.6	318 32.7	13.1	16 41.0										

UT	ARIES		VENUS -3.9		MARS -1.4		JUPITER -1.8		SATURN +0.0		STARS		
	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec
27 00	274 41.6	194 56.9 N22 40.8	297 23.7 S13 53.3	134 48.5 N16 26.8	181 29.3 N22 36.5	196 31.4	36.5	149 50.5	26.7	196 31.4	Acamar	315 24.5	540 17.3
01	289 44.1	209 56.1 41.1	312 23.3 53.1	149 50.5 26.7	196 31.4 36.5	149 50.5	26.7	196 31.4	36.5	196 31.4	Achernar	335 32.6	557 12.9
02	304 46.5	224 55.3 41.4	327 26.8 52.9	164 52.5 26.6	211 35.5 36.5	211 35.5	36.5	211 35.5	36.5	211 35.5	Acrux	173 184 563 07.3	
03	319 49.0	239 54.5 41.7	342 28.4 52.7	179 54.5 26.4	226 35.6 36.5	226 35.6	36.5	226 35.6	36.5	226 35.6	Adhara	255 191 528 58.5	
04	334 51.5	254 53.6 42.0	357 29.9 52.5	194 56.5 26.3	241 37.7 36.5	241 37.7	36.5	241 37.7	36.5	241 37.7	Aldebaran	290 58.7 N16 31.0	
05	349 53.9	269 52.8 42.4	372 31.5 52.3	209 58.5 26.1	256 39.8 36.5	256 39.8	36.5	256 39.8	36.5	256 39.8			
06	4 56.4	284 52.0 N22 42.7	27 33.1 S13 52.1	225 00.5 N16 26.0	271 41.9 N22 36.5	271 41.9	N22 36.5	271 41.9	N22 36.5	271 41.9	Alioth	166 27.3 N55 56.8	
07	19 58.8	299 51.1 43.0	42 34.6 51.9	240 02.5 25.8	286 44.1 36.5	286 44.1	36.5	286 44.1	36.5	286 44.1	Alkaid	153 04.7 N49 18.1	
08	35 01.3	314 50.3 43.3	57 36.2 51.7	255 04.5 25.7	301 46.2 36.5	301 46.2	36.5	301 46.2	36.5	301 46.2	Al Na'ir	27 53.1 546 56.5	
09	50 03.8	329 49.5 43.6	72 37.8 51.5	270 06.5 25.6	316 48.3 36.5	316 48.3	36.5	316 48.3	36.5	316 48.3	Alnilam	275 54.7 S 1 11.9	
FRI 10	65 06.2	344 48.6 43.9	87 39.3 51.4	285 08.5 25.4	331 50.4 36.5	331 50.4	36.5	331 50.4	36.5	331 50.4	Alphard	218 04.1 S 8 40.3	
FRI 11	80 08.7	359 47.8 44.2	102 40.9 51.2	300 10.5 25.3	346 52.5 36.5	346 52.5	36.5	346 52.5	36.5	346 52.5			
FRI 12	95 11.2	14 47.0 N22 44.5	117 42.5 S13 51.0	315 12.5 N16 25.1	1 54.6 N22 36.5	1 54.6	N22 36.5	1 54.6	N22 36.5	1 54.6	Alphecca	126 17.3 N26 42.3	
FRI 13	110 13.6	29 46.1 44.8	132 44.1 50.8	330 14.5 25.0	16 56.7 36.5	16 56.7	36.5	16 56.7	36.5	16 56.7	Alpheratz	357 51.7 N29 06.3	
FRI 14	125 16.1	44 45.3 45.1	147 45.6 50.6	345 16.5 24.8	31 58.8 36.5	31 58.8	36.5	31 58.8	36.5	31 58.8	Altair	62 15.6 N 8 52.6	
FRI 15	140 18.6	59 44.5 45.4	162 47.2 50.4	0 18.5 24.7	47 00.9 36.5	47 00.9	36.5	47 00.9	36.5	47 00.9	Ankaa	353 23.3 S42 17.1	
FRI 16	155 21.0	74 43.6 45.7	177 48.8 50.2	15 20.5 24.6	62 03.1 36.5	62 03.1	36.5	62 03.1	36.5	62 03.1	Antares	112 35.6 S26 26.5	
FRI 17	170 23.5	89 42.8 46.0	192 50.3 50.0	30 22.5 24.4	77 05.2 36.5	77 05.2	36.5	77 05.2	36.5	77 05.2			
FRI 18	185 26.0	104 42.0 N22 46.3	207 51.9 S13 49.9	45 24.5 N16 24.3	92 07.3 N22 36.5	92 07.3	N22 36.5	92 07.3	N22 36.5	92 07.3	Arcturus	146 02.7 N19 10.0	
FRI 19	200 28.4	119 41.1 46.6	222 53.5 49.7	60 26.4 24.1	107 09.4 36.5	107 09.4	36.5	107 09.4	36.5	107 09.4	Atria	107 44.1 N46 00.2	
FRI 20	215 30.9	134 40.3 46.9	237 55.1 49.5	75 28.4 24.0	122 11.5 36.4	122 11.5	36.4	122 11.5	36.4	122 11.5	Avior	234 22.0 S59 31.3	
FRI 21	230 33.3	149 39.5 47.2	252 56.7 49.3	90 30.4 23.8	137 13.6 36.4	137 13.6	36.4	137 13.6	36.4	137 13.6	Belatrix	278 40.8 N 6 21.2	
FRI 22	245 35.8	164 38.6 47.5	267 58.2 49.1	105 32.4 23.7	152 15.7 36.4	152 15.7	36.4	152 15.7	36.4	152 15.7	Betelgeuse	271 10.2 N 7 24.5	
FRI 23	260 38.3	179 37.8 47.8	282 59.8 48.9	120 34.4 23.5	167 17.8 36.4	167 17.8	36.4	167 17.8	36.4	167 17.8			
FRI 24	275 40.7	194 37.0 N22 48.1	298 01.4 S13 48.8	135 36.4 N16 23.4	182 20.0 N22 36.4	182 20.0	N22 36.4	182 20.0	N22 36.4	182 20.0	Canopus	264 00.2 S52 41.8	
FRI 25	290 43.2	209 36.1 48.4	313 03.0 48.6	150 38.4 23.3	197 22.1 36.4	197 22.1	36.4	197 22.1	36.4	197 22.1	Capella	280 46.5 N46 00.1	
FRI 26	305 45.7	224 35.3 48.7	328 04.6 48.4	165 40.4 23.1	212 24.2 36.4	212 24.2	36.4	212 24.2	36.4	212 24.2	Deneb	49 36.5 N45 17.3	
FRI 27	320 48.1	239 34.5 48.9	343 06.1 48.2	180 42.4 23.0	227 26.3 36.4	227 26.3	36.4	227 26.3	36.4	227 26.3	Denebola	182 41.7 N14 33.3	
FRI 28	335 50.6	254 33.6 49.2	358 07.7 48.0	195 44.4 22.8	242 28.4 36.4	242 28.4	36.4	242 28.4	36.4	242 28.4	Diphda	349 03.8 S17 58.0	
FRI 29	350 53.1	269 32.8 49.5	373 09.3 47.8	210 46.4 22.7	257 30.5 36.4	257 30.5	36.4	257 30.5	36.4	257 30.5			
FRI 30	5 55.5	284 31.9 N22 49.8	28 10.9 S13 47.7	225 48.4 N16 22.5	272 32.6 N22 36.4	272 32.6	N22 36.4	272 32.6	N22 36.4	272 32.6	Dubhe	194 01.3 N61 44.3	
FRI 01	20 58.0	299 31.1 50.1	43 12.5 47.5	240 50.4 22.4	287 34.7 36.4	287 34.7	36.4	287 34.7	36.4	287 34.7	Elnath	278 23.0 N28 36.6	
FRI 02	36 00.4	314 30.3 50.4	58 14.1 47.3	255 52.4 22.2	302 36.8 36.4	302 36.8	36.4	302 36.8	36.4	302 36.8	Eltanin	90 49.3 N51 29.3	
FRI 03	51 02.9	329 29.4 50.6	73 15.6 47.1	270 54.4 22.1	317 39.0 36.4	317 39.0	36.4	317 39.0	36.4	317 39.0	Enif	33 54.6 N 9 53.3	
FRI 04	66 05.4	344 28.6 50.9	88 17.2 46.9	285 56.4 22.0	332 41.1 36.4	332 41.1	36.4	332 41.1	36.4	332 41.1	Fomalhaut	15 32.4 S29 36.4	
FRI 05	81 07.8	359 27.8 51.2	103 18.8 46.7	300 58.4 21.8	347 43.2 36.4	347 43.2	36.4	347 43.2	36.4	347 43.2			
FRI 06	96 10.3	14 26.9 N22 51.5	118 20.4 S13 46.6	316 00.4 N16 21.7	2 45.3 N22 36.4	2 45.3	N22 36.4	2 45.3	N22 36.4	2 45.3	Gacrux	172 09.9 S57 08.2	
FRI 07	111 12.8	29 26.1 51.8	133 22.0 46.4	331 02.4 21.5	17 47.4 36.4	17 47.4	36.4	17 47.4	36.4	17 47.4	Gienah	176 00.5 S17 33.7	
FRI 08	126 15.2	44 25.2 52.0	148 23.6 46.2	346 04.4 21.4	32 49.5 36.4	32 49.5	36.4	32 49.5	36.4	32 49.5	Hadar	148 59.0 S60 23.6	
FRI 09	141 17.7	59 24.4 52.3	163 25.2 46.0	1 06.4 21.2	47 51.6 36.4	47 51.6	36.4	47 51.6	36.4	47 51.6	Hamal	328 09.9 S23 28.6	
FRI 10	156 20.2	74 23.6 52.6	178 26.8 45.8	16 08.4 21.1	62 53.7 36.4	62 53.7	36.4	62 53.7	36.4	62 53.7	Kaus Aust.	83 53.8 N34 45.0	
FRI 11	171 22.6	89 22.7 52.8	193 28.4 45.7	31 10.4 20.9	77 55.9 36.4	77 55.9	36.4	77 55.9	36.4	77 55.9			
FRI 12	186 25.1	104 21.9 N22 53.1	208 30.0 S13 45.5	46 12.4 N16 20.8	92 58.0 N22 36.4	92 58.0	N22 36.4	92 58.0	N22 36.4	92 58.0	Kochab	137 18.6 N74 08.8	
FRI 13	201 27.6	119 21.0 53.4	223 31.6 45.3	61 14.4 20.7	108 00.1 36.3	108 00.1	36.3	108 00.1	36.3	108 00.1	Markab	13 46.1 N15 13.3	
FRI 14	216 30.0	134 20.2 53.7	238 33.2 45.1	76 16.4 20.5	123 02.2 36.3	123 02.2	36.3	123 02.2	36.3	123 02.2	Menkar	314 23.5 N 4 06.2	
FRI 15	231 32.5	149 19.4 53.9	253 34.8 45.0	91 18.4 20.4	138 04.3 36.3	138 04.3	36.3	138 04.3	36.3	138 04.3	Menkent	148 16.8 S36 23.3	
FRI 16	246 34.9	164 18.5 54.2	268 36.4 44.8	106 20.4 20.2	153 06.4 36.3	153 06.4	36.3	153 06.4	36.3	153 06.4	Miaplacidus	221 42.4 S69 44.0	
FRI 17	261 37.4	179 17.7 54.5	283 38.0 44.6	121 22.3 20.1	168 08.5 36.3	168 08.5	36.3	168 08.5	36.3	168 08.5			
FRI 18	276 39.9	194 16.8 N22 54.7	298 39.6 S13 44.4	136 24.3 N16 19.9	183 10.6 N22 36.3	183 10.6	N22 36.3	183 10.6	N22 36.3	183 10.6	Mirfak	308 52.1 N49 52.2	
FRI 19	291 42.3	209 16.0 55.0	313 41.2 44.3	151 26.3 19.8	198 12.8 36.3	198 12.8	36.3	198 12.8	36.3	198 12.8	Nunki	76 07.7 S26 17.6	
FRI 20	306 44.8	224 15.1 55.2	328 42.8 44.1	166 28.3 19.6	213 14.9 36.3	213 14.9	36.3	213 14.9	36.3	213 14.9	Pecacock	53 30.9 S56 43.4	
FRI 21	321 47.3	239 14.3 55.5	343 44.4 43.9	181 30.3 19.5	228 17.0 36.3	228 17.0	36.3	228 17.0	36.3	228 17.0	Pollux	243 37.7 N28 01.2	
FRI 22	336 49.7	254 13.5 55.8	358 46.0 43.7	196 32.3 19.3	243 19.1 36.3	243 19.1	36.3	243 19.1	36.3	243 19.1	Procyon	245 08.3 N 5 13.1	
FRI 23	351 52.2	269 12.6 56.0	373 47.6 43.6	211 34.3 19.2	258 21.2 36.3	258 21.2	36.3	258 21.2	36.3	258 21.2			
FRI 24	6 54.7	284 11.8 N22 56.3	28 49.2 S13 43.4	226 36.3 N16 19.1	273 23.3 N22 36.3	273 23.3	N22 36.3	273 23.3	N22 36.3	273 23.3	Rasalhague	96 13.4 N12 33.4	
FRI 25	21 57.1	299 10.9 56.5	43 50.8 43.2	241 38.3 18.9	288 25.4 36.3	288 25.4	36.3	288 25.4	36.3	288 25.4	Regulus	207 52.0 N11 57.2	
FRI 26	36 59.6	314 10.1 56.8	58 52.4 43.0	256 40.3 18.8	303 27.5 36.3	303 27.5	36.3	303 27.5	36.3	303 27.5	Rigel	281 19.9 S 8 11.8	
FRI 27	52 02.1	329 09.2 57.0	73 54.0 42.9	271 42.3 18.6	318 29.7 36.3	318 29.7	36.3	318 29.7	36.3	318 29.7	Rigil Kent.	140 02.4 S60 51.2	
FRI 28	67 04.5	344 08.4 57.3	88 55.6 42.7	286 44.3 18.5	333 31.8 36.3	333 31.8	36.3	333 31.8	36.3	333 31.8	Sabik	102 21.2 S15 43.8	
FRI 29	82 07.0	359 07.6 57.5	103 57.2 42.5	301 46.3 18.3	348 33.9 36.3	348 33.9	36.3	348 33.9	36.3	348 33.9			
FRI 30	97 09.4	14 06.7 N22 57.8	118 58.8 S13 42.3	316 48.3 N16 18.2	3 36.0 N22 36.3	3 36.0	N22 36.3	3 36.0	N22 36.3	3 36.0	Schedar	349 49.8 N56 33.0	
FRI 01	112 11.9	29 05.9 58.0	134 00.4 42.2	331 50.3 18.0	18 38.1 36.3	18 38.1	36.3	18 38.1	36.3	18 38.1	Shaula	96 32.2 S37 06.5	
FRI 02	127 14.4	44 05.0 58.3	149 02.0 42.0	346 52.3 17.9	33 40.2 36.3	33 40.2	36.3	33 40.2	36.3	33 40.2	Sirius	258 41.0 S16 43.2	
FRI 03	142 16.8	59 04.2 58.5	164 03.7 41.8	1 54.3 17.7	48 42.3 36.3	48 42.3	36.3	48 42.3	36.3	48 42.3	Spica	158 39.5 S11 10.8	
FRI 04	157 19.3	74 03.3 58.8	179 05.3 41.7	16 56.2 17.6	63 44.4 36.2	63 44.4	36.2	63 44.4	36.2	63 44.4	Sunail	222 58.7 S43 26.8	
FRI 0													

UT	ARIES			VENUS -3.9			MARS -2.4			JUPITER -1.7			SATURN +0.1			STARS		
	GHA	GHA	Dec	GHA	Dec		GHA	Dec		GHA	Dec		GHA	Dec		Name	SHA	Dec
19 00	357 29.3	173 11.2 S	0 29.6	22 49.4	S16 24.3		200 27.7	N10 31.7		254 30.6	N22 09.6		Acamar	315 23.8	S40 17.1			
01	12 31.7	188 10.8	30.9	37 52.2	24.2		215 29.7	31.5		269 32.9	09.6		Achernar	335 31.7	S57 12.9			
02	27 34.2	203 10.4	32.2	52 55.0	24.1		230 31.6			284 35.2			Acruz	173 18.9	S63 07.1			
03	42 36.7	218 10.1	33.5	67 57.8	24.1		245 33.6	31.1		299 37.5	09.6		Adhara	255 18.7	S28 58.3			
04	57 39.1	233 09.7	34.7	83 00.6	24.0		260 35.6	30.9		314 39.8	09.6		Aldebaran	290 58.1	N16 31.1			
05	72 41.6	248 09.3	36.0	98 03.4	23.9		275 37.5	30.7		329 42.1	09.6							
06	87 44.1	263 08.9 S	0 37.3	113 06.2	S16 23.8		290 39.5	N10 30.5		344 44.4	N22 09.6		Alioth	166 27.7	N55 56.6			
07	102 46.5	278 08.6	38.6	128 08.9	23.8		305 41.5	30.3		359 46.2	09.5		Alkaid	153 05.2	N49 17.9			
08	117 49.0	293 08.2	39.8	143 11.7	23.7		320 43.4	30.2		14 48.9	09.5		Al Na'ir	27 52.8	S46 56.7			
09	132 51.4	308 07.8	41.1	158 14.5	23.6		335 45.4	30.0		29 51.2	09.5		Alnilam	275 54.2 S	1 11.8			
10	147 53.9	323 07.5	42.4	173 17.3	23.5		350 47.4	29.8		44 53.5	09.5		Alphard	218 03.9 S	8 40.2			
11	162 56.4	338 07.1	43.7	188 20.1	23.4		5 49.3	29.6		59 55.8	09.5							
12	177 58.8	353 06.7 S	0 44.9	203 22.9	S16 23.4		20 51.3	N10 29.4		74 58.1	N22 09.5		Alphecca	126 17.7	N26 42.7			
13	193 01.3	8 06.4	46.2	218 25.6	23.3		35 53.2	29.2		90 00.4	09.5		Alpheratz	357 51.2	N29 06.4			
14	208 03.8	23 06.0	47.5	233 28.4	23.2		50 55.2	29.0		105 02.7	09.4		Altair	62 15.6 N	8 52.7			
15	223 06.2	38 05.6	48.8	248 31.2	23.1		65 57.2	28.8		120 05.0	09.4		Ankaa	353 22.7	S42 17.1			
16	238 08.7	53 05.2	50.0	263 34.0	23.0		80 59.1	28.6		135 07.3	09.4		Antares	112 35.9	S26 26.5			
17	253 11.2	68 04.9	51.3	278 36.8	23.0		96 01.1	28.5		150 09.6	09.4							
18	268 13.6	83 04.5 S	0 52.6	293 39.5	S16 22.9		111 03.1	N10 28.3		165 11.9	N22 09.4		Arcturus	146 03.0	N19 10.0			
19	283 16.1	98 04.1	53.9	308 42.3	22.8		126 05.0	28.1		180 14.2	09.4		Atria	107 44.8	S69 02.3			
20	298 18.6	113 03.8	55.1	323 45.1	22.7		141 07.0	27.9		195 16.5	09.4		Avior	234 21.7	S59 30.9			
21	313 21.0	128 03.4	56.4	338 47.9	22.6		156 09.0	27.7		210 18.8	09.3		Bellatrix	278 40.2 N	6 21.4			
22	328 23.5	143 03.0	57.7	353 50.6	22.5		171 10.9	27.5		225 21.0	09.3		Betelgeuse	271 09.6 N	7 24.6			
23	343 25.9	158 02.7	0 59.0	8 53.4	22.4		186 12.9	27.3		240 23.3	09.3							
20 00	358 28.4	173 02.3 S	1 00.2	23 56.2	S16 22.4		201 14.9	N10 27.1		255 25.6	N22 09.3		Canopus	263 59.7	S52 41.4			
01	13 30.9	188 01.9	01.5	38 58.9	22.3		216 16.8	26.9		270 27.9	09.3		Capella	280 45.8	N46 00.0			
02	28 33.3	203 01.6	02.8	54 01.7	22.2		231 18.8	26.8		285 30.2	09.3		Deneb	49 36.5	N45 17.8			
03	43 35.8	218 01.2	04.1	69 04.5	22.1		246 20.8	26.6		300 32.5	09.3		Denebola	182 41.8	N14 33.3			
04	58 38.3	233 00.8	05.3	84 07.2	22.0		261 22.7	26.4		315 34.8	09.3		Diphda	349 03.2	S17 57.9			
05	73 40.7	248 00.4	06.6	99 10.0	21.9		276 24.7	26.2		330 37.1	09.2							
06	88 43.2	263 00.1 S	1 07.9	114 12.7	S16 21.8		291 26.7	N10 26.0		345 39.4	N22 09.2		Dubhe	194 01.4	N61 44.0			
07	103 45.7	277 59.7	09.2	129 15.5	21.7		306 28.6	25.8		0 41.7	09.2		Elath	278 22.3	N28 36.7			
08	118 48.1	292 59.3	10.4	144 18.3	21.6		321 30.6	25.6		15 44.0	09.2		Elnatan	90 49.7	N51 29.5			
09	133 50.6	307 59.0	11.7	159 21.0	21.5		336 32.6	25.4		30 46.3	09.2		Enif	33 54.4 N	9 53.6			
10	148 53.0	322 58.6	13.0	174 23.8	21.4		351 34.5	25.3		45 48.6	09.2		Fomalhaut	15 32.0	S29 36.2			
11	163 55.5	337 58.2	14.3	189 26.5	21.4		6 36.5	25.1		60 50.9	09.2							
12	178 58.0	352 57.8 S	1 15.5	204 29.3	S16 21.3		21 38.5	N10 24.9		75 53.2	N22 09.1		Gacrux	172 10.3	S57 07.9			
13	194 00.4	7 57.5	16.8	219 32.0	21.2		36 40.4	24.7		90 55.5	09.1		Gienah	176 00.6	S17 33.6			
14	209 02.9	22 57.1	18.1	234 34.8	21.1		51 42.4	24.5		105 57.8	09.1		Hadar	148 59.6	S60 23.5			
15	224 05.4	37 56.7	19.4	249 37.5	21.0		66 44.4	24.3		121 00.1	09.1		Hamal	328 09.2	N23 28.8			
16	239 07.8	52 56.4	20.6	264 40.3	20.9		81 46.3	24.1		136 02.4	09.1		Kaus Aust.	83 53.9 S	34 23.1			
17	254 10.3	67 56.0	21.9	279 43.0	20.8		96 48.3	23.9		151 04.7	09.1							
18	269 12.8	82 55.6 S	1 23.2	294 45.8	S16 20.7		111 50.3	N10 23.7		166 07.0	N22 09.1		Kochab	137 20.1	N74 08.7			
19	284 15.2	97 55.3	24.5	309 48.5	20.6		126 52.2	23.6		181 09.3	09.1		Markab	13 45.7	N15 13.6			
20	299 17.7	112 54.9	25.7	324 51.3	20.5		141 54.2	23.4		196 11.6	09.0		Menkar	314 22.9 N	4 06.4			
21	314 20.2	127 54.5	27.0	339 54.0	20.4		156 56.2	23.2		211 13.9	09.0		Menkent	148 17.1	S36 23.3			
22	329 22.6	142 54.1	28.3	354 56.7	20.3		171 58.1	23.0		226 16.2	09.0		Miaplacidus	221 42.4	S69 43.6			
23	344 25.1	157 53.8	29.6	9 59.5	20.2		187 00.1	22.8		241 18.5	09.0							
21 00	359 27.5	172 53.4 S	1 30.8	25 02.2	S16 20.1		202 02.1	N10 22.6		256 20.8	N22 09.0		Mirfak	308 51.2	N49 52.4			
01	14 30.0	187 53.0	32.1	40 05.0	20.0		217 04.0	22.4		271 23.1	09.0		Nunki	76 07.7	S26 17.6			
02	29 32.5	202 52.7	33.4	55 07.7	19.9		232 06.0	22.2		286 25.4	09.0		Peacock	53 30.8	S56 43.6			
03	44 34.9	217 52.3	34.7	70 10.4	19.8		247 08.0	22.1		301 27.7	08.9		Pollux	243 37.3	N28 01.1			
04	59 37.4	232 51.9	35.9	85 13.2	19.7		262 09.9	21.9		316 30.0	08.9		Procyon	245 07.9 N	5 13.2			
05	74 39.9	247 51.5	37.2	100 15.9	19.6		277 11.9	21.7		331 32.3	08.9							
06	89 42.3	262 51.2 S	1 38.5	115 18.6	S16 19.5		292 13.9	N10 21.5		346 34.6	N22 08.9		Rasalhague	96 13.6	N12 33.6			
07	104 44.8	277 50.8	39.8	130 21.4	19.4		307 15.8	21.3		1 36.9	08.9		Regulus	207 51.9	N11 57.2			
08	119 47.3	292 50.4	41.0	145 24.1	19.3		322 17.8	21.1		16 39.2	08.9		Rigel	281 19.4 S	8 11.6			
09	134 49.7	307 50.1	42.3	160 26.8	19.2		337 19.8	20.9		31 41.5	08.9		Rigil Kant.	140 03.1	S60 51.1			
10	149 52.2	322 49.7	43.6	175 29.5	19.0		352 21.8	20.7		46 43.8	08.9		Sabik	102 21.4	S15 43.8			
11	164 54.7	337 49.3	44.9	190 32.3	18.9		7 23.7	20.6		61 46.1	08.8							
12	179 57.1	352 48.9 S	1 46.1	205 35.0	S16 18.8		22 25.7	N10 20.4		76 48.4	N22 08.8		Schedar	349 49.0	N56 33.4			
13	194 59.6	7 48.6	47.4	220 37.7	18.7		37 27.7	20.2		91 50.7	08.8		Shaula	76 32.4	S37 06.5			
14	210 02.0	22 48.2	48.7	235 40.4	18.6		52 29.6	20.0		106 53.0	08.8		Sirius	258 40.6	S16 42.7			
15	225 04.5	37 47.8	50.0	250 43.1	18.5		67 31.6	19.8		121 55.3	08.8		Spica	158 39.7	S11 10.9			
16	240 07.0																	

UT	ARIES			VENUS -3.9			MARS -2.2			JUPITER -1.7			SATURN +0.1			STARS		
	GHA	Dec	SHA	GHA	Dec	SHA	GHA	Dec	SHA	GHA	Dec	SHA	GHA	Dec	SHA	Name	SHA	Dec
2800	6 21.5	171 49.7 S	5 04.0	32 23.8	S15 55.3	207 33.6 N	9 51.3	262 49.5 N22	06.9	Acamar	315 23.7	S40 17.2						
01	21 24.0	186 49.3	05.3	47 26.3	55.1	222 35.6	51.1	277 51.8	06.9	Achernar	335 31.7	S57 13.0						
02	36 26.4	201 48.9	06.6	62 28.8	54.9	237 37.6	50.9	292 54.1	06.9	Acrux	173 19.0	S66 07.0						
03	51 28.9	216 48.5	07.8	77 31.3	54.7	252 39.6	50.7	307 56.5	06.9	Adhara	255 18.6	S28 58.3						
04	66 31.4	231 48.1	09.1	92 33.8	54.5	267 41.6	50.5	322 58.8	06.9	Aldebaran	290 58.1	N16 31.1						
05	81 33.8	246 47.7	10.3	107 36.3	54.3	282 43.5	50.3	338 01.1	06.9									
06	96 36.3	261 47.3 S	5 11.6	122 38.9 S15	54.1	297 45.5 N	9 50.2	353 03.5 N22	06.9	Alioth	166 27.7	N55 56.5						
07	111 38.8	276 47.0	12.9	137 41.4	53.9	312 47.5	50.0	8 05.8	06.8	Alkaid	153 05.2	N49 17.9						
08	126 41.2	291 46.6	14.1	152 43.9	53.7	327 49.5	49.8	23 08.1	06.8	Al Nair	27 52.8	S46 56.7						
09	141 43.7	306 46.2	15.4	167 46.4	53.5	342 51.5	49.6	38 10.5	06.8	Anilam	275 54.1 S	11.8						
S 10	156 46.2	321 45.8	16.6	182 48.9	53.3	357 53.5	49.4	53 12.8	06.8	Alphard	218 03.9 S	8 40.2						
U 11	171 48.6	336 45.4	17.9	197 51.4	53.1	12 55.4	49.2	68 15.1	06.8									
N 12	186 51.1	351 45.0 S	5 19.1	212 53.9 S15	52.9	27 57.4 N	9 49.1	83 17.5 N22	06.8	Alphecca	126 17.7	N26 42.3						
D 13	201 53.5	6 44.6	20.4	227 56.4	52.7	42 59.4	48.9	98 19.8	06.8	Alpheratz	57 51.2	N29 06.7						
A 14	216 56.0	21 44.2	21.7	242 58.9	52.5	58 01.4	48.7	113 22.1	06.8	Altair	62 15.6 N	5 52.8						
Y 15	231 58.5	36 43.8	22.9	258 01.4	52.3	73 03.4	48.5	128 24.4	06.8	Ankaa	353 22.8 S	14.7						
16	247 00.9	51 43.4	24.2	273 03.9	52.1	88 05.3	48.3	143 26.8	06.7	Antares	112 35.9	S26 26.5						
17	262 03.4	66 43.0	25.4	288 06.4	51.9	103 07.3	48.1	158 29.1	06.7									
18	277 05.9	81 42.6 S	5 26.7	303 08.9 S15	51.7	118 09.3 N	9 47.9	173 31.4 N22	06.7	Arcturus	146 03.0	N19 10.0						
19	292 08.3	96 42.2	27.9	318 11.3	51.5	133 11.3	47.8	188 33.8	06.7	Atria	107 45.0	S29 02.3						
20	307 10.8	111 41.8	29.2	333 13.8	51.3	148 13.3	47.6	203 36.1	06.7	Avior	234 21.6	S59 30.0						
21	322 13.3	126 41.5	30.4	348 16.3	51.1	163 15.3	47.4	218 38.4	06.7	Bellatrix	278 40.2 N	6 21.4						
22	337 15.7	141 41.1	31.7	3 18.8	50.9	178 17.2	47.2	233 40.8	06.7	Betelgeuse	271 09.6 N	7 24.6						
23	352 18.2	156 40.7	33.0	18 21.3	50.7	193 19.2	47.0	248 43.1	06.7									
2900	7 20.6	171 40.3 S	5 34.2	33 23.8 S15	50.5	208 21.2 N	9 46.8	263 45.4 N22	06.6	Canopus	263 59.6	S52 41.4						
01	22 23.1	186 39.9	35.5	48 26.3	50.3	223 23.2	46.7	278 47.8	06.6	Capella	280 56.2	N46 00.0						
02	37 25.6	201 39.5	36.7	63 28.7	50.1	238 25.2	46.5	293 50.1	06.6	Deneb	49 36.6	N45 17.8						
03	52 28.0	216 39.1	38.0	78 31.2	49.8	253 27.1	46.3	308 52.4	06.6	Denebola	182 41.8	N14 33.3						
04	67 30.5	231 38.7	39.2	93 33.7	49.6	268 29.1	46.1	323 54.8	06.6	Diphda	349 03.2	S17 57.9						
05	82 33.0	246 38.3	40.5	108 36.2	49.4	283 31.1	45.9	338 57.1	06.6									
06	97 35.4	261 37.9 S	5 41.7	123 38.7 S15	49.2	298 33.1 N	9 45.7	353 59.4 N22	06.6	Dubhe	194 01.3	N61 43.9						
07	112 37.9	276 37.5	43.0	138 41.1	49.0	313 35.1	45.5	9 01.8	06.6	Elmath	278 22.2	S28 36.7						
08	127 40.4	291 37.1	44.2	153 43.6	48.8	328 37.1	45.4	24 04.1	06.6	Eltanin	90 49.8	N51 29.5						
M 09	142 42.8	306 36.7	45.5	168 46.1	48.6	343 39.0	45.2	39 06.5	06.6	Enif	33 54.4 N	9 53.6						
O 10	157 45.3	321 36.3	46.8	183 48.5	48.4	358 41.0	45.0	54 08.8	06.6	Formalhaut	15 32.0	S29 36.2						
N 11	172 47.8	336 35.9	48.0	198 51.0	48.2	13 43.0	44.8	69 11.1	06.5									
D 12	187 50.2	351 35.5 S	5 49.3	213 53.5 S15	48.0	28 45.0 N	9 44.6	84 13.5 N22	06.5	Gacrux	172 10.3	S57 07.9						
A 13	202 52.7	6 35.1	50.5	228 55.9	47.7	43 47.0	44.4	99 15.3	06.5	Gienah	176 00.6	S17 33.5						
Y 14	217 55.1	21 34.7	51.8	243 58.4	47.5	58 49.0	44.3	114 18.1	06.5	Hadar	148 59.7	S60 23.5						
15	232 57.6	36 34.3	53.0	259 00.9	47.3	73 50.9	44.1	129 20.5	06.5	Hamal	328 09.2	N23 28.8						
16	248 00.1	51 33.9	54.3	274 03.3	47.1	88 52.9	43.9	144 22.8	06.5	Kaus Aust.	83 54.0	S34 23.1						
17	263 02.5	66 33.5	55.5	289 05.8	46.9	103 54.9	43.7	159 25.1	06.5									
18	278 05.0	81 33.1 S	5 56.8	304 08.3 S15	46.7	118 56.9 N	9 43.5	174 27.5 N22	06.5	Kochab	137 20.2	N74 08.6						
19	293 07.5	96 32.7	58.0	319 10.7	46.5	133 58.9	43.3	189 29.8	06.5	Markab	13 45.7	N15 13.6						
20	308 09.9	111 32.3	59.3	334 13.2	46.2	149 00.9	43.2	204 32.2	06.4	Menkar	314 22.8 N	4 06.4						
21	323 12.4	126 31.9	6 00.5	349 15.6	46.0	164 02.8	43.0	219 34.5	06.4	Menkent	148 17.1	S36 23.2						
22	338 14.9	141 31.5	01.8	4 18.1	45.8	179 04.8	42.8	234 36.8	06.4	Miaplacidus	221 42.3	S69 43.6						
23	353 17.3	156 31.1	03.0	19 20.5	45.6	194 06.8	42.6	249 39.2	06.4									
3000	8 19.8	171 30.7 S	6 04.3	34 23.0 S15	45.4	209 08.8 N	9 42.4	264 41.5 N22	06.4	Mirafak	308 51.2	N49 52.4						
01	23 23.2	186 30.3	05.5	49 25.4	45.2	224 10.8	42.2	279 43.8	06.4	Nunki	76 07.8	S26 17.6						
02	38 24.7	201 29.9	06.8	64 27.9	44.9	239 12.8	42.1	294 46.2	06.4	Peacock	53 30.8	S56 43.7						
03	53 27.2	216 29.5	08.0	79 30.3	44.7	254 14.8	41.9	309 48.5	06.4	Pollux	243 37.2	N28 01.1						
04	68 29.6	231 29.1	09.3	94 32.8	44.5	269 16.7	41.7	324 50.9	06.4	Procyon	245 07.8 N	5 13.2						
05	83 32.1	246 28.7	10.5	109 35.2	44.3	284 18.7	41.5	339 53.2	06.4									
06	98 34.6	261 28.3 S	6 11.8	124 37.7 S15	44.1	299 20.7 N	9 41.3	354 55.5 N22	06.3	Rasalhague	96 13.6	N12 33.6						
07	113 37.0	276 27.9	13.0	139 40.1	43.8	314 22.7	41.1	9 57.9	06.3	Regulus	207 51.9	N11 57.2						
08	128 39.5	291 27.5	14.3	154 42.5	43.6	329 24.7	40.9	25 00.2	06.3	Rigel	281 19.3 S	8 11.6						
09	143 42.0	306 27.1	15.5	169 45.0	43.4	344 26.7	40.8	40 02.6	06.3	Rigel Kent.	140 03.1	S60 51.1						
10	158 44.4	321 26.7	16.8	184 47.4	43.2	359 28.6	40.6	55 04.9	06.3	Sabik	102 21.5	S15 43.8						
11	173 46.9	336 26.3	18.0	199 49.9	42.9	14 30.6	40.4	70 07.2	06.3									
12	188 49.4	351 25.9 S	6 19.3	214 52.3 S15	42.7	29 32.6 N	9 40.2	85 09.6 N22	06.3	Schedar	349 49.0	N56 33.5						
13	203 51.8	6 25.5	20.5	229 54.7	42.5	44 34.6	40.0	100 11.9	06.3	Shaula	96 32.4	S37 06.5						
14	218 54.3	21 25.1	21.7	244 57.2	42.3	59 36.6	39.8	115 14.3	06.3	Sirius	258 40.5	S16 42.9						
15	233 56.7	36 24.7	23.0	259 59.6	42.1	74 38.6	39.7	130 16.6	06.2	Spica	158 39.7	S11 10.7						

UT	ARIES			VENUS -4.0			MARS +0.0			JUPITER -2.1			SATURN -0.4			STARS		
	GHA	SHA	Dec	GHA	SHA	Dec	GHA	SHA	Dec	GHA	SHA	Dec	GHA	SHA	Dec	Name	SHA	Dec
1800	86 11.8	147 53.2	S22 41.9	85 18.4	N 03.0	03.0	276 22.3	N 5 37.4	344 25.0	N22 18.2	18.2	Acamar	315 23.6	S40 17.5				
01	101 14.2	162 52.4	41.4	100 19.6	03.7		291 24.6	37.4	359 27.7	18.2		Achernar	335 31.8	S57 13.3				
02	116 16.7	177 51.6	40.8	115 20.7	04.3		306 27.0	37.3	14 30.4	18.3		Acruz	173 18.2	S63 06.9				
03	131 19.2	192 50.7	40.3	130 21.9	05.0		321 29.3	37.3	29 33.1	18.3		Adhara	255 18.1	S28 58.5				
04	146 21.6	207 49.9	39.7	145 23.0	05.6		336 31.6	37.2	44 35.7	18.3		Aldebaran	290 57.7	N16 31.1				
05	161 24.1	222 49.1	39.2	160 24.2	06.3		351 34.0	37.2	59 38.4	18.3								
06	176 26.6	237 48.3	S22 38.6	175 25.4	N 06.9		6 36.3	N 5 37.2	74 41.1	N22 18.3		Alioth	166 27.2	N55 56.1				
07	191 29.0	252 47.4	38.1	190 26.5	07.5		21 38.6	37.1	89 43.8	18.3		Alkaid	153 04.9	N49 17.4				
08	206 31.5	267 46.6	37.5	205 27.7	08.2		36 41.0	37.1	104 46.4	18.4		Al Nair	27 53.2	S46 56.8				
09	221 33.9	282 45.8	36.9	220 28.8	08.8		51 43.3	37.0	119 49.1	18.4		Alnilam	275 53.6	S 1 11.9				
10	236 36.4	297 45.0	36.4	235 30.0	09.5		66 45.7	37.0	134 51.8	18.4		Alphard	218 03.3	S 8 40.4				
11	251 38.9	312 44.1	35.8	250 31.2	10.1		81 48.0	37.0	149 54.5	18.4								
12	266 41.3	327 43.3	S22 35.2	265 32.3	N 10.8		96 50.3	N 5 36.9	164 57.1	N22 18.4		Alphecca	126 17.6	N26 42.0				
13	281 43.8	342 42.5	34.7	280 33.5	11.4		111 52.7	36.9	179 59.8	18.5		Alpheratz	357 51.3	N29 06.8				
14	296 46.3	357 41.7	34.1	295 34.6	12.1		126 55.0	36.8	195 02.5	18.5		Altair	62 15.8	N 8 52.7				
15	311 48.7	372 40.8	33.5	310 35.8	12.7		141 57.4	36.8	210 05.2	18.5		Ankaa	353 22.8	S42 17.4				
16	326 51.2	387 39.9	33.0	325 36.9	13.4		156 59.7	36.8	225 07.8	18.5		Antares	112 35.9	S26 26.4				
17	341 53.7	402 39.2	32.4	340 38.1	14.0		172 02.0	36.7	240 10.5	18.5								
18	356 56.1	417 38.4	S22 31.8	355 39.2	N 14.7		187 04.4	N 5 36.7	255 13.2	N22 18.6		Arcturus	146 02.7	N19 09.6				
19	371 58.6	432 37.6	31.3	370 40.4	15.3		202 06.7	36.6	270 15.9	18.6		Atria	170 07.2	N14 6				
20	386 61.1	447 36.7	30.7	385 41.7	15.9		217 09.1	36.6	285 18.5	18.6		Avior	234 20.7	S59 31.0				
21	401 63.6	462 35.9	30.1	400 42.7	16.6		232 11.4	36.6	300 21.2	18.6		Bellatrix	278 39.7	N 6 21.3				
22	416 66.1	477 35.1	29.5	415 43.9	17.2		247 13.8	36.5	315 23.9	18.6		Betelgeuse	271 09.1	N 7 24.5				
23	431 68.6	492 34.3	29.0	430 45.0	17.9		262 16.1	36.5	330 26.6	18.7								
1900	87 10.9	147 33.5	S22 28.4	85 46.2	N 0 18.5		277 18.4	N 5 36.4	345 29.2	N22 18.7		Canopus	263 58.9	S52 41.7				
01	102 13.4	162 32.6	27.8	100 47.3	19.2		292 20.8	36.4	0 31.9	18.7		Capella	280 10.1	N46 00.2				
02	117 15.8	177 31.8	27.2	115 48.5	19.8		307 23.1	36.4	15 34.6	18.7		Deneb	49 37.0	N45 17.7				
03	132 18.3	192 31.0	26.6	130 49.6	20.5		322 25.5	36.3	30 37.3	18.7		Denebola	182 41.2	N14 33.0				
04	147 20.8	207 30.2	26.1	145 50.8	21.1		337 27.8	36.3	45 39.9	18.8		Diphda	349 03.3	S17 58.1				
05	162 23.2	222 29.4	25.5	160 51.9	21.8		352 30.2	36.2	60 42.6	18.8								
06	177 25.7	237 28.6	S22 24.3	175 53.1	N 22.4		7 32.5	N 5 36.2	75 45.3	N22 18.8		Dubhe	194 00.4	N61 43.6				
07	192 28.2	252 27.7	24.9	190 54.3	23.1		22 34.8	36.2	90 48.0	18.8		Einath	278 21.7	S69 36.7				
08	207 30.6	267 26.9	23.7	205 55.4	23.7		37 37.2	36.1	105 50.6	18.8		Eltanin	90 50.2	N51 29.2				
09	222 33.1	282 26.1	23.1	220 56.6	24.4		52 39.5	36.1	120 53.3	18.9		Enif	33 54.7	N 9 53.5				
10	237 35.6	297 25.3	22.5	235 57.7	25.0		67 41.9	36.1	135 56.0	18.9		Fomalhaut	15 32.2	S29 36.3				
11	252 38.0	312 24.5	22.0	250 58.9	25.6		82 44.2	36.0	150 58.7	18.9								
12	267 40.5	327 23.7	S22 21.4	266 00.0	N 0 26.3		97 46.6	N 5 36.0	166 01.3	N22 18.9		Gacrux	172 09.7	S57 07.8				
13	282 42.9	342 22.9	20.8	281 01.2	26.9		112 48.9	35.9	181 04.0	18.9		Gienah	176 00.1	S17 33.6				
14	297 45.4	357 22.1	20.2	296 02.3	27.6		127 51.3	35.9	196 06.7	18.9		Hadar	148 59.2	S60 23.2				
15	312 47.9	372 21.3	19.6	311 03.5	28.2		142 53.6	35.9	211 09.4	19.0		Hama	328 09.1	N23 29.0				
16	327 50.3	387 20.4	19.0	326 04.6	28.9		157 56.0	35.8	226 12.1	19.0		Kaus Aust.	83 54.1	S34 23.1				
17	342 52.8	402 19.6	18.4	341 05.8	29.5		172 58.3	35.8	241 14.7	19.0								
18	357 55.3	417 18.8	S22 17.8	356 06.9	N 0 30.2		188 00.7	N 5 35.8	256 17.4	N22 19.0		Kochab	137 20.2	N74 08.1				
19	372 57.7	432 18.0	17.2	371 08.1	30.8		203 03.0	35.7	271 20.1	19.1		Markab	13 45.9	N15 13.6				
20	387 60.2	447 17.2	16.6	386 09.2	31.5		218 05.4	35.7	286 22.8	19.1		Menkar	314 22.6	N 4 06.3				
21	402 62.7	462 16.4	16.0	401 10.4	32.1		233 07.7	35.6	301 25.4	19.1		Menkent	148 16.8	S36 23.2				
22	417 65.2	477 15.6	15.4	416 11.5	32.8		248 10.1	35.6	316 28.1	19.1		Miaplacidus	221 41.0	S69 43.6				
23	432 67.7	492 14.8	14.8	431 12.7	33.4		263 12.4	35.6	331 30.8	19.1								
2000	88 10.6	147 14.0	S22 14.2	86 13.8	N 0 34.1		278 14.8	N 5 35.5	346 33.5	N22 19.1		Mirfak	308 50.8	N49 52.7				
01	103 12.5	162 13.2	13.6	101 15.0	34.7		293 17.1	35.5	1 36.1	19.2		Nunki	76 07.9	S26 17.6				
02	118 15.0	177 12.4	13.0	116 16.1	35.3		308 19.5	35.5	16 38.8	19.2		Peacock	53 31.3	S56 43.6				
03	133 17.4	192 11.6	12.3	131 17.3	36.0		323 21.8	35.4	31 41.5	19.2		Pollux	243 36.5	N28 01.0				
04	148 19.9	207 10.8	11.7	146 18.4	36.6		338 24.2	35.4	46 44.2	19.2		Procyon	245 07.3	N 5 13.0				
05	163 22.4	222 10.0	11.1	161 19.6	37.3		353 26.5	35.4	61 46.9	19.2								
06	178 24.8	237 09.2	S22 10.5	176 20.7	N 0 37.9		8 28.9	N 5 35.3	76 49.5	N22 19.3		Rasalhague	96 13.8	N12 33.4				
07	193 27.3	252 08.4	09.9	191 21.9	38.6		23 31.2	35.3	91 52.2	19.3		Regulus	207 51.3	N11 56.9				
08	208 29.8	267 07.6	09.3	206 23.0	39.2		38 33.6	35.3	106 54.9	19.3		Rigel	281 18.9	S 8 11.8				
09	223 32.2	282 06.8	08.7	221 24.1	39.9		53 35.9	35.2	121 57.6	19.3		Rigel Kent.	140 02.8	S60 50.8				
10	238 34.7	297 06.0	08.1	236 25.3	40.5		68 38.3	35.2	137 00.2	19.3		Sabik	102 21.5	S15 43.8				
11	253 37.2	312 05.2	07.4	251 26.4	41.2		83 40.6	35.2	152 02.9	19.4								
12	268 39.6	327 04.4	S22 06.8	266 27.6	N 0 41.8		98 43.0	N 5 35.1	167 05.6	N22 19.4		Schedar	349 49.2	N56 33.8				
13	283 42.1	342 03.6	06.2	281 28.7	42.5		113 45.3	35.1	182 08.3	19.4		Shaula	96 32.5	S37 06.4				
14	298 44.5	357 02.8	05.6	296 29.9	43.1		128 47.7	35.0	197 11.0	19.4		Sirius	258 40.0	S16 43.2				
15	313 47.0	372 02.0	05.0	311														

POLARIS (POLE STAR) TABLES, 2003
FOR DETERMINING LATITUDE FROM SEXTANT ALTITUDE AND FOR AZIMUTH

LHA ARIES	0° - 9°	10° - 19°	20° - 29°	30° - 39°	40° - 49°	50° - 59°	60° - 69°	70° - 79°	80° - 89°	90° - 99°	100° - 109°	110° - 119°
0	25.3	21.0	17.9	16.1	15.6	16.4	18.6	21.9	26.4	31.9	38.2	45.2
1	24.8	20.7	17.7	16.0	15.6	16.6	18.8	22.3	26.9	32.5	38.9	45.9
2	24.3	20.3	17.5	15.9	15.7	16.8	19.1	22.7	27.5	33.1	39.6	46.6
3	23.9	20.0	17.3	15.8	15.7	16.9	19.5	23.2	28.0	33.7	40.3	47.3
4	23.4	19.6	17.1	15.8	15.8	17.1	19.8	23.6	28.5	34.4	40.9	48.1
5	23.0	19.3	16.9	15.7	15.9	17.3	20.1	24.1	29.1	35.0	41.6	48.8
6	22.6	19.0	16.7	15.7	15.9	17.6	20.4	24.5	29.6	35.6	42.3	49.5
7	22.2	18.7	16.5	15.6	16.0	17.8	20.8	25.0	30.2	36.3	43.0	50.3
8	21.8	18.5	16.4	15.6	16.2	18.0	21.2	25.5	30.8	36.9	43.7	51.0
9	21.4	18.2	16.2	15.6	16.3	18.3	21.5	25.9	31.3	37.6	44.5	51.8
10	21.0	17.9	16.1	15.6	16.4	18.6	21.9	26.4	31.9	38.2	45.2	52.5
Lat.	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1
0	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3
10	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3
20	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3
30	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3
40	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5
45	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
50	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
55	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
60	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7
62	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8
64	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8
66	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.9
68	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9
Month	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2
Jan.	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6
Feb.	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Mar.	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	0.9	0.9
Apr.	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	0.9
May	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.8	0.8	0.9
June	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8
July	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6
Aug.	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
Sept.	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Oct.	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3
Nov.	0.9	0.9	0.8	0.8	0.7	0.6	0.6	0.5	0.4	0.4	0.3	0.3
Dec.	1.0	1.0	1.0	0.9	0.9	0.8	0.7	0.7	0.6	0.5	0.4	0.4
Lat.	AZIMUTH											
0	0.4	0.3	0.2	0.0	359.9	359.8	359.7	359.6	359.5	359.4	359.3	359.3
20	0.4	0.3	0.2	0.1	359.9	359.8	359.7	359.5	359.4	359.4	359.3	359.3
40	0.5	0.4	0.2	0.1	359.9	359.7	359.6	359.4	359.3	359.2	359.1	359.1
50	0.6	0.5	0.3	0.1	359.9	359.7	359.5	359.3	359.2	359.1	359.0	358.9
55	0.7	0.5	0.3	0.1	359.9	359.6	359.4	359.2	359.1	358.9	358.8	358.8
60	0.8	0.6	0.4	0.1	359.8	359.6	359.4	359.1	358.9	358.8	358.7	358.6
65	1.0	0.7	0.4	0.1	359.8	359.5	359.2	359.0	358.7	358.6	358.4	358.3

Latitude = Apparent altitude (corrected for refraction) - $1^\circ + a_0 + a_1 + a_2$

The table is entered with LHA Aries to determine the column to be used; each column refers to a range of 10° . a_0 is taken, with mental interpolation, from the upper table with the units of LHA Aries in degrees as argument; a_1 , a_2 are taken, without interpolation, from the second and third tables with arguments latitude and month respectively. a_0 , a_1 , a_2 , are always positive. The final table gives the azimuth of Polaris.

POLARIS (POLE STAR) TABLES, 2003
FOR DETERMINING LATITUDE FROM SEXTANT ALTITUDE AND FOR AZIMUTH

LHA ARIES	120° - 129°	130° - 139°	140° - 149°	150° - 159°	160° - 169°	170° - 179°	180° - 189°	190° - 199°	200° - 209°	210° - 219°	220° - 229°	230° - 239°
0	52.5	00.0	07.5	14.7	21.4	27.4	32.6	36.7	39.7	41.5	42.0	41.2
1	53.3	00.8	08.2	15.4	22.1	28.0	33.1	37.1	40.0	41.6	42.0	41.0
2	54.0	01.5	09.0	16.1	22.7	28.5	33.5	37.4	40.2	41.7	41.9	40.9
3	54.8	02.3	09.7	16.8	23.3	29.1	33.9	37.8	40.4	41.8	41.9	40.7
4	55.5	03.0	10.4	17.5	23.9	29.6	34.4	38.1	40.6	41.9	41.8	40.5
5	56.3	03.8	11.2	18.1	24.5	30.1	34.8	38.4	40.8	41.9	41.8	40.3
6	57.0	04.5	11.9	18.8	25.1	30.6	35.2	38.7	40.9	41.9	41.7	40.1
7	57.8	05.3	12.6	19.5	25.7	31.1	35.6	39.0	41.1	42.0	41.6	39.9
8	58.5	06.0	13.3	20.1	26.3	31.6	36.0	39.2	41.2	42.0	41.5	39.6
9	59.3	06.8	14.0	20.8	26.9	32.1	36.4	39.5	41.4	42.0	41.3	39.4
10	00.0	07.5	14.7	21.4	27.4	32.6	36.7	39.7	41.5	42.0	41.2	39.1
Lat.	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1
0	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6
10	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6
20	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
30	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
40	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
45	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
50	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
55	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
60	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6
62	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6
64	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.6
66	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.6
68	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.6
Month	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2
Jan.	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Feb.	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4
Mar.	0.9	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5
Apr.	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.7	0.7	0.6	0.6
May	0.9	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.7
June	0.8	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.8
July	0.7	0.7	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	0.9	0.9
Aug.	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9
Sept.	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9
Oct.	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.6	0.6	0.7	0.7
Nov.	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.6
Dec.	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4
Lat.	AZIMUTH											
0	359.3	359.3	359.3	359.4	359.4	359.5	359.6	359.7	359.8	0.0	0.1	0.2
20	359.2	359.2	359.3	359.3	359.4	359.5	359.6	359.7	359.8	359.9	0.1	0.2
40	359.1	359.1	359.1	359.2	359.2	359.4	359.5	359.6	359.8	359.9	0.1	0.3
50	358.9	358.9	358.9	359.0	359.1	359.2	359.4	359.6	359.7	359.9	0.1	0.3
55	358.7	358.8	358.8	358.9	359.0	359.1	359.3	359.5	359.7	359.9	0.1	0.3
60	358.6	358.6	358.6	358								

POLARIS (POLE STAR) TABLES, 2003
FOR DETERMINING LATITUDE FROM SEXTANT ALTITUDE AND FOR AZIMUTH

LHA ARIES	240° - 249°	250° - 259°	260° - 269°	270° - 279°	280° - 289°	290° - 299°	300° - 309°	310° - 319°	320° - 329°	330° - 339°	340° - 349°	350° - 359°
°	<i>a</i> ₀	<i>a</i> ₀	<i>a</i> ₀	<i>a</i> ₀	<i>a</i> ₀	<i>a</i> ₀	<i>a</i> ₀	<i>a</i> ₀	<i>a</i> ₀	<i>a</i> ₀	<i>a</i> ₀	<i>a</i> ₀
0	I 39.1	I 35.8	I 31.4	I 26.1	I 19.9	I 13.0	I 05.7	0 58.2	0 50.7	0 43.5	0 36.7	0 30.5
1	38.8	35.4	30.9	25.5	19.2	12.3	05.0	57.5	50.0	42.8	36.0	30.0
2	38.6	35.0	30.4	24.9	18.5	11.6	04.2	56.7	49.2	42.1	35.4	29.4
3	38.3	34.6	29.9	24.3	17.9	10.9	03.5	56.0	48.5	41.4	34.7	28.8
4	37.9	34.2	29.4	23.7	17.2	10.1	02.7	55.2	47.8	40.7	34.1	28.3
5	I 37.6	I 33.8	I 28.9	I 23.1	I 16.5	I 09.4	I 02.0	0 54.5	0 47.0	0 40.0	0 33.5	0 27.8
6	37.3	33.3	28.3	22.4	15.8	08.7	01.2	53.7	46.3	39.3	32.9	27.3
7	36.9	32.9	27.8	21.8	15.1	07.9	I 00.5	53.0	45.6	38.6	32.3	26.7
8	36.6	32.4	27.2	21.2	14.4	07.2	0 59.7	52.2	44.9	38.0	31.7	26.2
9	36.2	31.9	26.6	20.5	13.7	06.5	0 59.0	51.5	44.2	37.3	31.1	25.7
10	I 35.8	I 31.4	I 26.1	I 19.9	I 13.0	I 05.7	0 58.2	0 50.7	0 43.5	0 36.7	0 30.5	0 25.3
Lat.	<i>a</i> ₁	<i>a</i> ₁	<i>a</i> ₁	<i>a</i> ₁	<i>a</i> ₁	<i>a</i> ₁	<i>a</i> ₁	<i>a</i> ₁	<i>a</i> ₁	<i>a</i> ₁	<i>a</i> ₁	<i>a</i> ₁
0	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
10	.5	.5	.5	.4	.4	.3	.3	.3	.3	.4	.4	.5
20	.6	.5	.5	.4	.4	.4	.4	.4	.4	.4	.5	.5
30	.6	.5	.5	.5	.5	.4	.4	.4	.4	.5	.5	.5
40	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6
45	.6	.6	.6	.6	.6	.6	.5	.5	.6	.6	.6	.6
50	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6
55	.6	.6	.6	.6	.7	.7	.7	.7	.7	.7	.6	.6
60	.6	.7	.7	.7	.7	.7	.7	.7	.7	.7	.7	.7
62	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7
64	.6	.7	.7	.8	.8	.8	.8	.8	.8	.8	.8	.7
66	.7	.7	.7	.8	.8	.8	.9	.9	.9	.8	.8	.7
68	0.7	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8
Month	<i>a</i> ₂	<i>a</i> ₂	<i>a</i> ₂	<i>a</i> ₂	<i>a</i> ₂	<i>a</i> ₂	<i>a</i> ₂	<i>a</i> ₂	<i>a</i> ₂	<i>a</i> ₂	<i>a</i> ₂	<i>a</i> ₂
Jan.	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7
Feb.	.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.6	.6
Mar.	.4	.4	.3	.3	.3	.3	.3	.3	.3	.4	.4	.4
Apr.	0.5	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3
May	.6	.6	.5	.4	.4	.3	.3	.2	.2	.2	.2	.2
June	.8	.7	.6	.6	.5	.4	.4	.3	.3	.2	.2	.2
July	0.9	0.8	0.8	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.3	0.3
Aug.	.9	.9	.9	.8	.8	.8	.7	.6	.6	.5	.5	.4
Sept.	.9	.9	.9	.9	.9	.9	.8	.8	.8	.7	.7	.6
Oct.	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8
Nov.	.6	.7	.8	.8	.9	.9	.9	1.0	1.0	1.0	1.0	1.0
Dec.	0.5	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.0	1.0	1.0	1.0
Lat.	AZIMUTH											
0	0.3	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.5
20	0.3	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.7	0.7	0.6	0.5
40	0.4	0.6	0.7	0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.7
50	0.5	0.7	0.8	0.9	1.0	1.1	1.1	1.1	1.1	1.0	0.9	0.8
55	0.5	0.7	0.9	1.0	1.1	1.2	1.3	1.3	1.2	1.1	1.0	0.9
60	0.6	0.8	1.0	1.2	1.3	1.4	1.4	1.4	1.4	1.3	1.2	1.0
65	0.7	1.0	1.2	1.4	1.5	1.6	1.7	1.7	1.6	1.5	1.4	1.2

Latitude = Apparent altitude (corrected for refraction) - 1° + *a*₀ + *a*₁ + *a*₂

The table is entered with LHA Aries to determine the column to be used; each column refers to a range of 10°. *a*₀ is taken, with mental interpolation, from the upper table with the units of LHA Aries in degrees as argument; *a*₁, *a*₂ are taken, without interpolation, from the second and third tables with arguments latitude and month respectively. *a*₀, *a*₁, *a*₂, are always positive. The final table gives the azimuth of *Polaris*.

Increments and Corrections

INCREMENTS AND CORRECTIONS

0	SUN PLANETS			ARIES	MOON	v or Corr ⁿ			1	SUN PLANETS			ARIES	MOON	v or Corr ⁿ		
	s	'	"			s	'	"		s	'	"			s	'	"
00	0 00-0	0 00-0	0 00-0	0 0-0	0 0-0	6 0-0	12-0	0-1	00	0 15-0	0 15-0	0 14-3	0 0-0	0 0-0	6 0-0	12-0	0-1
01	0 00-3	0 00-3	0 00-2	0 1-0	0 1-0	6 1-0	12-1	0-1	01	0 15-3	0 15-3	0 14-6	0 1-0	0 1-0	6 1-0	12-1	0-1
02	0 00-5	0 00-5	0 00-5	0 2-0	0 2-0	6 2-0	12-2	0-1	02	0 15-5	0 15-5	0 14-8	0 2-0	0 2-0	6 2-0	12-2	0-1
03	0 00-8	0 00-8	0 00-7	0 3-0	0 3-0	6 3-0	12-3	0-1	03	0 15-8	0 15-8	0 15-0	0 3-0	0 3-0	6 3-0	12-3	0-1
04	0 01-0	0 01-0	0 01-0	0 4-0	0 4-0	6 4-0	12-4	0-1	04	0 16-0	0 16-0	0 15-3	0 4-0	0 4-0	6 4-0	12-4	0-1
05	0 01-3	0 01-3	0 01-2	0 5-0	0 5-0	6 5-0	12-5	0-1	05	0 16-3	0 16-3	0 15-5	0 5-0	0 5-0	6 5-0	12-5	0-1
06	0 01-5	0 01-5	0 01-4	0 6-0	0 6-0	6 6-0	12-6	0-1	06	0 16-5	0 16-5	0 15-7	0 6-0	0 6-0	6 6-0	12-6	0-1
07	0 01-8	0 01-8	0 01-7	0 7-0	0 7-0	6 7-0	12-7	0-1	07	0 16-8	0 16-8	0 16-0	0 7-0	0 7-0	6 7-0	12-7	0-1
08	0 02-0	0 02-0	0 01-9	0 8-0	0 8-0	6 8-0	12-8	0-1	08	0 17-0	0 17-0	0 16-2	0 8-0	0 8-0	6 8-0	12-8	0-1
09	0 02-3	0 02-3	0 02-1	0 9-0	0 9-0	6 9-0	12-9	0-1	09	0 17-3	0 17-3	0 16-5	0 9-0	0 9-0	6 9-0	12-9	0-1
10	0 02-5	0 02-5	0 02-4	1 0-0	1 0-0	7 0-0	13-0	0-1	10	0 17-5	0 17-5	0 16-7	1 0-0	1 0-0	7 0-0	13-0	0-1
11	0 02-8	0 02-8	0 02-6	1 1-0	1 1-0	7 1-0	13-1	0-1	11	0 17-8	0 17-8	0 16-9	1 1-0	1 1-0	7 1-0	13-1	0-1
12	0 03-0	0 03-0	0 02-9	1 2-0	1 2-0	7 2-0	13-2	0-1	12	0 18-0	0 18-0	0 17-2	1 2-0	1 2-0	7 2-0	13-2	0-1
13	0 03-3	0 03-3	0 03-1	1 3-0	1 3-0	7 3-0	13-3	0-1	13	0 18-3	0 18-3	0 17-4	1 3-0	1 3-0	7 3-0	13-3	0-1
14	0 03-5	0 03-5	0 03-3	1 4-0	1 4-0	7 4-0	13-4	0-1	14	0 18-5	0 18-5	0 17-7	1 4-0	1 4-0	7 4-0	13-4	0-1
15	0 03-8	0 03-8	0 03-6	1 5-0	1 5-0	7 5-0	13-5	0-1	15	0 18-8	0 18-8	0 17-9	1 5-0	1 5-0	7 5-0	13-5	0-1
16	0 04-0	0 04-0	0 03-8	1 6-0	1 6-0	7 6-0	13-6	0-1	16	0 19-0	0 19-0	0 18-1	1 6-0	1 6-0	7 6-0	13-6	0-1
17	0 04-3	0 04-3	0 04-1	1 7-0	1 7-0	7 7-0	13-7	0-1	17	0 19-3	0 19-3	0 18-4	1 7-0	1 7-0	7 7-0	13-7	0-1
18	0 04-5	0 04-5	0 04-3	1 8-0	1 8-0	7 8-0	13-8	0-1	18	0 19-5	0 19-5	0 18-6	1 8-0	1 8-0	7 8-0	13-8	0-1
19	0 04-8	0 04-8	0 04-5	1 9-0	1 9-0	7 9-0	13-9	0-1	19	0 19-8	0 19-8	0 18-9	1 9-0	1 9-0	7 9-0	13-9	0-1
20	0 05-0	0 05-0	0 04-8	2 0-0	2 0-0	8 0-0	14-0	0-1	20	0 20-0	0 20-0	0 19-1	2 0-0	2 0-0	8 0-0	14-0	0-1
21	0 05-3	0 05-3	0 05-0	2 1-0	2 1-0	8 1-0	14-1	0-1	21	0 20-3	0 20-3	0 19-3	2 1-0	2 1-0	8 1-0	14-1	0-1
22	0 05-5	0 05-5	0 05-2	2 2-0	2 2-0	8 2-0	14-2	0-1	22	0 20-5	0 20-5	0 19-5	2 2-0	2 2-0	8 2-0	14-2	0-1
23	0 05-8	0 05-8	0 05-5	2 3-0	2 3-0	8 3-0	14-3	0-1	23	0 20-8	0 20-8	0 19-8	2 3-0	2 3-0	8 3-0	14-3	0-1
24	0 06-0	0 06-0	0 05-7	2 4-0	2 4-0	8 4-0	14-4	0-1	24	0 21-0	0 21-0	0 20-0	2 4-0	2 4-0	8 4-0	14-4	0-1
25	0 06-3	0 06-3	0 06-0	2 5-0	2 5-0	8 5-0	14-5	0-1	25	0 21-3	0 21-3	0 20-3	2 5-0	2 5-0	8 5-0	14-5	0-1
26	0 06-5	0 06-5	0 06-2	2 6-0	2 6-0	8 6-0	14-6	0-1	26	0 21-5	0 21-5	0 20-5	2 6-0	2 6-0	8 6-0	14-6	0-1
27	0 06-8	0 06-8	0 06-4	2 7-0	2 7-0	8 7-0	14-7	0-1	27	0 21-8	0 21-8	0 20-8	2 7-0	2 7-0	8 7-0	14-7	0-1
28	0 07-0	0 07-0	0 06-7	2 8-0	2 8-0	8 8-0	14-8	0-1	28	0 22-0	0 22-0	0 21-0	2 8-0	2 8-0	8 8-0	14-8	0-1
29	0 07-3	0 07-3	0 06-9	2 9-0	2 9-0	8 9-0	14-9	0-1	29	0 22-3	0 22-3	0 21-3	2 9-0	2 9-0	8 9-0	14-9	0-1
30	0 07-5	0 07-5	0 07-2	3 0-0	3 0-0	9 0-0	15-0	0-1	30	0 22-5	0 22-5	0 21-5	3 0-0	3 0-0	9 0-0	15-0	0-1
31	0 07-8	0 07-8	0 07-4	3 1-0	3 1-0	9 1-0	15-1	0-1	31	0 22-8	0 22-8	0 21-8	3 1-0	3 1-0	9 1-0	15-1	0-1
32	0 08-0	0 08-0	0 07-6	3 2-0	3 2-0	9 2-0	15-2	0-1	32	0 23-0	0 23-0	0 22-0	3 2-0	3 2-0	9 2-0	15-2	0-1
33	0 08-3	0 08-3	0 07-9	3 3-0	3 3-0	9 3-0	15-3	0-1	33	0 23-3	0 23-3	0 22-3	3 3-0	3 3-0	9 3-0	15-3	0-1
34	0 08-5	0 08-5	0 08-1	3 4-0	3 4-0	9 4-0	15-4	0-1	34	0 23-5	0 23-5	0 22-5	3 4-0	3 4-0	9 4-0	15-4	0-1
35	0 08-8	0 08-8	0 08-4	3 5-0	3 5-0	9 5-0	15-5	0-1	35	0 23-8	0 23-8	0 22-8	3 5-0	3 5-0	9 5-0	15-5	0-1
36	0 09-0	0 09-0	0 08-6	3 6-0	3 6-0	9 6-0	15-6	0-1	36	0 24-0	0 24-0	0 23-0	3 6-0	3 6-0	9 6-0	15-6	0-1
37	0 09-3	0 09-3	0 08-9	3 7-0	3 7-0	9 7-0	15-7	0-1	37	0 24-3	0 24-3	0 23-3	3 7-0	3 7-0	9 7-0	15-7	0-1
38	0 09-5	0 09-5	0 09-1	3 8-0	3 8-0	9 8-0	15-8	0-1	38	0 24-5	0 24-5	0 23-5	3 8-0	3 8-0	9 8-0	15-8	0-1
39	0 09-8	0 09-8	0 09-3	3 9-0	3 9-0	9 9-0	15-9	0-1	39	0 24-8	0 24-8	0 23-8	3 9-0	3 9-0	9 9-0	15-9	0-1
40	0 10-0	0 10-0	0 09-5	4 0-0	4 0-0	10 0-0	16-0	0-1	40	0 25-0	0 25-0	0 23-9	4 0-0	4 0-0	10 0-0	16-0	0-1
41	0 10-3	0 10-3	0 09-8	4 1-0	4 1-0	10 1-0	16-1	0-1	41	0 25-3	0 25-3	0 24-1	4 1-0	4 1-0	10 1-0	16-1	0-1
42	0 10-5	0 10-5	0 10-0	4 2-0	4 2-0	10 2-0	16-2	0-1	42	0 25-5	0 25-5	0 24-3	4 2-0	4 2-0	10 2-0	16-2	0-1
43	0 10-8	0 10-8	0 10-3	4 3-0	4 3-0	10 3-0	16-3	0-1	43	0 25-8	0 25-8	0 24-6	4 3-0	4 3-0	10 3-0	16-3	0-1
44	0 11-0	0 11-0	0 10-5	4 4-0	4 4-0	10 4-0	16-4	0-1	44	0 26-0	0 26-0	0 24-8	4 4-0	4 4-0	10 4-0	16-4	0-1
45	0 11-3	0 11-3	0 10-7	4 5-0	4 5-0	10 5-0	16-5	0-1	45	0 26-3	0 26-3	0 25-1	4 5-0	4 5-0	10 5-0	16-5	0-1
46	0 11-5	0 11-5	0 11-0	4 6-0	4 6-0	10 6-0	16-6	0-1	46	0 26-5	0 26-5	0 25-3	4 6-0	4 6-0	10 6-0	16-6	0-1
47	0 11-8	0 11-8	0 11-2	4 7-0	4 7-0	10 7-0	16-7	0-1	47	0 26-8	0 26-8	0 25-6	4 7-0	4 7-0	10 7-0	16-7	0-1
48	0 12-0	0 12-0	0 11-5	4 8-0	4 8-0	10 8-0	16-8	0-1	48	0 27-0	0 27-0	0 25-8	4 8-0	4 8-0	10 8-0	16-8	0-1
49	0 12-3	0 12-3	0 11-7	4 9-0	4 9-0	10 9-0	16-9	0-1	49	0 27-3	0 27-3	0 26-0	4 9-0	4 9-0	10 9-0	16-9	0-1
50	0 12-5	0 12-5	0 11-9	5 0-0	5 0-0	11 0-0	17-0	0-1	50	0 27-5	0 27-5	0 26-2	5 0-0	5 0-0	11 0-0	17-0	0-1
51	0 12-8	0 12-8	0 12-2	5 1-0	5 1-0	11 1-0	17-1	0-1	51	0 27-8	0 27-8	0 26-5	5 1-0	5 1-0	11 1-0	17-1	0-1
52	0 13-0	0 13-0	0 12-4	5 2-0	5 2-0	11 2-0	17-2	0-1	52	0 28-0	0 28-0	0 26-7	5 2-0	5 2-0	11 2-0	17-2	0-1
53	0 13-3	0 13-3	0 12-6	5 3-0	5 3-0	11 3-0	17-3	0-1	53	0 28-3	0 28-3	0 27-0	5 3-0	5 3-0	11 3-0	17-3	0-1
54	0 13-5	0 13-5	0 12-9	5 4-0	5 4-0	11 4-0	17-4	0-1	54	0 28-5	0 28-5	0 27-2	5 4-0	5 4-0	11 4-0	17-4	0-1
55	0 13-8	0 13-8	0 13-1	5 5-0	5 5-0	11 5-0	17-5	0-1	55	0 28-8	0 28-8	0 27-5	5 5-0	5 5-0	11 5-0	17-5	0-1
56	0 14-0	0 14-0	0 13-4	5 6-0	5 6-0	11 6-0	17-6	0-1	56	0 29-0	0 29-0	0 27-7	5 6-0	5 6-0	11 6-0	17-6	0-1
57	0 14-3	0 14-3	0 13-6	5 7-0	5 7-0	11 7-0	17-7	0-1	57	0 29-3	0 29-3	0 27-9	5 7-0	5 7-0	11 7-0	17-7	0-1
58	0 14-5	0 14-5	0 13-8	5 8-0	5 8-0	11 8-0	17-8	0-1	58	0 29-5	0 29-5	0 28-2	5 8-0	5 8-0	11 8-0	17-8	0-1
59	0 14-8	0 14-8	0 14-1	5 9-0	5 9-0	11 9-0	17-9	0-1	59	0 29-8	0 29-8	0 28-4	5 9-0	5 9-0	11 9-0	17-9	0-1
60	0 15-0	0 15-0	0 14-3	6 0-0	6 0-0	12 0-0	18-0	0-2	60	0 30-0	0 30-0	0 28-6	6 0-0	6 0-0	12 0-0	18-0	0-2

INCREMENTS AND CORRECTIONS

2	SUN PLANETS			ARIES	MOON	v or Corr ⁿ			3	SUN PLANETS			ARIES	MOON	v or Corr ⁿ		
	s	'	"			s	'	"		s	'	"			s	'	"
00	0 30-0	0 30-1	0 28-6	0 0-0	0 0-0	6 0-0	12-0	0-5	00	0 45-0	0 45-1	0 43-0	0 0-0	0 0-0	6 0-0	12-0	0-7
01	0 30-3	0 30-3	0 28-9	0 1-0	0 1-0	6 1-0	12-1	0-5	01	0 45-3	0 45-4	0 43-2	0 1-0	0 1-0	6 1-0	12-1	0-7
02	0 30-5	0 30-6	0 29-1	0 2-0	0 2-0	6 2-0	12-2	0-5	02	0 45-5	0 45-6	0 43-4	0 2-0	0 2-0	6 2-0	12-2	0-7
03	0 30-8	0 30-8	0 29-3	0 3-0	0 3-0	6 3-0	12-3	0-5	03	0 45-8	0						

INCREMENTS AND CORRECTIONS

Table with columns: SUN PLANETS, ARIES, MOON, and three columns of corrections (v or Corr). Rows 00-60.

Table with columns: SUN PLANETS, ARIES, MOON, and three columns of corrections (v or Corr). Rows 00-60.

INCREMENTS AND CORRECTIONS

Table with columns: SUN PLANETS, ARIES, MOON, and three columns of corrections (v or Corr). Rows 00-60.

Table with columns: SUN PLANETS, ARIES, MOON, and three columns of corrections (v or Corr). Rows 00-60.

INCREMENTS AND CORRECTIONS

8	SUN PLANETS	ARIES	MOON	v or Corr ⁿ		
				v	d	f
00	2 00-0	2 00-3	1 54-5	0-0	0-0	12-0 1-7
01	2 00-3	2 00-6	1 54-8	0-1	0-0	12-1 1-7
02	2 00-5	2 00-8	1 55-0	0-2	0-0	12-2 1-7
03	2 00-8	2 01-1	1 55-2	0-3	0-0	12-3 1-7
04	2 01-0	2 01-3	1 55-5	0-4	0-1	12-4 1-8
05	2 01-3	2 01-6	1 55-7	0-5	0-1	12-5 1-8
06	2 01-5	2 01-8	1 56-0	0-6	0-1	12-6 1-8
07	2 01-8	2 02-1	1 56-2	0-7	0-1	12-7 1-8
08	2 02-0	2 02-3	1 56-4	0-8	0-1	12-8 1-8
09	2 02-3	2 02-6	1 56-7	0-9	0-1	12-9 1-8
10	2 02-5	2 02-8	1 56-9	1-0	0-1	13-0 1-8
11	2 02-8	2 03-1	1 57-2	1-1	0-2	13-1 1-9
12	2 03-0	2 03-3	1 57-4	1-2	0-2	13-2 1-9
13	2 03-3	2 03-6	1 57-6	1-3	0-2	13-3 1-9
14	2 03-5	2 03-8	1 57-9	1-4	0-2	13-4 1-9
15	2 03-8	2 04-1	1 58-1	1-5	0-2	13-5 1-9
16	2 04-0	2 04-3	1 58-4	1-6	0-2	13-6 1-9
17	2 04-3	2 04-6	1 58-6	1-7	0-2	13-7 1-9
18	2 04-5	2 04-8	1 58-8	1-8	0-3	13-8 2-0
19	2 04-8	2 05-1	1 59-1	1-9	0-3	13-9 2-0
20	2 05-0	2 05-3	1 59-3	2-0	0-3	14-0 2-0
21	2 05-3	2 05-6	1 59-5	2-1	0-3	14-1 2-0
22	2 05-5	2 05-8	1 59-8	2-2	0-3	14-2 2-0
23	2 05-8	2 06-1	2 00-0	2-3	0-3	14-3 2-0
24	2 06-0	2 06-3	2 00-3	2-4	0-3	14-4 2-0
25	2 06-3	2 06-6	2 00-5	2-5	0-4	14-5 2-1
26	2 06-5	2 06-8	2 00-7	2-6	0-4	14-6 2-1
27	2 06-8	2 07-1	2 01-0	2-7	0-4	14-7 2-1
28	2 07-0	2 07-3	2 01-2	2-8	0-4	14-8 2-1
29	2 07-3	2 07-6	2 01-5	2-9	0-4	14-9 2-1
30	2 07-5	2 07-8	2 01-7	3-0	0-4	15-0 2-1
31	2 07-8	2 08-1	2 01-9	3-1	0-4	15-1 2-1
32	2 08-0	2 08-4	2 02-2	3-2	0-5	15-2 2-2
33	2 08-3	2 08-6	2 02-4	3-3	0-5	15-3 2-2
34	2 08-5	2 08-9	2 02-6	3-4	0-5	15-4 2-2
35	2 08-8	2 09-1	2 02-9	3-5	0-5	15-5 2-2
36	2 09-0	2 09-4	2 03-1	3-6	0-5	15-6 2-2
37	2 09-3	2 09-6	2 03-4	3-7	0-5	15-7 2-2
38	2 09-5	2 09-9	2 03-6	3-8	0-5	15-8 2-2
39	2 09-8	2 10-1	2 03-8	3-9	0-6	15-9 2-3
40	2 10-0	2 10-4	2 04-1	4-0	0-6	16-0 2-3
41	2 10-3	2 10-6	2 04-3	4-1	0-6	16-1 2-3
42	2 10-5	2 10-9	2 04-6	4-2	0-6	16-2 2-3
43	2 10-8	2 11-1	2 04-8	4-3	0-6	16-3 2-3
44	2 11-0	2 11-4	2 05-0	4-4	0-6	16-4 2-3
45	2 11-3	2 11-6	2 05-3	4-5	0-6	16-5 2-3
46	2 11-5	2 11-9	2 05-5	4-6	0-7	16-6 2-4
47	2 11-8	2 12-1	2 05-7	4-7	0-7	16-7 2-4
48	2 12-0	2 12-4	2 06-0	4-8	0-7	16-8 2-4
49	2 12-3	2 12-6	2 06-2	4-9	0-7	16-9 2-4
50	2 12-5	2 12-9	2 06-5	5-0	0-7	17-0 2-4
51	2 12-8	2 13-1	2 06-7	5-1	0-7	17-1 2-4
52	2 13-0	2 13-4	2 06-9	5-2	0-7	17-2 2-4
53	2 13-3	2 13-6	2 07-2	5-3	0-8	17-3 2-5
54	2 13-5	2 13-9	2 07-4	5-4	0-8	17-4 2-5
55	2 13-8	2 14-1	2 07-7	5-5	0-8	17-5 2-5
56	2 14-0	2 14-4	2 07-9	5-6	0-8	17-6 2-5
57	2 14-3	2 14-6	2 08-1	5-7	0-8	17-7 2-5
58	2 14-5	2 14-9	2 08-4	5-8	0-8	17-8 2-5
59	2 14-8	2 15-1	2 08-6	5-9	0-8	17-9 2-5
60	2 15-0	2 15-4	2 08-9	6-0	0-9	18-0 2-6

INCREMENTS AND CORRECTIONS

10	SUN PLANETS	ARIES	MOON	v or Corr ⁿ		
				v	d	f
00	2 30-0	2 30-4	2 23-2	6-0	0-0	12-0 2-1
01	2 30-3	2 30-7	2 23-4	6-1	0-0	12-1 2-1
02	2 30-5	2 30-9	2 23-6	6-2	0-0	12-2 2-1
03	2 30-8	2 31-2	2 23-9	6-3	0-1	12-3 2-2
04	2 31-0	2 31-4	2 24-1	6-4	0-1	12-4 2-2
05	2 31-3	2 31-7	2 24-4	6-5	0-1	12-5 2-2
06	2 31-5	2 31-9	2 24-6	6-6	0-1	12-6 2-2
07	2 31-8	2 32-2	2 24-8	6-7	0-1	12-7 2-2
08	2 32-0	2 32-4	2 25-1	6-8	0-1	12-8 2-2
09	2 32-3	2 32-7	2 25-3	6-9	0-2	12-9 2-3
10	2 32-5	2 32-9	2 25-6	7-0	0-2	13-0 2-3
11	2 32-8	2 33-2	2 25-8	7-1	0-2	13-1 2-3
12	2 33-0	2 33-4	2 26-0	7-2	0-2	13-2 2-3
13	2 33-3	2 33-7	2 26-3	7-3	0-2	13-3 2-3
14	2 33-5	2 33-9	2 26-5	7-4	0-2	13-4 2-3
15	2 33-8	2 34-2	2 26-7	7-5	0-3	13-5 2-4
16	2 34-0	2 34-4	2 27-0	7-6	0-3	13-6 2-4
17	2 34-3	2 34-7	2 27-2	7-7	0-3	13-7 2-4
18	2 34-5	2 34-9	2 27-5	7-8	0-3	13-8 2-4
19	2 34-8	2 35-2	2 27-7	7-9	0-3	13-9 2-4
20	2 35-0	2 35-4	2 27-9	8-0	0-4	14-0 2-5
21	2 35-3	2 35-7	2 28-2	8-1	0-4	14-1 2-5
22	2 35-5	2 35-9	2 28-4	8-2	0-4	14-2 2-5
23	2 35-8	2 36-2	2 28-6	8-3	0-4	14-3 2-5
24	2 36-0	2 36-4	2 28-9	8-4	0-4	14-4 2-5
25	2 36-3	2 36-7	2 29-1	8-5	0-5	14-5 2-5
26	2 36-5	2 36-9	2 29-4	8-6	0-5	14-6 2-6
27	2 36-8	2 37-2	2 29-6	8-7	0-5	14-7 2-6
28	2 37-0	2 37-4	2 29-8	8-8	0-5	14-8 2-6
29	2 37-3	2 37-7	2 30-1	8-9	0-5	14-9 2-6
30	2 37-5	2 37-9	2 30-3	9-0	0-5	15-0 2-6
31	2 37-8	2 38-2	2 30-6	9-1	0-5	15-1 2-6
32	2 38-0	2 38-4	2 30-8	9-2	0-6	15-2 2-7
33	2 38-3	2 38-7	2 31-0	9-3	0-6	15-3 2-7
34	2 38-5	2 38-9	2 31-3	9-4	0-6	15-4 2-7
35	2 38-8	2 39-2	2 31-5	9-5	0-6	15-5 2-7
36	2 39-0	2 39-4	2 31-8	9-6	0-6	15-6 2-7
37	2 39-3	2 39-7	2 32-0	9-7	0-6	15-7 2-7
38	2 39-5	2 39-9	2 32-2	9-8	0-7	15-8 2-8
39	2 39-8	2 40-2	2 32-5	9-9	0-7	15-9 2-8
40	2 40-0	2 40-4	2 32-7	10-0	0-7	16-0 2-8
41	2 40-3	2 40-7	2 32-9	10-1	0-7	16-1 2-8
42	2 40-5	2 40-9	2 33-2	10-2	0-7	16-2 2-8
43	2 40-8	2 41-2	2 33-4	10-3	0-8	16-3 2-9
44	2 41-0	2 41-4	2 33-7	10-4	0-8	16-4 2-9
45	2 41-3	2 41-7	2 33-9	10-5	0-8	16-5 2-9
46	2 41-5	2 41-9	2 34-1	10-6	0-8	16-6 2-9
47	2 41-8	2 42-2	2 34-4	10-7	0-8	16-7 2-9
48	2 42-0	2 42-4	2 34-6	10-8	0-8	16-8 2-9
49	2 42-3	2 42-7	2 34-9	10-9	0-9	16-9 3-0
50	2 42-5	2 42-9	2 35-1	11-0	0-9	17-0 3-0
51	2 42-8	2 43-2	2 35-3	11-1	0-9	17-1 3-0
52	2 43-0	2 43-4	2 35-6	11-2	0-9	17-2 3-0
53	2 43-3	2 43-7	2 35-8	11-3	0-9	17-3 3-0
54	2 43-5	2 43-9	2 36-1	11-4	0-9	17-4 3-0
55	2 43-8	2 44-2	2 36-3	11-5	1-0	17-5 3-1
56	2 44-0	2 44-4	2 36-5	11-6	1-0	17-6 3-1
57	2 44-3	2 44-7	2 36-8	11-7	1-0	17-7 3-1
58	2 44-5	2 45-0	2 37-0	11-8	1-0	17-8 3-1
59	2 44-8	2 45-2	2 37-2	11-9	1-0	17-9 3-1
60	2 45-0	2 45-5	2 37-5	12-0	1-1	18-0 3-2

12^m

INCREMENTS AND CORRECTIONS

13^m

Table for 12m increments and corrections. Columns include SUN PLANETS, ARIES, MOON, and three columns for 'of Corr' with sub-columns for 'd', 'r', and 'l'.

Table for 13m increments and corrections. Columns include SUN PLANETS, ARIES, MOON, and three columns for 'of Corr' with sub-columns for 'd', 'r', and 'l'.

viii

14^m

INCREMENTS AND CORRECTIONS

15^m

Table for 14m increments and corrections. Columns include SUN PLANETS, ARIES, MOON, and three columns for 'of Corr' with sub-columns for 'd', 'r', and 'l'.

ix

Table for 15m increments and corrections. Columns include SUN PLANETS, ARIES, MOON, and three columns for 'of Corr' with sub-columns for 'd', 'r', and 'l'.

INCREMENTS AND CORRECTIONS

Table with 7 columns: SUN PLANETS, ARIES, MOON, and three columns for 'of Corr' (d, Corr, d, Corr, d, Corr). Rows 00-60.

Table with 7 columns: SUN PLANETS, ARIES, MOON, and three columns for 'of Corr' (d, Corr, d, Corr, d, Corr). Rows 00-60.

INCREMENTS AND CORRECTIONS

Table with 7 columns: SUN PLANETS, ARIES, MOON, and three columns for 'of Corr' (d, Corr, d, Corr, d, Corr). Rows 00-60.

Table with 7 columns: SUN PLANETS, ARIES, MOON, and three columns for 'of Corr' (d, Corr, d, Corr, d, Corr). Rows 00-60.

20 ^m	SUN PLANETS			ARIES			MOON			v or Corr ⁿ			v or Corr ⁿ			v or Corr ⁿ					
	s	'	''	s	'	''	s	'	''	d	'	''	d	'	''	d	'	''			
00	5 00-0	5 00-8	4 46-3	0-0	0-0	6-0	2-1	12-0	4-1	0-0	0-0	6-0	2-2	12-0	4-3	0-0	0-0	6-0	2-2	12-0	4-3
01	5 00-3	5 01-1	4 46-6	0-1	0-0	6-1	2-1	12-1	4-1	0-1	0-0	6-1	2-2	12-1	4-3	0-1	0-0	6-1	2-2	12-1	4-3
02	5 00-5	5 01-3	4 46-8	0-2	0-1	6-2	2-1	12-2	4-2	0-2	0-1	6-2	2-2	12-2	4-4	0-2	0-1	6-2	2-2	12-2	4-4
03	5 00-8	5 01-6	4 47-0	0-3	0-1	6-3	2-2	12-3	4-2	0-3	0-1	6-3	2-3	12-3	4-4	0-3	0-1	6-3	2-3	12-3	4-4
04	5 01-0	5 01-8	4 47-3	0-4	0-1	6-4	2-2	12-4	4-2	0-4	0-1	6-4	2-3	12-4	4-4	0-4	0-1	6-4	2-3	12-4	4-4
05	5 01-3	5 02-1	4 47-5	0-5	0-2	6-5	2-2	12-5	4-3	0-5	0-2	6-5	2-3	12-5	4-5	0-5	0-2	6-5	2-3	12-5	4-5
06	5 01-5	5 02-3	4 47-8	0-6	0-2	6-6	2-3	12-6	4-3	0-6	0-2	6-6	2-4	12-6	4-5	0-6	0-2	6-6	2-4	12-6	4-5
07	5 01-8	5 02-6	4 48-0	0-7	0-2	6-7	2-3	12-7	4-3	0-7	0-3	6-7	2-4	12-7	4-6	0-7	0-3	6-7	2-4	12-7	4-6
08	5 02-0	5 02-8	4 48-2	0-8	0-3	6-8	2-3	12-8	4-4	0-8	0-3	6-8	2-4	12-8	4-6	0-8	0-3	6-8	2-4	12-8	4-6
09	5 02-3	5 03-1	4 48-5	0-9	0-3	6-9	2-4	12-9	4-4	0-9	0-3	6-9	2-5	12-9	4-6	0-9	0-3	6-9	2-5	12-9	4-6
10	5 02-5	5 03-3	4 48-7	1-0	0-3	7-0	2-4	13-0	4-4	1-0	0-4	7-0	2-5	13-0	4-7	1-0	0-4	7-0	2-5	13-0	4-7
11	5 02-8	5 03-6	4 49-0	1-1	0-4	7-1	2-4	13-1	4-5	1-1	0-4	7-1	2-5	13-1	4-7	1-1	0-4	7-1	2-5	13-1	4-7
12	5 03-0	5 03-8	4 49-2	1-2	0-4	7-2	2-5	13-2	4-5	1-2	0-5	7-2	2-6	13-2	4-7	1-2	0-5	7-2	2-6	13-2	4-7
13	5 03-3	5 04-1	4 49-4	1-3	0-4	7-3	2-5	13-3	4-5	1-3	0-5	7-3	2-6	13-3	4-8	1-3	0-5	7-3	2-6	13-3	4-8
14	5 03-5	5 04-3	4 49-7	1-4	0-5	7-4	2-5	13-4	4-6	1-4	0-5	7-4	2-7	13-4	4-8	1-4	0-5	7-4	2-7	13-4	4-8
15	5 03-8	5 04-6	4 49-9	1-5	0-5	7-5	2-6	13-5	4-6	1-5	0-6	7-5	2-7	13-5	4-8	1-5	0-6	7-5	2-7	13-5	4-8
16	5 04-0	5 04-8	4 50-2	1-6	0-5	7-6	2-6	13-6	4-6	1-6	0-6	7-6	2-7	13-6	4-9	1-6	0-6	7-6	2-7	13-6	4-9
17	5 04-3	5 05-1	4 50-4	1-7	0-6	7-7	2-6	13-7	4-7	1-7	0-6	7-7	2-8	13-7	4-9	1-7	0-7	7-7	2-8	13-7	4-9
18	5 04-5	5 05-3	4 50-6	1-8	0-6	7-8	2-7	13-8	4-7	1-8	0-6	7-8	2-8	13-8	4-9	1-8	0-7	7-8	2-8	13-8	4-9
19	5 04-8	5 05-6	4 50-9	1-9	0-6	7-9	2-7	13-9	4-7	1-9	0-7	7-9	2-8	13-9	5-0	1-9	0-7	7-9	2-8	13-9	5-0
20	5 05-0	5 05-8	4 51-1	2-0	0-7	8-0	2-7	14-0	4-8	2-0	0-7	8-0	2-9	14-0	5-0	2-0	0-7	8-0	2-9	14-0	5-0
21	5 05-3	5 06-1	4 51-3	2-1	0-7	8-1	2-8	14-1	4-8	2-1	0-8	8-1	2-9	14-1	5-1	2-1	0-8	8-1	2-9	14-1	5-1
22	5 05-5	5 06-3	4 51-6	2-2	0-8	8-2	2-8	14-2	4-9	2-2	0-8	8-2	2-9	14-2	5-1	2-2	0-8	8-2	2-9	14-2	5-1
23	5 05-8	5 06-6	4 51-8	2-3	0-8	8-3	2-8	14-3	4-9	2-3	0-8	8-3	2-9	14-3	5-1	2-3	0-8	8-3	2-9	14-3	5-1
24	5 06-0	5 06-8	4 52-1	2-4	0-8	8-4	2-9	14-4	4-9	2-4	0-9	8-4	3-0	14-4	5-2	2-4	0-9	8-4	3-0	14-4	5-2
25	5 06-3	5 07-1	4 52-3	2-5	0-9	8-5	2-9	14-5	5-0	2-5	0-9	8-5	3-0	14-5	5-2	2-5	0-9	8-5	3-0	14-5	5-2
26	5 06-5	5 07-3	4 52-5	2-6	0-9	8-6	2-9	14-6	5-0	2-6	0-9	8-6	3-1	14-6	5-2	2-6	0-9	8-6	3-1	14-6	5-2
27	5 06-8	5 07-6	4 52-8	2-7	0-9	8-7	3-0	14-7	5-0	2-7	1-0	8-7	3-1	14-7	5-3	2-7	1-0	8-7	3-1	14-7	5-3
28	5 07-0	5 07-8	4 53-0	2-8	1-0	8-8	3-0	14-8	5-1	2-8	1-0	8-8	3-2	14-8	5-3	2-8	1-0	8-8	3-2	14-8	5-3
29	5 07-3	5 08-1	4 53-3	2-9	1-0	8-9	3-0	14-9	5-1	2-9	1-0	8-9	3-2	14-9	5-3	2-9	1-1	8-9	3-2	14-9	5-3
30	5 07-5	5 08-3	4 53-5	3-0	1-0	9-0	3-1	15-0	5-1	3-0	1-1	9-0	3-2	15-0	5-4	3-0	1-1	9-0	3-2	15-0	5-4
31	5 07-8	5 08-6	4 53-7	3-1	1-1	9-1	3-1	15-1	5-2	3-1	1-1	9-1	3-3	15-1	5-4	3-1	1-1	9-1	3-3	15-1	5-4
32	5 08-0	5 08-8	4 54-0	3-2	1-1	9-2	3-1	15-2	5-2	3-2	1-2	9-2	3-3	15-2	5-4	3-2	1-2	9-2	3-3	15-2	5-4
33	5 08-3	5 09-1	4 54-2	3-3	1-1	9-3	3-2	15-3	5-2	3-3	1-2	9-3	3-3	15-3	5-5	3-3	1-2	9-3	3-3	15-3	5-5
34	5 08-5	5 09-3	4 54-4	3-4	1-2	9-4	3-2	15-4	5-3	3-4	1-2	9-4	3-4	15-4	5-5	3-4	1-2	9-4	3-4	15-4	5-5
35	5 08-8	5 09-6	4 54-7	3-5	1-2	9-5	3-2	15-5	5-3	3-5	1-3	9-5	3-4	15-5	5-6	3-5	1-3	9-5	3-4	15-5	5-6
36	5 09-0	5 09-8	4 54-9	3-6	1-2	9-6	3-3	15-6	5-3	3-6	1-3	9-6	3-4	15-6	5-6	3-6	1-3	9-6	3-4	15-6	5-6
37	5 09-3	5 10-1	4 55-2	3-7	1-3	9-7	3-3	15-7	5-4	3-7	1-3	9-7	3-5	15-7	5-6	3-7	1-3	9-7	3-5	15-7	5-6
38	5 09-5	5 10-3	4 55-4	3-8	1-3	9-8	3-3	15-8	5-4	3-8	1-4	9-8	3-5	15-8	5-7	3-8	1-4	9-8	3-5	15-8	5-7
39	5 09-8	5 10-6	4 55-6	3-9	1-3	9-9	3-4	15-9	5-4	3-9	1-4	9-9	3-5	15-9	5-7	3-9	1-4	9-9	3-5	15-9	5-7
40	5 10-0	5 10-8	4 55-9	4-0	1-4	10-0	3-4	16-0	5-5	4-0	1-4	10-0	3-6	16-0	5-7	4-0	1-4	10-0	3-6	16-0	5-7
41	5 10-3	5 11-1	4 56-1	4-1	1-4	10-1	3-5	16-1	5-5	4-1	1-5	10-1	3-6	16-1	5-8	4-1	1-5	10-1	3-6	16-1	5-8
42	5 10-5	5 11-4	4 56-4	4-2	1-4	10-2	3-5	16-2	5-5	4-2	1-5	10-2	3-7	16-2	5-8	4-2	1-5	10-2	3-7	16-2	5-8
43	5 10-8	5 11-6	4 56-6	4-3	1-5	10-3	3-5	16-3	5-6	4-3	1-5	10-3	3-7	16-3	5-8	4-3	1-5	10-3	3-7	16-3	5-8
44	5 11-0	5 11-9	4 56-8	4-4	1-5	10-4	3-6	16-4	5-6	4-4	1-6	10-4	3-7	16-4	5-9	4-4	1-6	10-4	3-7	16-4	5-9
45	5 11-3	5 12-1	4 57-1	4-5	1-5	10-5	3-6	16-5	5-6	4-5	1-6	10-5	3-8	16-5	5-9	4-5	1-6	10-5	3-8	16-5	5-9
46	5 11-5	5 12-4	4 57-3	4-6	1-6	10-6	3-6	16-6	5-7	4-6	1-6	10-6	3-8	16-6	5-9	4-6	1-6	10-6	3-8	16-6	5-9
47	5 11-8	5 12-6	4 57-5	4-7	1-6	10-7	3-7	16-7	5-7	4-7	1-7	10-7	3-8	16-7	6-0	4-7	1-7	10-7	3-8	16-7	6-0
48	5 12-0	5 12-9	4 57-8	4-8	1-6	10-8	3-7	16-8	5-7	4-8	1-7	10-8	3-9	16-8	6-0	4-8	1-7	10-8	3-9	16-8	6-0
49	5 12-3	5 13-1	4 58-0	4-9	1-7	10-9	3-7	16-9	5-8	4-9	1-8	10-9	3-9	16-9	6-1	4-9	1-8	10-9	3-9	16-9	6-1
50	5 12-5	5 13-4	4 58-3	5-0	1-7	11-0	3-8	17-0	5-8	5-0	1-8	11-0	3-9	17-0	6-1	5-0	1-8	11-0	3-9	17-0	6-1
51	5 12-8	5 13-6	4 58-5	5-1	1-7	11-1	3-8	17-1	5-8	5-1	1-8	11-1	4-0	17-1	6-1	5-1	1-8	11-1	4-0	17-1	6-1
52	5 13-0	5 13-9	4 58-7	5-2	1-8	11-2	3-8	17-2	5-9	5-2	1-9	11-2	4-0	17-2	6-2	5-2	1-9	11-2	4-0	17-2	6-2
53	5 13-3	5 14-1	4 59-0	5-3	1-8	11-3	3-9	17-3	5-9	5-3	1-9	11-3	4-1	17-3	6-2	5-3	1-9	11-3	4-1	17-3	6-2
54	5 13-5	5 14-4	4 59-2	5-4	1-8	11-4	3-9	17-4	5-9	5-4	1-9	11-4	4-1	17-4	6-3	5-4	1-9	11-4	4-1	17-4	6-3
55	5 13-8	5 14-6	4 59-5	5-5	1-9	11-5	3-9	17-5	6-0	5-5	1-9	11-5	4-1	17-5	6-3	5-5	1-9	11-5	4-1	17-5	6-3
56	5 14-0	5 14-9	4 59-7	5-6	1-9	11-6	4-0	17-6	6-0	5-6	2-0	11-6	4-2	17-6	6-3	5-6	2-0	11-6	4-2	17-6	6-3
57	5 14-3	5 15-1	4 59-9	5-7	1-9	11-7	4-0	17-7	6-0	5-7	2-0	11-7	4-2	17-7	6-3	5-7	2-0	11-7	4-2	17-7	6-3
58	5 14-5	5 15-4	5 00-2	5-8	2-0	11-8	4-0	17-8	6-1	5-8	2-1	11-8	4-2	17-8	6-4	5-8	2-1	11-8	4-2	17-8	6-4
59	5 14-8	5 15-6	5 00-4	5-9	2-0	11-9	4-1	17-9	6-1	5-9	2-1	11-9	4-3	17-9	6-4	5-9	2-1	11-9	4-3	17-9	6-4
60	5 15-0	5 15-9	5 00-7	6-0	2-1	12-0	4-1	18-0	6-2	6-0	2-1	12-0	4-3	18-0	6-5	6-0	2-2	12-0	4-3	18-0	6-5

24	SUN PLANETS			ARIES	MOON	v or Corr ⁿ			
	s	'	"			d	'	"	d
00	6 00-0	6 01-0	5 43-6	0-0	0-0	6-0	2-5	12-0	4-9
01	6 00-3	6 01-2	5 43-8	0-1	0-0	6-1	2-5	12-1	4-9
02	6 00-5	6 01-5	5 44-1	0-2	0-1	6-2	2-5	12-2	5-0
03	6 00-8	6 01-7	5 44-3	0-3	0-1	6-3	2-6	12-3	5-0
04	6 01-0	6 02-0	5 44-6	0-4	0-2	6-4	2-6	12-4	5-1
05	6 01-3	6 02-2	5 44-8	0-5	0-2	6-5	2-7	12-5	5-1
06	6 01-5	6 02-5	5 45-0	0-6	0-2	6-6	2-7	12-6	5-1
07	6 01-8	6 02-7	5 45-3	0-7	0-3	6-7	2-7	12-7	5-2
08	6 02-0	6 03-0	5 45-5	0-8	0-3	6-8	2-8	12-8	5-2
09	6 02-3	6 03-2	5 45-7	0-9	0-4	6-9	2-8	12-9	5-3
10	6 02-5	6 03-5	5 46-0	1-0	0-4	7-0	2-9	13-0	5-3
11	6 02-8	6 03-7	5 46-2	1-1	0-4	7-1	2-9	13-1	5-3
12	6 03-0	6 04-0	5 46-5	1-2	0-5	7-2	2-9	13-2	5-4
13	6 03-3	6 04-2	5 46-7	1-3	0-5	7-3	3-0	13-3	5-4
14	6 03-5	6 04-5	5 46-9	1-4	0-6	7-4	3-0	13-4	5-5
15	6 03-8	6 04-7	5 47-2	1-5	0-6	7-5	3-1	13-5	5-5
16	6 04-0	6 05-0	5 47-4	1-6	0-7	7-6	3-1	13-6	5-6
17	6 04-3	6 05-2	5 47-7	1-7	0-7	7-7	3-1	13-7	5-6
18	6 04-5	6 05-5	5 47-9	1-8	0-7	7-8	3-2	13-8	5-6
19	6 04-8	6 05-7	5 48-1	1-9	0-8	7-9	3-2	13-9	5-7
20	6 05-0	6 06-0	5 48-4	2-0	0-8	8-0	3-3	14-0	5-7
21	6 05-3	6 06-3	5 48-6	2-1	0-9	8-1	3-3	14-1	5-8
22	6 05-5	6 06-5	5 48-8	2-2	0-9	8-2	3-3	14-2	5-8
23	6 05-8	6 06-8	5 49-1	2-3	0-9	8-3	3-4	14-3	5-8
24	6 06-0	6 07-0	5 49-3	2-4	1-0	8-4	3-4	14-4	5-9
25	6 06-3	6 07-3	5 49-6	2-5	1-0	8-5	3-5	14-5	5-9
26	6 06-5	6 07-5	5 49-8	2-6	1-1	8-6	3-5	14-6	6-0
27	6 06-8	6 07-8	5 50-0	2-7	1-1	8-7	3-6	14-7	6-0
28	6 07-0	6 08-0	5 50-3	2-8	1-1	8-8	3-6	14-8	6-0
29	6 07-3	6 08-3	5 50-5	2-9	1-2	8-9	3-6	14-9	6-1
30	6 07-5	6 08-5	5 50-8	3-0	1-2	9-0	3-7	15-0	6-1
31	6 07-8	6 08-8	5 51-0	3-1	1-3	9-1	3-7	15-1	6-2
32	6 08-0	6 09-0	5 51-2	3-2	1-3	9-2	3-8	15-2	6-2
33	6 08-3	6 09-3	5 51-5	3-3	1-3	9-3	3-8	15-3	6-2
34	6 08-5	6 09-5	5 51-7	3-4	1-4	9-4	3-8	15-4	6-3
35	6 08-8	6 09-8	5 52-0	3-5	1-4	9-5	3-9	15-5	6-3
36	6 09-0	6 10-0	5 52-2	3-6	1-5	9-6	3-9	15-6	6-4
37	6 09-3	6 10-3	5 52-4	3-7	1-5	9-7	4-0	15-7	6-4
38	6 09-5	6 10-5	5 52-7	3-8	1-6	9-8	4-0	15-8	6-5
39	6 09-8	6 10-8	5 52-9	3-9	1-6	9-9	4-0	15-9	6-5
40	6 10-0	6 11-0	5 53-1	4-0	1-6	10-0	4-1	16-0	6-5
41	6 10-3	6 11-3	5 53-4	4-1	1-7	10-1	4-1	16-1	6-6
42	6 10-5	6 11-5	5 53-6	4-2	1-7	10-2	4-2	16-2	6-6
43	6 10-8	6 11-8	5 53-9	4-3	1-8	10-3	4-2	16-3	6-7
44	6 11-0	6 12-0	5 54-1	4-4	1-8	10-4	4-2	16-4	6-7
45	6 11-3	6 12-3	5 54-3	4-5	1-8	10-5	4-3	16-5	6-7
46	6 11-5	6 12-5	5 54-6	4-6	1-9	10-6	4-3	16-6	6-8
47	6 11-8	6 12-8	5 54-8	4-7	1-9	10-7	4-4	16-7	6-8
48	6 12-0	6 13-0	5 55-1	4-8	2-0	10-8	4-4	16-8	6-9
49	6 12-3	6 13-3	5 55-3	4-9	2-0	10-9	4-5	16-9	6-9
50	6 12-5	6 13-5	5 55-5	5-0	2-0	11-0	4-5	17-0	6-9
51	6 12-8	6 13-8	5 55-8	5-1	2-1	11-1	4-5	17-1	7-0
52	6 13-0	6 14-0	5 56-0	5-2	2-1	11-2	4-6	17-2	7-0
53	6 13-3	6 14-3	5 56-2	5-3	2-2	11-3	4-6	17-3	7-1
54	6 13-5	6 14-5	5 56-5	5-4	2-2	11-4	4-7	17-4	7-1
55	6 13-8	6 14-8	5 56-7	5-5	2-2	11-5	4-7	17-5	7-1
56	6 14-0	6 15-0	5 57-0	5-6	2-3	11-6	4-7	17-6	7-2
57	6 14-3	6 15-3	5 57-2	5-7	2-3	11-7	4-8	17-7	7-2
58	6 14-5	6 15-5	5 57-4	5-8	2-4	11-8	4-8	17-8	7-3
59	6 14-8	6 15-8	5 57-7	5-9	2-4	11-9	4-9	17-9	7-3
60	6 15-0	6 16-0	5 57-9	6-0	2-5	12-0	4-9	18-0	7-4

25	SUN PLANETS			ARIES	MOON	v or Corr ⁿ			
	s	'	"			d	'	"	d
00	6 15-0	6 16-0	5 57-9	0-0	0-0	6-0	2-6	12-0	5-1
01	6 15-3	6 16-3	5 58-2	0-1	0-0	6-1	2-6	12-1	5-1
02	6 15-5	6 16-5	5 58-4	0-2	0-1	6-2	2-6	12-2	5-2
03	6 15-8	6 16-8	5 58-6	0-3	0-1	6-3	2-7	12-3	5-2
04	6 16-0	6 17-0	5 58-9	0-4	0-2	6-4	2-7	12-4	5-3
05	6 16-3	6 17-3	5 59-1	0-5	0-2	6-5	2-8	12-5	5-3
06	6 16-5	6 17-5	5 59-3	0-6	0-3	6-6	2-8	12-6	5-4
07	6 16-8	6 17-8	5 59-6	0-7	0-3	6-7	2-8	12-7	5-4
08	6 17-0	6 18-0	5 59-8	0-8	0-3	6-8	2-9	12-8	5-4
09	6 17-3	6 18-3	6 00-1	0-9	0-4	6-9	2-9	12-9	5-5
10	6 17-5	6 18-5	6 00-3	1-0	0-4	7-0	3-0	13-0	5-5
11	6 17-8	6 18-8	6 00-5	1-1	0-5	7-1	3-0	13-1	5-6
12	6 18-0	6 19-0	6 00-8	1-2	0-5	7-2	3-1	13-2	5-6
13	6 18-3	6 19-3	6 01-0	1-3	0-6	7-3	3-1	13-3	5-7
14	6 18-5	6 19-5	6 01-3	1-4	0-6	7-4	3-1	13-4	5-7
15	6 18-8	6 19-8	6 01-5	1-5	0-6	7-5	3-2	13-5	5-7
16	6 19-0	6 20-0	6 01-7	1-6	0-7	7-6	3-2	13-6	5-8
17	6 19-3	6 20-3	6 02-0	1-7	0-7	7-7	3-3	13-7	5-8
18	6 19-5	6 20-5	6 02-2	1-8	0-7	7-8	3-3	13-8	5-9
19	6 19-8	6 20-8	6 02-5	1-9	0-8	7-9	3-4	13-9	5-9
20	6 20-0	6 21-0	6 02-7	2-0	0-8	8-0	3-4	14-0	6-0
21	6 20-3	6 21-3	6 02-9	2-1	0-9	8-1	3-4	14-1	6-0
22	6 20-5	6 21-5	6 03-2	2-2	0-9	8-2	3-5	14-2	6-0
23	6 20-8	6 21-8	6 03-4	2-3	1-0	8-3	3-5	14-3	6-1
24	6 21-0	6 22-0	6 03-6	2-4	1-0	8-4	3-6	14-4	6-1
25	6 21-3	6 22-3	6 03-9	2-5	1-1	8-5	3-6	14-5	6-2
26	6 21-5	6 22-5	6 04-1	2-6	1-1	8-6	3-7	14-6	6-2
27	6 21-8	6 22-8	6 04-4	2-7	1-1	8-7	3-7	14-7	6-2
28	6 22-0	6 23-0	6 04-6	2-8	1-2	8-8	3-7	14-8	6-3
29	6 22-3	6 23-3	6 04-8	2-9	1-2	8-9	3-8	14-9	6-3
30	6 22-5	6 23-5	6 05-1	3-0	1-3	9-0	3-8	15-0	6-4
31	6 22-8	6 23-8	6 05-3	3-1	1-3	9-1	3-9	15-1	6-4
32	6 23-0	6 24-0	6 05-6	3-2	1-4	9-2	3-9	15-2	6-5
33	6 23-3	6 24-3	6 05-8	3-3	1-4	9-3	4-0	15-3	6-5
34	6 23-5	6 24-5	6 06-0	3-4	1-4	9-4	4-0	15-4	6-5
35	6 23-8	6 24-8	6 06-3	3-5	1-5	9-5	4-0	15-5	6-6
36	6 24-0	6 25-1	6 06-5	3-6	1-5	9-6	4-1	15-6	6-6
37	6 24-3	6 25-3	6 06-7	3-7	1-6	9-7	4-1	15-7	6-7
38	6 24-5	6 25-5	6 07-0	3-8	1-6	9-8	4-2	15-8	6-7
39	6 24-8	6 25-8	6 07-2	3-9	1-7	9-9	4-2	15-9	6-8
40	6 25-0	6 26-1	6 07-5	4-0	1-7	10-0	4-3	16-0	6-8
41	6 25-3	6 26-3	6 07-7	4-1	1-7	10-1	4-3	16-1	6-8
42	6 25-5	6 26-5	6 07-9	4-2	1-8	10-2	4-3	16-2	6-9
43	6 25-8	6 26-8	6 08-2	4-3	1-8	10-3	4-4	16-3	6-9
44	6 26-0	6 27-1	6 08-4	4-4	1-9	10-4	4-4	16-4	7-0
45	6 26-3	6 27-3	6 08-7	4-5	1-9	10-5	4-5	16-5	7-0
46	6 26-5	6 27-5	6 08-9	4-6	2-0	10-6	4-5	16-6	7-1
47	6 26-8	6 27-8	6 09-1	4-7	2-0	10-7	4-5	16-7	7-1
48	6 27-0	6 28-1	6 09-4	4-8	2-0	10-8	4-6	16-8	7-1
49	6 27-3	6 28-3	6 09-6	4-9	2-1	10-9	4-6	16-9	7-2
50	6 27-5	6 28-6	6 09-8	5-0	2-1	11-0	4-7	17-0	7-2
51	6 27-8	6 28-8	6 10-1	5-1	2-2	11-1	4-7	17-1	7-3
52	6 28-0	6 29-1	6 10-3	5-2	2-2	11-2	4-8	17-2	7-3
53	6 28-3	6 29-3	6 10-6	5-3	2-3	11-3	4-8	17-3	7-4
54	6 28-5	6 29-6	6 10-8	5-4	2-3	11-4	4-8	17-4	7-4
55	6 28-8	6 29-8	6 11-0	5-5	2-3	11-5	4-9	17-5	7-4
56	6 29-0	6 30-1	6 11-3	5-6	2-4	11-6	4-9	17-6	7-5
57	6 29-3	6 30-3	6 11-5	5-7	2-4	11-7	5-0	17-7	7-5
58	6 29-5	6 30-6	6 11-8	5-8	2-5	11-8	5-0	17-8	7-6
59	6 29-8	6 30-8	6 12-0	5-9	2-5	11-9	5-1	17-9	7-6
60	6 30-0	6 31-1	6 12-2	6-0	2-6	12-0	5-1	18-0	7-7

26	SUN PLANETS			ARIES	MOON	v or Corr ⁿ			
	s	'	"			d	'	"	d
00	6 30-0	6 31-1	6 12-2	0-0	0-0	6-0	2-7	12-0	5-3
01	6 3								

Main table for increments and corrections, columns 28 and 29, including Sun Planets, Aries, Moon, and correction values.

TABLES FOR INTERPOLATING SUNRISE, MOONRISE, ETC.

TABLE I—FOR LATITUDE

Table I: Interpolating sunrise, moonrise, etc. for latitude. Includes sub-headers for Tabular Interval and Difference between the times for consecutive latitudes.

Table I is for interpolating the L.M.T. of sunrise, twilight, moonrise, etc., for latitude. It is to be entered, in the appropriate column on the left, with the difference between the true latitude and the nearest tabular latitude which is less than the true latitude...

TABLE II—FOR LONGITUDE

Table II: Interpolating sunrise, moonrise, etc. for longitude. Includes sub-headers for Long. East or West and Difference between the times for given date and preceding date (for east longitude) or for given date and following date (for west longitude).

Table II is for interpolating the L.M.T. of moonrise, moonset and the Moon's meridian passage for longitude. It is entered with longitude and with the difference between the times for the given date and for the preceding date (in east longitudes) or following date (in west longitudes).

ALTITUDE CORRECTION TABLES 0°-35°— MOON

App. Alt.	0°-4°		5°-9°		10°-14°		15°-19°		20°-24°		25°-29°		30°-34°		App. Alt.
	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ		
0	33.8	58.2	62.1	62.8	62.2	60.8	58.9	00							
10	35.9	58.5	62.2	62.8	62.1	60.8	58.8	10							
20	37.8	58.7	62.2	62.8	62.1	60.7	58.7	20							
30	39.6	58.9	62.3	62.8	62.1	60.7	58.7	30							
40	41.2	59.1	62.3	62.8	62.0	60.6	58.6	40							
50	42.6	59.3	62.4	62.7	62.0	60.6	58.5	50							
00	1 44.0	6 59.5	11 62.4	16 62.7	21 62.0	26 60.5	31 58.5	00							
10	45.2	59.7	62.4	62.7	61.9	60.4	58.4	10							
20	46.3	59.9	62.5	62.7	61.9	60.4	58.3	20							
30	47.3	60.0	62.5	62.7	61.9	60.3	58.2	30							
40	48.3	60.2	62.5	62.7	61.8	60.3	58.2	40							
50	49.2	60.3	62.6	62.7	61.8	60.2	58.1	50							
00	2 50.0	7 60.5	12 62.6	17 62.7	22 61.7	27 60.1	32 58.0	00							
10	50.8	60.6	62.6	62.6	61.7	60.1	57.9	10							
20	51.4	60.7	62.6	62.6	61.6	60.0	57.8	20							
30	52.1	60.9	62.7	62.6	61.6	59.9	57.8	30							
40	52.7	61.0	62.7	62.6	61.5	59.9	57.7	40							
50	53.3	61.1	62.7	62.6	61.5	59.8	57.6	50							
00	3 53.8	8 61.2	13 62.7	18 62.5	23 61.5	28 59.7	33 57.5	00							
10	54.3	61.3	62.7	62.5	61.4	59.7	57.4	10							
20	54.8	61.4	62.7	62.5	61.4	59.6	57.4	20							
30	55.2	61.5	62.8	62.5	61.3	59.6	57.3	30							
40	55.6	61.6	62.8	62.4	61.3	59.5	57.2	40							
50	56.0	61.6	62.8	62.4	61.2	59.4	57.1	50							
00	4 56.4	9 61.7	14 62.8	19 62.4	24 61.2	29 59.3	34 57.0	00							
10	56.7	61.8	62.8	62.3	61.1	59.3	56.9	10							
20	57.1	61.9	62.8	62.3	61.1	59.2	56.9	20							
30	57.4	61.9	62.8	62.3	61.0	59.1	56.8	30							
40	57.7	62.0	62.8	62.2	60.9	59.1	56.7	40							
50	57.9	62.1	62.8	62.2	60.9	59.0	56.6	50							
HP	L U	L U	L U	L U	L U	L U	L U	HP							
54.0	0.3 0.9	0.3 0.9	0.4 1.0	0.5 1.1	0.6 1.2	0.7 1.3	0.9 1.5	54.0							
54.3	0.7 1.1	0.7 1.2	0.7 1.2	0.8 1.3	0.9 1.4	1.1 1.5	1.2 1.7	54.3							
54.6	1.1 1.4	1.1 1.4	1.1 1.4	1.2 1.5	1.3 1.6	1.4 1.7	1.5 1.8	54.6							
54.9	1.4 1.6	1.5 1.6	1.5 1.6	1.6 1.7	1.6 1.8	1.8 1.9	1.9 2.0	54.9							
55.2	1.8 1.8	1.8 1.8	1.9 1.9	1.9 1.9	2.0 2.0	2.1 2.1	2.2 2.2	55.2							
55.5	2.2 2.0	2.2 2.0	2.3 2.1	2.3 2.1	2.4 2.2	2.4 2.3	2.5 2.4	55.5							
55.8	2.6 2.2	2.6 2.2	2.6 2.3	2.7 2.3	2.7 2.4	2.8 2.4	2.9 2.5	55.8							
56.1	3.0 2.4	3.0 2.5	3.0 2.5	3.0 2.5	3.1 2.6	3.1 2.6	3.2 2.7	56.1							
56.4	3.4 2.7	3.4 2.7	3.4 2.7	3.4 2.7	3.4 2.8	3.5 2.8	3.5 2.9	56.4							
56.7	3.7 2.9	3.7 2.9	3.8 2.9	3.8 2.9	3.8 3.0	3.8 3.0	3.9 3.0	56.7							
57.0	4.1 3.1	4.1 3.1	4.1 3.1	4.1 3.1	4.2 3.1	4.2 3.2	4.2 3.2	57.0							
57.3	4.5 3.3	4.5 3.3	4.5 3.3	4.5 3.3	4.5 3.3	4.5 3.4	4.6 3.4	57.3							
57.6	4.9 3.5	4.9 3.5	4.9 3.5	4.9 3.5	4.9 3.5	4.9 3.5	4.9 3.6	57.6							
57.9	5.3 3.8	5.3 3.8	5.2 3.8	5.2 3.7	5.2 3.7	5.2 3.7	5.2 3.7	57.9							
58.2	5.6 4.0	5.6 4.0	5.6 4.0	5.6 4.0	5.6 3.9	5.6 3.9	5.6 3.9	58.2							
58.5	6.0 4.2	6.0 4.2	6.0 4.2	6.0 4.2	6.0 4.1	5.9 4.1	5.9 4.1	58.5							
58.8	6.4 4.4	6.4 4.4	6.4 4.4	6.3 4.4	6.3 4.3	6.2 4.2	6.2 4.2	58.8							
59.1	6.8 4.6	6.8 4.6	6.7 4.6	6.7 4.6	6.7 4.5	6.6 4.5	6.6 4.4	59.1							
59.4	7.2 4.8	7.1 4.8	7.1 4.8	7.1 4.8	7.0 4.7	7.0 4.7	6.9 4.6	59.4							
59.7	7.5 5.1	7.5 5.0	7.5 5.0	7.5 5.0	7.4 4.9	7.3 4.8	7.2 4.7	59.7							
60.0	7.9 5.3	7.9 5.3	7.9 5.2	7.8 5.2	7.8 5.1	7.7 5.0	7.6 4.9	60.0							
60.3	8.3 5.5	8.3 5.5	8.2 5.4	8.2 5.4	8.1 5.3	8.0 5.2	7.9 5.1	60.3							
60.6	8.7 5.7	8.7 5.7	8.6 5.7	8.6 5.6	8.5 5.5	8.4 5.4	8.2 5.3	60.6							
60.9	9.1 5.9	9.0 5.9	9.0 5.9	8.9 5.8	8.8 5.7	8.7 5.6	8.6 5.4	60.9							
61.2	9.5 6.2	9.4 6.1	9.4 6.1	9.3 6.0	9.2 5.9	9.1 5.8	8.9 5.6	61.2							
61.5	9.8 6.4	9.8 6.3	9.7 6.3	9.7 6.2	9.5 6.1	9.4 5.9	9.2 5.8	61.5							

ALTITUDE CORRECTION TABLES 35°-90°— MOON

DIP					
Ht. of Eye	Corr ⁿ		Ht. of Eye	Corr ⁿ	
	m	ft.		m	ft.
2.4	-2.8	8.0	9.5	-5.5	31.5
2.6	-2.9	8.6	9.9	-5.6	32.7
2.8	-2.9	9.2	10.3	-5.7	33.9
3.0	-3.0	9.8	10.6	-5.7	35.1
3.2	-3.2	10.5	11.0	-5.9	36.3
3.4	-3.3	11.2	11.4	-6.0	37.6
3.6	-3.4	11.9	11.8	-6.1	38.9
3.8	-3.5	12.6	12.2	-6.2	40.1
4.0	-3.6	13.3	12.6	-6.3	41.5
4.3	-3.7	14.1	13.0	-6.4	42.8
4.5	-3.8	14.9	13.4	-6.5	44.2
4.7	-3.9	15.7	13.8	-6.6	45.5
5.0	-4.0	16.5	14.2	-6.6	46.9
5.2	-4.1	17.4	14.7	-6.7	48.4
5.5	-4.2	18.3	15.1	-6.8	49.8
5.8	-4.3	19.1	15.5	-6.9	51.3
6.1	-4.4	20.1	16.0	-7.0	52.8
6.3	-4.4	21.0	16.5	-7.1	54.3
6.6	-4.6	22.0	16.9	-7.2	55.8
6.9	-4.7	22.9	17.4	-7.3	57.4
7.2	-4.8	23.9	17.9	-7.4	58.9
7.5	-4.9	24.9	18.4	-7.5	60.5
7.9	-5.0	26.0	18.8	-7.6	62.1
8.2	-5.1	27.1	19.3	-7.7	63.8
8.5	-5.2	28.1	19.8	-7.8	65.4
8.8	-5.3	29.2	20.4	-7.9	67.1
9.2	-5.4	30.4	20.9	-8.0	68.8
9.5	-5.4	31.5	21.4	-8.1	70.5

MOON CORRECTION TABLE

The correction is in two parts; the first correction is taken from the upper part of the table with argument apparent altitude, and the second from the lower part, with argument HP, in the same column as that from which the first correction was taken. Separate corrections are given in the lower part for lower (L) and upper (U) limbs. All corrections are to be added to apparent altitude, but 30' is to be subtracted from the altitude of the upper limb.

For corrections for pressure and temperature see page A4.

For bubble sextant observations ignore dip, take the mean of upper and lower limb corrections and subtract 15' from the altitude.

App. Alt. = Apparent altitude = Sextant altitude corrected for index error and dip.

App. Alt.	35°-39°		40°-44°		45°-49°		50°-54°		55°-59°		60°-64°		65°-69°		70°-74°		75°-79°		80°-84°		85°-89°		App. Alt.
	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ	Corr ⁿ		
00	56.5	40	53.7	45	50.5	50	46.9	55	43.1	60	38.9	65	34.6	70	30.1	75	25.3	80	20.5	85	15.6	00	
10	56.4	53.6	50.4	46.8	42.9	38.8	34.4	29.9	25.2	20.4	15.5	10											
20	56.3	53.5	50.2	46.7	42.8	38.7	34.3	29.7	25.0	20.2	15.3	20											
30	56.2	53.4	50.1	46.5	42.7	38.5	34.1	29.6	24.9	20.0	15.1	30											
40	56.2	53.3	50.0	46.4	42.5	38.4	34.0	29.4	24.7	19.9	15.0	40											
50	56.1	53.2	49.9	46.3	42.4	38.2	33.8	29.3	24.5	19.7	14.8	50											
00	36	56.0	41	53.1	46	49.8	51	46.2	56	42.3	61	38.1	66	33.7	71	29.1	76	24.4	81	19.6	86	14.6	00
10	55.9	53.0	49.7	46.0	42.1	37.9	33.5	29.0	24.2	19.4	14.5	10											
20	55.8	52.8	49.5	45.9	42.0	37.8	33.4	28.8	24.1	19.2	14.3	20											
30	55.7	52.7	49.4	45.8	41.8	37.7	33.2	28.7	23.9	19.1	14.1	30											
40	55.6	52.6	49.3	45.7	41.7	37.5	33.1	28.5	23.8	18.9	14.0	40											
50	55.5	52.5	49.2	45.5	41.6	37.4	32.9	28.3	23.6	18.7	13.8	50											
00	37	55.4	42	52.4	47	49.1	52	45.4	57	41.4	62	37.2	67	32.8	72	28.2	77	23.4	82	18.6	87	13.7	00
10	55.3	52.3	49.0	45.3	41.3	37.1	32.6	28.0	23.3	18.4	13.5	10											
20	55.2	52.2	48.8	45.2	41.2	36.9	32.5	27.9	23.1	18.2	13.3	20											
30	55.1	52.1	48.7	45.0	41.0	36.8	32.3	27.7	22.9	18.1	13.2	30											
40	55.0	52.0	48.6	44.9	40.9	36.6	32.2	27.6	22.8	17.9	13.0	40											
50	55.0	51.9	48.5	44.8	40.8	36.5	32.0	27.4	22.6	17.8	12.8	50											
00	38	54.9	43	51.8	48	48.4	53	44.6	58	40.6	63	36.4	68	31.9	73	27.2	78	22.5	83	17.6	88	12.7	00
10	54.8	51.7	48.2	44.5	40.5	36.2	31.7	27.1	22.3	17.4	12.5	10											
20	54.7	51.6	48.1	44.4	40.3	36.1	31.6	26.9	22.1	17.3	12.3	20											
30	54.6	51.5	48.0	44.2	40.2	35.9	31.4	26.8	22.0	17.1	12.2	30											
40	54.5	51.4	47.9	44.1	40.1	35.8	31.3	26.6	21.8	16.9	12.0	40											
50	54.4	51.2	47.8	44.0	39.9	35.6	31.1	26.5	21.7	16.8	11.8	50											
00	39	54.3	44	51.1	49	47.6	54	43.9	59	39.8	64	35.5	69	31.0	74	26.3	79	21.5	84	16.6	89	11.7	00
10	54.2	51.0	47.5	43.7	39.6	35.3	30.8	26.1	21.3	16.5	11.5	10											
20	54.1	50.9	47.4	43.6	39.5	35.2	30.7	26.0	21.2	16.3	11.4	20											
30	54.0	50.8	47.3	43.5	39.4	35.0	30.5	25.8	21.0	16.1	11.2	30											
40	53.9	50.7	47.2	43.3	39.2	34.9	30.4	25.7	20.9	16.0	11.0	40											
50	53.8	50.6	47.0	43.2	39.1	34.7	30.2	25.5</															

**Extracts from
the
Admiralty Tide Tables
Volume I**

Extracts from the Admiralty Tide Tables (Vol. I) 2002 are
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WALES; ENGLAND, WEST COAST

No.	PLACE	Lat. N	Long. W	TIME DIFFERENCES				HEIGHT DIFFERENCES (IN METRES)				ML Z ₀ m
				High Water	Low Water	MHWS	MHWN	MLWN	MLWS			
523	PORT OF BRISTOL (AVONMOUTH)	(see page 162)		0600 and 1800	1100 and 2300	0300 and 1500	0800 and 2000	13.2	9.8	3.8	1.0	
513	Barry	51 23	3 16	-0030	-0015	-0125	-0030	-1.8	-1.3	+0.2	0.0	6.09
513a	Flat Holm	51 23	3 07	-0015	-0015	-0045	-0045	-1.3	-1.1	-0.2	+0.2	6.2 x
513b	Steep Holm	51 20	3 06	-0020	-0020	-0050	-0050	-1.6	-1.2	-0.2	-0.2	6.1 x
514	Cardiff	51 27	3 09	-0015	-0015	-0100	-0030	-1.0	-0.6	+0.1	0.0	6.45
515	Newport	51 33	2 59	-0020	-0010	0000	-0020	-1.1	-1.0	-0.6	-0.7	6.03 *
516	River Wye Chepstow	51 39	2 40	+0020	+0020	0	0	0	0	0	0	*
523	PORT OF BRISTOL (AVONMOUTH)	(see page 162)		0000 and 1200	0600 and 1800	0000 and 1200	0700 and 1900	13.2	9.8	3.8	1.0	
England												
River Severn												
517	Sudbrook	51 35	2 43	+0010	+0010	+0025	+0015	+0.2	+0.1	-0.1	+0.1	6.86
518	Beachley (Aust)	51 36	2 38	+0010	+0015	+0040	+0025	-0.2	-0.2	-0.5	-0.4	6.42 *
519	Inward Rocks	51 39	2 37	+0020	+0020	+0105	+0045	-1.0	-1.1	-1.4	-0.8	5.74 *c
520	Narwood Rocks	51 39	2 36	+0025	+0025	+0120	+0100	-1.9	-2.0	-2.3	-0.8	0 *
521	White House	51 40	2 33	+0025	+0025	+0145	+0120	-3.0	-3.1	-3.6	-1.0	3.94 *c
522	Berkeley	51 42	2 30	+0030	+0045	+0245	+0220	-3.8	-3.9	-3.4	-0.5	3.44 *c
522a	Sharpness Dock	51 43	2 29	+0035	+0050	+0305	+0245	-3.9	-4.2	-3.3	-0.4	0 *
522b	Wellhouse Rock	51 44	2 29	+0040	+0055	+0320	+0305	-4.1	-4.4	-3.1	-0.2	3.25 *c
522c	Egney	51 42	2 24	+0130	0	0	0	-3.4	0	0	0	0 *
522d	Minsterworth	51 50	2 23	+0140	0	0	0	-10.1	0	0	0	0 *
522e	Llanthony	51 51	2 21	+0215	0	0	0	-10.7	0	0	0	0 *
523	PORT OF BRISTOL (AVONMOUTH) (Royal Portbury Dock)	(see page 162)		0200 and 1400	0800 and 2000	0300 and 1500	0800 and 2000	13.2	9.8	3.8	1.0	6.95 *
River Avon												
523a	Shirehampton	51 29	2 41	0000	0000	+0035	+0010	-0.7	-0.7	-0.8	0.0	0
523b	Sea Mills	51 29	2 39	+0005	+0005	+0105	+0030	-1.4	-1.5	-1.7	-0.1	0
524	Cumberland Basin Entrance	51 27	2 37	+0010	+0010	0	0	-2.9	-3.0	0	0	0
524a	Portishead	51 30	2 45	-0002	0000	0	0	-0.1	-0.1	0	0	0
525	Clevedon	51 27	2 52	-0010	-0020	-0025	-0015	-0.4	-0.2	+0.2	0.0	6.8 x
525a	St. Thomas Head	51 24	2 56	0000	0000	-0030	-0030	-0.4	-0.2	+0.1	+0.1	6.7 x
526	English And Welsh Grounds	51 28	2 59	-0008	-0008	-0030	-0030	-0.5	-0.8	-0.3	0.0	6.5 ax
527	Weston-super-Mare	51 21	2 59	-0020	-0030	-0130	-0030	-1.2	-1.0	-0.8	-0.2	6.1 x
River Parrett												
528	Burnham-on-Sea	51 14	3 00	-0020	-0025	-0030	0000	-2.3	-1.9	-1.4	-1.1	0
529	Bridgwater	51 08	3 00	-0015	-0030	+0305	+0455	-8.6	-8.1	0	0	0 *
530	Hinkley Point	51 13	3 08	-0020	-0025	-0100	-0040	-1.7	-1.4	-0.2	-0.2	6.0 x
531	Watchet	51 11	3 20	-0035	-0050	-0145	-0040	-1.9	-1.5	+0.1	+0.1	5.87
532	Minehead	51 13	3 28	-0037	-0052	-0155	-0045	-2.6	-1.9	-0.2	0.0	5.71
533	Porlock Bay	51 13	3 38	-0045	-0055	-0205	-0050	-3.0	-2.2	-0.1	-0.1	5.62
534	Lynmouth	51 14	3 49	-0055	-0115	0	0	-3.6	-2.7	0	0	0
496	MILFORD HAVEN	(see page 154)		0100 and 1300	0700 and 1900	0100 and 1300	0700 and 1900	7.0	5.2	2.5	0.7	
535	Ilfracombe	51 13	4 07	-0016	-0016	-0041	-0031	+2.3	+1.8	+0.6	+0.3	5.04
Rivers Taw and Torridge												
536	Appledore	51 03	4 12	-0020	-0025	+0015	-0045	+0.5	0.0	-0.9	-0.5	3.68 *c
537	Yelland Marsh	51 04	4 10	-0010	-0015	+0100	-0015	+0.1	-0.4	-1.2	-0.6	3.02 *c
538	Fremington	51 05	4 07	-0010	-0015	+0030	-0030	-1.1	-1.8	-2.2	-0.5	0 *
539	Barnstaple	51 05	4 04	0000	-0015	-0155	-0245	-2.9	-3.8	-2.2	-0.4	0 *
540	Bideford	51 01	4 12	-0020	-0025	0000	0000	-1.1	-1.6	-2.5	-0.7	0 *
541	Clovelly	51 00	4 24	-0030	-0030	-0020	-0040	+1.3	+1.1	+0.2	+0.2	0
542	Lundy	51 10	4 40	-0025	-0025	-0020	-0035	+1.0	+0.7	+0.2	0.0	4.28
543	Bude	50 50	4 33	-0040	-0040	-0035	-0045	+0.7	+0.6	0	0	0
544	Boscastle	50 41	4 42	-0045	-0010	-0110	-0100	+0.3	+0.4	+0.2	+0.2	4.02
544a	Port Isaac	50 35	4 50	-0100	-0100	-0100	-0100	+0.5	+0.6	0.0	+0.2	4.13

SEASONAL CHANGES IN MEAN LEVEL

No.	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sep. 1	Oct. 1	Nov. 1	Dec. 1	Jan. 1
476 - 482	+0.1	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	+0.1	+0.1	+0.1
482a - 512	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	+0.1	+0.1	0.0
513 - 534	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	+0.1	+0.1	+0.1	0.0	0.0
535 - 544a	+0.1	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	+0.1	+0.1	+0.1

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